Plantasie Creek – Phase 1 and 2 Sediment Sampling Report

Hercules, Inc (#356001)
Port Ewen, Ulster County, NY

Prepared for:

Hercules, Inc
Dyno Nobel, Inc

Prepared by:

EHS Support

April 2020
Volume I of II

Table of Contents

1 Introduction 1

2 Investigation Approach 2

2.1 Objectives 2
2.2 Study Design 2
2.3 Data Evaluation 3
2.4 Implementation 4

3 Investigation Findings 5

3.1 Substrate Mapping Results 5
3.2 Sediment Delineation Results 5
3.3 Updated Conceptual Site Model 6

4 Summary and Recommendations 8

5 References 10

List of Tables

Table 1 Plantasie Creek Sediment Sampling Results - Downstream Samples from Sediments Overlying the Native Clay Layer
Table 2 Plantasie Creek Sediment Sampling Results - Downstream Samples from the Native Clay Layer
Table 3 Plantasie Creek Sediment Sampling Results - Background Samples from Sediments Overlying the Native Clay Layer
Table 4 Sediment Delineation Sampling Results for Target Metals in Plantasie Creek Downstream of Mill Brook Drive

List of Figures

Figure 1 Site Location Map
Figure 2 Plantasie Creek Sediment Delineation Transect Overview Map
Figure 3 Plantasie Creek Sediment Sampling Results – Site to Transect 14
Figure 4 Plantasie Creek Longitudinal Profile
Figure 5A Plantasie Creek Sediment Sampling Results – Site to Transect 14
Figure 5B Plantasie Creek Sediment Sampling Results – Transect 15 to Rondout Creek
Figure 6A Longitudinal Profile – Surface Copper and Mercury Sediment Concentrations and SGV Classes
Figure 6B Longitudinal Profile – Surface Selenium and Zinc Sediment Concentrations and SGV Classes

List of Appendices

Appendix A NYSDEC Correspondence
Appendix B Laboratory Analytical Reports

Acronyms

µm	micrometer
BTV	background threshold value
CSM	conceptual site model
DFWMR	Division of Fish, Wildlife, and Marine Resource
FWRIA	Fish and Wildlife Resources Impact Analysis
mg/kg	milligrams per kilogram
mm	millimeter
NYSDEC	New York State Department of Environmental Conservation
SCO	soil cleanup objective
SGV	sediment guidance value
SQT	sediment quality triad
SWAC	surface-weighted average concentration
SWMU	solid waste management unit
TOC	total organic carbon
UCL	upper confidence limit
USEPA	United States Environmental Protection Agency
UTL	upper tolerance limit

1 Introduction

This report was prepared on behalf of Hercules Incorporated ("Hercules"), a wholly owned subsidiary of Ashland LLC ("Ashland") and Dyno Nobel Incorporated ("Dyno Nobel") to present a summary of sediment sampling and survey activities completed in Plantasie Creek downstream of the Solid Waste Management Unit (SWMU) 1/22 Wetland Complex at the Dyno Nobel Port Ewen Facility in Port Ewen, New York (Site). The Site is located at 161 Ulster Avenue in Ulster Park, approximately one mile south of the Village of Port Ewen in Ulster County, New York (**Figure 1**).

Sediment delineation sampling and substrate mapping were conducted as part of a phased investigation program completed between October 2016 and February 2017 in accordance with the New York State Department of Environmental Conservation (NYSDEC)-approved *Sediment Delineation Sampling and Substrate Mapping Work Plan* (Work Plan; EHS Support, 2016). Additional sediment sampling was requested by the NYSDEC to further characterize the concentrations of target metals in sediments, specifically copper, mercury, selenium, and zinc, that were elevated at the farthest downstream on-site sediment quality triad (SQT) station sampled within the SWMU 1/22 Wetland Complex during the June 2010 Step IIC Fish and Wildlife Resources Impact Analysis (FWRIA) field investigation (URS Corporation, 2011). During a meeting on October 2, 2014, the NYSDEC Division of Fish, Wildlife, and Marine Resources (DFWMR) requested additional downstream delineation of target metals to Class A and Class C freshwater sediment guidance values (SGVs) provided in the NYSDEC DFWMR *Screening and Assessment of Contaminated Sediments* (NYSDEC, 2014).

In response to the NYSDEC DFWMR request for additional downstream sediment sampling, Hercules and Dyno Nobel met with NYSDEC DFWMR on April 28, 2015 to discuss the conceptual approach for the delineation sampling program. The draft *Sediment Delineation Sampling and Substrate Mapping Work Plan* (Work Plan) was submitted to NYSDEC DFWMR in March 2016 (EHS Support, 2016). The objectives of the Work Plan were to delineate target metals to Class A and Class C freshwater SGVs or background threshold values (BTVs) and to map the spatial extent of fine-grained sediment deposits within the stream channel. The Work Plan received conditional approval from NYSDEC on September 6, 2016 and NYSDEC-stipulated conditions on the implementation of the Work Plan were resolved during a conference call on October 13, 2016. Copies of the NYSDEC approval letter and notes from the October 13, 2016 call are provided in **Appendix A**.

The following sections describe the approach for the downstream sediment delineation sampling and substrate mapping survey, summarize the key findings of the phased sediment delineation sampling and substrate mapping survey, and provide recommendations for further investigation of Plantasie Creek downstream of the Site.

2 Investigation Approach

The following section presents the investigation objectives, study design, and implementation of sampling and survey activities identified in the Work Plan.

2.1 Objectives

The overall objectives of the sediment sampling and substrate mapping surveys were to delineate the concentrations of target metals (**Table 1**) exceeding SGVs or BTVs in sediment and define the spatial extent of fine-grained sediment deposits in Plantasie Creek downstream of the SWMU 1/22 Wetland Complex (**Figure 2**). The proposed investigation was intended to satisfy the following specific objectives:

- Establish a background dataset for representative concentrations of target metals upstream of the facility to support the calculation of BTVs.
- Delineate target metals in surficial (<12 inches) and sub-surface (>12 inches) sediments to SGVs [Class A and Class C levels (NYSDEC, 2014; MacDonald, et al. 2000)] or BTVs in the Plantasie Creek downstream of the Site boundary.
- Map the spatial extent of streambed substrates, particularly fine-grained sediment deposits (predominantly silt-clay fractions, smaller than 63-micrometer [µm] particle size diameter), downstream of the Site boundary within the area of sediment delineation.

The following sections describe the phased sediment delineation sampling and substrate mapping completed in accordance with the Work Plan to satisfy the investigation objectives.

2.2 Study Design

Sediment delineation sampling was conducted in Plantasie Creek downstream of the SWMU 1/22 Wetland Complex using a transect design. The sediment delineation program was phased to maximize the efficiency of the delineation sampling (EHS Support, 2016). Phase I sampling was conducted initially on a coarse spatial scale to identify potential extents of SGV exceedances; Phase II sampling was conducted at the broad extents defined by the Phase I sampling to provide additional data to complete the delineation to SGVs and/or BTVs (**Figure 2**).

Sediment samples were collected at two stations along each delineation transect from fine-grained sediment deposits along the channel margin of each bank in the background area and downstream of the SWMU 1/22 Wetland Complex. Samples were collected with a 2-inch diameter sediment core and analyzed for target metals (copper, mercury, selenium, and zinc), total organic carbon (TOC), and sediment grain size distribution. Consistent with data collected at the direction of NYSDEC DFWMR during the FWRIA (URS Corporation, 2011), surficial sediment samples for metals analyses were targeted in the 0–12-inch sediment interval. However, at most stations, the depth of fine-grained sediments overlying the native clay layer was less than 12-inches. Samples of the native clay were collected at select stations and analyzed for target metals, TOC, and grain size distribution to characterize sediment quality in the underlying material.

Background sediment samples (n = 10) were collected from surface sediments at stations along five transects in Plantasie Creek upstream of the Site (**Figure 3**). Target metals concentrations in background samples were representative of sediment quality immediately upstream of the facility; however, contributions of non-site related sources of target metals downstream of the facility (e.g., stormwater

outfalls) were not represented in the background dataset. The number and location of background sampling stations were confirmed with NYSDEC DFWMR during a teleconference on October 13, 2019 (**Appendix A**).

Streambed substrate composition was mapped within the extent of downstream sampling transects to describe the distribution of fine-grained sediment features (EHS Support, 2016). Predominant substrate types were classified into one of five facies of substrate defined based on particle size diameter according to the Wentworth scale (adapted from Leeder, 1982):

- Silts and Clays (< 0.063 millimeters [mm])
- Fine Sands (0.064 mm – 0.25 mm)
- Medium / Coarse Sand and Granules (0.26mm – 64.00 mm)
- Cobbles and Boulders (64.01 mm – 4,096 mm)
- Bedrock (>4,096 mm)

In addition to defining the type and extent of substrates, general sediment thickness in fine-grained depositional areas was also measured as part of delineation sampling.

Substrate mapping results were used to inform the selection of sediment delineation sampling stations and to support the conceptual site model (CSM) for the distribution of target metals downstream of the Site.

2.3 Data Evaluation

Sediment delineation sampling results were categorized into one of three sediment classes based on comparisons of measured concentrations of copper, mercury, and zinc to NYSDEC SGVs (NYSDEC, 2014):

- Class A: Metals concentrations below the Class A SGV threshold; concentrations associated with this class are considered to present little or no potential for risk to aquatic life.
- Class B: Metals concentrations between the Class A and Class C SGV thresholds; additional information is needed to evaluate the potential risk to aquatic life posed by sediments in this concentration range.
- Class C: Metals concentrations exceeding the Class C SGV thresholds; concentrations exceeding Class C thresholds have a higher potential to be toxic to aquatic life.

NYSDEC SGVs are not available for selenium; therefore, the screening benchmark of 5 milligrams per kilogram (mg/kg) proposed by Nagpal et al. (1995) was used for comparison with sediment delineation sampling results, consistent with the FWRIA (URS Corporation, 2011).

In addition to comparisons to Class A and Class C SGVs, results of bulk sediment analyses were also compared to BTV concentrations. BTVs were calculated based on the 95th percent upper tolerance limits (UTL_{95}) of the results from the 10 background samples collected upstream of the Site using United States Environmental Protection Agency (USEPA) ProUCL 5.1 software (USEPA, 2015).

Consistent with the Work Plan and subsequent discussions with NYSDEC DFWMR on October 13, 2016, Phase II delineation sampling would be deemed complete when target metal concentrations were below corresponding SGVs or BTVs based on comparisons to the following statistics calculated for the area defined by the delineation: 1) the upper confidence limit of the mean concentration (UCL_{mean}) of the delineation dataset or 2) surface-weighted average concentration (SWAC) of the delineation dataset.

During the October 13, 2016 conference call to review the Work Plan comments, NYSDEC DFWMR indicated that averaging downstream sampling results was acceptable to demonstrate complete delineation if the calculations of the UCL_{mean} and SWAC values were based on a minimum of 10 sediment samples collected within a depositional reach having consistent slope and geomorphology (**Appendix A**). UCL_{mean} concentrations were calculated using USEPA ProUCL 5.1 software based on the ProUCL-recommended statistic, as determined by the underlying distribution of the delineation dataset (USEPA, 2015). Thiessen polygons were used to define the area represented by the 10 samples within the delineation dataset; SWAC values were calculated for target metals for the delineation dataset based on the following:

$$SWAC = \frac{\sum_i^{10} C_i \times A_i}{A_{total}}$$

where:
C_i = Concentration represented by polygon *i*
A_i = Area represented by polygon *i*
A_{total} = Total area of polygons represented by the delineation dataset.

2.4 Implementation

Phase I delineation sampling and substrate mapping events were conducted in October 2016 (13 transects) and December 2016 (six transects) to identify the broad extents of potential SGV exceedances (**Figure 2**). Phase I sampling also included the collection of 10 background sediment samples along five transects located upstream of the Site (**Figure 3**).

Sediment stations from Phase I sampling were categorized into one of three sediment classes based on comparisons of measured target metals concentrations to NYSDEC SGVs (NYSDEC, 2014). In addition to comparisons to Class A and Class C SGVs, results of bulk sediment analyses were also compared to BTVs.

The results of Phase I delineation sampling were reviewed with NYSDEC in a meeting on February 7, 2017. Based on the data review, Phase II delineation samples were recommended between stations SCD-18 and SCD-19 to provide adequate data to confirm the delineation to Class C SGVs (**Figure 2**); additional transects were also recommended to address spatial data gaps upstream of SCD-15. NYSDEC approved the recommendations for additional sampling on February 23, 2017 and Phase II delineation sampling was conducted in May 2017 (four transects). A copy of the NYSDEC approval letter is provided in **Appendix A**.

3 Investigation Findings

The following section presents findings of the substrate mapping survey and the results of the phased sediment delineation sampling. Analytical results from the phased sediment delineation sampling and information obtained from the substrate mapping survey were integrated to update the CSM related to the distribution of target metals in sediment within Plantasie Creek downstream of the Site.

3.1 Substrate Mapping Results

The results of the substrate mapping survey indicate that the distribution of fine-grained depositional sediment within the extent of the delineation sampling is consistent with stream slope. As illustrated in the longitudinal stream profile of Plantasie Creek (**Figure 4**), the reach of Plantasie Creek from the Site boundary to Salem Street is a low-gradient (0.2 percent slope) depositional reach, resulting in the accumulation and storage of fine-grained sediment overlying a native clay layer. At Salem Street, there is an abrupt increase in gradient, with slope increasing to 3.9 percent between Salem Street and Mill Brook Drive. This high-gradient reach is erosional, with minimal sediment deposition and storage. The substrate in this reach was characterized by primarily bedrock, with boulder, cobble, gravel, and fine-medium sand substrates. Finer-grained sediments were limited to shallow, channel margin deposits that were spatially limited within the reach between Salem Street and Mill Brook Drive. From Mill Brook Drive downstream to Rondout Creek, the slope of Plantasie Creek decreases to 0.3 percent resulting in a depositional sediment environment, with fine-grained sediments overlying a native clay layer.

3.2 Sediment Delineation Results

Analytical results from the Phase I and II sediment delineation sampling are summarized in the following tables:

- **Table 1**: Downstream Samples from Sediments Overlying the Native Clay Layer
- **Table 2**: Downstream Samples from the Native Clay Layer
- T**able 3**: Background Samples from Sediments Overlying the Native Clay Layer

A copy of the laboratory analytical reports is provided in **Appendix B**. Sediment analytical results are presented spatially within the downstream extent of sampling in **Figure 5A** and **Figure 5B**.

The results of the downstream sediment delineation sampling indicated decreasing concentrations of target metals in sediment with increasing distance from the Site (**Figure 6A** and **Figure 6B**). The greatest concentrations of target metals within the extent of sediment delineation sampling were observed within the reach from the Site boundary to Salem Street. Copper and mercury concentrations in surface sediments generally exceeded Class C SGV thresholds in transects from SCD-01 through SCD-17, but were generally below Class C SGVs downstream of SCD-17 (**Figure 6A**). Selenium concentrations exceeded the identified screening benchmark of 5 mg/kg at transect SCD-01; however, selenium concentrations were below the screening benchmark in 20 of 22 samples collected downstream of SCD-01 (**Figure 6B**). Zinc concentrations were below Class C SGVs in Phase I and II samples (**Figure 6B**).

Metals concentrations from background samples were within the range of Class A SGVs, except one sample result for zinc that was within the range of Class B SGVs (**Table 3**). Concentrations of target metals analyzed in background samples collected upstream of the Site were used to calculate BTVs that were compared to downstream sampling results.

The combined results of Phase I and II sediment delineation sampling indicate that the extent of sediments in Plantasie Creek categorized as NYSDEC Class C has been delineated between the Site boundary and Salem Street (**Figure 5A**). As previously discussed, the reach between Salem Street and Mill Brook Drive is a high-gradient, erosional reach (3.9 percent slope) with limited sediment depositional features and, therefore, limited sediment-related exposure (**Figure 4**).

Downstream of Mill Brook Drive to SCD-20 (transects SCD18.7 to SCD-20), target metal concentrations were delineated to Class C SGVs based on SWAC or UCL_{mean} concentrations, consistent with delineation criteria established in coordination with NYSDEC (**Table 4**). Copper concentrations in 8 of 10 samples collected downstream of Mill Brook Drive were below the Class C SGV of 150 mg/kg. The SWAC for copper (132.8 mg/kg) was below the Class C SGV and the UCL_{mean} copper concentration slightly exceeded the Class C SGV (**Table 4**). Mercury concentrations were below the Class C SGV in 9 of 10 delineation samples; SWAC and UCL_{mean} mercury concentrations calculated for the delineation dataset were below the Class C SGV. Selenium concentrations in delineation samples were below the sediment quality benchmark of 5 mg/kg and the BTV calculated based on the background dataset (**Table 4**). Zinc concentrations in the delineation dataset were below the BTV in 9 of 10 samples; SWAC and UCL_{mean} concentrations for zinc were below the Class A SGV (**Table 4**). Based on the phased sampling results and delineation criteria, copper and mercury concentrations were within the range of Class B SGVs and selenium and zinc concentrations were within the range of Class A SGVs (and consistent with background concentrations) in samples collected downstream of Mill Brook Drive.

In summary, the results of the phased sediment delineation sampling indicate that Salem Street is the downstream extent of Class C SGV exceedances of target metals based on the following rationale (**Figure 6A** and **Figure 6B**):

- Target metals concentrations downstream of Mill Brook Drive were within Class B SGVs (copper and mercury) or Class A SGVs/BTVs (selenium and zinc).
- Sediment deposits in the high-gradient reach between Salem Street and Mill Brook Drive were spatially limited; therefore, there is limited exposure to target metals within this reach.

3.3 Updated Conceptual Site Model

The findings of the phased sampling program support an updated CSM regarding the distribution of target metals in sediment downstream of the Site. The results of sediment delineation sampling indicated decreasing concentrations of target metals in sediment with increasing distance from the Site (**Figure 6A** and **Figure 6B**). The distribution of target metals in sediments downstream of the Site was consistent with sediment depositional patterns observed during the substrate mapping survey. The greatest concentrations of target metals were observed within the low-gradient reach (0.2 percent slope) from the Site boundary to Salem Street (**Figure 6A** and **Figure 6B**), which was characterized as a depositional reach containing predominantly fine-grained sediments overlying a native clay layer. From Salem Street to Mill Brook Drive, there is limited sediment storage due to increased channel slope (3.6 percent slope) and increased flow velocity. Potential exposure to target metals in sediments within this reach is spatially limited to shallow channel margin deposits that contained lower target metal concentrations relative to the concentrations generally observed between the Site boundary and Salem Street (**Figure 6A** and **Figure 6B**). In the fine-grained sediments observed in the low-gradient reach (0.3 percent slope) from Mill Brook Drive to the downstream extent of the delineation sampling, target metals concentrations were lower relative to the concentrations observed between the Site boundary and Salem Street. Copper and mercury concentrations in this reach were below Class C SGVs and

selenium and zinc concentrations were below Class B SGVs and below BTVs in all but one sample (zinc). Based on the updated CSM, the greatest potential exposure to target metals in Plantasie Creek sediments downstream of the Site is identified within the reach from the Site boundary to Salem Street (**Figure 2**).

4 Summary and Recommendations

The phased sediment delineation sampling program satisfied the investigation objectives of delineating target metals concentrations in sediment exceeding Class C SGVs and defining the spatial extent of fine-grained sediment deposits in Plantasie Creek downstream of the SWMU 1/22 Wetland Complex. The updated CSM based on the findings of the phased sampling program provides the basis for recommendations for further investigations of potential exposure to target metals in Plantasie Creek downstream of the Site.

Based on the updated CSM, further investigation of potential exposure to target metals is recommended in Plantasie Creek within the reach from the Site boundary to Salem Street (**Figure 2**). No further investigation is recommended downstream of Salem Street due to the limited sediment depositional features present within the high-gradient reach between Salem Street and Mill Brook Drive and SWAC concentrations below Class C SGVs (copper and mercury) or Class A SGVs (selenium and zinc) in the reach downstream of Mill Brook Drive to Rondout Creek.

Further investigations within Plantasie Creek will assess potential human health and ecological exposure to target metals in sediments within the reach extending from the Site boundary to Salem Street. The evaluation of ecological risk will be conducted consistent with the FWRIA process in NYSDEC *Division of Environmental Remediation Technical Guidance for Site Remediation* (DER-10; NYSDEC, 2010), with supporting guidance from NYSDEC DFWMR *Screening and Assessment of Contaminated Sediment* (NYSDEC, 2014). Two key considerations in the assessment of ecological risks to target metals in sediment within Plantasie Creek include:

- Metal bioavailability and toxicity: Delineation sampling results presented in this report represent total recoverable metals concentrations in sediments. However, metal concentrations in labile sediment fractions better represent metal bioavailability and toxicity. A phased assessment approach is recommended to evaluate the bioavailability and toxicity of metals in sediments based on site-specific exposure conditions.
- Mobility of target metals into food webs: Mercury, particularly in the form of methylmercury, has the potential to biomagnify in aquatic and terrestrial food webs. The evaluation of potential exposure to target metals in sediment will include an assessment of potential mobility of metals from sediment into associated food webs.

The potential for human health exposure to sediments within Plantasie Creek will be evaluated based on likely scenarios for dermal and incidental ingestion exposure pathways. Key considerations in the evaluation of potential human health exposure include the frequency and duration of exposure and the rate of incidental sediment ingestion.

In addition to further investigations of exposure to sediments within Plantasie Creek, potential human health and ecological exposure to target metals in floodplain soils between the Site boundary and Salem Street will also be evaluated. Target metals may have been transported to and deposited on the floodplain during overbank flooding events. A soil sampling program will be designed to characterize concentrations of target metals in surficial soils within the extent of the floodplain that may be regularly inundated by overbank flow from Plantasie Creek. Potential human health and ecological exposure will be evaluated based on comparisons to NYSDEC soil cleanup objectives (SCOs). If warranted, site-specific evaluations of potential human health or ecological exposure may also be considered.

Based on the outcome of the December 11, 2019 meeting and pending discussions with NYSDEC regarding the findings of the delineation sampling and the recommendations presented in this report, a work plan(s) will be developed to define investigation objectives and provide details regarding the sampling design and approach, data analysis procedures, and decision criteria for further action. The work plan(s) will be submitted for NYSDEC review and approval prior to implementation.

5 References

EHS Support. 2016. Sediment Delineation Sampling and Substrate Mapping Work Plan. Dyno Nobel Site. Port Ewen, New York. March 3, 2016.

Leeder, M. R. 1982. Sedimentology: Process and Product. George Allen and Unwin Ltd, London, UK.

MacDonald, D.D., C.G. Ingersoll and T.A. Berger. (2000). Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Archives Environmental Contaminants Toxicology. 39: 20-31.

Nagpal, N.K., Pommen, L.W., and L.G. Swain. 1995. Approved and working criteria for water quality guidelines for British Columbia. ISBN 0-7726-3774-1. Water Quality Branch. Ministry of Environment. Lands and Parks. Victoria, British Columbia. 28 pp.

NYSDEC. 2010. DER-10/Technical Guidance for Site Investigation and Remediation. NYSDEC, Division of Environmental Remediation. May 3, 2010.

NYSDEC. 2014. Screening and Assessment of Contaminated Sediment. NYSDEC, Division of Fish, Wildlife, and Marine Resources. June 24, 2014.

URS Corporation. 2011. Fish and Wildlife Impact Analysis Step IIC Investigation Report. Dyno Nobel Site. Port Ewen, New York. July 13, 2011.

USEPA. 2015. ProUCL Version 5.1 User Guide. Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations. U.S. EPA Office of Research and Development. EPA/600/R-07/041.

Tables

Table 1
Plantasie Creek Sediment Sampling Results - Downstream Samples from Sediments Overlying the Native Clay Layer
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

				Site	Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen	
				Location ID	P1SCD-01-A		P1SCD-01-B		P1SCD-02-A		P1SCD-02-B		P1SCD-03-A		P1SCD-03-B	
				Lab IDs	200-35700-1		200-35700-2		200-35700-4		200-35700-5		200-35700-6		200-35700-8	
				Sample Name	P1SCD-01-A-0007IN		P1SCD-01-B-0006IN		P1SCD-02-A-0004IN		P1SCD-02-B-0004IN		P1SCD-03-A-0006IN		P1SCD-03-B-0006IN	
				Sample Depth	0-0.583333 FT		0-0.5 FT		0-0.333333 FT		0-0.333333 FT		0-0.5 FT		0-0.5 FT	
				Sample Date	10/12/2016		10/12/2016		10/12/2016		10/12/2016		10/12/2016		10/12/2016	
Analyte	Units	NYSDEC Freshwater Sediment Guidance Values			Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
		Class A	Class B	Class C												
METALS																
Copper	mg/kg	< 32	32 - 150	>150	2,490		2,350		373		1,700		805		928	
Mercury	mg/kg	<0.2	36- 130	>130	9.5		17.9		2.2		6.1		7		8.7	
Selenium	mg/kg	< 5[a]	-	-	5.1		6		2.1		2.7		3.4		3.7	
Zinc	mg/kg	<120	120 - 460	>460	326		283		105		193		175		188	
GENERAL CHEMISTRY AND PHYSICAL CHARACTERISTICS																
Total Carbon	%	-	-	-	6		3.6		1.53		3.28		4.21		5	
Fine-Grained Sediment (Sieve No. 230)	% Passing	-	-	-	70.4		65.1		89		56.4		47.1		64.4	
Solids, Percent	%	-	-	-	50.3		38.5		50.2		48.1		37.1		38.2	

Table 1
Plantasie Creek Sediment Sampling Results - Downstream Samples from Sediments Overlying the Native Clay Layer
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

				Site	Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen	
				Location ID	P2SCD-04-A		P2SCD-04-B		P1SCD-05-A		P1SCD-05-B		P1SCD-06-A		P1SCD-06-B	
				Lab IDs	200-38498-1		200-38498-2		200-35736-11		200-35736-12		200-35680-1		200-35680-2	
				Sample Name	0006IN		0002IN		P1SCD-05-A-0006IN		P1SCD-05-B-0006IN		P1SCD-06-A-0006IN		P1SCD-06-B-0008IN	
				Sample Depth	0-0.5 FT		0-0.166667 FT		0-0.5 FT		0-0.5 FT		0-0.5 FT		0-0.666667 FT	
				Sample Date	5/4/2017		5/4/2017		10/11/2016		10/11/2016		10/10/2016		10/10/2016	
Analyte	Units	NYSDEC Freshwater Sediment Guidance Values			Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
		Class A	Class B	Class C												
METALS																
Copper	mg/kg	< 32	32 - 150	>150	707	B	533	B	540		481		347		448	
Mercury	mg/kg	<0.2	36- 130	>130	6.4		4.3		6.4		3.7		1.6		2.6	
Selenium	mg/kg	< 5[a]	-	-	2		1.8		3.4		3.4		4.1		3.5	
Zinc	mg/kg	<120	120 - 460	>460	212		131		200	F1	192		175		207	
GENERAL CHEMISTRY AND PHYSICAL CHARACTERISTICS																
Total Carbon	%	-	-	-	6.28		6.22		4.66		4.44		4.27		4.34	
Fine-Grained Sediment (Sieve No. 230)	% Passing	-	-	-	72.1		-		31		47.7		28.2		38.7	
Solids, Percent	%	-	-	-	35.7		27.1		36.2		36.1		47.8		42.5	

Table 1
Plantasie Creek Sediment Sampling Results - Downstream Samples from Sediments Overlying the Native Clay Layer
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

				Site	Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen	
				Location ID	P1SCD-07-A		P1SCD-07-B		P1SCD-08-A		P1SCD-08-A (DUP)		P1SCD-08-B		P1SCD-09-A	
				Lab IDs	200-35680-4		200-35680-5		200-35680-6		200-35680-7		200-35680-14		200-35680-8	
				Sample Name	P1SCD-07-A-0008IN		P1SCD-07-B-0006IN		P1SCD-08-A-0006IN		P1SCD-08-A-0006IN		P1SCD-08-B-0006IN		P1SCD-09-A-0006IN	
				Sample Depth	0-0.666667 FT		0-0.5 FT		0-0.5 FT		0-0.5 FT		0-0.5 FT		0-0.5 FT	
				Sample Date	10/10/2016		10/10/2016		10/10/2016		10/10/2016		10/10/2016		10/10/2016	
Analyte	Units	NYSDEC Freshwater Sediment Guidance Values			Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
		Class A	Class B	Class C												
METALS																
Copper	mg/kg	< 32	32 - 150	>150	502		397		781		600		589		899	
Mercury	mg/kg	<0.2	36- 130	>130	2.5		2.7		4.3		3.4		4.5	F1	5.1	F1
Selenium	mg/kg	< 5[a]	-	-	3.1		3.6		5.2		4.4		4.1		6	
Zinc	mg/kg	<120	120 - 460	>460	220		200		294		226		242		289	
GENERAL CHEMISTRY AND PHYSICAL CHARACTERISTICS																
Total Carbon	%	-	-	-	4.32		3.03		5.38		4.58		4.69		3.56	
Fine-Grained Sediment (Sieve No. 230)	% Passing	-	-	-	44.7		62.1		46.4		53.8		60.3		71	
Solids, Percent	%	-	-	-	44.8		48.2		38.8		41		37.1		34.2	

Table 1
Plantasie Creek Sediment Sampling Results - Downstream Samples from Sediments Overlying the Native Clay Layer
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

				Site	Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen	
				Location ID	P1SCD-09-B		P1SCD-10-A		P1SCD-10-B		P1SCD-11-A		P1SCD-11-B		P1SCD-12-A	
				Lab IDs	200-35680-11		200-35680-9		200-35680-10		200-35700-9		200-35700-10		200-35700-11	
				Sample Name	P1SCD-09-B_0003IN		P1SCD-10-A-0005IN		P1SCD-10-B-0006IN		P1SCD-11-A-0004IN		P1SCD-11-B-0006IN		P1SCD-12-A-0008IN	
				Sample Depth	0-0.25 FT		0-0.416667 FT		0-0.5 FT		0-0.333333 FT		0-0.5 FT		0-0.666667 FT	
				Sample Date	10/10/2016		10/10/2016		10/10/2016		10/12/2016		10/12/2016		10/12/2016	
Analyte	Units	NYSDEC Freshwater Sediment Guidance Values			Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
		Class A	Class B	Class C												
METALS																
Copper	mg/kg	< 32	32 - 150	>150	156		619		515		230		2,170		293	
Mercury	mg/kg	<0.2	36- 130	>130	1.5		4.4		3.8		1.2		4.1		1.8	
Selenium	mg/kg	< 5[a]	-	-	1.1		4.9		3.7		2		3.7		2.5	B
Zinc	mg/kg	<120	120 - 460	>460	82.8		310		298		154		311		170	
GENERAL CHEMISTRY AND PHYSICAL CHARACTERISTICS																
Total Carbon	%	-	-	-	5.87		6.9		6.88		2.2		2.95		3.43	
Fine-Grained Sediment (Sieve No. 230)	% Passing	-	-	-	66.8		56.8		56.6		44		61.1		46.3	
Solids, Percent	%	-	-	-	80.7		26.5		27.8		51.3		43.9		40.8	

Table 1
Plantasie Creek Sediment Sampling Results - Downstream Samples from Sediments Overlying the Native Clay Layer
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

				Site	Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen	
				Location ID	P1SCD-12-B		P1SCD-13-A		P1SCD-13-B		P1SCD-13-B (DUP)		P1SCD-14-A		P1SCD-14-B	
				Lab IDs	200-35700-12		200-35700-13		200-35700-14		200-35700-15		200-35700-16		200-35700-17	
				Sample Name	P1SCD-12-B-0006IN		P1SCD-13-A-0002IN		P1SCD-13-B-0006IN		P1SCD-13-B-0006IN		P1SCD-14-A-0004IN		P1SCD-14-B-0004IN	
				Sample Depth	0-0.5 FT		0-0.166667 FT		0-0.5 FT		0-0.5 FT		0-0.333333 FT		0-0.333333 FT	
				Sample Date	10/12/2016		10/12/2016		10/12/2016		10/12/2016		10/12/2016		10/12/2016	
Analyte	Units	NYSDEC Freshwater Sediment Guidance Values			Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
		Class A	Class B	Class C												
METALS																
Copper	mg/kg	< 32	32 - 150	>150	236		34.2		547		567		914		633	
Mercury	mg/kg	<0.2	36- 130	>130	1.9	F1	0.053	U	3.3		3		3.8		2.3	
Selenium	mg/kg	< 5[a]	-	-	2.6	B	0.92	B	4.6	B	4.5	B	3.9	B	2.9	B
Zinc	mg/kg	<120	120 - 460	>460	171		79.8		240		246		303		243	
GENERAL CHEMISTRY AND PHYSICAL CHARACTERISTICS																
Total Carbon	%	-	-	-	3.47		0.145		7.73		6.1		3.08		3.37	
Fine-Grained Sediment (Sieve No. 230)	% Passing	-	-	-	67		89.2		57.2		60.5		52.3		52	
Solids, Percent	%	-	-	-	45.5		71.1		32.2		31.5		40.9		46.4	

Table 1
Plantasie Creek Sediment Sampling Results - Downstream Samples from Sediments Overlying the Native Clay Layer
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

				Site	Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen	
				Location ID	SCD-15-A		SCD-15-B		SCD-16-A		SCD-16-B		SCD-17-A		SCD-17-B	
				Lab IDs	200-36502-14		200-36502-15		200-36502-12		200-36502-13		200-36502-10		200-36502-11	
				Sample Name	0006IN		0004IN		0006IN		0004IN		0005IN		0008IN	
				Sample Depth	0-0.5 ft		0-0.333333 ft		0-0.5 ft		0-0.333333 ft		0-0.416667 ft		0-0.666667 ft	
				Sample Date	12/5/2016		12/5/2016		12/5/2016		12/5/2016		12/5/2016		12/5/2016	
Analyte	Units	NYSDEC Freshwater Sediment Guidance Values			Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
		Class A	Class B	Class C												
METALS																
Copper	mg/kg	< 32	32 - 150	>150	587		713		623		401		215		244	
Mercury	mg/kg	<0.2	36- 130	>130	3.1		4.2	F1F2	2.5		1.9		2		1.1	
Selenium	mg/kg	< 5[a]	-	-	2.3		1.6	F1	0.59		1.4		1.4		1.7	
Zinc	mg/kg	<120	120 - 460	>460	220		173		114		168		103		138	
GENERAL CHEMISTRY AND PHYSICAL CHARACTERISTICS																
Total Carbon	%	-	-	-	6.53		4.57		1.4		3.97		2.28		3.66	
Fine-Grained Sediment (Sieve No. 230)	% Passing	-	-	-	64.3		71.8		46.3		47.1		39.2		37.6	
Solids, Percent	%	-	-	-	33.6		44.1		67.8		43.7		54		39.5	

Table 1
Plantasie Creek Sediment Sampling Results - Downstream Samples from Sediments Overlying the Native Clay Layer
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

				Site	Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen	
				Location ID	SCD-18-A		SCD-18-B		P2SCD-18.7		P2SCD-18.7-B		P2SCD-18.8-A		P2SCD-18.8-B	
				Lab IDs	200-36502-8		200-36502-9		200-38498-3		200-38498-4		200-38498-5		200-38498-6	
				Sample Name	0004IN		0001IN		0001IN		0006IN		0006IN		0004IN	
				Sample Depth	0-0.333333 ft		0-0.0833333 ft		0-0.0833333 ft		0-0.5 ft		0-0.5 ft		0-0.333333 ft	
				Sample Date	12/5/2016		12/5/2016		5/4/2017		5/4/2017		5/4/2017		5/4/2017	
Analyte	Units	NYSDEC Freshwater Sediment Guidance Values			Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
		Class A	Class B	Class C												
METALS																
Copper	mg/kg	< 32	32 - 150	>150	233		280		105	B	371	B	47.8	B	138	B
Mercury	mg/kg	<0.2	36- 130	>130	0.59		1		0.37		1.1		0.14		0.46	
Selenium	mg/kg	< 5[a]	-	-	1.2		1.4		0.48	J	0.58		0.15	J	0.37	J
Zinc	mg/kg	<120	120 - 460	>460	198		198		126		158		40.2		93.1	
GENERAL CHEMISTRY AND PHYSICAL CHARACTERISTICS																
Total Carbon	%	-	-	-	2.6		3.1		1.87		1.68		0.96		1.69	
Fine-Grained Sediment (Sieve No. 230)	% Passing	-	-	-	21.7		33.2		15.2		36.7		28.8		32	
Solids, Percent	%	-	-	-	50.9		48		46.8		54		67.2		53.5	

Table 1
Plantasie Creek Sediment Sampling Results - Downstream Samples from Sediments Overlying the Native Clay Layer
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

				Site	Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen	
				Location ID	P2SCD-18.9-A		P2SCD-18.9-A		P2SCD-18.9-B		P2SCD-18.9-B		SCD-19-A		SCD-19-B	
				Lab IDs	200-38498-7		200-38498-11		200-38498-8		200-38498-9		200-36502-6		200-36502-5	
				Sample Name	0012IN		1218IN		0006IN		0006IN-D		0009IN		0008IN	
				Sample Depth	0-1 ft		1-1.5 ft		0-0.5 ft		0-0.5 ft		0-0.75 ft		0-0.666667 ft	
				Sample Date	5/4/2017		5/4/2017		5/4/2017		5/4/2017		12/5/2016		12/5/2016	
Analyte	Units	NYSDEC Freshwater Sediment Guidance Values			Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
		Class A	Class B	Class C												
METALS																
Copper	mg/kg	< 32	32 - 150	>150	34.4	B	18.9	B	141	B	158	B	66		62.6	
Mercury	mg/kg	<0.2	36- 130	>130	0.61	F1	0.17		0.42		0.64		0.24		0.13	
Selenium	mg/kg	< 5[a]	-	-	0.21	JF1	0.19	J	0.37	J	0.43	J	0.42	J	0.57	
Zinc	mg/kg	<120	120 - 460	>460	51.9	F1	35.1		86.1		105		66.1		73.3	
GENERAL CHEMISTRY AND PHYSICAL CHARACTERISTICS																
Total Carbon	%	-	-	-	0.989		2.2		1.6		1.62		1.31		0.829	
Fine-Grained Sediment (Sieve No. 230)	% Passing	-	-	-	50.3		42.5		18.4		28		17.7		23.9	
Solids, Percent	%	-	-	-	73.5		69.3		57.1		53.3		69.6		74.1	

Table 1
Plantasie Creek Sediment Sampling Results - Downstream Samples from Sediments Overlying the Native Clay Layer
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

				Site	**Port Ewen**		**Port Ewen**		**Port Ewen**	
				Location ID	**SCD-20-A**		**SCD-20-B**		**SCD-20-B**	
				Lab IDs	**200-36502-3**		**200-36502-1**		**200-36502-2**	
				Sample Name	**0005IN**		**0006IN**		**0006IN-D**	
				Sample Depth	**0-0.416667 ft**		**0-0.5 ft**		**0-0.5 ft**	
				Sample Date	**12/5/2016**		**12/5/2016**		**12/5/2016**	
Analyte	**Units**	**NYSDEC Freshwater Sediment Guidance Values**			**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
		Class A	**Class B**	**Class C**						
METALS										
Copper	mg/kg	< 32	32 - 150	>150	176		53.8		25.7	
Mercury	mg/kg	<0.2	36- 130	>130	0.45		0.12		0.084	
Selenium	mg/kg	< 5[a]	-	-	0.94		0.31	J	0.32	J
Zinc	mg/kg	<120	120 - 460	>460	128		52.4		48.8	
GENERAL CHEMISTRY AND PHYSICAL CHARACTERISTICS										
Total Carbon	%	-	-	-	2.76		1.16		1.06	
Fine-Grained Sediment (Sieve No. 230)	% Passing	-	-	-	38.8		34.9		33.4	
Solids, Percent	%	-	-	-	51.1		71.5		70.8	

Table 1
Plantasie Creek Sediment Sampling Results - Downstream Samples from Sediments Overlying the Native Clay Layer
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

Notes:

[a] = NYSDEC SGVs are not available for selenium; the sediment benchmark of 5 mg/kg proposed by Nagpal et al. (1995) is presented for comparison with selenium concentrations measured in sediments.

Grey text = concentration level below limit of detection.

- = Not available or applicable

% = percent

NYSDEC sediment classes are defined based on NYSDEC (2014):

Class A = Metals concentrations below the Class A SGV threshold; concentrations associated with this class are considered to present little or no potential for risk to aquatic life.

Class B = Metals concentrations between the Class A and Class C SGV thresholds; additional information is needed to evaluate the potential risk to aquatic life posed by sediments in this concentration range.

Class C = Metals concentrations exceeding the Class C SGV thresholds; concentrations exceeding Class C thresholds have a higher potential to be toxic to aquatic life.

ft = feet

mg/kg = milligrams per kilogram

NYSDEC = New York State Department of Environmental Conservation

SGV = sediment guidance value

Analytical data qualifiers:

B = Analyte was present in the field sample and associated blank sample.

F1 = Field duplicate results were outside the control limit.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = The result concentration is below limit of detection.

Nagpal, N.K., Pommen, L.W., and L.G. Swain. 1995. Approved and working criteria for water quality guidelines for British Columbia. ISBN 0-7726-3774-1. Water Quality Branch. Ministry of Environment. Lands and Parks. Victoria, British Columbia. 28 pp.

Table 2
Plantasie Creek Sediment Sampling Results - Downstream Samples from the Native Clay Layer
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

				Site	Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen	
				Location ID	P1SCD-01-A		P1SCD-03-A		P1SCD-06-A		P1SCD-09-B		P1SCD-12-A		SCD-19-A		SCD-20-A	
				Lab IDs	200-35700-3		200-35700-7		200-35680-3		200-35680-12		200-35700-18		200-36502-7		200-36502-4	
				Sample Name	P1SCD-01-A-0718IN		P1SCD-03-A-0612IN		P1SCD-06-A-0613IN		P1SCD-09-B_0309IN		P1SCD-12-A-0814IN		0918IN		0517IN	
				Sample Depth	0.583333-1.5 ft		0.5-1 ft		0.5-1.08333 ft		0.25-0.75 ft		0.666667-1.16667 ft		0.75-1.5 ft		0.416667-1.41667 ft	
				Sample Date	10/12/2016		10/12/2016		10/10/2016		10/10/2016		10/12/2016		12/5/2016		12/5/2016	
Analyte	Units	NYSDEC Freshwater Sediment Guidance Values			Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
		Class A	Class B	Class C														
METALS																		
Copper	mg/kg	< 32	32 - 150	>150	5,590		15.5		13.7		55.3		16		14.7		130	
Mercury	mg/kg	<0.2	36- 130	>130	6.1		0.047	J	0.064		0.039	J	0.038	J	0.024	J	0.13	
Selenium	mg/kg	< 5[a]	-	-	1.2		1.7		0.74		2.5		1.1	B	0.39	J	1.1	
Zinc	mg/kg	<120	120 - 460	>460	227		91.8		66.3		147		87.5		44.8		103	
GENERAL CHEMISTRY AND PHYSICAL CHARACTERISTICS																		
Total Carbon	%	-	-	-	1.59		0.407		0.135		0.129		0.458		2.55		0.855	
Fine-Grained Sediment (Sieve No. 230)	% Passing	-	-	-	95.4		96.4		86.8		97.3		96.4		26.7		44.6	
Solids, Percent	%	-	-	-	68.4		75.2		82.2		38.1		80.7		70.7		83.7	

Table 2
Plantasie Creek Sediment Sampling Results - Downstream Samples from the Native Clay Layer
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

Notes:

[a] = NYSDEC SGVs are not available for selenium; the sediment benchmark of 5 mg/Kg proposed by Nagpal et al. (1995) is presented for comparison with selenium concentrations measured in sediments.

- = Not available or applicable

% = percent

NYSDEC sediment classes are defined based on NYSDEC (2014):

Class A = Metals concentrations below the Class A SGV threshold; concentrations associated with this class are considered to present little or no potential for risk to aquatic life.

Class B = Metals concentrations between the Class A and Class C SGV thresholds; additional information is needed to evaluate the potential risk to aquatic life posed by sediments in this concentration range.

Class C = Metals concentrations exceeding the Class C SGV thresholds; concentrations exceeding Class C thresholds have a higher potential to be toxic to aquatic life.

ft = feet

mg/kg = milligrams per kilogram

NYSDEC = New York State Department of Environmental Conservation

SGV = sediment guidance value

Analytical data qualifiers:

B = Analyte was present in the field sample and associated blank sample.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Nagpal, N.K., Pommen, L.W., and L.G. Swain. 1995. Approved and working criteria for water quality guidelines for British Columbia. ISBN 0-7726-3774-1. Water Quality Branch. Ministry of Environment. Lands and Parks. Victoria, British Columbia. 28 pp.

Table 3
Plantasie Creek Sediment Sampling Results - Background Samples from Sediments Overlying the Native Clay Layer
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

				Site	Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen	
				Location ID	P1SCD-REF-01-A		P1SCD-REF-01-B		P1SCD-REF-02-A		P1SCD-REF-02-B		P1SCD-REF-03-A		P1SCD-REF-03-A (DUP)	
				Lab IDs	200-35736-1		200-35736-2		200-35736-3		200-35736-4		200-35736-5		200-35736-13	
				Sample Name	P1SCD-REF1-A-0006IN		P1SCD-REF1-B-0006IN		P1SCD-REF2-A-0006IN		P1SCD-REF2-B-0006IN		P1SCD-REF3-A-0006IN		P1SCD-REF3-A-0006IN	
				Sample Depth	0-0.5 FT		0-0.5 FT		0-0.5 FT		0-0.5 FT		0-0.5 FT		0-0.5 FT	
				Sample Date	10/11/2016		10/11/2016		10/11/2016		10/11/2016		10/11/2016		10/11/2016	
Analyte	Units	NYSDEC Freshwater Sediment Guidance Values			Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
		Class A	Class B	Class C												
METALS																
Copper	mg/kg	< 32	32 - 150	>150	18.5		14.9		20.5		16.2		19		23.2	
Mercury	mg/kg	<0.2	36- 130	>130	0.059	J	0.042	J	0.055	J	0.074	J	0.064	J	0.059	J
Selenium	mg/kg	< 5[a]	-	-	1.4		0.93		1.3		1.3		1.3		1.7	B
Zinc	mg/kg	<120	120 - 460	>460	100		76.5		107		80.5		97		110	
GENERAL CHEMISTRY AND PHYSICAL CHARACTERISTICS																
Total Carbon	%	-	-	-	2.84		3.52		3.37		4.87		3.06		3.85	
Fine-Grained Sediment (Sieve No. 230)	% Passing	-	-	-	67.8		68		62.3		48.4		76.1		72.7	
Solids, Percent	%	-	-	-	53		52.1		47.8		44.7		45.3		40	

Table 3
Plantasie Creek Sediment Sampling Results - Background Samples from Sediments Overlying the Native Clay Layer
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

				Site	Port Ewen		Port Ewen		Port Ewen		Port Ewen		Port Ewen	
				Location ID	P1SCD-REF-03-B		P1SCD-REF-04-A		P1SCD-REF-04-B		P1SCD-REF-05-A		P1SCD-REF-05-B	
				Lab IDs	200-35736-6		200-35736-7		200-35736-8		200-35736-9		200-35736-10	
				Sample Name	P1SCD-REF3-B-0006IN		P1SCD-REF4-A-0006IN		P1SCD-REF4-B-0006IN		P1SCD-REF5-A-0003IN		P1SCD-REF5-B-0003IN	
				Sample Depth	0-0.5 FT		0-0.5 FT		0-0.5 ft		0-0.25 ft		0-0.25 ft	
				Sample Date	10/11/2016		10/11/2016		10/11/2016		10/11/2016		10/11/2016	
Analyte	Units	NYSDEC Freshwater Sediment Guidance Values			Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
		Class A	Class B	Class C										
METALS														
Copper	mg/kg	< 32	32 - 150	>150	18.5		15.8		20.4		17.5		14.6	
Mercury	mg/kg	<0.2	36- 130	>130	0.036	J	0.047	J	0.069	J	0.056	J	0.051	J
Selenium	mg/kg	< 5[a]	-	-	1.1		1.1		1.4		1.2		1.1	
Zinc	mg/kg	<120	120 - 460	>460	92.9		88.7		127		105		87	
GENERAL CHEMISTRY AND PHYSICAL CHARACTERISTICS														
Total Carbon	%	-	-	-	5.57		3.65		5.65		6.29		4.41	
Fine-Grained Sediment (Sieve No. 230)	% Passing	-	-	-	61.4		42.1		59.8		62.1		49	
Solids, Percent	%	-	-	-	46.5		53.7		43.4		46.2		54.8	

Table 3
Plantasie Creek Sediment Sampling Results - Background Samples from Sediments Overlying the Native Clay Layer
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

Notes:

[a] = NYSDEC SGVs are not available for selenium; the sediment benchmark of 5 mg/kg proposed by Nagpal et al. (1995) is presented for comparison with selenium concentrations measured in sediments.

- = Not available or applicable

% = percent

NYSDEC sediment classes are defined based on NYSDEC (2014):

Class A = Metals concentrations below the Class A SGV threshold; concentrations associated with this class are considered to present little or no potential for risk to aquatic life.

Class B = Metals concentrations between the Class A and Class C SGV thresholds; additional information is needed to evaluate the potential risk to aquatic life posed by sediments in this concentration range.

Class C = Metals concentrations exceeding the Class C SGV thresholds; concentrations exceeding Class C thresholds have a higher potential to be toxic to aquatic life.

ft = feet

mg/kg = milligrams per kilogram

NYSDEC = New York State Department of Environmental Conservation

SGV = sediment guidance value

Analytical data qualifiers:

B = Analyte was present in the field sample and associated blank sample.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Nagpal, N.K., Pommen, L.W., and L.G. Swain. 1995. Approved and working criteria for water quality guidelines for British Columbia. ISBN 0-7726-3774-1. Water Quality Branch. Ministry of Environment. Lands and Parks. Victoria, British Columbia. 28 pp.

Table 4
Sediment Delineation Sampling Results for Target Metals in Plantasie Creek Downstream of Mill Brook Drive
Downstream Sediment Investigation
Dyno Nobel Port Ewen Site
Port Ewen, New York

Sample	Copper (mg/kg)	Mercury (mg/kg)	Selenium (mg/kg)	Zinc (mg/kg)
	Class A: <32	Class A: <0.2	Class A: <5	Class A: <120
	Class B: 32-150	*Class B: 0.2-1*	***Class B/C: >5***	*Class B: 120-460*
	Class C: >150	**Class C: >1**		**Class C: >460**
	BTV: 23.8	BTV: 0.09	BTV: 1.6	BTV: 138.9
SCD-18.7-A	*105*	*0.37*	0.94	*128*
SCD-18.7-B	**371**	**1.1**	0.42	66.1
SCD-18.8-A	*47.8*	0.14	0.21	51.9
SCD-18.8-B	*138*	*0.46*	0.15	40.2
SCD-18.9-A	*34.4*	*0.61*	0.48	*126*
SCD-18.9-B	*141*	*0.42*	0.58	*158*
SCD-19-A	*66*	*0.24*	0.37	93.1
SCD-19-B	*62.6*	0.13	0.37	86.1
SCD-20-A	**176**	*0.45*	0.57	73.3
SCD-20-B	*53.8*	0.12	0.31	52.4
SWAC	*132.8*	*0.4*	0.5	94
UCL_{mean}	**177.6**	*0.58*	0.57	110

Notes:

For copper, mercury, and zinc, italicized font indicates exceedance of Class A SGV;**bold** font indicates exceedance of Class C SGV. For selenium, italicized/**bold** text indicates exceedance of Nagpal et al. (1995) criterion.

BTV = Background threshold value

NYSDEC sediment classes are defined based on NYSDEC (2014):

Class A = Metals concentrations below the Class A SGV threshold; concentrations associated with this class are considered to present little or no potential for risk to aquatic life.

Class B = Metals concentrations between the Class A and Class C SGV thresholds; additional information is needed to evaluate the potential risk to aquatic life posed by sediments in this concentration range.

Class C = Metals concentrations exceeding the Class C SGV thresholds; concentrations exceeding Class C thresholds have a higher potential to be toxic to aquatic life.

mg/kg = milligrams per kilogram

NYSDEC = New York State Department of Environmental Conservation

SGV = sediment guidance value

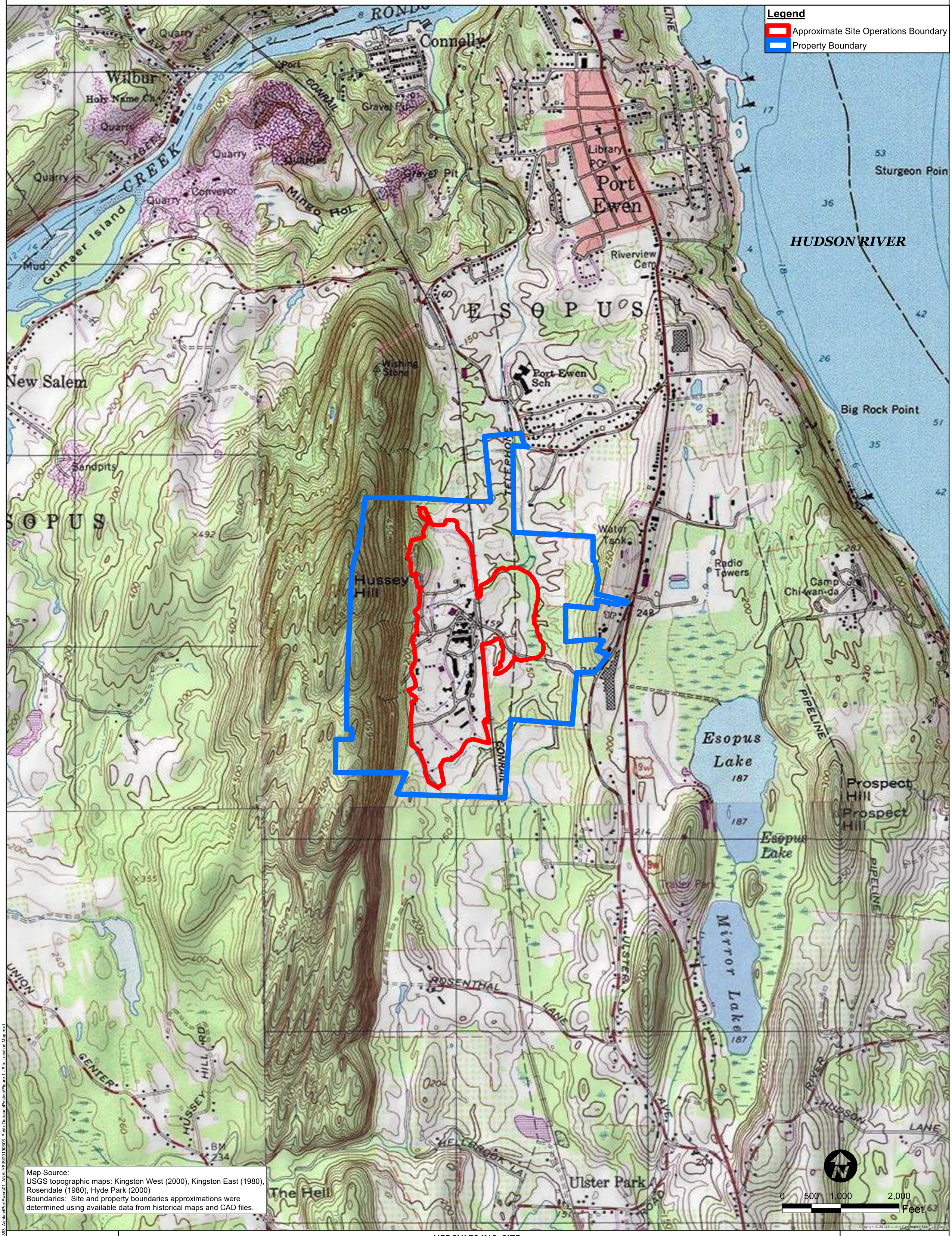
SWAC = Surface-weighted average concentration

UCL_{mean} = Upper confidence limit of the mean concentration

Nagpal, N.K., Pommen, L.W., and L.G. Swain. 1995. Approved and working criteria for water quality guidelines for British Columbia. ISBN 0-7726-3774-1. Water Quality Branch. Ministry of Environment. Lands and Parks. Victoria, British Columbia. 28 pp.

Figures

SITE LOCATION MAP



Map Source:
USGS topographic maps: Kingston West (2000), Kingston East (1980), Rosendale (1980), Hyde Park (2000)
Boundaries: Site and property boundaries approximations were determined using available data from historical maps and CAD files.

J:\EHSS_GIS\C00363_AshlandPortEwen\01_ANALYSIS\20190605_PublicOutreachPosters\Figure 1 - Site Location Map.mxd

EHS Support

HERCULES INC. SITE,
ULSTER COUNTY, NEW YORK,
REGISTRY NO. 356001

FIGURE 1

RONDOUT CREEK

Plantasia Ave

Connelly Rd

Sunset Dr

Mill Brook Dr

Salem St

New Salem Rd

Mountain View Ave

Rogers St

Lindorf St

Clay Rd

P1SCD-20
P1SCD-19
P2SCD-18.9
P2SCD-18.8
P2SCD-18.7
P1SCD-18
P1SCD-17
P1SCD-16
P1SCD-15
P1SCD-14
P1SCD-13
P1SCD-12
P1SCD-11
P1SCD-10
P1SCD-09
P1SCD-08
P1SCD-07
P1SCD-06
PE-DNS-SD-04
P1SCD-05
P2SCD-04
P1SCD-03
PE-DNS-SD-03
P1SCD-02
P1SCD-01
PE-DNS-SD-02
PE-DNS-SD-01
PE-SQT-08
SWMU 1/22
Wetland Complex

Legend

- 2010 FWRIA Sediment Sampling Station
- 2016 Phase I/IA Sediment Delineation Transects
- 2017 Phase II Sediment Delineation Transects
- Plantasie Creek
- 50' Elevation Contours
- Roadways
- Approx. Property Boundary

500 250 0 500

Scale In Feet

PLANTASIE CREEK SEDIMENT DELINEATION TRANSECT OVERVIEW MAP

DOWNSTREAM SEDIMENT INVESTIGATION
DYNO NOBEL PORT EWEN SITE
PORT EWEN, NEW YORK

EHS Support

FIGURE 2

Reviewed By: Gary Long

J:\EHSS_GIS\C00363_AshlandPortEwen\01_ANALYSIS\20170731_Presentation\Transects11x17p.mxd

Printed 04/09/2020 9:16:31 AM by Justine.Decker



Reviewed By: Gary Long

J:\EHSS_GIS\C00363_AshlandPortEwen\01_ANALYSIS\20170731_Presentation\Background.mxd

PLANTASIE CREEK BACKGROUND SEDIMENT SAMPLING STATIONS

DOWNSTREAM SEDIMENT INVESTIGATION
DYNO NOBEL PORT EWEN SITE
PORT EWEN, NEW YORK

EHS Support

FIGURE 3

Printed 04/09/2020 9:49:46 AM by Justine.Decker



Port Ewen, New York EHS Support *December, 2019*	**Plantasie Creek Longitudinal Profile** **Downstream Sediment Investigation**	**FIGURE** **4**

	NYSDEC Freshwater Sediment Guidance Values (mg/kg)		
	Class A	Class B	Class C
Cadmium	<1	1 - 5	> 5
Copper	< 32	32 - 150	> 150
Lead	< 36	36 - 130	> 130
Mercury	< 0.2	0.2 - 1	> 1
Zinc	< 120	120 - 460	> 460
Selenium	> 5[a]		

Note:
a, NYSDEC SGVs are not available for selenium; bold values indicate concentrations exceeding the 5 mg/kg benchmark proposed by Nagpal et al. (1995)

P1SCD-14-A 0.0-0.3-ft
Copper 914
Mercury 3.8
Selenium 3.9 B
Zinc 303

P1SCD-14-B 0.0-0.3-ft
Copper 633
Mercury 2.3
Selenium 2.9 B
Zinc 243

P1SCD-13-A 0.0-0.2-ft
Copper 34.2
Mercury --
Selenium 0.92 B
Zinc 79.8

P1SCD-13-B 0.0-0.5-ft
Copper 547
Mercury 3.3
Selenium 4.6 B
Zinc 240

P1SCD-12-A 0.0-0.7-ft
Copper 293
Mercury 1.8
Selenium 2.5 B
Zinc 170

P1SCD-12-B 0.0-0.5-ft
Copper 236
Mercury 1.9 F1
Selenium 2.6 B
Zinc 171

P1SCD-11-A 0.0-0.3-ft
Copper 230
Mercury 1.2
Selenium 2
Zinc 154

P1SCD-11-B 0.0-0.5-ft
Copper 2170
Mercury 4.1
Selenium 3.7
Zinc 311

P1SCD-10-A 0.0-0.4-ft
Copper 619
Mercury 4.4
Selenium 4.9
Zinc 310

P1SCD-10-B 0.0-0.5-ft
Copper 515
Mercury 3.8
Selenium 3.7
Zinc 298

P1SCD-09-A 0.0-0.5-ft
Copper 899
Mercury 5.1 F1
Selenium 6
Zinc 289

P1SCD-09-B 0.0-0.3-ft
Copper 156
Mercury 1.5
Selenium 1.1
Zinc 82.8

P1SCD-08-A 0.0-0.5-ft
Copper 781
Mercury 4.3
Selenium 5.2
Zinc 294

P1SCD-08-B 0.0-0.5-ft
Copper 589
Mercury 4.5 F1
Selenium 4.1
Zinc 242

P1SCD-07-A 0.0-0.7-ft
Copper 502
Mercury 2.5
Selenium 3.1
Zinc 220

P1SCD-07-B 0.0-0.5-ft
Copper 397
Mercury 2.7
Selenium 3.6
Zinc 200

P1SCD-06-B 0.0-0.7-ft
Copper 448
Mercury 2.6
Selenium 3.5
Zinc 207

P1SCD-05-B 0.0-0.5-ft
Copper 481
Mercury 3.7
Selenium 3.4
Zinc 192

P1SCD-06-A 0.0-0.5-ft
Copper 347
Mercury 1.6
Selenium 4.1
Zinc 175

PE-DNS-SD-04 0.0-1.0-ft
Cadmium 0.78
Copper 179
Lead 40.6
Mercury 1.1
Selenium 2
Zinc 185
TOC 4.82

P2SCD-04-A 0.0-0.5-ft
Copper 707 B
Mercury 6.4
Selenium 2
Zinc 212

P2SCD-04-BB 0.0-0.2-ft
Copper 533 B
Mercury 4.3
Selenium 1.8
Zinc 131

P1SCD-05-A 0.0-0.5-ft
Copper 540
Mercury 6.4
Selenium 3.4
Zinc 200 F1

P1SCD-03-B 0.0-0.5-ft
Copper 928
Mercury 8.7
Selenium 3.7
Zinc 188

P1SCD-03-A 0.0-0.5-ft
Copper 805
Mercury 7
Selenium 3.4
Zinc 175

PE-DNS-SD-03 0.0-1.0-ft
Cadmium 0.45
Copper 246
Lead 25.9
Mercury 3.4
Selenium 1.3
Zinc 89.3
TOC 2.08

P1SCD-02-A 0.0-0.3-ft
Copper 373
Mercury 2.2
Selenium 2.1
Zinc 105

P1SCD-02-B 0.0-0.3-ft
Copper 1700
Mercury 6.1
Selenium 2.7
Zinc 193

P1SCD-01-A 0.0-0.6-ft
Copper 2490
Mercury 9.5
Selenium 5.1
Zinc 326

P1SCD-01-B 0.0-0.5-ft
Copper 2350
Mercury 17.9
Selenium 6
Zinc 283

PE-DNS-SD-02 0.0-1.0-ft
Cadmium 1.7
Copper 1,410
Lead 52.3
Mercury 25.4
Selenium **5.1**
Zinc 226
TOC 7.75

PE-SQT-08 0.0-1.0-ft
Cadmium 3.3
Copper 2,300
Lead 128
Mercury 24.8
Selenium **16.4**
Zinc 404
TOC 4.93

PE-DNS-SD-01 0.0-1.0-ft
Cadmium 1.9
Copper 2,020
Lead 77.3
Mercury 25.5
Selenium **7.7**
Zinc 270
TOC 7.14

Note: Metals concentrations reported in mg/kg and total organic carbon (TOC) concentrations reported in %.

Salem St.
Mountainview Ave.
Connelly
Port Ewen
Ulster Ave
SWMU 48
SWMU 52
SWMU 35
SWMU 22
SWMU 1
SWMU 27

Legend

Sediment Sampling Phase
- 2010 FWRIA Sediment Sampling Station
- 2016 Phase 1/1A Sediment Delineation Station
- 2017 Phase 2 Sediment Delineation Station

- Railroad
- Stream Flowline

- NYSDEC Mapped Class 2 Wetland
- NYSDEC Mapped Class 3 Wetland
- Approximate SWMU/AOC Boundary
- Approx. Property Boundary
- Ulster Co. Tax Parcels (Sept. '09)

FIGURE 5A
PLANTASIE CREEK SEDIMENT SAMPLING RESULTS
SITE TO TRANSECT 14
DOWNSTREAM SEDIMENT INVESTIGATION
DYNO NOBEL PORT EWEN SITE
PORT EWEN, NEW YORK

Map Source:
Fresh water wetlands: New York State Department of Environmental Conservation
Surface water: National Hydrography Dataset
Boundaries: Site and property boundaries approximations were determined using available data from historical maps and CAD files.
Imagery: 2013 Ortho Imagery - NYS Office of IT, GIS Services

EHS Support

Document Path: J:\EHSS_GIS\C00363_AshlandPortEwen\01_ANALYSIS\20170623_SedDelineationPhIIPort Ewen Sampling Plan - Data Posting - PhII Posting- 1.mxd

	NYSDEC Freshwater Sediment Guidance Values (mg/kg)		
	Class A	Class B	Class C
Cadmium	<1	1 - 5	> 5
Copper	< 32	32 - 150	> 150
Lead	< 36	36 - 130	> 130
Mercury	< 0.2	0.2 - 1	> 1
Zinc	< 120	120 - 460	> 460
Selenium	> 5[a]		

Note:
a, NYSDEC SGVs are not available for selenium; bold values indicate concentrations exceeding the 5 mg/kg benchmark proposed by Nagpal et al. (1995)

Rondout Creek

Mill Brook Dr.

Salem St.

Mountainview Ave.

SCD-20-A 0.0-0.4-ft
Copper 176
Mercury 0.45
Selenium 0.94
Zinc 128

SCD-20-B 0.0-0.5-ft
Copper 53.8
Mercury 0.12
Selenium 0.31 J
Zinc 52.4

SCD-19-A 0.0-0.8-ft
Copper 66
Mercury 0.24
Selenium 0.42 J
Zinc 66.1

SCD-19-B 0.0-0.7-ft
Copper 62.6
Mercury 0.13
Selenium 0.57
Zinc 73.3

P2SCD-18.9-A 0.0-1.0-ft
Copper 34.4 B
Mercury 0.61 F1
Selenium 0.21 J F1
Zinc 51.9 F1

P2SCD-18.9-B 0.0-0.5-ft
Copper 141 B
Mercury 0.42
Selenium 0.37 J
Zinc 86.1

P2SCD-18.8-A 0.0-0.5-ft
Copper 47.8 B
Mercury 0.14
Selenium 0.15 J
Zinc 40.2

P2SCD-18.8-B 0.0-0.3-ft
Copper 138 B
Mercury 0.46
Selenium 0.37 J
Zinc 93.1

P2SCD-18.7 0.0-0.1-ft
Copper 105 B
Mercury 0.37
Selenium 0.48 J
Zinc 126

P2SCD-18.7-B 0.0-0.5-ft
Copper 371 B
Mercury 1.1
Selenium 0.58
Zinc 158

SCD-18-B 0.0-0.1-ft
Copper 280
Mercury 1
Selenium 1.4
Zinc 198

SCD-18-A 0.0-0.3-ft
Copper 233
Mercury 0.59
Selenium 1.2
Zinc 198

SCD-17-A 0.0-0.4-ft
Copper 215
Mercury 2
Selenium 1.4
Zinc 103

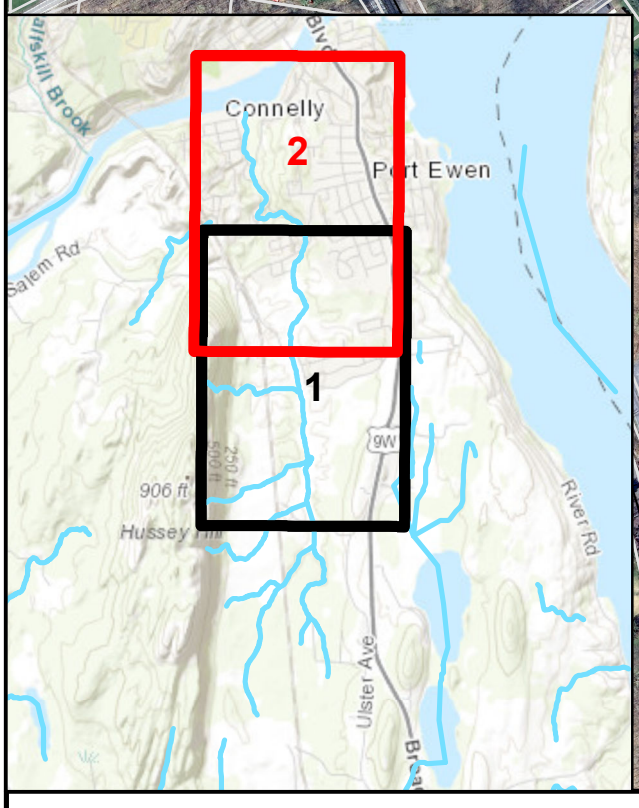
SCD-17-B 0.0-0.7-ft
Copper 244
Mercury 1.1
Selenium 1.7
Zinc 138

SCD-16-A 0.0-0.5-ft
Copper 623
Mercury 2.5
Selenium 0.59
Zinc 114

SCD-16-B 0.0-0.3-ft
Copper 401
Mercury 1.9
Selenium 1.4
Zinc 168

SCD-15-A 0.0-0.5-ft
Copper 587
Mercury 3.1
Selenium 2.3
Zinc 220

SCD-15-B 0.0-0.3-ft
Copper 713
Mercury 4.2 F1 F2
Selenium 1.6 F1
Zinc 173



Note: Metals concentrations reported in mg/kg.

0 250 500 1,000 Feet

Legend

Sediment Sampling Phase
- 2010 FWRIA Sediment Sampling Station
- 2016 Phase 1/1A Sediment Delineation Station
- 2017 Phase 2 Sediment Delineation Station

- Railroad
- Stream Flowline
- Approximate SWMU/AOC Boundary
- Approx. Property Boundary
- Ulster Co. Tax Parcels (Sept. '09)

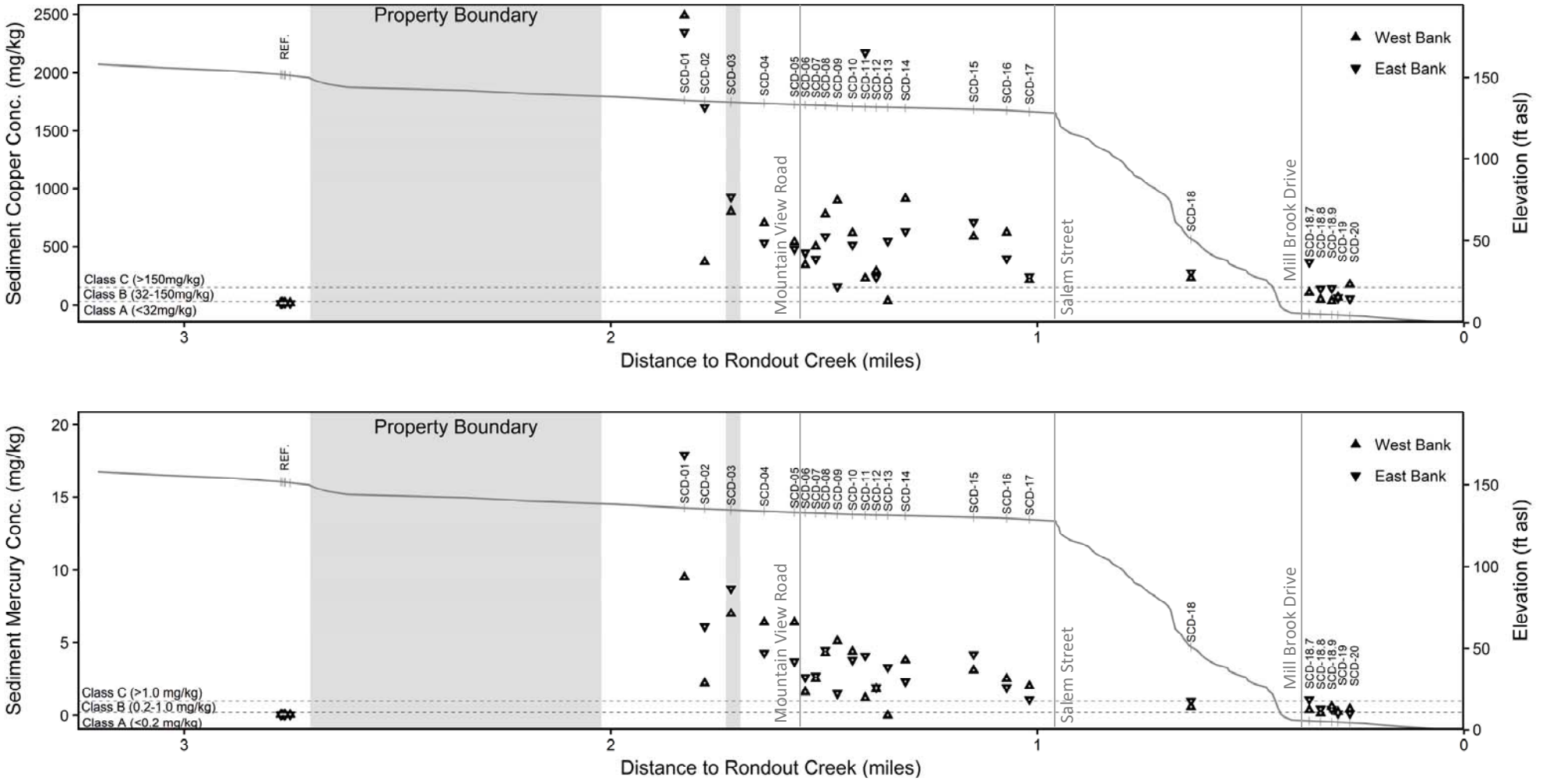
N

FIGURE 5B
PLANTASIE CREEK SEDIMENT SAMPLING RESULTS
TRANSECT 15 TO RONDOUT CREEK
DOWNSTREAM SEDIMENT INVESTIGATION
DYNO NOBEL PORT EWEN SITE
PORT EWEN, NEW YORK

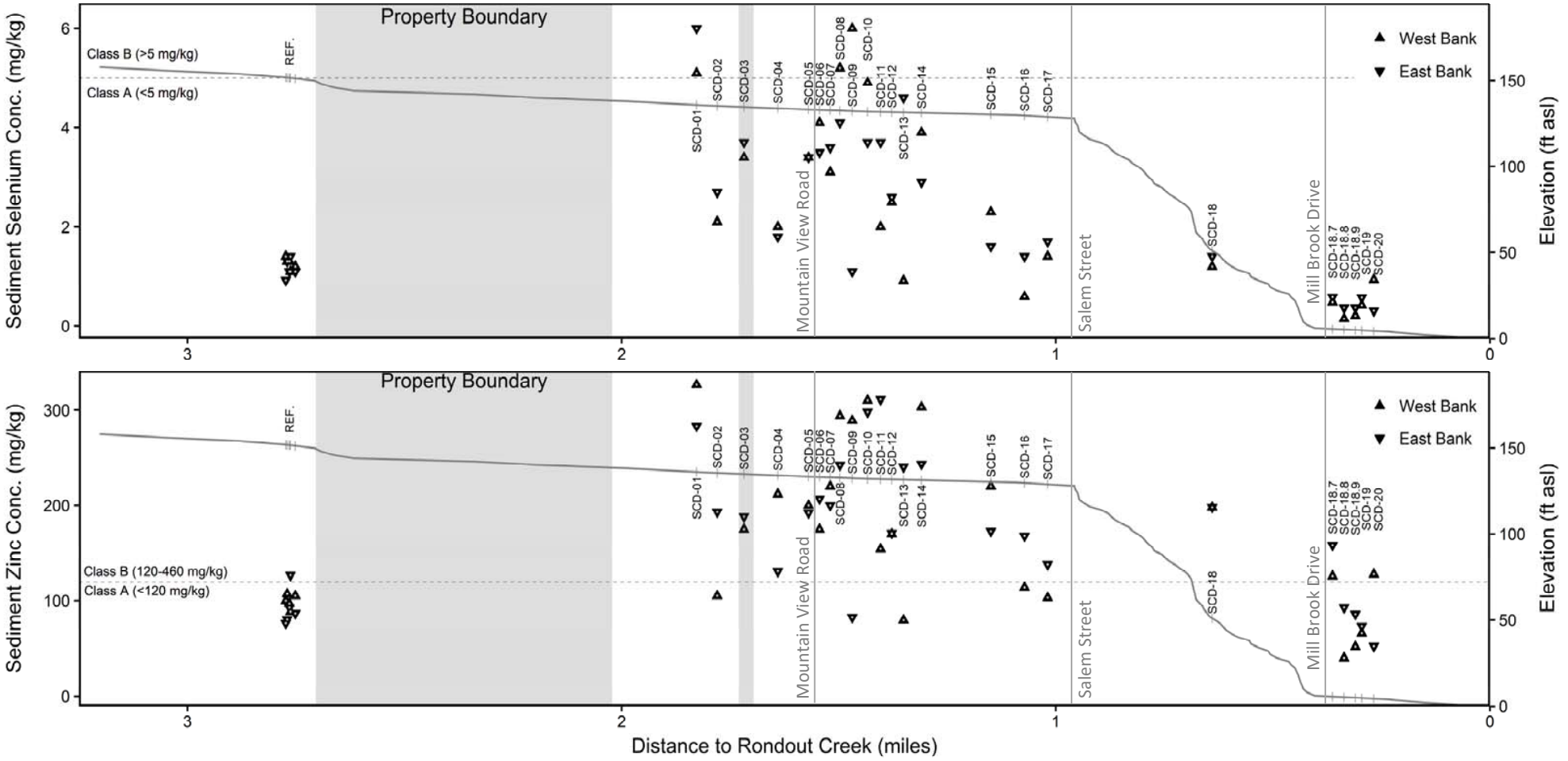
Map Source:
Fresh water wetlands: New York State Department of Environmental Conservation
Surface water: National Hydrography Dataset
Boundaries: Site and property boundaries approximations were determined using available data from historical maps and CAD files.
Imagery: 2013 Ortho Imagery - NYS Office of IT, GIS Services

EHS Support

Document Path: J:\EHS_GIS\C00363_AshlandPortEwen\01_ANALYSIS\20170623_SedDelineationPhII\Port Ewen Sampling Plan - Data Posting - PhII Posting - 2.mxd



Port Ewen, New York EHS Support *December, 2019*	**Longitudinal Profiles – Surface Copper and Mercury Sediment Concentrations and SGV Classes** **Downstream Sediment Investigation**	**FIGURE 6A**



Port Ewen, New York EHS Support *December, 2019*	**Longitudinal Profiles – Surface Selenium and Zinc Sediment Concentrations and SGV Classes** **Downstream Sediment Investigation**	**FIGURE 6B**

Appendix A NYSDEC Correspondence

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau C
625 Broadway, 11th Floor, Albany, NY 12233-7014
P: (518) 402-9662 I F: (518) 402-9679
www.dec.ny.gov

(Via e-mail and US Mail)

September 6, 2016

Mr. Fred Jardinico
Environmental Manager
Dyno Nobel Inc.
161 Ulster Avenue
Ulster Park, New York 12487-5019

Dear Mr. Jardinico:

RE: Sediment Delineation Sampling and
Substrate Mapping Work Plan
Dyno Nobel, a.k.a., Hercules Inc.
Site No. 356001
Village of Port Ewen, Ulster County

The New York State Department of Environmental Conservation (Department) has completed a review of the Sediment Delineation Sampling and Substrate Work Plan, prepare by EHS Support, dated February 2016. The work plan is approved with the following modification:

1) Previously when the Department was looking for background sample locations your consultant indicated that sampling could not be conducted in the area outlined on this work plan's current map because spring flooding may inundate the area and there is the possibility that the site contaminants could impact this area. Based on the above, the Department requires that background sampling locations need to be further discuss and agreed to prior to sampling.

2) If a surface weighted average concentrations (SWAG) is going to be used, the Department will need to agree upon the delineation/criteria of the SWAGs prior to sampling. The Department maintains that the SWAGs needs to be no longer than about 50' of stream length and that the stream reach of the SWAG needs to be consistent (i.e., the entire SWAG is in a depositional area (pool) or the entire SWAG is a straight run, or a ripple area). Multiple samples would need to be collected within the SWAG to develop the average.

3) After the completion of Phase 1, the Department must be provided an opportunity to review the data set developed and to accept or reject any conclusions regarding the determination of the background threshold values and the decision on whether or not the Phase 2 work will be implement. The Department reserves its right to request additional sampling and will not be bound by the decision points presented in the work plan.

The Department is willing to meet with you to discuss the comments 1 and 2 above prior to mobilization to finalize the background samples and the SWAG definitions. As per part 375-1.6(d) (3) should you elect to modify the work plan, please provide a notification of your election and a schedule for implementation of the work plan to the Department within 15 days of receipt of this letter.

Sincerely,

David A. Crosby
Environmental Engineer
Remedial Section B, Remedial Bureau C
Division of Environmental Remediation

ec: K. VanLandingham, EHS-Support
K. Kulow, NYSDOH
M. Crance, DFWMR
E. Moore, DEC-R3
T. Lahr, DER

Summary of Discussions on October 13, 2016 to Review NYSDEC Comments on the *Sediment Delineation Sampling Plan* (February 2016)
Dyno Nobel Site No. 356001
Port Ewen, New York

NYSDEC Comment	Discussion Points
1) Previously when the Department was looking for background sample locations your consultant indicated that sampling could not be conducted in the area outlined on this work plan's current map because spring flooding may inundate the area and there is the possibility that the site contaminants could impact this area. Based on the above, the Department requires that background sampling locations need to be further discuss and agreed to prior to sampling.	- EHS Support obtained access agreement to an off-site property adjacent to the southern boundary of the Site (see attached map) that are farther from the SWMU 1/22 Wetland Complex (~1500 feet) to limit the potential for site influence during flooding conditions - Revised background stations were located in the drainage separated by topographic divide from the Site but upstream of SWMU 1/22 Wetland Complex - EHS Support collected samples on 10/12/16 at stations with similar characteristics to the downstream reach (silt deposits overlying native clay material); placed samples on analytical hold pending discussions and agreement with NYSDEC on the revised stations - Mary Jo Crance (NYSDEC DFW) concurred with the selection of the revised background locations, but requested photo documentation of the stream characteristics in the report. - Background samples were released from analytical hold on 10/14/16
2) If a surface weighted average concentrations (SWAC) is going to be used, the Department will need to agree upon the delineation/criteria of the SWACs prior to sampling. The Department maintains that the SWACs needs to be no longer than about 50' of stream length and that the stream reach of the SWAC needs to be consistent (i.e., the entire SWAC is in a depositional area (pool) or the entire SWAC is a straight run, or a ripple area). Multiple samples would need to be collected within the SWAC to develop the average.	- EHS Support agreed with NYSDEC comment that the surface-weighted average concentrations (SWAC) should be developed from consistent reach features and geomorphology - EHS Support suggested that the designation of the extent of the reach to be included in the SWAC calculations be determined on a reach-specific basis using stream features and geomorphology and not constrained by a 50-foot interval - EHS Support agreed that multiple samples are needed for the SWAC calculations; the purpose of the Phase 2 sampling effort is to collect additional data points at the anticipated extent of the Class A and Class C sediments (based on Phase 1 results) to support SWAC and upper confidence limit of the mean (UCL) calculations - Mary Jo Crance (NYSDEC DFW) concurred with the reach-specific approach
3) After the completion of Phase 1, the Department must be provided an opportunity to review the data set developed and to accept or reject any conclusions regarding the determination of the background threshold values and the decision on whether or not the Phase 2 work will be implement. The Department reserves its right to request additional sampling and will not be bound by the decision points presented in the work plan.	- EHS Support recommended that conference calls be scheduled with NYSDEC to review the results of the sample batches analyzed during Phase 1 sampling; the results of the data review will be used to assess the extent of Class A or Class C sediments and make recommendations regarding the need to analyze subsequent downstream sample batches; these recommendations will be reviewed and discussed with NYSDEC on the conference calls - Phase 2 sampling will be conducted at the anticipated extent of the Class A and Class C sediments (as determined using Phase 1 results) to collect additional data points to support SWAC and upper confidence limit of the mean (UCL) calculations - EHS Support will provide a schedule of potential dates to NYSDEC for two conference calls to discuss the results

MEMO

To: Tanya Lahr, NYSDEC

From: Kristin VanLandingham, EHS Support

Date: April 22, 2020

Re: **February 7, 2017 Agency Meeting and February 8, 2017 Site Visit**
Dyno Nobel Site (#356001)
Port Ewen, NY

The purpose of the memorandum is to document the minutes from the meeting with New York State Department of Environmental Conservation (NYSDEC) on February 7, 2017 regarding to the Dyno Nobel site located in Port Ewen, NY (the Site) and the Site walk on February 8, 2017.

Meeting Date: February 7, 2017
Location: NYSDEC offices, Albany, NY

RE: Downstream Phase 1/1A Sediment Sampling Results
Dyno Nobel Site
Port Ewen, NY

Attendees:

George Heitzman, NYSDEC
Tanya Lahr, NYSDEC
Mary Jo Crance, NYSDEC Division of Fish and Wildlife (DFW)
Ed Meeks, Ashland
Fred Jardinico, Dyno Nobel
Kathleen Blessing, Dyno Nobel
Gary Long, EHS Support
Andy Patz, EHS Support
Kristin VanLandingham, EHS Support

Introductions and Purpose of Meeting
Purpose of meeting was to discuss the results of the Phase 1/1A downstream sediment sampling results and seek agreement from NYSDEC on the proposed sampling locations for Phase 2.

Downstream Sediment Sampling
Gary Long (EHS Support) provided background of historical sediment sampling, results of the Phase 1/1A findings and proposed sample locations for Phase 2.

Mary Jo Crance (NYSDEC-DFW) agreed with proposed sample locations.

DRAFT

Discussion of competent clay layer that is present beneath the stream and the varying amounts of overlying fines and silt materials. Mary Jo Crance requests a longitudinal profile showing depth of sediment in the creek at the downstream sampling locations.

NYSDEC requests a week's notice (to Tanya Lahr) prior to implementing the Phase 2 sediment sampling George Heitzman indicated that NYSDEC could assist with gaining access to off-site properties if necessary since this is a class 2 site.

Public Outreach

Dyno Nobel/Ashland team indicated that several off-site property owners have requested a copy of data/report related to the Phase 1 and 1A sampling adjacent to their property. Dyno Nobel/Ashland team and NYSDEC discussed communication to the public. The Phase 2 sampling effort will be scheduled as soon as feasible. The results of the entire sampling effort will then be summarized in a report and provided the NYSDEC, the New York State Department of Health (NYSDOH), and the property owners where sampling occurred.

George Heitzman had the following questions/comments:

- Are there flooding issues at the downstream properties? Mary Jo Crance indicated that the on-site wetland had a large buffering effect on storm surges. The Dyno Nobel/Ashland team agreed to further research the issue and provide and update to NYSDEC.
- What is the elevation of school property in relation to the creek? The Dyno Nobel/Ashland team agreed to further research the issue and provide and update to NYSDEC.
- NYSDOH needs to be involved. Tanya Lahr (NYSDEC) to identify the NYSDOH contact and communicate data to them

CMS/PRAP Discussion

George Heitzman indicated that a draft Proposed Remedial Action Plan (PRAP) was developed and presented to management; however, the following concerns still need to be resolved

1. Sampling density between SWMUs and overall site has not been adequately delineated, particularly surficial soils, and this is the critical path to PRAP
    a. Dyno Nobel/Ashland team indicated the historical RCRA Facility Assessment (RFA), RCRA Facility Investigation (RFI), and Corrective Measures Study (CMS) included specific sampling rational based on operations at the Site and a detailed understanding of the explosive manufacturing process in the 19th and 20th century that was utilized to design the site investigation efforts. Information regarding historical operations/use of the Site and sampling strategies will be provided to NYSDEC
2. Defining the actual Site boundary vs. the property boundary
    a. NYSDEC indicated that they have an interest in reducing the size of the Site to include only the acreage where historical operations occurred.
    b. Dyno Nobel/Ashland team will provide an information package to NYSDEC regarding land use, list of tax parcels, and current deed restrictions

New Consent Order Request

Dyno Nobel has requested the termination of its RCRA Part B permit and the issuance of a Consent Order for the Site.

George Heitzman indicated that there would be a NYSDEC docket meeting the following day (February 8) and that the request would be discussed. The "Site" boundary needs to be defined for the new Consent Order. Dyno Nobel team will propose a Site boundary for consideration by NYSDEC.

Meeting Date: February 8, 2017
Location: Dyno Nobel Site, Port Ewen, NY

RE: Site Walk and Downstream Phase 1/1A Sediment Sampling Locations
Dyno Nobel Site
Port Ewen, NY

Attendees:

David Crosby, NYSDEC
Tanya Lahr, NYSDEC
Ed Meeks, Ashland
Fred Jardinico, Dyno Nobel
Kathleen Blessing, Dyno Nobel
Gary Long, EHS Support
Andy Patz, EHS Support
Kristin VanLandingham, EHS Support

Introductions and Purpose of Meeting
Purpose of meeting to familiarize NYSDEC project manager, Tanya Lahr, with the Site and show NYSDEC and the project team the Phase 1/1A downstream sediment sample locations and the proposed Phase 2 sample locations

February 7, 2017 Meeting
David Crosby, NYSDEC, was not able to attend the February 7, 2017 meeting in Albany so Gary Long, EHS Support, briefly went over the presentation with him.

David Crosby indicated that a map showing the proposed Phase 2 sediment sample transect locations should be submitted to NYSDEC for official approval prior to initiating the Phase 2 sediment sampling efforts. The Dyno Nobel/Ashland team agreed to provide a transect location map.

CMS/PRAP
David Crosby asked what was discussed in the previous day's meeting in regards to the CMS. In addition to questions around sample density between solid waste management units (SWMUs), David Crosby indicated that the Department was interested in discussing a more active remedy for groundwater than monitored natural attenuation (MNA) (i.e., passive diffusion socks) because of the high concentrations in source monitoring wells. The group agreed that based on the historical monitoring data and the site geology the impacted groundwater is not migrating. Further discussion is necessary.

Site Walk
Site walk through main plant area, SWMU 22 and Shooting Pond (SWMU 1). Drove along Plantasie Creek downstream of the Site to view the creek features, sample locations and proposed Phase 2 sample locations.

Action Items

- Dyno Nobel/Ashland
  - Prepare and submit longitudinal profile depicting sediment depths at downstream sampling locations
  - Provide NYSDEC with one week's notice prior to Phase 2 sediment sampling implementation
  - Prepare and submit historical operations and sampling rational information package to NYSDEC
  - Prepare and submit information package regarding land use, deed restrictions and proposed "Site" boundary
- NYSDEC
  - Identify and communicate with NYSDOH representative
  - Consider Dyno Nobel request for new Consent Order
  - Further discussion regarding groundwater remedy

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau C
625 Broadway, 11th Floor, Albany, NY 12233-7014
P: (518) 402-9662 I F: (518) 402-9679
www.dec.ny.gov

(Via e-mail and US Mail)

February 23, 2017

Mr. Fred Jardinico
Environmental Manager
Dyna Nobel Inc.
161 Ulster Avenue
Ulster Park, New York 12487-5019

RE: Phase 2 Sediment Sample Transect Locations
Dyna Nobel, a.k.a., Hercules Inc.Site No. 356001
Village of Port Ewen, Ulster County

Dear Mr. Jardinico:

The New York State Department of Environmental Conservation (Department) has completed a review of the Phase 2 Sediment Sample Transect Locations prepared by EHS Support dated February 17, 2017, and also discussed at our meetings on February 7 & 8, 2017. The Phase 2 Sediment Sample Transect Locations are approved. Please provide the Department a schedule for implementation of the field work at least one week prior to mobilization so we can arrange for field oversight.

Please contact me if you have any questions or concerns at (518) 402-9581 or at tanya.lahr@dec.ny.gov

Sincerely,

Tanya Lahr

Tanya Lahr, P.E.
Project Manager
Remedial Section B, Remedial Bureau C
Division of Environmental Remediation

ec: K. VanLandingham, EHS-Support
K. Kulow, NYSDOH
M. Schuck, NYSDOH
M. Crance, DFWMR
E. Moore, DEC-R3
D. Crosby, DER

Plantasie Creek – Phase 1 and 2 Sediment Sampling Report

Hercules, Inc (#356001)
Port Ewen, Ulster County, NY

Prepared for:

Hercules, Inc
Dyno Nobel, Inc

Prepared by:

EHS Support

April 2020
Volume II of II

Appendix B Laboratory Analytical Reports

ANALYTICAL REPORT

Job Number: 200-35680-1

SDG Number: 200-35660-1

Job Description: Port Ewen DNS Sediment

For:
Ashland LLC
Ashland Hercules Research Center
500 Hercules Rd Bldg 8139
Wilmington, DE 19808

Attention: John Hoffman

Approved for release.
Kristine A Dusablon
Project Manager II
11/8/2016 5:17 PM

Kristine A Dusablon, Project Manager II
30 Community Drive, South Burlington, VT, 05403
(802)660-1990
kris.dusablon@testamericainc.com
11/08/2016

cc: Melissa Hollinger
Gary Long

The test results in this report relate only to sample(s) as received by the laboratory. These test results were derived under a quality system that adheres to the requirements of NELAC. Pursuant to NELAC, this report may not be produced in full without written approval from the laboratory

Table of Contents

Cover Title Page 1

Data Summaries 5

- Definitions 5
- Case Narrative 6
- Detection Summary 8
- Client Sample Results 18
- Default Detection Limits 62
- QC Sample Results 63
- QC Association 69
- Chronicle 73
- Certification Summary 79
- Method Summary 80
- Sample Summary 81
- Reagent Traceability 82
  - COAs 125

Inorganic Sample Data 319

- Metals Data 319
  - Met Cover Page 320
  - Met Sample Data 321
  - Met QC Data 335
    - Met ICV/CCV 335
    - Met Blanks 352
    - Met ICSA/ICSAB 369
    - Met MS/MSD/PDS 377
    - Met LCS/LCSD 387
    - Met Serial Dilution 395

Table of Contents

Met MDL 397

Met Linear Ranges 405

Met Preparation Log 408

Met Analysis Run Log 415

Met ICP/MS Tune 427

Met ICP/MS Int Stds 431

Met Prep Data 439

Met Raw Data 451

General Chemistry Data 1016

Gen Chem Cover Page 1017

Gen Chem Sample Data 1018

Gen Chem QC Data 1031

Gen Chem ICV/CCV 1031

Gen Chem Blanks 1033

Gen Chem LCS/LCSD 1034

Gen Chem MDL 1035

Gen Chem Linear Ranges 1040

Gen Chem Analysis Run Log 1042

Gen Chem Prep Data 1047

Gen Chem Raw Data 1051

Geotechnical Data 1144

Geo Cover Page 1144

Geo Sample Data 1145

Geo Duplicates 1158

Geo Prep Data 1161

Shipping and Receiving Documents 1162

Table of Contents

Client Chain of Custody 1163

Sample Receipt Checklist 1166

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery is outside acceptance limits.
E	Result exceeded calibration range.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
W	PS: Post-digestion spike was outside control limits
V	Serial Dilution exceeds the control limits
^	Instrument related QC is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Geotechnical

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Ashland LLC

Project: Port Ewen DNS Sediment

Report Number: 200-35680-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 10/12/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.8 C.

METALS (ICPMS)
Samples PE1016_P1SCD-06-A-0006IN, PE1016_P1SCD-06-B-0008IN, PE1016_P1SCD-06-A-0613IN, PE1016_P1SCD-07-A-0008IN, PE1016_P1SCD-07-B-0006IN, PE1016_P1SCD-08-A-0006IN, PE1016_P1SCD-08-A-0006IN-D, PE1016_P1SCD-09-A-0006IN, PE1016_P1SCD-10-A-0005IN, PE1016_P1SCD-10-B-0006IN, PE1016_P1SCD-09-B-0003IN, PE1016_P1SCD-09-B-0309IN and PE1016_P1SCD-08-B-0006IN were analyzed for metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 10/13/2016, 10/17/2016 and 10/24/2016 and analyzed on 10/14/2016, 10/18/2016 and 10/25/2016.

For the MS of sample PE1016_P1SCD-08-A-0006IN and MSD of sample PE1016_P1SCD-08-A-0006IN, Copper and Zinc failed the recovery criteria. Due to the high concentration of Copper and Zinc in the parent sample, the matrix spike and matrix spike duplcate could not be evaluated for accuracy and precision. Refer to the QC report for details.

For the MS of sample PE1016_P1SCD-09-A-0006IN and MSD of sample PE1016_P1SCD-09-A-0006IN, Copper and Zinc failed the recovery criteria. Due to the high concentration of Copper and Zinc in the parent sample, the matrix spike and matrix spike duplcate could not be evaluated for accuracy and precision. Refer to the QC report for details.

The post digestion spike % recovery for Zinc associated with sample PE1016_P1SCD-08-A-0006IN was outside of control limits. Refer to the QC report for details. Refer to the QC report for details.

The post digestion spike % recovery for Selenium associated with sample PE1016_P1SCD-09-A-0006IN was outside of control limits. Refer to the QC report for details. Refer to the QC report for details.

Internal standards for the following elements were re-associated: Copper and Zinc were re-associated from Scandium to Indium. Selenium was re-associated from Yttrium to Indium.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample PE1016_P1SCD-BLK-1-101016 was analyzed for metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 10/17/2016 and analyzed on 10/18/2016 and 10/19/2016.

Copper was detected in method blank MB 200-110239/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY
Sample PE1016_P1SCD-BLK-1-101016 was analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 10/17/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY
Samples PE1016_P1SCD-06-A-0006IN, PE1016_P1SCD-06-B-0008IN, PE1016_P1SCD-06-A-0613IN, PE1016_P1SCD-07-A-0008IN, PE1016_P1SCD-07-B-0006IN, PE1016_P1SCD-08-A-0006IN, PE1016_P1SCD-08-A-0006IN-D, PE1016_P1SCD-09-A-0006IN, PE1016_P1SCD-10-A-0005IN, PE1016_P1SCD-10-B-0006IN, PE1016_P1SCD-09-B-0003IN, PE1016_P1SCD-09-B-0309IN and PE1016_P1SCD-08-B-0006IN were analyzed for mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared on 10/17/2016 and 10/25/2016 and analyzed on 10/17/2016 and 10/26/2016.

The parent sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with samples PE1016_P1SCD-09-A-0006IN and PE1016_P1SCD-08-B-0006IN were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Mercury in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Mercury failed the recovery criteria low for the MSD of sample PE1016_P1SCD-08-B-0006INMSD in batch 200-110260.

Mercury failed the recovery criteria high for the MS of sample PE1016_P1SCD-09-A-0006INMS in batch 200-110575.

Mercury failed the recovery criteria low for the MSD of sample PE1016_P1SCD-09-A-0006INMSD in batch 200-110575.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY
Sample PE1016_P1SCD-BLK-1-101016 was analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 10/17/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GRAIN SIZE
Samples PE1016_P1SCD-06-A-0006IN, PE1016_P1SCD-06-B-0008IN, PE1016_P1SCD-06-A-0613IN, PE1016_P1SCD-07-A-0008IN, PE1016_P1SCD-07-B-0006IN, PE1016_P1SCD-08-A-0006IN, PE1016_P1SCD-08-A-0006IN-D, PE1016_P1SCD-09-A-0006IN, PE1016_P1SCD-10-A-0005IN, PE1016_P1SCD-10-B-0006IN, PE1016_P1SCD-09-B-0003IN, PE1016_P1SCD-09-B-0309IN and PE1016_P1SCD-08-B-0006IN were analyzed for grain size in accordance with D422 grain size. The samples were analyzed on 10/23/2016, 10/25/2016 and 11/01/2016.

Coarse Sand and Medium Sand exceeded the RPD limit for the duplicate of sample PE1016_P1SCD-09-A-0006INDU. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON
Samples PE1016_P1SCD-06-A-0006IN, PE1016_P1SCD-06-B-0008IN, PE1016_P1SCD-06-A-0613IN, PE1016_P1SCD-07-A-0008IN, PE1016_P1SCD-07-B-0006IN, PE1016_P1SCD-08-A-0006IN, PE1016_P1SCD-08-A-0006IN-D, PE1016_P1SCD-09-A-0006IN, PE1016_P1SCD-10-A-0005IN, PE1016_P1SCD-10-B-0006IN, PE1016_P1SCD-09-B-0003IN, PE1016_P1SCD-09-B-0309IN and PE1016_P1SCD-08-B-0006IN were analyzed for total organic carbon in accordance with Lloyd Kahn Method. The samples were analyzed on 10/17/2016 and 10/19/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35680-1
SDG: 200-35660-1

Client Sample ID: PE1016_P1SCD-06-A-0006IN — Lab Sample ID: 200-35680-1

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	19.7				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	52.1				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	28.4				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	13.8				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	9.9				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	93.9				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	80.3				% Passing	1		D422	Total/NA
Silt	19.8				%	1		D422	Total/NA
Clay	8.4				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	51.9				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	44.4				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	38.1				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	33.0				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	31.7				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	31.0				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	28.6				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	28.2				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	22.4				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	20.4				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	14.4				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	10.4				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	8.4				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	5.7				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	3.7				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	347		0.71	0.17	mg/Kg	1	☼	6020A	Total/NA
Selenium	4.1		0.57	0.090	mg/Kg	1	☼	6020A	Total/NA
Zinc	175		2.8	0.88	mg/Kg	1	☼	6020A	Total/NA
Mercury	1.6		0.080	0.029	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	42700		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016_P1SCD-06-B-0008IN — Lab Sample ID: 200-35680-2

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	10.5				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	50.8				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	14.0				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	15.8				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	21.0				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	89.5				% Passing	1		D422	Total/NA
Silt	26.0				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016_P1SCD-06-B-0008IN (Continued) — Lab Sample ID: 200-35680-2

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Clay	12.7				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	75.5				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	68.2				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	59.7				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	46.9				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	43.6				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	42.3				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	39.0				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	38.7				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	31.0				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	28.0				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	21.9				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	18.8				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	12.7				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	8.7				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	5.6				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	448		1.0	0.25	mg/Kg	1	☼	6020A	Total/NA
Selenium	3.5		0.83	0.13	mg/Kg	1	☼	6020A	Total/NA
Zinc	207		4.2	1.3	mg/Kg	1	☼	6020A	Total/NA
Mercury	2.6		0.083	0.030	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	43400		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016_P1SCD-06-A-0613IN — Lab Sample ID: 200-35680-3

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	0.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	13.2				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	0.5				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	1.3				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	11.4				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Silt	50.6				%	1		D422	Total/NA
Clay	36.2				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	99.5				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	99.3				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	98.2				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	96.0				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	94.2				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	92.9				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	87.8				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	86.8				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	69.2				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	62.3				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	50.0				% Passing	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016_P1SCD-06-A-0613IN (Continued) — Lab Sample ID: 200-35680-3

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Hydrometer Reading 4 - Percent Finer	44.5				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	36.2				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	24.3				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	17.4				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	13.7		0.43	0.10	mg/Kg	1	☼	6020A	Total/NA
Selenium	0.74		0.35	0.054	mg/Kg	1	☼	6020A	Total/NA
Zinc	66.3		1.7	0.54	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.064		0.041	0.015	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	1350		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016_P1SCD-07-A-0008IN — Lab Sample ID: 200-35680-4

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	4.5				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	50.8				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	9.4				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	13.1				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	28.3				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	95.5				% Passing	1		D422	Total/NA
Silt	34.0				%	1		D422	Total/NA
Clay	10.7				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	86.1				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	80.5				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	73.0				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	61.0				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	55.9				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	53.0				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	45.7				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	44.7				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	31.1				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	27.7				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	20.9				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	15.8				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	10.7				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	6.2				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	4.5				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	502		0.93	0.22	mg/Kg	1	☼	6020A	Total/NA
Selenium	3.1		0.74	0.12	mg/Kg	1	☼	6020A	Total/NA
Zinc	220		3.7	1.2	mg/Kg	1	☼	6020A	Total/NA
Mercury	2.5		0.082	0.030	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	43200		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35680-1
SDG: 200-35660-1

Client Sample ID: PE1016_P1SCD-07-B-0006IN — Lab Sample ID: 200-35680-5

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	5.9				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	32.0				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	6.6				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	10.9				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	14.5				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	94.1				% Passing	1		D422	Total/NA
Silt	35.9				%	1		D422	Total/NA
Clay	26.2				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	87.5				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	80.6				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	76.6				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	71.2				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	68.4				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	66.7				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	62.6				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	62.1				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	49.1				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	46.2				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	37.6				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	30.5				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	26.2				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	18.1				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	11.0				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	397		0.98	0.24	mg/Kg	1	☼	6020A	Total/NA
Selenium	3.6		0.78	0.12	mg/Kg	1	☼	6020A	Total/NA
Zinc	200		3.9	1.2	mg/Kg	1	☼	6020A	Total/NA
Mercury	2.7		0.071	0.026	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	30300		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016_P1SCD-08-A-0006IN — Lab Sample ID: 200-35680-6

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	10.4				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	43.2				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	8.5				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	11.9				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	22.8				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	89.6				% Passing	1		D422	Total/NA
Silt	27.9				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016_P1SCD-08-A-0006IN (Continued) — Lab Sample ID: 200-35680-6

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Clay	18.5				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	81.1				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	75.7				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	69.2				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	57.7				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	53.5				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	51.5				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	47.0				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	46.4				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	43.6				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	40.0				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	32.9				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	22.1				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	18.5				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	11.9				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	6.6				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	781		1.1	0.27	mg/Kg	1	☼	6020A	Total/NA
Selenium	5.2		0.89	0.14	mg/Kg	1	☼	6020A	Total/NA
Zinc	294		4.4	1.4	mg/Kg	1	☼	6020A	Total/NA
Mercury	4.3		0.094	0.034	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	53800		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016_P1SCD-08-A-0006IN-D — Lab Sample ID: 200-35680-7

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	10.7				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	35.5				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	4.2				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	10.1				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	21.2				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	89.3				% Passing	1		D422	Total/NA
Silt	40.3				%	1		D422	Total/NA
Clay	13.5				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	85.1				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	80.9				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	75.0				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	64.7				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	60.8				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	58.9				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	54.4				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	53.8				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	35.1				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	32.2				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	26.4				% Passing	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016_P1SCD-08-A-0006IN-D (Continued) — Lab Sample ID: 200-35680-7

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Hydrometer Reading 4 - Percent Finer	20.7				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	13.5				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	8.2				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	5.3				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	600		1.1	0.26	mg/Kg	1	☼	6020A	Total/NA
Selenium	4.4		0.86	0.13	mg/Kg	1	☼	6020A	Total/NA
Zinc	226		4.3	1.3	mg/Kg	1	☼	6020A	Total/NA
Mercury	3.4		0.095	0.034	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	45800		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016_P1SCD-09-A-0006IN — Lab Sample ID: 200-35680-8

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	5.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	24.0				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	2.3				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	9.4				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	12.3				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	95.0				% Passing	1		D422	Total/NA
Silt	52.5				%	1		D422	Total/NA
Clay	18.5				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	92.7				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	84.9				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	83.3				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	80.7				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	78.3				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	76.5				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	71.6				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	71.0				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	49.9				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	43.2				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	34.2				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	27.5				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	18.5				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	9.5				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	5.1				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	899		1.2	0.30	mg/Kg	1	☼	6020A	Total/NA
Selenium	6.0		0.99	0.16	mg/Kg	1	☼	6020A	Total/NA
Zinc	289		5.0	1.5	mg/Kg	1	☼	6020A	Total/NA
Mercury	5.1	F1	0.11	0.039	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	35600		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35680-1
SDG: 200-35660-1

Client Sample ID: PE1016_P1SCD-10-A-0005IN — Lab Sample ID: 200-35680-9

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	5.3				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	37.9				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	5.0				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	19.7				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	13.2				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	94.7				% Passing	1		D422	Total/NA
Silt	48.8				%	1		D422	Total/NA
Clay	8.0				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	89.7				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	74.9				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	70.0				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	65.7				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	63.2				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	61.5				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	57.3				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	56.8				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	37.5				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	32.5				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	22.7				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	12.9				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	8.0				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	5.5				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	0.6				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	619		1.6	0.38	mg/Kg	1	☼	6020A	Total/NA
Selenium	4.9		1.3	0.20	mg/Kg	1	☼	6020A	Total/NA
Zinc	310		6.3	1.9	mg/Kg	1	☼	6020A	Total/NA
Mercury	4.4		0.14	0.052	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	69000		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016_P1SCD-10-B-0006IN — Lab Sample ID: 200-35680-10

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	12.1				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	31.3				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	3.0				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	15.8				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	12.5				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	87.9				% Passing	1		D422	Total/NA
Silt	49.1				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016_P1SCD-10-B-0006IN (Continued) — Lab Sample ID: 200-35680-10

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Clay	7.5				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	84.9				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	72.3				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	69.1				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	65.7				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	63.4				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	61.8				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	57.2				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	56.6				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	37.6				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	30.7				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	21.4				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	12.1				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	7.5				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	5.2				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	0.6				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	515		1.6	0.39	mg/Kg	1	☼	6020A	Total/NA
Selenium	3.7		1.3	0.20	mg/Kg	1	☼	6020A	Total/NA
Zinc	298		6.4	2.0	mg/Kg	1	☼	6020A	Total/NA
Mercury	3.8		0.13	0.046	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	68800		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016_P1SCD-09-B-0003IN — Lab Sample ID: 200-35680-11

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	5.9				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	27.3				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	4.3				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	11.0				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	12.0				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	94.1				% Passing	1		D422	Total/NA
Silt	49.6				%	1		D422	Total/NA
Clay	17.2				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	89.8				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	82.0				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	78.8				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	75.0				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	72.6				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	71.2				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	67.4				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	66.8				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	50.8				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	45.2				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	30.3				% Passing	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016_P1SCD-09-B-0003IN (Continued) — Lab Sample ID: 200-35680-11

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Hydrometer Reading 4 - Percent Finer	21.0				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	17.2				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	11.6				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	6.1				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	156		0.48	0.11	mg/Kg	1	☼	6020A	Total/NA
Selenium	1.1		0.38	0.060	mg/Kg	1	☼	6020A	Total/NA
Zinc	82.8		1.9	0.59	mg/Kg	1	☼	6020A	Total/NA
Mercury	1.5		0.045	0.017	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	58700		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016_P1SCD-09-B-0309IN — Lab Sample ID: 200-35680-12

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	0.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	2.7				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	1.3				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	0.5				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	0.9				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Silt	53.3				%	1		D422	Total/NA
Clay	44.0				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	98.7				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	98.4				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	98.2				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	97.9				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	97.8				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	97.7				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	97.4				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	97.3				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	74.1				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	71.1				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	62.0				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	53.0				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	44.0				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	28.9				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	16.9				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	55.3		1.2	0.30	mg/Kg	1	☼	6020A	Total/NA
Selenium	2.5		0.99	0.16	mg/Kg	1	☼	6020A	Total/NA
Zinc	147		5.0	1.5	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.039	J	0.091	0.033	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	1290		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35680-1
SDG: 200-35660-1

Client Sample ID: PE1016_P1SCD-BLK-1-101016 — Lab Sample ID: 200-35680-13

No Detections.

Client Sample ID: PE1016_P1SCD-08-B-0006IN — Lab Sample ID: 200-35680-14

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	7.9				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	31.8				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	4.4				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	9.9				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	17.5				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	92.1				% Passing	1		D422	Total/NA
Silt	57.1				%	1		D422	Total/NA
Clay	3.2				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	87.7				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	80.6				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	77.8				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	72.2				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	68.4				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	66.1				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	61.0				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	60.3				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	28.6				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	23.5				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	18.4				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	10.8				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	3.2				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	0.6				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	0.6				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	589		1.3	0.31	mg/Kg	1	☼	6020A	Total/NA
Selenium	4.1		1.0	0.16	mg/Kg	1	☼	6020A	Total/NA
Zinc	242		5.1	1.6	mg/Kg	1	☼	6020A	Total/NA
Mercury	4.5	F1	0.10	0.037	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	46900		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016_P1SCD-06-A-0006IN

Date Collected: 10/10/16 16:45
Date Received: 10/12/16 10:30

Lab Sample ID: 200-35680-1

Matrix: Sediment
Percent Solids: 47.8

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	347		0.71	0.17	mg/Kg	☼	10/13/16 13:50	10/14/16 11:58	1
Selenium	4.1		0.57	0.090	mg/Kg	☼	10/13/16 13:50	10/14/16 11:58	1
Zinc	175		2.8	0.88	mg/Kg	☼	10/13/16 13:50	10/14/16 11:58	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	1.6		0.080	0.029	mg/Kg	☼	10/17/16 10:05	10/17/16 14:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	42700		1000	380	mg/Kg			10/17/16 15:17	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	47.8		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	19.7				%			11/01/16 09:24	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			11/01/16 09:24	1
Sand	52.1				%			11/01/16 09:24	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			11/01/16 09:24	1
Coarse Sand	28.4				%			11/01/16 09:24	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			11/01/16 09:24	1
Medium Sand	13.8				%			11/01/16 09:24	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			11/01/16 09:24	1
Fine Sand	9.9				%			11/01/16 09:24	1
Sieve Size 0.375 inch - Percent Finer	93.9				% Passing			11/01/16 09:24	1
Sieve Size #4 - Percent Finer	80.3				% Passing			11/01/16 09:24	1
Silt	19.8				%			11/01/16 09:24	1
Clay	8.4				%			11/01/16 09:24	1
Sieve Size #10 - Percent Finer	51.9				% Passing			11/01/16 09:24	1
Sieve Size #20 - Percent Finer	44.4				% Passing			11/01/16 09:24	1
Sieve Size #40 - Percent Finer	38.1				% Passing			11/01/16 09:24	1
Sieve Size #60 - Percent Finer	33.0				% Passing			11/01/16 09:24	1
Sieve Size #80 - Percent Finer	31.7				% Passing			11/01/16 09:24	1
Sieve Size #100 - Percent Finer	31.0				% Passing			11/01/16 09:24	1
Sieve Size #200 - Percent Finer	28.6				% Passing			11/01/16 09:24	1
Sieve Size #230 - Percent Finer	28.2				% Passing			11/01/16 09:24	1
Hydrometer Reading 1 - Percent Finer	22.4				% Passing			11/01/16 09:24	1
Hydrometer Reading 2 - Percent Finer	20.4				% Passing			11/01/16 09:24	1
Hydrometer Reading 3 - Percent Finer	14.4				% Passing			11/01/16 09:24	1
Hydrometer Reading 4 - Percent Finer	10.4				% Passing			11/01/16 09:24	1
Hydrometer Reading 5 - Percent Finer	8.4				% Passing			11/01/16 09:24	1
Hydrometer Reading 6 - Percent Finer	5.7				% Passing			11/01/16 09:24	1

Client Sample ID: PE1016_P1SCD-06-A-0006IN

Lab Sample ID: 200-35680-1
Date Collected: 10/10/16 16:45
Matrix: Sediment
Date Received: 10/12/16 10:30

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 7 - Percent Finer	3.7				% Passing			11/01/16 09:24	1

Client Sample ID: PE1016_P1SCD-06-B-0008IN

Lab Sample ID: 200-35680-2
Date Collected: 10/10/16 16:30
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 42.5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	448		1.0	0.25	mg/Kg	☼	10/13/16 13:50	10/14/16 12:04	1
Selenium	3.5		0.83	0.13	mg/Kg	☼	10/13/16 13:50	10/14/16 12:04	1
Zinc	207		4.2	1.3	mg/Kg	☼	10/13/16 13:50	10/14/16 12:04	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	2.6		0.083	0.030	mg/Kg	☼	10/17/16 10:05	10/17/16 14:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	43400		1000	380	mg/Kg			10/17/16 15:24	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	42.5		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	10.5				%			11/01/16 09:26	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			11/01/16 09:26	1
Sand	50.8				%			11/01/16 09:26	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			11/01/16 09:26	1
Coarse Sand	14.0				%			11/01/16 09:26	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			11/01/16 09:26	1
Medium Sand	15.8				%			11/01/16 09:26	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			11/01/16 09:26	1
Fine Sand	21.0				%			11/01/16 09:26	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			11/01/16 09:26	1
Sieve Size #4 - Percent Finer	89.5				% Passing			11/01/16 09:26	1
Silt	26.0				%			11/01/16 09:26	1
Clay	12.7				%			11/01/16 09:26	1
Sieve Size #10 - Percent Finer	75.5				% Passing			11/01/16 09:26	1
Sieve Size #20 - Percent Finer	68.2				% Passing			11/01/16 09:26	1
Sieve Size #40 - Percent Finer	59.7				% Passing			11/01/16 09:26	1
Sieve Size #60 - Percent Finer	46.9				% Passing			11/01/16 09:26	1
Sieve Size #80 - Percent Finer	43.6				% Passing			11/01/16 09:26	1
Sieve Size #100 - Percent Finer	42.3				% Passing			11/01/16 09:26	1
Sieve Size #200 - Percent Finer	39.0				% Passing			11/01/16 09:26	1
Sieve Size #230 - Percent Finer	38.7				% Passing			11/01/16 09:26	1
Hydrometer Reading 1 - Percent Finer	31.0				% Passing			11/01/16 09:26	1

Client Sample ID: PE1016_P1SCD-06-B-0008IN

Lab Sample ID: 200-35680-2

Date Collected: 10/10/16 16:30
Matrix: Sediment
Date Received: 10/12/16 10:30

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 2 - Percent Finer	28.0				% Passing			11/01/16 09:26	1
Hydrometer Reading 3 - Percent Finer	21.9				% Passing			11/01/16 09:26	1
Hydrometer Reading 4 - Percent Finer	18.8				% Passing			11/01/16 09:26	1
Hydrometer Reading 5 - Percent Finer	12.7				% Passing			11/01/16 09:26	1
Hydrometer Reading 6 - Percent Finer	8.7				% Passing			11/01/16 09:26	1
Hydrometer Reading 7 - Percent Finer	5.6				% Passing			11/01/16 09:26	1

Client Sample ID: PE1016_P1SCD-06-A-0613IN

Lab Sample ID: 200-35680-3

Date Collected: 10/10/16 16:46
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 82.2

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	13.7		0.43	0.10	mg/Kg	☼	10/13/16 13:50	10/14/16 12:09	1
Selenium	0.74		0.35	0.054	mg/Kg	☼	10/13/16 13:50	10/14/16 12:09	1
Zinc	66.3		1.7	0.54	mg/Kg	☼	10/13/16 13:50	10/14/16 12:09	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.064		0.041	0.015	mg/Kg	☼	10/17/16 10:05	10/17/16 14:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1350		1000	380	mg/Kg			10/19/16 13:26	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	82.2		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			11/01/16 09:28	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			11/01/16 09:28	1
Sand	13.2				%			11/01/16 09:28	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			11/01/16 09:28	1
Coarse Sand	0.5				%			11/01/16 09:28	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			11/01/16 09:28	1
Medium Sand	1.3				%			11/01/16 09:28	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			11/01/16 09:28	1
Fine Sand	11.4				%			11/01/16 09:28	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			11/01/16 09:28	1
Sieve Size #4 - Percent Finer	100.0				% Passing			11/01/16 09:28	1
Silt	50.6				%			11/01/16 09:28	1
Clay	36.2				%			11/01/16 09:28	1
Sieve Size #10 - Percent Finer	99.5				% Passing			11/01/16 09:28	1
Sieve Size #20 - Percent Finer	99.3				% Passing			11/01/16 09:28	1

Client Sample ID: PE1016_P1SCD-06-A-0613IN

Lab Sample ID: 200-35680-3

Date Collected: 10/10/16 16:46
Matrix: Sediment
Date Received: 10/12/16 10:30

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Sieve Size #40 - Percent Finer	98.2				% Passing			11/01/16 09:28	1
Sieve Size #60 - Percent Finer	96.0				% Passing			11/01/16 09:28	1
Sieve Size #80 - Percent Finer	94.2				% Passing			11/01/16 09:28	1
Sieve Size #100 - Percent Finer	92.9				% Passing			11/01/16 09:28	1
Sieve Size #200 - Percent Finer	87.8				% Passing			11/01/16 09:28	1
Sieve Size #230 - Percent Finer	86.8				% Passing			11/01/16 09:28	1
Hydrometer Reading 1 - Percent Finer	69.2				% Passing			11/01/16 09:28	1
Hydrometer Reading 2 - Percent Finer	62.3				% Passing			11/01/16 09:28	1
Hydrometer Reading 3 - Percent Finer	50.0				% Passing			11/01/16 09:28	1
Hydrometer Reading 4 - Percent Finer	44.5				% Passing			11/01/16 09:28	1
Hydrometer Reading 5 - Percent Finer	36.2				% Passing			11/01/16 09:28	1
Hydrometer Reading 6 - Percent Finer	24.3				% Passing			11/01/16 09:28	1
Hydrometer Reading 7 - Percent Finer	17.4				% Passing			11/01/16 09:28	1

Client Sample ID: PE1016_P1SCD-07-A-0008IN

Lab Sample ID: 200-35680-4

Date Collected: 10/10/16 16:10
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 44.8

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	502		0.93	0.22	mg/Kg	☼	10/13/16 13:50	10/14/16 12:15	1
Selenium	3.1		0.74	0.12	mg/Kg	☼	10/13/16 13:50	10/14/16 12:15	1
Zinc	220		3.7	1.2	mg/Kg	☼	10/13/16 13:50	10/14/16 12:15	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	2.5		0.082	0.030	mg/Kg	☼	10/17/16 10:05	10/17/16 14:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	43200		1000	380	mg/Kg			10/17/16 15:37	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	44.8		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	4.5				%			11/01/16 09:31	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			11/01/16 09:31	1
Sand	50.8				%			11/01/16 09:31	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			11/01/16 09:31	1
Coarse Sand	9.4				%			11/01/16 09:31	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			11/01/16 09:31	1
Medium Sand	13.1				%			11/01/16 09:31	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			11/01/16 09:31	1

Client Sample ID: PE1016_P1SCD-07-A-0008IN

Lab Sample ID: 200-35680-4

Date Collected: 10/10/16 16:10
Matrix: Sediment
Date Received: 10/12/16 10:30

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Fine Sand	28.3				%			11/01/16 09:31	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			11/01/16 09:31	1
Sieve Size #4 - Percent Finer	95.5				% Passing			11/01/16 09:31	1
Silt	34.0				%			11/01/16 09:31	1
Clay	10.7				%			11/01/16 09:31	1
Sieve Size #10 - Percent Finer	86.1				% Passing			11/01/16 09:31	1
Sieve Size #20 - Percent Finer	80.5				% Passing			11/01/16 09:31	1
Sieve Size #40 - Percent Finer	73.0				% Passing			11/01/16 09:31	1
Sieve Size #60 - Percent Finer	61.0				% Passing			11/01/16 09:31	1
Sieve Size #80 - Percent Finer	55.9				% Passing			11/01/16 09:31	1
Sieve Size #100 - Percent Finer	53.0				% Passing			11/01/16 09:31	1
Sieve Size #200 - Percent Finer	45.7				% Passing			11/01/16 09:31	1
Sieve Size #230 - Percent Finer	44.7				% Passing			11/01/16 09:31	1
Hydrometer Reading 1 - Percent Finer	31.1				% Passing			11/01/16 09:31	1
Hydrometer Reading 2 - Percent Finer	27.7				% Passing			11/01/16 09:31	1
Hydrometer Reading 3 - Percent Finer	20.9				% Passing			11/01/16 09:31	1
Hydrometer Reading 4 - Percent Finer	15.8				% Passing			11/01/16 09:31	1
Hydrometer Reading 5 - Percent Finer	10.7				% Passing			11/01/16 09:31	1
Hydrometer Reading 6 - Percent Finer	6.2				% Passing			11/01/16 09:31	1
Hydrometer Reading 7 - Percent Finer	4.5				% Passing			11/01/16 09:31	1

Client Sample ID: PE1016_P1SCD-07-B-0006IN

Lab Sample ID: 200-35680-5

Date Collected: 10/10/16 15:43
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 48.2

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	397		0.98	0.24	mg/Kg	☼	10/13/16 13:50	10/14/16 12:21	1
Selenium	3.6		0.78	0.12	mg/Kg	☼	10/13/16 13:50	10/14/16 12:21	1
Zinc	200		3.9	1.2	mg/Kg	☼	10/13/16 13:50	10/14/16 12:21	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	2.7		0.071	0.026	mg/Kg	☼	10/17/16 10:05	10/17/16 14:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	30300		1000	380	mg/Kg			10/17/16 15:44	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	48.2		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	5.9				%			11/01/16 09:32	1

Client Sample ID: PE1016_P1SCD-07-B-0006IN

Lab Sample ID: 200-35680-5

Date Collected: 10/10/16 15:43
Matrix: Sediment
Date Received: 10/12/16 10:30

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Sieve Size 2 inch - Percent Finer	100.0				% Passing			11/01/16 09:32	1
Sand	32.0				%			11/01/16 09:32	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			11/01/16 09:32	1
Coarse Sand	6.6				%			11/01/16 09:32	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			11/01/16 09:32	1
Medium Sand	10.9				%			11/01/16 09:32	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			11/01/16 09:32	1
Fine Sand	14.5				%			11/01/16 09:32	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			11/01/16 09:32	1
Sieve Size #4 - Percent Finer	94.1				% Passing			11/01/16 09:32	1
Silt	35.9				%			11/01/16 09:32	1
Clay	26.2				%			11/01/16 09:32	1
Sieve Size #10 - Percent Finer	87.5				% Passing			11/01/16 09:32	1
Sieve Size #20 - Percent Finer	80.6				% Passing			11/01/16 09:32	1
Sieve Size #40 - Percent Finer	76.6				% Passing			11/01/16 09:32	1
Sieve Size #60 - Percent Finer	71.2				% Passing			11/01/16 09:32	1
Sieve Size #80 - Percent Finer	68.4				% Passing			11/01/16 09:32	1
Sieve Size #100 - Percent Finer	66.7				% Passing			11/01/16 09:32	1
Sieve Size #200 - Percent Finer	62.6				% Passing			11/01/16 09:32	1
Sieve Size #230 - Percent Finer	62.1				% Passing			11/01/16 09:32	1
Hydrometer Reading 1 - Percent Finer	49.1				% Passing			11/01/16 09:32	1
Hydrometer Reading 2 - Percent Finer	46.2				% Passing			11/01/16 09:32	1
Hydrometer Reading 3 - Percent Finer	37.6				% Passing			11/01/16 09:32	1
Hydrometer Reading 4 - Percent Finer	30.5				% Passing			11/01/16 09:32	1
Hydrometer Reading 5 - Percent Finer	26.2				% Passing			11/01/16 09:32	1
Hydrometer Reading 6 - Percent Finer	18.1				% Passing			11/01/16 09:32	1
Hydrometer Reading 7 - Percent Finer	11.0				% Passing			11/01/16 09:32	1

Client Sample ID: PE1016_P1SCD-08-A-0006IN

Lab Sample ID: 200-35680-6

Date Collected: 10/10/16 15:10
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 38.8

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	781		1.1	0.27	mg/Kg	☼	10/13/16 13:50	10/14/16 12:27	1
Selenium	5.2		0.89	0.14	mg/Kg	☼	10/13/16 13:50	10/14/16 12:27	1
Zinc	294		4.4	1.4	mg/Kg	☼	10/13/16 13:50	10/14/16 12:27	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	4.3		0.094	0.034	mg/Kg	☼	10/17/16 10:05	10/17/16 14:42	1

Client Sample ID: PE1016_P1SCD-08-A-0006IN

Lab Sample ID: 200-35680-6

Date Collected: 10/10/16 15:10
Matrix: Sediment
Date Received: 10/12/16 10:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	53800		1000	380	mg/Kg			10/17/16 15:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	38.8		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	10.4				%			11/01/16 09:34	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			11/01/16 09:34	1
Sand	43.2				%			11/01/16 09:34	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			11/01/16 09:34	1
Coarse Sand	8.5				%			11/01/16 09:34	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			11/01/16 09:34	1
Medium Sand	11.9				%			11/01/16 09:34	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			11/01/16 09:34	1
Fine Sand	22.8				%			11/01/16 09:34	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			11/01/16 09:34	1
Sieve Size #4 - Percent Finer	89.6				% Passing			11/01/16 09:34	1
Silt	27.9				%			11/01/16 09:34	1
Clay	18.5				%			11/01/16 09:34	1
Sieve Size #10 - Percent Finer	81.1				% Passing			11/01/16 09:34	1
Sieve Size #20 - Percent Finer	75.7				% Passing			11/01/16 09:34	1
Sieve Size #40 - Percent Finer	69.2				% Passing			11/01/16 09:34	1
Sieve Size #60 - Percent Finer	57.7				% Passing			11/01/16 09:34	1
Sieve Size #80 - Percent Finer	53.5				% Passing			11/01/16 09:34	1
Sieve Size #100 - Percent Finer	51.5				% Passing			11/01/16 09:34	1
Sieve Size #200 - Percent Finer	47.0				% Passing			11/01/16 09:34	1
Sieve Size #230 - Percent Finer	46.4				% Passing			11/01/16 09:34	1
Hydrometer Reading 1 - Percent Finer	43.6				% Passing			11/01/16 09:34	1
Hydrometer Reading 2 - Percent Finer	40.0				% Passing			11/01/16 09:34	1
Hydrometer Reading 3 - Percent Finer	32.9				% Passing			11/01/16 09:34	1
Hydrometer Reading 4 - Percent Finer	22.1				% Passing			11/01/16 09:34	1
Hydrometer Reading 5 - Percent Finer	18.5				% Passing			11/01/16 09:34	1
Hydrometer Reading 6 - Percent Finer	11.9				% Passing			11/01/16 09:34	1
Hydrometer Reading 7 - Percent Finer	6.6				% Passing			11/01/16 09:34	1

Client Sample ID: PE1016_P1SCD-08-A-0006IN-D

Lab Sample ID: 200-35680-7

Date Collected: 10/10/16 15:11
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 41.0

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	600		1.1	0.26	mg/Kg	☼	10/17/16 10:03	10/18/16 13:59	1
Selenium	4.4		0.86	0.13	mg/Kg	☼	10/17/16 10:03	10/18/16 13:59	1

Client Sample ID: PE1016_P1SCD-08-A-0006IN-D

Date Collected: 10/10/16 15:11
Date Received: 10/12/16 10:30

Lab Sample ID: 200-35680-7

Matrix: Sediment
Percent Solids: 41.0

Method: 6020A - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	226		4.3	1.3	mg/Kg	☼	10/17/16 10:03	10/18/16 13:59	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	3.4		0.095	0.034	mg/Kg	☼	10/17/16 10:05	10/17/16 14:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	45800		1000	380	mg/Kg			10/17/16 15:57	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	41.0		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	10.7				%			11/01/16 09:39	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			11/01/16 09:39	1
Sand	35.5				%			11/01/16 09:39	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			11/01/16 09:39	1
Coarse Sand	4.2				%			11/01/16 09:39	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			11/01/16 09:39	1
Medium Sand	10.1				%			11/01/16 09:39	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			11/01/16 09:39	1
Fine Sand	21.2				%			11/01/16 09:39	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			11/01/16 09:39	1
Sieve Size #4 - Percent Finer	89.3				% Passing			11/01/16 09:39	1
Silt	40.3				%			11/01/16 09:39	1
Clay	13.5				%			11/01/16 09:39	1
Sieve Size #10 - Percent Finer	85.1				% Passing			11/01/16 09:39	1
Sieve Size #20 - Percent Finer	80.9				% Passing			11/01/16 09:39	1
Sieve Size #40 - Percent Finer	75.0				% Passing			11/01/16 09:39	1
Sieve Size #60 - Percent Finer	64.7				% Passing			11/01/16 09:39	1
Sieve Size #80 - Percent Finer	60.8				% Passing			11/01/16 09:39	1
Sieve Size #100 - Percent Finer	58.9				% Passing			11/01/16 09:39	1
Sieve Size #200 - Percent Finer	54.4				% Passing			11/01/16 09:39	1
Sieve Size #230 - Percent Finer	53.8				% Passing			11/01/16 09:39	1
Hydrometer Reading 1 - Percent Finer	35.1				% Passing			11/01/16 09:39	1
Hydrometer Reading 2 - Percent Finer	32.2				% Passing			11/01/16 09:39	1
Hydrometer Reading 3 - Percent Finer	26.4				% Passing			11/01/16 09:39	1
Hydrometer Reading 4 - Percent Finer	20.7				% Passing			11/01/16 09:39	1
Hydrometer Reading 5 - Percent Finer	13.5				% Passing			11/01/16 09:39	1
Hydrometer Reading 6 - Percent Finer	8.2				% Passing			11/01/16 09:39	1
Hydrometer Reading 7 - Percent Finer	5.3				% Passing			11/01/16 09:39	1

Client Sample ID: PE1016_P1SCD-09-A-0006IN

Date Collected: 10/10/16 14:20
Date Received: 10/12/16 10:30

Lab Sample ID: 200-35680-8

Matrix: Sediment
Percent Solids: 34.2

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	899		1.2	0.30	mg/Kg	☼	10/24/16 14:26	10/25/16 14:25	1
Selenium	6.0		0.99	0.16	mg/Kg	☼	10/24/16 14:26	10/25/16 14:25	1
Zinc	289		5.0	1.5	mg/Kg	☼	10/24/16 14:26	10/25/16 14:25	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	5.1	F1	0.11	0.039	mg/Kg	☼	10/25/16 11:41	10/26/16 10:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	35600		1000	380	mg/Kg			10/17/16 16:03	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	34.2		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	5.0				%			10/25/16 09:49	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/25/16 09:49	1
Sand	24.0				%			10/25/16 09:49	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/25/16 09:49	1
Coarse Sand	2.3				%			10/25/16 09:49	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/25/16 09:49	1
Medium Sand	9.4				%			10/25/16 09:49	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/25/16 09:49	1
Fine Sand	12.3				%			10/25/16 09:49	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/25/16 09:49	1
Sieve Size #4 - Percent Finer	95.0				% Passing			10/25/16 09:49	1
Silt	52.5				%			10/25/16 09:49	1
Clay	18.5				%			10/25/16 09:49	1
Sieve Size #10 - Percent Finer	92.7				% Passing			10/25/16 09:49	1
Sieve Size #20 - Percent Finer	84.9				% Passing			10/25/16 09:49	1
Sieve Size #40 - Percent Finer	83.3				% Passing			10/25/16 09:49	1
Sieve Size #60 - Percent Finer	80.7				% Passing			10/25/16 09:49	1
Sieve Size #80 - Percent Finer	78.3				% Passing			10/25/16 09:49	1
Sieve Size #100 - Percent Finer	76.5				% Passing			10/25/16 09:49	1
Sieve Size #200 - Percent Finer	71.6				% Passing			10/25/16 09:49	1
Sieve Size #230 - Percent Finer	71.0				% Passing			10/25/16 09:49	1
Hydrometer Reading 1 - Percent Finer	49.9				% Passing			10/25/16 09:49	1
Hydrometer Reading 2 - Percent Finer	43.2				% Passing			10/25/16 09:49	1
Hydrometer Reading 3 - Percent Finer	34.2				% Passing			10/25/16 09:49	1
Hydrometer Reading 4 - Percent Finer	27.5				% Passing			10/25/16 09:49	1
Hydrometer Reading 5 - Percent Finer	18.5				% Passing			10/25/16 09:49	1
Hydrometer Reading 6 - Percent Finer	9.5				% Passing			10/25/16 09:49	1

Client Sample ID: PE1016_P1SCD-09-A-0006IN

Lab Sample ID: 200-35680-8

Date Collected: 10/10/16 14:20
Matrix: Sediment
Date Received: 10/12/16 10:30

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 7 - Percent Finer	5.1				% Passing			10/25/16 09:49	1

Client Sample ID: PE1016_P1SCD-10-A-0005IN

Lab Sample ID: 200-35680-9

Date Collected: 10/10/16 17:50
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 26.5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	619		1.6	0.38	mg/Kg	☼	10/24/16 14:26	10/25/16 14:54	1
Selenium	4.9		1.3	0.20	mg/Kg	☼	10/24/16 14:26	10/25/16 14:54	1
Zinc	310		6.3	1.9	mg/Kg	☼	10/24/16 14:26	10/25/16 14:54	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	4.4		0.14	0.052	mg/Kg	☼	10/25/16 11:41	10/26/16 10:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	69000		1000	380	mg/Kg			10/17/16 16:10	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	26.5		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	5.3				%			10/25/16 09:52	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/25/16 09:52	1
Sand	37.9				%			10/25/16 09:52	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/25/16 09:52	1
Coarse Sand	5.0				%			10/25/16 09:52	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/25/16 09:52	1
Medium Sand	19.7				%			10/25/16 09:52	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/25/16 09:52	1
Fine Sand	13.2				%			10/25/16 09:52	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/25/16 09:52	1
Sieve Size #4 - Percent Finer	94.7				% Passing			10/25/16 09:52	1
Silt	48.8				%			10/25/16 09:52	1
Clay	8.0				%			10/25/16 09:52	1
Sieve Size #10 - Percent Finer	89.7				% Passing			10/25/16 09:52	1
Sieve Size #20 - Percent Finer	74.9				% Passing			10/25/16 09:52	1
Sieve Size #40 - Percent Finer	70.0				% Passing			10/25/16 09:52	1
Sieve Size #60 - Percent Finer	65.7				% Passing			10/25/16 09:52	1
Sieve Size #80 - Percent Finer	63.2				% Passing			10/25/16 09:52	1
Sieve Size #100 - Percent Finer	61.5				% Passing			10/25/16 09:52	1
Sieve Size #200 - Percent Finer	57.3				% Passing			10/25/16 09:52	1
Sieve Size #230 - Percent Finer	56.8				% Passing			10/25/16 09:52	1
Hydrometer Reading 1 - Percent Finer	37.5				% Passing			10/25/16 09:52	1

Client Sample ID: PE1016_P1SCD-10-A-0005IN

Lab Sample ID: 200-35680-9

Date Collected: 10/10/16 17:50
Matrix: Sediment
Date Received: 10/12/16 10:30

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 2 - Percent Finer	32.5				% Passing			10/25/16 09:52	1
Hydrometer Reading 3 - Percent Finer	22.7				% Passing			10/25/16 09:52	1
Hydrometer Reading 4 - Percent Finer	12.9				% Passing			10/25/16 09:52	1
Hydrometer Reading 5 - Percent Finer	8.0				% Passing			10/25/16 09:52	1
Hydrometer Reading 6 - Percent Finer	5.5				% Passing			10/25/16 09:52	1
Hydrometer Reading 7 - Percent Finer	0.6				% Passing			10/25/16 09:52	1

Client Sample ID: PE1016_P1SCD-10-B-0006IN

Lab Sample ID: 200-35680-10

Date Collected: 10/10/16 17:55
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 27.8

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	515		1.6	0.39	mg/Kg	☼	10/24/16 14:26	10/25/16 14:59	1
Selenium	3.7		1.3	0.20	mg/Kg	☼	10/24/16 14:26	10/25/16 14:59	1
Zinc	298		6.4	2.0	mg/Kg	☼	10/24/16 14:26	10/25/16 14:59	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	3.8		0.13	0.046	mg/Kg	☼	10/25/16 11:41	10/26/16 10:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	68800		1000	380	mg/Kg			10/17/16 16:17	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	27.8		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	12.1				%			10/25/16 09:54	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/25/16 09:54	1
Sand	31.3				%			10/25/16 09:54	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/25/16 09:54	1
Coarse Sand	3.0				%			10/25/16 09:54	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/25/16 09:54	1
Medium Sand	15.8				%			10/25/16 09:54	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/25/16 09:54	1
Fine Sand	12.5				%			10/25/16 09:54	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/25/16 09:54	1
Sieve Size #4 - Percent Finer	87.9				% Passing			10/25/16 09:54	1
Silt	49.1				%			10/25/16 09:54	1
Clay	7.5				%			10/25/16 09:54	1
Sieve Size #10 - Percent Finer	84.9				% Passing			10/25/16 09:54	1
Sieve Size #20 - Percent Finer	72.3				% Passing			10/25/16 09:54	1

Client Sample ID: PE1016_P1SCD-10-B-0006IN

Lab Sample ID: 200-35680-10

Date Collected: 10/10/16 17:55
Matrix: Sediment
Date Received: 10/12/16 10:30

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Sieve Size #40 - Percent Finer	69.1				% Passing			10/25/16 09:54	1
Sieve Size #60 - Percent Finer	65.7				% Passing			10/25/16 09:54	1
Sieve Size #80 - Percent Finer	63.4				% Passing			10/25/16 09:54	1
Sieve Size #100 - Percent Finer	61.8				% Passing			10/25/16 09:54	1
Sieve Size #200 - Percent Finer	57.2				% Passing			10/25/16 09:54	1
Sieve Size #230 - Percent Finer	56.6				% Passing			10/25/16 09:54	1
Hydrometer Reading 1 - Percent Finer	37.6				% Passing			10/25/16 09:54	1
Hydrometer Reading 2 - Percent Finer	30.7				% Passing			10/25/16 09:54	1
Hydrometer Reading 3 - Percent Finer	21.4				% Passing			10/25/16 09:54	1
Hydrometer Reading 4 - Percent Finer	12.1				% Passing			10/25/16 09:54	1
Hydrometer Reading 5 - Percent Finer	7.5				% Passing			10/25/16 09:54	1
Hydrometer Reading 6 - Percent Finer	5.2				% Passing			10/25/16 09:54	1
Hydrometer Reading 7 - Percent Finer	0.6				% Passing			10/25/16 09:54	1

Client Sample ID: PE1016_P1SCD-09-B-0003IN

Lab Sample ID: 200-35680-11

Date Collected: 10/10/16 14:40
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 80.7

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	156		0.48	0.11	mg/Kg	☼	10/24/16 14:26	10/25/16 15:05	1
Selenium	1.1		0.38	0.060	mg/Kg	☼	10/24/16 14:26	10/25/16 15:05	1
Zinc	82.8		1.9	0.59	mg/Kg	☼	10/24/16 14:26	10/25/16 15:05	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	1.5		0.045	0.017	mg/Kg	☼	10/25/16 11:41	10/26/16 10:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	58700		1000	380	mg/Kg			10/17/16 16:23	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	80.7		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	5.9				%			10/25/16 09:56	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/25/16 09:56	1
Sand	27.3				%			10/25/16 09:56	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/25/16 09:56	1
Coarse Sand	4.3				%			10/25/16 09:56	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/25/16 09:56	1
Medium Sand	11.0				%			10/25/16 09:56	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/25/16 09:56	1

Client Sample ID: PE1016_P1SCD-09-B-0003IN

Lab Sample ID: 200-35680-11
Date Collected: 10/10/16 14:40
Matrix: Sediment
Date Received: 10/12/16 10:30

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Fine Sand	12.0				%			10/25/16 09:56	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/25/16 09:56	1
Sieve Size #4 - Percent Finer	94.1				% Passing			10/25/16 09:56	1
Silt	49.6				%			10/25/16 09:56	1
Clay	17.2				%			10/25/16 09:56	1
Sieve Size #10 - Percent Finer	89.8				% Passing			10/25/16 09:56	1
Sieve Size #20 - Percent Finer	82.0				% Passing			10/25/16 09:56	1
Sieve Size #40 - Percent Finer	78.8				% Passing			10/25/16 09:56	1
Sieve Size #60 - Percent Finer	75.0				% Passing			10/25/16 09:56	1
Sieve Size #80 - Percent Finer	72.6				% Passing			10/25/16 09:56	1
Sieve Size #100 - Percent Finer	71.2				% Passing			10/25/16 09:56	1
Sieve Size #200 - Percent Finer	67.4				% Passing			10/25/16 09:56	1
Sieve Size #230 - Percent Finer	66.8				% Passing			10/25/16 09:56	1
Hydrometer Reading 1 - Percent Finer	50.8				% Passing			10/25/16 09:56	1
Hydrometer Reading 2 - Percent Finer	45.2				% Passing			10/25/16 09:56	1
Hydrometer Reading 3 - Percent Finer	30.3				% Passing			10/25/16 09:56	1
Hydrometer Reading 4 - Percent Finer	21.0				% Passing			10/25/16 09:56	1
Hydrometer Reading 5 - Percent Finer	17.2				% Passing			10/25/16 09:56	1
Hydrometer Reading 6 - Percent Finer	11.6				% Passing			10/25/16 09:56	1
Hydrometer Reading 7 - Percent Finer	6.1				% Passing			10/25/16 09:56	1

Client Sample ID: PE1016_P1SCD-09-B-0309IN

Lab Sample ID: 200-35680-12
Date Collected: 10/10/16 14:41
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 38.1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	55.3		1.2	0.30	mg/Kg	☼	10/24/16 14:26	10/25/16 15:28	1
Selenium	2.5		0.99	0.16	mg/Kg	☼	10/24/16 14:26	10/25/16 15:28	1
Zinc	147		5.0	1.5	mg/Kg	☼	10/24/16 14:26	10/25/16 15:28	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.039	J	0.091	0.033	mg/Kg	☼	10/25/16 11:41	10/26/16 10:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1290		1000	380	mg/Kg			10/17/16 16:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	38.1		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			10/25/16 09:58	1

Client Sample ID: PE1016_P1SCD-09-B-0309IN

Lab Sample ID: 200-35680-12

Date Collected: 10/10/16 14:41
Matrix: Sediment
Date Received: 10/12/16 10:30

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/25/16 09:58	1
Sand	2.7				%			10/25/16 09:58	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/25/16 09:58	1
Coarse Sand	1.3				%			10/25/16 09:58	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/25/16 09:58	1
Medium Sand	0.5				%			10/25/16 09:58	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/25/16 09:58	1
Fine Sand	0.9				%			10/25/16 09:58	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/25/16 09:58	1
Sieve Size #4 - Percent Finer	100.0				% Passing			10/25/16 09:58	1
Silt	53.3				%			10/25/16 09:58	1
Clay	44.0				%			10/25/16 09:58	1
Sieve Size #10 - Percent Finer	98.7				% Passing			10/25/16 09:58	1
Sieve Size #20 - Percent Finer	98.4				% Passing			10/25/16 09:58	1
Sieve Size #40 - Percent Finer	98.2				% Passing			10/25/16 09:58	1
Sieve Size #60 - Percent Finer	97.9				% Passing			10/25/16 09:58	1
Sieve Size #80 - Percent Finer	97.8				% Passing			10/25/16 09:58	1
Sieve Size #100 - Percent Finer	97.7				% Passing			10/25/16 09:58	1
Sieve Size #200 - Percent Finer	97.4				% Passing			10/25/16 09:58	1
Sieve Size #230 - Percent Finer	97.3				% Passing			10/25/16 09:58	1
Hydrometer Reading 1 - Percent Finer	74.1				% Passing			10/25/16 09:58	1
Hydrometer Reading 2 - Percent Finer	71.1				% Passing			10/25/16 09:58	1
Hydrometer Reading 3 - Percent Finer	62.0				% Passing			10/25/16 09:58	1
Hydrometer Reading 4 - Percent Finer	53.0				% Passing			10/25/16 09:58	1
Hydrometer Reading 5 - Percent Finer	44.0				% Passing			10/25/16 09:58	1
Hydrometer Reading 6 - Percent Finer	28.9				% Passing			10/25/16 09:58	1
Hydrometer Reading 7 - Percent Finer	16.9				% Passing			10/25/16 09:58	1

Client Sample ID: PE1016_P1SCD-BLK-1-101016

Lab Sample ID: 200-35680-13

Date Collected: 10/10/16 20:20
Matrix: Water
Date Received: 10/12/16 10:30

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	5.0	U	5.0	2.2	ug/L		10/17/16 12:26	10/18/16 16:51	1
Selenium	4.0	U	4.0	0.97	ug/L		10/17/16 12:26	10/19/16 11:58	1
Zinc	20.0	U	20.0	2.6	ug/L		10/17/16 12:26	10/18/16 16:51	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.044	ug/L		10/17/16 12:52	10/17/16 16:29	1

Client Sample ID: PE1016_P1SCD-08-B-0006IN

Date Collected: 10/10/16 15:15
Date Received: 10/12/16 10:30

Lab Sample ID: 200-35680-14

Matrix: Sediment
Percent Solids: 37.1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	589		1.3	0.31	mg/Kg	☼	10/17/16 10:03	10/18/16 14:05	1
Selenium	4.1		1.0	0.16	mg/Kg	☼	10/17/16 10:03	10/18/16 14:05	1
Zinc	242		5.1	1.6	mg/Kg	☼	10/17/16 10:03	10/18/16 14:05	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	4.5	F1	0.10	0.037	mg/Kg	☼	10/17/16 10:05	10/17/16 14:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	46900		1000	380	mg/Kg			10/17/16 16:37	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	37.1		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	7.9				%			10/23/16 18:39	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:39	1
Sand	31.8				%			10/23/16 18:39	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:39	1
Coarse Sand	4.4				%			10/23/16 18:39	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:39	1
Medium Sand	9.9				%			10/23/16 18:39	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:39	1
Fine Sand	17.5				%			10/23/16 18:39	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:39	1
Sieve Size #4 - Percent Finer	92.1				% Passing			10/23/16 18:39	1
Silt	57.1				%			10/23/16 18:39	1
Clay	3.2				%			10/23/16 18:39	1
Sieve Size #10 - Percent Finer	87.7				% Passing			10/23/16 18:39	1
Sieve Size #20 - Percent Finer	80.6				% Passing			10/23/16 18:39	1
Sieve Size #40 - Percent Finer	77.8				% Passing			10/23/16 18:39	1
Sieve Size #60 - Percent Finer	72.2				% Passing			10/23/16 18:39	1
Sieve Size #80 - Percent Finer	68.4				% Passing			10/23/16 18:39	1
Sieve Size #100 - Percent Finer	66.1				% Passing			10/23/16 18:39	1
Sieve Size #200 - Percent Finer	61.0				% Passing			10/23/16 18:39	1
Sieve Size #230 - Percent Finer	60.3				% Passing			10/23/16 18:39	1
Hydrometer Reading 1 - Percent Finer	28.6				% Passing			10/23/16 18:39	1
Hydrometer Reading 2 - Percent Finer	23.5				% Passing			10/23/16 18:39	1
Hydrometer Reading 3 - Percent Finer	18.4				% Passing			10/23/16 18:39	1
Hydrometer Reading 4 - Percent Finer	10.8				% Passing			10/23/16 18:39	1
Hydrometer Reading 5 - Percent Finer	3.2				% Passing			10/23/16 18:39	1
Hydrometer Reading 6 - Percent Finer	0.6				% Passing			10/23/16 18:39	1

Client Sample ID: PE1016_P1SCD-08-B-0006IN

Date Collected: 10/10/16 15:15
Date Received: 10/12/16 10:30

Lab Sample ID: 200-35680-14

Matrix: Sediment

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 7 - Percent Finer	0.6				% Passing			10/23/16 18:39	1

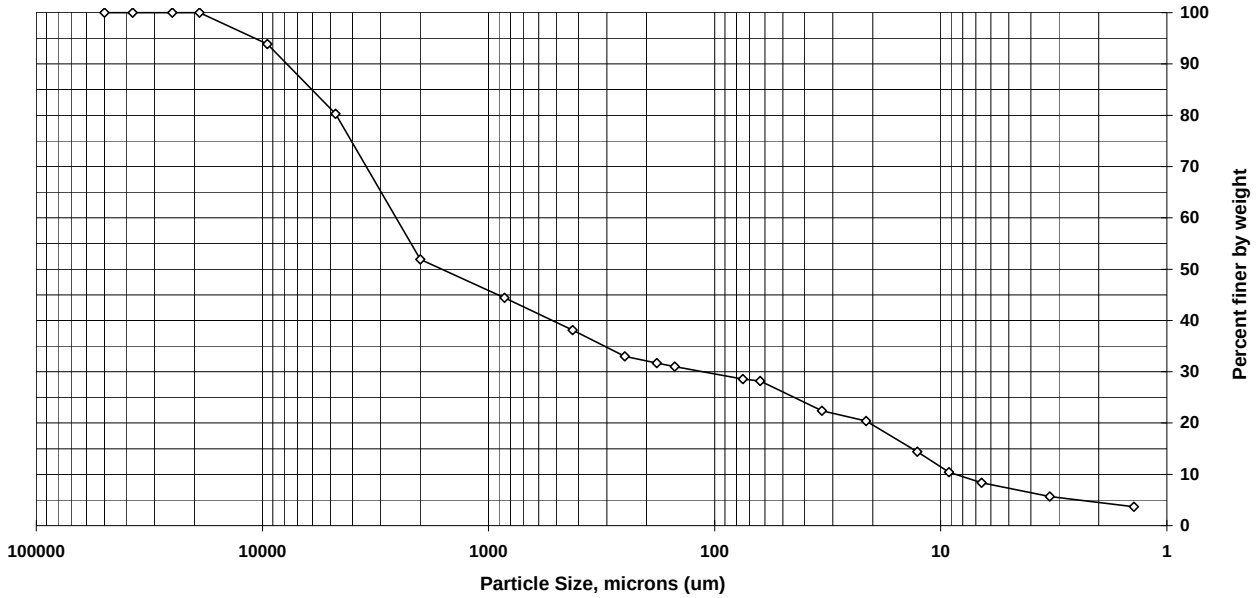
Particle Size of Soils by ASTM D422

				Date Received:	10/12/2016
Sample ID:	PE1016_P1SCD-06-A-00	**Percent Solids:**	48.5%	**Start Date:**	11/1/2016
Lab ID:	200-35680-B-1	**Specific Gravity:**	2.650	**End Date:**	11/8/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	93.9	6.1
#4	4750	80.3	13.6
#10	2000	51.9	28.4
#20	850	44.4	7.5
#40	425	38.1	6.3
#60	250	33.0	5.1
#80	180	31.7	1.3
#100	150	31.0	0.7
#200	75	28.6	2.4
#230	63	28.2	0.4
Hyd1	33.5	22.4	5.8
Hyd2	21.4	20.4	2.0
Hyd3	12.7	14.4	6.0
Hyd4	9.2	10.4	4.0
Hyd5	6.6	8.4	2.0
Hyd6	3.3	5.7	2.7
Hyd7	1.4	3.7	2.0

Soil Classification	Percent of sample
Gravel	19.7
Sand	52.1
Coarse Sand	28.4
Medium Sand	13.8
Fine Sand	9.9
Silt	19.8
Clay	8.4

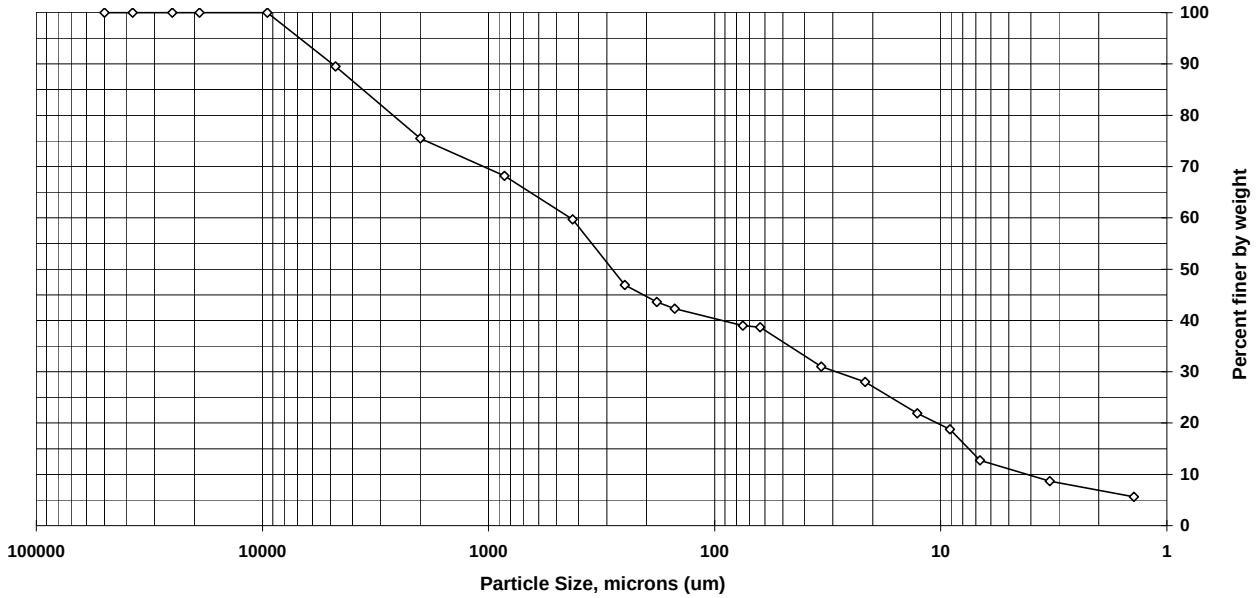
Particle Size of Soils by ASTM D422

				Date Received:	10/12/2016
Sample ID:	PE1016_P1SCD-06-B-00	**Percent Solids:**	38.4%	**Start Date:**	11/1/2016
Lab ID:	200-35680-B-2	**Specific Gravity:**	2.650	**End Date:**	11/8/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	89.5	10.5
#10	2000	75.5	14.0
#20	850	68.2	7.3
#40	425	59.7	8.5
#60	250	46.9	12.8
#80	180	43.6	3.3
#100	150	42.3	1.3
#200	75	39.0	3.3
#230	63	38.7	0.3
Hyd1	33.8	31.0	7.7
Hyd2	21.6	28.0	3.0
Hyd3	12.7	21.9	6.1
Hyd4	9.1	18.8	3.1
Hyd5	6.7	12.7	6.1
Hyd6	3.3	8.7	4.1
Hyd7	1.4	5.6	3.1

Soil Classification	Percent of sample
Gravel	10.5
Sand	50.8
Coarse Sand	14.0
Medium Sand	15.8
Fine Sand	21.0
Silt	26.0
Clay	12.7

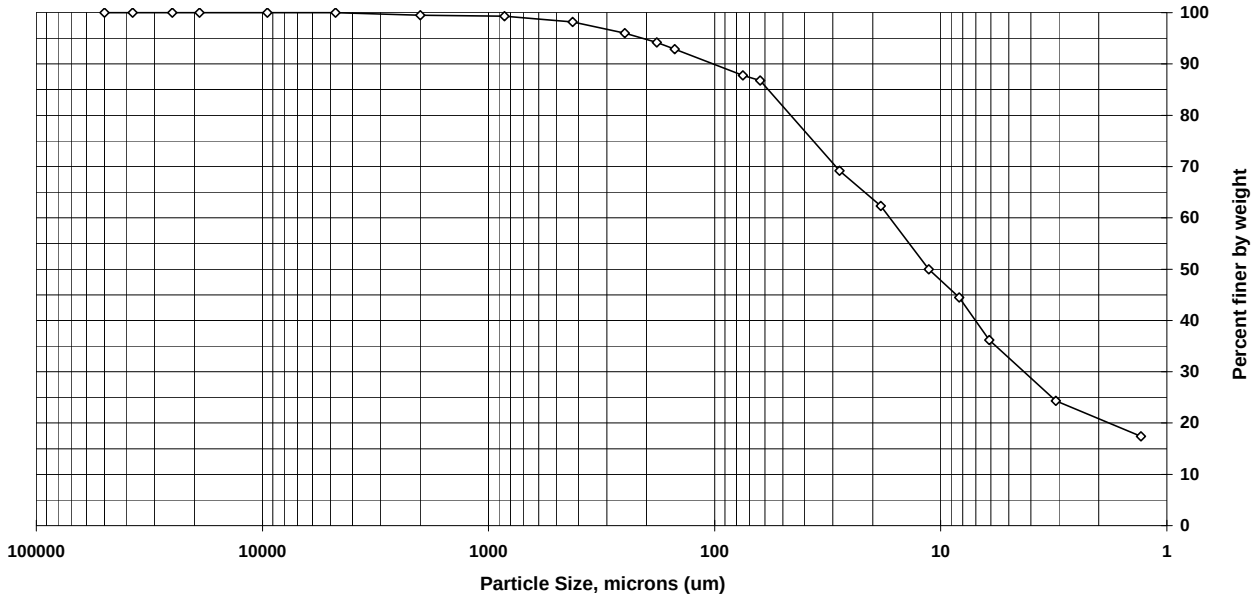
Particle Size of Soils by ASTM D422

				Date Received:	10/12/2016
Sample ID:	PE1016_P1SCD-06-A-06	**Percent Solids:**	82.4%	**Start Date:**	11/1/2016
Lab ID:	200-35680-B-3	**Specific Gravity:**	2.650	**End Date:**	11/8/2016

Shape (> #10): subangular

Non-soil material: na

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.5	0.5
#20	850	99.3	0.2
#40	425	98.2	1.1
#60	250	96.0	2.2
#80	180	94.2	1.8
#100	150	92.9	1.3
#200	75	87.8	5.1
#230	63	86.8	1.0
Hyd1	28	69.2	17.6
Hyd2	18.4	62.3	6.9
Hyd3	11.3	50.0	12.3
Hyd4	8.3	44.5	5.5
Hyd5	6.1	36.2	8.3
Hyd6	3.1	24.3	11.9
Hyd7	1.3	17.4	6.9

Soil Classification	Percent of sample
Gravel	0.0
Sand	13.2
Coarse Sand	0.5
Medium Sand	1.3
Fine Sand	11.4
Silt	50.6
Clay	36.2

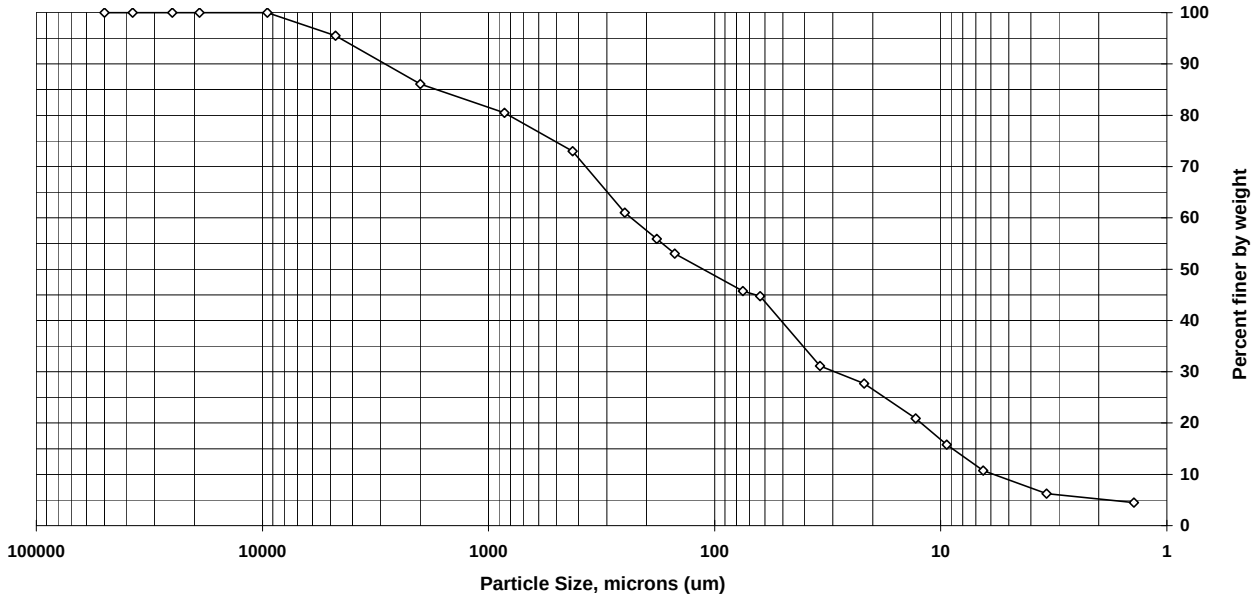
Particle Size of Soils by ASTM D422

				Date Received:	10/12/2016
Sample ID:	PE1016_P1SCD-07-A-00	**Percent Solids:**	42.7%	**Start Date:**	11/1/2016
Lab ID:	200-35680-B-4	**Specific Gravity:**	2.650	**End Date:**	11/8/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	95.5	4.5
#10	2000	86.1	9.4
#20	850	80.5	5.6
#40	425	73.0	7.5
#60	250	61.0	12.0
#80	180	55.9	5.1
#100	150	53.0	2.9
#200	75	45.7	7.3
#230	63	44.7	1.0
Hyd1	34.2	31.1	13.6
Hyd2	21.8	27.7	3.4
Hyd3	12.9	20.9	6.8
Hyd4	9.4	15.8	5.1
Hyd5	6.5	10.7	5.1
Hyd6	3.4	6.2	4.5
Hyd7	1.4	4.5	1.7

Soil Classification	Percent of sample
Gravel	4.5
Sand	50.8
Coarse Sand	9.4
Medium Sand	13.1
Fine Sand	28.3
Silt	34.0
Clay	10.7

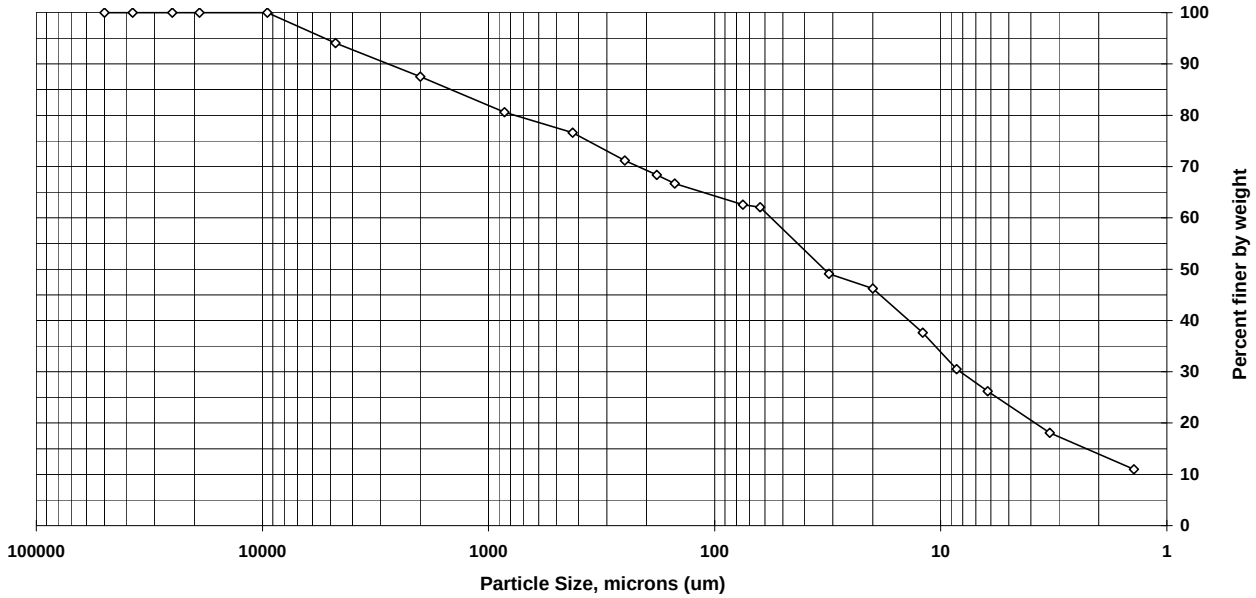
Particle Size of Soils by ASTM D422

				Date Received:	10/12/2016
Sample ID:	PE1016_P1SCD-07-B-00	**Percent Solids:**	53.6%	**Start Date:**	11/1/2016
Lab ID:	200-35680-B-5	**Specific Gravity:**	2.650	**End Date:**	11/8/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	94.1	5.9
#10	2000	87.5	6.6
#20	850	80.6	6.9
#40	425	76.6	4.0
#60	250	71.2	5.4
#80	180	68.4	2.8
#100	150	66.7	1.7
#200	75	62.6	4.1
#230	63	62.1	0.5
Hyd1	31.2	49.1	13.0
Hyd2	20	46.2	2.9
Hyd3	12	37.6	8.6
Hyd4	8.5	30.5	7.1
Hyd5	6.2	26.2	4.3
Hyd6	3.3	18.1	8.1
Hyd7	1.4	11.0	7.1

Soil Classification	Percent of sample
Gravel	5.9
Sand	32.0
Coarse Sand	6.6
Medium Sand	10.9
Fine Sand	14.5
Silt	35.9
Clay	26.2

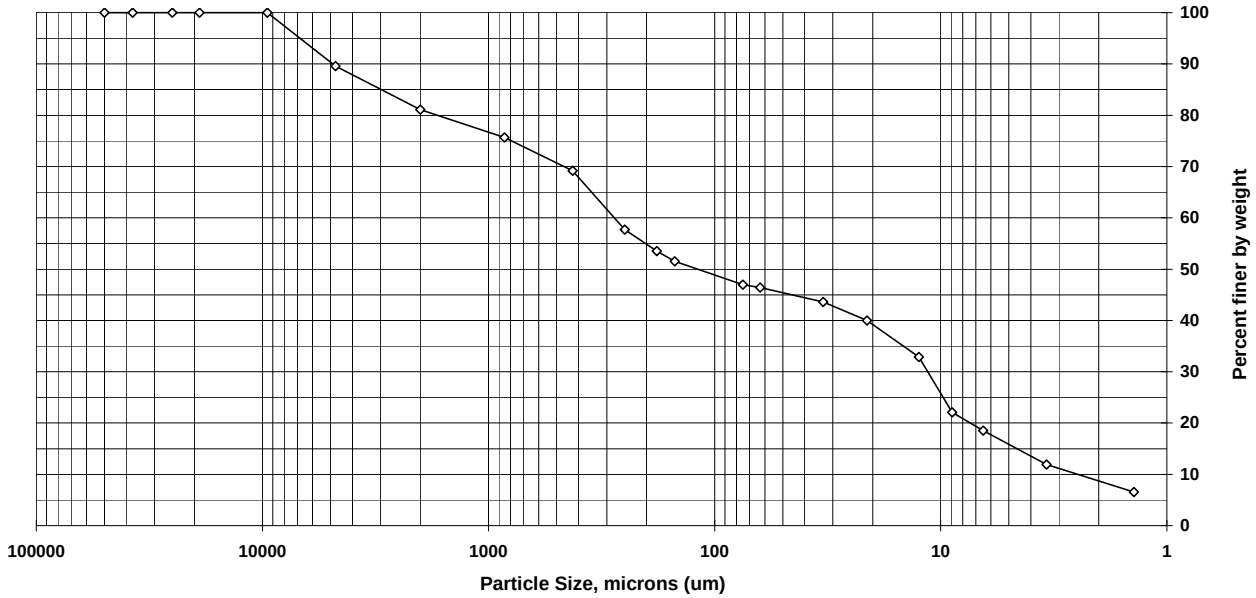
Particle Size of Soils by ASTM D422

				Date Received:	10/12/2016
Sample ID:	PE1016_P1SCD-08-A-00	**Percent Solids:**	36.4%	**Start Date:**	11/1/2016
Lab ID:	200-35680-B-6	**Specific Gravity:**	2.650	**End Date:**	11/8/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	89.6	10.4
#10	2000	81.1	8.5
#20	850	75.7	5.4
#40	425	69.2	6.5
#60	250	57.7	11.5
#80	180	53.5	4.2
#100	150	51.5	2.0
#200	75	47.0	4.5
#230	63	46.4	0.6
Hyd1	33.1	43.6	2.8
Hyd2	21.2	40.0	3.6
Hyd3	12.5	32.9	7.1
Hyd4	8.9	22.1	10.8
Hyd5	6.5	18.5	3.6
Hyd6	3.4	11.9	6.6
Hyd7	1.4	6.6	5.3

Soil Classification	Percent of sample
Gravel	10.4
Sand	43.2
Coarse Sand	8.5
Medium Sand	11.9
Fine Sand	22.8
Silt	27.9
Clay	18.5

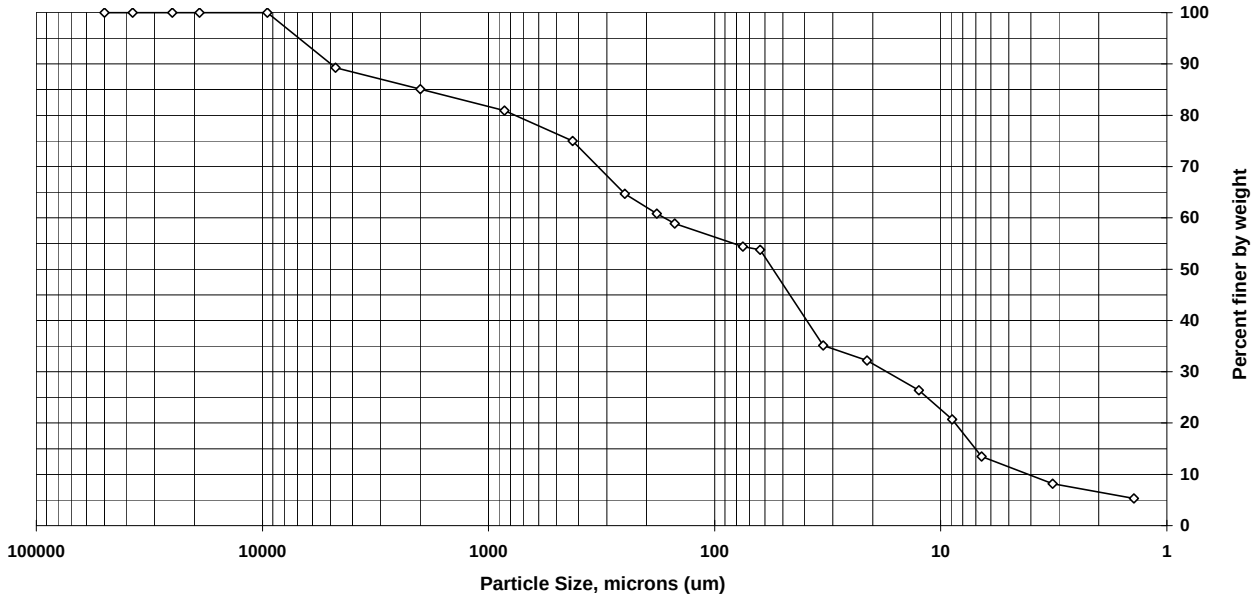
Particle Size of Soils by ASTM D422

				Date Received:	10/12/2016
Sample ID:	PE1016_P1SCD-08-A-00	**Percent Solids:**	41.6%	**Start Date:**	11/1/2016
Lab ID:	200-35680-B-7	**Specific Gravity:**	2.650	**End Date:**	11/8/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	89.3	10.7
#10	2000	85.1	4.2
#20	850	80.9	4.2
#40	425	75.0	5.9
#60	250	64.7	10.3
#80	180	60.8	3.9
#100	150	58.9	1.9
#200	75	54.4	4.5
#230	63	53.8	0.6
Hyd1	33.1	35.1	18.7
Hyd2	21.2	32.2	2.9
Hyd3	12.5	26.4	5.8
Hyd4	8.9	20.7	5.7
Hyd5	6.6	13.5	7.2
Hyd6	3.2	8.2	5.3
Hyd7	1.4	5.3	2.9

Soil Classification	Percent of sample
Gravel	10.7
Sand	35.5
Coarse Sand	4.2
Medium Sand	10.1
Fine Sand	21.2
Silt	40.3
Clay	13.5

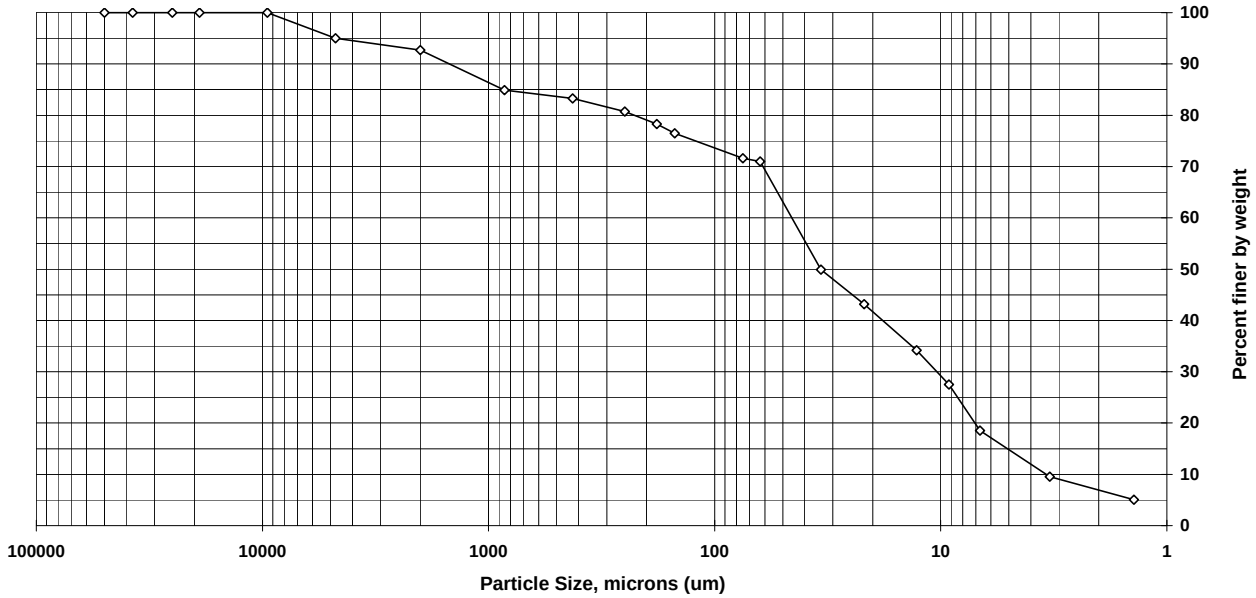
Particle Size of Soils by ASTM D422

				Date Received:	10/12/2016
Sample ID:	PE1016_P1SCD-09-A-00	**Percent Solids:**	35.5%	**Start Date:**	10/25/2016
Lab ID:	200-35680-B-8	**Specific Gravity:**	2.650	**End Date:**	10/31/2016

Shape (> #10): na

Non-soil material: plant

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	95.0	5.0
#10	2000	92.7	2.3
#20	850	84.9	7.8
#40	425	83.3	1.6
#60	250	80.7	2.6
#80	180	78.3	2.4
#100	150	76.5	1.8
#200	75	71.6	4.9
#230	63	71.0	0.6
Hyd1	33.9	49.9	21.1
Hyd2	21.8	43.2	6.7
Hyd3	12.8	34.2	9.0
Hyd4	9.2	27.5	6.7
Hyd5	6.7	18.5	9.0
Hyd6	3.3	9.5	9.0
Hyd7	1.4	5.1	4.5

Soil Classification	Percent of sample
Gravel	5.0
Sand	24.0
Coarse Sand	2.3
Medium Sand	9.4
Fine Sand	12.3
Silt	52.5
Clay	18.5

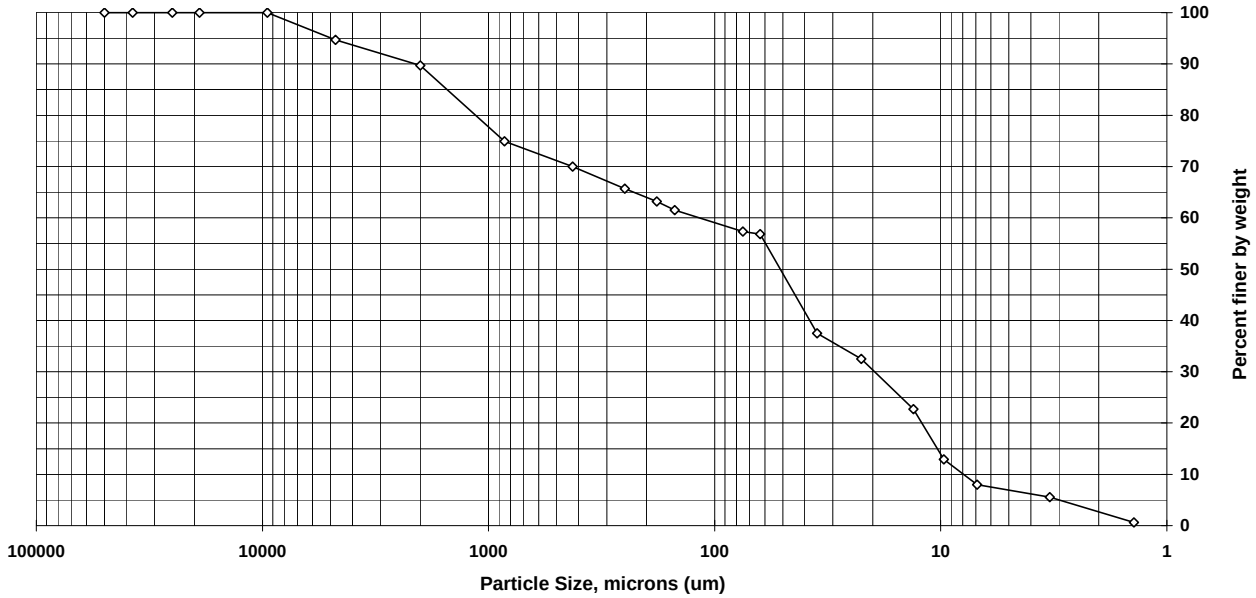
Particle Size of Soils by ASTM D422

Sample ID:	PE1016_P1SCD-10-A-00	**Percent Solids:**	28.5%	**Date Received:**	10/12/2016
Lab ID:	200-35680-B-9	**Specific Gravity:**	2.650	**Start Date:**	10/25/2016
				End Date:	10/31/2016

Shape (> #10): na

Non-soil material: plant

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	94.7	5.3
#10	2000	89.7	5.0
#20	850	74.9	14.8
#40	425	70.0	4.9
#60	250	65.7	4.3
#80	180	63.2	2.5
#100	150	61.5	1.7
#200	75	57.3	4.2
#230	63	56.8	0.5
Hyd1	35.2	37.5	19.3
Hyd2	22.5	32.5	5.0
Hyd3	13.2	22.7	9.8
Hyd4	9.7	12.9	9.8
Hyd5	6.9	8.0	4.9
Hyd6	3.3	5.5	2.5
Hyd7	1.4	0.6	4.9

Soil Classification	Percent of sample
Gravel	5.3
Sand	37.9
Coarse Sand	5.0
Medium Sand	19.7
Fine Sand	13.2
Silt	48.8
Clay	8.0

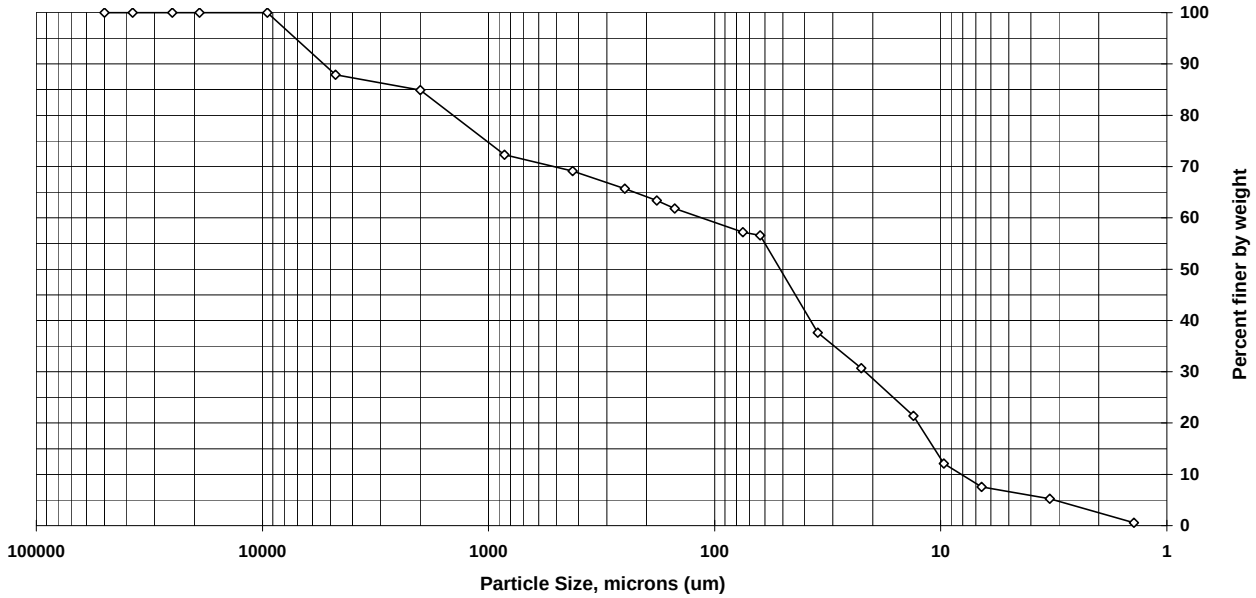
Particle Size of Soils by ASTM D422

				Date Received:	10/12/2016
Sample ID:	PE1016_P1SCD-10-B-00	**Percent Solids:**	27.7%	**Start Date:**	10/25/2016
Lab ID:	200-35680-B-10	**Specific Gravity:**	2.650	**End Date:**	10/31/2016

Shape (> #10): na

Non-soil material: plant

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	87.9	12.1
#10	2000	84.9	3.0
#20	850	72.3	12.6
#40	425	69.1	3.2
#60	250	65.7	3.4
#80	180	63.4	2.3
#100	150	61.8	1.6
#200	75	57.2	4.6
#230	63	56.6	0.6
Hyd1	35	37.6	19.0
Hyd2	22.5	30.7	6.9
Hyd3	13.2	21.4	9.3
Hyd4	9.7	12.1	9.3
Hyd5	6.6	7.5	4.6
Hyd6	3.3	5.2	2.3
Hyd7	1.4	0.6	4.6

Soil Classification	Percent of sample
Gravel	12.1
Sand	31.3
Coarse Sand	3.0
Medium Sand	15.8
Fine Sand	12.5
Silt	49.1
Clay	7.5

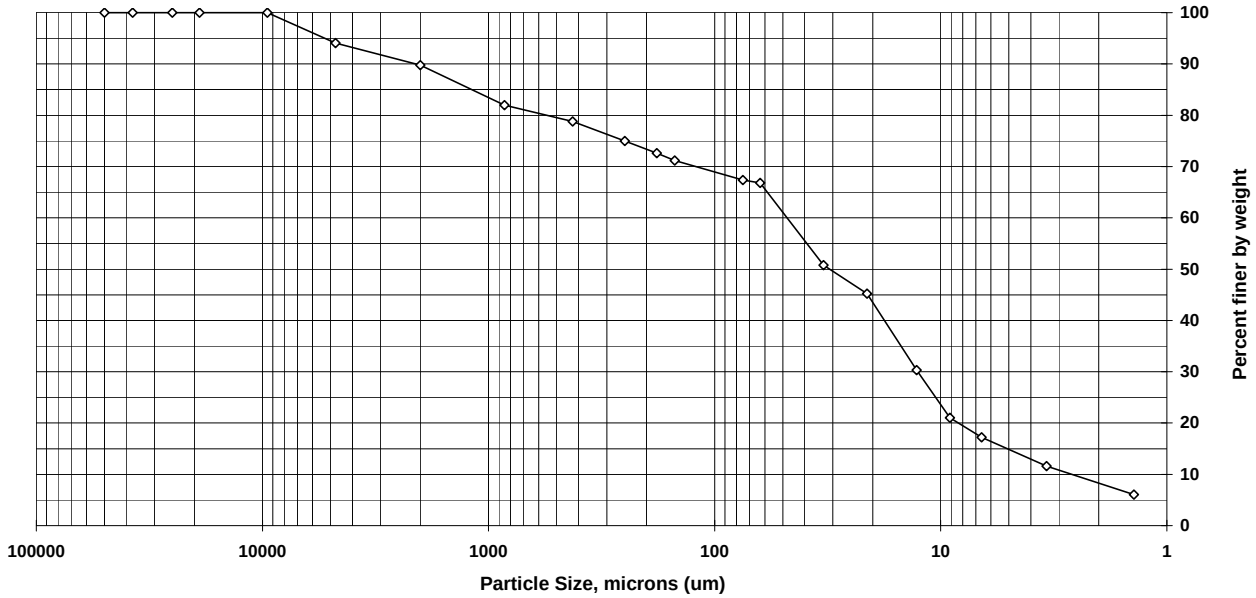
Particle Size of Soils by ASTM D422

Sample ID:	PE1016_P1SCD-09-B-00	**Percent Solids:**	40.0%	**Date Received:**	10/12/2016
Lab ID:	200-35680-B-11	**Specific Gravity:**	2.650	**Start Date:**	10/25/2016
				End Date:	10/31/2016

Shape (> #10): na

Non-soil material: plant

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	94.1	5.9
#10	2000	89.8	4.3
#20	850	82.0	7.8
#40	425	78.8	3.2
#60	250	75.0	3.8
#80	180	72.6	2.4
#100	150	71.2	1.4
#200	75	67.4	3.8
#230	63	66.8	0.6
Hyd1	33	50.8	16.0
Hyd2	21.2	45.2	5.6
Hyd3	12.8	30.3	14.9
Hyd4	9.1	21.0	9.3
Hyd5	6.6	17.2	3.8
Hyd6	3.4	11.6	5.6
Hyd7	1.4	6.1	5.5

Soil Classification	Percent of sample
Gravel	5.9
Sand	27.3
Coarse Sand	4.3
Medium Sand	11.0
Fine Sand	12.0
Silt	49.6
Clay	17.2

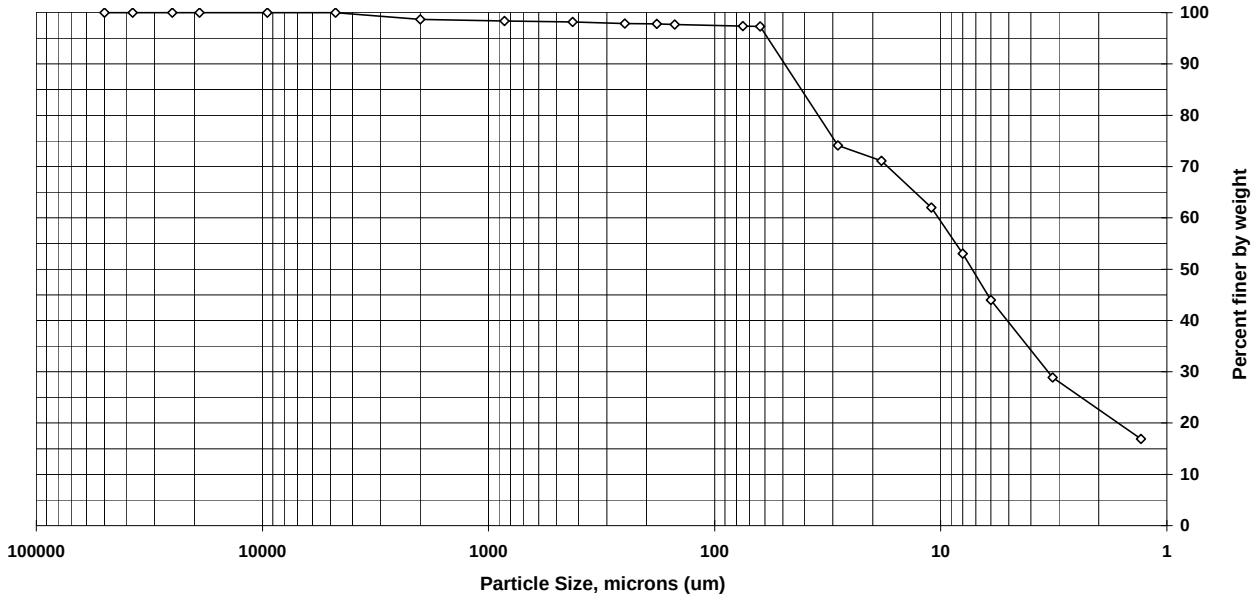
Particle Size of Soils by ASTM D422

				Date Received:	10/12/2016
Sample ID:	PE1016_P1SCD-09-B-03	**Percent Solids:**	81.0%	**Start Date:**	10/25/2016
Lab ID:	200-35680-B-12	**Specific Gravity:**	2.650	**End Date:**	10/31/2016

Shape (> #10): subangular

Non-soil material: na

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	98.7	1.3
#20	850	98.4	0.3
#40	425	98.2	0.2
#60	250	97.9	0.3
#80	180	97.8	0.1
#100	150	97.7	0.1
#200	75	97.4	0.3
#230	63	97.3	0.1
Hyd1	28.5	74.1	23.2
Hyd2	18.3	71.1	3.0
Hyd3	11	62.0	9.1
Hyd4	8	53.0	9.0
Hyd5	6	44.0	9.0
Hyd6	3.2	28.9	15.1
Hyd7	1.3	16.9	12.0

Soil Classification	Percent of sample
Gravel	0.0
Sand	2.7
Coarse Sand	1.3
Medium Sand	0.5
Fine Sand	0.9
Silt	53.3
Clay	44.0

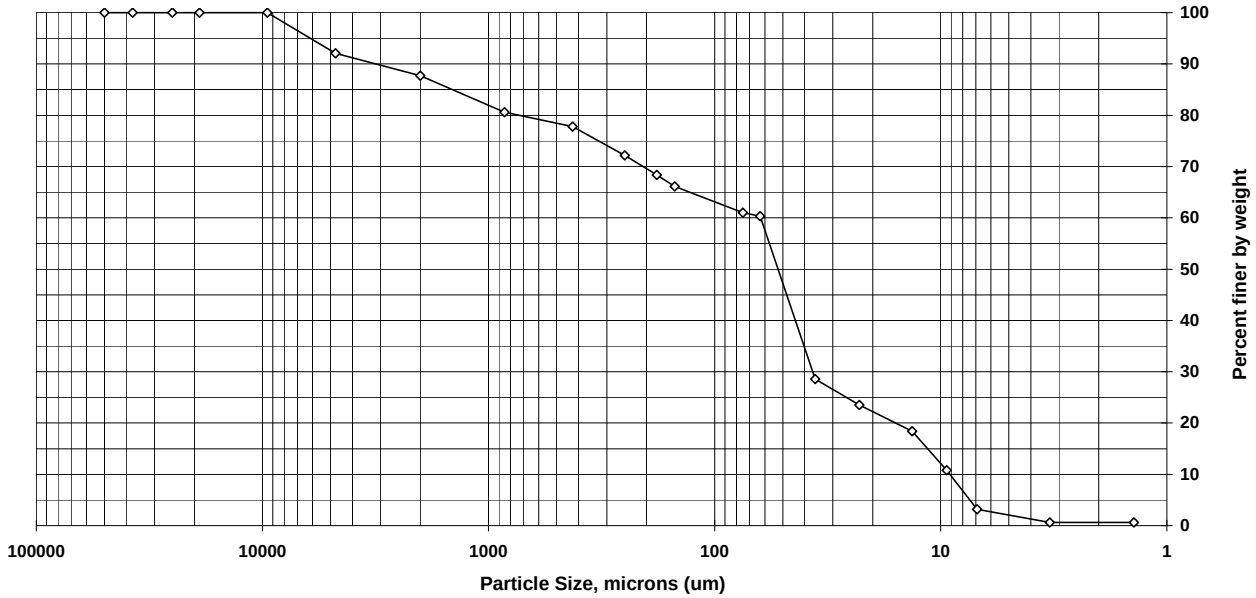
Particle Size of Soils by ASTM D422

				Date Received:	10/12/2016
Sample ID:	PE1016_P1SCD-08-B-00	**Percent Solids:**	36.1%	**Start Date:**	10/23/2016
Lab ID:	200-35680-B-14	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	92.1	7.9
#10	2000	87.7	4.4
#20	850	80.6	7.1
#40	425	77.8	2.8
#60	250	72.2	5.6
#80	180	68.4	3.8
#100	150	66.1	2.3
#200	75	61.0	5.1
#230	63	60.3	0.7
Hyd1	35.9	28.6	31.7
Hyd2	22.9	23.5	5.1
Hyd3	13.4	18.4	5.1
Hyd4	9.4	10.8	7.6
Hyd5	6.9	3.2	7.6
Hyd6	3.3	0.6	2.5
Hyd7	1.4	0.6	0.0

Soil Classification	Percent of sample
Gravel	7.9
Sand	31.8
Coarse Sand	4.4
Medium Sand	9.9
Fine Sand	17.5
Silt	57.1
Clay	3.2

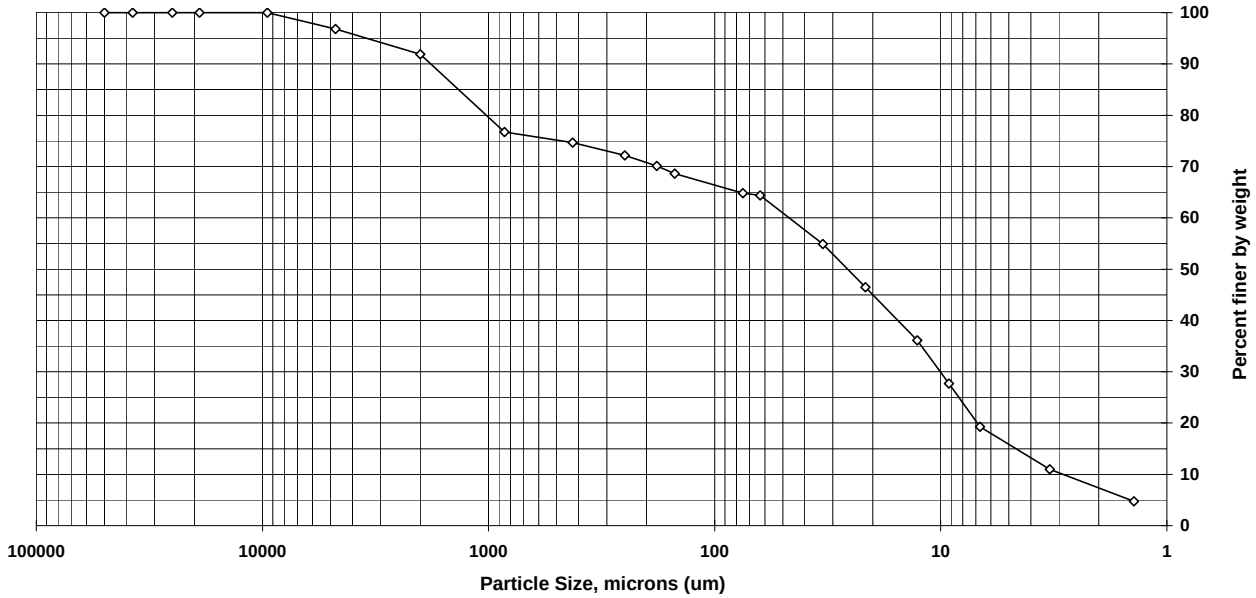
Particle Size of Soils by ASTM D422

Sample ID:	PE1016_P1SCD-09-A-00	**Percent Solids:**	34.2%	**Date Received:**	10/12/2016
Lab ID:	200-35680-B-8DU	**Specific Gravity:**	2.650	**Start Date:**	10/25/2016
				End Date:	10/31/2016

Shape (> #10): na

Non-soil material: plant

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	96.8	3.2
#10	2000	91.9	4.9
#20	850	76.7	15.2
#40	425	74.7	2.0
#60	250	72.2	2.5
#80	180	70.1	2.1
#100	150	68.6	1.5
#200	75	64.8	3.8
#230	63	64.4	0.4
Hyd1	33.2	54.9	9.5
Hyd2	21.5	46.5	8.4
Hyd3	12.7	36.1	10.4
Hyd4	9.2	27.7	8.4
Hyd5	6.7	19.3	8.4
Hyd6	3.3	11.0	8.3
Hyd7	1.4	4.7	6.3

Soil Classification	Percent of sample
Gravel	3.2
Sand	32.4
Coarse Sand	4.9
Medium Sand	17.2
Fine Sand	10.3
Silt	45.1
Clay	19.3

Sediment Grain Size - D422

Client		Date Received	10/12/2016
Client Sample ID	PE1016_P1SCD-06-A-00	Start Date	11/1/2016 09:24
Lab Sample ID	200-35680-B-1	End Date	11/8/2016 11:25

Dry Weight Determination

Tin Weight	0.98	g	Non-soil material:	plant
Wet Sample + Tin	19.97	g	Shape (> #10):	subangular
Dry Sample + Tin	10.19	g	Hardness (> #10):	hard
% Moisture	51.50	%		
			Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	45.18	210.05	164.87
Sample Weight (Oven Dried)			80

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			38.4
Sample <#10			41.6
% Passing #10			25.2

Hydrometer Data

Serial Number	504381
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.37	452.23	4.86	g	93.9	Gravel	
#4	4750	488.14	499.03	10.89	g	80.3	Gravel	
#10	2000	462.80	485.49	22.69	g	51.9	Sand	Coarse
#20	850	380.04	386.08	6.04	g	44.4	Sand	Medium
#40	425	354.00	359.05	5.05	g	38.1	Sand	Medium
#60	250	351.72	355.77	4.05	g	33.0	Sand	Fine
#80	180	338.44	339.46	1.02	g	31.7	Sand	Fine
#100	150	328.97	329.55	0.58	g	31.0	Sand	Fine
#200	75	323.73	325.62	1.89	g	28.6	Sand	Fine
#230	63	341.28	341.57	0.29	g	28.2	Sand	Fine
				0.00	g	28.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	80

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0150	21.0	33.5	22.4	Silt	
5	5	1.0140	21.0	21.4	20.4	Silt	
15	15	1.0110	21.0	12.7	14.4	Silt	
30	30	1.0090	21.0	9.2	10.4	Silt	
60	59	1.0080	21.0	6.6	8.36	Silt	
250	256	1.0070	19.0	3.3	5.69	Clay	
1440	1440	1.0060	19.0	1.4	3.68	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016_P1SCD-06-B-00
Lab Sample ID	200-35680-B-2

Date Received	10/12/2016
Start Date	11/1/2016 09:26
End Date	11/8/2016 11:36

Dry Weight Determination

Tin Weight	0.97	g
Wet Sample + Tin	21.54	g
Dry Sample + Tin	8.87	g
% Moisture	61.59	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.86	181.73	136.87
Sample Weight (Oven Dried)			52.6

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			12.9
Sample <#10			39.7
% Passing #10			29

Hydrometer Data

Serial Number	504381
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.14	493.67	5.53	g	89.5	Gravel	
#10	2000	462.80	470.15	7.35	g	75.5	Sand	Coarse
#20	850	380.04	383.90	3.86	g	68.2	Sand	Medium
#40	425	354.00	358.49	4.49	g	59.7	Sand	Medium
#60	250	351.72	358.44	6.72	g	46.9	Sand	Fine
#80	180	338.44	340.16	1.72	g	43.6	Sand	Fine
#100	150	328.97	329.67	0.70	g	42.3	Sand	Fine
#200	75	323.73	325.44	1.71	g	39.0	Sand	Fine
#230	63	341.28	341.43	0.15	g	38.7	Sand	Fine
				0.00	g	38.7		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	52.6

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0140	21.0	33.8	31	Silt	
5	5	1.0130	21.0	21.6	28	Silt	
15	15	1.0110	21.0	12.7	21.9	Silt	
30	30	1.0100	21.0	9.1	18.8	Silt	
60	58	1.0080	21.0	6.7	12.7	Silt	
250	256	1.0070	19.0	3.3	8.65	Clay	
1440	1440	1.0060	19.0	1.4	5.6	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016_P1SCD-06-A-06
Lab Sample ID	200-35680-B-3

Date Received	10/12/2016
Start Date	11/1/2016 09:28
End Date	11/8/2016 11:46

Dry Weight Determination

Tin Weight	0.94	g
Wet Sample + Tin	27.26	g
Dry Sample + Tin	22.62	g
% Moisture	17.63	%

Non-soil material:	na
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.93	115.86	70.93
Sample Weight (Oven Dried)			58.4

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			0.32
Sample <#10			58.1
% Passing #10			81.9

Hydrometer Data

Serial Number	504381
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	462.80	463.12	0.32	g	99.5	Sand	Coarse
#20	850	380.04	380.16	0.12	g	99.3	Sand	Medium
#40	425	354.00	354.66	0.66	g	98.2	Sand	Medium
#60	250	351.72	352.98	1.26	g	96.0	Sand	Fine
#80	180	338.44	339.47	1.03	g	94.2	Sand	Fine
#100	150	328.97	329.75	0.78	g	92.9	Sand	Fine
#200	75	323.73	326.69	2.96	g	87.8	Sand	Fine
#230	63	341.28	341.89	0.61	g	86.8	Sand	Fine
				0.00	g	86.8		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	58.4

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0290	21.0	28	69.2	Silt	
5	5	1.0265	21.0	18.4	62.3	Silt	
15	15	1.0220	21.0	11.3	50	Silt	
30	29	1.0200	21.0	8.3	44.5	Silt	
60	58	1.0170	21.0	6.1	36.2	Silt	
250	250	1.0130	19.0	3.1	24.3	Clay	
1440	1434	1.0105	19.0	1.3	17.4	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016_P1SCD-07-A-00
Lab Sample ID	200-35680-B-4

Date Received	10/12/2016
Start Date	11/1/2016 09:31
End Date	11/8/2016 12:00

Dry Weight Determination

Tin Weight	0.97	g
Wet Sample + Tin	24.36	g
Dry Sample + Tin	10.96	g
% Moisture	57.29	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.74	155.74	111
Sample Weight (Oven Dried)			47.4

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			6.57
Sample <#10			40.8
% Passing #10			36.8

Hydrometer Data

Serial Number	504381
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.14	490.26	2.12	g	95.5	Gravel	
#10	2000	462.80	467.25	4.45	g	86.1	Sand	Coarse
#20	850	380.04	382.71	2.67	g	80.5	Sand	Medium
#40	425	354.00	357.55	3.55	g	73.0	Sand	Medium
#60	250	351.72	357.40	5.68	g	61.0	Sand	Fine
#80	180	338.44	340.88	2.44	g	55.9	Sand	Fine
#100	150	328.97	330.34	1.37	g	53.0	Sand	Fine
#200	75	323.73	327.18	3.45	g	45.7	Sand	Fine
#230	63	341.28	341.74	0.46	g	44.7	Sand	Fine
				0.00	g	44.7		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	47.4

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0130	21.0	34.2	31.1	Silt	
5	5	1.0120	21.0	21.8	27.7	Silt	
15	15	1.0100	21.0	12.9	20.9	Silt	
30	29	1.0085	21.0	9.4	15.8	Silt	
60	63	1.0070	21.0	6.5	10.7	Silt	
250	250	1.0060	19.0	3.4	6.21	Clay	
1440	1434	1.0055	19.0	1.4	4.52	Clay	

Sediment Grain Size - D422

Client		Date Received	10/12/2016
Client Sample ID	PE1016_P1SCD-07-B-00	Start Date	11/1/2016 09:32
Lab Sample ID	200-35680-B-5	End Date	11/8/2016 12:16

Dry Weight Determination

Tin Weight	0.98	g	Non-soil material:	plant
Wet Sample + Tin	25.85	g	Shape (> #10):	subangular
Dry Sample + Tin	14.31	g	Hardness (> #10):	hard
% Moisture	46.40	%		
			Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	50.66	155.43	104.77
Sample Weight (Oven Dried)			56.2

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			7.05
Sample <#10			49.2
% Passing #10			47

Hydrometer Data

Serial Number	504381
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.14	491.47	3.33	g	94.1	Gravel	
#10	2000	462.80	466.52	3.72	g	87.5	Sand	Coarse
#20	850	380.04	383.93	3.89	g	80.6	Sand	Medium
#40	425	354.00	356.23	2.23	g	76.6	Sand	Medium
#60	250	351.72	354.78	3.06	g	71.2	Sand	Fine
#80	180	338.44	340.04	1.60	g	68.4	Sand	Fine
#100	150	328.97	329.90	0.93	g	66.7	Sand	Fine
#200	75	323.73	326.05	2.32	g	62.6	Sand	Fine
#230	63	341.28	341.58	0.30	g	62.1	Sand	Fine
				0.00	g	62.1		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	56.2

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0210	21.0	31.2	49.1	Silt	
5	5	1.0200	21.0	20	46.2	Silt	
15	15	1.0170	21.0	12	37.6	Silt	
30	31	1.0145	21.0	8.5	30.5	Silt	
60	60	1.0130	21.0	6.2	26.2	Silt	
250	240	1.0105	19.0	3.3	18.1	Clay	
1440	1424	1.0080	19.0	1.4	11	Clay	

Sediment Grain Size - D422

Client		Date Received	10/12/2016
Client Sample ID	PE1016_P1SCD-08-A-00	Start Date	11/1/2016 09:34
Lab Sample ID	200-35680-B-6	End Date	11/8/2016 12:30

Dry Weight Determination

Tin Weight	0.99	g	Non-soil material:	plant
Wet Sample + Tin	21.04	g	Shape (> #10):	subangular
Dry Sample + Tin	8.29	g	Hardness (> #10):	hard
% Moisture	63.59	%		
			Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.76	167.87	123.11
Sample Weight (Oven Dried)			44.8

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			8.44
Sample <#10			36.4
% Passing #10			29.6

Hydrometer Data

Serial Number	504381
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.14	492.79	4.65	g	89.6	Gravel	
#10	2000	462.80	466.59	3.79	g	81.1	Sand	Coarse
#20	850	380.04	382.47	2.43	g	75.7	Sand	Medium
#40	425	354.00	356.92	2.92	g	69.2	Sand	Medium
#60	250	351.72	356.85	5.13	g	57.7	Sand	Fine
#80	180	338.44	340.32	1.88	g	53.5	Sand	Fine
#100	150	328.97	329.86	0.89	g	51.5	Sand	Fine
#200	75	323.73	325.74	2.01	g	47.0	Sand	Fine
#230	63	341.28	341.53	0.25	g	46.4	Sand	Fine
				0.00	g	46.4		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	44.8

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0160	21.0	33.1	43.6	Silt	
5	5	1.0150	21.0	21.2	40	Silt	
15	15	1.0130	21.0	12.5	32.9	Silt	
30	31	1.0100	21.0	8.9	22.1	Silt	
60	59	1.0090	21.0	6.5	18.5	Silt	
250	234	1.0075	19.0	3.4	11.9	Clay	
1440	1418	1.0060	19.0	1.4	6.57	Clay	

Sediment Grain Size - D422

Client		Date Received	10/12/2016
Client Sample ID	PE1016_P1SCD-08-A-00	Start Date	11/1/2016 09:39
Lab Sample ID	200-35680-B-7	End Date	11/8/2016 12:40

Dry Weight Determination

Tin Weight	1.02	g	Non-soil material:	plant
Wet Sample + Tin	27.30	g	Shape (> #10):	subangular
Dry Sample + Tin	11.96	g	Hardness (> #10):	hard
% Moisture	58.37	%		
			Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.72	178.48	133.76
Sample Weight (Oven Dried)			55.7

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			8.3
Sample <#10			47.4
% Passing #10			35.4

Hydrometer Data

Serial Number	504381
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.14	494.11	5.97	g	89.3	Gravel	
#10	2000	462.80	465.13	2.33	g	85.1	Sand	Coarse
#20	850	380.04	382.39	2.35	g	80.9	Sand	Medium
#40	425	354.00	357.27	3.27	g	75.0	Sand	Medium
#60	250	351.72	357.44	5.72	g	64.7	Sand	Fine
#80	180	338.44	340.60	2.16	g	60.8	Sand	Fine
#100	150	328.97	330.01	1.04	g	58.9	Sand	Fine
#200	75	323.73	326.23	2.50	g	54.4	Sand	Fine
#230	63	341.28	341.64	0.36	g	53.8	Sand	Fine
				0.00	g	53.8		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	55.7

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0160	21.0	33.1	35.1	Silt	
5	5	1.0150	21.0	21.2	32.2	Silt	
15	15	1.0130	21.0	12.5	26.4	Silt	
30	31	1.0110	21.0	8.9	20.7	Silt	
60	59	1.0085	21.0	6.6	13.5	Silt	
250	265	1.0070	19.0	3.2	8.17	Clay	
1440	1412	1.0060	19.0	1.4	5.29	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016_P1SCD-09-A-00
Lab Sample ID	200-35680-B-8

Date Received	10/12/2016
Start Date	10/25/2016 09:49
End Date	10/31/2016 12:08

Dry Weight Determination

Tin Weight	0.94	g
Wet Sample + Tin	19.60	g
Dry Sample + Tin	7.57	g
% Moisture	64.47	%

Non-soil material:	plant
Shape (> #10):	na
Hardness (> #10):	na
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.61	145.46	100.85
Sample Weight (Oven Dried)			35.8

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			2.6
Sample <#10			33.2
% Passing #10			32.9

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	489.94	1.78	g	95.0	Gravel	
#10	2000	462.83	463.65	0.82	g	92.7	Sand	Coarse
#20	850	380.27	383.06	2.79	g	84.9	Sand	Medium
#40	425	354.63	355.20	0.57	g	83.3	Sand	Medium
#60	250	352.35	353.28	0.93	g	80.7	Sand	Fine
#80	180	338.63	339.50	0.87	g	78.3	Sand	Fine
#100	150	329.03	329.68	0.65	g	76.5	Sand	Fine
#200	75	323.78	325.52	1.74	g	71.6	Sand	Fine
#230	63	341.29	341.52	0.23	g	71.0	Sand	Fine
				0.00	g	71.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	35.8

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0155	19.5	33.9	49.9	Silt	
5	5	1.0140	19.5	21.8	43.2	Silt	
15	15	1.0120	19.5	12.8	34.2	Silt	
30	30	1.0105	19.5	9.2	27.5	Silt	
60	59	1.0085	19.5	6.7	18.5	Silt	
250	256	1.0065	19.5	3.3	9.53	Clay	
1440	1440	1.0055	19.5	1.4	5.05	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016_P1SCD-10-A-00
Lab Sample ID	200-35680-B-9

Date Received	10/12/2016
Start Date	10/25/2016 09:52
End Date	10/31/2016 13:03

Dry Weight Determination

Tin Weight	0.98	g
Wet Sample + Tin	21.06	g
Dry Sample + Tin	6.71	g
% Moisture	71.46	%

Non-soil material:	plant
Shape (> #10):	na
Hardness (> #10):	na
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.69	159.36	114.67
Sample Weight (Oven Dried)			32.7

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			3.36
Sample <#10			29.3
% Passing #10			25.6

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	489.89	1.73	g	94.7	Gravel	
#10	2000	462.83	464.46	1.63	g	89.7	Sand	Coarse
#20	850	380.27	385.11	4.84	g	74.9	Sand	Medium
#40	425	354.63	356.24	1.61	g	70.0	Sand	Medium
#60	250	352.35	353.77	1.42	g	65.7	Sand	Fine
#80	180	338.63	339.46	0.83	g	63.2	Sand	Fine
#100	150	329.03	329.57	0.54	g	61.5	Sand	Fine
#200	75	323.78	325.15	1.37	g	57.3	Sand	Fine
#230	63	341.29	341.45	0.16	g	56.8	Sand	Fine
				0.00	g	56.8		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	32.7

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0120	19.5	35.2	37.5	Silt	
5	5	1.0110	19.5	22.5	32.5	Silt	
15	15	1.0090	19.5	13.2	22.7	Silt	
30	29	1.0070	19.5	9.7	12.9	Silt	
60	58	1.0060	19.5	6.9	7.98	Silt	
250	250	1.0055	19.5	3.3	5.53	Clay	
1440	1434	1.0045	19.5	1.4	0.614	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016_P1SCD-10-B-00
Lab Sample ID	200-35680-B-10

Date Received	10/12/2016
Start Date	10/25/2016 09:54
End Date	10/31/2016 13:14

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	22.60	g
Dry Sample + Tin	6.98	g
% Moisture	72.31	%

Non-soil material:	plant
Shape (> #10):	na
Hardness (> #10):	na
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.71	169.97	125.26
Sample Weight (Oven Dried)			34.7

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			5.24
Sample <#10			29.5
% Passing #10			23.6

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	492.35	4.19	g	87.9	Gravel	
#10	2000	462.83	463.88	1.05	g	84.9	Sand	Coarse
#20	850	380.27	384.65	4.38	g	72.3	Sand	Medium
#40	425	354.63	355.75	1.12	g	69.1	Sand	Medium
#60	250	352.35	353.52	1.17	g	65.7	Sand	Fine
#80	180	338.63	339.43	0.80	g	63.4	Sand	Fine
#100	150	329.03	329.59	0.56	g	61.8	Sand	Fine
#200	75	323.78	325.36	1.58	g	57.2	Sand	Fine
#230	63	341.29	341.50	0.21	g	56.6	Sand	Fine
				0.00	g	56.6		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	34.7

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0125	19.5	35	37.6	Silt	
5	5	1.0110	19.5	22.5	30.7	Silt	
15	15	1.0090	19.5	13.2	21.4	Silt	
30	29	1.0070	19.5	9.7	12.1	Silt	
60	63	1.0060	19.5	6.6	7.52	Silt	
250	250	1.0055	19.5	3.3	5.21	Clay	
1440	1434	1.0045	19.5	1.4	0.579	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016_P1SCD-09-B-00
Lab Sample ID	200-35680-B-11

Date Received	10/12/2016
Start Date	10/25/2016 09:56
End Date	10/31/2016 13:26

Dry Weight Determination

Tin Weight	0.94	g
Wet Sample + Tin	33.20	g
Dry Sample + Tin	13.83	g
% Moisture	60.04	%

Non-soil material:	plant
Shape (> #10):	na
Hardness (> #10):	na
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.95	152.75	107.8
Sample Weight (Oven Dried)			43.1

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			4.43
Sample <#10			38.7
% Passing #10			35.9

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	490.72	2.56	g	94.1	Gravel	
#10	2000	462.83	464.70	1.87	g	89.8	Sand	Coarse
#20	850	380.27	383.63	3.36	g	82.0	Sand	Medium
#40	425	354.63	356.00	1.37	g	78.8	Sand	Medium
#60	250	352.35	354.00	1.65	g	75.0	Sand	Fine
#80	180	338.63	339.65	1.02	g	72.6	Sand	Fine
#100	150	329.03	329.65	0.62	g	71.2	Sand	Fine
#200	75	323.78	325.43	1.65	g	67.4	Sand	Fine
#230	63	341.29	341.54	0.25	g	66.8	Sand	Fine
				0.00	g	66.8		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	43.1

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0180	19.5	33	50.8	Silt	
5	5	1.0165	19.5	21.2	45.2	Silt	
15	15	1.0125	19.5	12.8	30.3	Silt	
30	31	1.0100	19.5	9.1	21	Silt	
60	60	1.0090	19.5	6.6	17.2	Silt	
250	240	1.0075	19.5	3.4	11.6	Clay	
1440	1424	1.0060	19.5	1.4	6.06	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016_P1SCD-09-B-03
Lab Sample ID	200-35680-B-12

Date Received	10/12/2016
Start Date	10/25/2016 09:58
End Date	10/31/2016 13:36

Dry Weight Determination

Tin Weight	0.92	g
Wet Sample + Tin	24.29	g
Dry Sample + Tin	19.84	g
% Moisture	19.04	%

Non-soil material:	na
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.75	110.70	65.95
Sample Weight (Oven Dried)			53.4

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			0.68
Sample <#10			52.7
% Passing #10			79.9

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	462.83	463.51	0.68	g	98.7	Sand	Coarse
#20	850	380.27	380.45	0.18	g	98.4	Sand	Medium
#40	425	354.63	354.72	0.09	g	98.2	Sand	Medium
#60	250	352.35	352.50	0.15	g	97.9	Sand	Fine
#80	180	338.63	338.68	0.05	g	97.8	Sand	Fine
#100	150	329.03	329.06	0.03	g	97.7	Sand	Fine
#200	75	323.78	323.96	0.18	g	97.4	Sand	Fine
#230	63	341.29	341.32	0.03	g	97.3	Sand	Fine
				0.00	g	97.3		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	53.4

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0290	19.5	28.5	74.1	Silt	
5	5	1.0280	19.5	18.3	71.1	Silt	
15	15	1.0250	19.5	11	62	Silt	
30	31	1.0220	19.5	8	53	Silt	
60	59	1.0190	19.5	6	44	Silt	
250	234	1.0140	19.5	3.2	28.9	Clay	
1440	1418	1.0100	19.5	1.3	16.9	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016_P1SCD-08-B-00
Lab Sample ID	200-35680-B-14

Date Received	10/12/2016
Start Date	10/23/2016 18:39
End Date	10/28/2016 14:01

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	17.35	g
Dry Sample + Tin	6.92	g
% Moisture	63.87	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.68	132.06	87.38
Sample Weight (Oven Dried)			31.6

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			3.88
Sample <#10			27.7
% Passing #10			31.7

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	490.66	2.50	g	92.1	Gravel	
#10	2000	462.82	464.20	1.38	g	87.7	Sand	Coarse
#20	850	380.39	382.63	2.24	g	80.6	Sand	Medium
#40	425	354.99	355.87	0.88	g	77.8	Sand	Medium
#60	250	352.59	354.36	1.77	g	72.2	Sand	Fine
#80	180	338.73	339.94	1.21	g	68.4	Sand	Fine
#100	150	329.04	329.76	0.72	g	66.1	Sand	Fine
#200	75	323.77	325.39	1.62	g	61.0	Sand	Fine
#230	63	341.27	341.48	0.21	g	60.3	Sand	Fine
				0.00	g	60.3		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	31.6

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0100	19.5	35.9	28.6	Silt	
5	5	1.0090	19.5	22.9	23.5	Silt	
15	15	1.0080	19.5	13.4	18.4	Silt	
30	31	1.0065	19.5	9.4	10.8	Silt	
60	59	1.0050	19.5	6.9	3.18	Silt	
250	265	1.0045	19.5	3.3	0.635	Clay	
1440	1412	1.0045	19.5	1.4	0.635	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016_P1SCD-09-A-00
Lab Sample ID	200-35680-B-8DU

Date Received	10/12/2016
Start Date	10/25/2016 09:51
End Date	10/31/2016 12:51

Dry Weight Determination

Tin Weight	0.98	g
Wet Sample + Tin	19.16	g
Dry Sample + Tin	7.20	g
% Moisture	65.79	%

Non-soil material:	plant
Shape (> #10):	na
Hardness (> #10):	na
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.71	156.87	112.16
Sample Weight (Oven Dried)			38.4

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			3.1
Sample <#10			35.3
% Passing #10			31.5

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	489.37	1.21	g	96.8	Gravel	
#10	2000	462.83	464.72	1.89	g	91.9	Sand	Coarse
#20	850	380.27	386.10	5.83	g	76.7	Sand	Medium
#40	425	354.63	355.38	0.75	g	74.7	Sand	Medium
#60	250	352.35	353.31	0.96	g	72.2	Sand	Fine
#80	180	338.63	339.45	0.82	g	70.1	Sand	Fine
#100	150	329.03	329.62	0.59	g	68.6	Sand	Fine
#200	75	323.78	325.25	1.47	g	64.8	Sand	Fine
#230	63	341.29	341.46	0.17	g	64.4	Sand	Fine
				0.00	g	64.4		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	38.4

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0175	19.5	33.2	54.9	Silt	
5	5	1.0155	19.5	21.5	46.5	Silt	
15	15	1.0130	19.5	12.7	36.1	Silt	
30	30	1.0110	19.5	9.2	27.7	Silt	
60	58	1.0090	19.5	6.7	19.3	Silt	
250	256	1.0070	19.5	3.3	11	Clay	
1440	1440	1.0055	19.5	1.4	4.71	Clay	

Default Detection Limits

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35680-1
SDG: 200-35660-1

Method: 6020A - Metals (ICP/MS)
Prep: 3010A

Analyte	RL	MDL	Units	Method
Copper	5.0	2.2	ug/L	6020A
Selenium	4.0	0.97	ug/L	6020A
Zinc	20.0	2.6	ug/L	6020A

Method: 6020A - Metals (ICP/MS)
Prep: 3050B

Analyte	RL	MDL	Units	Method
Copper	0.50	0.12	mg/Kg	6020A
Selenium	0.40	0.063	mg/Kg	6020A
Zinc	2.0	0.62	mg/Kg	6020A

Method: 7470A - Mercury (CVAA)
Prep: 7470A

Analyte	RL	MDL	Units	Method
Mercury	0.20	0.044	ug/L	7470A

Method: 7471B - Mercury (CVAA)
Prep: 7471B

Analyte	RL	MDL	Units	Method
Mercury	0.033	0.012	mg/Kg	7471B

General Chemistry

Analyte	RL	MDL	Units	Method
Total Organic Carbon	1000	380	mg/Kg	Lloyd Kahn
Percent Solids	0.1	0.1	%	Moisture

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 200-110153/1-A
Matrix: Sediment
Analysis Batch: 110192

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110153

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.50	U	0.50	0.12	mg/Kg		10/13/16 13:50	10/14/16 11:47	1
Selenium	0.40	U	0.40	0.063	mg/Kg		10/13/16 13:50	10/14/16 11:47	1
Zinc	2.0	U	2.0	0.62	mg/Kg		10/13/16 13:50	10/14/16 11:47	1

Lab Sample ID: LCS 200-110153/2-A
Matrix: Sediment
Analysis Batch: 110192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110153

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	5.00	5.44		mg/Kg		109	80 - 120
Selenium	4.00	3.23		mg/Kg		81	80 - 120
Zinc	20.0	17.78		mg/Kg		89	80 - 120

Lab Sample ID: 200-35680-6 MS
Matrix: Sediment
Analysis Batch: 110192

Client Sample ID: PE1016_P1SCD-08-A-0006IN
Prep Type: Total/NA
Prep Batch: 110153

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	781		9.33	819.6	4	mg/Kg	☼	414	75 - 125
Selenium	5.2		7.47	11.63		mg/Kg	☼	86	75 - 125
Zinc	294		37.3	312.5	4	mg/Kg	☼	51	75 - 125

Lab Sample ID: 200-35680-6 MSD
Matrix: Sediment
Analysis Batch: 110192

Client Sample ID: PE1016_P1SCD-08-A-0006IN
Prep Type: Total/NA
Prep Batch: 110153

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Copper	781		12.2	865.8	4	mg/Kg	☼	698	75 - 125	5	20
Selenium	5.2		9.72	13.98		mg/Kg	☼	90	75 - 125	18	20
Zinc	294		48.6	340.4	4	mg/Kg	☼	96	75 - 125	9	20

Lab Sample ID: MB 200-110229/1-A
Matrix: Sediment
Analysis Batch: 110334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110229

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.50	U	0.50	0.12	mg/Kg		10/17/16 10:03	10/18/16 13:48	1
Selenium	0.40	U	0.40	0.063	mg/Kg		10/17/16 10:03	10/18/16 13:48	1
Zinc	2.0	U	2.0	0.62	mg/Kg		10/17/16 10:03	10/18/16 13:48	1

Lab Sample ID: LCS 200-110229/2-A
Matrix: Sediment
Analysis Batch: 110334

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110229

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	5.00	4.90		mg/Kg		98	80 - 120
Selenium	4.00	3.45		mg/Kg		86	80 - 120
Zinc	20.0	18.27		mg/Kg		91	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 200-110239/1-A
Matrix: Water
Analysis Batch: 110334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110239

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	2.66	J	5.0	2.2	ug/L		10/17/16 12:26	10/18/16 16:40	1
Zinc	20.0	U	20.0	2.6	ug/L		10/17/16 12:26	10/18/16 16:40	1

Lab Sample ID: MB 200-110239/1-A
Matrix: Water
Analysis Batch: 110361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110239

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	4.0	U	4.0	0.97	ug/L		10/17/16 12:26	10/19/16 11:47	1

Lab Sample ID: LCS 200-110239/2-A
Matrix: Water
Analysis Batch: 110334

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110239

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	50.0	56.30		ug/L		113	80 - 120
Zinc	200	208.5		ug/L		104	80 - 120

Lab Sample ID: LCS 200-110239/2-A
Matrix: Water
Analysis Batch: 110361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110239

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	40.0	38.84		ug/L		97	80 - 120

Lab Sample ID: MB 200-110491/1-A
Matrix: Sediment
Analysis Batch: 110547

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110491

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.50	U	0.50	0.12	mg/Kg		10/24/16 14:26	10/25/16 14:14	1
Selenium	0.40	U	0.40	0.063	mg/Kg		10/24/16 14:26	10/25/16 14:14	1
Zinc	2.0	U	2.0	0.62	mg/Kg		10/24/16 14:26	10/25/16 14:14	1

Lab Sample ID: LCS 200-110491/2-A
Matrix: Sediment
Analysis Batch: 110547

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110491

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	5.00	4.73		mg/Kg		95	80 - 120
Selenium	4.00	3.32		mg/Kg		83	80 - 120
Zinc	20.0	17.39		mg/Kg		87	80 - 120

Lab Sample ID: 200-35680-8 MS
Matrix: Sediment
Analysis Batch: 110547

Client Sample ID: PE1016_P1SCD-09-A-0006IN
Prep Type: Total/NA
Prep Batch: 110491

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	899		11.8	840.2	4	mg/Kg	☼	-501	75 - 125

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 200-35680-8 MS — **Client Sample ID: PE1016_P1SCD-09-A-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110547 — **Prep Batch: 110491**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	6.0		9.43	13.96		mg/Kg	☼	84	75 - 125
Zinc	289		47.2	305.7	4	mg/Kg	☼	36	75 - 125

Lab Sample ID: 200-35680-8 MSD — **Client Sample ID: PE1016_P1SCD-09-A-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110547 — **Prep Batch: 110491**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Copper	899		12.6	854.0	4	mg/Kg	☼	-359	75 - 125	2	20
Selenium	6.0		10.1	13.77		mg/Kg	☼	77	75 - 125	1	20
Zinc	289		50.4	301.3	4	mg/Kg	☼	25	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 200-110242/11-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 110261 — **Prep Batch: 110242**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.044	ug/L		10/17/16 12:52	10/17/16 16:26	1

Lab Sample ID: LCS 200-110242/12-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 110261 — **Prep Batch: 110242**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.50	2.57		ug/L		103	85 - 115

Lab Sample ID: 200-35680-13 MS — **Client Sample ID: PE1016_P1SCD-BLK-1-101016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 110261 — **Prep Batch: 110242**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.20	U	2.50	2.46		ug/L		98	85 - 115

Lab Sample ID: 200-35680-13 MSD — **Client Sample ID: PE1016_P1SCD-BLK-1-101016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 110261 — **Prep Batch: 110242**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.20	U	2.50	2.50		ug/L		100	85 - 115	2	20

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 200-110231/11-A — **Client Sample ID: Method Blank**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110260 — **Prep Batch: 110231**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.040	U	0.040	0.014	mg/Kg		10/17/16 10:05	10/17/16 14:30	1

Lab Sample ID: LCS 200-110231/12-A — **Client Sample ID: Lab Control Sample**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110260 — **Prep Batch: 110231**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.500	0.492		mg/Kg		98	80 - 120

Lab Sample ID: 200-35680-14 MS — **Client Sample ID: PE1016_P1SCD-08-B-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110260 — **Prep Batch: 110231**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	4.5	F1	1.27	5.54	E	mg/Kg	☼	84	80 - 120

Lab Sample ID: 200-35680-14 MSD — **Client Sample ID: PE1016_P1SCD-08-B-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110260 — **Prep Batch: 110231**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	4.5	F1	1.14	5.12	E F1	mg/Kg	☼	56	80 - 120	8	20

Lab Sample ID: MB 200-110530/11-A — **Client Sample ID: Method Blank**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110575 — **Prep Batch: 110530**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.040	U	0.040	0.014	mg/Kg		10/25/16 11:41	10/26/16 10:09	1

Lab Sample ID: LCS 200-110530/12-A — **Client Sample ID: Lab Control Sample**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110575 — **Prep Batch: 110530**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.500	0.486		mg/Kg		97	80 - 120

Lab Sample ID: 200-35680-8 MS — **Client Sample ID: PE1016_P1SCD-09-A-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110575 — **Prep Batch: 110530**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.1	F1	1.41	7.03	E F1	mg/Kg	☼	135	80 - 120

Lab Sample ID: 200-35680-8 MSD — **Client Sample ID: PE1016_P1SCD-09-A-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110575 — **Prep Batch: 110530**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	5.1	F1	1.35	6.17	E F1	mg/Kg	☼	77	80 - 120	13	20

Method: Lloyd Kahn - Organic Carbon, Total (TOC)

Lab Sample ID: MB 200-110277/5
Matrix: Sediment
Analysis Batch: 110277

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1000	U	1000	380	mg/Kg			10/17/16 14:38	1

Lab Sample ID: LCS 200-110277/6
Matrix: Sediment
Analysis Batch: 110277

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			9260	8420		mg/Kg		91	75 - 125		

Lab Sample ID: MB 200-110363/5
Matrix: Sediment
Analysis Batch: 110363

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1000	U	1000	380	mg/Kg			10/19/16 12:48	1

Lab Sample ID: LCS 200-110363/6
Matrix: Sediment
Analysis Batch: 110363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			9260	8943		mg/Kg		97	75 - 125		

Method: Moisture - Percent Moisture

Lab Sample ID: 200-35680-8 DU
Matrix: Sediment
Analysis Batch: 110190

Client Sample ID: PE1016_P1SCD-09-A-0006IN
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Solids	34.2			34.3		%				0.2	20

Method: D422 - Grain Size

Lab Sample ID: 200-35680-8 DU
Matrix: Sediment
Analysis Batch: 110708

Client Sample ID: PE1016_P1SCD-09-A-0006IN
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Gravel	5.0			3.2		%				44	50
Sieve Size 2 inch - Percent Finer	100.0			100.0		% Passing				0	50
Sand	24.0			32.4		%				30	50
Sieve Size 1.5 inch - Percent Finer	100.0			100.0		% Passing				0	50
Coarse Sand	2.3			4.9	F3	%				72	50
Sieve Size 1 inch - Percent Finer	100.0			100.0		% Passing				0	50
Medium Sand	9.4			17.2	F3	%				59	50
Sieve Size 0.75 inch - Percent Finer	100.0			100.0		% Passing				0	50

Method: D422 - Grain Size (Continued)

Lab Sample ID: 200-35680-8 DU
Matrix: Sediment
Analysis Batch: 110708

Client Sample ID: PE1016_P1SCD-09-A-0006IN
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fine Sand	12.3		10.3		%		18	50
Sieve Size 0.375 inch - Percent Finer	100.0		100.0		% Passing		0	50
Sieve Size #4 - Percent Finer	95.0		96.8		% Passing		2	50
Silt	52.5		45.1		%		15	50
Clay	18.5		19.3		%		4	50
Sieve Size #10 - Percent Finer	92.7		91.9		% Passing		0.9	50
Sieve Size #20 - Percent Finer	84.9		76.7		% Passing		10	50
Sieve Size #40 - Percent Finer	83.3		74.7		% Passing		11	50
Sieve Size #60 - Percent Finer	80.7		72.2		% Passing		11	50
Sieve Size #80 - Percent Finer	78.3		70.1		% Passing		11	50
Sieve Size #100 - Percent Finer	76.5		68.6		% Passing		11	50
Sieve Size #200 - Percent Finer	71.6		64.8		% Passing		10	50
Sieve Size #230 - Percent Finer	71.0		64.4		% Passing		10	50
Hydrometer Reading 1 - Percent Finer	49.9		54.9		% Passing		10	50
Hydrometer Reading 2 - Percent Finer	43.2		46.5		% Passing		7	50
Hydrometer Reading 3 - Percent Finer	34.2		36.1		% Passing		5	50
Hydrometer Reading 4 - Percent Finer	27.5		27.7		% Passing		0.7	50
Hydrometer Reading 5 - Percent Finer	18.5		19.3		% Passing		4	50
Hydrometer Reading 6 - Percent Finer	9.5		11.0		% Passing		14	50
Hydrometer Reading 7 - Percent Finer	5.1		4.7		% Passing		7	50

Metals

Prep Batch: 110153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-1	PE1016_P1SCD-06-A-0006IN	Total/NA	Sediment	3050B	
200-35680-2	PE1016_P1SCD-06-B-0008IN	Total/NA	Sediment	3050B	
200-35680-3	PE1016_P1SCD-06-A-0613IN	Total/NA	Sediment	3050B	
200-35680-4	PE1016_P1SCD-07-A-0008IN	Total/NA	Sediment	3050B	
200-35680-5	PE1016_P1SCD-07-B-0006IN	Total/NA	Sediment	3050B	
200-35680-6	PE1016_P1SCD-08-A-0006IN	Total/NA	Sediment	3050B	
MB 200-110153/1-A	Method Blank	Total/NA	Sediment	3050B	
LCS 200-110153/2-A	Lab Control Sample	Total/NA	Sediment	3050B	
200-35680-6 MS	PE1016_P1SCD-08-A-0006IN	Total/NA	Sediment	3050B	
200-35680-6 MSD	PE1016_P1SCD-08-A-0006IN	Total/NA	Sediment	3050B	

Analysis Batch: 110192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-1	PE1016_P1SCD-06-A-0006IN	Total/NA	Sediment	6020A	110153
200-35680-2	PE1016_P1SCD-06-B-0008IN	Total/NA	Sediment	6020A	110153
200-35680-3	PE1016_P1SCD-06-A-0613IN	Total/NA	Sediment	6020A	110153
200-35680-4	PE1016_P1SCD-07-A-0008IN	Total/NA	Sediment	6020A	110153
200-35680-5	PE1016_P1SCD-07-B-0006IN	Total/NA	Sediment	6020A	110153
200-35680-6	PE1016_P1SCD-08-A-0006IN	Total/NA	Sediment	6020A	110153
MB 200-110153/1-A	Method Blank	Total/NA	Sediment	6020A	110153
LCS 200-110153/2-A	Lab Control Sample	Total/NA	Sediment	6020A	110153
200-35680-6 MS	PE1016_P1SCD-08-A-0006IN	Total/NA	Sediment	6020A	110153
200-35680-6 MSD	PE1016_P1SCD-08-A-0006IN	Total/NA	Sediment	6020A	110153

Prep Batch: 110229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-7	PE1016_P1SCD-08-A-0006IN-D	Total/NA	Sediment	3050B	
200-35680-14	PE1016_P1SCD-08-B-0006IN	Total/NA	Sediment	3050B	
MB 200-110229/1-A	Method Blank	Total/NA	Sediment	3050B	
LCS 200-110229/2-A	Lab Control Sample	Total/NA	Sediment	3050B	

Prep Batch: 110231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-1	PE1016_P1SCD-06-A-0006IN	Total/NA	Sediment	7471B	
200-35680-2	PE1016_P1SCD-06-B-0008IN	Total/NA	Sediment	7471B	
200-35680-3	PE1016_P1SCD-06-A-0613IN	Total/NA	Sediment	7471B	
200-35680-4	PE1016_P1SCD-07-A-0008IN	Total/NA	Sediment	7471B	
200-35680-5	PE1016_P1SCD-07-B-0006IN	Total/NA	Sediment	7471B	
200-35680-6	PE1016_P1SCD-08-A-0006IN	Total/NA	Sediment	7471B	
200-35680-7	PE1016_P1SCD-08-A-0006IN-D	Total/NA	Sediment	7471B	
200-35680-14	PE1016_P1SCD-08-B-0006IN	Total/NA	Sediment	7471B	
MB 200-110231/11-A	Method Blank	Total/NA	Sediment	7471B	
LCS 200-110231/12-A	Lab Control Sample	Total/NA	Sediment	7471B	
200-35680-14 MS	PE1016_P1SCD-08-B-0006IN	Total/NA	Sediment	7471B	
200-35680-14 MSD	PE1016_P1SCD-08-B-0006IN	Total/NA	Sediment	7471B	

Prep Batch: 110239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-13	PE1016_P1SCD-BLK-1-101016	Total/NA	Water	3010A	
MB 200-110239/1-A	Method Blank	Total/NA	Water	3010A	
LCS 200-110239/2-A	Lab Control Sample	Total/NA	Water	3010A	

QC Association Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35680-1
SDG: 200-35660-1

Prep Batch: 110242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-13	PE1016_P1SCD-BLK-1-101016	Total/NA	Water	7470A	
MB 200-110242/11-A	Method Blank	Total/NA	Water	7470A	
LCS 200-110242/12-A	Lab Control Sample	Total/NA	Water	7470A	
200-35680-13 MS	PE1016_P1SCD-BLK-1-101016	Total/NA	Water	7470A	
200-35680-13 MSD	PE1016_P1SCD-BLK-1-101016	Total/NA	Water	7470A	

Analysis Batch: 110260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-1	PE1016_P1SCD-06-A-0006IN	Total/NA	Sediment	7471B	110231
200-35680-2	PE1016_P1SCD-06-B-0008IN	Total/NA	Sediment	7471B	110231
200-35680-3	PE1016_P1SCD-06-A-0613IN	Total/NA	Sediment	7471B	110231
200-35680-4	PE1016_P1SCD-07-A-0008IN	Total/NA	Sediment	7471B	110231
200-35680-5	PE1016_P1SCD-07-B-0006IN	Total/NA	Sediment	7471B	110231
200-35680-6	PE1016_P1SCD-08-A-0006IN	Total/NA	Sediment	7471B	110231
200-35680-7	PE1016_P1SCD-08-A-0006IN-D	Total/NA	Sediment	7471B	110231
200-35680-14	PE1016_P1SCD-08-B-0006IN	Total/NA	Sediment	7471B	110231
MB 200-110231/11-A	Method Blank	Total/NA	Sediment	7471B	110231
LCS 200-110231/12-A	Lab Control Sample	Total/NA	Sediment	7471B	110231
200-35680-14 MS	PE1016_P1SCD-08-B-0006IN	Total/NA	Sediment	7471B	110231
200-35680-14 MSD	PE1016_P1SCD-08-B-0006IN	Total/NA	Sediment	7471B	110231

Analysis Batch: 110261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-13	PE1016_P1SCD-BLK-1-101016	Total/NA	Water	7470A	110242
MB 200-110242/11-A	Method Blank	Total/NA	Water	7470A	110242
LCS 200-110242/12-A	Lab Control Sample	Total/NA	Water	7470A	110242
200-35680-13 MS	PE1016_P1SCD-BLK-1-101016	Total/NA	Water	7470A	110242
200-35680-13 MSD	PE1016_P1SCD-BLK-1-101016	Total/NA	Water	7470A	110242

Analysis Batch: 110334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-7	PE1016_P1SCD-08-A-0006IN-D	Total/NA	Sediment	6020A	110229
200-35680-13	PE1016_P1SCD-BLK-1-101016	Total/NA	Water	6020A	110239
200-35680-14	PE1016_P1SCD-08-B-0006IN	Total/NA	Sediment	6020A	110229
MB 200-110229/1-A	Method Blank	Total/NA	Sediment	6020A	110229
MB 200-110239/1-A	Method Blank	Total/NA	Water	6020A	110239
LCS 200-110229/2-A	Lab Control Sample	Total/NA	Sediment	6020A	110229
LCS 200-110239/2-A	Lab Control Sample	Total/NA	Water	6020A	110239

Analysis Batch: 110361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-13	PE1016_P1SCD-BLK-1-101016	Total/NA	Water	6020A	110239
MB 200-110239/1-A	Method Blank	Total/NA	Water	6020A	110239
LCS 200-110239/2-A	Lab Control Sample	Total/NA	Water	6020A	110239

Prep Batch: 110491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-8	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	3050B	
200-35680-9	PE1016_P1SCD-10-A-0005IN	Total/NA	Sediment	3050B	
200-35680-10	PE1016_P1SCD-10-B-0006IN	Total/NA	Sediment	3050B	
200-35680-11	PE1016_P1SCD-09-B-0003IN	Total/NA	Sediment	3050B	
200-35680-12	PE1016_P1SCD-09-B-0309IN	Total/NA	Sediment	3050B	
MB 200-110491/1-A	Method Blank	Total/NA	Sediment	3050B	

Metals (Continued)

Prep Batch: 110491 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 200-110491/2-A	Lab Control Sample	Total/NA	Sediment	3050B	
200-35680-8 MS	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	3050B	
200-35680-8 MSD	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	3050B	

Prep Batch: 110530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-8	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	7471B	
200-35680-9	PE1016_P1SCD-10-A-0005IN	Total/NA	Sediment	7471B	
200-35680-10	PE1016_P1SCD-10-B-0006IN	Total/NA	Sediment	7471B	
200-35680-11	PE1016_P1SCD-09-B-0003IN	Total/NA	Sediment	7471B	
200-35680-12	PE1016_P1SCD-09-B-0309IN	Total/NA	Sediment	7471B	
MB 200-110530/11-A	Method Blank	Total/NA	Sediment	7471B	
LCS 200-110530/12-A	Lab Control Sample	Total/NA	Sediment	7471B	
200-35680-8 MS	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	7471B	
200-35680-8 MSD	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	7471B	

Analysis Batch: 110547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-8	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	6020A	110491
200-35680-9	PE1016_P1SCD-10-A-0005IN	Total/NA	Sediment	6020A	110491
200-35680-10	PE1016_P1SCD-10-B-0006IN	Total/NA	Sediment	6020A	110491
200-35680-11	PE1016_P1SCD-09-B-0003IN	Total/NA	Sediment	6020A	110491
200-35680-12	PE1016_P1SCD-09-B-0309IN	Total/NA	Sediment	6020A	110491
MB 200-110491/1-A	Method Blank	Total/NA	Sediment	6020A	110491
LCS 200-110491/2-A	Lab Control Sample	Total/NA	Sediment	6020A	110491
200-35680-8 MS	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	6020A	110491
200-35680-8 MSD	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	6020A	110491

Analysis Batch: 110575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-8	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	7471B	110530
200-35680-9	PE1016_P1SCD-10-A-0005IN	Total/NA	Sediment	7471B	110530
200-35680-10	PE1016_P1SCD-10-B-0006IN	Total/NA	Sediment	7471B	110530
200-35680-11	PE1016_P1SCD-09-B-0003IN	Total/NA	Sediment	7471B	110530
200-35680-12	PE1016_P1SCD-09-B-0309IN	Total/NA	Sediment	7471B	110530
MB 200-110530/11-A	Method Blank	Total/NA	Sediment	7471B	110530
LCS 200-110530/12-A	Lab Control Sample	Total/NA	Sediment	7471B	110530
200-35680-8 MS	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	7471B	110530
200-35680-8 MSD	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	7471B	110530

General Chemistry

Analysis Batch: 110190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-1	PE1016_P1SCD-06-A-0006IN	Total/NA	Sediment	Moisture	
200-35680-2	PE1016_P1SCD-06-B-0008IN	Total/NA	Sediment	Moisture	
200-35680-3	PE1016_P1SCD-06-A-0613IN	Total/NA	Sediment	Moisture	
200-35680-4	PE1016_P1SCD-07-A-0008IN	Total/NA	Sediment	Moisture	
200-35680-5	PE1016_P1SCD-07-B-0006IN	Total/NA	Sediment	Moisture	
200-35680-6	PE1016_P1SCD-08-A-0006IN	Total/NA	Sediment	Moisture	

General Chemistry (Continued)

Analysis Batch: 110190 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-7	PE1016_P1SCD-08-A-0006IN-D	Total/NA	Sediment	Moisture	
200-35680-8	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	Moisture	
200-35680-9	PE1016_P1SCD-10-A-0005IN	Total/NA	Sediment	Moisture	
200-35680-10	PE1016_P1SCD-10-B-0006IN	Total/NA	Sediment	Moisture	
200-35680-11	PE1016_P1SCD-09-B-0003IN	Total/NA	Sediment	Moisture	
200-35680-12	PE1016_P1SCD-09-B-0309IN	Total/NA	Sediment	Moisture	
200-35680-14	PE1016_P1SCD-08-B-0006IN	Total/NA	Sediment	Moisture	
200-35680-8 DU	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	Moisture	

Analysis Batch: 110277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-1	PE1016_P1SCD-06-A-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35680-2	PE1016_P1SCD-06-B-0008IN	Total/NA	Sediment	Lloyd Kahn	
200-35680-4	PE1016_P1SCD-07-A-0008IN	Total/NA	Sediment	Lloyd Kahn	
200-35680-5	PE1016_P1SCD-07-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35680-6	PE1016_P1SCD-08-A-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35680-7	PE1016_P1SCD-08-A-0006IN-D	Total/NA	Sediment	Lloyd Kahn	
200-35680-8	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35680-9	PE1016_P1SCD-10-A-0005IN	Total/NA	Sediment	Lloyd Kahn	
200-35680-10	PE1016_P1SCD-10-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35680-11	PE1016_P1SCD-09-B-0003IN	Total/NA	Sediment	Lloyd Kahn	
200-35680-12	PE1016_P1SCD-09-B-0309IN	Total/NA	Sediment	Lloyd Kahn	
200-35680-14	PE1016_P1SCD-08-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
MB 200-110277/5	Method Blank	Total/NA	Sediment	Lloyd Kahn	
LCS 200-110277/6	Lab Control Sample	Total/NA	Sediment	Lloyd Kahn	

Analysis Batch: 110363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-3	PE1016_P1SCD-06-A-0613IN	Total/NA	Sediment	Lloyd Kahn	
MB 200-110363/5	Method Blank	Total/NA	Sediment	Lloyd Kahn	
LCS 200-110363/6	Lab Control Sample	Total/NA	Sediment	Lloyd Kahn	

Geotechnical

Analysis Batch: 110708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35680-1	PE1016_P1SCD-06-A-0006IN	Total/NA	Sediment	D422	
200-35680-2	PE1016_P1SCD-06-B-0008IN	Total/NA	Sediment	D422	
200-35680-3	PE1016_P1SCD-06-A-0613IN	Total/NA	Sediment	D422	
200-35680-4	PE1016_P1SCD-07-A-0008IN	Total/NA	Sediment	D422	
200-35680-5	PE1016_P1SCD-07-B-0006IN	Total/NA	Sediment	D422	
200-35680-6	PE1016_P1SCD-08-A-0006IN	Total/NA	Sediment	D422	
200-35680-7	PE1016_P1SCD-08-A-0006IN-D	Total/NA	Sediment	D422	
200-35680-8	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	D422	
200-35680-9	PE1016_P1SCD-10-A-0005IN	Total/NA	Sediment	D422	
200-35680-10	PE1016_P1SCD-10-B-0006IN	Total/NA	Sediment	D422	
200-35680-11	PE1016_P1SCD-09-B-0003IN	Total/NA	Sediment	D422	
200-35680-12	PE1016_P1SCD-09-B-0309IN	Total/NA	Sediment	D422	
200-35680-14	PE1016_P1SCD-08-B-0006IN	Total/NA	Sediment	D422	
200-35680-8 DU	PE1016_P1SCD-09-A-0006IN	Total/NA	Sediment	D422	

Client Sample ID: PE1016_P1SCD-06-A-0006IN
Lab Sample ID: 200-35680-1
Date Collected: 10/10/16 16:45
Matrix: Sediment
Date Received: 10/12/16 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 15:17	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110708	11/01/16 09:24	VTP	TAL BUR

Client Sample ID: PE1016_P1SCD-06-A-0006IN
Lab Sample ID: 200-35680-1
Date Collected: 10/10/16 16:45
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 47.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110192	10/14/16 11:58	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 14:33	MDK	TAL BUR

Client Sample ID: PE1016_P1SCD-06-B-0008IN
Lab Sample ID: 200-35680-2
Date Collected: 10/10/16 16:30
Matrix: Sediment
Date Received: 10/12/16 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 15:24	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110708	11/01/16 09:26	VTP	TAL BUR

Client Sample ID: PE1016_P1SCD-06-B-0008IN
Lab Sample ID: 200-35680-2
Date Collected: 10/10/16 16:30
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 42.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110192	10/14/16 12:04	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 14:35	MDK	TAL BUR

Client Sample ID: PE1016_P1SCD-06-A-0613IN
Lab Sample ID: 200-35680-3
Date Collected: 10/10/16 16:46
Matrix: Sediment
Date Received: 10/12/16 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110363	10/19/16 13:26	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110708	11/01/16 09:28	VTP	TAL BUR

Client Sample ID: PE1016_P1SCD-06-A-0613IN
Lab Sample ID: 200-35680-3
Date Collected: 10/10/16 16:46
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 82.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110192	10/14/16 12:09	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 14:37	MDK	TAL BUR

Client Sample ID: PE1016_P1SCD-07-A-0008IN
Lab Sample ID: 200-35680-4
Date Collected: 10/10/16 16:10
Matrix: Sediment
Date Received: 10/12/16 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 15:37	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110708	11/01/16 09:31	VTP	TAL BUR

Client Sample ID: PE1016_P1SCD-07-A-0008IN
Lab Sample ID: 200-35680-4
Date Collected: 10/10/16 16:10
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 44.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110192	10/14/16 12:15	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 14:39	MDK	TAL BUR

Client Sample ID: PE1016_P1SCD-07-B-0006IN
Lab Sample ID: 200-35680-5
Date Collected: 10/10/16 15:43
Matrix: Sediment
Date Received: 10/12/16 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 15:44	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110708	11/01/16 09:32	VTP	TAL BUR

Client Sample ID: PE1016_P1SCD-07-B-0006IN
Lab Sample ID: 200-35680-5
Date Collected: 10/10/16 15:43
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 48.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110192	10/14/16 12:21	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 14:40	MDK	TAL BUR

Client Sample ID: PE1016_P1SCD-08-A-0006IN
Lab Sample ID: 200-35680-6
Date Collected: 10/10/16 15:10
Matrix: Sediment
Date Received: 10/12/16 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 15:50	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110708	11/01/16 09:34	VTP	TAL BUR

Client Sample ID: PE1016_P1SCD-08-A-0006IN
Lab Sample ID: 200-35680-6
Date Collected: 10/10/16 15:10
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 38.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110192	10/14/16 12:27	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 14:42	MDK	TAL BUR

Client Sample ID: PE1016_P1SCD-08-A-0006IN-D
Lab Sample ID: 200-35680-7
Date Collected: 10/10/16 15:11
Matrix: Sediment
Date Received: 10/12/16 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 15:57	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110708	11/01/16 09:39	VTP	TAL BUR

Client Sample ID: PE1016_P1SCD-08-A-0006IN-D
Lab Sample ID: 200-35680-7
Date Collected: 10/10/16 15:11
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 41.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 13:59	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 14:44	MDK	TAL BUR

Client Sample ID: PE1016_P1SCD-09-A-0006IN
Lab Sample ID: 200-35680-8
Date Collected: 10/10/16 14:20
Matrix: Sediment
Date Received: 10/12/16 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 16:03	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110708	10/25/16 09:49	VTP	TAL BUR

Client Sample ID: PE1016_P1SCD-09-A-0006IN
Lab Sample ID: 200-35680-8
Date Collected: 10/10/16 14:20
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 34.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110491	10/24/16 14:26	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110547	10/25/16 14:25	RM1	TAL BUR
Total/NA	Prep	7471B			110530	10/25/16 11:41	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110575	10/26/16 10:12	MDK	TAL BUR

Client Sample ID: PE1016_P1SCD-10-A-0005IN
Lab Sample ID: 200-35680-9
Date Collected: 10/10/16 17:50
Matrix: Sediment
Date Received: 10/12/16 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 16:10	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110708	10/25/16 09:52	VTP	TAL BUR

Client Sample ID: PE1016_P1SCD-10-A-0005IN
Lab Sample ID: 200-35680-9
Date Collected: 10/10/16 17:50
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 26.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110491	10/24/16 14:26	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110547	10/25/16 14:54	RM1	TAL BUR
Total/NA	Prep	7471B			110530	10/25/16 11:41	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110575	10/26/16 10:17	MDK	TAL BUR

Client Sample ID: PE1016_P1SCD-10-B-0006IN
Lab Sample ID: 200-35680-10
Date Collected: 10/10/16 17:55
Matrix: Sediment
Date Received: 10/12/16 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 16:17	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110708	10/25/16 09:54	VTP	TAL BUR

Client Sample ID: PE1016_P1SCD-10-B-0006IN
Lab Sample ID: 200-35680-10
Date Collected: 10/10/16 17:55
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 27.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110491	10/24/16 14:26	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110547	10/25/16 14:59	RM1	TAL BUR
Total/NA	Prep	7471B			110530	10/25/16 11:41	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110575	10/26/16 10:19	MDK	TAL BUR

Client Sample ID: PE1016_P1SCD-09-B-0003IN
Lab Sample ID: 200-35680-11
Date Collected: 10/10/16 14:40
Matrix: Sediment
Date Received: 10/12/16 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 16:23	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110708	10/25/16 09:56	VTP	TAL BUR

Client Sample ID: PE1016_P1SCD-09-B-0003IN
Lab Sample ID: 200-35680-11
Date Collected: 10/10/16 14:40
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 80.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110491	10/24/16 14:26	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110547	10/25/16 15:05	RM1	TAL BUR
Total/NA	Prep	7471B			110530	10/25/16 11:41	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110575	10/26/16 10:21	MDK	TAL BUR

Client Sample ID: PE1016_P1SCD-09-B-0309IN
Lab Sample ID: 200-35680-12
Date Collected: 10/10/16 14:41
Matrix: Sediment
Date Received: 10/12/16 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 16:30	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110708	10/25/16 09:58	VTP	TAL BUR

Client Sample ID: PE1016_P1SCD-09-B-0309IN
Lab Sample ID: 200-35680-12
Date Collected: 10/10/16 14:41
Matrix: Sediment
Date Received: 10/12/16 10:30
Percent Solids: 38.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110491	10/24/16 14:26	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110547	10/25/16 15:28	RM1	TAL BUR
Total/NA	Prep	7471B			110530	10/25/16 11:41	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110575	10/26/16 10:22	MDK	TAL BUR

Client Sample ID: PE1016_P1SCD-BLK-1-101016
Lab Sample ID: 200-35680-13
Date Collected: 10/10/16 20:20
Matrix: Water
Date Received: 10/12/16 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			110239	10/17/16 12:26	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 16:51	RM1	TAL BUR
Total/NA	Prep	3010A			110239	10/17/16 12:26	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110361	10/19/16 11:58	RM1	TAL BUR

Lab Chronicle

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35680-1
SDG: 200-35660-1

Client Sample ID: PE1016_P1SCD-BLK-1-101016
Date Collected: 10/10/16 20:20
Date Received: 10/12/16 10:30

Lab Sample ID: 200-35680-13
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			110242	10/17/16 12:52	MDK	TAL BUR
Total/NA	Analysis	7470A		1	110261	10/17/16 16:29	MDK	TAL BUR

Client Sample ID: PE1016_P1SCD-08-B-0006IN
Date Collected: 10/10/16 15:15
Date Received: 10/12/16 10:30

Lab Sample ID: 200-35680-14
Matrix: Sediment

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 16:37	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110708	10/23/16 18:39	VTP	TAL BUR

Client Sample ID: PE1016_P1SCD-08-B-0006IN
Date Collected: 10/10/16 15:15
Date Received: 10/12/16 10:30

Lab Sample ID: 200-35680-14
Matrix: Sediment
Percent Solids: 37.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 14:05	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 14:45	MDK	TAL BUR

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Certification Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35680-1
SDG: 200-35660-1

Laboratory: TestAmerica Burlington

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Connecticut	State Program	1	PH-0751	09-30-17
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	NA	02-02-17
Florida	NELAP	4	E87467	06-30-17
L-A-B	DoD ELAP		L2336	02-26-17
Maine	State Program	1	VT00008	04-17-17
Minnesota	NELAP	5	050-999-436	12-31-16 *
New Hampshire	NELAP	1	2006	12-18-16
New Jersey	NELAP	2	VT972	06-30-17
New York	NELAP	2	10391	04-01-17
Pennsylvania	NELAP	3	68-00489	04-30-17
Rhode Island	State Program	1	LAO00298	12-30-16
US Fish & Wildlife	Federal		LE-058448-0	10-31-17
USDA	Federal		P330-11-00093	10-28-16 *
Vermont	State Program	1	VT-4000	12-31-16
Virginia	NELAP	3	460209	12-14-16

* Certification renewal pending - certification considered valid.

Method Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35680-1
SDG: 200-35660-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL BUR
7470A	Mercury (CVAA)	SW846	TAL BUR
7471B	Mercury (CVAA)	SW846	TAL BUR
Lloyd Kahn	Organic Carbon, Total (TOC)	EPA	TAL BUR
Moisture	Percent Moisture	EPA	TAL BUR
D422	Grain Size	ASTM	TAL BUR

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Sample Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35680-1
SDG: 200-35660-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
200-35680-1	PE1016_P1SCD-06-A-0006IN	Sediment	10/10/16 16:45	10/12/16 10:30
200-35680-2	PE1016_P1SCD-06-B-0008IN	Sediment	10/10/16 16:30	10/12/16 10:30
200-35680-3	PE1016_P1SCD-06-A-0613IN	Sediment	10/10/16 16:46	10/12/16 10:30
200-35680-4	PE1016_P1SCD-07-A-0008IN	Sediment	10/10/16 16:10	10/12/16 10:30
200-35680-5	PE1016_P1SCD-07-B-0006IN	Sediment	10/10/16 15:43	10/12/16 10:30
200-35680-6	PE1016_P1SCD-08-A-0006IN	Sediment	10/10/16 15:10	10/12/16 10:30
200-35680-7	PE1016_P1SCD-08-A-0006IN-D	Sediment	10/10/16 15:11	10/12/16 10:30
200-35680-8	PE1016_P1SCD-09-A-0006IN	Sediment	10/10/16 14:20	10/12/16 10:30
200-35680-9	PE1016_P1SCD-10-A-0005IN	Sediment	10/10/16 17:50	10/12/16 10:30
200-35680-10	PE1016_P1SCD-10-B-0006IN	Sediment	10/10/16 17:55	10/12/16 10:30
200-35680-11	PE1016_P1SCD-09-B-0003IN	Sediment	10/10/16 14:40	10/12/16 10:30
200-35680-12	PE1016_P1SCD-09-B-0309IN	Sediment	10/10/16 14:41	10/12/16 10:30
200-35680-13	PE1016_P1SCD-BLK-1-101016	Water	10/10/16 20:20	10/12/16 10:30
200-35680-14	PE1016_P1SCD-08-B-0006IN	Sediment	10/10/16 15:15	10/12/16 10:30

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEHCLACIDs_00226	20 mL	Hydrogen Chloride	100000000 ug/L
					MEHNO3s_00187	5 mL	Nitric acid	25000000 ug/L
					MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
							Ba-137 (Tune)	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
							Be-9 (Tune)	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
							Calcium hardness as calcium carbonate	1248500 ug/L
							Hardness as calcium carbonate	2072100 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
							Co-59 (Tune)	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Hardness as calcium carbonate	2072100 ug/L
							Magnesium hardness as calcium carbonate	823600 ug/L
							Mg	200000 ug/L
							Mg-24 (Tune)	200000 ug/L
							Mg-25 (Tune)	200000 ug/L
							Mg-26 (Tune)	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Cation Exchange Capacity	500000 ug/L
							Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
							Pb-206 (Tune)	1000 ug/L
							Pb-207 (Tune)	1000 ug/L
							Pb-208 (Tune)	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVSRs_00006	1 mL	Sr	5000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
.MEHCLACIDs_00226	08/18/17	Fisher 4116020, Lot 4116020			(Purchased Reagent)		Hydrogen Chloride	1 mL/mL
.MEHNO3s_00187	08/18/17	Macron 0000138698, Lot 0000138698			(Purchased Reagent)		Nitric acid	1 mL/mL
.MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
.MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
.MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
							Ba-137 (Tune)	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MEIVBEs_00010	05/23/17		IV J2-BE02038, Lot J2-BE02038		(Purchased Reagent)		Be	1000 ppm
							Be-9 (Tune)	1000 ppm
.MEIVCAwHRDs_00011	07/21/17		Inorg Vent./H2-CA04105, Lot H2-CA04105		(Purchased Reagent)		Ca	10000 ug/mL
							Calcium hardness as calcium carbonate	24970 ug/mL
							Hardness as calcium carbonate	24970 ug/mL
.MEIVCDs_00012	07/21/17		IV J2-CD02063, Lot J2-CD02063		(Purchased Reagent)		Cd	1000 ug/mL
.MEIVCOs_00012	07/21/17		IV J2-CO02068, Lot J2-CO02068		(Purchased Reagent)		Co	1000 ug/mL
							Co-59 (Tune)	1000 ug/mL
.MEIVCRs_00013	05/06/17		IV/J2-CR03111, Lot J2-CR03111		(Purchased Reagent)		Cr	1000 ppm
.MEIVCUs_00014	05/06/17		IV/J2-CU03026, Lot J2-CU03026		(Purchased Reagent)		Copper	1000 ug/mL
.MEIVFEs_00015	07/21/17		IV./K2-FE04057, Lot K2-FE04057		(Purchased Reagent)		Fe	10000 ppm
.MEIVKs_00013	07/12/17		IV J2-K03054, Lot J2-K03054		(Purchased Reagent)		K	10000 ug/mL
.MEIVMGs_00018	07/21/17		IV J2-MG03145, Lot J2-MG03145		(Purchased Reagent)		Hardness as calcium carbonate	41180 ppm
							Magnesium hardness as calcium carbonate	41180 ppm
							Mg	10000 ppm
							Mg-24 (Tune)	10000 ppm
							Mg-25 (Tune)	10000 ppm
							Mg-26 (Tune)	10000 ppm
.MEIVMNs_00010	01/06/17		IV G2-MN02110, Lot G2-MN02110		(Purchased Reagent)		Mn	1000 ug/mL
.MEIVMOs_00012	01/06/17		Inorganic Ventures H2-MO02073, Lot H2-MO02073		(Purchased Reagent)		Mo	1000 ug/mL
.MEIVNAs_00016	09/01/17		Inorganic Ventures J2-NA03138, Lot J2-NA03138		(Purchased Reagent)		Cation Exchange Capacity	10000 ug/mL
							Na	10000 ug/mL
.MEIVNIs_00011	01/06/17		Inorganic Ventures J2-NI02095, Lot J2-NI02095		(Purchased Reagent)		Ni	1000 ug/mL
.MEIVPBs_00017	05/06/17		IV/J2-PB03066, Lot J2-PB03066		(Purchased Reagent)		Pb	1000 ug/mL
							Pb-206 (Tune)	1000 ug/mL
							Pb-207 (Tune)	1000 ug/mL
							Pb-208 (Tune)	1000 ug/mL
.MEIVSBs_00011	05/06/17		IV/J2-SB03037, Lot J2-SB03037		(Purchased Reagent)		Sb	1000 ug/mL
.MEIVSEs_00013	05/23/17		IV J2-SE02059, Lot J2-SE02059		(Purchased Reagent)		Selenium	1000 ppm
.MEIVSRs_00006	04/14/17		IV J2-SR02053, Lot J2-SR02053		(Purchased Reagent)		Sr	1000 ppm
.MEIVTLs_00013	01/06/17		Inorganic Ventures J2-TL02025, Lot J2-TL02025		(Purchased Reagent)		Tl	1000 ug/mL
.MEIVVs_00010	01/06/17		Inorganic Ventures J2-V02106, Lot J2-V02106		(Purchased Reagent)		V	1000 ug/mL
.MEIVZNs_00014	01/06/17		IV J2-ZN02107, Lot J2-ZN02107		(Purchased Reagent)		Zinc	1000 ppm
ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
							Th-232 (Tune)	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
					MEMS2%0.5%Riw_00230	476.5 mL	Hydrogen Chloride	4765000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Nitric acid	19060000 ppb
.MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
.MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
.MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
.MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
							Th-232 (Tune)	1000 ug/mL
.MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEMS2%0.5%Riw_00230	07/19/17	08/10/16	DI WATER, Lot na	20 L	MEHCLACIDs_00225	100 mL	Hydrogen Chloride	0.5 %
					MEHNO3s_00186	400 mL	Nitric acid	2 %
..MEHCLACIDs_00225	08/05/17	Fisher 4116020, Lot 4116020			(Purchased Reagent)		Hydrogen Chloride	1 mL/mL
..MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
ME6020ICVw_00442	12/23/16	10/14/16	DI WATER, Lot na	100 mL	MESCPICVi_00007	1 mL	Copper	625 ug/L
							Selenium	100 ug/L
							Zinc	625 ug/L
.MESCPICVi_00007	12/23/16	08/03/16	DI WATER, Lot na	250 mL	MESCPICV1_00003	25 mL	Copper	62500 ppb
							Selenium	10000 ppb
							Zinc	62500 ppb
..MESCPICV1_00003	12/31/16	SCP Science/S151210015, Lot S151210015			(Purchased Reagent)		Copper	625000 ug/L
							Selenium	100000 ug/L
							Zinc	625000 ug/L
ME6020ICVw_00443	12/23/16	10/18/16	DI WATER, Lot na	100 mL	MESCPICVi_00007	1 mL	Copper	625 ug/L
							Selenium	100 ug/L
							Zinc	625 ug/L
.MESCPICVi_00007	12/23/16	08/03/16	DI WATER, Lot na	250 mL	MESCPICV1_00003	25 mL	Copper	62500 ppb
							Selenium	10000 ppb
							Zinc	62500 ppb
..MESCPICV1_00003	12/31/16	SCP Science/S151210015, Lot S151210015			(Purchased Reagent)		Copper	625000 ug/L
							Selenium	100000 ug/L
							Zinc	625000 ug/L
ME6020ICVw_00444	12/23/16	10/19/16	DI WATER, Lot na	100 mL	MESCPICVi_00007	1 mL	Selenium	100 ug/L
.MESCPICVi_00007	12/23/16	08/03/16	DI WATER, Lot na	250 mL	MESCPICV1_00003	25 mL	Selenium	10000 ppb
..MESCPICV1_00003	12/31/16	SCP Science/S151210015, Lot S151210015			(Purchased Reagent)		Selenium	100000 ug/L
ME6020ICVw_00445	12/23/16	10/25/16	DI WATER, Lot na	100 mL	MESCPICVi_00007	1 mL	Copper	625 ug/L
							Selenium	100 ug/L
							Zinc	625 ug/L
.MESCPICVi_00007	12/23/16	08/03/16	DI WATER, Lot na	250 mL	MESCPICV1_00003	25 mL	Copper	62500 ppb
							Selenium	10000 ppb
							Zinc	62500 ppb
..MESCPICV1_00003	12/31/16	SCP Science/S151210015, Lot S151210015			(Purchased Reagent)		Copper	625000 ug/L
							Selenium	100000 ug/L
							Zinc	625000 ug/L
ME6020STD1_00436	10/15/16	10/14/16	DI WATER, Lot na	250 mL	ME6020CALi_A_00022	0.25 mL	Ag	1 ug/L
							Al	50 ug/L
							Ba	10 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Be	1 ug/L
							Ca	500 ug/L
							Cd	1 ug/L
							Co	1 ug/L
							Cr	4 ug/L
							Copper	5 ug/L
							Fe	200 ug/L
							K	500 ug/L
							Mg	200 ug/L
							Mn	2 ug/L
							Mo	10 ug/L
							Na	500 ug/L
							Ni	2 ug/L
							Pb	1 ug/L
							Sb	2 ug/L
							Selenium	4 ug/L
							Tl	2 ug/L
							V	5 ug/L
							Zinc	20 ug/L
					ME6020CALi_B_00019	0.25 mL	W	2 ug/L
							As	2 ug/L
							B	40 ug/L
							Th	2 ug/L
							U	1 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD1_00437	10/19/16	10/18/16	DI WATER, Lot na	250 mL	ME6020CALi_A_00022	0.25 mL	Ag	1 ug/L
							Al	50 ug/L
							Ba	10 ug/L
							Be	1 ug/L
							Ca	500 ug/L
							Cd	1 ug/L
							Co	1 ug/L
							Cr	4 ug/L
							Copper	5 ug/L
							Fe	200 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							K	500 ug/L
							Mg	200 ug/L
							Mn	2 ug/L
							Mo	10 ug/L
							Na	500 ug/L
							Ni	2 ug/L
							Pb	1 ug/L
							Sb	2 ug/L
							Selenium	4 ug/L
							Tl	2 ug/L
							V	5 ug/L
							Zinc	20 ug/L
					ME6020CALi_B_00019	0.25 mL	W	2 ug/L
							As	2 ug/L
							B	40 ug/L
							Th	2 ug/L
							U	1 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17		IV/J2-AG03048, Lot J2-AG03048		(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17		IV J2-AL05009, Lot J2-AL05009		(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17		IV J2-BA02093, Lot J2-BA02093		(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17		IV J2-BE02038, Lot J2-BE02038		(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17		Inorg Vent./H2-CA04105, Lot H2-CA04105		(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17		IV J2-CD02063, Lot J2-CD02063		(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17		IV J2-CO02068, Lot J2-CO02068		(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17		IV/J2-CR03111, Lot J2-CR03111		(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17		IV/J2-CU03026, Lot J2-CU03026		(Purchased Reagent)		Copper	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD1_00438	10/20/16	10/19/16	DI WATER, Lot na	250 mL	ME6020CALi_A_00022	0.25 mL	Ag	1 ug/L
							Al	50 ug/L
							Ba	10 ug/L
							Be	1 ug/L
							Ca	500 ug/L
							Cd	1 ug/L
							Co	1 ug/L
							Cr	4 ug/L
							Copper	5 ug/L
							Fe	200 ug/L
							K	500 ug/L
							Mg	200 ug/L
							Mn	2 ug/L
							Mo	10 ug/L
							Na	500 ug/L
							Ni	2 ug/L
							Pb	1 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Sb	2 ug/L
							Selenium	4 ug/L
							Tl	2 ug/L
							V	5 ug/L
							Zinc	20 ug/L
					ME6020CALi_B_00019	0.25 mL	W	2 ug/L
							As	2 ug/L
							B	40 ug/L
							Th	2 ug/L
							U	1 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD1_00439	10/26/16	10/25/16	DI WATER, Lot na	250 mL	ME6020CALi_A_00022	0.25 mL	Ag	1 ug/L
							Al	50 ug/L
							Ba	10 ug/L
							Be	1 ug/L
							Ca	500 ug/L
							Cd	1 ug/L
							Co	1 ug/L
							Cr	4 ug/L
							Copper	5 ug/L
							Fe	200 ug/L
							K	500 ug/L
							Mg	200 ug/L
							Mn	2 ug/L
							Mo	10 ug/L
							Na	500 ug/L
							Ni	2 ug/L
							Pb	1 ug/L
							Sb	2 ug/L
							Selenium	4 ug/L
							Tl	2 ug/L
							V	5 ug/L
							Zinc	20 ug/L
					ME6020CALi_B_00019	0.25 mL	W	2 ug/L

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							As	2 ug/L
							B	40 ug/L
							Th	2 ug/L
							U	1 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD2_00441	10/15/16	10/14/16	DI WATER, Lot na	100 mL	ME6020CALi_A_00022	0.5 mL	Ag	5 ug/L
							Al	250 ug/L
							Ba	50 ug/L
							Be	5 ug/L
							Ca	2500 ug/L
							Cd	5 ug/L
							Co	5 ug/L
							Cr	20 ug/L
							Copper	25 ug/L
							Fe	1000 ug/L
							K	2500 ug/L
							Mg	1000 ug/L
							Mn	10 ug/L
							Mo	50 ug/L
							Na	2500 ug/L
							Ni	10 ug/L
							Pb	5 ug/L
							Sb	10 ug/L
							Selenium	20 ug/L
							Tl	10 ug/L
							V	25 ug/L
							Zinc	100 ug/L
					ME6020CALi_B_00019	0.5 mL	W	10 ug/L
							As	10 ug/L
							B	200 ug/L
							Th	10 ug/L
							U	5 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD2_00442	10/19/16	10/18/16	DI WATER, Lot na	100 mL	ME6020CALi_A_00022	0.5 mL	Ag	5 ug/L
							Al	250 ug/L
							Ba	50 ug/L
							Be	5 ug/L
							Ca	2500 ug/L
							Cd	5 ug/L
							Co	5 ug/L
							Cr	20 ug/L
							Copper	25 ug/L
							Fe	1000 ug/L
							K	2500 ug/L
							Mg	1000 ug/L
							Mn	10 ug/L
							Mo	50 ug/L
							Na	2500 ug/L
							Ni	10 ug/L
							Pb	5 ug/L
							Sb	10 ug/L
							Selenium	20 ug/L
							Tl	10 ug/L
							V	25 ug/L
							Zinc	100 ug/L
					ME6020CALi_B_00019	0.5 mL	W	10 ug/L
							As	10 ug/L
							B	200 ug/L
							Th	10 ug/L
							U	5 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD2_00443	10/20/16	10/19/16	DI WATER, Lot na	100 mL	ME6020CALi_A_00022	0.5 mL	Ag	5 ug/L
							Al	250 ug/L
							Ba	50 ug/L
							Be	5 ug/L
							Ca	2500 ug/L
							Cd	5 ug/L
							Co	5 ug/L
							Cr	20 ug/L
							Copper	25 ug/L
							Fe	1000 ug/L
							K	2500 ug/L
							Mg	1000 ug/L
							Mn	10 ug/L
							Mo	50 ug/L
							Na	2500 ug/L
							Ni	10 ug/L
							Pb	5 ug/L
							Sb	10 ug/L
							Selenium	20 ug/L
							Tl	10 ug/L
							V	25 ug/L
							Zinc	100 ug/L
					ME6020CALi_B_00019	0.5 mL	W	10 ug/L
							As	10 ug/L
							B	200 ug/L
							Th	10 ug/L
							U	5 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17		IV/J2-AG03048, Lot J2-AG03048		(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17		IV J2-AL05009, Lot J2-AL05009		(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17		IV J2-BA02093, Lot J2-BA02093		(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17		IV J2-BE02038, Lot J2-BE02038		(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17		Inorg Vent./H2-CA04105, Lot H2-CA04105		(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17		IV J2-CD02063, Lot J2-CD02063		(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17		IV J2-CO02068, Lot J2-CO02068		(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17		IV/J2-CR03111, Lot J2-CR03111		(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17		IV/J2-CU03026, Lot J2-CU03026		(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17		IV./K2-FE04057, Lot K2-FE04057		(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17		IV J2-K03054, Lot J2-K03054		(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17		IV J2-MG03145, Lot J2-MG03145		(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17		IV G2-MN02110, Lot G2-MN02110		(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17		Inorganic Ventures H2-MO02073, Lot H2-MO02073		(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17		Inorganic Ventures J2-NA03138, Lot J2-NA03138		(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17		Inorganic Ventures J2-NI02095, Lot J2-NI02095		(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17		IV/J2-PB03066, Lot J2-PB03066		(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17		IV/J2-SB03037, Lot J2-SB03037		(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17		IV J2-SE02059, Lot J2-SE02059		(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17		Inorganic Ventures J2-TL02025, Lot J2-TL02025		(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17		Inorganic Ventures J2-V02106, Lot J2-V02106		(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17		IV J2-ZN02107, Lot J2-ZN02107		(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17		High Purity 1426812, Lot 1426812		(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17		IV J2-AS02122, Lot J2-AS02122		(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17		Inorganic Ventures H2-B02125, Lot H2-B02125		(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17		IV/J2-TH01112, Lot J2-TH01112		(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17		Inorganic Ventures J2-U01107R, Lot J2-U01107R		(Purchased Reagent)		U	1000 ug/mL
ME6020STD2_00444	10/26/16	10/25/16	DI WATER, Lot na	100 mL	ME6020CALi_A_00022	0.5 mL	Ag	5 ug/L
							Al	250 ug/L
							Ba	50 ug/L
							Be	5 ug/L
							Ca	2500 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cd	5 ug/L
							Co	5 ug/L
							Cr	20 ug/L
							Copper	25 ug/L
							Fe	1000 ug/L
							K	2500 ug/L
							Mg	1000 ug/L
							Mn	10 ug/L
							Mo	50 ug/L
							Na	2500 ug/L
							Ni	10 ug/L
							Pb	5 ug/L
							Sb	10 ug/L
							Selenium	20 ug/L
							Tl	10 ug/L
							V	25 ug/L
							Zinc	100 ug/L
					ME6020CALi_B_00019	0.5 mL	W	10 ug/L
							As	10 ug/L
							B	200 ug/L
							Th	10 ug/L
							U	5 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD3_00442	10/15/16	10/14/16	DI WATER, Lot na	30 mL	6020CALi_UWTh_00014	0.3 mL	W	20 ug/L
							Th	20 ug/L
							U	10 ug/L
					MEIVCALi_00039	0.6 mL	Ag	100 ug/L
							As	200 ug/L
							B	250 ug/L
							Ba	1250 ug/L
							Be	625 ug/L
							Cd	200 ug/L
							Co	500 ug/L
							Copper	1250 ug/L
							Cr	400 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Mn	1250 ug/L
							Ni	1250 ug/L
							Pb	1250 ug/L
							Selenium	200 ug/L
							Tl	200 ug/L
							V	1250 ug/L
							Zinc	1250 ug/L
							Ca	30000 ug/L
							K	10000 ug/L
							Mg	30000 ug/L
							Na	10000 ug/L
							Mo	1250 ug/L
							Sb	250 ug/L
							Al	30000 ug/L
							Fe	30000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD3_00443	10/19/16	10/18/16	DI WATER, Lot na	30 mL	6020CALi_UWTh_00014	0.3 mL	W	20 ug/L
							Th	20 ug/L
							U	10 ug/L
					MEIVCALi_00039	0.6 mL	Ag	100 ug/L
							As	200 ug/L
							B	250 ug/L
							Ba	1250 ug/L
							Be	625 ug/L
							Cd	200 ug/L
							Co	500 ug/L
							Copper	1250 ug/L
							Cr	400 ug/L
							Mn	1250 ug/L
							Ni	1250 ug/L
							Pb	1250 ug/L
							Selenium	200 ug/L
							Tl	200 ug/L
							V	1250 ug/L
							Zinc	1250 ug/L
							Ca	30000 ug/L
							K	10000 ug/L
							Mg	30000 ug/L
							Na	10000 ug/L
							Mo	1250 ug/L
							Sb	250 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Al	30000 ug/L
							Fe	30000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD3_00444	10/20/16	10/19/16	DI WATER, Lot na	30 mL	6020CALi_UWTh_00014	0.3 mL	W	20 ug/L
							Th	20 ug/L
							U	10 ug/L
					MEIVCALi_00039	0.6 mL	Ag	100 ug/L
							As	200 ug/L
							B	250 ug/L
							Ba	1250 ug/L
							Be	625 ug/L
							Cd	200 ug/L
							Co	500 ug/L
							Copper	1250 ug/L
							Cr	400 ug/L
							Mn	1250 ug/L
							Ni	1250 ug/L
							Pb	1250 ug/L
							Selenium	200 ug/L
							Tl	200 ug/L
							V	1250 ug/L
							Zinc	1250 ug/L
							Ca	30000 ug/L
							K	10000 ug/L
							Mg	30000 ug/L
							Na	10000 ug/L
							Mo	1250 ug/L
							Sb	250 ug/L
							Al	30000 ug/L
							Fe	30000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD3_00445	10/26/16	10/25/16	DI WATER, Lot na	30 mL	6020CALi_UWTh_00014	0.3 mL	W	20 ug/L
							Th	20 ug/L
							U	10 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVCALi_00039	0.6 mL	Ag	100 ug/L
							As	200 ug/L
							B	250 ug/L
							Ba	1250 ug/L
							Be	625 ug/L
							Cd	200 ug/L
							Co	500 ug/L
							Copper	1250 ug/L
							Cr	400 ug/L
							Mn	1250 ug/L
							Ni	1250 ug/L
							Pb	1250 ug/L
							Selenium	200 ug/L
							Tl	200 ug/L
							V	1250 ug/L
							Zinc	1250 ug/L
							Ca	30000 ug/L
							K	10000 ug/L
							Mg	30000 ug/L
							Na	10000 ug/L
							Mo	1250 ug/L
							Sb	250 ug/L
							Al	30000 ug/L
							Fe	30000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD4_00181	10/15/16	10/14/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.3 mL	W	60 ug/L
							Th	60 ug/L
							U	30 ug/L
					MEIVCALi_00039	0.6 mL	Ag	300 ug/L
							As	600 ug/L
							B	750 ug/L
							Ba	3750 ug/L
							Be	1875 ug/L
							Cd	600 ug/L
							Co	1500 ug/L
							Copper	3750 ug/L
							Cr	1200 ug/L
							Mn	3750 ug/L
							Ni	3750 ug/L
							Pb	3750 ug/L
							Selenium	600 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Tl	600 ug/L
							V	3750 ug/L
							Zinc	3750 ug/L
							Ca	90000 ug/L
							K	30000 ug/L
							Mg	90000 ug/L
							Na	30000 ug/L
							Mo	3750 ug/L
							Sb	750 ug/L
							Al	90000 ug/L
							Fe	90000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD4_00183	10/19/16	10/18/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.3 mL	W	60 ug/L
							Th	60 ug/L
							U	30 ug/L
					MEIVCALi_00039	0.6 mL	Ag	300 ug/L
							As	600 ug/L
							B	750 ug/L
							Ba	3750 ug/L
							Be	1875 ug/L
							Cd	600 ug/L
							Co	1500 ug/L
							Copper	3750 ug/L
							Cr	1200 ug/L
							Mn	3750 ug/L
							Ni	3750 ug/L
							Pb	3750 ug/L
							Selenium	600 ug/L
							Tl	600 ug/L
							V	3750 ug/L
							Zinc	3750 ug/L
							Ca	90000 ug/L
							K	30000 ug/L
							Mg	90000 ug/L
							Na	30000 ug/L
							Mo	3750 ug/L
							Sb	750 ug/L
							Al	90000 ug/L
							Fe	90000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD4_00184	10/20/16	10/19/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.3 mL	W	60 ug/L
							Th	60 ug/L
							U	30 ug/L
					MEIVCALi_00039	0.6 mL	Ag	300 ug/L
							As	600 ug/L
							B	750 ug/L
							Ba	3750 ug/L
							Be	1875 ug/L
							Cd	600 ug/L
							Co	1500 ug/L
							Copper	3750 ug/L
							Cr	1200 ug/L
							Mn	3750 ug/L
							Ni	3750 ug/L
							Pb	3750 ug/L
							Selenium	600 ug/L
							Tl	600 ug/L
							V	3750 ug/L
							Zinc	3750 ug/L
							Ca	90000 ug/L
							K	30000 ug/L
							Mg	90000 ug/L
							Na	30000 ug/L
							Mo	3750 ug/L
							Sb	750 ug/L
							Al	90000 ug/L
							Fe	90000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD4_00186	10/26/16	10/25/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.3 mL	W	60 ug/L
							Th	60 ug/L
							U	30 ug/L
					MEIVCALi_00039	0.6 mL	Ag	300 ug/L
							As	600 ug/L
							B	750 ug/L
							Ba	3750 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Be	1875 ug/L
							Cd	600 ug/L
							Co	1500 ug/L
							Copper	3750 ug/L
							Cr	1200 ug/L
							Mn	3750 ug/L
							Ni	3750 ug/L
							Pb	3750 ug/L
							Selenium	600 ug/L
							Tl	600 ug/L
							V	3750 ug/L
							Zinc	3750 ug/L
							Ca	90000 ug/L
							K	30000 ug/L
							Mg	90000 ug/L
							Na	30000 ug/L
							Mo	3750 ug/L
							Sb	750 ug/L
							Al	90000 ug/L
							Fe	90000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD5_00174	10/15/16	10/14/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.6 mL	W	120 ug/L
							Th	120 ug/L
							U	60 ug/L
					MEIVCALi_00039	1 mL	Ag	500 ug/L
							As	1000 ug/L
							B	1250 ug/L
							Ba	6250 ug/L
							Be	3125 ug/L
							Cd	1000 ug/L
							Co	2500 ug/L
							Copper	6250 ug/L
							Cr	2000 ug/L
							Mn	6250 ug/L
							Ni	6250 ug/L
							Pb	6250 ug/L
							Selenium	1000 ug/L
							Tl	1000 ug/L
							V	6250 ug/L
							Zinc	6250 ug/L
							Ca	150000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							K	50000 ug/L
							Mg	150000 ug/L
							Na	50000 ug/L
							Mo	6250 ug/L
							Sb	1250 ug/L
							Al	150000 ug/L
							Fe	150000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD5_00175	10/19/16	10/18/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.6 mL	W	120 ug/L
							Th	120 ug/L
							U	60 ug/L
					MEIVCALi_00039	1 mL	Ag	500 ug/L
							As	1000 ug/L
							B	1250 ug/L
							Ba	6250 ug/L
							Be	3125 ug/L
							Cd	1000 ug/L
							Co	2500 ug/L
							Cr	2000 ug/L
							Mn	6250 ug/L
							Ni	6250 ug/L
							Pb	6250 ug/L
							Tl	1000 ug/L
							V	6250 ug/L
							Ca	150000 ug/L
							K	50000 ug/L
							Mg	150000 ug/L
							Na	50000 ug/L
							Mo	6250 ug/L
							Sb	1250 ug/L
							Al	150000 ug/L
							Fe	150000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Tl	10000 ppb
							V	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD5_00175	10/19/16	10/18/16	DI WATER, Lot na	10 mL	MEIVCALi_00039	1 mL	Copper	6250 ug/L
							Selenium	1000 ug/L
							Zinc	6250 ug/L
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Copper	62500 ppb
							Selenium	10000 ppb
							Zinc	62500 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Copper	625 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Selenium	100 ug/mL
							Zinc	625 ug/mL
ME6020STD5_00176	10/20/16	10/19/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.6 mL	W	120 ug/L
							Th	120 ug/L
							U	60 ug/L
					MEIVCALi_00039	1 mL	Ag	500 ug/L
							As	1000 ug/L
							B	1250 ug/L
							Ba	6250 ug/L
							Be	3125 ug/L
							Cd	1000 ug/L
							Co	2500 ug/L
							Copper	6250 ug/L
							Cr	2000 ug/L
							Mn	6250 ug/L
							Ni	6250 ug/L
							Pb	6250 ug/L
							Selenium	1000 ug/L
							Tl	1000 ug/L
							V	6250 ug/L
							Zinc	6250 ug/L
							Ca	150000 ug/L
							K	50000 ug/L
							Mg	150000 ug/L
							Na	50000 ug/L
							Mo	6250 ug/L
							Sb	1250 ug/L
							Al	150000 ug/L
							Fe	150000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD5_00177	10/26/16	10/25/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.6 mL	W	120 ug/L
							Th	120 ug/L
							U	60 ug/L
					MEIVCALi_00039	1 mL	Ag	500 ug/L
							As	1000 ug/L
							B	1250 ug/L
							Ba	6250 ug/L
							Be	3125 ug/L
							Cd	1000 ug/L
							Co	2500 ug/L
							Copper	6250 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cr	2000 ug/L
							Mn	6250 ug/L
							Ni	6250 ug/L
							Pb	6250 ug/L
							Selenium	1000 ug/L
							Tl	1000 ug/L
							V	6250 ug/L
							Zinc	6250 ug/L
							Ca	150000 ug/L
							K	50000 ug/L
							Mg	150000 ug/L
							Na	50000 ug/L
							Mo	6250 ug/L
							Sb	1250 ug/L
							Al	150000 ug/L
							Fe	150000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
mehgccvw_01052	10/18/16	10/17/16	DI WATER, Lot na	100 mL	MEHGCCVi_00258	1 mL	Nitric acid	3030000 ppb
							Mercury	100 ppb
					MEHNO3s_00186	0.3 mL	Nitric acid	3030000 ppb
.MEHGCCVi_00258	10/30/16	09/30/16	DI WATER, Lot na	100 mL	MEHNO3s_00185	0.3 mL	Nitric acid	3000000 ppb
					MESPEXHgs_00014	1 mL	Mercury	10000 ppb
..MEHNO3s_00185	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
..MESPEXHgs_00014	12/30/16	SPEX Certiprep 21-3HGY, Lot 21-3HGY			(Purchased Reagent)		Mercury	1000 mg/L
.MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
mehgccvw_01053	10/26/16	10/25/16	DI WATER, Lot na	100 mL	MEHGCCVi_00258	1 mL	Nitric acid	3030000 ppb
							Mercury	100 ppb
					MEHNO3s_00186	0.3 mL	Nitric acid	3030000 ppb
.MEHGCCVi_00258	10/30/16	09/30/16	DI WATER, Lot na	100 mL	MEHNO3s_00185	0.3 mL	Nitric acid	3000000 ppb
					MESPEXHgs_00014	1 mL	Mercury	10000 ppb
..MEHNO3s_00185	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
..MESPEXHgs_00014	12/30/16	SPEX Certiprep 21-3HGY, Lot 21-3HGY			(Purchased Reagent)		Mercury	1000 mg/L
.MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
MEHGICVw_00085	10/20/16	10/13/16	DI WATER, Lot na	500 mL	MEHGICVi_00032	1.5 mL	Nitric acid	2030000 ppb
							Mercury	30 ppb
					MEHNO3s_00186	1 mL	Nitric acid	2030000 ppb
.MEHGICVi_00032	11/13/16	10/13/16	DI WATER, Lot na	100 mL	MEHNO3s_00185	1 mL	Nitric acid	10000000 ppb
					MEIVHGs_00015	1 mL	Mercury	10000 ppb
..MEHNO3s_00185	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
..MEIVHGs_00015	01/06/17	Inorg. Vent. J2-HG02133, Lot J2-HG02133			(Purchased Reagent)		Mercury	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
MEHGICVw_00086	11/01/16	10/25/16	DI WATER, Lot na	500 mL	MEHGICVi_00032	1.5 mL	Nitric acid	2030000 ppb
							Mercury	30 ppb
					MEHNO3s_00186	1 mL	Nitric acid	2030000 ppb
.MEHGICVi_00032	11/13/16	10/13/16	DI WATER, Lot na	100 mL	MEHNO3s_00185	1 mL	Nitric acid	10000000 ppb
					MEIVHGs_00015	1 mL	Mercury	10000 ppb
..MEHNO3s_00185	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
..MEIVHGs_00015	01/06/17	Inorg. Vent. J2-HG02133, Lot J2-HG02133			(Purchased Reagent)		Mercury	1000 ug/mL
.MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
MEMSABw_00227	01/06/17	10/07/16	DI WATER, Lot na	200 mL	CLPICPMSCRQL_00001	0.5 mL	As	45 ppb
							Ba	250 ppb
							Be	25 ppb
							Cd	25 ppb
							Co	25 ppb
							Cr	50 ppb
							Copper	50 ppb
							Mn	25 ppb
							Ni	25 ppb
							Pb	25 ppb
							Sb	50 ppb
							Selenium	125 ppb
							Tl	25 ppb
							V	25 ppb
							Zinc	50 ppb
							Ag	25 ppb
					ME6020CALi_B_00019	2 mL	W	20 ppb
							As	45 ppb
							B	400 ppb
							Th	20 ppb
							U	10 ppb
					ME6020ICS-OAs_00016	20 mL	Al	100000 ppb
							Ca	100000 ppb
							Fe	100000 ppb
							K	100000 ppb
							Mg	100000 ppb
							Mo	2000 ppb
							Na	100000 ppb
.CLPICPMSCRQL_00001	01/06/17	10/07/16	DI WATER, Lot NA	100 mL	MEIVASs_00010	1 mL	As	10 ug/mL
					MEIVBAs_00016	10 mL	Ba	100 ug/mL
					MEIVBEs_00010	1 mL	Be	10 ug/mL
					MEIVCDs_00012	1 mL	Cd	10 ug/mL
					MEIVCOs_00012	1 mL	Co	10 ug/mL
					MEIVCRs_00013	2 mL	Cr	20 ug/mL
					MEIVCUs_00014	2 mL	Copper	20 ug/mL
					MEIVMNs_00010	1 mL	Mn	10 ug/mL
					MEIVNIs_00011	1 mL	Ni	10 ug/mL
					MEIVPBs_00018	1 mL	Pb	10 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVSBs_00011	2 mL	Sb	20 ug/mL
					MEIVSEs_00013	5 mL	Selenium	50 ug/mL
					MEIVTLs_00013	1 mL	Tl	10 ug/mL
					MEIVVs_00010	1 mL	V	10 ug/mL
					MEIVZNs_00014	2 mL	Zinc	20 ug/mL
					MESPEXAGs_00011	1 mL	Ag	10 ug/mL
..MEIVASs_00010	02/04/17	Inorganic VenturesJ2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00018	07/21/17	IV/J2-PB03074, Lot J2-PB03074			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
..MESPEXAGs_00011	02/28/17	SPEX 20-172AGY, Lot 20-172AGY			(Purchased Reagent)		Ag	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.ME6020ICS-OAs_00016	07/21/17	IV J2-MEB613036, Lot J2-MEB613036			(Purchased Reagent)		Al	1000 ug/mL
							Ca	1000 ug/mL
							Fe	1000 ug/mL
							K	1000 ug/mL
							Mg	1000 ug/mL
							Mo	20 ug/mL
							Na	1000 ug/mL
MEMSICSAw_00210	07/19/17	10/07/16	DI WATER, Lot na	200 mL	ME6020ICS-OAs_00016	20 mL	Al	100000 ppb
							Ca	100000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Fe	100000 ppb
							K	100000 ppb
							Mg	100000 ppb
							Mo	2000 ppb
							Na	100000 ppb
.ME6020ICS-OAs_00016	07/21/17	IV J2-MEB613036, Lot J2-MEB613036			(Purchased Reagent)		Al	1000 ug/mL
							Ca	1000 ug/mL
							Fe	1000 ug/mL
							K	1000 ug/mL
							Mg	1000 ug/mL
							Mo	20 ug/mL
							Na	1000 ug/mL
MEMSISw_00184	11/17/16	10/03/16	DI WATER, Lot na	8000 mL	MEIVLi_00005	1.92 mL	Li-6 Internal Standard	240 ug/L
					MEMSINSTDi_00055	16 mL	In-115 (IS)	100 ug/L
.MEIVLi_00005	01/06/17	IV J2-LI03018, Lot J2-LI03018			(Purchased Reagent)		Li-6 Internal Standard	1000 ppm
.MEMSINSTDi_00055	11/17/16	10/03/16	DI WATER, Lot na	100 mL	MEIVINs_00024	5 mL	In-115 (IS)	50000 ug/L
..MEIVINs_00024	01/06/17	IV J2-IN011115, Lot J2-IN011115			(Purchased Reagent)		In-115 (IS)	1000 ppm
MEMSTUNEw_00073	01/06/17	10/04/16	DI WATER, Lot na	500 mL	MEMS6020TUNEi_00043	5 mL	Ba-137 (Tune)	10 ppb
							Be-9 (Tune)	10 ppb
							Ce-140 (Tune)	10 ppb
							Co-59 (Tune)	10 ppb
							In-113 (Tune)	10 ppb
							In-115 (Tune)	10 ppb
							Mg-24 (Tune)	10 ppb
							Mg-25 (Tune)	10 ppb
							Mg-26 (Tune)	10 ppb
							Pb-206 (Tune)	1 ppb
							Pb-207 (Tune)	1 ppb
							Pb-208 (Tune)	1 ppb
							Th-232 (Tune)	10 ppb
.MEMS6020TUNEi_00043	01/06/17	10/04/16	DI WATER, Lot na	1000 mL	MEIVBAs_00016	1 mL	Ba-137 (Tune)	1 ppm
					MEIVBEs_00010	1 mL	Be-9 (Tune)	1 ppm
					MEIVCEs_00010	1 mL	Ce-140 (Tune)	1 ppm
					MEIVCOs_00012	1 mL	Co-59 (Tune)	1 ppm
					MEIVINs_00025	0.1 mL	In-113 (Tune)	1 ppm
							In-115 (Tune)	1 ppm
					MEIVMGs_00018	0.1 mL	Mg-24 (Tune)	1 ppm
							Mg-25 (Tune)	1 ppm
							Mg-26 (Tune)	1 ppm
					MEIVPBs_00018	0.1 mL	Pb-206 (Tune)	0.1 ppm
							Pb-207 (Tune)	0.1 ppm
							Pb-208 (Tune)	0.1 ppm
					MEIVTHs_00009	1 mL	Th-232 (Tune)	1 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba-137 (Tune)	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be-9 (Tune)	1000 ppm
..MEIVCEs_00010	01/06/17	Inorganic Ventures J2-CE01096, Lot J2-CE01096			(Purchased Reagent)		Ce-140 (Tune)	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co-59 (Tune)	1000 ug/mL
..MEIVINs_00025	03/14/17	IV J2-IN01114, Lot J2-IN01114			(Purchased Reagent)		In-113 (Tune)	10000 ppm
							In-115 (Tune)	10000 ppm
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg-24 (Tune)	10000 ppm
							Mg-25 (Tune)	10000 ppm
							Mg-26 (Tune)	10000 ppm
..MEIVPBs_00018	07/21/17	IV/J2-PB03074, Lot J2-PB03074			(Purchased Reagent)		Pb-206 (Tune)	1000 ug/mL
							Pb-207 (Tune)	1000 ug/mL
							Pb-208 (Tune)	1000 ug/mL
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th-232 (Tune)	1000 ug/mL
WCLKLCSs_00018	01/26/17	LECO 1017, Lot 1017			(Purchased Reagent)		Total Organic Carbon	0.00926 g/g
WCTOCCALs_00014	02/28/17	AccuSPEC, Lot S150220002			(Purchased Reagent)		Total Organic Carbon	10000 mg/L

Reagent

ME6020ICS-OAs_00016

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	6020ICS-0A
Lot Number:	J2-MEB613036
Matrix:	1% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Chloride, 2 000 µg/mL ea: Carbon, 1 000 µg/mL ea: Aluminum, Calcium, Iron, Potassium, Magnesium, Sodium, Phosphorus, Sulfur, 20 µg/mL ea: Molybdenum, Titanium

954502
ID: ME6020ICS-OAs_00016
Exp:07/21/17 Prpd:MDK Opn:07/21/16
6020ICS-OA Stock Std
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	1 001 ± 4 µg/mL	Calcium, Ca	1 001 ± 6 µg/mL
Carbon, C	2 001 ± 9 µg/mL	Chloride, Cl	10 010.0 ± 40.0 µg/mL
Iron, Fe	1 001 ± 4 µg/mL	Magnesium, Mg	1 001 ± 4 µg/mL
Molybdenum, Mo	20.01 ± 0.09 µg/mL	Phosphorus, P	1 001 ± 5 µg/mL
Potassium, K	1 001 ± 4 µg/mL	Sodium, Na	1 001 ± 4 µg/mL
Sulfur, S	1 001 ± 4 µg/mL	Titanium, Ti	20.01 ± 0.11 µg/mL

Certified Density: 1.034 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
C	Acidimetric	84L	84L
Ca	ICP Assay	3109a	050825
Ca	EDTA	928	928
Cl	Acidimetric	84L	84L
Fe	ICP Assay	3126a	051031
Fe	EDTA	928	928
K	ICP Assay	3141a	051220
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
Mo	ICP Assay	3134	891307
Mo	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
S	Acidimetric	84L	84L
S	ICP Assay	3154	892205
Ti	ICP Assay	3162a	060808
Ti	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000207	M	Eu	<	0.000103	s	Na	<		M	Se	<	0.003315	M	Zn	0.010362
s	Al	<		s	Fe	<		M	Nb	<	0.000621	n	Si	<		M	Zr	< 0.000828
O	As	<	0.041360	M	Ga	<	0.000103	M	Nd	<	0.000103	M	Sm	<	0.000103			
M	Au	<	0.000205	M	Gd	<	0.000103	O	Ni	<	0.009092	M	Sn	<	0.000414			
M	B	<	0.006320	M	Ge	<	0.005388	M	Os	<	0.000102	O	Sr		0.004446			
M	Ba		0.000932	M	Hf	<	0.000103	s	P	<		M	Ta	<	0.000103			
O	Be	<	0.000103	M	Hg	<	0.000308	M	Pb		0.004662	M	Tb	<	0.000103			
M	Bi	<	0.000414	M	Ho	<	0.000103	M	Pd	<	0.000205	M	Te	<	0.001761			
s	Ca	<		M	In	<	0.000103	M	Pr	<	0.000103	M	Th	<	0.000103			
O	Cd	<	0.000827	M	Ir	<	0.000102	M	Pt	<	0.000103	s	Ti	<				
M	Ce	<	0.000414	s	K	<		M	Rb		0.011812	M	Tl	<	0.000103			
M	Co	<	0.001036	M	La	<	0.000103	M	Re	<	0.000103	M	Tm	<	0.000103			
M	Cr		0.011294	O	Li		0.001095	M	Rh	<	0.000103	M	U	<	0.000103			
M	Cs	<	0.000103	M	Lu	<	0.000103	M	Ru	<	0.000205	O	V	<	0.006204			
O	Cu	<	0.006809	s	Mg	<		s	S	<		M	W		0.001347			
M	Dy	<	0.000103	M	Mn		0.001554	M	Sb	<	0.000621	M	Y	<	0.000103			
M	Er	<	0.000103	s	Mo	<		O	Sc	<	0.000310	M	Yb	<	0.000103			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 06, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- January 06, 2019

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MWK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

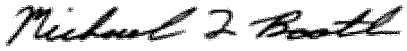
Certificate Prepared By:

James King Jr
Product Documentation Supervisor



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEAWWs_00007

HIGH-PURITY STANDARDS
www.highpuritystandards.com

P.O. Box 41727
Charleston, SC 29423
Phone (843) 767-7900
Fax (843) 767-7906

Certificate of Analysis

Product Description:

Name:	Tungsten	Source Material:	Tungsten Metal
Part Number:	**100063-3**	Material Purity:	99.99%
Lot Number:	**1411305**	Matrix:	1% (v/v) HF + 2% (v/v) HNO_3

Certified Value: 1000 µg/mL ± 4 µg/mL

The Certified value is based on gravimetric and volumetric preparation, and confirmed against SRM 3163 (lot number 080331) by inductively coupled plasma optical emission spectrometry (ICP-OES) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.

Density: 1.011 g/mL ± 0.002 g/mL @ 21.7°C

Uncertified Values:

Trace Metal Impurity Scan: The data reported are based upon a scan of this specific lot at 1000 µg/mL via ICP analysis. The values are reported in µg/L.

Ag	<	1	Cu	<	0.1	Li	<	0.02	Rb	<	0.02	Th		na
Al	<	5	Dy	<	0.02	Lu	<	0.02	Re		na	Ti	<	5
As	<	1	Er	<	0.02	Mg	<	0.5	Rh	<	0.1	Tl	<	0.02
Au		na	Eu	<	0.02	Mn	<	0.1	Ru	<	0.02	Tm	<	0.02
B	<	10	Fe	<	10	Mo	<	5	Sb	<	1	U	<	0.1
Ba	<	0.02	Ga	<	0.02	Na	<	3	Sc	<	0.02	V	<	1
Be	<	0.02	Gd	<	0.02	Nb	<	5	Se	<	0.1	W		M
Bi	<	0.02	Ge	<	0.02	Nd	<	0.02	Si	<	50	Y	<	0.02
Ca	<	5	Hf	<	0.1	Ni	<	0.02	Sm	<	0.02	Yb	<	0.02
Cd	<	0.02	Ho	<	0.02	Os	<	0.02	Sn	<	5	Zn	<	0.1
Ce	<	0.02	In	<	0.02	Pb	<	0.05	Sr	<	0.02	Zr	<	1
Co	<	0.05	Ir	<	1	Pd	<	0.02	Ta		na			
Cr	<	0.1	K	<	1	Pr	<	0.02	Tb	<	0.02			
Cs	<	0.02	La	<	0.02	Pt	<	0.02	Te	<	1	na - not analyzed		

Preparation Information:

The standard solution is prepared using high purity materials and assayed by analytical methods for conformity prior to use. This standard was prepared using the methods developed at NIST for SRM Spectrometric Standard Solutions under appropriate laboratory conditions.

Sub-boiling distilled high-purity acid has been used to place the materials in solution and to stabilize the standard. The matrix is as noted above in 18 megaohm deionized water.

Stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. This testing includes, but is not limited to, the effect of temperature and packaging on the product.

High-Purity Standards is certified to ISO 9001:2008 and accredited to ISO/IEC 17025:2005 and ISO Guide 34:2009.

Intended Use:

This Certified Reference Material (CRM) is intended for use as a calibration standard for the quantitative determination of tungsten, calibration of instruments such as ICPOES, ICPMS, AAS and XRF, and validation of analytical methods. It also can be used in EPA, ASTM and other methods.

Traceability Information:

The traceability of this standard is maintained through an unbroken chain of comparisons to appropriate standards with suitable procedure and measurement uncertainties. The maintenance of the base and derived units of International System of Units (SI) with traceability of measurement results (contemporary metrology) to SI ensures their comparability over time as follows.

a. **Standard Weight and Analytical Balance**
The standard weights (NBS weights Inventory No 20231A) are calibrated every two years by South Carolina Metrology Laboratory that is a participant in "NIST Weights and Measures Measurement Assurance Program" with a certificate of measurement traceability to NIST primary standards.
The balances are calibrated yearly by the ISO 17025 accredited metrology service, and are verified weekly by an in-house method using standard weights.

b. **Volumetric Device**
The calibration of volumetric vessels is checked annually using the ASTM method E542.

c. **Thermometer**
The standard thermometers are calibrated every year by the ISO 17025 accredited metrology service. The thermometers used in-house are verified against the standard thermometers yearly.

d. **Calibration Standards:**
The Calibration Standard is directly traceable to SRM 3100 Series Spectrometric Standard Solutions.

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Refer to Material Safety Datasheet (MSDS) for hazardous information.

Expiration Information:

The expiry date is guaranteed to be valid for eighteen months from the shipping date provided. For this reason, standards from the same lot may have different expiration dates.

Preparation Date:	**April 23, 2014**
Shipped Date:	**8/19/2015**
Expire Date:	**2/19/2017**
Certificate Issue Date:	**June 18, 2014**

Quality Information:

ACCLASS ACCREDITED TESTING

ISO/IEC 17025:2005 Accreditation
Certificate Number AT-1529

ACCLASS ACCREDITED REFERENCE MATERIAL PRODUCER

ISO Guide 34:2009 (RMP) Accreditation
Certificate Number AR-1436

Angel Sellers
Quality Manager

NOTICE: HPS products are intended for laboratory use only. All products should be handled and used by trained professional personnel. The responsibility for the safe handling and use of these products rests solely with the buyer and/or user. The data and information as stated was furnished by the manufacturer of the product. The information provided in this certificate pertains only to the lot number specified. None of the information provided in this certificate may be used, reproduced or transmitted in any form or by any means without written approval from High Purity Standards.

Reagent

MEAWWs_00008

HIGH-PURITY STANDARDS
www.highpuritystandards.com

P.O Box 41727
Charleston, SC 29423
Phone (843) 767-7900
Fax (843) 767-7906

Certificate of Analysis

Product Description:

Name:	Tungsten	Source Material:	Tungsten Metal
Part Number:	**100063-3**	Material Purity:	99.99%
Lot Number:	**1426812**	Matrix:	1% (v/v) HF + 2% (v/v) HNO_3

Certified Value: 1000 µg/mL ± 4 µg/mL

The Certified value is based on gravimetric and volumetric preparation, and confirmed against SRM 3163 (lot number 080331) by inductively coupled plasma optical emission spectrometry (ICP-OES) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.

Density: 1.011 g/mL ± 0.002 g/mL @ 22.5°C

903063
ID: MEAWWs_00008
Exp 02/23/17 Prpd:MDK Opn 02/23/16
1000 PPM Tungsten

Rec'd 2/23/16 MDK

Uncertified Values:

Trace Metal Impurity Scan: The data reported are based upon a scan of this specific lot at 1000 µg/mL via ICP analysis. The values are reported in µg/L.

Ag	<	1	Cu	<	0.1	Li	<	0.02	Rb	<	0.02	Th		na
Al	<	5	Dy	<	0.02	Lu	<	0.02	Re		na	Ti	<	5
As	<	1	Er	<	0.02	Mg	<	1	Rh	<	0.02	Tl	<	0.02
Au		na	Eu	<	0.02	Mn	<	0.1	Ru	<	0.02	Tm	<	0.02
B	<	10	Fe	<	10	Mo	<	5	Sb	<	1	U	<	0.1
Ba	<	0.02	Ga	<	0.02	Na	<	3	Sc	<	0.02	V	<	1
Be	<	0.02	Gd	<	0.02	Nb	<	5	Se	<	0.5	W		M
Bi	<	0.02	Ge	<	0.02	Nd	<	0.02	Si	<	50	Y	<	0.02
Ca	<	5	Hf	<	0.02	Ni	<	0.02	Sm	<	0.02	Yb	<	0.02
Cd	<	0.02	Ho	<	0.02	Os	<	0.02	Sn	<	5	Zn	<	2
Ce	<	0.02	In	<	0.02	Pb	<	0.05	Sr	<	0.02	Zr	<	2
Co	<	0.05	Ir	<	0.02	Pd	<	0.02	Ta		na			
Cr	<	0.1	K	<	1	Pr	<	0.02	Tb	<	0.02			
Cs	<	0.02	La	<	0.02	Pt	<	0.02	Te	<	0.02	na - not analyzed		

Preparation Information:

The standard solution is prepared using high purity materials and assayed by analytical methods for conformity prior to use. This standard was prepared using the methods developed at NIST for SRM Spectrometric Standard Solutions under appropriate laboratory conditions.

Sub-boiling distilled high-purity acid has been used to place the materials in solution and to stabilize the standard. The matrix is as noted above in 18 megaohm deionized water.

Stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. This testing includes, but is not limited to, the effect of temperature and packaging on the product.

High-Purity Standards is certified to ISO 9001:2008 and accredited to ISO/IEC 17025:2005 and ISO Guide 34:2009.

Reagent

MEHPTHs_00004

HIGH-PURITY STANDARDS
www.highpuritystandards.com

P.O. Box 41727
Charleston, SC 29423
Phone (843) 767-7900
Fax (843) 767-7906

Certificate of Analysis

933454
ID: MEHPTHs_00004
Exp:05/20/17 Prpd:MDK Opn:05/20/16
1000 ppm Thorium
Rec'd 5/20/16

Product Description:

Name:	Thorium	Source Material:	Thorium Oxide
Part Number:	**100059-1**	Material Purity:	99.99%
Lot Number:	**1601307**	Matrix:	2% (v/v) HNO_3

Certified Value: 1000 µg/mL ± 4 µg/mL

The Certified value is based on gravimetric and volumetric preparation, and confirmed against a second source via inductively coupled plasma optical emission spectrometry (ICP-OES) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.

Density: 1.008 g/mL ± 0.002 g/mL @ 22.8°C

Uncertified Values:

Trace Metal Impurity Scan: The data reported are based upon a scan of this specific lot at 1000 µg/mL via ICP analysis. The values are reported in µg/L.

Ag	<	0.02	Cu	<	0.1	Li	<	0.02	Rb	<	0.02	Th		M
Al	<	0.1	Dy	<	0.02	Lu	<	0.02	Re	<	0.02	Ti	<	1
As	<	0.05	Er	<	0.02	Mg	<	0.5	Rh	<	0.02	Tl	<	0.02
Au	<	0.02	Eu	<	0.02	Mn	<	0.1	Ru	<	0.02	Tm	<	0.02
B	<	1	Fe	<	5	Mo	<	0.02	Sb	<	0.02	U	<	0.1
Ba	<	0.02	Ga	<	0.02	Na	<	3	Sc	<	0.02	V	<	0.05
Be	<	0.02	Gd	<	0.02	Nb	<	0.02	Se	<	0.1	W	<	0.02
Bi	<	0.02	Ge	<	0.02	Nd	<	2	Si	<	20	Y	<	0.02
Ca		20	Hf	<	0.02	Ni	<	0.02	Sm	<	0.5	Yb	<	0.02
Cd	<	0.02	Ho	<	0.02	Os	<	0.02	Sn	<	1	Zn	<	0.1
Ce	<	3	In	<	0.02	Pb	<	0.05	Sr	<	0.02	Zr	<	2
Co	<	0.05	Ir	<	0.02	Pd	<	0.02	Ta	<	0.02			
Cr	<	0.1	K	<	1	Pr	<	0.5	Tb	<	0.02			
Cs	<	0.02	La	<	1	Pt	<	0.02	Te	<	0.02			

Preparation Information:

The standard solution is prepared using high purity materials and assayed by analytical methods for conformity prior to use. This standard was prepared using the methods developed at NIST for SRM Spectrometric Standard Solutions under appropriate laboratory conditions.

Sub-boiling distilled high-purity acid has been used to place the materials in solution and to stabilize the standard. The matrix is as noted above in 18 megaohm deionized water.

Stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. This testing includes, but is not limited to, the effect of temperature and packaging on the product.

Intended Use:

This Certified Reference Material (CRM) is intended for use as a calibration standard for the quantitative determination of thorium, calibration of instruments such as ICPOES, ICPMS, AAS and XRF, and validation of analytical methods. It also can be used in EPA, ASTM and other methods.

Traceability Information:

The traceability of this standard is maintained through an unbroken chain of comparisons to appropriate standards with suitable procedure and measurement uncertainties. The maintenance of the base and derived units of International System of Units (SI) with traceability of measurement results (contemporary metrology) to SI ensures their comparability over time as follows.

a. **Standard Weight and Analytical Balance**
   The standard weights (NBS weights Inventory No 20231A) are calibrated every two years by South Carolina Metrology Laboratory that is a participant in "NIST Weights and Measures Measurement Assurance Program" with a certificate of measurement traceability to NIST primary standards.
   The balances are calibrated yearly by the ISO 17025 accredited metrology service, and are verified weekly by an in-house method using standard weights.

b. **Volumetric Device**
   The calibration of volumetric vessels is checked annually using the ASTM method E542.

c. **Thermometer**
   The standard thermometers are calibrated every year by the ISO 17025 accredited metrology service. The thermometers used in-house are verified against the standard thermometers yearly.

d. **Calibration Standards**
   The Calibration Standard is traceable to a second source.

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Refer to Material Safety Datasheet (MSDS) for hazardous information.

Expiration Information:

The expiry date is guaranteed to be valid for eighteen months from the shipping date provided. For this reason, standards from the same lot may have different expiration dates.

Preparation Date:	**January 13, 2016**
Shipped Date:	**5/13/2016**
Expire Date:	**November 13, 2017**
Certificate Issue Date:	**February 10, 2016**

Quality Information:

ISO/IEC 17025:2005 Accreditation
Certificate Number AT-1529

ISO Guide 34:2009 (RMP) Accreditation
Certificate Number AR-1436

Moven Mutuvari
Moven T. Mutuvari, Ph.D.
Laboratory Manager

NOTICE: HPS products are intended for laboratory use only. All products should be handled and used by trained professional personnel. The responsibility for the safe handling and use of these products rests solely with the buyer and/or user. The data and information as stated was furnished by the manufacturer of the product. The information provided in this certificate pertains only to the lot number specified. None of the information provided in this certificate may be used, reproduced or transmitted in any form or by any means without written approval from High Purity Standards.

Reagent

MEIVAGs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6729 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAG1
Lot Number:	J2-AG03048
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Ag
Starting Material:	Ag shot
Starting Material Lot#:	1641
Starting Material Purity:	99.9999%

929532
ID: MEIVAGs_00012
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000 ppm Silver Stock Std
Rec'd 5/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 6 µg/mL

Certified Density: 1.027 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 5 µg/mL**
ICP Assay NIST SRM 3151 Lot Number: 992212

Assay Method #2 **999 ± 2 µg/mL**
Volhard NIST SRM 999b Lot Number: 999b

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

s	Ag	<		M	Eu	<	0.007546	O	Na		0.000119	M	Se	<	0.020123	O	Zn		0.000198
O	Al		0.000158	O	Fe	<	0.001000	M	Nb	<	0.001257	O	Si	<	0.003400	M	Zr	<	0.012577
M	As	<	0.025154	M	Ga	<	0.002515	M	Nd	<	0.005030	M	Sm	<	0.002515				
O	Au	<	0.003000	M	Gd	<	0.002515	O	Ni	<	0.003000	M	Sn	<	0.012577				
M	B	<	0.176078	M	Ge	<	0.015092	n	Os	<		M	Sr	<	0.001257				
M	Ba	<	0.025154	M	Hf	<	0.005030	O	P	<	0.003000	M	Ta	<	0.017607				
M	Be	<	0.001257	O	Hg	<	0.015000	M	Pb	<	0.007546	M	Tb	<	0.000754				
M	Bi	<	0.001006	M	Ho	<	0.001257	O	Pd	<	0.004000	M	Te	<	0.075462				
O	Ca		0.000873	M	In	<	0.025154	M	Pr	<	0.000754	M	Th	<	0.002515				
O	Cd	<	0.005000	M	Ir	<	0.012577	O	Pt	<	0.017000	M	Ti	<	0.125770				
M	Ce	<	0.012577	O	K		0.000198	M	Rb	<	0.002515	M	Tl	<	0.002515				
M	Co	<	0.007546	M	La	<	0.001257	M	Re	<	0.002515	M	Tm	<	0.001006				
M	Cr	<	0.012577	O	Li	<	0.000020	M	Rh	<	0.002515	M	U	<	0.005030				
M	Cs	<	0.000754	M	Lu	<	0.001006	M	Ru	<	0.005030	M	V	<	0.005030				
O	Cu	<	0.003000	O	Mg	<	0.000030	O	S	<	0.025000	M	W	<	0.025154				
M	Dy	<	0.015092	M	Mn	<	0.010061	M	Sb	<	0.001257	M	Y	<	0.100616				
M	Er	<	0.012577	M	Mo	<	0.005030	M	Sc	<	0.025154	M	Yb	<	0.002515				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 107.87 +1 6 Ag(H2O)6+
Chemical Compatibility -Stable in HNO3, and HF. Avoid basic media. Ag forms more insoluble salts than any other metal. It also is subject to photochemical reduction to the metal in HCl media although 10 µg/mL solutions in 10% HCl [AgClx1-x] are commonly used in the analytical laboratory. The most common solubility problems exist with arsenate, arsenite , bromide, chloride, iodide, carbonate , chromate, cyanide, iodate, oxalate, oxide, sulfate, sulfide, tartrate, and thiocyanate in aqueous media. The addition of nitric acid renders many of these salts soluble.
Stability - 2-100 ppb levels stable for 75+ days when mixed with equivalent levels of all other elements including the precious metals (where chloride is present) when in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Ag Containing Samples (Preparation and Solution) -Metal (Soluble in HNO3); Oxides (Soluble in HNO3); Ores (Digestion with conc. HNO3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 107 amu	1 ppt	N/A	91Zr16O
ICP-OES 243.779 nm	0.12/0.01 µg/mL	1	Mn, Th, Ni, Rh
ICP-OES 328.068 nm	0.007/0.0007 µg/mL	1	Ce, Rh, V
ICP-OES 338.289 nm	0.013/0.001 µg/mL	1	Ce, Cr, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 30, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- March 30, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/6/16 MPK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVASs_00010

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.[illegible]
fax: 540.[illegible]
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAS1
Lot Number:	J2-AS02122
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: As
Starting Material:	As pieces
Starting Material Lot#:	1665
Starting Material Purity:	99.9980%

898416
ID: MEIVASs_00010
Exp:02/04/17 Prpd:MDK Opn:02/04/16
1000ppm Arsenic

2/4/16
MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value:	1001 ± 5 µg/mL
Certified Density:	1.012 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1	**1001 ± 4 µg/mL** ICP Assay NIST SRM 3103a Lot Number: 100818
Assay Method #2	**1001 ± 5 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.010063	M	Eu	<	0.015094	O	Na		0.002724	M	Se	<	0.040252	O	Zn		0.000656
O	Al		0.000556	O	Fe		0.000099	O	Nb	<	0.002000	O	Si		0.007755	M	Zr	<	0.025157
s	As	<		M	Ga	<	0.005031	M	Nd	<	0.010063	M	Sm	<	0.005031				
M	Au	<	0.015094	M	Gd	<	0.005031	O	Ni	<	0.002000	O	Sn	<	0.004000				
O	B		0.000298	M	Ge	<	0.030189	n	Os	<		M	Sr	<	0.002515				
M	Ba	<	0.050315	M	Hf	<	0.010063	O	P	<	0.002600	M	Ta	<	0.035220				
M	Be	<	0.002515	O	Hg	<	0.012000	M	Pb	<	0.015094	M	Tb	<	0.001509				
M	Bi	<	0.002012	M	Ho	<	0.002515	M	Pd	<	0.025157	M	Te	<	0.150946				
O	Ca		0.007954	M	In	<	0.050315	M	Pr	<	0.001509	M	Th	<	0.005031				
M	Cd	<	0.015094	M	Ir	<	0.025157	M	Pt	<	0.010063	M	Ti	<	0.251578				
M	Ce	<	0.025157	O	K		0.000596	M	Rb	<	0.005031	M	Tl	<	0.005031				
M	Co	<	0.015094	M	La	<	0.002515	O	Re	<	0.010000	M	Tm	<	0.002012				
O	Cr	<	0.000800	O	Li	<	0.000020	M	Rh	<	0.005031	M	U	<	0.010063				
M	Cs	<	0.001509	M	Lu	<	0.002012	M	Ru	<	0.010063	M	V	<	0.010063				
M	Cu	<	0.030189	O	Mg		0.000159	n	S	<		M	W	<	0.050315				
M	Dy	<	0.030189	O	Mn	<	0.000030	O	Sb	<	0.010000	M	Y	<	0.201262				
M	Er	<	0.025157	M	Mo	<	0.010063	M	Sc	<	0.050315	M	Yb	<	0.005031				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 74.92 ; mix of +3 and +5 ; 6 ; H3AsO4 and HAsO2

Chemical Compatibility - Arsenic has no cationic chemistry. It is soluble in HCl, HNO3,H3PO4, H2SO4 and HF aqueous matrices water and NH4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO3 / LDPE container.

As Containing Samples (Preparation and Solution) - Metal (soluble in 1:1 H2O / HNO3); Oxides (the oxide exists in crystalline and amorphous forms where the amorphic form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (one gram of powered sample is fused in a Ni crucible with 10 grams of a 1:1 mix of K2CO3 and KNO3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of sample are fused with 15 grams of a 1:1 Na2CO3 / Na2O2 mix in a Ni crucible. The fuseate is extracted with water and acidified with HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 75 amu	20 ppt	N/A	40Ar35Cl, 59Co16O, 36Ar38Ar1H,8Ar37Cl,Ar39K, 150Nd2+,150Sm2+
ICP-OES 189.042 nm	0.05/0.005 µg/mL	1	Cr
ICP-OES 193.696 nm	0.1/0.01 µg/mL	1	V, Ge
ICP-OES 228.812 nm	0.1/0.01 µg/mL	1	Cd, Pt, Ir, Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 12, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 12, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

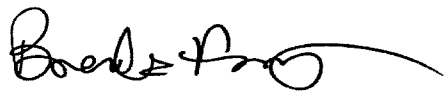
- Sealed TCT Bag Open Date: 2/4/16 mdk

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

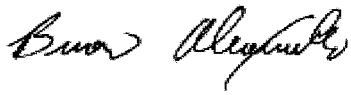
Certificate Prepared By:

Brenda Francis
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVASs_00011

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS
[illegible]

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAS1
Lot Number:	J2-AS02122
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: As
Starting Material:	As pieces
Starting Material Lot#:	1665
Starting Material Purity:	99.9980%

954503
ID: MEIVASs_00011
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000ppm Arsenic
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 5 µg/mL

Certified Density: 1.012 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1001 ± 4 µg/mL**
ICP Assay NIST SRM 3103a Lot Number: 100818

Assay Method #2 **1001 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.010063	M	Eu	<	0.015094	O	Na		0.002724	M	Se	<	0.040252	O	Zn		0.000656
O	Al		0.000556	O	Fe		0.000099	O	Nb	<	0.002000	O	Si		0.007755	M	Zr	<	0.025157
s	As	<		M	Ga	<	0.005031	M	Nd	<	0.010063	M	Sm	<	0.005031				
M	Au	<	0.015094	M	Gd	<	0.005031	O	Ni	<	0.002000	O	Sn	<	0.004000				
O	B		0.000298	M	Ge	<	0.030189	n	Os	<		M	Sr	<	0.002515				
M	Ba	<	0.050315	M	Hf	<	0.010063	O	P	<	0.002600	M	Ta	<	0.035220				
M	Be	<	0.002515	O	Hg	<	0.012000	M	Pb	<	0.015094	M	Tb	<	0.001509				
M	Bi	<	0.002012	M	Ho	<	0.002515	M	Pd	<	0.025157	M	Te	<	0.150946				
O	Ca		0.007954	M	In	<	0.050315	M	Pr	<	0.001509	M	Th	<	0.005031				
M	Cd	<	0.015094	M	Ir	<	0.025157	M	Pt	<	0.010063	M	Ti	<	0.251578				
M	Ce	<	0.025157	O	K		0.000596	M	Rb	<	0.005031	M	Tl	<	0.005031				
M	Co	<	0.015094	M	La	<	0.002515	O	Re	<	0.010000	M	Tm	<	0.002012				
O	Cr	<	0.000800	O	Li	<	0.000020	M	Rh	<	0.005031	M	U	<	0.010063				
M	Cs	<	0.001509	M	Lu	<	0.002012	M	Ru	<	0.010063	M	V	<	0.010063				
M	Cu	<	0.030189	O	Mg		0.000159	n	S	<		M	W	<	0.050315				
M	Dy	<	0.030189	O	Mn	<	0.000030	O	Sb	<	0.010000	M	Y	<	0.201262				
M	Er	<	0.025157	M	Mo	<	0.010063	M	Sc	<	0.050315	M	Yb	<	0.005031				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 74.92 ; mix of +3 and +5 ; 6 ; H_3AsO_4 and $HAsO_2$

Chemical Compatibility - Arsenic has no cationic chemistry. It is soluble in HCl, HNO_3,H_3PO_4, H_2SO_4 and HF aqueous matrices water and NH_4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO_3 / LDPE container.

As Containing Samples (Preparation and Solution) - Metal (soluble in 1:1 H_2O / HNO_3); Oxides (the oxide exists in crystalline and amorphous forms where the amorphic form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (one gram of powered sample is fused in a Ni crucible with 10 grams of a 1:1 mix of K_2CO_3 and KNO_3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of sample are fused with 15 grams of a 1:1 Na_2CO_3 / Na_2O_2 mix in a Ni crucible. The fuseate is extracted with water and acidified with HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 75 amu	20 ppt	N/A	40Ar35Cl, 59Co16O, 36Ar38Ar1H,8Ar37Cl,Ar39K, 150Nd2+,150Sm2+
ICP-OES 189.042 nm	0.05/0.005 µg/mL	1	Cr
ICP-OES 193.696 nm	0.1/0.01 µg/mL	1	V, Ge
ICP-OES 228.812 nm	0.1/0.01 µg/mL	1	Cd, Pt, Ir, Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 12, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 12, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

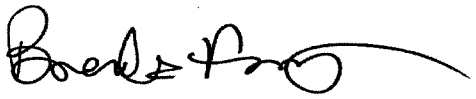
- Sealed TCT Bag Open Date: 2/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

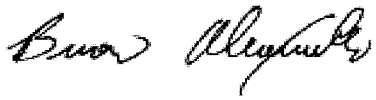
Certificate Prepared By:

Brenda Francis
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVBAs_00016

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBA1
Lot Number:	J2-BA02093
Matrix:	0.1% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Ba
Starting Material:	Ba(NO3)2
Starting Material Lot#:	1822
Starting Material Purity:	99.9991%

954505
ID: MEIVBAs_00016
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000ppm Barium Stock std
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 5 µg/mL

Certified Density: 1.000 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **997 ± 3 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

Assay Method #2 **998 ± 5 µg/mL**
ICP Assay NIST SRM 3104a Lot Number: 070222

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001998	O	Eu	<	0.001700	O	Na	<	0.020000	O	Se	<	0.050000	O	Zn	<	0.000400
O	Al	<	0.001500	O	Fe	<	0.001200	M	Nb	<	0.000199	O	Si	<	0.004000	M	Zr	<	0.000199
M	As	<	0.002997	M	Ga	<	0.000199	M	Nd	<	0.000199	O	Sm	<	0.007000				
M	Au	<	0.001998	M	Gd	<	0.000199	O	Ni	<	0.002000	M	Sn	<	0.003996				
M	B	<	0.005994	M	Ge	<	0.001198	n	Os	<		O	Sr		0.010487				
s	Ba	<		M	Hf	<	0.001998	O	P	<	0.050000	M	Ta	<	0.000999				
M	Be	<	0.000199	O	Hg	<	0.009000	M	Pb		0.001596	M	Tb	<	0.000199				
M	Bi	<	0.001398	M	Ho	<	0.000199	M	Pd	<	0.000199	M	Te	<	0.011988				
O	Ca		0.000499	M	In	<	0.000199	M	Pr	<	0.000199	M	Th	<	0.000199				
M	Cd	<	0.000199	M	Ir	<	0.000199	M	Pt	<	0.000199	O	Ti	<	0.000400				
M	Ce	<	0.000199	O	K	<	0.002000	M	Rb	<	0.000199	M	Tl	<	0.000199				
M	Co	<	0.000199	O	La	<	0.002000	M	Re	<	0.000199	M	Tm	<	0.000199				
M	Cr	<	0.000999	O	Li	<	0.000080	M	Rh	<	0.000199	M	U	<	0.000199				
M	Cs	<	0.000599	M	Lu	<	0.000199	M	Ru	<	0.000199	M	V	<	0.000199				
O	Cu	<	0.004000	O	Mg	<	0.000600	O	S		0.004994	M	W	<	0.005994				
M	Dy	<	0.000199	O	Mn	<	0.000400	M	Sb	<	0.001998	O	Y	<	0.000400				
M	Er	<	0.000199	O	Mo	<	0.000300	O	Sc	<	0.000300	M	Yb	<	0.000999				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001998	O	Eu	<	0.001700	O	Na	<	0.020000	O	Se	<	0.050000	O	Zn	<	0.000400
O	Al	<	0.001500	O	Fe	<	0.001200	M	Nb	<	0.000199	O	Si	<	0.004000	M	Zr	<	0.000199
M	As	<	0.002997	M	Ga	<	0.000199	M	Nd	<	0.000199	O	Sm	<	0.007000				
M	Au	<	0.001998	M	Gd	<	0.000199	O	Ni	<	0.002000	M	Sn	<	0.003996				
M	B	<	0.005994	M	Ge	<	0.001198	n	Os	<		O	Sr		0.010487				
s	Ba	<		M	Hf	<	0.001998	O	P	<	0.050000	M	Ta	<	0.000999				
M	Be	<	0.000199	O	Hg	<	0.009000	M	Pb		0.001596	M	Tb	<	0.000199				
M	Bi	<	0.001398	M	Ho	<	0.000199	M	Pd	<	0.000199	M	Te	<	0.011988				
O	Ca		0.000499	M	In	<	0.000199	M	Pr	<	0.000199	M	Th	<	0.000199				
M	Cd	<	0.000199	M	Ir	<	0.000199	M	Pt	<	0.000199	O	Ti	<	0.000400				
M	Ce	<	0.000199	O	K	<	0.002000	M	Rb	<	0.000199	M	Tl	<	0.000199				
M	Co	<	0.000199	O	La	<	0.002000	M	Re	<	0.000199	M	Tm	<	0.000199				
M	Cr	<	0.000999	O	Li	<	0.000080	M	Rh	<	0.000199	M	U	<	0.000199				
M	Cs	<	0.000599	M	Lu	<	0.000199	M	Ru	<	0.000199	M	V	<	0.000199				
O	Cu	<	0.004000	O	Mg	<	0.000600	O	S		0.004994	M	W	<	0.005994				
M	Dy	<	0.000199	O	Mn	<	0.000400	M	Sb	<	0.001998	O	Y	<	0.000400				
M	Er	<	0.000199	O	Mo	<	0.000300	O	Sc	<	0.000300	M	Yb	<	0.000999				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 137.33 +2 6 Ba(H2O)6+2
Chemical Compatibility - Soluble in HCl, and HNO3. Avoid H2SO4, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, iodate, molybdate, sulfite and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1 -10,000 ppm solutions chemically stable for years in 1-3.5% HNO3 / LDPE container.
Ba Containing Samples (Preparation and Solution) -Metal(is best dissolved in diluted HNO3); Ores(Carbonate fusion in Pt0 followed by HCl dissolution. If sulfate is present dissolve the fuseate using HCl / tartaric acid to prevent BaSO4 precipitate); Organic Matrices (dry ash and dissolve in dilute HCl.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 138 amu	1 ppt	N/A	122Sn16O, 122Te16O
ICP-OES 230.424 nm	0.004/0.0005 µg/mL	1	Mo, Ir, Co
ICP-OES 233.527 nm	0.004/0.0003 µg/mL	1	
ICP-OES 455.403 nm	0.002/0.0001 µg/mL	1	Zr, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 02, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 02, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MPK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVBEs_00010

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

Tel: 800.669.6799 - 540.585.3030
Fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBE1
Lot Number:	J2-BE02038
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Be
Starting Material:	Be Acetate
Starting Material Lot#:	1858
Starting Material Purity:	99.9998%

934046
ID: MEIVBEs_00010
Exp:05/23/17 Prpd:MDK Opn:05/23/16
1000ppm Beryllium stock s
Rec'd 5/23/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 4 µg/mL - weighted mean

Certified Density: 1.020 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **999 ± 4 µg/mL**
ICP Assay NIST SRM 3105a Lot Number: 090514

Assay Method #2 **999 ± 4 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001190	M	Eu	<	0.000238	O	Na		0.007553	M	Se	<	0.002379	O	Zn		0.003594
O	Al		0.000853	O	Fe		0.002314	M	Nb	<	0.000476	O	Si		0.003045	M	Zr	<	0.000714
M	As	<	0.007137	M	Ga	<	0.000238	M	Nd	<	0.000238	M	Sm	<	0.000238				
M	Au	<	0.000238	M	Gd	<	0.000238	O	Ni	<	0.002426	M	Sn	<	0.001190				
M	B	<	0.004758	M	Ge	<	0.000238	n	Os	<		O	Sr		0.000018				
O	Ba	<	0.004852	M	Hf	<	0.000238	O	P	<	0.060650	M	Ta	<	0.000238				
s	Be	<		O	Hg	<	0.011281	M	Pb	<	0.001190	M	Tb	<	0.000238				
M	Bi	<	0.000238	M	Ho	<	0.000238	M	Pd	<	0.004758	M	Te	<	0.011895				
O	Ca		0.002071	M	In	<	0.000238	M	Pr	<	0.000238	M	Th	<	0.000238				
O	Cd	<	0.000607	M	Ir	<	0.000238	M	Pt	<	0.000238	M	Ti	<	0.007137				
M	Ce	<	0.000238	O	K		0.006091	M	Rb	<	0.000238	M	Tl	<	0.000238				
O	Co	<	0.000728	M	La	<	0.000238	M	Re	<	0.000238	M	Tm	<	0.000238				
O	Cr		0.000305	O	Li	<	0.001213	M	Rh	<	0.000238	M	U	<	0.001190				
M	Cs	<	0.000476	M	Lu	<	0.000238	M	Ru	<	0.000238	M	V	<	0.000476				
O	Cu	<	0.003033	O	Mg		0.000365	i	S	<		M	W	<	0.000714				
M	Dy	<	0.000238	O	Mn	<	0.000121	M	Sb	<	0.000238	M	Y	<	0.000238				
M	Er	<	0.000238	M	Mo	<	0.000714	O	Sc	<	0.000121	M	Yb	<	0.000238				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 9.01 +2 4 Be+(H2O)4+2
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Stable with all metals and inorganic anions.
Stability - 2-100 ppb levels stable for months in 1 % HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 5-10 % HNO3 / LDPE container.
Be Containing Samples (Preparation and Solution) - Meta l(is best dissolved in diluted H2SO4); BeO (boiling nitric, hydrochloric, or sulfuric acids or KHSO4 fusion); Ores (H2SO4/HF digestion or carbonate fusion in Pt0); Organic Matrices (sulfuric/peroxide digestion or nitric/sulfuric/perchloric acid decomposition, or dry ash and dissolution according to the BeO procedure above).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 9 amu	4 ppt	N/A	
ICP-OES 234.861 nm	0.0003/0.00016 µg/mL	1	Fe, Ta, Mo
ICP-OES 313.042 nm	0.0003/0.00009 µg/mL	1	V, Ce, U
ICP-OES 313.107 nm	0.0007/0.0005 µg/mL	1	Ce, Th, Tm

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 12, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- May 12, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/23/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVBs_00006

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGB1
Lot Number:	H2-B02125
Matrix:	H2O
Value / Analyte(s):	1 000 µg/mL ea: B
Starting Material:	Recrystallized H3BO3
Starting Material Lot#:	F2-B02105
Starting Material Purity:	100.0000%

Inorganic Ventures 1,000

889361

ID: MEIVBs_00006

Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 6 µg/mL - weighted mean

Certified Density: 1.001 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1003 ± 5 µg/mL**
ICP Assay NIST SRM 3107 Lot Number: 110830

Assay Method #2 **1000 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	< 0.000100	M	Eu	< 0.000100	O	Na	0.000833	M	Se	< 0.005021	O	Zn	< 0.008176			
O	Al	< 0.008176	O	Fe	< 0.003066	M	Nb	< 0.000100	O	Si	< 0.009198	M	Zr	< 0.000100			
M	As	< 0.000502	M	Ga	< 0.000502	M	Nd	< 0.000100	M	Sm	< 0.000100						
M	Au	< 0.000100	M	Gd	< 0.000100	O	Ni	< 0.003066	M	Sn	< 0.000100						
s	B	<	M	Ge	< 0.003013	n	Os	<	M	Sr	< 0.000301						
M	Ba	< 0.000100	M	Hf	< 0.000100	O	P	< 0.153300	M	Ta	< 0.000100						
M	Be	< 0.000803	O	Hg	< 0.051100	M	Pb	< 0.000100	M	Tb	< 0.000100						
M	Bi	< 0.000100	M	Ho	< 0.001004	M	Pd	< 0.000100	M	Te	< 0.001004						
O	Ca	0.000552	M	In	< 0.000100	M	Pr	< 0.000100	M	Th	< 0.000100						
M	Cd	< 0.000100	M	Ir	< 0.000100	M	Pt	< 0.000100	O	Ti	< 0.001533						
M	Ce	< 0.000100	O	K	< 0.001635	M	Rb	< 0.001004	M	Tl	< 0.000100						
M	Co	< 0.001004	M	La	< 0.000100	M	Re	< 0.000100	M	Tm	< 0.000100						
M	Cr	< 0.002008	O	Li	< 0.000061	M	Rh	< 0.000100	M	U	< 0.000100						
M	Cs	< 0.003013	M	Lu	< 0.000100	M	Ru	< 0.000100	O	V	< 0.003066						
M	Cu	< 0.002008	O	Mg	< 0.000082	n	S	<	M	W	< 0.001004						
M	Dy	< 0.000100	O	Mn	< 0.005110	M	Sb	< 0.000100	M	Y	< 0.000100						
M	Er	< 0.000100	M	Mo	< 0.000100	O	Sc	< 0.010220	M	Yb	< 0.000100						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 10.81 +3 4 B(OH)3 and B(OH)4-1

Chemical Compatibility -Moderately soluble in HCl, HNO_3, H_2SO_4 and HF aqueous matrices and very soluble in NH_4OH . Stable with all metals and inorganic anions at low to moderate ppm levels.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-1,000 ppm solutions chemically stable for years in 1% HNO_3 / LDPE container. 1000 -10,000 ppm stable for years in dilute NH_4OH / LDPE container.

B Containing Samples (Preparation and Solution) -Metal (Crystalline form is scarcely attacked by acids or alkaline solutions; amorphous form is soluble in conc. HNO_3 or H_2SO_4); B(OH)3 (water soluble); Ores(avoid acid digestions and use caustic fusions in PtE); Organic Matrices (dry ash mixed with Na_2CO_3 in PtE at 450EC then increase heat to 1000EC to fuse; or perform a Na_2O_2 fusion in a NiE crucible / Parr bomb).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 11 amu	700 ppt	N/A	
ICP-OES 208.959 nm	0.007/0.0005 µg/mL	1	Mo
ICP-OES 249.678 nm	0.004/0.003 µg/mL	1	Os, W, Co, Cr, Hf
ICP-OES 249.773 nm	0.003/0.001 µg/mL	1	W, Ce, Co, Th, Ta, Mn, Mo, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 05, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- February 05, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MBK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVCAwHRDs_00011

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6779 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCA10
Lot Number:	H2-CA04105
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Calcium
Starting Material:	CaO
Starting Material Lot#:	1748
Starting Material Purity:	99.9971%

954506
ID: MEIVCAwHRDs_00011
Exp:07/21/17 Prpd:MDK Opn:07/21/16
10000ppm Calcium stock st
Recd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9950 ± 24 µg/mL - weighted mean

Certified Density: 1.040 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1	**9956 ± 50 µg/mL** ICP Assay NIST SRM 3109a Lot Number: 130213
Assay Method #2	**9948 ± 25 µg/mL** EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stablility standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001138	M	Eu	<	0.000569	O	Na		0.051844	M	Se	<	0.017081	O	Zn		0.000607
O	Al	<	0.058400	O	Fe		0.001626	M	Nb	<	0.000569	O	Si		0.010604	M	Zr	<	0.001708
M	As	<	0.005693	M	Ga	<	0.000569	M	Nd	<	0.000569	M	Sm	<	0.000569				
M	Au	<	0.000572	M	Gd	<	0.000569	O	Ni	<	0.003504	M	Sn	<	0.001708				
O	B	<	0.023360	M	Ge	<	0.002846	M	Os	<	0.000572	O	Sr		0.336991				
O	Ba		0.010173	M	Hf	<	0.000569	O	P	<	0.058400	M	Ta	<	0.000569				
O	Be	<	0.000233	M	Hg	<	0.000572	M	Pb		0.003216	M	Tb	<	0.000569				
M	Bi	<	0.000569	M	Ho	<	0.000569	M	Pd	<	0.000569	M	Te	<	0.000569				
s	Ca	<		M	In	<	0.000569	M	Pr	<	0.000569	M	Th	<	0.000569				
O	Cd	<	0.000487	M	Ir	<	0.000572	M	Pt	<	0.000569	M	Ti	<	0.003985				
M	Ce	<	0.000569	O	K		0.016496	M	Rb		0.004135	M	Tl	<	0.000569				
O	Co	<	0.002336	M	La	<	0.000569	M	Re	<	0.000569	M	Tm	<	0.000569				
O	Cr	<	0.002336	M	Li	<	0.006832	M	Rh	<	0.000569	M	U	<	0.000569				
M	Cs		0.009190	O	Lu	<	0.000268	M	Ru	<	0.000572	O	V	<	0.001752				
O	Cu	<	0.004672	O	Mg		0.022896	n	S	<		M	W	<	0.001138				
M	Dy	<	0.000569	O	Mn	<	0.000350	M	Sb	<	0.003416	M	Y	<	0.000569				
M	Er	<	0.000569	M	Mo	<	0.005693	O	Sc	<	0.000584	M	Yb	<	0.000569				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 40.08 +2 6 Ca(H2O)6+2
Chemical Compatibility - Soluble in HCl and HNO3. Avoid H2SO4, HF, H3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO3 / LDPE container.
Ca Containing Samples (Preparation and Solution) -Metal (best dissolved in diluted HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (dry ash and dissolution in dilute HCl. Do not heat when dissolving to avoid precipitation of SiO2). The oxide, hydroxide, carbonate, phosphate, and fluoride of calcium are soluble in % levels of HCl or HNO3. The sulfates (gypsum, anhydrite, etc.), certain silicates, and complex compounds require fusion with Na2CO3 followed by HCl / water dissolution. Note that contamination is a very real problem when analyzing for trace levels.
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 44 amu	1200 ppt	n/a	16O212C, 28Si16O, 88Sr
ICP-OES 393.366 nm	0.0002 / 0.00004 µg/mL	1	U, Ce
ICP-OES 396.847 nm	0.0005 / 0.00006 µg/mL	1	Th
ICP-OES 422.673 nm	0.01 / 0.001 µg/mL	1	Ge

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 03, 2014

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- December 03, 2017

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MMK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVCDs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6739 - 540.382.3082
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCO1
Lot Number:	J2-CO02068
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Cobalt
Starting Material:	Cobalt Carbonate
Starting Material Lot#:	1850
Starting Material Purity:	99.9990%

954510
ID: MEIVCDs_00012
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000 PPM Cd
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 996 ± 3 µg/mL

Certified Density: 1.017 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1	**997 ± 3 µg/mL** EDTA NIST SRM 928 Lot Number: 928
Assay Method #2	**994 ± 4 µg/mL** ICP Assay NIST SRM 3113 Lot Number: 000630 Co

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.005549	M	Eu	<	0.000555	O	Na		0.005793	M	Se	<	0.110979	O	Zn		0.000897
O	Al	<	0.034740	O	Fe	<	0.023160	M	Nb	<	0.001665	O	Si		0.002720	M	Zr	<	0.005549
i	As	<		M	Ga	<	0.000555	M	Nd	<	0.000555	M	Sm	<	0.001665				
M	Au	<	0.000555	M	Gd	<	0.000555	O	Ni		0.002094	M	Sn	<	0.016647				
M	B	<	0.066587	M	Ge	<	0.005549	n	Os	<		M	Sr	<	0.002774				
O	Ba		0.000625	M	Hf	<	0.000555	n	P	<		M	Ta	<	0.001110				
O	Be	<	0.000116	n	Hg	<		M	Pb	<	0.011098	M	Tb	<	0.000555				
M	Bi		0.005630	M	Ho	<	0.000555	M	Pd	<	0.000555	M	Te	<	0.022196				
O	Ca		0.005793	M	In	<	0.002774	M	Pr	<	0.001665	M	Th	<	0.000555				
M	Cd	<	0.000555	M	Ir	<	0.000555	M	Pt	<	0.000555	M	Ti	<	0.016647				
M	Ce	<	0.000555	O	K		0.000816	M	Rb	<	0.000555	M	Tl	<	0.000555				
s	Co	<		M	La	<	0.002774	M	Re	<	0.000555	M	Tm	<	0.000555				
M	Cr	<	0.022196	O	Li		0.000011	M	Rh	<	0.000555	M	U	<	0.000555				
M	Cs	<	0.000555	M	Lu	<	0.000555	M	Ru	<	0.000555	O	V	<	0.001158				
M	Cu	<	0.011098	O	Mg		0.001169	n	S	<		M	W	<	0.011098				
M	Dy	<	0.000555	O	Mn	<	0.001158	M	Sb	<	0.005549	M	Y	<	0.000555				
M	Er		0.001043	M	Mo	<	0.016647	M	Sc	<	0.005549	M	Yb	<	0.005549				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.93 +2 6 $Co(H_2O)_6^{2+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Co Containing Samples (Preparation and Solution) - Metal (soluble in HNO_3); Oxides (Soluble in HCl); Ores (dissolve in HCl / HNO_3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 59 amu	2 ppt	n/a	42Ca16O1H , 40Ar18O1H , 36Ar23Na, 43Ca16O, 24Mg35Cl
ICP-OES 228.616 nm	0.01/0.001 µg/mL	1	
ICP-OES 237.862 nm	0.01/0.002 µg/mL	1	W, Re, Al, Ta
ICP-OES 238.892 nm	0.01/0.002 µg/mL	1	Fe, W, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 15, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- September 15, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVCEs_00010

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCE1
Lot Number:	J2-CE01096
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Ce
Starting Material:	CeO2
Starting Material Lot#:	0609251 OCE
Starting Material Purity:	99.9980%

1000ppm Cerium stock std
889362
ID: MEIVCEs_00010
Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1003 ± 4 µg/mL

Certified Density: 1.040 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1003 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **1000 ± 4 µg/mL**
ICP Assay NIST SRM 3110 Lot Number: 090504

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001015	M	Eu	<	0.002031	M	Na		0.008011	M	Se	<	0.040628	O	Zn	<	0.050000
M	Al		0.008011	O	Fe	<	0.050000	M	Nb	<	0.002031	O	Si	<	0.200000	M	Zr	<	0.006094
M	As	<	0.001015	O	Ga	<	0.100000	M	Nd		0.005808	M	Sm	<	0.006094				
M	Au	<	0.000203	M	Gd	<	0.304715	M	Ni	<	0.016251	M	Sn	<	0.006094				
M	B	<	0.020314	M	Ge	<	0.002031	n	Os	<		M	Sr	<	0.002031				
M	Ba	<	0.040628	M	Hf	<	0.002031	i	P	<		M	Ta	<	0.002031				
M	Be	<	0.000203	i	Hg	<		M	Pb		0.000701	i	Tb	<					
M	Bi	<	0.000406	M	Ho	<	0.001015	M	Pd	<	0.001015	M	Te	<	0.040628				
O	Ca	<	0.100000	M	In	<	0.004062	M	Pr	<	0.406287	M	Th	<	0.001015				
M	Cd	<	0.002031	M	Ir	<	0.000203	M	Pt	<	0.000203	M	Ti	<	0.010157				
s	Ce	<		O	K	<	0.100000	M	Rb	<	0.000609	M	Tl	<	0.000203				
M	Co	<	0.000203	O	La	<	0.100000	M	Re	<	0.000203	M	Tm	<	0.000812				
M	Cr	<	0.020314	O	Li	<	0.005000	M	Rh	<	0.000203	M	U	<	0.000203				
M	Cs	<	0.002031	M	Lu		0.000630	M	Ru	<	0.000203	M	V	<	0.014220				
M	Cu	<	0.010157	O	Mg		0.000246	i	S	<		M	W	<	0.006094				
M	Dy		0.002113	M	Mn	<	0.006094	M	Sb	<	0.002031	M	Y		0.000360				
M	Er	<	0.004062	M	Mo	<	0.002031	M	Sc	<	0.001015	M	Yb		0.000650				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 140.12 +4 6 to 8,9,10 for some compounds Ce(OH)y(H2O)x+4-y
Chemical Compatibility -Soluble in HCl, and HNO3. Avoid HF, H3PO4, H2SO4 and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride and sparingly soluble sulfates (La - Eu exhibit low sulfate solubility). Avoid mixing with elements/solutions containing moderate amounts of fluoride.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5 % HNO3 / LDPE container.
Ce Containing Samples (Preparation and Solution) -Metal (Soluble in acids); Oxide (dissolved by heating in H2O / HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (dry ash and dissolve in 1:1 H2O/ HCl or HNO3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 140 amu	1 ppt	n/a	124Sn16O, 124Te16O
ICP-OES 413.765 nm	0.05 / 0.0058 µg/mL	1	a Ce 413.747 line may effect Bkg. Corr.
ICP-OES 418.660 nm	0.05 / 0.003 µg/mL	1	Zr
ICP-OES 453.975 nm	0.06 / 0.0063 µg/mL	1	

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 05, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- August 05, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDB

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVCOs_00012

300 Technology Drive
Christiansburg, VA 24073 - USA
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCD1
Lot Number:	J2-CD02063
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Cadmium
Starting Material:	Cd shot
Starting Material Lot#:	1714
Starting Material Purity:	99.9958%

954511
ID: MEIVCOs_00012
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000ppm Cobalt Stock Std
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 5 µg/mL

Certified Density: 1.016 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **997 ± 5 µg/mL**
ICP Assay NIST SRM 3108 Lot Number: 130116

Assay Method #2 **999 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.009150	M	Eu	<	0.013725	O	Na		0.005201	M	Se	<	0.036600	O	Zn		0.000570
O	Al		0.001755	O	Fe	<	0.001100	M	Nb	<	0.002287	O	Si		0.028532	M	Zr	<	0.022875
M	As	<	0.045750	M	Ga	<	0.004575	M	Nd	<	0.009150	M	Sm	<	0.004575				
M	Au	<	0.013725	M	Gd	<	0.004575	O	Ni	<	0.003000	M	Sn	<	0.022875				
O	B		0.003950	M	Ge	<	0.027450	n	Os	<		M	Sr	<	0.002287				
M	Ba	<	0.045750	M	Hf	<	0.009150	O	P	<	0.003000	M	Ta	<	0.032025				
M	Be	<	0.002287	O	Hg	<	0.012000	M	Pb	<	0.013725	M	Tb	<	0.001372				
M	Bi	<	0.001830	M	Ho	<	0.002287	M	Pd	<	0.022875	O	Te	<	0.007000				
O	Ca		0.002194	O	In	<	0.002000	M	Pr	<	0.001372	M	Th	<	0.004575				
s	Cd	<		M	Ir	<	0.022875	M	Pt	<	0.009150	M	Ti	<	0.228751				
M	Ce	<	0.022875	O	K		0.000219	M	Rb	<	0.004575	M	Tl	<	0.004575				
M	Co	<	0.013725	M	La	<	0.002287	M	Re	<	0.004575	M	Tm	<	0.001830				
M	Cr	<	0.022875	O	Li	<	0.000020	M	Rh	<	0.004575	M	U	<	0.009150				
M	Cs	<	0.001372	M	Lu	<	0.001830	M	Ru	<	0.009150	M	V	<	0.009150				
M	Cu	<	0.027450	O	Mg		0.000197	O	S	<	0.030000	M	W	<	0.045750				
M	Dy	<	0.027450	M	Mn	<	0.018300	M	Sb	<	0.002287	M	Y	<	0.183001				
M	Er	<	0.022875	M	Mo	<	0.009150	M	Sc	<	0.045750	M	Yb	<	0.004575				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 112.41 +2 4 Cd2(OH) (aq)3+ and Cd(OH)(aq)
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 , and HF. Avoid basic media forming insoluble carbonate and hydroxide.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO3 / LDPE container.
Cd Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (soluble in HCl or HNO3); Ores (dissolve in HCl /HNO3 then take to fumes with H2SO4. The silica and lead sulfate are filtered off after the addition of water); Organic based (dry ash at 450°C and dissolve ash in HCl), (sulfuric / peroxide acid digestion).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 111 amu	11 ppt	n/a	95Mo16O
ICP-OES 214.438 nm	0.003 / 0.0003 µg/mL	1	Pt, Ir
ICP-OES 226.502 nm	0.003 / 0.0003 µg/mL	1	Ir
ICP-OES 228.802 nm	0.003 / 0.0003 µg/mL	1	Co, Ir, As, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 20, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 20, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVCRs_00013

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCR(3)1
Lot Number:	J2-CR03111
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Chromium+3
Starting Material:	Cr Flake
Starting Material Lot#:	1661
Starting Material Purity:	99.9899%

929534
ID: MEIVCRs_00013
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000ppm Chromium (+3) sto

Rec'd 5/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 4 µg/mL

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **997 ± 5 µg/mL**
ICP Assay NIST SRM 3112a Lot Number: 030730Cr3

Assay Method #2 **999 ± 4 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001009	M	Eu	<	0.025220	O	Na		0.017703	M	Se	<	0.050441	O	Zn	<	0.036630
O	Al		0.002714	O	Fe		0.040127	M	Nb	<	0.025220	n	Si	<		M	Zr	<	0.015132
M	As	<	0.025220	O	Ga	<	0.024420	M	Nd	<	0.001009	M	Sm	<	0.000504				
M	Au	<	0.000504	M	Gd	<	0.000504	O	Ni		0.001210	M	Sn	<	0.015132				
O	B		0.000856	M	Ge	<	0.005044	n	Os	<		M	Sr	<	0.025220				
M	Ba	<	0.025220	M	Hf	<	0.000504	i	P	<		M	Ta	<	0.000504				
M	Be	<	0.002522	O	Hg	<	0.003663	M	Pb		0.000573	M	Tb	<	0.000504				
M	Bi	<	0.010088	M	Ho	<	0.000504	M	Pd	<	0.005044	M	Te	<	0.010088				
O	Ca		0.007435	M	In	<	0.001009	M	Pr	<	0.001513	M	Th	<	0.000504				
M	Cd	<	0.001513	M	Ir	<	0.000504	M	Pt	<	0.000504	O	Ti		0.002360				
M	Ce	<	0.001513	O	K		0.009442	i	Rb	<		M	Tl	<	0.000504				
O	Co		0.007701	M	La	<	0.000504	M	Re	<	0.015132	M	Tm	<	0.030264				
s	Cr	<		O	Li	<	0.004274	M	Rh	<	0.100881	M	U	<	0.000504				
M	Cs	<	0.005044	M	Lu	<	0.000504	M	Ru	<	0.050441	M	V	<	0.075661				
O	Cu		0.006314	O	Mg		0.000708	i	S	<		M	W		0.005461				
M	Dy	<	0.000504	O	Mn		0.000797	M	Sb	<	0.020176	M	Y	<	0.001513				
M	Er	<	0.010088	M	Mo		0.020087	M	Sc	<	0.020176	M	Yb	<	0.000504				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 52.00 +3 6 $Cr(H_2O)_6^{3+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4, HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Cr3 Containing Samples (Preparation and Solution) -Metal (soluble in HCl); Oxides/Ores (Chrome ore/oxides are very difficult to dissolve. The following procedures [A-D] are commonly used: A. Fusion with $KHSO_4$ and extraction with hot KCl. The residue fused with Na_2CO_3 and $KClO_3$, 3:1. B. Fusion with $NaKSO_4$ and NaF 2:1, C. Fusion with magnesia or lime and sodium or potassium carbonates, 4:1. D. Fusion with Na_2O_2 or NaOH and KNO_3 or NaOH and Na_2O_2. Nickel, iron, copper, or silver crucibles should be used for D. Platinum may be used for A, B, C); Organic Matrices (ash at 4500C followed by one of the fusion methods above or sulfuric/hydrogen peroxide acid digestions may be applicable to non oxide containing samples).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 52 amu	40 ppt	N/A	36S16O, 36Ar16O - The 50Cr, 53Cr, 54Cr lines suffer from many more potential interferences from sulfur, chlorine and argon compounds of oxygen, nitrogen and carbon.
ICP-OES 205.552 nm	0.006/0.0008 µg/mL	1	Os
ICP-OES 276.654 nm	0.01/0.001 µg/mL	1	Cu, Ta, V
ICP-OES 284.325 nm	0.008/0.0007 µg/mL	1	

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 17, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- November 17, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

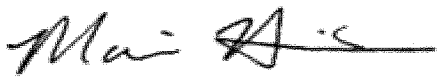
- Sealed TCT Bag Open Date: 5/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

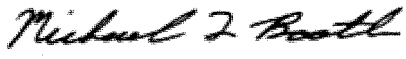
Certificate Prepared By:

Maurice Harris
Product Documentation Technician



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVCUs_00014

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com
tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCU1
Lot Number:	J2-CU03026
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Copper
Starting Material:	Cu Metal
Starting Material Lot#:	1806
Starting Material Purity:	99.9996%

929533
ID: MEIVCUs_00014
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000ppm Copper stock std
Rec'd 5/6/17 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 5 µg/mL

Certified Density: 1.014 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 5 µg/mL**
ICP Assay NIST SRM 3114 Lot Number: 121207

Assay Method #2 **1001 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.004691	M	Eu	<	0.000938	O	Na		0.000312	M	Se	<	0.018765	O	Zn	<	0.001230
O	Al		0.000312	O	Fe		0.000718	M	Nb	<	0.004691	O	Si		0.000983	O	Zr	<	0.002460
O	As	<	0.007380	M	Ga	<	0.000938	M	Nd	<	0.000938	M	Sm	<	0.000938				
M	Au	<	0.000938	M	Gd	<	0.000938	M	Ni	<	0.002815	O	Sn	<	0.002460				
O	B	<	0.001230	M	Ge	<	0.009383	n	Os	<		O	Sr	<	0.000062				
O	Ba	<	0.000086	M	Hf	<	0.004691	O	P	<	0.061500	M	Ta	<	0.009383				
O	Be	<	0.000062	O	Hg	<	0.002460	M	Pb		0.000155	M	Tb	<	0.000938				
M	Bi	<	0.018765	M	Ho	<	0.000938	M	Pd	<	0.002815	M	Te	<	0.037530				
O	Ca		0.000296	M	In	<	0.000938	M	Pr	<	0.000938	M	Th	<	0.000938				
M	Cd	<	0.002815	M	Ir	<	0.000938	M	Pt	<	0.000938	O	Ti	<	0.000615				
M	Ce	<	0.000938	O	K		0.000359	M	Rb	<	0.000938	M	Tl	<	0.000938				
O	Co	<	0.003690	M	La	<	0.000938	M	Re	<	0.000938	M	Tm	<	0.000938				
O	Cr	<	0.002460	M	Li	<	0.046913	O	Rh	<	0.008610	M	U	<	0.000938				
M	Cs	<	0.018765	M	Lu	<	0.000938	M	Ru	<	0.000938	O	V	<	0.000615				
s	Cu	<		O	Mg		0.001295	O	S		0.000749	M	W	<	0.005630				
M	Dy	<	0.000938	O	Mn	<	0.000615	M	Sb	<	0.004691	O	Y	<	0.000369				
M	Er	<	0.000938	O	Mo	<	0.003075	O	Sc	<	0.000369	M	Yb	<	0.000938				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 63.55 +2 6 Cu(H2O)62+
Chemical Compatibility -Stable in HCl, HNO3, H2SO4, HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Cu Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 63 amu	10 ppt	n/a	40Ar23Na 47Ti16O, 14N12C37Cl, 16O12C35Cl, 23Na40Ca
ICP-OES 219.958 nm	0.01/.002 µg/mL	1	Th, Ta, Nb, U, Hf
ICP-OES 224.700 nm	0.01/.001 µg/mL	1	Pb, Ir, Ni, W
ICP-OES 324.754 nm	0.06/.001 µg/mL		Nb, U, Th, Mo, Hf

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 01, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- December 01, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/6/16 mbh

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVFEs_00015

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGFE10
Lot Number:	K2-FE04057
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Iron
Starting Material:	Iron Metal
Starting Material Lot#:	2031
Starting Material Purity:	99.9970%

954508

ID: MEIVFEs_00015

Exp:07/21/17 Prpd:MDK Opn:07/21/16

10,000 ppm Iron

Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10 003 ± 26 µg/mL

Certified Density: 1.041 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **9998 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **10038 ± 66 µg/mL**
ICP Assay NIST SRM 3126a Lot Number: 140812

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001204	M	Eu	<	0.000602	O	Na		0.014010	M	Se	<	0.003000	M	Zn	<	0.021079
O	Al		0.005094	s	Fe	<		M	Nb	<	0.001204	O	Si		0.056296	M	Zr	<	0.002409
M	As	<	0.063841	M	Ga	<	0.018068	M	Nd	<	0.000602	M	Sm	<	0.000602				
M	Au	<	0.000600	M	Gd	<	0.000602	M	Ni		0.029566	M	Sn	<	0.006022				
O	B	<	0.037050	i	Ge	<		M	Os	<	0.000600	M	Sr	<	0.000602				
O	Ba	<	0.001852	M	Hf	<	0.000602	i	P	<		M	Ta	<	0.000602				
O	Be	<	0.000617	M	Hg	<	0.003000	M	Pb	<	0.004818	M	Tb	<	0.000602				
M	Bi	<	0.000602	M	Ho	<	0.000602	M	Pd	<	0.001204	M	Te	<	0.008431				
O	Ca		0.011717	M	In	<	0.000602	M	Pr	<	0.000602	M	Th	<	0.000602				
M	Cd	<	0.000602	M	Ir	<	0.000600	M	Pt	<	0.000602	M	Ti	<	0.001806				
M	Ce	<	0.000602	O	K		0.005604	M	Rb	<	0.001204	M	Tl	<	0.000602				
M	Co		0.038013	M	La	<	0.000602	M	Re	<	0.000602	M	Tm	<	0.000602				
O	Cr		0.030058	O	Li	<	0.000123	M	Rh	<	0.000602	M	U	<	0.000602				
M	Cs	<	0.000602	M	Lu	<	0.000602	M	Ru	<	0.000600	M	V	<	0.004818				
M	Cu		0.023230	O	Mg		0.001783	O	S		0.020124	M	W	<	0.001204				
M	Dy	<	0.000602	O	Mn		0.076420	M	Sb		0.035404	M	Y	<	0.000602				
M	Er	<	0.000602	M	Mo		0.005838	M	Sc	<	0.001204	M	Yb	<	0.000602				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 55.85 +3 6 $Fe(H_2O)_6^{3+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF and H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Fe Containing Samples (Preparation and Solution) - Metal (Soluble in HCl); Oxides (If the oxide has been at a high temperature then Na_2CO_3 fusion in Pt0 followed by HCl dissolution otherwise dissolve in dilute HCl); Ores (See Oxides above using only the fusion approach).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 56 amu	970 ppt	N/A	40Ar15N1H, 40Ar16O, 36Ar17O1H , 38Ar18O, 37Cl18O1H, 40Ca16O
ICP-OES 238.204 nm	0.005/0.001 µg/mL	1	Ru, Co
ICP-OES 239.562 nm	0.005/0.001 µg/mL	1	Co, W, Cr
ICP-OES 259.940 nm	0.006/0.001 µg/mL	1	Hf, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 27, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- February 27, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVHGs_00015

INORGANIC VENTURES
300 Technology Drive
Christiansburg VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGHG1
Lot Number:	J2-HG02133
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Hg
Starting Material:	Hg metal
Starting Material Lot#:	1780
Starting Material Purity:	99.9997%

1000ppm Mercury stock std
889371
ID: MEIVHGs_00015
Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 3 µg/mL - weighted mean

Certified Density: 1.029 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1001 ± 5 µg/mL**
ICP Assay NIST SRM 3133 Lot Number: 061204

Assay Method #2 **1002 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.006542	M	Eu	<	0.000218	O	Na		0.000553	O	Se	<	0.030000	O	Zn	<	0.000400
O	Al	<	0.001000	O	Fe	<	0.000800	M	Nb	<	0.002180	O	Si		0.000691	O	Zr	<	0.001000
M	As	<	0.006542	M	Ga	<	0.000436	M	Nd	<	0.000218	M	Sm	<	0.000218				
M	Au	<	0.004361	M	Gd	<	0.000218	O	Ni	<	0.002000	O	Sn	<	0.002000				
M	B	<	0.004361	M	Ge	<	0.001090	n	Os	<		O	Sr	<	0.000200				
O	Ba	<	0.000260	M	Hf	<	0.006542	O	P	<	0.030000	M	Ta	<	0.001090				
O	Be	<	0.000180	s	Hg	<		M	Pb	<	0.002180	M	Tb	<	0.000218				
M	Bi	<	0.002180	M	Ho	<	0.000218	M	Pd	<	0.008723	M	Te	<	0.010904				
O	Ca		0.001706	M	In	<	0.000218	M	Pr	<	0.000218	M	Th	<	0.000436				
O	Cd	<	0.000500	M	Ir	<	0.000218	M	Pt	<	0.000218	O	Ti	<	0.000600				
M	Ce	<	0.000218	O	K		0.000322	M	Rb	<	0.000218	O	Tl	<	0.010000				
M	Co	<	0.000436	M	La	<	0.000218	M	Re	<	0.000218	M	Tm	<	0.000218				
O	Cr	<	0.002000	O	Li	<	0.000040	M	Rh	<	0.000218	M	U	<	0.000218				
M	Cs	<	0.001090	M	Lu	<	0.000218	M	Ru	<	0.000218	O	V	<	0.000550				
M	Cu	<	0.002180	O	Mg		0.000359	O	S	<	0.030000	M	W	<	0.004361				
M	Dy	<	0.000218	O	Mn	<	0.000160	M	Sb	<	0.001090	M	Y	<	0.000218				
M	Er	<	0.000218	O	Mo	<	0.001500	O	Sc	<	0.000600	M	Yb	<	0.000218				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59 +2 4 Hg(OH)(aq) 1+
Chemical Compatibility - Stable in HNO3. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.
Stability - 2-100 ppb levels not stable in 1% HNO3 / LDPE container, stable in 10% HNO3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO3 / LDPE container.
Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO3); Oxide (Soluble in HNO3); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th ,Rh , Fe, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 11, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **February 11, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVINs_00024

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGIN1
Lot Number:	J2-IN01115
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: In
Starting Material:	In shot
Starting Material Lot#:	1810
Starting Material Purity:	99.9998%

1000ppm Indium stock std

889359

ID: MEIVINs_00024

Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 997 ± 3 µg/mL

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **996 ± 4 µg/mL**
ICP Assay NIST SRM 3124a Lot Number: 110516

Assay Method #2 **998 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.002886	M	Eu	<	0.000577	O	Na		0.000344	M	Se	<	0.040406	O	Zn	<	0.000400
O	Al	<	0.001000	O	Fe		0.000120	M	Nb	<	0.002886	O	Si		0.000637	M	Zr	<	0.001154
M	As	<	0.011544	M	Ga	<	0.000577	M	Nd	<	0.000577	M	Sm	<	0.000577				
M	Au	<	0.000577	M	Gd	<	0.000577	O	Ni	<	0.003000	M	Sn	<	0.028861				
O	B	<	0.020000	M	Ge	<	0.005772	n	Os	<		O	Sr	<	0.000070				
O	Ba	<	0.000500	M	Hf	<	0.001154	O	P	<	0.030000	M	Ta	<	0.002886				
O	Be	<	0.000100	O	Hg	<	0.009000	M	Pb	<	0.017316	M	Tb	<	0.000577				
M	Bi	<	0.005772	M	Ho	<	0.000577	M	Pd	<	0.001731	M	Te	<	0.034633				
O	Ca		0.000344	s	In	<		M	Pr	<	0.000577	M	Th	<	0.000577				
O	Cd	<	0.001000	M	Ir	<	0.000577	M	Pt	<	0.000577	O	Ti	<	0.000400				
M	Ce	<	0.000577	O	K		0.000258	M	Rb	<	0.000577	M	Tl	<	0.005772				
M	Co	<	0.002886	M	La	<	0.000577	M	Re	<	0.000577	M	Tm	<	0.005772				
O	Cr	<	0.002000	O	Li	<	0.000060	M	Rh	<	0.000577	M	U	<	0.000577				
M	Cs	<	0.000577	M	Lu	<	0.000577	M	Ru	<	0.000577	O	V	<	0.000400				
O	Cu	<	0.002000	O	Mg		0.000034	O	S	<	0.015000	M	W	<	0.028861				
M	Dy	<	0.000577	O	Mn	<	0.000400	M	Sb	<	0.005772	M	Y	<	0.000577				
M	Er	<	0.000577	M	Mo	<	0.005772	O	Sc	<	0.000300	M	Yb	<	0.000577				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 114.82 +3 6 In(H2O)6+3
Chemical Compatibility -Soluble in HCl, HNO3, and H2SO4. Avoid neutral and basic media. Stable with most metals and inorganic anions. The oxalate, sulfide, carbonate, hydroxide and phosphate are insoluble in water.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
In Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO3); Oxide (Soluble in mineral acids); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 115 amu	1 ppt	n/a	115Sn, 99Ru16O
ICP-OES 158.583 nm	0.05 / 0.002 µg/mL	1	
ICP-OES 230.606 nm	0.1 / 0.03 µg/mL	1	Ni, Os
ICP-OES 325.609 nm	0.2 / 0.05 µg/mL	1	Mn, Mo, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 01, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- September 01, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVKs_00013

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGK10
Lot Number:	J2-K03054
Matrix:	2% (v/v) HNO_3
Value / Analyte(s):	10 000 µg/mL ea: Potassium
Starting Material:	KNO_3
Starting Material Lot#:	1727
Starting Material Purity:	99.9990%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10 003 ± 24 µg/mL

Certified Density: 1.025 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **10008 ± 64 µg/mL**
ICP Assay NIST SRM 3141a Lot Number: 140813

Assay Method #2 **10003 ± 24 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

951638
ID MEIVKs_00013
Exp 07/12/17 Prpd RM1 Opn 07/12/16
10,000ppm Potassium Stock

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	< 0.000639	M	Eu	< 0.000639	O	Na	0.133153	M	Se	< 0.005751	O	Zn	0.000333			
O	Al	0.000592	O	Fe	0.000999	O	Nb	< 0.002994	O	Si	0.002589	M	Zr	< 0.000639			
O	As	< 0.005545	M	Ga	< 0.000639	M	Nd	< 0.000639	M	Sm	< 0.000639						
M	Au	< 0.000639	M	Gd	< 0.000639	O	Ni	< 0.003660	M	Sn	< 0.000639						
O	B	< 0.003327	M	Ge	< 0.001917	M	Os	< 0.000639	O	Sr	0.000142						
O	Ba	0.000592	M	Hf	< 0.000639	O	P	< 0.033270	M	Ta	< 0.000639						
O	Be	< 0.000222	M	Hg	< 0.003194	M	Pb	< 0.003834	M	Tb	< 0.000639						
M	Bi	< 0.000639	M	Ho	< 0.000639	M	Pd	< 0.000639	M	Te	< 0.007669						
O	Ca	0.007952	M	In	< 0.000639	M	Pr	< 0.000639	M	Th	< 0.000639						
M	Cd	< 0.000639	M	Ir	< 0.000639	M	Pt	< 0.000639	O	Ti	< 0.000588						
M	Ce	< 0.000639	s	K	<	M	Rb	0.102731	M	Tl	< 0.000639						
M	Co	< 0.000639	M	La	< 0.000639	M	Re	< 0.000639	M	Tm	< 0.000639						
O	Cr	< 0.002440	O	Li	< 0.000067	M	Rh	< 0.000639	M	U	< 0.000639						
M	Cs	< 0.000639	M	Lu	< 0.000639	M	Ru	< 0.001278	O	V	< 0.001331						
M	Cu	0.036233	O	Mg	0.000888	O	S	0.007212	M	W	< 0.000639						
M	Dy	< 0.000639	O	Mn	< 0.000776	M	Sb	< 0.001278	M	Y	< 0.000639						
M	Er	< 0.000639	O	Mo	< 0.001331	O	Sc	< 0.000288	M	Yb	< 0.000639						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 39.10 +1 (6) K+(aq)
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Avoid use of HClO4 due to insolubility of the perchlorate. Stable with all metals and inorganic anions except ClO4-.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
K Containing Samples (Preparation and Solution) - Metal (Dissolves very rapidly in water); Ores (Sodium carbonate fusion in Pt0 followed by HCl dissolution-blank levels of K in sodium carbonate critical); Organic Matrices (Sulfuric/peroxide digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 39 amu	10 ppt	n/a	38ArH, 23Na16O, 78Se
ICP-OES 404.721 nm	1.1 / 0.05 µg/mL	1	U, Ce
ICP-OES 766.490 nm	0.4 / 0.001 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 771.531 nm	1.0 / 0.03 µg/mL	1	2nd order radiation from R.E.s on some optical designs

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 01, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- December 01, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVMGs_00018

INORGANIC VENTURES
[illegible]

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMG10
Lot Number:	J2-MG03145
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Magnesium
Starting Material:	Mg chips
Starting Material Lot#:	1484
Starting Material Purity:	99.9987%

954509
ID: MEIVMGs_00018
Exp:07/21/17 Prpd:MDK Opn:07/21/16
10,000ppm Magnesium
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9970 ± 24 µg/mL

Certified Density: 1.053 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **9954 ± 58 µg/mL**
ICP Assay NIST SRM 3131a Lot Number: 050302

Assay Method #2 **9973 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001107	M	Eu	<	0.000554	O	Na		0.074480	M	Se	<	0.011074	O	Zn	<	0.002432
O	Al	<	0.006080	O	Fe	<	0.001459	M	Nb	<	0.000554	O	Si	<	0.006080	M	Zr	<	0.000554
M	As	<	0.003322	M	Ga	<	0.000554	M	Nd	<	0.008306	M	Sm	<	0.000554				
M	Au	<	0.002216	M	Gd	<	0.000554	M	Ni	<	0.005537	M	Sn	<	0.001107				
O	B	<	0.002432	M	Ge	<	0.000554	M	Os	<	0.002770	O	Sr		0.000056				
M	Ba	<	0.000554	M	Hf	<	0.000554	O	P	<	0.060800	M	Ta	<	0.000554				
M	Be	<	0.000554	M	Hg	<	0.005540	M	Pb		0.005869	M	Tb	<	0.000554				
M	Bi	<	0.000554	M	Ho	<	0.000554	M	Pd	<	0.000554	M	Te	<	0.002769				
O	Ca		0.018942	M	In	<	0.000554	M	Pr	<	0.002769	M	Th	<	0.000554				
M	Cd	<	0.000554	M	Ir	<	0.000554	M	Pt	<	0.000554	O	Ti	<	0.000973				
M	Ce	<	0.016611	O	K		0.018270	M	Rb	<	0.001107	M	Tl	<	0.000554				
M	Co	<	0.001661	M	La	<	0.008306	M	Re	<	0.000554	M	Tm	<	0.000554				
O	Cr	<	0.003648	O	Li		0.026060	M	Rh	<	0.000554	M	U	<	0.000554				
M	Cs	<	0.000554	M	Lu	<	0.000554	M	Ru	<	0.000554	M	V	<	0.001107				
M	Cu		0.004338	s	Mg	<		O	S		0.012301	M	W	<	0.000554				
M	Dy	<	0.000554	O	Mn		0.006725	M	Sb	<	0.000554	M	Y	<	0.000554				
M	Er	<	0.000554	M	Mo	<	0.001661	O	Sc		0.000336	M	Yb	<	0.000554				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 24.31 +2 6 $Mg(H_2O)_6^{+2}$
Chemical Compatibility -Soluble in HCl, HNO_3, and H_2SO_4 avoid HF, H_3PO_4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicates, carbonates, hydroxides, oxides, and tungstates in neutral and slightly acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO_3 / LDPE container.
Mg Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO_3); Oxide (Readily soluble in above compatible aqueous acidic solutions); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric / peroxide digestion or nitric / sulfuric / perchloric acid decomposition, or dry ash and dissolution in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 24 amu	42 ppt	n/a	7Li17O, 48Ti+2 , 48Ca+2
ICP-OES 279.553 nm	0.0002 / 0.00003 µg/mL	1	Th
ICP-OES 280.270 nm	0.0003 / 0.00005 µg/mL	1	U, V
ICP-OES 285.213 nm	0.002 / 0.00003 µg/mL	1	U, Hf, Cr, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 16, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 16, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MBK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVMOs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.382.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMO1
Lot Number:	H2-MO02073
Matrix:	H2O tr. NH4OH
Value / Analyte(s):	1 000 µg/mL ea: Mo
Starting Material:	Ammonium Molybdate
Starting Material Lot#:	1934
Starting Material Purity:	99.9942%

1000 PPM Mo
889365
ID: MEIVMOs_00012
Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 6 µg/mL - weighted mean

Certified Density: 1.000 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **999 ± 4 µg/mL**
ICP Assay NIST SRM 3134 Lot Number: 130418

Assay Method #2 **1000 ± 4 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	< 0.006076	M	Eu	< 0.001519	O	Na	< 0.010480	M	Se	< 0.005063	M	Zn	< 0.026834			
M	Al	0.002201	M	Fe	0.000618	M	Nb	< 0.126574	i	Si	<	M	Zr	< 0.003797			
M	As	0.010793	M	Ga	0.000472	i	Nd	<	M	Sm	< 0.005063						
M	Au	< 0.001519	M	Gd	< 0.002531	M	Ni	< 0.010126	M	Sn	< 0.002025						
M	B	< 0.016455	M	Ge	< 0.022277	M	Os	< 0.006077	O	Sr	< 0.001572						
M	Ba	< 0.012657	M	Hf	< 0.001519	i	P	<	M	Ta	< 0.001013						
M	Be	< 0.000506	M	Hg	< 0.015193	M	Pb	< 0.010632	M	Tb	< 0.000253						
M	Bi	< 0.000253	M	Ho	< 0.000506	M	Pd	< 0.040504	i	Te	<						
O	Ca	0.001735	M	In	< 0.025315	M	Pr	< 0.101259	M	Th	< 0.001013						
O	Cd	< 0.010480	M	Ir	< 0.001519	M	Pt	< 0.001519	O	Ti	< 0.001048						
M	Ce	< 0.063287	O	K	0.008228	M	Rb	< 0.010632	M	Tl	< 0.005569						
M	Co	< 0.006076	M	La	< 0.001519	M	Re	0.002232	M	Tm	< 0.000253						
M	Cr	< 0.011139	O	Li	< 0.005240	M	Rh	< 0.001013	M	U	< 0.002531						
M	Cs	< 0.006582	M	Lu	< 0.000253	M	Ru	< 0.001519	O	V	<						
M	Cu	< 0.014176	M	Mg	0.000566	i	S	<	M	W	0.111288						
M	Dy	< 0.010632	M	Mn	< 0.037972	M	Sb	< 0.012657	M	Y	< 0.000253						
M	Er	< 0.001519	s	Mo	<	O	Sc	< 0.010480	M	Yb	< 0.002025						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 95.94 +6 6,7,8,9 [MoO4] -2(chemical form as received)

Chemical Compatibility -Mo is received in a NH4OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO4]-2 is soluble in concentrated HCl [MoOCl5]-2, dilute HF / HNO3 [MoOF5] -2 and basic media [MoO4]-2. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO4]-2 chemical form.

Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [MoO4] -2 chemically stable for years in 1% NH4OH in a LDPE container.

Mo Containing Samples (Preparation and Solution) -Metal (Soluble in HF / HNO3 or hot dilute HCl); Oxide (soluble in HF or NH4OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 95 amu	3 ppt	n/a	40Ar39K16O,79Br1 6O,190Os2+,190Pt 2+
ICP-OES 202.030 nm	0.008 / 0.0002 µg/mL	1	Os, Hf
ICP-OES 203.844 nm	0.012 / 0.002 µg/mL	1	
ICP-OES 204.598 nm	0.012 / 0.001 µg/mL	1	Ir, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 09, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- January 09, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MAH

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVNIs_00011

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
Inorganicventures.com

CERTIFICATE OF ANALYSIS

Tel: 800.669.6795 - 540.585.3030
Fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGNI1
Lot Number:	J2-NI02095
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Ni
Starting Material:	Ni pieces
Starting Material Lot#:	1559
Starting Material Purity:	99.9993%

1000 PPM NI
889360
ID: MEIVNIs_00011
Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/26/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 4 µg/mL - weighted mean

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1000 ± 4 µg/mL**
ICP Assay NIST SRM 3136 Lot Number: 120619

Assay Method #2 **1001 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.015884	M	Eu	<	0.023826	O	Na		0.000739	O	Se	<	0.006000	M	Zn	<	0.158844
O	Al	<	0.003000	O	Fe		0.001402	M	Nb	<	0.003971	O	Si		0.001784	M	Zr	<	0.039711
O	As	<	0.005400	M	Ga	<	0.007942	M	Nd	<	0.015884	M	Sm	<	0.007942				
M	Au	<	0.023826	M	Gd	<	0.007942	s	Ni	<	0.000900	M	Sn	<	0.039711				
O	B	<	0.009900	M	Ge	<	0.047653	n	Os	<		M	Sr	<	0.003971				
M	Ba	<	0.079422	M	Hf	<	0.015884	O	P	<	0.100000	M	Ta	<	0.055595				
O	Be	<	0.002000	O	Hg	<	0.011000	M	Pb	<	0.023826	M	Tb	<	0.002382				
M	Bi	<	0.003176	M	Ho	<	0.003971	M	Pd	<	0.039711	M	Te	<	0.238267				
O	Ca		0.002294	M	In	<	0.079422	M	Pr	<	0.002382	M	Th	<	0.007942				
M	Cd	<	0.023826	M	Ir	<	0.039711	M	Pt	<	0.015884	M	Ti	<	0.397111				
M	Ce	<	0.039711	O	K		0.000280	M	Rb	<	0.007942	M	Tl	<	0.007942				
O	Co		0.000446	M	La	<	0.003971	M	Re	<	0.007942	M	Tm	<	0.003176				
M	Cr	<	0.039711	O	Li	<	0.000020	M	Rh	<	0.007942	M	U	<	0.015884				
M	Cs	<	0.002382	M	Lu	<	0.003176	M	Ru	<	0.015884	M	V	<	0.015884				
M	Cu	<	0.047653	O	Mg		0.000025	O	S	<	0.025000	M	W	<	0.079422				
M	Dy	<	0.047653	M	Mn	<	0.031768	M	Sb	<	0.003971	M	Y	<	0.317689				
M	Er	<	0.039711	M	Mo	<	0.015884	M	Sc	<	0.079422	M	Yb	<	0.007942				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.69 +2 6 $Ni(H_2O)_6^{2+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Ni Containing Samples (Preparation and Solution) -Metal (Soluble in HNO_3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO_3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 60 amu	100 ppt	n/a	43Ca16O1H , 44Ca16O, 23Na37Cl
ICP-OES 221.647 nm	0.01 / 0.0009 µg/mL	1	Si
ICP-OES 231.604 nm	0.02 / 0.002 µg/mL	1	Sb, Ta, Co
ICP-OES 232.003 nm	0.02 / 0.006 µg/mL	1	Cr, Re, Os, Nb, Ag, Pt, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 24, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- February 24, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVPBs_00017

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGPB1
Lot Number:	J2-PB03066
Matrix:	0.5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Pb
Starting Material:	Lead nitrate
Starting Material Lot#:	1840 and 1908
Starting Material Purity:	99.9994%

929535
ID: MEIVPBs_00017
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000 PPM Pb

Rec'd 5/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 3 µg/mL

Certified Density: 1.002 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 3 µg/mL**
ICP Assay NIST SRM 3128 Lot Number: 101026

Assay Method #2 **1004 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000304	M	Eu	<	0.000304	O	Na		0.000155	M	Se	<	0.006074	O	Zn		0.000323
O	Al		0.003019	O	Fe		0.000359	M	Nb	<	0.000304	O	Si		0.001006	M	Zr	<	0.000911
M	As	<	0.000607	M	Ga	<	0.000304	M	Nd	<	0.000304	M	Sm	<	0.000304				
M	Au	<	0.000611	M	Gd	<	0.000304	M	Ni	<	0.000607	M	Sn	<	0.000304				
O	B	<	0.000624	M	Ge	<	0.000304	M	Os	<	0.000306	O	Sr		0.000012				
O	Ba		0.000647	M	Hf	<	0.000304	O	P	<	0.020800	M	Ta	<	0.000304				
O	Be	<	0.000031	O	Hg	<	0.002080	s	Pb	<		M	Tb	<	0.000304				
O	Bi		0.002588	M	Ho	<	0.000304	M	Pd	<	0.000304	M	Te	<	0.003037				
O	Ca		0.000359	M	In	<	0.000304	M	Pr	<	0.000304	M	Th	<	0.004555				
O	Cd	<	0.000208	M	Ir	<	0.000306	M	Pt	<	0.000304	O	Ti		0.000115				
M	Ce	<	0.000304	O	K		0.000575	M	Rb	<	0.000304	M	Tl	<	0.003037				
M	Co	<	0.000304	M	La	<	0.000304	M	Re	<	0.000304	M	Tm	<	0.000304				
O	Cr	<	0.000520	O	Li	<	0.000416	O	Rh	<	0.010400	M	U	<	0.000304				
M	Cs		0.000168	M	Lu	<	0.000304	M	Ru	<	0.000306	M	V	<	0.000304				
M	Cu	<	0.000304	O	Mg		0.000043	O	S	<	0.010400	M	W	<	0.000304				
M	Dy	<	0.000304	M	Mn	<	0.000607	M	Sb	<	0.000304	M	Y	<	0.000304				
M	Er	<	0.000304	M	Mo	<	0.000304	M	Sc	<	0.000304	M	Yb	<	0.000304				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 207.20 +2 6 $Pb(H_2O)_6^{+2}$
Chemical Compatibility - Soluble in HCl, HF and HNO_3. Avoid H_2SO_4. Stable with most metals and inorganic anions forming insoluble carbonate, borate, sulfate, sulfite, sulfide, phosphate, oxalate, chromate, tannate, iodate, and cyanide in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO_3 / LDPE container.
Pb Containing Samples (Preparation and Solution) -Metal (Best dissolved in 1:1 H_2O / HNO_3); Oxides (The many different Pb oxides are soluble in HNO_3 with the exception of PbO_2 which is soluble in HCl or HF); Ores and Alloys (Best attacked using 1:1 H_2O / HNO_3); Organic Matrices (Dry ash and dissolve in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 208 amu	5 ppt	n/a	192Pt16O, 192Os16O
ICP-OES 168.215 nm	0.03 / 0.003 µg/mL	1	Co
ICP-OES 217.000 nm	0.09 / 0.03 µg/mL	1	W, Ir, Hf, Sb, Th
ICP-OES 220.353 nm	0.04 / 0.006 µg/mL	1	Bi, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 08, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 08, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/6/16 MBK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVPBs_00018

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGPB1
Lot Number:	K2-PB03074
Matrix:	0.5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Lead
Starting Material:	Lead nitrate
Starting Material Lot#:	1840 and 1908
Starting Material Purity:	99.9994%

954504

ID: MEIVPBs_00018

Exp:07/21/17 Prpd:MDK Opn:07/21/16

1000 PPM Pb

Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1003 ± 4 µg/mL

Certified Density: 1.002 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1003 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **1003 ± 4 µg/mL**
ICP Assay NIST SRM 3128 Lot Number: 101026

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000304	M	Eu	<	0.000304	O	Na		0.000155	M	Se	<	0.006074	O	Zn		0.000324
O	Al		0.003025	O	Fe		0.000360	M	Nb	<	0.000304	O	Si		0.001008	M	Zr	<	0.000911
M	As	<	0.000607	M	Ga	<	0.000304	M	Nd	<	0.000304	M	Sm	<	0.000304				
M	Au	<	0.000611	M	Gd	<	0.000304	M	Ni	<	0.000607	M	Sn	<	0.000304				
O	B	<	0.000624	M	Ge	<	0.000304	M	Os	<	0.000306	O	Sr		0.000012				
O	Ba		0.000648	M	Hf	<	0.000304	O	P	<	0.020800	M	Ta	<	0.000304				
O	Be	<	0.000031	O	Hg	<	0.002080	s	Pb	<		M	Tb	<	0.000304				
O	Bi		0.002593	M	Ho	<	0.000304	M	Pd	<	0.000304	M	Te	<	0.003037				
O	Ca		0.000360	M	In	<	0.000304	M	Pr	<	0.000304	M	Th	<	0.004555				
O	Cd	<	0.000208	M	Ir	<	0.000306	M	Pt	<	0.000304	O	Ti		0.000115				
M	Ce	<	0.000304	O	K		0.000576	M	Rb	<	0.000304	M	Tl	<	0.003037				
M	Co	<	0.000304	M	La	<	0.000304	M	Re	<	0.000304	M	Tm	<	0.000304				
O	Cr	<	0.000520	O	Li	<	0.000416	O	Rh	<	0.010400	M	U	<	0.000304				
M	Cs		0.000168	M	Lu	<	0.000304	M	Ru	<	0.000306	M	V	<	0.000304				
M	Cu	<	0.000304	O	Mg		0.000043	O	S	<	0.010400	M	W	<	0.000304				
M	Dy	<	0.000304	M	Mn	<	0.000607	M	Sb	<	0.000304	M	Y	<	0.000304				
M	Er	<	0.000304	M	Mo	<	0.000304	M	Sc	<	0.000304	M	Yb	<	0.000304				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 207.20 +2 6 $Pb(H_2O)_6^{+2}$
Chemical Compatibility - Soluble in HCl, HF and HNO_3. Avoid H_2SO_4. Stable with most metals and inorganic anions forming insoluble carbonate, borate, sulfate, sulfite, sulfide, phosphate, oxalate, chromate, tannate, iodate, and cyanide in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO_3 / LDPE container.
Pb Containing Samples (Preparation and Solution) -Metal (Best dissolved in 1:1 H_2O / HNO_3); Oxides (The many different Pb oxides are soluble in HNO_3 with the exception of PbO_2 which is soluble in HCl or HF); Ores and Alloys (Best attacked using 1:1 H_2O / HNO_3); Organic Matrices (Dry ash and dissolve in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 208 amu	5 ppt	n/a	192Pt16O, 192Os16O
ICP-OES 168.215 nm	0.03 / 0.003 µg/mL	1	Co
ICP-OES 217.000 nm	0.09 / 0.03 µg/mL	1	W, Ir, Hf, Sb, Th
ICP-OES 220.353 nm	0.04 / 0.006 µg/mL	1	Bi, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 19, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 19, 2020**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVSBs_00011

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 540.961.0330
fax: 540.961.0329
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSB1
Lot Number:	J2-SB03037
Matrix:	1% (v/v) HNO3 3% Tartaric Acid
Value / Analyte(s):	1 000 µg/mL ea: Sb
Starting Material:	Sb Metal
Starting Material Lot#:	1857
Starting Material Purity:	99.9898%

929536
ID: MEIVSBs_00011
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000 PPM Sb
Rec'd 5/12/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 7 µg/mL

Certified Density: 1.022 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **996 ± 5 µg/mL**
ICP Assay NIST SRM 3102A Lot Number: 061229

Assay Method #2 **1002 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000101	M	Eu	<	0.000101	O	Na		0.007416	M	Se	<	0.003733	M	Zn	0.000243
O	Al		0.000971	O	Fe		0.002142	O	Nb	<	0.001814	O	Si		0.019082	M	Zr	< 0.001211
M	As	<	0.003228	M	Ga	<	0.000101	M	Nd	<	0.000101	M	Sm	<	0.000101			
M	Au	<	0.001994	M	Gd	<	0.000101	O	Ni		0.000525	M	Sn	<	0.001816			
O	B		0.003127	M	Ge	<	0.000807	M	Os	<	0.000100	O	Sr	<	0.000085			
O	Ba	<	0.001067	M	Hf	<	0.000101	O	P		0.006812	O	Ta	<	0.001014			
O	Be	<	0.000028	M	Hg	<	0.000299	M	Pb	<	0.000605	M	Tb	<	0.000101			
M	Bi	<	0.000101	M	Ho	<	0.000101	M	Pd	<	0.000202	M	Te	<	0.001110			
O	Ca		0.001111	M	In	<	0.000101	M	Pr	<	0.001009	M	Th	<	0.000101			
M	Cd	<	0.000101	M	Ir	<	0.000399	M	Pt	<	0.000101	O	Ti		0.001104			
O	Ce	<	0.007469	O	K		0.052182	M	Rb	<	0.002825	M	Tl	<	0.000101			
M	Co	<	0.000101	O	La	<	0.000760	M	Re	<	0.000101	M	Tm	<	0.000101			
O	Cr		0.010294	O	Li	<	0.000053	M	Rh	<	0.000101	M	U	<	0.000101			
M	Cs	<	0.002018	M	Lu	<	0.000101	M	Ru	<	0.000100	M	V	<	0.000101			
O	Cu	<	0.000598	O	Mg		0.000486	n	S	<		M	W	<	0.001009			
M	Dy	<	0.000404	O	Mn		0.000172	s	Sb	<		M	Y	<	0.000101			
M	Er	<	0.000101	M	Mo		0.000317	O	Sc	<	0.000049	O	Yb	<	0.000064			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 121.75 +3 6 Sb(O)C4H4O6-1
Chemical Compatibility -Stable in conc. HCl, dilute or conc. HF. Stable in dilute HNO3 as the fluoride or tartrate complex. Avoid basic media. Stable with most metals and inorganic anions in acidic media as the tartrate provided the acidity is not too high or the acid is oxidizing causing loss of the stabilizing tartrate ion. The fluoride complex of antimony is stable in strong acid but you should only mix with other metals that are fluorinated.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-2% HNO3 / LDPE container.
Sb Containing Samples (Preparation and Solution) -Metal and alloys (Soluble in H2O / HF / HNO3 mixture); Oxides (Soluble in HCl and tartaric acid or H2O / HF / HNO3 mixtures); Ores (fusion with Na2CO3 in Pt0 followed by dissolving the fuseate in a H2O / HF / HNO3 mixture); Organic based (sulfuric acid / hydrogen peroxide digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 121 amu	5 ppt	N/A	105Pd16O, 89Y16O2
ICP-OES 206.833 nm	0.03/0.003 µg/mL	1	Ta, Cr, Ge, Hf
ICP-OES 217.581 nm	0.05/0.005 µg/mL	1	Nb, W, Re, Fe
ICP-OES 231.147 nm	0.06/0.006 µg/mL	1	Ni, Co, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 21, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 21, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/6/16 MBL

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVSEs_00013

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

toll: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSE(4)1
Lot Number:	J2-SE02059
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Se
Starting Material:	Se shot
Starting Material Lot#:	1616
Starting Material Purity:	99.9996%

934044
ID: MEIVSEs_00013
Exp:05/23/17 Prpd:MDK Opn:05/23/16
1000 ppm Se
Rec'd 5/23/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1003 ± 4 µg/mL

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1006 ± 5 µg/mL**
ICP Assay NIST SRM 3149 Lot Number: 100901

Assay Method #2 **1001 ± 4 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.007579	M	Eu	<	0.011369	O	Na		0.002646	s	Se	<		O	Zn	<	0.000200
O	Al		0.000169	O	Fe		0.000198	O	Nb	<	0.004000	O	Si	<	0.003000	O	Zr	<	0.000400
O	As	<	0.005000	M	Ga	<	0.003789	M	Nd	<	0.007579	M	Sm	<	0.003789				
M	Au	<	0.011369	M	Gd	<	0.003789	O	Ni	<	0.000900	M	Sn	<	0.018949				
O	B		0.000688	M	Ge	<	0.022739	n	Os	<		M	Sr	<	0.001894				
M	Ba	<	0.037899	M	Hf	<	0.007579	O	P	<	0.003000	M	Ta	<	0.026529				
O	Be	<	0.000090	O	Hg	<	0.014000	M	Pb	<	0.011369	M	Tb	<	0.001136				
M	Bi	<	0.001515	M	Ho	<	0.001894	M	Pd	<	0.018949	M	Te	<	0.113699				
O	Ca		0.000436	M	In	<	0.037899	M	Pr	<	0.001136	M	Th	<	0.003789				
M	Cd	<	0.011369	M	Ir	<	0.018949	M	Pt	<	0.007579	M	Ti	<	0.189499				
M	Ce	<	0.018949	O	K		0.000211	M	Rb	<	0.003789	M	Tl	<	0.003789				
M	Co	<	0.011369	M	La	<	0.001894	O	Re	<	0.009000	M	Tm	<	0.001515				
M	Cr	<	0.018949	O	Li	<	0.000030	M	Rh	<	0.003789	M	U	<	0.007579				
M	Cs	<	0.001136	M	Lu	<	0.001515	O	Ru	<	0.007000	M	V	<	0.007579				
M	Cu	<	0.022739	O	Mg		0.000066	O	S	<	0.040000	M	W	<	0.037899				
M	Dy	<	0.022739	M	Mn	<	0.015159	M	Sb	<	0.001894	M	Y	<	0.151599				
M	Er	<	0.018949	O	Mo	<	0.004000	M	Sc	<	0.037899	M	Yb	<	0.003789				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 78.96 +4 6 H2SeO3
Chemical Compatibility -Soluble in HCl, HNO3,H3PO4, H2SO4 and HF aqueous matrices and water. It is stable with most inorganic anions but many cationic metals form the insoluble selenites under pH neutral conditions. When fluorinated and/or under acidic conditions precipitation is typically not a problem at moderate to low concentrations.
Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Se Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (readily soluble in water); Minerals and alloys (acid digestion with HNO3or HNO3 / HF); Organic Matrices (acid digestion with hot concentrated H2SO4 accompanied by the careful dropwise addition of H2O2 until clear).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 82 amu	200 ppt	N/A	12C35Cl2
ICP-OES 196.026 nm	0.08/0.006 µg/mL	1	Fe
ICP-OES 203.985 nm	0.2/0.05 µg/mL	1	Sb, Ir, Cr, Ta
ICP-OES 206.279 nm	0.3/0.16 µg/mL	1	Cr, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 09, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 09, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/23/16 MOK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVSRs_00006

[illegible]

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 863.01

ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSR1
Lot Number:	J2-SR02053
Matrix:	0.1% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Sr
Starting Material:	SrCO3
Starting Material Lot#:	1716
Starting Material Purity:	99.9989%

919362

ID: MEIVSRs_00006

Exp:04/14/17 Prpd:MDK Opn:04/14/16

1000ppm Strontium Stock S

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL

Certified Density: 1.001 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1001 ± 5 µg/mL**
ICP Assay NIST SRM 3153a Lot Number: 990906

Assay Method #2 **1002 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.009865	M	Eu	<	0.014798	O	Na		0.000711	O	Se	<	0.050000	O	Zn	<	0.000400				
O	Al		0.000325	O	Fe		0.000732	M	Nb	<	0.002466	O	Si		0.001423	M	Zr	<	0.024664				
O	As	<	0.005000	M	Ga	<	0.004932	M	Nd	<	0.009865	M	Sm	<	0.004932								
M	Au	<	0.014798	M	Gd	<	0.004932	O	Ni	<	0.003000	M	Sn	<	0.024664								
O	B	<	0.000600	M	Ge	<	0.029597	n	Os	<		s	Sr	<									
O	Ba		0.009965	M	Hf	<	0.009865	O	P	<	0.004800	M	Ta	<	0.034530								
O	Be	<	0.000090	O	Hg	<	0.015000	M	Pb	<	0.014798	M	Tb	<	0.001479								
M	Bi	<	0.001973	M	Ho	<	0.002466	O	Pd	<	0.004000	O	Te	<	0.100000								
O	Ca		0.006101	O	In	<	0.002000	M	Pr	<	0.001479	M	Th	<	0.004932								
M	Cd	<	0.014798	M	Ir	<	0.024664	M	Pt	<	0.009865	M	Ti	<	0.246648								
M	Ce	<	0.024664	O	K	<	0.001700	i	Rb	<		M	Tl	<	0.004932								
M	Co	<	0.014798	M	La	<	0.002466	M	Re	<	0.004932	M	Tm	<	0.001973								
O	Cr	<	0.000800	O	Li	<	0.000030	O	Rh	<	0.006000	M	U	<	0.009865								
M	Cs	<	0.001479	M	Lu	<	0.001973	O	Ru	<	0.003000	M	V	<	0.009865								
O	Cu	<	0.001400	O	Mg		0.000101	n	S	<		M	W	<	0.049329								
M	Dy	<	0.029597	O	Mn	<	0.000030	M	Sb	<	0.002466	O	Y	<	0.000040								
M	Er	<	0.024664	M	Mo	<	0.009865	M	Sc	<	0.049329	M	Yb	<	0.004932								

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 87.62 +2 6 $Sr(H_2O)_{6+2}$
Chemical Compatibility - Soluble in HCl, and HNO_3. Avoid H_2SO_4, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% HNO_3 / LDPE container.
Sr Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO_3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolution in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 88 amu	1200 ppt	N/A	72Ge16O, 176Yb+2, 176Lu+2 , 176Hf+2
ICP-OES 407.771 nm	0.0004 / 0.00006 µg/mL	1	U, Ce
ICP-OES 421.552 nm	0.0008 / 0.00004 µg/mL	1	Rb
ICP-OES 460.733 nm	0.07 / 0.003 µg/mL	1	Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 09, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 09, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 4/14/16

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVTA-68-R1_00003

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

RATION

redited to ISO Guide 34, "General Requirements for
Material Producers" and ISO/IEC 17025, "General
nce of Testing and Calibration Laboratories".
SO 9001 registered manufacturer (SAI Global File

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

lti Analyte Custom Grade Solution

929531

-68-REV1

ID: MEIVTA-68-R1_00003

Exp:05/06/17 Prpd:MDK Opn:05/06/16

-MEB628028

6010 ICV stock part 1

(v/v) HNO3

Rec'd 5/6/17 MDK

5 µg/mL ea:

ium,	Copper,	Manganese,
kel,	Lead,	Vanadium,
c,		

2.5 µg/mL ea:

yllium,

) µg/mL ea:

balt, Phosphorus,

) µg/mL ea:

omium+3,

5 µg/mL ea:

on,

) µg/mL ea:

enic,	Cadmium,	Selenium,
ntium,	Thallium,	

ug/mL ea:

er

NCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	100.0 ± 0.8 µg/mL	Barium, Ba	625.0 ± 2.6 µg/mL
Beryllium, Be	312.6 ± 1.5 µg/mL	Boron, B	125.0 ± 1.0 µg/mL
Cadmium, Cd	100.1 ± 0.4 µg/mL	Chromium+3, Cr3	200.0 ± 0.8 µg/mL
Cobalt, Co	250.0 ± 1.1 µg/mL	Copper, Cu	624.9 ± 2.5 µg/mL
Lead, Pb	625.0 ± 2.8 µg/mL	Manganese, Mn	625.2 ± 2.3 µg/mL
Nickel, Ni	625.1 ± 2.6 µg/mL	Phosphorus, P	250.3 ± 1.1 µg/mL
Selenium, Se	100.0 ± 0.6 µg/mL	Silver, Ag	50.00 ± 0.30 µg/mL
Strontium, Sr	100.1 ± 0.5 µg/mL	Thallium, Tl	100.0 ± 0.7 µg/mL
Vanadium, V	625.0 ± 2.6 µg/mL	Zinc, Zn	625.1 ± 2.6 µg/mL

Certified Density: 1.059 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	992212
Ag	Volhard	999b	999b
As	ICP Assay	3103a	100818
B	ICP Assay	3107	110830
Ba	ICP Assay	3104a	070222
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Cd	ICP Assay	3108	060531
Cd	EDTA	928	928
Co	ICP Assay	3113	000630 Co
Co	EDTA	928	928
Cr3	ICP Assay	3112a	030730Cr3
Cr3	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric		traceable to 84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	3153a	990906
Tl	ICP Assay	3158	993012
V	EDTA	928	928
V	ICP Assay	3165	992706
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\ (u_{char\ a})^2 + (w_b)^2\ (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 21, 2016

11.2 Expiration Date

EXPIRES
1 APR 2017

11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVTHs_00009

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTH1
Lot Number:	J2-TH01112
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Th
Starting Material:	Th(NO3)4x4H2O
Starting Material Lot#:	1803
Starting Material Purity:	99.9934%

929537
ID: MEIVTHs_00009
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000ppm Thorium stock std
Rec'd 5/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 4 µg/mL

Certified Density: 1.026 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1000 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.012727	M	Eu	<	0.000848	i	Na	<	2.121309	M	Se	<	0.006363	M	Zn	<	0.019091
M	Al	<	0.063639	M	Fe	<	0.530327	M	Nb	<	0.004242	i	Si	<		M	Zr		0.014506
M	As	<	0.004242	M	Ga	<	0.001060	M	Nd		0.000725	M	Sm	<	0.002121				
M	Au	<	0.006363	M	Gd	<	0.021213	M	Ni		0.010361	M	Sn	<	0.001484				
M	B	<	0.010606	M	Ge	<	0.006363	n	Os	<		M	Sr		0.000725				
M	Ba	<	0.042426	M	Hf	<	0.001272	i	P	<		M	Ta	<	0.004242				
M	Be	<	0.001060	i	Hg	<		M	Pb	<	0.006363	M	Tb	<	0.004242				
M	Bi	<	0.014849	M	Ho	<	0.000212	M	Pd	<	0.010606	M	Te	<	0.063639				
O	Ca	<	0.100000	M	In	<	0.000212	M	Pr	<	0.004242	s	Th	<					
M	Cd	<	0.000636	M	Ir	<	0.010606	M	Pt	<	0.004242	M	Ti	<	0.106065				
M	Ce		0.001450	i	K	<		M	Rb		0.045590	M	Tl	<	0.001484				
M	Co	<	0.004242	M	La	<	0.008485	M	Re	<	0.002121	M	Tm	<	0.000212				
M	Cr		0.023831	O	Li		0.000634	M	Rh	<	0.002121	M	U		0.044554				
M	Cs	<	0.106065	M	Lu	<	0.000212	M	Ru	<	0.004242	M	V	<	0.004242				
M	Cu	<	0.021213	M	Mg		0.051807	i	S	<		M	W	<	0.021213				
M	Dy	<	0.001484	M	Mn	<	0.008485	M	Sb	<	0.001060	M	Y	<	0.001060				
M	Er	<	0.004242	M	Mo	<	0.042426	M	Sc		0.003108	M	Yb	<	0.000636				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 232.04 +4 8 Th(OH) 3+ and Th(OH)22+

Chemical Compatibility -Soluble in HCl, and HNO3. Avoid H3PO4, H2SO4 and HF although solubilities may not be a problem depending upon pH and matrix (For example: ThF4 is soluble in acids). Avoid neutral to basic media. Th4+ is stable with most metals and inorganic anions forming an insoluble carbonate, oxide, fluoride, oxalate, sulfate and phosphate in neutral to slightly acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

Th Containing Samples (Preparation and Solution) -Metal (Soluble in Aqua Regia); Oxide (The heated oxide is not soluble in acids except hot conc. H2SO4); Ores (Na2O2 fusion at 480 ± 20EC for 7 minutes, cool and treat sintered mass with 50 mL cold water and stand until disintegrated. The mass is transferred to a beaker and acidified with HCl with 25 mL excess HCl added. Any residue is collected on a Whatman No. 42 filter, dried and ignited to 1000 EC in Pt0 crucible and the ash treated with H2SO4 / HF and fumed. If residue remains, then treat it by peroxide fusion as above.)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 232 amu	1 ppt	N/A	
ICP-OES 274.716 nm	0.08 / 0.008 µg/mL	1	Ti, Ta, Fe, V
ICP-OES 283.231 nm	0.07 / 0.007 µg/mL	1	U, Mo, Ti, Fe, Cr
ICP-OES 283.730 nm	0.07 / 0.007 µg/mL	1	U, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 14, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **September 14, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/6/16

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVTLs_00013

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.382.3030
fax: 540.382.3031
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTL1
Lot Number:	J2-TL02025
Matrix:	0.7% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Tl
Starting Material:	TlNO3
Starting Material Lot#:	1741 and 1793
Starting Material Purity:	99.9988%

1000 PPM Tl

889366

ID: MEIVTLs_00013

Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 6 µg/mL

Certified Density: 1.003 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 5 µg/mL**
ICP Assay NIST SRM 3158 Lot Number: 993012

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.000267	M	Eu	<	0.001195	O	Na		0.000939	M	Se	<	0.002988	O	Zn		0.000917
M	Al	<	0.007170	O	Fe		0.000345	M	Nb	<	0.000199	O	Si		0.000755	M	Zr	<	0.000199
M	As	<	0.002390	M	Ga	<	0.000199	M	Nd	<	0.000199	M	Sm	<	0.000199				
M	Au	<	0.001395	M	Gd	<	0.000199	O	Ni	<	0.000628	M	Sn	<	0.000398				
O	B	<	0.000647	M	Ge	<	0.000996	M	Os	<	0.000797	O	Sr		0.000016				
O	Ba	<	0.002092	M	Hf	<	0.000199	O	P	<	0.031380	M	Ta	<	0.000199				
O	Be	<	0.000084	O	Hg	<	0.003138	M	Pb		0.003339	M	Tb	<	0.000199				
M	Bi		0.000134	M	Ho	<	0.000199	M	Pd	<	0.001195	M	Te	<	0.001593				
O	Ca		0.001873	M	In	<	0.000199	M	Pr	<	0.000199	M	Th	<	0.000199				
M	Cd		0.000709	M	Ir	<	0.003188	M	Pt	<	0.000398	O	Ti	<	0.000209				
M	Ce	<	0.004780	O	K		0.002374	M	Rb	<	0.011950	s	Tl	<					
M	Co	<	0.000797	M	La	<	0.000797	M	Re		0.003843	M	Tm	<	0.000199				
M	Cr	<	0.000598	O	Li	<	0.000066	M	Rh	<	0.000199	M	U	<	0.000199				
M	Cs	<	0.005975	M	Lu	<	0.000199	M	Ru	<	0.000199	M	V	<	0.000199				
M	Cu		0.000370	O	Mg		0.000305	O	S	<	0.047818	M	W		0.000092				
M	Dy	<	0.000199	M	Mn	<	0.000199	M	Sb	<	0.000199	M	Y	<	0.000199				
M	Er	<	0.000199	M	Mo		0.000277	O	Sc	<	0.000146	M	Yb	<	0.000199				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 204.38 +1 6 Tl(H2O)61+
Chemical Compatibility - Soluble in HCl, HNO3, and H2SO4. Stable with most metals and inorganic anions. The sulfite, thiocyanate and oxalate are moderately soluble; the phosphate and arsenite are slightly soluble and the sulfide is insoluble.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
Tl Containing Samples (Preparation and Solution) -Metal (Best dissolved in HNO3 which forms chiefly the Tl1+ ion.); Oxide (The thallous oxide is readily soluble in water. The thallic oxide requires high levels of acid); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 205 amu	2 ppt	N/A	189Os16O
ICP-OES 190.864 nm	0.04 / 0.004 µg/mL	1	V, Ti
ICP-OES 276.787 nm	0.1 / 0.01 µg/mL	1	Ta, V, Fe, Cr
ICP-OES 351.924 nm	0.2 / 0.02 µg/mL	1	Th, Ce, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 24, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 24, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVUs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGU1
Lot Number:	J2-U01107R
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: U
Starting Material:	UO2(NO3)2.6H2O
Starting Material Lot#:	1841
Starting Material Purity:	99.9817%

1000 ppm U

889368

ID: MEIVUs_00012

Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1005 ± 4 µg/mL - weighted mean

Certified Density: 1.026 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1005 ± 3 µg/mL**
ICP Assay NIST SRM 3164 Lot Number: 080521

Assay Method #2 **1005 ± 3 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.21 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.025329	M	Eu	<	0.000253	O	Na		0.008722	M	Se	<	0.012664	M	Zn	<	0.050658
M	Al	<	0.037993	M	Fe	<	1.266462	M	Nb	<	0.002532	i	Si	<		M	Zr	<	0.005065
M	As	<	0.151975	M	Ga	<	0.002532	M	Nd	<	0.012664	M	Sm	<	0.002532				
M	Au	<	0.000253	M	Gd	<	0.002532	M	Ni	<	0.050658	M	Sn	<	0.050658				
M	B	<	0.025329	M	Ge	<	0.005065	n	Os	<		M	Sr	<	0.012664				
M	Ba	<	0.025329	M	Hf	<	0.002532	i	P	<		M	Ta	<	0.002532				
M	Be	<	0.001266	i	Hg	<		M	Pb	<	0.075987	M	Tb	<	0.007598				
M	Bi	<	0.007598	M	Ho	<	0.000759	M	Pd	<	0.001266	M	Te	<	0.075987				
O	Ca		0.030527	M	In	<	0.050658	M	Pr	<	0.002532	M	Th	<	0.007598				
M	Cd	<	0.007598	M	Ir	<	0.000253	M	Pt	<	0.000253	M	Ti	<	0.012664				
M	Ce		0.351469	i	K	<		M	Rb	<	0.002532	M	Tl	<	0.012664				
M	Co	<	0.007598	M	La	<	0.025329	M	Re	<	0.000759	M	Tm	<	0.000506				
M	Cr	<	0.050658	O	Li	<	0.014000	M	Rh	<	0.000253	s	U	<	0.005065				
M	Cs	<	0.017730	M	Lu	<	0.005065	M	Ru	<	0.000253	M	V	<	0.075987				
M	Cu	<	0.025329	M	Mg	<	0.075987	i	S	<		M	W	<	0.126646				
M	Dy	<	0.002532	M	Mn	<	0.015197	M	Sb	<	0.012664	M	Y	<	0.012664				
M	Er	<	0.002532	M	Mo	<	0.037993	M	Sc	<	0.025329	M	Yb	<	0.005065				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 238.03 +6 8 UO22+(uranyl)
Chemical Compatibility - Soluble in HCl and HNO3. Avoid H3PO4. H2SO4 and HF matrices should not be a problem depending upon [U]. Although the UO22+ ion is distinctly basic, any U+4 will precipitate in basic media. UO22+salts are generally soluble in water and UO22+ is stable with most metals and inorganic anions. The uranyl phosphate is insoluble in water. UF4 and UF6 are water soluble.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
U Containing Samples (Preparation and Solution) -Metal (Dissolves rapidly in HCl and HNO3); Oxide (Soluble in HNO3); Ores (Digest for 1-2 hours with 1 gram of ore to 30 mL 1:1 HNO3. Silica insolubles are removed by filtration after bringing the sample to fumes with conc. H2SO4.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 238 amu	2 ppt	N/A	206Pb16O2
ICP-OES 263.553 nm	0.3 / 0.01 µg/mL	1	Ce, Ir, Th, Rh, W, Zr, Ta, Ti, V, Hf, Fe, Re, Ru
ICP-OES 367.007 nm	0.3 / 0.02 µg/mL	1	Th, Ce
ICP-OES 385.958 nm	0.3 / 0.01 µg/mL	1	Th, Fe

Uranium Note: If uranium is present in this standard, it is natural abundance unless specified in Section 3.0

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 16, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 16, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

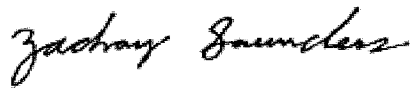
- Sealed TCT Bag Open Date: 1/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

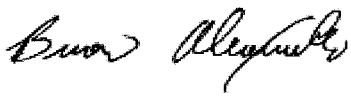
Certificate Prepared By:

Zach Saunders
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVVs_00010

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

fax: 800.859.8799 - 540.585.3060
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGV1
Lot Number:	J2-V02106
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: V
Starting Material:	V2O5
Starting Material Lot#:	1782
Starting Material Purity:	99.9947%

1000 ppm V

889367

ID: MEIVVs_00010

Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 11/16/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 996 ± 5 µg/mL - weighted mean

Certified Density: 1.016 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **995 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **998 ± 4 µg/mL**
ICP Assay NIST SRM 3165 Lot Number: 992706

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

0	Ag	< 0.000200	0	Eu	< 0.000100	0	Na	0.007884	0	Se	< 0.006683	0	Zn	< 0.006624			
0	Al	0.009315	0	Fe	0.033448	0	Nb	0.001123	0	Si	0.002628	0	Zr	< 0.001995			
0	As	< 0.001596	0	Ga	0.000432	0	Nd	< 0.000399	0	Sm	< 0.000100						
0	Au	< 0.000300	0	Gd	< 0.000100	0	Ni	< 0.006983	0	Sn	< 0.001397						
0	B	< 0.016459	0	Ge	< 0.000399	0	Os	< 0.000100	0	Sr	0.000143						
0	Ba	0.000183	0	Hf	< 0.000100	0	P	< 0.055200	0	Ta	< 0.000100						
0	Be	< 0.000499	0	Hg	< 0.008002	0	Pb	0.000237	0	Tb	< 0.000100						
0	Bi	< 0.000399	0	Ho	< 0.000100	0	Pd	< 0.000100	0	Te	< 0.001197						
0	Ca	0.011946	0	In	< 0.000100	0	Pr	< 0.000100	0	Th	< 0.000200						
0	Cd	< 0.000100	0	Ir	< 0.000100	0	Pt	< 0.000200	0	Ti	0.001446						
0	Ce	< 0.000399	0	K	< 0.110400	0	Rb	< 0.000599	0	Tl	< 0.001397						
0	Co	< 0.000100	0	La	< 0.000200	0	Re	< 0.000100	0	Tm	< 0.000100						
0	Cr	0.016246	0	Li	< 0.003312	0	Rh	< 0.000399	0	U	< 0.000200						
0	Cs	< 0.006185	0	Lu	< 0.000100	0	Ru	< 0.000100	s	V	<						
0	Cu	< 0.002793	0	Mg	< 0.033120	n	S	<	0	W	0.000367						
0	Dy	< 0.000100	0	Mn	0.000648	0	Sb	0.009326	0	Y	< 0.000100						
0	Er	< 0.000100	0	Mo	0.010977	0	Sc	< 0.000499	0	Yb	< 0.000100						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 50.94 +5 6 H2V10O284-
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4, HF, H3PO4 and strong basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
V Containing Samples (Preparation and Solution) -Metal (Fusion with NaOH or KOH in Ni0 or Na2CO3 / KNO3); Oxides (V2O3 - use HCl, V2O4 - use HCl or HNO3, V2O5 - use concentrated acids); Ores (Na2CO3 / KNO3 in Pt0 caution - nitrates attack Pto followed by water extraction of fuseate); Organic Matrices (Ash at 450 EC followed by dissolving according to V2O5 above) .
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 51 amu	4 ppt	N/A	34S16O1H, 35Cl16O, 38Ar13C, 36Ar15N, 36Ar14N1H, 37Cl14N,36S15N, 33S18O, 34S17O, 102Ru+2,02Pd+2
ICP-OES 290.882 nm	0.008 / 0.0008 µg/mL	1	Hf, Nb
ICP-OES 292.402 nm	0.006 / 0.001 µg/mL	1	Th
ICP-OES 309.311 nm	0.005 / 0.001 µg/mL	1	Mg, U, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 04, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- August 04, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/26/16 mok

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGU1
Lot Number:	J2-U01107R
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: U
Starting Material:	UO2(NO3)2.6H2O
Starting Material Lot#:	1841
Starting Material Purity:	99.9817%

1000 ppm U

889368

ID: MEIVUs_00012

Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1005 ± 4 µg/mL - weighted mean

Certified Density: 1.026 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1005 ± 3 µg/mL**
ICP Assay NIST SRM 3164 Lot Number: 080521

Assay Method #2 **1005 ± 3 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Reagent

MEIVZNs_00014

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGZN1
Lot Number:	J2-ZN02107
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Zn
Starting Material:	Zn Shot
Starting Material Lot#:	1887
Starting Material Purity:	99.9994%

1000 ppm Zinc
889364
ID: MEIVZNs_00014
Exp:01/06/17 Prpd:MDK Opn:01/06/16

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 5 µg/mL

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 4 µg/mL**
ICP Assay NIST SRM 3168a Lot Number: 120629

Assay Method #2 **1000 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001528	M	Eu	<	0.000509	O	Na		0.000718	M	Se	<	0.050920	s	Zn	<	
O	Al	<	0.011300	O	Fe		0.000470	M	Nb	<	0.000509	O	Si	<	0.022600	O	Zr	<	0.001130
M	As	<	0.005092	M	Ga	<	0.005092	M	Nd	<	0.001018	M	Sm	<	0.000509				
M	Au	<	0.000509	M	Gd	<	0.002037	O	Ni	<	0.000904	M	Sn	<	0.000509				
O	B	<	0.001130	M	Ge	<	0.001018	n	Os	<		O	Sr		0.000009				
O	Ba	<	0.001130	M	Hf	<	0.000509	O	P	<	0.033900	M	Ta	<	0.000509				
O	Be	<	0.000113	O	Hg	<	0.002260	O	Pb		0.004232	M	Tb	<	0.000509				
M	Bi	<	0.010184	M	Ho	<	0.000509	M	Pd	<	0.000509	M	Te	<	0.005092				
O	Ca		0.000601	M	In	<	0.000509	M	Pr	<	0.000509	M	Th	<	0.000509				
O	Cd		0.000290	M	Ir	<	0.000509	M	Pt	<	0.000509	O	Ti	<	0.000565				
M	Ce	<	0.000509	O	K		0.000322	M	Rb	<	0.000509	M	Tl		0.000312				
M	Co	<	0.000509	M	La	<	0.000509	M	Re	<	0.000509	O	Tm	<	0.000379				
O	Cr	<	0.002260	O	Li	<	0.000565	M	Rh	<	0.000509	M	U	<	0.000509				
M	Cs	<	0.001528	M	Lu	<	0.000509	O	Ru	<	0.006780	O	V	<	0.001130				
O	Cu		0.000148	O	Mg		0.000023	O	S	<	0.011300	M	W	<	0.000509				
M	Dy	<	0.000509	O	Mn	<	0.000226	M	Sb	<	0.000509	O	Y		0.000082				
M	Er	<	0.000509	M	Mo	<	0.001528	O	Sc	<	0.000565	M	Yb	<	0.000509				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 65.39 +2 4 Zn(OH)(aq)1+
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media forming insoluble carbonate and hydroxide. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Zn Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3); Organic based (dry ash at 4500C and dissolve ash in HCl) (sulfuric/peroxide acid digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 66 amu	7 ppt	N/A	50Ti16O,50Cr16O, 50V16O, 34S16O2, 32S16O18O, 32S17O2, 33S16O17O, 32S34S, 33S2
ICP-OES 202.548 nm	0.004/0.0002 µg/mL	1	Nb, Cu, Co, Hf
ICP-OES 206.200 nm	0.006/0.0006 µg/mL	1	Sb, Ta, Bi, Os
ICP-OES 213.856 nm	0.002/0.0004 µg/mL	1	Ni, Cu, V

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 20, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- April 20, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/16/16 mdh

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MESCPICV1_00003

SCP SCIENCE
Providing Innovative Solutions to Analytical Chemists

Certificate of Analysis

1.0 DESCRIPTION : ***Plasma*** **CAL – Custom Standard**

Catalogue Number : **600-304-822** **Cal #1**
Lot Number : **S151210015**
Matrix: **7.0% HNO3**
Expiration Date : **December 2016**

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Method of Analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)

Traceability: Applicable NIST Standard Reference Materials (see list below):

3101a	Al	3109a	Ca	3117a	Eu	3126a	Fe	3134	Mo	3142a	Pr	3151	Ag	3159	Th	3167a	Y
3102a	Sb	3110	Ce	3118a	Gd	3127a	La	3135a	Nd	3143	Re	3152a	Na	3160a	Tm	3168a	Zn
3103a	As	3111a	Cs	3119a	Ga	3128	Pb	3136	Ni	3144	Rh	3153a	Sr	3161a	Sn	3169	Zr
3104a	Ba	3112a	Cr	3120a	Ge	3129a	Li	3137	Nb	3145a	Rb	3154	S	3162a	Ti		
3105a	Be	3113	Co	3121	Au	3130a	Lu	3138	Pd	3147a	Sm	3155	Ta	3163	W		
3106	Bi	3114	Cu	3122	Hf	3131a	Mg	3139a	P	3148a	Sc	3156	Te	3164	U		
3107	B	3115a	Dy	3123a	Ho	3132	Mn	3140	Pt	3149	Se	3157a	Tb	3165	V		
3108	Cd	3116a	Er	3124a	In	3133	Hg	3141a	K	3150	Si	3158	Tl	3166a	Yb		

Certified Concentrations:

Ag	49.58 ± 0.46	µg/ml	P	251.6 ± 1.9	µg/ml
As	100.2 ± 0.7	µg/ml	Pb	625 ± 6	µg/ml
B	124.5 ± 0.9	µg/ml	Se	100.1 ± 0.6	µg/ml
Ba	626 ± 4	µg/ml	Sr	99.9 ± 0.8	µg/ml
Be	313.0 ± 2.0	µg/ml	Tl	99.6 ± 0.7	µg/ml
Cd	100.4 ± 0.9	µg/ml	V	625 ± 6	µg/ml
Co	251.4 ± 2.3	µg/ml	Zn	625 ± 6	µg/ml
Cr	199.5 ± 1.9	µg/ml			
Cu	626 ± 5	µg/ml			
Mn	627 ± 5	µg/ml			
Ni	628 ± 6	µg/ml			

ACCREDITED
Reference Material Producer
ISO Guide 34
CERTIFICATE #2885.02

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) such as the SRM inherited uncertainty, weighing and dilution errors and instrument variability. The combined uncertainty ($uc= v\Sigma u_i^2$) has been multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:

Density: **1.043 g/ml** @ **21.2 °C**

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Yaling Sui, Chemist
Certification Date: **December 11, 2015**

Yaling Sui

888892
ID: MESCPICV1_00003
Exp:12/31/16 Prpd:MDK Opn:01/05/16

Rec'd 1/5/16 MPK

Reagent

MESPEXAGs_00011

ACCREDITED
Reference Materials Producer
Cert #2495.01

SPEXertificate®

Certificate of Reference Material

ilac-MRA ACCREDITED
Chemical Testing
Cert #2495.02

Catalog Number: PLAG2-2Y **Lot No.** 20-172AGY

Description: 1000 µg/mL Silver

Matrix: 2% HNO_3

This **ASSURANCE®** Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for inorganic spectroscopic instrumentation such as ICP-OES, DCP, AA, ICP-MS, and XRF. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

Certified Value: 1001 µg/mL ±5 µg/mL

903018
ID: MESPEXAGs_00011
Exp:02/28/17 Prpd:MDK Opn:02/23/16
1000ppm Silver stock

Certified Value is Traceable to: 3151*

* - indicates NIST SRM † - indicates SPEX CertiPrep CRM (when NIST SRM is not available)

The CRM is prepared gravimetrically using high purity Silver nitrate, Lot# 12141H. The certified value listed is the average of values obtained by classical wet assay and ICP spectrometer analysis.

Refer to side 2 for details of measurement uncertainties.

Classical Wet Assay: 1001 µg/mL

Method: Precipitation using Hydrochloric Acid. Filter, dry, and weigh as AgCl.

Instrumental Analysis by ICP Spectrometer: 1001 µg/mL

Rec'd 2/23/16 MDK

Uncertified Properties

Density: 1.010 g/mL @ 20.0°C

Trace Metallic Impurities in the Actual Solution via ICP-MS Analysis:

Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL
Al	0.002	Cs	<0.001	Ho	<0.001	Nb	<0.001	Ru	<0.001	Th	<0.001
As	<0.001	Cu	<0.001	In	<0.001	Nd	<0.001	Sb	<0.001	Ti	<0.001
Au	<0.001	Dy	<0.001	Ir	<0.001	Ni	<0.001	Sc	<0.001	Tl	<0.001
B	<0.001	Er	<0.001	K	<0.1	P	<0.1	Se	<0.003	Tm	<0.001
Ba	<0.001	Eu	<0.001	La	<0.001	Pb	<0.001	Si	<0.1	U	<0.001
Be	<0.001	Fe	<0.1	Li	<0.001	Pd	<0.001	Sm	<0.001	V	<0.001
Bi	<0.001	Ga	<0.001	Lu	<0.001	Pr	<0.001	Sn	<0.001	W	<0.002
Ca	0.002	Gd	<0.001	Mg	<0.001	Pt	<0.001	Sr	<0.001	Y	<0.001
Cd	<0.001	Ge	<0.001	Mn	<0.001	Rb	<0.001	Ta	<0.001	Yb	<0.001
Ce	<0.001	Hf	<0.001	Mo	<0.001	Re	<0.001	Tb	<0.001	Zn	0.005
Co	<0.001	Hg	<0.001	Na	0.003	Rh	<0.001	Te	<0.001	Zr	<0.001
Cr	<0.001										

Balances are calibrated regularly with weight sets traceable to NIST #32856, #32867 and others. This CRM is guaranteed stable and accurate to +/- 0.5% of the certified value. This includes uncertainty components due to preparation, homogeneity by the most precise method, and short-term and long-term stability. This guarantee is valid for a period of one year from the date of certification only when the material is unopened and stored under ambient laboratory conditions.

Date of Certification: FEB 2016 Certifying Officer:

©2013 SPEX CertiPrep, Inc.

Reagent

MESPEXHgs_00014

ACCREDITED
Reference Materials Producer
Cert #2495.01

SPEXertificate®

Certificate of Reference Material

ilac-MRA ACCREDITED
Chemical Testing
Cert #2495.02

Catalog Number: PLHG4-2Y **Lot No.** 21-3HGY

Description: 1000 µg/mL Mercury

Matrix: 10% HNO_3

This **ASSURANCE®** Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for inorganic spectroscopic instrumentation such as ICP-OES, DCP, AA, ICP-MS, and XRF. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

Certified Value: 1000 µg/mL ±5 µg/mL

Certified Value is Traceable to: 3133*

* - indicates NIST SRM † - indicates SPEX CertiPrep CRM (when NIST SRM is not available)

The CRM is prepared gravimetrically using high purity Mercury Metal, Lot# 03141E. The certified value listed is the average of values obtained by classical wet assay and ICP spectrometer analysis.

Refer to side 2 for details of measurement uncertainties.

Classical Wet Assay: 999 µg/mL

Method: Titration with Ammonium Thiocyanate using Ferric Nitrate as indicator.

Instrumental Analysis by ICP Spectrometer: 1000 µg/mL

Uncertified Properties

Density: 1.047 g/mL @ 20.0°C

Trace Metallic Impurities in the Actual Solution via ICP-MS Analysis:

Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL
Ag	<0.001	Cr	<0.002	Ho	<0.001	Nb	<0.001	Ru	<0.001	Th	<0.001
Al	<0.001	Cs	<0.001	In	<0.001	Nd	<0.001	Sb	<0.001	Ti	<0.001
As	<0.001	Cu	<0.001	Ir	<0.001	Ni	<0.001	Sc	<0.001	Tl	0.002
Au	<0.01	Dy	<0.001	K	<0.1	P	<0.1	Se	<0.005	Tm	<0.001
B	0.003	Er	<0.001	La	<0.001	Pb	<0.001	Si	<0.1	U	<0.001
Ba	<0.001	Eu	<0.001	Li	<0.001	Pd	<0.01	Sm	<0.001	V	<0.001
Be	<0.001	Fe	<0.004	Lu	<0.001	Pr	<0.001	Sn	<0.001	W	<0.001
Bi	<0.001	Ga	<0.001	Mg	0.003	Pt	<0.001	Sr	<0.001	Y	<0.001
Ca	<0.05	Gd	<0.001	Mn	<0.001	Rb	<0.001	Ta	<0.001	Yb	<0.001
Cd	<0.001	Ge	<0.001	Mo	<0.001	Re	<0.001	Tb	<0.001	Zn	0.004
Ce	<0.001	Hf	<0.001	Na	0.002	Rh	<0.001	Te	<0.001	Zr	<0.001
Co	<0.001										

Balances are calibrated regularly with weight sets traceable to NIST #32856, #32867 and others. This CRM is guaranteed stable and accurate to +/- 0.5% of the certified value. This includes uncertainty components due to preparation, homogeneity by the most precise method, and short-term and long-term stability. This guarantee is valid for a period of one year from the date of certification only when the material is unopened and stored under ambient laboratory conditions.

888957
ID: MESPEXHgs_00014
Exp:12/30/16 Prpd:RRP Opn:01/05/16
1000ppm Mercury stock sta

Date of Certification: DEC 2015 Certifying Officer:

72

©2015 SPEX CertiPrep, LLC

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/21/2015 Reviewed on 05/21/2015

1 Identification

· **Product identifier**

· **Product Name: 1000 µg/mL Mercury**

· **Part Number:** PLHG4-2M / 2Y / 2T / 2X
· **Relevant identified uses of the substance or mixture and uses advised against** No further relevant information available.
· **Application of the substance / the mixture** Certified Reference Material

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA

· **Information department:** product safety department
· **Emergency telephone number:**
Emergency Phone Number (24 hours)
CHEMTREC (800-424-9300)
Outside US: 703-527-3887

2 Hazard(s) identification

· **Classification of the substance or mixture**



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Corrosive
Causes burns.
· **Information concerning particular hazards for human and environment:**
The product has to be labeled due to the calculation procedure of international guidelines.
· **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**



GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
nitric acid
· **Hazard statements**
Causes severe skin burns and eye damage.
· **Precautionary statements**
Do not breathe dusts or mists.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**



Health = 3
Fire = 0
Reactivity = 0

(Contd. on page 2)

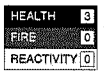
Safety Data Sheet
acc. to OSHA HCS

Printing date 05/21/2015 Reviewed on 05/21/2015

Product Name: 1000 µg/mL Mercury

(Contd. of page 1)

· **HMIS-ratings (scale 0 - 4)**



Health = 3
Fire = 0
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**		
7697-37-2	nitric acid	10.0%
7439-97-6	mercury	0.1%
· **Chemical identification of the substance/preparation**		
7732-18-5	water, distilled, conductivity or of similar purity	89.9%

4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.
· **Information for Doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/21/2015 Reviewed on 05/21/2015

Product Name: 1000 µg/mL Mercury

(Contd. of page 4)

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)		
7439-97-6	mercury	3

· NTP (National Toxicology Program)
None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· UN-Number	
· DOT, ADR, IMDG, IATA	UN3264
· UN proper shipping name	
· DOT	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution)
· ADR	3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution)
· IMDG, IATA	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/21/2015 Reviewed on 05/21/2015

Product Name: 1000 µg/mL Mercury

(Contd. of page 5)

· Transport hazard class(es)	
· DOT	
	
· Class	8 Corrosive substances
· Label	8
· ADR, IMDG, IATA	
	
· Class	8 Corrosive substances
· Label	8
· Packing group	
· DOT, ADR, IMDG, IATA	II
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Corrosive substances
· Danger code (Kemler):	80
· EMS Number:	F-A,S-B
· Segregation groups	Acids
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution), 8, II

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· Section 355 (extremely hazardous substances):	
7697-37-2	nitric acid

· Section 313 (Specific toxic chemical listings):	
7697-37-2	nitric acid
7439-97-6	mercury

· TSCA (Toxic Substances Control Act):
All ingredients are listed.

· **Proposition 65**

· Chemicals known to cause cancer:
None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:
None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:
None of the ingredients is listed.

(Contd. on page 7)

Reagent

META-69_00010

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-69
Lot Number:	K2-MEB637108
Matrix:	1% (v/v) HNO3
Value / Analyte(s):	15 000 µg/mL ea: Calcium, Magnesium, 5 000 µg/mL ea: Potassium, Sodium

934537
ID: META-69_00010
Exp:05/24/17 Prpd:MDK Opn:05/24/16
6010 ICV stock part 2
Rec'd 5/24/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Calcium, Ca	15 000.0 ± 60.0 µg/mL	Magnesium, Mg	15 000.0 ± 60.0 µg/mL
Potassium, K	5 000 ± 18 µg/mL	Sodium, Na	5 000 ± 18 µg/mL

Certified Density: 1.136 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ca	ICP Assay	3109a	050825
Ca	EDTA	928	928
K	ICP Assay	3141a	051220
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 19, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 19, 2019**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

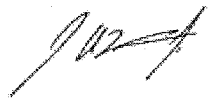
- Sealed TCT Bag Open Date: 5/24/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

META-70_00007

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 29, 2015

11.2 Expiration Date

EXPIRES
1 FEB 2017

11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-70
Lot Number:	J2-MEB615044
Matrix:	5% (v/v) HNO3 0.4% (v/v) HF
Value / Analyte(s):	625 µg/mL ea: Molybdenum, 500 µg/mL ea: Silicon, 250 µg/mL ea: Tin, 125 µg/mL ea: Antimony, 100 µg/mL ea: Titanium

Rec'd 12/31/15 MDK

6010 ICV stock part 3
888263
ID: META-70_00007
Exp:01/04/17 Prpd:MDK Opn:01/04/16
2010 ICV stock part 3

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	**125.0 ± 0.9 µg/mL**	**Molybdenum, Mo**	**625.0 ± 3.3 µg/mL**
Silicon, Si	**500.0 ± 3.6 µg/mL**	**Tin, Sn**	**250.1 ± 0.9 µg/mL**
Titanium, Ti	**100.0 ± 0.6 µg/mL**		

Certified Density: 1.027 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	891307
Sb	ICP Assay	3102A	061229
Sb	Calculated		See Sec. 4.2
Si	ICP Assay	3150	071204
Si	Calculated		See Sec. 4.2
Sn	ICP Assay	3161a	070330
Sn	Calculated		See Sec. 4.2
Ti	ICP Assay	3162a	060808
Ti	Calculated		See Sec. 4.2

Reagent

META-71_00007

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

920731
ID: META-71_00007
Exp:04/16/17 Prpd:MDK Opn:04/16/16
6010 Cal stock part 4

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-71QC
Lot Number:	K2-MEB628027
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	15 000 µg/mL ea: Aluminum, Iron

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	15 000.0 ± 70.0 µg/mL	Iron, Fe	15 000.0 ± 60.0 µg/mL

Certified Density: 1.144 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 21, 2016

11.2 Expiration Date

EXPIRES
1 APR 2017

11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

WCLKLCSs_00018

LECO Reference Material

LECO Corporation; Saint Joseph, Michigan USA

Part No: 502-062
Lot No: 1017

895118
ID: WCLKLCSs_00018
Exp:01/26/17 Prpd:KSH Opn:01/26/16
Lloyd Kahn LCS

ACCREDITED
Reference Material Producer
Certificate # 3285.02

LECO Certificate of Analysis

LECO Reference Materials are traceable to national or international Certified Reference Materials whenever possible. When these Certified Reference Materials do not exist or are inadequate for calibration purposes, other appropriate materials are used. The accuracy of the reported results for LECO Reference Materials is greatly influenced by the accuracy of the primary reference materials used. The intended use of this reference material is for calibration purposes.

Category	Reference Value	+/-
% Carbon	0.926	0.04
% Hydrogen	0.36	0.03
% Nitrogen	0.092	0.016
% Sulfur	0.016	0.003

- +/- indicates two times the standard deviation (2s).
- Refer to the reverse side of certificate for additional information regarding calculations.

Homogeneity:
Homogeneity of this material was confirmed through analysis of a random selection of bottled material and was found to be highly homogeneous.

Material:
LECO 502-062 Lot: 1017 is a soil calibration material.

Traceability: The following Certified Reference Materials were used to validate the analytical data:
NIST SRM 915b, Calcium Carbonate @ 12.0% Carbon
NIST SRM 2690, Coal Fly Ash @ 0.15% Sulfur
LECO CRM EDTA 502-812 (HS10007A) @ 41.1% Carbon, 5.55% Hydrogen and 9.56% Nitrogen

Preparation:
A separate portion of this reference material must be dried for one hour at 105°Celsius prior to usage. The dried sample should be stored in a desiccator and must be used for analysis within 24 hours. Any unused portion of the dried sample should be discarded.

Analysis:
LECO analytical instruments were used to characterize this material. This material was analyzed by high temperature combustion using a resistance furnace utilizing LECO infrared (IR) and thermal conductivity (TC) detection technology.

Category	Method/Detection	n
% Carbon	Combustion/IR	60
% Hydrogen	Combustion/IR	30
% Nitrogen	Combustion/TC	40
% Sulfur	Combustion/IR	40

Expiration:
ISO Guide 31 States that the certificate should contain an expiration date for all materials where instability has been demonstrated or considered possible, after which the certified value is no longer guaranteed by the certifying body. This reference material is valid within the stated deviation until **August 5th, 2019** provided the RM is stored in its original bottle at room temperature. This reference material is nullified if it is contaminated or otherwise altered.

Certificate Number: 502-062-1017.0

Analysis Data:

Data Set	Number of Analyses	% Carbon	Carbon Standard Dev.	% Hydrogen	Hydrogen Standard Dev.	% Nitrogen	Nitrogen Standard Dev.	% Sulfur	Sulfur Standard Dev.	Method	Instrument
1	10	0.9420	0.0078	0.371	0.010	0.0921	0.0121	-	-	TSL-C001	LECO CHN628-Argon
2	10	-	-	-	-	-	-	0.0158	0.0004	TSL-C001	LECO 628 S-Module
3	10	0.9250	0.0032	-	-	0.0842	0.0015	0.0156	0.0029	TSL-C001	LECO TruMac CNS
4	10	0.8905	0.0054	-	-	-	-	0.0159	0.0011	TSL-C001	LECO SC632
5	10	-	-	-	-	-	-	0.0146	0.0005	TSL-C001	LECO S632
6	10	0.9380	0.0063	0.365	0.012	0.0936	0.0019	-	-	TSL-C001	LECO CHN628
7	10	0.9288	0.0069	0.348	0.011	-	-	-	-	TSL-C001	LECO TruSpec CHN
8	10	0.9286	0.0066	-	-	0.0980	0.0005	-	-	TSL-C001	LECO TruMac CN
Average		0.9255		0.361		0.0920		0.0155			
Std Dev		0.0179		0.014		0.0078		0.0016			

- Each Data Set value represents an average of the sample analyses.
- Underline indicates last significant digit.

Participating Laboratories:

Lab:
LECO Technical Services Laboratory

Accreditation:
A2LA Accredited to ISO 17025:2005

Calculations:
In compliance with the requirements of ISO Guides 31, 34 and 35 for the production of Reference Materials, the values for this material were calculated using a mean and standard deviation of the overall data.

References:
LECO TSL-C001: In house method for the analysis of Plant Tissue and Soil materials

ISO Standard 17025:2005 General requirements for the competence of testing and calibration laboratories.
ISO Guide 30:1992 Terms and definitions used in connection with reference materials.
ISO Guide 31:2000 Reference Materials-Contents of certificates and labels.
ISO Guide 33:2000 Uses of certified reference materials.
ISO Guide 34:2009 General requirements for the competence of reference material producers.
ISO Guide 35:2006 Reference Materials-General and statistical principles for certification.

ASTM Documents available from ASTM, 1916 Race Street, Philadelphia, PA, 19103
ISO Guides and Standards available from Global Engineering – www.global.ihs.com

Approved by: Dennis Lawrenz
Technical Services Laboratory Director
Date of release: August 5th, 2014

No warranties of description, merchantability, or fitness for a particular purpose or any other express or implied warranties arise out of LECO's sale of this product. Remedies for any claimed defect in this product will be limited to replacement of the product or refund of the purchase price. In no event shall LECO be liable for incidental or consequential damages.

LECO Corporation • Technical Services Laboratory
3000 Lakeview Avenue • St. Joseph, MI. USA 49085
Phone: 800-292-6141 • Fax: 269-982-8977 • www.leco.com
info@leco.com • A2LA Accredited to ISO 17025:2005
LECO is a registered trademark of LECO Corporation.

METALS

COVER PAGE
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG No.: 200-35660-1

Project: Port Ewen DNS Sediment

Client Sample ID	Lab Sample ID
PE1016_P1SCD-06-A-0006IN	200-35680-1
PE1016_P1SCD-06-B-0008IN	200-35680-2
PE1016_P1SCD-06-A-0613IN	200-35680-3
PE1016_P1SCD-07-A-0008IN	200-35680-4
PE1016_P1SCD-07-B-0006IN	200-35680-5
PE1016_P1SCD-08-A-0006IN	200-35680-6
PE1016_P1SCD-08-A-0006IN-D	200-35680-7
PE1016_P1SCD-09-A-0006IN	200-35680-8
PE1016_P1SCD-10-A-0005IN	200-35680-9
PE1016_P1SCD-10-B-0006IN	200-35680-10
PE1016_P1SCD-09-B-0003IN	200-35680-11
PE1016_P1SCD-09-B-0309IN	200-35680-12
PE1016_P1SCD-BLK-1-101016	200-35680-13
PE1016_P1SCD-08-B-0006IN	200-35680-14

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016_P1SCD-06-A-0006IN
Lab Sample ID: 200-35680-1
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 16:45
Reporting Basis: DRY
Date Received: 10/12/2016 10:30
% Solids: 47.8

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	347	0.71	0.17	mg/Kg			1	6020A
7782-49-2	Selenium	4.1	0.57	0.090	mg/Kg			1	6020A
7440-66-6	Zinc	175	2.8	0.88	mg/Kg			1	6020A
7439-97-6	Mercury	1.6	0.080	0.029	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016_P1SCD-06-B-0008IN
Lab Sample ID: 200-35680-2
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 16:30
Reporting Basis: DRY
Date Received: 10/12/2016 10:30
% Solids: 42.5

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	448	1.0	0.25	mg/Kg			1	6020A
7782-49-2	Selenium	3.5	0.83	0.13	mg/Kg			1	6020A
7440-66-6	Zinc	207	4.2	1.3	mg/Kg			1	6020A
7439-97-6	Mercury	2.6	0.083	0.030	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016_P1SCD-06-A-0613IN
Lab Sample ID: 200-35680-3
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 16:46
Reporting Basis: DRY
Date Received: 10/12/2016 10:30
% Solids: 82.2

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	13.7	0.43	0.10	mg/Kg			1	6020A
7782-49-2	Selenium	0.74	0.35	0.054	mg/Kg			1	6020A
7440-66-6	Zinc	66.3	1.7	0.54	mg/Kg			1	6020A
7439-97-6	Mercury	0.064	0.041	0.015	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016_P1SCD-07-A-0008IN
Lab Sample ID: 200-35680-4
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 16:10
Reporting Basis: DRY
Date Received: 10/12/2016 10:30
% Solids: 44.8

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	502	0.93	0.22	mg/Kg			1	6020A
7782-49-2	Selenium	3.1	0.74	0.12	mg/Kg			1	6020A
7440-66-6	Zinc	220	3.7	1.2	mg/Kg			1	6020A
7439-97-6	Mercury	2.5	0.082	0.030	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016_P1SCD-07-B-0006IN
Lab Sample ID: 200-35680-5
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 15:43
Reporting Basis: DRY
Date Received: 10/12/2016 10:30
% Solids: 48.2

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	397	0.98	0.24	mg/Kg			1	6020A
7782-49-2	Selenium	3.6	0.78	0.12	mg/Kg			1	6020A
7440-66-6	Zinc	200	3.9	1.2	mg/Kg			1	6020A
7439-97-6	Mercury	2.7	0.071	0.026	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016_P1SCD-08-A-0006IN
Lab Sample ID: 200-35680-6
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 15:10
Reporting Basis: DRY
Date Received: 10/12/2016 10:30
% Solids: 38.8

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	781	1.1	0.27	mg/Kg			1	6020A
7782-49-2	Selenium	5.2	0.89	0.14	mg/Kg			1	6020A
7440-66-6	Zinc	294	4.4	1.4	mg/Kg			1	6020A
7439-97-6	Mercury	4.3	0.094	0.034	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016_P1SCD-08-A-0006IN-D
Lab Sample ID: 200-35680-7
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 15:11
Reporting Basis: DRY
Date Received: 10/12/2016 10:30
% Solids: 41.0

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	600	1.1	0.26	mg/Kg			1	6020A
7782-49-2	Selenium	4.4	0.86	0.13	mg/Kg			1	6020A
7440-66-6	Zinc	226	4.3	1.3	mg/Kg			1	6020A
7439-97-6	Mercury	3.4	0.095	0.034	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016_P1SCD-09-A-0006IN
Lab Sample ID: 200-35680-8
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 14:20
Reporting Basis: DRY
Date Received: 10/12/2016 10:30
% Solids: 34.2

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	899	1.2	0.30	mg/Kg			1	6020A
7782-49-2	Selenium	6.0	0.99	0.16	mg/Kg			1	6020A
7440-66-6	Zinc	289	5.0	1.5	mg/Kg			1	6020A
7439-97-6	Mercury	5.1	0.11	0.039	mg/Kg		F1	1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016_P1SCD-10-A-0005IN
Lab Sample ID: 200-35680-9
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 17:50
Reporting Basis: DRY
Date Received: 10/12/2016 10:30
% Solids: 26.5

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	619	1.6	0.38	mg/Kg			1	6020A
7782-49-2	Selenium	4.9	1.3	0.20	mg/Kg			1	6020A
7440-66-6	Zinc	310	6.3	1.9	mg/Kg			1	6020A
7439-97-6	Mercury	4.4	0.14	0.052	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016_P1SCD-10-B-0006IN
Lab Sample ID: 200-35680-10
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 17:55
Reporting Basis: DRY
Date Received: 10/12/2016 10:30
% Solids: 27.8

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	515	1.6	0.39	mg/Kg			1	6020A
7782-49-2	Selenium	3.7	1.3	0.20	mg/Kg			1	6020A
7440-66-6	Zinc	298	6.4	2.0	mg/Kg			1	6020A
7439-97-6	Mercury	3.8	0.13	0.046	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016_P1SCD-09-B-0003IN
Lab Sample ID: 200-35680-11
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 14:40
Reporting Basis: DRY
Date Received: 10/12/2016 10:30
% Solids: 80.7

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	156	0.48	0.11	mg/Kg			1	6020A
7782-49-2	Selenium	1.1	0.38	0.060	mg/Kg			1	6020A
7440-66-6	Zinc	82.8	1.9	0.59	mg/Kg			1	6020A
7439-97-6	Mercury	1.5	0.045	0.017	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016_P1SCD-09-B-0309IN
Lab Sample ID: 200-35680-12
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 14:41
Reporting Basis: DRY
Date Received: 10/12/2016 10:30
% Solids: 38.1

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	55.3	1.2	0.30	mg/Kg			1	6020A
7782-49-2	Selenium	2.5	0.99	0.16	mg/Kg			1	6020A
7440-66-6	Zinc	147	5.0	1.5	mg/Kg			1	6020A
7439-97-6	Mercury	0.039	0.091	0.033	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016_P1SCD-BLK-1-101016 Lab Sample ID: 200-35680-13

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG ID.: 200-35660-1

Matrix: Water Date Sampled: 10/10/2016 20:20

Reporting Basis: WET Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	5.0	5.0	2.2	ug/L	U		1	6020A
7782-49-2	Selenium	4.0	4.0	0.97	ug/L	U		1	6020A
7440-66-6	Zinc	20.0	20.0	2.6	ug/L	U		1	6020A
7439-97-6	Mercury	0.20	0.20	0.044	ug/L	U		1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016_P1SCD-08-B-0006IN
Lab Sample ID: 200-35680-14
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 15:15
Reporting Basis: DRY
Date Received: 10/12/2016 10:30
% Solids: 37.1

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	589	1.3	0.31	mg/Kg			1	6020A
7782-49-2	Selenium	4.1	1.0	0.16	mg/Kg			1	6020A
7440-66-6	Zinc	242	5.1	1.6	mg/Kg			1	6020A
7439-97-6	Mercury	4.5	0.10	0.037	mg/Kg		F1	1	7471B

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: ME6020ICVw_00442 Concentration Units: ug/L

CCV Source: ME6020STD3_00442

Analyte	ICV 200-110192/8 10/14/2016 11:07				CCV 200-110192/13 10/14/2016 11:35				CCV 200-110192/25 10/14/2016 12:44			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	625.4		625	100	1151		1250	92	1214		1250	97
Selenium	107.4		100	107	195.3		200	98	196.3		200	98
Zinc	636.3		625	102	1161		1250	93	1184		1250	95

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: ME6020ICVw_00442 Concentration Units: ug/L

CCV Source: ME6020STD3_00442

Analyte	CCV 200-110192/38 10/14/2016 13:58				CCV 200-110192/48 10/14/2016 14:55							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	1264		1250	101	1295		1250	104				
Selenium	195.6		200	98	197.2		200	99				
Zinc	1212		1250	97	1224		1250	98				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: ME6020STD1_00436 Concentration Units: ug/L

CCV Source: ME6020STD1_00436

Analyte	ICVL 200-110192/9 10/14/2016 11:12				CCVL 200-110192/27 10/14/2016 12:55				CCVL 200-110192/40 10/14/2016 14:09			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	5.59		5.00	112	4.77	J	5.00	95	4.97	J	5.00	99
Selenium	4.45		4.00	111	4.19		4.00	105	3.38	J	4.00	84
Zinc	20.70		20.0	104	20.11		20.0	101	20.18		20.0	101

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: ME6020STD1_00436 Concentration Units: ug/L

CCV Source: ME6020STD1_00436

Analyte	CCVL 200-110192/50 10/14/2016 15:07											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	5.23		5.00	105								
Selenium	3.63	J	4.00	91								
Zinc	21.06		20.0	105								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: ME6020ICVw_00443 Concentration Units: ug/L

CCV Source: ME6020STD3_00443

Analyte	ICV 200-110334/8 10/18/2016 13:02				CCV 200-110334/13 10/18/2016 13:37				CCV 200-110334/25 10/18/2016 14:45			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	619.8		625	99	1126		1250	90	1203		1250	96
Selenium	108.0		100	108	209.1		200	105	214.4		200	107
Zinc	640.0		625	102	1194		1250	95	1225		1250	98

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: ME6020ICVw_00443 Concentration Units: ug/L

CCV Source: ME6020STD3_00443

Analyte	CCV 200-110334/38 10/18/2016 16:00				CCV 200-110334/51 10/18/2016 17:14							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	1213		1250	97	1298		1250	104				
Selenium												
Zinc	1237		1250	99	1319		1250	105				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: ME6020STD1_00437 Concentration Units: ug/L

CCV Source: ME6020STD1_00437

Analyte	ICVL 200-110334/9 10/18/2016 13:08				CCVL 200-110334/27 10/18/2016 14:57				CCVL 200-110334/40 10/18/2016 16:11			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	5.17		5.00	103	5.26		5.00	105	5.70		5.00	114
Selenium	2.99	J	4.00	75	3.41	J	4.00	85				
Zinc	22.09		20.0	110	21.62		20.0	108	23.72		20.0	119

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: ME6020STD1_00437 Concentration Units: ug/L

CCV Source: ME6020STD1_00437

Analyte	CCVL 200-110334/53 10/18/2016 17:26											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	5.93		5.00	119								
Selenium												
Zinc	23.46		20.0	117								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: ME6020ICVw_00444 Concentration Units: ug/L

CCV Source: ME6020STD3_00444

Analyte	ICV 200-110361/8 10/19/2016 10:33				CCV 200-110361/13 10/19/2016 11:01				CCV 200-110361/25 10/19/2016 12:10			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Selenium	107.0		100	107	211.0		200	105	218.5		200	109

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: ME6020STD1_00438 Concentration Units: ug/L

CCV Source: ME6020STD1_00438

Analyte	ICVL 200-110361/9 10/19/2016 10:38				CCVL 200-110361/27 10/19/2016 12:21							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Selenium	3.80	J	4.00	95	3.91	J	4.00	98				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: ME6020ICVw_00445 Concentration Units: ug/L

CCV Source: ME6020STD3_00445

Analyte	ICV 200-110547/8 10/25/2016 13:34				CCV 200-110547/13 10/25/2016 14:02				CCV 200-110547/25 10/25/2016 15:11			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	604.8		625	97	1119		1250	90	1185		1250	95
Selenium	105.3		100	105	202.4		200	101	209.9		200	105
Zinc	631.6		625	101	1196		1250	96	1229		1250	98

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: ME6020ICVw_00445 Concentration Units: ug/L

CCV Source: ME6020STD3_00445

Analyte	CCV 200-110547/32 10/25/2016 15:51											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	1207		1250	97								
Selenium	206.8		200	103								
Zinc	1241		1250	99								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: ME6020STD1_00439 Concentration Units: ug/L

CCV Source: ME6020STD1_00439

Analyte	ICVL 200-110547/9 10/25/2016 13:39				CCVL 200-110547/27 10/25/2016 15:22				CCVL 200-110547/34 10/25/2016 16:02			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	4.92	J	5.00	98	5.31		5.00	106	5.73		5.00	115
Selenium	3.60	J	4.00	90	3.68	J	4.00	92	4.45		4.00	111
Zinc	20.00		20.0	100	21.44		20.0	107	20.40		20.0	102

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: MEHGICVw_00085 Concentration Units: ug/L

CCV Source: mehgccvw_01052

Analyte	ICV 200-110231/7-A 10/17/2016 14:23				CCV 200-110231/9-A 10/17/2016 14:27				CCV 200-110231/9-A 10/17/2016 14:47			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	2.77		3.00	92	5.00		5.00	100	4.87		5.00	97

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: MEHGICVw_00085 Concentration Units: ug/L

CCV Source: mehgccvw_01052

Analyte	CCV 200-110231/9-A 10/17/2016 15:08											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	4.91		5.00	98								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: MEHGICVw_00085 Concentration Units: ug/L

CCV Source: mehgccvw_01052

Analyte	ICV 200-110242/7-A 10/17/2016 16:19				CCV 200-110242/9-A 10/17/2016 16:22				CCV 200-110242/9-A 10/17/2016 16:37			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	2.76		3.00	92	5.03		5.00	101	5.24		5.00	105

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICV Source: MEHGICVw_00086 Concentration Units: ug/L

CCV Source: mehgccvw_01053

Analyte	ICV 200-110530/7-A 10/26/2016 10:03				CCV 200-110530/9-A 10/26/2016 10:06				CCV 200-110530/9-A 10/26/2016 10:25			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	2.77		3.00	92	4.84		5.00	97	5.05		5.00	101

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: ug/L

Analyte	RL	ICBIS 200-110192/10 10/14/2016 11:18		CCB 200-110192/14 10/14/2016 11:41		CCB 200-110192/26 10/14/2016 12:50		CCB 200-110192/39 10/14/2016 14:04	
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U	5.0	U	5.0	U	5.0	U
Selenium	4.0	4.0	U	4.0	U	4.0	U	4.0	U
Zinc	20.0	20.0	U	20.0	U	20.0	U	20.0	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: ug/L

Analyte	RL	CCB 200-110192/49 10/14/2016 15:01							
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U						
Selenium	4.0	4.0	U						
Zinc	20.0	20.0	U						

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: ug/L

Analyte	RL	ICBIS 200-110334/10 10/18/2016 13:19		CCB 200-110334/14 10/18/2016 13:42		CCB 200-110334/26 10/18/2016 14:51		CCB 200-110334/39 10/18/2016 16:05	
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U	5.0	U	5.0	U	5.0	U
Selenium	4.0	4.0	U	4.0	U	4.0	U		
Zinc	20.0	20.0	U	20.0	U	20.0	U	20.0	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: ug/L

Analyte	RL	CCB 200-110334/52 10/18/2016 17:20							
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U						
Selenium	4.0								
Zinc	20.0	20.0	U						

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: ug/L

Analyte	RL	ICBIS 200-110361/10 10/19/2016 10:44		CCB 200-110361/14 10/19/2016 11:07		CCB 200-110361/26 10/19/2016 12:16			
		Found	C	Found	C	Found	C	Found	C
Selenium	4.0	4.0	U	4.0	U	4.0	U		

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: ug/L

Analyte	RL	ICBIS 200-110547/10 10/25/2016 13:45		CCB 200-110547/14 10/25/2016 14:08		CCB 200-110547/26 10/25/2016 15:16		CCB 200-110547/33 10/25/2016 15:57	
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U	5.0	U	5.0	U	5.0	U
Selenium	4.0	4.0	U	4.0	U	4.0	U	4.0	U
Zinc	20.0	20.0	U	20.0	U	20.0	U	20.0	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: ug/L

Analyte	RL	ICB 200-110231/8-A 10/17/2016 14:25		CCB 200-110231/10-A 10/17/2016 14:29		CCB 200-110231/10-A 10/17/2016 14:49		CCB 200-110231/10-A 10/17/2016 15:09	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U	0.20	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: ug/L

Analyte	RL	ICB 200-110242/8-A 10/17/2016 16:20		CCB 200-110242/10-A 10/17/2016 16:24		CCB 200-110242/10-A 10/17/2016 16:39			
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U		

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: ug/L

Analyte	RL	ICB 200-110530/8-A 10/26/2016 10:04		CCB 200-110530/10-A 10/26/2016 10:08		CCB 200-110530/10-A 10/26/2016 10:27			
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U		

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-110153/1-A

Instrument Code: METICPMS2 Batch No.: 110192

CAS No.	Analyte	Concentration	C	Q	Method
7440-50-8	Copper	0.50	U		6020A
7782-49-2	Selenium	0.40	U		6020A
7440-66-6	Zinc	2.0	U		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-110229/1-A

Instrument Code: METICPMS2 Batch No.: 110334

CAS No.	Analyte	Concentration	C	Q	Method
7440-50-8	Copper	0.50	U		6020A
7782-49-2	Selenium	0.40	U		6020A
7440-66-6	Zinc	2.0	U		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: ug/L Lab Sample ID: MB 200-110239/1-A

Instrument Code: METICPMS2 Batch No.: 110334

CAS No.	Analyte	Concentration	C	Q	Method
7440-50-8	Copper	2.66	J		6020A
7440-66-6	Zinc	20.0	U		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: ug/L Lab Sample ID: MB 200-110239/1-A

Instrument Code: METICPMS2 Batch No.: 110361

CAS No.	Analyte	Concentration	C	Q	Method
7782-49-2	Selenium	4.0	U		6020A

FORM III-IN

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-110491/1-A

Instrument Code: METICPMS2 Batch No.: 110547

CAS No.	Analyte	Concentration	C	Q	Method
7440-50-8	Copper	0.50	U		6020A
7782-49-2	Selenium	0.40	U		6020A
7440-66-6	Zinc	2.0	U		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: ug/L Lab Sample ID: MB 200-110242/11-A

Instrument Code: MEPCV3 II Batch No.: 110261

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.20	U		7470A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-110231/11-A

Instrument Code: MEPCV3 II Batch No.: 110260

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.040	U		7471B

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-110530/11-A

Instrument Code: MEPCV3 II Batch No.: 110575

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.040	U		7471B

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Lab Sample ID: ICSA 200-110192/11 Instrument ID: METICPMS2

Lab File ID: 101416-03 6020A.xml ICS Source: MEMSICSAw_00210

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Copper		**0.605**	
Selenium		**0.0677**	
Zinc		**-1.59**	
Aluminum	*100000*	*94130*	*94*
Antimony		*0.189*	
Arsenic		*-0.0330*	
Barium		*-0.231*	
Beryllium		*-0.0940*	
Boron		*-0.113*	
Cadmium		*0.137*	
Calcium	*100000*	*96443*	*96*
Chromium		*0.778*	
Cobalt		*-0.134*	
Iron	*100000*	*96193*	*96*
Lead		*0.289*	
Magnesium	*100000*	*95857*	*96*
Manganese		*0.0260*	
Molybdenum	*2000*	*1978*	*99*
Nickel		*0.0627*	
Potassium	*100000*	*95983*	*96*
Silver		*0.0483*	
Sodium	*100000*	*94820*	*95*
Thallium		*-0.0570*	
Thorium		*0.780*	
Tungsten		*0.232*	
Uranium		*-0.0017*	
Vanadium		*0.603*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Lab Sample ID: ICSAB 200-110192/12 Instrument ID: METICPMS2

Lab File ID: 101416-03 6020A.xml ICS Source: MEMSABw_00227

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Copper	**50.0**	**44.5**	**89**
Selenium	**125**	**119**	**95**
Zinc	**50.0**	**43.2**	**86**
Aluminum	*100000*	*94557*	*95*
Antimony	*50.0*	*44.5*	*89*
Arsenic	*45.0*	*44.4*	*99*
Barium	*250*	*221*	*89*
Beryllium	*25.0*	*25.8*	*103*
Boron	*400*	*419*	*105*
Cadmium	*25.0*	*23.1*	*93*
Calcium	*100000*	*97163*	*97*
Chromium	*50.0*	*45.6*	*91*
Cobalt	*25.0*	*22.7*	*91*
Iron	*100000*	*96553*	*97*
Lead	*25.0*	*22.4*	*89*
Magnesium	*100000*	*95670*	*96*
Manganese	*25.0*	*22.0*	*88*
Molybdenum	*2000*	*1989*	*99*
Nickel	*25.0*	*22.6*	*90*
Potassium	*100000*	*96280*	*96*
Silver	*25.0*	*23.1*	*92*
Sodium	*100000*	*94530*	*95*
Thallium	*25.0*	*21.8*	*87*
Thorium	*20.0*	*18.2*	*91*
Tungsten	*20.0*	*18.7*	*94*
Uranium	*10.0*	*10.3*	*103*
Vanadium	*25.0*	*21.8*	*87*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Lab Sample ID: ICSA 200-110334/11 Instrument ID: METICPMS2

Lab File ID: 101816-05 6020A.xml ICS Source: MEMSICSAw_00210

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Copper		**1.14**	
Selenium		**-0.430**	
Zinc		**-1.21**	
Aluminum	*100000*	*98733*	*99*
Antimony		*-0.134*	
Arsenic		*-0.0747*	
Barium		*0.373*	
Beryllium		*0.146*	
Boron		*0.872*	
Cadmium		*0.299*	
Calcium	*100000*	*104300*	*104*
Chromium		*1.33*	
Cobalt		*0.140*	
Iron	*100000*	*97747*	*98*
Lead		*0.394*	
Magnesium	*100000*	*99843*	*100*
Manganese		*0.634*	
Molybdenum	*2000*	*2068*	*103*
Nickel		*0.617*	
Potassium	*100000*	*101293*	*101*
Silver		*0.177*	
Sodium	*100000*	*99067*	*99*
Thallium		*0.108*	
Thorium		*4.79*	
Tungsten		*0.297*	
Uranium		*0.0020*	
Vanadium		*0.542*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Lab Sample ID: ICSAB 200-110334/12 Instrument ID: METICPMS2

Lab File ID: 101816-05 6020A.xml ICS Source: MEMSABw_00227

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Copper	**50.0**	**45.4**	**91**
Selenium	**125**	**112**	**90**
Zinc	**50.0**	**43.6**	**87**
Aluminum	*100000*	*95100*	*95*
Antimony	*50.0*	*47.4*	*95*
Arsenic	*45.0*	*43.6*	*97*
Barium	*250*	*239*	*96*
Beryllium	*25.0*	*27.6*	*111*
Boron	*400*	*454*	*113*
Cadmium	*25.0*	*23.4*	*94*
Calcium	*100000*	*102233*	*102*
Chromium	*50.0*	*48.1*	*96*
Cobalt	*25.0*	*22.8*	*91*
Iron	*100000*	*96390*	*96*
Lead	*25.0*	*23.8*	*95*
Magnesium	*100000*	*95993*	*96*
Manganese	*25.0*	*24.2*	*97*
Molybdenum	*2000*	*2073*	*104*
Nickel	*25.0*	*24.5*	*98*
Potassium	*100000*	*97770*	*98*
Silver	*25.0*	*24.7*	*99*
Sodium	*100000*	*96563*	*97*
Thallium	*25.0*	*22.7*	*91*
Thorium	*20.0*	*20.1*	*100*
Tungsten	*20.0*	*18.4*	*92*
Uranium	*10.0*	*10.9*	*109*
Vanadium	*25.0*	*24.5*	*98*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Lab Sample ID: ICSA 200-110361/11 Instrument ID: METICPMS2

Lab File ID: 101916-03 6020A.xml ICS Source: MEMSICSAw_00210

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Selenium		**-1.08**	
Aluminum	*100000*	*102533*	*103*
Antimony		*0.330*	
Arsenic		*-0.248*	
Barium		*0.357*	
Beryllium		*0.111*	
Boron		*5.71*	
Cadmium		*0.0883*	
Calcium	*100000*	*105633*	*106*
Chromium		*1.27*	
Cobalt		*0.141*	
Copper		*1.19*	
Iron	*100000*	*101400*	*101*
Lead		*0.415*	
Magnesium	*100000*	*103600*	*104*
Manganese		*0.540*	
Molybdenum	*2000*	*2179*	*109*
Nickel		*0.750*	
Potassium	*100000*	*98567*	*99*
Silver		*0.168*	
Sodium	*100000*	*101733*	*102*
Thallium		*0.123*	
Thorium		*5.04*	
Tungsten		*0.328*	
Uranium		*-0.0080*	
Vanadium		*0.553*	
Zinc		*-0.811*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Lab Sample ID: ICSAB 200-110361/12 Instrument ID: METICPMS2

Lab File ID: 101916-03 6020A.xml ICS Source: MEMSABw_00227

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Selenium	**125**	**115**	**92**
Aluminum	*100000*	*104400*	*104*
Antimony	*50.0*	*51.0*	*102*
Arsenic	*45.0*	*44.9*	*100*
Barium	*250*	*243*	*97*
Beryllium	*25.0*	*27.7*	*111*
Boron	*400*	*459*	*115*
Cadmium	*25.0*	*24.0*	*96*
Calcium	*100000*	*105900*	*106*
Chromium	*50.0*	*47.8*	*96*
Cobalt	*25.0*	*23.5*	*94*
Copper	*50.0*	*46.4*	*93*
Iron	*100000*	*102933*	*103*
Lead	*25.0*	*23.2*	*93*
Magnesium	*100000*	*103833*	*104*
Manganese	*25.0*	*23.9*	*95*
Molybdenum	*2000*	*2214*	*111*
Nickel	*25.0*	*23.3*	*93*
Potassium	*100000*	*100333*	*100*
Silver	*25.0*	*25.0*	*100*
Sodium	*100000*	*101537*	*102*
Thallium	*25.0*	*22.7*	*91*
Thorium	*20.0*	*19.7*	*98*
Tungsten	*20.0*	*20.9*	*104*
Uranium	*10.0*	*11.6*	*116*
Vanadium	*25.0*	*22.8*	*91*
Zinc	*50.0*	*45.6*	*91*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Lab Sample ID: ICSA 200-110547/11 Instrument ID: METICPMS2

Lab File ID: 102516-03 6020A.xml ICS Source: MEMSICSAw_00210

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Copper		**0.837**	
Selenium		**-0.177**	
Zinc		**-1.66**	
Aluminum	*100000*	*98393*	*98*
Antimony		*-0.203*	
Arsenic		*-0.156*	
Barium		*-0.0073*	
Beryllium		*-0.0590*	
Boron		*-4.29*	
Cadmium		*0.204*	
Calcium	*100000*	*101033*	*101*
Chromium		*1.14*	
Cobalt		*-0.0090*	
Iron	*100000*	*94920*	*95*
Lead		*0.225*	
Magnesium	*100000*	*95393*	*95*
Manganese		*0.0563*	
Molybdenum	*2000*	*2066*	*103*
Nickel		*0.192*	
Potassium	*100000*	*98003*	*98*
Silver		*0.0753*	
Sodium	*100000*	*94703*	*95*
Thallium		*-0.0860*	
Thorium		*2.50*	
Tungsten		*0.235*	
Uranium		*-0.0033*	
Vanadium		*0.887*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Lab Sample ID: ICSAB 200-110547/12 Instrument ID: METICPMS2

Lab File ID: 102516-03 6020A.xml ICS Source: MEMSABw_00227

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Copper	**50.0**	**45.0**	**90**
Selenium	**125**	**110**	**88**
Zinc	**50.0**	**43.0**	**86**
Aluminum	*100000*	*96880*	*97*
Antimony	*50.0*	*46.9*	*94*
Arsenic	*45.0*	*43.8*	*97*
Barium	*250*	*246*	*98*
Beryllium	*25.0*	*24.1*	*97*
Boron	*400*	*406*	*102*
Cadmium	*25.0*	*23.0*	*92*
Calcium	*100000*	*101900*	*102*
Chromium	*50.0*	*46.9*	*94*
Cobalt	*25.0*	*23.0*	*92*
Iron	*100000*	*96570*	*97*
Lead	*25.0*	*22.4*	*90*
Magnesium	*100000*	*95007*	*95*
Manganese	*25.0*	*23.1*	*92*
Molybdenum	*2000*	*2075*	*104*
Nickel	*25.0*	*22.9*	*92*
Potassium	*100000*	*97543*	*98*
Silver	*25.0*	*23.5*	*94*
Sodium	*100000*	*95673*	*96*
Thallium	*25.0*	*22.2*	*89*
Thorium	*20.0*	*21.6*	*108*
Tungsten	*20.0*	*19.5*	*98*
Uranium	*10.0*	*10.4*	*104*
Vanadium	*25.0*	*22.3*	*89*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: PE1016_P1SCD-08-A-0006IN MS
Lab ID: 200-35680-6 MS
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG No.: 200-35660-1
Matrix: Sediment
Concentration Units: mg/Kg
% Solids: 38.8

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	819.6		781		9.33	414	75-125	4	6020A
Selenium	11.63		5.2		7.47	86	75-125		6020A
Zinc	312.5		294		37.3	51	75-125	4	6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: PE1016_P1SCD-09-A-0006IN MS
Lab ID: 200-35680-8 MS
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG No.: 200-35660-1
Matrix: Sediment
Concentration Units: mg/Kg
% Solids: 34.2

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	840.2		899		11.8	-501	75-125	4	6020A
Selenium	13.96		6.0		9.43	84	75-125		6020A
Zinc	305.7		289		47.2	36	75-125	4	6020A
Mercury	7.03		5.1		1.41	135	80-120	E F1	7471B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: PE1016_P1SCD-BLK-1-101016 MS Lab ID: 200-35680-13 MS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Matrix: Water Concentration Units: ug/L

% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Mercury	2.46		0.20	U	2.50	98	85-115		7470A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: PE1016_P1SCD-08-B-0006IN MS
Lab ID: 200-35680-14 MS
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG No.: 200-35660-1
Matrix: Sediment
Concentration Units: mg/Kg
% Solids: 37.1

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Mercury	5.54		4.5		1.27	84	80-120	E	7471B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: PE1016_P1SCD-08-A-0006IN MSD
Lab ID: 200-35680-6 MSD
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG No.: 200-35660-1
Matrix: Sediment
Concentration Units: mg/Kg
% Solids: 38.8

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Copper	865.8		12.2	698	75-125	5	20	4	6020A
Selenium	13.98		9.72	90	75-125	18	20		6020A
Zinc	340.4		48.6	96	75-125	9	20	4	6020A

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VD - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: PE1016_P1SCD-09-A-0006IN MSD
Lab ID: 200-35680-8 MSD
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG No.: 200-35660-1
Matrix: Sediment
Concentration Units: mg/Kg
% Solids: 34.2

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Copper	854.0		12.6	-359	75-125	2	20	4	6020A
Selenium	13.77		10.1	77	75-125	1	20		6020A
Zinc	301.3		50.4	25	75-125	1	20	4	6020A
Mercury	6.17		1.35	77	80-120	13	20	E F1	7471B

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VD - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: PE1016_P1SCD-BLK-1-101016 MSD Lab ID: 200-35680-13 MSD

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Matrix: Water Concentration Units: ug/L

% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Mercury	2.50		2.50	100	85-115	2	20		7470A

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: PE1016_P1SCD-08-B-0006IN MSD
Lab ID: 200-35680-14 MSD
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG No.: 200-35660-1
Matrix: Sediment
Concentration Units: mg/Kg
% Solids: 37.1

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Mercury	5.12		1.14	56	80-120	8	20	E F1	7471B

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VD - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: PE1016_P1SCD-08-A-0006IN PDS Lab ID: 200-35680-6 PDS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Matrix: Sediment Concentration Units: mg/Kg

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	770.1		781		11.1	NC	80-120		6020A
Selenium	12.48		5.2		8.88	82	80-120		6020A
Zinc	325.3		294		44.4	71	80-120	W	6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VB - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: PE1016_P1SCD-09-A-0006IN PDS Lab ID: 200-35680-8 PDS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Matrix: Sediment Concentration Units: mg/Kg

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	912.6		899		12.4	NC	80-120		6020A
Selenium	13.76		6.0		9.91	78	80-120	W	6020A
Zinc	331.6		289		49.6	86	80-120		6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VB - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110153/2-A

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

Sample Matrix: Sediment LCS Source: ME6020CALi_A_00022

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Copper	5.00	5.44		109	80	120		6020A
Selenium	4.00	3.23		81	80	120		6020A
Zinc	20.0	17.78		89	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110229/2-A

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

Sample Matrix: Sediment LCS Source: ME6020CALi_A_00022

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Copper	5.00	4.90		98	80	120		6020A
Selenium	4.00	3.45		86	80	120		6020A
Zinc	20.0	18.27		91	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110239/2-A

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

Sample Matrix: Water LCS Source: ME6020CALi_A_00022

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Copper	50.0	56.30		113	80	120		6020A
Zinc	200	208.5		104	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110239/2-A

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

Sample Matrix: Water LCS Source: ME6020CALi_A_00022

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Selenium	40.0	38.84		97	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110491/2-A

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

Sample Matrix: Sediment LCS Source: ME6020CALi_A_00022

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Copper	5.00	4.73		95	80	120		6020A
Selenium	4.00	3.32		83	80	120		6020A
Zinc	20.0	17.39		87	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110242/12-A

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

Sample Matrix: Water LCS Source: mehgccvw_01052

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Mercury	2.50	2.57		103	85	115		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110231/12-A

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

Sample Matrix: Sediment LCS Source: mehgccvw_01052

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Mercury	0.500	0.492		98	80	120		7471B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110530/12-A

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

Sample Matrix: Sediment LCS Source: mehgccvw_01053

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Mercury	0.500	0.486		97	80	120		7471B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 200-35680-6

SDG No: 200-35660-1

Lab Name: TestAmerica Burlington Job No: 200-35680-1

Matrix: Sediment Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Copper	781		765.6		2.0		6020A
Selenium	5.2		6.47		NC		6020A
Zinc	294		347.3		18	V	6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 200-35680-8

SDG No: 200-35660-1

Lab Name: TestAmerica Burlington Job No: 200-35680-1

Matrix: Sediment Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Copper	899		907.5		0.92		6020A
Selenium	6.0		7.26		NC		6020A
Zinc	289		343.0		19	V	6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG Number: 200-35660-1

Matrix: Water Instrument ID: METICPMS2

Method: 6020A MDL Date: 08/25/2016 17:21

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Copper		5	2.2
Selenium		4	0.97
Zinc		20	2.6

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG Number: 200-35660-1

Matrix: Water Instrument ID: METICPMS2

Method: 6020A XMDL Date: 08/25/2016 17:21

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Copper		5	2.2
Selenium		4	0.97
Zinc		20	2.6

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG Number: 200-35660-1

Matrix: Sediment Instrument ID: METICPMS2

Method: 6020A MDL Date: 09/04/2014 14:11

Prep Method: 3050B

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Copper		0.5	0.12
Selenium		0.4	0.063
Zinc		2	0.62

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG Number: 200-35660-1

Matrix: Sediment Instrument ID: METICPMS2

Method: 6020A XMDL Date: 09/19/2014 14:34

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Copper		5	2.1
Selenium		4	0.79
Zinc		20	9.3

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG Number: 200-35660-1

Matrix: Water Instrument ID: MEPCV3 II

Method: 7470A MDL Date: 03/16/2016 14:58

Prep Method: 7470A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Mercury	253.7	0.2	0.044

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG Number: 200-35660-1

Matrix: Water Instrument ID: MEPCV3 II

Method: 7470A XMDL Date: 03/16/2016 14:58

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury	253.7	0.2	0.044

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG Number: 200-35660-1

Matrix: Sediment Instrument ID: MEPCV3 II

Method: 7471B MDL Date: 02/23/2015 16:26

Prep Method: 7471B

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Mercury	253.7	0.033	0.012

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG Number: 200-35660-1

Matrix: Sediment Instrument ID: MEPCV3 II

Method: 7471B XMDL Date: 03/16/2016 14:59

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury	253.7	0.2	0.044

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Burlington Job No: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: METICPMS2 Date: 03/25/2015 10:58

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Copper		6250	6020A
Selenium		1000	6020A
Zinc		6250	6020A

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Burlington Job No: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: MEPCV3 II Date: 01/01/2011 09:52

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Mercury	10	10	7470A

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Burlington Job No: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: MEPCV3 II Date: 04/18/2011 17:05

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Mercury	10	10	7471B

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Prep Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-110153/1-A	10/13/2016 13:50	110153	1.00		100.00
LCS 200-110153/2-A	10/13/2016 13:50	110153	1.00		100.00
200-35680-1	10/13/2016 13:50	110153	1.47		100.00
200-35680-2	10/13/2016 13:50	110153	1.13		100.00
200-35680-3	10/13/2016 13:50	110153	1.41		100.00
200-35680-4	10/13/2016 13:50	110153	1.20		100.00
200-35680-5	10/13/2016 13:50	110153	1.06		100.00
200-35680-6	10/13/2016 13:50	110153	1.16		100.00
200-35680-6 MS	10/13/2016 13:50	110153	1.38		100.00
200-35680-6 MSD	10/13/2016 13:50	110153	1.06		100.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Prep Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-110229/1-A	10/17/2016 10:03	110229	1.00		100.00
LCS 200-110229/2-A	10/17/2016 10:03	110229	1.00		100.00
200-35680-7	10/17/2016 10:03	110229	1.14		100.00
200-35680-14	10/17/2016 10:03	110229	1.05		100.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 200-110239/1-A	10/17/2016 12:26	110239		50.00	50.00
LCS 200-110239/2-A	10/17/2016 12:26	110239		50.00	50.00
200-35680-13	10/17/2016 12:26	110239		50.00	50.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Prep Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-110491/1-A	10/24/2016 14:26	110491	1.00		100.00
LCS 200-110491/2-A	10/24/2016 14:26	110491	1.00		100.00
200-35680-8	10/24/2016 14:26	110491	1.18		100.00
200-35680-8 MS	10/24/2016 14:26	110491	1.24		100.00
200-35680-8 MSD	10/24/2016 14:26	110491	1.16		100.00
200-35680-9	10/24/2016 14:26	110491	1.20		100.00
200-35680-10	10/24/2016 14:26	110491	1.12		100.00
200-35680-11	10/24/2016 14:26	110491	1.30		100.00
200-35680-12	10/24/2016 14:26	110491	1.06		100.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Prep Method: 7471B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-110231/11-A	10/17/2016 10:05	110231	0.50		100.00
LCS 200-110231/12-A	10/17/2016 10:05	110231	0.50		100.00
200-35680-1	10/17/2016 10:05	110231	0.52		100.00
200-35680-2	10/17/2016 10:05	110231	0.56		100.00
200-35680-3	10/17/2016 10:05	110231	0.59		100.00
200-35680-4	10/17/2016 10:05	110231	0.54		100.00
200-35680-5	10/17/2016 10:05	110231	0.58		100.00
200-35680-6	10/17/2016 10:05	110231	0.54		100.00
200-35680-7	10/17/2016 10:05	110231	0.51		100.00
200-35680-14	10/17/2016 10:05	110231	0.52		100.00
200-35680-14 MS	10/17/2016 10:05	110231	0.53		100.00
200-35680-14 MSD	10/17/2016 10:05	110231	0.59		100.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Prep Method: 7470A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 200-110242/11-A	10/17/2016 12:52	110242		50.00	50.00
LCS 200-110242/12-A	10/17/2016 12:52	110242		50.00	50.00
200-35680-13	10/17/2016 12:52	110242		50.00	50.00
200-35680-13 MS	10/17/2016 12:52	110242		50.00	50.00
200-35680-13 MSD	10/17/2016 12:52	110242		50.00	50.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Prep Method: 7471B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-110530/11-A	10/25/2016 11:41	110530	0.50		100.00
LCS 200-110530/12-A	10/25/2016 11:41	110530	0.50		100.00
200-35680-8	10/25/2016 11:41	110530	0.54		100.00
200-35680-8 MS	10/25/2016 11:41	110530	0.52		100.00
200-35680-8 MSD	10/25/2016 11:41	110530	0.54		100.00
200-35680-9	10/25/2016 11:41	110530	0.52		100.00
200-35680-10	10/25/2016 11:41	110530	0.56		100.00
200-35680-11	10/25/2016 11:41	110530	0.54		100.00
200-35680-12	10/25/2016 11:41	110530	0.57		100.00

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/14/2016 09:32 End Date: 10/14/2016 15:07

Lab Sample Id	D/F	Type	Time	Analytes																									
				Cu	Se	Zn																							
ITUNE 200-110192/1	1		09:32																										
STD0 200-110192/2 IC	1		10:32	X	X	X																							
STD1 200-110192/3 IC	1		10:38	X	X	X																							
STD2 200-110192/4 IC	1		10:44	X	X	X																							
STD3 200-110192/5 IC	1		10:49	X	X	X																							
STD4 200-110192/6 IC	1		10:55	X	X	X																							
STD5 200-110192/7 IC	1		11:01	X	X	X																							
ICV 200-110192/8	1		11:07	X	X	X																							
ICVL 200-110192/9	1		11:12	X	X	X																							
ICBIS 200-110192/10	1		11:18	X	X	X																							
ICSA 200-110192/11	1		11:24	X	X	X																							
ICSAB 200-110192/12	1		11:29	X	X	X																							
CCV 200-110192/13	1		11:35	X	X	X																							
CCB 200-110192/14	1		11:41	X	X	X																							
MB 200-110153/1-A	1	T	11:47	X	X	X																							
ZZZZZZ			11:52																										
200-35680-1	1	T	11:58	X	X	X																							
200-35680-2	1	T	12:04	X	X	X																							
200-35680-3	1	T	12:09	X	X	X																							
200-35680-4	1	T	12:15	X	X	X																							
200-35680-5	1	T	12:21	X	X	X																							
200-35680-6	1	T	12:27	X	X	X																							
200-35680-6 SD	5	T	12:32	X	X	X																							
200-35680-6 PDS	1	T	12:38	X	X	X																							
CCV 200-110192/25	1		12:44	X	X	X																							
CCB 200-110192/26	1		12:50	X	X	X																							
CCVL 200-110192/27	1		12:55	X	X	X																							
200-35680-6 MS	1	T	13:01	X	X	X																							
200-35680-6 MSD	1	T	13:07	X	X	X																							
ZZZZZZ			13:12																										
ZZZZZZ			13:18																										
ZZZZZZ			13:24																										
ZZZZZZ			13:30																										
ZZZZZZ			13:35																										
ZZZZZZ			13:41																										
ZZZZZZ			13:47																										
ZZZZZZ			13:52																										
CCV 200-110192/38	1		13:58	X	X	X																							
CCB 200-110192/39	1		14:04	X	X	X																							
CCVL 200-110192/40	1		14:09	X	X	X																							
LCS 200-110153/2-A	1	T	14:15	X	X	X																							
ZZZZZZ			14:21																										

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/14/2016 09:32 End Date: 10/14/2016 15:07

Lab Sample Id	D/F	Type	Time	Analytes																										
				Cu	Se	Zn																								
ZZZZZZ			14:27																											
ZZZZZZ			14:32																											
ZZZZZZ			14:38																											
ZZZZZZ			14:44																											
ZZZZZZ			14:50																											
CCV 200-110192/48	1		14:55	X	X	X																								
CCB 200-110192/49	1		15:01	X	X	X																								
CCVL 200-110192/50	1		15:07	X	X	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/18/2016 09:54 End Date: 10/18/2016 18:05

Lab Sample Id	D/F	Type	Time	Analytes																									
				Cu	Se	Zn																							
ITUNE 200-110334/1	1		09:54																										
STD0 200-110334/2 IC	1		12:40	X	X	X																							
STD1 200-110334/3 IC	1		12:44	X	X	X																							
STD2 200-110334/4 IC	1		12:47	X	X	X																							
STD3 200-110334/5 IC	1		12:50	X	X	X																							
STD4 200-110334/6 IC	1		12:54	X	X	X																							
STD5 200-110334/7 IC	1		12:57	X	X	X																							
ICV 200-110334/8	1		13:02	X	X	X																							
ICVL 200-110334/9	1		13:08	X	X	X																							
ICBIS 200-110334/10	1		13:19	X	X	X																							
ICSA 200-110334/11	1		13:25	X	X	X																							
ICSAB 200-110334/12	1		13:31	X	X	X																							
CCV 200-110334/13	1		13:37	X	X	X																							
CCB 200-110334/14	1		13:42	X	X	X																							
MB 200-110229/1-A	1	T	13:48	X	X	X																							
LCS 200-110229/2-A	1	T	13:54	X	X	X																							
200-35680-7	1	T	13:59	X	X	X																							
200-35680-14	1	T	14:05	X	X	X																							
ZZZZZZ			14:11																										
ZZZZZZ			14:17																										
ZZZZZZ			14:22																										
ZZZZZZ			14:28																										
ZZZZZZ			14:34																										
ZZZZZZ			14:39																										
CCV 200-110334/25	1		14:45	X	X	X																							
CCB 200-110334/26	1		14:51	X	X	X																							
CCVL 200-110334/27	1		14:57	X	X	X																							
ZZZZZZ			15:02																										
ZZZZZZ			15:08																										
ZZZZZZ			15:14																										
ZZZZZZ			15:20																										
ZZZZZZ			15:25																										
ZZZZZZ			15:31																										
ZZZZZZ			15:37																										
ZZZZZZ			15:42																										
ZZZZZZ			15:48																										
ZZZZZZ			15:54																										
CCV 200-110334/38	1		16:00	X		X																							
CCB 200-110334/39	1		16:05	X		X																							
CCVL 200-110334/40	1		16:11	X		X																							
ZZZZZZ			16:17																										
ZZZZZZ			16:23																										

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/18/2016 09:54 End Date: 10/18/2016 18:05

Lab Sample Id	D/F	Type	Time	Analytes																										
				Cu	Se	Zn																								
ZZZZZZ			16:28																											
ZZZZZZ			16:34																											
MB 200-110239/1-A	1	T	16:40	X		X																								
LCS 200-110239/2-A	1	T	16:46	X		X																								
200-35680-13	1	T	16:51	X		X																								
ZZZZZZ			16:57																											
ZZZZZZ			17:03																											
ZZZZZZ			17:08																											
CCV 200-110334/51	1		17:14	X		X																								
CCB 200-110334/52	1		17:20	X		X																								
CCVL 200-110334/53	1		17:26	X		X																								
CCVL 200-110334/54			17:30																											
ZZZZZZ			17:36																											
ZZZZZZ			17:42																											
ZZZZZZ			17:48																											
CCV 200-110334/58			17:54																											
CCB 200-110334/59			17:59																											
CCVL 200-110334/60			18:05																											

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/19/2016 09:50 End Date: 10/19/2016 14:15

Lab Sample Id	D/F	Type	Time	Analytes
				Se
ITUNE 200-110361/1	1		09:50	
STD0 200-110361/2 IC	1		10:04	X
STD1 200-110361/3 IC	1		10:09	X
STD2 200-110361/4 IC	1		10:13	X
STD3 200-110361/5 IC	1		10:17	X
STD4 200-110361/6 IC	1		10:21	X
STD5 200-110361/7 IC	1		10:27	X
ICV 200-110361/8	1		10:33	X
ICVL 200-110361/9	1		10:38	X
ICBIS 200-110361/10	1		10:44	X
ICSA 200-110361/11	1		10:50	X
ICSAB 200-110361/12	1		10:56	X
CCV 200-110361/13	1		11:01	X
CCB 200-110361/14	1		11:07	X
ZZZZZZ			11:13	
ZZZZZZ			11:18	
ZZZZZZ			11:24	
ZZZZZZ			11:30	
ZZZZZZ			11:36	
ZZZZZZ			11:41	
MB 200-110239/1-A	1	T	11:47	X
LCS 200-110239/2-A	1	T	11:53	X
200-35680-13	1	T	11:58	X
ZZZZZZ			12:04	
CCV 200-110361/25	1		12:10	X
CCB 200-110361/26	1		12:16	X
CCVL 200-110361/27	1		12:21	X
ZZZZZZ			12:27	
ZZZZZZ			12:33	
ZZZZZZ			12:39	
ZZZZZZ			12:44	
ZZZZZZ			12:49	
CCV 200-110361/33			12:55	
CCB 200-110361/34			13:00	
CCVL 200-110361/35			13:06	
ZZZZZZ			13:11	
ZZZZZZ			13:17	
ZZZZZZ			13:23	
ZZZZZZ			13:29	
ZZZZZZ			13:34	
ZZZZZZ			13:40	
ZZZZZZ			13:46	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/19/2016 09:50 End Date: 10/19/2016 14:15

Lab Sample Id	D/F	Type	Time	Analytes
				Se
ZZZZZZ			13:52	
ZZZZZZ			13:57	
CCV 200-110361/45			14:03	
CCB 200-110361/46			14:09	
CCVL 200-110361/47			14:15	

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/25/2016 11:41 End Date: 10/25/2016 16:02

Lab Sample Id	D/F	Type	Time	Analytes																										
				Cu	Se	Zn																								
ITUNE 200-110547/1	1		11:41																											
STD0 200-110547/2 IC	1		12:59	X	X	X																								
STD1 200-110547/3 IC	1		13:05	X	X	X																								
STD2 200-110547/4 IC	1		13:11	X	X	X																								
STD3 200-110547/5 IC	1		13:16	X	X	X																								
STD4 200-110547/6 IC	1		13:22	X	X	X																								
STD5 200-110547/7 IC	1		13:28	X	X	X																								
ICV 200-110547/8	1		13:34	X	X	X																								
ICVL 200-110547/9	1		13:39	X	X	X																								
ICBIS 200-110547/10	1		13:45	X	X	X																								
ICSA 200-110547/11	1		13:51	X	X	X																								
ICSAB 200-110547/12	1		13:56	X	X	X																								
CCV 200-110547/13	1		14:02	X	X	X																								
CCB 200-110547/14	1		14:08	X	X	X																								
MB 200-110491/1-A	1	T	14:14	X	X	X																								
LCS 200-110491/2-A	1	T	14:19	X	X	X																								
200-35680-8	1	T	14:25	X	X	X																								
200-35680-8 SD	5	T	14:31	X	X	X																								
200-35680-8 PDS	1	T	14:36	X	X	X																								
200-35680-8 MS	1	T	14:42	X	X	X																								
200-35680-8 MSD	1	T	14:48	X	X	X																								
200-35680-9	1	T	14:54	X	X	X																								
200-35680-10	1	T	14:59	X	X	X																								
200-35680-11	1	T	15:05	X	X	X																								
CCV 200-110547/25	1		15:11	X	X	X																								
CCB 200-110547/26	1		15:16	X	X	X																								
CCVL 200-110547/27	1		15:22	X	X	X																								
200-35680-12	1	T	15:28	X	X	X																								
ZZZZZZ			15:34																											
ZZZZZZ			15:39																											
ZZZZZZ			15:45																											
CCV 200-110547/32	1		15:51	X	X	X																								
CCB 200-110547/33	1		15:57	X	X	X																								
CCVL 200-110547/34	1		16:02	X	X	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: MEPCV3 II Analysis Method: 7470A

Start Date: 10/17/2016 16:09 End Date: 10/17/2016 16:39

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
IC 200-110242/1-A	1		16:09	X																								
IC 200-110242/2-A	1		16:11	X																								
IC 200-110242/3-A	1		16:12	X																								
IC 200-110242/4-A	1		16:14	X																								
IC 200-110242/5-A	1		16:16	X																								
IC 200-110242/6-A	1		16:17	X																								
ICV 200-110242/7-A	1		16:19	X																								
ICB 200-110242/8-A	1		16:20	X																								
CCV 200-110242/9-A	1		16:22	X																								
CCB 200-110242/10-A	1		16:24	X																								
MB 200-110242/11-A	1	T	16:26	X																								
LCS 200-110242/12-A	1	T	16:27	X																								
200-35680-13	1	T	16:29	X																								
200-35680-13 MS	1	T	16:30	X																								
200-35680-13 MSD	1	T	16:32	X																								
ZZZZZZ			16:34																									
ZZZZZZ			16:35																									
CCV 200-110242/9-A	1		16:37	X																								
CCB 200-110242/10-A	1		16:39	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: MEPCV3 II Analysis Method: 7471B

Start Date: 10/17/2016 14:14 End Date: 10/17/2016 16:07

Lab Sample Id	D/F	Type	Time	Analytes
				Hg
IC 200-110231/1-A	1		14:14	X
IC 200-110231/2-A	1		14:15	X
IC 200-110231/3-A	1		14:17	X
IC 200-110231/4-A	1		14:18	X
IC 200-110231/5-A	1		14:20	X
IC 200-110231/6-A	1		14:22	X
ICV 200-110231/7-A	1		14:23	X
ICB 200-110231/8-A	1		14:25	X
CCV 200-110231/9-A	1		14:27	X
CCB 200-110231/10-A	1		14:29	X
MB 200-110231/11-A	1	T	14:30	X
LCS 200-110231/12-A	1	T	14:32	X
200-35680-1	1	T	14:33	X
200-35680-2	1	T	14:35	X
200-35680-3	1	T	14:37	X
200-35680-4	1	T	14:39	X
200-35680-5	1	T	14:40	X
200-35680-6	1	T	14:42	X
200-35680-7	1	T	14:44	X
200-35680-14	1	T	14:45	X
CCV 200-110231/9-A	1		14:47	X
CCB 200-110231/10-A	1		14:49	X
200-35680-14 MS	1	T	14:51	X
200-35680-14 MSD	1	T	14:52	X
ZZZZZZ			14:54	
ZZZZZZ			14:56	
ZZZZZZ			14:58	
ZZZZZZ			14:59	
ZZZZZZ			15:01	
ZZZZZZ			15:03	
ZZZZZZ			15:04	
ZZZZZZ			15:06	
CCV 200-110231/9-A	1		15:08	X
CCB 200-110231/10-A	1		15:09	X
ZZZZZZ			15:11	
ZZZZZZ			15:13	
ZZZZZZ			15:14	
ZZZZZZ			15:16	
ZZZZZZ			15:18	
ZZZZZZ			15:20	
ZZZZZZ			15:21	
ZZZZZZ			15:23	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: MEPCV3 II Analysis Method: 7471B

Start Date: 10/17/2016 14:14 End Date: 10/17/2016 16:07

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
ZZZZZZ			15:25																									
ZZZZZZ			15:26																									
CCV 200-110231/9-A			15:28																									
CCB 200-110231/10-A			15:29																									
ZZZZZZ			15:31																									
ZZZZZZ			15:33																									
ZZZZZZ			15:35																									
ZZZZZZ			15:36																									
ZZZZZZ			15:38																									
ZZZZZZ			15:40																									
ZZZZZZ			15:42																									
ZZZZZZ			15:43																									
CCV 200-110231/9-A			15:45																									
CCB 200-110231/10-A			15:47																									
ZZZZZZ			15:48																									
ZZZZZZ			15:51																									
ZZZZZZ			15:52																									
ZZZZZZ			15:54																									
ZZZZZZ			15:56																									
ZZZZZZ			15:57																									
ZZZZZZ			15:59																									
ZZZZZZ			16:01																									
ZZZZZZ			16:02																									
ZZZZZZ			16:04																									
CCV 200-110231/9-A			16:06																									
CCB 200-110231/10-A			16:07																									

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: MEPCV3 II Analysis Method: 7471B

Start Date: 10/26/2016 09:53 End Date: 10/26/2016 11:12

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
IC 200-110530/1-A	1		09:53	X																								
IC 200-110530/2-A	1		09:54	X																								
IC 200-110530/3-A	1		09:56	X																								
IC 200-110530/4-A	1		09:58	X																								
IC 200-110530/5-A	1		09:59	X																								
IC 200-110530/6-A	1		10:01	X																								
ICV 200-110530/7-A	1		10:03	X																								
ICB 200-110530/8-A	1		10:04	X																								
CCV 200-110530/9-A	1		10:06	X																								
CCB 200-110530/10-A	1		10:08	X																								
MB 200-110530/11-A	1	T	10:09	X																								
LCS 200-110530/12-A	1	T	10:11	X																								
200-35680-8	1	T	10:12	X																								
200-35680-8 MS	1	T	10:14	X																								
200-35680-8 MSD	1	T	10:16	X																								
200-35680-9	1	T	10:17	X																								
200-35680-10	1	T	10:19	X																								
200-35680-11	1	T	10:21	X																								
200-35680-12	1	T	10:22	X																								
ZZZZZZ			10:24																									
CCV 200-110530/9-A	1		10:25	X																								
CCB 200-110530/10-A	1		10:27	X																								
ZZZZZZ			10:29																									
ZZZZZZ			10:30																									
ZZZZZZ			10:32																									
ZZZZZZ			10:34																									
ZZZZZZ			10:35																									
ZZZZZZ			10:37																									
ZZZZZZ			10:39																									
ZZZZZZ			10:40																									
ZZZZZZ			10:42																									
ZZZZZZ			10:43																									
CCV 200-110530/9-A			10:45																									
CCB 200-110530/10-A			10:47																									
ZZZZZZ			10:49																									
ZZZZZZ			10:50																									
ZZZZZZ			10:52																									
CCV 200-110530/9-A			10:54																									
CCB 200-110530/10-A			10:55																									
ZZZZZZ			11:09																									
CCV 200-110530/9-A			11:11																									
CCB 200-110530/10-A			11:12																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: MEPCV3 II Analysis Method: 7471B

Start Date: 10/26/2016 09:53 End Date: 10/26/2016 11:12

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								

Prep Types:
T = Total/NA

FORM XIII-IN

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICP-MS Instrument ID: METICPMS2 Analysis Date: 10/14/16

Lab ID: ITUNE 200-110192/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	8.9722	0.75	3.078	
Mg-24	23.965	0.72	2.753	
Mg-25	24.9758	0.69	2.362	
Mg-26	25.9726	0.71	3.341	
Al-27	26.9815	0.71	4.131	
V-51	50.964	0.71	0.642	
Co-59	58.9432	0.72	0.442	
In-113	112.9041	0.71	2.312	
In-115	114.9039	0.73	0.700	
Ba-137	136.8858	0.74	0.890	
Ce-140	139.8854	0.74	0.688	
Pb-206	205.9545	0.73	1.928	
Pb-207	206.9559	0.74	1.321	
Pb-208	207.9566	0.75	1.446	
Th-232	232.0281	0.74	0.740	
U-238	238.0408	0.74	0.645	

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICP-MS Instrument ID: METICPMS2 Analysis Date: 10/18/16

Lab ID: ITUNE 200-110334/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	8.9922	0.73	1.079	
Mg-24	23.975	0.72	1.468	
Mg-25	24.9858	0.69	1.872	
Mg-26	25.9926	0.71	3.116	
Al-27	26.9915	0.69	0.406	
V-51	50.994	0.68	0.808	
Co-59	58.9532	0.69	0.472	
In-113	112.9441	0.68	1.952	
In-115	114.9239	0.69	0.378	
Ba-137	136.9158	0.68	1.055	
Ce-140	139.9154	0.71	0.577	
Pb-206	205.9845	0.72	1.154	
Pb-207	206.9859	0.72	1.327	
Pb-208	207.9866	0.72	1.288	
Th-232	232.0681	0.72	0.416	
U-238	238.0908	0.71	0.167	

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICP-MS Instrument ID: METICPMS2 Analysis Date: 10/19/16

Lab ID: ITUNE 200-110361/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	8.9922	0.73	2.508	
Mg-24	23.975	0.71	1.298	
Mg-25	24.9858	0.68	2.679	
Mg-26	25.9826	0.69	2.272	
Al-27	26.9915	0.68	1.069	
V-51	50.994	0.69	1.570	
Co-59	58.9532	0.71	1.213	
In-113	112.9141	0.71	2.138	
In-115	114.9139	0.69	1.014	
Ba-137	136.9158	0.72	0.790	
Ce-140	139.9054	0.72	0.881	
Pb-206	205.9745	0.72	2.882	
Pb-207	206.9859	0.68	1.441	
Pb-208	207.9866	0.73	0.824	
Th-232	232.0581	0.73	0.554	
U-238	238.0708	0.72	0.726	

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICP-MS Instrument ID: METICPMS2 Analysis Date: 10/25/16

Lab ID: ITUNE 200-110547/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	8.9722	0.77	1.973	
Mg-24	23.965	0.73	1.447	
Mg-25	24.9658	0.73	1.217	
Mg-26	25.9726	0.71	2.371	
Al-27	26.9815	0.71	0.784	
V-51	50.964	0.71	0.442	
Co-59	58.9332	0.72	0.706	
In-113	112.8941	0.73	1.780	
In-115	114.8739	0.73	0.267	
Ba-137	136.8658	0.75	1.474	
Ce-140	139.8754	0.77	0.642	
Pb-206	205.9245	0.74	1.881	
Pb-207	206.9459	0.74	1.087	
Pb-208	207.9466	0.78	1.416	
Th-232	231.9981	0.75	0.967	
U-238	238.0208	0.75	0.451	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/14/2016 End Date: 10/14/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
STD0 200-110192/2 I	10:32	100		100		100		100		100	
STD1 200-110192/3 I	10:38	102		103		101		101		101	
STD2 200-110192/4 I	10:44	95		95		96		95		96	
STD3 200-110192/5 I	10:49	95		94		95		94		98	
STD4 200-110192/6 I	10:55	95		94		94		93		97	
STD5 200-110192/7 I	11:01	95		97		95		95		101	
ICV 200-110192/8	11:07	88		89		92		92		94	
ICVL 200-110192/9	11:12	94		96		97		97		97	
ICBIS 200-110192/10	11:18	97		98		99		99		98	
ICSA 200-110192/11	11:24	88		97		97		97		102	
ICSAB 200-110192/12	11:29	85		97		98		99		106	
CCV 200-110192/13	11:35	82		87		91		92		95	
CCB 200-110192/14	11:41	85		89		94		94		95	
MB 200-110153/1-A	11:47	93		95		98		97		99	
200-35680-1	11:58	84		125		373		94		136	
200-35680-2	12:04	87		118		271		100		127	
200-35680-3	12:09	106		208		655		122		189	
200-35680-4	12:15	103		161		394		120		154	
200-35680-5	12:21	102		180		535		123		172	
200-35680-6	12:27	102		157		371		123		152	
200-35680-6 SD	12:32	102		139		183		128		130	
200-35680-6 PDS	12:38	96		148		346		116		145	
CCV 200-110192/25	12:44	81		99		99		100		100	
CCB 200-110192/26	12:50	89		104		105		106		102	
CCVL 200-110192/27	12:55	88		106		105		105		102	
200-35680-6 MS	13:01	96		147		369		111		142	
200-35680-6 MSD	13:07	95		144		326		114		140	
CCV 200-110192/38	13:58	82		101		99		99		97	
CCB 200-110192/39	14:04	92		109		104		104		99	
CCVL 200-110192/40	14:09	94		112		107		106		101	
LCS 200-110153/2-A	14:15	90		105		101		101		99	
CCV 200-110192/48	14:55	81		95		92		92		90	
CCB 200-110192/49	15:01	87		102		97		97		92	
CCVL 200-110192/50	15:07	89		105		98		98		94	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/14/2016 End Date: 10/14/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
STD0 200-110192/2 I	10:32	100									
STD1 200-110192/3 I	10:38	100									
STD2 200-110192/4 I	10:44	96									
STD3 200-110192/5 I	10:49	95									
STD4 200-110192/6 I	10:55	97									
STD5 200-110192/7 I	11:01	96									
ICV 200-110192/8	11:07	93									
ICVL 200-110192/9	11:12	97									
ICBIS 200-110192/10	11:18	95									
ICSA 200-110192/11	11:24	96									
ICSAB 200-110192/12	11:29	99									
CCV 200-110192/13	11:35	93									
CCB 200-110192/14	11:41	95									
MB 200-110153/1-A	11:47	96									
200-35680-1	11:58	104									
200-35680-2	12:04	105									
200-35680-3	12:09	129									
200-35680-4	12:15	120									
200-35680-5	12:21	123									
200-35680-6	12:27	119									
200-35680-6 SD	12:32	117									
200-35680-6 PDS	12:38	114									
CCV 200-110192/25	12:44	95									
CCB 200-110192/26	12:50	99									
CCVL 200-110192/27	12:55	98									
200-35680-6 MS	13:01	111									
200-35680-6 MSD	13:07	110									
CCV 200-110192/38	13:58	91									
CCB 200-110192/39	14:04	95									
CCVL 200-110192/40	14:09	97									
LCS 200-110153/2-A	14:15	92									
CCV 200-110192/48	14:55	85									
CCB 200-110192/49	15:01	89									
CCVL 200-110192/50	15:07	90									

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/18/2016 End Date: 10/18/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
STD0 200-110334/2 I	12:40	100		100		100		100		100	
STD1 200-110334/3 I	12:44	105		105		104		103		102	
STD2 200-110334/4 I	12:47	98		98		99		98		98	
STD3 200-110334/5 I	12:50	98		99		97		96		98	
STD4 200-110334/6 I	12:54	102		104		100		99		102	
STD5 200-110334/7 I	12:57	101		106		99		101		103	
ICV 200-110334/8	13:02	93		98		99		98		98	
ICVL 200-110334/9	13:08	96		103		104		103		100	
ICBIS 200-110334/10	13:19	101		108		109		107		103	
ICSA 200-110334/11	13:25	96		111		108		108		108	
ICSAB 200-110334/12	13:31	90		111		108		109		111	
CCV 200-110334/13	13:37	86		97		101		100		101	
CCB 200-110334/14	13:42	88		100		103		102		100	
MB 200-110229/1-A	13:48	97		106		109		107		104	
LCS 200-110229/2-A	13:54	91		101		102		101		101	
200-35680-7	13:59	104		147		293		120		136	
200-35680-14	14:05	106		161		321		129		145	
CCV 200-110334/25	14:45	89		110		113		109		105	
CCB 200-110334/26	14:51	94		117		116		114		106	
CCVL 200-110334/27	14:57	97		119		119		116		107	
CCV 200-110334/38	16:00	85		106		104		103		97	
CCB 200-110334/39	16:05	91		114		109		107		99	
CCVL 200-110334/40	16:11	93		116		111		107		99	
MB 200-110239/1-A	16:40	95		127		118		112		105	
LCS 200-110239/2-A	16:46	86		109		102		99		95	
200-35680-13	16:51	92		118		108		105		97	
CCV 200-110334/51	17:14	83		102		95		92		88	
CCB 200-110334/52	17:20	90		107		100		96		90	
CCVL 200-110334/53	17:26	91		110		101		98		91	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/18/2016 End Date: 10/18/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
STD0 200-110334/2 I	12:40	100									
STD1 200-110334/3 I	12:44	100									
STD2 200-110334/4 I	12:47	97									
STD3 200-110334/5 I	12:50	96									
STD4 200-110334/6 I	12:54	99									
STD5 200-110334/7 I	12:57	98									
ICV 200-110334/8	13:02	97									
ICVL 200-110334/9	13:08	98									
ICBIS 200-110334/10	13:19	101									
ICSA 200-110334/11	13:25	102									
ICSAB 200-110334/12	13:31	104									
CCV 200-110334/13	13:37	99									
CCB 200-110334/14	13:42	99									
MB 200-110229/1-A	13:48	102									
LCS 200-110229/2-A	13:54	98									
200-35680-7	13:59	115									
200-35680-14	14:05	122									
CCV 200-110334/25	14:45	99									
CCB 200-110334/26	14:51	102									
CCVL 200-110334/27	14:57	104									
CCV 200-110334/38	16:00	92									
CCB 200-110334/39	16:05	96									
CCVL 200-110334/40	16:11	94									
MB 200-110239/1-A	16:40	99									
LCS 200-110239/2-A	16:46	91									
200-35680-13	16:51	94									
CCV 200-110334/51	17:14	86									
CCB 200-110334/52	17:20	89									
CCVL 200-110334/53	17:26	90									

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/19/2016 End Date: 10/19/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
STD0 200-110361/2 I	10:04	100		100		100		100		100	
STD1 200-110361/3 I	10:09	97		99		100		98		98	
STD2 200-110361/4 I	10:13	90		91		93		91		92	
STD3 200-110361/5 I	10:17	88		85		89		88		90	
STD4 200-110361/6 I	10:21	85		81		84		83		86	
STD5 200-110361/7 I	10:27	81		76		80		80		83	
ICV 200-110361/8	10:33	75		72		79		78		79	
ICVL 200-110361/9	10:38	77		73		79		78		79	
ICBIS 200-110361/10	10:44	76		72		79		79		78	
ICSA 200-110361/11	10:50	75		79		84		84		87	
ICSAB 200-110361/12	10:56	68		74		80		82		86	
CCV 200-110361/13	11:01	61		61		71		73		75	
CCB 200-110361/14	11:07	66		64		73		75		75	
MB 200-110239/1-A	11:47	71		81		90		87		83	
LCS 200-110239/2-A	11:53	67		72		79		79		77	
200-35680-13	11:58	71		75		81		81		77	
CCV 200-110361/25	12:10	64		65		72		71		71	
CCB 200-110361/26	12:16	68		68		75		75		73	
CCVL 200-110361/27	12:21	68		71		77		76		74	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/19/2016 End Date: 10/19/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
STD0 200-110361/2 I	10:04	100									
STD1 200-110361/3 I	10:09	99									
STD2 200-110361/4 I	10:13	93									
STD3 200-110361/5 I	10:17	90									
STD4 200-110361/6 I	10:21	87									
STD5 200-110361/7 I	10:27	84									
ICV 200-110361/8	10:33	81									
ICVL 200-110361/9	10:38	80									
ICBIS 200-110361/10	10:44	81									
ICSA 200-110361/11	10:50	86									
ICSAB 200-110361/12	10:56	84									
CCV 200-110361/13	11:01	78									
CCB 200-110361/14	11:07	79									
MB 200-110239/1-A	11:47	84									
LCS 200-110239/2-A	11:53	78									
200-35680-13	11:58	80									
CCV 200-110361/25	12:10	74									
CCB 200-110361/26	12:16	76									
CCVL 200-110361/27	12:21	78									

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/25/2016 End Date: 10/25/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
STD0 200-110547/2 I	12:59	100		100		100		100		100	
STD1 200-110547/3 I	13:05	104		104		103		102		101	
STD2 200-110547/4 I	13:11	101		101		101		101		99	
STD3 200-110547/5 I	13:16	102		102		102		101		100	
STD4 200-110547/6 I	13:22	107		107		102		102		101	
STD5 200-110547/7 I	13:28	106		107		101		103		102	
ICV 200-110547/8	13:34	98		98		98		97		96	
ICVL 200-110547/9	13:39	102		99		102		100		97	
ICBIS 200-110547/10	13:45	108		103		105		103		99	
ICSA 200-110547/11	13:51	111		120		113		113		111	
ICSAB 200-110547/12	13:56	103		112		110		110		111	
CCV 200-110547/13	14:02	91		92		95		95		95	
CCB 200-110547/14	14:08	100		95		98		97		97	
MB 200-110491/1-A	14:14	103		98		102		100		97	
LCS 200-110491/2-A	14:19	103		98		102		99		98	
200-35680-8	14:25	116		146		307		119		134	
200-35680-8 SD	14:31	111		128		164		121		120	
200-35680-8 PDS	14:36	112		148		311		121		136	
200-35680-8 MS	14:42	112		153		319		123		139	
200-35680-8 MSD	14:48	111		151		309		124		139	
200-35680-9	14:54	117		155		310		126		138	
200-35680-10	14:59	113		149		272		124		133	
200-35680-11	15:05	115		172		348		128		143	
CCV 200-110547/25	15:11	93		105		107		104		102	
CCB 200-110547/26	15:16	102		107		111		107		103	
CCVL 200-110547/27	15:22	101		107		111		107		102	
200-35680-12	15:28	120		201		452		127		156	
CCV 200-110547/32	15:51	98		109		110		108		102	
CCB 200-110547/33	15:57	102		109		112		109		104	
CCVL 200-110547/34	16:02	104		112		115		111		103	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/25/2016 End Date: 10/25/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
STD0 200-110547/2 I	12:59	100									
STD1 200-110547/3 I	13:05	102									
STD2 200-110547/4 I	13:11	100									
STD3 200-110547/5 I	13:16	100									
STD4 200-110547/6 I	13:22	98									
STD5 200-110547/7 I	13:28	100									
ICV 200-110547/8	13:34	98									
ICVL 200-110547/9	13:39	98									
ICBIS 200-110547/10	13:45	100									
ICSA 200-110547/11	13:51	106									
ICSAB 200-110547/12	13:56	107									
CCV 200-110547/13	14:02	98									
CCB 200-110547/14	14:08	98									
MB 200-110491/1-A	14:14	99									
LCS 200-110491/2-A	14:19	98									
200-35680-8	14:25	117									
200-35680-8 SD	14:31	112									
200-35680-8 PDS	14:36	117									
200-35680-8 MS	14:42	118									
200-35680-8 MSD	14:48	118									
200-35680-9	14:54	120									
200-35680-10	14:59	117									
200-35680-11	15:05	121									
CCV 200-110547/25	15:11	99									
CCB 200-110547/26	15:16	100									
CCVL 200-110547/27	15:22	101									
200-35680-12	15:28	122									
CCV 200-110547/32	15:51	99									
CCB 200-110547/33	15:57	101									
CCVL 200-110547/34	16:02	100									

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110153 Batch Start Date: 10/13/16 13:50 Batch Analyst: Kirk, Matthew D

Batch Method: 3050B Batch End Date: 10/13/16 17:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	CalcMsg	InitialAmount	FinalAmount	ME6020CALi_A 00022	ME6020CALi_B 00019	
MB 200-110153/1		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL			
LCS 200-110153/2		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL	1 mL	1 mL	
200-35680-A-1	PE1016_P1SCD-06-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.47 g	100.00 mL			
200-35680-A-2	PE1016_P1SCD-06-B-0008IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.13 g	100.00 mL			
200-35680-A-3	PE1016_P1SCD-06-A-0613IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.41 g	100.00 mL			
200-35680-A-4	PE1016_P1SCD-07-A-0008IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.20 g	100.00 mL			
200-35680-A-5	PE1016_P1SCD-07-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.06 g	100.00 mL			
200-35680-A-6	PE1016_P1SCD-08-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.16 g	100.00 mL			
200-35680-A-6 MS	PE1016_P1SCD-08-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.38 g	100.00 mL	1 mL	1 mL	
200-35680-A-6 MSD	PE1016_P1SCD-08-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.06 g	100.00 mL	1 mL	1 mL	

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110153 Batch Start Date: 10/13/16 13:50 Batch Analyst: Kirk, Matthew D

Batch Method: 3050B Batch End Date: 10/13/16 17:15

Batch Notes	
Balance ID	L92017
First End time	1715
Hydrogen Peroxide ID	975367
Lot # of hydrochloric acid	933665
Lot # of Nitric Acid	1:1 978119, Conc.974279
Hot Block ID	B5
Nominal Amount Used	1.0g g
Oven, Bath or Block Temperature 1	93 Degrees C
Pipette ID	HJ17902
Analyst ID - Reagent Drop Witness	MJZ
Perform Calculation (0=No, 1=Yes)	0
First Start time	1425
Thermometer ID	73, CF=-2
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	95 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110229 Batch Start Date: 10/17/16 10:03 Batch Analyst: Kirk, Matthew D

Batch Method: 3050B Batch End Date: 10/17/16 14:25

Lab Sample ID	Client Sample ID	Method Chain	Basis	CalcMsg	InitialAmount	FinalAmount	ME6020CALi_A 00022	ME6020CALi_B 00019	
MB 200-110229/1		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL			
LCS 200-110229/2		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL	1 mL	1 mL	
200-35680-A-7	PE1016_P1SCD-08-A-0006IN-D	3050B, 6020A	T	CALC NOT SET TO RUN	1.14 g	100.00 mL			
200-35680-A-14	PE1016_P1SCD-08-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.05 g	100.00 mL			

Batch Notes	
Balance ID	L92017
First End time	1425
Hydrogen Peroxide ID	975367
Lot # of hydrochloric acid	933665
Lot # of Nitric Acid	1:1 978119 Conc. 974279
Hot Block ID	B6
Nominal Amount Used	1.0g g
Oven, Bath or Block Temperature 1	94 Degrees C
Pipette ID	HJ17902
Analyst ID - Reagent Drop Witness	ERJ
Perform Calculation (0=No, 1=Yes)	0
First Start time	1200
Thermometer ID	97, CF=-1
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	95 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110239 Batch Start Date: 10/17/16 12:26 Batch Analyst: Kirk, Matthew D

Batch Method: 3010A Batch End Date: 10/17/16 15:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	ME6020CALi_A 00022	ME6020CALi_B 00019	
MB 200-110239/1		3010A, 6020A			50.00 mL	50.00 mL			
LCS 200-110239/2		3010A, 6020A			50.00 mL	50.00 mL	0.5 mL	0.5 mL	
200-35680-A-13	PE1016_P1SCD-BLK -1-101016	3010A, 6020A	T	<2	50.00 mL	50.00 mL			

Batch Notes	
First End time	1530
Lot # of hydrochloric acid	1:1 933665
Lot # of Nitric Acid	974279
Hot Block ID	B5
Oven, Bath or Block Temperature 1	93 Degrees C
pH Paper ID	HC682547
Pipette ID	129654
Analyst ID - Spike Witness Analyst	JWM
First Start time	1230
Thermometer ID	73, CF=-2
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	95 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110491 Batch Start Date: 10/24/16 14:26 Batch Analyst: Kirk, Matthew D

Batch Method: 3050B Batch End Date: 10/24/16 18:05

Lab Sample ID	Client Sample ID	Method Chain	Basis	CalcMsg	InitialAmount	FinalAmount	ME6020CALi_A 00022	ME6020CALi_B 00019	
MB 200-110491/1		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL			
LCS 200-110491/2		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL	1 mL	1 mL	
200-35680-A-8	PE1016_P1SCD-09-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.18 g	100.00 mL			
200-35680-A-8 MS	PE1016_P1SCD-09-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.24 g	100.00 mL	1 mL	1 mL	
200-35680-A-8 MSD	PE1016_P1SCD-09-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.16 g	100.00 mL	1 mL	1 mL	
200-35680-A-9	PE1016_P1SCD-10-A-0005IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.20 g	100.00 mL			
200-35680-A-10	PE1016_P1SCD-10-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.12 g	100.00 mL			
200-35680-A-11	PE1016_P1SCD-09-B-0003IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.30 g	100.00 mL			
200-35680-A-12	PE1016_P1SCD-09-B-0309IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.06 g	100.00 mL			

Batch Notes	
Balance ID	L92017
First End time	1805
Hydrogen Peroxide ID	984249
Lot # of hydrochloric acid	933665
Lot # of Nitric Acid	1:1 978119 Conc. 983882
Hot Block ID	B5
Nominal Amount Used	1.00g g
Oven, Bath or Block Temperature 1	95 Degrees C
Pipette ID	HJ17902
Analyst ID - Reagent Drop Witness	MJZ
Perform Calculation (0=No, 1=Yes)	0
First Start time	1500
Thermometer ID	73, CF=-2
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	97 Celsius

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110491 Batch Start Date: 10/24/16 14:26 Batch Analyst: Kirk, Matthew D

Batch Method: 3050B Batch End Date: 10/24/16 18:05

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110242 Batch Start Date: 10/17/16 12:52 Batch Analyst: Kirk, Matthew D

Batch Method: 7470A Batch End Date: 10/17/16 15:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	mehgccvw 01052	MEHGICVw 00085	
IC 200-110242/1	S01	7470A, 7470A			50.00 mL	50.00 mL			
IC 200-110242/2	S02	7470A, 7470A			50.00 mL	50.00 mL	0.1 mL		
IC 200-110242/3	S03	7470A, 7470A			50.00 mL	50.00 mL	0.25 mL		
IC 200-110242/4	S04	7470A, 7470A			50.00 mL	50.00 mL	0.5 mL		
IC 200-110242/5	S05	7470A, 7470A			50.00 mL	50.00 mL	2.5 mL		
IC 200-110242/6	S06	7470A, 7470A			50.00 mL	50.00 mL	5 mL		
ICV 200-110242/7	ICV	7470A, 7470A			50.00 mL	50.00 mL		5 mL	
ICB 200-110242/8	ICB	7470A, 7470A			50.00 mL	50.00 mL			
CCV 200-110242/9	CCV	7470A, 7470A			50.00 mL	50.00 mL	2.5 mL		
CCB 200-110242/10	CCB	7470A, 7470A			50.00 mL	50.00 mL			
MB 200-110242/11		7470A, 7470A			50.00 mL	50.00 mL			
LCS 200-110242/12		7470A, 7470A			50.00 mL	50.00 mL	1.25 mL		
200-35680-A-13	PE1016_P1SCD-BLK-1-101016	7470A, 7470A	T	<2	50.00 mL	50.00 mL			
200-35680-A-13 MS	PE1016_P1SCD-BLK-1-101016	7470A, 7470A	T	<2	50.00 mL	50.00 mL	1.25 mL		
200-35680-A-13 MSD	PE1016_P1SCD-BLK-1-101016	7470A, 7470A	T	<2	50.00 mL	50.00 mL	1.25 mL		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110242 Batch Start Date: 10/17/16 12:52 Batch Analyst: Kirk, Matthew D

Batch Method: 7470A Batch End Date: 10/17/16 15:15

Batch Notes	
Hydroxylamine Hydrochloride ID	981762
Batch Comment	LCS+ MS/MSD inadvertantly spiked with 1.25mL
Digestion End Time	1515
Digestion Start Time	1300
Sulfuric Acid Lot Number	921859
Lot # of hydrochloric acid	969548
Lot # of Nitric Acid	974279
Hot Block ID	B4
Potassium Persulfate ID	921392
Potassium Permanganate ID	971259
Oven, Bath or Block Temperature 1	93 Celsius
pH Paper ID	HC682547
Pipette ID	HJ17902
Stannous Chloride ID	978394
SOP Number	BR-ME-015 r16.3
Analyst ID - Spike Witness Analyst	KSH
Temperature	93
Thermometer ID	36, CF=-2
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	95 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110231 Batch Start Date: 10/17/16 10:05 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/17/16 13:10

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	mehgccvw 01052	MEHGICVw 00085		
IC 200-110231/1	S01	7471B, 7471B		100.00 mL	100.00 mL				
IC 200-110231/2	S02	7471B, 7471B		100.00 mL	100.00 mL	0.2 mL			
IC 200-110231/3	S03	7471B, 7471B		100.00 mL	100.00 mL	0.5 mL			
IC 200-110231/4	S04	7471B, 7471B		100.00 mL	100.00 mL	1 mL			
IC 200-110231/5	S05	7471B, 7471B		100.00 mL	100.00 mL	5 mL			
IC 200-110231/6	S06	7471B, 7471B		100.00 mL	100.00 mL	10 mL			
ICV 200-110231/7	ICV	7471B, 7471B		100.00 mL	100.00 mL		10 mL		
ICB 200-110231/8	ICB	7471B, 7471B		100.00 mL	100.00 mL				
CCV 200-110231/9	CCV	7471B, 7471B		100.00 mL	100.00 mL	5 mL			
CCB 200-110231/10	CCB	7471B, 7471B		100.00 mL	100.00 mL				
MB 200-110231/11		7471B, 7471B		0.50 g	100.00 mL				
LCS 200-110231/12		7471B, 7471B		0.50 g	100.00 mL	2.5 mL			
200-35680-A-1	PE1016_P1SCD-06-A-0006IN	7471B, 7471B	T	0.52 g	100.00 mL				
200-35680-A-2	PE1016_P1SCD-06-B-0008IN	7471B, 7471B	T	0.56 g	100.00 mL				
200-35680-A-3	PE1016_P1SCD-06-A-0613IN	7471B, 7471B	T	0.59 g	100.00 mL				
200-35680-A-4	PE1016_P1SCD-07-A-0008IN	7471B, 7471B	T	0.54 g	100.00 mL				
200-35680-A-5	PE1016_P1SCD-07-B-0006IN	7471B, 7471B	T	0.58 g	100.00 mL				
200-35680-A-6	PE1016_P1SCD-08-A-0006IN	7471B, 7471B	T	0.54 g	100.00 mL				
200-35680-A-7	PE1016_P1SCD-08-A-0006IN-D	7471B, 7471B	T	0.51 g	100.00 mL				
200-35680-A-14	PE1016_P1SCD-08-B-0006IN	7471B, 7471B	T	0.52 g	100.00 mL				
200-35680-A-14 MS	PE1016_P1SCD-08-B-0006IN	7471B, 7471B	T	0.53 g	100.00 mL	2.5 mL			
200-35680-A-14 MSD	PE1016_P1SCD-08-B-0006IN	7471B, 7471B	T	0.59 g	100.00 mL	2.5 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110231 Batch Start Date: 10/17/16 10:05 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/17/16 13:10

Batch Notes	
Hydroxylamine Hydrochloride ID	981762
Balance ID	L92017
Digestion End Time	1310
Digestion Start Time	1210
Lot # of hydrochloric acid	968481
Lot # of Nitric Acid	974279
Hot Block ID	B4\B1
Potassium Permanganate ID	971259
Nominal Amount Used	0.60g g
Oven, Bath or Block Temperature 1	94\95 Celsius
Pipette ID	HJ17902 and 129654
Stannous Chloride ID	978394
SOP Number	BR-ME-004 r15.1
Analyst ID - Spike Witness Analyst	ERJ
Thermometer ID	74\36 (CF=0\-2)
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	94\93 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110530 Batch Start Date: 10/25/16 11:41 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/25/16 13:40

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	mehgccvw 01053	MEHGICVw 00086		
IC 200-110530/1	S01	7471B, 7471B		100.00 mL	100.00 mL				
IC 200-110530/2	S02	7471B, 7471B		100.00 mL	100.00 mL	0.2 mL			
IC 200-110530/3	S03	7471B, 7471B		100.00 mL	100.00 mL	0.5 mL			
IC 200-110530/4	S04	7471B, 7471B		100.00 mL	100.00 mL	1 mL			
IC 200-110530/5	S05	7471B, 7471B		100.00 mL	100.00 mL	5 mL			
IC 200-110530/6	S06	7471B, 7471B		100.00 mL	100.00 mL	10 mL			
ICV 200-110530/7	ICV	7471B, 7471B		100.00 mL	100.00 mL		10 mL		
ICB 200-110530/8	ICB	7471B, 7471B		100.00 mL	100.00 mL				
CCV 200-110530/9	CCV	7471B, 7471B		100.00 mL	100.00 mL	5 mL			
CCB 200-110530/10	CCB	7471B, 7471B		100.00 mL	100.00 mL				
MB 200-110530/11		7471B, 7471B		0.50 g	100.00 mL				
LCS 200-110530/12		7471B, 7471B		0.50 g	100.00 mL	2.5 mL			
200-35680-A-8	PE1016_P1SCD-09-A-0006IN	7471B, 7471B	T	0.54 g	100.00 mL				
200-35680-A-8 MS	PE1016_P1SCD-09-A-0006IN	7471B, 7471B	T	0.52 g	100.00 mL	2.5 mL			
200-35680-A-8 MSD	PE1016_P1SCD-09-A-0006IN	7471B, 7471B	T	0.54 g	100.00 mL	2.5 mL			
200-35680-A-9	PE1016_P1SCD-10-A-0005IN	7471B, 7471B	T	0.52 g	100.00 mL				
200-35680-A-10	PE1016_P1SCD-10-B-0006IN	7471B, 7471B	T	0.56 g	100.00 mL				
200-35680-A-11	PE1016_P1SCD-09-B-0003IN	7471B, 7471B	T	0.54 g	100.00 mL				
200-35680-A-12	PE1016_P1SCD-09-B-0309IN	7471B, 7471B	T	0.57 g	100.00 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110530 Batch Start Date: 10/25/16 11:41 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/25/16 13:40

Batch Notes	
Hydroxylamine Hydrochloride ID	981762
Balance ID	L92017
Digestion End Time	1340
Digestion Start Time	1230
Lot # of hydrochloric acid	968479
Lot # of Nitric Acid	983882
Hot Block ID	B4 and B1
Potassium Permanganate ID	971259
Nominal Amount Used	0.6g g
Oven, Bath or Block Temperature 1	93 and 94 Celsius
Pipette ID	HJ17902 and 129654
Stannous Chloride ID	978394
SOP Number	BR-ME-004 r.15.1
Analyst ID - Spike Witness Analyst	KNK
Thermometer ID	36 and 74 (CF=-2 and 0)
Digestion Tube/Cup ID	246757-9884 and 252941-0026
Uncorrected Temperature	95 and 94 Celsius

Basis	Basis Description
T	Total/NA

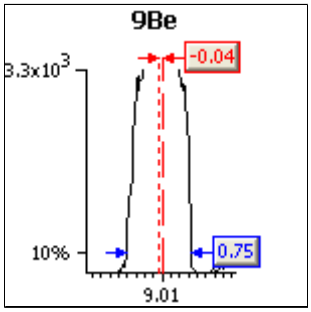
The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

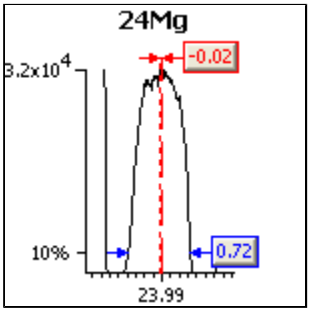
Performance Report

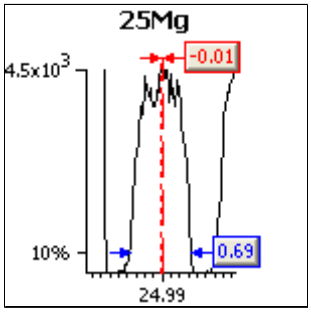
Sample details
Sample name : ITUNE
Acquired at : 10/14/2016 09:32:18 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

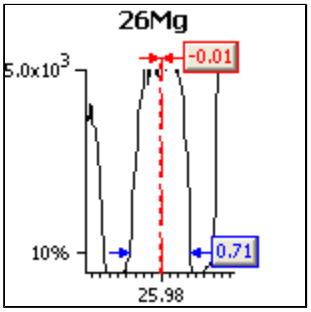
Mass Calibration verification

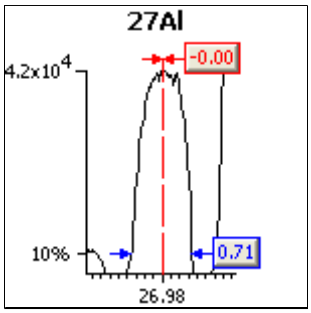
Acquisition parameters
Sweeps : 20
Dwell : 1.0 mSecs
Point spacing : 0.01 amu
Peak width measured at 10% of the peak maximum

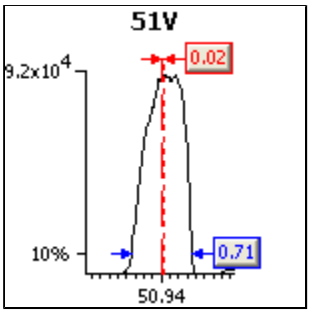


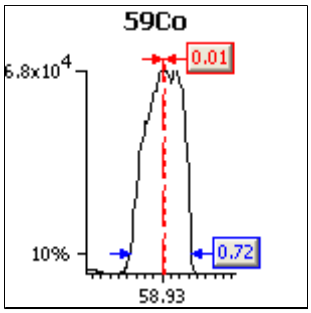


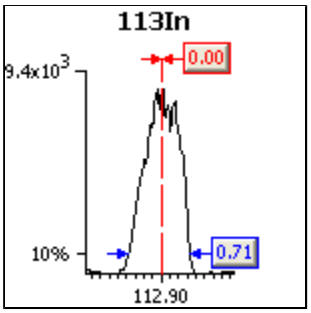


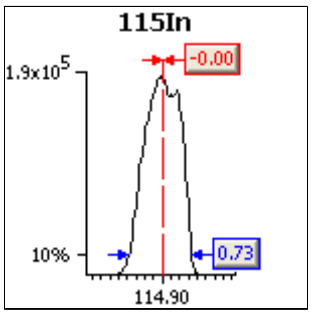


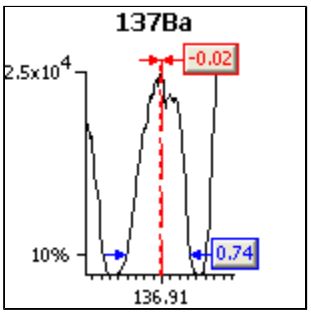


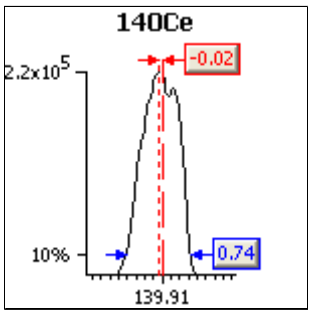


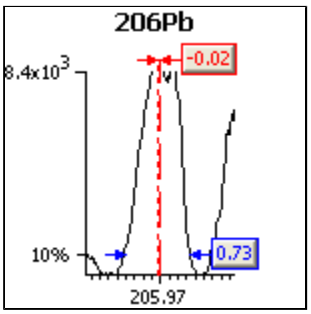


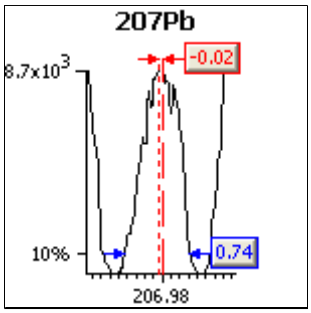


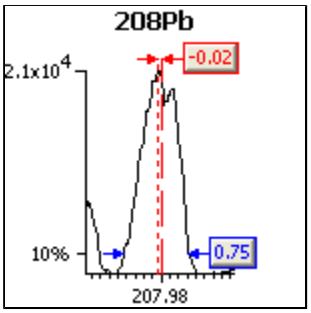


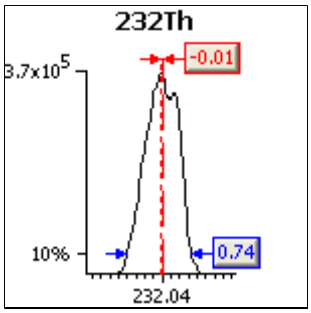


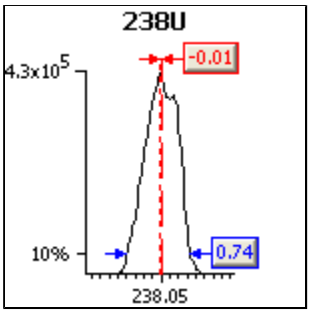












Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
9Be	0.90	0.65	0.10	0.75	-0.04
24Mg	0.90	0.65	0.10	0.72	-0.02

25Mg	0.90	0.65	0.10	0.69	-0.01
26Mg	0.90	0.65	0.10	0.71	-0.01
27Al	0.90	0.65	0.10	0.71	-0.00
51V	0.90	0.65	0.10	0.71	0.02
59Co	0.90	0.65	0.10	0.72	0.01
113In	0.90	0.65	0.10	0.71	0.00
115In	0.90	0.65	0.10	0.73	-0.00
137Ba	0.90	0.65	0.10	0.74	-0.02
140Ce	0.90	0.65	0.10	0.74	-0.02
206Pb	0.90	0.65	0.10	0.73	-0.02
207Pb	0.90	0.65	0.10	0.74	-0.02
208Pb	0.90	0.65	0.10	0.75	-0.02
232Th	0.90	0.65	0.10	0.74	-0.01
238U	0.90	0.65	0.10	0.74	-0.01

Sample details
Sample name : ITUNE
Acquired at : 10/14/2016 09:32:18 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Tune conditions

Major	
Extraction	-118
Lens 1	-4.1
Focus	18.0
D1	-43.9
Pole Bias	1.0
Hexapole Bias	-3.0
Nebuliser	0.76
Sampling Depth	147

Minor	
Lens 2	-39.2
Lens 3	-177.3
Forward power	1404
Horizontal	70
Vertical	522
D2	-158
DA	-40.8
Cool	13.0
Auxiliary	0.90

Global	
Standard resolution	135
High resolution	115
Analogue Detector	2353
PC Detector	1196

Add. Gases	
CCT1	0.00
CCT2	0.00

Sensitivity and stability results

Acquisition parameters
Sweeps : 50

Run	Time	8Bkg	9Be	24Mg	25Mg	26Mg	27Al	51V	59Co	113In
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Countrate	-	>100	>100	>100	>100	>100	>100	>100	>100
1	09:33:15 AM	0.300	3760.424	31748.210	4164.520	5356.861	41198.858	89576.071	68281.585	7997.919
2	09:33:49 AM	0.100	3760.424	31163.107	4252.542	5212.815	40310.690	89477.544	68426.176	8392.112
3	09:34:22 AM	0.200	3598.388	30666.187	4266.546	5114.785	39829.535	90871.053	68474.374	8149.992
4	09:34:56 AM	0.300	3656.401	29748.526	4108.506	5150.796	42538.216	89929.969	67827.738	8190.012
5	09:35:30 AM	0.000	3898.456	29898.794	4032.488	4884.716	38035.351	89574.060	68612.942	7903.874
x		0.180	3734.819	30644.965	4164.921	5143.994	40382.530	89885.739	68324.563	8126.782
σ		0.13	114.95	843.57	98.40	171.88	1668.35	577.16	301.92	187.90
%RSD		72.436	3.078	2.753	2.362	3.341	4.131	0.642	0.442	2.312

Run	Time	115In	137Ba	140Ce	156Ce O	206Pb	207Pb	208Pb	220Bkg	232Th
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	5.0%	5.0%	5.0%	-	5.0%	5.0%	5.0%	-	5.0%
	Countrate	>100	>100	>100	-	>100	>100	>100	-	>100
1	09:33:15 AM	189869.39	24690.275	221613.65	1450.063	9630.782	8604.220	20778.945	0.000	370848.46
2	09:33:49 AM	191044.70	24435.900	221254.93	1564.073	9332.612	8830.339	20788.957	0.000	369779.09
3	09:34:22 AM	190191.02	24429.891	223224.94	1400.059	9356.626	8802.324	20708.858	0.000	371445.54
4	09:34:56 AM	193221.58	24185.535	222742.55	1474.065	9394.647	8576.206	20466.559	0.000	373819.74
5	09:35:30 AM	191706.23	24159.498	225128.28	1636.080	9124.497	8670.255	20088.099	0.000	376677.00
x		191206.59	24380.220	222792.87	1504.868	9367.833	8696.669	20566.283	0.000	372513.97
σ		1337.49	216.98	1532.91	94.42	180.58	114.88	297.38	0.00	2758.21
%RSD		0.700	0.890	0.688	6.274	1.928	1.321	1.446	0.000	0.740

Run	Time	238U
Dwell (mSecs)		0.0
Limits	%RSD	5.0%
	Countrate	>100
1	09:33:15 AM	423667.24
2	09:33:49 AM	419801.24
3	09:34:22 AM	423708.26
4	09:34:56 AM	422586.31
5	09:35:30 AM	427413.08
x		423435.22
σ		2733.05
%RSD		0.645

Ratio results

Run	Time	156Ce O/140Ce
	Ratio limits	<0.0200
1	09:33:15 AM	0.007
2	09:33:49 AM	0.007

3	09:34:22 AM	0.006
4	09:34:56 AM	0.007
5	09:35:30 AM	0.007
x		0.0068
σ		0.00
%RSD		6.0058

Result : The performance report passed.

Experiment Details

Description	PlasmaLab Template BlankExperiment
Template Filename	C:\Program Files\Thermo Fisher\PlasmaLab\TEMPLATES\6020A.tet
Created By User	user
Analyte Database	Default.tea
Creation Timestamp	8/29/2003 01:55:15 PM
Last Edited By	INORG-User
Last Edit Timestamp	10/14/2016 10:28:42 AM
Instrument Detector	Simultaneous
Database Version	3.51
Acquisition Mode	Unknown

Numerical Results report key (text indicates meaning)

Blue text indicates that cell is a statistic.
Underlining indicates that a data warning flag is set.

Column headings	Result cells	Data warning flags
No flag	Internal Standard	I - Invalid calibration
Semi Quant	Excluded	T - Tripped
Standard Addition	QC Warning	F - Interference correction failed
Multi Element	QC Failure	M - Result over max
	Transient TRA only:	V - Valley integration failed
	Peak Not Found	D - Different method used
	Manually Edited	
	Merged Peak	

Setup

Survey Scan Setup

Sweeps	10
Dwell Time	600
Channels Per Mass	10
Acquisition Duration	13247

Main Run Setup

Main Run	Peak Jumping
Sweeps	20
Dwell Time	10000
Channels Per Mass	1
Acquisition Duration	18211
Channel Spacing	0.02

Survey Scan Regions

Start AMU	End AMU	Channels	Dwell ms	Resolution

4.59	11.41	68	600	Standard
22.59	27.41	48	600	Standard
28.59	29.41	8	600	Standard
30.59	31.41	8	600	Standard
32.59	33.41	8	600	Standard
38.59	39.41	8	600	Standard
42.59	79.41	368	600	Standard
80.59	245.50	1649	600	Standard

Peak Jump Regions

Analyte	Channels	Dwell ms	Resolution
6Li	1	5000	Standard
7Li	1	5000	Standard
9Be	1	20000	Standard
11B	1	10000	Standard
23Na	1	5000	Standard
25Mg	1	5000	Standard
26Mg	1	5000	Standard
27Al	1	10000	Standard
39K	1	5000	Standard
43Ca	1	10000	Standard
44Ca	1	5000	Standard
45Sc	1	5000	Standard
47Ti	1	10000	Standard
51V	1	10000	Standard
52Cr	1	10000	Standard
53Cl O	1	10000	Standard
55Mn	1	10000	Standard
56Fe	1	10000	Standard
59Co	1	10000	Standard
60Ni	1	10000	Standard
65Cu	1	10000	Standard
66Zn	1	10000	Standard
75As	1	50000	Standard
77Ar Cl	1	50000	Standard
82Se	1	100000	Standard
83Kr	1	100000	Standard
84Kr	1	10000	Standard
88Sr	1	10000	Standard
89Y	1	5000	Standard
98Mo	1	10000	Standard
106Cd	1	10000	Standard
107Ag	1	10000	Standard
108Mo O	1	10000	Standard
111Cd	1	10000	Standard
115In	1	5000	Standard
118Sn	1	10000	Standard
121Sb	1	10000	Standard
123Sb	1	100000	Standard
135Ba	1	10000	Standard

159Tb	1	5000	Standard
182W	1	10000	Standard
205Tl	1	10000	Standard
206Pb	1	10000	Standard
207Pb	1	10000	Standard
208Pb	1	10000	Standard
209Bi	1	5000	Standard
220Bkg	1	10000	Standard
232Th	1	10000	Standard
238U	1	10000	Standard

Calibration Technique

Use External Drift Correction - No
Calibrate by - Isotope

Symbol	Interference Correction	RSF	Calibration Method	Line Fit	Weighting	Forcing	Use for Semi-Quant	Max Error	Minimum Correlation
6Li	Yes	1.00	None				No		
7Li	Yes	1.00	None				No		
9Be	Yes	0.75	Fully-Quantified	Linear	Absolute SD	None	Yes		
11B	Yes	0.58	Fully-Quantified	Linear	Absolute SD	None	Yes		
23Na	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
25Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
26Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
27Al	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
39K	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
43Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
44Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
45Sc	Yes	1.00	None				No		
47Ti	Yes	0.99	None				No		
51V	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
52Cr	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
55Mn	Yes	0.95	Fully-Quantified	Linear	Absolute SD	None	Yes		
56Fe	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
59Co	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
60Ni	No	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
65Cu	Yes	0.90	Fully-Quantified	Linear	Absolute SD	None	Yes		
66Zn	Yes	0.38	Fully-Quantified	Linear	Absolute SD	None	Yes		
75As	Yes	0.07	Fully-Quantified	Linear	Absolute SD	None	Yes		
82Se	Yes	0.10	Fully-Quantified	Linear	Absolute SD	None	Yes		
83Kr	Yes	0.01	None				No		
84Kr	Yes	0.01	None				No		
88Sr	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
89Y	Yes	0.98	None				No		
98Mo	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
107Ag	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
106Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
111Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
115In	Yes	0.99	None				No		
118Sn	Yes	0.96	None				No		

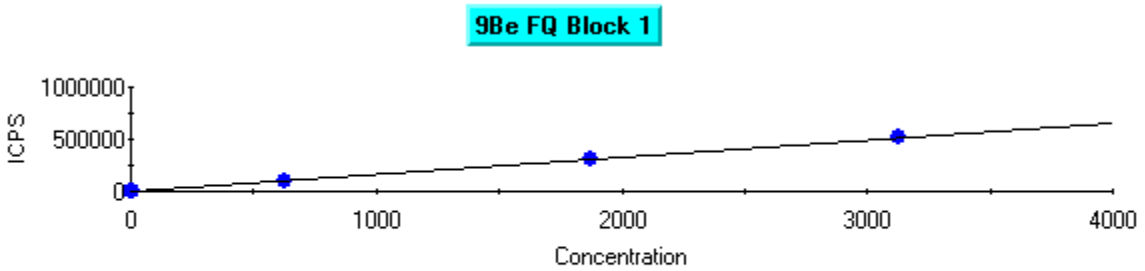
121Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
123Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
135Ba	Yes	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes
159Tb	Yes	0.99	None				No
182W	Yes	0.94	Fully-Quantified	Linear	Absolute SD	None	Yes
206Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
207Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
208Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	No
209Bi	Yes	0.92	None				No
232Th	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
238U	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
205Tl	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
220Bkg	Yes		Semi-Quantified				No
77Ar Cl	Yes		Semi-Quantified				No
53Cl O	Yes		Semi-Quantified				No
108Mo O	Yes		Semi-Quantified				No

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	STD0	Fully Quant Standard	1.000	0	1	2	144
2	STD1	Fully Quant Standard	1.000	0	1	3	144
3	STD2	Fully Quant Standard	1.000	0	1	4	144
4	STD3	Fully Quant Standard	1.000	0	1	5	144
5	STD4	Fully Quant Standard	1.000	1	1	1	144
6	STD5	Fully Quant Standard	1.000	1	1	2	144
7	ICV	QC Sample	1.000	0	1	6	144
8	ICVL	QC Sample	1.000	0	1	3	144
9	ICBIS	QC Sample	1.000	0	1	2	144
10	ICSA	QC Sample	1.000	1	1	3	144
11	ICSAB	QC Sample	1.000	1	1	4	144
12	CCV	QC Sample	1.000	0	1	5	144
13	CCB	QC Sample	1.000	0	1	2	144
14	MB 200-110153/1-A	Unknown	1.000	1	2	1	144
15	LCS 200-110153/2-A	Unknown	1.000	1	2	2	144
16	200-35680-A-1-O	Unknown	1.000	1	2	3	144
17	200-35680-A-2-A	Unknown	1.000	1	2	4	144
18	200-35680-A-3-A	Unknown	1.000	1	2	5	144
19	200-35680-A-4-A	Unknown	1.000	1	2	6	144
20	200-35680-A-5-A	Unknown	1.000	1	2	7	144
21	200-35680-A-6-A	Unknown	1.000	1	2	8	144
22	200-35680-A-6-A SD@5	Unknown	1.000	1	2	9	144
23	200-35680-A-6-A PDS	Unknown	1.000	1	2	10	144
24	CCV	QC Sample	1.000	0	1	5	144
25	CCB	QC Sample	1.000	0	1	2	144
26	CCVL	QC Sample	1.000	0	1	3	144
27	200-35680-A-6-B MS	Unknown	1.000	1	2	11	144
28	200-35680-A-6-C MSD	Unknown	1.000	1	2	12	144
29	200-35700-A-1-B	Unknown	1.000	1	3	1	144
30	200-35700-A-2-B	Unknown	1.000	1	3	2	144
31	200-35700-A-3-B	Unknown	1.000	1	3	3	144
32	200-35700-A-4-B	Unknown	1.000	1	3	4	144

33	200-35700-A-5-B	Unknown	1.000	1	3	5	144
34	200-35700-A-6-B	Unknown	1.000	1	3	6	144
35	200-35700-A-7-B	Unknown	1.000	1	3	7	144
36	200-35700-A-8-B	Unknown	1.000	1	3	8	144
37	CCV	QC Sample	1.000	0	1	5	144
38	CCB	QC Sample	1.000	0	1	2	144
39	CCVL	QC Sample	1.000	0	1	3	144
40	LCS 200-110153/2-A	Unknown	1.000	1	3	9	144
41	200-35700-A-1-B @2	Unknown	1.000	1	3	10	144
42	200-35700-A-2-B @2	Unknown	1.000	1	3	11	144
43	200-35700-A-3-B @8	Unknown	1.000	1	3	12	144
44	200-35700-A-5-B @2	Unknown	1.000	1	4	1	144
45	200-35700-A-1-B @4	Unknown	1.000	1	4	2	144
46	200-35700-A-3-B @10	Unknown	1.000	1	4	3	144
47	CCV	QC Sample	1.000	0	1	5	144
48	CCB	QC Sample	1.000	0	1	2	144
49	CCVL	QC Sample	1.000	0	1	3	144

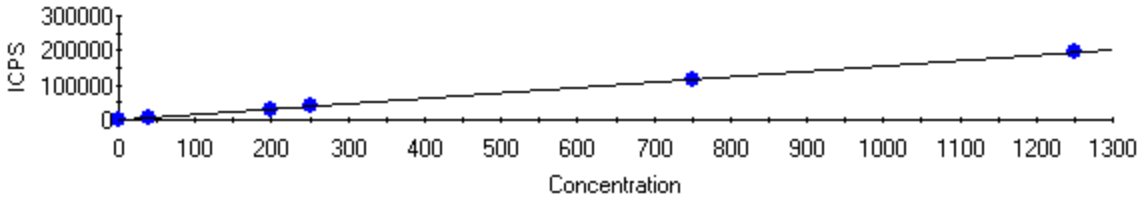
Fully Quant Calibration



Intercept CPS=28.498158 Intercept Conc=0.175282
Sensitivity=162.584319 Correlation Coeff=0.999972

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.147	0.147	52.48	0.00
STD1	1.000	0.910	0.090	176.49	8.98
STD2	5.000	5.084	0.084	855.04	1.68
STD3	625.000	625.281	0.281	101689.47	0.05
STD4	1875.000	1859.844	15.156	302409.93	0.81
STD5	3125.000	3142.495	17.495	510948.98	0.56

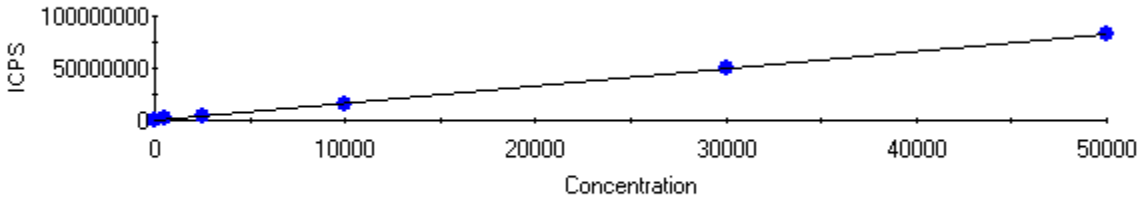
11B FQ Block 1



Intercept CPS=1293.204431 Intercept Conc=8.436857
Sensitivity=153.280355 Correlation Coeff=0.999954

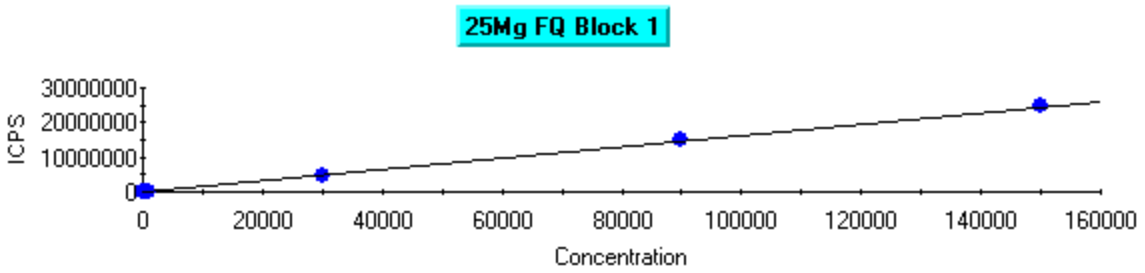
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-1.119	1.119	1121.65	0.00
STD1	40.000	41.966	1.966	7725.83	4.92
STD2	200.000	197.401	2.599	31550.96	1.30
STD3	250.000	246.060	3.940	39009.39	1.58
STD4	750.000	758.766	8.766	117597.17	1.17
STD5	1250.000	1279.122	29.122	197357.45	2.33

23Na FQ Block 1



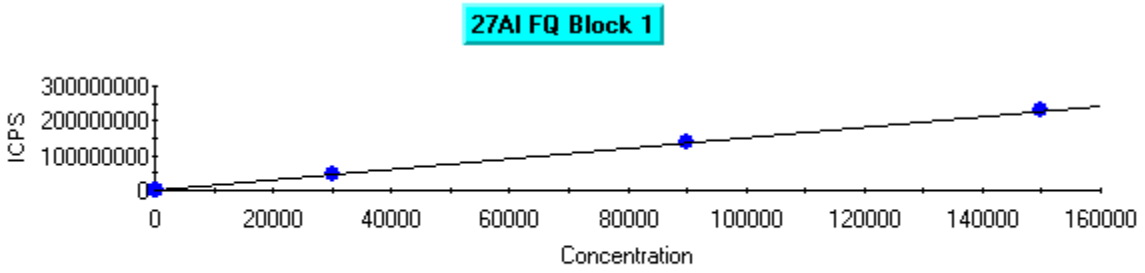
Intercept CPS=265124.681265 Intercept Conc=162.651099
Sensitivity=1630.020839 Correlation Coeff=0.999966

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	1.108	1.108	266930.85	0.00
STD1	500.000	497.365	2.635	1075840.77	0.53
STD2	2500.000	2508.371	8.371	4353821.21	0.33
STD3	10000.000	9772.200	227.800	16194014.67	2.28
STD4	30000.000	30327.396	327.396	49699412.84	1.09
STD5	50000.000	49998.338	1.662	81763457.45	0.00



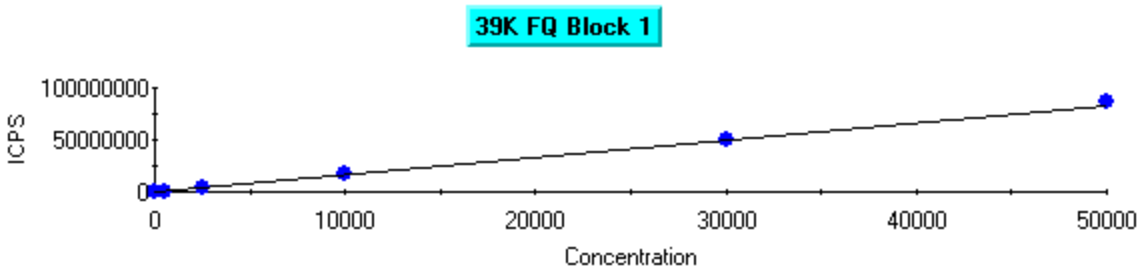
Intercept CPS=1123.122963 Intercept Conc=6.879583
Sensitivity=163.254514 Correlation Coeff=0.999984

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	7.104	7.104	2282.81	0.00
STD1	200.000	178.989	21.011	30343.83	10.51
STD2	1000.000	922.172	77.828	151671.89	7.78
STD3	30000.000	29877.115	122.885	4878696.97	0.41
STD4	90000.000	92382.266	2382.266	15082945.01	2.65
STD5	150000.000	153399.981	3399.981	25044362.53	2.27



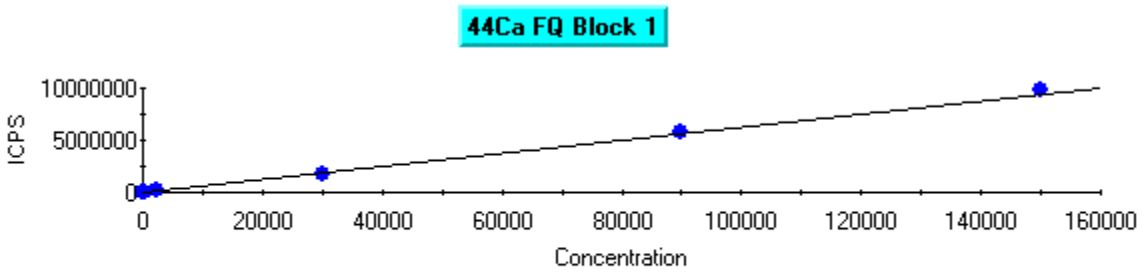
Intercept CPS=5562.782990 Intercept Conc=3.649030
Sensitivity=1524.455093 Correlation Coeff=0.999993

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	9.299	9.299	19738.51	0.00
STD1	50.000	49.826	0.174	81519.78	0.35
STD2	250.000	223.928	26.072	346931.67	10.43
STD3	30000.000	30051.228	51.228	45817310.06	0.17
STD4	90000.000	91395.371	1395.371	139333701.84	1.55
STD5	150000.000	152968.046	2968.046	233198479.51	1.98



Intercept CPS=56913.934150 Intercept Conc=34.537858
Sensitivity=1647.870988 Correlation Coeff=0.999893

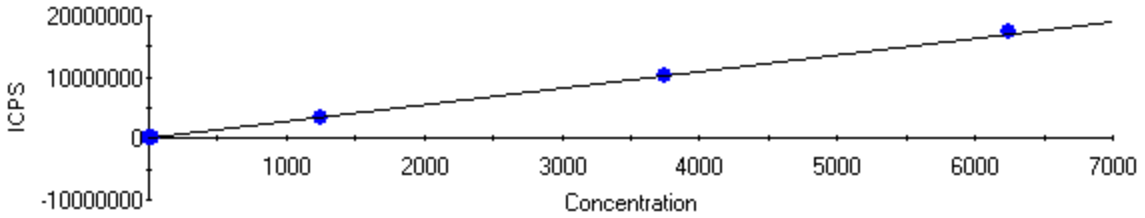
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.799	0.799	58230.95	0.00
STD1	500.000	457.002	42.998	809995.03	8.60
STD2	2500.000	2508.272	8.272	4190222.06	0.33
STD3	10000.000	9940.392	59.608	16437398.28	0.60
STD4	30000.000	30855.672	855.672	50903081.31	2.85
STD5	50000.000	52608.494	2608.494	86748924.27	5.22



Intercept CPS=1250.881738 Intercept Conc=20.203064
Sensitivity=61.915446 Correlation Coeff=0.999775

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	1.882	1.882	1367.42	0.00
STD1	500.000	444.768	55.232	28788.91	11.05
STD2	2500.000	2300.847	199.153	143708.85	7.97
STD3	30000.000	29177.003	822.997	1807758.04	2.74
STD4	90000.000	91683.061	1683.061	5677848.47	1.87
STD5	150000.000	158008.731	8008.731	9784431.91	5.34

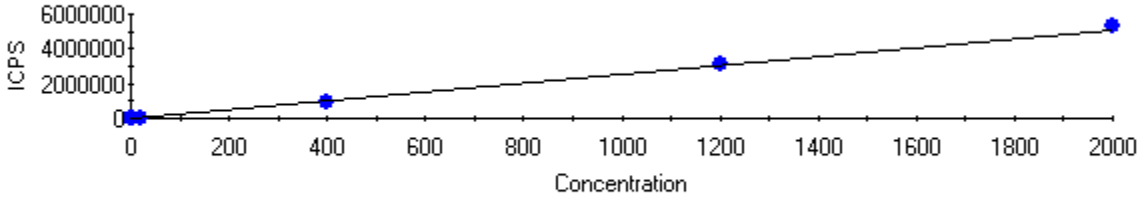
51V FQ Block 1



Intercept CPS=-1666.746064 Intercept Conc=-0.610870
Sensitivity=2728.480155 Correlation Coeff=0.999925

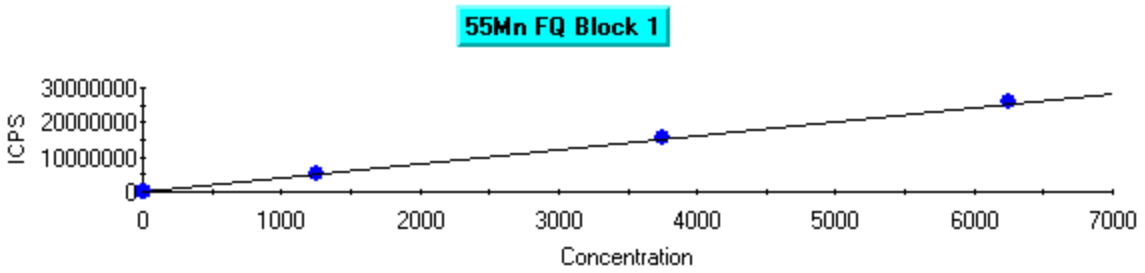
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.393	0.393	-594.72	0.00
STD1	5.000	4.922	0.078	11763.15	1.56
STD2	25.000	21.598	3.402	57264.18	13.61
STD3	1250.000	1210.137	39.863	3300167.35	3.19
STD4	3750.000	3789.894	39.894	10338983.70	1.06
STD5	6250.000	6408.207	158.207	17482997.54	2.53

52Cr FQ Block 1



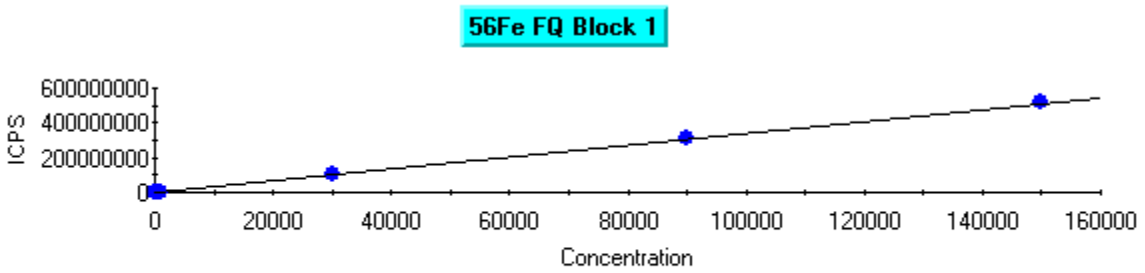
Intercept CPS=3040.114330 Intercept Conc=1.195221
Sensitivity=2543.558112 Correlation Coeff=0.999742

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.126	0.126	3359.39	0.00
STD1	4.000	3.833	0.167	12788.50	4.19
STD2	20.000	19.019	0.981	51417.24	4.90
STD3	400.000	370.919	29.081	946495.11	7.27
STD4	1200.000	1242.136	42.136	3162483.99	3.51
STD5	2000.000	2100.235	100.235	5345109.08	5.01



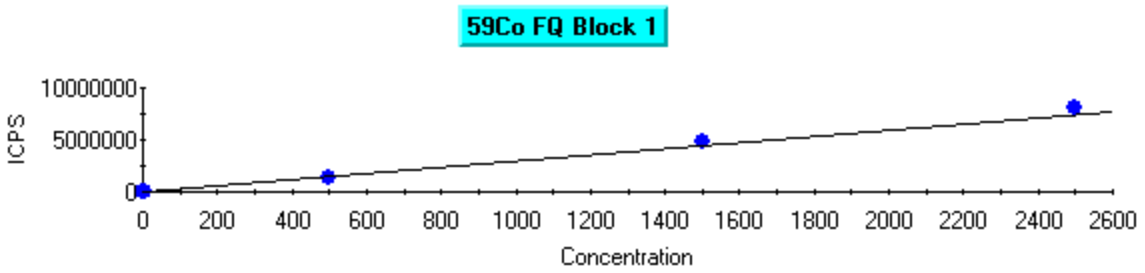
Intercept CPS=1393.627343 Intercept Conc=0.343551
Sensitivity=4056.535749 Correlation Coeff=0.999941

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.351	0.351	2818.25	0.00
STD1	2.000	1.714	0.286	8347.03	14.29
STD2	10.000	8.864	1.136	37350.43	11.36
STD3	1250.000	1228.449	21.551	4984639.01	1.72
STD4	3750.000	3807.437	57.437	15446398.38	1.53
STD5	6250.000	6437.875	187.875	26116865.24	3.01



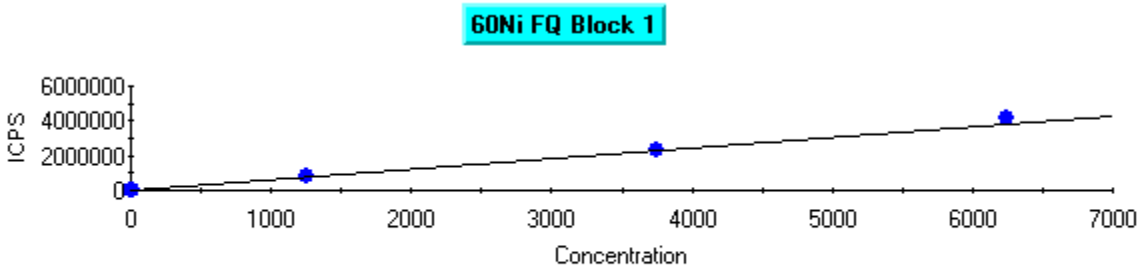
Intercept CPS=209229.350136 Intercept Conc=61.579338
Sensitivity=3397.720046 Correlation Coeff=0.999987

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	17.714	17.714	269416.73	0.00
STD1	200.000	196.878	3.122	878165.99	1.56
STD2	1000.000	1033.045	33.045	3719225.73	3.30
STD3	30000.000	29780.982	219.018	101396669.06	0.73
STD4	90000.000	91313.668	1313.668	310467509.09	1.46
STD5	150000.000	152772.477	2772.477	519287336.11	1.85



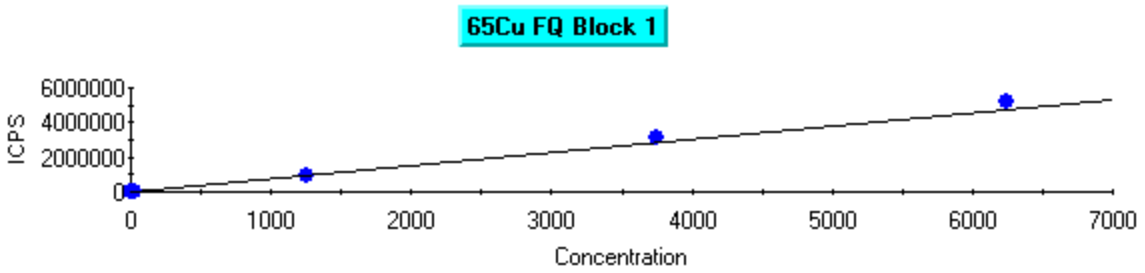
Intercept CPS=669.504172 Intercept Conc=0.225659
Sensitivity=2966.882376 Correlation Coeff=0.999748

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.002	0.002	675.24	0.00
STD1	1.000	0.811	0.189	3076.40	18.87
STD2	5.000	4.801	0.199	14914.90	3.97
STD3	500.000	482.553	17.447	1432348.58	3.49
STD4	1500.000	1631.913	131.913	4842364.46	8.79
STD5	2500.000	2732.202	232.202	8106791.37	9.29



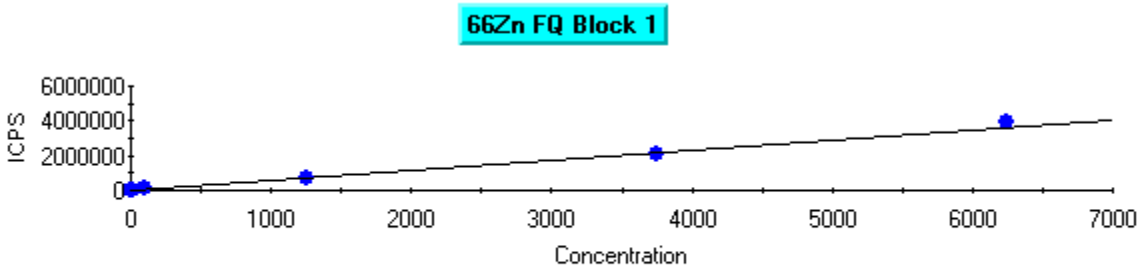
Intercept CPS=283.927654 Intercept Conc=0.461733
Sensitivity=614.917480 Correlation Coeff=0.999533

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.125	0.125	361.09	0.00
STD1	2.000	1.731	0.269	1348.32	13.45
STD2	10.000	10.151	0.151	6526.16	1.51
STD3	1250.000	1239.375	10.625	762397.53	0.85
STD4	3750.000	3813.066	63.066	2345005.09	1.68
STD5	6250.000	6707.698	457.698	4124964.89	7.32



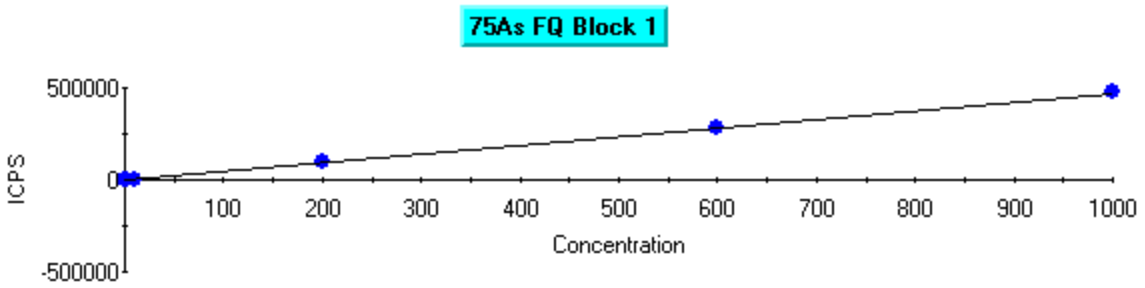
Intercept CPS=646.689401 Intercept Conc=0.853200
Sensitivity=757.957700 Correlation Coeff=0.999842

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.004	0.004	650.09	0.00
STD1	5.000	4.909	0.091	4367.84	1.81
STD2	25.000	24.971	0.029	19573.62	0.12
STD3	1250.000	1241.940	8.060	941984.55	0.64
STD4	3750.000	4069.145	319.145	3084886.10	8.51
STD5	6250.000	6840.831	590.831	5185707.07	9.45



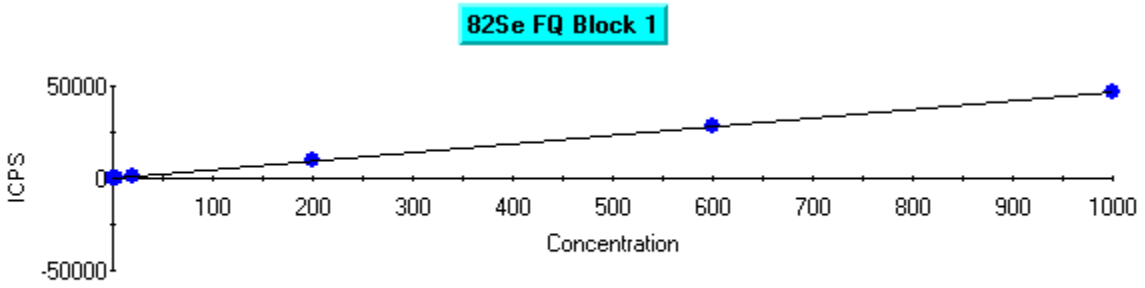
Intercept CPS=950.640654 Intercept Conc=1.629625
Sensitivity=583.349240 Correlation Coeff=0.998580

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.114	0.114	884.40	0.00
STD1	20.000	20.471	0.471	12892.16	2.35
STD2	100.000	104.644	4.644	61994.70	4.64
STD3	1250.000	1231.279	18.721	719216.11	1.50
STD4	3750.000	3635.781	114.219	2121880.98	3.05
STD5	6250.000	6694.872	444.872	3906399.19	7.12



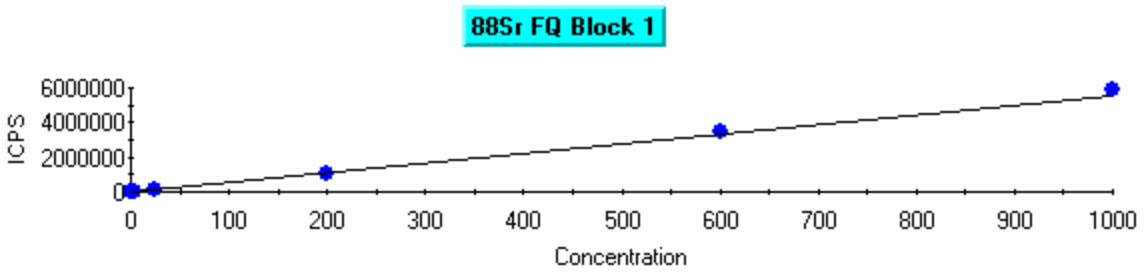
Intercept CPS=-113.524051 Intercept Conc=-0.240825
Sensitivity=471.395690 Correlation Coeff=0.999984

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.026	0.026	-125.73	0.00
STD1	2.000	1.936	0.064	799.29	3.18
STD2	10.000	10.167	0.167	4678.93	1.67
STD3	200.000	199.471	0.529	93916.17	0.26
STD4	600.000	597.917	2.083	281742.09	0.35
STD5	1000.000	1006.786	6.786	474480.87	0.68



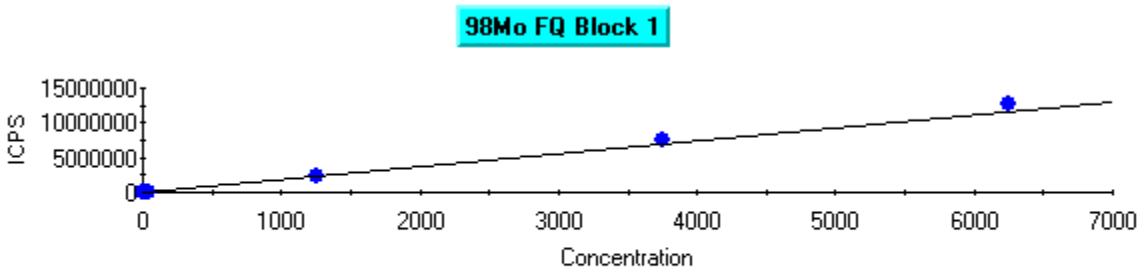
Intercept CPS=-12.985698 Intercept Conc=-0.278244
Sensitivity=46.670241 Correlation Coeff=0.999942

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.450	0.450	-33.99	0.00
STD1	4.000	3.427	0.573	146.94	14.33
STD2	20.000	22.757	2.757	1049.10	13.79
STD3	200.000	202.957	2.957	9459.06	1.48
STD4	600.000	605.429	5.429	28242.52	0.90
STD5	1000.000	990.458	9.542	46211.93	0.95



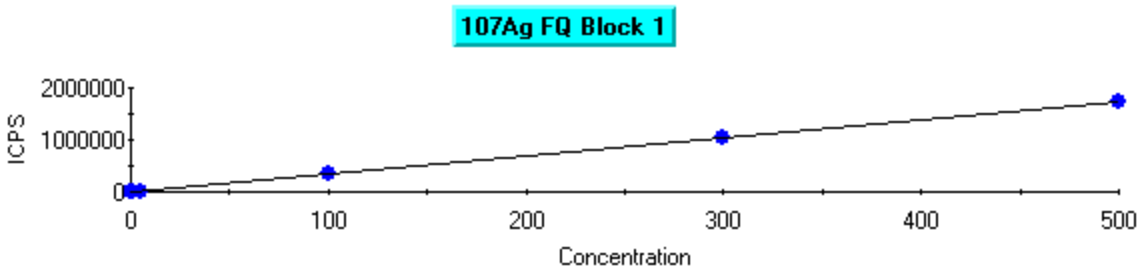
Intercept CPS=380.350802 Intercept Conc=0.068942
Sensitivity=5516.978460 Correlation Coeff=0.999555

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.012	0.012	444.52	0.00
STD1	5.000	4.569	0.431	25588.51	8.62
STD2	25.000	22.754	2.246	125915.57	8.98
STD3	200.000	183.600	16.400	1013298.71	8.20
STD4	600.000	625.376	25.376	3450567.12	4.23
STD5	1000.000	1074.986	74.986	5931056.47	7.50



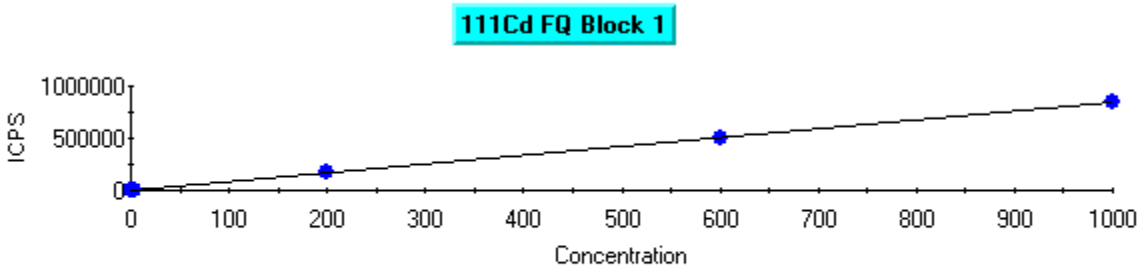
Intercept CPS=1259.509239 Intercept Conc=0.686638
Sensitivity=1834.312762 Correlation Coeff=0.999619

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.271	0.271	1756.91	0.00
STD1	10.000	8.910	1.090	17602.36	10.90
STD2	50.000	46.536	3.464	86621.12	6.93
STD3	1250.000	1214.269	35.731	2228608.71	2.86
STD4	3750.000	4040.822	290.822	7413390.14	7.76
STD5	6250.000	6954.766	704.766	12758474.75	11.28



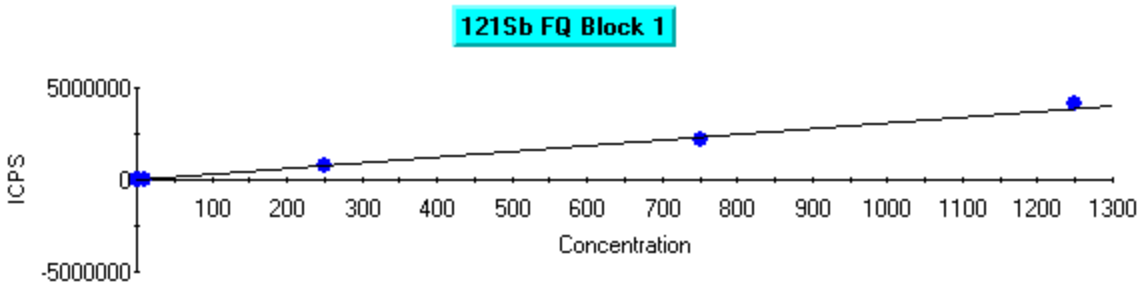
Intercept CPS=145.550322 Intercept Conc=0.042508
Sensitivity=3424.075800 Correlation Coeff=0.999990

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.001	0.001	143.23	0.00
STD1	1.000	0.979	0.021	3499.18	2.06
STD2	5.000	5.079	0.079	17536.44	1.58
STD3	100.000	99.390	0.610	340463.01	0.61
STD4	300.000	297.902	2.098	1020184.05	0.70
STD5	500.000	500.565	0.565	1714117.50	0.11



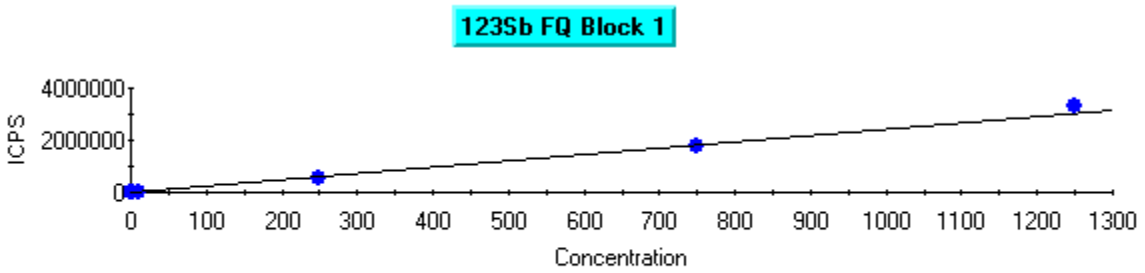
Intercept CPS=125.464690 Intercept Conc=0.149497
Sensitivity=839.243177 Correlation Coeff=0.999997

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.009	0.009	133.07	0.00
STD1	1.000	0.963	0.037	933.94	3.67
STD2	5.000	4.805	0.195	4158.03	3.90
STD3	200.000	197.268	2.732	165681.55	1.37
STD4	600.000	599.523	0.477	503271.34	0.08
STD5	1000.000	1000.184	0.184	839523.42	0.02



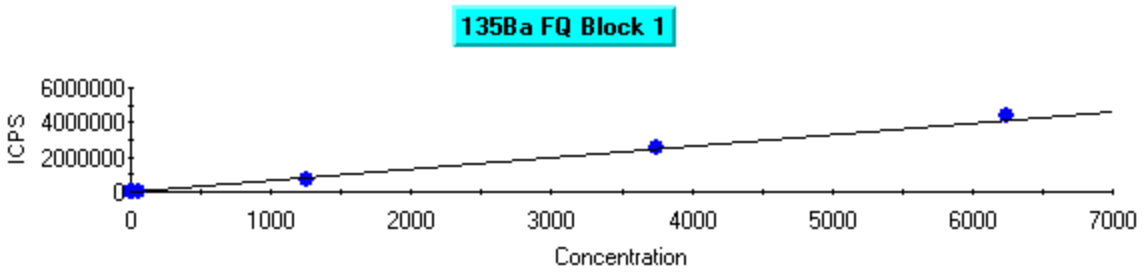
Intercept CPS=-109.066766 Intercept Conc=-0.035517
Sensitivity=3070.845664 Correlation Coeff=0.997698

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.344	0.344	947.14	0.00
STD1	2.000	2.006	0.006	6051.37	0.31
STD2	10.000	9.461	0.539	28942.69	5.39
STD3	250.000	232.935	17.065	715199.03	6.83
STD4	750.000	717.609	32.391	2203558.25	4.32
STD5	1250.000	1356.387	106.387	4165144.88	8.51



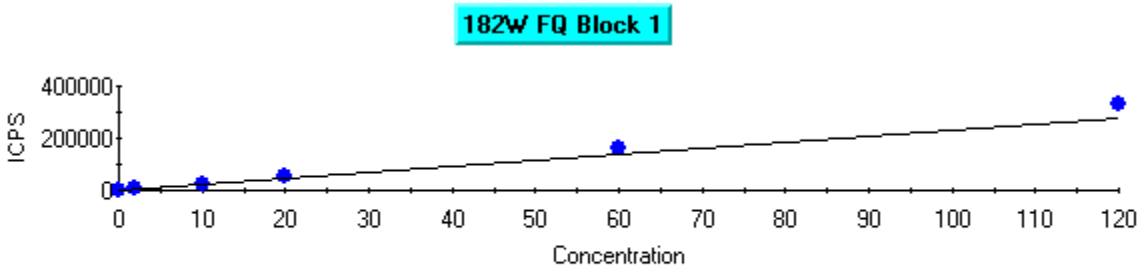
Intercept CPS=169.174099 Intercept Conc=0.069171
Sensitivity=2445.748792 Correlation Coeff=0.997809

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.245	0.245	768.33	0.00
STD1	2.000	1.886	0.114	4781.00	5.72
STD2	10.000	9.203	0.797	22677.21	7.97
STD3	250.000	229.036	20.964	560332.50	8.39
STD4	750.000	712.600	37.400	1743010.17	4.99
STD5	1250.000	1341.541	91.541	3281242.63	7.32



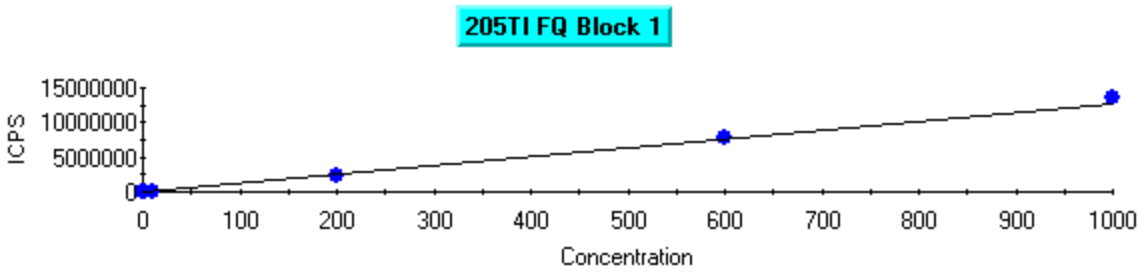
Intercept CPS=256.637557 Intercept Conc=0.386209
Sensitivity=664.505102 Correlation Coeff=0.999364

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.097	0.097	321.20	0.00
STD1	10.000	8.419	1.581	5851.08	15.81
STD2	50.000	43.813	6.187	29370.42	12.37
STD3	1250.000	1110.897	139.103	738453.25	11.13
STD4	3750.000	3856.966	106.966	2563230.22	2.85
STD5	6250.000	6680.758	430.758	4439654.73	6.89



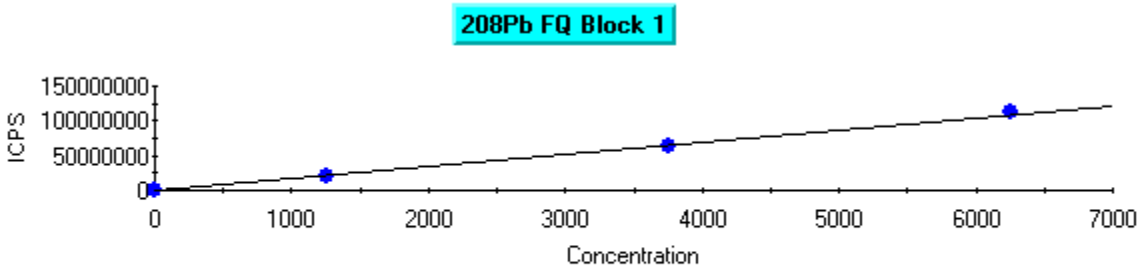
Intercept CPS=192.718733 Intercept Conc=0.082871
Sensitivity=2325.527754 Correlation Coeff=0.999833

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.007	0.007	209.96	0.00
STD1	2.000	1.781	0.219	4334.78	10.94
STD2	10.000	8.864	1.136	20805.14	11.36
STD3	20.000	22.501	2.501	52520.31	12.51
STD4	60.000	69.750	9.750	162398.77	16.25
STD5	120.000	141.395	21.395	329010.04	17.83



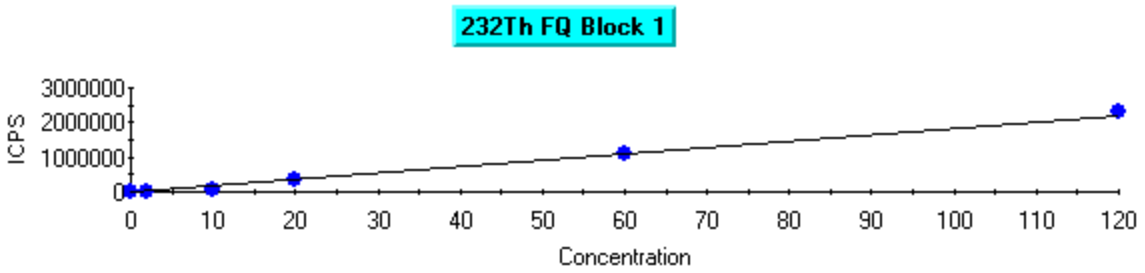
Intercept CPS=2429.013960 Intercept Conc=0.190516
Sensitivity=12749.655616 Correlation Coeff=0.999244

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.002	0.002	2453.52	0.00
STD1	2.000	1.589	0.411	22688.66	20.55
STD2	10.000	8.320	1.680	108502.72	16.80
STD3	200.000	175.548	24.452	2240600.45	12.23
STD4	600.000	606.883	6.883	7739980.81	1.15
STD5	1000.000	1061.979	61.979	13542289.34	6.20



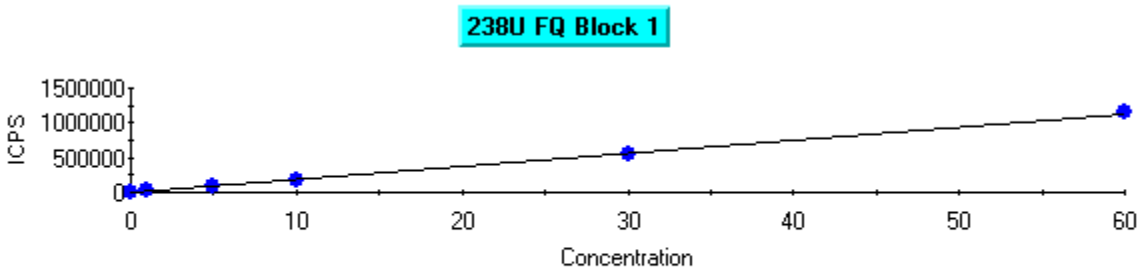
Intercept CPS=429.208263 Intercept Conc=0.024825
Sensitivity=17289.325612 Correlation Coeff=0.999712

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.502	0.502	9104.85	0.00
STD1	1.000	1.007	0.007	17834.85	0.67
STD2	5.000	4.377	0.623	76097.92	12.47
STD3	1250.000	1212.069	37.931	20956276.24	3.03
STD4	3750.000	3736.988	13.012	64610439.37	0.35
STD5	6250.000	6490.580	240.580	112218181.22	3.85



Intercept CPS=550.294304 Intercept Conc=0.029944
Sensitivity=18377.326900 Correlation Coeff=0.998964

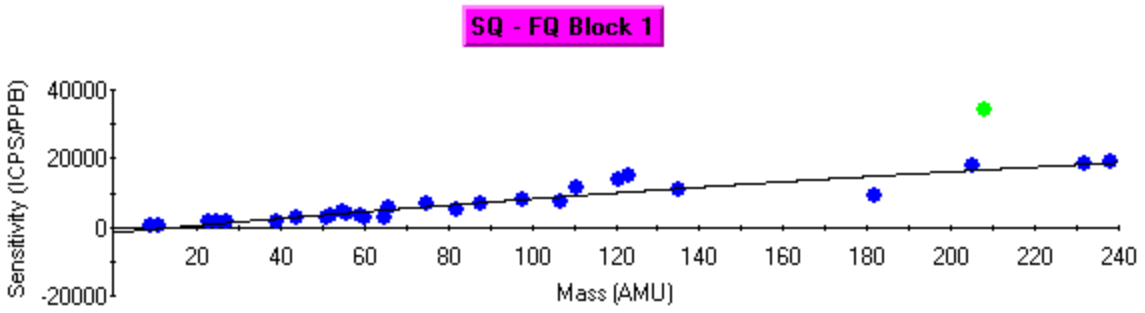
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.317	0.317	6379.80	0.00
STD1	2.000	1.049	0.951	19822.30	47.57
STD2	10.000	4.428	5.572	81929.04	55.72
STD3	20.000	19.310	0.690	355417.98	3.45
STD4	60.000	60.506	0.506	1112492.37	0.84
STD5	120.000	126.536	6.536	2325936.71	5.45



Intercept CPS=75.081841 Intercept Conc=0.003982
Sensitivity=18853.420514 Correlation Coeff=0.999748

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.001	0.001	86.57	0.00
STD1	1.000	0.932	0.068	17646.35	6.80
STD2	5.000	4.617	0.383	87129.95	7.65
STD3	10.000	9.274	0.726	174924.60	7.26
STD4	30.000	28.927	1.073	545439.15	3.58
STD5	60.000	60.471	0.471	1140157.72	0.78

Semi Quant Calibration



Coeff 0=-1601.090267 Coeff 1=108.113933 Coeff 2=-0.096075

Symbol	Mass	RSF	Available	Excluded	Sensitivity Measured	Corrected	Calculated	%Error
9Be	9.01	0.7500	1	1	162.58	216.78	-634.55	-392.7
11B	11.01	0.5800	1	1	153.28	326.19	-422.48	-229.5
23Na	22.99	1.0000	1	1	1630.02	1630.02	833.64	-48.9
25Mg	24.99	0.9800	1	1	163.25	1647.74	1040.25	-36.9
27Al	26.98	0.9800	1	1	1524.46	1555.57	1246.05	-19.9
39K	38.96	1.0000	1	1	1647.87	1770.38	2465.57	39.3
44Ca	43.96	0.9900	1	1	61.92	2936.19	2965.49	1.0
51V	50.94	0.9900	1	1	2728.48	2762.67	3657.32	32.4
52Cr	51.94	0.9800	1	1	2543.56	3098.70	3755.21	21.2
55Mn	54.94	0.9500	1	1	4056.54	4270.04	4048.51	-5.2
56Fe	55.93	0.9600	1	1	3397.72	3867.23	4145.66	7.2
59Co	58.93	0.9300	1	1	2966.88	3190.20	4436.73	39.1
60Ni	59.93	0.9100	1	1	614.92	2583.08	4533.19	75.5
65Cu	64.93	0.9000	1	1	757.96	2724.60	5013.49	84.0
66Zn	65.93	0.3750	1	1	583.35	5593.66	5108.87	-8.7
75As	74.92	0.0700	1	1	471.40	6734.22	5959.69	-11.5
82Se	81.92	0.1000	1	1	46.67	5279.44	6610.55	25.2
88Sr	87.91	0.9600	1	1	5516.98	6960.82	7160.32	2.9
98Mo	97.91	0.9800	1	1	1834.31	7798.95	8062.92	3.4
107Ag	106.91	0.9300	1	1	3424.08	7170.01	8858.83	23.6
111Cd	110.90	0.5660	1	1	839.24	11530.03	9207.50	-20.1
121Sb	120.90	0.3900	1	1	3070.85	13753.65	10065.90	-26.8
123Sb	122.90	0.3900	1	1	2445.75	14669.36	10235.31	-30.2
135Ba	134.91	0.9100	1	1	664.51	11080.81	11235.57	1.4
182W	181.95	0.9400	1	1	2325.53	9403.14	14889.47	58.3
205Tl	204.97	1.0000	1	1	12749.66	18084.62	16522.79	-8.6
208Pb	207.98	0.9700	0	1	17289.33	34028.34	16728.43	-50.8
232Th	232.04	1.0000	1	1	18377.33	18377.33	18312.62	-0.4
238U	238.05	1.0000	1	1	18853.42	18990.15	18691.13	-1.6

Dilution Corrected Concentrations

STD0 10/14/2016 10:32:42 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:04	100.756%	0.099	-0.731	-4.607	4.250	6.395	0.087	0.323	100.721%	0.000	0.403	0.046
2	10:33:26	99.141%	0.073	-0.968	5.343	9.198	10.060	1.509	3.293	98.303%	0.000	0.158	0.165
3	10:33:48	100.102%	0.270	-1.659	2.588	7.862	11.450	0.802	2.031	100.976%	0.000	0.618	0.166
x		100.000%	0.147	-1.119	1.108	7.104	9.299	0.799	1.882	100.000%	0.000	0.393	0.126
σ		0.812%	0.107	0.482	5.137	2.560	2.609	0.711	1.490	1.475%	0.000	0.230	0.069
%RSD		0.812	72.600	43.050	463.600	36.030	28.060	88.950	79.190	1.475	0.000	58.550	54.760

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:04	18.280	0.267	14.180	-0.001	-0.026	0.024	-0.177	0.200	0.512	0.189	0.000	0.000
2	10:33:26	19.430	0.396	19.730	0.011	0.035	-0.040	-0.198	-0.133	0.534	-0.705	0.000	0.000
3	10:33:48	18.960	0.390	19.230	-0.004	0.368	0.029	0.035	-0.144	0.535	-0.834	0.000	0.000
x		18.890	0.351	17.710	0.002	0.126	0.004	-0.114	-0.026	0.527	-0.450	0.000	0.000
σ		0.578	0.073	3.067	0.008	0.212	0.038	0.129	0.195	0.013	0.557	0.000	0.000
%RSD		3.061	20.740	17.310	406.800	168.900	857.100	113.600	754.800	2.475	123.900	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:04	-0.001	98.568%	0.243	-0.005	-0.917	-0.029	98.535%	0.000	0.288	0.199	0.003	99.967%
2	10:33:26	0.021	100.038%	0.349	0.007	-1.095	0.055	100.568%	0.000	0.344	0.257	0.130	99.337%
3	10:33:48	0.015	101.394%	0.222	-0.003	-0.640	0.001	100.898%	0.000	0.400	0.279	0.158	100.696%
x		0.012	100.000%	0.271	-0.001	-0.884	0.009	100.000%	0.000	0.344	0.245	0.097	100.000%
σ		0.011	1.414%	0.068	0.007	0.229	0.043	1.280%	0.000	0.056	0.041	0.083	0.680%
%RSD		97.340	1.414	25.090	976.200	25.900	469.700	1.280	0.000	16.350	16.830	84.950	0.680

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:04	0.003	0.001	0.426	99.354%	0.000	0.333	-0.001
2	10:33:26	0.006	0.005	0.534	99.942%	0.000	0.330	0.001
3	10:33:48	0.013	0.001	0.546	100.704%	0.000	0.289	0.002
x		0.007	0.002	0.502	100.000%	0.000	0.317	0.001
σ		0.005	0.002	0.066	0.677%	0.000	0.025	0.001
%RSD		70.160	117.100	13.160	0.677	0.000	7.819	201.400

STD1 10/14/2016 10:38:26 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:38:47	102.742%	0.947	41.390	T 488.000	176.400	49.450	456.900	436.200	104.176%	0.000	4.736	3.743
2	10:39:09	102.460%	0.965	42.510	T 506.300	184.200	49.620	451.900	453.000	102.892%	0.000	4.999	3.931
3	10:39:31	100.602%	0.818	42.000	T 497.700	176.400	50.410	462.200	445.100	102.691%	0.000	5.031	3.824
x		101.935%	0.910	41.970	T 497.400	179.000	49.830	457.000	444.800	103.253%	0.000	4.922	3.833
σ		1.163%	0.080	0.563	T 9.133	4.534	0.513	5.176	8.435	0.806%	0.000	0.162	0.094

%RSD		1.141	8.810	1.341	T 1.836	2.533	1.030	1.133	1.897	0.780	0.000	3.289	2.458
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:38:47	19.370	1.649	195.900	0.721	1.560	4.891	20.260	1.766	0.533	3.033	0.000	0.000
2	10:39:09	20.290	1.699	196.400	0.887	1.885	5.136	20.900	1.909	0.565	2.895	0.000	0.000
3	10:39:31	19.930	1.794	198.300	0.826	1.748	4.701	20.250	2.134	0.505	4.351	0.000	0.000
x		19.860	1.714	196.900	0.811	1.731	4.909	20.470	1.936	0.534	3.427	0.000	0.000
σ		0.461	0.073	1.276	0.084	0.163	0.218	0.369	0.185	0.030	0.804	0.000	0.000
%RSD		2.322	4.268	0.648	10.350	9.440	4.441	1.803	9.570	5.649	23.460	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:38:47	4.491	100.510%	8.732	1.004	-1.723	1.044	101.878%	0.000	2.002	1.849	7.946	100.638%
2	10:39:09	4.557	100.080%	9.001	1.041	-1.187	1.011	100.461%	0.000	2.003	1.894	8.813	100.673%
3	10:39:31	4.659	101.626%	8.996	0.894	-0.708	0.834	100.131%	0.000	2.014	1.914	8.498	101.181%
x		4.569	100.739%	8.910	0.979	-1.206	0.963	100.823%	0.000	2.006	1.886	8.419	100.831%
σ		0.085	0.798%	0.154	0.076	0.508	0.113	0.928%	0.000	0.007	0.033	0.439	0.304%
%RSD		1.857	0.792	1.730	7.795	42.120	11.720	0.920	0.000	0.327	1.755	5.210	0.302
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	10:38:47	1.723	1.628	0.994	98.197%	0.000	1.027	0.916					
2	10:39:09	1.897	1.568	1.005	101.113%	0.000	1.018	0.941					
3	10:39:31	1.724	1.570	1.021	100.864%	0.000	1.100	0.939					
x		1.781	1.589	1.007	100.058%	0.000	1.049	0.932					
σ		0.101	0.034	0.014	1.616%	0.000	0.045	0.014					
%RSD		5.643	2.138	1.360	1.615	0.000	4.296	1.485					

STD2 10/14/2016 10:44:08 AM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:44:30	96.217%	5.386	196.800	T 2476.000	885.500	217.500	T 2454.000	2239.000	98.652%	0.000	20.630	18.770
2	10:44:52	95.655%	4.840	196.300	T 2564.000	954.900	229.600	T 2545.000	2319.000	93.379%	0.000	21.800	18.850
3	10:45:13	92.853%	5.025	199.100	T 2485.000	926.200	224.700	T 2526.000	2345.000	92.640%	0.000	22.370	19.440
x		94.908%	5.084	197.400	T 2508.000	922.200	223.900	T 2508.000	2301.000	94.890%	0.000	21.600	19.020
σ		1.802%	0.278	1.507	T 48.780	34.860	6.075	T 48.080	54.890	3.279%	0.000	0.884	0.363
%RSD		1.899	5.464	0.763	T 1.945	3.781	2.713	T 1.917	2.385	3.455	0.000	4.094	1.909
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:44:30	19.700	8.521	T 998.800	4.681	10.030	24.470	103.400	9.892	0.475	21.590	0.000	0.000
2	10:44:52	19.710	9.063	T 1059.000	5.086	10.110	25.310	105.400	10.380	0.367	22.680	0.000	0.000
3	10:45:13	17.780	9.008	T 1042.000	4.637	10.310	25.130	105.200	10.220	0.372	24.000	0.000	0.000
x		19.060	8.864	T 1033.000	4.801	10.150	24.970	104.600	10.170	0.405	22.760	0.000	0.000
σ		1.111	0.299	T 30.890	0.248	0.143	0.443	1.090	0.251	0.061	1.205	0.000	0.000
%RSD		5.828	3.369	T 2.990	5.158	1.407	1.773	1.042	2.464	15.070	5.295	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	10:44:30	22.440	95.615%	45.960	5.019	-0.516	4.423	97.299%	0.000	9.426	9.051	42.620	97.320%
2	10:44:52	22.880	96.021%	46.690	5.146	-0.462	4.976	94.956%	0.000	9.514	9.345	44.760	95.990%
3	10:45:13	22.940	94.737%	46.960	5.072	-0.329	5.016	93.548%	0.000	9.442	9.213	44.070	95.615%
x		22.750	95.458%	46.540	5.079	-0.436	4.805	95.267%	0.000	9.461	9.203	43.810	96.308%
σ		0.271	0.657%	0.517	0.064	0.097	0.332	1.894%	0.000	0.047	0.147	1.092	0.896%
%RSD		1.190	0.688	1.112	1.250	22.170	6.903	1.989	0.000	0.493	1.598	2.494	0.930

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:44:30	8.875	7.993	4.304	98.183%	0.000	4.135	4.459
2	10:44:52	8.797	8.397	4.400	95.399%	0.000	4.401	4.682
3	10:45:13	8.919	8.569	4.426	94.541%	0.000	4.749	4.712
x		8.864	8.320	4.377	96.041%	0.000	4.428	4.617
σ		0.062	0.295	0.064	1.904%	0.000	0.308	0.138
%RSD		0.700	3.551	1.470	1.982	0.000	6.954	2.994

STD3 10/14/2016 10:49:52 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:14	96.461%	624.400	244.100	T 9720.000	T 29440.000	T 29480.000	T 9773.000	T 28900.000	96.015%	0.000	T 1195.000	362.800
2	10:50:36	94.993%	622.000	243.800	T 9892.000	T 30530.000	T 30930.000	T 10190.000	T 29290.000	93.426%	0.000	T 1225.000	377.300
3	10:50:57	94.104%	629.500	250.300	T 9706.000	T 29660.000	T 29740.000	T 9862.000	T 29340.000	93.497%	0.000	T 1210.000	372.700
x		95.186%	625.300	246.100	T 9772.000	T 29880.000	T 30050.000	T 9940.000	T 29180.000	94.312%	0.000	T 1210.000	370.900
σ		1.190%	3.803	3.682	T 103.600	T 575.000	T 774.800	T 217.900	T 239.100	1.475%	0.000	T 14.940	7.441
%RSD		1.250	0.608	1.496	T 1.060	T 1.925	T 2.578	T 2.192	T 0.820	1.564	0.000	T 1.234	2.006

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:14	22.130	T 1215.000	T 29430.000	478.900	1234.000	1244.000	1229.000	197.000	-0.377	205.200	0.000	0.000
2	10:50:36	20.700	T 1243.000	T 29980.000	484.800	1249.000	1239.000	1225.000	199.300	-0.294	200.100	0.000	0.000
3	10:50:57	20.790	T 1228.000	T 29940.000	483.900	1235.000	1243.000	1239.000	202.100	-0.490	203.500	0.000	0.000
x		21.200	T 1228.000	T 29780.000	482.600	1239.000	1242.000	1231.000	199.500	-0.387	203.000	0.000	0.000
σ		0.802	T 14.090	T 307.300	3.173	8.104	2.462	7.203	2.564	0.098	2.603	0.000	0.000
%RSD		3.785	T 1.147	T 1.032	0.658	0.654	0.198	0.585	1.286	25.440	1.282	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:14	184.000	96.078%	1160.000	100.300	-0.870	195.100	94.089%	0.000	233.100	227.500	1102.000	97.360%
2	10:50:36	180.500	94.869%	T 1293.000	97.390	4.580	196.500	94.594%	0.000	230.900	227.800	1108.000	97.239%
3	10:50:57	186.300	93.296%	1190.000	100.400	11.130	200.200	92.728%	0.000	234.800	231.800	1123.000	98.169%
x		183.600	94.748%	T 1214.000	99.390	4.947	197.300	93.804%	0.000	232.900	229.000	1111.000	97.589%
σ		2.929	1.395%	T 69.850	1.731	6.009	2.610	0.965%	0.000	1.924	2.415	10.820	0.506%
%RSD		1.595	1.472	T 5.753	1.742	121.500	1.323	1.029	0.000	0.826	1.054	0.974	0.518

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:14	22.160	175.600	T 1209.000	94.846%	0.000	18.470	9.220
2	10:50:36	22.880	177.400	T 1222.000	94.229%	0.000	19.610	9.423
3	10:50:57	22.460	173.600	T 1206.000	96.216%	0.000	19.850	9.179

x		22.500	175.500	┬1212.000	95.097%	0.000	19.310	9.274
σ		0.366	1.908	┬8.441	1.017%	0.000	0.733	0.131
%RSD		1.625	1.087	┬0.696	1.070	0.000	3.796	1.411

STD4 10/14/2016 10:55:36 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:55:57	95.999%	1834.000	733.400	┬30380.000	┬92140.000	┬92470.000	┬31090.000	┬91340.000	93.012%	0.000	┬3778.000	┬1241.000
2	10:56:19	93.455%	1884.000	782.200	┬30090.000	┬91020.000	┬90510.000	┬30570.000	┬91480.000	95.057%	0.000	┬3771.000	┬1223.000
3	10:56:41	95.473%	1861.000	760.600	┬30510.000	┬93980.000	┬91200.000	┬30910.000	┬92230.000	93.727%	0.000	┬3820.000	┬1262.000
x		94.976%	1860.000	758.800	┬30330.000	┬92380.000	┬91400.000	┬30860.000	┬91680.000	93.932%	0.000	┬3790.000	┬1242.000
σ		1.343%	24.940	24.470	┬211.500	┬1496.000	┬993.600	┬266.000	┬481.800	1.038%	0.000	┬26.600	┬19.340
%RSD		1.414	1.341	3.225	┬0.698	┬1.620	┬1.087	┬0.862	┬0.526	1.105	0.000	┬0.702	┬1.557

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:55:57	-11.830	┬3817.000	┬91670.000	┬1639.000	3714.000	┬4023.000	3633.000	602.900	-2.037	609.600	0.000	0.000
2	10:56:19	-16.190	┬3767.000	┬89980.000	┬1611.000	3640.000	┬4093.000	3653.000	597.300	-1.905	605.600	0.000	0.000
3	10:56:41	-15.640	┬3839.000	┬92290.000	┬1645.000	┬4085.000	┬4091.000	3621.000	593.600	-1.921	601.100	0.000	0.000
x		-14.550	┬3807.000	┬91310.000	┬1632.000	┬3813.000	┬4069.000	3636.000	597.900	-1.954	605.400	0.000	0.000
σ		2.377	┬37.100	┬1199.000	┬18.120	┬238.400	┬39.700	16.050	4.700	0.072	4.211	0.000	0.000
%RSD		16.340	┬0.974	┬1.313	┬1.111	┬6.252	┬0.976	0.442	0.786	3.699	0.696	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:55:57	┬619.400	92.961%	┬4005.000	296.300	25.470	598.700	92.516%	┬0.000	710.700	706.100	┬3818.000	97.227%
2	10:56:19	┬633.100	94.141%	┬4040.000	297.300	21.910	601.900	93.075%	┬0.000	722.700	716.100	┬3868.000	96.516%
3	10:56:41	┬623.500	94.670%	┬4078.000	300.200	10.140	598.000	93.539%	┬0.000	719.400	715.700	┬3885.000	98.216%
x		┬625.400	93.924%	┬4041.000	297.900	19.170	599.500	93.043%	┬0.000	717.600	712.600	┬3857.000	97.320%
σ		┬7.026	0.875%	┬36.390	2.017	8.024	2.100	0.512%	┬0.000	6.180	5.672	┬34.640	0.853%
%RSD		┬1.123	0.932	┬0.901	0.677	41.850	0.350	0.550	┬0.000	0.861	0.796	┬0.898	0.877

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:55:57	68.010	┬605.100	┬3733.000	95.102%	0.000	59.480	28.540
2	10:56:19	70.890	┬615.300	┬3765.000	95.856%	0.000	61.520	29.550
3	10:56:41	70.350	┬600.200	┬3713.000	98.557%	0.000	60.510	28.690
x		69.750	┬606.900	┬3737.000	96.505%	0.000	60.510	28.930
σ		1.534	┬7.720	┬26.120	1.817%	0.000	1.019	0.545
%RSD		2.200	┬1.272	┬0.699	1.883	0.000	1.684	1.884

STD5 10/14/2016 11:01:18 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:01:40	96.029%	M 3154.000	M 1286.000	TM 50860.000	TM 155000.000	TM 154100.000	TM 52830.000	TM 156600.000	97.168%	0.000	TM 6412.000	TM 2093.000
2	11:02:02	95.457%	3102.000	1247.000	T 49460.000	TM 151700.000	TM 150300.000	TM 51990.000	TM 157300.000	98.445%	0.000	TM 6321.000	TM 2078.000
3	11:02:23	92.909%	M 3171.000	M 1304.000	T 49670.000	TM 153500.000	TM 154600.000	TM 53000.000	TM 160200.000	95.938%	0.000	TM 6492.000	TM 2129.000
x		94.798%	M 3142.000	M 1279.000	TM 50000.000	TM 153400.000	TM 153000.000	TM 52610.000	TM 158000.000	97.183%	0.000	TM 6408.000	TM 2100.000
σ		1.661%	M 36.060	M 29.340	TM 756.600	TM 1666.000	TM 2360.000	TM 542.600	TM 1900.000	1.253%	0.000	TM 85.420	TM 25.890
%RSD		1.752	M 1.148	M 2.293	TM 1.513	TM 1.086	TM 1.543	TM 1.031	TM 1.202	1.290	0.000	TM 1.333	TM 1.233

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:01:40	-28.870	TM 6411.000	TM 152600.000	TM 2709.000	TM 6666.000	TM 6908.000	TM 6734.000	M 1003.000	-3.402	996.800	0.000	0.000
2	11:02:02	-29.790	TM 6381.000	TM 151800.000	TM 2705.000	TM 6593.000	TM 6781.000	TM 6652.000	997.600	-3.096	988.200	0.000	0.000
3	11:02:23	-37.300	TM 6522.000	TM 154000.000	TM 2782.000	TM 6865.000	TM 6834.000	TM 6698.000	M 1020.000	-3.359	986.400	0.000	0.000
x		-31.990	TM 6438.000	TM 152800.000	TM 2732.000	TM 6708.000	TM 6841.000	TM 6695.000	M 1007.000	-3.286	990.500	0.000	0.000
σ		4.622	TM 74.170	TM 1112.000	TM 43.490	TM 140.900	TM 63.500	TM 41.010	M 11.670	0.166	5.590	0.000	0.000
%RSD		14.450	TM 1.152	TM 0.728	TM 1.592	TM 2.101	TM 0.928	TM 0.613	M 1.159	5.045	0.564	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:01:40	TM 1077.000	94.959%	TM 6818.000	M 502.400	44.090	999.900	93.872%	T 0.000	TM 1354.000	TM 1337.000	TM 6651.000	100.152%
2	11:02:02	TM 1082.000	95.511%	TM 6990.000	M 500.600	40.990	M 1001.000	95.273%	T 0.000	TM 1352.000	TM 1338.000	TM 6662.000	100.002%
3	11:02:23	TM 1066.000	94.179%	TM 7056.000	498.700	48.620	999.300	95.271%	T 0.000	TM 1363.000	TM 1350.000	TM 6729.000	101.684%
x		TM 1075.000	94.883%	TM 6955.000	M 500.600	44.570	M 1000.000	94.806%	T 0.000	TM 1356.000	TM 1342.000	TM 6681.000	100.613%
σ		TM 8.116	0.669%	TM 122.900	M 1.872	3.840	M 1.085	0.808%	T 0.000	TM 5.774	TM 6.981	TM 42.470	0.931%
%RSD		TM 0.755	0.705	TM 1.768	M 0.374	8.617	M 0.108	0.853	T 0.000	TM 0.426	TM 0.520	TM 0.636	0.925

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:01:40	M 140.400	TM 1067.000	TM 6510.000	95.337%	0.000	M 126.100	M 60.380
2	11:02:02	M 142.400	TM 1056.000	TM 6453.000	97.117%	0.000	M 126.100	M 60.360
3	11:02:23	M 141.400	TM 1063.000	TM 6509.000	96.791%	0.000	M 127.400	M 60.670
x		M 141.400	TM 1062.000	TM 6491.000	96.415%	0.000	M 126.500	M 60.470
σ		M 1.041	TM 5.333	TM 32.160	0.948%	0.000	M 0.718	M 0.169
%RSD		M 0.736	TM 0.502	TM 0.496	0.983	0.000	M 0.567	M 0.280

ICV 10/14/2016 11:07:02 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:24	86.986%	334.800	145.000	T 5210.000	T 15360.000	T 15540.000	T 5022.000	13590.000	89.910%	0.000	T 604.900	185.400
2	11:07:46	89.490%	329.000	135.700	T 5303.000	T 15530.000	T 15720.000	T 5107.000	13950.000	88.020%	0.000	573.000	189.500
3	11:08:08	85.941%	336.900	145.100	T 5153.000	T 15310.000	T 15460.000	T 4961.000	13720.000	89.213%	0.000	562.400	185.700
x		87.472%	106.733%	113.550%	T 104.446%	T 102.662%	T 103.830%	T 100.598%	91.679%	89.048%	0.000	T 92.813%	93.415%
σ		1.824%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.956%	0.000	T n/a	n/a
%RSD		2.085	1.223	3.827	T 1.452	T 0.725	T 0.847	T 1.461	1.311	1.074	0.000	T 3.814	1.218

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:24	13.920	T 616.100	T 15100.000	246.400	641.400	621.300	634.400	103.500	0.038	107.700	0.000	0.000
2	11:07:46	17.040	T 631.000	T 15490.000	254.700	653.800	629.600	636.500	101.900	0.064	105.500	0.000	0.000
3	11:08:08	15.100	T 622.200	T 15140.000	248.800	643.900	625.400	637.900	102.800	-0.057	108.900	0.000	0.000
x		15.350	T 99.700%	T 101.623%	99.977%	103.423%	100.070%	101.804%	102.718%	0.015	107.362%	0.000	0.000
σ		1.578	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.064	n/a	0.000	0.000
%RSD		10.280	T 1.201	T 1.412	1.704	1.013	0.659	0.276	0.772	426.300	1.575	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:24	88.300	91.851%	279.400	47.660	2.049	100.100	92.386%	0.000	116.200	115.200	553.000	94.817%
2	11:07:46	90.010	91.672%	283.800	48.910	5.329	99.200	92.287%	0.000	119.000	117.100	558.700	93.581%
3	11:08:08	88.660	91.228%	280.200	48.550	5.018	101.800	91.634%	0.000	118.600	117.700	562.400	94.661%
x		88.990	91.584%	89.962%	96.744%	4.132	100.367%	92.102%	0.000	118.000	93.346%	89.284%	94.353%
σ		0.900	0.321%	n/a	n/a	1.811	n/a	0.409%	0.000	1.526	n/a	n/a	0.673%
%RSD		1.011	0.350	0.828	1.328	43.820	1.310	0.444	0.000	1.294	1.090	0.846	0.714

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:24	23.690	87.840	T 589.300	92.526%	0.000	14.820	8.964
2	11:07:46	24.080	86.630	T 588.600	93.461%	0.000	15.820	8.961
3	11:08:08	23.920	88.130	T 589.300	92.409%	0.000	16.850	9.024
x		119.480%	87.534%	T 94.247%	92.799%	0.000	79.153%	89.829%
σ		n/a	n/a	T n/a	0.577%	0.000	n/a	n/a
%RSD		0.819	0.910	T 0.073	0.621	0.000	6.431	0.395

ICVL 10/14/2016 11:12:46 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:08	93.812%	1.447	46.380	441.700	199.300	69.530	446.600	454.000	97.528%	0.000	5.384	3.602
2	11:13:30	95.022%	1.313	48.910	T 511.100	209.100	78.660	451.500	463.500	94.502%	0.000	6.148	3.874
3	11:13:51	94.061%	1.410	46.340	450.600	199.300	74.520	440.900	463.500	96.074%	0.000	5.720	3.574
x		94.298%	139.045%	118.015%	T 93.558%	101.283%	148.467%	89.261%	92.071%	96.035%	0.000	115.010%	92.076%
σ		0.639%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.514%	0.000	n/a	n/a
%RSD		0.677	4.974	3.121	T 8.070	2.800	6.156	1.185	1.196	1.576	0.000	6.655	4.501

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:08	14.780	2.367	213.200	1.069	2.540	5.344	20.300	2.853	0.340	5.409	0.000	0.000
2	11:13:30	15.320	2.640	221.900	1.162	3.075	5.660	21.200	1.979	0.452	4.158	0.000	0.000
3	11:13:51	15.070	2.572	221.000	1.087	2.645	5.766	20.610	2.005	0.428	3.783	0.000	0.000
x		15.060	126.327%	109.359%	110.575%	137.653%	111.798%	103.523%	113.956%	0.407	111.249%	0.000	0.000
σ		0.268	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.059	n/a	0.000	0.000
%RSD		1.781	5.634	2.206	4.473	10.300	3.928	2.189	21.820	14.530	19.130	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:08	4.452	97.963%	10.220	0.941	-1.374	1.032	96.562%	0.000	2.407	2.255	9.270	96.522%
2	11:13:30	4.476	96.484%	10.650	1.008	-0.862	1.049	97.448%	0.000	2.474	2.394	9.406	96.794%

3	11:13:51	4.707	97.415%	10.740	1.013	-0.559	1.054	97.582%	0.000	2.421	2.352	8.598	97.528%
x		90.893%	97.287%	105.348%	98.706%	-0.932	104.529%	97.197%	0.000	2.434	116.687%	90.917%	96.948%
σ		n/a	0.748%	n/a	n/a	0.412	n/a	0.554%	0.000	0.036	n/a	n/a	0.520%
%RSD		3.098	0.768	2.611	4.088	44.200	1.124	0.570	0.000	1.466	3.062	4.758	0.537

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:08	1.686	1.775	1.695	95.649%	0.000	1.528	0.903
2	11:13:30	1.861	1.829	1.826	96.549%	0.000	1.555	0.934
3	11:13:51	1.785	1.811	1.783	97.428%	0.000	1.598	0.913
x		88.860%	90.248%	176.818%	96.542%	0.000	78.009%	91.680%
σ		n/a	n/a	n/a	0.890%	0.000	n/a	n/a
%RSD		4.937	1.534	3.778	0.922	0.000	2.274	1.736

ICBIS 10/14/2016 11:18:29 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:51	98.885%	0.011	0.437	4.218	-2.606	-0.239	-1.204	-11.060	98.906%	0.000	0.654	-0.058
2	11:19:13	96.769%	0.031	0.496	2.671	-3.598	-1.119	-3.216	-9.919	98.941%	0.000	0.521	-0.071
3	11:19:34	94.948%	-0.030	0.256	4.766	-3.645	-1.224	-1.409	-6.157	96.594%	0.000	0.049	-0.121
x		96.867%	0.004	0.396	3.885	-3.283	-0.861	-1.943	-9.045	98.147%	0.000	0.408	-0.083
σ		1.970%	0.031	0.126	1.086	0.587	0.541	1.107	2.565	1.345%	0.000	0.318	0.033
%RSD		2.034	711.100	31.680	27.960	17.870	62.810	56.980	28.350	1.370	0.000	77.980	39.700

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:51	18.310	-0.086	9.883	-0.135	-0.314	-0.409	-0.519	-0.038	0.509	-0.781	0.000	0.000
2	11:19:13	18.410	-0.102	8.525	-0.169	-0.297	-0.554	-0.514	0.076	0.522	-0.106	0.000	0.000
3	11:19:34	19.860	-0.127	8.400	-0.152	-0.403	-0.512	-0.760	0.237	0.476	0.650	0.000	0.000
x		18.860	-0.105	8.936	-0.152	-0.338	-0.492	-0.598	0.092	0.502	-0.079	0.000	0.000
σ		0.865	0.021	0.823	0.017	0.057	0.074	0.140	0.138	0.024	0.716	0.000	0.000
%RSD		4.584	19.740	9.204	11.190	16.790	15.140	23.490	150.700	4.697	902.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:51	-0.028	99.896%	-0.114	-0.026	-0.776	-0.040	98.043%	0.000	0.286	0.154	-0.279	98.984%
2	11:19:13	-0.050	98.525%	-0.092	-0.020	-0.713	-0.063	99.120%	0.000	0.271	0.163	-0.272	97.747%
3	11:19:34	-0.043	98.294%	-0.018	-0.029	-0.662	-0.079	98.560%	0.000	0.313	0.178	-0.310	98.418%
x		-0.040	98.905%	-0.075	-0.025	-0.717	-0.061	98.574%	0.000	0.290	0.165	-0.287	98.383%
σ		0.011	0.866%	0.050	0.004	0.057	0.020	0.539%	0.000	0.021	0.013	0.020	0.619%
%RSD		27.240	0.875	66.980	17.630	7.992	32.600	0.547	0.000	7.382	7.611	6.993	0.629

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:51	0.006	-0.043	0.165	93.080%	0.000	0.550	0.000
2	11:19:13	0.023	-0.073	0.115	97.407%	0.000	0.565	-0.001
3	11:19:34	0.000	-0.045	0.125	95.337%	0.000	0.521	-0.001
x		0.010	-0.054	0.135	95.275%	0.000	0.545	-0.001
σ		0.012	0.017	0.026	2.164%	0.000	0.022	0.001

%RSD	120.700	30.920	19.420	2.272	0.000	4.073	121.600	

ICSA 10/14/2016 11:24:11 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:24:33	88.370%	-0.106	-0.205	TM 94140.000	T 94750.000	T 92730.000	TM 95090.000	T 95490.000	96.624%	0.000	0.512	0.691
2	11:24:55	87.790%	-0.088	0.370	TM 96510.000	T 96890.000	T 96030.000	TM 96950.000	T 97590.000	96.157%	0.000	0.727	0.843
3	11:25:17	87.988%	-0.088	-0.503	TM 93810.000	T 95930.000	T 93630.000	TM 95910.000	T 96250.000	98.409%	0.000	0.569	0.801
x		88.049%	-1.#IO%	-1.#IO%	TM 94.820%	T 95.859%	T 94.127%	TM 95.983%	T 96.442%	97.063%	0.000	1.#IO%	1.#IO%
σ		0.295%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.189%	0.000	n/a	n/a
%RSD		0.335	11.010	393.300	TM 1.554	T 1.120	T 1.812	TM 0.971	T 1.102	1.225	0.000	18.430	10.100

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:24:33	6.620	0.006	T 94540.000	-0.133	-0.033	0.661	-1.524	0.080	0.377	0.083	0.000	0.000
2	11:24:55	6.492	0.029	T 96960.000	-0.131	0.096	0.576	-1.891	-0.262	0.410	-0.366	0.000	0.000
3	11:25:17	6.507	0.043	T 97080.000	-0.138	0.125	0.578	-1.363	0.083	0.376	0.486	0.000	0.000
x		6.540	1.#IO%	T 96.193%	-1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	0.388	1.#IO%	0.000	0.000
σ		0.070	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.020	n/a	0.000	0.000
%RSD		1.068	71.990	T 1.492	2.792	133.300	8.020	16.990	599.800	5.088	630.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:24:33	0.613	96.102%	T 1945.000	0.046	7.382	0.128	95.867%	0.000	0.279	0.174	-0.269	98.678%
2	11:24:55	0.605	96.669%	T 2001.000	0.045	6.768	0.191	96.952%	0.000	0.287	0.194	-0.200	103.234%
3	11:25:17	0.645	99.050%	T 1987.000	0.054	9.047	0.092	98.198%	0.000	0.346	0.200	-0.225	104.813%
x		1.#IO%	97.273%	T 98.889%	1.#IO%	7.732	1.#IO%	97.006%	0.000	0.304	1.#IO%	-1.#IO%	102.242%
σ		n/a	1.564%	T n/a	n/a	1.179	n/a	1.167%	0.000	0.037	n/a	n/a	3.186%
%RSD		3.370	1.608	T 1.459	10.580	15.250	36.600	1.203	0.000	12.050	7.024	14.980	3.116

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:24:33	0.264	-0.047	0.289	93.911%	0.000	0.908	-0.001
2	11:24:55	0.213	-0.061	0.290	97.359%	0.000	0.765	-0.001
3	11:25:17	0.219	-0.063	0.289	96.895%	0.000	0.668	-0.003
x		1.#IO%	-1.#IO%	1.#IO%	96.055%	0.000	1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	1.871%	0.000	n/a	n/a
%RSD		11.980	15.280	0.106	1.948	0.000	15.460	60.320

ICSAB 10/14/2016 11:29:54 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:16	86.598%	26.210	403.800	TM 94250.000	T 95880.000	T 93920.000	TM 95950.000	T 97080.000	96.080%	0.000	21.520	45.230
2	11:30:38	84.718%	25.290	427.000	TM 94740.000	T 95670.000	T 94410.000	TM 96450.000	T 96530.000	97.375%	0.000	21.320	46.210
3	11:30:59	84.009%	25.930	427.000	TM 94600.000	T 95460.000	T 95340.000	TM 96440.000	T 97880.000	97.369%	0.000	22.620	45.340
x		85.108%	103.246%	104.820%	TM 94.528%	T 95.668%	T 94.555%	TM 96.282%	T 97.164%	96.941%	0.000	87.286%	91.189%
σ		1.338%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.746%	0.000	n/a	n/a
%RSD		1.572	1.827	3.189	TM 0.269	T 0.220	T 0.759	TM 0.298	T 0.699	0.769	0.000	3.189	1.183

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:16	8.965	22.020	T 95130.000	22.610	21.960	44.160	42.210	42.970	0.088	119.100	0.000	0.000
2	11:30:38	8.878	21.720	T 96780.000	22.700	22.780	44.520	43.960	45.540	0.001	119.500	0.000	0.000
3	11:30:59	7.709	22.260	T 97750.000	22.830	23.060	44.750	43.390	44.680	0.068	118.200	0.000	0.000
x		8.517	87.991%	T 96.554%	90.854%	90.400%	88.955%	86.376%	98.664%	0.052	95.142%	0.000	0.000
σ		0.702	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.046	n/a	0.000	0.000
%RSD		8.236	1.238	T 1.373	0.473	2.544	0.669	2.069	2.946	87.390	0.567	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:16	0.568	97.613%	T 1941.000	23.030	9.086	23.080	97.405%	0.000	44.730	44.070	222.200	104.125%
2	11:30:38	0.539	97.080%	T 2013.000	23.170	9.335	22.780	100.000%	0.000	44.520	44.300	218.600	106.311%
3	11:30:59	0.610	99.324%	T 2014.000	23.130	7.240	23.560	100.186%	0.000	45.960	45.210	223.500	107.173%
x		0.572	98.006%	T 99.473%	92.436%	8.554	92.569%	99.197%	0.000	45.070	89.051%	88.570%	105.870%
σ		0.035	1.173%	T n/a	n/a	1.144	n/a	1.555%	0.000	0.774	n/a	n/a	1.572%
%RSD		6.187	1.196	T 2.108	0.310	13.380	1.715	1.567	0.000	1.718	1.357	1.147	1.484

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:16	18.530	21.690	22.320	97.304%	0.000	17.330	10.200
2	11:30:38	18.660	22.080	22.780	97.262%	0.000	18.490	10.390
3	11:30:59	18.960	21.560	22.010	101.113%	0.000	18.720	10.230
x		93.585%	87.103%	89.474%	98.560%	0.000	90.898%	102.754%
σ		n/a	n/a	n/a	2.211%	0.000	n/a	n/a
%RSD		1.175	1.228	1.718	2.244	0.000	4.107	0.995

CCV 10/14/2016 11:35:38 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:59	83.493%	634.100	252.600	T 9597.000	T 28680.000	T 28930.000	T 9492.000	T 27770.000	89.420%	0.000	T 1157.000	352.900
2	11:36:21	82.595%	637.400	256.900	T 9817.000	T 29430.000	T 29610.000	T 9689.000	26990.000	86.567%	0.000	T 1180.000	361.300
3	11:36:43	80.083%	650.100	268.600	T 9927.000	T 30010.000	T 29930.000	T 9792.000	T 29150.000	85.061%	0.000	T 1214.000	370.800
x		82.057%	102.483%	103.753%	T 97.804%	T 97.913%	T 98.304%	T 96.577%	T 93.231%	87.016%	0.000	T 94.692%	90.419%
σ		1.767%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.214%	0.000	T n/a	n/a
%RSD		2.154	1.320	3.180	T 1.718	T 2.278	T 1.734	T 1.581	T 3.898	2.544	0.000	T 2.420	2.468

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:59	20.470	T 1182.000	T 29100.000	467.000	1196.000	1134.000	1150.000	189.400	-0.284	192.700	0.000	0.000
2	11:36:21	24.620	T 1209.000	T 29600.000	480.100	1217.000	1150.000	1167.000	190.800	-0.299	195.400	0.000	0.000
3	11:36:43	22.080	T 1224.000	T 30360.000	493.900	1248.000	1169.000	1167.000	193.500	-0.396	197.800	0.000	0.000
x		22.390	T 96.403%	T 98.952%	96.068%	97.640%	92.085%	92.922%	95.613%	-0.326	97.650%	0.000	0.000
σ		2.088	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.061	n/a	0.000	0.000
%RSD		9.327	T 1.761	T 2.132	2.794	2.148	1.493	0.863	1.080	18.660	1.294	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:59	175.900	93.041%	1141.000	96.430	11.780	192.800	93.364%	0.000	225.300	222.700	1081.000	95.262%
2	11:36:21	178.900	90.780%	1173.000	99.000	8.061	193.700	91.675%	0.000	226.700	226.500	1107.000	96.170%
3	11:36:43	180.500	90.038%	T 1286.000	97.490	10.330	192.400	91.323%	0.000	231.300	228.000	1111.000	94.829%
x		178.400	91.286%	T 96.015%	97.638%	10.060	96.481%	92.121%	0.000	227.800	90.286%	87.983%	95.420%
σ		2.323	1.564%	T n/a	n/a	1.874	n/a	1.091%	0.000	3.188	n/a	n/a	0.684%
%RSD		1.302	1.714	T 6.367	1.320	18.630	0.322	1.184	0.000	1.400	1.207	1.476	0.717

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:59	21.630	174.000	T 1203.000	92.990%	0.000	18.330	9.265
2	11:36:21	22.280	173.800	T 1204.000	93.018%	0.000	18.810	9.282
3	11:36:43	22.350	176.100	T 1216.000	92.042%	0.000	19.600	9.435
x		110.438%	87.325%	T 96.624%	92.683%	0.000	94.565%	93.277%
σ		n/a	n/a	T n/a	0.556%	0.000	n/a	n/a
%RSD		1.797	0.722	T 0.605	0.600	0.000	3.398	1.003

CCB 10/14/2016 11:41:21 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:43	84.958%	0.042	0.164	14.640	10.580	10.750	11.260	6.334	89.473%	0.000	0.575	-0.180
2	11:42:05	84.637%	0.152	-0.343	18.740	23.210	23.650	14.820	15.350	90.400%	0.000	1.114	-0.158
3	11:42:26	84.690%	0.224	-1.388	25.070	29.230	29.810	19.820	14.340	87.896%	0.000	0.481	-0.104
x		84.762%	0.139	-0.522	19.480	21.000	21.400	15.300	12.010	89.256%	0.000	0.723	-0.147
σ		0.172%	0.092	0.791	5.254	9.516	9.728	4.297	4.942	1.266%	0.000	0.341	0.039
%RSD		0.203	65.890	151.500	26.960	45.310	45.450	28.080	41.150	1.419	0.000	47.180	26.680

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:43	14.600	0.097	20.800	-0.071	0.002	-0.169	-0.469	0.649	0.348	-0.117	0.000	0.000
2	11:42:05	13.740	0.301	30.920	0.007	0.078	0.043	-0.038	-0.358	0.454	-0.969	0.000	0.000
3	11:42:26	14.980	0.424	38.940	0.102	0.306	0.093	-0.065	-0.152	0.407	0.185	0.000	0.000
x		14.440	0.274	30.220	0.013	0.129	-0.011	-0.191	0.046	0.403	-0.300	0.000	0.000
σ		0.633	0.165	9.095	0.087	0.158	0.139	0.241	0.532	0.053	0.598	0.000	0.000
%RSD		4.381	60.140	30.100	678.700	123.200	1270.000	126.600	1148.000	13.120	199.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:43	-0.013	92.536%	1.269	-0.002	-0.978	0.003	94.451%	0.000	0.399	0.257	-0.147	94.679%
2	11:42:05	0.023	93.764%	1.602	0.021	-0.635	0.014	94.181%	0.000	0.400	0.349	0.173	95.621%

3	11:42:26	0.031	95.044%	1.706	0.013	-0.498	-0.047	94.163%	0.000	0.540	0.339	0.261	94.823%
x		0.014	93.781%	1.526	0.011	-0.704	-0.010	94.265%	0.000	0.446	0.315	0.096	95.041%
σ		0.024	1.254%	0.228	0.012	0.247	0.033	0.161%	0.000	0.081	0.051	0.215	0.507%
%RSD		172.500	1.337	14.930	111.400	35.150	329.200	0.171	0.000	18.190	16.110	224.700	0.534

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:43	0.015	0.035	0.348	94.631%	0.000	0.502	-0.000
2	11:42:05	0.016	0.048	0.525	94.361%	0.000	0.472	0.004
3	11:42:26	0.017	0.043	0.607	94.887%	0.000	0.436	0.004
x		0.016	0.042	0.494	94.626%	0.000	0.470	0.002
σ		0.001	0.007	0.132	0.263%	0.000	0.033	0.002
%RSD		6.708	15.740	26.810	0.278	0.000	6.966	88.800

MB 200-110153/1-A 10/14/2016 11:47:04 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:26	93.671%	0.104	-1.785	90.940	31.130	40.200	35.560	40.050	94.626%	0.000	0.737	0.299
2	11:47:48	94.405%	0.265	-1.802	99.000	39.850	44.950	39.430	44.720	94.791%	0.000	1.022	0.354
3	11:48:09	91.413%	0.094	-1.371	90.090	32.610	39.760	35.660	38.300	96.352%	0.000	0.667	0.360
x		93.163%	0.154	-1.653	93.340	34.530	41.630	36.880	41.030	95.256%	0.000	0.809	0.337
σ		1.559%	0.096	0.244	4.916	4.669	2.876	2.208	3.317	0.952%	0.000	0.188	0.034
%RSD		1.674	62.180	14.770	5.267	13.520	6.908	5.986	8.085	1.000	0.000	23.240	9.997

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:26	12.740	0.729	49.090	0.091	0.337	0.138	0.261	0.196	0.319	-0.504	0.000	0.000
2	11:47:48	12.130	0.718	54.110	0.139	0.473	0.360	0.087	0.364	0.300	-0.796	0.000	0.000
3	11:48:09	12.590	0.667	48.040	0.122	0.273	0.198	0.298	-0.226	0.347	-0.497	0.000	0.000
x		12.490	0.705	50.410	0.117	0.361	0.232	0.215	0.111	0.322	-0.599	0.000	0.000
σ		0.316	0.033	3.242	0.024	0.102	0.115	0.113	0.304	0.023	0.171	0.000	0.000
%RSD		2.529	4.651	6.430	20.500	28.380	49.540	52.500	273.700	7.238	28.550	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:26	0.036	98.053%	0.982	0.007	-0.944	0.040	97.851%	0.000	0.241	0.143	0.083	99.297%
2	11:47:48	0.074	98.266%	1.203	0.004	-0.618	-0.046	96.810%	0.000	0.264	0.178	0.166	97.516%
3	11:48:09	0.041	98.369%	0.973	0.009	-1.117	0.055	97.296%	0.000	0.289	0.178	0.287	99.684%
x		0.050	98.229%	1.052	0.007	-0.893	0.016	97.319%	0.000	0.265	0.166	0.178	98.832%
σ		0.021	0.161%	0.130	0.002	0.254	0.054	0.521%	0.000	0.024	0.020	0.102	1.156%
%RSD		41.570	0.164	12.360	32.970	28.410	329.000	0.536	0.000	8.993	12.090	57.450	1.170

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:26	0.034	-0.032	0.442	96.763%	0.000	1.005	0.005
2	11:47:48	0.038	-0.021	0.513	94.326%	0.000	0.840	0.006
3	11:48:09	0.010	-0.039	0.421	96.777%	0.000	0.702	0.006
x		0.027	-0.031	0.459	95.956%	0.000	0.849	0.006
σ		0.015	0.009	0.048	1.411%	0.000	0.152	0.001

%RSD		56.000	29.780	10.500	1.471	0.000	17.870	9.220

LCS 200-110153/2-A 10/14/2016 11:52:47 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:09	87.837%	9.663	389.100	T 5032.000	1825.000	440.100	T 4842.000	4443.000	89.656%	0.000	43.280	37.190
2	11:53:31	85.301%	9.650	405.100	T 5194.000	1893.000	453.600	T 4913.000	4504.000	87.878%	0.000	44.400	37.370
3	11:53:53	84.781%	9.546	393.400	T 5129.000	1832.000	453.900	T 4934.000	4581.000	87.087%	0.000	43.300	37.310
x		85.973%	9.620	395.900	T 5118.000	1850.000	449.200	T 4896.000	4509.000	88.207%	0.000	43.660	37.290
σ		1.635%	0.064	8.298	T 81.540	37.170	7.867	T 48.270	69.010	1.316%	0.000	0.644	0.092
%RSD		1.902	0.664	2.096	T 1.593	2.009	1.751	T 0.986	1.530	1.492	0.000	1.476	0.248

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:09	11.480	18.000	T 2011.000	9.878	20.360	48.750	168.200	18.400	0.119	32.970	0.000	0.000
2	11:53:31	9.508	18.540	T 2017.000	9.800	20.230	47.240	167.200	18.690	0.141	31.750	0.000	0.000
3	11:53:53	9.777	18.620	T 2046.000	10.170	20.430	48.200	167.100	17.320	0.184	30.550	0.000	0.000
x		10.250	18.390	T 2025.000	9.949	20.340	48.060	167.500	18.140	0.148	31.760	0.000	0.000
σ		1.069	0.341	T 18.420	0.194	0.105	0.767	0.604	0.723	0.033	1.211	0.000	0.000
%RSD		10.420	1.853	T 0.910	1.951	0.516	1.597	0.360	3.987	22.360	3.814	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:09	43.770	92.215%	92.890	9.742	-0.309	9.285	92.896%	0.000	17.570	17.090	88.380	96.204%
2	11:53:31	43.630	91.020%	94.290	9.861	-1.941	8.964	93.968%	0.000	17.440	17.080	85.610	93.650%
3	11:53:53	44.250	91.431%	93.990	9.830	0.286	8.911	91.981%	0.000	17.990	17.410	87.110	96.435%
x		43.880	91.555%	93.720	9.811	-0.655	9.053	92.948%	0.000	17.670	17.190	87.030	95.430%
σ		0.323	0.607%	0.736	0.062	1.153	0.203	0.994%	0.000	0.287	0.188	1.388	1.546%
%RSD		0.736	0.663	0.785	0.628	176.100	2.238	1.070	0.000	1.627	1.095	1.594	1.620

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:09	35.420	16.580	8.732	93.115%	0.000	16.620	9.711
2	11:53:31	37.020	17.110	9.052	92.132%	0.000	17.620	9.956
3	11:53:53	35.110	17.660	9.080	90.907%	0.000	18.370	10.160
x		35.850	17.120	8.955	92.051%	0.000	17.540	9.943
σ		1.026	0.539	0.193	1.106%	0.000	0.878	0.226
%RSD		2.861	3.152	2.158	1.202	0.000	5.004	2.272

200-35680-A-1-O 10/14/2016 11:58:30 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	83.724%	6.051	34.230	T 656.800	T 23550.000	T 67150.000	T 5039.000	TM 156100.000	126.299%	0.000	107.300	83.060
2	11:59:14	83.122%	6.114	32.970	T 653.400	T 23750.000	T 67600.000	T 5159.000	TM 159900.000	124.834%	0.000	108.200	83.080
3	11:59:35	85.548%	5.918	34.620	T 666.500	T 23790.000	T 68640.000	T 5251.000	TM 160700.000	124.739%	0.000	110.000	85.440
x		84.131%	6.028	33.940	T 658.900	T 23700.000	T 67800.000	T 5150.000	TM 158900.000	125.291%	0.000	108.500	83.860
σ		1.263%	0.100	0.862	T 6.803	T 127.300	T 767.900	T 106.100	TM 2498.000	0.874%	0.000	1.354	1.366
%RSD		1.501	1.662	2.540	T 1.033	T 0.537	T 1.133	T 2.061	TM 1.572	0.698	0.000	1.248	1.629

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	4.736	T 4858.000	T 149600.000	58.330	120.200	2362.000	1235.000	13.070	-0.021	31.430	0.000	0.000
2	11:59:14	5.194	T 4983.000	TM 151200.000	57.210	120.200	2336.000	1224.000	12.330	0.049	23.200	0.000	0.000
3	11:59:35	5.564	T 5103.000	TM 155100.000	58.760	124.400	T 2624.000	1238.000	13.050	-0.023	32.500	0.000	0.000
x		5.165	T 4981.000	TM 152000.000	58.100	121.600	T 2441.000	1232.000	12.810	0.002	29.050	0.000	0.000
σ		0.415	T 122.800	TM 2850.000	0.798	2.436	T 159.400	7.226	0.423	0.041	5.089	0.000	0.000
%RSD		8.033	T 2.466	TM 1.875	1.373	2.003	T 6.529	0.586	3.301	2465.000	17.520	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	T 396.500	369.506%	1.687	2.018	-4.018	4.821	93.440%	0.000	1.629	1.554	1037.000	135.554%
2	11:59:14	365.600	371.815%	1.743	1.996	-3.405	4.977	94.916%	0.000	1.560	1.558	1044.000	134.811%
3	11:59:35	T 404.300	378.618%	1.680	2.038	-4.946	5.195	94.625%	0.000	1.633	1.592	1075.000	138.566%
x		T 388.800	373.313%	1.703	2.017	-4.123	4.998	94.327%	0.000	1.607	1.568	1052.000	136.310%
σ		T 20.490	4.737%	0.034	0.021	0.776	0.188	0.782%	0.000	0.041	0.021	20.160	1.988%
%RSD		T 5.269	1.269	2.011	1.036	18.820	3.755	0.829	0.000	2.549	1.349	1.917	1.459

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	0.661	0.655	193.400	102.374%	0.000	22.460	10.140
2	11:59:14	0.678	0.661	191.700	104.348%	0.000	22.490	10.160
3	11:59:35	0.651	0.677	191.300	105.679%	0.000	22.300	10.320
x		0.663	0.665	192.100	104.134%	0.000	22.410	10.210
σ		0.014	0.011	1.142	1.663%	0.000	0.103	0.098
%RSD		2.044	1.723	0.595	1.597	0.000	0.459	0.959

200-35680-A-2-A 10/14/2016 12:04:13 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:04:34	89.567%	3.756	25.580	T 421.400	T 13390.000	T 45280.000	T 3777.000	T 73720.000	118.072%	0.000	74.610	55.980
2	12:04:56	87.689%	3.858	25.270	T 426.800	T 13650.000	T 45750.000	T 3760.000	T 75420.000	117.402%	0.000	75.610	56.160
3	12:05:18	82.521%	3.607	30.230	T 427.700	T 13550.000	T 45550.000	T 3747.000	T 74540.000	118.836%	0.000	75.700	56.270
x		86.592%	3.741	27.030	T 425.300	T 13530.000	T 45530.000	T 3761.000	T 74560.000	118.103%	0.000	75.300	56.140
σ		3.649%	0.126	2.776	T 3.365	T 129.800	T 238.700	T 15.080	T 847.500	0.717%	0.000	0.606	0.146
%RSD		4.214	3.368	10.270	T 0.791	T 0.960	T 0.524	T 0.401	T 1.137	0.607	0.000	0.805	0.260

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:04:34	4.372	T 2907.000	T 91150.000	42.770	91.070	2118.000	993.700	11.010	0.089	15.060	0.000	0.000
2	12:04:56	4.473	T 2944.000	T 92580.000	43.030	91.320	2156.000	993.300	11.300	0.069	17.940	0.000	0.000
3	12:05:18	3.205	T 2898.000	T 91520.000	43.420	91.200	2178.000	1002.000	11.570	0.071	17.240	0.000	0.000
x		4.017	T 2916.000	T 91750.000	43.070	91.190	2151.000	996.400	11.290	0.076	16.740	0.000	0.000
σ		0.705	T 24.290	T 741.000	0.327	0.122	30.350	4.944	0.283	0.011	1.502	0.000	0.000
%RSD		17.540	T 0.833	T 0.808	0.760	0.134	1.411	0.496	2.509	14.810	8.972	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:04:34	160.600	271.632%	1.660	2.028	-6.810	5.026	100.167%	0.000	1.407	1.307	587.300	126.007%
2	12:04:56	162.400	271.202%	1.653	2.164	-2.831	4.803	100.030%	0.000	1.397	1.343	597.200	126.848%
3	12:05:18	164.300	270.555%	1.572	2.127	-3.402	4.713	100.238%	0.000	1.450	1.342	611.700	128.651%
x		162.400	271.129%	1.628	2.106	-4.348	4.847	100.145%	0.000	1.418	1.331	598.700	127.168%
σ		1.843	0.542%	0.049	0.070	2.151	0.161	0.106%	0.000	0.028	0.020	12.260	1.351%
%RSD		1.135	0.200	3.014	3.334	49.480	3.322	0.106	0.000	2.007	1.521	2.048	1.062

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:04:34	0.588	0.389	150.600	105.298%	0.000	13.020	6.659
2	12:04:56	0.588	0.385	152.500	105.499%	0.000	13.200	6.755
3	12:05:18	0.515	0.367	157.000	104.196%	0.000	13.400	6.985
x		0.564	0.380	153.400	104.997%	0.000	13.210	6.800
σ		0.042	0.012	3.282	0.701%	0.000	0.189	0.168
%RSD		7.434	3.133	2.140	0.668	0.000	1.432	2.464

200-35680-A-3-A 10/14/2016 12:09:56 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:17	107.761%	8.729	23.560	T 464.900	T 25310.000	T 95290.000	T 5187.000	T 19490.000	204.323%	0.000	113.600	119.500
2	12:10:39	105.539%	9.193	20.810	T 439.500	T 24690.000	T 93650.000	T 5074.000	T 19190.000	211.163%	0.000	113.000	116.000
3	12:11:01	105.143%	8.146	20.080	T 453.300	T 25020.000	T 93940.000	T 5147.000	T 19510.000	209.686%	0.000	112.000	116.700
x		106.148%	8.690	21.480	T 452.600	T 25010.000	T 94300.000	T 5136.000	T 19400.000	208.390%	0.000	112.900	117.400
σ		1.411%	0.525	1.839	T 12.690	T 311.900	T 876.100	T 57.470	T 177.300	3.599%	0.000	0.818	1.891
%RSD		1.330	6.037	8.559	T 2.804	T 1.247	T 0.929	T 1.119	T 0.914	1.727	0.000	0.725	1.611

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:17	9.528	TM 6455.000	T 130900.000	70.190	168.700	159.100	761.500	3.619	0.113	7.703	0.000	0.000
2	12:10:39	8.439	TM 6385.000	T 128900.000	69.520	164.500	158.000	768.500	3.600	0.106	7.529	0.000	0.000
3	12:11:01	10.040	TM 6441.000	T 131200.000	70.370	165.800	160.400	775.500	3.871	0.097	10.420	0.000	0.000
x		9.334	TM 6427.000	T 130300.000	70.030	166.300	159.100	768.500	3.696	0.105	8.550	0.000	0.000
σ		0.816	TM 37.140	T 1261.000	0.448	2.133	1.205	7.012	0.152	0.008	1.619	0.000	0.000
%RSD		8.744	TM 0.578	T 0.967	0.640	1.282	0.757	0.912	4.103	7.344	18.940	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:17	160.600	644.238%	-0.112	0.929	-11.030	2.767	121.179%	0.000	0.538	0.450	1575.000	186.043%
2	12:10:39	164.300	661.473%	-0.088	0.951	-10.870	2.714	122.144%	0.000	0.545	0.487	1583.000	190.903%

3	12:11:01	T 184.400	660.317%	-0.068	0.997	-9.086	2.484	121.669%	0.000	0.569	0.499	1617.000	189.917%
x		T 169.800	655.343%	-0.089	0.959	-10.330	2.655	121.664%	0.000	0.551	0.479	1592.000	188.955%
σ		T 12.820	9.634%	0.022	0.035	1.079	0.151	0.482%	0.000	0.016	0.026	22.800	2.569%
%RSD		T 7.549	1.470	24.800	3.622	10.450	5.673	0.397	0.000	2.892	5.400	1.432	1.360

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:17	0.104	0.687	125.500	128.508%	0.000	49.700	7.436
2	12:10:39	0.104	0.724	127.700	127.591%	0.000	51.700	7.692
3	12:11:01	0.130	0.716	127.600	129.563%	0.000	51.100	7.619
x		0.113	0.709	126.900	128.554%	0.000	50.830	7.582
σ		0.015	0.020	1.238	0.987%	0.000	1.025	0.132
%RSD		13.180	2.788	0.976	0.768	0.000	2.017	1.738

200-35680-A-4-A 10/14/2016 12:15:39 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:00	103.321%	4.691	37.480	T 439.100	T 18820.000	T 62600.000	T 5504.000	T 37270.000	159.794%	0.000	97.350	83.550
2	12:16:22	103.290%	4.916	38.250	T 435.400	T 18610.000	T 62550.000	T 5493.000	T 37110.000	160.674%	0.000	97.340	81.660
3	12:16:44	101.212%	5.097	35.530	T 422.000	T 18400.000	T 62350.000	T 5501.000	T 37250.000	162.186%	0.000	98.720	82.960
x		102.608%	4.901	37.090	T 432.200	T 18610.000	T 62500.000	T 5499.000	T 37210.000	160.885%	0.000	97.800	82.720
σ		1.208%	0.203	1.400	T 9.007	T 211.900	T 134.200	T 5.428	T 84.170	1.210%	0.000	0.793	0.967
%RSD		1.178	4.142	3.776	T 2.084	T 1.139	T 0.215	T 0.099	T 0.226	0.752	0.000	0.811	1.169

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:00	9.086	TM 8688.000	T 124900.000	52.200	117.700	T 2702.000	1184.000	11.480	0.138	15.980	0.000	0.000
2	12:16:22	8.084	TM 8717.000	T 124900.000	51.560	116.400	T 2686.000	1180.000	11.340	0.132	15.970	0.000	0.000
3	12:16:44	8.200	TM 8680.000	T 124700.000	51.860	116.100	T 2696.000	1188.000	11.420	0.130	17.280	0.000	0.000
x		8.456	TM 8695.000	T 124800.000	51.870	116.700	T 2695.000	1184.000	11.410	0.133	16.410	0.000	0.000
σ		0.548	TM 19.810	T 89.860	0.316	0.833	T 8.012	4.259	0.068	0.004	0.755	0.000	0.000
%RSD		6.486	TM 0.228	T 0.072	0.610	0.713	T 0.297	0.360	0.593	3.360	4.602	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:00	142.100	393.221%	1.361	2.208	-9.230	4.577	119.732%	0.000	1.387	1.350	1078.000	152.495%
2	12:16:22	143.400	396.361%	1.403	2.198	-7.391	4.344	120.594%	0.000	1.512	1.366	1083.000	154.088%
3	12:16:44	141.700	393.687%	1.489	2.184	-6.418	4.102	120.045%	0.000	1.501	1.387	1107.000	154.426%
x		142.400	394.423%	1.418	2.197	-7.680	4.341	120.124%	0.000	1.467	1.367	1089.000	153.670%
σ		0.851	1.694%	0.065	0.012	1.428	0.237	0.436%	0.000	0.069	0.019	15.310	1.031%
%RSD		0.597	0.430	4.600	0.552	18.590	5.467	0.363	0.000	4.705	1.358	1.405	0.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:00	0.533	0.616	185.100	119.512%	0.000	18.950	7.444
2	12:16:22	0.541	0.649	184.100	120.782%	0.000	18.750	7.472
3	12:16:44	0.566	0.648	188.800	118.458%	0.000	19.360	7.762
x		0.547	0.638	186.000	119.584%	0.000	19.020	7.559
σ		0.017	0.019	2.480	1.164%	0.000	0.312	0.176

%RSD		3.128	2.965	1.333	0.973	0.000	1.641	2.332

200-35680-A-5-A 10/14/2016 12:21:22 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:44	103.717%	7.297	31.390	┬466.200	┬16840.000	┬84420.000	┬6291.000	┬16550.000	178.190%	0.000	133.300	98.060
2	12:22:05	102.782%	7.021	31.050	┬457.000	┬16820.000	┬84990.000	┬6253.000	┬16580.000	180.623%	0.000	130.800	96.720
3	12:22:27	100.212%	7.819	33.200	┬434.200	┬16340.000	┬83300.000	┬6199.000	┬16600.000	181.857%	0.000	133.200	98.640
x		102.237%	7.379	31.880	┬452.500	┬16670.000	┬84240.000	┬6247.000	┬16570.000	180.223%	0.000	132.400	97.810
σ		1.814%	0.405	1.158	┬16.490	┬285.600	┬862.600	┬46.000	┬25.520	1.866%	0.000	1.441	0.989
%RSD		1.775	5.494	3.631	┬3.644	┬1.714	┬1.024	┬0.736	┬0.154	1.035	0.000	1.088	1.011

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:44	9.794	┬4288.000	┬128300.000	58.780	138.900	2054.000	1026.000	8.624	0.124	18.500	0.000	0.000
2	12:22:05	10.650	┬4266.000	┬128700.000	58.180	136.500	2029.000	1020.000	8.629	0.132	18.910	0.000	0.000
3	12:22:27	10.760	┬4290.000	┬127800.000	58.740	134.700	2003.000	1023.000	8.637	0.140	18.320	0.000	0.000
x		10.400	┬4281.000	┬128300.000	58.570	136.700	2028.000	1023.000	8.630	0.132	18.580	0.000	0.000
σ		0.529	┬13.200	┬436.500	0.334	2.142	25.750	3.098	0.006	0.008	0.302	0.000	0.000
%RSD		5.089	┬0.308	┬0.340	0.571	1.567	1.269	0.303	0.075	6.047	1.626	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:44	109.400	531.133%	1.354	2.484	-8.647	5.053	121.740%	0.000	1.170	1.100	1265.000	169.409%
2	12:22:05	111.200	534.821%	1.530	2.479	-5.535	4.880	122.288%	0.000	1.260	1.139	1295.000	173.201%
3	12:22:27	109.900	537.573%	1.505	2.497	-6.787	5.049	124.138%	0.000	1.233	1.122	1293.000	173.841%
x		110.200	534.509%	1.463	2.487	-6.990	4.994	122.722%	0.000	1.221	1.121	1284.000	172.150%
σ		0.913	3.231%	0.095	0.009	1.566	0.099	1.257%	0.000	0.046	0.020	16.550	2.396%
%RSD		0.829	0.605	6.506	0.366	22.400	1.973	1.024	0.000	3.786	1.757	1.288	1.392

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:44	0.320	0.858	189.500	122.017%	0.000	27.000	17.640
2	12:22:05	0.318	0.858	190.400	124.148%	0.000	27.360	17.790
3	12:22:27	0.349	0.870	192.800	122.399%	0.000	28.060	18.040
x		0.329	0.862	190.900	122.855%	0.000	27.470	17.830
σ		0.017	0.007	1.695	1.136%	0.000	0.536	0.203
%RSD		5.272	0.801	0.888	0.925	0.000	1.950	1.138

200-35680-A-6-A 10/14/2016 12:27:05 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:27:27	101.372%	4.345	30.250	┬462.800	┬12670.000	┬57960.000	┬4929.000	┬18890.000	156.337%	0.000	92.550	70.280
2	12:27:48	101.170%	5.190	30.520	┬457.200	┬12640.000	┬57970.000	┬4926.000	┬18830.000	156.403%	0.000	94.280	70.910
3	12:28:10	102.131%	4.793	32.680	┬456.800	┬12560.000	┬57720.000	┬4917.000	┬18780.000	157.979%	0.000	93.230	71.180
x		101.558%	4.776	31.150	┬458.900	┬12620.000	┬57880.000	┬4924.000	┬18830.000	156.906%	0.000	93.350	70.790
σ		0.506%	0.423	1.331	┬3.370	┬60.090	┬143.100	┬6.209	┬57.680	0.930%	0.000	0.875	0.463
%RSD		0.499	8.852	4.273	┬0.734	┬0.476	┬0.247	┬0.126	┬0.306	0.592	0.000	0.937	0.654

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:27:27	11.120	┬3304.000	┬95180.000	44.950	99.230	┬3451.000	1304.000	9.683	0.178	22.970	0.000	0.000
2	12:27:48	9.301	┬3354.000	┬96980.000	44.850	100.700	┬3523.000	1321.000	9.650	0.169	24.450	0.000	0.000
3	12:28:10	10.470	┬3301.000	┬96040.000	44.460	101.700	┬3578.000	1341.000	9.892	0.176	23.290	0.000	0.000
x		10.300	┬3320.000	┬96070.000	44.750	100.500	┬3517.000	1322.000	9.742	0.174	23.570	0.000	0.000
σ		0.924	┬30.050	┬900.400	0.258	1.224	┬63.610	18.710	0.132	0.005	0.779	0.000	0.000
%RSD		8.969	┬0.905	┬0.937	0.577	1.218	┬1.808	1.416	1.351	2.660	3.305	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:27:27	90.870	370.323%	1.675	2.536	-3.620	7.588	123.048%	0.000	1.530	1.549	976.900	150.258%
2	12:27:48	92.330	372.074%	1.578	2.530	-2.779	7.419	122.582%	0.000	1.595	1.551	990.300	151.077%
3	12:28:10	91.530	369.888%	1.570	2.564	-4.524	7.556	122.096%	0.000	1.707	1.583	993.300	154.367%
x		91.580	370.762%	1.608	2.544	-3.641	7.521	122.575%	0.000	1.611	1.561	986.800	151.901%
σ		0.733	1.157%	0.058	0.018	0.873	0.090	0.476%	0.000	0.089	0.019	8.725	2.175%
%RSD		0.800	0.312	3.632	0.720	23.960	1.194	0.389	0.000	5.553	1.200	0.884	1.432

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:27:27	0.574	0.513	196.500	117.785%	0.000	16.020	7.139
2	12:27:48	0.555	0.567	200.400	117.618%	0.000	16.160	7.034
3	12:28:10	0.573	0.528	198.600	120.845%	0.000	16.200	7.034
x		0.567	0.536	198.500	118.749%	0.000	16.130	7.069
σ		0.011	0.028	1.955	1.817%	0.000	0.093	0.060
%RSD		1.918	5.213	0.985	1.530	0.000	0.575	0.855

200-35680-A-6-A SD@5 10/14/2016 12:32:49 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:11	104.576%	0.692	3.791	86.940	2817.000	┬14210.000	┬1217.000	4273.000	142.667%	0.000	22.870	17.820
2	12:33:32	100.225%	0.883	5.006	91.690	2949.000	┬14580.000	┬1214.000	4385.000	138.296%	0.000	23.110	18.110
3	12:33:54	100.633%	0.940	4.206	88.390	2956.000	┬14580.000	┬1244.000	4460.000	136.278%	0.000	24.270	19.100
x		101.811%	0.839	4.334	89.010	2908.000	┬14460.000	┬1225.000	4373.000	139.080%	0.000	23.420	18.340
σ		2.403%	0.130	0.617	2.433	78.620	┬211.100	┬16.570	94.130	3.266%	0.000	0.749	0.672
%RSD		2.360	15.490	14.240	2.734	2.704	┬1.460	┬1.353	2.153	2.348	0.000	3.199	3.662

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:11	30.900	┬795.100	┬23450.000	11.050	24.950	688.000	312.700	4.583	1.150	6.690	0.000	0.000
2	12:33:32	31.820	┬816.700	┬24140.000	11.180	25.780	686.000	310.700	4.606	1.185	5.356	0.000	0.000
3	12:33:54	32.730	┬827.200	┬24330.000	11.370	25.460	694.800	315.100	4.936	1.118	5.425	0.000	0.000
x		31.820	┬813.000	┬23970.000	11.200	25.400	689.600	312.800	4.709	1.151	5.823	0.000	0.000
σ		0.915	┬16.380	┬460.200	0.159	0.420	4.581	2.174	0.198	0.034	0.751	0.000	0.000
%RSD		2.877	┬2.015	┬1.919	1.422	1.653	0.664	0.695	4.197	2.911	12.900	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:11	19.030	184.302%	0.288	0.548	-2.634	1.693	128.934%	0.000	0.429	0.337	202.900	129.509%
2	12:33:32	19.220	181.364%	0.278	0.538	-1.353	1.540	127.994%	0.000	0.429	0.353	206.900	129.329%
3	12:33:54	19.600	183.657%	0.283	0.578	-2.407	1.799	126.966%	0.000	0.453	0.336	208.700	131.029%
x		19.280	183.107%	0.283	0.554	-2.132	1.677	127.965%	0.000	0.437	0.342	206.200	129.956%
σ		0.289	1.544%	0.005	0.020	0.684	0.131	0.985%	0.000	0.014	0.009	2.993	0.934%
%RSD		1.499	0.843	1.730	3.694	32.080	7.791	0.769	0.000	3.142	2.724	1.452	0.718

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:11	0.053	-0.015	42.030	116.245%	0.000	3.102	1.465
2	12:33:32	0.097	-0.016	42.120	117.008%	0.000	3.160	1.448
3	12:33:54	0.099	-0.018	42.700	116.321%	0.000	3.206	1.523
x		0.083	-0.017	42.280	116.525%	0.000	3.156	1.479
σ		0.026	0.002	0.366	0.420%	0.000	0.052	0.039
%RSD		31.110	9.660	0.867	0.361	0.000	1.657	2.660

200-35680-A-6-A PDS 10/14/2016 12:38:32 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:54	97.007%	14.600	436.700	┬4030.000	┬13550.000	┬57430.000	┬8595.000	┬21960.000	148.977%	0.000	124.200	96.680
2	12:39:16	96.353%	14.570	443.500	┬4092.000	┬13880.000	┬57040.000	┬8757.000	┬22360.000	149.725%	0.000	125.900	97.640
3	12:39:37	93.400%	15.150	476.200	┬4223.000	┬14200.000	┬57940.000	┬8758.000	┬22610.000	146.368%	0.000	128.200	99.570
x		95.587%	14.770	452.100	┬4115.000	┬13880.000	┬57470.000	┬8703.000	┬22310.000	148.357%	0.000	126.100	97.970
σ		1.922%	0.328	21.150	┬98.800	┬324.000	┬454.400	┬93.300	┬329.400	1.763%	0.000	1.979	1.469
%RSD		2.010	2.221	4.679	┬2.401	┬2.335	┬0.791	┬1.072	┬1.476	1.188	0.000	1.569	1.499

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:54	11.490	┬3239.000	┬94420.000	50.890	110.700	┬3478.000	1469.000	15.850	0.126	57.640	0.000	0.000
2	12:39:16	11.970	┬3300.000	┬96650.000	51.620	112.600	┬3495.000	1458.000	15.380	0.167	55.180	0.000	0.000
3	12:39:37	11.060	┬3364.000	┬98450.000	52.760	114.200	┬3432.000	1467.000	15.560	0.142	55.830	0.000	0.000
x		11.510	┬3301.000	┬96510.000	51.760	112.500	┬3468.000	1465.000	15.600	0.145	56.220	0.000	0.000
σ		0.455	┬62.270	┬2020.000	0.941	1.781	┬32.730	5.691	0.239	0.021	1.272	0.000	0.000
%RSD		3.956	┬1.887	┬2.093	1.818	1.583	┬0.944	0.389	1.530	14.550	2.262	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:54	133.600	339.662%	32.050	12.030	-6.248	16.530	113.969%	0.000	18.080	17.940	1065.000	144.012%
2	12:39:16	135.000	347.461%	32.510	11.850	-2.732	16.050	116.512%	0.000	18.080	18.050	1068.000	143.925%

3	12:39:37	133.600	349.471%	32.260	11.950	-4.014	16.490	116.844%	0.000	18.370	18.090	1071.000	145.639%
x		134.100	345.531%	32.280	11.940	-4.331	16.360	115.775%	0.000	18.170	18.030	1068.000	144.525%
σ		0.812	5.181%	0.233	0.088	1.779	0.265	1.573%	0.000	0.168	0.077	2.890	0.965%
%RSD		0.606	1.500	0.722	0.737	41.080	1.620	1.359	0.000	0.922	0.425	0.271	0.668

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:54	14.250	16.250	201.400	112.493%	0.000	32.710	15.780
2	12:39:16	13.910	16.420	204.400	114.220%	0.000	33.270	16.250
3	12:39:37	14.360	16.250	202.400	115.905%	0.000	33.330	16.000
x		14.170	16.300	202.700	114.206%	0.000	33.100	16.010
σ		0.234	0.099	1.532	1.706%	0.000	0.341	0.234
%RSD		1.654	0.606	0.756	1.494	0.000	1.031	1.462

CCV 10/14/2016 12:44:17 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:38	83.266%	683.500	270.400	┬9375.000	┬28290.000	┬28240.000	┬9501.000	┬28100.000	101.987%	0.000	┬1173.000	354.000
2	12:45:00	81.108%	665.200	276.400	┬9596.000	┬29560.000	┬29270.000	┬9446.000	┬28520.000	97.451%	0.000	┬1205.000	362.500
3	12:45:22	79.787%	679.000	276.800	┬9603.000	┬28940.000	┬28900.000	┬9546.000	┬28370.000	96.127%	0.000	┬1207.000	366.100
x		81.387%	108.146%	109.811%	┬95.244%	┬96.435%	┬96.005%	┬94.976%	┬94.434%	98.522%	0.000	┬95.596%	90.218%
σ		1.756%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	3.073%	0.000	┬n/a	n/a
%RSD		2.158	1.409	1.292	┬1.362	┬2.192	┬1.798	┬0.530	┬0.745	3.119	0.000	┬1.581	1.731

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:38	25.790	┬1179.000	┬29050.000	476.900	1213.000	1228.000	1189.000	194.500	-0.063	198.900	0.000	0.000
2	12:45:00	21.970	┬1195.000	┬29340.000	480.600	1244.000	1204.000	1176.000	192.800	-0.090	194.600	0.000	0.000
3	12:45:22	21.740	┬1211.000	┬29590.000	481.400	1243.000	1211.000	1186.000	198.500	-0.237	195.300	0.000	0.000
x		23.170	┬95.593%	┬97.756%	95.926%	98.659%	97.134%	94.693%	97.633%	-0.130	98.128%	0.000	0.000
σ		2.278	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.094	n/a	0.000	0.000
%RSD		9.832	┬1.302	┬0.925	0.495	1.449	1.011	0.564	1.505	71.810	1.188	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:38	181.800	100.936%	┬1253.000	97.070	8.201	191.100	100.668%	0.000	227.500	222.200	1100.000	101.945%
2	12:45:00	177.000	99.575%	┬1283.000	96.150	3.718	191.200	100.384%	0.000	225.900	220.500	1088.000	100.251%
3	12:45:22	176.400	96.527%	┬1294.000	98.100	12.340	191.000	98.731%	0.000	227.000	222.200	1097.000	97.470%
x		178.400	99.012%	┬102.149%	97.107%	8.086	95.539%	99.927%	0.000	226.800	88.652%	87.624%	99.888%
σ		2.959	2.258%	┬n/a	n/a	4.312	n/a	1.046%	0.000	0.825	n/a	n/a	2.259%
%RSD		1.659	2.280	┬1.668	1.006	53.320	0.063	1.047	0.000	0.364	0.440	0.573	2.262

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:38	21.350	170.200	┬1183.000	96.535%	0.000	17.480	8.893
2	12:45:00	21.380	171.000	┬1195.000	95.753%	0.000	18.320	8.986
3	12:45:22	22.080	173.200	┬1210.000	93.835%	0.000	18.950	9.213
x		108.014%	85.744%	┬95.671%	95.374%	0.000	91.243%	90.308%
σ		n/a	n/a	┬n/a	1.389%	0.000	n/a	n/a

%RSD	1.895	0.909	T 1.125	1.457	0.000	4.053	1.825	

CCB 10/14/2016 12:50:00 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:22	91.260%	-0.040	-1.038	-3.377	1.117	7.739	3.536	-3.648	103.419%	0.000	0.424	-0.203
2	12:50:44	86.199%	-0.050	-1.171	0.613	2.186	10.290	3.859	-2.198	104.058%	0.000	0.397	-0.228
3	12:51:05	88.310%	-0.019	-1.271	-2.630	2.247	11.470	2.823	-3.544	104.709%	0.000	0.512	-0.146
x		88.590%	-0.036	-1.160	-1.798	1.850	9.834	3.406	-3.130	104.062%	0.000	0.444	-0.192
σ		2.542%	0.016	0.117	2.121	0.636	1.907	0.530	0.809	0.645%	0.000	0.060	0.042
%RSD		2.869	44.650	10.080	117.900	34.360	19.390	15.560	25.850	0.620	0.000	13.490	21.940

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:22	16.170	0.180	25.260	-0.170	-0.194	-0.276	-0.440	-0.118	0.494	-0.396	0.000	0.000
2	12:50:44	16.180	0.359	26.520	-0.156	-0.259	-0.124	-0.311	0.214	0.486	-0.225	0.000	0.000
3	12:51:05	15.960	0.444	27.610	-0.150	-0.291	-0.058	-0.499	-0.079	0.479	0.554	0.000	0.000
x		16.100	0.328	26.460	-0.159	-0.248	-0.153	-0.416	0.006	0.486	-0.022	0.000	0.000
σ		0.123	0.135	1.176	0.010	0.049	0.112	0.096	0.181	0.007	0.507	0.000	0.000
%RSD		0.764	41.190	4.445	6.548	19.800	73.190	23.150	3289.000	1.496	2271.000	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:22	-0.022	104.978%	0.627	-0.022	-1.085	-0.008	105.151%	0.000	0.300	0.157	-0.186	101.638%
2	12:50:44	-0.018	104.453%	0.728	-0.004	-1.335	-0.005	105.890%	0.000	0.286	0.174	-0.145	102.066%
3	12:51:05	-0.016	105.522%	0.538	-0.012	-0.755	-0.045	105.346%	0.000	0.322	0.180	-0.065	102.731%
x		-0.018	104.985%	0.631	-0.013	-1.058	-0.019	105.462%	0.000	0.303	0.170	-0.132	102.145%
σ		0.003	0.534%	0.095	0.009	0.291	0.022	0.383%	0.000	0.018	0.012	0.062	0.551%
%RSD		16.560	0.509	15.060	71.060	27.480	115.800	0.363	0.000	6.089	7.224	46.710	0.539

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:22	0.002	-0.025	0.177	98.578%	0.000	0.442	0.000
2	12:50:44	-0.022	-0.048	0.210	98.481%	0.000	0.419	-0.001
3	12:51:05	-0.012	-0.057	0.202	99.083%	0.000	0.383	0.001
x		-0.011	-0.043	0.196	98.714%	0.000	0.414	0.000
σ		0.012	0.017	0.017	0.324%	0.000	0.030	0.001
%RSD		111.500	38.540	8.617	0.328	0.000	7.189	1513.000

CCVL 10/14/2016 12:55:43 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:56:05	88.634%	0.970	43.690	436.300	171.300	54.460	453.300	438.700	104.448%	0.000	4.908	3.476
2	12:56:27	88.817%	0.985	44.060	T 475.400	172.800	53.250	430.800	426.400	106.537%	0.000	4.502	3.515
3	12:56:48	86.075%	1.165	45.120	425.600	174.200	53.110	432.300	441.300	105.815%	0.000	5.137	3.648
x		87.842%	103.965%	110.723%	T 89.154%	86.385%	107.209%	87.766%	87.091%	105.600%	0.000	96.988%	88.659%
σ		1.533%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.061%	0.000	n/a	n/a
%RSD		1.745	10.430	1.683	T 5.880	0.861	1.385	2.869	1.836	1.005	0.000	6.632	2.541

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:56:05	16.890	1.797	207.400	0.914	1.827	4.724	20.090	2.103	0.485	4.474	0.000	0.000
2	12:56:27	17.180	1.860	203.200	0.864	1.874	4.749	19.950	2.158	0.492	4.014	0.000	0.000
3	12:56:48	16.440	1.944	204.900	0.835	1.921	4.839	20.280	2.246	0.514	4.080	0.000	0.000
x		16.840	93.336%	102.577%	87.104%	93.691%	95.413%	100.523%	108.443%	0.497	104.731%	0.000	0.000
σ		0.369	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.015	n/a	0.000	0.000
%RSD		2.190	3.955	1.023	4.551	2.492	1.262	0.828	3.331	3.014	5.931	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:56:05	4.524	106.539%	9.077	1.025	-0.989	0.822	104.683%	0.000	1.955	1.800	8.183	99.539%
2	12:56:27	4.422	105.844%	8.819	0.953	-0.702	0.770	106.113%	0.000	1.894	1.823	8.678	103.604%
3	12:56:48	4.430	103.834%	9.069	0.969	-1.367	1.036	105.015%	0.000	2.008	1.831	8.371	103.188%
x		89.173%	105.406%	89.883%	98.192%	-1.019	87.598%	105.270%	0.000	1.952	90.893%	84.107%	102.111%
σ		n/a	1.405%	n/a	n/a	0.333	n/a	0.748%	0.000	0.057	n/a	n/a	2.236%
%RSD		1.273	1.333	1.632	3.862	32.700	16.080	0.711	0.000	2.926	0.900	2.968	2.190

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:56:05	1.712	1.533	0.988	98.266%	0.000	1.041	0.903
2	12:56:27	1.712	1.611	1.058	96.840%	0.000	1.082	0.934
3	12:56:48	1.582	1.547	1.060	99.167%	0.000	1.122	0.934
x		83.448%	78.182%	103.494%	98.091%	0.000	54.087%	92.368%
σ		n/a	n/a	n/a	1.173%	0.000	n/a	n/a
%RSD		4.505	2.648	3.973	1.196	0.000	3.728	1.939

200-35680-A-6-B MS 10/14/2016 01:01:27 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:49	95.345%	14.870	410.000	T 4241.000	T 16590.000	T 67200.000	T 8930.000	T 27140.000	144.300%	0.000	133.300	106.300
2	13:02:10	94.289%	15.580	418.300	T 4281.000	T 16800.000	T 66640.000	T 8893.000	T 27550.000	146.879%	0.000	134.300	106.900
3	13:02:32	97.170%	15.190	398.300	T 4204.000	T 16580.000	T 66020.000	T 8928.000	T 27530.000	150.017%	0.000	134.000	107.800
x		95.601%	15.210	408.900	T 4242.000	T 16660.000	T 66620.000	T 8917.000	T 27400.000	147.065%	0.000	133.900	107.000
σ		1.457%	0.354	10.030	T 38.670	T 125.700	T 591.600	T 20.980	T 230.700	2.863%	0.000	0.512	0.760
%RSD		1.524	2.326	2.453	T 0.912	T 0.755	T 0.888	T 0.235	T 0.842	1.947	0.000	0.383	0.711

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:49	11.670	┬3540.000	┬106200.000	63.670	139.500	┬4394.000	1670.000	16.510	0.114	62.890	0.000	0.000
2	13:02:10	11.230	┬3491.000	┬105800.000	63.400	137.900	┬4368.000	1665.000	16.230	0.135	60.180	0.000	0.000
3	13:02:32	10.690	┬3531.000	┬106400.000	62.410	135.100	┬4412.000	1688.000	16.460	0.123	63.860	0.000	0.000
x		11.200	┬3521.000	┬106100.000	63.160	137.500	┬4391.000	1674.000	16.400	0.124	62.310	0.000	0.000
σ		0.490	┬26.210	┬283.600	0.663	2.199	┬21.860	12.040	0.151	0.011	1.908	0.000	0.000
%RSD		4.377	┬0.745	┬0.267	1.049	1.599	┬0.498	0.719	0.922	8.682	3.063	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:49	155.900	365.228%	28.820	13.000	-3.064	15.370	109.719%	0.000	7.543	7.723	962.000	139.773%
2	13:02:10	156.400	368.978%	28.940	12.920	-6.613	16.360	111.140%	0.000	7.834	7.684	971.000	142.485%
3	13:02:32	155.600	371.600%	29.170	12.870	-3.048	15.890	112.187%	0.000	7.629	7.885	982.000	144.779%
x		156.000	368.602%	28.980	12.930	-4.242	15.870	111.016%	0.000	7.669	7.764	971.700	142.346%
σ		0.407	3.202%	0.176	0.066	2.054	0.495	1.239%	0.000	0.149	0.107	10.020	2.506%
%RSD		0.261	0.869	0.607	0.510	48.420	3.120	1.116	0.000	1.946	1.374	1.031	1.760

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:49	16.060	16.670	232.400	108.756%	0.000	35.850	17.760
2	13:02:10	15.750	16.480	234.800	110.815%	0.000	35.920	17.800
3	13:02:32	15.800	16.500	233.600	112.958%	0.000	35.540	17.800
x		15.870	16.550	233.600	110.843%	0.000	35.770	17.790
σ		0.170	0.107	1.175	2.101%	0.000	0.202	0.024
%RSD		1.070	0.646	0.503	1.895	0.000	0.565	0.136

200-35680-A-6-C MSD 10/14/2016 01:07:12 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:07:33	96.855%	15.100	411.800	┬4326.000	┬13710.000	┬54250.000	┬8024.000	┬21900.000	143.546%	0.000	119.100	94.070
2	13:07:55	96.787%	14.430	407.400	┬4288.000	┬13460.000	┬53820.000	┬8002.000	┬21850.000	144.983%	0.000	118.400	93.270
3	13:08:17	91.756%	13.430	434.400	┬4323.000	┬13680.000	┬55150.000	┬8061.000	┬22150.000	144.158%	0.000	120.900	95.720
x		95.132%	14.320	417.900	┬4312.000	┬13620.000	┬54410.000	┬8029.000	┬21970.000	144.229%	0.000	119.500	94.350
σ		2.924%	0.838	14.510	┬20.950	┬135.000	┬680.800	┬29.620	┬161.800	0.721%	0.000	1.292	1.251
%RSD		3.074	5.851	3.471	┬0.486	┬0.992	┬1.251	┬0.369	┬0.736	0.500	0.000	1.081	1.325

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:07:33	12.820	┬2725.000	┬86200.000	52.240	118.800	┬3578.000	1398.000	16.290	0.170	57.640	0.000	0.000
2	13:07:55	12.020	┬2712.000	┬85420.000	52.280	117.900	┬3561.000	1397.000	16.370	0.162	57.530	0.000	0.000
3	13:08:17	11.710	┬2755.000	┬87400.000	52.900	118.500	┬3549.000	1410.000	16.310	0.171	57.380	0.000	0.000
x		12.180	┬2731.000	┬86340.000	52.470	118.400	┬3563.000	1401.000	16.320	0.168	57.520	0.000	0.000
σ		0.571	┬22.180	┬995.600	0.369	0.493	┬14.510	7.583	0.041	0.005	0.134	0.000	0.000
%RSD		4.686	┬0.812	┬1.153	0.703	0.416	┬0.407	0.541	0.249	3.070	0.232	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:07:33	127.900	324.606%	33.660	12.580	-1.825	15.470	113.618%	0.000	8.135	7.941	752.800	138.624%
2	13:07:55	129.700	326.275%	33.930	12.520	-2.667	15.850	113.263%	0.000	8.382	8.045	777.400	140.638%

3	13:08:17	129.600	326.596%	34.050	12.410	-2.501	15.920	114.725%	0.000	7.983	8.023	766.900	141.318%
x		129.000	325.826%	33.880	12.500	-2.331	15.750	113.869%	0.000	8.166	8.003	765.700	140.193%
σ		1.032	1.068%	0.201	0.083	0.446	0.238	0.763%	0.000	0.202	0.055	12.360	1.401%
%RSD		0.800	0.328	0.593	0.661	19.120	1.515	0.670	0.000	2.469	0.682	1.614	0.999

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:07:33	17.570	16.820	194.300	110.212%	0.000	31.840	16.200
2	13:07:55	17.560	17.220	197.800	109.020%	0.000	32.730	16.710
3	13:08:17	17.790	17.200	197.000	110.531%	0.000	33.220	16.320
x		17.640	17.080	196.400	109.921%	0.000	32.600	16.410
σ		0.127	0.228	1.856	0.797%	0.000	0.695	0.269
%RSD		0.720	1.336	0.945	0.725	0.000	2.133	1.641

200-35700-A-1-B 10/14/2016 01:12:55 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:13:17	104.996%	9.271	36.870	T 385.100	T 13620.000	T 84760.000	T 4896.000	T 19770.000	176.647%	0.000	129.000	94.030
2	13:13:38	104.087%	9.132	35.230	T 375.900	T 13550.000	T 84540.000	T 4813.000	T 19490.000	178.125%	0.000	126.700	93.410
3	13:14:01	100.120%	9.562	36.470	T 374.600	T 13690.000	T 85780.000	T 4897.000	T 19890.000	177.147%	0.000	128.400	95.490
x		103.068%	9.322	36.190	T 378.500	T 13620.000	T 85030.000	T 4869.000	T 19720.000	177.306%	0.000	128.000	94.310
σ		2.593%	0.220	0.856	T 5.760	T 67.770	T 659.500	T 48.040	T 203.200	0.752%	0.000	1.205	1.065
%RSD		2.515	2.355	2.366	T 1.522	T 0.498	T 0.776	T 0.987	T 1.030	0.424	0.000	0.941	1.129

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:13:17	8.610	TM 14280.000	TM 190400.000	72.270	121.600	TM 12040.000	1806.000	15.430	0.129	28.200	0.000	0.000
2	13:13:38	10.010	TM 14490.000	TM 192300.000	72.960	122.200	TM 12180.000	1795.000	15.130	0.130	27.300	0.000	0.000
3	13:14:01	8.817	TM 14500.000	TM 193200.000	75.170	124.500	TM 12150.000	1811.000	15.240	0.111	29.480	0.000	0.000
x		9.145	TM 14420.000	TM 192000.000	73.470	122.800	TM 12120.000	1804.000	15.270	0.123	28.330	0.000	0.000
σ		0.754	TM 123.700	TM 1424.000	1.516	1.519	TM 77.740	7.899	0.151	0.011	1.096	0.000	0.000
%RSD		8.248	TM 0.857	TM 0.742	2.063	1.237	TM 0.641	0.438	0.987	8.570	3.869	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:13:17	147.500	503.559%	1.536	5.389	-6.364	8.527	121.569%	0.000	1.512	1.428	1465.000	167.092%
2	13:13:38	149.500	516.579%	1.449	5.611	-6.908	9.219	122.281%	0.000	1.601	1.457	1488.000	166.515%
3	13:14:01	149.200	517.595%	1.485	5.497	-4.012	8.958	122.889%	0.000	1.504	1.452	1485.000	170.748%
x		148.700	512.578%	1.490	5.499	-5.762	8.901	122.246%	0.000	1.539	1.446	1479.000	168.118%
σ		1.048	7.827%	0.044	0.111	1.539	0.349	0.661%	0.000	0.054	0.015	12.340	2.296%
%RSD		0.704	1.527	2.939	2.017	26.710	3.927	0.541	0.000	3.514	1.057	0.834	1.366

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:13:17	0.636	0.909	280.000	118.721%	0.000	22.800	7.727
2	13:13:38	0.609	0.883	281.300	119.734%	0.000	22.780	7.616
3	13:14:01	0.658	0.919	278.900	120.727%	0.000	22.660	7.720
x		0.634	0.904	280.000	119.728%	0.000	22.750	7.688
σ		0.024	0.019	1.187	1.003%	0.000	0.075	0.062

%RSD		3.819	2.074	0.424	0.837	0.000	0.330	0.806

200-35700-A-2-B 10/14/2016 01:18:38 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:19:00	96.504%	4.860	35.140	T 392.400	T 11850.000	T 64510.000	T 4556.000	16320.000	150.908%	0.000	96.250	72.160
2	13:19:21	97.481%	4.762	37.150	T 387.800	T 11910.000	T 65230.000	T 4505.000	T 17170.000	151.711%	0.000	95.370	71.910
3	13:19:43	94.614%	4.782	39.770	T 379.800	T 11710.000	T 65810.000	T 4499.000	T 17520.000	152.597%	0.000	98.860	73.200
x		96.200%	4.801	37.350	T 386.600	T 11820.000	T 65180.000	T 4520.000	T 17000.000	151.739%	0.000	96.830	72.430
σ		1.458%	0.052	2.322	T 6.396	T 102.300	T 651.100	T 31.250	T 615.600	0.845%	0.000	1.815	0.684
%RSD		1.515	1.078	6.216	T 1.654	T 0.865	T 0.999	T 0.691	T 3.620	0.557	0.000	1.874	0.944

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:19:00	11.640	TM 8958.000	T 98850.000	53.230	103.900	TM 10640.000	1347.000	13.970	0.198	29.810	0.000	0.000
2	13:19:21	11.250	TM 8964.000	T 98770.000	53.290	101.400	TM 10400.000	1327.000	13.650	0.182	28.620	0.000	0.000
3	13:19:43	9.965	TM 8968.000	T 98490.000	53.980	103.900	TM 10630.000	1354.000	13.890	0.217	27.220	0.000	0.000
x		10.950	TM 8963.000	T 98700.000	53.500	103.000	TM 10560.000	1342.000	13.830	0.199	28.550	0.000	0.000
σ		0.875	TM 5.229	T 188.200	0.417	1.451	TM 134.400	13.890	0.166	0.017	1.295	0.000	0.000
%RSD		7.991	TM 0.058	T 0.191	0.779	1.408	TM 1.274	1.035	1.200	8.709	4.536	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:19:00	91.010	339.496%	1.227	7.037	-4.409	8.989	115.978%	0.000	1.792	1.723	912.100	139.826%
2	13:19:21	91.270	345.827%	1.231	6.942	-4.001	9.036	117.424%	0.000	1.770	1.727	907.600	142.427%
3	13:19:43	92.270	340.315%	1.289	7.304	-2.573	8.858	117.291%	0.000	1.882	1.742	926.200	142.113%
x		91.520	341.879%	1.249	7.095	-3.661	8.961	116.898%	0.000	1.815	1.731	915.300	141.455%
σ		0.662	3.444%	0.035	0.188	0.964	0.092	0.799%	0.000	0.059	0.010	9.694	1.420%
%RSD		0.724	1.007	2.782	2.647	26.330	1.031	0.684	0.000	3.261	0.584	1.059	1.004

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:19:00	0.915	0.640	269.500	109.602%	0.000	15.970	5.351
2	13:19:21	0.898	0.640	264.600	113.263%	0.000	15.570	5.229
3	13:19:43	0.870	0.669	270.600	112.112%	0.000	15.910	5.356
x		0.895	0.650	268.200	111.659%	0.000	15.820	5.312
σ		0.023	0.017	3.213	1.872%	0.000	0.218	0.072
%RSD		2.531	2.586	1.198	1.677	0.000	1.376	1.358

200-35700-A-3-B 10/14/2016 01:24:20 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:24:42	99.595%	11.000	44.670	T 498.000	T 22830.000	T 119000.000	T 7336.000	11730.000	207.515%	0.000	138.700	129.000
2	13:25:04	100.908%	11.030	44.270	T 493.000	T 22830.000	T 120100.000	T 7373.000	T 12770.000	210.720%	0.000	139.500	129.400
3	13:25:26	98.906%	11.590	47.510	T 479.900	T 21960.000	T 115800.000	T 7168.000	T 12260.000	215.698%	0.000	136.100	126.400
x		99.803%	11.210	45.480	T 490.300	T 22540.000	T 118300.000	T 7292.000	T 12250.000	211.311%	0.000	138.100	128.300
σ		1.017%	0.335	1.769	T 9.372	T 504.600	T 2223.000	T 108.900	T 521.900	4.123%	0.000	1.777	1.662
%RSD		1.019	2.989	3.890	T 1.911	T 2.239	T 1.879	T 1.494	T 4.260	1.951	0.000	1.287	1.296

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:24:42	10.680	T 4491.000	T 147500.000	62.980	169.000	TM 45450.000	2132.000	4.195	0.126	12.270	0.000	0.000
2	13:25:04	9.992	T 4517.000	T 148900.000	63.880	168.200	TM 45940.000	2145.000	4.233	0.117	11.780	0.000	0.000
3	13:25:26	9.787	T 4402.000	T 146400.000	62.810	164.500	TM 45360.000	2137.000	4.280	0.120	10.950	0.000	0.000
x		10.150	T 4470.000	T 147600.000	63.220	167.200	TM 45580.000	2138.000	4.236	0.121	11.670	0.000	0.000
σ		0.469	T 60.100	T 1283.000	0.579	2.410	TM 309.100	6.250	0.043	0.004	0.667	0.000	0.000
%RSD		4.615	T 1.345	T 0.869	0.916	1.441	TM 0.678	0.292	1.007	3.563	5.716	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:24:42	134.700	718.596%	-0.045	1.050	-10.370	2.128	121.428%	0.000	1.004	0.933	1710.000	184.976%
2	13:25:04	135.400	729.165%	-0.085	1.014	-9.463	2.061	122.238%	0.000	1.078	0.950	1738.000	186.889%
3	13:25:26	132.500	734.777%	-0.068	1.024	-9.698	2.043	124.504%	0.000	1.071	0.957	1714.000	188.978%
x		134.200	727.512%	-0.066	1.029	-9.844	2.077	122.723%	0.000	1.051	0.947	1721.000	186.947%
σ		1.503	8.216%	0.020	0.019	0.471	0.044	1.594%	0.000	0.040	0.012	15.400	2.002%
%RSD		1.120	1.129	29.810	1.800	4.787	2.137	1.299	0.000	3.844	1.307	0.895	1.071

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:24:42	0.176	1.313	166.000	123.891%	0.000	39.090	10.800
2	13:25:04	0.181	1.332	164.900	127.119%	0.000	39.240	10.860
3	13:25:26	0.185	1.377	171.000	124.100%	0.000	40.520	11.070
x		0.180	1.341	167.300	125.037%	0.000	39.620	10.910
σ		0.004	0.033	3.268	1.807%	0.000	0.785	0.144
%RSD		2.262	2.459	1.953	1.445	0.000	1.982	1.323

200-35700-A-4-B 10/14/2016 01:30:03 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:30:25	98.835%	9.207	27.840	T 335.100	T 16100.000	T 88940.000	T 6426.000	T 11490.000	189.171%	0.000	132.200	101.300
2	13:30:47	95.233%	10.580	33.460	T 353.600	T 16970.000	T 93650.000	T 6853.000	11160.000	187.464%	0.000	140.700	109.700
3	13:31:08	93.495%	9.989	30.160	T 337.000	T 16240.000	T 91110.000	T 6433.000	10820.000	189.983%	0.000	135.200	104.200
x		95.854%	9.925	30.490	T 341.900	T 16440.000	T 91230.000	T 6571.000	T 11160.000	188.873%	0.000	136.100	105.100
σ		2.724%	0.688	2.825	T 10.200	T 469.500	T 2357.000	T 244.500	T 338.500	1.285%	0.000	4.339	4.271
%RSD		2.842	6.936	9.266	T 2.984	T 2.856	T 2.583	T 3.721	T 3.034	0.681	0.000	3.189	4.065

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:30:25	10.210	T 3439.000	T 117100.000	52.110	139.900	2178.000	654.700	4.032	0.156	12.300	0.000	0.000
2	13:30:47	12.580	T 3696.000	T 122400.000	54.960	145.300	T 2546.000	696.500	4.105	0.150	13.870	0.000	0.000
3	13:31:08	11.410	T 3589.000	T 120300.000	52.970	140.700	T 2412.000	661.500	4.148	0.140	13.430	0.000	0.000
x		11.400	T 3575.000	T 119900.000	53.350	142.000	T 2379.000	670.900	4.095	0.149	13.200	0.000	0.000
σ		1.182	T 129.000	T 2665.000	1.465	2.923	T 186.200	22.400	0.058	0.008	0.808	0.000	0.000
%RSD		10.370	T 3.608	T 2.222	2.747	2.059	T 7.828	3.340	1.426	5.185	6.123	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:30:25	102.900	635.215%	0.276	2.004	-10.640	2.969	115.415%	0.000	0.666	0.561	1318.000	177.035%
2	13:30:47	108.800	657.696%	0.302	2.134	-7.854	2.999	113.473%	0.000	0.682	0.582	1413.000	177.227%
3	13:31:08	101.400	644.102%	0.255	2.076	-9.034	2.812	117.479%	0.000	0.687	0.571	1328.000	177.874%
x		104.400	645.671%	0.278	2.071	-9.177	2.926	115.456%	0.000	0.678	0.572	1353.000	177.379%
σ		3.909	11.322%	0.023	0.065	1.400	0.100	2.003%	0.000	0.011	0.010	52.100	0.440%
%RSD		3.746	1.754	8.390	3.151	15.260	3.419	1.735	0.000	1.654	1.826	3.851	0.248

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:30:25	0.211	0.988	130.500	115.426%	0.000	31.750	29.940
2	13:30:47	0.247	1.059	140.500	113.492%	0.000	34.490	32.510
3	13:31:08	0.172	0.941	133.300	116.980%	0.000	32.670	30.790
x		0.210	0.996	134.700	115.299%	0.000	32.970	31.080
σ		0.037	0.059	5.157	1.748%	0.000	1.399	1.308
%RSD		17.840	5.958	3.827	1.516	0.000	4.243	4.209

200-35700-A-5-B 10/14/2016 01:35:46 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:07	103.278%	8.461	27.260	T 358.800	T 16110.000	T 84970.000	T 5166.000	T 14230.000	184.672%	0.000	121.400	94.460
2	13:36:29	101.556%	8.637	26.190	T 361.200	T 15920.000	T 85330.000	T 5154.000	T 14510.000	184.631%	0.000	123.700	95.460
3	13:36:50	98.713%	9.016	29.670	T 352.800	T 16130.000	T 84540.000	T 5150.000	T 14160.000	184.899%	0.000	123.700	94.810
x		101.182%	8.704	27.710	T 357.600	T 16050.000	T 84950.000	T 5157.000	T 14300.000	184.734%	0.000	122.900	94.910
σ		2.305%	0.284	1.781	T 4.319	T 112.900	T 391.900	T 8.164	T 184.100	0.144%	0.000	1.327	0.507
%RSD		2.278	3.258	6.428	T 1.208	T 0.704	T 0.461	T 0.158	T 1.288	0.078	0.000	1.080	0.535

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:07	10.270	T 5961.000	TM 151000.000	57.480	126.900	TM 9307.000	1226.000	12.120	0.135	16.870	0.000	0.000
2	13:36:29	10.480	T 6067.000	TM 152000.000	57.910	128.800	TM 9413.000	1237.000	12.050	0.142	17.030	0.000	0.000
3	13:36:50	9.335	T 6186.000	TM 154500.000	58.330	129.300	TM 9382.000	1231.000	11.930	0.132	18.000	0.000	0.000
x		10.030	T 6071.000	TM 152500.000	57.910	128.400	TM 9367.000	1232.000	12.030	0.136	17.300	0.000	0.000
σ		0.610	T 112.900	TM 1774.000	0.423	1.279	TM 54.280	5.156	0.093	0.005	0.608	0.000	0.000
%RSD		6.079	T 1.859	TM 1.163	0.731	0.997	TM 0.580	0.419	0.775	3.861	3.517	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:07	107.500	549.333%	0.665	2.725	-7.451	3.456	120.346%	0.000	1.218	1.124	1292.000	167.976%
2	13:36:29	109.800	552.970%	0.660	2.705	-7.824	3.706	120.054%	0.000	1.304	1.153	1308.000	171.325%

3	13:36:50	109.400	561.160%	0.655	2.728	-8.653	4.097	121.464%	0.000	1.167	1.131	1300.000	171.436%
x		108.900	554.487%	0.660	2.719	-7.976	3.753	120.621%	0.000	1.230	1.136	1300.000	170.246%
σ		1.253	6.058%	0.005	0.013	0.615	0.323	0.744%	0.000	0.069	0.015	8.271	1.966%
%RSD		1.151	1.093	0.722	0.466	7.713	8.603	0.617	0.000	5.630	1.346	0.636	1.155

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:07	0.404	0.823	246.600	117.244%	0.000	26.440	8.780
2	13:36:29	0.369	0.795	244.600	119.901%	0.000	26.300	8.732
3	13:36:50	0.382	0.861	246.800	118.867%	0.000	26.600	8.767
x		0.385	0.827	246.000	118.671%	0.000	26.450	8.760
σ		0.017	0.033	1.235	1.339%	0.000	0.153	0.025
%RSD		4.531	4.009	0.502	1.129	0.000	0.579	0.281

200-35700-A-6-B 10/14/2016 01:41:28 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:50	102.692%	5.230	26.890	T 361.900	T 12220.000	T 59820.000	T 4102.000	T 17120.000	159.901%	0.000	93.110	68.600
2	13:42:12	101.385%	6.149	25.610	T 365.400	T 11980.000	T 59570.000	T 4137.000	T 17410.000	160.192%	0.000	93.880	69.380
3	13:42:33	99.925%	5.334	27.180	T 342.700	T 11880.000	T 58240.000	T 4056.000	T 17240.000	162.168%	0.000	92.260	67.260
x		101.334%	5.571	26.560	T 356.700	T 12020.000	T 59210.000	T 4098.000	T 17260.000	160.754%	0.000	93.080	68.410
σ		1.385%	0.503	0.838	T 12.240	T 174.300	T 848.600	T 40.780	T 143.400	1.233%	0.000	0.810	1.073
%RSD		1.366	9.036	3.154	T 3.433	T 1.450	T 1.433	T 0.995	T 0.831	0.767	0.000	0.870	1.568

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:50	10.210	TM 7170.000	T 132300.000	52.750	101.600	T 3787.000	819.500	11.860	0.189	15.580	0.000	0.000
2	13:42:12	9.434	TM 7195.000	T 133500.000	53.770	103.000	T 3821.000	821.300	11.920	0.183	15.760	0.000	0.000
3	13:42:33	9.824	TM 7083.000	T 129900.000	52.380	101.600	T 3775.000	829.700	11.990	0.164	17.430	0.000	0.000
x		9.824	TM 7149.000	T 131900.000	52.970	102.100	T 3794.000	823.500	11.920	0.178	16.260	0.000	0.000
σ		0.390	TM 58.650	T 1841.000	0.720	0.813	T 23.570	5.389	0.062	0.013	1.019	0.000	0.000
%RSD		3.966	TM 0.820	T 1.395	1.358	0.796	T 0.621	0.654	0.523	7.388	6.266	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:50	90.240	404.005%	0.857	2.748	-6.213	3.998	118.529%	0.000	1.200	1.080	935.800	148.712%
2	13:42:12	90.770	404.300%	0.904	2.882	-4.954	3.947	119.590%	0.000	1.173	1.120	934.400	151.176%
3	13:42:33	90.580	401.957%	0.928	2.747	-4.680	3.996	119.237%	0.000	1.218	1.115	941.500	148.549%
x		90.530	403.421%	0.896	2.792	-5.282	3.980	119.119%	0.000	1.197	1.105	937.200	149.479%
σ		0.265	1.276%	0.036	0.078	0.817	0.029	0.540%	0.000	0.023	0.022	3.727	1.472%
%RSD		0.293	0.316	4.026	2.779	15.470	0.734	0.454	0.000	1.897	1.988	0.398	0.985

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:50	0.478	0.502	174.300	112.625%	0.000	17.320	5.837
2	13:42:12	0.509	0.506	173.500	113.623%	0.000	17.450	5.862
3	13:42:33	0.498	0.512	176.000	112.659%	0.000	17.600	5.942
x		0.495	0.507	174.600	112.969%	0.000	17.460	5.880
σ		0.016	0.005	1.281	0.567%	0.000	0.141	0.055

%RSD		3.137	0.943	0.734	0.502	0.000	0.808	0.939

200-35700-A-7-B 10/14/2016 01:47:11 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:47:33	101.473%	14.480	36.190	T 479.400	T 22570.000	T 118700.000	T 6560.000	T 16580.000	245.074%	0.000	165.800	137.400
2	13:47:55	97.568%	16.180	42.390	T 476.600	T 22950.000	T 119300.000	T 6527.000	T 16750.000	246.323%	0.000	166.900	139.100
3	13:48:16	96.595%	16.490	42.770	T 463.900	T 22640.000	T 117700.000	T 6518.000	T 16720.000	246.167%	0.000	171.500	139.400
x		98.545%	15.720	40.450	T 473.300	T 22720.000	T 118600.000	T 6535.000	T 16690.000	245.854%	0.000	168.100	138.600
σ		2.582%	1.085	3.694	T 8.276	T 202.600	T 812.700	T 22.520	T 87.990	0.680%	0.000	3.027	1.088
%RSD		2.620	6.901	9.132	T 1.749	T 0.892	T 0.685	T 0.345	T 0.527	0.277	0.000	1.801	0.785

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:47:33	10.720	T 2025.000	TM 197800.000	67.490	182.200	167.300	984.500	6.163	0.097	15.750	0.000	0.000
2	13:47:55	10.040	T 2041.000	TM 196800.000	66.720	180.300	170.900	1005.000	6.969	0.096	18.140	0.000	0.000
3	13:48:16	10.690	T 2050.000	TM 197400.000	67.720	182.500	165.000	992.400	6.344	0.075	21.750	0.000	0.000
x		10.480	T 2039.000	TM 197400.000	67.310	181.700	167.700	993.900	6.492	0.090	18.540	0.000	0.000
σ		0.386	T 12.930	TM 505.700	0.526	1.190	2.960	10.360	0.423	0.012	3.020	0.000	0.000
%RSD		3.681	T 0.634	TM 0.256	0.781	0.655	1.765	1.042	6.513	13.770	16.290	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:47:33	239.400	T 1073.509%	1.168	1.654	-12.760	4.075	118.549%	0.000	0.472	0.398	T 2683.000	211.025%
2	13:47:55	241.300	981.817%	1.405	1.673	-12.940	4.320	118.398%	0.000	0.479	0.426	T 2738.000	216.764%
3	13:48:16	T 267.300	T 1088.171%	1.178	1.667	-13.610	4.065	119.728%	0.000	0.485	0.429	T 2722.000	217.384%
x		T 249.400	T 1047.832%	1.250	1.665	-13.100	4.153	118.892%	0.000	0.479	0.417	T 2714.000	215.058%
σ		T 15.600	T 57.639%	0.134	0.010	0.451	0.144	0.728%	0.000	0.006	0.017	T 28.200	3.506%
%RSD		T 6.258	T 5.501	10.710	0.592	3.444	3.473	0.612	0.000	1.350	4.104	T 1.039	1.630

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:47:33	0.155	1.451	147.700	125.425%	0.000	53.900	30.400
2	13:47:55	0.164	1.396	148.200	128.064%	0.000	54.310	30.400
3	13:48:16	0.153	1.466	152.500	124.322%	0.000	56.770	31.510
x		0.157	1.438	149.500	125.937%	0.000	54.990	30.770
σ		0.006	0.037	2.597	1.923%	0.000	1.551	0.640
%RSD		3.943	2.543	1.738	1.527	0.000	2.820	2.079

200-35700-A-8-B 10/14/2016 01:52:40 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:53:02	100.000%	6.837	22.560	T 344.100	T 13950.000	T 67100.000	T 4268.000	T 16320.000	165.603%	0.000	101.500	81.490
2	13:53:24	96.442%	7.016	26.310	T 349.400	T 14330.000	T 69160.000	T 4401.000	T 16580.000	165.382%	0.000	103.100	82.510
3	13:53:46	96.914%	6.394	26.140	T 330.100	T 14040.000	T 66920.000	T 4263.000	T 16850.000	167.990%	0.000	101.500	80.880
x		97.785%	6.749	25.000	T 341.200	T 14110.000	T 67730.000	T 4311.000	T 16580.000	166.325%	0.000	102.000	81.630
σ		1.932%	0.320	2.117	T 9.991	T 197.500	T 1248.000	T 78.590	T 264.600	1.446%	0.000	0.888	0.821
%RSD		1.976	4.746	8.468	T 2.928	T 1.400	T 1.842	T 1.823	T 1.596	0.870	0.000	0.871	1.006

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:53:02	10.520	TM 7842.000	T 146600.000	56.150	120.000	T 4905.000	988.000	10.530	0.159	20.230	0.000	0.000
2	13:53:24	9.595	TM 7949.000	T 148900.000	57.290	121.400	T 4915.000	993.900	10.520	0.163	20.240	0.000	0.000
3	13:53:46	8.822	TM 7857.000	T 148300.000	56.880	120.500	T 4972.000	1018.000	10.540	0.158	19.190	0.000	0.000
x		9.647	TM 7883.000	T 147900.000	56.780	120.600	T 4931.000	1000.000	10.530	0.160	19.890	0.000	0.000
σ		0.852	TM 57.780	T 1192.000	0.576	0.732	T 36.290	15.940	0.012	0.003	0.602	0.000	0.000
%RSD		8.833	TM 0.733	T 0.806	1.015	0.607	T 0.736	1.594	0.115	1.671	3.025	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:53:02	95.250	450.181%	1.029	4.691	-7.790	4.806	117.147%	0.000	1.312	1.109	1123.000	152.548%
2	13:53:24	94.790	455.933%	1.067	4.884	-5.558	4.565	118.394%	0.000	1.196	1.098	1119.000	155.304%
3	13:53:46	96.400	457.233%	1.082	4.847	-7.054	4.900	118.118%	0.000	1.176	1.141	1133.000	153.914%
x		95.480	454.449%	1.059	4.807	-6.801	4.757	117.887%	0.000	1.228	1.116	1125.000	153.922%
σ		0.830	3.753%	0.027	0.103	1.138	0.173	0.655%	0.000	0.073	0.022	7.206	1.378%
%RSD		0.869	0.826	2.578	2.137	16.730	3.629	0.555	0.000	5.976	1.984	0.641	0.895

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:53:02	0.506	0.592	225.200	112.895%	0.000	20.020	6.499
2	13:53:24	0.522	0.572	224.300	114.775%	0.000	20.330	6.493
3	13:53:46	0.472	0.588	226.900	115.302%	0.000	20.440	6.568
x		0.500	0.584	225.500	114.324%	0.000	20.260	6.520
σ		0.026	0.011	1.310	1.265%	0.000	0.221	0.041
%RSD		5.156	1.831	0.581	1.106	0.000	1.089	0.634

CCV 10/14/2016 01:58:24 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:46	82.386%	689.700	260.300	T 9590.000	T 29120.000	T 29320.000	T 9787.000	T 27650.000	103.176%	0.000	T 1191.000	367.600
2	13:59:07	82.031%	681.400	274.900	T 9743.000	T 29730.000	T 29890.000	T 9815.000	T 28230.000	98.870%	0.000	T 1218.000	369.400
3	13:59:29	80.477%	682.600	276.000	T 9580.000	T 28770.000	T 28640.000	T 9434.000	T 27920.000	99.474%	0.000	T 1185.000	360.900
x		81.632%	109.532%	108.160%	T 96.376%	T 97.364%	T 97.611%	T 96.787%	T 93.114%	100.507%	0.000	T 95.848%	91.498%
σ		1.015%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.331%	0.000	T n/a	n/a
%RSD		1.244	0.660	3.246	T 0.945	T 1.662	T 2.151	T 2.193	T 1.045	2.320	0.000	T 1.463	1.221

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:46	20.720	T 1192.000	T 28790.000	469.900	1234.000	1271.000	1219.000	198.300	-0.045	196.700	0.000	0.000
2	13:59:07	23.310	T 1220.000	T 30030.000	489.700	1277.000	1271.000	1215.000	197.000	-0.134	197.400	0.000	0.000
3	13:59:29	22.660	T 1188.000	T 29540.000	480.700	1230.000	1249.000	1203.000	194.700	-0.103	192.800	0.000	0.000
x		22.230	T 96.015%	T 98.179%	96.024%	99.749%	101.088%	97.010%	98.331%	-0.094	97.819%	0.000	0.000
σ		1.349	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.045	n/a	0.000	0.000
%RSD		6.069	T 1.465	T 2.105	2.068	2.117	1.003	0.693	0.912	48.160	1.272	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:46	178.800	100.756%	T 1256.000	97.790	16.600	185.400	100.371%	0.000	221.100	212.800	1068.000	99.447%
2	13:59:07	181.900	98.889%	T 1272.000	97.630	10.730	187.200	98.390%	0.000	225.000	215.900	1078.000	96.233%
3	13:59:29	176.600	98.299%	T 1275.000	96.600	10.890	185.500	98.496%	0.000	223.200	213.100	1069.000	94.344%
x		179.100	99.315%	T 101.417%	97.338%	12.740	93.028%	99.085%	0.000	223.100	85.568%	85.736%	96.675%
σ		2.651	1.283%	T n/a	n/a	3.340	n/a	1.114%	0.000	1.969	n/a	n/a	2.580%
%RSD		1.481	1.292	T 0.794	0.666	26.220	0.527	1.124	0.000	0.883	0.798	0.512	2.669

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:46	20.450	166.400	T 1153.000	93.018%	0.000	17.090	8.741
2	13:59:07	21.050	174.400	T 1206.000	89.128%	0.000	18.350	9.012
3	13:59:29	21.890	169.800	T 1177.000	90.353%	0.000	18.480	8.851
x		105.647%	85.099%	T 94.288%	90.833%	0.000	89.856%	88.682%
σ		n/a	n/a	T n/a	1.989%	0.000	n/a	n/a
%RSD		3.424	2.364	T 2.245	2.189	0.000	4.274	1.538

CCB 10/14/2016 02:04:07 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:29	91.927%	0.059	-2.546	4.607	5.533	18.530	5.425	-4.661	108.076%	0.000	0.812	-0.153
2	14:04:51	93.858%	0.021	-3.745	2.368	5.991	20.700	5.444	-1.067	108.040%	0.000	0.792	-0.016
3	14:05:13	91.089%	0.027	-3.781	2.015	6.385	21.340	3.357	-0.577	109.455%	0.000	0.681	-0.064
x		92.291%	0.036	-3.357	2.997	5.970	20.190	4.742	-2.102	108.524%	0.000	0.762	-0.078
σ		1.420%	0.020	0.703	1.406	0.426	1.473	1.199	2.230	0.807%	0.000	0.070	0.069
%RSD		1.539	56.360	20.930	46.910	7.135	7.294	25.290	106.100	0.743	0.000	9.218	89.560

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:29	16.460	1.095	45.910	-0.101	-0.116	0.290	-0.388	0.075	0.539	-0.221	0.000	0.000
2	14:04:51	16.490	1.231	50.760	-0.092	-0.161	0.306	-0.323	0.795	0.477	-0.117	0.000	0.000
3	14:05:13	16.560	1.355	52.220	-0.087	-0.105	0.219	-0.245	-0.161	0.558	-1.556	0.000	0.000
x		16.500	1.227	49.630	-0.093	-0.127	0.272	-0.318	0.237	0.525	-0.631	0.000	0.000
σ		0.052	0.130	3.304	0.007	0.030	0.046	0.072	0.498	0.043	0.802	0.000	0.000
%RSD		0.318	10.600	6.658	7.578	23.200	16.960	22.540	210.600	8.126	127.100	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:29	-0.014	102.680%	0.750	-0.007	-0.798	-0.028	102.131%	0.000	0.257	0.171	0.063	97.435%
2	14:04:51	-0.002	103.697%	0.725	-0.013	-0.944	-0.035	103.589%	0.000	0.256	0.168	-0.001	98.643%

3	14:05:13	-0.006	105.451%	0.466	-0.019	-0.873	-0.019	105.793%	0.000	0.299	0.168	0.119	99.990%
x		-0.008	103.943%	0.647	-0.013	-0.872	-0.027	103.838%	0.000	0.271	0.169	0.060	98.690%
σ		0.006	1.402%	0.157	0.006	0.073	0.008	1.844%	0.000	0.025	0.002	0.060	1.278%
%RSD		76.770	1.349	24.260	47.580	8.382	29.480	1.776	0.000	9.179	1.077	99.680	1.295

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:29	-0.014	-0.039	0.274	92.956%	0.000	0.409	0.003
2	14:04:51	0.022	-0.055	0.256	96.050%	0.000	0.363	0.004
3	14:05:13	-0.003	-0.063	0.281	94.797%	0.000	0.341	-0.000
x		0.001	-0.052	0.270	94.601%	0.000	0.371	0.002
σ		0.019	0.012	0.013	1.557%	0.000	0.035	0.002
%RSD		1400.000	23.840	4.757	1.645	0.000	9.381	91.480

CCVL 10/14/2016 02:09:50 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:12	96.572%	0.923	41.900	424.900	169.300	50.690	440.900	414.200	113.286%	0.000	5.302	3.629
2	14:10:34	95.682%	0.837	40.800	436.300	176.800	52.730	439.200	416.700	110.822%	0.000	5.514	3.715
3	14:10:56	90.987%	1.058	42.950	T 490.100	180.000	52.160	440.200	439.200	110.556%	0.000	5.017	3.568
x		94.414%	93.965%	104.712%	T 90.083%	87.678%	103.721%	88.024%	84.673%	111.555%	0.000	105.553%	90.935%
σ		3.001%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.505%	0.000	n/a	n/a
%RSD		3.179	11.870	2.563	T 7.727	3.137	2.034	0.195	3.261	1.349	0.000	4.724	2.024

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:12	16.050	1.732	197.400	0.725	1.649	5.054	19.800	2.090	0.531	3.664	0.000	0.000
2	14:10:34	16.460	1.672	200.300	0.804	1.571	4.851	20.640	2.180	0.584	3.851	0.000	0.000
3	14:10:56	17.230	1.817	202.400	0.817	1.649	5.009	20.100	1.353	0.618	2.610	0.000	0.000
x		16.580	87.014%	100.013%	78.203%	81.142%	99.424%	100.891%	93.728%	0.578	84.372%	0.000	0.000
σ		0.599	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.044	n/a	0.000	0.000
%RSD		3.611	4.167	1.276	6.368	2.780	2.145	2.103	24.210	7.575	19.830	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:12	4.333	109.435%	8.667	0.868	-1.445	0.878	106.885%	0.000	1.846	1.678	8.056	101.199%
2	14:10:34	4.455	106.052%	8.620	1.024	-1.019	0.782	105.717%	0.000	1.902	1.722	8.519	101.407%
3	14:10:56	4.393	106.624%	8.987	0.922	-1.064	0.843	105.573%	0.000	2.007	1.733	8.111	100.256%
x		87.874%	107.370%	87.581%	93.770%	-1.176	83.416%	106.058%	0.000	1.918	85.551%	82.288%	100.954%
σ		n/a	1.811%	n/a	n/a	0.234	n/a	0.719%	0.000	0.082	n/a	n/a	0.613%
%RSD		1.393	1.686	2.283	8.475	19.880	5.859	0.678	0.000	4.272	1.713	3.077	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:12	1.594	1.523	1.034	96.272%	0.000	1.055	0.874
2	14:10:34	1.650	1.488	1.006	97.719%	0.000	1.045	0.845
3	14:10:56	1.646	1.565	1.022	97.054%	0.000	1.096	0.894
x		81.484%	76.257%	102.087%	97.015%	0.000	53.265%	87.100%
σ		n/a	n/a	n/a	0.724%	0.000	n/a	n/a

%RSD	1.919	2.516	1.340	0.747	0.000	2.521	2.878	

LCS 200-110153/2-A 10/14/2016 02:15:36 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:59	91.824%	10.360	399.500	T 4855.000	1751.000	488.000	T 4781.000	4233.000	107.277%	0.000	42.150	35.740
2	14:16:20	88.227%	9.812	410.300	T 4877.000	1759.000	482.300	T 4836.000	4255.000	105.732%	0.000	42.980	36.760
3	14:16:44	89.763%	9.983	398.900	T 4959.000	1836.000	475.200	T 4842.000	4325.000	102.171%	0.000	43.980	37.610
x		89.938%	10.050	402.900	T 4897.000	1782.000	481.800	T 4820.000	4271.000	105.060%	0.000	43.030	36.700
σ		1.805%	0.280	6.417	T 55.100	47.140	6.393	T 33.780	48.280	2.619%	0.000	0.917	0.936
%RSD		2.007	2.781	1.593	T 1.125	2.645	1.327	T 0.701	1.130	2.493	0.000	2.131	2.550

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:59	12.700	21.570	T 2087.000	9.330	19.750	54.820	178.100	18.110	0.342	32.180	0.000	0.000
2	14:16:20	10.510	21.120	T 2097.000	9.546	19.960	54.550	179.200	18.080	0.299	32.060	0.000	0.000
3	14:16:44	10.480	20.640	T 2105.000	9.710	20.830	53.670	176.300	18.330	0.287	32.640	0.000	0.000
x		11.230	21.110	T 2096.000	9.529	20.180	54.350	177.800	18.170	0.309	32.300	0.000	0.000
σ		1.270	0.462	T 9.026	0.191	0.572	0.598	1.440	0.137	0.029	0.302	0.000	0.000
%RSD		11.310	2.187	T 0.431	2.001	2.834	1.100	0.810	0.755	9.265	0.935	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:59	43.720	102.420%	90.780	9.919	-1.173	8.249	101.298%	0.000	16.720	15.690	83.980	98.586%
2	14:16:20	44.020	100.922%	92.860	9.907	0.308	8.272	100.891%	0.000	16.540	15.990	84.370	99.129%
3	14:16:44	44.540	100.066%	92.530	9.881	-1.722	8.184	101.035%	0.000	16.970	15.920	82.790	99.771%
x		44.090	101.136%	92.060	9.902	-0.862	8.235	101.075%	0.000	16.740	15.870	83.710	99.162%
σ		0.416	1.192%	1.116	0.019	1.050	0.046	0.206%	0.000	0.214	0.159	0.822	0.593%
%RSD		0.943	1.178	1.213	0.195	121.800	0.557	0.204	0.000	1.279	1.004	0.982	0.598

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:59	34.450	16.940	8.855	91.121%	0.000	17.810	9.410
2	14:16:20	34.450	16.690	8.912	91.370%	0.000	18.110	9.435
3	14:16:44	33.880	16.620	8.729	91.993%	0.000	18.220	9.523
x		34.260	16.750	8.832	91.495%	0.000	18.040	9.456
σ		0.329	0.167	0.093	0.449%	0.000	0.209	0.059
%RSD		0.960	0.995	1.058	0.491	0.000	1.157	0.625

200-35700-A-1-B @2 10/14/2016 02:21:24 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:45	97.379%	4.815	17.330	209.100	T 8341.000	T 52320.000	T 2903.000	10950.000	140.891%	0.000	78.410	56.470
2	14:22:07	94.472%	5.164	17.120	205.700	T 8283.000	T 52000.000	T 2920.000	10760.000	142.892%	0.000	76.270	56.460
3	14:22:28	97.039%	5.450	17.950	205.400	T 8400.000	T 52320.000	T 2888.000	10920.000	139.317%	0.000	78.500	58.320
x		96.297%	5.143	17.470	206.700	T 8341.000	T 52210.000	T 2904.000	10870.000	141.033%	0.000	77.730	57.080
σ		1.589%	0.318	0.436	2.061	T 58.690	T 182.300	T 15.770	104.200	1.792%	0.000	1.260	1.069
%RSD		1.650	6.188	2.494	0.997	T 0.704	T 0.349	T 0.543	0.958	1.270	0.000	1.621	1.873

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:45	6.902	TM 8607.000	T 116800.000	44.590	76.300	TM 6714.000	1027.000	13.820	0.164	16.600	0.000	0.000
2	14:22:07	8.453	TM 8728.000	T 118200.000	44.960	76.750	TM 6887.000	1051.000	13.940	0.155	16.460	0.000	0.000
3	14:22:28	8.236	TM 8895.000	T 119500.000	45.470	76.680	TM 6647.000	1018.000	13.530	0.176	15.860	0.000	0.000
x		7.864	TM 8743.000	T 118200.000	45.000	76.580	TM 6749.000	1032.000	13.760	0.165	16.310	0.000	0.000
σ		0.839	TM 144.500	T 1347.000	0.443	0.241	TM 123.500	17.260	0.212	0.011	0.392	0.000	0.000
%RSD		10.680	TM 1.652	T 1.140	0.983	0.315	TM 1.831	1.672	1.538	6.541	2.406	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:45	77.920	290.634%	1.040	2.861	-3.776	4.514	109.171%	0.000	0.896	0.745	761.200	126.987%
2	14:22:07	78.910	292.871%	1.161	2.943	-1.931	4.514	108.425%	0.000	0.946	0.782	772.100	128.210%
3	14:22:28	77.710	296.069%	1.129	2.928	-3.793	4.729	110.187%	0.000	0.935	0.748	755.700	127.914%
x		78.180	293.191%	1.110	2.911	-3.167	4.585	109.261%	0.000	0.925	0.758	763.000	127.704%
σ		0.642	2.731%	0.063	0.044	1.070	0.124	0.884%	0.000	0.026	0.021	8.323	0.638%
%RSD		0.822	0.932	5.680	1.502	33.790	2.707	0.809	0.000	2.825	2.716	1.091	0.500

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:45	0.385	0.429	148.300	103.136%	0.000	12.370	4.099
2	14:22:07	0.400	0.405	150.000	103.080%	0.000	12.600	4.081
3	14:22:28	0.391	0.405	149.800	103.614%	0.000	12.370	4.141
x		0.392	0.413	149.400	103.277%	0.000	12.450	4.107
σ		0.008	0.014	0.924	0.293%	0.000	0.134	0.031
%RSD		2.006	3.337	0.619	0.284	0.000	1.074	0.754

200-35700-A-2-B @2 10/14/2016 02:27:08 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:27:30	94.830%	2.533	17.330	194.100	6008.000	T 36600.000	T 2466.000	8725.000	133.595%	0.000	53.190	38.770
2	14:27:52	93.607%	2.141	15.960	189.400	T 6590.000	T 36910.000	T 2527.000	8967.000	130.996%	0.000	55.040	40.120
3	14:28:14	92.639%	1.684	15.860	193.100	6102.000	T 36200.000	T 2509.000	8956.000	130.522%	0.000	54.550	40.120
x		93.692%	2.119	16.380	192.200	T 6233.000	T 36570.000	T 2501.000	8883.000	131.704%	0.000	54.260	39.670
σ		1.098%	0.425	0.821	2.458	T 312.500	T 355.800	T 31.510	136.700	1.655%	0.000	0.957	0.780
%RSD		1.172	20.050	5.012	1.279	T 5.014	T 0.973	T 1.260	1.538	1.256	0.000	1.764	1.965

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:27:30	9.704	T 4837.000	T 54650.000	29.510	57.050	T 5591.000	729.300	11.280	0.246	16.640	0.000	0.000
2	14:27:52	9.125	T 4945.000	T 55820.000	30.180	57.990	T 5478.000	723.400	11.570	0.251	17.090	0.000	0.000
3	14:28:14	9.205	T 4956.000	T 55540.000	29.950	58.140	T 5625.000	734.400	11.070	0.282	16.880	0.000	0.000
x		9.345	T 4913.000	T 55340.000	29.880	57.720	T 5565.000	729.000	11.310	0.260	16.870	0.000	0.000
σ		0.314	T 65.780	T 609.400	0.342	0.588	T 76.760	5.496	0.250	0.019	0.224	0.000	0.000
%RSD		3.358	T 1.339	T 1.101	1.144	1.019	T 1.379	0.754	2.214	7.428	1.326	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:27:30	45.550	218.505%	0.818	3.454	-4.409	4.544	109.665%	0.000	0.910	0.827	443.900	116.591%
2	14:27:52	46.310	212.846%	0.795	3.452	-1.403	4.185	109.871%	0.000	0.957	0.830	443.100	115.815%
3	14:28:14	46.580	213.699%	0.816	3.665	-1.491	4.171	108.014%	0.000	0.980	0.849	456.500	118.346%
x		46.150	215.017%	0.810	3.523	-2.435	4.300	109.183%	0.000	0.949	0.836	447.800	116.918%
σ		0.535	3.051%	0.013	0.122	1.711	0.211	1.018%	0.000	0.035	0.012	7.537	1.297%
%RSD		1.160	1.419	1.560	3.468	70.260	4.909	0.932	0.000	3.732	1.415	1.683	1.109

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:27:30	0.496	0.249	132.700	101.494%	0.000	7.679	2.627
2	14:27:52	0.454	0.248	135.900	100.469%	0.000	7.934	2.659
3	14:28:14	0.460	0.255	138.200	98.758%	0.000	8.365	2.727
x		0.470	0.251	135.600	100.240%	0.000	7.993	2.671
σ		0.023	0.004	2.755	1.382%	0.000	0.347	0.052
%RSD		4.865	1.545	2.032	1.379	0.000	4.344	1.928

200-35700-A-3-B @8 10/14/2016 02:32:53 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:33:15	96.560%	1.369	2.543	87.520	4190.000	T 24410.000	T 1439.000	2238.000	134.046%	0.000	27.400	25.410
2	14:33:36	93.916%	1.511	2.157	83.660	4222.000	T 24760.000	T 1458.000	2292.000	132.990%	0.000	28.910	25.940
3	14:33:58	94.861%	1.608	0.745	82.850	4282.000	T 24920.000	T 1474.000	2306.000	131.945%	0.000	28.220	26.190
x		95.113%	1.496	1.815	84.680	4231.000	T 24700.000	T 1457.000	2279.000	132.994%	0.000	28.180	25.850
σ		1.340%	0.120	0.947	2.495	46.840	T 262.100	T 17.750	35.530	1.050%	0.000	0.758	0.400
%RSD		1.409	8.015	52.150	2.947	1.107	T 1.061	T 1.218	1.559	0.790	0.000	2.690	1.548

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:33:15	9.780	T 873.000	T 29970.000	12.800	34.470	TM 6718.000	343.800	2.254	0.313	1.611	0.000	0.000
2	14:33:36	8.750	T 888.600	T 30470.000	12.920	35.250	TM 6689.000	344.400	2.312	0.302	1.361	0.000	0.000
3	14:33:58	8.977	T 903.700	T 31270.000	13.270	36.500	TM 6767.000	351.300	2.321	0.312	2.210	0.000	0.000
x		9.169	T 888.400	T 30570.000	13.000	35.400	TM 6725.000	346.500	2.296	0.309	1.727	0.000	0.000
σ		0.541	T 15.350	T 654.800	0.243	1.025	TM 39.540	4.166	0.037	0.006	0.436	0.000	0.000
%RSD		5.903	T 1.727	T 2.142	1.869	2.895	TM 0.588	1.202	1.596	1.952	25.260	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:33:15	18.250	192.030%	-0.377	0.106	-1.936	0.278	112.423%	0.000	0.218	0.097	223.300	113.331%
2	14:33:36	18.200	193.016%	-0.373	0.121	-1.382	0.181	112.775%	0.000	0.191	0.102	229.200	115.346%

3	14:33:58	18.510	192.083%	-0.367	0.124	-1.850	0.249	113.188%	0.000	0.255	0.111	228.600	116.516%
x		18.320	192.376%	-0.373	0.117	-1.722	0.236	112.795%	0.000	0.221	0.103	227.000	115.065%
σ		0.168	0.554%	0.005	0.010	0.298	0.050	0.383%	0.000	0.032	0.007	3.264	1.611%
%RSD		0.914	0.288	1.329	8.386	17.310	21.120	0.340	0.000	14.480	6.403	1.438	1.400

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:33:15	0.006	0.035	25.040	100.864%	0.000	4.058	1.599
2	14:33:36	-0.005	0.038	24.800	103.718%	0.000	4.219	1.550
3	14:33:58	-0.004	0.066	24.900	102.789%	0.000	4.457	1.550
x		-0.001	0.046	24.910	102.457%	0.000	4.245	1.566
σ		0.006	0.017	0.119	1.456%	0.000	0.201	0.028
%RSD		993.500	36.880	0.479	1.421	0.000	4.731	1.799

200-35700-A-5-B @2 10/14/2016 02:38:36 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:38:58	94.041%	4.796	13.380	T 249.700	T 10490.000	T 54980.000	T 3333.000	8348.000	149.702%	0.000	78.840	60.140
2	14:39:20	95.479%	4.302	12.750	T 247.400	T 10460.000	T 56050.000	T 3355.000	8507.000	147.277%	0.000	81.190	61.340
3	14:39:42	93.576%	5.083	13.560	207.300	T 10300.000	T 55970.000	T 3363.000	8506.000	147.122%	0.000	79.910	61.810
x		94.366%	4.727	13.230	T 234.800	T 10420.000	T 55670.000	T 3350.000	8454.000	148.034%	0.000	79.980	61.090
σ		0.992%	0.395	0.428	T 23.850	T 102.800	T 596.700	T 15.350	91.680	1.447%	0.000	1.177	0.862
%RSD		1.051	8.359	3.236	T 10.160	T 0.987	T 1.072	T 0.458	1.084	0.977	0.000	1.471	1.411

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:38:58	9.166	T 3805.000	T 97780.000	36.890	85.400	T 5518.000	738.500	10.840	0.197	10.560	0.000	0.000
2	14:39:20	8.485	T 3919.000	T 99370.000	37.190	83.820	T 5383.000	729.700	10.820	0.193	9.354	0.000	0.000
3	14:39:42	9.210	T 3923.000	T 100600.000	37.210	84.640	T 5389.000	735.500	10.950	0.181	11.990	0.000	0.000
x		8.953	T 3882.000	T 99250.000	37.100	84.620	T 5430.000	734.500	10.870	0.190	10.630	0.000	0.000
σ		0.407	T 66.920	T 1417.000	0.176	0.788	T 76.030	4.489	0.071	0.008	1.320	0.000	0.000
%RSD		4.541	T 1.724	T 1.428	0.473	0.931	T 1.400	0.611	0.657	4.341	12.410	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:38:58	60.900	331.291%	0.477	1.592	-5.893	2.124	109.260%	0.000	0.713	0.621	717.100	132.653%
2	14:39:20	61.290	335.098%	0.448	1.451	-3.519	2.280	110.688%	0.000	0.705	0.597	713.100	134.057%
3	14:39:42	61.630	333.856%	0.408	1.567	-4.317	2.032	110.260%	0.000	0.733	0.619	713.200	134.103%
x		61.270	333.415%	0.444	1.537	-4.576	2.146	110.069%	0.000	0.717	0.612	714.500	133.604%
σ		0.366	1.941%	0.034	0.075	1.208	0.125	0.732%	0.000	0.014	0.013	2.293	0.824%
%RSD		0.597	0.582	7.741	4.897	26.400	5.838	0.665	0.000	2.018	2.145	0.321	0.617

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:38:58	0.201	0.370	139.000	104.348%	0.000	15.300	4.994
2	14:39:20	0.193	0.400	138.500	105.138%	0.000	15.150	5.043
3	14:39:42	0.206	0.401	141.200	104.979%	0.000	15.300	5.020
x		0.200	0.390	139.500	104.822%	0.000	15.250	5.019
σ		0.006	0.018	1.426	0.418%	0.000	0.089	0.024

%RSD	3.212	4.608	1.022	0.399	0.000	0.586	0.488	

200-35700-A-1-B @4 10/14/2016 02:44:19 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:44:40	96.034%	2.098	3.996	109.500	4167.000	T 28560.000	T 1585.000	5844.000	135.821%	0.000	42.240	30.310
2	14:45:02	94.840%	2.630	5.872	114.900	4284.000	T 29090.000	T 1602.000	5921.000	133.150%	0.000	42.720	30.570
3	14:45:24	95.603%	2.366	4.837	108.700	4252.000	T 28660.000	T 1587.000	5900.000	133.013%	0.000	43.250	31.070
x		95.492%	2.365	4.902	111.000	4234.000	T 28770.000	T 1591.000	5889.000	133.995%	0.000	42.740	30.650
σ		0.605%	0.266	0.940	3.383	60.180	T 283.100	T 9.346	39.900	1.583%	0.000	0.505	0.387
%RSD		0.633	11.230	19.180	3.046	1.421	T 0.984	T 0.587	0.678	1.181	0.000	1.181	1.264

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:44:40	7.682	T 4681.000	T 64430.000	24.850	42.130	T 3427.000	539.300	10.340	0.270	7.982	0.000	0.000
2	14:45:02	8.529	T 4778.000	T 65390.000	24.830	43.050	T 3474.000	557.700	10.370	0.269	7.628	0.000	0.000
3	14:45:24	7.609	T 4776.000	T 65810.000	24.830	41.600	T 3443.000	552.300	10.720	0.247	8.325	0.000	0.000
x		7.940	T 4745.000	T 65210.000	24.840	42.260	T 3448.000	549.800	10.480	0.262	7.978	0.000	0.000
σ		0.512	T 55.410	T 709.100	0.009	0.731	T 23.730	9.444	0.211	0.013	0.349	0.000	0.000
%RSD		6.444	T 1.168	T 1.087	0.036	1.730	T 0.688	1.718	2.016	5.091	4.371	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:44:40	38.970	208.215%	0.633	1.475	-1.311	2.366	113.384%	0.000	0.472	0.368	375.100	116.939%
2	14:45:02	40.050	212.913%	0.607	1.575	-2.921	2.496	112.218%	0.000	0.462	0.353	384.100	117.489%
3	14:45:24	39.960	210.382%	0.595	1.547	-2.258	2.422	112.995%	0.000	0.480	0.351	378.800	118.207%
x		39.660	210.503%	0.612	1.532	-2.164	2.428	112.866%	0.000	0.471	0.358	379.300	117.545%
σ		0.599	2.351%	0.020	0.052	0.809	0.065	0.593%	0.000	0.009	0.009	4.527	0.636%
%RSD		1.509	1.117	3.202	3.380	37.400	2.692	0.526	0.000	1.823	2.532	1.193	0.541

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:44:40	0.193	0.098	74.990	102.755%	0.000	5.367	2.004
2	14:45:02	0.151	0.112	76.550	101.466%	0.000	5.659	2.078
3	14:45:24	0.165	0.097	75.890	102.457%	0.000	5.791	2.029
x		0.170	0.102	75.810	102.226%	0.000	5.606	2.037
σ		0.021	0.008	0.781	0.675%	0.000	0.217	0.038
%RSD		12.520	8.172	1.030	0.660	0.000	3.875	1.859

200-35700-A-3-B @10 10/14/2016 02:50:01 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:23	99.577%	0.767	-0.444	68.720	3361.000	┬19310.000	┬1141.000	1793.000	131.536%	0.000	22.480	20.170
2	14:50:45	96.579%	1.130	-0.297	68.650	3336.000	┬19430.000	┬1147.000	1780.000	131.228%	0.000	22.440	20.300
3	14:51:06	94.070%	1.165	0.163	62.420	3361.000	┬19670.000	┬1149.000	1800.000	131.572%	0.000	22.590	20.100
x		96.742%	1.021	-0.192	66.590	3353.000	┬19470.000	┬1146.000	1791.000	131.445%	0.000	22.500	20.190
σ		2.757%	0.221	0.317	3.617	14.360	┬183.600	┬3.797	10.240	0.189%	0.000	0.076	0.102
%RSD		2.850	21.620	164.600	5.432	0.428	┬0.943	┬0.332	0.572	0.144	0.000	0.338	0.502

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:23	7.532	┬701.300	┬23800.000	9.997	27.310	┬5196.000	266.400	1.845	0.338	0.706	0.000	0.000
2	14:50:45	8.434	┬698.600	┬24160.000	10.150	27.410	┬5239.000	267.500	1.753	0.357	0.089	0.000	0.000
3	14:51:06	7.929	┬712.300	┬24610.000	10.340	28.540	┬5371.000	272.300	1.826	0.331	1.307	0.000	0.000
x		7.965	┬704.100	┬24190.000	10.160	27.750	┬5269.000	268.700	1.808	0.342	0.700	0.000	0.000
σ		0.452	┬7.282	┬405.300	0.171	0.684	┬91.370	3.141	0.048	0.013	0.609	0.000	0.000
%RSD		5.676	┬1.034	┬1.675	1.682	2.465	┬1.734	1.169	2.673	3.922	86.910	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:23	13.920	175.053%	-0.422	0.068	-2.387	0.238	113.331%	0.000	0.166	0.053	169.800	112.284%
2	14:50:45	14.210	175.168%	-0.436	0.088	-2.112	0.158	113.357%	0.000	0.155	0.053	173.200	113.470%
3	14:51:06	14.270	175.869%	-0.462	0.096	-1.951	0.184	112.601%	0.000	0.153	0.064	177.000	113.534%
x		14.130	175.363%	-0.440	0.084	-2.150	0.193	113.096%	0.000	0.158	0.057	173.300	113.096%
σ		0.185	0.442%	0.020	0.014	0.221	0.041	0.429%	0.000	0.007	0.006	3.599	0.704%
%RSD		1.308	0.252	4.607	17.020	10.270	21.020	0.379	0.000	4.735	10.440	2.076	0.623

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:23	-0.029	-0.018	18.740	101.674%	0.000	2.938	1.202
2	14:50:45	-0.003	-0.014	18.720	101.889%	0.000	3.097	1.175
3	14:51:06	-0.011	-0.008	19.100	101.889%	0.000	3.333	1.180
x		-0.014	-0.013	18.860	101.817%	0.000	3.122	1.186
σ		0.013	0.005	0.216	0.124%	0.000	0.199	0.014
%RSD		92.150	38.770	1.145	0.122	0.000	6.372	1.202

CCV 10/14/2016 02:55:44 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:56:06	82.830%	664.900	252.500	┬9653.000	┬28790.000	┬28710.000	┬9508.000	┬27180.000	98.344%	0.000	┬1173.000	356.900
2	14:56:28	80.339%	672.200	268.500	┬10030.000	┬30020.000	┬30340.000	┬9905.000	┬28130.000	92.534%	0.000	┬1213.000	370.900
3	14:56:51	79.486%	670.100	260.800	┬9617.000	┬28750.000	┬29210.000	┬9609.000	┬27970.000	95.370%	0.000	┬1191.000	359.900
x		80.885%	107.052%	104.235%	┬97.677%	┬97.286%	┬98.064%	┬96.738%	┬92.538%	95.416%	0.000	┬95.396%	90.645%
σ		1.738%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	2.906%	0.000	┬n/a	n/a
%RSD		2.148	0.562	3.075	┬2.358	┬2.468	┬2.834	┬2.132	┬1.823	3.045	0.000	┬1.697	2.036

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:56:06	22.370	T 1161.000	T 28820.000	471.700	1224.000	1293.000	1222.000	198.400	0.143	195.200	0.000	0.000
2	14:56:28	21.750	T 1223.000	T 30000.000	486.600	1285.000	1295.000	1223.000	198.500	0.006	196.000	0.000	0.000
3	14:56:51	16.640	T 1175.000	T 28790.000	468.900	1212.000	1297.000	1227.000	200.300	-0.087	200.300	0.000	0.000
x		20.250	T 94.898%	T 97.341%	95.147%	99.225%	103.573%	97.940%	99.538%	0.021	98.569%	0.000	0.000
σ		3.142	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.116	n/a	0.000	0.000
%RSD		15.510	T 2.725	T 2.357	2.004	3.140	0.160	0.204	0.533	559.300	1.398	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:56:06	178.700	93.716%	1127.000	96.210	8.787	184.600	93.180%	0.000	219.400	208.400	1050.000	88.879%
2	14:56:28	180.900	92.456%	1154.000	97.680	7.873	182.500	91.418%	0.000	220.500	211.300	1063.000	89.024%
3	14:56:51	181.100	90.496%	1179.000	96.710	12.230	184.200	90.174%	0.000	223.300	214.100	1077.000	91.062%
x		180.200	92.223%	92.294%	96.867%	9.631	91.876%	91.591%	0.000	221.000	84.504%	85.058%	89.655%
σ		1.334	1.623%	n/a	n/a	2.300	n/a	1.510%	0.000	1.988	n/a	n/a	1.221%
%RSD		0.740	1.759	2.239	0.773	23.880	0.604	1.649	0.000	0.900	1.363	1.309	1.362

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:56:06	21.000	164.400	T 1168.000	86.264%	0.000	18.130	8.690
2	14:56:28	20.730	169.200	T 1204.000	83.939%	0.000	18.980	8.936
3	14:56:51	21.110	169.400	T 1195.000	83.953%	0.000	19.200	8.861
x		104.736%	83.828%	T 95.120%	84.719%	0.000	93.839%	88.291%
σ		n/a	n/a	T n/a	1.338%	0.000	n/a	n/a
%RSD		0.920	1.706	T 1.593	1.579	0.000	3.001	1.426

CCB 10/14/2016 03:01:33 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:01:55	87.325%	0.195	-3.020	7.305	10.160	16.860	7.204	1.862	101.017%	0.000	0.957	-0.164
2	15:02:17	88.779%	0.102	-3.954	7.867	10.020	19.280	7.058	2.073	102.236%	0.000	0.973	-0.003
3	15:02:39	86.062%	0.343	-3.055	7.986	12.130	20.350	5.807	8.479	102.490%	0.000	0.243	-0.067
x		87.389%	0.213	-3.343	7.719	10.770	18.830	6.690	4.138	101.914%	0.000	0.725	-0.078
σ		1.360%	0.122	0.530	0.364	1.179	1.786	0.768	3.761	0.787%	0.000	0.417	0.081
%RSD		1.556	57.060	15.840	4.710	10.950	9.484	11.480	90.890	0.772	0.000	57.540	103.700

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:01:55	15.680	0.702	35.540	-0.009	0.118	0.453	0.004	0.075	0.533	0.656	0.000	0.000
2	15:02:17	15.590	0.724	39.210	0.020	0.191	0.624	0.351	0.307	0.539	-0.413	0.000	0.000
3	15:02:39	17.050	0.764	37.590	0.039	0.443	0.771	0.199	0.036	0.540	-0.879	0.000	0.000
x		16.100	0.730	37.450	0.017	0.250	0.616	0.185	0.139	0.537	-0.212	0.000	0.000
σ		0.818	0.031	1.839	0.024	0.171	0.159	0.174	0.146	0.004	0.787	0.000	0.000
%RSD		5.082	4.312	4.912	143.800	68.120	25.840	94.170	105.300	0.745	370.700	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:01:55	0.011	96.139%	0.981	0.017	-0.998	0.047	95.984%	0.000	0.326	0.183	0.116	92.004%
2	15:02:17	0.038	96.031%	1.000	0.009	-1.019	0.036	96.020%	0.000	0.322	0.233	0.225	91.559%

3	15:02:39	0.041	97.368%	0.909	0.014	-0.979	0.043	97.912%	0.000	0.341	0.237	0.298	92.616%
x		0.030	96.513%	0.963	0.013	-0.999	0.042	96.639%	0.000	0.330	0.218	0.213	92.060%
σ		0.016	0.743%	0.048	0.004	0.020	0.005	1.103%	0.000	0.010	0.030	0.092	0.531%
%RSD		54.330	0.769	4.948	28.900	2.014	13.080	1.141	0.000	2.950	13.870	43.120	0.577

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:01:55	-0.022	0.012	0.493	87.461%	0.000	0.444	0.003
2	15:02:17	0.002	0.014	0.567	88.609%	0.000	0.425	0.004
3	15:02:39	-0.004	0.008	0.608	92.083%	0.000	0.380	0.004
x		-0.008	0.011	0.556	89.384%	0.000	0.416	0.003
σ		0.012	0.003	0.058	2.407%	0.000	0.033	0.000
%RSD		152.900	27.080	10.500	2.693	0.000	7.916	8.854

CCVL 10/14/2016 03:07:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:07:38	86.318%	1.285	43.570	T 494.000	170.100	53.370	431.600	416.100	104.933%	0.000	4.613	3.340
2	15:08:00	90.958%	1.245	38.160	435.000	180.500	56.480	438.700	429.500	105.182%	0.000	4.990	3.569
3	15:08:22	89.336%	1.202	41.490	T 492.600	183.600	55.830	438.400	433.000	104.892%	0.000	4.414	3.711
x		88.871%	124.398%	102.683%	T 94.769%	89.032%	110.453%	87.247%	85.240%	105.002%	0.000	93.453%	88.497%
σ		2.355%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.157%	0.000	n/a	n/a
%RSD		2.649	3.368	6.650	T 7.107	3.968	2.966	0.917	2.102	0.149	0.000	6.261	5.291

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:07:38	17.110	1.807	200.700	0.785	2.010	5.133	21.530	2.275	0.561	3.096	0.000	0.000
2	15:08:00	16.530	1.902	201.900	0.813	2.306	5.293	21.330	1.778	0.562	4.206	0.000	0.000
3	15:08:22	17.290	1.953	201.300	0.935	1.980	5.263	20.330	1.806	0.554	3.574	0.000	0.000
x		16.980	94.371%	100.646%	84.394%	104.942%	104.593%	105.314%	97.636%	0.559	90.629%	0.000	0.000
σ		0.399	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.004	n/a	0.000	0.000
%RSD		2.348	3.945	0.292	9.439	8.577	1.623	3.038	14.290	0.783	15.360	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:07:38	4.456	95.861%	8.821	0.962	-0.323	0.893	96.101%	0.000	1.871	1.710	8.220	93.379%
2	15:08:00	4.661	100.198%	8.971	0.910	-0.897	0.922	98.755%	0.000	1.892	1.704	8.309	95.563%
3	15:08:22	4.543	98.766%	8.945	0.958	-0.272	0.801	98.707%	0.000	1.910	1.668	8.069	92.714%
x		91.067%	98.275%	89.122%	94.315%	-0.497	87.216%	97.855%	0.000	1.891	84.709%	81.993%	93.885%
σ		n/a	2.210%	n/a	n/a	0.347	n/a	1.518%	0.000	0.019	n/a	n/a	1.490%
%RSD		2.256	2.249	0.896	3.068	69.840	7.234	1.552	0.000	1.017	1.332	1.478	1.587

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:07:38	1.649	1.528	1.073	89.896%	0.000	1.071	0.929
2	15:08:00	1.681	1.569	1.151	89.419%	0.000	1.098	0.941
3	15:08:22	1.573	1.552	1.170	91.156%	0.000	1.108	0.900
x		81.719%	77.481%	113.133%	90.157%	0.000	54.626%	92.339%
σ		n/a	n/a	n/a	0.897%	0.000	n/a	n/a

%RSD	3.396	1.307	4.535	0.995	0.000	1.765	2.304

Mass Uncorrected ICPS

STD0 10/14/2016 10:32:42 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:33:04	139642.560	45.000	1190.043	259474.200	1830.101	15422.132	57468.910	1280.049	172063.620	10.000	30392.686	3180.303
2	10:33:26	137343.580	40.000	1135.039	269186.430	2580.200	20537.646	58392.110	1430.061	167931.790	20.000	30908.634	3400.347
3	10:33:48	138704.780	72.500	1040.032	271971.090	2430.177	23236.186	58803.553	1390.058	172498.070	10.000	32216.106	3495.367
x		138563.640	52.500	1121.705	266877.240	2280.159	19731.988	58221.524	1366.723	170831.160	13.333	31172.475	3358.672
σ		1155.973	17.500	75.889	6560.662	396.915	3968.838	683.479	77.681	2520.305	5.774	939.907	161.613
%RSD		0.834	33.333	6.765	2.458	17.407	20.114	1.174	5.684	1.475	43.301	3.015	4.812

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:33:04	10528.324	2495.187	259281.240	670.013	270.002	655.013	835.021	2353.166	757.017	450.506	418.005	2240.151
2	10:33:26	10933.585	2950.261	271569.620	690.014	300.003	620.012	840.021	2334.163	767.018	422.505	446.006	2310.160
3	10:33:48	10968.608	3005.271	277246.950	665.013	515.008	675.014	980.029	2367.168	775.018	429.506	414.505	2375.169
x		10810.173	2816.906	269365.940	675.014	361.671	650.013	885.024	2351.499	766.351	434.172	426.172	2308.493
σ		244.715	279.972	9183.351	13.229	133.638	27.840	82.315	16.565	9.019	14.572	17.266	67.525
%RSD		2.264	9.939	3.409	1.960	36.950	4.283	9.301	0.704	1.177	3.356	4.051	2.925

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:33:04	370.004	211240.240	1680.085	125.000	5.000	40.000	970591.830	2200.145	765.018	646.513	255.002	174731.150
2	10:33:26	500.007	214390.080	1900.108	170.001	10.000	100.000	990620.190	2530.192	950.027	802.019	345.004	173629.730
3	10:33:48	465.006	217297.370	1690.086	135.001	15.000	85.000	993875.680	2650.211	1130.038	859.022	365.004	176004.450
x		445.006	214309.230	1756.760	143.334	10.000	75.000	985029.230	2460.183	948.361	769.185	321.670	174788.440
σ		67.270	3029.373	124.244	23.629	5.000	31.225	12608.670	233.057	182.516	109.994	58.596	1188.393
%RSD		15.117	1.414	7.072	16.485	50.000	41.633	1.280	9.473	19.245	14.300	18.216	0.680

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:33:04	200.001	2420.176	4185.525	144695.390	0.000	6631.319	60.000
2	10:33:26	205.001	2485.185	5150.796	145552.810	0.000	6606.309	95.000
3	10:33:48	225.002	2455.181	5615.946	146662.470	0.000	5896.043	105.000
x		210.001	2453.514	4984.089	145636.890	0.000	6377.890	86.667
σ		13.229	32.537	729.636	986.233	0.000	417.480	23.629
%RSD		6.299	1.326	14.639	0.677	0.000	6.546	27.264

STD1 10/14/2016 10:38:26 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:38:47	142345.280	187.501	7846.847	T 1104944.400	31169.118	84327.797	843687.090	29435.971	177965.100	25.000	45667.480	13085.135
2	10:39:09	141931.780	190.001	8001.921	T 1121943.500	32100.884	83548.889	824711.840	30147.241	175772.010	15.000	47427.385	13415.397
3	10:39:31	139380.380	162.501	7776.814	T 1105433.500	30718.282	84629.320	840617.680	29586.237	175428.420	20.000	46805.631	13110.154
x		141219.150	180.001	7875.194	T 1110773.800	31329.428	84168.668	836338.870	29723.150	176388.510	20.000	46633.499	13203.562
σ		1605.784	15.207	115.199	T 9676.337	705.104	557.516	10185.586	374.880	1376.133	5.000	892.490	183.881
%RSD		1.137	8.448	1.463	T 0.871	2.251	0.662	1.218	1.261	0.780	25.000	1.914	1.393

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:38:47	12634.787	8422.127	911374.970	2925.257	1295.050	4435.590	13015.080	3238.315	913.025	628.012	459.006	2620.206
2	10:39:09	13055.111	8527.181	901942.020	3395.346	1485.066	4560.624	13205.229	3445.356	952.027	607.511	440.506	2560.197
3	10:39:31	12794.909	8902.377	906831.950	3205.308	1395.058	4215.533	12784.902	3318.330	928.026	644.012	424.005	2410.174

x		12828.269	8617.228	906716.310	3175.304	1391.725	4403.916	13001.737	3334.000	931.026	626.512	441.173	2530.192
σ		212.138	252.470	4717.536	236.477	95.052	174.712	210.481	104.406	19.673	18.297	17.510	108.183
%RSD		1.654	2.930	0.520	7.447	6.830	3.967	1.619	3.132	2.113	2.920	3.969	4.276
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:38:47	25629.691	215403.020	17364.041	3650.400	50.000	905.025	1003507.900	1400.059	6141.131	4779.685	5640.954	175903.390
2	10:39:09	25639.707	214481.240	17784.484	3725.416	55.000	900.024	989559.900	1390.058	6071.105	4824.198	6141.131	175964.020
3	10:39:31	26120.452	217793.790	18049.769	3210.309	40.000	780.018	986305.230	1380.057	6091.113	4855.707	5911.048	176853.360
x		25796.617	215892.680	17732.764	3528.708	48.333	861.689	993124.350	1390.058	6101.117	4819.864	5897.711	176240.260
σ		280.495	1709.698	345.777	278.281	7.638	70.773	9138.496	10.001	36.069	38.196	250.355	531.829
%RSD		1.087	0.792	1.950	7.886	15.802	8.213	0.920	0.719	0.591	0.792	4.245	0.302

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:38:47	4225.536	22770.544	9347.621	143010.940	0.000	19075.910	17033.700
2	10:39:09	4635.645	22675.415	9527.722	147257.680	0.000	19481.379	18019.736
3	10:39:31	4250.542	22645.374	9882.929	146894.500	0.000	20953.163	17924.634
x		4370.574	22697.111	9586.091	145721.040	0.000	19836.817	17659.357
σ		229.898	65.345	272.386	2354.029	0.000	987.811	543.917
%RSD		5.260	0.288	2.841	1.615	0.000	4.980	3.080

STD2 10/14/2016 10:44:08 AM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	10:44:30	133311.030	870.023	30262.450	T 4242845.700	143716.980	332580.510	T 4045217.700	138009.040	168527.760	15.000	86574.271	50110.218
2	10:44:52	132494.560	780.018	30022.015	T 4150909.700	146612.030	331988.890	T 3969185.300	135226.370	159519.760	20.000	84930.848	47602.884
3	10:45:13	128664.730	785.018	29541.157	T 3997764.500	141114.880	322515.590	T 3908961.700	135639.710	158257.820	10.000	82689.620	48615.802
x		131490.110	811.686	29941.874	T 4130506.600	143814.630	329028.330	T 3974454.900	136291.700	162101.780	15.000	84731.579	48776.301
σ		2480.670	50.582	367.264	T 123807.960	2749.873	5647.954	T 68280.714	1501.546	5600.720	5.000	1949.977	1261.349
%RSD		1.887	6.232	1.227	T 2.997	1.912	1.717	T 1.718	1.102	3.455	33.333	2.301	2.586
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	10:44:30	16443.107	35472.709	T 3554304.700	14361.185	6366.216	18675.457	59626.469	6485.261	1473.065	1390.558	429.006	2900.252
2	10:44:52	15587.285	35633.051	T 3554725.100	14716.494	6071.105	18830.632	59290.273	6247.171	1340.054	1386.058	403.505	2750.227
3	10:45:13	14636.424	35142.010	T 3472148.800	13365.357	6136.129	18425.179	58296.777	6115.122	1375.057	1388.058	410.505	2540.194
x		15555.606	35415.923	T 3527059.500	14147.679	6191.150	18643.756	59071.173	6282.518	1396.059	1388.225	414.338	2730.224
σ		903.758	250.397	T 47554.565	700.415	155.058	204.577	691.392	187.585	68.948	2.255	13.175	180.861
%RSD		5.810	0.707	T 1.348	4.951	2.505	1.097	1.170	2.986	4.939	0.162	3.180	6.624
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:44:30	120846.530	204911.970	81810.296	16863.527	240.002	3700.411	958395.530	725.016	28058.599	21703.122	27803.171	170103.650
2	10:44:52	120211.970	205782.600	83448.387	16868.532	310.003	4055.493	935318.300	775.018	27677.963	21862.329	28484.320	167780.280
3	10:45:13	118756.590	203029.140	82795.142	16383.048	275.002	4035.488	921457.290	790.019	27102.018	21237.522	27632.888	167123.730
x		119938.370	204574.570	82684.608	16705.036	275.002	3930.464	938390.370	763.351	27612.860	21600.991	27973.460	168335.890
σ		1071.498	1407.397	824.620	278.861	35.001	199.483	18659.756	34.036	481.602	324.683	450.536	1565.729
%RSD		0.893	0.688	0.997	1.669	12.727	5.075	1.988	4.459	1.744	1.503	1.611	0.930

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:44:30	20272.322	102443.880	39251.165	142990.770	0.000	75144.018	82609.222
2	10:44:52	19821.780	104456.310	38800.111	138936.700	0.000	77685.631	84282.569
3	10:45:13	20017.013	105578.350	38479.369	137686.390	0.000	83026.287	84051.406
x		20037.038	104159.510	38843.548	139871.290	0.000	78618.645	83647.733

σ		225.937	1588.173	387.727	2772.943	0.000	4023.112	906.773
%RSD		1.128	1.525	0.998	1.982	0.000	5.117	1.084

STD3 10/14/2016 10:49:52 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:50:14	133623.520	97946.965	37341.785	┬15466255.000	┬4616093.500	┬43156664.000	┬15516939.000	┬1719381.200	164023.160	29671.388	┬3165714.000	88885
2	10:50:36	131526.940	96093.724	36720.407	┬15311123.000	┬4657403.500	┬44061640.000	┬15735866.000	┬1695497.600	159600.530	31319.400	┬3154237.300	89952
3	10:50:57	130367.890	96332.597	37321.741	┬15039259.000	┬4528301.500	┬42393191.000	┬15247507.000	┬1699512.800	159721.680	29991.961	┬3117363.500	88907
x		131839.450	96791.095	37127.978	┬15272212.000	┬4600599.500	┬43203832.000	┬15500104.000	┬1704797.200	161115.120	30327.583	┬3145771.600	89248
σ		1650.161	1008.113	353.109	┬216141.200	┬65930.892	┬835224.460	┬244614.530	┬12788.706	2519.160	873.766	┬25262.470	609
%RSD		1.252	1.042	0.951	┬1.415	┬1.433	┬1.933	┬1.578	┬0.750	1.564	2.881	┬0.803	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:50:14	113062.200	┬4732133.300	┬96201424.000	1364921.800	728996.880	887644.250	676053.900	87417.656	6790.383	9176.526	442.506	734
2	10:50:36	113223.280	┬4711269.400	┬95363970.000	1344389.400	717644.790	889061.890	677667.490	87700.134	6770.375	9090.478	384.004	770
3	10:50:57	112085.630	┬4658555.300	┬95293025.000	1343063.700	710383.430	874121.920	671812.460	86639.609	6479.259	8953.905	388.505	724
x		112790.370	┬4700652.700	┬95619473.000	1350791.600	719008.370	883609.350	675177.950	87252.466	6680.006	9073.636	405.005	743
σ		615.613	┬37920.537	┬505231.300	12255.022	9381.346	8246.879	3024.204	549.221	174.139	112.262	32.555	24
%RSD		0.546	┬0.807	┬0.528	0.907	1.305	0.933	0.448	0.629	2.607	1.237	8.038	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	10:50:14	955638.800	205904.090	2045122.400	323387.230	9982.989	154144.540	941417.730	1046074.300	676491.120	523707.310	689065.860	17017
2	10:50:36	942237.150	203312.560	┬2251278.300	315584.790	10033.019	156400.410	946239.620	1035275.300	673222.690	527122.990	696802.770	16996
3	10:50:57	953369.190	199942.160	2037751.200	319044.740	10738.458	156577.050	927984.940	1044266.000	673508.910	525898.710	692102.890	17158
x		950415.050	203052.930	┬2111383.900	319338.920	10251.489	155707.330	938547.430	1041871.800	674407.570	525576.340	692657.170	17057
σ		7172.608	2989.433	┬121208.080	3909.532	422.469	1356.300	9459.775	5783.894	1810.070	1730.512	3898.124	88
%RSD		0.755	1.472	┬5.741	1.224	4.121	0.871	1.008	0.555	0.268	0.329	0.563	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:50:14	50350.942	2125747.000	┬10879168.000	138130.040	0.000	322541.070	164932.060
2	10:50:36	51935.794	2133896.500	┬10895033.000	137232.670	10.000	340084.690	167482.300
3	10:50:57	51474.366	2132107.800	┬11025617.000	140126.600	0.000	351451.890	166588.410
x		51253.700	2130583.800	┬10933273.000	138496.430	3.333	338025.880	166334.260
σ		815.144	4283.167	┬80365.368	1481.349	5.774	14564.953	1293.978
%RSD		1.590	0.201	┬0.735	1.070	173.205	4.309	0.778

STD4 10/14/2016 10:55:36 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	10:55:57	132988.470	286354.010	109161.320	┬46309857.000	┬13992219.000	┬131123240.000	┬47704546.000	┬5261051.100	158893.820	91867.493	┬9567902.600
2	10:56:19	129501.170	286343.830	113263.560	┬46880887.000	┬14126299.000	┬131167830.000	┬47933806.000	┬5385315.300	162387.250	94225.603	┬9753810.100
3	10:56:41	132272.810	288849.010	112548.740	┬46854838.000	┬14382047.000	┬130317030.000	┬47795737.000	┬5353608.900	160115.430	93235.056	┬9743709.200
x		131587.480	287182.280	111657.870	┬46681861.000	┬14166855.000	┬130869370.000	┬47811363.000	┬5333325.100	160465.500	93109.384	┬9688474.000
σ		1841.893	1443.436	2191.420	┬322428.130	┬198052.870	┬478857.580	┬115426.340	┬64567.609	1772.830	1184.067	┬104539.950
%RSD		1.400	0.503	1.963	┬0.691	┬1.398	┬0.366	┬0.241	┬1.211	1.105	1.272	┬1.079

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	10:55:57	329041.300	┬14401476.000	┬289912120.000	┬4524468.800	2124440.100	┬2821868.200	1963422.600	255194.890	18587.359	25666.247	461.506
2	10:56:19	328985.210	┬14525531.000	┬290799640.000	┬4544759.800	2128067.000	┬2887922.700	1985969.100	256523.050	18728.517	25747.873	433.006

3	10:56:41	335176.750	┬14597961.000	┬294106100.000	┬4575420.400	┬2354661.600	┬2901322.100	1978499.000	256240.750	18638.416	25661.741	478.00
x		331067.750	┬14508323.000	┬291605950.000	┬4548216.400	┬2202389.500	┬2870371.000	1975963.600	255986.230	18651.431	25691.954	457.50
σ		3558.609	┬99366.512	┬2210195.100	┬25651.043	┬131883.900	┬42535.637	11485.057	699.705	71.473	48.480	22.76
%RSD		1.075	┬0.685	┬0.758	┬0.564	┬5.988	┬1.482	0.581	0.273	0.383	0.189	4.97

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	10:55:57	┬3162050.000	199223.630	┬6830015.000	938637.300	30598.061	466498.520	960724.010	┬3531909.500	2032544.200	1597750.200	┬2347523.30
2	10:56:19	┬3251469.200	201753.790	┬6978026.000	947588.090	31640.004	471635.090	967150.150	┬3597303.000	2075636.600	1630181.600	┬2392612.20
3	10:56:41	┬3218182.900	202887.430	┬7082004.000	961480.840	30673.199	470169.540	971767.450	┬3601236.400	2079761.500	1637456.000	┬2414837.00
x		┬3210567.400	201288.280	┬6963348.300	949235.410	30970.422	469434.380	966547.200	┬3576816.300	2062647.400	1621795.900	┬2384990.80
σ		┬45193.414	1875.735	┬126634.070	11510.516	581.091	2646.021	5546.355	┬38940.104	26151.637	21139.453	┬34297.93
%RSD		┬1.408	0.932	┬1.819	1.213	1.876	0.564	0.574	┬1.089	1.268	1.303	┬1.43

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:55:57	153952.770	┬7339484.800	┬33523675.000	138503.110	0.000	1040144.900	511845.720
2	10:56:19	159307.750	┬7522520.600	┬34108156.000	139602.230	10.000	1084294.700	534113.340
3	10:56:41	160872.670	┬7544273.700	┬34746847.000	143535.420	0.000	1096538.000	533101.710
x		158044.400	┬7468759.700	┬34126226.000	140546.920	3.333	1073659.200	526353.590
σ		3628.813	┬112482.460	┬611786.270	2645.822	5.774	29662.801	12574.363
%RSD		2.296	┬1.506	┬1.793	1.883	173.205	2.763	2.389

STD5 10/14/2016 11:01:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti
1	11:01:40	133119.510	M 492518.780	M 190558.180	TM 80818272.000	TM 24594006.000	TM 228244880.000	TM 84647085.000	TM 9422657.700	165992.510	164482.650
2	11:02:02	132242.570	481447.240	183676.570	T 79630625.000	TM 24382155.000	TM 225502630.000	TM 84396644.000	TM 9586278.100	168174.220	167179.280
3	11:02:23	128755.430	M 479039.330	M 186947.640	T 77928051.000	TM 24037064.000	TM 226060430.000	TM 83851893.000	TM 9515354.000	163891.870	164038.300
x		131372.500	M 484335.120	M 187060.790	TM 79458983.000	TM 24337742.000	TM 226602650.000	TM 84298541.000	TM 9508096.600	166019.530	165233.410
σ		2308.478	M 7188.798	M 3442.202	TM 1452735.600	TM 281114.990	TM 1449305.800	TM 406571.970	TM 82051.261	2141.300	1699.756
%RSD		1.757	M 1.484	M 1.840	TM 1.828	TM 1.155	TM 0.640	TM 0.482	TM 0.863	1.290	1.029

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se
1	11:01:40	574674.610	TM 25271406.000	TM 503904700.000	TM 7809777.800	TM 3983038.300	TM 4915435.200	TM 3691534.300	M 433598.810	30717.280	42464.027
2	11:02:02	577448.050	TM 25482915.000	TM 507881380.000	TM 7902420.800	TM 3991089.400	TM 4897508.000	TM 3701074.000	435163.820	31345.448	42626.942
3	11:02:23	572791.420	TM 25382317.000	TM 502103920.000	TM 7920322.200	TM 4050123.200	TM 4935361.900	TM 3726308.700	M 437827.220	30968.745	42589.346
x		574971.360	TM 25378879.000	TM 504630000.000	TM 7877506.900	TM 4008083.600	TM 4916101.700	TM 3706305.600	M 435529.950	31010.491	42560.105
σ		2342.451	TM 105796.690	TM 2956230.800	TM 59334.172	TM 36629.203	TM 18935.712	TM 17967.805	M 2137.851	316.158	85.303
%RSD		0.407	TM 0.417	TM 0.586	TM 0.753	TM 0.914	TM 0.385	TM 0.485	M 0.491	1.020	0.200

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb
1	11:01:40	TM 5579588.600	203504.890	TM 11877202.000	M 1615023.000	51509.474	790560.180	1011202.700	T 6183269.300	TM 3935824.200	TM 3070793.200
2	11:02:02	TM 5685975.200	204689.260	TM 12247208.000	M 1633247.000	52668.087	M 803381.990	1026677.100	T 6302895.100	TM 3982391.600	TM 3116888.200
3	11:02:23	TM 5603170.100	201834.760	TM 12191354.000	1626876.900	53325.171	802165.450	1026772.700	T 6311229.100	TM 4022142.400	TM 3144858.300
x		TM 5622911.300	203342.970	TM 12105255.000	M 1625048.900	52500.910	M 798702.540	1021550.900	T 6265797.800	TM 3980119.400	TM 3110846.600
σ		TM 55873.187	1434.120	TM 199464.040	M 9248.514	919.320	M 7077.675	8961.866	T 71593.137	TM 43203.963	TM 37400.361
%RSD		TM 0.994	0.705	TM 1.648	M 0.569	1.751	M 0.886	0.877	T 1.143	TM 1.085	TM 1.202

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:01:40	M 327078.220	TM 12971582.000	TM 58723548.000	138845.950	0.000	M 2209764.100	M 1085408.800
2	11:02:02	M 331427.890	TM 13082299.000	TM 59333745.000	141437.600	0.000	M 2251944.900	M 1105326.000
3	11:02:23	M 334569.740	TM 13115330.000	TM 59711553.000	140963.610	5.000	M 2266037.000	M 1107130.000
x		M 331025.280	TM 13056404.000	TM 59256282.000	140415.720	1.667	M 2242582.000	M 1099288.300
σ		M 3761.952	TM 75291.512	TM 498536.790	1379.967	2.887	M 29281.507	M 12053.772
%RSD		M 1.136	TM 0.577	TM 0.841	0.983	173.205	M 1.306	M 1.097

ICV 10/14/2016 11:07:02 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	11:07:24	120594.720	47372.228	20462.554	T 7874242.000	T 2255504.100	T 21306540.000	T 7491928.400	757721.420	153594.490	14776.547	T 1503461.600	426636.5
2	11:07:46	123989.490	47891.208	19766.715	T 7842506.200	T 2231939.900	T 21097986.000	T 7457539.400	761173.500	150365.250	14476.284	1399788.200	426826.3
3	11:08:08	119093.990	47091.434	20227.267	T 7730330.200	T 2231261.100	T 21033893.000	T 7343456.500	758830.190	152403.630	14671.455	1390127.700	424046.7
x		121226.070	47451.624	20152.178	T 7815692.800	T 2239568.300	T 21146139.000	T 7430974.800	759241.710	152121.120	14641.429	T 1431125.800	425836.5
σ		2508.076	405.755	353.944	T 75609.997	T 13804.922	T 142559.410	T 77718.941	1762.449	1633.055	152.367	T 62830.551	1552.9
%RSD		2.069	0.855	1.756	T 0.967	T 0.616	T 0.674	T 1.046	0.232	1.074	1.041	T 4.390	0.3

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	11:07:24	55547.411	T 2248474.500	T 46303291.000	657805.010	354888.570	435686.200	343054.630	44859.290	3826.439	4981.744	394.505	4780.6
2	11:07:46	56942.106	T 2254333.800	T 46510382.000	665610.930	354127.640	440987.940	343809.960	44202.538	3783.429	4893.218	380.004	4880.7
3	11:08:08	55778.180	T 2252987.700	T 46092856.000	659120.480	353504.620	434962.670	342130.930	43858.632	3706.412	4990.247	428.005	4745.6
x		56089.233	T 2251932.000	T 46302177.000	660845.470	354173.610	437212.270	342998.510	44306.820	3772.094	4955.070	400.838	4802.3
σ		747.568	T 3069.012	T 208765.160	4179.093	693.119	3289.776	840.918	508.414	60.811	53.734	24.619	70.0

%RSD		1.333	T 0.136	T 0.451	0.632	0.196	0.752	0.245	1.147	1.612	1.084	6.142	1.4
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	11:07:24	450435.610	196845.620	471917.930	150905.090	5095.779	77856.425	917191.380	513660.280	330729.220	260560.460	339742.820	165729.9
2	11:07:46	458639.870	196461.120	478342.230	154689.550	5320.849	77273.723	916293.980	519512.540	337855.020	264533.810	342835.180	163568.7
3	11:08:08	448586.740	195510.040	470046.130	152449.050	5200.811	78700.375	909844.660	518274.890	335151.250	263868.900	342687.180	165457.2
x		452554.070	196272.260	473435.430	152681.230	5205.813	77943.507	914443.340	517149.240	334578.490	262987.720	341755.060	164918.6
σ		5350.911	687.530	4351.253	1902.883	112.619	717.302	4007.767	3084.244	3597.264	2128.204	1744.224	1176.9
%RSD		1.182	0.350	0.919	1.246	2.163	0.920	0.438	0.596	1.075	0.809	0.510	0.7

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:07:24	52422.314	1038512.700	T 5277369.500	134752.550	0.000	252488.130	156440.780
2	11:07:46	52587.834	1034536.500	T 5343463.700	136113.550	5.000	272199.780	157965.060
3	11:08:08	52828.593	1040575.600	T 5276023.600	134581.180	0.000	286740.570	157283.660
x		52612.914	1037874.900	T 5298952.300	135149.090	1.667	270476.160	157229.830
σ		204.298	3069.651	T 38553.915	839.625	2.887	17191.146	763.562
%RSD		0.388	0.296	T 0.728	0.621	173.205	6.356	0.486

ICVL 10/14/2016 11:12:46 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:13:08	129944.600	247.502	7881.863	960734.600	32832.307	108798.960	773229.890	28634.577	166608.610	35.000	36950.916	11899.246
2	11:13:30	131647.890	230.002	8352.092	T 1037803.900	33323.280	118570.270	756811.440	28304.013	161438.100	55.000	38624.704	12184.452
3	11:13:51	130297.340	242.502	7896.870	960374.720	32331.329	114481.840	752670.080	28774.818	164124.140	60.000	37742.687	11654.073
x		130629.940	240.002	8043.609	T 986304.390	32828.972	113950.360	760903.810	28571.136	164056.950	50.000	37772.769	11912.591
σ		899.037	9.014	267.260	T 44600.209	495.984	4907.289	10873.686	241.729	2585.911	13.229	837.300	265.441
%RSD		0.688	3.756	3.323	T 4.522	1.511	4.307	1.429	0.846	1.576	26.458	2.217	2.228
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:13:08	9317.604	10723.449	910456.770	3745.421	1800.097	4535.617	12359.581	2771.230	690.014	612.511	421.005	2040.125
2	11:13:30	9382.640	11438.924	910377.620	3890.454	2055.127	4810.694	12980.052	2841.242	801.019	604.011	378.004	2270.155
3	11:13:51	9322.607	11363.873	922545.060	3740.420	1835.101	4895.719	12664.810	2769.230	758.017	592.511	418.005	2305.159
x		9340.950	11175.415	914459.820	3792.098	1896.775	4747.343	12668.148	2793.901	749.684	603.011	405.672	2205.146
σ		36.191	393.209	7002.140	85.215	138.249	188.224	310.249	41.011	55.970	10.038	24.008	143.981
%RSD		0.387	3.519	0.766	2.247	7.289	3.965	2.449	1.468	7.466	1.665	5.918	6.529
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:13:08	24082.386	209944.020	19601.520	3250.317	35.000	870.023	951179.230	3370.341	7031.483	5488.404	6196.152	168709.590
2	11:13:30	24432.896	206774.770	20057.061	3505.369	75.000	925.026	959909.000	3930.463	7291.595	5870.534	6341.206	169184.360
3	11:13:51	25709.815	208769.400	20412.492	3525.373	40.000	950.027	961242.670	4305.556	7146.532	5779.502	5826.018	170467.340
x		24741.699	208496.060	20023.691	3427.019	50.000	915.025	957443.640	3868.787	7156.537	5712.813	6121.125	169453.760
σ		856.534	1602.210	406.515	153.355	21.795	40.929	5465.962	470.648	130.344	199.603	265.662	909.315
%RSD		3.462	0.768	2.030	4.475	43.589	4.473	0.571	12.165	1.821	3.494	4.340	0.537

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:13:08	3970.473	23967.220	15477.183	139299.710	0.000	27382.476	16358.024
2	11:13:30	4375.574	24863.532	16272.940	140610.650	0.000	28113.691	17078.746
3	11:13:51	4235.538	24858.525	16338.004	141891.440	0.000	29150.470	16843.507
x		4193.862	24563.092	16029.376	140600.600	0.000	28215.546	16760.092
σ		205.741	516.046	479.318	1295.892	0.000	888.387	367.531
%RSD		4.906	2.101	2.990	0.922	0.000	3.149	2.193

ICBIS 10/14/2016 11:18:29 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:18:51	136930.200	30.000	1345.054	269023.830	690.014	5140.793	54328.403	560.009	168962.130	5.000	30583.034	2860.245
2	11:19:13	134097.300	32.500	1325.053	266625.760	530.008	3815.437	51068.119	630.012	169022.740	0.000	30402.704	2830.240
3	11:19:34	131567.260	22.500	1265.048	263598.160	510.008	3570.382	52733.292	840.021	165012.850	10.000	30783.402	2640.209
x		134198.250	28.333	1311.718	266415.920	576.677	4175.537	52709.938	676.681	167665.910	5.000	30589.714	2776.898
σ		2682.894	5.204	41.637	2718.913	98.661	844.868	1630.268	145.723	2297.811	5.000	190.437	119.323
%RSD		1.999	18.368	3.174	1.021	17.109	20.234	3.093	21.535	1.370	100.000	0.623	4.297

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:18:51	10328.199	1035.032	240152.830	265.002	90.000	330.003	635.012	2260.153	727.016	386.004	459.006	2140.137
2	11:19:13	10383.233	970.028	235674.580	165.001	100.000	225.002	645.012	2340.164	760.017	394.505	440.006	2030.124
3	11:19:34	10893.559	850.022	229671.640	210.001	35.000	255.002	500.007	2198.145	719.016	440.506	452.006	2085.130
x		10534.997	951.694	235166.350	213.335	75.000	270.002	593.344	2266.154	735.350	407.005	450.339	2085.131
σ		311.740	93.858	5259.041	50.084	35.000	54.084	80.986	71.200	21.734	29.322	9.609	55.007
%RSD		2.959	9.862	2.236	23.477	46.667	20.031	13.649	3.142	2.956	7.204	2.134	2.638

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:18:51	220.001	214086.210	1050.033	55.000	0.000	40.000	965741.910	1985.118	755.017	534.009	70.000	173013.370
2	11:19:13	105.000	211149.100	1075.035	75.000	0.000	25.000	976364.800	2395.172	715.015	561.509	75.000	170851.240
3	11:19:34	140.001	210652.880	1205.044	45.000	0.000	15.000	970846.010	2375.169	840.021	596.511	50.000	172023.200
x		155.001	211962.730	1110.037	58.333	0.000	26.667	970984.240	2251.820	770.018	564.010	65.000	171962.600
σ		58.950	1855.651	83.222	15.275	0.000	12.583	5312.795	231.187	63.839	31.326	13.229	1082.340
%RSD		38.032	0.875	7.497	26.186	0.000	47.187	0.547	10.267	8.291	5.554	20.352	0.629

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:18:51	205.001	1745.091	1650.082	135559.050	0.000	9927.956	75.000
2	11:19:13	240.002	1460.064	1305.051	141861.180	0.000	10648.401	50.000
3	11:19:34	190.001	1770.094	1270.048	138845.950	0.000	9657.797	50.000
x		211.668	1658.416	1408.394	138755.390	0.000	10078.051	58.333
σ		25.658	172.233	210.038	3152.038	0.000	512.074	14.434
%RSD		12.122	10.385	14.913	2.272	0.000	5.081	24.744

ICSA 10/14/2016 11:24:11 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	11:24:33	122458.230	10.000	1115.037	TM 148518520.000	T 14947102.000	T 136591110.000	TM 151465120.000	T 5713975.300	165063.350	310393.660	10498.305
2	11:24:55	121712.800	12.500	1185.042	TM 151523610.000	T 15211351.000	T 140767400.000	TM 153677380.000	T 5811275.200	164265.530	314560.700	10803.500
3	11:25:17	121914.270	12.500	1070.034	TM 150747030.000	T 15413667.000	T 140464940.000	TM 155583220.000	T 5865584.600	168113.610	320833.590	10658.407
x		122028.440	11.667	1123.371	TM 150263060.000	T 15190707.000	T 139274480.000	TM 153575240.000	T 5796945.000	165814.160	315262.650	10653.404
σ		385.606	1.443	57.955	TM 1559908.000	T 233966.400	T 2328788.100	TM 2060950.200	T 76813.816	2030.943	5255.241	152.659
%RSD		0.316	12.372	5.159	TM 1.038	T 1.540	T 1.672	TM 1.342	T 1.325	1.225	1.667	1.433

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	11:24:33	4060.495	1370.056	T 310568450.000	265.002	255.002	1100.036	1840.102	1631.080	539.009	416.005	454.506
2	11:24:55	4015.484	1455.064	T 316984960.000	270.002	330.003	1050.033	1690.086	1636.080	574.010	422.005	481.507
3	11:25:17	4105.506	1545.072	T 324812870.000	255.002	355.004	1065.034	2000.120	1674.084	568.010	440.006	488.007
x		4060.495	1456.730	T 317455430.000	263.335	313.336	1071.701	1843.436	1647.081	560.343	426.005	474.673

σ		45.011	87.520	T 7133856.500	7.638	52.043	25.660	155.044	23.518	18.718	12.490	17.765	
%RSD		1.109	6.008	T 2.247	2.900	16.609	2.394	8.411	1.428	3.340	2.932	3.743	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	11:24:33	3605.390	205954.710	T 3430478.200	290.003	530.008	690.014	944304.360	1610.078	720.016	571.010	75.000	172
2	11:24:55	3605.390	207169.620	T 3548645.900	290.003	510.008	710.015	954998.620	2045.126	755.017	623.512	120.000	180
3	11:25:17	3865.448	212273.240	T 3612208.300	325.003	655.013	785.018	967277.220	2195.145	945.027	646.013	105.000	183
x		3692.076	208465.860	T 3530444.100	301.669	565.010	728.349	955526.730	1950.116	806.686	613.511	100.000	178
σ		150.145	3352.782	T 92222.190	20.208	78.584	50.085	11495.532	303.885	121.078	38.488	22.913	5
%RSD		4.067	1.608	T 2.612	6.699	13.908	6.877	1.203	15.583	15.009	6.273	22.913	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:24:33	795.019	1715.088	2565.197	136768.880	0.000	16192.862	45.000
2	11:24:55	710.015	1605.077	2810.237	141790.580	0.000	14226.069	60.000
3	11:25:17	735.016	1570.074	2755.228	141114.880	0.000	12434.637	25.000
x		746.683	1630.080	2710.221	139891.450	0.000	14284.523	43.333
σ		43.686	75.671	128.570	2725.247	0.000	1879.795	17.559
%RSD		5.851	4.642	4.744	1.948	0.000	13.160	40.522

ICSAB 10/14/2016 11:29:54 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:30:16	120000.450	3715.414	54724.697	TM 147856320.000	T 15039872.000	T 137572330.000	TM 151969360.000	T 5776315.100	164134.240	313047.610	69313.833	1
2	11:30:38	117371.830	3507.869	56545.760	TM 150633150.000	T 15209735.000	T 140148970.000	TM 154825330.000	T 5821071.000	166346.010	318326.190	69569.897	1
3	11:30:59	116425.230	3565.381	56069.154	TM 150394880.000	T 15174793.000	T 141515130.000	TM 154796310.000	T 5902171.600	166335.910	318912.240	71086.275	1
x		117932.510	3596.222	55779.870	TM 149628120.000	T 15141467.000	T 139745480.000	TM 153863670.000	T 5833185.900	165605.390	316762.010	69990.002	1
σ		1852.382	107.154	944.369	TM 1539036.200	T 89701.150	T 2002129.400	TM 1640583.400	T 63796.889	1274.058	3230.085	957.995	
%RSD		1.571	2.980	1.693	TM 1.029	T 0.592	T 1.433	TM 1.066	T 1.094	0.769	1.020	1.369	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:30:16	17689.382	87152.271	T 310754340.000	65101.900	13245.261	33233.100	26711.388	20067.073	4530.616	5820.016	464.506	
2	11:30:38	18159.888	87137.193	T 320403780.000	66236.357	13915.807	34390.445	28424.217	20734.890	4536.617	5988.075	510.008	
3	11:30:59	17283.957	89278.481	T 323595430.000	66592.773	14085.950	34630.942	28158.767	21126.381	4595.633	5944.060	480.507	
x		17711.076	87855.982	T 318251180.000	65977.010	13749.006	34084.829	27764.791	20642.782	4554.289	5917.384	485.007	
σ		438.368	1231.943	T 6685703.500	778.538	444.473	747.356	921.878	535.627	35.931	87.148	23.082	
%RSD		2.475	1.402	T 2.101	1.180	3.233	2.193	3.320	2.595	0.789	1.473	4.759	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	11:30:16	3420.351	209194.680	T 3476729.000	76947.217	1755.092	19576.490	959453.890	1595.076	134873.530	105141.600	144054.880	18
2	11:30:38	3355.338	208050.500	T 3586563.700	79469.009	1835.101	19856.822	985012.010	1515.069	137726.720	108515.620	145512.460	18
3	11:30:59	3750.422	212860.660	T 3670517.000	79499.152	1750.092	20417.499	986856.470	1895.108	142541.950	110947.560	149053.540	18
x		3508.704	210035.280	T 3577936.600	78638.460	1780.095	19950.270	977107.460	1668.418	138380.730	108201.590	146206.960	18
σ		211.843	2512.844	T 97181.624	1464.736	47.702	428.221	15316.227	200.354	3875.820	2915.689	2570.684	
%RSD		6.038	1.196	T 2.716	1.863	2.680	2.146	1.568	12.009	2.801	2.695	1.758	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:30:16	45075.873	271452.740	200402.640	141709.900	0.000	310378.380	187271.240
2	11:30:38	46334.317	276108.280	204790.490	141649.390	0.000	331070.900	190644.160
3	11:30:59	47462.485	280414.290	205134.690	147257.680	0.000	348388.570	195080.040
x		46290.891	275991.770	203442.600	143538.990	0.000	329945.950	190998.480
σ		1193.898	4481.909	2638.309	3220.624	0.000	19030.051	3916.443
%RSD		2.579	1.624	1.297	2.244	0.000	5.768	2.051

CCV 10/14/2016 11:35:38 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:35:59	115680.070	86096.807	33413.460	T 14225471.000	T 4187251.000	T 39441874.000	T 14037147.000	T 1538523.100	152756.850	28243.911	T 2852006.300	8054
2	11:36:21	114431.490	85616.844	33593.822	T 14081498.000	T 4160777.600	T 39083456.000	T 13870951.000	1447893.800	147883.190	27152.099	T 2821757.900	7981
3	11:36:43	110927.930	84667.010	34004.654	T 13989806.000	T 4168373.700	T 38817118.000	T 13774182.000	T 1536065.500	145310.710	27557.764	T 2847480.800	8047
x		113679.830	85460.220	33670.646	T 14098925.000	T 4172134.100	T 39114149.000	T 13894093.000	T 1507494.100	148650.250	27651.258	T 2840415.000	8028
σ		2463.628	727.652	302.992	T 118794.810	T 13631.393	T 313506.990	T 133001.440	T 51630.018	3781.869	551.878	T 16315.219	40
%RSD		2.167	0.851	0.900	T 0.843	T 0.327	T 0.802	T 0.957	T 3.425	2.544	1.996	T 0.574	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:35:59	101930.750	T 4289517.100	T 88608687.000	1239632.700	658137.760	803334.800	627701.810	81731.913	6437.243	8572.204	390.005	70
2	11:36:21	102760.820	T 4245968.100	T 87229172.000	1233690.200	647861.680	799769.310	625584.390	80264.809	6394.226	8543.689	380.004	71
3	11:36:43	102116.880	T 4225124.000	T 87919350.000	1246933.300	653251.040	809549.960	623296.000	80342.180	6324.200	8555.195	388.505	68
x		102269.480	T 4253536.400	T 87919070.000	1240085.400	653083.490	804218.020	625527.400	80779.634	6385.223	8557.030	386.171	70
σ		435.570	T 32856.935	T 689757.480	6633.163	5140.092	4949.778	2203.457	825.605	57.057	14.346	5.393	1

%RSD		0.426	T 0.772	T 0.785	0.535	0.787	0.615	0.352	1.022	0.894	0.168	1.397	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	11:35:59	906415.170	199395.670	1948583.200	308412.390	10013.007	151904.110	933870.400	1017175.200	647503.140	508669.160	670995.520	1665
2	11:36:21	905286.220	194548.890	1954471.500	310882.650	10063.037	149593.350	917011.890	1001354.000	642074.040	507928.060	674809.980	1680
3	11:36:43	909623.040	192960.580	T 2125854.400	304969.900	10098.058	148231.260	913665.410	1009631.700	651982.800	509369.050	674367.610	1657
x		907108.140	195635.050	T 2009636.400	308088.310	10058.034	149909.570	921515.900	1009387.000	647186.660	508655.420	673391.040	1667
σ		2249.928	3352.219	T 100690.790	2969.665	42.746	1856.732	10829.357	7913.462	4961.954	720.594	2086.337	11
%RSD		0.248	1.714	T 5.010	0.964	0.425	1.239	1.175	0.784	0.767	0.142	0.310	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:35:59	48104.321	2065280.800	T 10607460.000	135428.000	0.000	313714.980	162508.430
2	11:36:21	50014.932	2063916.300	T 10659064.000	135468.320	0.000	322061.940	162856.800
3	11:36:43	49473.319	2068811.000	T 10618456.000	134046.900	0.000	332050.090	163800.990
x		49197.524	2066002.700	T 10628327.000	134981.070	0.000	322609.010	163055.400
σ		984.711	2525.969	T 27180.984	809.269	0.000	9179.788	668.776
%RSD		2.002	0.122	T 0.256	0.600	0.000	2.845	0.410

CCB 10/14/2016 11:41:21 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:41:43	117734.380	30.000	1120.038	258570.320	2550.195	19636.561	67526.518	1470.065	152847.670	85.000	21884.358	2310.160
2	11:42:05	117291.270	45.000	1050.033	267286.210	4440.592	37627.427	73531.851	1990.119	154432.180	50.000	22134.689	2385.171
3	11:42:26	117341.620	55.000	915.025	268952.700	5180.805	44830.211	78725.493	1880.106	150153.350	85.000	21829.286	2440.179
x		117455.760	43.333	1028.365	264936.410	4057.197	34031.400	73261.287	1780.097	152477.730	73.334	21949.444	2378.503
σ		242.603	12.583	104.210	5575.806	1356.566	12976.077	5604.388	274.072	2163.271	20.207	162.772	65.265
%RSD		0.207	29.038	10.134	2.105	33.436	38.130	7.650	15.396	1.419	27.555	0.742	2.744

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:41:43	7476.677	1600.077	250422.310	410.005	255.002	490.007	640.012	1692.086	471.007	388.505	390.005	2000.120
2	11:42:05	7131.525	2365.168	284121.280	625.012	300.003	640.012	875.023	1734.090	596.011	359.004	371.504	2040.125
3	11:42:26	7546.708	2735.224	300209.640	855.022	415.005	675.014	860.022	1644.081	580.010	399.505	390.005	1990.119
x		7384.970	2233.490	278251.080	630.013	323.337	601.678	791.686	1690.086	549.009	382.338	383.838	2010.121
σ		222.265	578.917	25407.460	222.551	82.514	98.280	131.567	45.038	68.024	20.943	10.681	26.461
%RSD		3.010	25.920	9.131	35.325	25.520	16.334	16.619	2.665	12.390	5.478	2.783	1.316

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:41:43	290.003	198312.860	3320.331	130.001	0.000	60.000	930372.690	2400.173	1055.033	752.517	150.001	165487.520
2	11:42:05	480.007	200944.100	3935.465	205.001	0.000	90.000	927720.820	2960.263	1055.033	963.028	350.004	167133.830
3	11:42:26	520.008	203687.090	4170.522	180.001	5.000	50.000	927541.230	2780.232	1460.064	940.527	405.005	165740.020
x		430.006	200981.350	3808.772	171.668	1.667	66.667	928544.910	2713.556	1190.044	885.357	301.670	166120.460
σ		122.885	2687.309	439.027	38.189	2.887	20.817	1585.444	285.936	233.845	115.592	134.197	886.641
%RSD		28.578	1.337	11.527	22.246	173.205	31.225	0.171	10.537	19.650	13.056	44.485	0.534

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:41:43	215.001	2720.222	3315.330	137817.460	0.000	9247.565	70.000
2	11:42:05	220.001	2870.247	4650.649	137424.240	0.000	8702.271	135.001
3	11:42:26	220.001	2820.239	5575.933	138190.530	0.000	8131.983	140.001
x		218.335	2803.569	4513.970	137810.740	0.000	8693.940	115.000
σ		2.887	76.389	1136.482	383.193	0.000	557.837	39.051
%RSD		1.322	2.725	25.177	0.278	0.000	6.416	33.958

MB 200-110153/1-A 10/14/2016 11:47:04 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:47:26	129813.590	42.500	955.027	391136.400	5871.034	63249.789	109297.210	3530.374	161650.140	150.001	20602.726	3595.388
2	11:47:48	130801.260	67.500	960.028	404274.380	7231.569	70222.626	115539.100	3810.436	161932.860	180.001	20407.486	3735.419
3	11:48:09	126609.080	40.000	990.029	396941.240	6211.157	63761.734	111451.400	3490.365	164598.790	135.001	20547.658	3810.436
x		129074.640	50.000	968.361	397450.670	6437.920	65744.716	112095.900	3610.392	162727.260	155.001	20519.290	3713.747
σ		2191.606	15.207	18.931	6583.788	708.046	3886.422	3170.463	174.394	1626.941	22.913	100.664	109.150
%RSD		1.698	30.414	1.955	1.657	10.998	5.911	2.828	4.830	1.000	14.783	0.491	2.939

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:47:26	7066.498	4115.508	355807.860	890.024	465.006	735.016	1080.035	1449.063	442.006	412.505	376.004	2210.146
2	11:47:48	6776.377	4080.499	372598.860	1025.032	545.009	890.024	970.028	1444.063	405.005	374.004	371.004	2085.130
3	11:48:09	7131.525	3950.468	358882.750	995.030	435.006	775.018	1095.036	1386.058	485.007	412.005	390.505	2205.146
x		6991.467	4048.825	362429.820	970.028	481.674	800.019	1048.366	1426.394	444.006	399.505	379.171	2166.808
σ		189.089	86.960	8939.836	70.891	56.864	80.471	68.256	35.022	40.039	22.086	10.129	70.779
%RSD		2.705	2.148	2.467	7.308	11.806	10.059	6.511	2.455	9.018	5.528	2.671	3.266

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:47:26	565.010	210136.420	3000.270	165.001	0.000	95.000	964482.010	46569.972	620.012	508.008	305.003	173559.000
2	11:47:48	765.018	210592.120	3405.348	155.001	0.000	45.000	954215.630	46198.942	680.014	584.510	355.004	170447.130
3	11:48:09	590.010	210814.910	2995.269	170.001	0.000	95.000	959019.950	47056.335	760.017	588.510	435.006	174236.010
x		640.013	210514.480	3133.629	163.334	0.000	78.334	959239.200	46608.416	686.681	560.343	365.004	172747.380
σ		108.977	345.842	235.329	7.638	0.000	28.868	5136.698	429.988	70.241	45.368	65.576	2020.629
%RSD		17.027	0.164	7.510	4.676	0.000	36.852	0.535	0.923	10.229	8.096	17.966	1.170

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:47:26	270.002	1955.115	4080.499	140923.270	0.000	18410.162	170.001
2	11:47:48	275.002	2040.125	4835.701	137373.820	0.000	15071.812	185.001
3	11:48:09	215.001	1870.105	3920.461	140943.440	0.000	13025.088	180.001
x		253.335	1955.115	4278.887	139746.850	0.000	15502.354	178.334
σ		33.292	85.010	488.809	2055.123	0.000	2718.231	7.638
%RSD		13.142	4.348	11.424	1.471	0.000	17.534	4.283

LCS 200-110153/2-A 10/14/2016 11:52:47 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:53:09	121692.660	1405.059	53520.797	T 7590973.900	268149.920	606492.810	T 7204394.600	247757.930	153160.530	60.000	121682.580	87539.292
2	11:53:31	118157.360	1362.556	54072.573	T 7672484.200	272509.780	612532.790	T 7164222.700	246154.440	150123.080	65.000	119053.700	86207.376
3	11:53:53	117462.470	1340.054	52221.685	T 7511450.900	261414.170	607379.230	T 7130210.000	248082.710	148771.030	70.000	115745.520	85302.740
x		119104.160	1369.223	53271.685	T 7591636.300	267357.960	608801.610	T 7166275.700	247331.690	150684.880	65.000	118827.270	86349.802
σ		2268.469	33.012	950.257	T 80518.673	5590.041	3261.546	T 37134.902	1032.387	2248.027	5.000	2975.002	1125.058
%RSD		1.905	2.411	1.784	T 1.061	2.091	0.536	T 0.518	0.417	1.492	7.692	2.504	1.303

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:53:09	15662.356	66698.193	T 6314495.500	26876.653	11478.952	34926.558	92053.515	8408.120	1320.052	1762.093	366.004	3220.311
2	11:53:31	14441.254	67305.628	T 6206535.700	26140.484	11178.748	34250.156	92566.344	8519.177	1318.052	1736.591	396.005	3290.325
3	11:53:53	14426.241	67009.438	T 6235322.300	26856.621	11188.754	34200.053	90565.396	8149.992	1312.052	1688.585	368.004	3440.355
x		14843.283	67004.419	T 6252117.900	26624.586	11282.151	34458.922	91728.418	8359.096	1316.719	1729.090	376.671	3316.997

σ		709.377	303.748	T 55905.234	419.364	170.508	405.758	1039.334	189.412	4.164	37.323	16.773	112.421
%RSD		4.779	0.453	T 0.894	1.575	1.511	1.178	1.133	2.266	0.316	2.159	4.453	3.389
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:53:09	224679.280	197624.760	158283.050	31124.034	510.008	7336.614	915607.770	42143.214	50250.640	38990.053	54794.927	168154.020
2	11:53:31	226534.140	195064.870	158565.720	31865.433	425.005	7066.498	926167.930	42223.417	50205.504	39405.529	53696.360	163689.900
3	11:53:53	224876.920	195945.100	158777.730	31093.978	525.008	7011.475	906605.090	42474.052	51038.027	39322.333	53480.668	168558.070
x		225363.450	196211.580	158542.170	31361.148	486.674	7138.196	916126.930	42280.228	50498.057	39239.305	53990.652	166800.660
σ		1018.653	1300.584	248.176	436.982	53.930	174.024	9791.749	172.581	468.172	219.830	704.822	2701.560
%RSD		0.452	0.663	0.157	1.393	11.081	2.438	1.069	0.408	0.927	0.560	1.305	1.620

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:53:09	79428.818	199097.130	75661.350	135609.460	0.000	284935.000	170543.110
2	11:53:31	80805.412	203206.280	77243.583	134177.950	0.000	298921.800	173013.370
3	11:53:53	78921.416	206881.070	76781.455	132393.760	0.000	307393.830	174230.960
x		79718.549	203061.490	76562.130	134060.390	0.000	297083.540	172595.810
σ		974.842	3893.991	813.599	1611.070	0.000	11341.701	1879.050
%RSD		1.223	1.918	1.063	1.202	0.000	3.818	1.089

200-35680-A-1-O 10/14/2016 11:58:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:58:52	123687.260	847.522	5475.899	T 1686920.400	T 4857489.100	T 129286810.000	T 10559777.000	TM 12205866.000	215757.560	21814.267	377691.580	2
2	11:59:14	122730.220	850.022	5275.835	T 1660504.500	T 4841779.600	T 128652840.000	T 10682654.000	TM 12363117.000	213255.670	20918.119	377328.490	2
3	11:59:35	126216.110	847.522	5645.956	T 1685880.900	T 4845723.200	T 130538800.000	T 10864523.000	TM 12416215.000	213093.610	20127.146	383824.320	2
x		124211.200	848.355	5465.897	T 1677768.600	T 4848330.600	T 129492810.000	T 10702318.000	TM 12328399.000	214035.610	20953.177	379614.800	2
σ		1801.038	1.443	185.263	T 14960.197	T 8172.881	T 959709.640	T 153321.420	TM 109387.850	1493.448	844.107	3650.071	
%RSD		1.450	0.170	3.389	T 0.892	T 0.169	T 0.741	T 1.433	TM 0.887	0.698	4.029	0.962	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:58:52	34159.971	T 24888788.000	T 642118650.000	219424.970	93672.498	1673413.500	674648.650	21977.481	988.029	1105.537	447.006	
2	11:59:14	34084.818	T 25234805.000	TM 641721300.000	212739.130	92601.539	1681400.500	679213.560	22039.563	1102.036	1107.537	471.507	
3	11:59:35	35167.063	T 25824438.000	TM 657725870.000	218295.280	95759.307	T 1882762.400	684664.940	22453.114	1031.032	1146.039	478.007	
x		34470.617	T 25316010.000	TM 647188610.000	216819.790	94011.115	T 1745858.800	679509.050	22156.719	1040.366	1119.704	465.507	
σ		604.309	T 473081.520	TM 9127701.300	3578.817	1605.887	T 118629.200	5014.682	258.556	57.574	22.829	16.348	
%RSD		1.753	T 1.869	TM 1.410	1.651	1.708	T 6.795	0.738	1.167	5.534	2.039	3.512	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	11:58:52	T 2044342.600	791885.950	16087.761	6591.303	445.006	3650.400	921214.400	59701.738	4775.684	3708.913	643933.770	2
2	11:59:14	1914776.000	796833.590	16568.231	6626.317	440.006	3870.449	935762.200	60369.135	4630.643	3777.928	658517.320	2
3	11:59:35	T 2111174.700	811412.320	16438.102	6741.363	350.004	3935.465	932919.290	62095.460	4850.706	3845.444	675918.580	2
x		T 2023431.100	800043.960	16364.698	6652.994	411.672	3818.771	929965.300	60722.111	4752.344	3777.428	659456.560	2
σ		T 99855.293	10151.335	248.504	78.506	53.465	149.394	7710.653	1235.282	111.872	68.267	16013.077	
%RSD		T 4.935	1.269	1.519	1.180	12.987	3.912	0.829	2.034	2.354	1.807	2.428	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:58:52	2345.165	11038.654	1823200.300	149093.900	0.000	423077.540	195773.100
2	11:59:14	2385.171	11333.852	1839114.500	151969.700	0.000	431832.840	199942.160
3	11:59:35	2365.168	11694.101	1859417.800	153907.360	0.000	433618.310	205650.990
x		2365.168	11355.536	1840577.500	151656.990	0.000	429509.560	200455.410
σ		20.003	328.261	18153.044	2421.918	0.000	5641.382	4958.907
%RSD		0.846	2.891	0.986	1.597	0.000	1.313	2.474

200-35680-A-2-A 10/14/2016 12:04:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	12:04:34	128614.340	572.510	4670.654	T 1124144.800	T 2581911.800	T 81502838.000	T 7415964.500	T 5390853.600	201703.180	23791.970	247062.730	171710.0
2	12:04:56	126014.600	575.010	4530.616	T 1127936.000	T 2616627.800	T 81891601.000	T 7340411.100	T 5483480.700	200559.510	25128.930	249072.310	171275.5
3	12:05:18	118691.130	507.508	4890.717	T 1143498.200	T 2629201.800	T 82529282.000	T 7405151.600	T 5486042.100	203008.890	24533.043	249869.100	173695.4
x		124440.020	551.676	4697.329	T 1131859.700	T 2609247.200	T 81974573.000	T 7387175.700	T 5453458.800	201757.190	24484.647	248668.050	172226.9
σ		5145.581	38.271	181.527	T 10255.940	T 24493.709	T 518227.820	T 40858.604	T 54232.808	1225.587	669.793	1446.204	1290.1
%RSD		4.135	6.937	3.864	T 0.906	T 0.939	T 0.632	T 0.553	T 0.994	0.607	2.736	0.582	0.7

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	12:04:34	22425.076	T 13924219.000	T 365924650.000	150602.370	66457.233	1608593.500	581914.430	14927.682	929.026	1051.533	474.507	7796.8
2	12:04:56	22425.076	T 14021472.000	T 369545230.000	150678.050	66256.436	1635475.500	580889.590	15017.763	953.027	1077.035	441.506	7321.6
3	12:05:18	21904.385	T 13972142.000	T 369787340.000	153872.030	66979.317	1655263.300	587220.760	15357.072	936.026	1095.536	445.006	7651.7
x		22251.512	T 13972611.000	T 368419070.000	151717.490	66564.329	1633110.800	583341.590	15100.839	939.360	1074.701	453.673	7590.0
σ		300.622	T 48628.110	T 2163624.600	1866.277	373.150	23424.559	3398.311	226.429	12.343	22.094	18.127	243.5

%RSD		1.351	T 0.348	T 0.587	1.230	0.561	1.434	0.583	1.499	1.314	2.056	3.996	3.2
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	12:04:34	888123.810	582131.830	11694.101	7101.513	250.002	3900.456	987895.380	89937.007	4340.565	3372.341	391192.700	220245.6
2	12:04:56	896468.230	581210.490	11639.063	7556.713	350.004	3970.473	986559.640	90892.168	4305.556	3453.858	397207.480	221714.9
3	12:05:18	909132.330	579823.410	11208.768	7446.663	355.004	3865.448	988626.900	91736.776	4490.605	3460.359	407706.480	224866.7
x		897908.120	581055.250	11513.977	7368.296	318.336	3912.126	987693.980	90855.317	4378.909	3428.853	398702.220	222275.8
σ		10578.015	1162.011	265.748	237.503	59.232	53.476	1048.244	900.450	98.303	49.048	8357.747	2361.0
%RSD		1.178	0.200	2.308	3.223	18.607	1.367	0.106	0.991	2.245	1.430	2.096	1.0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:04:34	1965.116	7781.816	1454182.500	153352.280	5.000	252579.500	132277.850
2	12:04:56	1980.118	7736.795	1476879.000	153644.950	0.000	256412.360	134440.050
3	12:05:18	1790.096	7401.643	1507884.300	151747.690	0.000	257168.880	137298.200
x		1911.776	7640.085	1479648.600	152914.970	1.667	255386.920	134672.030
σ		105.645	207.720	26957.835	1021.434	2.887	2460.543	2518.205
%RSD		5.526	2.719	1.822	0.668	173.205	0.963	1.870

200-35680-A-3-A 10/14/2016 12:09:56 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	12:10:17	163548.530	1560.073	5285.838	T 2090008.100	T 8445323.800	T 296837130.000	T 17582030.000	T 2467770.500	349047.140	69359.021	662724.250	62
2	12:10:39	160297.170	1607.578	4730.671	T 2072733.800	T 8513107.200	T 301487600.000	T 17776080.000	T 2512111.000	360732.030	67365.870	677303.120	62
3	12:11:01	159630.820	1422.561	4595.633	T 2105264.500	T 8566926.700	T 300312420.000	T 17904089.000	T 2536029.300	358208.470	66437.153	672613.830	62
x		161158.840	1530.070	4870.714	T 2089335.400	T 8508452.600	T 299545720.000	T 17754066.000	T 2505303.600	355995.880	67720.681	670880.400	62
σ		2096.179	96.088	365.793	T 16275.795	T 60934.924	T 2418180.500	T 162154.490	T 34634.837	6148.646	1492.898	7442.411	
%RSD		1.301	6.280	7.510	T 0.779	T 0.716	T 0.807	T 0.913	T 1.382	1.727	2.204	1.109	

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	12:10:17	82282.613	TM 53504915.000	T 908859700.000	426831.450	212511.250	146899.540	540494.180	13667.602	1435.062	746.517	729.016	
2	12:10:39	81569.118	TM 54695268.000	T 924967180.000	436948.610	214217.890	147040.780	549765.130	13771.687	1394.058	784.018	741.016	
3	12:11:01	83312.711	TM 54791115.000	T 935110300.000	439191.420	214374.890	148690.320	552648.170	14317.147	1436.062	777.018	676.014	
x		82388.147	TM 54330433.000	T 922979060.000	434323.830	213701.340	147543.550	547635.830	13918.812	1421.727	769.184	715.349	
σ		876.574	TM 716523.560	T 13237748.000	6584.780	1033.636	995.640	6350.615	348.872	23.967	19.940	34.590	
%RSD		1.064	TM 1.319	T 1.434	1.516	0.484	0.675	1.160	2.506	1.686	2.592	4.835	

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	12:10:17	1074451.900	1380662.400	6791.383	4030.487	475.007	2085.130	1194418.500	58035.869	1965.116	1537.571	1268163.900	32
2	12:10:39	1107359.500	1417598.200	7261.582	4155.518	510.008	2060.127	1203948.900	59902.456	2010.121	1661.083	1284900.800	33
3	12:11:01	T 1238446.000	1415120.400	7496.686	4330.563	725.016	1960.115	1199279.700	60218.592	2095.132	1691.586	1308008.600	33
x		T 1140085.800	1404460.300	7183.217	4172.189	570.010	2035.124	1199215.700	59385.639	2023.456	1630.080	1287024.400	33
σ		T 86756.976	20646.817	359.122	150.731	135.375	66.152	4765.531	1179.574	66.026	81.554	20007.044	
%RSD		T 7.610	1.470	4.999	3.613	23.750	3.251	0.397	1.986	3.263	5.003	1.555	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:10:17	810.020	14371.193	1481640.000	187154.940	0.000	1174516.100	180259.560
2	12:10:39	830.021	14881.641	1510238.900	185820.130	0.000	1213022.700	185127.490
3	12:11:01	940.027	14971.722	1527112.400	188692.130	0.000	1217378.800	186209.440
x		860.022	14741.519	1506330.400	187222.400	0.000	1201639.200	183865.500
σ		70.004	323.858	22986.780	1437.187	0.000	23590.088	3169.342
%RSD		8.140	2.197	1.526	0.768	0.000	1.963	1.724

200-35680-A-4-A 10/14/2016 12:15:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:16:00	151263.320	817.520	7271.586	T 1567467.800	T 4911502.500	T 152497810.000	T 14583335.000	T 3689194.700	272977.340	44604.607	446188.640	34442
2	12:16:22	151485.320	855.022	7391.639	T 1566183.700	T 4882281.600	T 153221740.000	T 14636202.000	T 3694248.400	274481.750	45572.220	445921.630	33860
3	12:16:44	148478.440	867.523	6821.396	T 1545607.400	T 4872843.000	T 154156480.000	T 14795076.000	T 3742708.000	277063.950	46645.182	456517.780	34717
x		150409.030	846.688	7161.540	T 1559753.000	T 4888875.700	T 153292010.000	T 14671538.000	T 3708717.000	274841.010	45607.336	449542.690	34340
σ		1675.615	26.022	300.627	T 12267.237	T 20155.666	T 831565.280	T 110204.470	T 29545.274	2066.856	1020.741	6042.087	437
%RSD		1.114	3.073	4.198	T 0.786	T 0.412	T 0.542	T 0.751	T 0.797	0.752	2.238	1.344	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:16:00	47281.973	TM 56319982.000	T 678376000.000	248524.220	116077.820	T 2453097.900	828618.640	23377.384	1533.071	1309.551	618.011	849
2	12:16:22	45772.768	TM 56820973.000	T 682014460.000	246880.050	115423.300	T 2456223.700	831796.200	23189.121	1505.068	1323.553	639.012	863
3	12:16:44	46920.954	TM 57107090.000	T 687627890.000	250605.030	116274.180	T 2453856.400	833976.190	23145.060	1545.072	1370.056	613.511	842
x		46658.565	TM 56749349.000	T 682672780.000	248669.760	115925.100	T 2454392.600	831463.680	23237.188	1527.737	1334.387	623.512	851
σ		788.074	TM 398412.570	T 4660945.000	1866.749	445.526	T 1630.425	2694.209	123.395	20.528	31.674	13.611	10
%RSD		1.689	TM 0.702	T 0.683	0.751	0.384	T 0.066	0.324	0.531	1.344	2.374	2.183	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	12:16:00	939382.580	842709.450	14771.543	9227.554	550.009	4020.485	1180508.000	82563.999	5120.787	4154.518	858337.450	26654
2	12:16:22	954347.890	849438.460	15191.921	9252.568	460.006	3960.470	1189022.400	84317.746	5635.953	4231.537	868125.370	26932
3	12:16:44	939202.870	843708.120	15712.403	9152.512	490.007	3775.428	1183628.000	84770.032	5570.931	4274.048	883307.720	26991
x		944311.110	845285.340	15225.289	9210.878	500.008	3918.794	1184386.100	83883.926	5442.557	4220.034	869923.510	26859
σ		8692.567	3631.204	471.317	52.070	45.827	127.734	4307.555	1165.245	280.551	60.590	12581.878	180
%RSD		0.921	0.430	3.096	0.565	9.165	3.260	0.364	1.389	5.155	1.436	1.446	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:16:00	2185.143	12289.529	2030214.200	174054.120	0.000	416817.740	167810.580
2	12:16:22	2235.150	12935.017	2040617.100	175903.390	0.000	416848.500	170250.130
3	12:16:44	2330.163	12664.810	2057743.400	172518.280	0.000	422144.320	173447.850
x		2250.152	12629.786	2042858.200	174158.600	0.000	418603.520	170502.860
σ		73.665	324.166	13900.755	1694.970	0.000	3066.460	2827.121
%RSD		3.274	2.567	0.680	0.973	0.000	0.733	1.658

200-35680-A-5-A 10/14/2016 12:21:22 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:21:44	155098.320	1260.048	6331.202	T 1826551.900	T 4902128.500	T 229321030.000	T 18572607.000	T 1827619.200	304404.710	53736.489	674653.850	44986
2	12:22:05	154008.280	1202.543	6221.161	T 1824381.200	T 4961701.700	T 234044360.000	T 18714201.000	T 1856071.900	308560.080	51017.966	673883.610	44982
3	12:22:27	150395.520	1302.551	6396.227	T 1769195.100	T 4852575.900	T 230939640.000	T 18680530.000	T 1870921.300	310668.710	54905.289	690925.520	46182
x		153167.370	1255.047	6316.197	T 1806709.400	T 4905468.700	T 231435010.000	T 18655779.000	T 1851537.500	307877.840	53219.915	679820.990	45383
σ		2461.593	50.191	88.492	T 32506.460	T 54639.535	T 2400315.300	T 73970.811	T 22004.297	3187.245	1994.482	9624.511	691
%RSD		1.607	3.999	1.401	T 1.799	T 1.114	T 1.037	T 0.397	T 1.188	1.035	3.748	1.416	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:21:44	60921.138	T 30996416.000	T 776873500.000	311926.890	152726.570	1896101.000	730531.950	24073.373	1832.101	1513.569	665.513	734
2	12:22:05	61899.734	T 31259294.000	T 790170850.000	312996.670	152141.250	1881089.300	729404.130	24455.930	1927.111	1468.065	669.513	708
3	12:22:27	63455.569	T 31648048.000	T 790176820.000	318163.120	151091.770	1885007.100	742728.660	24799.437	1981.118	1514.069	649.013	741
x		62092.147	T 31301253.000	T 785740390.000	314362.230	151986.530	1887399.100	734221.580	24442.913	1913.443	1498.567	661.346	727

σ		1278.124	T 327835.850	T 7678950.500	3334.847	828.309	7786.471	7388.898	363.207	75.443	26.417	10.867	17
%RSD		2.058	T 1.047	T 0.977	1.061	0.545	0.413	1.006	1.486	3.943	1.763	1.643	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	12:21:44	735545.390	1138266.000	19881.852	10533.327	410.005	4620.640	1200127.600	71287.130	4410.583	3480.863	1023941.300	29610
2	12:22:05	750631.150	1146171.100	21744.175	10558.343	520.008	4715.667	1205548.600	72873.971	4790.688	3613.892	1052851.700	30273
3	12:22:27	752832.160	1152067.600	21614.006	10793.494	500.007	4860.709	1223788.600	73767.891	4750.677	3617.893	1066574.300	30385
x		746336.230	1145501.600	21080.011	10628.388	476.674	4732.339	1209821.600	72642.997	4650.650	3570.883	1047789.100	30089
σ		9409.723	6925.111	1039.676	143.532	58.596	120.899	12395.793	1256.405	208.864	77.985	21762.727	418
%RSD		1.261	0.605	4.932	1.350	12.293	2.555	1.025	1.730	4.491	2.184	2.077	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:21:44	1585.075	16312.979	2133087.100	177702.320	0.000	606171.430	405954.480
2	12:22:05	1615.078	16603.266	2174966.800	180805.430	0.000	624966.860	416489.690
3	12:22:27	1745.091	16553.216	2167813.600	178258.210	0.000	631776.520	416479.440
x		1648.415	16489.821	2158622.500	178921.990	0.000	620971.600	412974.540
σ		85.058	155.180	22401.700	1654.620	0.000	13261.848	6079.547
%RSD		5.160	0.941	1.038	0.925	0.000	2.136	1.472

200-35680-A-6-A 10/14/2016 12:27:05 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:27:27	147419.100	745.017	6011.084	┬1593883.800	┬3235341.500	┬138143850.000	┬12788088.000	┬1830526.800	267072.830	39657.125	421416.230	284212
2	12:27:48	147217.330	882.523	6041.095	┬1580278.300	┬3230298.900	┬138219640.000	┬12783776.000	┬1825127.000	267184.600	41506.620	424205.670	286862
3	12:28:10	148538.980	825.020	6436.243	┬1595045.600	┬3239834.500	┬139007030.000	┬12890810.000	┬1838488.000	269877.470	41902.609	427051.990	290820
x		147725.140	817.520	6162.807	┬1589735.900	┬3235158.300	┬138456840.000	┬12820891.000	┬1831380.600	268044.960	41022.118	424224.630	287298
σ		711.992	69.060	237.277	┬8211.059	┬4770.428	┬477982.210	┬60589.801	┬6721.298	1587.977	1198.585	2817.928	3325
%RSD		0.482	8.447	3.850	┬0.517	┬0.147	┬0.345	┬0.473	┬0.367	0.592	2.922	0.664	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:27:27	42002.861	┬20954888.000	┬505936360.000	209554.160	95839.768	┬3219597.600	937411.100	19577.492	2054.127	1767.594	630.512	6471
2	12:27:48	40734.719	┬21283505.000	┬515713510.000	209154.180	97283.094	┬3274183.400	946176.170	19460.355	2075.129	1848.103	610.511	6526
3	12:28:10	42288.582	┬21154818.000	┬515821210.000	209457.960	99209.399	┬3312060.300	956792.230	19893.866	2051.126	1804.598	581.510	6611
x		41675.387	┬21131070.000	┬512490360.000	209388.770	97444.087	┬3268613.800	946793.160	19643.904	2060.127	1806.765	607.511	6536
σ		827.074	┬165590.470	┬5676189.000	208.773	1690.575	┬46482.254	9705.286	224.257	13.078	40.298	24.638	70
%RSD		1.985	┬0.784	┬1.108	0.100	1.735	┬1.422	1.025	1.142	0.635	2.230	4.056	1

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	12:27:27	617330.000	793636.330	16042.717	10863.539	690.014	7696.777	1213140.900	80051.788	5791.006	4871.212	799108.730	262633
2	12:27:48	624883.830	797389.250	15457.164	10798.497	775.018	7561.715	1208565.800	81448.531	6026.089	4858.708	806963.970	264065
3	12:28:10	616987.670	792703.470	15312.031	10898.562	600.011	7531.701	1203787.900	82071.576	6451.248	4933.230	806229.680	269816
x		619733.840	794576.350	15603.971	10853.533	688.348	7596.731	1208498.200	81190.632	6089.448	4887.717	804100.790	265505
σ		4463.310	2480.292	386.833	50.777	87.516	87.932	4676.862	1034.297	334.650	39.908	4338.811	3801
%RSD		0.720	0.312	2.479	0.468	12.714	1.158	0.387	1.274	5.496	0.817	0.540	1

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:27:27	2295.158	10568.350	2136710.100	171538.240	0.000	347464.580	158621.250
2	12:27:48	2240.151	11363.873	2156270.200	171295.770	0.000	349915.060	156072.350
3	12:28:10	2355.166	11068.674	2210702.200	175994.340	0.000	360420.400	160357.740
x		2296.825	11000.299	2167894.200	172942.780	0.000	352600.010	158350.450
σ		57.526	402.145	38341.144	2645.506	0.000	6882.589	2155.492
%RSD		2.505	3.656	1.769	1.530	0.000	1.952	1.361

200-35680-A-6-A SD@5 10/14/2016 12:32:49 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:33:11	146359.830	147.501	1960.115	580434.130	657675.030	┬30923057.000	┬2942919.100	379225.840	243719.030	8952.404	160801.990	69007.566
2	12:33:32	140388.790	172.501	2065.128	573355.320	667462.830	┬30755465.000	┬2844302.800	377169.970	236252.680	8972.415	158908.970	67898.023
3	12:33:54	140882.930	182.501	1950.114	557655.890	659255.670	┬30288556.000	┬2870992.900	378029.100	232804.660	9242.562	163008.270	70353.174
x		142543.850	167.501	1991.786	570481.780	661464.510	┬30655692.000	┬2886071.600	378141.640	237592.120	9055.793	160906.410	69086.255
σ		3313.955	18.028	63.713	11657.828	5254.474	┬328806.540	┬51008.025	1032.544	5579.110	162.056	2051.646	1229.466
%RSD		2.325	10.763	3.199	2.044	0.794	┬1.073	┬1.767	0.273	2.348	1.790	1.275	1.780

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:33:11	32211.097	┬4603465.800	┬113985500.000	47738.271	22294.902	673227.890	236485.950	13731.654	3506.369	954.527	585.510	3720.415
2	12:33:32	32035.759	┬4583413.500	┬113719150.000	46805.631	22319.935	666359.990	233306.610	13831.737	3484.364	872.523	583.510	3725.416
3	12:33:54	32651.953	┬4575000.600	┬112928380.000	46880.842	21724.149	669424.190	234645.210	13714.640	3341.335	900.524	590.010	3865.448
x		32299.603	┬4587293.300	┬113544340.000	47141.581	22112.995	669670.690	234812.590	13759.344	3444.023	909.192	586.344	3770.427
σ		317.488	┬14623.843	┬549811.320	518.115	336.983	3440.581	1596.265	63.269	89.608	41.684	3.329	82.329

%RSD		0.983	┬0.319	┬0.484	1.099	1.524	0.514	0.680	0.460	2.602	4.585	0.568	2.184
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:33:11	135841.340	394975.360	3295.326	2605.204	115.000	1770.094	1270281.400	20622.751	1560.073	1282.049	174155.170	226366.890
2	12:33:32	136224.450	388679.920	3210.309	2545.194	110.000	1700.087	1261037.500	21403.735	1550.072	1320.552	176262.150	226052.670
3	12:33:54	137751.920	393593.230	3265.320	2695.218	105.000	1875.105	1250905.000	21498.857	1635.080	1257.547	176444.060	229022.810
x		136605.900	392416.170	3256.985	2615.205	110.000	1781.762	1260741.300	21175.114	1581.742	1286.716	175620.460	227147.450
σ		1010.800	3308.659	43.117	75.510	5.000	88.091	9691.601	480.719	46.462	31.761	1272.232	1631.683
%RSD		0.740	0.843	1.324	2.887	4.545	4.944	0.769	2.270	2.937	2.468	0.724	0.718

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:33:11	410.005	2600.203	443549.580	169295.480	0.000	66904.015	32186.048
2	12:33:32	540.009	2600.203	450810.550	170406.720	0.000	68600.893	32035.759
3	12:33:54	555.009	2555.196	453866.840	169406.600	0.000	69178.272	33488.611
x		501.674	2585.200	449408.990	169702.940	0.000	68227.727	32570.139
σ		79.741	25.985	5299.502	612.023	0.000	1182.159	798.961
%RSD		15.895	1.005	1.179	0.361	0.000	1.733	2.453

200-35680-A-6-A PDS 10/14/2016 12:38:32 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	12:38:54	141024.120	2330.163	66186.158	┬10180561.000	┬3297274.300	┬130442650.000	┬21186075.000	┬2027584.300	254498.360	38484.380	531197.330	3708
2	12:39:16	140197.190	2310.160	66743.373	┬10384215.000	┬3393567.500	┬130197310.000	┬21690106.000	┬2075178.500	255777.720	38780.064	542053.620	3764
3	12:39:37	136012.730	2327.662	69389.146	┬10464135.000	┬3394375.600	┬129299940.000	┬21205990.000	┬2051225.600	250041.660	37898.039	536606.540	3751
x		139078.010	2322.662	67439.559	┬10342970.000	┬3361739.100	┬129979960.000	┬21360723.000	┬2051329.500	253439.250	38387.494	536619.160	3741
σ		2686.620	10.899	1711.224	┬146216.800	┬55829.643	┬601561.840	┬285427.330	┬23797.295	3011.128	448.924	5428.152	28
%RSD		1.932	0.469	2.537	┬1.414	┬1.661	┬0.463	┬1.336	┬1.160	1.188	1.169	1.012	

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	12:38:54	51730.156	┬19576661.000	┬478253480.000	225941.170	101820.070	┬3005276.500	977927.550	26997.849	3129.294	3457.859	544.509	77
2	12:39:16	52808.530	┬20043190.000	┬491993550.000	230290.090	104114.180	┬3087028.800	992491.760	27523.708	3309.329	3357.338	547.009	77
3	12:39:37	51705.078	┬19973254.000	┬489928630.000	230087.320	103238.760	┬3039912.600	1001290.300	27568.782	3214.310	3400.347	560.009	76
x		52081.255	┬19864368.000	┬486725220.000	228772.860	103057.670	┬3044072.600	990569.880	27363.446	3217.644	3405.181	550.509	76
σ		629.964	┬251603.450	┬7409034.800	2454.409	1157.725	┬41034.611	11799.368	317.418	90.064	50.434	8.322	
%RSD		1.210	┬1.267	┬1.522	1.073	1.123	┬1.348	1.191	1.160	2.799	1.481	1.512	

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	12:38:54	840554.620	727926.590	203960.410	47096.448	1095.036	15487.192	1123609.900	73125.067	64991.470	50206.006	806670.250	2517
2	12:39:16	868262.230	744641.230	211609.890	47447.442	1155.040	15632.328	1148707.100	76304.271	66266.476	51632.855	827069.470	2515
3	12:39:37	861583.680	748947.910	211209.860	47978.960	1240.046	16002.679	1151971.300	75766.828	67596.802	51896.171	831507.310	2545
x		856800.170	740505.240	208926.720	47507.617	1163.374	15707.400	1141429.400	75065.389	66284.916	51245.010	821749.010	2526
σ		14459.921	11104.220	4305.601	444.323	72.863	265.817	15518.216	1701.719	1302.764	909.386	13245.768	16
%RSD		1.688	1.500	2.061	0.935	6.263	1.692	1.360	2.267	1.965	1.775	1.612	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:38:54	47994.003	235745.570	2086382.400	163831.280	0.000	676824.240	334707.460
2	12:39:16	46830.701	241877.500	2150637.300	166346.010	0.000	698970.780	349920.160
3	12:39:37	48911.665	242937.750	2171602.600	168800.500	0.000	710508.600	349741.470
x		47912.123	240186.940	2136207.400	166325.930	0.000	695434.540	344789.700
σ		1042.896	3882.700	44404.797	2484.670	0.000	17118.344	8731.931
%RSD		2.177	1.617	2.079	1.494	0.000	2.462	2.533

CCV 10/14/2016 12:44:17 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:44:38	115428.330	92553.774	35592.965	┬15854943.000	┬4711449.300	┬43915777.000	┬16025727.000	┬1775905.900	174225.910	32105.894	┬3307108.700	92
2	12:45:00	112397.720	87745.371	35407.571	┬15501568.000	┬4703691.500	┬43481607.000	┬15223930.000	┬1722115.700	166477.310	31319.400	┬3237741.800	90
3	12:45:22	110545.400	88107.273	34881.463	┬15301064.000	┬4543041.200	┬42351921.000	┬15176299.000	┬1689474.700	164215.030	31479.701	┬3199057.800	89
x		112790.480	89468.806	35294.000	┬15552525.000	┬4652727.300	┬43249769.000	┬15475319.000	┬1729165.400	168306.080	31634.998	┬3247969.500	90
σ		2465.047	2677.782	369.097	┬280433.250	┬95070.117	┬807294.130	┬477261.840	┬43644.704	5250.020	415.609	┬54746.682	1
%RSD		2.186	2.993	1.046	┬1.803	┬2.043	┬1.867	┬3.084	┬2.524	3.119	1.314	┬1.686	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:44:38	119557.290	┬4881150.100	┬100869320.000	1443795.100	760775.950	937384.670	699471.130	92108.820	7509.691	9555.739	458.006	
2	12:45:00	114592.590	┬4724017.400	┬97365180.000	1390144.000	745932.070	916489.290	690191.010	89971.191	7283.591	9423.663	411.005	
3	12:45:22	113928.060	┬4721978.500	┬96843858.000	1373538.300	734876.840	907016.600	684800.340	89147.784	6977.460	9181.528	426.505	
x		116025.980	┬4775715.300	┬98359452.000	1402492.500	747194.960	920296.850	691487.490	90409.265	7256.914	9386.977	431.839	
σ		3076.197	┬91314.879	┬2189181.400	36720.114	12995.658	15537.959	7420.825	1528.354	267.117	189.783	23.950	
%RSD		2.651	┬1.912	┬2.226	2.618	1.739	1.688	1.073	1.690	3.681	2.022	5.546	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	12:44:38	1010093.400	216314.710	┬2321300.300	334743.170	10373.227	162094.420	1006872.000	1092831.000	704246.030	547131.560	736375.880	17
2	12:45:00	980724.950	213397.460	┬2345265.400	330632.320	10628.388	161453.250	1004112.800	1095396.500	696005.470	541540.850	726214.270	17
3	12:45:22	961205.620	206865.890	┬2292684.300	331789.990	10538.331	159156.310	987428.920	1066957.700	686945.990	536789.280	720092.030	17
x		984008.000	212192.690	┬2319750.000	332388.490	10513.315	160901.330	999471.230	1085061.800	695732.490	541820.560	727560.730	17
σ		24608.693	4838.252	┬26324.832	2119.768	129.407	1544.858	10519.798	15730.954	8653.251	5176.810	8225.002	3
%RSD		2.501	2.280	┬1.135	0.638	1.231	0.960	1.053	1.450	1.244	0.955	1.130	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:44:38	50812.339	2097739.200	┬10825359.000	140590.480	0.000	310587.220	161922.770
2	12:45:00	50045.022	2089651.500	┬10854139.000	139450.970	0.000	322841.810	162296.370
3	12:45:22	50225.564	2074835.500	┬10754769.000	136657.970	5.000	327328.050	163063.810
x		50360.975	2087408.700	┬10811422.000	138899.810	1.667	320252.360	162427.650
σ		401.180	11615.384	┬51130.145	2023.359	2.887	8665.612	581.739
%RSD		0.797	0.556	┬0.473	1.457	173.205	2.706	0.358

CCB 10/14/2016 12:50:00 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:50:22	126407.560	20.000	1035.032	268495.410	1350.055	17954.666	64886.061	1060.034	176671.450	40.000	27602.839	2610.204
2	12:50:44	119466.640	17.500	960.028	276921.610	1540.071	22114.662	65839.790	1160.040	177762.960	40.000	27708.013	2560.197
3	12:51:05	122397.790	22.500	970.028	273119.640	1560.073	24132.459	64464.429	1080.035	178874.760	40.000	27828.213	2795.234
x		122757.330	20.000	988.363	272845.560	1483.400	21400.596	65063.427	1100.036	177769.720	40.000	27713.021	2655.212
σ		3484.398	2.500	40.725	4219.781	115.912	3150.190	704.626	52.919	1101.673	0.000	112.771	123.814
%RSD		2.838	12.500	4.120	1.547	7.814	14.720	1.083	4.811	0.620	0.000	0.407	4.663

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:50:22	9532.725	2195.145	305153.210	170.001	170.001	460.006	730.016	2259.153	754.017	476.507	438.006	2510.189
2	12:50:44	9587.757	2965.264	311468.430	215.001	130.001	585.010	815.020	2371.169	744.017	442.006	426.505	2300.159
3	12:51:05	9547.734	3345.336	317322.320	235.002	110.000	635.012	695.014	2218.148	773.018	484.507	460.006	2320.162
x		9556.072	2835.248	311314.650	206.668	136.667	560.010	746.683	2282.823	757.017	467.673	441.506	2376.836

σ		28.448	586.015	6086.010	33.292	30.551	90.142	61.715	79.209	14.732	22.586	17.022	115.919
%RSD		0.298	20.669	1.955	16.109	22.354	16.096	8.265	3.470	1.946	4.829	3.856	4.877
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:50:22	275.002	224978.280	2530.192	75.000	0.000	50.000	1035764.300	2050.126	850.022	580.510	140.001	177651.790
2	12:50:44	300.003	223853.280	2710.220	140.001	0.000	35.000	1043037.500	2180.143	810.020	630.512	170.001	178399.710
3	12:51:05	310.003	226143.890	2370.169	110.000	5.000	40.000	1037688.700	2320.162	925.026	642.512	225.002	179562.090
x		295.003	224991.820	2536.860	108.334	1.667	41.667	1038830.200	2183.477	861.689	617.845	178.334	178537.860
σ		18.028	1145.366	170.124	32.532	2.887	7.638	3768.584	135.049	58.384	32.885	43.109	962.618
%RSD		6.111	0.509	6.706	30.030	173.205	18.330	0.363	6.185	6.776	5.323	24.173	0.539

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:50:22	200.001	2085.130	1820.099	143565.680	0.000	8542.189	80.000
2	12:50:44	145.001	1785.096	2130.136	143424.470	0.000	8131.983	60.000
3	12:51:05	170.001	1690.086	2080.130	144302.000	0.000	7511.692	85.000
x		171.668	1853.437	2010.122	143764.050	0.000	8061.955	75.000
σ		27.538	206.199	166.453	471.196	0.000	518.805	13.229
%RSD		16.042	11.125	8.281	0.328	0.000	6.435	17.638

CCVL 10/14/2016 12:55:43 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:56:05	122820.890	165.001	7081.504	1019687.000	30377.659	92521.094	839724.290	29676.397	178430.030	30.000	41912.634	12409.618
2	12:56:27	123082.810	167.501	7146.532	T 1108032.300	31249.268	92410.483	817016.380	29456.007	181998.310	25.000	42088.075	12764.886
3	12:56:48	119295.420	187.501	7066.498	1014663.900	31289.343	91550.758	814035.720	30237.404	180764.990	30.000	42333.696	13035.095
x		121733.040	173.334	7098.178	T 1047461.100	30972.090	92160.778	823592.130	29789.936	180397.780	28.333	42111.468	12736.533
σ		2115.099	12.332	42.543	T 52516.354	515.182	531.180	14050.128	402.882	1812.258	2.887	211.504	313.701
%RSD		1.737	7.115	0.599	T 5.014	1.663	0.576	1.706	1.352	1.005	10.189	0.502	2.463

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:56:05	11153.731	9067.466	954453.700	3530.374	1470.065	4425.587	13265.277	3362.339	945.027	685.514	479.007	2545.194
2	12:56:27	11559.007	9522.720	958427.280	3445.356	1530.070	4505.609	13360.353	3403.347	935.026	641.512	468.507	2425.176
3	12:56:48	11093.691	9817.891	958083.320	3330.333	1550.072	4530.616	13425.405	3487.365	955.027	637.012	466.007	2395.172
x		11268.810	9469.359	956988.100	3435.354	1516.736	4487.271	13350.345	3417.684	945.027	654.680	471.173	2455.181
σ		253.105	378.048	2201.582	100.395	41.637	54.863	80.532	63.734	10.001	26.798	6.898	79.384
%RSD		2.246	3.992	0.230	2.922	2.745	1.223	0.603	1.865	1.058	4.093	1.464	3.233

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:56:05	26526.092	228323.310	19080.916	3825.439	40.000	785.018	1031140.400	1360.055	6126.126	4784.687	5961.066	173983.390
2	12:56:27	26290.720	226833.170	18455.212	3615.392	85.000	770.018	1045228.600	1400.059	6036.093	4909.723	6391.225	181088.480
3	12:56:48	26065.366	222525.680	18580.351	3635.396	35.000	950.027	1034414.200	1280.049	6346.208	4881.215	6111.120	180360.650
x		26294.059	225894.050	18705.493	3692.076	53.333	835.021	1036927.700	1346.721	6169.475	4858.542	6154.470	178477.500
σ		230.381	3010.743	331.092	115.928	27.538	99.880	7372.772	61.106	159.538	65.529	218.332	3908.993
%RSD		0.876	1.333	1.770	3.140	51.634	11.961	0.711	4.537	2.586	1.349	3.548	2.190

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:56:05	4155.518	21593.980	9342.618	143111.800	0.000	19346.222	16803.466
2	12:56:27	4325.561	22239.828	9602.766	141034.210	0.000	19786.738	17118.787
3	12:56:48	3995.479	21969.470	9827.897	144423.040	0.000	20993.213	17544.229
x		4158.853	21934.426	9591.093	142856.350	0.000	20042.058	17155.494
σ		165.066	324.347	242.850	1708.799	0.000	852.664	371.743
%RSD		3.969	1.479	2.532	1.196	0.000	4.254	2.167

200-35680-A-6-B MS 10/14/2016 01:01:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:01:49	139803.900	2332.663	61157.000	T 10357554.000	T 3910008.000	T 147840650.000	T 21316445.000	T 2426476.000	246509.630	40048.058	550886.250	39451
2	13:02:10	138563.610	2415.175	61673.899	T 10638468.000	T 4030156.300	T 149217940.000	T 21606853.000	T 2507230.500	250914.630	40609.414	563683.660	40380
3	13:02:32	142476.390	2427.677	60584.916	T 10676685.000	T 4061155.000	T 150992440.000	T 22155436.000	T 2558528.400	256275.280	40038.034	573013.880	41591
x		140281.300	2391.838	61138.605	T 10557569.000	T 4000439.800	T 149350340.000	T 21692912.000	T 2497411.600	251233.180	40231.835	562527.930	40474
σ		1999.599	51.627	544.725	T 174268.980	T 79835.204	T 1580058.200	T 426064.610	T 66571.517	4890.612	327.031	11108.993	1072
%RSD		1.425	2.158	0.891	T 1.651	T 1.996	T 1.058	T 1.964	T 2.666	1.947	0.813	1.975	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:01:49	54273.224	T 20725642.000	T 520812590.000	273561.810	124175.870	T 3654790.200	1070531.300	29971.925	3239.315	3555.879	512.508	812
2	13:02:10	55146.082	T 20801596.000	T 528506740.000	277277.460	124936.530	T 3680623.700	1080974.000	30157.259	3284.324	3473.862	561.509	831
3	13:02:32	56269.829	T 21488680.000	T 542679750.000	278797.500	125082.620	T 3752286.200	1106201.300	30560.994	3401.347	3671.904	558.509	822
x		55229.712	T 21005306.000	T 530666360.000	276545.590	124731.670	T 3695900.000	1085902.200	30230.059	3308.329	3567.215	544.176	821
σ		1000.926	T 420333.350	T 11092396.000	2693.482	486.847	T 50511.319	18338.549	301.206	83.641	99.507	27.466	9

%RSD		1.812	┬2.001	┬2.090	0.974	0.390	┬1.367	1.689	0.996	2.528	2.789	5.047	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	13:01:49	943860.230	782717.740	197690.530	49016.974	1070.034	14070.937	1082253.200	108768.760	26060.358	20909.108	701691.600	2443(
2	13:02:10	959570.310	790754.060	200524.080	49337.919	1065.034	14916.672	1096266.000	109860.890	27437.566	21074.816	717425.660	2490
3	13:02:32	963730.340	796372.310	203499.830	49618.751	1245.046	14871.632	1106639.000	114310.670	26986.831	21824.780	732385.710	2530
x		955720.290	789948.040	200571.480	49324.548	1126.705	14619.747	1095052.700	110980.110	26828.252	21269.568	717167.650	2488(
σ		10479.614	6862.880	2904.936	301.111	102.517	475.817	12238.081	2935.584	702.165	487.914	15348.680	43
%RSD		1.097	0.869	1.448	0.610	9.099	3.255	1.118	2.645	2.617	2.294	2.140	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:01:49	52482.502	233849.130	2326676.600	158389.050	0.000	717070.870	364226.820
2	13:02:10	52457.424	235578.230	2398660.100	161387.610	0.000	732014.940	371995.600
3	13:02:32	53460.604	240305.000	2423457.600	164507.900	0.000	738303.410	379190.030
x		52800.177	236577.450	2382931.400	161428.190	0.000	729129.740	371804.150
σ		572.084	3341.912	50271.134	3059.624	0.000	10906.351	7483.445
%RSD		1.083	1.413	2.110	1.895	0.000	1.496	2.013

200-35680-A-6-C MSD 10/14/2016 01:07:12 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	13:07:33	140368.620	2405.173	62381.526	┬10502352.000	┬3213910.700	┬118712200.000	┬19061992.000	┬1948456.700	245220.820	40148.298	495173.220	3478
2	13:07:55	140116.510	2297.658	61693.973	┬10518098.000	┬3188116.100	┬118962530.000	┬19200370.000	┬1963306.100	247676.740	38429.253	495281.360	3483
3	13:08:17	133300.950	2030.124	62286.170	┬10539286.000	┬3221959.300	┬121213730.000	┬19230311.000	┬1979124.700	246266.070	41892.584	501590.910	3553
x		137928.700	2244.318	62120.556	┬10519912.000	┬3207995.400	┬119629490.000	┬19164224.000	┬1963629.100	246387.880	40156.712	497348.500	3505
σ		4009.726	193.131	372.495	┬18533.401	┬17680.046	┬1377695.400	┬89792.233	┬15336.554	1232.481	1731.680	3674.434	42
%RSD		2.907	8.605	0.600	┬0.176	┬0.551	┬1.152	┬0.469	┬0.781	0.500	4.312	0.739	

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	13:07:33	49809.318	┬15867692.000	┬420737380.000	223437.760	105296.570	┬3082202.300	927773.650	27149.094	3311.329	3398.346	536.509	719
2	13:07:55	49337.919	┬15954869.000	┬421094230.000	225870.220	105482.750	┬3058138.500	924203.250	27282.311	3261.319	3380.343	528.008	72
3	13:08:17	49834.393	┬16115604.000	┬428379180.000	227213.290	105432.430	┬3087120.700	945245.520	27372.459	3333.333	3412.349	557.509	73
x		49660.543	┬15979388.000	┬423403600.000	225507.090	105403.920	┬3075820.500	932407.470	27267.955	3301.994	3397.013	540.675	72
σ		279.682	┬125761.930	┬4312675.400	1913.780	96.305	┬15509.254	11260.488	112.372	36.904	16.045	15.185	
%RSD		0.563	┬0.787	┬1.019	0.849	0.091	┬0.504	1.208	0.412	1.118	0.472	2.809	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	13:07:33	801866.570	695661.550	204512.100	49092.195	1120.038	14761.534	1120308.400	84257.443	28970.156	22259.354	568668.790	2422
2	13:07:55	810908.680	699236.580	207184.810	48721.108	1155.040	15006.753	1116847.300	86534.063	29821.656	22476.145	585429.360	2458
3	13:08:17	820574.970	699924.580	208116.310	48931.724	1125.038	15282.003	1131251.800	86840.651	28734.749	22706.457	584973.780	2470
x		811116.740	698274.240	206604.410	48915.009	1133.372	15016.763	1122802.500	85877.385	29175.521	22480.652	579690.650	2450
σ		9355.937	2288.655	1870.889	186.107	18.931	260.379	7519.140	1411.262	571.815	223.585	9547.922	24
%RSD		1.153	0.328	0.906	0.380	1.670	1.734	0.670	1.643	1.960	0.995	1.647	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:07:33	56906.987	238960.880	1965082.200	160509.190	0.000	645585.870	336661.230
2	13:07:55	57709.740	242019.540	1986092.600	158772.680	0.000	656390.860	343605.810
3	13:08:17	58723.271	245053.390	1995441.600	160973.640	0.000	675304.420	340171.430
x		57779.999	242011.270	1982205.500	160085.170	0.000	659093.720	340146.150
σ		910.178	3046.264	15548.498	1160.131	0.000	15042.509	3472.362
%RSD		1.575	1.259	0.784	0.725	0.000	2.282	1.021

200-35700-A-1-B 10/14/2016 01:12:55 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	13:13:17	156249.000	1612.578	7291.595	T 1577312.700	T 3929370.100	T 228265040.000	T 14351782.000	T 2164136.500	301767.400	41341.209	644209.110
2	13:13:38	154967.110	1575.074	6966.456	T 1563737.800	T 3943172.400	T 229582630.000	T 14229726.000	T 2151987.000	304292.690	42443.976	642629.860
3	13:14:01	149083.810	1585.075	6891.425	T 1551202.500	T 3960724.400	T 231659470.000	T 14396505.000	T 2183693.400	302622.700	44203.541	644167.550
x		153433.310	1590.909	7049.825	T 1564084.300	T 3944422.300	T 229835710.000	T 14326004.000	T 2166605.600	302894.260	42662.909	643668.840
σ		3820.914	19.420	212.713	T 13058.546	T 15714.463	T 1711307.600	T 86325.730	T 15996.774	1284.364	1443.670	900.021
%RSD		2.490	1.221	3.017	T 0.835	T 0.398	T 0.745	T 0.603	T 0.738	0.424	3.384	0.140

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	13:13:17	57172.894	TM 102334590.000	TM 1143316100.000	379936.750	132620.560	TM 11091400.000	1282280.000	39092.794	2266.154	1999.620	645.513
2	13:13:38	58708.218	TM 104738290.000	TM 1164085400.000	386761.050	134359.400	TM 11292046.000	1282404.000	39401.519	2265.154	1992.619	625.012
3	13:14:01	58286.742	TM 104164200.000	TM 1163412200.000	396260.330	136123.630	TM 11322408.000	1299899.500	39299.278	2229.149	2005.121	674.514
x		58055.952	TM 103745690.000	TM 1156937900.000	387652.710	134367.860	TM 11235285.000	1288194.500	39264.531	2253.486	1999.120	648.346
σ		793.255	TM 1255313.500	TM 11801634.000	8198.234	1751.552	TM 125528.820	10137.016	157.269	21.082	6.266	24.872
%RSD		1.366	TM 1.210	TM 1.020	2.115	1.304	TM 1.117	0.787	0.401	0.936	0.313	3.836

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	13:13:17	990047.630	1079172.700	20527.634	22610.326	820.020	8342.087	1200159.800	193936.820	5725.983	4452.095	1184067.700
2	13:13:38	1008904.500	1107076.600	20232.273	23671.799	765.018	9057.460	1207202.100	195747.810	6101.117	4563.625	1209559.100
3	13:14:01	1012083.900	1109254.500	20617.745	23311.291	815.020	9067.466	1213259.100	200387.460	5760.996	4571.627	1212867.000
x		1003678.700	1098501.300	20459.217	23197.805	800.019	8822.338	1206873.600	196690.690	5862.699	4529.115	1202164.600
σ		11911.398	16774.409	201.638	539.759	30.415	415.939	6555.823	3327.080	207.217	66.822	15759.428
%RSD		1.187	1.527	0.986	2.327	3.802	4.715	0.543	1.692	3.534	1.475	1.311

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:13:17	2795.234	16643.306	3057757.800	172902.230	0.000	498196.340	173053.790
2	13:13:38	2680.215	16388.053	3093633.000	174377.480	0.000	501894.860	172023.200
3	13:14:01	2940.259	17083.751	3091310.300	175822.540	0.000	503486.810	175797.280
x		2805.236	16705.037	3080900.400	174367.420	0.000	501192.670	173624.760
σ		130.310	351.933	20075.673	1460.183	0.000	2714.234	1950.747
%RSD		4.645	2.107	0.652	0.837	0.000	0.542	1.124

200-35700-A-2-B 10/14/2016 01:18:38 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:19:00	141074.540	790.019	6446.246	T 1365343.100	T 2920020.900	T 148415980.000	T 11415501.000	1526756.900	257798.500	45797.837	423318.540	28158
2	13:19:21	142325.110	782.518	6811.392	T 1361123.900	T 2952377.200	T 150877040.000	T 11348468.000	T 1614916.200	259169.520	35888.598	420959.920	28210
3	13:19:43	138442.610	762.517	6991.466	T 1349169.500	T 2919536.000	T 153099590.000	T 11400616.000	T 1656799.100	260682.850	41155.751	434639.400	28876
x		140614.090	778.352	6749.701	T 1358545.500	T 2930644.700	T 150797540.000	T 11388195.000	T 1599490.700	259216.960	40947.395	426305.950	28415
σ		1981.782	14.216	277.796	T 8389.448	T 18822.461	T 2342813.400	T 35200.444	T 66379.223	1442.758	4957.904	7312.694	400
%RSD		1.409	1.826	4.116	T 0.618	T 0.642	T 1.554	T 0.309	T 4.150	0.557	12.108	1.715	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:19:00	41797.345	TM 54837633.000	T 507143250.000	239351.420	96805.324	TM 9352193.000	912620.420	25126.927	2314.161	1980.118	568.510	583
2	13:19:21	41586.819	TM 55166329.000	T 509469360.000	240883.250	94994.952	TM 9258650.200	910319.570	24816.462	2214.147	1993.119	560.509	617
3	13:19:43	41316.147	TM 55515652.000	T 510971510.000	245418.700	97926.847	TM 9452240.200	927562.360	25353.269	2312.160	1948.114	616.511	638
x		41566.770	TM 55173205.000	T 509194710.000	241884.460	96575.708	TM 9354361.100	916834.120	25098.886	2280.156	1973.784	581.844	612

σ		241.224	TM 339061.460	T 1928850.900	3155.122	1479.373	TM 96813.220	9361.883	269.500	57.174	23.162	30.289	27
%RSD		0.580	TM 0.615	T 0.379	1.304	1.532	TM 1.035	1.021	1.074	2.507	1.173	5.206	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	13:19:00	582794.390	727571.580	11919.261	28113.691	675.014	8557.196	1144020.700	117477.580	6406.231	5082.275	703250.280	24439
2	13:19:21	591741.510	741140.250	12164.438	28083.641	670.013	8742.292	1158319.400	121596.960	6406.231	5158.798	708500.780	24894
3	13:19:43	597512.010	729325.810	12334.563	29506.095	750.017	8667.253	1157045.300	123853.490	6811.392	5195.310	722184.720	24839
x		590682.640	732679.210	12139.420	28567.809	698.348	8655.581	1153128.400	120976.010	6541.284	5145.461	711311.930	24724
σ		7415.725	7379.777	208.778	812.718	44.816	93.098	7913.250	3232.994	233.920	57.686	9775.235	248
%RSD		1.255	1.007	1.720	2.845	6.417	1.076	0.686	2.672	3.576	1.121	1.374	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:19:00	3245.316	11604.038	2706787.900	159620.720	0.000	322219.950	110661.160
2	13:19:21	3250.317	11999.318	2764048.700	164952.260	0.000	324641.260	111738.310
3	13:19:43	3150.298	12289.529	2770364.900	163275.870	0.000	328495.690	113288.730
x		3215.310	11964.295	2747067.200	162616.280	0.000	325118.970	111896.070
σ		56.358	344.085	35025.557	2726.282	0.000	3165.025	1320.867
%RSD		1.753	2.876	1.275	1.677	0.000	0.973	1.180

200-35700-A-3-B 10/14/2016 01:24:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:24:42	158560.670	1810.098	8106.971	T 2234653.700	T 7736587.800	T 376401980.000	T 25203507.000	1509124.400	354500.440	47467.499	819084.260	687
2	13:25:04	160327.460	1837.601	8151.993	T 2252172.600	T 7857253.300	T 385738350.000	T 25720268.000	T 1668602.500	359975.950	52271.842	833839.610	699
3	13:25:26	157914.580	1892.608	8482.158	T 2259021.100	T 7734486.700	T 380779930.000	T 25601497.000	T 1640322.800	368478.760	54519.024	832809.990	699
x		158934.240	1846.769	8247.041	T 2248615.800	T 7776109.300	T 380973420.000	T 25508424.000	T 1606016.600	360985.050	51419.455	828577.950	695
σ		1249.060	42.012	204.858	T 12567.079	T 70280.630	T 4671189.000	T 270660.710	T 85094.092	7043.583	3602.211	8237.880	7
%RSD		0.786	2.275	2.484	T 0.559	T 0.904	T 1.226	T 1.061	T 5.298	1.951	7.006	0.994	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:24:42	90595.559	T 37806510.000	T 1040648700.000	389109.780	216274.190	TM 41829878.000	1512391.600	17631.321	1912.110	1122.538	781.518	83
2	13:25:04	91420.043	T 38611395.000	T 1066861500.000	400807.130	218523.240	TM 42560638.000	1531356.500	17728.424	1819.099	1049.033	740.516	81
3	13:25:26	91430.098	T 38520753.000	T 1073293600.000	403393.420	218791.730	TM 42808952.000	1554296.200	18141.868	1836.101	1116.537	808.520	86
x		91148.567	T 38312886.000	T 1060267900.000	397770.110	217863.050	TM 42399823.000	1532681.400	17833.871	1855.770	1096.036	776.851	83
σ		478.945	T 440870.020	T 17292436.000	7610.727	1382.530	TM 508962.440	20983.720	271.116	49.527	40.816	34.241	2
%RSD		0.525	T 1.151	T 1.631	1.913	0.635	TM 1.200	1.369	1.520	2.669	3.724	4.408	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	13:24:42	902944.160	1540017.600	8452.143	4540.618	315.003	1490.067	1196983.100	66176.118	3790.431	2975.266	1380044.200	3233
2	13:25:04	913375.130	1562667.300	8051.944	4420.586	435.006	1505.068	1204968.800	66532.533	4105.506	3047.779	1412327.700	3266
3	13:25:26	910609.800	1574694.100	8337.085	4545.620	390.005	1495.067	1227292.800	66954.216	4150.517	3123.293	1418239.500	3303
x		908976.360	1559126.400	8280.391	4502.275	380.004	1496.734	1209748.200	66554.289	4015.484	3048.779	1403537.100	3267
σ		5403.920	17607.347	206.035	70.789	60.623	7.638	15709.915	389.505	196.197	74.019	20559.078	34
%RSD		0.595	1.129	2.488	1.572	15.953	0.510	1.299	0.585	4.886	2.428	1.465	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:24:42	1115.037	23746.905	1882484.400	180431.410	0.000	890606.150	252285.090
2	13:25:04	1145.039	24678.257	1926990.800	185132.540	0.000	917476.440	260383.220
3	13:25:26	1175.041	24803.443	1959392.100	180734.670	0.000	924752.490	259159.360
x		1145.039	24409.535	1922955.800	182099.540	0.000	910945.030	257275.890
σ		30.002	577.258	38612.295	2631.032	0.000	17985.761	4365.263
%RSD		2.620	2.365	2.008	1.445	0.000	1.974	1.697

200-35700-A-4-B 10/14/2016 01:30:03 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:30:25	149850.640	1507.568	5495.906	T 1534723.100	T 4973920.100	T 256488520.000	T 20140475.000	T 1348699.900	323162.950	51078.150	711619.520	4932
2	13:30:47	145572.980	1665.083	6116.122	T 1577557.300	T 5196826.500	T 267631430.000	T 21276513.000	1297179.400	320247.470	49869.498	756434.910	5288
3	13:31:08	142678.110	1545.072	5530.918	T 1547227.800	T 5039473.200	T 263880040.000	T 20246209.000	1274851.300	324549.500	49909.617	734260.550	5094
x		146033.910	1572.574	5714.315	T 1553169.400	T 5070073.300	T 262666670.000	T 20554399.000	T 1306910.200	322653.310	50285.755	734105.000	5105
σ		3608.414	82.280	348.415	T 22026.532	T 114560.370	T 5669687.800	T 627599.570	T 37873.738	2195.827	686.527	22408.101	178
%RSD		2.471	5.232	6.097	T 1.418	T 2.260	T 2.159	T 3.053	T 2.898	0.681	1.365	3.052	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:30:25	66893.975	T 26391723.000	T 753302320.000	293715.460	163296.070	1906067.500	442507.420	15996.673	2016.122	1120.538	655.013	67
2	13:30:47	73310.881	T 28105673.000	T 780279210.000	306955.860	168073.210	T 2190396.500	462720.360	16622.285	2074.129	1136.539	656.513	66
3	13:31:08	70041.867	T 27663414.000	T 776716840.000	299832.950	164952.260	T 2148704.400	455027.860	16110.783	1949.114	1115.537	682.514	64
x		70082.241	T 27386937.000	T 770099460.000	300168.090	165440.510	T 2081722.800	453418.550	16243.247	2013.122	1124.205	664.680	66
σ		3208.643	T 889795.350	T 14655390.000	6626.563	2425.707	T 153543.650	10202.113	333.178	62.562	10.970	15.463	1

%RSD		4.578	T 3.249	T 1.903	2.208	1.466	T 7.376	2.250	2.051	3.108	0.976	2.326	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	13:30:25	655507.080	1361324.700	11213.771	8086.962	365.004	2210.146	1137709.900	62868.350	2345.165	1779.095	1010841.800	30943
2	13:30:47	681519.900	1409503.000	11924.264	8457.145	460.006	2410.174	1118641.900	66798.594	2370.169	1807.098	1065562.600	30977
3	13:31:08	657716.620	1380369.600	11128.714	8522.178	375.004	2220.148	1158083.800	65910.067	2465.182	1840.602	1037274.000	31090
x		664914.530	1383732.400	11422.250	8355.428	400.005	2280.156	1138145.200	65192.337	2393.505	1808.931	1037892.800	31003
σ		14423.043	24264.540	436.832	234.762	52.203	112.710	19724.587	2061.082	63.321	30.794	27365.625	76
%RSD		2.169	1.754	3.824	2.810	13.051	4.943	1.733	3.162	2.646	1.702	2.637	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:30:25	1210.044	17339.015	1386796.600	168103.510	0.000	674029.330	651686.550
2	13:30:47	1360.055	18079.801	1460833.100	165285.540	0.000	720045.060	695708.450
3	13:31:08	1055.033	16878.542	1435056.600	170366.310	0.000	702901.000	679218.760
x		1208.378	17432.453	1427562.100	167918.450	0.000	698991.800	675537.920
σ		152.518	606.056	37582.897	2545.439	0.000	23255.609	22240.580
%RSD		12.622	3.477	2.633	1.516	0.000	3.327	3.292

200-35700-A-5-B 10/14/2016 01:35:46 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	13:36:07	155269.910	1450.063	5650.958	T 1569760.900	T 4858394.200	T 239221660.000	T 15824867.000	T 1629904.000	315477.790	44138.369	640500.190	4493
2	13:36:29	152504.550	1455.064	5390.872	T 1576426.000	T 4801859.500	T 240173090.000	T 15786782.000	T 1660710.500	315406.460	46474.707	652663.690	4538
3	13:36:50	148841.660	1475.065	5765.997	T 1553495.500	T 4870871.200	T 238315880.000	T 15796021.000	T 1622981.200	315865.020	42158.252	649940.300	4514
x		152205.370	1460.064	5602.609	T 1566560.800	T 4843708.300	T 239236880.000	T 15802557.000	T 1637865.300	315583.090	44257.109	647701.390	4515
σ		3224.550	13.230	192.180	T 11795.437	T 36775.143	T 928696.920	T 19865.693	T 20085.070	246.751	2160.676	6383.354	22
%RSD		2.119	0.906	3.430	T 0.753	T 0.759	T 0.388	T 0.126	T 1.226	0.078	4.882	0.986	
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	13:36:07	61688.955	T 44655897.000	TM 947993700.000	316170.740	144655.040	TM 8490357.700	862767.630	34240.136	1877.106	1396.559	690.014	71
2	13:36:29	62431.713	T 45445222.000	TM 953816040.000	318473.970	146798.660	TM 8565858.500	867893.760	34484.639	1948.114	1382.057	640.012	71
3	13:36:50	61001.431	T 46403063.000	TM 970759940.000	321200.550	147590.610	TM 8638026.700	874132.450	34404.473	1932.112	1382.057	709.015	68
x		61707.366	T 45501394.000	TM 957523230.000	318615.090	146348.100	TM 8564747.600	868264.610	34376.416	1919.111	1386.891	679.681	70
σ		715.319	T 874936.440	TM 11827207.000	2517.874	1518.764	TM 73840.761	5691.480	124.643	37.247	8.372	35.643	1
%RSD		1.159	T 1.923	TM 1.235	0.790	1.038	TM 0.862	0.656	0.363	1.941	0.604	5.244	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	13:36:07	713925.040	1177270.600	13615.559	11403.900	460.006	3050.279	1186834.400	102479.090	4545.620	3512.370	1033452.200	2936
2	13:36:29	727775.190	1185064.900	13660.596	11293.825	435.006	3265.320	1183992.600	104692.790	4875.713	3589.887	1044133.000	2994
3	13:36:50	733471.940	1202617.800	13810.720	11523.983	360.004	3635.396	1197863.000	103339.380	4395.580	3565.881	1049244.500	2996
x		725057.390	1188317.800	13695.625	11407.236	418.339	3316.999	1189563.400	103503.750	4605.637	3556.046	1042276.600	2975
σ		10052.867	12982.912	102.187	115.115	52.043	295.962	7326.830	1115.964	245.629	39.683	8058.179	34
%RSD		1.386	1.093	0.746	1.009	12.440	8.923	0.616	1.078	5.333	1.116	0.773	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:36:07	1900.108	15156.889	2657010.500	170750.210	0.000	570411.870	194159.390
2	13:36:29	1800.097	15071.812	2694021.100	174620.000	0.000	580071.840	197483.100
3	13:36:50	1855.103	15942.621	2699044.900	173114.410	0.000	581759.150	196557.250
x		1851.770	15390.441	2683358.800	172828.210	0.000	577414.280	196066.580
σ		50.089	480.091	22956.157	1950.704	0.000	6122.675	1715.322
%RSD		2.705	3.119	0.856	1.129	0.000	1.060	0.875

200-35700-A-6-B 10/14/2016 01:41:28 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:41:50	149416.770	902.524	5560.928	T 1367238.700	T 3190540.400	T 145827730.000	T 10900349.000	T 1696986.000	273160.300	38319.000	431027.390	28385
2	13:42:12	147661.230	1042.533	5290.840	T 1378887.400	T 3134329.000	T 145474500.000	T 11012037.000	T 1728415.500	273658.370	42443.976	433069.310	28755
3	13:42:33	145381.320	895.024	5455.893	T 1335778.100	T 3145804.000	T 143989280.000	T 10930632.000	T 1733226.800	277033.450	39351.401	432309.970	28235
x		147486.440	946.694	5435.887	T 1360634.700	T 3156891.100	T 145097170.000	T 10947673.000	T 1719542.800	274617.370	40038.126	432135.560	28458
σ		2023.397	83.084	136.151	T 22300.521	T 29700.585	T 975580.870	T 57760.825	T 19682.323	2107.150	2146.521	1032.074	267
%RSD		1.372	8.776	2.505	T 1.639	T 0.941	T 0.672	T 0.528	T 1.145	0.767	5.361	0.239	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:41:50	41376.296	TM 46509481.000	T 719081160.000	251320.680	100381.390	T 3402638.200	568177.460	25711.818	1838.101	1334.553	630.512	640
2	13:42:12	41125.677	TM 46754642.000	T 727189910.000	256625.610	101950.870	T 3463981.200	574514.220	25736.856	1819.099	1346.054	604.511	643
3	13:42:33	40985.332	TM 46596836.000	T 716194190.000	253107.420	101804.980	T 3412842.900	578586.530	25343.254	1768.094	1381.557	600.511	614
x		41162.435	TM 46620320.000	T 720821750.000	253684.570	101379.080	T 3426487.400	573759.400	25597.309	1808.431	1354.055	611.845	632
σ		198.057	TM 124256.160	T 5700765.500	2699.145	867.101	T 32868.979	5245.427	220.374	36.202	24.502	16.290	15
%RSD		0.481	TM 0.267	T 0.791	1.064	0.855	T 0.959	0.914	0.861	2.002	1.810	2.662	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	13:41:50	590571.070	865819.960	11438.924	11323.846	345.004	3640.398	1168590.500	77384.233	4360.570	3330.833	737363.120	25993
2	13:42:12	599309.860	866451.550	11794.172	11974.300	365.004	3720.415	1179060.700	78665.209	4300.555	3479.363	742885.420	26423
3	13:42:33	596330.810	861431.090	11904.250	11388.890	410.005	3780.429	1175587.800	79408.723	4450.594	3452.358	746256.110	25964
x		595403.920	864567.530	11712.449	11562.345	373.338	3713.747	1174413.000	78486.055	4370.573	3420.851	742168.220	26127
σ		4442.516	2734.539	243.189	358.243	33.292	70.253	5333.052	1024.066	75.518	79.119	4489.663	257
%RSD		0.746	0.316	2.076	3.098	8.918	1.892	0.454	1.305	1.728	2.313	0.605	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:41:50	1940.113	9947.968	1802977.600	164023.160	0.000	359112.620	124014.680
2	13:42:12	2080.130	10098.058	1809606.600	165477.430	0.000	364942.210	125666.990
3	13:42:33	2005.121	10088.052	1815798.900	164073.650	0.000	365054.640	126301.760
x		2008.454	10044.693	1809461.100	164524.740	0.000	363036.490	125327.810
σ		70.068	83.915	6411.872	825.433	0.000	3398.637	1180.662
%RSD		3.489	0.835	0.354	0.502	0.000	0.936	0.942

200-35700-A-7-B 10/14/2016 01:47:11 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	13:47:33	161327.030	2417.675	6941.445	T 2564883.400	T 9031228.600	T 443320940.000	T 26633580.000	T 2519587.700	418663.140	121299.810	1148616.200
2	13:47:55	156097.590	2595.202	7601.733	T 2566626.200	T 9230247.500	T 448091080.000	T 26632417.000	T 2557178.500	420795.850	126160.700	1159470.400
3	13:48:16	154593.670	2617.706	7581.724	T 2513977.700	T 9099496.900	T 441737750.000	T 26579003.000	T 2552159.400	420529.250	125682.100	1192079.600
x		157339.430	2543.528	7374.967	T 2548495.800	T 9120324.300	T 444383260.000	T 26615000.000	T 2542975.200	419996.080	124380.870	1166722.100
σ		3534.286	109.571	375.575	T 29906.202	T 101130.920	T 3307205.000	T 31180.034	T 20409.065	1162.031	2678.984	22620.980
%RSD		2.246	4.308	5.093	T 1.173	T 1.109	T 0.744	T 0.117	T 0.803	0.277	2.154	1.939

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	13:47:33	112981.650	T 20133712.000	TM 1647996100.000	492382.340	275315.330	151051.410	683024.660	34882.465	2272.155	1218.545	880.023
2	13:47:55	113887.790	T 20396333.000	TM 1647978900.000	489241.860	273866.750	154109.210	696359.820	35562.901	2222.148	1224.545	861.522
3	13:48:16	114864.460	T 20478996.000	TM 1651952300.000	496264.980	277028.360	150516.600	695338.480	35159.046	2212.147	1274.549	894.524
x		113911.300	T 20336347.000	TM 1649309100.000	492629.730	275403.480	151892.410	691574.320	35201.471	2235.483	1239.213	878.690

σ		941.622	T 180288.610	TM 2289085.200	3518.092	1582.648	1938.342	7421.813	342.196	32.150	30.749	16.541
%RSD		0.827	T 0.887	TM 0.139	0.714	0.575	1.276	1.073	0.972	1.438	2.481	1.882
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**
1	13:47:33	1566257.000	T 2300628.800	36519.967	6886.422	795.019	3205.308	1168686.900	70328.069	1690.086	1353.555	T 2114064.100
2	13:47:55	1576695.800	2104123.800	37662.506	6956.452	840.021	3430.353	1167230.000	72437.073	1720.089	1433.562	T 2154481.900
3	13:48:16	T 1766315.300	T 2332050.700	37211.495	7006.472	705.015	3160.300	1180325.700	72351.703	1760.093	1457.564	T 2166086.000
x		T 1636422.700	T 2245601.100	37131.323	6949.782	780.018	3265.320	1172080.900	71705.615	1723.422	1414.893	T 2144877.300
σ		T 112611.350	T 123526.110	575.473	60.302	68.742	144.683	7177.318	1193.753	35.122	54.459	T 27308.494
%RSD		T 6.882	T 5.501	1.550	0.868	8.813	4.431	0.612	1.665	2.038	3.849	T 1.273

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:47:33	1165.041	26255.665	1713948.800	182665.550	5.000	1243097.000	719001.430
2	13:47:55	1245.046	25910.124	1744951.800	186507.750	5.000	1278915.700	734046.420
3	13:48:16	1190.043	26250.657	1744669.400	181058.150	0.000	1297675.900	738601.170
x		1200.043	26138.815	1734523.300	183410.480	3.333	1273229.500	730549.680
σ		40.930	198.068	17818.614	2800.130	2.887	27730.165	10257.093
%RSD		3.411	0.758	1.027	1.527	86.603	2.178	1.404

200-35700-A-8-B 10/14/2016 01:52:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:53:02	146924.760	1140.039	4750.677	T 1367972.500	T 3772986.600	T 169412640.000	T 11740093.000	T 1675352.200	282900.780	35197.126	485113.790	34828
2	13:53:24	141820.840	1127.538	5135.791	T 1380477.200	T 3870087.900	T 174385820.000	T 12088740.000	T 1700135.800	282524.480	39972.878	488948.430	35210
3	13:53:46	142466.310	1035.032	5135.791	T 1349291.800	T 3852148.100	T 171377500.000	T 11896059.000	T 1754549.000	286979.630	38073.438	487553.450	35071
x		143737.300	1100.870	5007.420	T 1365913.800	T 3831740.800	T 171725320.000	T 11908297.000	T 1710012.400	284134.960	37747.814	487205.220	35036
σ		2779.224	57.359	222.346	T 15694.332	T 51667.266	T 2504765.600	T 174645.520	T 40511.651	2470.729	2404.470	1940.895	193
%RSD		1.934	5.210	4.440	T 1.149	T 1.348	T 1.459	T 1.467	T 2.369	0.870	6.370	0.398	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:53:02	49327.889	TM 52682631.000	T 825054610.000	277002.950	122619.410	T 4356430.500	676761.780	25193.026	1964.116	1506.068	624.012	622
2	13:53:24	48901.636	TM 53328621.000	T 836876860.000	282214.290	123924.010	T 4411131.200	688044.950	25571.602	2017.122	1573.574	639.012	651
3	13:53:46	48164.494	TM 53544446.000	T 846639900.000	284629.850	124916.380	T 4452501.500	703093.880	25589.630	1937.113	1556.573	653.013	679
x		48798.007	TM 53185232.000	T 836190450.000	281282.360	123819.930	T 4406687.700	689300.200	25451.419	1972.783	1545.405	638.679	650
σ		588.580	TM 448443.320	T 10809002.000	3897.918	1152.013	T 48189.408	13210.852	223.956	40.703	35.111	14.503	28
%RSD		1.206	TM 0.843	T 1.293	1.386	0.930	T 1.094	1.917	0.880	2.063	2.272	2.271	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	13:53:02	616064.440	964778.450	14166.018	18985.808	515.008	4270.547	1155246.700	96458.321	4740.674	3376.842	874411.530	26663
2	13:53:24	619622.770	977106.430	14666.450	19971.959	540.009	4250.542	1167529.900	96936.081	4360.570	3380.343	880289.140	27145
3	13:53:46	628672.390	979893.100	14831.596	19776.727	415.005	4455.596	1164841.200	98741.633	4270.547	3495.867	889288.520	26902
x		621453.200	973925.990	14554.688	19578.164	490.007	4325.561	1162539.300	97378.678	4457.264	3417.684	881329.730	26903
σ		6500.223	8043.605	346.579	522.201	66.146	113.056	6457.039	1204.283	249.534	67.731	7492.883	240
%RSD		1.046	0.826	2.381	2.667	13.499	2.614	0.555	1.237	5.598	1.982	0.850	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:53:02	2090.131	11268.808	2338313.900	164417.010	0.000	415910.490	138422.450
2	13:53:24	2185.143	11158.734	2369886.900	167154.030	0.000	429360.170	140585.440
3	13:53:46	1985.118	11443.928	2399068.100	167921.690	0.000	433833.810	142854.610
x		2086.798	11290.490	2369089.600	166497.580	0.000	426368.160	140620.830
σ		100.054	143.828	30384.915	1842.254	0.000	9328.742	2216.294
%RSD		4.795	1.274	1.283	1.106	0.000	2.188	1.576

CCV 10/14/2016 01:58:24 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:58:46	114230.120	92412.997	33934.511	T 16402584.000	T 4906233.700	T 46121247.000	T 16698281.000	T 1767494.700	176257.090	32100.884	T 3388060.800	967
2	13:59:07	113716.630	90894.681	35628.040	T 15963480.000	T 4800307.900	T 45063398.000	T 16047866.000	T 1729453.900	168901.520	31434.616	T 3322857.400	931
3	13:59:29	111531.940	89341.316	35086.894	T 15796852.000	T 4673921.100	T 43430046.000	T 15521045.000	T 1721008.100	169931.910	30948.708	T 3252313.900	916
x		113159.560	90882.998	34883.148	T 16054305.000	T 4793487.600	T 44871563.000	T 16089064.000	T 1739318.900	171696.840	31494.736	T 3321077.400	938
σ		1432.755	1535.874	864.953	T 312913.320	T 116306.370	T 1355817.500	T 589698.380	T 24763.674	3982.758	578.436	T 67890.953	26
%RSD		1.266	1.690	2.480	T 1.949	T 2.426	T 3.022	T 3.665	T 1.424	2.320	1.837	T 2.044	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:58:46	122150.990	T 4989785.000	T 101160450.000	1439136.900	782901.050	967282.510	715552.660	93847.479	7431.657	9497.205	457.006	8
2	13:59:07	118973.130	T 4896016.100	T 101074450.000	1437265.300	776816.010	948656.360	698960.350	91087.228	7177.545	9357.626	432.506	8
3	13:59:29	116898.530	T 4796447.300	T 100049800.000	1419342.700	752523.690	933067.230	692853.120	89645.443	7059.495	9129.500	442.506	7
x		119340.880	T 4894082.800	T 100761560.000	1431915.000	770746.920	949668.700	702455.380	91526.716	7222.899	9328.110	444.006	8
σ		2645.474	T 96683.381	T 617904.070	10928.031	16072.382	17130.089	11746.434	2135.214	190.181	185.621	12.319	

%RSD		2.217	T 1.976	T 0.613	0.763	2.085	1.804	1.672	2.333	2.633	1.990	2.775	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	13:58:46	990302.100	215929.770	T 2323087.500	336232.700	10623.385	157424.980	1003592.800	1067729.900	680410.940	522439.950	712412.330	173
2	13:59:07	987540.240	211928.900	T 2307993.500	329041.300	10378.230	155385.980	984036.860	1064417.800	677646.670	519652.300	705038.500	168
3	13:59:29	959930.170	210663.010	T 2300565.000	325920.880	10393.240	154210.140	984916.610	1052575.000	670886.250	513578.830	700179.980	164
x		979257.500	212840.560	T 2310548.700	330398.290	10464.951	155673.700	990848.760	1061574.200	676314.620	518557.030	705876.940	168
σ		16794.826	2749.187	T 11476.583	5288.150	137.412	1626.621	11045.431	7967.553	4900.071	4530.958	6159.130	4
%RSD		1.715	1.292	T 0.497	1.601	1.313	1.045	1.115	0.751	0.725	0.874	0.873	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:58:46	47487.556	1975609.500	T 10168025.000	135468.320	5.000	292606.200	153362.370
2	13:59:07	47286.987	1984083.000	T 10170660.000	129803.510	0.000	301019.050	151505.500
3	13:59:29	48209.624	1958142.200	T 10023465.000	131587.410	0.000	307317.440	150844.550
x		47661.389	1972611.600	T 10120717.000	132286.410	1.667	300314.230	151904.140
σ		485.261	13227.685	T 84232.356	2896.374	2.887	7380.901	1305.389
%RSD		1.018	0.671	T 0.832	2.189	173.205	2.458	0.859

CCB 10/14/2016 02:04:07 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:04:29	127405.110	35.000	830.021	294651.770	2190.144	36540.011	71171.638	1040.032	184626.980	40.000	30507.896	2865.246
2	14:04:51	130015.150	30.000	675.014	290611.760	2270.155	40108.202	71181.681	1280.049	184566.310	40.000	30502.887	3240.315
3	14:05:13	126185.880	30.000	650.013	293786.700	2370.169	41692.082	68349.864	1330.053	186983.030	35.000	30698.245	3150.298
x		127868.710	31.667	718.349	293016.740	2276.822	39446.765	70234.395	1216.712	185392.110	38.333	30569.676	3085.286
σ		1956.275	2.887	97.515	2127.216	90.197	2638.955	1632.059	155.038	1378.112	2.887	111.372	195.803
%RSD		1.530	9.116	13.575	0.726	3.962	6.690	2.324	12.742	0.743	7.531	0.364	6.346

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:04:29	10148.089	6306.193	394709.160	400.005	230.002	885.024	740.016	2520.191	814.020	471.507	452.506	2440.179
2	14:04:51	10208.125	6901.429	412384.480	430.006	200.001	910.025	790.019	2594.202	729.016	437.506	452.506	2250.152
3	14:05:13	10368.224	7541.706	423221.110	450.006	240.002	860.022	855.022	2567.198	813.020	426.005	454.006	2545.194
x		10241.479	6916.442	410104.920	426.672	223.335	885.024	795.019	2560.530	785.352	445.006	453.006	2411.842
σ		113.795	617.893	14392.016	25.167	20.817	25.001	57.666	37.453	48.791	23.660	0.866	149.548
%RSD		1.111	8.934	3.509	5.898	9.321	2.825	7.253	1.463	6.213	5.317	0.191	6.201

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:04:29	310.003	220053.170	2705.220	125.000	0.000	50.000	1006012.300	2280.156	690.014	600.011	305.003	170305.700
2	14:04:51	380.004	222231.800	2685.216	105.000	0.000	35.000	1020377.400	2170.141	695.014	601.011	265.002	172417.240
3	14:05:13	365.004	225991.850	2230.149	85.000	0.000	55.000	1042091.000	2270.155	850.022	613.011	355.004	174771.570
x		351.670	222758.940	2540.195	105.000	0.000	46.667	1022826.900	2240.151	745.017	604.678	308.336	172498.170
σ		36.856	3004.227	268.694	20.000	0.000	10.408	18163.629	60.836	90.971	7.234	45.093	2234.037
%RSD		10.480	1.349	10.578	19.048	0.000	22.304	1.776	2.716	12.211	1.196	14.625	1.295

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:04:29	155.001	1800.097	2580.200	135377.590	0.000	7496.686	120.000
2	14:04:51	240.002	1665.083	2565.197	139884.580	0.000	6936.443	140.001
3	14:05:13	185.001	1540.071	2570.198	138059.450	0.000	6456.250	70.000
x		193.334	1668.417	2571.865	137773.870	0.000	6963.126	110.000
σ		43.109	130.045	7.639	2267.025	0.000	520.731	36.056
%RSD		22.298	7.795	0.297	1.645	0.000	7.478	32.778

CCVL 10/14/2016 02:09:50 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:10:12	133825.130	172.501	7451.665	1084971.700	32581.816	93838.428	887559.930	30467.823	193527.100	20.000	45080.886	13900.795
2	14:10:34	132605.440	157.501	7221.564	1081912.100	33223.080	95251.409	865156.820	29976.934	189319.180	15.000	45502.028	13840.745
3	14:10:56	126175.810	182.501	7166.540	T 1176242.900	33734.105	94064.698	864967.360	31449.644	188864.060	10.000	45326.551	13395.381
x		130868.790	170.834	7279.923	T 1114375.600	33179.667	94384.845	872561.370	30631.467	190570.110	15.000	45303.155	13712.307
σ		4109.741	12.583	151.256	T 53600.551	577.370	758.946	12989.479	749.869	2570.914	5.000	211.544	276.103
%RSD		3.140	7.366	2.078	T 4.810	1.740	0.804	1.489	2.448	1.349	33.333	0.467	2.014

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:10:12	11624.052	9537.728	996686.290	3195.306	1470.065	4785.687	13365.357	3685.407	1013.031	638.012	499.007	2485.185
2	14:10:34	11649.070	9062.463	985997.820	3385.344	1385.057	4570.627	13735.658	3878.451	1076.035	688.514	490.507	2700.219
3	14:10:56	12044.350	9687.815	991770.680	3420.351	1435.062	4690.660	13385.373	3655.401	1086.035	650.013	431.006	2810.237
x		11772.491	9429.335	991484.930	3333.667	1430.061	4682.324	13495.462	3739.753	1058.367	658.846	473.507	2665.214
σ		235.769	326.463	5349.966	121.096	42.724	107.772	208.256	121.049	39.579	26.384	37.052	165.329
%RSD		2.003	3.462	0.540	3.633	2.988	2.302	1.543	3.237	3.740	4.005	7.825	6.203

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:10:12	25955.194	234528.580	18775.570	3330.333	35.000	820.020	1052825.100	1290.050	5896.043	4566.626	5996.078	176883.680
2	14:10:34	26385.870	227279.180	18104.828	3860.447	70.000	755.017	1041325.300	1070.034	6026.089	4632.144	6256.174	177247.520
3	14:10:56	25990.249	228505.780	18920.734	3485.364	45.000	805.019	1039900.300	1015.031	6346.208	4653.150	5961.066	175236.420
x		26110.438	230104.510	18600.377	3558.715	50.000	793.352	1044683.600	1125.038	6089.447	4617.306	6071.106	176455.870
σ		239.174	3880.130	435.253	272.563	18.028	34.036	7086.673	145.526	231.674	45.130	161.227	1071.632
%RSD		0.916	1.686	2.340	7.659	36.056	4.290	0.678	12.935	3.805	0.977	2.656	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:10:12	3945.467	21028.257	9292.590	140207.270	0.000	19201.054	15937.617
2	14:10:34	4085.501	20913.113	9422.663	142315.020	0.000	19301.170	15632.328
3	14:10:56	4030.487	21719.142	9517.717	141346.840	0.000	20077.085	16438.102
x		4020.485	21220.171	9410.990	141289.710	0.000	19526.436	16002.682
σ		70.551	435.941	113.017	1055.036	0.000	479.496	406.809
%RSD		1.755	2.054	1.201	0.747	0.000	2.456	2.542

LCS 200-110153/2-A 10/14/2016 02:15:36 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:15:59	127253.960	1572.574	57418.737	T 8773973.700	307928.560	803985.050	T 8512309.200	282483.800	183262.040	135.001	144488.610	100788.830
2	14:16:20	122256.760	1432.562	56631.049	T 8685125.600	304781.500	783204.840	T 8486885.200	279870.260	180623.470	80.000	140913.190	102076.630
3	14:16:44	124392.480	1482.566	56049.087	T 8530268.300	307470.220	745838.000	T 8209719.400	274888.370	174539.160	80.000	138906.450	100849.200
x		124634.400	1495.901	56699.624	T 8663122.500	306726.760	777675.960	T 8402971.300	279080.810	179474.890	98.334	141436.080	101238.220
σ		2507.367	70.952	687.395	T 123333.600	1700.159	29465.171	T 167843.100	3858.764	4473.433	31.754	2827.576	726.714
%RSD		2.012	4.743	1.212	T 1.424	0.554	3.789	T 1.997	1.383	2.493	32.293	1.999	0.718

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:15:59	19010.836	95351.982	T 7831257.200	30412.723	13330.329	42744.743	106227.450	10271.164	1756.093	1956.615	415.005	3865.448
2	14:16:20	17774.473	92038.432	T 7756127.800	30653.163	13280.289	42363.772	106438.790	9903.942	1674.084	1954.115	408.505	3915.460
3	14:16:44	17409.088	86986.408	T 7520890.400	30117.187	13375.365	41757.245	104909.140	9882.929	1676.084	1906.609	422.005	3560.380
x		18064.799	91458.941	T 7702758.500	30394.357	13328.661	42288.587	105858.460	10019.345	1702.087	1939.113	415.172	3780.429

σ		839.414	4212.786	T 161920.060	268.459	47.560	498.024	828.899	218.335	46.781	28.177	6.752	192.202
%RSD		4.647	4.606	T 2.102	0.883	0.357	1.178	0.783	2.179	2.748	1.453	1.626	5.084
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:15:59	244728.670	219495.900	171846.390	34550.776	475.007	7061.496	998404.710	44755.010	51700.063	39034.156	56786.577	172316.210
2	14:16:20	245398.410	216284.320	173175.040	34370.403	510.008	7151.534	994363.530	42619.423	51007.935	39631.564	56821.696	173265.980
3	14:16:44	248671.390	214450.860	171108.860	34330.321	500.007	6951.449	995816.550	44714.902	52437.361	39502.257	55843.398	174387.580
x		246266.150	216743.690	172043.430	34417.167	495.007	7054.826	996194.930	44029.778	51715.119	39389.326	56483.890	173323.250
σ		2109.738	2553.699	1047.086	117.432	18.028	100.209	2046.988	1221.568	714.832	314.307	554.961	1036.876
%RSD		0.857	1.178	0.609	0.341	3.642	1.420	0.205	2.774	1.382	0.798	0.983	0.598

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:15:59	79162.556	198965.570	74164.646	132706.230	0.000	298779.280	161730.920
2	14:16:20	79604.654	196698.900	74822.576	133069.110	0.000	304516.730	162599.310
3	14:16:44	78795.824	197118.820	73757.846	133976.330	0.000	308473.500	165229.990
x		79187.678	197594.430	74248.356	133250.560	0.000	303923.170	163186.740
σ		405.000	1205.861	537.278	654.203	0.000	4874.291	1821.999
%RSD		0.511	0.610	0.724	0.491	0.000	1.604	1.117

200-35700-A-1-B @2 10/14/2016 02:21:24 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:21:45	140197.190	790.019	3845.444	853719.070	T 1920110.200	T 112375620.000	T 6820468.600	957009.170	240685.430	20442.529	315431.940	206668.460
2	14:22:07	136133.710	820.020	3700.411	857937.630	T 1933847.900	T 113287600.000	T 6956793.100	953390.350	244104.620	21133.390	315309.660	209549.100
3	14:22:28	139481.220	887.524	3925.462	835730.890	T 1912158.500	T 111127130.000	T 6710355.100	943490.130	237997.230	19596.514	315375.890	210895.920
x		138604.040	832.521	3823.772	849129.200	T 1922038.900	T 112263450.000	T 6829205.600	951296.550	240929.090	20390.811	315372.500	209037.830
σ		2169.112	49.940	114.080	11793.431	T 10972.574	T 1084595.200	T 123451.110	6998.507	3060.974	769.742	61.211	2159.609
%RSD		1.565	5.999	2.983	1.389	T 0.571	T 0.966	T 1.808	0.736	1.270	3.775	0.019	1.033

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:21:45	28930.087	TM 49194969.000	T 559546740.000	187311.690	66507.433	TM 5556100.200	655553.860	20848.031	1395.058	1242.046	537.509	5205.813
2	14:22:07	30557.988	TM 50594575.000	T 573997480.000	191559.560	67847.819	TM 5660284.400	666224.740	21035.266	1349.055	1283.549	540.509	5490.904
3	14:22:28	30377.659	TM 50271422.000	T 566047010.000	188864.060	66085.761	TM 5552376.900	655507.080	20992.212	1438.062	1270.548	565.510	5515.913
x		29955.245	TM 50020322.000	T 566530410.000	189245.100	66813.671	TM 5589587.200	659095.230	20958.503	1394.058	1265.381	547.842	5404.210
σ		892.379	TM 732811.110	T 7237485.000	2149.419	920.081	TM 61253.908	6174.384	98.064	44.512	21.229	15.374	172.271
%RSD		2.979	TM 1.465	T 1.278	1.136	1.377	TM 1.096	0.937	0.468	3.193	1.678	2.806	3.188

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:21:45	469717.050	622854.970	9202.540	10853.533	340.003	4000.480	1076604.400	91445.180	2940.259	2173.642	552472.480	221958.190
2	14:22:07	472463.050	627649.910	9927.956	11083.684	385.004	4105.506	1069295.600	93818.315	3095.287	2257.653	556555.000	224096.520
3	14:22:28	472838.470	634502.180	9857.915	11208.768	380.004	4235.538	1086656.300	94507.191	3100.288	2203.146	553629.960	223579.640
x		471672.860	628335.690	9662.804	11048.662	368.337	4113.841	1077518.800	93256.895	3045.278	2211.480	554219.150	223211.450
σ		1704.150	5853.814	400.135	180.189	24.665	117.751	8716.371	1606.353	90.984	42.621	2104.064	1115.701
%RSD		0.361	0.932	4.141	1.631	6.696	2.862	0.809	1.723	2.988	1.927	0.380	0.500

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:21:45	1380.057	8141.988	1403143.500	150203.800	0.000	235111.710	79775.468
2	14:22:07	1440.062	7821.835	1411980.000	150123.080	0.000	239305.770	79388.627
3	14:22:28	1410.060	7866.856	1422745.300	150900.050	0.000	236070.120	80976.238
x		1410.060	7943.560	1412622.900	150408.970	0.000	236829.200	80046.778
σ		30.003	173.312	9816.693	427.192	0.000	2197.656	827.849
%RSD		2.128	2.182	0.695	0.284	0.000	0.928	1.034

200-35700-A-2-B @2 10/14/2016 02:27:08 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:27:30	134893.690	417.505	3745.421	776789.830	1311789.100	T 74554237.000	T 5505231.400	723374.700	228221.930	17629.319	213463.300	135806.050
2	14:27:52	133159.830	352.504	3500.367	751708.100	T 1410813.300	T 73720704.000	T 5530450.000	728949.890	223782.340	18815.615	214633.180	137671.260
3	14:28:14	131688.210	280.002	3450.357	756780.060	1301767.200	T 72041740.000	T 5471731.900	725379.050	222971.580	20407.486	212303.630	137157.050
x		133247.240	350.004	3565.382	761759.330	T 1341456.500	T 73438894.000	T 5502471.100	725901.210	224991.950	18950.807	213466.700	136878.120
σ		1604.528	68.786	157.911	13261.533	T 60273.401	T 1279735.400	T 29456.200	2824.039	2826.468	1394.009	1164.780	963.380
%RSD		1.204	19.653	4.429	1.741	T 4.493	T 1.743	T 0.535	0.389	1.256	7.356	0.546	0.704

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:27:30	22640.367	T 26216458.000	T 248349390.000	117860.260	47246.873	T 4647677.400	467768.380	13900.795	1493.067	1279.049	517.008	4045.491
2	14:27:52	22294.902	T 26280396.000	T 248702040.000	118187.570	47081.406	T 4562960.200	464868.920	13876.775	1507.068	1299.551	534.509	4060.495
3	14:28:14	22269.868	T 26243677.000	T 246598650.000	116838.100	47031.265	T 4606077.300	463933.390	13739.661	1589.076	1297.051	536.009	4150.517
x		22401.713	T 26246844.000	T 247883360.000	117628.650	47119.848	T 4605571.600	465523.560	13839.077	1529.737	1291.883	529.175	4085.501
σ		207.060	T 32086.376	T 1126474.300	703.917	112.828	T 42360.854	1999.549	86.930	51.864	11.185	10.564	56.803

%RSD		0.924	T 0.122	T 0.454	0.598	0.239	T 0.920	0.430	0.628	3.390	0.866	1.996	1.390
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:27:30	276006.620	468277.370	6031.091	13130.170	325.003	4000.480	1080974.000	55702.929	2970.265	2404.673	323779.740	203788.320
2	14:27:52	281110.870	456147.860	5786.004	13145.182	360.004	3895.455	1083020.700	57007.329	3130.294	2416.175	323764.450	202431.940
3	14:28:14	278014.580	457977.010	5891.041	13710.637	370.004	3810.436	1064726.600	56475.523	3170.302	2425.677	327955.200	206855.760
x		278377.360	460800.750	5902.712	13328.663	351.670	3902.124	1076240.400	56395.260	3090.287	2415.508	325166.470	204358.670
σ		2571.391	6539.221	122.960	330.884	23.630	95.198	10023.669	655.893	105.850	10.517	2415.128	2266.391
%RSD		0.924	1.419	2.083	2.483	6.719	2.440	0.931	1.163	3.425	0.435	0.743	1.109

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:27:30	1570.074	5680.968	1235276.400	147812.560	0.000	143777.500	50335.896
2	14:27:52	1445.063	5620.948	1246793.400	146319.470	0.000	147040.780	50441.214
3	14:28:14	1495.067	5610.944	1245797.900	143827.930	0.000	152368.310	50857.476
x		1503.401	5637.620	1242622.600	145986.660	0.000	147728.860	50544.862
σ		62.921	37.872	6381.392	2013.059	0.000	4336.546	275.805
%RSD		4.185	0.672	0.514	1.379	0.000	2.935	0.546

200-35700-A-3-B @8 10/14/2016 02:32:53 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:33:15	136254.690	242.502	1625.079	546619.150	918458.370	T 49885034.000	T 3254131.800	187448.210	228992.390	6081.109	120025.630	90706.158
2	14:33:36	132675.990	257.502	1525.070	533937.850	918120.500	T 50197121.000	T 3270967.100	190371.060	227187.950	6231.165	122271.870	91782.024
3	14:33:58	133956.170	275.002	1335.054	528013.530	923928.630	T 50136191.000	T 3280205.900	190006.940	225403.970	6156.137	119300.460	91917.769
x		134295.620	258.335	1495.068	536190.180	920169.170	T 50072782.000	T 3268434.900	189275.400	227194.770	6156.137	120532.650	91468.651
σ		1813.337	16.266	147.322	9505.108	3260.174	T 165424.250	T 13220.199	1592.835	1794.220	75.028	1549.236	663.817
%RSD		1.350	6.297	9.854	1.773	0.354	T 0.330	T 0.404	0.842	0.790	1.219	1.285	0.726

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:33:15	17579.266	T 4748721.500	T 136764270.000	51795.358	28789.844	TM 5725281.800	226681.120	4645.647	962.028	621.512	547.509	3485.364
2	14:33:36	16888.552	T 4795813.800	T 137946040.000	51875.607	29200.558	TM 5718340.800	227775.890	4625.642	925.026	607.511	585.010	3480.363
3	14:33:58	17018.685	T 4838571.000	T 140441590.000	52818.562	29986.952	TM 5806390.600	233169.710	4703.664	987.029	598.511	558.509	3230.313
x		17162.168	T 4794368.800	T 138383970.000	52163.175	29325.785	TM 5750004.400	229208.910	4658.318	958.028	609.178	563.676	3398.680
σ		367.031	T 44942.179	T 1877365.500	568.998	608.299	TM 48955.040	3473.560	40.525	31.195	11.591	19.277	145.832
%RSD		2.139	T 0.937	T 1.357	1.091	2.074	TM 0.851	1.515	0.870	3.256	1.903	3.420	4.291

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:33:15	113636.080	411538.960	1090.036	570.010	40.000	260.002	1107471.600	8202.018	630.012	458.006	167083.330	198090.240
2	14:33:36	113646.150	413650.280	1110.037	630.012	45.000	210.001	1110952.200	8682.261	540.009	473.507	172058.560	201612.090
3	14:33:58	116022.440	411651.700	1125.038	645.012	20.000	240.002	1115020.900	8842.345	765.018	497.507	172220.220	203656.730
x		114434.890	412280.310	1108.370	615.011	35.000	236.668	1111148.200	8575.541	645.013	476.340	170454.040	201119.690
σ		1374.867	1187.762	17.561	39.688	13.229	25.166	3778.440	333.237	113.252	19.902	2920.239	2815.723
%RSD		1.201	0.288	1.584	6.453	37.796	10.634	0.340	3.886	17.558	4.178	1.713	1.400

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:33:15	235.002	2900.252	233134.220	146894.500	0.000	75771.851	30482.851
2	14:33:36	210.001	3020.274	237540.790	151051.410	0.000	80996.335	30392.686
3	14:33:58	215.001	3360.339	234731.410	149699.290	0.000	84759.981	30117.187
x		220.001	3093.622	235135.470	149215.070	0.000	80509.389	30330.908
σ		13.229	238.652	2230.900	2120.336	0.000	4513.808	190.499
%RSD		6.013	7.714	0.949	1.421	0.000	5.607	0.628

200-35700-A-5-B @2 10/14/2016 02:38:36 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	14:38:58	136385.760	760.017	3145.297	┬1006251.500	┬2565135.700	┬125481650.000	┬8308198.800	775617.070	255737.110	21719.142	342595.330	233539.84
2	14:39:20	138230.870	695.014	3100.288	┬984452.230	┬2516294.100	┬125857420.000	┬8226349.400	777606.630	251594.770	22835.633	344805.200	234244.63
3	14:39:42	135730.440	800.019	3155.299	887222.670	┬2474984.000	┬125538940.000	┬8236957.000	776643.230	251330.830	21303.607	341115.430	235776.00
x		136782.360	751.684	3133.628	┬959308.790	┬2518804.600	┬125626000.000	┬8257168.400	776622.310	252887.570	21952.794	342838.650	234520.16
σ		1296.533	52.996	29.303	┬63372.780	┬45128.221	┬202449.800	┬44510.784	994.948	2471.296	792.289	1856.881	1143.25
%RSD		0.948	7.050	0.935	┬6.606	┬1.792	┬0.161	┬0.539	0.128	0.977	3.609	0.542	0.48

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	14:38:58	34200.053	┬23108683.000	┬497672720.000	164861.370	79036.962	┬4570131.100	472036.210	19618.540	1411.060	952.527	559.509	4600.63
2	14:39:20	33603.842	┬23414179.000	┬497536280.000	163477.840	76329.386	┬4516671.500	472493.910	19742.686	1354.055	961.528	573.010	4965.74
3	14:39:42	34360.383	┬23414278.000	┬503234320.000	163386.950	76987.402	┬4504766.000	474391.690	19697.633	1402.059	997.030	581.510	4485.60
x		34054.759	┬23312380.000	┬499481110.000	163908.720	77451.250	┬4530522.800	472973.930	19686.286	1389.058	970.362	571.343	4683.99
σ		398.649	┬176406.910	┬3251095.600	826.267	1412.129	┬34814.422	1248.957	62.846	30.646	23.530	11.095	250.68
%RSD		1.171	┬0.757	┬0.651	0.504	1.823	┬0.768	0.264	0.319	2.206	2.425	1.942	5.35

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159T
1	14:38:58	367487.230	709987.060	7071.500	6116.122	210.001	1660.083	1076924.100	51078.150	2330.163	1843.602	520930.800	231861.65
2	14:39:20	374720.640	718145.690	6971.458	5660.961	275.002	2000.120	1091007.200	52713.229	2330.163	1803.598	524778.730	234315.62
3	14:39:42	375293.310	715484.840	6706.349	6076.107	195.001	1705.087	1086794.900	53174.691	2420.176	1855.103	522823.710	234396.75
x		372500.390	714539.200	6916.435	5951.064	226.668	1788.430	1084908.700	52322.023	2360.167	1834.101	522844.410	233524.67
σ		4350.959	4160.707	188.691	252.031	42.525	184.705	7228.543	1101.659	51.969	27.035	1924.050	1440.78
%RSD		1.168	0.582	2.728	4.235	18.761	10.328	0.666	2.106	2.202	1.474	0.368	0.61

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:38:58	875.023	7451.665	1330947.200	151969.700	0.000	294056.390	98334.235
2	14:39:20	860.022	7916.880	1332688.400	153120.160	0.000	293277.850	100049.400
3	14:39:42	900.024	7921.882	1360382.200	152888.040	0.000	295806.960	99430.712
x		878.356	7763.476	1341339.300	152659.300	0.000	294380.400	99271.448
σ		20.208	270.047	16514.642	608.383	0.000	1295.314	868.602
%RSD		2.301	3.478	1.231	0.399	0.000	0.440	0.875

200-35700-A-1-B @4 10/14/2016 02:44:19 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:44:40	135639.710	355.004	1830.101	602610.740	925544.700	┬59148775.000	┬3624096.800	493149.530	232023.890	9797.879	171831.240	108849.290
2	14:45:02	133885.610	432.506	2080.130	602403.440	932655.100	┬59063244.000	┬3590426.300	489813.280	227461.640	10178.107	172093.930	107581.090
3	14:45:24	134994.500	395.005	1945.113	588230.450	924794.740	┬58118656.000	┬3553778.800	487589.480	227228.500	10573.353	171780.720	109176.420
x		134839.940	394.171	1951.781	597748.210	927664.850	┬58776891.000	┬3589434.000	490184.100	228904.680	10183.113	171901.960	108535.600
σ		887.204	38.758	125.148	8243.277	4337.923	┬571650.910	┬35169.496	2798.511	2703.831	387.761	168.155	842.653
%RSD		0.658	9.833	6.412	1.379	0.468	┬0.973	┬0.980	0.571	1.181	3.808	0.098	0.776

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:44:40	18169.899	┬25793182.000	┬297600090.000	101030.290	35567.912	┬2946277.800	357912.210	12556.728	1179.042	946.027	561.509	4305.556
2	14:45:02	18535.301	┬25811215.000	┬296111050.000	98998.148	35623.029	┬2955701.100	366270.890	12861.961	1177.042	916.525	548.009	4300.555
3	14:45:24	18034.752	┬25770913.000	┬297698580.000	98872.405	34405.475	┬2949794.300	365218.160	12831.938	1127.038	932.026	530.008	4190.527
x		18246.651	┬25791770.000	┬297136570.000	99633.614	35198.806	┬2950591.100	363133.750	12750.209	1161.041	931.526	546.509	4265.546

σ		258.951	T 20188.380	T 889491.550	1211.188	687.596	T 4761.876	4552.521	168.230	29.464	14.757	15.804	65.017
%RSD		1.419	T 0.078	T 0.299	1.216	1.953	T 0.161	1.254	1.319	2.538	1.584	2.892	1.524
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:44:40	244185.790	446224.580	5040.762	5891.041	225.002	2295.158	1117488.200	47527.670	1525.070	1212.544	282916.040	204395.690
2	14:45:02	248356.750	456291.720	5050.765	6216.159	185.001	2275.155	1106009.200	47507.613	1480.066	1160.040	286720.220	205357.400
3	14:45:24	249508.760	450867.050	4945.734	6151.135	190.001	2270.155	1113675.200	48430.263	1550.072	1162.541	284695.960	206612.780
x		247350.430	451127.780	5012.420	6086.112	200.001	2280.156	1112390.900	47821.848	1518.402	1178.375	284777.410	205455.290
σ		2800.536	5038.630	57.969	172.036	21.795	13.231	5846.305	526.998	35.476	29.618	1903.400	1111.780
%RSD		1.132	1.117	1.156	2.827	10.897	0.580	0.526	1.102	2.336	2.513	0.668	0.541

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:44:40	750.017	3775.428	704668.330	149648.840	0.000	101910.620	38895.333
2	14:45:02	640.012	3910.459	712506.220	147772.210	0.000	106081.530	39832.542
3	14:45:24	680.014	3755.423	709006.620	149214.980	0.000	109609.240	39271.212
x		690.014	3813.770	708727.060	148878.670	0.000	105867.130	39333.029
σ		55.680	84.330	3926.421	982.478	0.000	3853.786	471.653
%RSD		8.069	2.211	0.554	0.660	0.000	3.640	1.199

200-35700-A-3-B @10 10/14/2016 02:50:01 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:50:23	139874.490	152.501	1220.045	496064.140	723218.120	┬38725192.000	┬2549104.100	147701.590	224704.620	5190.808	95150.837	71493.009
2	14:50:45	135801.010	205.001	1205.044	494756.100	716152.620	┬38878851.000	┬2554100.000	146248.860	224177.600	5155.797	96765.091	71754.128
3	14:51:06	132303.050	205.001	1240.046	482689.920	723332.940	┬39459705.000	┬2565905.200	148266.570	224765.430	4655.650	96433.176	71272.066
x		135992.850	187.501	1221.711	491170.050	720901.230	┬39021250.000	┬2556369.700	147405.670	224549.220	5000.752	96116.368	71506.401
σ		3789.367	30.311	17.561	7373.077	4112.812	┬387408.210	┬8627.438	1040.895	323.267	299.379	852.484	241.310
%RSD		2.786	16.166	1.437	1.501	0.571	┬0.993	┬0.337	0.706	0.144	5.987	0.887	0.337

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:50:23	13620.563	┬3744006.500	┬106644700.000	39892.686	22465.130	┬4463786.400	177272.780	4105.506	910.025	600.011	533.009	3435.354
2	14:50:45	14291.124	┬3720470.200	┬108005070.000	40403.915	22490.164	┬4502145.900	178040.900	4185.525	933.026	569.010	508.008	3455.358
3	14:51:06	13885.782	┬3803708.200	┬110290220.000	41235.949	23466.509	┬4584771.600	180011.910	4047.491	920.025	582.510	561.509	3205.308
x		13932.490	┬3756061.700	┬108313330.000	40510.850	22807.268	┬4516901.300	178441.860	4112.841	921.025	583.844	534.175	3365.340
σ		337.712	┬42908.451	┬1842210.000	677.986	571.057	┬61827.525	1412.897	69.309	11.533	15.543	26.770	138.952
%RSD		2.424	┬1.142	┬1.701	1.674	2.504	┬1.369	0.792	1.685	1.252	2.662	5.011	4.129

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:50:23	87494.055	375155.250	850.022	430.006	30.000	190.001	1116398.700	6661.331	455.006	340.003	128196.140	196258.760
2	14:50:45	89278.481	375400.690	805.019	505.008	40.000	135.001	1116655.000	6711.351	415.005	339.003	130730.710	198333.100
3	14:51:06	89092.489	376904.050	725.016	535.009	35.000	170.001	1109211.800	6851.408	405.005	365.504	132751.590	198444.410
x		88621.675	375820.000	793.352	490.007	35.000	165.001	1114088.500	6741.363	425.005	348.170	130559.480	197678.760
σ		980.966	946.805	63.314	54.085	5.000	27.839	4225.276	98.529	26.458	15.020	2282.549	1231.013
%RSD		1.107	0.252	7.981	11.038	14.286	16.872	0.379	1.462	6.225	4.314	1.748	0.623

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:50:23	140.001	2230.149	174801.890	148074.880	0.000	55447.078	23121.026
2	14:50:45	210.001	2295.158	176398.580	148387.640	0.000	58547.655	22655.388
3	14:51:06	190.001	2370.169	178753.470	148387.640	0.000	62968.728	22750.517
x		180.001	2298.492	176651.310	148283.380	0.000	58987.820	22842.310
σ		36.056	70.069	1987.877	180.574	0.000	3780.094	246.017
%RSD		20.031	3.048	1.125	0.122	0.000	6.408	1.077

CCV 10/14/2016 02:55:44 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:56:06	114804.040	89567.525	33127.891	┬15734665.000	┬4622978.500	┬43043078.000	┬15463935.000	┬1656453.000	168002.500	29751.531	┬3182947.100	8957
2	14:56:28	111330.600	87830.819	34104.859	┬15378080.000	┬4535574.400	┬42798571.000	┬15155529.000	┬1612562.400	158076.100	30297.513	┬3095894.500	8758
3	14:56:51	110152.810	86614.479	32797.238	┬15203533.000	┬4477746.700	┬42479987.000	┬15156008.000	┬1653060.800	162922.440	29816.647	┬3123988.900	8760
x		112095.820	88004.274	33343.329	┬15438759.000	┬4545433.200	┬42773879.000	┬15258491.000	┬1640692.100	163000.350	29955.230	┬3134276.800	8825
σ		2418.193	1484.145	679.910	┬270715.070	┬73116.081	┬282356.400	┬177920.640	┬24419.958	4963.656	298.208	┬44428.785	114
%RSD		2.157	1.686	2.039	┬1.753	┬1.609	┬0.660	┬1.166	┬1.488	3.045	0.996	┬1.418	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:56:06	114255.290	┬4633079.100	┬96510690.000	1376866.900	740774.510	913554.570	665850.210	88180.659	7108.516	8841.845	419.005	80
2	14:56:28	110958.130	┬4590757.400	┬94504236.000	1336582.500	731252.540	897591.330	653812.420	86437.564	6813.392	8660.249	412.005	77
3	14:56:51	108632.880	┬4547050.100	┬93487716.000	1327427.400	710910.190	886922.300	646874.420	84975.072	6741.363	8653.246	395.005	72
x		111282.100	┬4590295.500	┬94834214.000	1346958.900	727645.750	899356.060	655512.350	86531.098	6887.757	8718.447	408.672	76
σ		2825.170	┬43016.395	┬1538264.200	26302.432	15255.364	13403.553	9601.431	1604.839	194.545	106.923	12.343	3

%RSD		2.539	T 0.937	T 1.622	1.953	2.097	1.490	1.465	1.855	2.825	1.226	3.020	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	14:56:06	918790.970	200842.890	1939342.900	307088.270	9557.740	144982.870	931503.290	977667.960	623591.760	475004.270	650106.600	1553
2	14:56:28	912477.930	198140.830	1959050.200	305896.660	9757.856	140595.520	913887.080	959014.660	616520.860	472578.250	645835.260	1556
3	14:56:51	901150.910	193941.880	1958439.300	298743.650	9412.657	140247.610	901804.890	970877.780	618932.840	472386.420	645809.280	1591
x		910806.600	197641.870	1952277.500	303909.530	9576.084	141942.000	915731.750	969186.800	619681.820	473322.980	647250.380	1567
σ		8938.007	3477.459	11205.834	4513.279	173.329	2639.209	14934.885	9440.922	3594.459	1459.195	2473.594	21
%RSD		0.981	1.759	0.574	1.485	1.810	1.859	1.631	0.974	0.580	0.308	0.382	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:56:06	43576.894	1809728.900	T 9542764.800	125631.720	0.000	287890.130	141397.260
2	14:56:28	43095.645	1812858.100	T 9582827.900	122246.690	0.000	293181.170	141472.900
3	14:56:51	44875.333	1815326.300	T 9470141.400	122266.840	5.000	296641.600	140323.240
x		43849.291	1812637.800	T 9531911.400	123381.750	1.667	292570.970	141064.470
σ		920.582	2805.224	T 57121.929	1948.560	2.887	4407.530	643.034
%RSD		2.099	0.155	T 0.599	1.579	173.205	1.506	0.456

CCB 10/14/2016 03:01:33 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	15:01:55	120997.620	52.500	725.016	279849.920	2810.237	31584.900	69484.542	1380.057	172568.800	90.000	27592.822	2650.211
2	15:02:17	123022.370	40.000	610.011	284161.960	2820.239	35728.254	70077.015	1410.060	174650.310	35.000	27813.188	3100.288
3	15:02:39	119275.280	72.500	710.015	285067.230	3180.303	37492.122	68139.004	1820.099	175084.840	40.000	28359.107	2940.259
x		121098.420	55.000	681.681	283026.370	2936.926	34935.092	69233.520	1536.739	174101.320	55.000	27921.706	2896.919
σ		1875.577	16.394	62.519	2787.877	210.830	3032.433	993.091	245.856	1344.864	30.414	394.500	228.147
%RSD		1.549	29.807	9.171	0.985	7.179	8.680	1.434	15.999	0.772	55.298	1.413	7.876

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	15:01:55	9047.455	4285.551	333340.470	650.013	360.004	950.027	915.025	2331.163	785.018	412.505	423.505	1950.114
2	15:02:17	9152.512	4425.587	350109.070	745.017	410.005	1075.035	1110.037	2461.182	754.017	434.506	432.006	2295.158
3	15:02:39	9982.989	4605.636	345356.440	805.019	570.010	1205.044	1045.033	2377.170	749.017	439.006	430.506	2425.176
x		9394.319	4438.925	342935.330	733.350	446.673	1076.702	1023.365	2389.838	762.684	428.672	428.672	2223.483
σ		512.502	160.459	8642.500	78.159	109.700	127.516	99.295	65.929	19.503	14.181	4.537	245.508
%RSD		5.455	3.615	2.520	10.658	24.559	11.843	9.703	2.759	2.557	3.308	1.058	11.042

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:01:55	425.005	206035.700	2940.259	195.001	5.000	95.000	945467.600	2090.131	850.022	592.011	320.003	160812.090
2	15:02:17	565.010	205802.850	2970.265	170.001	0.000	85.000	945827.170	2335.164	840.021	710.515	390.005	160034.660
3	15:02:39	595.011	208668.150	2850.244	190.001	5.000	95.000	964460.830	2585.200	910.025	733.516	445.006	161882.380
x		528.342	206835.560	2920.256	185.001	3.333	91.667	951918.530	2336.832	866.689	678.681	385.005	160909.710
σ		90.740	1591.327	62.461	13.229	2.887	5.774	10863.435	247.539	37.861	75.934	62.651	927.718
%RSD		17.175	0.769	2.139	7.151	86.603	6.298	1.141	10.593	4.369	11.189	16.273	0.577

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:01:55	130.001	2255.153	3970.473	127374.880	0.000	7621.742	115.000
2	15:02:17	180.001	2310.160	4935.731	129047.670	0.000	7401.643	125.000
3	15:02:39	170.001	2330.163	5510.911	134107.380	0.000	6936.443	130.001
x		160.001	2298.492	4805.705	130176.640	0.000	7319.943	123.334
σ		26.458	38.843	778.407	3505.365	0.000	349.878	7.638
%RSD		16.536	1.690	16.198	2.693	0.000	4.780	6.193

CCVL 10/14/2016 03:07:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:07:38	119627.790	205.001	6881.420	T 1123135.900	30317.550	91213.918	806061.850	28344.081	179258.860	30.000	41656.994	12104.394
2	15:08:00	126004.520	210.001	6496.266	1024605.300	32181.039	96408.031	820228.530	29285.707	179683.390	10.000	41812.383	12744.871
3	15:08:22	123798.080	200.001	6836.402	T 1120292.500	32611.875	95110.609	817467.720	29435.971	179188.100	20.000	41396.346	13090.139
x		123143.460	205.001	6738.029	T 1089344.600	31703.488	94244.186	814586.030	29021.920	179376.780	20.000	41621.908	12646.468
σ		3238.374	5.000	210.580	T 56083.891	1219.436	2703.279	7510.115	591.814	267.877	10.000	210.226	500.185
%RSD		2.630	2.439	3.125	T 5.148	3.846	2.868	0.922	2.039	0.149	50.000	0.505	3.955

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:07:38	11293.825	9152.512	935091.060	3145.297	1595.076	4360.570	12985.056	3446.356	913.025	617.511	437.006	2580.200
2	15:08:00	11053.664	9582.754	941507.600	3240.315	1790.096	4600.635	13230.249	3373.341	996.030	624.012	430.506	2355.166
3	15:08:22	11508.972	9772.864	936924.870	3610.391	1575.074	4575.628	12649.799	3300.327	948.027	616.011	426.505	2455.181
x		11285.487	9502.710	937841.180	3332.001	1653.416	4512.278	12955.035	3373.342	952.361	619.178	431.339	2463.516
σ		227.769	317.828	3304.952	245.729	118.791	131.976	291.387	73.015	41.672	4.253	5.300	112.748
%RSD		2.018	3.345	0.352	7.375	7.185	2.925	2.249	2.164	4.376	0.687	1.229	4.577

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:07:38	23992.256	205438.390	16718.381	3305.328	85.000	820.020	946609.780	1170.041	5395.873	4181.525	5495.906	163215.280
2	15:08:00	25769.907	214734.470	17749.446	3220.311	50.000	830.021	972752.490	1265.048	5605.943	4283.550	5705.977	167032.830
3	15:08:22	25113.907	211665.590	17449.129	3380.343	55.000	770.018	972275.850	1330.053	5630.951	4194.528	5545.923	162054.030
x		24958.690	210612.820	17305.652	3301.994	63.333	806.686	963879.370	1255.047	5544.256	4219.868	5582.602	164100.710
σ		898.933	4736.615	530.295	80.068	18.930	32.147	14957.809	80.473	129.110	55.533	109.733	2604.819
%RSD		3.602	2.249	3.064	2.425	29.889	3.985	1.552	6.412	2.329	1.316	1.966	1.587

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:07:38	3760.424	19701.638	9132.501	130922.210	0.000	18189.921	15817.502
2	15:08:00	3920.461	20057.061	9712.829	130226.790	0.000	18535.301	15932.612
3	15:08:22	3570.382	20247.291	10083.049	132756.630	0.000	19070.905	15532.234
x		3750.423	20001.997	9642.793	131301.880	0.000	18598.709	15760.783
σ		175.254	276.963	479.128	1306.957	0.000	443.902	206.127
%RSD		4.673	1.385	4.969	0.995	0.000	2.387	1.308

Analyte ICPS

STD0 10/14/2016 10:32:42 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:33:04	100.756%	16.164	-112.095	-7509.036	693.869	9748.883	143.338	19.999	100.721%	9.938	1098.597	117.409
2	10:33:26	99.141%	11.848	-148.335	8709.289	1501.624	15329.449	2486.325	203.870	98.303%	20.329	431.464	418.940
3	10:33:48	100.102%	43.928	-254.235	4218.252	1283.571	17448.864	1321.379	125.744	100.976%	9.902	1686.029	421.475
x		100.000%	23.980	-171.555	1806.168	1159.688	14175.732	1317.014	116.537	100.000%	13.390	1072.030	319.275
σ		0.812%	17.410	73.860	8373.896	417.884	3977.527	1171.500	92.281	1.475%	6.010	627.704	174.825
%RSD		0.812	72.600	43.053	463.628	36.034	28.059	88.951	79.185	1.475	44.885	58.553	54.757

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:33:04	10092.954	1083.687	48194.709	-4.290	-15.859	18.065	-103.420	94.110	771.400	8.832	424.222	2270.919
2	10:33:26	10728.023	1607.571	67028.963	32.423	21.255	-30.177	-115.657	-62.661	804.317	-32.892	443.489	2293.753
3	10:33:48	10467.993	1582.603	65338.466	-10.917	226.104	22.318	20.365	-68.058	806.474	-38.941	410.817	2350.909
x		10429.657	1424.620	60187.379	5.739	77.166	3.402	-66.237	-12.203	794.063	-21.001	426.176	2305.194
σ		319.265	295.520	10420.295	23.346	130.312	29.157	75.249	92.109	19.657	26.012	16.424	41.204
%RSD		3.061	20.744	17.313	406.811	168.871	857.114	113.605	754.815	2.475	123.863	3.854	1.787

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:33:04	-4.844	98.568%	444.984	-18.691	-61.603	-24.376	98.535%	2232.865	883.945	486.953	2.157	99.967%
2	10:33:26	116.835	100.038%	639.883	23.491	-73.533	46.181	100.568%	2515.914	1055.328	628.319	86.419	99.337%
3	10:33:48	80.518	101.394%	407.335	-11.751	-43.014	1.019	100.898%	2626.628	1229.356	682.204	105.118	100.696%
x		64.170	100.000%	497.401	-2.317	-59.383	7.608	100.000%	2458.469	1056.209	599.159	64.565	100.000%
σ		62.465	1.414%	124.820	22.618	15.380	35.737	1.280%	203.069	172.707	100.839	54.850	0.680%
%RSD		97.344	1.414	25.095	976.217	25.900	469.731	1.280	8.260	16.352	16.830	84.953	0.680

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:33:04	7.348	6.909	7361.874	99.354%	0.000	6124.173	-14.691
2	10:33:26	13.651	57.607	9232.470	99.942%	0.000	6059.831	19.973
3	10:33:48	30.728	8.998	9432.572	100.704%	0.000	5304.519	29.184
x		17.242	24.505	8675.639	100.000%	0.000	5829.508	11.489
σ		12.097	28.686	1142.144	0.677%	0.000	455.791	23.136
%RSD		70.158	117.064	13.165	0.677	0.000	7.819	201.377

STD1 10/14/2016 10:38:26 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:38:47	102.742%	153.998	6344.203	T 795526.680	28796.544	75384.634	752952.960	27005.114	104.176%	24.038	12922.362	9520.487
2	10:39:09	102.460%	156.941	6516.580	T 825281.620	30075.423	75637.594	744615.720	28048.937	102.892%	14.597	13640.372	9998.183
3	10:39:31	100.602%	133.030	6437.086	T 811339.970	28790.159	76848.749	761674.600	27560.021	102.691%	19.485	13726.951	9726.477
x		101.935%	147.990	6432.623	T 810716.090	29220.709	75956.992	753081.090	27538.024	103.253%	19.373	13429.895	9748.382
σ		1.163%	13.038	86.275	T 14887.281	740.211	782.572	8530.160	522.259	0.806%	4.721	441.664	239.600
%RSD		1.141	8.810	1.341	T 1.836	2.533	1.030	1.133	1.897	0.780	24.370	3.289	2.458

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:38:47	10696.398	6690.889	665612.070	2138.490	959.209	3707.156	11820.828	832.621	802.171	141.565	450.547	2401.351
2	10:39:09	11201.773	6893.859	667359.590	2630.400	1159.394	3892.984	12190.069	899.921	851.345	135.120	438.482	2375.397
3	10:39:31	11004.216	7275.455	673838.240	2451.806	1074.572	3563.325	11813.656	1005.902	760.533	203.077	423.450	2230.154

x		10967.463	6953.401	668936.640	2406.899	1064.392	3721.155	11941.518	912.815	804.683	159.921	437.493	2335.634
σ		254.684	296.796	4333.909	249.011	100.480	165.275	215.282	87.357	45.458	37.513	13.575	92.265
%RSD		2.322	4.268	0.648	10.346	9.440	4.441	1.803	9.570	5.649	23.457	3.103	3.950
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:38:47	24777.005	100.510%	16016.359	3437.575	-115.728	876.526	101.878%	1374.257	6147.142	4522.425	5280.358	100.638%
2	10:39:09	25141.575	100.080%	16510.711	3562.753	-79.683	848.674	100.461%	1383.672	6150.556	4632.863	5856.283	100.673%
3	10:39:31	25705.908	101.626%	16501.475	3060.556	-47.538	700.215	100.131%	1378.251	6183.600	4680.177	5646.672	101.181%
x		25208.163	100.739%	16342.849	3353.628	-80.983	808.472	100.823%	1378.727	6160.433	4611.822	5594.438	100.831%
σ		468.018	0.798%	282.786	261.411	34.114	94.782	0.928%	4.726	20.136	80.953	291.494	0.304%
%RSD		1.857	0.792	1.730	7.795	42.125	11.724	0.920	0.343	0.327	1.755	5.210	0.302

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:38:47	4006.034	20759.640	17181.905	98.197%	0.000	18875.885	17271.388
2	10:39:09	4411.956	19996.823	17381.383	101.113%	0.000	18716.662	17746.319
3	10:39:31	4008.194	20022.486	17653.622	100.864%	0.000	20223.482	17696.093
x		4142.061	20259.649	17405.637	100.058%	0.000	19272.010	17571.267
σ		233.738	433.194	236.792	1.616%	0.000	827.836	260.914
%RSD		5.643	2.138	1.360	1.615	0.000	4.296	1.485

STD2 10/14/2016 10:44:08 AM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	10:44:30	96.217%	875.729	30159.010	T 4035711.200	144558.140	331563.360	T 4043592.900	138644.430	98.652%	15.227	56292.327	47754.998
2	10:44:52	95.655%	786.953	30092.574	T 4180122.200	155885.030	349967.130	T 4193722.700	143564.260	93.379%	21.391	59476.337	47938.246
3	10:45:13	92.853%	816.942	30521.690	T 4050256.200	151203.120	342576.180	T 4162608.800	145165.190	92.640%	10.784	61024.126	49438.139
x		94.908%	826.541	30257.758	T 4088696.500	150548.770	341368.890	T 4133308.100	142457.960	94.890%	15.801	58930.930	48377.128
σ		1.802%	45.160	230.973	T 79510.223	5691.724	9261.094	T 79237.848	3398.237	3.279%	5.327	2412.588	923.420
%RSD		1.899	5.464	0.763	T 1.945	3.781	2.713	T 1.917	2.385	3.455	33.714	4.094	1.909

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	10:44:30	10877.205	34563.915	T 3393654.700	13887.966	6169.300	18547.289	60313.155	4663.245	715.691	1007.656	440.917	2138.689
2	10:44:52	10881.032	36766.130	T 3597558.000	15090.523	6217.674	19184.302	61470.599	4894.711	552.832	1058.637	424.941	2037.995
3	10:45:13	9816.745	36540.362	T 3538776.400	13757.710	6339.708	19049.202	61348.432	4819.410	560.572	1119.975	438.816	1854.682
x		10524.994	35956.802	T 3509996.400	14245.400	6242.227	18926.931	61044.062	4792.455	609.698	1062.090	434.891	2010.455
σ		613.365	1211.546	T 104954.050	734.790	87.817	335.647	635.925	118.064	91.874	56.239	8.681	143.993
%RSD		5.828	3.369	T 2.990	5.158	1.407	1.773	1.042	2.464	15.069	5.295	1.996	7.162
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:44:30	123821.470	95.615%	84302.606	17186.190	-34.688	3711.751	97.299%	745.146	28945.851	22136.531	28318.484	97.320%
2	10:44:52	126217.770	96.021%	85646.574	17619.107	-31.016	4175.931	94.956%	816.190	29214.564	22854.571	29740.886	95.990%
3	10:45:13	126566.420	94.737%	86135.646	17367.373	-22.076	4210.014	93.548%	844.503	28994.863	22533.017	29281.983	95.615%
x		125535.220	95.458%	85361.609	17390.890	-29.260	4032.566	95.267%	801.946	29051.759	22508.040	29113.784	96.308%
σ		1494.355	0.657%	949.164	217.415	6.487	278.355	1.894%	51.187	143.107	359.671	725.965	0.896%
%RSD		1.190	0.688	1.112	1.250	22.171	6.903	1.989	6.383	0.493	1.598	2.494	0.930

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:44:30	20637.919	101910.640	74409.359	98.183%	0.000	75984.302	84062.866
2	10:44:52	20457.015	107064.680	76078.301	95.399%	0.000	80881.707	88271.994
3	10:45:13	20742.325	109245.800	76518.473	94.541%	0.000	87270.225	88829.751
x		20612.420	106073.710	75668.711	96.041%	0.000	81378.745	87054.870

σ		144.354	3766.653	1112.616	1.904%	0.000	5659.355	2606.116
%RSD		0.700	3.551	1.470	1.982	0.000	6.954	2.994

STD3 10/14/2016 10:49:52 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:50:14	96.461%	101512.330	37418.724	┬15843079.000	┬4806567.600	┬44942377.000	┬16104077.000	┬1789495.600	96.015%	30902.016	┬3261557.200	9227
2	10:50:36	94.993%	101130.590	37362.836	┬16123398.000	┬4984008.500	┬47156569.000	┬16786240.000	┬1813554.000	93.426%	33500.102	┬3343047.200	9597
3	10:50:57	94.104%	102339.980	38366.993	┬15820193.000	┬4842145.400	┬45336296.000	┬16251137.000	┬1816471.900	93.497%	32081.193	┬3300897.800	9478
x		95.186%	101660.970	37716.184	┬15928890.000	┬4877573.800	┬45811747.000	┬16380484.000	┬1806507.200	94.312%	32161.103	┬3301834.100	9434
σ		1.190%	618.245	564.309	┬168837.060	┬93876.001	┬1181186.700	┬359005.130	┬14804.516	1.475%	1300.885	┬40753.061	189
%RSD		1.250	0.608	1.496	┬1.060	┬1.925	┬2.578	┬2.192	┬0.820	1.564	4.045	┬1.234	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:50:14	12219.547	┬4927153.300	┬99985166.000	1420905.200	758970.960	942761.510	716982.060	92869.008	-567.109	9578.714	470.305	9
2	10:50:36	11428.580	┬5041394.300	┬101865230.000	1438320.700	767859.470	939224.860	714855.140	93938.640	-442.789	9339.826	405.950	13
3	10:50:57	11477.798	┬4981188.600	┬101711920.000	1435811.300	759510.390	942027.200	722959.200	95281.439	-738.050	9497.599	418.973	8
x		11708.642	┬4983245.400	┬101187440.000	1431679.100	762113.610	941337.860	718265.470	94029.696	-582.649	9472.046	431.743	10
σ		443.141	┬57148.245	┬1044017.800	9414.425	4983.370	1866.381	4201.701	1208.790	148.243	121.476	34.025	2
%RSD		3.785	┬1.147	┬1.032	0.658	0.654	0.198	0.585	1.286	25.443	1.282	7.881	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	10:50:14	1015294.000	96.078%	2127346.200	343557.650	-58.456	163760.210	94.089%	1111791.200	715806.550	556438.690	732098.000	97
2	10:50:36	995705.400	94.869%	┬2371784.800	333474.830	307.546	164911.170	94.594%	1094441.000	709167.870	557078.760	736368.230	97
3	10:50:57	1027755.700	93.296%	2182916.600	343919.890	747.524	167996.890	92.728%	1126161.300	720949.850	566972.520	746123.600	98
x		1012918.400	94.748%	┬2227349.200	340317.460	332.205	165556.090	93.804%	1110797.800	715308.090	560163.320	738196.610	97
σ		16156.667	1.395%	┬128133.710	5928.657	403.555	2190.732	0.965%	15883.468	5906.784	5905.616	7189.339	0
%RSD		1.595	1.472	┬5.753	1.742	121.478	1.323	1.029	1.430	0.826	1.054	0.974	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:50:14	51523.429	2238844.500	┬20899095.000	94.846%	0.000	339519.680	173820.420
2	10:50:36	53217.837	2262148.800	┬21121644.000	94.229%	10.612	360361.400	177663.950
3	10:50:57	52241.511	2213521.100	┬20846802.000	96.216%	0.000	364721.970	173064.190
x		52327.592	2238171.400	┬20955847.000	95.097%	3.537	354867.690	174849.520
σ		850.478	24320.812	┬145946.000	1.017%	6.127	13469.391	2466.520
%RSD		1.625	1.087	┬0.696	1.070	173.205	3.796	1.411

STD4 10/14/2016 10:55:36 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51
1	10:55:57	95.999%	298260.500	112417.870	┬49523888.000	┬15042300.000	┬140968670.000	┬51231567.000	┬5655051.100	93.012%	98771.770	┬10308276.00
2	10:56:19	93.455%	306367.620	119902.050	┬49053502.000	┬14859723.000	┬137982810.000	┬50369382.000	┬5664093.200	95.057%	99168.987	┬10289900.00
3	10:56:41	95.473%	302516.170	116591.980	┬49725475.000	┬15343442.000	┬139032940.000	┬50937553.000	┬5710648.400	93.727%	99429.812	┬10423775.00
x		94.976%	302381.430	116303.970	┬49434288.000	┬15081822.000	┬139328140.000	┬50846167.000	┬5676597.600	93.932%	99123.523	┬10340650.00
σ		1.343%	4055.237	3750.395	┬344830.000	┬244269.190	┬1514664.800	┬438296.920	┬29833.430	1.038%	331.368	┬72572.09
%RSD		1.414	1.341	3.225	┬0.698	┬1.620	┬1.087	┬0.862	┬0.526	1.105	0.334	┬0.70

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83K
1	10:55:57	-6530.507	┬15482033.000	┬311483340.000	┬4863712.500	2283760.600	┬3049495.700	2119471.300	284207.000	-3068.824	28448.027	498.84
2	10:56:19	-8942.469	┬15279445.000	┬305711580.000	┬4780411.400	2238439.500	┬3102130.800	2130938.700	281552.560	-2869.286	28263.322	465.22

3	10:56:41	-8634.691	┬15573536.000	┬313579920.000	┬4880961.000	┬2511963.400	┬3101091.800	2112381.000	279807.280	-2893.464	28055.180	511.0
x		-8035.889	┬15445005.000	┬310258280.000	┬4841695.000	┬2344721.200	┬3084239.400	2120930.300	281855.610	-2943.858	28255.509	491.6
σ		1312.750	┬150501.840	┬4074712.200	┬53769.265	┬146598.000	┬30093.430	9364.501	2215.461	108.897	196.540	23.7
%RSD		16.336	┬0.974	┬1.313	┬1.111	┬6.252	┬0.976	0.442	0.786	3.699	0.696	4.8

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135B
1	10:55:57	┬3417462.800	92.961%	┬7345937.600	1014422.500	1710.520	502430.590	92.516%	┬3817622.300	2182565.600	1726830.600	┬2537168.9
2	10:56:19	┬3492990.600	94.141%	┬7411019.500	1017940.900	1471.328	505153.330	93.075%	┬3864933.900	2219332.000	1751294.100	┬2570360.3
3	10:56:41	┬3440106.900	94.670%	┬7479434.800	1027752.100	680.809	501853.700	93.539%	┬3850001.200	2209104.400	1750398.300	┬2581391.5
x		┬3450186.800	93.924%	┬7412130.600	1020038.500	1287.552	503145.870	93.043%	┬3844185.800	2203667.300	1742841.000	┬2562973.6
σ		┬38759.700	0.875%	┬66755.528	6907.895	538.894	1762.273	0.512%	┬24185.946	18976.652	13872.666	┬23018.1
%RSD		┬1.123	0.932	┬0.901	0.677	41.854	0.350	0.550	┬0.629	0.861	0.796	┬0.8

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:55:57	158150.500	┬7715085.100	┬64535893.000	95.102%	0.000	1093168.600	538133.890
2	10:56:19	164865.010	┬7845271.800	┬65094008.000	95.856%	10.432	1130615.800	557126.670
3	10:56:41	163602.660	┬7652298.500	┬64200129.000	98.557%	0.000	1112041.900	540831.640
x		162206.050	┬7737551.800	┬64610010.000	96.505%	3.477	1111942.100	545364.070
σ		3568.474	┬98428.849	┬451525.410	1.817%	6.023	18723.815	10275.633
%RSD		2.200	┬1.272	┬0.699	1.883	173.205	1.684	1.884

STD5 10/14/2016 11:01:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti
1	11:01:40	96.029%	M 512855.540	M 197144.400	TM 82908985.000	TM 25309794.000	TM 234892620.000	TM 87057618.000	TM 9696075.500	97.168%	169456.120
2	11:02:02	95.457%	504334.390	191125.890	T 80623564.000	TM 24766239.000	TM 229059730.000	TM 85673091.000	TM 9736478.400	98.445%	170057.370
3	11:02:23	92.909%	M 515571.530	M 199922.440	T 80962449.000	TM 25053685.000	TM 235626400.000	TM 87345322.000	TM 9916989.200	95.938%	171128.790
x		94.798%	M 510920.490	M 196064.240	TM 81498333.000	TM 25043239.000	TM 233192920.000	TM 86692010.000	TM 9783181.000	97.183%	170214.090
σ		1.661%	M 5863.158	M 4496.648	TM 1233355.100	TM 271927.830	TM 3598198.800	TM 894058.450	TM 117628.960	1.253%	847.276
%RSD		1.752	M 1.148	M 2.293	TM 1.513	TM 1.086	TM 1.543	TM 1.031	TM 1.202	1.290	0.498

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se
1	11:01:40	-15943.058	TM 26006669.000	TM 518384200.000	TM 8036761.800	TM 4098859.200	TM 5235654.900	TM 3928405.100	M 472717.830	-5123.449	46522.381
2	11:02:02	-16448.720	TM 25884120.000	TM 515696040.000	TM 8026599.700	TM 4053859.700	TM 5139839.100	TM 3880664.100	470277.160	-4662.828	46117.338
3	11:02:23	-20594.482	TM 26455627.000	TM 523154090.000	TM 8255004.100	TM 4221324.000	TM 5179687.100	TM 3907276.400	M 480788.180	-5060.054	46035.038
x		-17662.087	TM 26115472.000	TM 519078110.000	TM 8106121.900	TM 4124681.000	TM 5185060.400	TM 3905448.500	M 474594.390	-4948.777	46224.919
σ		2552.084	TM 300888.120	TM 3777136.300	TM 129035.890	TM 86666.908	TM 48133.364	TM 23922.916	M 5501.045	249.659	260.876
%RSD		14.450	TM 1.152	TM 0.728	TM 1.592	TM 2.101	TM 0.928	TM 0.613	M 1.159	5.045	0.564

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb
1	11:01:40	TM 5943428.900	94.959%	TM 12506519.000	M 1720301.800	2960.919	839132.740	93.872%	T 6586896.600	TM 4157020.800	TM 3271077.100
2	11:02:02	TM 5967690.500	95.511%	TM 12821542.000	M 1714131.000	2752.525	M 840411.360	95.273%	T 6615597.600	TM 4153137.900	TM 3271355.700
3	11:02:23	TM 5880909.000	94.179%	TM 12943585.000	1707483.100	3265.326	838649.770	95.271%	T 6624493.700	TM 4185603.100	TM 3300787.500
x		TM 5930676.100	94.883%	TM 12757215.000	M 1713971.900	2992.923	M 839397.960	94.806%	T 6608996.000	TM 4165253.900	TM 3281073.500
σ		TM 44774.193	0.669%	TM 225522.050	M 6410.817	257.894	M 910.249	0.808%	T 19648.706	TM 17729.538	TM 17073.437
%RSD		TM 0.755	0.705	TM 1.768	M 0.374	8.617	M 0.108	0.853	T 0.297	TM 0.426	TM 0.520

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:01:40	M 326388.350	TM 13603592.000	TM 112547610.000	95.337%	0.000	M 2317293.200	M 1138421.000
2	11:02:02	M 331228.840	TM 13468284.000	TM 111575770.000	97.117%	0.000	M 2318254.900	M 1138068.100
3	11:02:23	M 328834.770	TM 13547705.000	TM 112529880.000	96.791%	5.166	M 2340611.100	M 1143758.900
x		M 328817.320	TM 13539860.000	TM 112217750.000	96.415%	1.722	M 2325386.400	M 1140082.600
σ		M 2420.290	TM 67994.339	TM 556041.180	0.948%	2.982	M 13193.767	M 3188.628
%RSD		M 0.736	TM 0.502	TM 0.496	0.983	173.205	M 0.567	M 0.280

ICV 10/14/2016 11:07:02 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:07:24	86.986%	54431.025	22230.724	T 8492779.800	T 2507497.900	T 23692038.000	T 8275773.100	841503.490	89.910%	16419.028	T 1650436.900	471474.410
2	11:07:46	89.490%	53487.212	20794.979	T 8644809.400	T 2534601.700	T 23964028.000	T 8415656.300	863524.430	88.020%	16416.869	1563310.200	481880.690
3	11:08:08	85.941%	54766.650	22243.052	T 8399900.100	T 2499925.600	T 23571593.000	T 8174459.300	849331.470	89.213%	16428.924	1534486.800	472279.200
x		87.472%	106.733%	113.550%	T 104.446%	T 102.662%	T 103.830%	T 100.598%	91.679%	89.048%	16421.607	T 92.813%	93.415%
σ		1.824%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.956%	6.428	T n/a	n/a
%RSD		2.085	1.223	3.827	T 1.452	T 0.725	T 0.847	T 1.461	1.311	1.074	0.039	T 3.814	1.218

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:07:24	7686.392	T 2499408.900	T 51290306.000	730955.640	394430.920	470945.150	370085.680	48775.221	56.855	5025.571	427.016	1869.035
2	11:07:46	9411.411	T 2559773.000	T 52631589.000	755536.410	402043.320	477198.060	371303.870	48029.846	96.773	4925.271	411.764	1919.164
3	11:08:08	8336.066	T 2524008.800	T 51456836.000	738146.970	395963.870	474027.880	372124.850	48457.686	-86.000	5080.992	467.082	1859.855
x		8477.956	T 99.700%	T 101.623%	99.977%	103.423%	100.070%	101.804%	102.718%	22.542	107.362%	435.288	1882.685
σ		871.219	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	96.096	n/a	28.571	31.924

%RSD		10.276	T 1.201	T 1.412	1.704	1.013	0.660	0.276	0.772	426.289	1.575	6.564	1.696
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:07:24	487176.430	91.851%	512525.700	163195.890	137.590	84012.127	92.386%	555991.900	356843.200	281864.510	367484.960	94.817%
2	11:07:46	496591.640	91.672%	520539.170	167472.620	357.880	83255.190	92.287%	562932.280	365511.270	286473.800	371231.970	93.581%
3	11:08:08	489162.170	91.228%	513983.730	166222.030	337.024	85429.263	91.634%	565593.170	364265.120	287790.840	373717.740	94.661%
x		490976.750	91.584%	89.962%	96.744%	277.498	100.367%	92.102%	561505.780	362206.530	93.346%	89.284%	94.353%
σ		4962.971	0.321%	n/a	n/a	121.612	n/a	0.409%	4957.041	4686.382	n/a	n/a	0.673%
%RSD		1.011	0.350	0.828	1.328	43.824	1.310	0.444	0.883	1.294	1.090	0.846	0.714

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:07:24	55094.913	1119967.200	T 10189218.000	92.526%	0.000	272331.990	169001.850
2	11:07:46	56002.289	1104490.000	T 10175681.000	93.461%	5.350	290694.250	168942.180
3	11:08:08	55615.225	1123628.800	T 10187757.000	92.409%	0.000	309745.730	170129.270
x		119.480%	87.534%	T 94.247%	92.799%	1.783	79.153%	89.829%
σ		n/a	n/a	T n/a	0.577%	3.089	n/a	n/a
%RSD		0.819	0.910	T 0.073	0.621	173.205	6.431	0.395

ICVL 10/14/2016 11:12:46 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:13:08	93.812%	235.329	7108.539	719958.890	32541.290	105993.590	735912.790	28109.413	97.528%	35.880	14690.089	9160.708
2	11:13:30	95.022%	213.554	7496.468	T 833062.410	34139.028	119906.340	743931.570	28699.963	94.502%	58.146	16773.545	9853.274
3	11:13:51	94.061%	229.316	7102.294	734496.240	32529.442	113597.410	726514.400	28699.834	96.074%	62.413	15606.885	9090.208
x		94.298%	139.045%	118.015%	T 93.558%	101.283%	148.467%	89.261%	92.071%	96.035%	52.146	115.010%	92.076%
σ		0.639%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.514%	14.248	n/a	n/a
%RSD		0.677	4.974	3.121	T 8.070	2.800	6.156	1.185	1.196	1.576	27.323	6.655	4.501
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:13:08	8162.856	9601.598	724302.140	3170.841	1561.791	4050.407	11844.879	1344.916	512.006	252.429	435.994	1943.667
2	11:13:30	8458.710	10710.855	754117.370	3447.311	1890.774	4290.008	12365.353	933.105	681.151	194.068	387.905	2159.621
3	11:13:51	8320.723	10434.636	751015.990	3223.770	1626.166	4370.316	12023.913	945.086	644.600	176.548	428.361	2183.637
x		8314.097	126.327%	109.359%	110.575%	137.653%	111.798%	103.523%	113.956%	612.586	111.249%	417.420	2095.642
σ		148.038	n/a	n/a	n/a	n/a	n/a	n/a	n/a	89.001	n/a	25.844	132.161
%RSD		1.781	5.634	2.206	4.473	10.299	3.928	2.189	21.815	14.529	19.130	6.191	6.306
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:13:08	24559.430	97.963%	18749.571	3220.486	-92.273	866.145	96.562%	3490.334	7391.300	5514.631	6160.113	96.522%
2	11:13:30	24692.500	96.484%	19528.392	3451.632	-57.878	880.626	97.448%	4033.411	7598.534	5855.123	6250.659	96.794%
3	11:13:51	25966.400	97.415%	19694.642	3467.160	-37.558	884.981	97.582%	4412.222	7433.207	5753.510	5713.715	97.528%
x		90.893%	97.287%	105.348%	98.706%	-62.570	104.529%	97.197%	3978.656	7474.347	116.687%	90.917%	96.948%
σ		n/a	0.748%	n/a	n/a	27.657	n/a	0.554%	463.377	109.572	n/a	n/a	0.520%
%RSD		3.098	0.768	2.611	4.088	44.203	1.124	0.570	11.647	1.466	3.062	4.758	0.537

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:13:08	3920.816	22628.550	29309.536	95.649%	0.000	28077.895	17027.119
2	11:13:30	4327.792	23323.285	31576.540	96.549%	0.000	28568.343	17614.157
3	11:13:51	4150.184	23085.691	30825.591	97.428%	0.000	29369.649	17213.036
x		88.860%	90.248%	176.818%	96.542%	0.000	78.009%	91.680%
σ		n/a	n/a	n/a	0.890%	0.000	n/a	n/a
%RSD		4.937	1.534	3.778	0.922	0.000	2.274	1.736

ICBIS 10/14/2016 11:18:29 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:18:51	98.885%	1.840	67.021	6875.051	-425.476	-365.124	-1984.559	-684.678	98.906%	5.053	1784.578	-148.229
2	11:19:13	96.769%	5.087	76.092	4353.780	-587.444	-1706.524	-5299.423	-614.129	98.941%	0.000	1422.318	-179.592
3	11:19:34	94.948%	-4.801	39.157	7767.880	-595.132	-1866.510	-2321.281	-381.242	96.594%	10.344	132.925	-306.812
x		96.867%	0.709	60.757	6332.237	-536.017	-1312.719	-3201.754	-560.016	98.147%	5.133	1113.273	-211.545
σ		1.970%	5.040	19.248	1770.594	95.809	824.531	1824.419	158.791	1.345%	5.173	868.113	83.981
%RSD		2.034	711.085	31.680	27.962	17.874	62.811	56.982	28.355	1.370	100.783	77.978	39.699

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:18:51	10112.773	-347.146	33580.009	-401.571	-192.932	-310.098	-303.041	-18.031	767.328	-36.465	468.170	2181.344
2	11:19:13	10168.227	-413.221	28966.777	-502.738	-182.857	-419.691	-299.987	36.054	786.108	-4.963	443.910	2047.420
3	11:19:34	10966.066	-513.634	28540.450	-452.098	-247.694	-387.962	-443.383	111.750	717.331	30.319	458.609	2114.628
x		10415.689	-424.667	30362.412	-452.136	-207.828	-372.584	-348.804	43.258	756.922	-3.703	456.897	2114.464
σ		477.447	83.832	2794.662	50.584	34.890	56.392	81.922	65.190	35.550	33.410	12.220	66.962
%RSD		4.584	19.741	9.204	11.188	16.788	15.135	23.487	150.701	4.697	902.232	2.675	3.167

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:18:51	-155.957	99.896%	-208.382	-89.452	-52.120	-33.484	98.043%	2024.752	878.159	375.496	-185.240	98.984%
2	11:19:13	-274.419	98.525%	-168.385	-69.885	-47.871	-53.233	99.120%	2416.426	831.808	397.318	-180.972	97.747%
3	11:19:34	-238.305	98.294%	-33.549	-99.893	-44.440	-66.606	98.560%	2409.867	961.527	436.051	-205.907	98.418%
x		-222.894	98.905%	-136.772	-86.410	-48.144	-51.108	98.574%	2283.681	890.498	402.955	-190.706	98.383%
σ		60.716	0.866%	91.603	15.234	3.847	16.663	0.539%	224.264	65.734	30.668	13.336	0.619%
%RSD		27.240	0.875	66.975	17.630	7.992	32.603	0.547	9.820	7.382	7.611	6.993	0.629

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:18:51	14.386	-554.188	2847.657	93.080%	0.000	10115.733	5.494
2	11:19:13	52.814	-930.090	1988.541	97.407%	0.000	10381.519	-23.751
3	11:19:34	0.337	-572.345	2166.917	95.337%	0.000	9579.865	-22.636
x		22.512	-685.541	2334.372	95.275%	0.000	10025.706	-13.631
σ		27.166	211.980	453.377	2.164%	0.000	408.339	16.572
%RSD		120.673	30.922	19.422	2.272	0.000	4.073	121.577

ICSA 10/14/2016 11:24:11 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:24:33	88.370%	-17.182	-31.416	TM 153443080.000	T 15468276.000	T 141358450.000	TM 156700850.000	T 5912387.900	96.624%	321318.990	1397.391	1757.514
2	11:24:55	87.790%	-14.260	56.656	TM 157314830.000	T 15818220.000	T 146388260.000	TM 159762900.000	T 6042298.900	96.157%	327054.910	1982.488	2144.910
3	11:25:17	87.988%	-14.292	-77.091	TM 152918730.000	T 15661705.000	T 142729990.000	TM 158041310.000	T 5959150.600	98.409%	325924.070	1552.713	2036.390
x		88.049%	-1.#IO%	-1.#IO%	TM 94.820%	T 95.859%	T 94.127%	TM 95.983%	T 96.442%	97.063%	324765.990	1.#IO%	1.#IO%
σ		0.295%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.189%	3038.266	n/a	n/a
%RSD		0.335	11.008	393.345	TM 1.554	T 1.120	T 1.812	TM 0.970	T 1.102	1.225	0.936	18.434	10.095

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:24:33	3655.451	24.303	T 321211420.000	-395.242	-20.015	500.775	-889.146	37.719	568.285	3.870	474.102	2180.830
2	11:24:55	3584.888	119.595	T 329445510.000	-388.710	59.266	436.357	-1103.368	-123.328	618.371	-17.084	496.646	2290.527
3	11:25:17	3593.149	176.420	T 329854230.000	-410.380	76.815	437.887	-795.310	38.927	565.621	22.684	496.962	2157.811
x		3611.163	1.#IO%	T 96.193%	-1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	584.092	1.#IO%	489.237	2209.723

σ		38.576	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	29.716	n/a	13.108	70.919
%RSD		1.068	71.989	T 1.492	2.792	133.349	8.020	16.992	599.783	5.088	630.244	2.679	3.209
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:24:33	3380.487	96.102%	T 3568375.600	156.956	495.749	107.474	95.867%	1679.497	857.210	426.455	-178.404	98.678%
2	11:24:55	3338.395	96.669%	T 3669682.000	153.570	454.512	160.543	96.952%	2109.425	881.363	473.941	-132.864	103.234%
3	11:25:17	3556.026	99.050%	T 3645594.800	185.416	607.560	77.334	98.198%	2235.424	1063.156	488.692	-149.711	104.813%
x		1.#IO%	97.273%	T 98.889%	1.#IO%	519.274	1.#IO%	97.006%	2008.115	933.909	1.#IO%	-1.#IO%	102.242%
σ		n/a	1.564%	T n/a	n/a	79.190	n/a	1.167%	291.482	112.580	n/a	n/a	3.186%
%RSD		3.370	1.608	T 1.459	10.581	15.250	36.595	1.203	14.515	12.055	7.024	14.985	3.116

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:24:33	612.951	-602.720	5001.786	93.911%	0.000	16692.503	-27.164
2	11:24:55	495.052	-780.396	5009.767	97.359%	0.000	14061.680	-13.454
3	11:25:17	508.544	-808.627	4999.680	96.895%	0.000	12282.809	-49.281
x		1.#IO%	-1.#IO%	1.#IO%	96.055%	0.000	1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	1.871%	0.000	n/a	n/a
%RSD		11.975	15.279	0.106	1.948	0.000	15.465	60.324

ICSAB 10/14/2016 11:29:54 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:30:16	86.598%	4261.914	61900.694	TM 153623950.000	T 15652398.000	T 143179920.000	TM 158113020.000	T 6010746.400	96.080%	325587.940	58730.500	1150
2	11:30:38	84.718%	4112.127	65452.388	TM 154429510.000	T 15618709.000	T 143922220.000	TM 158942940.000	T 5976772.400	97.375%	326954.250	58179.510	1175
3	11:30:59	84.009%	4215.546	65448.599	TM 154194200.000	T 15583771.000	T 145334040.000	TM 158922790.000	T 6060427.800	97.369%	327238.050	61708.378	1153
x		85.108%	103.246%	104.820%	TM 94.528%	T 95.668%	T 94.555%	TM 96.282%	T 97.164%	96.941%	326593.420	87.286%	91
σ		1.338%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.746%	882.252	n/a	
%RSD		1.572	1.827	3.189	TM 0.269	T 0.220	T 0.759	TM 0.298	T 0.699	0.769	0.270	3.189	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:30:16	4950.159	89314.585	T 323224350.000	67088.649	13501.759	33471.878	24622.715	20257.175	132.704	5556.963	476.883	21
2	11:30:38	4902.473	88093.027	T 328833530.000	67352.769	14007.088	33743.894	25644.511	21468.554	1.161	5578.027	510.010	20
3	11:30:59	4256.651	90297.617	T 332131410.000	67722.948	14182.697	33919.851	25313.670	21062.652	102.892	5516.152	479.613	21
x		4703.095	87.991%	T 96.554%	90.854%	90.400%	88.955%	86.376%	98.664%	78.919	95.142%	488.835	21
σ		387.365	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	68.970	n/a	18.388	
%RSD		8.236	1.238	T 1.373	0.473	2.544	0.669	2.069	2.946	87.394	0.567	3.762	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	11:30:16	3131.133	97.613%	T 3560471.100	78851.860	610.173	19373.435	97.405%	1637.576	137358.160	107773.830	147636.460	104
2	11:30:38	2975.001	97.080%	T 3693198.000	79323.781	626.894	19115.828	100.000%	1515.075	136721.840	108346.890	145256.410	106
3	11:30:59	3363.097	99.324%	T 3694236.200	79205.763	486.220	19776.596	100.186%	1891.584	141121.700	110572.060	148519.720	107
x		3156.410	98.006%	T 99.473%	92.436%	574.429	92.569%	99.197%	1681.411	138400.570	89.051%	88.570%	105
σ		195.279	1.173%	T n/a	n/a	76.847	n/a	1.555%	192.044	2377.948	n/a	n/a	1
%RSD		6.187	1.196	T 2.108	0.310	13.378	1.715	1.567	11.422	1.718	1.357	1.147	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:30:16	43097.474	276546.080	385840.680	97.304%	0.000	318429.120	192385.710
2	11:30:38	43390.843	281451.850	393782.910	97.262%	0.000	339840.410	195935.800
3	11:30:59	44092.943	274898.880	380582.120	101.113%	0.000	344003.730	192857.810
x		93.585%	87.103%	89.474%	98.560%	0.000	90.898%	102.754%
σ		n/a	n/a	n/a	2.211%	0.000	n/a	n/a
%RSD		1.175	1.228	1.718	2.244	0.000	4.107	0.995

CCV 10/14/2016 11:35:38 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:35:59	83.493%	103089.910	38726.198	T 15643515.000	T 4681566.800	T 44103105.000	T 15641120.000	T 1719311.500	89.420%	31529.926	T 3156689.200	89771
2	11:36:21	82.595%	103629.950	39379.674	T 16001489.000	T 4805308.800	T 45142722.000	T 15966480.000	1671321.800	86.567%	31299.365	T 3219892.600	91901
3	11:36:43	80.083%	105694.950	41168.307	T 16181666.000	T 4899328.700	T 45628881.000	T 16136384.000	T 1804588.800	85.061%	32316.315	T 3312105.100	94309
x		82.057%	102.483%	103.753%	T 97.804%	T 97.913%	T 98.304%	T 96.577%	T 93.231%	87.016%	31715.202	T 94.692%	90.
σ		1.767%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.214%	533.191	T n/a	
%RSD		2.154	1.320	3.180	T 1.718	T 2.278	T 1.734	T 1.581	T 3.898	2.544	1.681	T 2.420	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:35:59	11305.162	T 4795662.600	T 98883709.000	1385637.600	735725.230	859787.010	670823.920	89291.225	-427.162	8995.157	417.725	98
2	11:36:21	13592.283	T 4903448.400	T 100555850.000	1424460.200	748110.570	871750.620	680897.200	89934.779	-449.982	9117.870	414.513	105
3	11:36:43	12191.857	T 4965775.300	T 103151110.000	1465258.700	767695.500	885818.450	681004.350	91204.179	-596.035	9231.033	425.416	73
x		12363.101	T 96.403%	T 98.952%	96.068%	97.640%	92.085%	92.922%	95.613%	-491.060	97.650%	419.218	92
σ		1153.137	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	91.624	n/a	5.603	16

%RSD		9.327	T 1.761	T 2.132	2.794	2.148	1.493	0.863	1.080	18.659	1.294	1.337	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	11:35:59	970460.390	93.041%	2093065.700	330187.970	790.962	161798.860	93.364%	1089473.300	691751.280	544654.830	718431.460	95.
2	11:36:21	987115.980	90.780%	2151727.800	338968.720	541.345	162521.030	91.675%	1092288.100	696029.080	553884.430	735833.640	96.
3	11:36:43	995665.810	90.038%	T 2359793.700	333799.490	693.775	161507.930	91.323%	1105556.600	710439.480	557594.940	738182.510	94.
x		984414.060	91.286%	T 96.015%	97.638%	675.360	96.481%	92.121%	1095772.700	699406.610	90.286%	87.983%	95.
σ		12818.093	1.564%	T n/a	n/a	125.823	n/a	1.091%	8589.186	9791.220	n/a	n/a	0.
%RSD		1.302	1.714	T 6.367	1.320	18.631	0.322	1.184	0.784	1.400	1.207	1.476	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:35:59	50303.949	2218537.700	T 20802061.000	92.990%	0.000	336813.290	174683.620
2	11:36:21	51814.271	2216409.600	T 20816203.000	93.018%	0.000	345686.360	175006.130
3	11:36:43	51978.373	2245256.000	T 21027565.000	92.042%	0.000	360209.580	177888.500
x		110.438%	87.325%	T 96.624%	92.683%	0.000	94.565%	93.277%
σ		n/a	n/a	T n/a	0.556%	0.000	n/a	n/a
%RSD		1.797	0.722	T 0.605	0.600	0.000	3.398	1.003

CCB 10/14/2016 11:41:21 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:41:43	84.958%	6.813	25.137	23868.056	1727.119	16384.142	18557.502	392.145	89.473%	94.858	1569.052	-458.149
2	11:42:05	84.637%	24.670	-52.571	30544.350	3789.010	36060.258	24426.182	950.566	90.400%	55.219	3038.750	-401.665
3	11:42:26	84.690%	36.445	-212.763	40865.840	4771.137	45441.055	32652.948	888.136	87.896%	96.375	1313.316	-263.896
x		84.762%	22.643	-80.066	31759.416	3429.089	32628.485	25212.211	743.616	89.256%	82.151	1973.706	-374.570
σ		0.172%	14.919	121.310	8563.788	1553.599	14829.324	7080.521	305.979	1.266%	23.336	931.176	99.921
%RSD		0.203	65.890	151.512	26.965	45.306	45.449	28.084	41.147	1.419	28.406	47.179	26.676

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:41:43	8062.011	394.709	70656.715	-211.259	1.077	-127.895	-273.336	306.096	524.360	-5.479	412.917	2115.542
2	11:42:05	7588.031	1222.695	105062.450	21.877	47.932	32.865	-22.083	-168.916	683.291	-45.207	394.457	2162.716
3	11:42:26	8269.486	1718.268	132322.550	303.264	188.228	70.166	-37.972	-71.606	613.766	8.641	414.180	2109.735
x		7973.176	1111.891	102680.570	37.960	79.079	-8.288	-111.130	21.858	607.139	-14.015	407.184	2129.331
σ		349.305	668.701	30901.841	257.639	97.386	105.248	140.699	250.919	79.673	27.920	11.040	29.058
%RSD		4.381	60.141	30.095	678.703	123.150	1269.885	126.607	1147.952	13.123	199.213	2.711	1.365

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:41:43	-73.311	92.536%	2328.647	-7.913	-65.695	2.573	94.451%	2541.179	1225.716	627.552	-97.825	94.679%
2	11:42:05	129.313	93.764%	2937.710	72.117	-42.631	11.959	94.181%	3143.159	1226.986	853.353	114.991	95.621%
3	11:42:26	171.891	95.044%	3128.502	45.608	-33.453	-39.515	94.163%	2952.568	1658.164	829.652	173.472	94.823%
x		75.964	93.781%	2798.286	36.604	-47.260	-8.327	94.265%	2878.968	1370.288	770.186	63.546	95.041%
σ		131.017	1.254%	417.757	40.767	16.612	27.414	0.161%	307.665	249.308	124.092	142.777	0.507%
%RSD		172.473	1.337	14.929	111.374	35.151	329.202	0.171	10.687	18.194	16.112	224.683	0.534

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:41:43	34.366	445.547	6022.646	94.631%	0.000	9221.955	-1.110
2	11:42:05	37.359	612.763	9077.836	94.361%	0.000	8672.036	67.987
3	11:42:26	39.294	543.192	10500.923	94.887%	0.000	8019.878	72.463
x		37.006	533.834	8533.802	94.626%	0.000	8637.956	46.446
σ		2.482	84.000	2288.170	0.263%	0.000	601.762	41.246
%RSD		6.708	15.735	26.813	0.278	0.000	6.966	88.803

MB 200-110153/1-A 10/14/2016 11:47:04 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:47:26	93.671%	16.874	-273.645	148226.550	5081.360	61279.317	58590.874	2480.002	94.626%	158.268	2011.949	759.476
2	11:47:48	94.405%	43.002	-276.280	161364.790	6505.824	68518.612	64974.094	2768.939	94.791%	189.587	2788.942	900.567
3	11:48:09	91.413%	15.260	-210.171	146846.350	5323.213	60613.226	58757.464	2371.643	96.352%	139.982	1820.540	914.600
x		93.163%	25.045	-253.365	152145.900	5636.799	63470.385	60774.144	2540.195	95.256%	162.612	2207.144	858.214
σ		1.559%	15.572	37.431	8013.562	762.251	4384.560	3638.218	205.374	0.952%	25.086	512.861	85.797
%RSD		1.674	62.177	14.773	5.267	13.523	6.908	5.986	8.085	1.000	15.427	23.236	9.997

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:47:26	7034.691	2955.624	166786.840	271.069	207.489	104.467	152.324	92.260	480.481	-23.529	384.261	2254.764
2	11:47:48	6699.505	2911.098	183844.010	411.853	291.030	272.666	50.483	171.506	452.426	-37.172	383.231	2148.490
3	11:48:09	6950.716	2706.421	163242.140	363.201	167.549	149.867	173.961	-106.686	522.193	-23.172	401.357	2262.317
x		6894.971	2857.714	171291.000	348.708	222.023	175.667	125.589	52.360	485.033	-27.957	389.616	2221.857
σ		174.408	132.901	11014.754	71.502	63.010	87.017	65.937	143.324	35.105	7.982	10.181	63.650
%RSD		2.529	4.651	6.430	20.505	28.380	49.535	52.503	273.726	7.238	28.550	2.613	2.865

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:47:26	197.066	98.053%	1800.339	23.074	-63.413	33.893	97.851%	47592.603	741.436	349.989	55.063	99.297%
2	11:47:48	409.879	98.266%	2205.946	14.559	-41.473	-38.255	96.810%	47721.480	810.797	434.599	110.066	97.516%
3	11:48:09	226.057	98.369%	1785.407	29.175	-75.029	45.854	97.296%	48364.069	887.655	435.691	190.457	99.684%
x		277.667	98.229%	1930.564	22.269	-59.972	13.831	97.319%	47892.717	813.296	406.760	118.529	98.832%
σ		115.413	0.161%	238.604	7.341	17.040	45.502	0.521%	413.257	73.142	49.168	68.093	1.156%
%RSD		41.565	0.164	12.359	32.966	28.414	328.993	0.536	0.863	8.993	12.088	57.448	1.170

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:47:26	79.196	-408.504	7632.418	96.763%	0.000	18475.653	100.605
2	11:47:48	89.288	-266.175	8869.302	94.326%	0.000	15428.090	121.047
3	11:48:09	22.964	-496.634	7285.049	96.777%	0.000	12908.531	110.913
x		63.816	-390.438	7928.923	95.956%	0.000	15604.091	110.855
σ		35.737	116.287	832.707	1.411%	0.000	2787.731	10.221
%RSD		55.999	29.784	10.502	1.471	0.000	17.865	9.220

LCS 200-110153/2-A 10/14/2016 11:52:47 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:53:09	87.837%	1571.121	59638.663	T 8201644.800	297964.130	670903.100	T 7978675.400	275091.700	89.656%	66.838	118081.090	94598.874
2	11:53:31	85.301%	1568.859	62097.381	T 8465707.300	308976.850	691463.210	T 8095546.600	278858.270	87.878%	73.850	121151.240	95058.768
3	11:53:53	84.781%	1552.104	60302.606	T 8360142.100	299054.160	691880.100	T 8130580.600	283618.130	87.087%	80.206	118130.200	94911.520
x		85.973%	1564.028	60679.550	T 8342498.100	301998.380	684748.800	T 8068267.600	279189.370	88.207%	73.632	119120.850	94856.387
σ		1.635%	10.388	1271.962	T 132912.510	6068.056	11992.539	T 79541.901	4272.846	1.316%	6.687	1758.547	234.852
%RSD		1.902	0.664	2.096	T 1.593	2.009	1.751	T 0.986	1.530	1.492	9.081	1.476	0.248

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:53:09	6338.529	72999.756	T 6833790.300	29307.997	12519.388	36950.917	98108.057	8673.490	178.849	1538.711	393.995	1826.764
2	11:53:31	5250.018	75196.186	T 6853440.300	29076.816	12436.824	35802.177	97523.351	8810.849	212.283	1481.748	421.426	1867.050
3	11:53:53	5398.912	75552.130	T 6950681.500	30169.481	12563.922	36534.862	97475.497	8163.845	276.761	1425.659	400.086	2082.696
x		5662.486	74582.691	T 6879304.000	29518.098	12506.712	36429.319	97702.302	8549.395	222.631	1482.039	405.169	1925.503

σ		590.184	1382.366	T 62590.653	575.835	64.490	581.597	352.208	340.886	49.769	56.527	14.405	137.615
%RSD		10.423	1.853	T 0.910	1.951	0.516	1.597	0.360	3.987	22.355	3.814	3.555	7.147
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:53:09	241481.540	92.215%	170386.590	33358.730	-20.726	7792.579	92.896%	45366.165	53949.122	41802.688	58728.794	96.204%
2	11:53:31	240696.290	91.020%	172949.710	33765.504	-130.371	7522.696	93.968%	44933.976	53562.224	41766.018	56886.794	93.650%
3	11:53:53	244100.930	91.431%	172398.990	33659.144	19.186	7478.417	91.981%	46176.863	55247.184	42581.208	57886.378	96.435%
x		242092.920	91.555%	171911.760	33594.459	-43.970	7597.897	92.948%	45492.334	54252.843	42049.971	57833.988	95.430%
σ		1782.761	0.607%	1349.234	210.961	77.441	170.047	0.994%	630.976	882.586	460.430	922.117	1.546%
%RSD		0.736	0.663	0.785	0.628	176.120	2.238	1.070	1.387	1.627	1.095	1.594	1.620

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:53:09	82369.922	211390.030	150970.380	93.115%	0.000	305453.760	183078.560
2	11:53:31	86091.480	218131.300	156494.420	92.132%	0.000	323899.750	187713.820
3	11:53:53	81645.854	225146.020	156987.720	90.907%	0.000	337591.620	191583.900
x		83369.085	218222.450	154817.510	92.051%	0.000	322315.040	187458.760
σ		2385.297	6878.448	3340.825	1.106%	0.000	16127.426	4258.403
%RSD		2.861	3.152	2.158	1.202	0.000	5.004	2.272

200-35680-A-1-O 10/14/2016 11:58:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:58:52	83.724%	983.782	5247.213	T 1070534.600	T 3844909.000	T 102360330.000	T 8304040.100	TM 9663032.400	126.299%	16755.705	292747.040	21127
2	11:59:14	83.122%	994.116	5053.860	T 1065043.500	T 3877445.900	T 103053430.000	T 8500561.900	TM 9902381.000	124.834%	16251.255	295193.740	21130
3	11:59:35	85.548%	962.203	5306.573	T 1086398.700	T 3883556.900	T 104643720.000	T 8652868.700	TM 9952479.600	124.739%	15644.037	300008.910	21730
x		84.131%	980.034	5202.549	T 1073992.300	T 3868637.300	T 103352490.000	T 8485823.600	TM 9839297.700	125.291%	16216.999	295983.230	21329
σ		1.263%	16.283	132.144	T 11089.505	T 20775.232	T 1170705.300	T 174880.720	TM 154691.750	0.874%	556.625	3694.748	347
%RSD		1.501	1.662	2.540	T 1.033	T 0.537	T 1.133	T 2.061	TM 1.572	0.698	3.432	1.248	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:58:52	2615.223	T 19704894.000	T 508203430.000	173065.420	73883.493	1790250.700	720432.930	6162.028	-32.278	1467.019	478.389	-133
2	11:59:14	2868.283	T 20213267.000	TM 513849770.000	169747.880	73895.711	1770816.100	714030.500	5810.799	73.810	1082.836	496.762	47
3	11:59:35	3072.557	T 20701333.000	TM 527071120.000	174331.690	76483.617	T 1989065.500	721982.070	6149.944	-34.016	1516.920	505.160	-144
x		2852.021	T 20206498.000	TM 516374770.000	172381.660	74754.274	T 1850044.100	718815.170	6040.924	2.505	1355.592	493.437	-76
σ		229.100	T 498253.760	TM 9683962.100	2367.167	1497.668	T 120787.550	4215.418	199.385	61.758	237.528	13.692	107
%RSD		8.033	T 2.466	TM 1.875	1.373	2.003	T 6.529	0.586	3.301	2464.944	17.522	2.775	14

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	11:58:52	T 2187487.700	369.506%	3094.345	6908.503	-269.867	4046.225	93.440%	63893.165	5003.613	3800.127	688885.220	135.
2	11:59:14	2016958.400	371.815%	3196.534	6835.698	-228.636	4176.821	94.916%	63602.739	4790.966	3811.114	693533.410	134.
3	11:59:35	T 2230719.000	378.618%	3082.102	6978.754	-332.169	4359.743	94.625%	65622.776	5013.753	3894.709	714057.310	138.
x		T 2145055.000	373.313%	3124.327	6907.651	-276.891	4194.263	94.327%	64372.893	4936.111	3835.317	698825.310	136.
σ		T 113021.210	4.737%	62.832	71.532	52.123	157.485	0.782%	1092.127	125.801	51.728	13394.463	1.
%RSD		T 5.269	1.269	2.011	1.036	18.824	3.755	0.829	1.697	2.549	1.349	1.917	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:58:52	1537.345	8353.689	3344456.900	102.374%	0.000	412717.420	191158.660
2	11:59:14	1576.552	8432.539	3314523.100	104.348%	0.000	413287.410	191535.180
3	11:59:35	1514.172	8636.685	3307171.500	105.679%	0.000	409766.810	194524.910
x		1542.689	8474.305	3322050.500	104.134%	0.000	411923.880	192406.250
σ		31.531	146.048	19749.571	1.663%	0.000	1889.693	1844.444
%RSD		2.044	1.723	0.594	1.597	0.000	0.459	0.959

200-35680-A-2-A 10/14/2016 12:04:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:04:34	89.567%	610.702	3921.525	T 686962.250	T 2185609.800	T 69022719.000	T 6223987.500	T 4564496.400	118.072%	19633.138	203562.110	142388.520
2	12:04:56	87.689%	627.239	3873.481	T 695620.680	T 2227649.600	T 69747487.000	T 6195449.600	T 4669429.500	117.402%	20852.916	206296.620	142847.770
3	12:05:18	82.521%	586.509	4633.458	T 697124.390	T 2211339.500	T 69442493.000	T 6174491.100	T 4615231.200	118.836%	20118.733	206539.900	143123.870
x		86.592%	608.150	4142.821	T 693235.770	T 2208199.700	T 69404233.000	T 6197976.000	T 4616385.700	118.103%	20201.596	205466.210	142786.720
σ		3.649%	20.485	425.582	T 5484.808	T 21195.073	T 363895.230	T 24844.738	T 52476.081	0.717%	614.096	1653.478	371.458
%RSD		4.214	3.368	10.273	T 0.791	T 0.960	T 0.524	T 0.401	T 1.137	0.607	3.040	0.805	0.260

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:04:34	2413.904	T 11791630.000	T 309708200.000	126882.170	56001.581	1605270.600	579685.560	5188.714	134.734	702.691	473.717	1772.390
2	12:04:56	2469.854	T 11941716.000	T 314559400.000	127673.980	56151.512	1634343.500	579452.450	5327.571	103.667	837.136	441.375	1243.184
3	12:05:18	1769.757	T 11756107.000	T 310965310.000	128813.190	56078.895	1650680.500	584559.800	5455.806	107.008	804.366	443.948	1484.301
x		2217.838	T 11829818.000	T 311744300.000	127789.780	56077.329	1630098.200	581232.600	5324.030	115.136	781.397	453.013	1499.959
σ		389.057	T 98521.085	T 2517669.300	970.705	74.978	23000.695	2883.793	133.581	17.054	70.104	17.976	264.950

%RSD		17.542	T 0.833	T 0.808	0.760	0.134	1.411	0.496	2.509	14.812	8.972	3.968	17.664

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:04:34	886265.880	271.632%	3045.622	6944.148	-457.357	4217.627	100.167%	89787.378	4321.292	3197.557	390285.230	126.007%
2	12:04:56	895821.880	271.202%	3032.152	7408.920	-190.152	4030.559	100.030%	90865.197	4289.315	3283.659	396832.980	126.848%
3	12:05:18	906590.150	270.555%	2883.377	7283.405	-228.466	3955.145	100.238%	91518.636	4454.144	3282.957	406480.360	128.651%
x		896225.970	271.129%	2987.050	7212.158	-291.991	4067.777	100.145%	90723.737	4354.917	3254.724	397866.190	127.168%
σ		10168.160	0.542%	90.036	240.438	144.486	135.141	0.106%	874.255	87.407	49.510	8146.852	1.351%
%RSD		1.135	0.200	3.014	3.334	49.483	3.322	0.106	0.964	2.007	1.521	2.048	1.062

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:04:34	1366.810	4961.287	2603326.900	105.298%	4.748	239321.540	125547.660
2	12:04:56	1368.302	4904.535	2637273.400	105.499%	0.000	242497.700	127357.870
3	12:05:18	1198.719	4674.569	2714077.200	104.196%	0.000	246262.530	131694.190
x		1311.277	4846.797	2651559.200	104.997%	1.583	242693.920	128199.910
σ		97.481	151.829	56740.365	0.701%	2.742	3474.652	3158.596
%RSD		7.434	3.133	2.140	0.668	173.205	1.432	2.464

200-35680-A-3-A 10/14/2016 12:09:56 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	12:10:17	107.761%	1419.213	3611.930	T 757770.110	T 4132199.500	T 145272900.000	T 8548108.600	T 1206529.000	204.323%	32893.157	309993.160	304063
2	12:10:39	105.539%	1494.708	3189.183	T 716455.770	T 4030412.300	T 142769330.000	T 8361269.300	T 1188404.600	211.163%	30916.063	308222.460	294932
3	12:11:01	105.143%	1324.485	3077.655	T 738885.000	T 4084481.000	T 143214720.000	T 8481623.300	T 1208192.400	209.686%	30702.234	305558.810	296875
x		106.148%	1412.802	3292.923	T 737703.630	T 4082364.300	T 143752320.000	T 8463667.000	T 1201042.000	208.390%	31503.818	307924.810	298623
σ		1.411%	85.292	281.840	T 20682.491	T 50926.612	T 1335560.200	T 94705.082	T 10975.850	3.599%	1207.944	2232.112	4810
%RSD		1.330	6.037	8.559	T 2.804	T 1.247	T 0.929	T 1.119	T 0.914	1.727	3.834	0.725	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	12:10:17	5261.014	TM 26185060.000	T 444606210.000	208230.970	103723.640	120578.640	444235.870	1705.789	169.631	359.514	601.603	1326
2	12:10:39	4659.682	TM 25900537.000	T 437825660.000	206255.390	101162.820	119736.620	448310.720	1696.837	159.827	351.365	606.675	1493
3	12:11:01	5541.814	TM 26128725.000	T 445748890.000	208782.770	101952.380	121561.850	452416.180	1824.899	146.426	486.146	555.616	814
x		5154.170	TM 26071440.000	T 442726920.000	207756.380	102279.610	120625.710	448320.920	1742.508	158.628	399.008	587.965	1211
σ		450.667	TM 150663.390	T 4282893.800	1328.849	1311.397	913.524	4090.166	71.493	11.649	75.573	28.130	353
%RSD		8.744	TM 0.578	T 0.967	0.640	1.282	0.757	0.912	4.103	7.344	18.940	4.784	29

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	12:10:17	886285.370	644.238%	-205.337	3180.513	-740.616	2322.524	121.179%	47892.712	1653.671	1099.670	1046265.300	186.0
2	12:10:39	906222.630	661.473%	-161.720	3256.601	-730.019	2278.054	122.144%	49042.558	1673.978	1190.766	1051700.600	190.9
3	12:11:01	T 1017498.200	660.317%	-124.193	3413.738	-610.156	2084.727	121.669%	49493.648	1746.714	1221.140	1074795.300	189.9
x		T 936668.720	655.343%	-163.750	3283.617	-693.597	2228.435	121.664%	48809.639	1691.454	1170.525	1057587.100	188.9
σ		T 70706.596	9.634%	40.610	118.937	72.456	126.426	0.482%	825.492	48.922	63.214	15148.571	2.5
%RSD		T 7.549	1.470	24.800	3.622	10.446	5.673	0.397	1.691	2.892	5.400	1.432	1

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:10:17	242.675	8754.104	2169222.400	128.508%	0.000	913413.620	140196.080
2	12:10:39	242.067	9234.501	2207004.400	127.591%	0.000	950158.630	145018.940
3	12:11:01	302.248	9126.502	2205560.900	129.563%	0.000	939050.420	143645.610
x		262.330	9038.369	2193929.200	128.554%	0.000	934207.560	142953.550
σ		34.571	252.033	21408.887	0.987%	0.000	18845.130	2484.797
%RSD		13.179	2.788	0.976	0.768	0.000	2.017	1.738

200-35680-A-4-A 10/14/2016 12:15:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:16:00	103.321%	762.747	5744.671	T 715807.830	T 3072530.100	T 95428649.000	T 9069440.900	T 2307473.400	159.794%	27161.383	265612.240	212505.070
2	12:16:22	103.290%	799.294	5863.029	T 709632.240	T 3037497.200	T 95356141.000	T 9052323.300	T 2297964.800	160.674%	27597.215	265602.160	207699.900
3	12:16:44	101.212%	828.634	5446.490	T 687860.760	T 3003358.100	T 95043721.000	T 9065384.500	T 2306415.400	162.186%	27992.322	269353.810	211019.030
x		102.608%	796.891	5684.730	T 704433.610	T 3037795.100	T 95276170.000	T 9062382.900	T 2303951.200	160.885%	27583.640	266856.070	210408.000
σ		1.208%	33.009	214.641	T 14680.907	T 34586.958	T 204545.370	T 8944.814	T 5211.311	1.210%	415.636	2163.112	2460.170
%RSD		1.178	4.142	3.776	T 2.084	T 1.139	T 0.215	T 0.099	T 0.226	0.752	1.507	0.811	1.169

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:16:00	5017.243	TM 35244051.000	T 424323290.000	154858.720	72358.396	T 2048180.500	690618.820	5409.458	208.065	745.620	516.163	1777.432
2	12:16:22	4463.562	TM 35362680.000	T 424260970.000	152982.990	71552.892	T 2036128.900	688309.600	5346.000	198.086	745.490	529.888	1796.743
3	12:16:44	4527.623	TM 35209504.000	T 423766070.000	153847.700	71408.016	T 2043459.700	693274.050	5383.432	195.237	806.600	511.066	1711.295
x		4669.476	TM 35272079.000	T 424116770.000	153896.470	71773.101	T 2042589.700	690734.160	5379.630	200.462	765.903	519.039	1761.823
σ		302.874	TM 80342.114	T 305317.320	938.813	512.030	T 6072.760	2484.232	31.899	6.736	35.245	9.735	44.811
%RSD		6.486	TM 0.228	T 0.072	0.610	0.713	T 0.297	0.360	0.593	3.360	4.602	1.876	2.543

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:16:00	784191.930	393.221%	2497.038	7561.302	-619.852	3841.138	119.732%	68957.447	4260.707	3300.679	716626.750	152.495%
2	12:16:22	790994.020	396.361%	2573.339	7526.961	-496.327	3646.072	120.594%	69918.846	4644.109	3339.746	719619.390	154.088%
3	12:16:44	781992.500	393.687%	2731.578	7478.657	-431.032	3442.808	120.045%	70614.959	4608.936	3391.185	735554.560	154.426%
x		785726.150	394.423%	2600.652	7522.307	-515.737	3643.339	120.124%	69830.418	4504.584	3343.870	723933.560	153.670%
σ		4692.781	1.694%	119.632	41.519	95.894	199.179	0.436%	832.286	211.935	45.394	10174.703	1.031%
%RSD		0.597	0.430	4.600	0.552	18.594	5.467	0.363	1.192	4.705	1.358	1.405	0.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:16:00	1240.205	7854.045	3200962.500	119.512%	0.000	348215.000	140337.620
2	12:16:22	1257.845	8280.363	3182629.300	120.782%	0.000	344573.920	140881.270
3	12:16:44	1316.204	8262.395	3264346.900	118.458%	0.000	355816.490	146346.540
x		1271.418	8132.268	3215979.600	119.584%	0.000	349535.140	142521.810
σ		39.776	241.115	42878.626	1.164%	0.000	5736.369	3323.444
%RSD		3.128	2.965	1.333	0.973	0.000	1.641	2.332

200-35680-A-5-A 10/14/2016 12:21:22 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	12:21:44	103.717%	1186.398	4811.129	T 759931.670	T 2749939.100	T 128688820.000	T 10365986.000	T 1024404.400	178.190%	29246.754	363808.140	249423.29
2	12:22:05	102.782%	1141.499	4759.583	T 744925.440	T 2745872.700	T 129570720.000	T 10304013.000	T 1026344.500	180.623%	27396.090	356847.550	246003.46
3	12:22:27	100.212%	1271.292	5089.464	T 707723.990	T 2667221.400	T 126984010.000	T 10215175.000	T 1027535.200	181.857%	29284.202	363491.580	250906.94
x		102.237%	1199.729	4886.725	T 737527.030	T 2721011.100	T 128414520.000	T 10295058.000	T 1026094.700	180.223%	28642.349	361382.420	248777.90
σ		1.814%	65.915	177.458	T 26878.664	T 46627.575	T 1314992.800	T 75803.476	T 1580.275	1.866%	1079.454	3930.502	2514.63
%RSD		1.775	5.494	3.631	T 3.644	T 1.714	T 1.024	T 0.736	T 0.154	1.035	3.769	1.088	1.01

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	12:21:44	5407.962	T 17393718.000	T 435770230.000	174383.080	85425.841	1556857.800	598647.170	4065.370	186.095	863.328	546.669	1934.14
2	12:22:05	5879.192	T 17304997.000	T 437260850.000	172617.930	83947.534	1537601.200	595032.980	4067.586	198.291	882.512	547.490	1629.12
3	12:22:27	5943.117	T 17401301.000	T 434294840.000	174282.700	82798.730	1517826.600	596886.300	4071.373	210.057	855.021	522.814	1858.77
x		5743.424	T 17366672.000	T 435775310.000	173761.230	84057.368	1537428.500	596855.480	4068.110	198.147	866.954	538.991	1807.34

σ		292.271	T 53546.110	T 1483008.500	991.406	1316.995	19516.163	1807.293	3.036	11.982	14.100	14.016	158.87
%RSD		5.089	T 0.308	T 0.340	0.571	1.567	1.269	0.303	0.075	6.047	1.626	2.600	8.79
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	12:21:44	603814.910	531.133%	2483.785	8506.787	-580.703	4240.295	121.740%	58557.020	3593.083	2690.094	840834.160	169.409%
2	12:22:05	613443.120	534.821%	2806.182	8488.462	-371.730	4095.779	122.288%	59592.189	3869.664	2786.061	860705.600	173.201%
3	12:22:27	606065.930	537.573%	2761.159	8549.182	-455.814	4237.703	124.138%	59423.953	3786.860	2745.231	858925.590	173.841%
x		607774.650	534.509%	2683.708	8514.810	-469.416	4191.259	122.722%	59191.054	3749.869	2740.462	853488.450	172.150%
σ		5036.409	3.231%	174.596	31.145	105.148	82.698	1.257%	555.496	141.953	48.161	10995.018	2.396%
%RSD		0.829	0.605	6.506	0.366	22.400	1.973	1.024	0.938	3.786	1.757	1.288	1.39

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:21:44	742.932	10940.376	3276974.800	122.017%	0.000	496240.750	332627.090
2	12:22:05	739.771	10944.744	3291603.400	124.148%	0.000	502854.000	335403.020
3	12:22:27	811.122	11094.957	3333453.600	122.399%	0.000	515610.880	340188.460
x		764.608	10993.359	3300677.300	122.855%	0.000	504901.870	336072.860
σ		40.313	88.014	29312.374	1.136%	0.000	9846.105	3824.929
%RSD		5.272	0.801	0.888	0.925	0.000	1.950	1.138

200-35680-A-6-A 10/14/2016 12:27:05 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:27:27	101.372%	706.433	4636.507	┬754391.280	┬2068339.100	┬88357131.000	┬8122891.900	┬1169632.000	156.337%	24700.758	252513.290	178754.510
2	12:27:48	101.170%	843.818	4678.020	┬745265.820	┬2064249.300	┬88368622.000	┬8116713.400	┬1165689.700	156.403%	25839.733	257249.910	180372.690
3	12:28:10	102.131%	779.311	5008.767	┬744531.620	┬2049676.800	┬87985229.000	┬8102908.000	┬1162503.300	157.979%	25834.089	254375.290	181047.790
x		101.558%	776.521	4774.431	┬748062.910	┬2060755.100	┬88236994.000	┬8114171.100	┬1165941.700	156.906%	25458.193	254712.830	180058.330
σ		0.506%	68.735	204.000	┬5492.813	┬9809.588	┬218110.580	┬10231.651	┬3571.029	0.930%	655.964	2386.285	1178.514
%RSD		0.499	8.852	4.273	┬0.734	┬0.476	┬0.247	┬0.126	┬0.306	0.592	2.577	0.937	0.655

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:27:27	6142.231	┬13402246.000	┬323409220.000	133370.260	61019.271	┬2615883.100	760559.120	4564.353	267.875	1072.097	512.410	1857.610
2	12:27:48	5135.702	┬13606748.000	┬329525110.000	133058.460	61916.453	┬2670370.000	770604.250	4548.803	254.794	1141.174	498.043	1867.784
3	12:28:10	5782.451	┬13389506.000	┬326303160.000	131916.390	62515.152	┬2712023.000	782370.890	4663.208	265.599	1086.975	476.273	1988.710
x		5686.795	┬13466166.000	┬326412500.000	132781.700	61816.959	┬2666092.000	771178.090	4592.121	262.756	1100.082	495.575	1904.701
σ		510.037	┬121913.630	┬3059411.300	765.427	752.888	┬48212.499	10917.200	62.052	6.989	36.356	18.194	72.931
%RSD		8.969	┬0.905	┬0.937	0.576	1.218	┬1.808	1.416	1.351	2.660	3.305	3.671	3.829

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:27:27	501316.610	370.323%	3072.579	8683.123	-243.137	6368.377	123.048%	65057.163	4699.194	3789.603	649169.800	150.258%
2	12:27:48	509388.010	372.074%	2894.814	8663.658	-186.629	6226.508	122.582%	66444.164	4898.659	3794.468	658049.240	151.077%
3	12:28:10	504949.750	369.888%	2880.134	8780.676	-303.800	6341.541	122.096%	67218.909	5242.266	3871.279	660067.950	154.367%
x		505218.120	370.762%	2949.176	8709.152	-244.522	6312.142	122.575%	66240.079	4946.707	3818.450	655762.330	151.901%
σ		4042.386	1.157%	107.122	62.701	58.598	75.365	0.476%	1095.228	274.706	45.816	5797.834	2.175%
%RSD		0.800	0.312	3.632	0.720	23.964	1.194	0.389	1.653	5.553	1.200	0.884	1.432

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:27:27	1334.762	6543.572	3396990.000	117.785%	0.000	294449.000	134595.210
2	12:27:48	1290.067	7232.632	3464530.300	117.618%	0.000	296949.990	132618.750
3	12:28:10	1332.970	6730.413	3433401.400	120.845%	0.000	297700.800	132622.380
x		1319.266	6835.539	3431640.600	118.749%	0.000	296366.600	133278.780
σ		25.303	356.356	33804.591	1.817%	0.000	1702.591	1140.061
%RSD		1.918	5.213	0.985	1.530	0.000	0.574	0.855

200-35680-A-6-A SD@5 10/14/2016 12:32:49 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:33:11	104.576%	112.548	581.140	141721.820	459864.210	┬21669485.000	┬2005880.600	264561.710	142.667%	6210.677	62402.369	45329.692
2	12:33:32	100.225%	143.616	767.297	149460.910	481510.350	┬22233304.000	┬1999763.500	271475.690	138.296%	6417.869	63060.583	46056.041
3	12:33:54	100.633%	152.855	644.644	144081.050	482636.130	┬22220062.000	┬2049809.500	276145.410	136.278%	6702.702	66226.232	48584.772
x		101.811%	136.340	664.361	145087.930	474670.230	┬22040950.000	┬2018484.500	270727.610	139.080%	6443.749	63896.394	46656.835
σ		2.403%	21.116	94.631	3966.577	12834.741	┬321766.640	┬27300.095	5827.970	3.266%	247.031	2044.362	1708.684
%RSD		2.360	15.487	14.244	2.734	2.704	┬1.460	┬1.353	2.153	2.348	3.834	3.199	3.662

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:33:11	17063.722	┬3225335.900	┬79687177.000	32791.912	15343.346	521502.750	182403.200	2160.600	1731.912	312.208	454.116	2171.198
2	12:33:32	17567.669	┬3312811.500	┬82019574.000	33175.023	15855.320	519969.980	181264.790	2171.136	1784.901	249.954	455.887	2189.014
3	12:33:54	18074.640	┬3355724.100	┬82657180.000	33731.476	15657.169	526602.020	183796.830	2326.966	1684.006	253.179	464.701	2308.886
x		17568.677	┬3297957.200	┬81454644.000	33232.804	15618.611	522691.580	182488.270	2219.567	1733.607	271.780	458.235	2223.033
σ		505.460	┬66451.181	┬1563518.200	472.439	258.156	3472.170	1268.160	93.159	50.469	35.048	5.669	74.883

%RSD		2.877	┬2.015	┬1.919	1.422	1.653	0.664	0.695	4.197	2.911	12.896	1.237	3.369
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:33:11	104976.960	184.302%	528.498	1875.022	-176.916	1421.135	128.934%	15994.819	1318.313	825.172	134816.530	129.509%
2	12:33:32	106049.690	181.364%	510.582	1842.970	-90.865	1292.016	127.994%	16722.404	1318.410	862.553	137454.230	129.329%
3	12:33:54	108115.170	183.657%	518.438	1977.244	-161.661	1510.148	126.966%	16932.828	1391.438	821.289	138713.390	131.029%
x		106380.600	183.107%	519.173	1898.412	-143.147	1407.766	127.965%	16550.017	1342.720	836.338	136994.720	129.956%
σ		1595.061	1.544%	8.981	70.126	45.916	109.679	0.985%	492.192	42.191	22.786	1988.654	0.934%
%RSD		1.499	0.843	1.730	3.694	32.076	7.791	0.769	2.974	3.142	2.724	1.452	0.718

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:33:11	123.865	-192.183	726626.720	116.245%	0.000	57004.062	27613.051
2	12:33:32	224.827	-206.769	728199.860	117.008%	0.000	58078.968	27304.051
3	12:33:54	230.860	-232.342	738302.040	116.321%	0.000	58921.461	28714.687
x		193.184	-210.431	731042.870	116.525%	0.000	58001.497	27877.263
σ		60.108	20.328	6335.636	0.420%	0.000	961.044	741.505
%RSD		31.114	9.660	0.867	0.361	0.000	1.657	2.660

200-35680-A-6-A PDS 10/14/2016 12:38:32 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52C**
1	12:38:54	97.007%	2373.546	66934.687	┬6568542.400	┬2212161.000	┬87553624.000	┬14164167.000	┬1359758.200	148.977%	25173.933	338912.510	245919.48
2	12:39:16	96.353%	2369.101	67976.398	┬6670379.300	┬2265403.700	┬86951803.000	┬14429672.000	┬1384738.300	149.725%	25231.421	343564.410	248365.55
3	12:39:37	93.400%	2463.639	72999.038	┬6884085.200	┬2317950.900	┬88333549.000	┬14431247.000	┬1400168.600	146.368%	25208.994	349678.050	253256.03
x		95.587%	2402.095	69303.374	┬6707669.000	┬2265171.900	┬87612992.000	┬14341695.000	┬1381555.000	148.357%	25204.783	344051.660	249180.35
σ		1.922%	53.345	3242.644	┬161042.560	┬52895.305	┬692783.760	┬153746.160	┬20392.413	1.763%	28.975	5399.280	3735.52
%RSD		2.010	2.221	4.679	┬2.401	┬2.335	┬0.791	┬1.072	┬1.476	1.188	0.115	1.569	1.49

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84K**
1	12:38:54	6342.298	┬13139374.000	┬320816790.000	150992.740	68062.450	┬2636283.800	856762.980	7471.563	189.234	2690.006	477.770	1757.34
2	12:39:16	6609.998	┬13385235.000	┬328387920.000	153138.740	69252.801	┬2648886.600	850536.700	7248.219	252.142	2575.432	469.487	1570.62
3	12:39:37	6107.707	┬13644549.000	┬334515290.000	156528.630	70249.907	┬2601030.900	855645.830	7336.916	213.248	2605.781	479.278	1562.10
x		6353.334	┬13389719.000	┬327906670.000	153553.370	69188.386	┬2628733.800	854315.170	7352.233	218.208	2623.740	475.512	1630.02
σ		251.327	┬252617.480	┬6861918.800	2791.141	1095.150	┬24805.113	3319.583	112.457	31.746	59.361	5.272	110.34
%RSD		3.956	┬1.887	┬2.093	1.818	1.583	┬0.944	0.389	1.530	14.548	2.262	1.109	6.76

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	12:38:54	737150.500	339.662%	58788.576	41178.455	-419.603	13875.568	113.969%	64162.389	55513.316	43883.261	707542.930	144.012%
2	12:39:16	744831.240	347.461%	59642.239	40577.612	-183.489	13471.626	116.512%	65490.385	55507.753	44146.242	709600.060	143.925%
3	12:39:37	736997.070	349.471%	59177.569	40916.743	-269.549	13834.959	116.844%	64844.251	56402.146	44245.624	711380.240	145.639%
x		739659.600	345.531%	59202.794	40890.937	-290.880	13727.384	115.775%	64832.342	55807.738	44091.709	709507.740	144.525%
σ		4479.424	5.181%	427.390	301.252	119.493	222.422	1.573%	664.078	514.779	187.235	1920.322	0.965%
%RSD		0.606	1.500	0.722	0.737	41.080	1.620	1.359	1.024	0.922	0.425	0.271	0.66

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:38:54	33133.639	207135.670	3482231.000	112.493%	0.000	601108.770	297461.210
2	12:39:16	32345.542	209336.130	3534068.500	114.220%	0.000	611402.650	306282.040
3	12:39:37	33391.576	207171.660	3498704.800	115.905%	0.000	612458.910	301673.190
x		32956.919	207881.150	3505001.400	114.206%	0.000	608323.440	301805.480
σ		544.949	1260.175	26486.191	1.706%	0.000	6270.370	4411.899
%RSD		1.654	0.606	0.756	1.494	0.000	1.031	1.462

CCV 10/14/2016 12:44:17 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:44:38	83.266%	111125.620	41452.806	┬15280889.000	┬4618524.800	┬43054527.000	┬15656556.000	┬1740051.900	101.987%	31495.210	┬3200956.200	900
2	12:45:00	81.108%	108154.850	42361.630	┬15641853.000	┬4825583.200	┬44613211.000	┬15565165.000	┬1765903.000	97.451%	32107.370	┬3287137.700	922
3	12:45:22	79.787%	110399.050	42424.805	┬15652410.000	┬4724954.600	┬44052692.000	┬15730829.000	┬1756291.800	96.127%	32741.842	┬3293051.000	931
x		81.387%	108.146%	109.811%	┬95.244%	┬96.435%	┬96.005%	┬94.976%	┬94.434%	98.522%	32114.807	┬95.596%	9(
σ		1.756%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	3.073%	623.349	┬n/a	
%RSD		2.158	1.409	1.292	┬1.362	┬2.192	┬1.798	┬0.530	┬0.745	3.119	1.941	┬1.581	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:44:38	14241.983	┬4784648.500	┬98694677.000	1414993.600	745668.510	930519.870	693320.000	91666.240	-95.464	9283.654	454.968	1(
2	12:45:00	12129.646	┬4846170.100	┬99702324.000	1425830.700	765156.370	912336.700	686045.270	90893.581	-136.043	9081.298	409.433	15
3	12:45:22	12003.203	┬4910830.600	┬100536410.000	1428207.900	764200.680	918031.380	692094.830	93583.869	-357.337	9113.022	431.989	9
x		12791.611	┬95.593%	┬97.756%	95.926%	98.659%	97.134%	94.693%	97.633%	-196.281	98.128%	432.130	12
σ		1257.649	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	140.946	n/a	22.768	3
%RSD		9.832	┬1.302	┬0.926	0.495	1.449	1.011	0.564	1.505	71.808	1.188	5.269	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	12:44:38	1003012.600	100.936%	┬2298519.800	332377.110	550.739	160352.880	100.668%	1085581.800	698489.240	543333.010	731234.520	101
2	12:45:00	976592.980	99.575%	┬2354026.400	329221.990	249.705	160464.950	100.384%	1091206.200	693577.900	539300.080	723179.600	100
3	12:45:22	973183.450	96.527%	┬2373919.000	335910.250	828.668	160263.360	98.731%	1080675.500	697113.580	543521.580	729093.580	97
x		984263.020	99.012%	┬102.149%	97.107%	543.037	95.539%	99.927%	1085821.200	696393.570	88.652%	87.624%	9(
σ		16326.890	2.258%	┬n/a	n/a	289.559	n/a	1.046%	5269.433	2533.597	n/a	n/a	2
%RSD		1.659	2.280	┬1.668	1.006	53.322	0.063	1.047	0.485	0.364	0.440	0.573	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:44:38	49650.349	2170607.200	┬20455702.000	96.535%	0.000	321185.260	167659.800
2	12:45:00	49727.248	2179917.500	┬20653112.000	95.753%	0.000	336612.490	169420.620
3	12:45:22	51336.531	2208730.500	┬20919383.000	93.835%	5.329	348284.370	173702.600
x		108.014%	85.744%	┬95.671%	95.374%	1.776	91.243%	90.308%
σ		n/a	n/a	┬n/a	1.389%	3.076	n/a	n/a
%RSD		1.895	0.909	┬1.125	1.457	173.205	4.053	1.825

CCB 10/14/2016 12:50:00 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:50:22	91.260%	-6.583	-159.044	-5505.012	182.303	11798.349	5827.166	-225.890	103.419%	38.652	1156.718	-516.196
2	12:50:44	86.199%	-8.196	-179.473	998.474	356.894	15689.526	6358.457	-136.077	104.058%	38.434	1083.145	-579.752
3	12:51:05	88.310%	-3.020	-194.767	-4286.624	366.797	17484.492	4651.672	-219.414	104.709%	38.188	1395.940	-370.575
x		88.590%	-5.933	-177.761	-2931.054	301.998	14990.789	5612.432	-193.793	104.062%	38.424	1211.934	-488.841
σ		2.542%	2.649	17.923	3457.168	103.777	2906.756	873.420	50.089	0.645%	0.232	163.545	107.238
%RSD		2.869	44.646	10.083	117.950	34.364	19.390	15.562	25.847	0.620	0.604	13.495	21.937

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:50:22	8929.872	728.952	85836.310	-505.123	-119.547	-209.219	-256.543	-55.565	743.945	-18.478	416.548	2385.441
2	12:50:44	8933.405	1456.007	90093.487	-462.887	-158.996	-94.217	-181.104	100.666	731.709	-10.512	402.783	2170.303
3	12:51:05	8814.066	1801.276	93823.685	-445.070	-178.874	-43.904	-291.085	-37.309	722.083	25.867	436.661	2200.417
x		8892.448	1328.745	89917.827	-471.027	-152.472	-115.780	-242.911	2.597	732.579	-1.041	418.664	2252.054

σ		67.903	547.373	3996.584	30.843	30.197	84.740	56.244	85.419	10.957	23.641	17.038	116.494
%RSD		0.764	41.195	4.445	6.548	19.805	73.191	23.154	3288.932	1.496	2271.418	4.070	5.173
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:50:22	-118.821	104.978%	1150.695	-74.224	-72.895	-6.331	105.151%	1949.690	921.254	382.897	-123.496	101.638%
2	12:50:44	-97.034	104.453%	1335.160	-13.337	-89.622	-4.403	105.890%	2058.883	877.939	426.269	-96.092	102.066%
3	12:51:05	-86.081	105.522%	986.623	-41.133	-50.690	-37.717	105.346%	2202.413	990.194	440.731	-43.055	102.731%
x		-100.645	104.985%	1157.492	-42.898	-71.069	-16.150	105.462%	2070.329	929.796	416.632	-87.548	102.145%
σ		16.666	0.534%	174.368	30.482	19.530	18.702	0.383%	126.749	56.613	30.097	40.895	0.551%
%RSD		16.559	0.509	15.064	71.058	27.480	115.802	0.363	6.122	6.089	7.224	46.712	0.539

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:50:22	4.059	-313.802	3065.634	98.578%	0.000	8115.131	6.073
2	12:50:44	-50.653	-616.382	3627.609	98.481%	0.000	7707.130	-14.156
3	12:51:05	-27.237	-723.294	3486.864	99.083%	0.000	7030.886	10.705
x		-24.611	-551.159	3393.369	98.714%	0.000	7617.716	0.874
σ		27.451	212.395	292.421	0.324%	0.000	547.625	13.221
%RSD		111.540	38.536	8.617	0.328	0.000	7.189	1513.245

CCVL 10/14/2016 12:55:43 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:56:05	88.634%	157.662	6696.435	711136.450	27960.830	83018.077	747048.680	27161.674	104.448%	28.697	13392.690	8841.010
2	12:56:27	88.817%	160.093	6753.173	T 774920.430	28208.736	81177.530	709971.540	26397.748	106.537%	23.473	12284.537	8941.538
3	12:56:48	86.075%	189.335	6916.455	693778.950	28446.733	80956.857	712386.930	27324.844	105.815%	28.376	14017.237	9278.645
x		87.842%	103.965%	110.723%	T 89.154%	86.385%	107.209%	87.766%	87.091%	105.600%	26.849	96.988%	88.659%
σ		1.533%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.061%	2.928	n/a	n/a
%RSD		1.745	10.428	1.683	T 5.880	0.861	1.385	2.869	1.836	1.005	10.905	6.632	2.541

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:56:05	9324.274	7287.679	704576.640	2710.520	1123.531	3580.922	11717.576	991.186	730.225	208.787	457.579	2259.535
2	12:56:27	9483.855	7544.792	690390.250	2564.450	1152.260	3599.353	11636.583	1017.263	740.930	187.353	441.516	2117.481
3	12:56:48	9079.705	7884.727	696203.070	2477.812	1180.961	3667.550	11830.024	1058.720	773.527	190.400	443.751	2112.499
x		9295.945	93.336%	102.577%	87.104%	93.691%	95.413%	100.523%	108.443%	748.227	104.731%	447.615	2163.171
σ		203.559	n/a	n/a	n/a	n/a	n/a	n/a	n/a	22.554	n/a	8.701	83.491
%RSD		2.190	3.955	1.023	4.551	2.492	1.262	0.828	3.331	3.014	5.931	1.944	3.860

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:56:05	24959.113	106.539%	16650.255	3508.760	-66.391	689.633	104.683%	1299.214	6002.359	4401.473	5437.764	99.539%
2	12:56:27	24395.767	105.844%	16176.752	3261.560	-47.167	646.511	106.113%	1319.402	5816.196	4457.701	5766.391	103.604%
3	12:56:48	24440.165	103.834%	16634.789	3316.224	-91.797	869.335	105.015%	1218.916	6166.774	4478.920	5562.623	103.188%
x		89.173%	105.406%	89.883%	98.192%	-68.452	87.598%	105.270%	1279.177	5995.110	90.893%	84.107%	102.111%
σ		n/a	1.405%	n/a	n/a	22.386	n/a	0.748%	53.155	175.402	n/a	n/a	2.236%
%RSD		1.273	1.333	1.632	3.862	32.703	16.076	0.711	4.155	2.926	0.900	2.968	2.190

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:56:05	3982.028	19545.973	17072.793	98.266%	0.000	19137.275	17024.867
2	12:56:27	3982.357	20536.616	18286.123	96.840%	0.000	19882.189	17602.381
3	12:56:48	3679.321	19725.105	18321.121	99.167%	0.000	20619.363	17616.603
x		83.448%	78.182%	103.494%	98.091%	0.000	54.087%	92.368%
σ		n/a	n/a	n/a	1.173%	0.000	n/a	n/a
%RSD		4.505	2.648	3.973	1.196	0.000	3.728	1.939

200-35680-A-6-B MS 10/14/2016 01:01:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	13:01:49	95.345%	2418.057	62849.770	T 6912659.700	T 2708512.200	T 102448000.000	T 14715382.000	T 1680296.900	144.300%	26990.924	363804.010	270362.0
2	13:02:10	94.289%	2532.949	64115.906	T 6977903.700	T 2742743.500	T 101587050.000	T 14653762.000	T 1705756.300	146.879%	26892.501	366545.110	271886.2
3	13:02:32	97.170%	2469.888	61056.334	T 6851873.000	T 2706012.100	T 100644850.000	T 14711732.000	T 1704244.800	150.017%	25966.341	365651.810	274202.6
x		95.601%	2473.631	62674.004	T 6914145.500	T 2719089.300	T 101559970.000	T 14693625.000	T 1696766.000	147.065%	26616.588	365333.640	272150.3
σ		1.457%	57.538	1537.341	T 63028.499	T 20523.247	T 901880.000	T 34570.864	T 14282.689	2.863%	565.277	1397.974	1933.8
%RSD		1.524	2.326	2.453	T 0.912	T 0.755	T 0.888	T 0.235	T 0.842	1.947	2.124	0.383	0.7

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	13:01:49	6443.494	T 14361475.000	T 360713870.000	188908.810	85769.946	T 3330386.900	974314.900	7784.691	171.535	2934.907	467.108	1570.0
2	13:02:10	6203.715	T 14161035.000	T 359616010.000	188110.360	84777.080	T 3311039.300	971233.080	7650.676	203.857	2808.472	505.225	1625.1
3	13:02:32	5903.364	T 14322798.000	T 361536990.000	185174.800	83095.196	T 3344016.900	984645.250	7759.853	185.206	2980.331	497.837	1504.5
x		6183.524	T 14281770.000	T 360622290.000	187397.990	84547.407	T 3328481.000	976731.080	7731.740	186.866	2907.903	490.057	1566.5
σ		270.630	T 106332.170	T 963755.350	1966.296	1352.085	T 16571.193	7024.957	71.293	16.225	89.055	20.215	60.3

%RSD		4.377	↓0.745	↓0.267	1.049	1.599	↓0.498	0.719	0.922	8.682	3.063	4.125	3.8

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	13:01:49	859868.780	365.228%	52868.441	44529.295	-205.784	12901.090	109.719%	99133.572	23164.814	18887.717	639276.180	139.773
2	13:02:10	863004.720	368.978%	53086.291	44246.843	-444.137	13732.135	111.140%	98848.677	24056.156	18793.148	645255.830	142.485
3	13:02:32	858656.930	371.600%	53503.685	44082.959	-204.696	13331.627	112.187%	101892.740	23426.174	19284.712	652567.700	144.779
x		860510.150	368.602%	53152.805	44286.366	-284.872	13321.617	111.016%	99958.330	23549.048	18988.526	645699.910	142.346
σ		2243.734	3.202%	322.803	225.777	137.928	415.613	1.239%	1681.294	458.199	260.826	6656.879	2.506
%RSD		0.261	0.869	0.607	0.510	48.418	3.120	1.116	1.682	1.946	1.374	1.031	1.7

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:01:49	37355.587	212592.540	4018401.200	108.756%	0.000	658788.010	334827.230
2	13:02:10	36623.440	210157.810	4059013.500	110.815%	0.000	660023.180	335615.380
3	13:02:32	36732.988	210310.140	4039109.400	112.958%	0.000	653060.940	335617.350
x		36904.005	211020.160	4038841.400	110.843%	0.000	657290.710	335353.320
σ		394.899	1363.844	20307.480	2.101%	0.000	3714.786	455.607
%RSD		1.070	0.646	0.503	1.895	0.000	0.565	0.136

200-35680-A-6-C MSD 10/14/2016 01:07:12 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	13:07:33	96.855%	2454.776	63113.978	↓7051256.600	↓2237822.500	↓82694356.000	↓13222473.000	↓1356126.200	143.546%	27260.540	325068.630	239260.18
2	13:07:55	96.787%	2345.446	62449.107	↓6989569.000	↓2197830.100	↓82046985.000	↓13186241.000	↓1352908.800	144.983%	25837.161	323062.520	237248.42
3	13:08:17	91.756%	2184.026	66589.195	↓7045823.400	↓2233902.800	↓84078628.000	↓13282871.000	↓1371638.900	144.158%	28323.090	329917.630	243480.99
x		95.132%	2328.083	64050.760	↓7028883.000	↓2223185.200	↓82939990.000	↓13230528.000	↓1360224.600	144.229%	27140.264	326016.260	239996.53
σ		2.924%	136.208	2223.343	↓34155.116	↓22045.380	↓1037856.000	↓48815.793	↓10015.097	0.721%	1247.322	3524.432	3180.86
%RSD		3.074	5.851	3.471	↓0.486	↓0.992	↓1.251	↓0.369	↓0.736	0.500	4.596	1.081	1.32

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	13:07:33	7077.036	↓11052709.000	↓292894160.000	154986.660	73070.103	↓2712136.000	815289.920	7677.297	256.386	2690.228	472.205	1544.56
2	13:07:55	6637.166	↓11003228.000	↓290233930.000	155120.950	72471.147	↓2699383.600	814686.010	7715.032	243.672	2684.738	466.179	1539.43
3	13:08:17	6465.982	↓11177765.000	↓296951130.000	156945.020	72853.002	↓2690239.200	822631.920	7690.575	257.723	2677.795	485.952	1523.73
x		6726.728	↓11077901.000	↓293359740.000	155684.210	72798.084	↓2700586.300	817535.950	7694.301	252.593	2684.254	474.779	1535.91
σ		315.219	↓89954.153	↓3382714.000	1093.960	303.231	↓10997.831	4423.555	19.142	7.755	6.231	10.135	10.85
%RSD		4.686	↓0.812	↓1.153	0.703	0.417	↓0.407	0.541	0.249	3.070	0.232	2.135	0.70

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159T
1	13:07:33	705377.910	324.606%	61743.588	43062.664	-122.584	12987.193	113.618%	74158.705	24980.087	19422.269	500253.940	138.624%
2	13:07:55	715570.870	326.275%	62240.626	42870.313	-179.084	13299.857	113.263%	76400.918	25740.084	19675.013	516618.910	140.638%
3	13:08:17	714873.040	326.596%	62463.423	42505.740	-167.952	13360.008	114.725%	75694.571	24513.298	19622.887	509635.200	141.318%
x		711940.610	325.826%	62149.212	42812.906	-156.540	13215.686	113.869%	75418.065	25077.823	19573.390	508836.020	140.193%
σ		5694.160	1.068%	368.521	282.865	29.929	200.153	0.763%	1146.395	619.205	133.444	8211.703	1.401%
%RSD		0.800	0.328	0.593	0.661	19.119	1.515	0.670	1.520	2.469	0.682	1.614	0.99

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:07:33	40858.636	214390.460	3359148.000	110.212%	0.000	585217.510	305392.120
2	13:07:55	40841.429	219567.440	3420471.300	109.020%	0.000	601535.170	315103.080
3	13:08:17	41361.378	219276.930	3406195.800	110.531%	0.000	610414.550	307686.540
x		41020.481	217744.940	3395271.700	109.921%	0.000	599055.740	309393.910
σ		295.351	2908.700	32087.959	0.797%	0.000	12780.192	5075.633
%RSD		0.720	1.336	0.945	0.725	0.000	2.133	1.641

200-35700-A-1-B 10/14/2016 01:12:55 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	13:13:17	104.996%	1507.354	5651.461	T 627795.340	T 2223301.600	T 129215760.000	T 8067660.100	T 1223871.400	176.647%	22713.379	351874.240	239167.8
2	13:13:38	104.087%	1484.728	5399.703	T 612764.100	T 2212590.000	T 128883060.000	T 7931712.500	T 1206883.400	178.125%	23119.257	345609.840	237601.2
3	13:14:01	100.120%	1554.673	5589.942	T 610532.430	T 2234714.300	T 130766700.000	T 8069943.900	T 1231448.700	177.147%	24207.657	350470.330	242873.8
x		103.068%	1515.585	5547.035	T 617030.630	T 2223535.300	T 129621840.000	T 8023105.500	T 1220734.500	177.306%	23346.764	349318.140	239880.9
σ		2.593%	35.691	131.249	T 9389.059	T 11063.991	T 1005337.200	T 79156.876	T 12579.496	0.752%	772.681	3287.302	2707.6
%RSD		2.515	2.355	2.366	T 1.522	T 0.498	T 0.776	T 0.987	T 1.030	0.424	3.310	0.941	1.1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	13:13:17	4753.985	TM 57930432.000	TM 647024420.000	214413.490	74792.848	TM 9122924.700	1053440.000	7272.710	193.628	1316.120	530.986	1681.9
2	13:13:38	5525.915	TM 58799112.000	TM 653313080.000	216459.730	75145.988	TM 9233858.400	1047395.300	7131.953	195.181	1274.175	511.127	1813.1
3	13:14:01	4868.803	TM 58799520.000	TM 656539440.000	223020.300	76558.152	TM 9212851.700	1056442.600	7185.336	166.940	1375.950	548.879	1322.5
x		5049.568	TM 58509688.000	TM 652292310.000	217964.510	75498.996	TM 9189878.300	1052426.000	7196.666	185.250	1322.082	530.331	1605.8
σ		416.504	TM 501650.470	TM 4838941.900	4496.391	934.096	TM 58927.115	4608.113	71.060	15.875	51.149	18.884	254.0
%RSD		8.248	TM 0.857	TM 0.742	2.063	1.237	TM 0.641	0.438	0.987	8.570	3.869	3.561	15.8

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	13:13:17	814013.670	503.559%	2817.003	18453.267	-427.416	7156.297	121.569%	159528.670	4644.251	3493.033	973734.520	167.092
2	13:13:38	824690.140	516.579%	2657.079	19212.973	-463.936	7737.207	122.281%	160080.290	4917.840	3562.905	988906.830	166.515
3	13:14:01	823193.000	517.595%	2723.862	18823.785	-269.457	7517.704	122.889%	163063.330	4617.930	3550.943	986702.010	170.748
x		820632.270	512.578%	2732.648	18830.008	-386.936	7470.403	122.246%	160890.770	4726.673	3535.627	983114.450	168.118
σ		5780.548	7.827%	80.324	379.892	103.366	293.329	0.661%	1901.604	166.077	37.369	8197.726	2.296
%RSD		0.704	1.527	2.939	2.017	26.714	3.927	0.541	1.182	3.514	1.057	0.834	1.3

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:13:17	1480.157	11589.772	4840310.500	118.721%	0.000	419084.350	145689.470
2	13:13:38	1416.873	11257.989	4862839.800	119.734%	0.000	418623.130	143595.560
3	13:14:01	1529.265	11721.756	4821874.400	120.727%	0.000	416496.640	145540.880
x		1475.432	11523.172	4841674.900	119.728%	0.000	418068.040	144941.970
σ		56.345	238.949	20516.737	1.003%	0.000	1380.273	1168.390
%RSD		3.819	2.074	0.424	0.837	0.000	0.330	0.806

200-35700-A-2-B 10/14/2016 01:18:38 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	13:19:00	96.504%	790.141	5386.576	T 639625.140	T 1933839.800	T 98342855.000	T 7507611.500	1010460.400	150.908%	29582.550	262609.130	183555.81
2	13:19:21	97.481%	774.238	5694.172	T 632057.890	T 1944931.400	T 99444787.000	T 7423410.100	T 1063218.400	151.711%	23052.917	260215.450	182910.58
3	13:19:43	94.614%	777.425	6096.243	T 619015.520	T 1912112.500	T 100323940.000	T 7414158.800	T 1084485.700	152.597%	26294.678	269734.230	186193.94
x		96.200%	780.601	5725.663	T 630232.850	T 1930294.600	T 99370527.000	T 7448393.500	T 1052721.500	151.739%	26310.049	264186.270	184220.11
σ		1.458%	8.414	355.880	T 10425.315	T 16694.193	T 992627.200	T 51492.495	T 38112.677	0.845%	3264.844	4951.501	1739.56
%RSD		1.515	1.078	6.216	T 1.654	T 0.865	T 0.999	T 0.691	T 3.620	0.557	12.409	1.874	0.94

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	13:19:00	6425.235	TM 36336973.000	T 335851180.000	157937.630	63864.490	TM 8063127.000	785639.770	6585.102	297.969	1391.044	490.188	1620.71
2	13:19:21	6213.504	TM 36361401.000	T 335606660.000	158108.290	62331.838	TM 7884177.800	773990.620	6434.145	274.149	1335.933	477.339	1843.01
3	13:19:43	5502.691	TM 36379225.000	T 334641560.000	160158.730	63889.673	TM 8058139.800	789568.190	6545.594	326.243	1270.313	525.625	1986.58
x		6047.143	TM 36359200.000	T 335366470.000	158734.880	63362.000	TM 8001814.900	783066.190	6521.614	299.454	1332.430	497.717	1816.77

σ		483.248	TM 21211.563	T 639584.820	1236.036	892.236	TM 101907.210	8101.398	78.284	26.079	60.442	25.008	184.34
%RSD		7.991	TM 0.058	T 0.191	0.779	1.408	TM 1.274	1.035	1.200	8.709	4.536	5.025	10.14
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tl**
1	13:19:00	502124.470	339.496%	2251.358	24095.015	-296.073	7543.580	115.978%	101293.100	5504.332	4212.933	606109.280	139.826%
2	13:19:21	503556.820	345.827%	2257.978	23770.957	-268.708	7583.492	117.424%	103554.050	5434.186	4224.146	603114.720	142.427%
3	13:19:43	509046.150	340.315%	2364.949	25010.742	-172.793	7433.740	117.291%	105594.950	5778.073	4260.240	615463.270	142.113%
x		504909.150	341.879%	2291.428	24292.238	-245.858	7520.270	116.898%	103480.700	5572.197	4232.440	608229.090	141.455%
σ		3653.631	3.444%	63.756	642.993	64.739	77.549	0.799%	2151.863	181.710	24.720	6441.420	1.420%
%RSD		0.724	1.007	2.782	2.647	26.332	1.031	0.684	2.079	3.261	0.584	1.059	1.00

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:19:00	2128.256	8158.434	4659415.700	109.602%	0.000	293441.050	100891.430
2	13:19:21	2089.379	8165.223	4573945.100	113.263%	0.000	286076.540	98579.039
3	13:19:43	2024.035	8532.855	4678128.800	112.112%	0.000	292457.420	100974.860
x		2080.557	8285.504	4637163.200	111.659%	0.000	290658.340	100148.440
σ		52.668	214.240	55542.262	1.872%	0.000	3998.318	1359.783
%RSD		2.531	2.586	1.198	1.677	0.000	1.376	1.358

200-35700-A-3-B 10/14/2016 01:24:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	13:24:42	99.595%	1788.964	6846.746	T 811738.500	T 3727081.700	T 181379790.000	T 12088471.000	725985.080	207.515%	22135.449	378412.210	328182.35
2	13:25:04	100.908%	1792.569	6785.440	T 803672.430	T 3727636.300	T 183051470.000	T 12148966.000	T 790605.630	210.720%	24005.313	380570.810	329130.36
3	13:25:26	98.906%	1885.051	7282.808	T 782184.530	T 3584677.400	T 176528560.000	T 11812246.000	T 759222.400	215.698%	24464.803	371306.520	321380.80
x		99.803%	1822.195	6971.665	T 799198.480	T 3679798.400	T 180319940.000	T 12016561.000	T 758604.370	211.311%	23535.189	376763.180	326231.17
σ		1.017%	54.465	271.196	T 15276.501	T 82377.718	T 3388146.800	T 179508.620	T 32314.706	4.123%	1233.789	4847.292	4227.20
%RSD		1.019	2.989	3.890	T 1.911	T 2.239	T 1.879	T 1.494	T 4.260	1.951	5.242	1.287	1.29

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	13:24:42	5897.974	T 18217286.000	T 501271730.000	186839.640	103937.020	TM 34447733.000	1243795.300	1977.394	189.009	572.683	643.608	1795.39
2	13:25:04	5517.109	T 18322134.000	T 506083450.000	189538.610	103419.050	TM 34817215.000	1251039.600	1995.275	176.148	549.694	605.799	1582.40
3	13:25:26	5404.103	T 17857288.000	T 497382500.000	186348.510	101150.530	TM 34383020.000	1246698.100	2017.527	181.099	511.090	649.394	1962.42
x		5606.395	T 18132236.000	T 501579230.000	187575.590	102835.530	TM 34549323.000	1247177.700	1996.732	182.085	544.489	632.934	1780.07
σ		258.759	T 243814.650	T 4358619.000	1717.675	1482.056	TM 234247.260	3645.883	20.106	6.487	31.125	23.677	190.47
%RSD		4.615	T 1.345	T 0.869	0.916	1.441	TM 0.678	0.292	1.007	3.563	5.716	3.741	10.70

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159T
1	13:24:42	743226.010	718.596%	-83.307	3593.809	-696.507	1785.628	121.428%	54498.367	3084.456	2281.062	1136258.400	184.976%
2	13:25:04	746830.460	729.165%	-155.240	3470.828	-635.527	1729.883	122.238%	54428.708	3309.329	2324.142	1155135.600	186.889%
3	13:25:26	731011.140	734.777%	-124.867	3505.440	-651.309	1714.942	124.504%	53776.869	3287.699	2339.419	1138857.300	188.978%
x		740355.870	727.512%	-121.138	3523.359	-661.114	1743.484	122.723%	54234.648	3227.162	2314.874	1143417.100	186.947%
σ		8291.017	8.216%	36.111	63.419	31.650	37.254	1.594%	397.975	124.058	30.262	10231.372	2.002%
%RSD		1.120	1.129	29.810	1.800	4.787	2.137	1.299	0.734	3.844	1.307	0.895	1.07

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:24:42	410.084	16738.522	2869362.100	123.891%	0.000	718310.750	203559.170
2	13:25:04	419.966	16984.453	2851530.600	127.119%	0.000	721194.310	204758.710
3	13:25:26	429.070	17557.723	2957074.500	124.100%	0.000	744619.840	208756.810
x		419.707	17093.566	2892655.700	125.037%	0.000	728041.630	205691.570
σ		9.496	420.359	56496.192	1.807%	0.000	14429.360	2721.494
%RSD		2.262	2.459	1.953	1.445	0.000	1.982	1.323

200-35700-A-4-B 10/14/2016 01:30:03 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:30:25	98.835%	1496.835	4267.463	T 546164.260	T 2628202.300	T 135580000.000	T 10589792.000	T 711702.040	189.171%	26140.044	360668.430	257685.140
2	13:30:47	95.233%	1719.927	5129.045	T 576399.310	T 2771045.100	T 142758370.000	T 11292719.000	690709.780	187.464%	25738.408	384022.440	279083.100
3	13:31:08	93.495%	1624.080	4622.556	T 549280.290	T 2651473.900	T 138891380.000	T 10599961.000	669784.900	189.983%	25429.509	368971.060	265112.730
x		95.854%	1613.614	4673.021	T 557281.290	T 2683573.800	T 139076580.000	T 10827491.000	T 690732.240	188.873%	25769.321	371220.640	267293.660
σ		2.724%	111.914	433.002	T 16629.842	T 76640.856	T 3592764.200	T 402931.960	T 20958.579	1.285%	356.275	11838.409	10864.415
%RSD		2.842	6.936	9.266	T 2.984	T 2.856	T 2.583	T 3.721	T 3.034	0.681	1.383	3.189	4.065

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:30:25	5638.972	T 13949861.000	T 398003220.000	154595.050	86038.026	1650846.500	381939.490	1900.877	234.280	574.245	567.529	2016.238
2	13:30:47	6944.531	T 14991152.000	T 416018880.000	163071.450	89372.176	T 1929671.200	406280.290	1935.285	226.151	647.437	578.561	1807.147
3	13:31:08	6298.090	T 14559630.000	T 408626520.000	157151.750	86540.996	T 1828366.300	385858.540	1955.307	211.377	626.729	580.967	1652.986
x		6293.864	T 14500214.000	T 407549540.000	158272.750	87317.066	T 1802961.300	391359.440	1930.490	223.936	616.137	575.686	1825.457
σ		652.790	T 523181.610	T 9055988.700	4347.963	1797.457	T 141137.740	13069.565	27.530	11.611	37.728	7.166	182.317

%RSD		10.372	T 3.608	T 2.222	2.747	2.059	T 7.828	3.340	1.426	5.185	6.123	1.245	9.987
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:30:25	567577.220	635.215%	505.841	6861.317	-714.773	2491.402	115.415%	54471.655	2044.616	1372.305	875577.170	177.035%
2	13:30:47	600218.680	657.696%	553.527	7307.428	-527.472	2516.512	113.473%	58867.204	2095.401	1423.357	938785.420	177.227%
3	13:31:08	559478.990	644.102%	468.279	7108.670	-606.700	2360.142	117.479%	56103.747	2110.362	1397.577	882688.270	177.874%
x		575758.300	645.671%	509.216	7092.472	-616.315	2456.019	115.456%	56480.869	2083.460	1397.746	899016.950	177.379%
σ		21566.830	11.322%	42.724	223.496	94.020	83.976	2.003%	2221.909	34.461	25.526	34623.547	0.440%
%RSD		3.746	1.754	8.390	3.151	15.255	3.419	1.735	3.934	1.654	1.826	3.851	0.248

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:30:25	490.788	12592.684	2255985.400	115.426%	0.000	583396.670	564515.150
2	13:30:47	574.690	13501.515	2428708.400	113.492%	0.000	633897.980	612929.630
3	13:31:08	400.417	11999.533	2304012.400	116.980%	0.000	600321.510	580552.070
x		488.632	12697.911	2329568.700	115.299%	0.000	605872.050	585998.950
σ		87.157	756.500	89152.437	1.748%	0.000	25704.124	24662.561
%RSD		17.837	5.958	3.827	1.516	0.000	4.243	4.209

200-35700-A-5-B 10/14/2016 01:35:46 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:36:07	103.278%	1375.546	4178.416	T 584900.510	T 2629696.300	T 129532920.000	T 8512248.200	T 881341.810	184.672%	23180.412	331231.290	240258.840
2	13:36:29	101.556%	1404.272	4015.071	T 588702.730	T 2599670.800	T 130077530.000	T 8493558.700	T 898226.880	184.631%	24410.307	337532.090	242800.960
3	13:36:50	98.713%	1465.794	4547.950	T 575061.540	T 2633219.100	T 128884230.000	T 8486142.100	T 876515.710	184.899%	22106.442	337476.330	241143.890
x		101.182%	1415.204	4247.146	T 582888.260	T 2620862.100	T 129498230.000	T 8497316.300	T 885361.470	184.734%	23232.387	335413.240	241401.230
σ		2.305%	46.106	273.007	T 7039.704	T 18436.494	T 597403.250	T 13452.587	T 11400.086	0.144%	1152.812	3621.779	1290.450
%RSD		2.278	3.258	6.428	T 1.208	T 0.703	T 0.461	T 0.158	T 1.288	0.078	4.962	1.080	0.535
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:36:07	5668.475	T 24179765.000	TM 513129160.000	170536.890	78046.746	TM 7054322.100	715474.040	5711.906	203.417	787.514	573.360	1899.619
2	13:36:29	5788.523	T 24612750.000	TM 516398770.000	171823.090	79225.494	TM 7134350.400	721482.970	5682.275	213.946	794.900	533.103	1817.683
3	13:36:50	5154.790	T 25095051.000	TM 524812640.000	173047.300	79538.379	TM 7110934.300	718234.070	5625.411	198.419	839.972	583.723	1530.047
x		5537.263	T 24629189.000	TM 518113530.000	171802.430	78936.873	TM 7099869.000	718397.030	5673.198	205.261	807.462	563.395	1749.116
σ		336.626	T 457864.170	TM 6027537.900	1255.335	786.587	TM 41145.629	3007.780	43.956	7.926	28.396	26.741	194.092
%RSD		6.079	T 1.859	TM 1.163	0.731	0.996	TM 0.580	0.419	0.775	3.861	3.517	4.746	11.097
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:36:07	592847.770	549.333%	1219.054	9330.394	-500.383	2900.507	120.346%	85153.869	3740.223	2749.391	858479.040	167.976%
2	13:36:29	605825.540	552.970%	1210.897	9261.727	-525.464	3110.414	120.054%	87204.655	4004.678	2821.049	869461.930	171.325%
3	13:36:50	603478.070	561.160%	1201.593	9342.003	-581.112	3438.164	121.464%	85078.040	3584.122	2766.572	863573.470	171.436%
x		600717.120	554.487%	1210.515	9311.375	-535.653	3149.695	120.621%	85812.188	3776.341	2779.004	863838.140	170.246%
σ		6915.399	6.058%	8.737	43.386	41.318	270.972	0.744%	1206.508	212.592	37.412	5496.227	1.966%
%RSD		1.151	1.093	0.722	0.466	7.713	8.603	0.617	1.406	5.630	1.346	0.636	1.155

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:36:07	938.456	10498.654	4264050.900	117.244%	0.000	485967.460	165528.040
2	13:36:29	857.973	10141.206	4228724.000	119.901%	0.000	483242.280	164630.130
3	13:36:50	889.380	10983.120	4267170.100	118.867%	0.000	488869.330	165283.690
x		895.270	10540.994	4253315.000	118.671%	0.000	486026.360	165147.290
σ		40.564	422.551	21353.462	1.339%	0.000	2813.991	464.237
%RSD		4.531	4.009	0.502	1.129	0.000	0.579	0.281

200-35700-A-6-B 10/14/2016 01:41:28 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:41:50	102.692%	850.364	4121.926	T 589929.920	T 1994202.400	T 91193344.000	T 6760033.100	T 1060023.700	159.901%	23306.701	254048.930	174477.350
2	13:42:12	101.385%	999.794	3925.368	T 595645.380	T 1955480.800	T 90806850.000	T 6817346.800	T 1077712.000	160.192%	25769.164	256143.410	176465.640
3	13:42:33	99.925%	867.199	4166.795	T 558575.550	T 1938719.700	T 88784640.000	T 6683400.600	T 1067534.000	162.168%	23608.450	251724.450	171070.440
x		101.334%	905.786	4071.363	T 581383.620	T 1962801.000	T 90261611.000	T 6753593.500	T 1068423.200	160.754%	24228.105	253972.270	174004.480
σ		1.385%	81.848	128.410	T 19958.020	T 28456.470	T 1293610.500	T 67204.921	T 8877.613	1.233%	1343.097	2210.477	2728.506
%RSD		1.366	9.036	3.154	T 3.433	T 1.450	T 1.433	T 0.995	T 0.831	0.767	5.544	0.870	1.568

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:41:50	5639.247	TM 29085075.000	T 449495460.000	156503.420	62493.380	T 2870068.900	478082.650	5591.056	284.199	727.181	531.946	2026.638
2	13:42:12	5209.036	TM 29185178.000	T 453738860.000	159528.960	63358.872	T 2895890.700	479132.680	5618.889	275.776	735.428	505.484	1984.207
3	13:42:33	5424.777	TM 28732290.000	T 441428000.000	155407.800	62493.557	T 2861593.300	483975.780	5649.792	246.377	813.334	503.629	1763.726
x		5424.353	TM 29000848.000	T 448220770.000	157146.730	62781.937	T 2875851.000	480397.040	5619.912	268.784	758.648	513.686	1924.857
σ		215.106	TM 237902.220	T 6253635.500	2134.564	499.641	T 17864.787	3143.437	29.382	19.857	47.539	15.841	141.147
%RSD		3.966	TM 0.820	T 1.395	1.358	0.796	T 0.621	0.654	0.523	7.388	6.266	3.084	7.333

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:41:50	497868.800	404.005%	1571.873	9408.078	-417.218	3355.550	118.529%	65287.025	3686.196	2640.961	621837.070	148.712%
2	13:42:12	500754.990	404.300%	1657.676	9867.208	-332.694	3312.205	119.590%	65778.855	3602.732	2740.225	620934.780	151.176%
3	13:42:33	499742.850	401.957%	1702.063	9405.940	-314.308	3353.708	119.237%	66597.506	3741.249	2726.206	625604.020	148.549%
x		499455.550	403.421%	1643.871	9560.409	-354.740	3340.488	119.119%	65887.795	3676.726	2702.464	622791.950	149.479%
σ		1464.390	1.276%	66.184	265.698	54.883	24.511	0.540%	661.998	69.742	53.722	2476.756	1.472%
%RSD		0.293	0.316	4.026	2.779	15.471	0.734	0.454	1.005	1.897	1.988	0.398	0.985

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:41:50	1111.893	6403.831	3014114.800	112.625%	0.000	318307.390	110038.100
2	13:42:12	1183.247	6458.300	3000139.900	113.623%	0.000	320635.800	110524.590
3	13:42:33	1157.084	6525.456	3043528.200	112.659%	0.000	323483.590	112034.300
x		1150.741	6462.529	3019261.000	112.969%	0.000	320808.930	110865.660
σ		36.097	60.923	22147.161	0.567%	0.000	2592.435	1040.888
%RSD		3.137	0.943	0.734	0.502	0.000	0.808	0.939

200-35700-A-7-B 10/14/2016 01:47:11 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:47:33	101.473%	2354.079	5547.468	T 781449.450	T 3683976.200	T 180886960.000	T 10810643.000	T 1026840.800	245.074%	47760.591	452316.640	34942
2	13:47:55	97.568%	2631.392	6498.011	T 776852.610	T 3746095.100	T 181906690.000	T 10755091.000	T 1036890.900	246.323%	49475.298	455495.490	35391
3	13:48:16	96.595%	2681.491	6555.804	T 756125.880	T 3695356.100	T 179441100.000	T 10740247.000	T 1035510.200	246.167%	49261.674	467941.880	35448
x		98.545%	2555.654	6200.427	T 771475.980	T 3708475.800	T 180744920.000	T 10768660.000	T 1033080.600	245.854%	48832.521	458584.670	35260
σ		2.582%	176.358	566.217	T 13490.809	T 33072.412	T 1238912.800	T 37107.933	T 5447.790	0.680%	934.443	8257.985	276
%RSD		2.620	6.901	9.132	T 1.749	T 0.892	T 0.685	T 0.345	T 0.527	0.277	1.914	1.801	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:47:33	5919.578	T 8213959.200	TM 672238510.000	200242.010	112055.640	126770.070	574287.090	2905.260	146.683	734.901	742.328	150
2	13:47:55	5542.780	T 8278937.900	TM 668823380.000	197948.790	110898.190	129515.130	586268.830	3285.151	144.399	846.619	727.648	98
3	13:48:16	5903.527	T 8317767.800	TM 670861630.000	200927.700	112253.020	125068.960	578902.150	2990.597	113.445	1014.919	747.131	30
x		5788.628	T 8270221.600	TM 670641180.000	199706.170	111735.620	127118.050	579819.350	3060.336	134.843	865.479	739.036	93

σ		213.063	T 52450.325	TM 1718203.900	1560.074	731.915	2243.418	6043.301	199.316	18.566	140.958	10.150	60
%RSD		3.681	T 0.634	TM 0.256	0.781	0.655	1.765	1.042	6.513	13.768	16.287	1.373	6
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	13:47:33	1320808.200	T 1073.509%	2142.416	5663.370	-856.620	3419.518	118.549%	59324.007	1449.558	972.593	T 1783025.000	211.
2	13:47:55	1331308.900	981.817%	2576.492	5729.922	-869.036	3625.231	118.398%	61180.904	1472.011	1041.623	T 1819435.200	216.
3	13:48:16	T 1474895.200	T 1088.171%	2160.128	5706.450	-914.214	3411.863	119.728%	60430.151	1489.134	1048.224	T 1808918.500	217.
x		T 1375670.800	T 1047.832%	2293.012	5699.914	-879.957	3485.537	118.892%	60311.687	1470.235	1020.813	T 1803792.900	215.
σ		T 86091.155	T 57.639%	245.661	33.754	30.310	121.039	0.728%	934.100	19.848	41.890	T 18738.437	3.
%RSD		T 6.258	T 5.501	10.713	0.592	3.444	3.473	0.612	1.549	1.350	4.104	T 1.039	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:47:33	359.369	18504.289	2554294.700	125.425%	3.986	990554.950	573175.500
2	13:47:55	381.661	17803.228	2562748.300	128.064%	3.904	998106.870	573114.170
3	13:48:16	354.719	18686.103	2635950.100	124.322%	0.000	1043255.100	594030.060
x		365.249	18331.207	2584331.000	125.937%	2.630	1010639.000	580106.580
σ		14.401	466.192	44902.803	1.923%	2.278	28497.666	12058.127
%RSD		3.943	2.543	1.738	1.527	86.617	2.820	2.079

200-35700-A-8-B 10/14/2016 01:52:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	13:53:02	100.000%	1111.544	3457.487	T 560932.870	T 2277215.100	T 102295170.000	T 7032404.500	T 1010419.600	165.603%	20643.842	276904.890	207274.55
2	13:53:24	96.442%	1140.638	4032.060	T 569594.250	T 2338963.000	T 105438510.000	T 7252659.900	T 1026752.700	165.382%	23470.521	281176.000	209860.78
3	13:53:46	96.914%	1039.488	4006.105	T 538071.970	T 2291955.700	T 102010800.000	T 7024486.000	T 1043184.400	167.990%	22013.004	277055.930	205728.92
x		97.785%	1097.224	3831.884	T 556199.700	T 2302711.300	T 103248160.000	T 7103183.500	T 1026785.600	166.325%	22042.455	278378.940	207621.41
σ		1.932%	52.073	324.497	T 16285.445	T 32248.410	T 1902219.500	T 129510.940	T 16382.433	1.446%	1413.570	2423.500	2087.65
%RSD		1.976	4.746	8.468	T 2.928	T 1.400	T 1.842	T 1.823	T 1.596	0.870	6.413	0.871	1.00

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	13:53:02	5811.040	TM 31811297.000	T 498004440.000	166600.220	73760.465	T 3718111.500	576357.820	4964.593	238.826	944.085	532.672	1745.01
2	13:53:24	5298.146	TM 32244273.000	T 505816460.000	169974.100	74647.923	T 3725165.900	579804.680	4957.093	245.212	944.801	539.735	1955.53
3	13:53:46	4871.343	TM 31872157.000	T 503772450.000	168762.890	74075.389	T 3768881.500	593905.240	4968.252	237.787	895.816	552.847	2141.06
x		5326.843	TM 31975909.000	T 502531120.000	168445.740	74161.259	T 3737386.300	583355.910	4963.313	240.609	928.234	541.751	1947.20
σ		470.506	TM 234393.880	T 4051246.400	1709.154	449.918	T 27502.743	9297.122	5.688	4.021	28.077	10.237	198.15
%RSD		8.833	TM 0.733	T 0.806	1.015	0.607	T 0.736	1.594	0.115	1.671	3.025	1.890	10.17

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tl
1	13:53:02	525507.690	450.181%	1887.232	16061.211	-523.182	4033.746	117.147%	82339.239	4027.830	2713.383	746162.950	152.548%
2	13:53:24	522977.080	455.933%	1957.291	16723.541	-373.230	3831.220	118.394%	81875.974	3672.869	2685.994	743269.710	155.304%
3	13:53:46	531859.390	457.233%	1984.261	16597.606	-473.749	4111.904	118.118%	83595.562	3609.946	2790.458	752623.080	153.914%
x		526781.390	454.449%	1942.928	16460.786	-456.720	3992.290	117.887%	82603.592	3770.215	2729.945	747351.920	153.922%
σ		4576.087	3.753%	50.083	351.725	76.413	144.862	0.655%	889.751	225.309	54.165	4788.695	1.378%
%RSD		0.869	0.826	2.578	2.137	16.731	3.629	0.555	1.077	5.976	1.984	0.641	0.89

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:53:02	1177.430	7552.643	3893046.200	112.895%	0.000	367853.870	122536.410
2	13:53:24	1214.295	7293.296	3878133.000	114.775%	0.000	373539.870	122413.290
3	13:53:46	1097.040	7496.196	3922639.000	115.302%	0.000	375709.650	123821.370
x		1162.921	7447.378	3897939.400	114.324%	0.000	372367.800	122923.690
σ		59.959	136.391	22652.897	1.265%	0.000	4056.926	779.844
%RSD		5.156	1.831	0.581	1.106	0.000	1.089	0.634

CCV 10/14/2016 01:58:24 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:58:46	82.386%	112141.580	39896.207	T 15632519.000	T 4754076.100	T 44695878.000	T 16127324.000	T 1711832.900	103.176%	31146.620	T 3250580.300	9351
2	13:59:07	82.031%	110777.310	42139.410	T 15880733.000	T 4854026.700	T 45572669.000	T 16174293.000	T 1747961.400	98.870%	31793.471	T 3323275.700	9395
3	13:59:29	80.477%	110985.620	42305.221	T 15615321.000	T 4697531.500	T 43654307.000	T 15546266.000	T 1728864.500	99.474%	31129.371	T 3233077.000	9180
x		81.632%	109.532%	108.160%	T 96.376%	T 97.364%	T 97.611%	T 96.787%	T 93.114%	100.507%	31356.487	T 95.848%	91
σ		1.015%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.331%	378.537	T n/a	
%RSD		1.244	0.660	3.246	T 0.945	T 1.662	T 2.151	T 2.193	T 1.045	2.320	1.207	T 1.463	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:58:46	11440.751	T 4834784.800	T 97837073.000	1394164.700	758516.140	963064.880	711372.980	93467.332	-67.515	9181.078	455.319	14
2	13:59:07	12872.953	T 4950557.800	T 102019960.000	1453016.100	785406.950	963534.320	708867.320	92853.193	-201.722	9212.680	439.584	15
3	13:59:29	12512.897	T 4820435.500	T 100370020.000	1426184.100	756221.980	946668.070	701917.430	91795.553	-155.440	8997.548	449.263	13
x		12275.533	T 96.015%	T 98.179%	96.024%	99.749%	101.088%	97.010%	98.331%	-141.559	97.819%	448.055	14
σ		745.021	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	68.172	n/a	7.937	

%RSD		6.069	T 1.465	T 2.105	2.068	2.117	1.003	0.693	0.912	48.158	1.272	1.771	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	13:58:46	986265.830	100.756%	T 2304393.400	334845.880	1114.593	155623.820	100.371%	1063788.100	678866.250	520342.070	709525.670	9
2	13:59:07	1003320.900	98.889%	T 2332656.800	334280.470	720.795	157095.570	98.390%	1081836.800	690949.080	527987.170	716319.730	9
3	13:59:29	974207.530	98.299%	T 2339124.400	330751.990	731.549	155721.010	98.496%	1068647.400	685325.440	521251.780	710614.780	9
x		987931.410	99.315%	T 101.417%	97.338%	855.646	93.028%	99.085%	1071424.100	685046.920	85.568%	85.736%	9
σ		14627.957	1.283%	T n/a	n/a	224.320	n/a	1.114%	9339.261	6046.230	n/a	n/a	
%RSD		1.481	1.292	T 0.794	0.666	26.216	0.527	1.124	0.872	0.883	0.798	0.512	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:58:46	47558.944	2121474.300	T 19931147.000	93.018%	5.375	314019.610	164799.020
2	13:59:07	48945.192	2223671.600	T 20845294.000	89.128%	0.000	337186.930	169911.000
3	13:59:29	50907.313	2164782.300	T 20354893.000	90.353%	0.000	339579.160	166875.010
x		105.647%	85.099%	T 94.288%	90.833%	1.792	89.856%	88.682%
σ		n/a	n/a	T n/a	1.989%	3.103	n/a	n/a
%RSD		3.424	2.364	T 2.245	2.189	173.205	4.274	1.538

CCB 10/14/2016 02:04:07 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:04:29	91.927%	9.575	-390.293	7509.920	903.368	28246.861	8939.569	-288.563	108.076%	37.099	2214.287	-388.967
2	14:04:51	93.858%	3.465	-574.020	3860.175	978.090	31560.625	8970.511	-66.092	108.040%	37.094	2161.116	-40.939
3	14:05:13	91.089%	4.437	-579.601	3284.289	1042.307	32527.875	5531.768	-35.721	109.455%	32.032	1859.115	-161.944
x		92.291%	5.826	-514.638	4884.794	974.588	30778.454	7813.949	-130.125	108.524%	35.408	2078.172	-197.283
σ		1.420%	3.284	107.722	2291.588	69.536	2245.131	1976.487	138.049	0.807%	2.924	191.563	176.685
%RSD		1.539	56.362	20.932	46.913	7.135	7.294	25.294	106.089	0.743	8.258	9.218	89.559

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:04:29	9087.566	4441.350	155986.090	-299.389	-71.112	219.872	-226.326	35.512	811.673	-10.331	443.066	2387.216
2	14:04:51	9106.546	4994.207	172466.080	-271.499	-98.810	231.806	-188.256	374.935	718.047	-5.464	436.828	2169.703
3	14:05:13	9144.490	5496.615	177433.300	-258.370	-64.658	166.237	-142.699	-75.885	840.992	-72.628	429.144	2403.477
x		9112.867	4977.391	168628.490	-276.419	-78.193	205.971	-185.760	111.521	790.237	-29.474	436.346	2320.132
σ		28.984	527.833	11226.801	20.947	18.144	34.925	41.869	234.825	64.214	37.451	6.974	130.529
%RSD		0.318	10.605	6.658	7.578	23.204	16.956	22.539	210.566	8.126	127.066	1.598	5.626

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:04:29	-76.815	102.680%	1375.097	-23.157	-53.608	-23.865	102.131%	2232.590	789.124	418.320	42.003	97.435%
2	14:04:51	-13.513	103.697%	1329.979	-44.188	-63.424	-29.395	103.589%	2094.952	784.586	411.013	-0.817	98.643%
3	14:05:13	-35.335	105.451%	855.353	-65.205	-58.652	-15.880	105.793%	2145.838	918.896	410.268	78.926	99.990%
x		-41.887	103.943%	1186.810	-44.183	-58.561	-23.047	103.838%	2157.793	830.869	413.200	40.037	98.690%
σ		32.156	1.402%	287.935	21.024	4.909	6.795	1.844%	69.593	76.268	4.449	39.908	1.278%
%RSD		76.767	1.349	24.261	47.583	8.382	29.482	1.776	3.225	9.179	1.077	99.677	1.295

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:04:29	-33.638	-492.500	4740.223	92.956%	0.000	7514.511	54.013
2	14:04:51	50.584	-695.460	4422.694	96.050%	0.000	6671.388	70.676
3	14:05:13	-7.700	-804.416	4850.797	94.797%	0.000	6260.309	-1.240
x		3.082	-664.125	4671.238	94.601%	0.000	6815.403	41.150
σ		43.134	158.301	222.233	1.557%	0.000	639.383	37.644
%RSD		1399.580	23.836	4.757	1.645	0.000	9.381	91.480

CCVL 10/14/2016 02:09:50 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:10:12	96.572%	150.125	6422.942	692606.680	27637.653	77270.721	726557.190	25643.820	113.286%	17.683	14467.130	9230.461
2	14:10:34	95.682%	136.110	6254.229	711132.950	28855.548	80386.822	723755.740	25798.646	110.822%	13.563	15044.077	9449.008
3	14:10:56	90.987%	172.082	6583.269	T 798809.580	29390.021	79520.538	725465.610	27195.924	110.556%	9.060	13688.643	9076.264
x		94.414%	93.965%	104.712%	T 90.083%	87.678%	103.721%	88.024%	84.673%	111.555%	13.435	105.553%	90.935%
σ		3.001%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.505%	4.313	n/a	n/a
%RSD		3.179	11.868	2.563	T 7.727	3.137	2.034	0.195	3.261	1.349	32.099	4.724	2.024

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:10:12	8861.993	7025.561	670570.320	2151.072	1013.735	3830.747	11549.992	985.426	799.928	170.982	466.866	2160.471
2	14:10:34	9087.716	6783.838	680480.560	2385.243	965.872	3676.751	12038.481	1027.674	879.158	179.734	463.980	2384.966
3	14:10:56	9513.078	7369.187	687846.220	2424.269	1014.113	3796.370	11724.451	637.887	930.749	121.806	408.255	2494.984
x		9154.263	87.014%	100.013%	78.203%	81.142%	99.424%	100.891%	93.728%	869.945	84.372%	446.367	2346.807
σ		330.605	n/a	n/a	n/a	n/a	n/a	n/a	n/a	65.895	n/a	33.038	170.490
%RSD		3.611	4.167	1.276	6.368	2.780	2.145	2.103	24.205	7.575	19.825	7.401	7.265

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:10:12	23903.047	109.435%	15897.367	2970.273	-97.021	737.012	106.885%	1206.957	5667.582	4103.311	5353.228	101.199%
2	14:10:34	24578.535	106.052%	15812.146	3506.118	-68.438	655.926	105.717%	1012.165	5842.280	4212.457	5661.194	101.407%
3	14:10:56	24237.980	106.624%	16485.722	3155.836	-71.468	707.242	105.573%	961.452	6163.731	4238.355	5389.768	100.256%
x		87.874%	107.370%	87.581%	93.770%	-78.976	83.416%	106.058%	1060.191	5891.198	85.551%	82.288%	100.954%
σ		n/a	1.811%	n/a	n/a	15.701	n/a	0.719%	129.607	251.666	n/a	n/a	0.613%
%RSD		1.393	1.686	2.283	8.475	19.881	5.859	0.678	12.225	4.272	1.713	3.077	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:10:12	3706.013	19413.576	17871.718	96.272%	0.000	19394.333	16479.729
2	14:10:34	3836.101	18972.245	17401.111	97.719%	0.000	19201.396	15922.130
3	14:10:56	3827.465	19949.331	17677.872	97.054%	0.000	20136.155	16861.937
x		81.484%	76.257%	102.087%	97.015%	0.000	53.265%	87.100%
σ		n/a	n/a	n/a	0.724%	0.000	n/a	n/a
%RSD		1.919	2.516	1.340	0.747	0.000	2.521	2.878

LCS 200-110153/2-A 10/14/2016 02:15:36 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:15:59	91.824%	1684.089	61237.769	T 7913700.000	285918.280	743887.020	T 7877995.300	262071.710	107.277%	126.114	114999.750	90912.093
2	14:16:20	88.227%	1595.228	62894.821	T 7949146.000	287134.970	735181.430	T 7969863.800	263446.500	105.732%	75.827	117258.490	93502.544
3	14:16:44	89.763%	1623.153	61148.215	T 8083922.300	299815.040	724430.260	T 7978394.100	267797.620	102.171%	78.375	119995.980	95666.591
x		89.938%	1634.157	61760.268	T 7982256.100	290956.100	734499.570	T 7942084.400	264438.610	105.060%	93.439	117418.070	93360.409
σ		1.805%	45.441	983.571	T 89811.578	7696.151	9746.283	T 55666.430	2989.101	2.619%	28.326	2501.934	2380.434
%RSD		2.007	2.781	1.593	T 1.125	2.645	1.327	T 0.701	1.130	2.493	30.315	2.131	2.550

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:15:59	7010.757	87490.517	T 7090824.400	27680.288	12142.189	41550.416	103879.190	8537.381	514.295	1502.066	409.688	2177.923
2	14:16:20	5804.986	85655.039	T 7126408.200	28321.830	12276.384	41343.134	104512.200	8522.552	450.151	1496.442	404.899	2231.783
3	14:16:44	5786.676	83744.798	T 7151883.500	28807.858	12807.284	40682.751	102847.720	8641.260	432.265	1523.162	417.682	1855.185
x		6200.806	85630.118	T 7123038.700	28269.992	12408.619	41192.101	103746.370	8567.064	465.570	1507.223	410.756	2088.297

σ		701.498	1872.984	T 30668.654	565.570	351.714	453.121	840.154	64.682	43.134	14.087	6.458	203.669
%RSD		11.313	2.187	T 0.431	2.001	2.834	1.100	0.810	0.755	9.265	0.935	1.572	9.753
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:15:59	241212.900	102.420%	166526.170	33962.567	-78.783	6922.926	101.298%	44181.617	51338.133	38364.884	55802.400	98.586%
2	14:16:20	242851.900	100.922%	170334.110	33921.462	20.714	6942.601	100.891%	42243.218	50789.206	39112.559	56063.489	99.129%
3	14:16:44	245743.390	100.066%	169736.350	33833.056	-115.661	6868.346	101.035%	44256.797	52098.855	38928.382	55014.644	99.771%
x		243269.400	101.136%	168865.540	33905.695	-57.910	6911.291	101.075%	43560.544	51408.731	38801.942	55626.844	99.162%
σ		2293.920	1.192%	2047.885	66.180	70.543	38.471	0.206%	1141.457	657.673	389.544	546.016	0.593%
%RSD		0.943	1.178	1.213	0.195	121.814	0.557	0.204	2.620	1.279	1.004	0.982	0.598

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:15:59	80105.591	215923.400	153101.760	91.121%	0.000	327341.500	177414.600
2	14:16:20	80111.412	212847.220	154077.640	91.370%	0.000	332726.670	177881.000
3	14:16:44	78784.232	211845.930	150920.900	91.993%	0.000	334771.020	179535.600
x		79667.078	213538.850	152700.100	91.495%	0.000	331613.060	178277.070
σ		764.573	2124.902	1616.245	0.449%	0.000	3837.910	1114.593
%RSD		0.960	0.995	1.058	0.491	0.000	1.157	0.625

200-35700-A-1-B @2 10/14/2016 02:21:24 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:21:45	97.379%	782.785	2655.744	340819.030	T 1361712.500	T 79755215.000	T 4784046.300	678004.980	140.891%	14169.997	213941.240	143646.840
2	14:22:07	94.472%	839.506	2623.737	335283.790	T 1352237.100	T 79276233.000	T 4811642.300	665958.050	142.892%	14445.790	208112.190	143608.140
3	14:22:28	97.039%	886.106	2752.032	334751.520	T 1371398.100	T 79759970.000	T 4759687.200	675973.430	139.317%	13727.919	214187.400	148338.100
x		96.297%	836.132	2677.171	336951.450	T 1361782.600	T 79597139.000	T 4785125.200	673312.150	141.033%	14114.569	212080.280	145197.690
σ		1.589%	51.743	66.777	3359.978	T 9580.687	T 277923.240	T 25994.332	6449.337	1.792%	362.132	3438.670	2719.739
%RSD		1.650	6.188	2.494	0.997	T 0.704	T 0.349	T 0.543	0.958	1.270	2.566	1.621	1.873

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:21:45	3811.378	TM 34915692.000	T 396939950.000	132278.610	46921.016	TM 5088730.200	599325.360	6516.640	246.854	774.577	492.357	1851.352
2	14:22:07	4667.424	TM 35406089.000	T 401490080.000	133389.170	47197.852	TM 5219806.300	613290.860	6569.694	232.776	768.161	498.509	2109.847
3	14:22:28	4547.552	TM 36082745.000	T 406091570.000	134894.540	47151.528	TM 5038416.400	593746.470	6376.547	265.160	740.147	513.229	2096.503
x		4342.118	TM 35468175.000	T 401507200.000	133520.770	47090.132	TM 5115650.900	602120.900	6487.627	248.263	760.962	501.365	2019.234
σ		463.526	TM 585998.500	T 4575836.400	1312.920	148.279	TM 93643.566	10067.625	99.789	16.238	18.309	10.725	145.543
%RSD		10.675	TM 1.652	T 1.140	0.983	0.315	TM 1.831	1.672	1.538	6.541	2.406	2.139	7.208

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:21:45	429879.540	290.634%	1906.861	9796.264	-253.605	3788.008	109.171%	83763.605	2750.837	1821.878	505807.070	126.987%
2	14:22:07	435370.030	292.871%	2130.362	10076.878	-129.681	3788.370	108.425%	86528.178	2903.792	1913.048	513051.340	128.210%
3	14:22:28	428744.490	296.069%	2070.096	10026.974	-254.716	3968.632	110.187%	85770.059	2869.587	1830.292	502190.570	127.914%
x		431331.360	293.191%	2035.773	9966.705	-212.668	3848.336	109.261%	85353.947	2841.405	1855.073	507016.330	127.704%
σ		3543.341	2.731%	115.637	149.700	71.871	104.179	0.884%	1428.488	80.277	50.384	5530.445	0.638%
%RSD		0.821	0.932	5.680	1.502	33.795	2.707	0.809	1.674	2.825	2.716	1.091	0.500

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:21:45	894.054	5465.419	2564023.700	103.136%	0.000	227412.900	77274.832
2	14:22:07	930.486	5159.078	2593234.500	103.080%	0.000	231604.210	76941.143
3	14:22:28	909.627	5163.458	2589862.400	103.614%	0.000	227286.060	78076.831
x		911.389	5262.652	2582373.600	103.277%	0.000	228767.720	77430.935
σ		18.280	175.615	15980.626	0.293%	0.000	2457.284	583.715
%RSD		2.006	3.337	0.619	0.284	0.000	1.074	0.754

200-35700-A-2-B @2 10/14/2016 02:27:08 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:27:30	94.830%	411.767	2656.394	316326.480	980791.470	T 55800585.000	T 4063921.700	540217.400	133.595%	12963.219	145129.110	98614.908
2	14:27:52	93.607%	348.082	2446.244	308714.910	T 1075864.800	T 56271414.000	T 4164925.900	555215.540	130.996%	14112.650	150166.030	102055.500
3	14:28:14	92.639%	273.752	2431.307	314687.400	996234.470	T 55189696.000	T 4135289.900	554503.110	130.522%	15358.969	148842.810	102043.670
x		93.692%	344.534	2511.315	313242.930	T 1017630.200	T 55753898.000	T 4121379.200	549978.680	131.704%	14144.946	148045.980	100904.690
σ		1.098%	69.076	125.864	4006.104	T 51020.275	T 542368.060	T 51919.147	8461.017	1.655%	1198.201	2611.294	1983.020
%RSD		1.172	20.049	5.012	1.279	T 5.014	T 0.973	T 1.260	1.538	1.256	8.471	1.764	1.965

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:27:30	5358.341	T 19622435.000	T 185687950.000	87552.540	35081.815	T 4237422.700	425436.410	5317.800	370.989	776.534	471.443	1982.553
2	14:27:52	5038.602	T 20060559.000	T 189645150.000	89552.627	35657.118	T 4152373.200	421999.440	5453.630	378.057	797.388	486.488	1960.995
3	14:28:14	5082.656	T 20105374.000	T 188723970.000	88846.787	35749.389	T 4263672.200	428405.430	5218.597	424.477	787.675	496.238	2097.478
x		5159.867	T 19929456.000	T 188019030.000	88650.651	35496.107	T 4217822.700	425280.420	5330.009	391.174	787.199	484.723	2013.675
σ		173.290	T 266830.590	T 2070643.400	1014.366	361.742	T 58180.643	3205.843	117.991	29.057	10.435	12.491	73.371

%RSD		3.358	T 1.339	T 1.101	1.144	1.019	T 1.379	0.754	2.214	7.428	1.326	2.577	3.644
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:27:30	251301.320	218.505%	1500.647	11827.435	-296.097	3813.213	109.665%	50793.732	2795.626	2023.571	294987.830	116.591%
2	14:27:52	255475.280	212.846%	1458.895	11818.657	-94.251	3512.574	109.871%	51885.741	2938.201	2029.930	294420.540	115.815%
3	14:28:14	257006.310	213.699%	1497.189	12547.795	-100.130	3500.575	108.014%	52285.193	3009.216	2076.524	303365.180	118.346%
x		254594.300	215.017%	1485.577	12064.629	-163.493	3608.787	109.183%	51654.889	2914.348	2043.342	297591.180	116.918%
σ		2952.763	3.051%	23.172	418.457	114.876	177.139	1.018%	772.064	108.775	28.912	5008.470	1.297%
%RSD		1.160	1.419	1.560	3.468	70.264	4.909	0.932	1.495	3.732	1.415	1.683	1.109

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:27:30	1153.928	3168.335	2294499.900	101.494%	0.000	141110.920	49519.913
2	14:27:52	1055.011	3165.712	2350245.400	100.469%	0.000	145804.530	50130.822
3	14:28:14	1070.579	3252.501	2389289.400	98.758%	0.000	153734.390	51422.042
x		1093.172	3195.516	2344678.300	100.240%	0.000	146883.280	50357.592
σ		53.188	49.368	47639.338	1.382%	0.000	6380.502	971.129
%RSD		4.865	1.545	2.032	1.379	0.000	4.344	1.928

200-35700-A-3-B @8 10/14/2016 02:32:53 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:33:15	96.560%	222.642	389.761	142659.970	684058.190	T 37209290.000	T 2370708.700	138587.800	134.046%	4474.376	74758.323	64627.803
2	14:33:36	93.916%	245.684	330.653	136363.260	689246.190	T 37739540.000	T 2402649.200	141896.280	132.990%	4619.276	78890.812	65974.240
3	14:33:58	94.861%	261.402	114.174	135050.890	699112.100	T 37992098.000	T 2429117.600	142753.260	131.945%	4599.333	76985.314	66623.340
x		95.113%	243.242	278.196	138024.710	690805.490	T 37646976.000	T 2400825.100	141079.110	132.994%	4564.328	76878.150	65741.794
σ		1.340%	19.495	145.089	4067.536	7647.130	T 399528.730	T 29247.153	2199.676	1.050%	78.537	2068.328	1017.873
%RSD		1.409	8.015	52.153	2.947	1.107	T 1.061	T 1.218	1.559	0.790	1.721	2.690	1.548

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:33:15	5400.208	T 3541211.400	T 101818610.000	37970.474	21193.653	TM 5091996.200	200583.960	1062.327	471.289	75.206	487.010	2414.916
2	14:33:36	4831.501	T 3604759.100	T 103517590.000	38337.715	21673.070	TM 5069915.400	200923.640	1089.844	455.190	63.510	518.740	2402.869
3	14:33:58	4956.638	T 3665705.500	T 106229890.000	39361.096	22442.850	TM 5129211.900	204952.940	1094.158	470.555	103.148	493.435	2158.955
x		5062.782	T 3603892.000	T 103855360.000	38556.428	21769.857	TM 5097041.200	202153.510	1082.109	465.678	80.621	499.728	2325.580
σ		298.842	T 62251.558	T 2224951.900	720.648	630.198	TM 29968.437	2430.316	17.268	9.090	20.366	16.775	144.427
%RSD		5.903	T 1.727	T 2.142	1.869	2.895	TM 0.588	1.202	1.596	1.952	25.261	3.357	6.210
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:33:15	100699.030	192.030%	-691.872	361.474	-130.002	233.469	112.423%	7295.702	668.850	238.223	148364.120	113.331%
2	14:33:36	100391.860	193.016%	-684.407	413.093	-92.796	151.873	112.775%	7698.727	586.448	250.693	152310.980	115.346%
3	14:33:58	102123.720	192.083%	-673.805	424.308	-124.219	208.556	113.188%	7812.079	782.317	270.366	151897.330	116.516%
x		101071.540	192.376%	-683.362	399.625	-115.672	197.966	112.795%	7602.169	679.205	253.094	150857.480	115.065%
σ		924.071	0.554%	9.079	33.513	20.021	41.816	0.383%	271.393	98.344	16.206	2169.194	1.611%
%RSD		0.914	0.288	1.329	8.386	17.309	21.123	0.340	3.570	14.479	6.403	1.438	1.400

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:33:15	14.639	446.408	432888.700	100.864%	0.000	74572.849	30146.795
2	14:33:36	-10.657	482.996	428773.510	103.718%	0.000	77542.683	29228.162
3	14:33:58	-8.194	840.135	430533.930	102.789%	0.000	81909.548	29224.812
x		-1.404	589.847	430732.050	102.457%	0.000	78008.360	29533.256
σ		13.948	217.527	2064.736	1.456%	0.000	3690.451	531.343
%RSD		993.514	36.879	0.479	1.421	0.000	4.731	1.799

200-35700-A-5-B @2 10/14/2016 02:38:36 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:38:58	94.041%	779.675	2051.382	T 407046.490	T 1712375.200	T 83815576.000	T 5492923.000	516857.600	149.702%	14147.151	215102.750	152963.380
2	14:39:20	95.479%	699.425	1953.882	T 403311.770	T 1707423.700	T 85450779.000	T 5528722.000	526738.800	147.277%	15110.584	221516.580	156010.420
3	14:39:42	93.576%	826.441	2078.702	337926.180	T 1681139.200	T 85324048.000	T 5541797.900	526638.440	147.122%	14112.400	218034.610	157218.320
x		94.366%	768.514	2027.989	T 382761.480	T 1700312.700	T 84863467.000	T 5521147.600	523411.610	148.034%	14456.712	218217.980	155397.370
σ		0.992%	64.239	65.616	T 38873.381	T 16788.283	T 909709.980	T 25302.490	5676.165	1.447%	566.537	3210.845	2192.716
%RSD		1.051	8.359	3.236	T 10.156	T 0.987	T 1.072	T 0.458	1.084	0.977	3.919	1.471	1.411

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:38:58	5061.073	T 15435096.000	T 332233760.000	109457.100	52512.384	T 4182142.600	430800.030	5108.706	297.008	492.618	512.088	1930.317
2	14:39:20	4685.023	T 15896677.000	T 337614560.000	110330.850	51543.213	T 4079903.200	425644.990	5100.185	290.050	436.553	517.681	2190.967
3	14:39:42	5085.508	T 15913440.000	T 341842330.000	110385.640	52044.897	T 4084956.400	429024.360	5162.309	272.836	559.581	527.401	1760.497
x		4943.868	T 15748404.000	T 337230220.000	110057.860	52033.498	T 4115667.400	428489.800	5123.733	286.631	496.251	519.057	1960.594
σ		224.499	T 271462.330	T 4815798.800	520.999	484.686	T 57624.614	2618.766	33.678	12.443	61.594	7.749	216.827
%RSD		4.541	T 1.724	T 1.428	0.473	0.931	T 1.400	0.611	0.657	4.341	12.412	1.493	11.059

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:38:58	335960.470	331.291%	875.019	5452.199	-395.766	1782.560	109.260%	46749.017	2190.478	1518.173	476522.630	132.653%
2	14:39:20	338157.950	335.098%	820.915	4968.799	-236.304	1913.578	110.688%	47623.336	2164.216	1460.271	473850.410	134.057%
3	14:39:42	339992.380	333.856%	749.244	5365.183	-289.916	1705.664	110.260%	48226.852	2250.856	1513.314	473918.960	134.103%
x		338036.930	333.415%	815.059	5262.060	-307.329	1800.600	110.069%	47533.068	2201.850	1497.253	474764.000	133.604%
σ		2018.677	1.941%	63.092	257.672	81.145	105.125	0.732%	743.041	44.425	32.119	1523.400	0.824%
%RSD		0.597	0.582	7.741	4.897	26.403	5.838	0.665	1.563	2.018	2.145	0.321	0.617

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:38:58	466.916	4712.129	2403120.200	104.348%	0.000	281252.310	94161.414
2	14:39:20	448.817	5100.953	2393925.800	105.138%	0.000	278394.520	95084.714
3	14:39:42	478.425	5117.150	2440487.100	104.979%	0.000	281227.180	94639.844
x		464.719	4976.744	2412511.000	104.822%	0.000	280291.340	94628.657
σ		14.925	229.306	24660.277	0.418%	0.000	1642.740	461.751
%RSD		3.212	4.608	1.022	0.399	0.000	0.586	0.488

200-35700-A-1-B @4 10/14/2016 02:44:19 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:44:40	96.034%	341.166	612.471	178556.750	680323.410	T 43543633.000	T 2611383.100	361838.050	135.821%	7099.938	115259.970	77101.850
2	14:45:02	94.840%	427.540	900.104	187300.080	699331.470	T 44352872.000	T 2639614.100	366614.970	133.150%	7514.047	116568.980	77756.818
3	14:45:24	95.603%	384.675	741.375	177108.980	694140.720	T 43688241.000	T 2614829.100	365320.560	133.013%	7816.331	118014.130	79039.089
x		95.492%	384.460	751.316	180988.600	691265.200	T 43861582.000	T 2621942.100	364591.190	133.995%	7476.772	116614.360	77965.919
σ		0.605%	43.187	144.074	5513.623	9824.867	T 431569.180	T 15401.038	2470.569	1.583%	359.648	1377.640	985.402
%RSD		0.633	11.233	19.176	3.046	1.421	T 0.984	T 0.587	0.678	1.181	4.810	1.181	1.264

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:44:40	4241.684	T 18989234.000	T 218903420.000	73715.601	25903.495	T 2597857.100	314615.300	4875.283	406.695	372.524	495.230	2337.177
2	14:45:02	4709.769	T 19383676.000	T 222179890.000	73681.354	26470.137	T 2633239.300	325340.140	4889.357	405.487	355.993	488.342	2331.792
3	14:45:24	4201.559	T 19373266.000	T 223601580.000	73663.108	25582.226	T 2609900.800	322166.380	5054.374	371.319	388.540	469.054	2211.471
x		4384.337	T 19248725.000	T 221561630.000	73686.688	25985.286	T 2613665.700	320707.270	4939.672	394.500	372.352	484.209	2293.480

σ		282.545	T 224786.720	T 2409329.200	26.650	449.570	T 17989.023	5509.293	99.585	20.085	16.274	13.569	71.073
%RSD		6.444	T 1.168	T 1.087	0.036	1.730	T 0.688	1.718	2.016	5.091	4.371	2.802	3.099
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:44:40	214982.130	208.215%	1161.428	5050.121	-88.066	1985.258	113.384%	41917.578	1448.546	900.243	249264.430	116.939%
2	14:45:02	220935.450	212.913%	1112.714	5393.797	-196.185	2094.627	112.218%	42335.010	1419.919	864.562	255245.640	117.489%
3	14:45:24	220433.170	210.382%	1091.331	5298.161	-151.647	2032.524	112.995%	42860.446	1472.626	859.666	251697.310	118.207%
x		218783.580	210.503%	1121.824	5247.360	-145.300	2037.469	112.866%	42371.011	1447.030	874.824	252069.130	117.545%
σ		3301.718	2.351%	35.926	177.380	54.338	54.852	0.593%	472.464	26.386	22.150	3007.891	0.636%
%RSD		1.509	1.117	3.202	3.380	37.397	2.692	0.526	1.115	1.823	2.532	1.193	0.541

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:44:40	448.656	1245.198	1296532.700	102.755%	0.000	98628.196	37777.501
2	14:45:02	352.023	1424.938	1323417.900	101.466%	0.000	103998.350	39181.877
3	14:45:24	382.553	1236.356	1312125.600	102.457%	0.000	106430.580	38254.430
x		394.411	1302.164	1310692.100	102.226%	0.000	103019.040	38404.603
σ		49.396	106.417	13499.811	0.675%	0.000	3992.317	714.130
%RSD		12.524	8.172	1.030	0.660	0.000	3.875	1.859

200-35700-A-3-B @10 10/14/2016 02:50:01 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:50:23	99.577%	124.650	-67.976	112006.910	548701.750	T 29435174.000	T 1881036.500	111038.900	131.536%	3901.749	61337.154	51312.278
2	14:50:45	96.579%	183.764	-45.482	111896.750	544610.190	T 29621480.000	T 1889399.500	110195.860	131.228%	3884.142	61220.170	51639.038
3	14:51:06	94.070%	189.427	25.018	101739.910	548640.260	T 29985469.000	T 1893281.600	111437.930	131.572%	3498.015	61623.325	51129.646
x		96.742%	165.947	-29.480	108547.860	547317.400	T 29680707.000	T 1887905.900	110890.900	131.445%	3761.302	61393.550	51360.320
σ		2.757%	35.876	48.518	5896.116	2344.710	T 279887.550	T 6257.729	634.126	0.189%	228.183	207.410	258.072
%RSD		2.850	21.619	164.581	5.432	0.428	T 0.943	T 0.331	0.572	0.144	6.067	0.338	0.502

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:50:23	4158.828	T 2844978.500	T 80867149.000	29658.816	16795.135	T 3938066.000	155393.940	869.692	509.334	32.928	470.311	2507.824
2	14:50:45	4656.913	T 2833734.700	T 82094409.000	30119.691	16854.363	T 3971003.700	156034.330	826.577	537.303	4.158	448.148	2514.224
3	14:51:06	4378.424	T 2889584.200	T 83615968.000	30671.547	17551.603	T 4071043.200	158838.840	860.909	498.088	60.976	498.671	2310.154
x		4398.055	T 2856099.100	T 82192509.000	30150.018	17067.034	T 3993371.000	156755.700	852.393	514.908	32.688	472.377	2444.067
σ		249.622	T 29538.852	T 1377032.900	507.046	420.693	T 69252.850	1832.241	22.784	20.193	28.410	25.325	116.016
%RSD		5.676	T 1.034	T 1.675	1.682	2.465	T 1.734	1.169	2.673	3.922	86.913	5.361	4.747

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:50:23	76821.808	175.053%	-773.930	233.874	-160.328	199.629	113.331%	5877.761	511.061	130.835	112859.830	112.284%
2	14:50:45	78378.295	175.168%	-799.939	299.951	-141.810	132.886	113.357%	5920.541	475.121	129.884	115069.850	113.470%
3	14:51:06	78741.801	175.869%	-847.262	329.585	-130.994	154.148	112.601%	6084.667	468.345	155.426	117638.730	113.534%
x		77980.635	175.363%	-807.044	287.804	-144.378	162.221	113.096%	5960.990	484.842	138.715	115189.470	113.096%
σ		1019.899	0.442%	37.179	48.999	14.835	34.096	0.429%	109.223	22.958	14.480	2391.693	0.704%
%RSD		1.308	0.252	4.607	17.025	10.275	21.018	0.379	1.832	4.735	10.439	2.076	0.623

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:50:23	-68.034	-235.583	324004.010	101.674%	0.000	53983.872	22665.267
2	14:50:45	-7.647	-176.403	323684.490	101.889%	0.000	56912.027	22160.329
3	14:51:06	-25.367	-102.783	330305.070	101.889%	0.000	61251.144	22253.695
x		-33.683	-171.590	325997.860	101.817%	0.000	57382.348	22359.764
σ		31.040	66.531	3733.574	0.124%	0.000	3656.393	268.661
%RSD		92.155	38.773	1.145	0.122	0.000	6.372	1.202

CCV 10/14/2016 02:55:44 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:56:06	82.830%	108105.900	38701.922	T 15734465.000	T 4699692.500	T 43762232.000	T 15667388.000	T 1683091.800	98.344%	30320.298	T 3200588.400	90774
2	14:56:28	80.339%	109296.960	41158.059	T 16353802.000	T 4900423.800	T 46246397.000	T 16321504.000	T 1741428.100	92.534%	32743.453	T 3310779.100	94344
3	14:56:51	79.486%	108940.020	39968.561	T 15676431.000	T 4693986.300	T 44536524.000	T 15834810.000	T 1732054.200	95.370%	31340.501	T 3249310.500	91552
x		80.885%	107.052%	104.235%	T 97.677%	T 97.286%	T 98.064%	T 96.738%	T 92.538%	95.416%	31468.084	T 95.396%	90.
σ		1.738%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.906%	1216.605	T n/a	
%RSD		2.148	0.562	3.075	T 2.358	T 2.468	T 2.834	T 2.132	T 1.823	3.045	3.866	T 1.697	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:56:06	12349.552	T 4709692.700	T 97926413.000	1399379.700	752963.020	979774.830	713045.530	93535.138	215.219	9107.906	449.674	193
2	14:56:28	12011.781	T 4959789.000	T 101920490.000	1443760.900	789972.900	981209.170	713641.050	93575.248	9.356	9146.190	450.684	167
3	14:56:51	9189.920	T 4766383.300	T 97816648.000	1391195.000	745135.880	982917.200	715811.780	94421.626	-131.132	9347.368	438.046	128
x		11183.751	T 94.898%	T 97.341%	95.147%	99.225%	103.573%	97.940%	99.538%	31.148	98.569%	446.134	163
σ		1734.948	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	174.201	n/a	7.023	32

%RSD		15.513	T 2.725	T 2.357	2.004	3.140	0.160	0.204	0.533	559.274	1.398	1.574	2
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	14:56:06	985660.840	93.716%	2068114.600	329419.820	590.103	154889.840	93.180%	1049227.600	673757.660	509602.680	697434.030	88.
2	14:56:28	997759.640	92.456%	2117650.200	334468.230	528.696	153149.780	91.418%	1049045.500	676980.040	516774.010	706208.670	89.
3	14:56:51	998962.540	90.496%	2162850.800	331150.060	821.539	154597.170	90.174%	1076667.400	685570.370	523689.820	715921.870	91.
x		994127.670	92.223%	92.294%	96.867%	646.779	91.876%	91.591%	1058313.500	678769.360	84.504%	85.058%	89.
σ		7357.117	1.623%	n/a	n/a	154.430	n/a	1.510%	15895.188	6106.247	n/a	n/a	1.
%RSD		0.740	1.759	2.239	0.773	23.877	0.604	1.649	1.502	0.900	1.363	1.309	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:56:06	48836.604	2095474.900	T 20188436.000	86.264%	0.000	333182.480	163837.800
2	14:56:28	48216.509	2157294.200	T 20814586.000	83.939%	0.000	348727.010	168466.680
3	14:56:51	49087.087	2159878.300	T 20667971.000	83.953%	5.956	352791.310	167069.510
x		104.736%	83.828%	T 95.120%	84.719%	1.985	93.839%	88.291%
σ		n/a	n/a	T n/a	1.338%	3.439	n/a	n/a
%RSD		0.920	1.706	T 1.593	1.579	173.205	3.001	1.426

CCB 10/14/2016 03:01:33 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	15:01:55	87.325%	31.622	-462.951	11907.358	1658.817	25704.081	11870.950	115.279	101.017%	89.299	2611.678	-416.589
2	15:02:17	88.779%	16.557	-606.095	12823.392	1635.444	29384.186	11630.677	128.344	102.236%	34.335	2655.826	-7.621
3	15:02:39	86.062%	55.744	-468.200	13016.854	1979.915	31018.470	9569.636	524.998	102.490%	39.121	663.633	-171.288
x		87.389%	34.641	-512.415	12582.535	1758.059	28702.246	11023.754	256.207	101.914%	54.252	1977.046	-198.500
σ		1.360%	19.767	81.171	592.668	192.488	2722.034	1265.021	232.872	0.787%	30.446	1137.663	205.837
%RSD		1.556	57.061	15.841	4.710	10.949	9.484	11.475	90.892	0.772	56.120	57.544	103.697

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	15:01:55	8657.272	2848.771	120754.630	-26.037	72.451	343.086	2.341	35.400	802.210	30.598	441.225	2028.703
2	15:02:17	8606.666	2935.184	133223.730	59.221	117.112	472.902	204.983	144.577	811.492	-19.300	449.911	2386.296
3	15:02:39	9413.407	3100.115	127736.680	115.957	272.234	584.056	116.288	16.768	813.522	-41.016	439.688	2472.783
x		8892.448	2961.357	127238.350	49.714	153.932	466.682	107.871	65.582	809.075	-9.906	443.608	2295.927
σ		451.872	127.700	6249.471	71.473	104.857	120.606	101.583	69.044	6.031	36.719	5.513	235.428
%RSD		5.082	4.312	4.912	143.768	68.119	25.843	94.171	105.279	0.745	370.695	1.243	10.254

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:01:55	62.437	96.139%	1798.819	57.610	-67.043	39.346	95.984%	2177.581	999.875	447.606	76.754	92.004%
2	15:02:17	208.077	96.031%	1833.524	31.497	-68.423	30.250	96.020%	2431.949	989.714	570.790	149.532	91.559%
3	15:02:39	227.351	97.368%	1667.787	48.503	-65.723	36.102	97.912%	2640.340	1045.745	579.987	197.860	92.616%
x		165.955	96.513%	1766.710	45.870	-67.063	35.233	96.639%	2416.623	1011.778	532.794	141.382	92.060%
σ		90.166	0.743%	87.409	13.254	1.350	4.610	1.103%	231.760	29.852	73.919	60.963	0.531%
%RSD		54.332	0.769	4.948	28.895	2.014	13.084	1.141	9.590	2.950	13.874	43.119	0.577

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:01:55	-51.420	149.465	8518.476	87.461%	0.000	8164.194	56.406
2	15:02:17	3.877	178.120	9802.221	88.609%	0.000	7802.838	65.988
3	15:02:39	-9.165	101.478	10507.861	92.083%	0.000	6982.490	66.095
x		-18.903	143.021	9609.519	89.384%	0.000	7649.841	62.830
σ		28.906	38.725	1008.595	2.407%	0.000	605.526	5.563
%RSD		152.920	27.076	10.496	2.693	0.000	7.916	8.854

CCVL 10/14/2016 03:07:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:07:38	86.318%	208.997	6678.970	T 805207.970	27769.074	81362.794	711251.630	25760.628	104.933%	28.712	12587.184	8495.202
2	15:08:00	90.958%	202.380	5848.875	709002.670	29472.494	86095.637	722905.450	26592.044	105.182%	9.529	13616.051	9076.872
3	15:08:22	89.336%	195.376	6359.234	T 802919.830	29967.805	85112.075	722428.880	26812.260	104.892%	19.121	12044.559	9439.529
x		88.871%	124.398%	102.683%	T 94.769%	89.032%	110.453%	87.247%	85.240%	105.002%	19.121	93.453%	88.497%
σ		2.355%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.157%	9.592	n/a	n/a
%RSD		2.649	3.368	6.650	T 7.107	3.968	2.966	0.917	2.102	0.149	50.165	6.261	5.291

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:07:38	9447.830	7328.588	681899.240	2327.919	1236.158	3890.781	12557.344	1072.249	845.014	144.478	454.734	2515.607
2	15:08:00	9127.761	7717.025	685894.210	2411.174	1417.978	4011.930	12442.459	838.143	846.808	196.300	435.932	2207.928
3	15:08:22	9549.540	7923.452	683999.390	2772.506	1217.689	3988.884	11861.125	851.126	834.598	166.784	432.093	2314.843
x		9375.044	94.371%	100.646%	84.394%	104.942%	104.593%	105.314%	97.636%	842.140	90.629%	440.920	2346.126
σ		220.108	n/a	n/a	n/a	n/a	n/a	n/a	n/a	6.593	n/a	12.117	156.207
%RSD		2.348	3.945	0.292	9.439	8.577	1.623	3.038	14.294	0.783	15.364	2.748	6.658

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:07:38	24585.223	95.861%	16180.772	3293.868	-21.696	749.128	96.101%	1217.507	5746.153	4181.986	5462.226	93.379%
2	15:08:00	25714.351	100.198%	16454.788	3115.348	-60.250	774.183	98.755%	1280.992	5811.512	4168.365	5521.255	95.563%
3	15:08:22	25062.574	98.766%	16407.555	3279.078	-18.236	672.549	98.707%	1347.478	5864.043	4080.306	5361.942	92.714%
x		91.067%	98.275%	89.122%	94.315%	-33.394	87.216%	97.855%	1281.993	5807.236	84.709%	81.993%	93.885%
σ		n/a	2.210%	n/a	n/a	23.322	n/a	1.518%	64.991	59.062	n/a	n/a	1.490%
%RSD		2.256	2.249	0.896	3.068	69.840	7.234	1.552	5.070	1.017	1.332	1.478	1.587

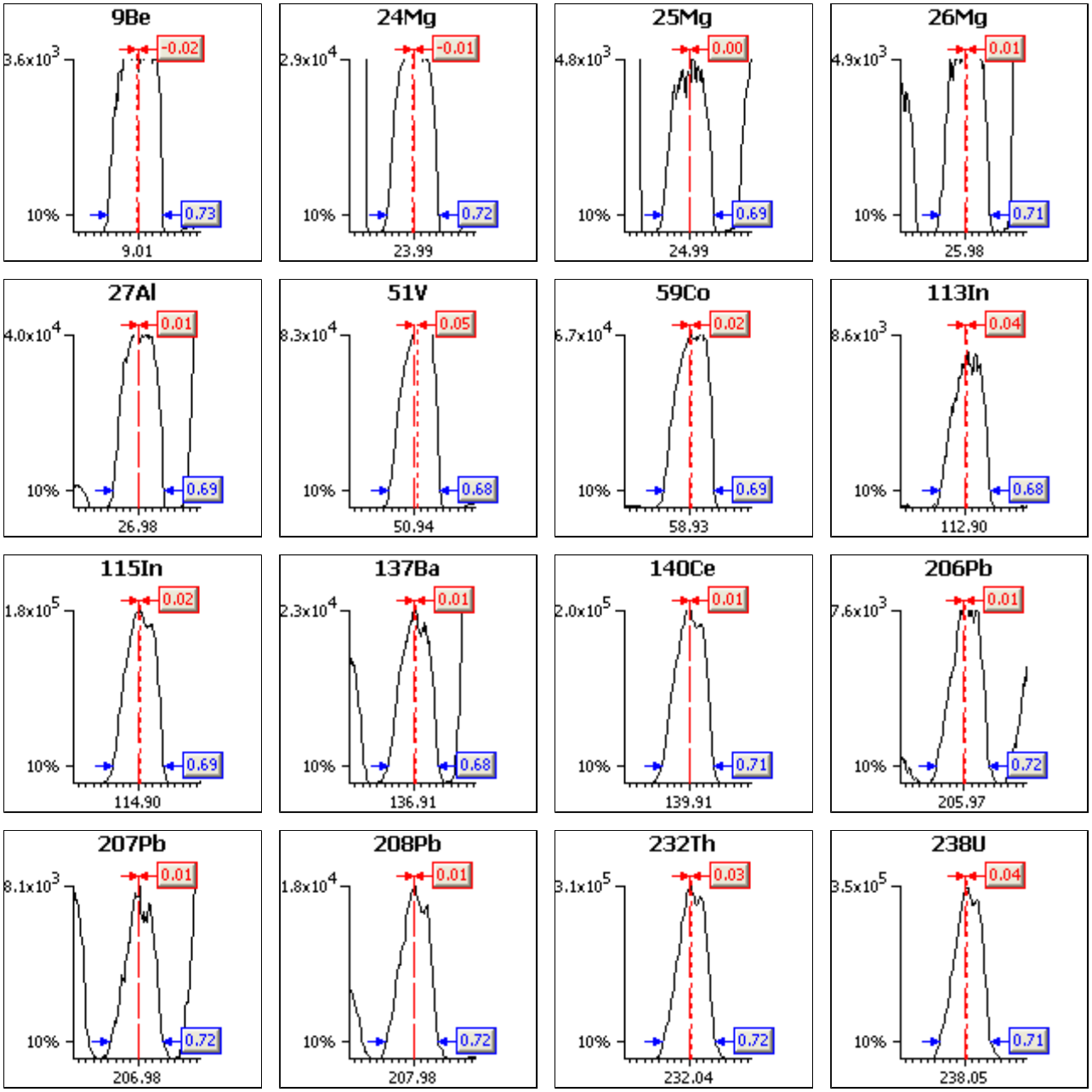
Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:07:38	3834.347	19486.941	18552.041	89.896%	0.000	19684.038	17520.190
2	15:08:00	3909.776	20001.455	19906.450	89.419%	0.000	20178.340	17742.880
3	15:08:22	3658.229	19782.701	20221.345	91.156%	0.000	20370.899	16964.114
x		81.719%	77.481%	113.133%	90.157%	0.000	54.626%	92.339%
σ		n/a	n/a	n/a	0.897%	0.000	n/a	n/a
%RSD		3.396	1.307	4.535	0.995	0.000	1.765	2.304

Performance Report

Sample details
Sample name : ITUNE
Acquired at : 10/18/2016 09:54:25 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Mass Calibration verification

Acquisition parameters
Sweeps : 20
Dwell : 1.0 mSecs
Point spacing : 0.01 amu
Peak width measured at 10% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
9Be	0.90	0.65	0.10	0.73	-0.02
24Mg	0.90	0.65	0.10	0.72	-0.01

25Mg	0.90	0.65	0.10	0.69	0.00
26Mg	0.90	0.65	0.10	0.71	0.01
27Al	0.90	0.65	0.10	0.69	0.01
51V	0.90	0.65	0.10	0.68	0.05
59Co	0.90	0.65	0.10	0.69	0.02
113In	0.90	0.65	0.10	0.68	0.04
115In	0.90	0.65	0.10	0.69	0.02
137Ba	0.90	0.65	0.10	0.68	0.01
140Ce	0.90	0.65	0.10	0.71	0.01
206Pb	0.90	0.65	0.10	0.72	0.01
207Pb	0.90	0.65	0.10	0.72	0.01
208Pb	0.90	0.65	0.10	0.72	0.01
232Th	0.90	0.65	0.10	0.72	0.03
238U	0.90	0.65	0.10	0.71	0.04

Sample details
Sample name : ITUNE
Acquired at : 10/18/2016 09:54:25 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Tune conditions

Major	
Extraction	-110
Lens 1	-4.1
Focus	18.0
D1	-43.9
Pole Bias	1.0
Hexapole Bias	-3.0
Nebuliser	0.74
Sampling Depth	133

Minor	
Lens 2	-39.2
Lens 3	-177.3
Forward power	1404
Horizontal	70
Vertical	522
D2	-158
DA	-40.8
Cool	13.0
Auxiliary	0.90

Global	
Standard resolution	135
High resolution	115
Analogue Detector	2353
PC Detector	1196

Add. Gases	
CCT1	0.00
CCT2	0.00

Sensitivity and stability results

Acquisition parameters
Sweeps : 50

Run	Time	8Bkg	9Be	24Mg	25Mg	26Mg	27Al	51V	59Co	113In
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Countrate	-	>100	>100	>100	>100	>100	>100	>100	>100
1	09:55:21 AM	0.100	4056.494	31894.489	4410.584	5446.890	40144.289	87613.681	66847.791	7925.884
2	09:55:55 AM	0.100	4004.481	30994.794	4300.555	5184.806	40102.188	86123.947	66476.309	7617.741
3	09:56:29 AM	0.000	4008.482	30732.308	4382.576	5110.783	40186.390	85963.119	66572.693	7937.890
4	09:57:03 AM	0.100	4004.481	30966.741	4382.576	5276.835	40092.164	85985.233	66325.711	7647.754
5	09:57:37 AM	0.000	4102.505	31403.558	4212.532	5024.757	39777.411	86208.381	67116.869	7731.793
x		0.060	4035.288	31198.378	4337.765	5208.814	40060.488	86378.872	66667.874	7772.212
σ		0.05	43.54	457.98	81.22	162.30	162.60	697.60	314.96	151.70
%RSD		91.287	1.079	1.468	1.872	3.116	0.406	0.808	0.472	1.952

Run	Time	115In	137Ba	140Ce	156Ce O	206Pb	207Pb	208Pb	220Bkg	232Th
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	5.0%	5.0%	5.0%	-	5.0%	5.0%	5.0%	-	5.0%
	Countrate	>100	>100	>100	-	>100	>100	>100	-	>100
1	09:55:21 AM	180866.08	22725.483	206667.45	1300.051	8186.010	7449.665	17619.308	0.000	305871.20
2	09:55:55 AM	180682.10	22689.434	208018.09	1314.052	8081.959	7483.680	17699.393	0.000	306032.11
3	09:56:29 AM	182125.69	22949.790	207540.19	1314.052	7985.913	7453.666	17288.963	0.000	307486.51
4	09:57:03 AM	180591.12	23272.237	209366.83	1316.052	7985.913	7417.650	17479.161	0.000	308994.01
5	09:57:37 AM	181717.26	23061.945	209459.99	1344.054	7965.903	7237.571	17889.596	0.000	307523.18
x		181196.45	22939.778	208210.51	1317.652	8041.140	7408.446	17595.284	0.000	307181.40
σ		684.63	241.94	1200.59	16.09	92.76	98.34	226.58	0.00	1277.98
%RSD		0.378	1.055	0.577	1.221	1.154	1.327	1.288	0.000	0.416

Run	Time	238U
Dwell (mSecs)		0.0
Limits	%RSD	5.0%
	Countrate	>100
1	09:55:21 AM	335393.04
2	09:55:55 AM	336135.78
3	09:56:29 AM	335172.67
4	09:57:03 AM	336515.32
5	09:57:37 AM	336094.97
x		335862.36
σ		559.28
%RSD		0.167

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0200
1	09:55:21 AM	0.006
2	09:55:55 AM	0.006

3	09:56:29 AM	0.006
4	09:57:03 AM	0.006
5	09:57:37 AM	0.006
x		0.0063
σ		0.00
%RSD		0.8358

Result : The performance report passed.

Experiment Details

Description	PlasmaLab Template BlankExperiment
Template Filename	C:\Program Files\Thermo Fisher\PlasmaLab\TEMPLATES\6020A.tet
Created By User	user
Analyte Database	Default.tea
Creation Timestamp	8/29/2003 01:55:15 PM
Last Edited By	INORG-User
Last Edit Timestamp	10/19/2016 09:26:35 AM
Instrument Detector	Simultaneous
Database Version	3.51
Acquisition Mode	Unknown

Numerical Results report key (text indicates meaning)

Blue text indicates that cell is a statistic.
Underlining indicates that a data warning flag is set.

Column headings	Result cells	Data warning flags
No flag	Internal Standard	I - Invalid calibration
Semi Quant	Excluded	T - Tripped
Standard Addition	QC Warning	F - Interference correction failed
Multi Element	QC Failure	M - Result over max
	Transient TRA only:	V - Valley integration failed
	Peak Not Found	D - Different method used
	Manually Edited	
	Merged Peak	

Setup

Survey Scan Setup

Sweeps	10
Dwell Time	600
Channels Per Mass	10
Acquisition Duration	13247

Main Run Setup

Main Run	Peak Jumping
Sweeps	20
Dwell Time	10000
Channels Per Mass	1
Acquisition Duration	18211
Channel Spacing	0.02

Survey Scan Regions

Start AMU	End AMU	Channels	Dwell ms	Resolution

4.59	11.41	68	600	Standard
22.59	27.41	48	600	Standard
28.59	29.41	8	600	Standard
30.59	31.41	8	600	Standard
32.59	33.41	8	600	Standard
38.59	39.41	8	600	Standard
42.59	79.41	368	600	Standard
80.59	245.50	1649	600	Standard

Peak Jump Regions

Analyte	Channels	Dwell ms	Resolution
6Li	1	5000	Standard
7Li	1	5000	Standard
9Be	1	20000	Standard
11B	1	10000	Standard
23Na	1	5000	Standard
25Mg	1	5000	Standard
26Mg	1	5000	Standard
27Al	1	10000	Standard
39K	1	5000	Standard
43Ca	1	10000	Standard
44Ca	1	5000	Standard
45Sc	1	5000	Standard
47Ti	1	10000	Standard
51V	1	10000	Standard
52Cr	1	10000	Standard
53Cl O	1	10000	Standard
55Mn	1	10000	Standard
56Fe	1	10000	Standard
59Co	1	10000	Standard
60Ni	1	10000	Standard
65Cu	1	10000	Standard
66Zn	1	10000	Standard
75As	1	50000	Standard
77Ar Cl	1	50000	Standard
82Se	1	100000	Standard
83Kr	1	100000	Standard
84Kr	1	10000	Standard
88Sr	1	10000	Standard
89Y	1	5000	Standard
98Mo	1	10000	Standard
106Cd	1	10000	Standard
107Ag	1	10000	Standard
108Mo O	1	10000	Standard
111Cd	1	10000	Standard
115In	1	5000	Standard
118Sn	1	10000	Standard
121Sb	1	10000	Standard
123Sb	1	100000	Standard
135Ba	1	10000	Standard

159Tb	1	5000	Standard
182W	1	10000	Standard
205Tl	1	10000	Standard
206Pb	1	10000	Standard
207Pb	1	10000	Standard
208Pb	1	10000	Standard
209Bi	1	5000	Standard
220Bkg	1	10000	Standard
232Th	1	10000	Standard
238U	1	10000	Standard

Calibration Technique

Use External Drift Correction - No
Calibrate by - Isotope

Symbol	Interference Correction	RSF	Calibration Method	Line Fit	Weighting	Forcing	Use for Semi-Quant	Max Error	Minimum Correlation
6Li	Yes	1.00	None				No		
7Li	Yes	1.00	None				No		
9Be	Yes	0.75	Fully-Quantified	Linear	Absolute SD	None	Yes		
11B	Yes	0.58	Fully-Quantified	Linear	Absolute SD	None	Yes		
23Na	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
25Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
26Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
27Al	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
39K	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
43Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
44Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
45Sc	Yes	1.00	None				No		
47Ti	Yes	0.99	None				No		
51V	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
52Cr	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
55Mn	Yes	0.95	Fully-Quantified	Linear	Absolute SD	None	Yes		
56Fe	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
59Co	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
60Ni	No	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
65Cu	Yes	0.90	Fully-Quantified	Linear	Absolute SD	None	Yes		
66Zn	Yes	0.38	Fully-Quantified	Linear	Absolute SD	None	Yes		
75As	Yes	0.07	Fully-Quantified	Linear	Absolute SD	None	Yes		
82Se	Yes	0.10	Fully-Quantified	Linear	Absolute SD	None	Yes		
83Kr	Yes	0.01	None				No		
84Kr	Yes	0.01	None				No		
88Sr	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
89Y	Yes	0.98	None				No		
98Mo	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
107Ag	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
106Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
111Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
115In	Yes	0.99	None				No		
118Sn	Yes	0.96	None				No		

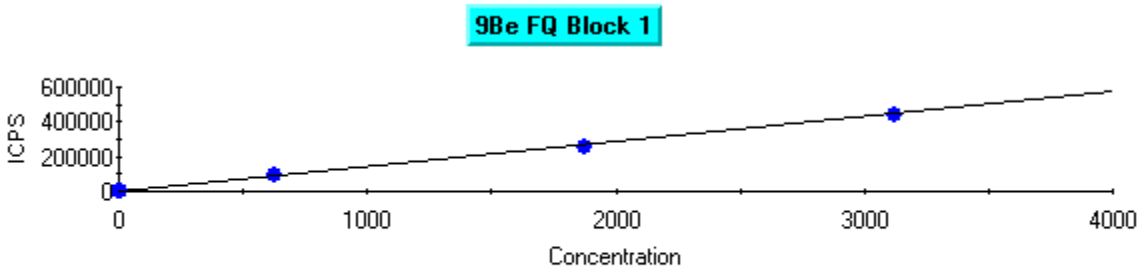
121Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
123Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
135Ba	Yes	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes
159Tb	Yes	0.99	None				No
182W	Yes	0.94	Fully-Quantified	Linear	Absolute SD	None	Yes
206Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
207Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
208Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	No
209Bi	Yes	0.92	None				No
232Th	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
238U	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
205Tl	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
220Bkg	Yes		Semi-Quantified				No
77Ar Cl	Yes		Semi-Quantified				No
53Cl O	Yes		Semi-Quantified				No
108Mo O	Yes		Semi-Quantified				No

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	STD0	Fully Quant Standard	1.000	0	1	2	144
2	STD1	Fully Quant Standard	1.000	0	1	3	144
3	STD2	Fully Quant Standard	1.000	0	1	4	144
4	STD3	Fully Quant Standard	1.000	0	1	5	144
5	STD4	Fully Quant Standard	1.000	1	1	1	144
6	STD5	Fully Quant Standard	1.000	1	1	2	144
7	ICV	QC Sample	1.000	0	1	6	144
8	ICVL	QC Sample	1.000	0	1	3	144
9	ICBIS	QC Sample	1.000	0	1	2	144
10	ICSA	QC Sample	1.000	1	1	3	144
11	ICSAB	QC Sample	1.000	1	1	4	144
12	CCV	QC Sample	1.000	0	1	5	144
13	CCB	QC Sample	1.000	0	1	2	144
14	MB 200-110229/1-A	Unknown	1.000	1	2	1	144
15	LCS 200-110229/2-A	Unknown	1.000	1	2	2	144
16	200-35680-A-7-B	Unknown	1.000	1	2	3	144
17	200-35680-A-14-D	Unknown	1.000	1	2	4	144
18	200-35736-A-1-A	Unknown	1.000	1	2	5	144
19	200-35736-A-2-A	Unknown	1.000	1	2	6	144
20	200-35736-A-3-A	Unknown	1.000	1	2	7	144
21	200-35736-A-4-A	Unknown	1.000	1	2	8	144
22	200-35736-A-5-A	Unknown	1.000	1	2	9	144
23	200-35736-A-5-A SD@5	Unknown	1.000	1	2	10	144
24	CCV	QC Sample	1.000	0	1	5	144
25	CCB	QC Sample	1.000	0	1	2	144
26	CCVL	QC Sample	1.000	0	1	3	144
27	200-35736-A-5-A PDS	Unknown	1.000	1	2	11	144
28	200-35736-A-5-I MS	Unknown	1.000	1	2	12	144
29	200-35736-A-5-J MSD	Unknown	1.000	1	3	1	144
30	200-35736-A-6-A	Unknown	1.000	1	3	2	144
31	200-35736-A-7-A	Unknown	1.000	1	3	3	144
32	200-35736-A-8-A	Unknown	1.000	1	3	4	144

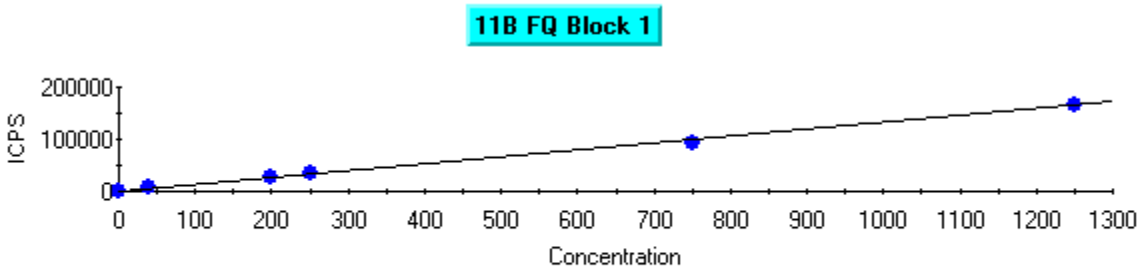
33	200-35736-A-9-A	Unknown	1.000	1	3	5	144
34	200-35736-A-10-A	Unknown	1.000	1	3	6	144
35	200-35736-A-11-A	Unknown	1.000	1	3	7	144
36	200-35736-A-11-A SD@5	Unknown	1.000	1	3	8	144
37	CCV	QC Sample	1.000	0	1	5	144
38	CCB	QC Sample	1.000	0	1	2	144
39	CCVL	QC Sample	1.000	0	1	3	144
40	200-35736-A-11-A PDS	Unknown	1.000	1	3	9	144
41	200-35736-A-11-I MS	Unknown	1.000	1	3	10	144
42	200-35736-A-11-J MSD	Unknown	1.000	1	3	11	144
43	200-35736-A-12-A	Unknown	1.000	1	3	12	144
44	MB 200-110239/1-A	Unknown	1.000	1	4	1	144
45	LCS 200-110239/2-A	Unknown	1.000	1	4	2	144
46	200-35680-A-13-A	Unknown	1.000	1	4	3	144
47	200-35700-A-19-A	Unknown	1.000	1	4	4	144
48	200-35736-A-14-A	Unknown	1.000	1	4	5	144
49	200-35736-A-14-A SD@5	Unknown	1.000	1	4	6	144
50	CCV	QC Sample	1.000	0	1	5	144
51	CCB	QC Sample	1.000	0	1	2	144
52	CCVL	QC Sample	1.000	0	1	3	144
53	CCVL	QC Sample	1.000	0	1	3	144
54	200-35736-A-14-A PDS	Unknown	1.000	1	4	7	144
55	200-35736-A-14-B MS	Unknown	1.000	1	4	8	144
56	200-35736-A-14-C MSD	Unknown	1.000	1	4	9	144
57	CCV	QC Sample	1.000	0	1	5	144
58	CCB	QC Sample	1.000	0	1	2	144
59	CCVL	QC Sample	1.000	0	1	3	144

Fully Quant Calibration



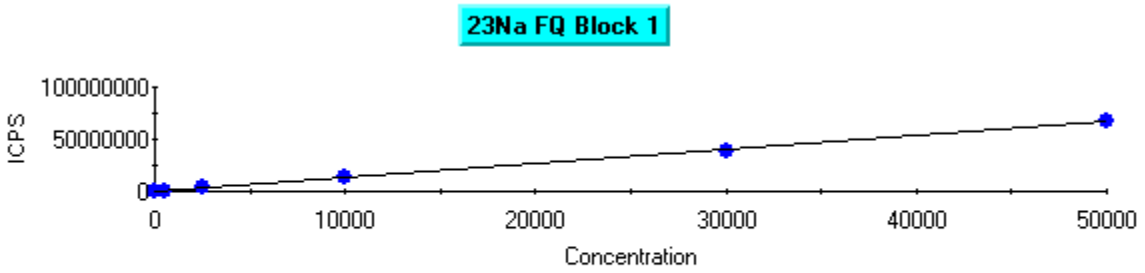
Intercept CPS=7.182359 Intercept Conc=0.050176
Sensitivity=143.142683 Correlation Coeff=0.999777

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.009	0.009	5.88	0.00
STD1	1.000	1.151	0.151	171.97	15.12
STD2	5.000	5.615	0.615	811.00	12.31
STD3	625.000	647.608	22.608	92707.57	3.62
STD4	1875.000	1781.392	93.608	255000.44	4.99
STD5	3125.000	3054.577	70.423	437247.57	2.25



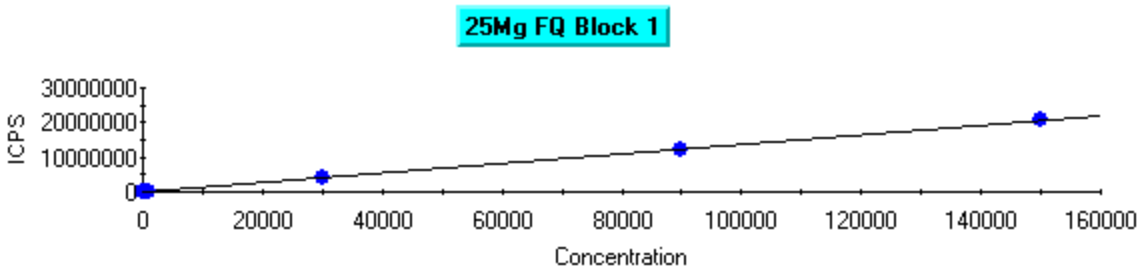
Intercept CPS=1241.290135 Intercept Conc=9.464432
Sensitivity=131.153159 Correlation Coeff=0.999587

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.076	0.076	1231.31	0.00
STD1	40.000	39.598	0.402	6434.64	1.01
STD2	200.000	200.199	0.199	27498.08	0.10
STD3	250.000	254.509	4.509	34620.97	1.80
STD4	750.000	708.624	41.376	94179.61	5.52
STD5	1250.000	1237.045	12.955	163483.66	1.04



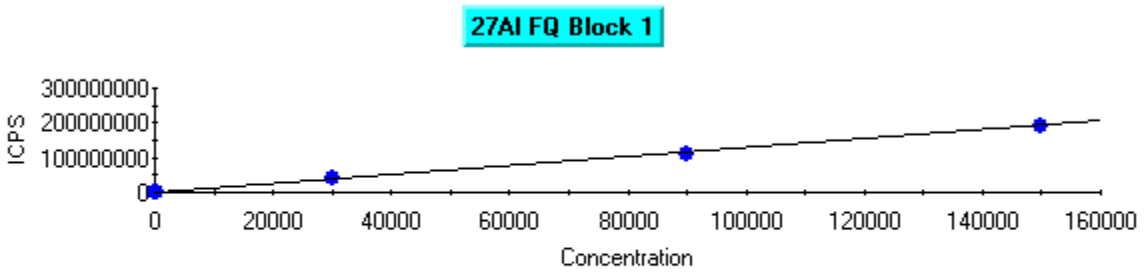
Intercept CPS=243715.829137 Intercept Conc=181.111879
Sensitivity=1345.664520 Correlation Coeff=0.999866

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-2.028	2.028	240987.09	0.00
STD1	500.000	506.126	6.126	924791.07	1.23
STD2	2500.000	2653.919	153.919	3815000.07	6.16
STD3	10000.000	10224.154	224.154	14001997.19	2.24
STD4	30000.000	28846.473	1153.527	39061391.63	3.85
STD5	50000.000	49184.844	815.156	66430015.08	1.63



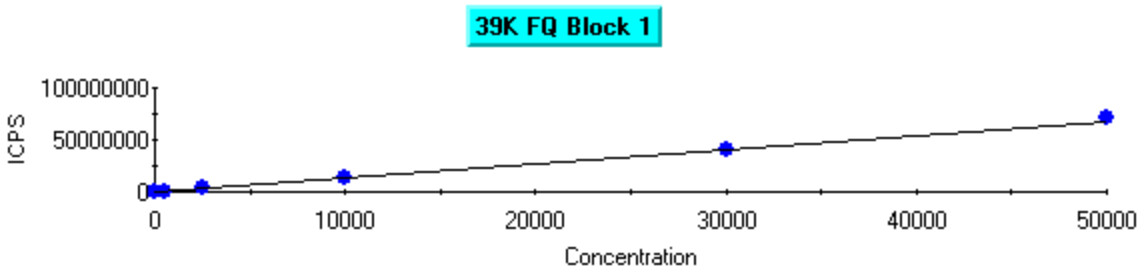
Intercept CPS=193.490143 Intercept Conc=1.401222
Sensitivity=138.086758 Correlation Coeff=0.999729

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	193.54	0.00
STD1	200.000	203.839	3.839	28340.96	1.92
STD2	1000.000	972.955	27.045	134545.71	2.70
STD3	30000.000	30651.629	651.629	4232777.56	2.17
STD4	90000.000	86604.797	3395.203	11959169.08	3.77
STD5	150000.000	150349.914	349.914	20761525.69	0.23



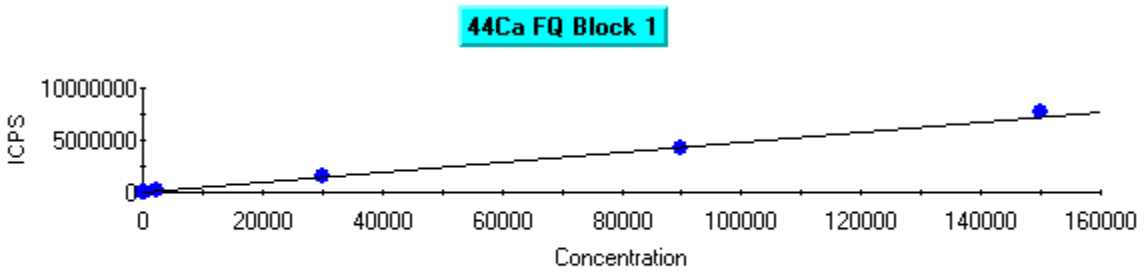
Intercept CPS=1307.442661 Intercept Conc=1.015458
Sensitivity=1287.540410 Correlation Coeff=0.999737

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.304	0.304	915.87	0.00
STD1	50.000	52.417	2.417	68796.59	4.83
STD2	250.000	237.631	12.369	307267.20	4.95
STD3	30000.000	30626.133	626.133	39433690.76	2.09
STD4	90000.000	86200.612	3799.388	110988078.84	4.22
STD5	150000.000	149468.935	531.065	192448600.70	0.35



Intercept CPS=47204.310921 Intercept Conc=34.784621
Sensitivity=1357.045434 Correlation Coeff=0.999293

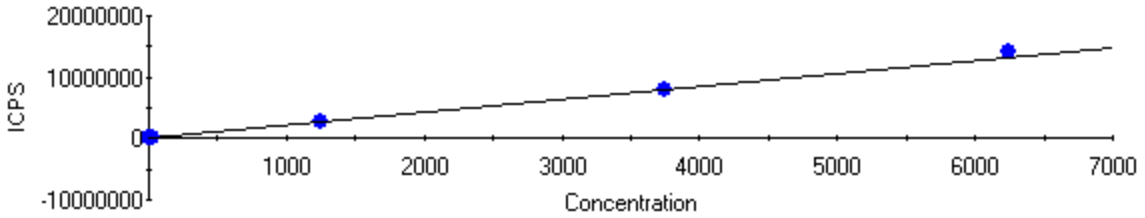
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.402	0.402	47749.41	0.00
STD1	500.000	485.015	14.985	705391.54	3.00
STD2	2500.000	2588.646	88.646	3560115.14	3.55
STD3	10000.000	10035.464	35.464	13665785.47	0.35
STD4	30000.000	29214.760	785.240	39692961.50	2.62
STD5	50000.000	52182.888	2182.888	70861753.92	4.37



Intercept CPS=339.385934 Intercept Conc=7.035441
Sensitivity=48.239465 Correlation Coeff=0.999237

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.050	0.050	337.00	0.00
STD1	500.000	514.410	14.410	25154.23	2.88
STD2	2500.000	2417.952	82.048	116980.08	3.28
STD3	30000.000	30320.497	320.497	1462983.96	1.07
STD4	90000.000	88907.253	1092.747	4289177.77	1.21
STD5	150000.000	159416.681	9416.681	7690514.89	6.28

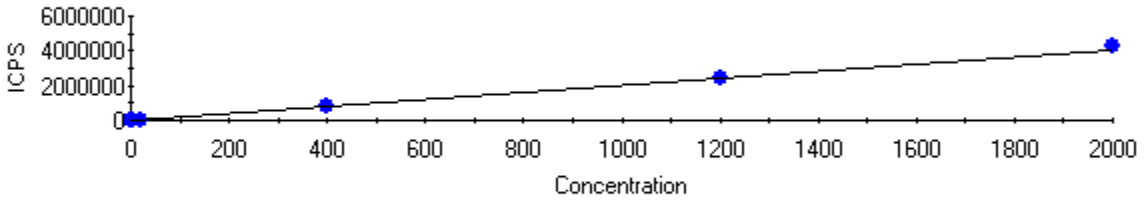
51V FQ Block 1



Intercept CPS=-1001.149747 Intercept Conc=-0.474535
Sensitivity=2109.749680 Correlation Coeff=0.999320

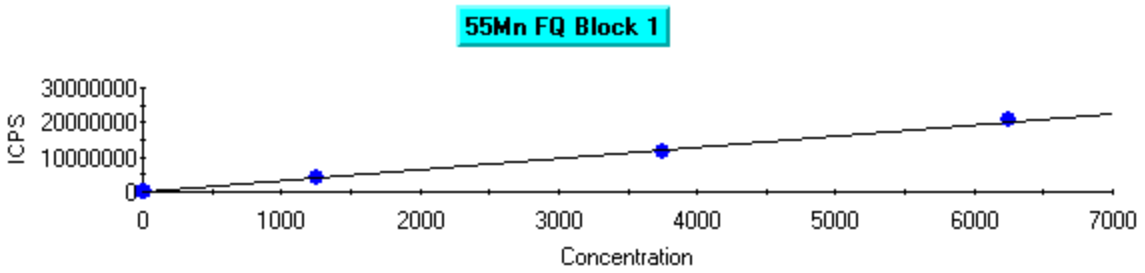
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.417	0.417	-122.33	0.00
STD1	5.000	5.492	0.492	10585.18	9.84
STD2	25.000	23.689	1.311	48977.46	5.24
STD3	1250.000	1280.213	30.213	2699928.32	2.42
STD4	3750.000	3712.885	37.115	7832257.60	0.99
STD5	6250.000	6631.329	381.329	13989442.85	6.10

52Cr FQ Block 1



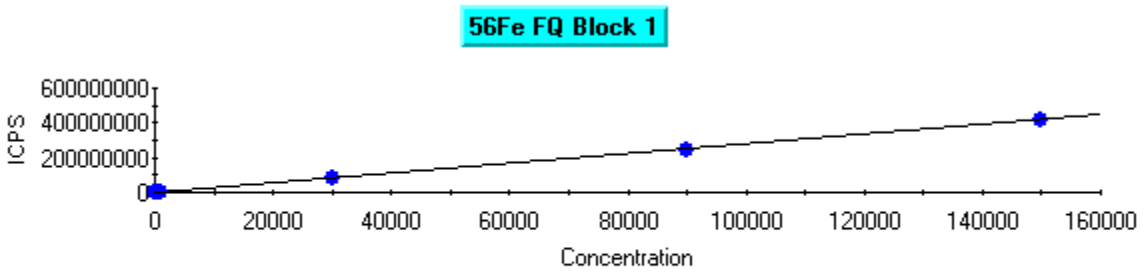
Intercept CPS=1757.571216 Intercept Conc=0.875087
Sensitivity=2008.453119 Correlation Coeff=0.999303

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.019	0.019	1719.96	0.00
STD1	4.000	4.071	0.071	9934.07	1.78
STD2	20.000	20.237	0.237	42401.97	1.18
STD3	400.000	386.689	13.311	778403.88	3.33
STD4	1200.000	1192.843	7.157	2397527.58	0.60
STD5	2000.000	2124.734	124.734	4269185.70	6.24



Intercept CPS=411.082180 Intercept Conc=0.126911
Sensitivity=3239.132564 Correlation Coeff=0.999472

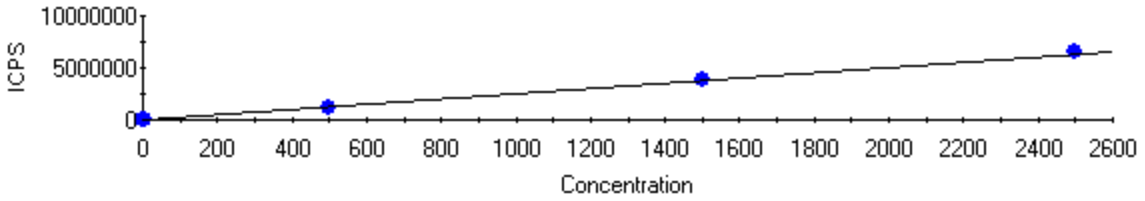
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.008	0.008	384.25	0.00
STD1	2.000	2.175	0.175	7454.64	8.73
STD2	10.000	9.659	0.341	31697.70	3.41
STD3	1250.000	1246.021	3.979	4036437.06	0.32
STD4	3750.000	3615.426	134.574	11711254.73	3.59
STD5	6250.000	6403.515	153.515	20742243.53	2.46



Intercept CPS=194744.856531 Intercept Conc=69.711525
Sensitivity=2793.581931 Correlation Coeff=0.999623

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.121	0.121	194407.84	0.00
STD1	200.000	195.562	4.438	741064.04	2.22
STD2	1000.000	1041.465	41.465	3104162.08	4.15
STD3	30000.000	29528.119	471.881	82683964.36	1.57
STD4	90000.000	85028.047	4971.953	237727559.60	5.52
STD5	150000.000	149092.866	907.134	416697880.32	0.60

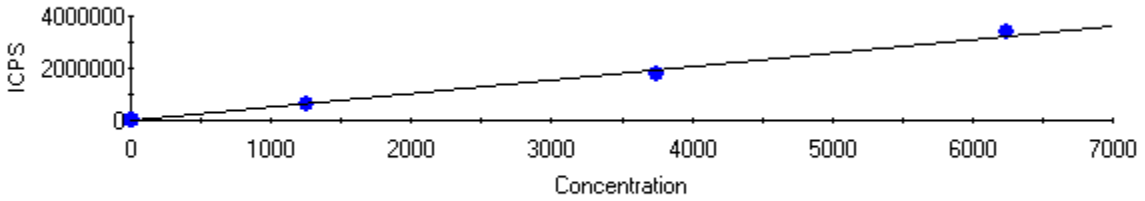
59Co FQ Block 1



Intercept CPS=42.660256 Intercept Conc=0.016787
Sensitivity=2541.298758 Correlation Coeff=0.999631

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	43.33	0.00
STD1	1.000	1.069	0.069	2758.63	6.87
STD2	5.000	4.963	0.037	12656.09	0.73
STD3	500.000	466.776	33.224	1186258.99	6.64
STD4	1500.000	1475.740	24.260	3750339.01	1.62
STD5	2500.000	2568.758	68.758	6528024.90	2.75

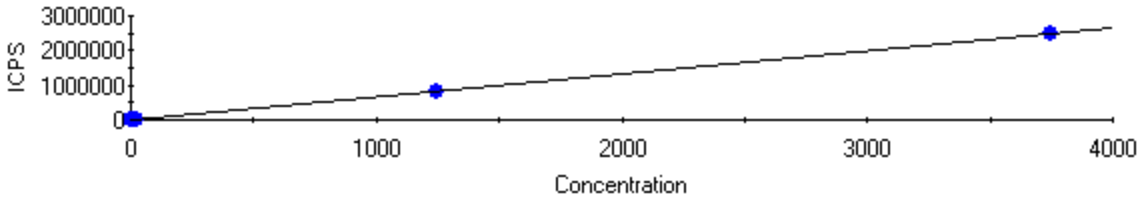
60Ni FQ Block 1



Intercept CPS=28.268916 Intercept Conc=0.055237
Sensitivity=511.777496 Correlation Coeff=0.997682

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.013	0.013	21.79	0.00
STD1	2.000	2.544	0.544	1330.22	27.20
STD2	10.000	10.811	0.811	5561.28	8.11
STD3	1250.000	1242.912	7.088	636122.77	0.57
STD4	3750.000	3463.085	286.915	1772357.40	7.65
STD5	6250.000	6574.968	324.968	3364948.71	5.20

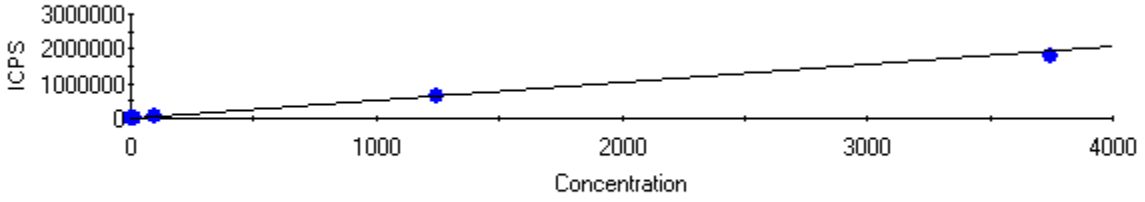
65Cu FQ Block 1



Intercept CPS=230.560936 Intercept Conc=0.347200
Sensitivity=664.057459 Correlation Coeff=0.999960

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.074	0.074	181.52	0.00
STD1	5.000	5.597	0.597	3947.19	11.94
STD2	25.000	24.595	0.405	16562.90	1.62
STD3	1250.000	1219.592	30.408	810109.52	2.43
STD4	3750.000	3756.770	6.770	2494941.49	0.18

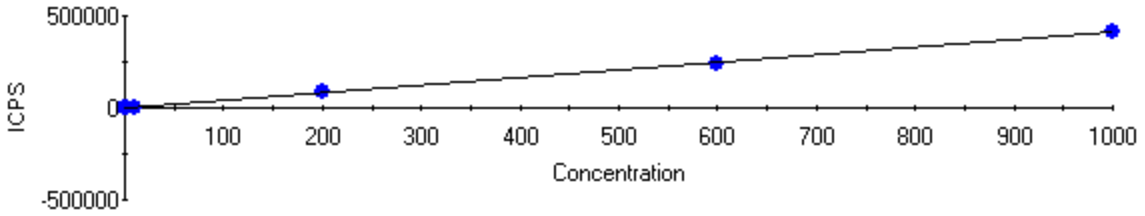
66Zn FQ Block 1



Intercept CPS=757.552099 Intercept Conc=1.480050
Sensitivity=511.842399 Correlation Coeff=0.999463

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.344	0.344	581.52	0.00
STD1	20.000	21.976	1.976	12005.66	9.88
STD2	100.000	104.439	4.439	54213.94	4.44
STD3	1250.000	1270.030	20.030	650812.59	1.60
STD4	3750.000	3471.793	278.207	1777768.23	7.42

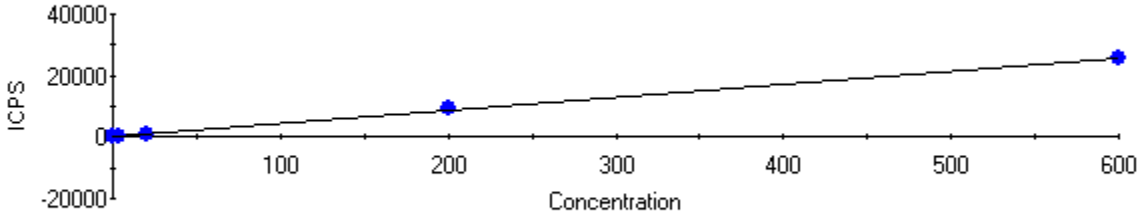
75As FQ Block 1



Intercept CPS=181.204690 Intercept Conc=0.436967
Sensitivity=414.687627 Correlation Coeff=0.999888

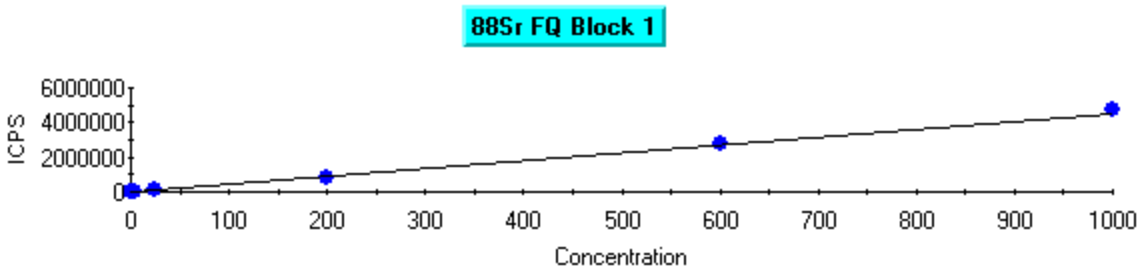
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.700	0.700	-109.22	0.00
STD1	2.000	1.624	0.376	854.70	18.80
STD2	10.000	10.135	0.135	4384.00	1.35
STD3	200.000	210.632	10.632	87527.80	5.32
STD4	600.000	589.155	10.845	244496.45	1.81
STD5	1000.000	995.854	4.146	413149.67	0.41

82Se FQ Block 1



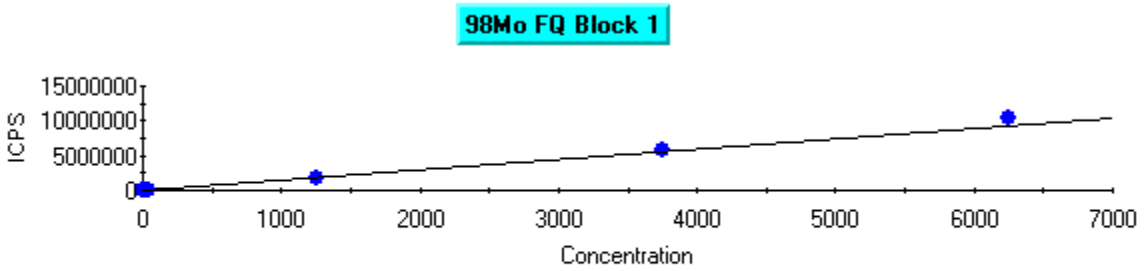
Intercept CPS=20.779464 Intercept Conc=0.482031
Sensitivity=43.108109 Correlation Coeff=0.999436

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.660	0.660	-7.68	0.00
STD1	4.000	3.611	0.389	176.44	9.72
STD2	20.000	21.261	1.261	937.31	6.31
STD3	200.000	217.775	17.775	9408.66	8.89
STD4	600.000	595.467	4.533	25690.25	0.76



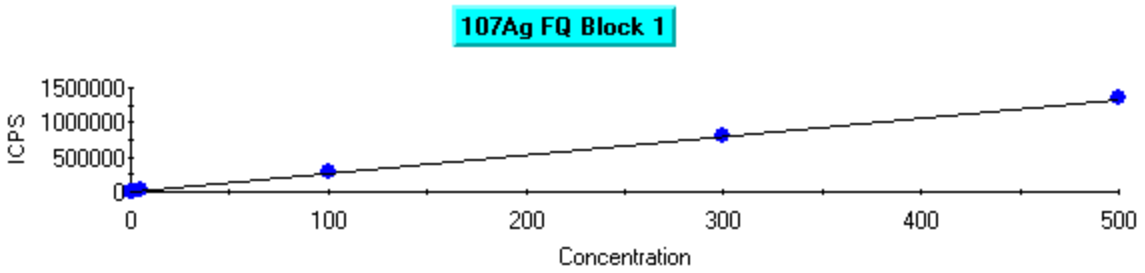
Intercept CPS=26.611526 Intercept Conc=0.005960
Sensitivity=4465.003728 Correlation Coeff=0.999640

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	26.68	0.00
STD1	5.000	4.974	0.026	22235.69	0.52
STD2	25.000	24.107	0.893	107665.87	3.57
STD3	200.000	192.233	7.767	858346.71	3.88
STD4	600.000	609.611	9.611	2721943.91	1.60
STD5	1000.000	1060.385	60.385	4734650.33	6.04



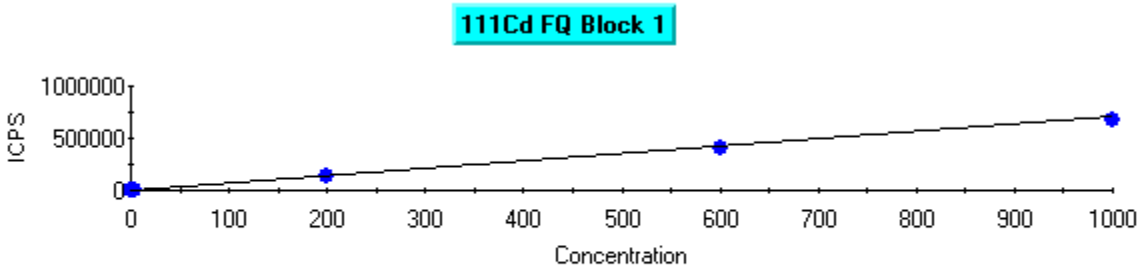
Intercept CPS=951.929259 Intercept Conc=0.642644
Sensitivity=1481.270309 Correlation Coeff=0.998762

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.369	0.369	1499.00	0.00
STD1	10.000	9.567	0.433	15123.19	4.33
STD2	50.000	48.574	1.426	72902.97	2.85
STD3	1250.000	1207.732	42.268	1789929.75	3.38
STD4	3750.000	3883.684	133.684	5753737.98	3.56
STD5	6250.000	7053.487	803.487	10449072.47	12.86



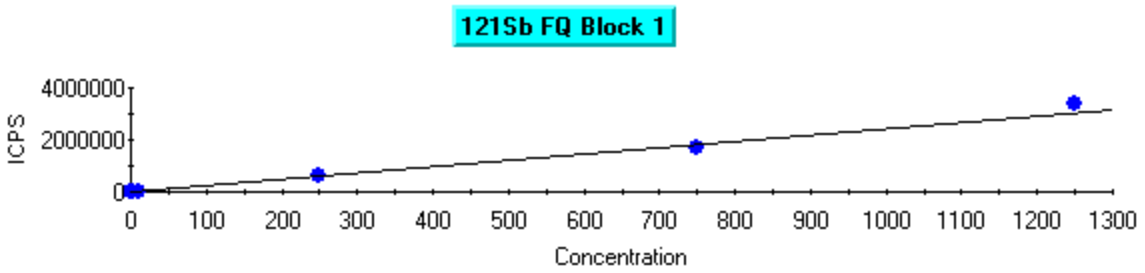
Intercept CPS=22.523318 Intercept Conc=0.008411
Sensitivity=2677.892722 Correlation Coeff=0.999838

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.002	0.002	16.69	0.00
STD1	1.000	1.079	0.079	2911.91	7.90
STD2	5.000	5.530	0.530	14831.36	10.60
STD3	100.000	107.408	7.408	287650.55	7.41
STD4	300.000	298.550	1.450	799507.41	0.48
STD5	500.000	509.205	9.205	1363618.15	1.84



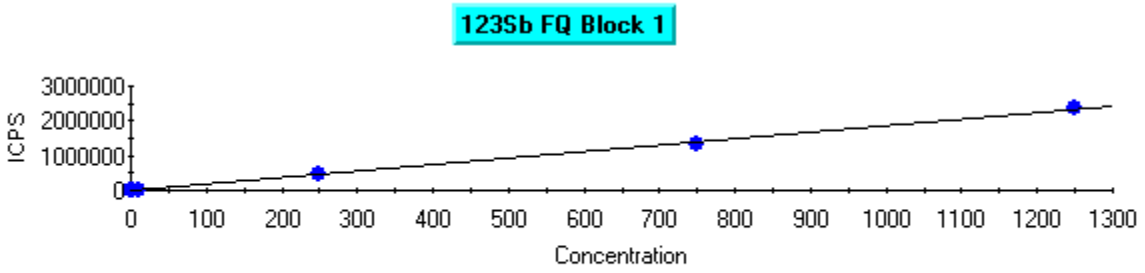
Intercept CPS=48.351116 Intercept Conc=0.068800
Sensitivity=702.780392 Correlation Coeff=0.999771

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.003	0.003	46.08	0.00
STD1	1.000	1.069	0.069	799.41	6.87
STD2	5.000	5.222	0.222	3718.43	4.44
STD3	200.000	202.124	2.124	142097.07	1.06
STD4	600.000	561.153	38.847	394415.99	6.47
STD5	1000.000	966.280	33.720	679131.26	3.37



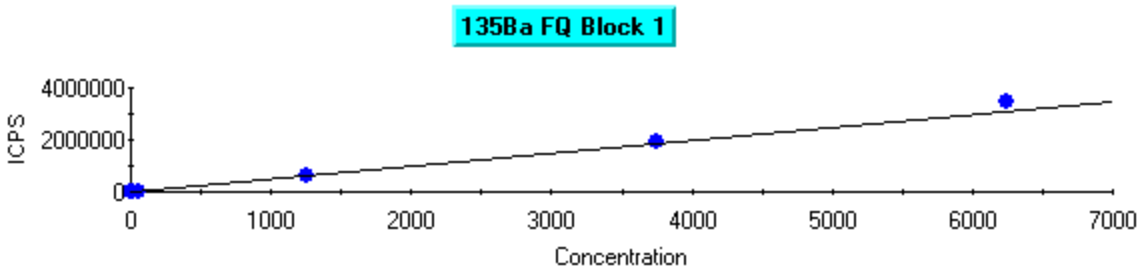
Intercept CPS=1169.196924 Intercept Conc=0.487907
Sensitivity=2396.353240 Correlation Coeff=0.996452

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.146	0.146	1518.22	0.00
STD1	2.000	1.764	0.236	5397.05	11.79
STD2	10.000	9.733	0.267	24493.00	2.67
STD3	250.000	249.475	0.525	598998.88	0.21
STD4	750.000	712.684	37.316	1709011.07	4.98
STD5	1250.000	1397.412	147.412	3349861.31	11.79



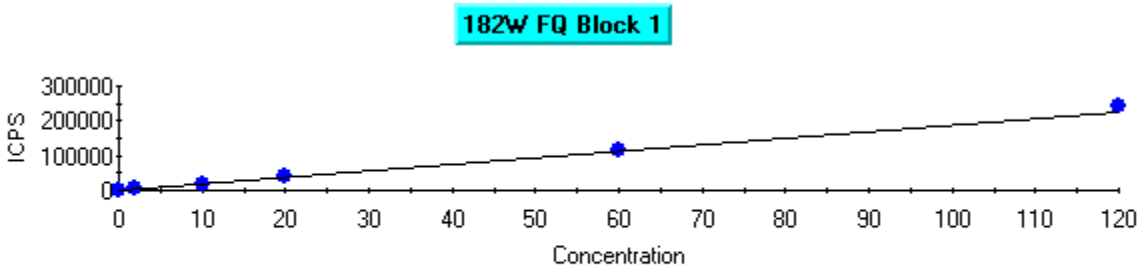
Intercept CPS=933.313984 Intercept Conc=0.497619
Sensitivity=1875.560320 Correlation Coeff=0.999567

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.116	0.116	1151.52	0.00
STD1	2.000	1.818	0.182	4343.49	9.09
STD2	10.000	9.759	0.241	19237.47	2.41
STD3	250.000	250.354	0.354	470486.45	0.14
STD4	750.000	716.846	33.154	1345420.47	4.42
STD5	1250.000	1261.607	11.607	2367153.96	0.93



Intercept CPS=16.793678 Intercept Conc=0.033781
Sensitivity=497.139528 Correlation Coeff=0.999198

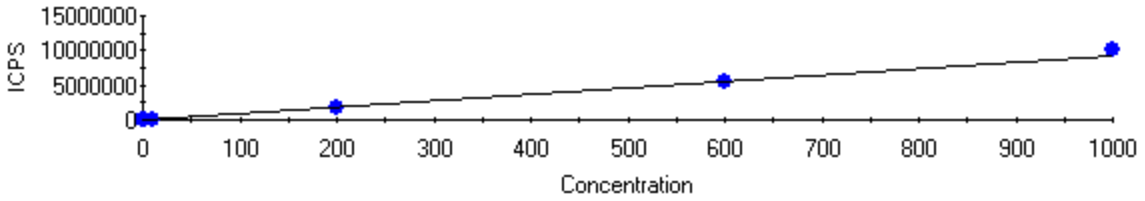
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	16.67	0.00
STD1	10.000	10.178	0.178	5076.77	1.78
STD2	50.000	47.743	2.257	23751.56	4.51
STD3	1250.000	1216.452	33.548	604763.08	2.68
STD4	3750.000	3944.259	194.259	1960863.92	5.18
STD5	6250.000	7016.928	766.928	3488408.83	12.27



Intercept CPS=91.638542 Intercept Conc=0.049386
Sensitivity=1855.574049 Correlation Coeff=0.999426

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.089	0.089	257.22	0.00
STD1	2.000	1.681	0.319	3211.36	15.94
STD2	10.000	8.418	1.582	15712.39	15.82
STD3	20.000	20.840	0.840	38761.77	4.20
STD4	60.000	60.924	0.924	113141.12	1.54
STD5	120.000	130.515	10.515	242272.30	8.76

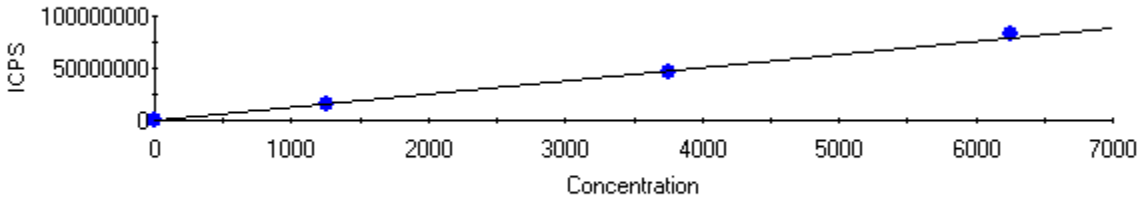
205Tl FQ Block 1



Intercept CPS=633.350024 Intercept Conc=0.067729
Sensitivity=9351.228370 Correlation Coeff=0.998836

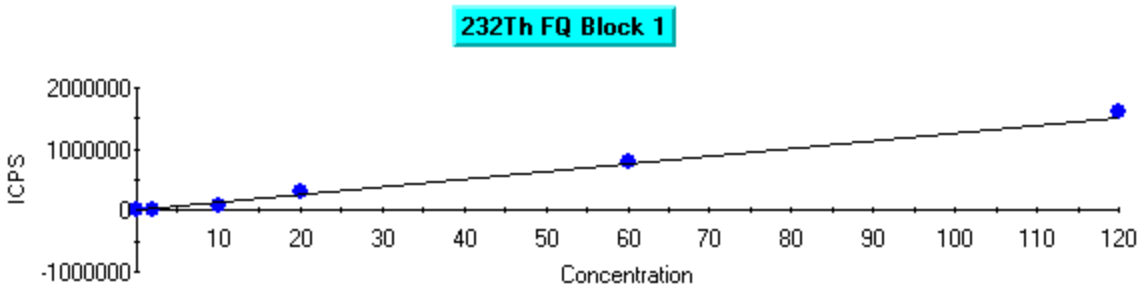
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.189	0.189	2399.82	0.00
STD1	2.000	1.916	0.084	18550.13	4.20
STD2	10.000	8.960	1.040	84417.44	10.40
STD3	200.000	180.946	19.054	1692703.45	9.53
STD4	600.000	597.974	2.026	5592423.41	0.34
STD5	1000.000	1078.309	78.309	10084144.32	7.83

208Pb FQ Block 1



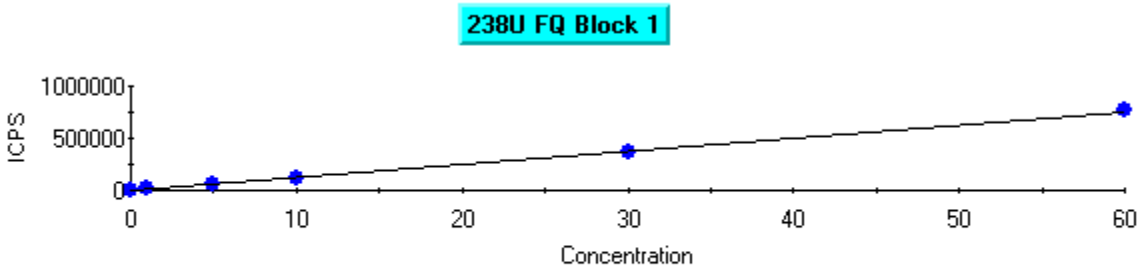
Intercept CPS=1814.161826 Intercept Conc=0.142091
Sensitivity=12767.604251 Correlation Coeff=0.999425

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.062	0.062	1020.47	0.00
STD1	1.000	1.078	0.078	15580.98	7.83
STD2	5.000	4.579	0.421	60276.50	8.42
STD3	1250.000	1260.723	10.723	16098227.34	0.86
STD4	3750.000	3671.551	78.449	46878721.52	2.09
STD5	6250.000	6520.749	270.749	83256158.66	4.33



Intercept CPS=-5155.352780 Intercept Conc=-0.409539
Sensitivity=12588.197027 Correlation Coeff=0.998465

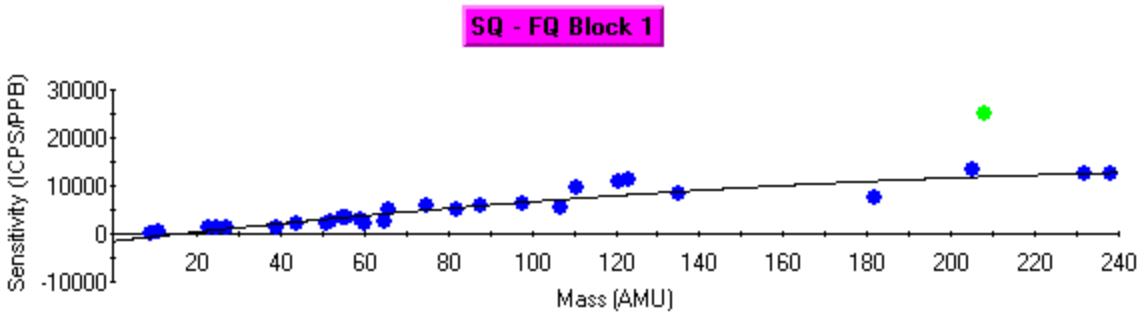
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.772	0.772	4566.81	0.00
STD1	2.000	1.470	0.530	13347.26	26.51
STD2	10.000	5.521	4.479	64348.77	44.79
STD3	20.000	24.639	4.639	305003.19	23.19
STD4	60.000	62.564	2.564	782406.54	4.27
STD5	120.000	129.173	9.173	1620904.57	7.64



Intercept CPS=59.650921 Intercept Conc=0.004782
Sensitivity=12473.673133 Correlation Coeff=0.999418

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.002	0.002	31.91	0.00
STD1	1.000	1.034	0.034	12953.09	3.37
STD2	5.000	5.128	0.128	64021.16	2.55
STD3	10.000	9.809	0.191	122419.49	1.91
STD4	30.000	28.877	1.123	360260.54	3.74
STD5	60.000	61.975	1.975	773119.53	3.29

Semi Quant Calibration



Coeff 0=-1506.109315 Coeff 1=98.445948 Coeff 2=-0.162720

Symbol	Mass	RSF	Available	Excluded	Sensitivity Measured	Corrected	Calculated	%Error
9Be	9.01	0.7500	1	1	143.14	190.86	-632.11	-431.2
11B	11.01	0.5800	1	1	131.15	279.10	-442.01	-258.4
23Na	22.99	1.0000	1	1	1345.66	1345.66	671.14	-50.1
25Mg	24.99	0.9800	1	1	138.09	1393.72	852.06	-38.9
27Al	26.98	0.9800	1	1	1287.54	1313.82	1031.65	-21.5
39K	38.96	1.0000	1	1	1357.05	1457.93	2082.67	42.9
44Ca	43.96	0.9900	1	1	48.24	2287.64	2506.75	9.6
51V	50.94	0.9900	1	1	2109.75	2136.19	3086.81	44.5
52Cr	51.94	0.9800	1	1	2008.45	2446.80	3168.23	29.5
55Mn	54.94	0.9500	1	1	3239.13	3409.61	3411.20	0.0
56Fe	55.93	0.9600	1	1	2793.58	3179.61	3491.35	9.8
59Co	58.93	0.9300	1	1	2541.30	2732.58	3730.48	36.5
60Ni	59.93	0.9100	1	1	511.78	2149.82	3809.39	77.2
65Cu	64.93	0.9000	1	1	664.06	2387.06	4199.80	75.9
66Zn	65.93	0.3750	1	1	511.84	4907.99	4276.82	-12.9
75As	74.92	0.0700	1	1	414.69	5924.11	4956.23	-16.3
82Se	81.92	0.1000	1	1	43.11	4876.48	5466.35	12.1
88Sr	87.91	0.9600	1	1	4465.00	5633.53	5890.44	4.6
98Mo	97.91	0.9800	1	1	1481.27	6297.92	6572.54	4.4
107Ag	106.91	0.9300	1	1	2677.89	5607.51	7158.59	27.7
111Cd	110.90	0.5660	1	1	702.78	9655.22	7410.55	-23.2
121Sb	120.90	0.3900	1	1	2396.35	10732.74	8017.79	-25.3
123Sb	122.90	0.3900	1	1	1875.56	11249.42	8135.36	-27.7
135Ba	134.91	0.9100	1	1	497.14	8289.94	8813.38	6.3
182W	181.95	0.9400	1	1	1855.57	7502.91	11019.09	46.9
205Tl	204.97	1.0000	1	1	9351.23	13264.15	11836.12	-10.8
208Pb	207.98	0.9700	0	1	12767.60	25128.83	11930.02	-52.5
232Th	232.04	1.0000	1	1	12588.20	12588.20	12576.00	-0.1
238U	238.05	1.0000	1	1	12473.67	12564.13	12707.99	1.1

Dilution Corrected Concentrations

STD0 10/18/2016 12:40:20 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:40:42	98.553%	0.003	0.710	-2.767	0.153	-0.499	1.392	-0.043	97.833%	0.000	-0.031	0.026
2	12:41:04	98.850%	0.003	-1.172	2.126	-0.093	-0.462	0.162	0.660	99.668%	0.000	0.505	-0.011
3	12:41:25	102.597%	-0.033	0.234	-5.442	-0.059	0.049	-0.349	-0.766	102.499%	0.000	0.775	-0.071
x		100.000%	-0.009	-0.076	-2.028	0.000	-0.304	0.402	-0.050	100.000%	0.000	0.417	-0.019
σ		2.254%	0.021	0.979	3.838	0.134	0.307	0.894	0.713	2.350%	0.000	0.410	0.049
%RSD		2.254	228.500	1285.000	189.300	36500.000	100.800	222.700	1440.000	2.350	0.000	98.490	261.200

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:40:42	12.300	-0.018	1.383	-0.003	0.005	-0.084	-0.436	-1.330	0.439	-1.141	0.000	0.000
2	12:41:04	11.880	-0.017	-0.985	0.005	-0.016	-0.120	-0.368	-0.417	0.350	-0.191	0.000	0.000
3	12:41:25	11.440	0.010	-0.761	-0.001	-0.027	-0.018	-0.228	-0.354	0.341	-0.648	0.000	0.000
x		11.870	-0.008	-0.121	0.000	-0.013	-0.074	-0.344	-0.700	0.376	-0.660	0.000	0.000
σ		0.429	0.016	1.307	0.004	0.016	0.052	0.106	0.546	0.054	0.475	0.000	0.000
%RSD		3.610	192.700	1084.000	1557.000	125.800	69.900	30.910	77.950	14.360	72.010	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:40:42	-0.000	98.845%	0.560	-0.007	-0.942	0.010	100.116%	0.000	0.158	0.120	-0.014	98.341%
2	12:41:04	0.001	99.783%	0.355	0.001	-0.543	-0.013	99.271%	0.000	0.105	0.133	0.007	101.683%
3	12:41:25	-0.000	101.372%	0.193	-0.001	-0.736	-0.006	100.613%	0.000	0.174	0.096	0.006	99.976%
x		0.000	100.000%	0.369	-0.002	-0.740	-0.003	100.000%	0.000	0.146	0.116	-0.000	100.000%
σ		0.001	1.278%	0.184	0.004	0.200	0.012	0.679%	0.000	0.036	0.019	0.012	1.671%
%RSD		4499.000	1.278	49.700	179.300	26.960	362.700	0.679	0.000	24.820	16.170	4725.000	1.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:40:42	0.121	0.227	-0.075	98.272%	0.000	0.786	0.000
2	12:41:04	0.067	0.176	-0.067	101.051%	0.000	0.787	-0.003
3	12:41:25	0.080	0.164	-0.044	100.677%	0.000	0.744	-0.004
x		0.089	0.189	-0.062	100.000%	0.000	0.772	-0.002
σ		0.028	0.033	0.016	1.508%	0.000	0.025	0.002
%RSD		31.180	17.610	25.390	1.508	0.000	3.205	94.820

STD1 10/18/2016 12:44:20 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:42	105.148%	1.295	40.440	498.500	210.800	52.500	485.100	510.100	103.950%	0.000	5.307	4.218
2	12:45:04	105.840%	1.022	37.770	T 529.300	200.800	51.620	479.600	525.200	105.981%	0.000	5.700	4.017
3	12:45:25	103.070%	1.136	40.590	490.600	199.900	53.130	490.300	507.900	104.061%	0.000	5.469	3.978
x		104.686%	1.151	39.600	T 506.100	203.800	52.420	485.000	514.400	104.664%	0.000	5.492	4.071
σ		1.442%	0.137	1.587	T 20.440	6.036	0.759	5.314	9.438	1.142%	0.000	0.197	0.129

%RSD		1.377	11.900	4.009	T 4.039	2.961	1.448	1.096	1.835	1.091	0.000	3.593	3.164
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:44:42	13.030	2.134	198.200	1.111	2.670	5.440	21.850	1.891	0.354	4.081	0.000	0.000
2	12:45:04	12.870	2.149	190.600	1.151	2.388	5.722	22.280	1.757	0.384	3.458	0.000	0.000
3	12:45:25	13.090	2.241	197.900	0.944	2.574	5.628	21.800	1.224	0.419	3.294	0.000	0.000
x		13.000	2.175	195.600	1.069	2.544	5.597	21.980	1.624	0.386	3.611	0.000	0.000
σ		0.119	0.058	4.330	0.110	0.144	0.143	0.268	0.353	0.032	0.415	0.000	0.000
%RSD		0.912	2.676	2.214	10.290	5.648	2.560	1.218	21.740	8.317	11.500	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:44:42	4.986	104.679%	9.387	1.031	-1.246	1.000	102.268%	0.000	1.708	1.795	9.969	101.335%
2	12:45:04	5.008	103.265%	9.485	1.129	-0.472	1.194	102.615%	0.000	1.796	1.817	10.280	102.050%
3	12:45:25	4.928	105.370%	9.828	1.077	-1.302	1.012	102.831%	0.000	1.789	1.843	10.290	102.249%
x		4.974	104.438%	9.567	1.079	-1.007	1.069	102.571%	0.000	1.764	1.818	10.180	101.878%
σ		0.041	1.073%	0.231	0.049	0.464	0.109	0.284%	0.000	0.048	0.024	0.181	0.481%
%RSD		0.824	1.027	2.419	4.561	46.100	10.190	0.277	0.000	2.747	1.324	1.777	0.472

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:44:42	1.647	1.889	1.097	98.630%	0.000	1.451	1.041
2	12:45:04	1.577	1.932	1.070	100.043%	0.000	1.491	1.036
3	12:45:25	1.819	1.927	1.067	100.848%	0.000	1.467	1.025
x		1.681	1.916	1.078	99.840%	0.000	1.470	1.034
σ		0.125	0.024	0.017	1.123%	0.000	0.021	0.008
%RSD		7.406	1.239	1.542	1.125	0.000	1.399	0.786

STD2 10/18/2016 12:47:26 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:47:47	98.735%	5.610	191.700	T 2687.000	983.500	238.200	T 2621.000	2394.000	97.801%	0.000	23.530	20.290
2	12:48:09	96.124%	5.837	207.000	T 2615.000	956.600	233.800	T 2513.000	2402.000	98.569%	0.000	24.030	19.970
3	12:48:31	98.394%	5.399	202.000	T 2660.000	978.700	240.900	T 2632.000	2458.000	97.111%	0.000	23.510	20.450
x		97.751%	5.615	200.200	T 2654.000	973.000	237.600	T 2589.000	2418.000	97.827%	0.000	23.690	20.240
σ		1.419%	0.219	7.806	T 36.170	14.330	3.581	T 65.540	35.310	0.729%	0.000	0.293	0.242
%RSD		1.452	3.897	3.899	T 1.363	1.473	1.507	T 2.532	1.460	0.745	0.000	1.239	1.196
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:47:47	12.720	9.750	T 1039.000	4.918	10.790	25.250	105.200	10.070	0.311	21.830	0.000	0.000
2	12:48:09	11.750	9.505	T 1031.000	5.001	11.010	24.250	103.000	10.350	0.238	20.680	0.000	0.000
3	12:48:31	12.210	9.721	T 1054.000	4.971	10.640	24.280	105.100	9.992	0.289	21.270	0.000	0.000
x		12.230	9.659	T 1041.000	4.963	10.810	24.590	104.400	10.130	0.279	21.260	0.000	0.000
σ		0.486	0.134	T 11.540	0.042	0.185	0.569	1.237	0.186	0.038	0.576	0.000	0.000
%RSD		3.974	1.386	T 1.108	0.851	1.712	2.314	1.184	1.835	13.460	2.711	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	12:47:47	24.050	98.764%	48.230	5.499	-0.567	5.071	97.995%	0.000	9.792	9.879	48.590	97.781%
2	12:48:09	23.910	97.936%	49.380	5.638	-1.000	5.370	98.183%	0.000	9.855	9.698	46.700	97.543%
3	12:48:31	24.370	99.405%	48.110	5.453	0.144	5.226	98.978%	0.000	9.553	9.701	47.940	98.592%
x		24.110	98.702%	48.570	5.530	-0.474	5.222	98.385%	0.000	9.733	9.759	47.740	97.972%
σ		0.236	0.736%	0.701	0.096	0.578	0.149	0.522%	0.000	0.159	0.104	0.960	0.550%
%RSD		0.981	0.746	1.442	1.745	121.900	2.858	0.530	0.000	1.638	1.065	2.010	0.562

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:47:47	8.550	8.704	4.467	97.102%	0.000	5.271	5.030
2	12:48:09	8.308	9.090	4.691	96.258%	0.000	5.504	5.166
3	12:48:31	8.397	9.085	4.578	97.671%	0.000	5.789	5.187
x		8.418	8.960	4.579	97.010%	0.000	5.521	5.128
σ		0.122	0.221	0.112	0.711%	0.000	0.260	0.085
%RSD		1.452	2.471	2.448	0.733	0.000	4.701	1.657

STD3 10/18/2016 12:50:40 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:51:01	100.176%	636.000	251.100	T 10280.000	T 30500.000	T 30380.000	T 10000.000	T 29870.000	99.915%	0.000	T 1265.000	382.100
2	12:51:23	96.617%	652.800	254.000	T 10100.000	T 30450.000	T 30400.000	T 9977.000	T 30240.000	99.714%	0.000	T 1274.000	386.100
3	12:51:45	95.925%	654.000	258.400	T 10290.000	T 31010.000	T 31090.000	T 10130.000	T 30850.000	97.586%	0.000	T 1302.000	391.900
x		97.573%	647.600	254.500	T 10220.000	T 30650.000	T 30630.000	T 10040.000	T 30320.000	99.072%	0.000	T 1280.000	386.700
σ		2.281%	10.070	3.668	T 111.200	T 307.200	T 405.300	T 78.860	T 493.600	1.290%	0.000	T 19.300	4.909
%RSD		2.338	1.555	1.441	T 1.088	T 1.002	T 1.324	T 0.786	T 1.628	1.302	0.000	T 1.508	1.269

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:51:01	14.720	T 1235.000	T 29140.000	463.500	1241.000	1238.000	1271.000	211.400	-0.580	218.800	0.000	0.000
2	12:51:23	17.410	T 1236.000	T 29380.000	463.700	1233.000	1205.000	1261.000	208.200	-0.356	214.600	0.000	0.000
3	12:51:45	19.010	T 1267.000	T 30060.000	473.100	1255.000	1216.000	1278.000	212.300	-0.627	219.900	0.000	0.000
x		17.050	T 1246.000	T 29530.000	466.800	1243.000	1220.000	1270.000	210.600	-0.521	217.800	0.000	0.000
σ		2.169	T 17.770	T 476.400	5.484	11.260	16.870	8.836	2.185	0.145	2.817	0.000	0.000
%RSD		12.720	T 1.426	T 1.613	1.175	0.906	1.383	0.696	1.037	27.820	1.294	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:51:01	192.300	97.745%	1156.000	107.700	6.732	202.100	95.491%	0.000	248.500	250.500	1219.000	97.549%
2	12:51:23	190.300	96.585%	1234.000	107.100	3.594	201.700	96.470%	0.000	250.500	250.100	1219.000	98.933%
3	12:51:45	194.100	97.861%	1233.000	107.500	-4.265	202.500	96.351%	0.000	249.400	250.400	1211.000	97.517%
x		192.200	97.397%	1208.000	107.400	2.021	202.100	96.104%	0.000	249.500	250.400	1216.000	98.000%
σ		1.923	0.706%	44.430	0.296	5.665	0.438	0.534%	0.000	1.008	0.198	4.402	0.809%
%RSD		1.000	0.725	3.679	0.276	280.400	0.217	0.556	0.000	0.404	0.079	0.362	0.825

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:51:01	20.280	175.200	T 1234.000	97.898%	0.000	24.130	9.640
2	12:51:23	20.680	182.700	T 1267.000	95.502%	0.000	24.930	9.735
3	12:51:45	21.560	185.000	T 1280.000	95.047%	0.000	24.860	10.050

x		20.840	180.900	ᵀ1261.000	96.149%	0.000	24.640	9.809
σ		0.657	5.127	ᵀ23.670	1.532%	0.000	0.443	0.217
%RSD		3.151	2.833	ᵀ1.878	1.593	0.000	1.797	2.208

STD4 10/18/2016 12:54:09 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:54:31	103.595%	1759.000	697.800	ᵀ28650.000	ᵀ85510.000	ᵀ84660.000	ᵀ28870.000	ᵀ88230.000	104.015%	0.000	ᵀ3647.000	ᵀ1170.000
2	12:54:53	101.499%	1769.000	695.000	ᵀ28600.000	ᵀ85780.000	ᵀ85190.000	ᵀ28790.000	ᵀ87980.000	104.588%	0.000	ᵀ3678.000	ᵀ1197.000
3	12:55:15	100.407%	1816.000	733.100	ᵀ29290.000	ᵀ88520.000	ᵀ88750.000	ᵀ29980.000	ᵀ90510.000	102.420%	0.000	ᵀ3814.000	ᵀ1212.000
x		101.834%	1781.000	708.600	ᵀ28850.000	ᵀ86600.000	ᵀ86200.000	ᵀ29210.000	ᵀ88910.000	103.674%	0.000	ᵀ3713.000	ᵀ1193.000
σ		1.620%	30.570	21.210	ᵀ385.400	ᵀ1666.000	ᵀ2227.000	ᵀ660.400	ᵀ1396.000	1.123%	0.000	ᵀ88.780	ᵀ21.200
%RSD		1.591	1.716	2.993	ᵀ1.336	ᵀ1.924	ᵀ2.584	ᵀ2.260	ᵀ1.570	1.083	0.000	ᵀ2.391	ᵀ1.778

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:54:31	-1.261	ᵀ3531.000	ᵀ83790.000	ᵀ1448.000	3424.000	ᵀᴹ3795.000	3504.000	593.400	-2.037	598.100	0.000	0.000
2	12:54:53	-7.695	ᵀ3618.000	ᵀ84250.000	ᵀ1471.000	3445.000	ᵀᴹ3752.000	3444.000	585.700	-2.267	594.000	0.000	0.000
3	12:55:15	-3.529	ᵀ3697.000	ᵀ87040.000	ᵀ1508.000	3520.000	ᵀ3723.000	3468.000	588.300	-2.193	594.300	0.000	0.000
x		-4.161	ᵀ3615.000	ᵀ85030.000	ᵀ1476.000	3463.000	ᵀᴹ3757.000	3472.000	589.200	-2.166	595.500	0.000	0.000
σ		3.263	ᵀ83.370	ᵀ1758.000	ᵀ30.120	50.190	ᵀᴹ36.060	29.960	3.938	0.117	2.298	0.000	0.000
%RSD		78.420	ᵀ2.306	ᵀ2.068	ᵀ2.041	1.449	ᵀᴹ0.960	0.863	0.668	5.425	0.386	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:54:31	ᵀ606.100	99.031%	ᵀ3805.000	298.700	18.800	557.100	97.588%	ᵀ0.000	711.400	719.700	ᵀ3965.000	100.942%
2	12:54:53	ᵀ609.100	100.848%	ᵀ3889.000	298.300	41.380	561.900	100.178%	ᵀ0.000	707.700	712.100	ᵀ3925.000	101.773%
3	12:55:15	ᵀ613.700	100.434%	ᵀ3957.000	298.600	30.080	564.500	100.133%	ᵀ0.000	718.900	718.800	ᵀ3942.000	101.915%
x		ᵀ609.600	100.104%	ᵀ3884.000	298.600	30.080	561.200	99.300%	ᵀ0.000	712.700	716.800	ᵀ3944.000	101.543%
σ		ᵀ3.819	0.952%	ᵀ75.930	0.206	11.290	3.774	1.482%	ᵀ0.000	5.722	4.146	ᵀ20.070	0.525%
%RSD		ᵀ0.626	0.951	ᵀ1.955	0.069	37.530	0.673	1.493	ᵀ0.000	0.803	0.578	ᵀ0.509	0.517

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:54:31	59.540	ᵀ596.300	ᵀ3692.000	97.257%	0.000	62.720	29.100
2	12:54:53	61.620	ᵀ600.000	ᵀ3674.000	99.117%	0.000	62.760	28.820
3	12:55:15	61.610	ᵀ597.600	ᵀ3649.000	99.889%	0.000	62.210	28.710
x		60.920	ᵀ598.000	ᵀ3672.000	98.754%	0.000	62.560	28.880
σ		1.195	ᵀ1.902	ᵀ21.690	1.353%	0.000	0.305	0.199
%RSD		1.961	ᵀ0.318	ᵀ0.591	1.370	0.000	0.488	0.691

STD5 10/18/2016 12:57:15 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:57:36	103.127%	2958.000	1194.000	T 49350.000	TM 150100.000	T 147100.000	TM 51480.000	TM 155000.000	105.219%	0.000	TM 6574.000	TM 2091.000
2	12:57:58	100.950%	3055.000	1238.000	T 49480.000	TM 152400.000	TM 151900.000	TM 52920.000	TM 161000.000	104.959%	0.000	TM 6748.000	TM 2172.000
3	12:58:20	97.483%	M 3151.000	M 1279.000	T 48730.000	T 148500.000	T 149400.000	TM 52140.000	TM 162300.000	106.593%	0.000	TM 6572.000	TM 2111.000
x		100.520%	M 3055.000	M 1237.000	T 49180.000	TM 150300.000	TM 149500.000	TM 52180.000	TM 159400.000	105.590%	0.000	TM 6631.000	TM 2125.000
σ		2.846%	M 96.180	M 42.220	T 404.100	TM 1971.000	TM 2375.000	TM 719.600	TM 3863.000	0.878%	0.000	TM 101.000	TM 41.890
%RSD		2.831	M 3.149	M 3.413	T 0.822	TM 1.311	TM 1.589	TM 1.379	TM 2.423	0.831	0.000	TM 1.523	TM 1.972

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:57:36	-35.060	TM 6319.000	T 147400.000	TM 2558.000	TM 6549.000	TM 6416.000	TM 6473.000	992.500	-3.491	M 966.500	0.000	0.000
2	12:57:58	-28.450	TM 6439.000	TM 150400.000	TM 2587.000	TM 6684.000	TM 6585.000	TM 6593.000	M 1005.000	-3.737	M 988.600	0.000	0.000
3	12:58:20	-6.098	TM 6453.000	T 149500.000	TM 2562.000	TM 6491.000	TM 6418.000	TM 6493.000	989.600	-3.519	M 970.600	0.000	0.000
x		-23.200	TM 6404.000	TM 149100.000	TM 2569.000	TM 6575.000	TM 6473.000	TM 6520.000	M 995.900	-3.583	M 975.200	0.000	0.000
σ		15.180	TM 73.910	TM 1545.000	TM 15.790	TM 98.950	TM 96.990	TM 64.340	M 8.411	0.135	M 11.740	0.000	0.000
%RSD		65.410	TM 1.154	TM 1.037	TM 0.615	TM 1.505	TM 1.498	TM 0.987	M 0.845	3.755	M 1.204	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:57:36	TM 1050.000	99.561%	TM 6877.000	M 507.400	39.980	961.700	100.917%	T 0.000	TM 1384.000	1240.000	TM 6915.000	101.760%
2	12:57:58	TM 1072.000	98.996%	TM 7059.000	M 510.900	48.180	974.700	100.689%	T 0.000	TM 1407.000	M 1276.000	TM 7128.000	102.881%
3	12:58:20	TM 1060.000	97.669%	TM 7224.000	M 509.200	48.090	962.500	102.501%	T 0.000	TM 1401.000	M 1269.000	TM 7008.000	103.769%
x		TM 1060.000	98.742%	TM 7053.000	M 509.200	45.420	966.300	101.369%	T 0.000	TM 1397.000	M 1262.000	TM 7017.000	102.803%
σ		TM 10.980	0.971%	TM 174.000	M 1.755	4.709	7.285	0.987%	T 0.000	TM 11.950	M 19.330	TM 106.300	1.007%
%RSD		TM 1.035	0.984	TM 2.466	M 0.345	10.370	0.754	0.974	T 0.000	TM 0.855	M 1.532	TM 1.516	0.979

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:57:36	M 129.400	TM 1071.000	TM 6462.000	97.606%	0.000	M 128.000	M 61.400
2	12:57:58	M 131.600	TM 1088.000	TM 6580.000	98.028%	0.000	M 129.600	M 61.860
3	12:58:20	M 130.600	TM 1076.000	TM 6520.000	99.328%	0.000	M 129.900	M 62.660
x		M 130.500	TM 1078.000	TM 6521.000	98.321%	0.000	M 129.200	M 61.980
σ		M 1.111	TM 8.886	TM 59.010	0.898%	0.000	M 1.025	M 0.640
%RSD		M 0.851	TM 0.824	TM 0.905	0.913	0.000	M 0.793	M 1.033

ICV 10/18/2016 01:02:59 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:03:20	95.778%	325.600	139.600	T 5321.000	T 15540.000	T 15780.000	T 5206.000	14510.000	97.755%	0.000	606.300	196.400
2	13:03:42	91.250%	335.000	139.700	T 5353.000	T 15620.000	T 16090.000	T 5225.000	14600.000	98.165%	0.000	595.700	194.800
3	13:04:04	90.396%	340.100	151.600	T 5427.000	T 15750.000	T 15800.000	T 5138.000	14590.000	98.282%	0.000	611.300	194.700
x		92.475%	106.741%	114.916%	T 107.343%	T 104.234%	T 105.916%	T 103.798%	97.100%	98.068%	0.000	96.710%	97.663%
σ		2.893%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.277%	0.000	n/a	n/a
%RSD		3.128	2.210	4.799	T 1.004	T 0.668	T 1.098	T 0.879	0.352	0.282	0.000	1.320	0.497

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:03:20	14.080	┬631.400	┬15190.000	240.300	638.700	609.100	633.400	105.000	-0.047	106.300	0.000	0.000
2	13:03:42	14.210	┬638.200	┬15330.000	243.600	648.500	636.100	652.300	107.700	-0.108	108.900	0.000	0.000
3	13:04:04	13.910	┬628.800	┬15100.000	239.300	642.900	614.300	634.300	104.200	-0.071	108.900	0.000	0.000
x		14.070	┬101.249%	┬101.355%	96.413%	102.936%	99.175%	102.404%	105.613%	-0.075	108.038%	0.000	0.000
σ		0.150	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.031	n/a	0.000	0.000
%RSD		1.069	┬0.772	┬0.768	0.938	0.768	2.309	1.661	1.731	40.770	1.388	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:03:20	92.790	98.668%	281.000	51.570	0.134	98.530	97.853%	0.000	124.700	124.600	596.000	96.925%
2	13:03:42	95.170	99.864%	284.700	52.910	1.253	101.300	96.232%	0.000	129.000	129.400	617.700	96.590%
3	13:04:04	92.750	99.112%	292.200	51.600	1.367	101.300	98.763%	0.000	124.600	126.300	600.600	99.764%
x		93.570	99.215%	91.505%	104.052%	0.918	100.374%	97.616%	0.000	126.100	101.397%	96.760%	97.760%
σ		1.386	0.604%	n/a	n/a	0.681	n/a	1.282%	0.000	2.513	n/a	n/a	1.744%
%RSD		1.481	0.609	1.983	1.475	74.210	1.591	1.313	0.000	1.993	1.920	1.890	1.784
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	13:03:20	22.090	90.230	┬613.300	95.210%	0.000	16.660	9.440					
2	13:03:42	22.060	90.010	┬611.500	96.916%	0.000	17.350	9.471					
3	13:04:04	22.280	90.130	┬608.900	97.517%	0.000	18.120	9.494					
x		110.708%	90.123%	┬97.797%	96.547%	0.000	86.877%	94.683%					
σ		n/a	n/a	┬n/a	1.197%	0.000	n/a	n/a					
%RSD		0.536	0.122	┬0.365	1.239	0.000	4.194	0.286					

ICVL 10/18/2016 01:08:43 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:09:05	95.546%	1.394	49.400	489.300	210.700	52.110	478.900	500.500	103.254%	0.000	5.635	3.915
2	13:09:27	94.354%	1.449	50.190	493.600	200.100	53.560	486.600	502.700	102.609%	0.000	5.380	3.998
3	13:09:50	97.374%	1.277	49.240	481.600	203.000	53.710	485.000	517.600	102.765%	0.000	5.366	3.966
x		95.758%	137.339%	124.021%	97.635%	102.299%	106.253%	96.697%	101.386%	102.876%	0.000	109.207%	98.994%
σ		1.521%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.336%	0.000	n/a	n/a
%RSD		1.588	6.396	1.022	1.245	2.698	1.659	0.841	1.843	0.327	0.000	2.775	1.064
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:09:05	9.803	2.164	197.100	1.119	2.424	4.995	22.330	1.494	0.317	2.905	0.000	0.000
2	13:09:27	10.360	2.258	198.200	1.111	2.449	5.341	21.750	1.269	0.336	2.164	0.000	0.000
3	13:09:50	10.620	2.294	192.800	1.107	2.607	5.160	22.190	1.993	0.272	3.912	0.000	0.000
x		10.260	111.926%	98.011%	111.231%	124.662%	103.311%	110.448%	79.272%	0.308	74.846%	0.000	0.000
σ		0.417	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.033	n/a	0.000	0.000
%RSD		4.066	2.992	1.433	0.545	3.977	3.350	1.352	23.360	10.580	29.310	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:09:05	4.604	104.179%	10.820	1.156	-0.884	1.022	102.186%	0.000	2.132	2.164	9.574	99.416%
2	13:09:27	4.960	104.891%	10.610	1.103	-1.432	1.042	103.651%	0.000	2.356	2.260	10.020	101.348%

3	13:09:50	4.862	103.406%	11.220	1.105	-0.976	1.104	102.281%	0.000	2.360	2.338	9.939	99.249%
x		96.168%	104.159%	108.835%	112.134%	-1.097	105.587%	102.706%	0.000	2.283	112.707%	98.443%	100.004%
σ		n/a	0.742%	n/a	n/a	0.293	n/a	0.820%	0.000	0.130	n/a	n/a	1.167%
%RSD		3.821	0.713	2.863	2.650	26.750	4.075	0.798	0.000	5.715	3.873	2.415	1.167

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:09:05	1.753	2.078	1.170	96.063%	0.000	1.572	1.071
2	13:09:27	1.769	2.031	1.123	99.613%	0.000	1.509	0.982
3	13:09:50	2.003	2.057	1.188	97.907%	0.000	1.534	1.067
x		92.100%	102.769%	116.035%	97.861%	0.000	76.930%	104.010%
σ		n/a	n/a	n/a	1.775%	0.000	n/a	n/a
%RSD		7.600	1.131	2.903	1.814	0.000	2.062	4.853

ICBIS 10/18/2016 01:19:56 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:20:18	101.127%	0.019	-0.266	2.366	-0.037	-0.302	3.578	-0.981	106.150%	0.000	0.514	0.058
2	13:20:40	101.459%	0.088	0.569	-1.124	-0.205	-0.313	1.260	1.335	108.976%	0.000	0.573	-0.002
3	13:21:01	100.799%	0.036	0.143	-1.448	0.519	-0.252	0.863	-0.400	109.341%	0.000	0.006	-0.094
x		101.128%	0.048	0.148	-0.068	0.093	-0.289	1.900	-0.016	108.156%	0.000	0.364	-0.013
σ		0.330%	0.036	0.417	2.115	0.379	0.033	1.466	1.205	1.746%	0.000	0.312	0.077
%RSD		0.327	74.850	280.900	3089.000	409.700	11.340	77.160	7759.000	1.615	0.000	85.640	604.300

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:20:18	12.060	-0.019	2.914	-0.008	-0.037	-0.018	-0.572	-0.597	0.371	-0.813	0.000	0.000
2	13:20:40	11.690	-0.004	-0.731	-0.004	-0.019	-0.086	-0.310	-0.277	0.347	-0.648	0.000	0.000
3	13:21:01	12.350	-0.008	1.231	-0.008	-0.020	0.053	-0.486	-0.259	0.338	-0.739	0.000	0.000
x		12.030	-0.010	1.138	-0.006	-0.025	-0.017	-0.456	-0.377	0.352	-0.734	0.000	0.000
σ		0.327	0.008	1.824	0.002	0.010	0.070	0.134	0.190	0.017	0.083	0.000	0.000
%RSD		2.720	76.900	160.300	31.280	39.800	409.300	29.300	50.450	4.805	11.260	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:20:18	0.001	107.415%	-0.181	0.002	-1.189	0.028	107.552%	0.000	-0.266	-0.287	-0.024	103.531%
2	13:20:40	0.001	109.860%	-0.256	0.007	-1.260	0.060	106.847%	0.000	-0.234	-0.251	0.032	101.754%
3	13:21:01	0.000	109.820%	-0.203	-0.005	-1.005	0.021	107.142%	0.000	-0.261	-0.234	0.004	102.076%
x		0.001	109.032%	-0.213	0.001	-1.152	0.036	107.180%	0.000	-0.253	-0.257	0.004	102.453%
σ		0.001	1.400%	0.038	0.006	0.132	0.021	0.354%	0.000	0.017	0.027	0.028	0.947%
%RSD		59.860	1.284	18.020	418.900	11.420	57.830	0.330	0.000	6.627	10.680	740.800	0.924

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:20:18	0.044	0.081	-0.060	100.726%	0.000	0.620	-0.003
2	13:20:40	0.049	0.060	-0.069	101.238%	0.000	0.628	-0.003
3	13:21:01	0.067	0.069	-0.066	100.198%	0.000	0.649	-0.004
x		0.053	0.070	-0.065	100.720%	0.000	0.632	-0.003
σ		0.012	0.010	0.005	0.520%	0.000	0.015	0.000

%RSD	22.400	14.940	7.270	0.516	0.000	2.409	12.370	

ICSA 10/18/2016 01:25:39 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:26:00	96.815%	0.058	1.640	TM 98720.000	T 98220.000	T 97120.000	TM 99880.000	T 102900.000	111.275%	0.000	0.504	1.266
2	13:26:22	96.045%	0.150	0.856	TM 100700.000	T 101400.000	T 99920.000	TM 101900.000	T 104200.000	110.226%	0.000	0.480	1.393
3	13:26:44	93.865%	0.229	0.121	TM 97780.000	T 99910.000	T 99160.000	TM 102100.000	T 105800.000	112.630%	0.000	0.642	1.333
x		95.575%	1.#IO%	1.#IO%	TM 99.057%	T 99.832%	T 98.732%	TM 101.282%	T 104.293%	111.377%	0.000	1.#IO%	1.#IO%
σ		1.530%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.205%	0.000	n/a	n/a
%RSD		1.601	58.720	87.070	TM 1.492	T 1.581	T 1.463	TM 1.203	T 1.409	1.082	0.000	16.110	4.758

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:26:00	5.191	0.508	T 96380.000	0.114	0.498	1.235	-1.352	-0.080	0.285	-0.461	0.000	0.000
2	13:26:22	5.548	0.641	T 99400.000	0.139	0.610	0.844	-1.173	-0.043	0.303	-0.218	0.000	0.000
3	13:26:44	5.302	0.752	T 97460.000	0.168	0.743	1.348	-1.100	-0.101	0.300	-0.610	0.000	0.000
x		5.347	1.#IO%	T 97.746%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	0.296	-1.#IO%	0.000	0.000
σ		0.183	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.009	n/a	0.000	0.000
%RSD		3.423	19.220	T 1.565	19.390	19.880	23.130	10.740	39.390	3.126	46.060	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:26:00	0.776	106.284%	T 2030.000	0.160	6.734	0.294	105.160%	0.000	-0.167	-0.170	0.282	106.140%
2	13:26:22	0.740	107.521%	T 2086.000	0.169	8.057	0.290	109.327%	0.000	-0.102	-0.134	0.325	108.157%
3	13:26:44	0.820	110.441%	T 2089.000	0.203	7.983	0.314	108.845%	0.000	-0.111	-0.097	0.511	110.554%
x		1.#IO%	108.082%	T 103.432%	1.#IO%	7.591	1.#IO%	107.777%	0.000	-0.127	-1.#IO%	1.#IO%	108.284%
σ		n/a	2.134%	T n/a	n/a	0.744	n/a	2.279%	0.000	0.035	n/a	n/a	2.210%
%RSD		5.178	1.975	T 1.618	12.580	9.795	4.153	2.115	0.000	27.810	27.000	32.730	2.041

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:26:00	0.288	0.104	0.285	98.613%	0.000	5.755	-0.001
2	13:26:22	0.327	0.087	0.353	101.798%	0.000	4.774	0.002
3	13:26:44	0.275	0.132	0.543	104.058%	0.000	3.846	0.005
x		1.#IO%	1.#IO%	1.#IO%	101.490%	0.000	1.#IO%	1.#IO%
σ		n/a	n/a	n/a	2.735%	0.000	n/a	n/a
%RSD		9.104	21.380	34.050	2.695	0.000	19.930	149.400

ICSAB 10/18/2016 01:31:21 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:31:43	89.414%	29.490	465.700	TM 98950.000	T 97610.000	T 96000.000	TM 98800.000	T 102900.000	109.920%	0.000	25.530	48.910
2	13:32:05	90.154%	26.730	444.500	TM 94790.000	T 95460.000	T 94320.000	TM 96430.000	T 101500.000	111.874%	0.000	24.640	47.670
3	13:32:26	89.485%	26.690	450.700	TM 95950.000	T 94910.000	T 94980.000	TM 98080.000	T 102300.000	111.164%	0.000	23.470	47.710
x		89.684%	110.538%	113.402%	TM 96.561%	T 95.991%	T 95.098%	TM 97.770%	T 102.239%	110.986%	0.000	98.190%	96.192%
σ		0.408%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.989%	0.000	n/a	n/a
%RSD		0.455	5.805	2.399	TM 2.228	T 1.484	T 0.887	TM 1.247	T 0.656	0.891	0.000	4.213	1.463

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:31:43	6.952	24.620	T 95880.000	23.500	25.750	46.990	44.320	44.050	-0.043	109.800	0.000	0.000
2	13:32:05	6.396	24.050	T 95760.000	22.210	24.180	44.640	43.360	43.300	0.033	113.000	0.000	0.000
3	13:32:26	6.948	23.800	T 97530.000	22.750	23.630	44.600	42.980	43.370	-0.031	113.300	0.000	0.000
x		6.765	96.620%	T 96.389%	91.269%	98.081%	90.816%	87.105%	96.824%	-0.014	89.623%	0.000	0.000
σ		0.320	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.041	n/a	0.000	0.000
%RSD		4.726	1.738	T 1.031	2.844	4.484	3.020	1.580	0.946	293.000	1.737	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:31:43	0.976	106.279%	T 2052.000	24.810	7.134	23.570	108.109%	0.000	46.940	46.930	237.400	109.098%
2	13:32:05	0.802	107.840%	T 2078.000	24.580	10.720	23.080	108.886%	0.000	47.230	47.530	238.000	111.772%
3	13:32:26	0.725	108.567%	T 2090.000	24.560	7.253	23.540	109.524%	0.000	47.670	47.670	242.700	112.481%
x		0.835	107.562%	T 103.668%	98.616%	8.368	93.586%	108.840%	0.000	47.280	94.758%	95.736%	111.117%
σ		0.129	1.169%	T n/a	n/a	2.035	n/a	0.709%	0.000	0.369	n/a	n/a	1.785%
%RSD		15.400	1.087	T 0.923	0.567	24.320	1.174	0.651	0.000	0.781	0.828	1.210	1.606

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:31:43	18.350	22.670	24.200	102.830%	0.000	19.570	10.700
2	13:32:05	18.330	22.460	23.540	105.139%	0.000	19.820	10.860
3	13:32:26	18.450	23.090	23.680	103.578%	0.000	20.870	11.170
x		91.881%	90.954%	95.237%	103.849%	0.000	100.448%	109.064%
σ		n/a	n/a	n/a	1.178%	0.000	n/a	n/a
%RSD		0.360	1.429	1.468	1.134	0.000	3.430	2.199

CCV 10/18/2016 01:37:05 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:37:27	84.830%	707.300	269.100	T 10050.000	T 29600.000	T 29920.000	T 9988.000	28080.000	97.281%	0.000	T 1265.000	381.200
2	13:37:49	86.663%	672.000	268.400	T 9967.000	T 29720.000	T 29640.000	T 9825.000	T 29740.000	97.131%	0.000	T 1256.000	378.600
3	13:38:10	85.381%	687.300	275.800	T 10070.000	T 30420.000	T 30190.000	T 9855.000	28800.000	95.466%	0.000	T 1286.000	386.100
x		85.625%	110.221%	108.441%	T 100.268%	T 99.709%	T 99.720%	T 98.891%	T 96.249%	96.626%	0.000	T 101.496%	95.492%
σ		0.941%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.007%	0.000	T n/a	n/a
%RSD		1.099	2.571	1.512	T 0.527	T 1.492	T 0.929	T 0.875	T 2.885	1.042	0.000	T 1.212	1.005

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:37:27	19.770	T 1243.000	T 29490.000	453.400	1207.000	1119.000	1186.000	198.500	-0.635	209.700	0.000	0.000
2	13:37:49	15.850	T 1227.000	T 29460.000	456.700	1206.000	1117.000	1193.000	201.900	-0.577	210.100	0.000	0.000
3	13:38:10	17.580	T 1245.000	T 29740.000	467.400	1233.000	1142.000	1202.000	199.200	-0.506	207.400	0.000	0.000
x		17.740	T 99.044%	T 98.549%	91.836%	97.226%	90.068%	95.498%	99.921%	-0.573	104.537%	0.000	0.000
σ		1.965	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.065	n/a	0.000	0.000
%RSD		11.080	T 0.793	T 0.519	1.596	1.281	1.257	0.679	0.893	11.270	0.704	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:37:27	184.700	101.231%	1140.000	102.500	3.421	197.200	100.671%	0.000	237.000	239.300	1168.000	101.264%
2	13:37:49	189.200	101.423%	1173.000	104.300	8.606	197.000	98.769%	0.000	242.100	245.700	1191.000	101.824%
3	13:38:10	187.400	100.505%	1192.000	102.300	3.321	197.000	99.647%	0.000	244.000	244.400	1180.000	101.090%
x		187.100	101.053%	93.474%	103.049%	5.116	98.525%	99.696%	0.000	241.000	97.242%	94.388%	101.393%
σ		2.234	0.484%	n/a	n/a	3.023	n/a	0.952%	0.000	3.616	n/a	n/a	0.384%
%RSD		1.194	0.479	2.251	1.046	59.080	0.077	0.955	0.000	1.500	1.387	0.974	0.378

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:37:27	19.800	176.100	T 1230.000	98.816%	0.000	16.900	9.577
2	13:37:49	20.540	178.000	T 1232.000	99.661%	0.000	18.050	9.556
3	13:38:10	20.460	179.900	T 1242.000	98.743%	0.000	19.090	9.691
x		101.329%	88.995%	T 98.775%	99.074%	0.000	90.058%	96.081%
σ		n/a	n/a	T n/a	0.510%	0.000	n/a	n/a
%RSD		2.014	1.049	T 0.527	0.515	0.000	6.073	0.754

CCB 10/18/2016 01:42:49 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:43:10	89.310%	0.067	0.140	-2.455	0.900	0.654	4.914	1.817	100.696%	0.000	0.314	-0.222
2	13:43:32	88.323%	0.009	1.240	2.054	0.886	0.978	7.087	2.045	98.172%	0.000	0.671	-0.211
3	13:43:54	87.144%	0.050	-0.540	3.183	3.538	2.089	8.896	3.569	99.694%	0.000	0.104	-0.221
x		88.259%	0.042	0.280	0.927	1.775	1.241	6.966	2.477	99.521%	0.000	0.363	-0.218
σ		1.084%	0.030	0.898	2.983	1.527	0.753	1.993	0.953	1.271%	0.000	0.287	0.006
%RSD		1.229	70.780	320.400	321.700	86.070	60.660	28.620	38.470	1.277	0.000	78.970	2.917

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:43:10	9.021	-0.038	2.816	-0.007	-0.007	-0.083	-0.556	-0.909	0.321	-1.172	0.000	0.000
2	13:43:32	9.004	-0.017	3.162	0.007	-0.025	-0.009	-0.450	-0.355	0.254	-0.562	0.000	0.000
3	13:43:54	9.394	0.008	3.879	-0.001	-0.006	-0.104	-0.542	-0.715	0.301	-0.562	0.000	0.000
x		9.140	-0.016	3.286	-0.000	-0.013	-0.065	-0.516	-0.660	0.292	-0.765	0.000	0.000
σ		0.221	0.023	0.542	0.007	0.011	0.050	0.057	0.281	0.034	0.352	0.000	0.000
%RSD		2.414	146.200	16.510	2857.000	85.400	76.250	11.130	42.590	11.730	46.040	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:43:10	0.001	102.119%	1.738	0.006	-0.985	0.006	102.517%	0.000	-0.071	-0.122	0.025	100.021%
2	13:43:32	-0.002	104.053%	1.651	0.004	-1.027	0.037	102.437%	0.000	-0.076	-0.080	0.015	98.701%

3	13:43:54	0.002	102.094%	1.685	0.003	-1.229	0.038	102.052%	0.000	-0.050	-0.055	0.035	100.949%
x		0.000	102.755%	1.691	0.004	-1.080	0.027	102.335%	0.000	-0.066	-0.086	0.025	99.890%
σ		0.002	1.124%	0.044	0.002	0.130	0.018	0.249%	0.000	0.014	0.034	0.010	1.129%
%RSD		693.300	1.093	2.573	41.220	12.070	67.950	0.243	0.000	21.520	39.460	39.480	1.131

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:43:10	0.064	0.167	-0.068	98.321%	0.000	0.579	-0.001
2	13:43:32	0.046	0.148	-0.057	99.816%	0.000	0.593	-0.003
3	13:43:54	0.065	0.138	-0.038	99.986%	0.000	0.567	-0.002
x		0.058	0.151	-0.054	99.374%	0.000	0.580	-0.002
σ		0.011	0.015	0.015	0.916%	0.000	0.013	0.001
%RSD		18.240	9.748	27.330	0.922	0.000	2.326	46.810

MB 200-110229/1-A 10/18/2016 01:48:31 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:52	96.415%	0.131	-0.567	107.900	39.150	42.040	44.370	58.370	105.551%	0.000	0.777	0.569
2	13:49:14	97.367%	0.237	-0.145	113.400	49.740	53.970	48.120	65.570	106.508%	0.000	0.691	0.745
3	13:49:36	96.913%	0.166	0.567	110.000	44.840	44.650	44.700	61.000	106.046%	0.000	0.732	0.658
x		96.898%	0.178	-0.049	110.500	44.580	46.890	45.730	61.650	106.035%	0.000	0.733	0.657
σ		0.477%	0.054	0.573	2.772	5.298	6.274	2.075	3.643	0.479%	0.000	0.043	0.088
%RSD		0.492	30.300	1180.000	2.510	11.890	13.380	4.537	5.910	0.451	0.000	5.823	13.420

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:52	9.200	0.974	46.820	0.222	0.602	0.384	0.039	-0.279	0.270	-0.762	0.000	0.000
2	13:49:14	9.760	0.999	56.470	0.223	0.706	0.474	0.166	-0.703	0.312	-0.729	0.000	0.000
3	13:49:36	9.444	0.968	46.660	0.195	0.525	0.407	0.303	-0.385	0.277	-0.744	0.000	0.000
x		9.468	0.981	49.980	0.213	0.611	0.421	0.169	-0.456	0.286	-0.745	0.000	0.000
σ		0.281	0.017	5.617	0.016	0.091	0.046	0.132	0.221	0.022	0.017	0.000	0.000
%RSD		2.968	1.694	11.240	7.551	14.860	11.020	78.060	48.460	7.854	2.268	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:52	0.077	108.926%	1.490	0.023	-1.159	0.053	106.029%	0.000	-0.194	-0.218	0.365	102.874%
2	13:49:14	0.078	108.021%	1.808	0.023	-1.145	0.104	107.332%	0.000	-0.183	-0.155	0.482	104.188%
3	13:49:36	0.074	110.759%	1.338	0.026	-0.788	0.077	107.860%	0.000	-0.156	-0.164	0.377	105.728%
x		0.076	109.235%	1.545	0.024	-1.031	0.078	107.074%	0.000	-0.178	-0.179	0.408	104.263%
σ		0.002	1.395%	0.239	0.002	0.210	0.026	0.943%	0.000	0.019	0.034	0.064	1.428%
%RSD		2.654	1.277	15.490	7.498	20.400	33.160	0.880	0.000	10.850	18.860	15.800	1.370

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:52	0.076	0.102	0.192	100.060%	0.000	3.447	0.003
2	13:49:14	0.077	0.136	0.255	104.041%	0.000	2.860	0.005
3	13:49:36	0.091	0.094	0.198	102.457%	0.000	2.490	0.001
x		0.081	0.111	0.215	102.186%	0.000	2.932	0.003
σ		0.008	0.022	0.035	2.005%	0.000	0.482	0.002

%RSD	9.900	20.220	16.100	1.962	0.000	16.440	65.160	

LCS 200-110229/2-A 10/18/2016 01:54:13 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:54:35	92.558%	10.990	436.500	T 5472.000	1979.000	483.700	T 5150.000	4850.000	103.058%	0.000	47.500	39.570
2	13:54:57	93.233%	10.460	438.200	T 5399.000	1964.000	481.700	T 5175.000	4864.000	102.121%	0.000	46.820	41.010
3	13:55:18	87.744%	11.930	445.900	T 5493.000	1982.000	494.200	T 5283.000	5086.000	98.393%	0.000	48.100	41.730
x		91.179%	11.130	440.200	T 5455.000	1975.000	486.500	T 5202.000	4933.000	101.191%	0.000	47.470	40.770
σ		2.993%	0.747	5.020	T 49.700	9.743	6.725	T 70.840	132.400	2.468%	0.000	0.641	1.098
%RSD		3.283	6.708	1.140	T 0.911	0.493	1.382	T 1.362	2.684	2.439	0.000	1.351	2.694

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:54:35	9.693	19.320	T 2091.000	9.714	20.640	48.490	178.100	18.790	0.124	34.290	0.000	0.000
2	13:54:57	9.015	20.100	T 2094.000	10.020	20.420	48.910	185.400	18.790	0.172	34.970	0.000	0.000
3	13:55:18	8.670	20.570	T 2165.000	10.610	22.030	49.650	184.500	18.940	0.103	34.100	0.000	0.000
x		9.126	20.000	T 2117.000	10.110	21.030	49.020	182.700	18.840	0.133	34.450	0.000	0.000
σ		0.520	0.631	T 41.500	0.453	0.873	0.588	3.986	0.089	0.035	0.456	0.000	0.000
%RSD		5.704	3.154	T 1.961	4.478	4.151	1.200	2.182	0.471	26.410	1.324	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:54:35	48.400	101.484%	100.600	11.130	0.569	9.326	102.018%	0.000	19.280	18.760	97.220	99.854%
2	13:54:57	49.820	102.407%	101.600	11.260	0.950	9.425	100.950%	0.000	19.550	19.270	99.200	101.721%
3	13:55:18	49.300	101.559%	101.900	11.210	-0.080	9.916	101.335%	0.000	19.540	19.330	96.690	100.511%
x		49.170	101.817%	101.400	11.200	0.479	9.556	101.434%	0.000	19.460	19.120	97.700	100.695%
σ		0.722	0.513%	0.689	0.066	0.521	0.316	0.541%	0.000	0.156	0.313	1.322	0.947%
%RSD		1.468	0.504	0.679	0.585	108.600	3.309	0.534	0.000	0.803	1.635	1.353	0.941

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:54:35	36.690	18.300	9.465	98.711%	0.000	17.580	10.650
2	13:54:57	37.070	18.860	9.662	97.541%	0.000	18.730	11.090
3	13:55:18	37.440	18.770	9.505	97.882%	0.000	19.220	10.900
x		37.070	18.640	9.544	98.045%	0.000	18.510	10.880
σ		0.373	0.298	0.104	0.602%	0.000	0.841	0.222
%RSD		1.005	1.597	1.086	0.614	0.000	4.544	2.044

200-35680-A-7-B 10/18/2016 01:59:56 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:00:18	104.854%	3.115	20.240	┬505.000	┬11180.000	┬48020.000	┬3669.000	16790.000	144.739%	0.000	77.200	59.560
2	14:00:39	101.865%	4.219	21.450	┬492.200	┬11160.000	┬48540.000	┬3693.000	16990.000	147.843%	0.000	79.440	59.010
3	14:01:01	104.921%	3.978	22.480	┬495.300	┬11190.000	┬49100.000	┬3738.000	17250.000	148.176%	0.000	77.990	59.850
x		103.880%	3.771	21.390	┬497.500	┬11180.000	┬48550.000	┬3700.000	17010.000	146.920%	0.000	78.210	59.470
σ		1.746%	0.581	1.118	┬6.688	┬15.310	┬541.800	┬35.040	233.400	1.896%	0.000	1.135	0.429
%RSD		1.680	15.400	5.228	┬1.344	┬0.137	┬1.116	┬0.947	1.372	1.290	0.000	1.451	0.722

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:00:18	6.239	┬2715.000	┬76200.000	35.280	86.570	┬2813.000	1050.000	23.520	0.127	20.220	0.000	0.000
2	14:00:39	6.701	┬2783.000	┬78910.000	36.380	87.170	┬2777.000	1062.000	24.020	0.118	20.920	0.000	0.000
3	14:01:01	8.686	┬2746.000	┬78220.000	36.600	89.430	┬2826.000	1062.000	23.840	0.130	20.020	0.000	0.000
x		7.209	┬2748.000	┬77780.000	36.090	87.730	┬2805.000	1058.000	23.790	0.125	20.390	0.000	0.000
σ		1.300	┬33.750	┬1410.000	0.710	1.509	┬25.780	6.996	0.252	0.006	0.471	0.000	0.000
%RSD		18.040	┬1.228	┬1.813	1.967	1.720	┬0.919	0.661	1.060	5.118	2.311	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:00:18	77.250	284.425%	1.819	2.543	-3.813	5.917	117.399%	0.000	0.654	0.633	621.300	134.532%
2	14:00:39	78.310	298.321%	1.675	2.649	-3.219	5.878	120.025%	0.000	0.708	0.694	624.900	134.066%
3	14:01:01	78.620	296.782%	1.741	2.565	-3.216	6.090	121.135%	0.000	0.597	0.693	632.800	140.489%
x		78.060	293.176%	1.745	2.586	-3.416	5.962	119.520%	0.000	0.653	0.673	626.300	136.362%
σ		0.716	7.617%	0.072	0.056	0.344	0.113	1.919%	0.000	0.056	0.035	5.861	3.581%
%RSD		0.917	2.598	4.135	2.168	10.060	1.891	1.605	0.000	8.500	5.196	0.936	2.626

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:00:18	0.513	0.498	165.800	113.236%	0.000	16.580	6.694
2	14:00:39	0.483	0.502	169.300	115.026%	0.000	15.980	6.777
3	14:01:01	0.459	0.484	171.300	115.807%	0.000	15.530	6.738
x		0.485	0.495	168.800	114.690%	0.000	16.030	6.737
σ		0.027	0.010	2.799	1.318%	0.000	0.531	0.042
%RSD		5.633	1.938	1.658	1.149	0.000	3.312	0.616

200-35680-A-14-D 10/18/2016 02:05:39 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:06:00	105.592%	3.688	23.860	┬543.400	┬12410.000	┬49740.000	┬4037.000	┬22980.000	160.764%	0.000	74.880	61.340
2	14:06:22	106.325%	3.810	21.520	┬542.700	┬12350.000	┬49650.000	┬3990.000	┬23110.000	161.530%	0.000	75.630	61.940
3	14:06:44	104.441%	3.378	21.600	┬538.100	┬12380.000	┬50050.000	┬4050.000	┬23210.000	161.157%	0.000	78.680	63.120
x		105.453%	3.625	22.330	┬541.400	┬12380.000	┬49810.000	┬4026.000	┬23100.000	161.150%	0.000	76.400	62.130
σ		0.950%	0.223	1.331	┬2.883	┬31.880	┬207.500	┬31.430	┬113.600	0.383%	0.000	2.011	0.903
%RSD		0.900	6.144	5.959	┬0.532	┬0.258	┬0.416	┬0.781	┬0.492	0.238	0.000	2.633	1.453

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:06:00	6.534	T 4133.000	T 96140.000	40.900	91.120	2288.000	938.000	28.220	0.139	15.010	0.000	0.000
2	14:06:22	6.788	T 4165.000	T 96890.000	40.200	90.620	2297.000	936.900	28.900	0.112	16.340	0.000	0.000
3	14:06:44	5.564	T 4209.000	T 97090.000	39.970	91.490	2303.000	952.000	29.630	0.104	16.800	0.000	0.000
x		6.295	T 4169.000	T 96710.000	40.360	91.080	2296.000	942.300	28.920	0.118	16.050	0.000	0.000
σ		0.646	T 38.140	T 499.100	0.485	0.436	7.809	8.418	0.703	0.019	0.928	0.000	0.000
%RSD		10.260	T 0.915	T 0.516	1.201	0.478	0.340	0.893	2.431	15.710	5.782	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:06:00	102.300	317.960%	1.953	2.223	-3.660	3.908	128.279%	0.000	0.473	0.486	752.000	140.896%
2	14:06:22	102.500	323.761%	1.960	2.105	-2.769	3.743	128.598%	0.000	0.546	0.501	761.800	146.521%
3	14:06:44	104.000	321.896%	1.920	2.201	-2.871	3.895	128.585%	0.000	0.491	0.526	777.100	147.310%
x		103.000	321.206%	1.944	2.176	-3.100	3.849	128.488%	0.000	0.503	0.504	763.600	144.909%
σ		0.909	2.962%	0.021	0.063	0.488	0.092	0.180%	0.000	0.038	0.020	12.620	3.498%
%RSD		0.882	0.922	1.087	2.898	15.740	2.385	0.140	0.000	7.554	3.983	1.652	2.414

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:06:00	0.457	0.510	140.300	121.616%	0.000	14.520	7.857
2	14:06:22	0.433	0.533	142.000	120.924%	0.000	14.920	8.003
3	14:06:44	0.382	0.513	139.200	124.692%	0.000	14.530	7.838
x		0.424	0.518	140.500	122.411%	0.000	14.660	7.899
σ		0.038	0.012	1.413	2.006%	0.000	0.228	0.090
%RSD		9.021	2.409	1.006	1.639	0.000	1.554	1.138

200-35736-A-1-A 10/18/2016 02:11:21 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:11:43	108.532%	8.753	17.130	T 566.800	T 16260.000	T 96530.000	T 6290.000	T 16720.000	200.902%	0.000	140.200	102.500
2	14:12:05	106.964%	8.653	16.200	T 567.700	T 15980.000	T 95640.000	T 6263.000	T 16680.000	203.503%	0.000	140.500	101.100
3	14:12:26	107.438%	8.680	15.870	T 549.900	T 15940.000	T 93890.000	T 6164.000	15870.000	204.712%	0.000	141.300	102.800
x		107.645%	8.695	16.400	T 561.400	T 16060.000	T 95350.000	T 6239.000	T 16420.000	203.039%	0.000	140.700	102.100
σ		0.805%	0.052	0.651	T 10.040	T 175.000	T 1340.000	T 66.400	T 476.400	1.947%	0.000	0.552	0.935
%RSD		0.747	0.593	3.971	T 1.787	T 1.089	T 1.406	T 1.064	T 2.901	0.959	0.000	0.393	0.915

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:11:43	7.867	T 4228.000	TM 175400.000	67.560	127.300	108.400	587.500	93.270	0.122	7.704	0.000	0.000
2	14:12:05	6.379	T 4262.000	TM 177300.000	67.190	127.500	109.500	598.600	94.710	0.111	8.825	0.000	0.000
3	14:12:26	8.219	T 4284.000	TM 177800.000	67.250	128.300	111.700	595.300	94.880	0.125	7.962	0.000	0.000
x		7.488	T 4258.000	TM 176800.000	67.330	127.700	109.900	593.800	94.290	0.119	8.164	0.000	0.000
σ		0.977	T 28.220	TM 1281.000	0.199	0.493	1.698	5.709	0.884	0.008	0.587	0.000	0.000
%RSD		13.050	T 0.663	TM 0.724	0.296	0.386	1.546	0.962	0.937	6.339	7.191	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:11:43	115.300	516.062%	1.690	0.968	-6.549	2.170	133.070%	0.000	0.236	0.201	1489.000	171.208%
2	14:12:05	116.900	517.753%	1.814	0.912	-6.078	2.292	132.930%	0.000	0.239	0.240	1519.000	169.108%

3	14:12:26	118.200	529.630%	1.792	0.949	-8.550	2.448	134.362%	0.000	0.234	0.266	1546.000	175.130%
x		116.800	521.148%	1.765	0.943	-7.059	2.303	133.454%	0.000	0.236	0.236	1518.000	171.815%
σ		1.452	7.394%	0.066	0.029	1.312	0.139	0.790%	0.000	0.003	0.032	28.220	3.057%
%RSD		1.243	1.419	3.756	3.052	18.590	6.045	0.592	0.000	1.098	13.700	1.859	1.779

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:11:43	0.199	0.984	127.000	127.208%	0.000	28.780	8.972
2	14:12:05	0.220	0.933	127.500	128.828%	0.000	29.360	9.065
3	14:12:26	0.180	0.933	127.700	130.839%	0.000	29.420	8.916
x		0.200	0.950	127.400	128.958%	0.000	29.180	8.985
σ		0.020	0.029	0.352	1.819%	0.000	0.356	0.075
%RSD		10.030	3.058	0.277	1.411	0.000	1.219	0.836

200-35736-A-2-A 10/18/2016 02:17:04 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:26	107.418%	7.852	33.130	┬575.000	┬17000.000	┬99850.000	┬7777.000	13280.000	194.238%	0.000	139.200	105.200
2	14:17:47	107.938%	8.348	34.230	┬551.100	┬17130.000	┬98860.000	┬7731.000	13490.000	197.980%	0.000	140.800	103.300
3	14:18:09	105.159%	8.088	34.880	┬539.400	┬16780.000	┬99390.000	┬7573.000	┬14280.000	199.490%	0.000	138.800	104.300
x		106.838%	8.096	34.080	┬555.200	┬16970.000	┬99370.000	┬7694.000	┬13680.000	197.236%	0.000	139.600	104.300
σ		1.478%	0.248	0.885	┬18.130	┬179.900	┬495.500	┬106.700	┬524.000	2.704%	0.000	1.070	0.960
%RSD		1.383	3.064	2.595	┬3.265	┬1.060	┬0.499	┬1.387	┬3.829	1.371	0.000	0.766	0.921

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:26	10.190	┬3338.000	┬121500.000	53.450	122.400	104.700	538.200	31.560	0.178	5.863	0.000	0.000
2	14:17:47	9.580	┬3320.000	┬121200.000	53.080	122.700	105.300	542.900	31.670	0.169	7.158	0.000	0.000
3	14:18:09	10.710	┬3372.000	┬120700.000	52.350	122.000	104.800	534.900	31.580	0.169	6.668	0.000	0.000
x		10.160	┬3343.000	┬121100.000	52.960	122.300	104.900	538.600	31.600	0.172	6.563	0.000	0.000
σ		0.566	┬26.410	┬377.400	0.561	0.384	0.310	4.040	0.063	0.005	0.654	0.000	0.000
%RSD		5.570	┬0.790	┬0.312	1.059	0.313	0.295	0.750	0.199	3.187	9.964	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:26	97.930	476.050%	0.462	0.752	-6.174	1.903	131.943%	0.000	0.124	0.123	1314.000	164.858%
2	14:17:47	97.500	478.709%	0.426	0.742	-4.735	1.818	133.171%	0.000	0.144	0.147	1327.000	164.618%
3	14:18:09	98.060	475.834%	0.499	0.746	-5.021	1.817	135.189%	0.000	0.158	0.158	1299.000	164.566%
x		97.830	476.865%	0.462	0.746	-5.310	1.846	133.434%	0.000	0.142	0.142	1313.000	164.681%
σ		0.292	1.601%	0.037	0.005	0.762	0.050	1.639%	0.000	0.017	0.018	13.990	0.156%
%RSD		0.299	0.336	7.917	0.661	14.340	2.691	1.228	0.000	11.920	12.550	1.065	0.094

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:26	0.235	0.898	112.100	124.684%	0.000	29.010	7.544
2	14:17:47	0.212	0.958	115.100	124.082%	0.000	29.540	7.740
3	14:18:09	0.221	0.938	114.900	125.026%	0.000	29.460	7.694
x		0.223	0.931	114.100	124.597%	0.000	29.340	7.659
σ		0.011	0.030	1.674	0.478%	0.000	0.287	0.103

%RSD		5.109	3.247	1.467	0.384	0.000	0.977	1.341

200-35736-A-3-A 10/18/2016 02:22:47 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:23:09	105.752%	8.009	40.870	T 595.600	T 16590.000	T 104100.000	T 8089.000	15340.000	197.087%	0.000	141.400	105.800
2	14:23:31	105.914%	7.206	41.410	T 581.400	T 16180.000	T 101300.000	T 8147.000	T 16500.000	204.147%	0.000	138.100	102.300
3	14:23:52	104.448%	8.361	42.410	T 606.100	T 16750.000	T 105800.000	T 8330.000	T 16970.000	197.671%	0.000	143.100	108.100
x		105.371%	7.859	41.560	T 594.400	T 16510.000	T 103700.000	T 8189.000	T 16270.000	199.635%	0.000	140.900	105.400
σ		0.804%	0.592	0.783	T 12.400	T 297.200	T 2263.000	T 125.600	T 841.300	3.918%	0.000	2.563	2.935
%RSD		0.763	7.537	1.883	T 2.087	T 1.800	T 2.183	T 1.533	T 5.171	1.963	0.000	1.819	2.785

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:23:09	10.770	T 2816.000	T 99670.000	47.440	120.500	111.900	576.100	23.620	0.192	7.181	0.000	0.000
2	14:23:31	11.290	T 2814.000	T 97740.000	46.860	117.800	109.400	570.200	23.320	0.191	5.905	0.000	0.000
3	14:23:52	11.390	T 2905.000	T 101200.000	48.560	122.300	107.700	568.100	24.490	0.179	7.485	0.000	0.000
x		11.150	T 2845.000	T 99550.000	47.620	120.200	109.700	571.400	23.810	0.187	6.857	0.000	0.000
σ		0.334	T 52.210	T 1759.000	0.862	2.272	2.124	4.174	0.608	0.007	0.838	0.000	0.000
%RSD		2.997	T 1.835	T 1.767	1.809	1.890	1.936	0.731	2.555	3.758	12.230	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:23:09	111.700	501.335%	0.166	0.833	-6.459	2.681	129.669%	0.000	0.034	0.078	1340.000	165.745%
2	14:23:31	111.300	506.056%	0.141	0.814	-6.164	2.411	132.206%	0.000	0.091	0.093	1348.000	168.415%
3	14:23:52	109.500	507.951%	0.163	0.786	-6.027	2.413	134.206%	0.000	0.065	0.086	1344.000	169.160%
x		110.800	505.114%	0.156	0.811	-6.217	2.502	132.027%	0.000	0.063	0.086	1344.000	167.773%
σ		1.147	3.407%	0.014	0.023	0.221	0.156	2.274%	0.000	0.029	0.007	4.110	1.795%
%RSD		1.035	0.675	8.759	2.885	3.553	6.214	1.722	0.000	45.550	8.661	0.306	1.070

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:23:09	0.222	0.908	119.600	121.136%	0.000	29.330	10.200
2	14:23:31	0.295	0.882	116.700	127.745%	0.000	28.860	9.898
3	14:23:52	0.199	0.922	120.300	124.904%	0.000	29.550	10.150
x		0.239	0.904	118.900	124.595%	0.000	29.250	10.080
σ		0.050	0.020	1.926	3.315%	0.000	0.348	0.162
%RSD		20.890	2.253	1.620	2.661	0.000	1.191	1.605

200-35736-A-4-A 10/18/2016 02:28:30 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:28:52	111.379%	6.410	36.270	T 530.600	T 15190.000	T 86400.000	T 7498.000	T 20230.000	200.186%	0.000	128.300	92.800
2	14:29:14	110.220%	6.827	38.000	T 521.400	T 15100.000	T 86040.000	T 7362.000	T 20560.000	202.721%	0.000	127.000	92.660
3	14:29:36	106.887%	6.600	41.230	T 506.700	T 14950.000	T 85460.000	T 7538.000	T 20430.000	203.293%	0.000	127.800	92.180
x		109.495%	6.613	38.500	T 519.600	T 15080.000	T 85970.000	T 7466.000	T 20410.000	202.067%	0.000	127.700	92.550
σ		2.332%	0.209	2.515	T 12.080	T 121.800	T 475.900	T 92.150	T 167.900	1.654%	0.000	0.659	0.325
%RSD		2.130	3.154	6.533	T 2.325	T 0.808	T 0.554	T 1.234	T 0.823	0.818	0.000	0.516	0.351

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:28:52	8.296	TM 9238.000	TM 182700.000	41.680	109.400	94.580	471.600	84.540	0.130	8.051	0.000	0.000
2	14:29:14	9.118	TM 9275.000	TM 182200.000	41.900	109.100	97.000	483.000	86.160	0.132	8.299	0.000	0.000
3	14:29:36	8.623	TM 9263.000	TM 185000.000	42.550	109.600	97.270	479.900	84.140	0.145	6.689	0.000	0.000
x		8.679	TM 9259.000	TM 183300.000	42.040	109.400	96.280	478.200	84.950	0.136	7.680	0.000	0.000
σ		0.414	TM 19.010	TM 1475.000	0.452	0.261	1.478	5.892	1.071	0.008	0.867	0.000	0.000
%RSD		4.768	TM 0.205	TM 0.804	1.076	0.239	1.535	1.232	1.260	6.214	11.290	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:28:52	126.800	481.776%	0.444	0.866	-6.765	1.668	135.971%	0.000	0.008	-0.004	1410.000	164.877%
2	14:29:14	129.200	483.735%	0.445	0.905	-7.012	1.502	134.768%	0.000	0.002	0.035	1435.000	162.675%
3	14:29:36	128.100	483.597%	0.411	0.874	-7.760	1.606	137.397%	0.000	0.102	0.045	1439.000	166.173%
x		128.000	483.036%	0.433	0.882	-7.179	1.592	136.045%	0.000	0.037	0.025	1428.000	164.575%
σ		1.188	1.093%	0.019	0.020	0.518	0.084	1.316%	0.000	0.056	0.026	15.700	1.768%
%RSD		0.928	0.226	4.443	2.308	7.217	5.259	0.967	0.000	150.400	101.300	1.099	1.075

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:28:52	0.248	0.823	118.000	126.337%	0.000	24.350	4.782
2	14:29:14	0.260	0.801	119.600	127.305%	0.000	24.500	4.805
3	14:29:36	0.233	0.842	118.900	128.983%	0.000	24.350	4.743
x		0.247	0.822	118.800	127.542%	0.000	24.400	4.777
σ		0.014	0.021	0.798	1.339%	0.000	0.085	0.031
%RSD		5.597	2.495	0.671	1.050	0.000	0.349	0.653

200-35736-A-5-A 10/18/2016 02:34:14 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:36	107.308%	6.477	32.460	T 481.700	T 14420.000	T 92780.000	T 7408.000	11750.000	192.191%	0.000	127.700	94.850
2	14:34:57	107.225%	6.726	34.840	T 496.800	T 15000.000	T 94870.000	T 7528.000	11890.000	192.138%	0.000	132.700	97.290
3	14:35:19	104.076%	7.065	37.280	T 474.800	T 14480.000	T 91850.000	T 7374.000	11650.000	195.557%	0.000	130.200	95.810
x		106.203%	6.756	34.860	T 484.500	T 14630.000	T 93160.000	T 7437.000	11760.000	193.295%	0.000	130.200	95.980
σ		1.842%	0.295	2.410	T 11.260	T 320.500	T 1546.000	T 80.900	121.000	1.959%	0.000	2.480	1.227
%RSD		1.735	4.374	6.912	T 2.323	T 2.190	T 1.660	T 1.088	1.028	1.014	0.000	1.905	1.278

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:36	11.200	T 2616.000	T 100700.000	44.880	109.000	92.180	475.300	24.390	0.203	5.440	0.000	0.000
2	14:34:57	10.100	T 2629.000	T 102000.000	45.820	110.400	94.520	478.100	24.960	0.197	6.357	0.000	0.000
3	14:35:19	11.630	T 2633.000	T 101000.000	45.520	108.200	94.770	482.000	24.210	0.182	6.768	0.000	0.000
x		10.980	T 2626.000	T 101200.000	45.410	109.200	93.830	478.500	24.520	0.194	6.189	0.000	0.000
σ		0.791	T 9.032	T 708.100	0.483	1.105	1.428	3.379	0.388	0.011	0.680	0.000	0.000
%RSD		7.208	T 0.344	T 0.699	1.063	1.012	1.522	0.706	1.581	5.764	10.980	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:36	83.800	429.355%	0.470	0.783	-5.969	2.062	131.834%	0.000	0.094	0.068	1193.000	156.938%
2	14:34:57	86.000	440.774%	0.469	0.728	-5.748	1.984	132.831%	0.000	0.099	0.063	1204.000	157.870%
3	14:35:19	84.260	438.835%	0.458	0.707	-4.557	1.972	133.462%	0.000	0.077	0.106	1213.000	158.524%
x		84.690	436.321%	0.466	0.739	-5.425	2.006	132.709%	0.000	0.090	0.079	1203.000	157.777%
σ		1.161	6.110%	0.006	0.040	0.759	0.049	0.821%	0.000	0.012	0.024	9.847	0.797%
%RSD		1.371	1.400	1.383	5.357	14.000	2.434	0.619	0.000	13.210	30.350	0.818	0.505

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:36	0.219	0.833	115.000	121.982%	0.000	24.830	7.929
2	14:34:57	0.242	0.854	118.000	121.860%	0.000	25.310	8.039
3	14:35:19	0.241	0.864	118.700	120.851%	0.000	25.840	8.143
x		0.234	0.850	117.200	121.564%	0.000	25.330	8.037
σ		0.014	0.016	1.989	0.621%	0.000	0.508	0.107
%RSD		5.782	1.834	1.697	0.511	0.000	2.004	1.333

200-35736-A-5-A SD@5 10/18/2016 02:39:58 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:40:19	103.766%	1.397	2.477	114.200	3547.000	T 24330.000	T 1908.000	3016.000	151.516%	0.000	34.130	25.410
2	14:40:41	104.161%	1.509	5.103	105.200	3536.000	T 24200.000	T 1892.000	3004.000	154.217%	0.000	33.930	24.830
3	14:41:03	103.798%	1.178	4.934	109.300	3635.000	T 24670.000	T 1928.000	3124.000	149.470%	0.000	34.660	25.640
x		103.909%	1.362	4.171	109.600	3573.000	T 24400.000	T 1909.000	3048.000	151.735%	0.000	34.240	25.290
σ		0.219%	0.168	1.470	4.490	54.140	T 242.700	T 18.350	66.230	2.381%	0.000	0.381	0.415
%RSD		0.211	12.370	35.240	4.099	1.515	T 0.995	T 0.961	2.173	1.569	0.000	1.114	1.640

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:40:19	10.060	T 665.100	T 26480.000	11.630	28.970	19.990	112.900	5.532	0.342	1.118	0.000	0.000
2	14:40:41	9.134	T 665.300	T 25940.000	11.870	28.550	19.490	114.200	5.434	0.360	0.671	0.000	0.000
3	14:41:03	9.904	T 684.700	T 27280.000	12.330	29.540	19.770	112.700	5.367	0.341	0.987	0.000	0.000
x		9.700	T 671.700	T 26570.000	11.940	29.020	19.750	113.300	5.444	0.348	0.925	0.000	0.000
σ		0.496	T 11.280	T 677.400	0.357	0.495	0.250	0.817	0.083	0.010	0.230	0.000	0.000
%RSD		5.116	T 1.680	T 2.550	2.988	1.706	1.266	0.721	1.525	2.948	24.840	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:40:19	17.310	201.614%	-0.150	0.159	-2.375	0.503	132.631%	0.000	-0.349	-0.349	240.600	129.985%
2	14:40:41	17.410	202.074%	-0.046	0.158	-1.908	0.353	133.460%	0.000	-0.326	-0.336	244.200	128.481%

3	14:41:03	17.450	202.876%	-0.132	0.181	-1.595	0.367	133.252%	0.000	-0.309	-0.332	244.100	130.366%
x		17.390	202.188%	-0.110	0.166	-1.959	0.407	133.114%	0.000	-0.328	-0.339	243.000	129.610%
σ		0.070	0.638%	0.056	0.013	0.393	0.083	0.431%	0.000	0.020	0.009	2.076	0.997%
%RSD		0.402	0.316	50.720	7.714	20.040	20.290	0.324	0.000	6.154	2.571	0.855	0.769

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:40:19	0.034	0.157	24.150	115.522%	0.000	4.454	1.640
2	14:40:41	0.035	0.169	24.710	114.700%	0.000	4.707	1.618
3	14:41:03	0.044	0.153	24.460	116.181%	0.000	4.839	1.635
x		0.037	0.160	24.440	115.468%	0.000	4.667	1.631
σ		0.006	0.008	0.282	0.742%	0.000	0.196	0.011
%RSD		14.960	5.173	1.154	0.642	0.000	4.192	0.691

CCV 10/18/2016 02:45:42 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:46:03	91.582%	688.900	264.100	┬10160.000	┬29780.000	┬30280.000	┬10240.000	┬30120.000	109.738%	0.000	┬1299.000	386.800
2	14:46:25	86.634%	709.900	282.000	┬9941.000	┬29250.000	┬29820.000	┬9814.000	┬29720.000	110.773%	0.000	┬1266.000	376.600
3	14:46:46	87.685%	695.800	273.000	┬9960.000	┬29300.000	┬29980.000	┬9861.000	┬29100.000	108.722%	0.000	┬1262.000	376.900
x		88.634%	111.714%	109.216%	┬100.202%	┬98.141%	┬100.087%	┬99.721%	┬98.817%	109.744%	0.000	┬102.032%	95.021%
σ		2.607%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.026%	0.000	┬n/a	n/a
%RSD		2.941	1.531	3.289	┬1.208	┬0.991	┬0.772	┬2.347	┬1.733	0.935	0.000	┬1.591	1.523

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:46:03	20.970	┬1256.000	┬30190.000	479.500	1282.000	1188.000	1219.000	207.200	-0.341	214.500	0.000	0.000
2	14:46:25	18.490	┬1205.000	┬29330.000	468.500	1259.000	1229.000	1232.000	210.500	-0.414	215.000	0.000	0.000
3	14:46:46	21.010	┬1230.000	┬29660.000	464.400	1242.000	1191.000	1225.000	206.300	-0.407	213.700	0.000	0.000
x		20.150	┬98.424%	┬99.093%	94.160%	100.865%	96.209%	98.054%	103.994%	-0.387	107.188%	0.000	0.000
σ		1.443	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.040	n/a	0.000	0.000
%RSD		7.162	┬2.090	┬1.465	1.664	1.589	1.879	0.532	1.076	10.340	0.318	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:46:03	189.100	115.581%	1101.000	104.200	3.263	191.500	110.815%	0.000	233.500	232.600	1134.000	107.107%
2	14:46:25	189.700	112.053%	1157.000	104.900	16.750	194.400	108.413%	0.000	239.900	237.700	1157.000	104.491%
3	14:46:46	189.700	110.456%	1174.000	103.700	4.169	193.900	107.077%	0.000	239.000	237.300	1162.000	103.112%
x		189.500	112.696%	91.533%	104.291%	8.061	96.632%	108.769%	0.000	237.500	94.342%	92.112%	104.903%
σ		0.388	2.622%	n/a	n/a	7.539	n/a	1.894%	0.000	3.460	n/a	n/a	2.029%
%RSD		0.205	2.327	3.313	0.584	93.530	0.793	1.741	0.000	1.457	1.208	1.295	1.934

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:46:03	19.030	174.000	┬1225.000	100.003%	0.000	16.030	9.181
2	14:46:25	19.860	180.600	┬1246.000	98.004%	0.000	17.660	9.729
3	14:46:46	20.260	175.500	┬1217.000	99.694%	0.000	18.090	9.315
x		98.577%	88.356%	┬98.362%	99.234%	0.000	86.297%	94.083%
σ		n/a	n/a	┬n/a	1.076%	0.000	n/a	n/a

%RSD	3.171	1.937	T 1.235	1.084	0.000	6.303	3.037

CCB 10/18/2016 02:51:26 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:51:48	95.066%	0.042	-3.569	-4.566	3.325	3.637	5.192	5.425	116.461%	0.000	0.672	-0.108
2	14:52:09	93.329%	-0.031	-3.174	-4.902	1.255	3.248	3.949	1.629	117.236%	0.000	0.222	-0.051
3	14:52:31	94.697%	0.116	-2.701	-3.840	2.967	3.834	4.024	5.468	116.057%	0.000	0.812	-0.051
x		94.364%	0.042	-3.148	-4.436	2.516	3.573	4.389	4.174	116.584%	0.000	0.568	-0.070
σ		0.915%	0.074	0.435	0.543	1.106	0.298	0.697	2.204	0.599%	0.000	0.308	0.033
%RSD		0.970	175.300	13.810	12.230	43.980	8.340	15.870	52.810	0.514	0.000	54.220	46.500

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:51:48	10.460	0.088	12.640	0.022	0.037	-0.049	-0.261	-0.559	0.385	-1.220	0.000	0.000
2	14:52:09	11.340	0.106	11.990	0.039	0.028	-0.071	-0.431	-0.602	0.394	-1.007	0.000	0.000
3	14:52:31	10.580	0.058	12.490	0.010	0.079	0.021	-0.464	-0.637	0.409	-1.530	0.000	0.000
x		10.790	0.084	12.370	0.024	0.048	-0.033	-0.386	-0.600	0.396	-1.252	0.000	0.000
σ		0.477	0.024	0.339	0.014	0.027	0.048	0.109	0.039	0.012	0.263	0.000	0.000
%RSD		4.424	28.960	2.736	59.980	56.920	146.300	28.210	6.547	3.088	21.000	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:51:48	0.008	116.329%	1.412	0.006	-1.420	0.045	113.813%	0.000	-0.167	-0.195	0.090	104.272%
2	14:52:09	0.012	115.378%	1.318	0.010	-1.293	0.042	114.528%	0.000	-0.125	-0.156	0.036	104.858%
3	14:52:31	0.019	117.021%	1.302	0.010	-0.883	0.011	114.396%	0.000	-0.122	-0.153	0.089	108.176%
x		0.013	116.243%	1.344	0.008	-1.199	0.032	114.246%	0.000	-0.138	-0.168	0.072	105.769%
σ		0.006	0.825%	0.060	0.002	0.281	0.019	0.381%	0.000	0.025	0.023	0.031	2.105%
%RSD		45.850	0.710	4.434	21.660	23.420	58.710	0.333	0.000	18.250	13.890	42.680	1.991

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:51:48	0.075	0.105	-0.035	103.131%	0.000	0.570	-0.004
2	14:52:09	0.079	0.098	-0.027	100.458%	0.000	0.571	-0.002
3	14:52:31	0.053	0.098	-0.012	102.026%	0.000	0.570	-0.001
x		0.069	0.101	-0.025	101.872%	0.000	0.570	-0.002
σ		0.014	0.004	0.012	1.343%	0.000	0.000	0.001
%RSD		20.500	4.222	46.330	1.319	0.000	0.085	59.150

CCVL 10/18/2016 02:57:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:57:32	98.719%	1.489	42.100	T 535.200	199.700	55.000	478.900	498.700	118.637%	0.000	5.458	4.295
2	14:57:55	97.865%	1.431	39.980	T 519.300	199.600	53.240	467.700	487.600	119.706%	0.000	4.751	3.866
3	14:58:18	94.234%	1.358	43.380	T 522.100	200.500	55.780	467.400	502.100	119.035%	0.000	5.226	4.041
x		96.939%	142.616%	104.552%	T 105.106%	99.989%	109.344%	94.266%	99.231%	119.126%	0.000	102.900%	101.689%
σ		2.381%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.540%	0.000	n/a	n/a
%RSD		2.456	4.589	4.109	T 1.616	0.244	2.381	1.389	1.527	0.454	0.000	7.009	5.304

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:57:32	12.260	2.242	205.700	1.131	2.350	5.337	21.280	1.650	0.403	3.323	0.000	0.000
2	14:57:55	12.620	2.297	200.300	1.152	2.573	5.133	22.200	1.424	0.446	3.688	0.000	0.000
3	14:58:18	12.050	2.352	198.500	1.064	2.251	5.304	21.390	1.466	0.418	3.214	0.000	0.000
x		12.310	114.842%	100.753%	111.573%	119.560%	105.159%	108.123%	75.676%	0.422	85.202%	0.000	0.000
σ		0.289	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.022	n/a	0.000	0.000
%RSD		2.347	2.398	1.852	4.101	6.894	2.080	2.334	7.943	5.115	7.282	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:57:32	4.843	119.054%	9.340	1.105	-0.272	1.055	116.726%	0.000	1.526	1.548	9.523	107.951%
2	14:57:55	4.917	119.130%	9.322	1.223	-0.499	1.165	115.424%	0.000	1.713	1.585	9.527	106.675%
3	14:58:18	4.728	117.906%	9.620	1.096	-2.374	1.022	117.123%	0.000	1.681	1.581	9.122	106.501%
x		96.589%	118.697%	94.275%	114.141%	-1.048	108.071%	116.424%	0.000	1.640	78.565%	93.905%	107.042%
σ		n/a	0.686%	n/a	n/a	1.154	n/a	0.889%	0.000	0.100	n/a	n/a	0.792%
%RSD		1.965	0.578	1.775	6.183	110.000	6.911	0.763	0.000	6.112	1.296	2.480	0.740

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:57:32	1.493	1.774	1.027	103.074%	0.000	1.239	0.952
2	14:57:55	1.547	1.734	1.081	103.066%	0.000	1.240	0.999
3	14:58:18	1.666	1.847	1.066	104.903%	0.000	1.258	1.006
x		78.446%	89.249%	105.821%	103.681%	0.000	62.289%	98.547%
σ		n/a	n/a	n/a	1.058%	0.000	n/a	n/a
%RSD		5.637	3.194	2.637	1.021	0.000	0.876	2.941

200-35736-A-5-A PDS 10/18/2016 03:02:58 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:03:20	107.870%	16.660	456.400	T 4149.000	T 16130.000	T 94030.000	T 11100.000	T 15820.000	178.668%	0.000	156.500	120.000
2	15:03:41	106.954%	17.060	466.000	T 4237.000	T 16320.000	T 94370.000	T 11070.000	14790.000	182.109%	0.000	160.600	123.300
3	15:04:03	106.144%	16.950	473.600	T 4157.000	T 16400.000	T 95440.000	T 11190.000	15160.000	181.808%	0.000	162.100	121.700
x		106.989%	16.890	465.400	T 4181.000	T 16280.000	T 94610.000	T 11120.000	T 15260.000	180.862%	0.000	159.700	121.700
σ		0.864%	0.208	8.586	T 48.410	T 140.400	T 735.300	T 60.540	T 520.600	1.906%	0.000	2.863	1.681
%RSD		0.807	1.233	1.845	T 1.158	T 0.862	T 0.777	T 0.544	T 3.412	1.054	0.000	1.792	1.381

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:03:20	13.130	T 2573.000	T 101100.000	51.560	120.000	137.100	632.800	41.110	0.193	36.290	0.000	0.000
2	15:03:41	12.670	T 2600.000	T 99850.000	50.340	118.400	141.300	645.200	41.420	0.218	36.100	0.000	0.000
3	15:04:03	12.880	T 2623.000	T 102600.000	51.140	121.600	140.900	641.200	43.190	0.182	37.470	0.000	0.000
x		12.890	T 2598.000	T 101200.000	51.010	120.000	139.700	639.700	41.910	0.198	36.620	0.000	0.000
σ		0.231	T 25.030	T 1392.000	0.617	1.592	2.323	6.336	1.119	0.019	0.744	0.000	0.000
%RSD		1.791	T 0.963	T 1.376	1.209	1.326	1.662	0.991	2.671	9.456	2.032	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:03:20	128.200	389.857%	30.840	10.730	-5.457	10.220	122.565%	0.000	17.410	17.340	1224.000	145.247%
2	15:03:41	131.500	400.328%	30.840	10.930	-4.435	10.650	123.091%	0.000	17.410	17.810	1271.000	147.265%
3	15:04:03	130.800	406.077%	30.810	10.740	-9.379	10.850	125.253%	0.000	17.580	17.630	1263.000	150.201%
x		130.200	398.754%	30.830	10.800	-6.424	10.570	123.636%	0.000	17.470	17.600	1253.000	147.571%
σ		1.754	8.224%	0.018	0.115	2.610	0.320	1.425%	0.000	0.098	0.237	25.000	2.491%
%RSD		1.347	2.062	0.059	1.066	40.630	3.024	1.153	0.000	0.562	1.349	1.995	1.688
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	15:03:20	13.200	17.130	119.900	113.383%	0.000	46.260	17.590					
2	15:03:41	13.260	17.450	120.900	116.018%	0.000	45.370	17.400					
3	15:04:03	13.140	17.520	121.600	117.889%	0.000	44.320	17.620					
x		13.200	17.360	120.800	115.763%	0.000	45.310	17.540					
σ		0.059	0.208	0.826	2.264%	0.000	0.972	0.122					
%RSD		0.448	1.198	0.684	1.956	0.000	2.145	0.698					

200-35736-A-5-I MS 10/18/2016 03:08:42 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:09:04	104.824%	17.000	386.900	T 4301.000	T 15240.000	T 85790.000	T 9926.000	15240.000	178.235%	0.000	155.800	117.300
2	15:09:26	107.050%	16.380	376.400	T 4282.000	T 15200.000	T 85620.000	T 10040.000	T 16250.000	181.375%	0.000	153.200	116.500
3	15:09:48	105.509%	17.480	390.600	T 4321.000	T 15040.000	T 84690.000	T 9825.000	15070.000	182.752%	0.000	156.700	118.800
x		105.794%	16.950	384.600	T 4302.000	T 15160.000	T 85370.000	T 9930.000	T 15520.000	180.787%	0.000	155.200	117.500
σ		1.140%	0.552	7.368	T 19.320	T 108.500	T 591.000	T 106.400	T 638.000	2.315%	0.000	1.814	1.177
%RSD		1.078	3.255	1.916	T 0.449	T 0.716	T 0.692	T 1.072	T 4.110	1.280	0.000	1.169	1.001
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:09:04	12.330	T 2673.000	T 101900.000	51.150	116.300	135.800	625.300	44.550	0.222	37.330	0.000	0.000
2	15:09:26	12.690	T 2693.000	T 102700.000	51.470	118.000	137.100	621.800	43.950	0.214	36.560	0.000	0.000
3	15:09:48	11.820	T 2674.000	T 103200.000	52.480	118.000	138.100	624.500	44.840	0.179	36.360	0.000	0.000
x		12.280	T 2680.000	T 102600.000	51.700	117.400	137.000	623.900	44.450	0.205	36.750	0.000	0.000
σ		0.436	T 11.580	T 625.400	0.696	0.987	1.123	1.864	0.454	0.023	0.515	0.000	0.000
%RSD		3.551	T 0.432	T 0.610	1.346	0.840	0.820	0.299	1.022	11.150	1.400	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:09:04	129.600	385.920%	31.120	11.490	-4.860	10.880	123.750%	0.000	4.865	4.830	1165.000	145.726%
2	15:09:26	127.200	390.812%	31.930	11.250	-5.775	10.700	127.044%	0.000	4.790	4.903	1155.000	148.701%

3	15:09:48	128.000	393.717%	31.690	11.330	-4.686	10.560	127.847%	0.000	4.740	4.912	1173.000	150.544%
x		128.300	390.150%	31.580	11.360	-5.107	10.710	126.214%	0.000	4.798	4.882	1164.000	148.324%
σ		1.252	3.940%	0.416	0.119	0.585	0.160	2.171%	0.000	0.063	0.045	9.099	2.431%
%RSD		0.976	1.010	1.319	1.047	11.450	1.491	1.720	0.000	1.313	0.927	0.781	1.639

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:09:04	11.260	13.940	118.700	114.635%	0.000	41.990	17.360
2	15:09:26	11.490	13.850	117.400	118.418%	0.000	40.580	17.350
3	15:09:48	11.300	13.920	119.900	116.555%	0.000	42.220	18.090
x		11.350	13.910	118.600	116.536%	0.000	41.600	17.600
σ		0.121	0.045	1.260	1.891%	0.000	0.887	0.425
%RSD		1.068	0.327	1.062	1.623	0.000	2.132	2.416

200-35736-A-5-J MSD 10/18/2016 03:14:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:47	106.725%	17.720	383.100	┬4226.000	┬16360.000	┬94240.000	┬10750.000	┬16970.000	187.388%	0.000	165.000	123.600
2	15:15:09	104.444%	18.040	406.200	┬4190.000	┬16480.000	┬95110.000	┬10640.000	┬17090.000	190.445%	0.000	166.700	124.300
3	15:15:31	104.974%	17.890	407.600	┬4274.000	┬17110.000	┬97570.000	┬10920.000	┬17380.000	188.188%	0.000	168.500	127.500
x		105.381%	17.880	399.000	┬4230.000	┬16650.000	┬95640.000	┬10770.000	┬17150.000	188.674%	0.000	166.700	125.100
σ		1.194%	0.161	13.700	┬42.480	┬402.500	┬1727.000	┬140.500	┬209.600	1.585%	0.000	1.778	2.063
%RSD		1.133	0.898	3.435	┬1.004	┬2.417	┬1.806	┬1.304	┬1.222	0.840	0.000	1.066	1.648

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:47	12.340	┬2719.000	┬105200.000	53.730	123.900	147.100	658.100	47.120	0.180	37.680	0.000	0.000
2	15:15:09	13.020	┬2772.000	┬105700.000	54.250	124.800	149.800	668.600	46.660	0.198	36.980	0.000	0.000
3	15:15:31	12.640	┬2854.000	┬108900.000	54.450	126.400	146.400	661.300	45.550	0.200	36.760	0.000	0.000
x		12.670	┬2781.000	┬106600.000	54.140	125.000	147.700	662.700	46.440	0.193	37.140	0.000	0.000
σ		0.339	┬68.070	┬2012.000	0.369	1.284	1.776	5.353	0.809	0.011	0.483	0.000	0.000
%RSD		2.679	┬2.447	┬1.886	0.682	1.027	1.202	0.808	1.742	5.776	1.301	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:47	136.700	417.999%	28.430	11.070	-7.042	11.120	126.276%	0.000	4.651	4.696	1294.000	153.132%
2	15:15:09	138.700	425.064%	28.460	11.250	-5.789	11.410	126.530%	0.000	4.666	4.740	1317.000	152.880%
3	15:15:31	137.400	428.369%	28.630	10.890	-6.146	11.110	129.210%	0.000	4.611	4.650	1299.000	151.935%
x		137.600	423.811%	28.510	11.070	-6.325	11.210	127.339%	0.000	4.643	4.695	1303.000	152.649%
σ		1.039	5.297%	0.109	0.182	0.646	0.170	1.625%	0.000	0.028	0.045	12.170	0.631%
%RSD		0.755	1.250	0.382	1.644	10.210	1.519	1.276	0.000	0.607	0.961	0.934	0.413

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:47	9.862	13.380	126.500	118.329%	0.000	42.810	17.640
2	15:15:09	10.400	13.300	126.000	119.801%	0.000	43.110	17.760
3	15:15:31	10.420	13.250	127.700	120.216%	0.000	43.310	18.260
x		10.230	13.310	126.700	119.449%	0.000	43.070	17.890
σ		0.316	0.062	0.888	0.992%	0.000	0.250	0.328

%RSD	3.094	0.469	0.700	0.830	0.000	0.580	1.834	

200-35736-A-6-A 10/18/2016 03:20:08 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:20:29	105.405%	8.616	42.770	┬604.600	┬17680.000	┬114100.000	┬8738.000	┬17870.000	202.839%	0.000	137.200	110.000
2	15:20:52	105.069%	8.261	42.800	┬597.700	┬17780.000	┬111500.000	┬8610.000	┬17940.000	203.897%	0.000	136.900	110.400
3	15:21:13	102.327%	9.730	44.380	┬614.000	┬17920.000	┬114600.000	┬8779.000	17080.000	203.917%	0.000	139.300	112.500
x		104.267%	8.869	43.320	┬605.500	┬17800.000	┬113400.000	┬8709.000	┬17630.000	203.551%	0.000	137.800	111.000
σ		1.689%	0.766	0.923	┬8.176	┬121.700	┬1670.000	┬88.040	┬474.200	0.616%	0.000	1.315	1.358
%RSD		1.620	8.642	2.130	┬1.350	┬0.684	┬1.472	┬1.011	┬2.689	0.303	0.000	0.954	1.224

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:20:29	12.010	┬1663.000	┬101400.000	47.500	124.800	126.900	629.100	17.920	0.191	8.533	0.000	0.000
2	15:20:52	12.340	┬1708.000	┬103700.000	47.260	123.600	126.900	641.900	18.240	0.181	7.525	0.000	0.000
3	15:21:13	11.220	┬1737.000	┬105300.000	47.630	125.600	126.100	633.700	18.090	0.194	6.922	0.000	0.000
x		11.850	┬1703.000	┬103500.000	47.470	124.700	126.700	634.900	18.080	0.188	7.660	0.000	0.000
σ		0.574	┬37.310	┬1978.000	0.188	1.027	0.475	6.464	0.159	0.006	0.814	0.000	0.000
%RSD		4.840	┬2.191	┬1.911	0.397	0.824	0.375	1.018	0.881	3.446	10.620	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:20:29	122.000	549.224%	-0.037	0.860	-6.549	2.716	126.861%	0.000	-0.114	-0.068	1331.000	166.283%
2	15:20:52	125.000	552.295%	-0.094	0.886	-5.853	2.889	127.077%	0.000	-0.028	-0.078	1343.000	165.784%
3	15:21:13	123.200	554.493%	-0.071	0.858	-5.114	2.628	128.475%	0.000	-0.038	-0.059	1360.000	165.933%
x		123.400	552.004%	-0.067	0.868	-5.839	2.744	127.471%	0.000	-0.060	-0.068	1344.000	166.000%
σ		1.503	2.646%	0.029	0.016	0.718	0.133	0.877%	0.000	0.047	0.009	14.530	0.256%
%RSD		1.218	0.479	43.190	1.836	12.290	4.832	0.688	0.000	78.100	13.820	1.081	0.154

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:20:29	0.218	1.050	109.600	118.687%	0.000	29.490	12.380
2	15:20:52	0.199	1.054	110.800	120.713%	0.000	29.640	12.560
3	15:21:13	0.225	0.985	112.400	120.810%	0.000	29.820	12.600
x		0.214	1.030	110.900	120.070%	0.000	29.650	12.510
σ		0.013	0.039	1.389	1.199%	0.000	0.167	0.115
%RSD		6.217	3.784	1.252	0.999	0.000	0.564	0.916

200-35736-A-7-A 10/18/2016 03:25:50 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:26:12	106.217%	7.103	37.960	T 508.200	T 15130.000	T 90020.000	T 7120.000	T 15480.000	192.591%	0.000	129.900	95.020
2	15:26:33	104.425%	7.409	36.840	T 514.900	T 15260.000	T 89890.000	T 7034.000	T 15600.000	194.002%	0.000	130.800	96.940
3	15:26:55	107.766%	7.243	38.520	T 513.800	T 15180.000	T 90470.000	T 7104.000	14490.000	193.372%	0.000	133.000	97.580
x		106.136%	7.252	37.770	T 512.300	T 15190.000	T 90130.000	T 7086.000	T 15190.000	193.321%	0.000	131.200	96.510
σ		1.672%	0.154	0.855	T 3.631	T 62.390	T 305.900	T 45.680	T 606.900	0.707%	0.000	1.595	1.330
%RSD		1.575	2.117	2.264	T 0.709	T 0.411	T 0.339	T 0.645	T 3.995	0.366	0.000	1.216	1.378

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:26:12	9.880	T 3784.000	T 139800.000	48.060	109.700	96.770	543.700	47.640	0.170	7.685	0.000	0.000
2	15:26:33	8.963	T 3809.000	T 142800.000	49.310	111.600	100.000	556.800	47.510	0.180	7.289	0.000	0.000
3	15:26:55	7.969	T 3799.000	T 142700.000	49.160	108.300	96.080	541.500	46.630	0.189	5.719	0.000	0.000
x		8.937	T 3797.000	T 141800.000	48.840	109.800	97.620	547.300	47.260	0.180	6.898	0.000	0.000
σ		0.956	T 12.800	T 1746.000	0.684	1.674	2.100	8.229	0.550	0.010	1.040	0.000	0.000
%RSD		10.700	T 0.337	T 1.231	1.401	1.524	2.151	1.504	1.164	5.326	15.070	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:26:12	96.470	445.351%	0.629	0.754	-7.937	2.185	131.340%	0.000	0.088	0.053	1172.000	157.294%
2	15:26:33	98.830	455.965%	0.609	0.797	-6.349	2.108	129.641%	0.000	0.082	0.106	1180.000	153.521%
3	15:26:55	98.390	459.244%	0.615	0.696	-6.751	2.093	132.818%	0.000	0.103	0.086	1174.000	158.718%
x		97.900	453.520%	0.618	0.749	-7.012	2.128	131.266%	0.000	0.091	0.082	1175.000	156.511%
σ		1.254	7.262%	0.010	0.051	0.826	0.049	1.590%	0.000	0.011	0.027	4.228	2.686%
%RSD		1.281	1.601	1.649	6.755	11.780	2.319	1.211	0.000	11.920	32.670	0.360	1.716

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:26:12	0.247	0.861	133.100	118.979%	0.000	25.160	5.639
2	15:26:33	0.205	0.863	133.900	120.265%	0.000	25.350	5.806
3	15:26:55	0.237	0.850	135.300	120.241%	0.000	25.630	5.815
x		0.230	0.858	134.100	119.828%	0.000	25.380	5.753
σ		0.022	0.007	1.089	0.735%	0.000	0.237	0.099
%RSD		9.551	0.806	0.812	0.614	0.000	0.934	1.724

200-35736-A-8-A 10/18/2016 03:31:32 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:31:54	108.665%	8.774	28.780	T 439.200	T 12220.000	T 79180.000	T 5906.000	13280.000	190.209%	0.000	130.700	85.800
2	15:32:16	107.599%	8.683	32.880	T 453.800	T 12410.000	T 79660.000	T 5990.000	13610.000	187.651%	0.000	133.900	88.800
3	15:32:37	104.969%	9.251	33.290	T 443.800	T 12320.000	T 79070.000	T 5897.000	13550.000	189.763%	0.000	132.700	88.420
x		107.077%	8.903	31.650	T 445.600	T 12320.000	T 79300.000	T 5931.000	13480.000	189.207%	0.000	132.400	87.680
σ		1.902%	0.305	2.493	T 7.444	T 93.530	T 312.900	T 51.050	173.000	1.367%	0.000	1.617	1.633
%RSD		1.777	3.428	7.877	T 1.671	T 0.759	T 0.395	T 0.861	1.283	0.722	0.000	1.221	1.863

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:31:54	6.840	T 4787.000	TM 251100.000	54.080	102.500	91.780	578.500	148.300	0.144	5.867	0.000	0.000
2	15:32:16	7.439	T 4944.000	TM 258100.000	55.550	105.600	93.900	580.700	149.500	0.128	6.808	0.000	0.000
3	15:32:37	7.477	T 4877.000	TM 252500.000	54.560	104.100	92.750	582.800	147.200	0.140	6.179	0.000	0.000
x		7.252	T 4870.000	TM 253900.000	54.730	104.100	92.810	580.700	148.300	0.137	6.284	0.000	0.000
σ		0.357	T 78.730	TM 3727.000	0.751	1.541	1.058	2.172	1.162	0.009	0.479	0.000	0.000
%RSD		4.930	T 1.617	TM 1.468	1.372	1.480	1.140	0.374	0.783	6.299	7.626	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:31:54	87.510	447.459%	3.007	0.619	-6.778	2.296	130.274%	0.000	0.239	0.241	1090.000	157.851%
2	15:32:16	87.420	452.602%	2.991	0.651	-6.919	2.755	130.249%	0.000	0.311	0.308	1104.000	160.687%
3	15:32:37	87.690	447.059%	2.980	0.644	-6.655	2.574	131.062%	0.000	0.322	0.315	1105.000	159.146%
x		87.540	449.040%	2.993	0.638	-6.784	2.542	130.528%	0.000	0.291	0.288	1100.000	159.228%
σ		0.140	3.091%	0.014	0.017	0.132	0.231	0.462%	0.000	0.045	0.041	8.466	1.420%
%RSD		0.160	0.688	0.467	2.608	1.947	9.097	0.354	0.000	15.450	14.210	0.770	0.892

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:31:54	0.217	0.688	132.300	120.216%	0.000	22.380	6.745
2	15:32:16	0.217	0.716	137.500	116.596%	0.000	23.500	7.199
3	15:32:37	0.240	0.698	135.400	120.208%	0.000	23.030	7.055
x		0.225	0.701	135.100	119.007%	0.000	22.970	7.000
σ		0.013	0.014	2.655	2.088%	0.000	0.565	0.232
%RSD		5.925	1.997	1.966	1.754	0.000	2.460	3.316

200-35736-A-9-A 10/18/2016 03:37:15 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:37	103.699%	6.064	36.280	T 591.900	T 16570.000	T 90230.000	T 6848.000	T 21400.000	186.070%	0.000	129.100	96.790
2	15:37:58	103.575%	6.509	34.010	T 590.800	T 16550.000	T 90810.000	T 6869.000	T 21230.000	186.057%	0.000	129.100	96.180
3	15:38:20	102.144%	6.841	33.800	T 593.700	T 16330.000	T 90360.000	T 6754.000	T 21500.000	185.781%	0.000	131.100	97.480
x		103.139%	6.471	34.700	T 592.100	T 16480.000	T 90470.000	T 6824.000	T 21380.000	185.969%	0.000	129.800	96.820
σ		0.865%	0.390	1.373	T 1.475	T 136.400	T 306.500	T 61.070	T 138.400	0.163%	0.000	1.175	0.651
%RSD		0.838	6.026	3.957	T 0.249	T 0.828	T 0.339	T 0.895	T 0.647	0.088	0.000	0.905	0.672

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:37	9.497	T 3869.000	T 123400.000	52.300	117.800	106.300	637.000	24.780	0.181	8.639	0.000	0.000
2	15:37:58	11.160	T 3982.000	T 125700.000	53.400	122.200	108.600	642.400	25.370	0.178	7.337	0.000	0.000
3	15:38:20	8.912	T 3907.000	T 125900.000	53.210	121.200	104.800	637.600	24.050	0.196	5.705	0.000	0.000
x		9.858	T 3919.000	T 125000.000	52.970	120.400	106.600	639.000	24.740	0.185	7.227	0.000	0.000
σ		1.168	T 57.610	T 1365.000	0.588	2.309	1.931	2.954	0.663	0.010	1.470	0.000	0.000
%RSD		11.850	T 1.470	T 1.092	1.111	1.918	1.812	0.462	2.679	5.206	20.340	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:37	123.300	422.946%	0.532	0.740	-6.985	3.228	125.448%	0.000	0.148	0.153	1222.000	146.793%
2	15:37:58	124.200	425.195%	0.597	0.745	-5.694	3.042	126.643%	0.000	0.157	0.162	1221.000	149.703%

3	15:38:20	122.600	424.294%	0.559	0.810	-7.736	3.141	127.739%	0.000	0.237	0.160	1236.000	150.053%
x		123.400	424.145%	0.563	0.765	-6.805	3.137	126.610%	0.000	0.181	0.158	1227.000	148.850%
σ		0.798	1.132%	0.032	0.039	1.032	0.093	1.146%	0.000	0.049	0.005	8.335	1.790%
%RSD		0.646	0.267	5.758	5.105	15.170	2.961	0.905	0.000	27.100	2.927	0.679	1.202

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:37	0.246	0.845	149.100	115.571%	0.000	24.620	6.996
2	15:37:58	0.293	0.878	150.300	116.392%	0.000	25.130	7.157
3	15:38:20	0.229	0.885	150.200	117.580%	0.000	25.250	7.180
x		0.256	0.870	149.900	116.514%	0.000	25.000	7.111
σ		0.033	0.021	0.646	1.010%	0.000	0.335	0.100
%RSD		12.870	2.436	0.431	0.867	0.000	1.341	1.409

200-35736-A-10-A 10/18/2016 03:42:58 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:19	103.666%	7.616	29.010	┬530.500	┬15070.000	┬86000.000	┬5988.000	┬19360.000	188.110%	0.000	129.300	93.370
2	15:43:41	101.430%	7.354	29.330	┬519.200	┬15090.000	┬85500.000	┬5997.000	┬19300.000	189.186%	0.000	128.200	94.130
3	15:44:03	101.279%	7.175	30.590	┬520.500	┬15140.000	┬86030.000	┬6058.000	┬19510.000	189.107%	0.000	129.300	95.770
x		102.125%	7.382	29.640	┬523.400	┬15100.000	┬85850.000	┬6014.000	┬19390.000	188.801%	0.000	128.900	94.420
σ		1.336%	0.221	0.838	┬6.194	┬38.350	┬299.300	┬37.980	┬109.100	0.600%	0.000	0.640	1.228
%RSD		1.309	2.999	2.825	┬1.183	┬0.254	┬0.349	┬0.631	┬0.563	0.318	0.000	0.497	1.300

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:19	9.147	┬4531.000	┬134200.000	51.740	112.100	99.970	595.300	35.590	0.176	6.780	0.000	0.000
2	15:43:41	8.740	┬4588.000	┬135400.000	51.510	111.900	99.840	593.900	34.750	0.176	8.144	0.000	0.000
3	15:44:03	9.861	┬4579.000	┬136900.000	52.470	112.800	100.200	597.200	35.250	0.179	7.182	0.000	0.000
x		9.249	┬4566.000	┬135500.000	51.900	112.300	100.000	595.400	35.200	0.177	7.368	0.000	0.000
σ		0.568	┬30.800	┬1377.000	0.503	0.467	0.210	1.655	0.424	0.002	0.701	0.000	0.000
%RSD		6.138	┬0.675	┬1.016	0.970	0.416	0.210	0.278	1.204	1.100	9.514	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:19	110.900	429.376%	0.672	0.715	-6.491	2.814	127.070%	0.000	0.106	0.153	1197.000	152.725%
2	15:43:41	110.700	429.045%	0.715	0.671	-6.241	2.650	128.297%	0.000	0.174	0.161	1192.000	151.625%
3	15:44:03	112.500	439.030%	0.685	0.662	-5.281	2.547	128.758%	0.000	0.141	0.173	1216.000	154.019%
x		111.400	432.484%	0.691	0.683	-6.004	2.670	128.042%	0.000	0.140	0.162	1202.000	152.789%
σ		0.980	5.671%	0.022	0.028	0.638	0.135	0.872%	0.000	0.034	0.010	12.450	1.198%
%RSD		0.880	1.311	3.179	4.134	10.630	5.036	0.681	0.000	24.470	6.273	1.036	0.784

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:19	0.192	0.796	144.000	115.636%	0.000	24.440	6.758
2	15:43:41	0.221	0.810	146.400	115.319%	0.000	24.790	6.847
3	15:44:03	0.239	0.738	144.100	118.207%	0.000	24.440	6.740
x		0.218	0.781	144.800	116.387%	0.000	24.560	6.782
σ		0.024	0.038	1.341	1.584%	0.000	0.201	0.057

%RSD		10.880	4.895	0.926	1.361	0.000	0.819	0.843

200-35736-A-11-A 10/18/2016 03:48:41 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:03	99.703%	4.066	26.220	T 462.000	T 11740.000	T 48440.000	T 4201.000	T 46560.000	150.608%	0.000	76.130	59.690
2	15:49:24	97.603%	3.851	26.630	T 468.700	T 11760.000	T 49710.000	T 4329.000	T 47530.000	150.392%	0.000	78.520	61.110
3	15:49:46	95.983%	4.262	28.190	T 467.500	T 11920.000	T 49840.000	T 4307.000	T 47870.000	149.863%	0.000	78.500	60.710
x		97.763%	4.060	27.010	T 466.100	T 11810.000	T 49330.000	T 4279.000	T 47320.000	150.287%	0.000	77.720	60.500
σ		1.865%	0.206	1.043	T 3.559	T 97.140	T 773.300	T 68.140	T 680.100	0.383%	0.000	1.374	0.732
%RSD		1.908	5.071	3.862	T 0.763	T 0.823	T 1.568	T 1.593	T 1.437	0.255	0.000	1.768	1.210

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:03	6.945	TM 6470.000	T 91690.000	43.410	82.940	2150.000	789.500	33.060	0.118	13.240	0.000	0.000
2	15:49:24	6.343	TM 6515.000	T 92580.000	43.130	85.870	2131.000	798.300	32.800	0.140	11.800	0.000	0.000
3	15:49:46	6.583	TM 6582.000	T 94490.000	43.820	85.930	2169.000	797.300	33.240	0.101	14.400	0.000	0.000
x		6.624	TM 6523.000	T 92920.000	43.460	84.910	2150.000	795.100	33.030	0.120	13.150	0.000	0.000
σ		0.303	TM 56.530	T 1433.000	0.349	1.708	18.940	4.807	0.221	0.020	1.303	0.000	0.000
%RSD		4.577	TM 0.867	T 1.542	0.803	2.011	0.881	0.605	0.670	16.490	9.908	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:03	145.400	308.758%	1.382	2.015	-4.680	3.572	118.221%	0.000	0.260	0.288	761.800	132.671%
2	15:49:24	145.100	308.499%	1.499	1.976	-3.824	3.843	118.466%	0.000	0.303	0.280	769.800	131.018%
3	15:49:46	146.300	311.474%	1.535	2.024	-5.339	3.663	119.096%	0.000	0.300	0.295	768.600	132.813%
x		145.600	309.577%	1.472	2.005	-4.614	3.693	118.594%	0.000	0.287	0.288	766.700	132.168%
σ		0.647	1.648%	0.080	0.025	0.759	0.138	0.451%	0.000	0.024	0.008	4.336	0.998%
%RSD		0.444	0.532	5.461	1.263	16.460	3.729	0.381	0.000	8.379	2.631	0.566	0.755

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:03	0.590	0.418	153.600	107.707%	0.000	13.280	5.413
2	15:49:24	0.574	0.422	154.600	108.187%	0.000	13.520	5.605
3	15:49:46	0.628	0.417	153.800	110.374%	0.000	13.100	5.486
x		0.598	0.419	154.000	108.756%	0.000	13.300	5.501
σ		0.028	0.002	0.528	1.422%	0.000	0.210	0.097
%RSD		4.673	0.591	0.343	1.307	0.000	1.580	1.764

200-35736-A-11-A SD@5 10/18/2016 03:54:24 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:46	92.687%	0.704	0.654	96.020	2465.000	T 11030.000	T 936.000	9626.000	125.952%	0.000	17.820	13.190
2	15:55:08	95.138%	0.831	0.874	93.430	2487.000	T 11220.000	T 956.900	9653.000	126.631%	0.000	17.360	13.260
3	15:55:30	92.208%	1.067	0.996	89.910	2472.000	T 11030.000	T 932.200	9535.000	128.607%	0.000	17.160	13.340
x		93.345%	0.867	0.842	93.120	2475.000	T 11090.000	T 941.700	9605.000	127.063%	0.000	17.450	13.260
σ		1.572%	0.185	0.173	3.071	10.860	T 111.400	T 13.330	61.600	1.379%	0.000	0.341	0.079
%RSD		1.684	21.280	20.600	3.298	0.439	T 1.004	T 1.415	0.641	1.086	0.000	1.957	0.596

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:46	6.567	T 1450.000	T 20720.000	9.754	19.450	430.100	174.800	6.798	0.274	2.420	0.000	0.000
2	15:55:08	7.146	T 1458.000	T 20840.000	9.800	20.160	428.400	169.700	6.064	0.271	1.866	0.000	0.000
3	15:55:30	7.347	T 1433.000	T 20710.000	9.825	19.230	433.600	175.000	6.374	0.277	1.431	0.000	0.000
x		7.020	T 1447.000	T 20760.000	9.793	19.610	430.700	173.100	6.412	0.274	1.906	0.000	0.000
σ		0.405	T 12.790	T 68.240	0.036	0.484	2.639	3.008	0.368	0.003	0.496	0.000	0.000
%RSD		5.770	T 0.884	T 0.329	0.368	2.468	0.613	1.737	5.748	1.204	26.020	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:46	28.130	151.986%	0.193	0.422	-3.230	0.977	113.725%	0.000	-0.298	-0.329	149.500	109.272%
2	15:55:08	28.020	156.404%	0.121	0.395	-2.113	0.815	116.984%	0.000	-0.286	-0.304	146.200	109.536%
3	15:55:30	28.200	154.606%	0.196	0.453	-1.748	0.794	115.844%	0.000	-0.316	-0.314	150.100	111.237%
x		28.120	154.332%	0.170	0.423	-2.364	0.862	115.518%	0.000	-0.300	-0.316	148.600	110.015%
σ		0.089	2.222%	0.042	0.029	0.772	0.100	1.654%	0.000	0.015	0.012	2.100	1.067%
%RSD		0.316	1.440	24.740	6.760	32.660	11.580	1.432	0.000	4.961	3.951	1.413	0.970

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:46	0.153	0.061	30.450	100.799%	0.000	2.424	1.075
2	15:55:08	0.083	0.056	30.840	101.327%	0.000	2.511	1.062
3	15:55:30	0.132	0.050	30.950	100.612%	0.000	2.666	1.130
x		0.123	0.056	30.750	100.913%	0.000	2.534	1.089
σ		0.036	0.006	0.265	0.371%	0.000	0.122	0.036
%RSD		29.000	10.310	0.862	0.367	0.000	4.826	3.295

CCV 10/18/2016 04:00:08 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:30	85.869%	722.300	277.400	T 10490.000	T 30310.000	T 30480.000	T 9865.000	27500.000	106.300%	0.000	T 1275.000	382.700
2	16:00:52	84.349%	722.500	287.800	T 10200.000	T 29710.000	T 30170.000	T 9728.000	27290.000	106.690%	0.000	T 1252.000	374.000
3	16:01:14	83.906%	716.800	282.200	T 10050.000	T 29500.000	T 29600.000	T 9698.000	27740.000	105.447%	0.000	T 1275.000	379.400
x		84.708%	115.289%	112.994%	T 102.450%	T 99.469%	T 100.274%	T 97.636%	91.695%	106.146%	0.000	T 101.396%	94.671%
σ		1.030%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.636%	0.000	T n/a	n/a
%RSD		1.216	0.453	1.831	T 2.214	T 1.402	T 1.471	T 0.910	0.834	0.599	0.000	T 1.037	1.165

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:30	21.710	T 1237.000	T 29170.000	459.500	1241.000	1236.000	1250.000	210.700	-0.497	217.200	0.000	0.000
2	16:00:52	16.480	T 1219.000	T 29230.000	460.400	1230.000	1204.000	1228.000	206.800	-0.397	211.200	0.000	0.000
3	16:01:14	15.240	T 1202.000	T 28840.000	453.200	1210.000	1198.000	1233.000	208.900	-0.325	209.400	0.000	0.000
x		17.810	T 97.535%	T 96.932%	91.537%	98.153%	97.012%	98.988%	104.393%	-0.406	106.306%	0.000	0.000
σ		3.434	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.086	n/a	0.000	0.000
%RSD		19.280	T 1.413	T 0.734	0.859	1.268	1.702	0.924	0.954	21.270	1.915	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:30	188.700	106.193%	1127.000	104.500	12.530	189.300	103.323%	0.000	234.000	228.500	1140.000	96.796%
2	16:00:52	185.600	103.346%	1165.000	102.500	9.007	190.600	102.990%	0.000	235.300	228.800	1120.000	96.545%
3	16:01:14	188.600	103.457%	T 1280.000	102.900	6.378	193.200	101.251%	0.000	238.600	230.900	1143.000	96.410%
x		187.600	104.332%	T 95.267%	103.310%	9.304	95.520%	102.521%	0.000	236.000	91.772%	90.771%	96.584%
σ		1.782	1.613%	T n/a	n/a	3.085	n/a	1.112%	0.000	2.398	n/a	n/a	0.196%
%RSD		0.950	1.546	T 6.696	1.050	33.160	1.036	1.085	0.000	1.016	0.561	1.104	0.203

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:30	19.280	173.600	T 1228.000	92.692%	0.000	15.770	9.188
2	16:00:52	19.670	179.300	T 1253.000	90.638%	0.000	17.200	9.332
3	16:01:14	20.370	175.600	T 1221.000	92.619%	0.000	17.930	9.339
x		98.876%	88.077%	T 98.733%	91.983%	0.000	84.841%	92.860%
σ		n/a	n/a	T n/a	1.166%	0.000	n/a	n/a
%RSD		2.792	1.643	T 1.373	1.267	0.000	6.486	0.919

CCB 10/18/2016 04:05:52 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:06:14	92.799%	0.082	-4.083	4.405	2.131	4.234	5.389	2.157	112.760%	0.000	0.455	-0.120
2	16:06:35	88.512%	-0.011	-3.779	4.715	2.563	4.510	4.521	2.849	113.255%	0.000	0.418	-0.044
3	16:06:57	90.627%	0.046	-4.543	0.104	2.118	4.776	4.827	2.319	115.236%	0.000	0.418	-0.048
x		90.646%	0.039	-4.135	3.075	2.271	4.507	4.912	2.442	113.750%	0.000	0.430	-0.071
σ		2.144%	0.047	0.385	2.577	0.253	0.271	0.440	0.362	1.310%	0.000	0.021	0.043
%RSD		2.365	119.300	9.299	83.810	11.160	6.006	8.960	14.820	1.152	0.000	4.981	60.660

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:06:14	10.850	0.120	14.940	0.020	0.092	0.059	-0.315	-0.628	0.379	-1.790	0.000	0.000
2	16:06:35	11.680	0.116	15.930	0.020	0.014	0.050	-0.378	-0.489	0.364	-0.373	0.000	0.000
3	16:06:57	11.090	0.124	15.400	0.004	-0.004	-0.032	-0.316	-0.859	0.405	-1.374	0.000	0.000
x		11.210	0.120	15.420	0.014	0.034	0.026	-0.337	-0.659	0.383	-1.179	0.000	0.000
σ		0.428	0.004	0.499	0.009	0.051	0.050	0.036	0.187	0.021	0.728	0.000	0.000
%RSD		3.822	3.298	3.234	64.370	151.500	195.000	10.690	28.350	5.486	61.770	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:06:14	0.013	109.264%	1.498	0.006	-1.187	0.028	105.656%	0.000	-0.161	-0.195	0.099	98.882%
2	16:06:35	0.016	107.698%	1.617	0.007	-1.681	0.072	108.137%	0.000	-0.173	-0.161	0.078	98.611%

3	16:06:57	0.015	110.057%	1.317	0.005	-0.877	0.011	107.436%	0.000	-0.114	-0.173	0.135	97.974%
x		0.015	109.006%	1.478	0.006	-1.249	0.037	107.076%	0.000	-0.149	-0.176	0.104	98.489%
σ		0.001	1.200%	0.151	0.001	0.405	0.031	1.279%	0.000	0.031	0.017	0.029	0.466%
%RSD		9.303	1.101	10.220	14.470	32.470	85.200	1.194	0.000	20.900	9.627	27.610	0.473

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:06:14	0.062	0.111	-0.027	94.341%	0.000	0.620	-0.001
2	16:06:35	0.063	0.104	-0.029	95.876%	0.000	0.625	-0.001
3	16:06:57	0.044	0.102	-0.028	97.379%	0.000	0.591	0.001
x		0.056	0.106	-0.028	95.865%	0.000	0.612	-0.000
σ		0.011	0.005	0.001	1.519%	0.000	0.019	0.001
%RSD		18.820	4.386	3.380	1.584	0.000	3.034	348.600

CCVL 10/18/2016 04:11:36 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:59	93.310%	1.391	40.680	486.300	199.300	51.980	470.000	478.400	116.897%	0.000	5.133	3.931
2	16:12:22	94.075%	1.639	42.460	T 522.100	188.400	51.030	456.100	483.100	118.650%	0.000	5.112	4.070
3	16:12:46	90.894%	1.564	44.150	T 562.700	206.900	57.430	495.200	491.400	113.040%	0.000	5.744	4.611
x		92.760%	153.140%	106.068%	T 104.734%	99.104%	106.963%	94.752%	96.861%	116.196%	0.000	106.587%	105.097%
σ		1.660%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	2.870%	0.000	n/a	n/a
%RSD		1.790	8.309	4.093	T 7.302	4.716	6.460	4.187	1.367	2.470	0.000	6.735	8.542

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:59	12.840	2.059	192.800	1.167	2.168	5.707	23.690	1.184	0.431	3.118	0.000	0.000
2	16:12:22	12.970	2.033	194.700	1.033	2.325	5.600	23.010	1.440	0.417	3.666	0.000	0.000
3	16:12:46	12.820	2.281	214.000	1.172	2.598	5.800	24.450	1.609	0.439	3.636	0.000	0.000
x		12.880	106.225%	100.247%	112.388%	118.180%	114.048%	118.583%	70.548%	0.429	86.838%	0.000	0.000
σ		0.084	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.011	n/a	0.000	0.000
%RSD		0.656	6.416	5.831	7.010	9.213	1.749	3.051	15.180	2.570	8.863	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:59	4.858	112.149%	9.262	1.111	-0.625	1.155	108.216%	0.000	1.506	1.530	10.080	99.506%
2	16:12:22	4.904	112.942%	9.333	1.082	-0.399	0.961	108.886%	0.000	1.623	1.553	9.611	100.356%
3	16:12:46	5.290	107.148%	10.150	1.179	-0.128	1.020	104.130%	0.000	1.706	1.741	10.200	95.927%
x		100.348%	110.746%	95.802%	112.416%	-0.384	104.564%	107.077%	0.000	1.612	80.403%	99.623%	98.596%
σ		n/a	3.142%	n/a	n/a	0.249	n/a	2.574%	0.000	0.100	n/a	n/a	2.351%
%RSD		4.728	2.837	5.132	4.399	64.870	9.520	2.404	0.000	6.215	7.181	3.110	2.384

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:59	1.768	1.681	1.061	97.768%	0.000	1.233	0.929
2	16:12:22	1.487	1.804	1.086	94.138%	0.000	1.311	0.976
3	16:12:46	1.793	1.973	1.162	90.906%	0.000	1.406	1.137
x		84.132%	90.952%	110.310%	94.271%	0.000	65.826%	101.404%
σ		n/a	n/a	n/a	3.433%	0.000	n/a	n/a

%RSD		10.120	8.048	4.774	3.642	0.000	6.558	10.770

200-35736-A-11-A PDS 10/18/2016 04:17:25 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:47	94.214%	15.240	474.000	T 4833.000	T 13610.000	T 49670.000	T 8454.000	T 50120.000	136.745%	0.000	113.900	91.450
2	16:18:09	94.351%	14.810	462.200	T 4819.000	T 13700.000	T 50190.000	T 8541.000	T 50640.000	137.509%	0.000	115.100	93.080
3	16:18:30	93.671%	15.560	477.700	T 4847.000	T 13600.000	T 50080.000	T 8502.000	T 50420.000	138.730%	0.000	114.900	92.700
x		94.078%	15.210	471.300	T 4833.000	T 13640.000	T 49980.000	T 8499.000	T 50390.000	137.662%	0.000	114.600	92.410
σ		0.360%	0.373	8.120	T 14.260	T 53.550	T 277.200	T 43.360	T 263.000	1.001%	0.000	0.629	0.855
%RSD		0.382	2.450	1.723	T 0.295	T 0.393	T 0.555	T 0.510	T 0.522	0.727	0.000	0.549	0.926

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:47	8.520	TM 6438.000	T 92850.000	49.460	98.030	2169.000	972.400	53.960	0.037	49.790	0.000	0.000
2	16:18:09	7.799	TM 6441.000	T 92800.000	51.400	99.720	2160.000	962.700	52.870	0.050	50.460	0.000	0.000
3	16:18:30	7.164	TM 6538.000	T 93680.000	50.380	100.800	2183.000	983.200	52.910	0.074	50.550	0.000	0.000
x		7.828	TM 6472.000	T 93110.000	50.410	99.510	2171.000	972.700	53.240	0.054	50.270	0.000	0.000
σ		0.678	TM 56.960	T 495.000	0.973	1.385	11.590	10.280	0.618	0.018	0.414	0.000	0.000
%RSD		8.662	TM 0.880	T 0.532	1.930	1.392	0.534	1.056	1.161	34.280	0.823	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:47	193.300	278.924%	39.290	12.450	-4.237	12.440	105.375%	0.000	18.730	18.350	848.700	118.343%
2	16:18:09	190.500	274.987%	40.050	12.110	-2.630	12.350	108.459%	0.000	18.370	18.410	845.500	121.291%
3	16:18:30	193.200	277.445%	40.690	12.730	-3.159	12.320	107.129%	0.000	18.700	18.820	859.000	120.330%
x		192.300	277.118%	40.010	12.430	-3.342	12.370	106.988%	0.000	18.600	18.530	851.100	119.988%
σ		1.599	1.989%	0.703	0.309	0.819	0.063	1.547%	0.000	0.202	0.258	7.056	1.503%
%RSD		0.832	0.718	1.757	2.486	24.490	0.507	1.446	0.000	1.085	1.390	0.829	1.253

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:47	15.050	17.660	162.400	97.898%	0.000	35.580	15.590
2	16:18:09	14.430	17.510	160.200	101.189%	0.000	34.510	15.400
3	16:18:30	15.050	18.200	165.800	98.370%	0.000	34.980	16.300
x		14.850	17.790	162.800	99.152%	0.000	35.020	15.760
σ		0.356	0.367	2.834	1.779%	0.000	0.538	0.476
%RSD		2.401	2.062	1.741	1.795	0.000	1.537	3.022

200-35736-A-11-I MS 10/18/2016 04:23:09 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:23:31	93.575%	16.000	415.500	T 4937.000	T 14570.000	T 56870.000	T 8917.000	T 58680.000	140.337%	0.000	124.800	98.260
2	16:23:53	91.436%	16.530	426.200	T 4987.000	T 14860.000	T 58360.000	T 9108.000	T 60460.000	138.606%	0.000	128.800	103.100
3	16:24:14	89.673%	16.020	427.200	T 4768.000	T 14270.000	T 55520.000	T 8711.000	T 58210.000	141.865%	0.000	125.300	99.340
x		91.561%	16.180	423.000	T 4898.000	T 14570.000	T 56920.000	T 8912.000	T 59120.000	140.269%	0.000	126.300	100.200
σ		1.954%	0.300	6.478	T 114.500	T 296.700	T 1421.000	T 198.600	T 1185.000	1.630%	0.000	2.199	2.551
%RSD		2.134	1.856	1.532	T 2.338	T 2.037	T 2.496	T 2.229	T 2.004	1.162	0.000	1.741	2.545

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:23:31	7.453	TM 6683.000	T 94240.000	48.970	106.200	2529.000	1012.000	55.570	0.093	48.200	0.000	0.000
2	16:23:53	6.713	TM 6854.000	T 96390.000	50.260	109.900	2547.000	1012.000	56.050	0.083	48.220	0.000	0.000
3	16:24:14	7.279	TM 6662.000	T 93950.000	48.600	103.300	2518.000	1002.000	54.960	0.095	47.930	0.000	0.000
x		7.148	TM 6733.000	T 94860.000	49.280	106.500	2531.000	1009.000	55.530	0.090	48.120	0.000	0.000
σ		0.387	TM 105.100	T 1335.000	0.870	3.286	14.660	5.940	0.547	0.007	0.163	0.000	0.000
%RSD		5.413	TM 1.560	T 1.408	1.765	3.086	0.579	0.589	0.985	7.285	0.338	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:23:31	216.600	295.661%	35.910	12.890	-4.358	12.250	105.973%	0.000	4.665	4.719	876.000	122.917%
2	16:23:53	215.700	301.525%	35.870	12.420	-5.063	12.220	107.618%	0.000	4.759	4.732	878.800	121.955%
3	16:24:14	216.100	299.716%	36.180	12.830	-3.963	12.090	107.354%	0.000	4.776	4.735	868.600	121.536%
x		216.100	298.967%	35.990	12.710	-4.461	12.190	106.982%	0.000	4.733	4.729	874.500	122.136%
σ		0.467	3.003%	0.169	0.253	0.557	0.086	0.883%	0.000	0.060	0.009	5.302	0.708%
%RSD		0.216	1.004	0.470	1.990	12.480	0.706	0.825	0.000	1.266	0.183	0.606	0.580

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:23:31	15.170	14.500	151.500	101.124%	0.000	32.910	15.700
2	16:23:53	15.660	14.930	155.400	100.190%	0.000	33.610	15.940
3	16:24:14	15.960	14.610	155.800	100.718%	0.000	33.450	16.200
x		15.600	14.680	154.200	100.677%	0.000	33.320	15.950
σ		0.398	0.224	2.402	0.469%	0.000	0.364	0.250
%RSD		2.552	1.528	1.557	0.465	0.000	1.093	1.570

200-35736-A-11-J MSD 10/18/2016 04:28:54 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:29:15	96.358%	13.650	390.000	T 4764.000	T 14490.000	T 51600.000	T 8441.000	T 41390.000	144.693%	0.000	118.600	95.330
2	16:29:37	93.348%	15.050	408.400	T 4848.000	T 15010.000	T 53880.000	T 8584.000	T 42160.000	142.623%	0.000	123.100	98.400
3	16:29:59	95.122%	15.410	407.800	T 4852.000	T 14860.000	T 51990.000	T 8526.000	T 42430.000	145.994%	0.000	118.400	95.960
x		94.943%	14.700	402.100	T 4822.000	T 14790.000	T 52490.000	T 8517.000	T 41990.000	144.437%	0.000	120.000	96.560
σ		1.513%	0.928	10.480	T 49.410	T 271.000	T 1223.000	T 71.490	T 540.800	1.700%	0.000	2.644	1.624
%RSD		1.594	6.311	2.607	T 1.025	T 1.832	T 2.330	T 0.839	T 1.288	1.177	0.000	2.203	1.682

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:29:15	8.139	T 5778.000	T 89130.000	48.000	105.000	2375.000	1049.000	54.370	0.064	51.740	0.000	0.000
2	16:29:37	7.048	T 6008.000	T 91830.000	48.530	106.700	2381.000	1043.000	55.490	0.074	49.960	0.000	0.000
3	16:29:59	8.399	T 5880.000	T 91530.000	48.480	104.000	2347.000	1044.000	52.480	0.111	47.760	0.000	0.000
x		7.862	T 5889.000	T 90830.000	48.340	105.200	2368.000	1046.000	54.110	0.083	49.820	0.000	0.000
σ		0.717	T 115.400	T 1476.000	0.296	1.348	18.010	3.422	1.521	0.025	1.994	0.000	0.000
%RSD		9.114	T 1.959	T 1.625	0.612	1.281	0.761	0.327	2.810	29.750	4.003	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:29:15	170.900	285.875%	37.770	12.830	-3.114	14.200	107.494%	0.000	4.521	4.693	808.800	122.078%
2	16:29:37	170.300	286.205%	38.540	12.600	-3.492	14.440	108.843%	0.000	4.669	4.701	813.900	122.388%
3	16:29:59	169.700	289.657%	38.050	12.490	-3.925	14.300	109.986%	0.000	4.586	4.786	808.000	122.420%
x		170.300	287.245%	38.120	12.640	-3.510	14.310	108.774%	0.000	4.592	4.726	810.200	122.295%
σ		0.631	2.095%	0.390	0.171	0.406	0.117	1.247%	0.000	0.074	0.051	3.202	0.189%
%RSD		0.371	0.729	1.024	1.354	11.560	0.821	1.147	0.000	1.616	1.089	0.395	0.154

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:29:15	16.060	15.230	161.500	99.190%	0.000	31.530	15.690
2	16:29:37	16.480	15.220	161.200	100.848%	0.000	31.630	15.730
3	16:29:59	16.400	15.450	162.600	100.775%	0.000	32.200	16.100
x		16.310	15.300	161.800	100.271%	0.000	31.790	15.840
σ		0.224	0.132	0.748	0.937%	0.000	0.363	0.225
%RSD		1.374	0.864	0.462	0.934	0.000	1.142	1.418

200-35736-A-12-A 10/18/2016 04:34:38 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:35:00	86.133%	3.924	24.000	T 491.500	T 15060.000	T 44970.000	T 3884.000	T 60800.000	131.615%	0.000	71.220	56.670
2	16:35:22	86.578%	4.327	24.090	T 484.700	T 14950.000	T 45170.000	T 3908.000	T 60740.000	131.413%	0.000	73.160	57.140
3	16:35:43	87.234%	3.293	23.840	T 486.000	T 15070.000	T 45740.000	T 3940.000	T 61890.000	131.184%	0.000	72.500	57.480
x		86.648%	3.848	23.980	T 487.400	T 15030.000	T 45290.000	T 3911.000	T 61140.000	131.404%	0.000	72.290	57.090
σ		0.554%	0.521	0.128	T 3.612	T 64.650	T 395.200	T 28.390	T 648.200	0.215%	0.000	0.988	0.406
%RSD		0.639	13.540	0.532	T 0.741	T 0.430	T 0.873	T 0.726	T 1.060	0.164	0.000	1.367	0.710

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:35:00	5.102	TM 7124.000	T 90490.000	38.520	84.870	2030.000	805.500	35.580	0.042	16.540	0.000	0.000
2	16:35:22	4.514	TM 7200.000	T 93850.000	39.150	84.250	2029.000	810.500	33.350	0.110	11.980	0.000	0.000
3	16:35:43	4.913	TM 7216.000	T 92220.000	39.210	85.390	2039.000	816.500	34.670	0.081	13.810	0.000	0.000
x		4.843	TM 7180.000	T 92190.000	38.960	84.830	2033.000	810.800	34.540	0.078	14.110	0.000	0.000
σ		0.300	TM 49.310	T 1681.000	0.381	0.571	5.351	5.520	1.119	0.034	2.295	0.000	0.000
%RSD		6.201	TM 0.687	T 1.823	0.977	0.673	0.263	0.681	3.239	44.140	16.260	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:35:00	170.700	256.208%	0.998	1.680	-4.201	3.609	104.396%	0.000	0.100	0.120	741.000	115.492%
2	16:35:22	170.800	256.913%	0.880	1.827	-2.404	3.607	105.487%	0.000	0.084	0.155	743.500	116.331%

3	16:35:43	172.900	259.833%	0.872	1.597	-4.336	3.687	104.824%	0.000	0.105	0.157	754.400	117.124%
x		171.500	257.651%	0.917	1.701	-3.647	3.635	104.902%	0.000	0.096	0.144	746.300	116.316%
σ		1.288	1.922%	0.070	0.117	1.079	0.046	0.550%	0.000	0.011	0.021	7.149	0.816%
%RSD		0.751	0.746	7.666	6.865	29.580	1.257	0.524	0.000	11.060	14.500	0.958	0.701

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:35:00	0.452	0.474	124.100	97.825%	0.000	11.650	4.530
2	16:35:22	0.456	0.483	125.800	97.785%	0.000	11.850	4.685
3	16:35:43	0.438	0.456	127.000	97.809%	0.000	11.930	4.716
x		0.449	0.471	125.700	97.806%	0.000	11.810	4.643
σ		0.009	0.014	1.481	0.020%	0.000	0.146	0.100
%RSD		2.036	3.025	1.178	0.021	0.000	1.236	2.146

MB 200-110239/1-A 10/18/2016 04:40:22 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:40:44	96.941%	-0.050	-0.026	154.000	17.270	65.190	12.280	74.140	126.435%	0.000	0.924	0.076
2	16:41:05	93.967%	-0.050	-0.823	144.600	15.620	56.170	10.380	73.260	128.072%	0.000	0.518	0.019
3	16:41:27	94.419%	0.024	-0.702	148.200	14.840	55.420	9.419	72.640	127.505%	0.000	0.021	0.035
x		95.109%	-0.026	-0.517	148.900	15.910	58.930	10.690	73.350	127.337%	0.000	0.488	0.043
σ		1.603%	0.043	0.430	4.766	1.241	5.436	1.454	0.751	0.831%	0.000	0.452	0.029
%RSD		1.685	167.400	83.100	3.200	7.796	9.226	13.600	1.024	0.653	0.000	92.650	67.810

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:40:44	6.828	7.040	122.800	0.052	0.177	2.986	1.379	-0.601	0.325	-1.293	0.000	0.000
2	16:41:05	7.350	6.139	108.100	0.034	0.128	2.305	1.085	-0.840	0.358	-2.242	0.000	0.000
3	16:41:27	8.009	6.013	101.700	0.054	0.198	2.695	0.858	-0.575	0.332	-0.994	0.000	0.000
x		7.396	6.398	110.900	0.047	0.167	2.662	1.107	-0.672	0.339	-1.509	0.000	0.000
σ		0.592	0.560	10.780	0.011	0.036	0.342	0.261	0.146	0.017	0.651	0.000	0.000
%RSD		7.999	8.751	9.728	23.730	21.390	12.830	23.580	21.760	5.118	43.160	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:40:44	0.294	117.684%	-0.496	0.007	-1.239	0.025	112.061%	0.000	-0.441	-0.454	0.828	103.647%
2	16:41:05	0.365	117.820%	-0.456	0.008	-1.374	0.042	112.720%	0.000	-0.451	-0.451	0.867	105.096%
3	16:41:27	0.289	119.550%	-0.510	0.028	-1.252	0.051	112.369%	0.000	-0.437	-0.451	0.682	104.697%
x		0.316	118.351%	-0.488	0.014	-1.288	0.039	112.383%	0.000	-0.443	-0.452	0.792	104.480%
σ		0.042	1.040%	0.028	0.012	0.074	0.013	0.330%	0.000	0.007	0.002	0.098	0.749%
%RSD		13.400	0.879	5.706	84.090	5.765	33.730	0.293	0.000	1.548	0.436	12.300	0.717

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:40:44	0.023	-0.019	0.069	98.175%	0.000	0.917	0.007
2	16:41:05	0.010	-0.019	0.064	99.588%	0.000	0.870	0.011
3	16:41:27	0.025	-0.021	0.055	98.963%	0.000	0.855	0.010
x		0.019	-0.020	0.063	98.909%	0.000	0.881	0.009
σ		0.009	0.001	0.007	0.708%	0.000	0.033	0.002

%RSD		44.110	5.208	10.920	0.716	0.000	3.704	18.730

LCS 200-110239/2-A 10/18/2016 04:46:04 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:46:26	89.583%	12.000	442.000	T 5288.000	1833.000	445.800	T 4895.000	4539.000	114.395%	0.000	46.000	38.030
2	16:46:47	84.598%	11.530	477.200	T 5559.000	1928.000	474.800	T 5132.000	4672.000	107.739%	0.000	46.470	39.200
3	16:47:11	83.758%	12.000	479.100	T 5492.000	1917.000	473.800	T 5104.000	4792.000	106.105%	0.000	47.600	40.080
x		85.980%	11.840	466.100	T 5446.000	1892.000	464.800	T 5044.000	4668.000	109.413%	0.000	46.690	39.100
σ		3.149%	0.271	20.920	T 140.800	51.950	16.480	T 129.600	126.400	4.391%	0.000	0.823	1.028
%RSD		3.662	2.285	4.488	T 2.584	2.745	3.546	T 2.570	2.708	4.014	0.000	1.762	2.629

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:46:26	8.292	18.190	T 1995.000	9.432	19.630	56.110	210.900	21.510	0.179	41.030	0.000	0.000
2	16:46:47	8.331	19.100	T 2092.000	10.050	21.490	56.550	209.900	21.430	0.163	41.980	0.000	0.000
3	16:47:11	6.976	19.420	T 2069.000	9.832	20.600	56.250	204.600	22.550	0.035	43.670	0.000	0.000
x		7.866	18.900	T 2052.000	9.770	20.570	56.300	208.500	21.830	0.125	42.230	0.000	0.000
σ		0.771	0.636	T 50.650	0.312	0.930	0.225	3.381	0.629	0.079	1.341	0.000	0.000
%RSD		9.806	3.365	T 2.468	3.194	4.523	0.399	1.622	2.880	62.930	3.176	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:46:26	48.820	102.715%	96.680	11.070	-0.470	9.162	100.372%	0.000	19.110	18.040	93.510	95.901%
2	16:46:47	49.980	103.073%	95.640	10.900	1.079	9.569	98.763%	0.000	18.940	18.350	94.700	95.464%
3	16:47:11	49.830	101.085%	96.870	10.950	-0.290	9.853	98.187%	0.000	18.910	18.380	93.590	93.649%
x		49.540	102.291%	96.400	10.970	0.106	9.528	99.108%	0.000	18.990	18.260	93.930	95.005%
σ		0.632	1.060%	0.662	0.089	0.848	0.347	1.132%	0.000	0.108	0.184	0.667	1.194%
%RSD		1.276	1.036	0.687	0.807	798.000	3.646	1.143	0.000	0.568	1.008	0.710	1.257

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:46:26	34.060	17.320	8.924	90.963%	0.000	13.060	10.270
2	16:46:47	34.750	17.610	8.953	90.687%	0.000	13.800	10.240
3	16:47:11	36.190	17.650	8.989	91.036%	0.000	14.420	10.150
x		35.000	17.520	8.955	90.895%	0.000	13.760	10.220
σ		1.088	0.181	0.033	0.184%	0.000	0.680	0.066
%RSD		3.108	1.031	0.364	0.203	0.000	4.940	0.644

200-35680-A-13-A 10/18/2016 04:51:48 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:52:10	92.086%	-0.031	0.720	155.200	7.981	24.660	8.829	44.730	117.334%	0.000	0.481	-0.001
2	16:52:32	92.948%	-0.013	1.733	155.000	6.669	21.440	8.366	45.870	117.562%	0.000	0.188	-0.064
3	16:52:53	90.059%	0.027	1.669	150.300	6.135	17.900	7.122	38.040	118.194%	0.000	0.237	-0.001
x		91.698%	-0.005	1.374	153.500	6.928	21.330	8.106	42.880	117.697%	0.000	0.302	-0.022
σ		1.483%	0.030	0.567	2.769	0.950	3.385	0.883	4.229	0.446%	0.000	0.157	0.036
%RSD		1.617	547.400	41.280	1.803	13.710	15.870	10.890	9.862	0.379	0.000	51.990	166.000

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:52:10	9.235	2.766	46.250	0.022	0.078	1.098	2.045	-0.813	0.393	-2.312	0.000	0.000
2	16:52:32	10.150	2.358	38.980	0.028	0.227	1.159	1.670	-0.500	0.358	-1.388	0.000	0.000
3	16:52:53	10.120	2.074	34.820	0.010	0.143	0.889	1.598	-0.820	0.376	-1.397	0.000	0.000
x		9.835	2.399	40.020	0.020	0.149	1.049	1.771	-0.711	0.376	-1.699	0.000	0.000
σ		0.520	0.348	5.785	0.009	0.075	0.142	0.240	0.183	0.017	0.530	0.000	0.000
%RSD		5.288	14.490	14.460	46.990	50.080	13.500	13.560	25.730	4.530	31.220	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:52:10	0.193	107.633%	-0.357	0.013	-1.028	0.016	104.756%	0.000	-0.423	-0.429	0.245	95.612%
2	16:52:32	0.180	107.420%	-0.429	0.004	-1.062	0.018	105.448%	0.000	-0.420	-0.428	0.147	97.858%
3	16:52:53	0.158	108.825%	-0.404	0.008	-1.005	0.021	104.741%	0.000	-0.421	-0.422	0.293	97.613%
x		0.177	107.959%	-0.397	0.008	-1.032	0.018	104.982%	0.000	-0.422	-0.427	0.228	97.028%
σ		0.018	0.757%	0.036	0.005	0.029	0.003	0.404%	0.000	0.002	0.004	0.074	1.232%
%RSD		10.080	0.701	9.172	55.180	2.782	13.610	0.384	0.000	0.406	0.902	32.420	1.270

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:52:10	0.106	-0.004	-0.017	92.213%	0.000	3.180	0.014
2	16:52:32	0.105	-0.000	-0.017	94.966%	0.000	2.833	0.010
3	16:52:53	0.100	-0.013	-0.047	94.714%	0.000	2.615	0.005
x		0.103	-0.006	-0.027	93.965%	0.000	2.876	0.010
σ		0.003	0.007	0.017	1.522%	0.000	0.285	0.005
%RSD		3.117	115.600	64.240	1.620	0.000	9.901	50.610

200-35700-A-19-A 10/18/2016 04:57:31 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:57:53	97.655%	-0.014	-0.915	160.700	1.126	6.924	3.753	32.680	123.207%	0.000	0.520	0.174
2	16:58:14	96.885%	-0.050	-2.342	157.100	1.118	6.426	4.597	23.320	123.611%	0.000	0.151	0.168
3	16:58:36	97.061%	-0.032	-0.823	152.400	1.579	6.640	4.499	31.280	123.918%	0.000	0.013	0.242
x		97.200%	-0.032	-1.360	156.700	1.275	6.664	4.283	29.090	123.579%	0.000	0.228	0.195
σ		0.403%	0.018	0.852	4.157	0.264	0.250	0.462	5.046	0.356%	0.000	0.262	0.041
%RSD		0.415	55.450	62.640	2.652	20.710	3.746	10.770	17.350	0.288	0.000	115.000	21.120

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:57:53	12.200	0.244	9.983	-0.004	0.127	0.324	0.317	-0.765	0.451	-2.181	0.000	0.000
2	16:58:14	12.800	0.232	11.590	-0.010	0.087	0.538	0.532	-0.931	0.477	-2.034	0.000	0.000
3	16:58:36	12.810	0.198	11.690	-0.004	0.087	0.377	0.614	-0.859	0.455	-1.820	0.000	0.000
x		12.600	0.225	11.090	-0.006	0.100	0.413	0.487	-0.852	0.461	-2.012	0.000	0.000
σ		0.346	0.024	0.959	0.004	0.023	0.111	0.154	0.083	0.014	0.182	0.000	0.000
%RSD		2.749	10.530	8.649	59.610	23.200	26.960	31.520	9.783	2.975	9.037	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:57:53	0.068	114.949%	-0.554	0.002	-1.313	0.031	107.658%	0.000	-0.464	-0.463	0.022	100.871%
2	16:58:14	0.057	114.069%	-0.563	0.005	-1.166	0.020	109.726%	0.000	-0.440	-0.457	0.003	100.781%
3	16:58:36	0.070	112.644%	-0.541	-0.002	-1.665	0.070	109.153%	0.000	-0.438	-0.458	0.012	101.322%
x		0.065	113.887%	-0.553	0.002	-1.381	0.040	108.846%	0.000	-0.447	-0.459	0.012	100.992%
σ		0.007	1.163%	0.011	0.003	0.257	0.027	1.067%	0.000	0.015	0.003	0.010	0.290%
%RSD		10.430	1.021	2.010	180.500	18.580	66.520	0.981	0.000	3.325	0.627	77.680	0.287
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	16:57:53	0.036	-0.031	-0.069	95.673%	0.000	1.412	-0.003					
2	16:58:14	0.020	-0.030	-0.074	96.412%	0.000	1.381	-0.004					
3	16:58:36	0.022	-0.031	-0.082	98.256%	0.000	1.327	-0.003					
x		0.026	-0.031	-0.075	96.780%	0.000	1.373	-0.003					
σ		0.009	0.001	0.006	1.330%	0.000	0.043	0.000					
%RSD		32.930	2.073	8.555	1.375	0.000	3.131	15.870					

200-35736-A-14-A 10/18/2016 05:03:14 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:03:35	96.181%	-0.032	-2.488	154.600	2.502	7.101	3.627	28.450	126.174%	0.000	0.183	0.116
2	17:03:57	98.696%	-0.032	-2.318	154.900	1.580	5.834	4.489	27.100	126.305%	0.000	0.339	0.223
3	17:04:19	94.952%	-0.032	-2.197	155.800	2.248	6.136	2.904	31.100	125.039%	0.000	0.221	0.188
x		96.610%	-0.032	-2.334	155.100	2.110	6.357	3.673	28.890	125.839%	0.000	0.248	0.175
σ		1.908%	0.000	0.146	0.631	0.476	0.662	0.793	2.031	0.696%	0.000	0.081	0.055
%RSD		1.975	1.106	6.262	0.407	22.560	10.410	21.600	7.032	0.553	0.000	32.880	31.230
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:03:35	13.330	0.812	18.160	-0.006	0.162	0.544	1.293	-0.781	0.467	-1.387	0.000	0.000
2	17:03:57	13.660	0.592	15.130	-0.004	0.161	0.485	1.377	-0.457	0.460	-0.543	0.000	0.000
3	17:04:19	13.690	0.711	16.920	-0.004	0.242	0.553	1.358	-1.050	0.480	-2.132	0.000	0.000
x		13.560	0.705	16.740	-0.005	0.188	0.528	1.342	-0.763	0.469	-1.354	0.000	0.000
σ		0.202	0.110	1.523	0.001	0.046	0.037	0.044	0.297	0.010	0.795	0.000	0.000
%RSD		1.489	15.610	9.101	19.410	24.610	6.979	3.271	38.890	2.182	58.730	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:03:35	0.062	114.822%	-0.607	-0.003	-1.432	0.046	108.147%	0.000	-0.457	-0.463	0.096	101.380%
2	17:03:57	0.073	114.721%	-0.587	0.012	-1.354	0.040	109.420%	0.000	-0.436	-0.452	0.067	103.840%

3	17:04:19	0.073	118.103%	-0.557	-0.000	-0.908	0.006	111.196%	0.000	-0.450	-0.457	0.039	100.511%
x		0.069	115.882%	-0.584	0.003	-1.231	0.031	109.588%	0.000	-0.448	-0.458	0.067	101.910%
σ		0.006	1.924%	0.025	0.008	0.282	0.021	1.531%	0.000	0.011	0.006	0.029	1.727%
%RSD		8.617	1.660	4.347	274.400	22.940	69.390	1.397	0.000	2.356	1.209	42.880	1.695

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:03:35	0.009	-0.037	-0.062	94.974%	0.000	0.996	-0.001
2	17:03:57	0.003	-0.033	-0.052	98.508%	0.000	0.925	-0.002
3	17:04:19	0.028	-0.043	-0.058	96.842%	0.000	0.929	-0.002
x		0.013	-0.038	-0.057	96.775%	0.000	0.950	-0.001
σ		0.013	0.005	0.005	1.768%	0.000	0.040	0.001
%RSD		100.800	13.840	8.615	1.827	0.000	4.167	51.680

200-35736-A-14-A SD@5 10/18/2016 05:08:56 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:09:18	97.989%	-0.032	-5.224	29.630	0.392	2.968	2.160	8.033	125.196%	0.000	0.354	0.058
2	17:09:40	96.048%	-0.032	-4.979	32.470	-0.023	2.823	1.691	7.925	126.096%	0.000	0.481	0.057
3	17:10:02	95.774%	-0.032	-4.051	28.370	0.093	2.767	2.072	9.582	125.998%	0.000	0.604	0.052
x		96.604%	-0.032	-4.751	30.160	0.154	2.853	1.974	8.513	125.763%	0.000	0.480	0.055
σ		1.207%	0.000	0.619	2.100	0.214	0.104	0.249	0.927	0.494%	0.000	0.125	0.003
%RSD		1.250	0.699	13.020	6.963	138.900	3.641	12.620	10.890	0.393	0.000	26.060	5.849

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:09:18	13.860	0.030	10.260	-0.009	0.023	0.018	0.077	-0.734	0.499	-0.995	0.000	0.000
2	17:09:40	13.600	0.015	8.698	-0.012	0.007	-0.007	0.251	-1.143	0.548	-2.938	0.000	0.000
3	17:10:02	13.720	0.047	8.421	-0.011	-0.001	0.047	0.133	-1.032	0.517	-1.137	0.000	0.000
x		13.730	0.031	9.125	-0.011	0.010	0.019	0.154	-0.970	0.522	-1.690	0.000	0.000
σ		0.128	0.016	0.990	0.002	0.012	0.027	0.089	0.212	0.024	1.083	0.000	0.000
%RSD		0.931	52.280	10.850	15.090	127.200	139.000	57.840	21.820	4.693	64.070	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:09:18	0.019	114.868%	-0.619	0.002	-1.192	0.028	107.302%	0.000	-0.466	-0.474	-0.006	99.468%
2	17:09:40	0.015	114.069%	-0.601	-0.002	-0.870	0.004	108.348%	0.000	-0.463	-0.468	0.013	101.451%
3	17:10:02	0.010	114.721%	-0.613	0.002	-1.033	0.009	110.793%	0.000	-0.452	-0.470	-0.025	101.245%
x		0.015	114.553%	-0.611	0.001	-1.032	0.014	108.814%	0.000	-0.460	-0.471	-0.006	100.721%
σ		0.004	0.425%	0.009	0.002	0.161	0.013	1.791%	0.000	0.008	0.003	0.019	1.090%
%RSD		30.250	0.371	1.494	265.800	15.620	92.980	1.646	0.000	1.654	0.651	315.900	1.083

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:09:18	0.010	-0.043	-0.096	94.869%	0.000	0.489	-0.005
2	17:09:40	0.006	-0.036	-0.108	95.681%	0.000	0.502	-0.005
3	17:10:02	-0.009	-0.039	-0.104	96.639%	0.000	0.499	-0.004
x		0.002	-0.039	-0.102	95.730%	0.000	0.497	-0.005
σ		0.010	0.004	0.006	0.886%	0.000	0.007	0.000

%RSD	438.300	9.009	5.878	0.926	0.000	1.361	5.157	

CCV 10/18/2016 05:14:40 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:15:02	85.266%	730.400	279.800	┬10660.000	┬30450.000	┬31120.000	┬9931.000	27690.000	102.648%	0.000	┬1281.000	378.900
2	17:15:23	82.584%	749.200	290.300	┬10700.000	┬30780.000	┬30870.000	┬9966.000	┬30150.000	100.306%	0.000	┬1311.000	387.200
3	17:15:45	80.336%	754.200	296.100	┬10360.000	┬29530.000	┬30130.000	┬9680.000	┬29550.000	101.601%	0.000	┬1272.000	375.800
x		82.729%	119.138%	115.496%	┬105.748%	┬100.850%	┬102.361%	┬98.592%	┬97.099%	101.518%	0.000	┬103.058%	95.166%
σ		2.468%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.173%	0.000	┬n/a	n/a
%RSD		2.983	1.691	2.851	┬1.729	┬2.137	┬1.682	┬1.582	┬4.409	1.156	0.000	┬1.557	1.552

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:15:02	19.200	┬1227.000	┬29500.000	467.500	1253.000	1311.000	1319.000	215.100	-0.315	218.400	0.000	0.000
2	17:15:23	19.040	┬1245.000	┬29810.000	472.100	1261.000	1302.000	1328.000	218.200	-0.406	218.800	0.000	0.000
3	17:15:45	15.810	┬1215.000	┬29390.000	461.200	1230.000	1280.000	1309.000	219.500	-0.383	221.600	0.000	0.000
x		18.010	┬98.305%	┬98.557%	93.392%	99.830%	103.809%	105.484%	108.791%	-0.368	109.787%	0.000	0.000
σ		1.914	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.048	n/a	0.000	0.000
%RSD		10.620	┬1.204	┬0.740	1.171	1.270	1.237	0.726	1.049	12.970	0.793	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:15:02	191.000	96.292%	1138.000	105.400	12.880	189.200	93.409%	0.000	236.100	228.300	1143.000	88.193%
2	17:15:23	194.200	94.769%	1186.000	105.400	9.953	192.300	92.337%	0.000	238.600	230.000	1154.000	86.701%
3	17:15:45	194.100	94.295%	1201.000	106.200	8.636	191.400	91.602%	0.000	240.900	233.000	1158.000	88.708%
x		193.100	95.119%	93.998%	105.692%	10.490	95.479%	92.449%	0.000	238.500	92.175%	92.131%	87.867%
σ		1.810	1.043%	n/a	n/a	2.175	n/a	0.909%	0.000	2.391	n/a	n/a	1.042%
%RSD		0.937	1.097	2.812	0.429	20.730	0.841	0.983	0.000	1.002	1.027	0.687	1.186

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:15:02	19.650	173.100	┬1194.000	86.652%	0.000	16.040	9.663
2	17:15:23	20.200	175.800	┬1203.000	85.329%	0.000	17.580	9.720
3	17:15:45	19.660	176.900	┬1218.000	85.150%	0.000	18.560	9.655
x		99.185%	87.616%	┬96.426%	85.710%	0.000	86.971%	96.793%
σ		n/a	n/a	┬n/a	0.820%	0.000	n/a	n/a
%RSD		1.597	1.106	┬1.005	0.957	0.000	7.306	0.369

CCB 10/18/2016 05:20:23 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:45	92.628%	-0.012	-3.702	6.439	2.888	4.568	4.912	4.074	106.365%	0.000	0.079	-0.100
2	17:21:08	88.979%	0.009	-3.337	3.669	2.843	4.235	4.844	6.078	107.498%	0.000	0.463	-0.125
3	17:21:29	86.856%	0.010	-4.109	1.687	3.685	4.299	3.259	6.359	106.788%	0.000	1.022	-0.155
x		89.488%	0.002	-3.716	3.932	3.139	4.367	4.338	5.504	106.884%	0.000	0.521	-0.127
σ		2.920%	0.013	0.386	2.387	0.474	0.177	0.935	1.246	0.572%	0.000	0.474	0.027
%RSD		3.263	594.300	10.390	60.710	15.090	4.053	21.560	22.650	0.536	0.000	90.960	21.510

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:45	11.810	0.118	14.000	0.029	0.129	0.170	-0.158	-0.544	0.375	-1.293	0.000	0.000
2	17:21:08	11.590	0.120	12.890	0.022	0.045	0.056	-0.179	-1.419	0.428	-2.062	0.000	0.000
3	17:21:29	10.810	0.115	12.000	0.024	0.091	0.108	-0.381	-0.702	0.368	-0.534	0.000	0.000
x		11.400	0.118	12.960	0.025	0.088	0.111	-0.239	-0.888	0.390	-1.296	0.000	0.000
σ		0.525	0.003	1.005	0.004	0.042	0.057	0.123	0.466	0.033	0.764	0.000	0.000
%RSD		4.601	2.432	7.750	16.200	47.610	51.590	51.540	52.500	8.517	58.950	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:45	0.022	98.597%	1.692	0.009	-1.262	0.042	96.019%	0.000	-0.162	-0.182	0.060	88.251%
2	17:21:08	0.022	100.005%	1.589	0.015	-1.104	0.037	95.320%	0.000	-0.166	-0.150	0.082	90.618%
3	17:21:29	0.023	100.010%	1.237	0.013	-1.263	0.042	95.954%	0.000	-0.127	-0.132	0.061	91.834%
x		0.022	99.537%	1.506	0.012	-1.210	0.040	95.764%	0.000	-0.152	-0.154	0.068	90.235%
σ		0.001	0.814%	0.238	0.003	0.092	0.003	0.386%	0.000	0.022	0.025	0.013	1.822%
%RSD		2.818	0.818	15.830	24.590	7.568	6.385	0.403	0.000	14.250	16.480	18.540	2.019

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:45	0.042	0.117	-0.003	89.997%	0.000	0.630	-0.002
2	17:21:08	0.070	0.092	-0.009	88.957%	0.000	0.619	-0.000
3	17:21:29	0.039	0.090	-0.004	87.334%	0.000	0.628	-0.002
x		0.050	0.099	-0.005	88.763%	0.000	0.626	-0.001
σ		0.017	0.015	0.003	1.342%	0.000	0.006	0.001
%RSD		33.730	14.860	52.260	1.512	0.000	1.004	66.290

CCVL 10/18/2016 05:26:07 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:26:29	91.657%	1.550	40.830	T 558.900	190.800	52.310	472.500	493.100	110.207%	0.000	5.534	4.112
2	17:26:51	91.597%	1.323	39.740	T 555.600	198.000	53.410	468.000	478.500	110.623%	0.000	4.595	4.131
3	17:27:12	89.645%	1.528	42.390	491.200	192.200	52.650	466.400	490.600	110.428%	0.000	5.582	3.890
x		90.966%	146.701%	102.464%	T 107.044%	96.843%	105.579%	93.789%	97.486%	110.419%	0.000	104.740%	101.112%
σ		1.145%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.209%	0.000	n/a	n/a
%RSD		1.259	8.555	3.244	T 7.136	1.956	1.070	0.672	1.607	0.189	0.000	10.620	3.318

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:26:29	13.230	2.057	192.000	1.153	2.356	6.056	23.990	1.726	0.388	3.512	0.000	0.000
2	17:26:51	14.410	2.184	191.900	1.093	2.223	5.849	22.770	1.428	0.426	2.648	0.000	0.000
3	17:27:12	12.940	2.189	194.300	1.081	2.183	5.870	23.620	1.126	0.467	2.059	0.000	0.000
x		13.530	107.169%	96.345%	110.889%	112.713%	118.495%	117.295%	71.329%	0.427	68.491%	0.000	0.000
σ		0.782	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.039	n/a	0.000	0.000
%RSD		5.779	3.482	0.706	3.465	4.015	1.920	2.672	21.020	9.219	26.680	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:26:29	4.930	101.786%	9.204	1.151	-1.086	0.906	98.088%	0.000	1.704	1.448	9.534	91.339%
2	17:26:51	4.951	99.551%	9.877	1.110	-1.602	1.147	96.859%	0.000	1.765	1.581	9.541	90.708%
3	17:27:12	4.889	100.404%	9.979	1.000	-0.313	0.884	97.995%	0.000	1.677	1.540	9.307	91.551%
x		98.472%	100.580%	96.868%	108.676%	-1.000	97.896%	97.648%	0.000	1.715	76.161%	94.608%	91.199%
σ		n/a	1.128%	n/a	n/a	0.648	n/a	0.684%	0.000	0.045	n/a	n/a	0.438%
%RSD		0.641	1.122	4.346	7.200	64.810	14.910	0.701	0.000	2.619	4.473	1.408	0.481
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	17:26:29	1.535	1.741	1.059	89.193%	0.000	1.239	1.014					
2	17:26:51	1.668	1.772	1.025	90.987%	0.000	1.283	0.960					
3	17:27:12	1.708	1.771	1.068	90.354%	0.000	1.315	1.006					
x		81.844%	88.080%	105.100%	90.178%	0.000	63.962%	99.319%					
σ		n/a	n/a	n/a	0.910%	0.000	n/a	n/a					
%RSD		5.530	1.008	2.154	1.009	0.000	2.980	2.932					

CCVL 10/18/2016 05:30:57 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:31:19	95.561%	1.156	40.090	481.900	197.500	51.650	451.700	466.600	112.832%	0.000	5.151	3.892
2	17:31:40	92.885%	1.379	42.260	474.300	194.500	52.640	456.300	463.400	111.796%	0.000	5.022	3.885
3	17:32:03	90.713%	1.644	40.640	T 548.300	201.300	53.260	462.300	477.200	110.330%	0.000	4.804	4.014
x		93.053%	139.301%	102.495%	T 100.305%	98.873%	105.037%	91.358%	93.809%	111.653%	0.000	99.845%	98.260%
σ		2.428%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.257%	0.000	n/a	n/a
%RSD		2.609	17.540	2.749	T 8.115	1.726	1.541	1.165	1.536	1.126	0.000	3.511	1.841
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:31:19	13.660	2.019	185.800	1.026	2.413	6.036	23.510	0.931	0.487	2.705	0.000	0.000
2	17:31:40	13.980	2.092	189.000	1.011	2.575	5.975	23.030	1.424	0.449	1.434	0.000	0.000
3	17:32:03	13.360	2.136	191.600	1.010	2.371	5.905	22.810	1.760	0.405	3.283	0.000	0.000
x		13.660	104.120%	94.390%	101.587%	122.652%	119.439%	115.589%	68.596%	0.447	61.852%	0.000	0.000
σ		0.313	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.041	n/a	0.000	0.000
%RSD		2.289	2.846	1.543	0.870	4.399	1.092	1.550	30.410	9.166	38.220	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:31:19	4.883	102.130%	8.738	1.174	-1.301	1.009	96.626%	0.000	1.590	1.425	9.377	90.921%
2	17:31:40	4.877	100.727%	9.402	1.158	-1.238	1.047	98.147%	0.000	1.493	1.424	9.672	93.230%

3	17:32:03	5.063	102.765%	9.469	1.054	-1.309	0.975	97.917%	0.000	1.562	1.481	8.606	92.458%
x		98.819%	101.874%	92.029%	112.865%	-1.283	101.037%	97.563%	0.000	1.548	72.178%	92.182%	92.203%
σ		n/a	1.043%	n/a	n/a	0.039	n/a	0.820%	0.000	0.050	n/a	n/a	1.176%
%RSD		2.133	1.024	4.391	5.789	3.057	3.570	0.840	0.000	3.224	2.268	5.973	1.275

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:31:19	1.569	1.770	1.036	91.807%	0.000	1.373	0.933
2	17:31:40	1.549	1.748	1.051	89.493%	0.000	1.409	0.993
3	17:32:03	1.466	1.826	1.067	89.859%	0.000	1.437	0.993
x		76.403%	89.060%	105.129%	90.386%	0.000	70.324%	97.269%
σ		n/a	n/a	n/a	1.244%	0.000	n/a	n/a
%RSD		3.565	2.266	1.444	1.376	0.000	2.260	3.579

200-35736-A-14-A PDS 10/18/2016 05:36:47 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:08	89.860%	12.060	441.300	T 5590.000	1870.000	459.100	T 5035.000	4445.000	106.964%	0.000	45.400	38.220
2	17:37:30	87.304%	11.550	458.100	T 5489.000	1859.000	448.000	T 4991.000	4547.000	105.428%	0.000	46.070	38.050
3	17:37:52	88.177%	12.250	459.300	T 5502.000	1856.000	456.300	T 5032.000	4559.000	104.295%	0.000	47.620	39.020
x		88.447%	11.950	452.900	T 5527.000	1862.000	454.500	T 5019.000	4517.000	105.562%	0.000	46.360	38.430
σ		1.299%	0.360	10.060	T 54.970	7.357	5.729	T 24.810	62.500	1.340%	0.000	1.141	0.518
%RSD		1.469	3.014	2.222	T 0.994	0.395	1.261	T 0.494	1.384	1.269	0.000	2.460	1.347

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:08	12.630	18.640	T 1989.000	9.126	19.900	54.360	204.800	20.130	0.336	37.420	0.000	0.000
2	17:37:30	11.530	18.020	T 1982.000	9.233	20.780	54.960	211.800	19.640	0.379	39.250	0.000	0.000
3	17:37:52	9.902	18.600	T 2018.000	9.338	20.130	52.670	206.500	20.520	0.207	38.970	0.000	0.000
x		11.350	18.420	T 1996.000	9.232	20.270	54.000	207.700	20.100	0.307	38.550	0.000	0.000
σ		1.370	0.346	T 19.470	0.106	0.459	1.190	3.669	0.442	0.090	0.987	0.000	0.000
%RSD		12.070	1.877	T 0.975	1.144	2.264	2.204	1.767	2.199	29.150	2.560	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:08	46.920	98.295%	91.300	10.500	-0.032	9.093	94.162%	0.000	17.950	16.990	89.060	87.917%
2	17:37:30	48.370	96.776%	94.680	10.740	-0.538	8.958	92.725%	0.000	18.220	17.580	91.000	89.936%
3	17:37:52	47.680	94.457%	96.000	10.550	1.036	8.936	93.535%	0.000	18.390	17.650	90.260	89.885%
x		47.660	96.509%	93.990	10.600	0.155	8.996	93.474%	0.000	18.190	17.410	90.110	89.246%
σ		0.724	1.933%	2.422	0.129	0.804	0.085	0.720%	0.000	0.225	0.361	0.977	1.152%
%RSD		1.520	2.003	2.576	1.221	517.700	0.942	0.771	0.000	1.235	2.075	1.084	1.290

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:08	16.020	16.860	8.627	87.667%	0.000	15.120	9.889
2	17:37:30	16.190	17.290	8.785	86.303%	0.000	16.080	10.120
3	17:37:52	16.900	17.210	8.824	86.920%	0.000	16.580	10.220
x		16.370	17.120	8.746	86.963%	0.000	15.930	10.070
σ		0.469	0.231	0.104	0.683%	0.000	0.744	0.169

%RSD		2.866	1.348	1.192	0.785	0.000	4.673	1.676

200-35736-A-14-B MS 10/18/2016 05:42:30 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:42:52	91.058%	11.920	465.200	T 5649.000	1902.000	452.100	T 5018.000	4696.000	107.986%	0.000	46.110	38.480
2	17:43:14	88.768%	11.320	464.300	T 5603.000	1905.000	464.400	T 5169.000	4802.000	105.564%	0.000	46.650	38.810
3	17:43:35	87.642%	12.620	475.300	T 5625.000	1911.000	463.800	T 5152.000	4783.000	105.349%	0.000	47.280	39.850
x		89.156%	11.960	468.300	T 5626.000	1906.000	460.100	T 5113.000	4760.000	106.300%	0.000	46.680	39.050
σ		1.740%	0.652	6.103	T 23.120	4.610	6.938	T 82.800	56.210	1.464%	0.000	0.589	0.718
%RSD		1.952	5.451	1.303	T 0.411	0.242	1.508	T 1.619	1.181	1.377	0.000	1.261	1.839

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:42:52	10.520	18.480	T 2025.000	9.418	19.600	55.710	214.300	21.600	0.159	42.000	0.000	0.000
2	17:43:14	9.714	18.640	T 2089.000	9.701	20.350	58.580	219.000	22.050	0.134	43.810	0.000	0.000
3	17:43:35	8.983	18.780	T 2101.000	9.758	20.680	56.700	217.900	21.020	0.203	42.600	0.000	0.000
x		9.740	18.630	T 2072.000	9.626	20.210	57.000	217.100	21.560	0.165	42.800	0.000	0.000
σ		0.770	0.152	T 40.940	0.183	0.552	1.456	2.504	0.518	0.035	0.924	0.000	0.000
%RSD		7.909	0.816	T 1.976	1.896	2.730	2.555	1.153	2.403	21.180	2.160	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:42:52	49.560	96.403%	96.630	10.760	-1.103	9.558	93.132%	0.000	18.220	17.910	91.890	88.804%
2	17:43:14	51.010	93.347%	101.700	11.390	-0.286	9.827	90.946%	0.000	18.930	18.600	97.560	90.033%
3	17:43:35	50.380	94.129%	101.300	11.290	0.502	9.647	92.216%	0.000	19.080	18.560	95.200	88.373%
x		50.320	94.626%	99.890	11.150	-0.296	9.677	92.098%	0.000	18.740	18.360	94.880	89.070%
σ		0.726	1.588%	2.827	0.342	0.803	0.137	1.098%	0.000	0.458	0.390	2.848	0.861%
%RSD		1.442	1.678	2.830	3.070	271.400	1.417	1.192	0.000	2.442	2.125	3.001	0.967

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:42:52	34.990	18.020	9.123	85.288%	0.000	18.250	10.240
2	17:43:14	35.170	18.150	9.215	86.051%	0.000	18.470	10.470
3	17:43:35	35.240	18.270	9.242	85.938%	0.000	19.250	10.610
x		35.140	18.150	9.193	85.759%	0.000	18.660	10.440
σ		0.129	0.123	0.062	0.412%	0.000	0.521	0.186
%RSD		0.366	0.677	0.675	0.480	0.000	2.793	1.782

200-35736-A-14-C MSD 10/18/2016 05:48:15 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:38	90.832%	11.640	449.400	T 5574.000	1873.000	452.100	T 5086.000	4647.000	106.463%	0.000	47.170	38.310
2	17:49:00	88.862%	12.760	459.600	T 5613.000	1930.000	455.700	T 5109.000	4574.000	106.918%	0.000	46.460	38.870
3	17:49:23	87.818%	13.040	467.500	T 5409.000	1843.000	441.100	T 4928.000	4617.000	107.648%	0.000	45.000	38.610
x		89.171%	12.480	458.900	T 5532.000	1882.000	449.600	T 5041.000	4613.000	107.010%	0.000	46.210	38.600
σ		1.531%	0.740	9.054	T 108.100	44.300	7.580	T 98.330	37.080	0.598%	0.000	1.105	0.283
%RSD		1.717	5.929	1.973	T 1.954	2.354	1.686	T 1.951	0.804	0.559	0.000	2.390	0.733

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:38	8.653	17.840	T 2020.000	9.227	21.250	55.450	211.600	20.510	0.216	39.960	0.000	0.000
2	17:49:00	9.703	18.310	T 2041.000	9.381	20.400	56.450	212.100	21.010	0.149	41.100	0.000	0.000
3	17:49:23	9.384	18.170	T 2011.000	9.493	20.590	56.710	214.900	20.350	0.231	39.630	0.000	0.000
x		9.247	18.110	T 2024.000	9.367	20.750	56.200	212.900	20.620	0.199	40.230	0.000	0.000
σ		0.538	0.242	T 15.290	0.134	0.446	0.666	1.764	0.348	0.044	0.768	0.000	0.000
%RSD		5.824	1.339	T 0.755	1.427	2.151	1.184	0.829	1.688	22.170	1.909	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:38	48.700	95.067%	95.980	11.000	-1.328	9.350	92.252%	0.000	18.400	17.790	93.470	89.711%
2	17:49:00	49.030	94.381%	98.050	11.080	-0.437	9.139	93.147%	0.000	18.460	17.770	93.230	89.248%
3	17:49:23	49.260	95.284%	99.770	10.840	1.346	9.326	92.914%	0.000	18.610	18.040	94.060	88.914%
x		49.000	94.910%	97.940	10.970	-0.140	9.272	92.771%	0.000	18.490	17.860	93.590	89.291%
σ		0.283	0.471%	1.898	0.125	1.361	0.115	0.464%	0.000	0.105	0.151	0.427	0.401%
%RSD		0.578	0.496	1.938	1.138	976.000	1.244	0.500	0.000	0.569	0.845	0.456	0.449

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:38	34.090	17.400	8.897	86.425%	0.000	18.370	10.170
2	17:49:00	35.130	17.790	9.222	85.329%	0.000	18.940	10.300
3	17:49:23	35.340	17.670	8.986	87.374%	0.000	19.080	10.260
x		34.850	17.620	9.035	86.376%	0.000	18.800	10.250
σ		0.667	0.201	0.168	1.024%	0.000	0.379	0.069
%RSD		1.913	1.138	1.862	1.185	0.000	2.018	0.678

CCV 10/18/2016 05:54:01 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:54:23	87.797%	739.100	277.800	T 10630.000	T 30860.000	T 31290.000	T 10270.000	T 30370.000	101.880%	0.000	T 1290.000	386.000
2	17:54:44	86.778%	739.400	283.500	T 10900.000	T 31540.000	T 31740.000	T 10220.000	28370.000	99.291%	0.000	T 1319.000	391.400
3	17:55:06	85.544%	739.600	286.800	T 10430.000	T 29640.000	T 29940.000	T 9750.000	T 29650.000	103.859%	0.000	T 1251.000	366.300
x		86.706%	118.297%	113.085%	T 106.518%	T 102.265%	T 103.309%	T 100.820%	T 98.210%	101.677%	0.000	T 102.934%	95.310%
σ		1.128%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.291%	0.000	T n/a	n/a
%RSD		1.301	0.031	1.617	T 2.218	T 3.129	T 3.014	T 2.862	T 3.434	2.253	0.000	T 2.637	3.461

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:54:23	14.880	┬1250.000	┬29720.000	462.800	1249.000	1343.000	1349.000	220.000	-0.316	221.100	0.000	0.000
2	17:54:44	23.390	┬1275.000	┬30190.000	467.100	1263.000	1317.000	1349.000	220.600	-0.347	220.000	0.000	0.000
3	17:55:06	17.770	┬1212.000	┬29000.000	450.000	1213.000	1309.000	1326.000	217.100	-0.413	220.600	0.000	0.000
x		18.680	┬99.649%	┬98.786%	91.997%	99.336%	105.835%	107.318%	109.602%	-0.359	110.290%	0.000	0.000
σ		4.326	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.050	n/a	0.000	0.000
%RSD		23.160	┬2.538	┬2.022	1.937	2.066	1.374	0.979	0.854	13.880	0.260	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:54:23	194.400	93.504%	1142.000	105.500	15.860	187.300	90.320%	0.000	235.900	228.900	1154.000	86.438%
2	17:54:44	192.600	92.410%	1185.000	105.300	12.890	188.700	90.426%	0.000	237.300	230.000	1160.000	86.425%
3	17:55:06	192.200	91.563%	1208.000	105.800	14.400	189.500	90.703%	0.000	236.000	229.700	1151.000	88.238%
x		193.100	92.492%	94.276%	105.520%	14.380	94.247%	90.483%	0.000	236.400	91.806%	92.381%	87.033%
σ		1.212	0.973%	n/a	n/a	1.487	n/a	0.198%	0.000	0.768	n/a	n/a	1.043%
%RSD		0.628	1.052	2.837	0.204	10.330	0.608	0.219	0.000	0.325	0.235	0.407	1.199
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	17:54:23	19.910	171.300	┬1219.000	85.995%	0.000	21.820	9.340					
2	17:54:44	20.420	176.100	┬1234.000	85.370%	0.000	22.850	9.462					
3	17:55:06	20.260	177.900	┬1211.000	84.745%	0.000	23.420	9.560					
x		100.977%	87.534%	┬97.717%	85.370%	0.000	113.496%	94.540%					
σ		n/a	n/a	┬n/a	0.625%	0.000	n/a	n/a					
%RSD		1.295	1.955	┬0.967	0.732	0.000	3.561	1.164					

CCB 10/18/2016 05:59:45 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:00:06	95.040%	-0.013	0.003	6.656	4.403	4.699	6.003	7.859	108.559%	0.000	0.308	-0.079
2	18:00:28	90.501%	0.066	1.488	0.256	3.719	4.320	4.713	7.051	108.904%	0.000	0.465	-0.228
3	18:00:50	90.698%	0.142	1.633	7.425	4.721	4.917	5.902	4.188	105.284%	0.000	0.122	-0.133
x		92.079%	0.065	1.041	4.779	4.281	4.645	5.539	6.366	107.583%	0.000	0.299	-0.147
σ		2.565%	0.078	0.902	3.935	0.512	0.302	0.718	1.929	1.998%	0.000	0.172	0.075
%RSD		2.786	120.100	86.660	82.350	11.950	6.500	12.960	30.310	1.857	0.000	57.460	51.410
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:00:06	11.180	0.166	11.520	0.041	0.089	0.089	0.039	-0.055	0.292	0.741	0.000	0.000
2	18:00:28	10.760	0.134	10.090	0.027	0.061	0.090	0.022	-0.687	0.361	-0.858	0.000	0.000
3	18:00:50	11.490	0.118	13.180	0.028	0.056	0.079	-0.333	-0.814	0.369	-1.814	0.000	0.000
x		11.140	0.139	11.600	0.032	0.069	0.086	-0.091	-0.519	0.341	-0.643	0.000	0.000
σ		0.367	0.024	1.544	0.008	0.018	0.006	0.210	0.407	0.043	1.291	0.000	0.000
%RSD		3.299	17.580	13.310	25.210	25.490	7.070	231.700	78.420	12.480	200.600	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:00:06	0.022	96.963%	1.693	0.018	-1.083	0.044	93.243%	0.000	-0.150	-0.196	0.139	88.470%
2	18:00:28	0.037	97.316%	1.626	0.004	-0.869	0.020	92.990%	0.000	-0.161	-0.139	0.074	88.991%

3	18:00:50	0.010	95.843%	1.583	0.010	-1.079	0.081	93.638%	0.000	-0.158	-0.138	0.106	89.647%
x		0.023	96.707%	1.634	0.010	-1.010	0.048	93.290%	0.000	-0.156	-0.157	0.106	89.036%
σ		0.014	0.769%	0.056	0.007	0.122	0.031	0.327%	0.000	0.006	0.033	0.032	0.590%
%RSD		60.940	0.795	3.396	68.400	12.120	63.950	0.350	0.000	3.647	21.160	30.290	0.662

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:00:06	0.097	0.150	0.016	87.196%	0.000	0.749	0.002
2	18:00:28	0.066	0.110	0.011	85.986%	0.000	0.740	0.001
3	18:00:50	0.089	0.101	-0.000	88.170%	0.000	0.725	-0.002
x		0.084	0.120	0.009	87.117%	0.000	0.738	0.000
σ		0.016	0.026	0.008	1.094%	0.000	0.012	0.002
%RSD		19.310	21.690	93.530	1.256	0.000	1.656	400.900

CCVL 10/18/2016 06:05:29 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:50	95.342%	1.397	40.170	T 532.600	185.700	50.920	441.600	458.800	111.926%	0.000	5.324	3.860
2	18:06:12	90.004%	1.366	42.480	468.700	188.400	51.900	447.200	465.100	110.246%	0.000	4.696	3.688
3	18:06:34	89.415%	1.415	42.600	472.100	191.700	51.410	448.000	459.000	109.516%	0.000	5.181	3.729
x		91.587%	139.271%	104.372%	T 98.218%	94.291%	102.825%	89.117%	92.187%	110.563%	0.000	101.340%	93.972%
σ		3.266%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.236%	0.000	n/a	n/a
%RSD		3.566	1.758	3.285	T 7.320	1.585	0.952	0.787	0.783	1.118	0.000	6.501	2.385

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:50	11.680	2.000	176.900	1.020	2.206	5.948	22.940	1.357	0.428	2.383	0.000	0.000
2	18:06:12	11.920	1.978	181.200	0.981	2.364	6.369	24.700	1.415	0.381	4.150	0.000	0.000
3	18:06:34	11.750	2.030	182.500	0.957	2.050	5.561	22.860	1.224	0.416	2.654	0.000	0.000
x		11.780	100.139%	90.100%	98.612%	110.333%	119.186%	117.502%	66.608%	0.408	76.562%	0.000	0.000
σ		0.123	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.024	n/a	0.000	0.000
%RSD		1.048	1.305	1.631	3.248	7.115	6.779	4.428	7.337	5.961	31.060	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:50	4.790	97.588%	9.126	1.083	-1.694	0.995	95.103%	0.000	1.443	1.403	9.073	88.348%
2	18:06:12	4.825	98.411%	9.226	1.037	-0.900	0.984	93.960%	0.000	1.524	1.454	9.644	91.017%
3	18:06:34	4.719	97.452%	9.296	1.046	-1.571	1.017	94.950%	0.000	1.460	1.459	9.448	91.763%
x		95.564%	97.817%	92.159%	105.529%	-1.388	99.841%	94.671%	0.000	1.476	71.939%	93.882%	90.376%
σ		n/a	0.519%	n/a	n/a	0.427	n/a	0.620%	0.000	0.043	n/a	n/a	1.796%
%RSD		1.130	0.530	0.925	2.333	30.780	1.686	0.655	0.000	2.901	2.172	3.091	1.987

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:50	1.506	1.674	1.006	89.233%	0.000	1.357	0.956
2	18:06:12	1.736	1.749	1.065	90.126%	0.000	1.356	0.939
3	18:06:34	1.666	1.737	1.012	88.275%	0.000	1.411	0.976
x		81.797%	86.015%	102.778%	89.212%	0.000	68.728%	95.719%
σ		n/a	n/a	n/a	0.926%	0.000	n/a	n/a

%RSD	7.196	2.339	3.166	1.038	0.000	2.269	1.914

Mass Uncorrected ICPS

STD0 10/18/2016 12:40:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:40:42	142819.310	7.500	1315.052	234792.250	210.001	650.013	48029.104	330.003	151767.870	0.000	16027.703	1770.094
2	12:41:04	143242.920	7.500	1075.035	245758.660	180.001	710.015	47266.930	370.004	154613.850	0.000	16858.522	1730.090
3	12:41:25	148649.960	2.500	1305.051	242298.550	190.001	1405.059	47898.730	310.003	159004.880	15.000	17288.963	1655.082
x		144904.060	5.833	1231.713	240949.820	193.334	921.696	47731.588	336.670	155128.870	5.000	16725.062	1718.422
σ		3250.949	2.887	135.779	5606.229	15.275	419.679	407.651	30.551	3645.886	8.660	641.134	58.387
%RSD		2.244	49.487	11.024	2.327	7.901	45.533	0.854	9.075	2.350	173.205	3.833	3.398

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:40:42	5806.011	345.004	194306.080	35.000	30.000	175.001	535.009	1321.052	519.008	355.504	378.504	1890.107
2	12:41:04	5710.978	355.004	191357.260	55.000	20.000	150.001	565.010	1371.056	447.006	402.505	340.503	1920.111
3	12:41:25	5650.958	455.006	197432.500	40.000	15.000	220.001	645.012	1382.057	426.005	360.504	388.005	1810.098
x		5722.649	385.005	194365.280	43.333	21.667	181.668	581.677	1358.055	464.007	372.838	369.004	1873.439
σ		78.183	60.829	3038.055	10.408	7.638	35.473	56.864	32.514	48.776	25.814	25.135	56.869
%RSD		1.366	15.800	1.563	24.019	35.251	19.527	9.776	2.394	10.512	6.924	6.812	3.036

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:40:42	25.000	198262.270	1760.093	5.000	0.000	5.000	895529.740	4405.582	1545.072	1160.040	10.000	154169.770
2	12:41:04	30.000	200144.560	1475.065	25.000	0.000	10.000	887970.980	4650.649	1415.060	1174.041	20.000	159408.710
3	12:41:25	25.000	203332.810	1255.047	20.000	0.000	5.000	899969.570	4315.559	1595.076	1120.038	20.000	156733.510
x		26.667	200579.880	1496.735	16.667	0.000	6.667	894490.100	4457.263	1518.403	1151.373	16.667	156770.660
σ		2.887	2563.147	253.219	10.408	0.000	2.887	6066.480	173.420	92.924	28.026	5.774	2619.667
%RSD		10.825	1.278	16.918	62.450	0.000	43.301	0.678	3.891	6.120	2.434	34.641	1.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:40:42	310.003	2705.220	455.006	121853.830	0.000	4660.652	60.000
2	12:41:04	220.001	2305.159	515.008	125299.230	0.000	4800.691	25.000
3	12:41:25	240.002	2180.143	720.016	124835.770	0.000	4235.538	10.000
x		256.669	2396.840	563.343	123996.280	0.000	4565.627	31.667
σ		47.259	274.282	138.959	1869.831	0.000	294.316	25.658
%RSD		18.412	11.443	24.667	1.508	0.000	6.446	81.025

STD1 10/18/2016 12:44:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:44:42	152413.730	202.501	6881.420	950660.880	30457.805	71623.568	733419.720	25930.156	161256.350	15.000	29816.647	10633.391
2	12:45:04	153382.550	162.501	6556.289	T 1013130.600	29596.255	71824.430	739854.990	27212.197	164406.910	30.000	31023.848	10413.252
3	12:45:25	149396.590	175.001	6766.373	940582.500	28925.078	72547.552	741453.740	25850.031	161428.000	10.000	30292.504	10143.086
x		151730.960	180.001	6734.694	T 968124.670	29659.713	71998.516	738242.820	26330.795	162363.750	18.333	30377.666	10396.576
σ		2078.846	20.464	164.864	T 39300.715	768.331	485.969	4252.727	764.367	1771.504	10.408	608.089	245.578
%RSD		1.370	11.369	2.448	T 4.059	2.590	0.675	0.576	2.903	1.091	56.773	2.002	2.362

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:44:42	7521.697	7611.738	777978.390	2980.266	1450.063	3930.463	12214.474	2435.178	628.012	570.010	382.504	1970.116
2	12:45:04	7536.704	7811.830	770591.830	3145.297	1325.053	4135.513	12484.674	2481.185	638.012	581.510	382.004	2160.140
3	12:45:25	7501.688	7981.911	778030.750	2540.194	1400.059	4080.499	12254.504	2429.177	688.014	605.511	381.504	2310.160

x		7520.029	7801.826	775533.660	2888.586	1391.725	4048.825	12317.884	2448.513	651.346	585.677	382.004	2146.805
σ		17.567	185.289	4279.829	312.796	62.921	106.131	145.825	28.453	32.147	18.114	0.500	170.414
%RSD		0.234	2.375	0.552	10.829	4.521	2.621	1.184	1.162	4.935	3.093	0.131	7.938
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:44:42	22795.578	209964.270	15552.253	2845.243	55.000	700.015	914742.120	2160.140	5375.867	4396.580	5085.776	158863.540
2	12:45:04	22970.819	207129.130	15492.197	3125.293	65.000	885.024	917856.540	2615.205	5610.944	4455.596	5260.830	159984.180
3	12:45:25	22655.388	211351.640	16343.009	2990.268	15.000	710.015	919788.810	2690.217	5605.943	4513.611	5275.835	160297.170
x		22807.262	209481.680	15795.820	2986.935	45.000	765.018	917462.490	2488.521	5530.918	4455.262	5207.480	159714.960
σ		158.040	2152.227	474.830	140.055	26.458	104.048	2546.316	286.849	134.301	58.516	105.666	753.779
%RSD		0.693	1.027	3.006	4.689	58.795	13.601	0.278	11.527	2.428	1.313	2.029	0.472

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:44:42	3190.305	18044.763	8417.125	122297.060	0.000	12925.010	12859.959
2	12:45:04	3080.285	18710.497	8202.018	124049.940	0.000	13625.567	12985.056
3	12:45:25	3545.377	18810.609	8522.178	125047.350	0.000	13430.409	12950.029
x		3271.989	18521.956	8380.440	123798.120	0.000	13326.995	12931.682
σ		243.068	416.282	163.202	1392.333	0.000	361.547	64.535
%RSD		7.429	2.248	1.947	1.125	0.000	2.713	0.499

STD2 10/18/2016 12:47:26 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:47:47	143071.460	800.019	26045.335	T 3774024.000	133008.630	301202.310	T 3524454.000	113263.560	151717.420	25.000	65222.370	41576.794
2	12:48:09	139319.880	810.020	27287.320	T 3708779.100	130398.120	298015.790	T 3408283.900	114532.180	152908.220	30.000	65408.095	41271.036
3	12:48:31	142577.250	767.518	27282.311	T 3713028.900	131436.230	302485.230	T 3514325.500	115498.820	150647.780	10.000	64012.693	41586.819
x		141656.200	792.519	26871.655	T 3731944.000	131614.330	300567.780	T 3482354.500	114431.520	151757.810	21.667	64881.053	41478.216
σ		2038.344	22.222	715.619	T 36504.259	1314.335	2301.294	T 64346.586	1121.026	1130.764	10.408	757.733	179.494
%RSD		1.439	2.804	2.663	T 0.978	0.999	0.766	T 1.848	0.980	0.745	48.038	1.168	0.433
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:47:47	10533.327	31289.343	T 3029820.000	12264.511	5425.883	16658.321	53520.797	5465.896	1152.040	1328.053	363.504	2610.204
2	12:48:09	10098.058	30753.347	T 3031461.500	12569.738	5580.934	16037.713	52527.644	5297.842	1021.031	1307.051	405.505	2735.224
3	12:48:31	10263.159	30978.764	T 3048377.100	12309.544	5315.848	16187.858	54017.395	5402.876	1116.037	1319.052	373.004	2655.211
x		10298.182	31007.151	T 3036552.900	12381.264	5440.888	16294.630	53355.279	5388.871	1096.370	1318.052	380.671	2666.880
σ		219.738	269.123	T 10272.950	164.769	133.179	323.788	758.542	84.898	67.683	10.536	22.025	63.322
%RSD		2.134	0.868	T 0.338	1.331	2.448	1.987	1.422	1.575	6.173	0.799	5.786	2.374
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:47:47	105246.260	198100.360	71503.052	14451.262	240.002	3510.370	876517.970	1610.078	24132.459	19072.406	23686.820	153291.720
2	12:48:09	104828.640	196440.890	72567.639	14846.610	195.001	3700.411	878203.300	2110.134	24312.720	18775.069	22810.599	152918.320
3	12:48:31	107716.970	199385.550	71784.257	14476.284	245.002	3690.409	885315.140	2050.126	23801.984	18931.746	23606.706	154563.390
x		105930.620	197975.600	71951.649	14591.385	226.668	3633.730	880012.140	1923.446	24082.388	18926.407	23368.042	153591.140
σ		1561.050	1476.288	551.680	221.384	27.538	106.950	4669.204	273.038	259.024	148.741	484.419	862.440
%RSD		1.474	0.746	0.767	1.517	12.149	2.943	0.531	14.195	1.076	0.786	2.073	0.562

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:47:47	15602.300	79649.869	30763.365	120403.340	0.000	59420.736	60986.376
2	12:48:09	15126.862	82428.330	31655.033	119355.850	0.000	61734.122	62085.423
3	12:48:31	15452.160	83599.140	31224.221	121108.420	0.000	66140.979	63249.789
x		15393.774	81892.446	31214.206	120289.210	0.000	62431.946	62107.196

σ	243.037	2028.439	445.918	881.845	0.000	3414.035	1131.863
%RSD	1.579	2.477	1.429	0.733	0.000	5.468	1.822

STD3 10/18/2016 12:50:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:51:01	145169.480	91206.377	34235.125	┬14071898.000	┬4208099.900	┬39086311.000	┬13612536.000	┬1440080.900	154997.390	26280.704	┬2685648.900	7684
2	12:51:23	140035.840	90286.388	33388.410	┬13789669.000	┬4193004.600	┬39033331.000	┬13546975.000	┬1454999.500	154684.500	25880.078	┬2704185.400	7750
3	12:51:45	139057.700	89813.846	33699.034	┬13752705.000	┬4178264.900	┬39069762.000	┬13454586.000	┬1452541.900	151384.410	26946.766	┬2705524.900	7697
x		141421.010	90435.537	33774.190	┬13871424.000	┬4193123.200	┬39063135.000	┬13538032.000	┬1449207.400	153688.770	26369.183	┬2698453.100	7710
σ		3282.909	708.145	428.332	┬174596.300	┬14917.879	┬27104.921	┬79353.935	┬7998.780	2001.756	538.820	┬11108.927	34
%RSD		2.321	0.783	1.268	┬1.259	┬0.356	┬0.069	┬0.586	┬0.552	1.302	2.043	┬0.412	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:51:01	94456.907	┬3997857.600	┬81531887.000	1177008.000	634554.110	785132.430	622507.330	81671.619	6648.326	9366.131	360.004	72
2	12:51:23	96443.234	┬3993740.200	┬82045502.000	1175046.600	629139.530	771853.240	623731.860	82110.768	6859.411	9162.018	384.004	66
3	12:51:45	96387.915	┬4003815.900	┬82137987.000	1173326.500	626824.710	778533.430	631625.970	82618.267	6693.344	9335.114	360.004	65
x		95762.685	┬3998471.200	┬81905126.000	1175127.000	630172.780	778506.360	625955.060	82133.551	6733.694	9287.754	368.004	68
σ		1131.176	┬5065.780	┬326524.870	1842.054	3966.938	6639.638	4949.173	473.735	111.177	109.990	13.857	3
%RSD		1.181	┬0.127	┬0.399	0.157	0.629	0.853	0.791	0.577	1.651	1.184	3.765	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	12:51:01	819766.610	196056.400	1675283.100	275345.830	8852.350	136048.010	865956.810	847230.210	571368.820	449534.770	578560.650	15292
2	12:51:23	819698.380	193729.430	1766238.500	276662.360	9042.452	136960.440	874895.990	860341.930	582199.120	453469.750	584766.700	15509
3	12:51:45	835231.780	196289.120	1788072.900	277313.040	8887.369	136980.610	873769.120	855875.560	577996.580	453456.900	580263.330	15287
x		824898.920	195358.310	1743198.200	276440.410	8927.390	136663.020	871540.640	854482.570	577188.170	452153.810	581196.890	15363
σ		8948.583	1415.449	59820.830	1002.213	101.173	532.707	4868.455	6665.932	5460.217	2268.159	3206.620	126
%RSD		1.085	0.725	3.432	0.363	1.133	0.390	0.559	0.780	0.946	0.502	0.552	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:51:01	36795.573	1604275.600	┬8485229.000	121390.470	0.000	292316.180	117779.700
2	12:51:23	38053.392	1632229.200	┬8467359.500	118419.200	0.000	294794.250	116022.440
3	12:51:45	39105.824	1644601.300	┬8489324.100	117855.230	0.000	292499.350	119250.100
x		37984.930	1627035.400	┬8480637.500	119221.630	0.000	293203.260	117684.080
σ		1156.646	20658.452	┬11679.976	1899.314	0.000	1380.882	1615.954
%RSD		3.045	1.270	┬0.138	1.593	0.000	0.471	1.373

STD4 10/18/2016 12:54:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	12:54:31	150193.710	260837.740	96101.267	┬40353094.000	┬12282409.000	┬113377630.000	┬40805684.000	┬4427649.800	161357.320	78228.160	┬8000577.100
2	12:54:53	147156.800	257026.720	93773.062	┬40506545.000	┬12388626.000	┬114719370.000	┬40917337.000	┬4438934.000	162245.890	78820.943	┬8102419.000
3	12:55:15	145502.370	261043.420	97780.995	┬40618965.000	┬12519893.000	┬117041920.000	┬41711605.000	┬4472267.300	158883.730	79273.079	┬8234925.600
x		147617.630	259635.960	95885.108	┬40492868.000	┬12396976.000	┬115046310.000	┬41144875.000	┬4446283.700	160828.980	78774.060	┬8112640.600
σ		2379.378	2262.011	2012.691	┬133462.370	┬118962.220	┬1853892.100	┬493967.330	┬23198.982	1742.236	524.035	┬117508.150
%RSD		1.612	0.871	2.099	┬0.330	┬0.960	┬1.611	┬1.201	┬0.522	1.083	0.665	┬1.448

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	12:54:31	278202.680	┬11896300.000	┬243672850.000	┬3827789.400	1822772.000	™2459602.200	1752251.300	232461.930	18000.716	24793.428	396.505
2	12:54:53	283124.530	┬12257361.000	┬246372800.000	┬3910660.400	1844214.600	™2496031.100	1768206.700	234569.150	18062.783	25185.014	458.506

3	12:55:15	282651.610	T 12266882.000	T 249240430.000	T 3924614.500	1844944.100	T 2476127.400	1779537.900	235891.620	18170.900	25137.442	436.00
x		281326.270	T 12140181.000	T 246428700.000	T 3887688.100	1837310.200	TM 2477253.600	1766665.300	234307.560	18078.133	25038.628	430.33
σ		2715.423	T 211260.790	T 2784213.400	T 52340.871	12595.772	TM 18240.517	13708.445	1729.742	86.124	213.678	31.38
%RSD		0.965	T 1.740	T 1.130	T 1.346	0.686	TM 0.736	0.776	0.738	0.476	0.853	7.29

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	12:54:31	T 2640946.100	198636.680	T 5582860.000	780696.150	25229.081	383072.310	912388.210	T 2823546.200	1672437.500	1318111.900	T 1923825.40
2	12:54:53	T 2724399.700	202280.110	T 5810582.500	800325.060	26741.436	397857.710	936660.620	T 2903050.800	1703709.500	1338865.800	T 1954974.60
3	12:55:15	T 2743701.400	201450.150	T 5887430.200	800692.070	26320.767	398892.000	936502.070	T 2920431.700	1730389.500	1350880.600	T 1962325.50
x		T 2703015.700	200788.980	T 5760290.900	793904.430	26097.095	393274.010	928516.970	T 2882342.900	1702178.800	1335952.700	T 1947041.90
σ		T 54613.363	1909.582	T 158390.890	11440.175	780.594	8850.048	13968.138	T 51655.742	29006.309	16577.441	T 20439.20
%RSD		T 2.020	0.951	T 2.750	1.441	2.991	2.250	1.504	T 1.792	1.704	1.241	T 1.05

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:54:31	111622.540	T 5423635.000	T 25126419.000	120594.720	0.000	762805.640	353050.140
2	12:54:53	116455.440	T 5562131.600	T 25427508.000	122901.480	0.000	777983.630	356436.080
3	12:55:15	116606.490	T 5582765.400	T 25448156.000	123858.520	5.000	777119.690	357764.080
x		114894.820	T 5522844.000	T 25334028.000	122451.570	1.667	772636.320	355750.100
σ		2834.887	T 86534.711	T 180090.560	1677.771	2.887	8524.570	2430.684
%RSD		2.467	T 1.567	T 0.711	1.370	173.205	1.103	0.683

STD5 10/18/2016 12:57:15 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	12:57:36	149537.850	436694.580	162836.610	T 70124190.000	TM 21813302.000	T 199318310.000	TM 73561206.000	TM 7868592.900	163225.380	140777.040	TM
2	12:57:58	146309.390	441455.060	165134.040	T 70146845.000	TM 22091288.000	TM 205242630.000	TM 75426806.000	TM 8151008.600	162821.460	145941.180	TM
3	12:58:20	141316.580	M 439640.530	M 164719.980	T 70150361.000	T 21857618.000	T 205051010.000	TM 75478064.000	TM 8343393.200	165356.230	145567.940	TM
x		145721.270	M 439263.390	M 164230.210	T 70140466.000	TM 21920736.000	TM 203203980.000	TM 74822025.000	TM 8120998.200	163801.020	144095.390	TM
σ		4142.068	M 2402.543	M 1224.525	T 14204.258	TM 149355.350	TM 3366452.500	TM 1092202.200	TM 238818.510	1361.907	2879.822	
%RSD		2.842	M 0.547	M 0.746	T 0.020	TM 0.681	TM 1.657	TM 1.460	TM 2.941	0.831	1.999	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	
1	12:57:36	486812.250	TM 21535238.000	T 433385010.000	TM 6838647.000	TM 3526782.200	TM 4300189.900	TM 3346652.500	401981.920	29936.862	M 41079.564	
2	12:57:58	508196.560	TM 21891686.000	TM 441075480.000	TM 6899882.700	TM 3590488.700	TM 4403247.900	TM 3401164.900	M 405554.930	30360.628	M 41899.100	
3	12:58:20	512495.230	TM 22280361.000	T 445525290.000	TM 6939995.300	TM 3541173.200	TM 4368611.700	TM 3410045.900	407420.620	30671.196	M 41885.065	
x		502501.350	TM 21902428.000	TM 439995260.000	TM 6892841.700	TM 3552814.700	TM 4357349.800	TM 3385954.400	M 404985.820	30322.895	M 41621.243	
σ		13756.107	TM 372677.820	TM 6141803.400	TM 51039.744	TM 33410.671	TM 52443.890	TM 34324.903	M 2763.651	368.618	M 469.160	
%RSD		2.738	TM 1.702	TM 1.396	TM 0.740	TM 0.940	TM 1.204	TM 1.014	M 0.682	1.216	M 1.127	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	
1	12:57:36	TM 4730506.200	199699.270	TM 10142347.000	M 1371326.900	44469.246	684253.550	975252.430	T 5187494.400	TM 3352241.400	2347472.900	TI
2	12:57:58	TM 4818326.000	198565.850	TM 10352887.000	M 1377696.400	45677.507	692337.330	973546.930	T 5211218.000	TM 3406700.400	M 2411439.200	TI
3	12:58:20	TM 4849407.600	195904.630	TM 10452796.000	M 1397828.500	45331.565	695995.050	991574.510	T 5340923.200	TM 3447721.700	M 2439919.500	TI
x		TM 4799413.300	198056.580	TM 10316010.000	M 1382283.900	45159.440	690861.980	980124.620	T 5246545.200	TM 3402221.200	M 2399610.600	TI
σ		TM 61665.638	1947.904	TM 158475.520	M 13833.608	622.249	6008.175	9952.492	T 82589.973	TM 47897.466	M 47344.841	
%RSD		TM 1.285	0.984	TM 1.536	M 1.001	1.378	0.870	1.015	T 1.574	TM 1.408	M 1.973	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:57:36	M 244353.220	TM 9773706.600	TM 43993305.000	121027.840	0.000	M 1567693.000	M 747615.020
2	12:57:58	M 251275.000	TM 9975051.700	TM 44866075.000	121551.630	0.000	M 1594468.100	M 756471.520
3	12:58:20	M 251589.700	TM 9995743.000	TM 45369857.000	123163.400	0.000	M 1619085.200	M 776470.460
x		M 249072.640	TM 9914833.800	TM 44743079.000	121914.290	0.000	M 1593748.800	M 760185.670
σ		M 4090.165	TM 122656.820	TM 696469.540	1113.011	0.000	M 25703.613	M 14781.922
%RSD		M 1.642	TM 1.237	TM 1.557	0.913	0.000	M 1.613	M 1.945

ICV 10/18/2016 01:02:59 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:03:20	138795.530	44642.208	18725.513	T 7238363.900	T 2098021.500	T 19859261.000	T 6952550.100	684399.360	151646.780	13365.357	1269036.700	387416.000
2	13:03:42	132313.130	43767.392	17854.558	T 7311038.300	T 2117125.000	T 20335743.000	T 7007059.400	691764.260	152282.540	13460.433	1252487.500	385829.840
3	13:04:04	131083.470	44013.038	19095.933	T 7416488.100	T 2137359.900	T 19990199.000	T 6899649.100	691930.970	152464.180	12714.848	1285957.800	386085.660
x		134064.040	44140.879	18558.668	T 7321963.400	T 2117502.100	T 20061734.000	T 6953086.200	689364.860	152131.170	13180.213	1269160.700	386443.830
σ		4143.459	451.202	637.284	T 89563.215	T 19671.865	T 246164.380	T 53707.158	4301.058	429.212	405.812	16735.518	851.584
%RSD		3.091	1.022	3.434	T 1.223	T 0.929	T 1.227	T 0.772	0.624	0.282	3.079	1.319	0.220

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:03:20	50576.624	T 1999809.700	T 41661661.000	596942.120	319549.260	396035.070	318254.850	42596.364	3613.392	4841.203	401.005	4405.582
2	13:03:42	50481.335	T 2029799.100	T 42224401.000	607685.080	325834.210	406712.640	322276.020	42723.689	3564.381	4875.213	366.504	4430.589
3	13:04:04	50381.033	T 2002026.700	T 41638920.000	597605.260	323382.140	403121.960	321664.370	42575.310	3707.412	4999.250	365.504	4460.597
x		50479.664	T 2010545.200	T 41841661.000	600744.160	322921.870	401956.560	320731.750	42631.788	3628.395	4905.222	377.671	4432.256
σ		97.806	T 16711.205	T 331657.860	6020.158	3167.650	5433.347	2166.748	80.282	72.686	83.187	20.214	27.545

%RSD		0.194	T 0.831	T 0.793	1.002	0.981	1.352	0.676	0.188	2.003	1.696	5.352	0.621
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:03:20	405421.750	197908.090	411687.570	135145.720	4610.638	67812.677	881448.040	444822.850	293104.850	229516.020	289945.300	151949.520
2	13:03:42	408951.430	200306.490	422041.770	136375.680	4420.586	68641.057	867030.520	450266.120	298743.650	234394.210	295516.880	151424.770
3	13:04:04	409053.900	198798.600	429868.020	136491.620	4395.580	70403.386	889667.990	450117.180	296478.740	234893.670	294896.030	156400.410
x		407809.030	199004.390	421199.120	136004.340	4475.601	68952.373	879382.180	448402.050	296109.080	232934.630	293452.740	153258.230
σ		2068.076	1212.370	9119.469	745.843	117.612	1323.114	11459.254	3100.574	2837.518	2971.119	3053.352	2733.822
%RSD		0.507	0.609	2.165	0.548	2.628	1.919	1.303	0.691	0.958	1.276	1.040	1.784

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:03:20	39817.506	803937.860	T 4212015.900	118056.650	0.000	194766.410	112166.170
2	13:03:42	39622.041	816344.640	T 4294175.400	120171.680	0.000	206663.400	114557.350
3	13:04:04	41331.185	822522.540	T 4282777.900	120917.040	0.000	217368.290	115539.100
x		40256.911	814268.340	T 4262989.700	119715.120	0.000	206266.030	114087.540
σ		935.468	9464.714	T 44510.973	1483.847	0.000	11306.177	1734.848
%RSD		2.324	1.162	T 1.044	1.239	0.000	5.481	1.521

ICVL 10/18/2016 01:08:43 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:09:05	138533.360	197.501	7376.632	931524.420	30247.422	70629.339	719742.400	25279.157	160176.010	15.000	25599.645	9932.959
2	13:09:27	136829.370	202.501	7381.634	931630.090	28544.423	72100.618	725974.140	25229.081	159176.500	25.000	25699.799	10043.025
3	13:09:50	141135.050	185.001	7496.686	916462.900	29005.217	72406.942	724867.500	26010.280	159418.800	35.000	26085.397	9992.995
x		138832.600	195.001	7418.317	926539.140	29265.687	71712.300	723528.010	25506.173	159590.440	25.000	25794.947	9989.660
σ		2168.382	9.014	67.915	8726.439	880.872	950.296	3324.800	437.287	521.390	10.000	256.474	55.109
%RSD		1.562	4.623	0.916	0.942	3.010	1.325	0.460	1.714	0.327	40.000	0.994	0.552
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:09:05	5846.025	7661.761	769482.290	2980.266	1310.052	3625.394	12454.652	2105.133	534.009	587.510	376.504	2300.159
2	13:09:27	6096.115	7926.885	767865.210	2940.259	1315.052	3915.460	12329.559	2108.133	537.009	561.009	413.505	2335.164
3	13:09:50	6221.161	8056.947	753752.390	2935.258	1400.059	3740.420	12394.607	2129.136	510.008	603.011	402.505	2165.141
x		6054.434	7881.864	763699.960	2951.928	1341.721	3760.425	12392.939	2114.134	527.008	583.844	397.505	2266.821
σ		191.010	201.403	8652.713	24.669	50.584	146.064	62.563	13.078	14.799	21.239	19.000	89.780
%RSD		3.155	2.555	1.133	0.836	3.770	3.884	0.505	0.619	2.808	3.638	4.780	3.961
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:09:05	21033.264	208961.790	17684.377	3185.304	35.000	735.016	914045.420	4605.636	6391.225	5101.281	4880.715	155855.340
2	13:09:27	22980.833	210389.580	17484.166	3085.286	40.000	730.016	927160.920	5635.953	7041.487	5360.862	5180.805	158883.730
3	13:09:50	22229.815	207412.620	18174.904	3050.279	70.000	790.019	914911.020	5660.961	6951.449	5440.388	5070.771	155592.900
x		22081.304	208921.330	17781.149	3106.956	48.333	751.684	918705.790	5300.850	6794.721	5300.843	5044.097	156777.320
σ		982.241	1488.895	355.392	70.073	18.930	33.293	7335.141	602.203	352.325	177.342	151.813	1828.915
%RSD		4.448	0.713	1.999	2.255	39.165	4.429	0.798	11.360	5.185	3.346	3.010	1.167

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:09:05	3325.332	19271.135	8622.230	119114.130	0.000	14060.929	12894.986
2	13:09:27	3420.351	19551.461	8562.199	123516.000	0.000	13790.703	12259.507
3	13:09:50	3780.429	19456.350	8882.366	121400.540	0.000	13860.761	13090.139
x		3508.704	19426.315	8688.932	121343.550	0.000	13904.131	12748.211
σ		240.069	142.556	170.187	2201.487	0.000	140.236	434.332
%RSD		6.842	0.734	1.959	1.814	0.000	1.009	3.407

ICBIS 10/18/2016 01:19:56 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:20:18	146632.210	10.000	1220.045	262084.570	200.001	975.029	55261.463	310.003	164669.480	10.000	18239.975	1990.119
2	13:20:40	147096.270	20.000	1335.054	263943.570	180.001	985.029	53305.107	440.006	169053.040	15.000	18300.041	1910.109
3	13:21:01	146147.980	12.500	1270.048	264349.930	290.003	1075.035	52893.800	350.004	169618.750	15.000	18064.785	1715.088
x		146625.480	14.167	1275.049	263459.360	223.335	1011.697	53820.123	366.671	167780.420	13.333	18201.600	1871.772
σ		474.180	5.204	57.667	1207.810	58.595	55.079	1265.065	66.585	2708.961	2.887	122.233	141.466
%RSD		0.323	36.735	4.523	0.458	26.237	5.444	2.351	18.159	1.615	21.651	0.672	7.558

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:20:18	6186.148	370.004	215362.500	25.000	10.000	235.002	500.007	1484.066	486.007	395.005	413.005	2020.122
2	13:20:40	6151.135	435.006	209999.710	35.000	20.000	185.001	640.012	1560.073	471.007	422.005	430.006	2115.134
3	13:21:01	6481.260	420.005	216694.600	25.000	20.000	285.002	545.009	1529.070	455.006	398.505	412.005	2020.122
x		6272.848	408.338	214018.940	28.333	16.667	235.002	561.676	1524.403	470.673	405.172	418.339	2051.793
σ		181.337	34.035	3543.901	5.774	5.774	50.001	71.475	38.218	15.503	14.683	10.116	54.855
%RSD		2.891	8.335	1.656	20.377	34.641	21.277	12.725	2.507	3.294	3.624	2.418	2.674

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:20:18	35.000	215453.660	735.016	30.000	0.000	5.000	962004.810	2130.136	570.010	424.005	5.000	162306.470
2	13:20:40	35.000	220357.150	630.012	45.000	0.000	25.000	955697.000	2080.130	645.012	494.507	35.000	159519.760
3	13:21:01	30.000	220276.090	715.015	10.000	0.000	10.000	958342.610	2310.160	580.010	530.508	20.000	160024.570
x		33.333	218695.640	693.348	28.333	0.000	13.333	958681.470	2173.475	598.344	483.007	20.000	160616.930
σ		2.887	2807.921	55.755	17.559	0.000	10.408	3167.532	120.984	40.724	54.175	15.000	1484.795
%RSD		8.660	1.284	8.041	61.974	0.000	78.063	0.330	5.566	6.806	11.216	75.000	0.924

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:20:18	180.001	1400.059	580.010	124896.230	0.000	2665.213	25.000
2	13:20:40	185.001	1210.044	495.007	125530.970	0.000	2790.233	20.000
3	13:21:01	220.001	1280.049	495.007	124241.360	0.000	3025.275	15.000
x		195.001	1296.717	523.342	124889.520	0.000	2826.907	20.000
σ		21.795	96.098	49.076	644.831	0.000	182.811	5.000
%RSD		11.177	7.411	9.377	0.516	0.000	6.467	25.000

ICSA 10/18/2016 01:25:39 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:26:00	140398.880	15.000	1410.060	TM 148091860.000	T 15091946.000	T 139150940.000	TM 150875480.000	T 5523702.100	172619.320	295954.550	8262.047	4
2	13:26:22	139259.370	27.500	1300.051	TM 149596810.000	T 15429700.000	T 141805300.000	TM 152462340.000	T 5538551.500	170992.680	308748.520	8687.263	5
3	13:26:44	136073.220	37.500	1180.042	TM 148466700.000	T 15538276.000	T 143792970.000	TM 156068910.000	T 5750146.900	174721.050	311305.430	8867.358	4
x		138577.160	26.667	1296.717	TM 148718460.000	T 15353307.000	T 141583070.000	TM 153135580.000	T 5604133.500	172777.680	305336.170	8605.556	4
σ		2242.073	11.273	115.045	TM 783422.060	T 232764.730	T 2328978.400	TM 2661369.000	T 126669.090	1869.223	8224.691	310.817	
%RSD		1.618	42.274	8.872	TM 0.527	T 1.516	T 1.645	TM 1.738	T 2.260	1.082	2.694	3.612	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:26:00	3235.314	2290.157	T 299810530.000	370.004	315.003	1105.037	1885.107	1339.054	380.004	419.505	441.006	2
2	13:26:22	3420.351	2740.225	T 306286670.000	435.006	375.004	865.022	1985.118	1448.063	417.005	429.006	503.508	2
3	13:26:44	3350.337	3205.308	T 306875360.000	530.008	460.006	1225.045	2065.128	1443.063	409.005	440.506	495.507	2
x		3335.334	2745.230	T 304324190.000	445.006	383.338	1065.035	1978.451	1410.060	402.005	429.672	480.007	2

σ		93.426	457.596	T 3920008.700	80.470	72.860	183.314	90.196	61.544	19.468	10.516	34.012	
%RSD		2.801	16.669	T 1.288	18.083	19.007	17.212	4.559	4.365	4.843	2.447	7.086	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	13:26:00	3670.404	213184.770	T 3197006.800	475.007	435.006	645.012	940635.360	3715.414	810.020	647.013	165.001	1663
2	13:26:22	3640.398	215666.390	T 3324045.600	520.008	525.008	745.017	977911.660	4425.587	1010.031	745.517	195.001	1695
3	13:26:44	4015.484	221522.450	T 3419217.000	615.011	555.009	755.017	973610.480	5245.825	985.029	817.020	295.003	1733
x		3775.428	216791.200	T 3313423.100	536.675	505.008	715.015	964052.500	4462.276	935.026	736.516	218.335	169
σ		208.435	4281.136	T 111485.310	71.475	62.452	60.830	20393.548	765.865	108.978	85.360	68.070	3
%RSD		5.521	1.975	T 3.365	13.318	12.367	8.508	2.115	17.163	11.655	11.590	31.177	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:26:00	665.013	1580.075	2770.230	122276.910	0.000	66361.854	50.000
2	13:26:22	755.017	1470.065	3365.340	126226.190	0.000	55928.683	80.000
3	13:26:44	665.013	1945.113	4640.646	129027.520	0.000	45010.697	130.001
x		695.015	1665.084	3592.072	125843.540	0.000	55767.078	86.667
σ		51.964	248.672	955.599	3391.532	0.000	10676.496	40.415
%RSD		7.477	14.934	26.603	2.695	0.000	19.145	46.632

ICSAB 10/18/2016 01:31:21 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:31:43	129652.340	3780.429	55717.979	TM 146635410.000	T 14815285.000	T 135861020.000	TM 147434890.000	T 5455270.200	170517.850	297751.120	68947.318	1(
2	13:32:05	130710.560	3455.358	53676.295	TM 142966900.000	T 14746985.000	T 135866290.000	TM 146445680.000	T 5480157.700	173548.900	301696.120	67190.163	1(
3	13:32:26	129753.120	3425.352	54002.346	TM 143795850.000	T 14569041.000	T 135938450.000	TM 148010850.000	T 5486492.100	172447.550	301202.310	64886.061	1(
x		130038.670	3553.713	54465.540	TM 144466050.000	T 14710437.000	T 135888590.000	TM 147297140.000	T 5473973.300	172171.430	300216.520	67007.847	1(
σ		584.047	196.914	1096.827	TM 1923895.900	T 127125.350	T 43263.097	TM 791623.110	T 16504.104	1534.272	2149.324	2036.758	
%RSD		0.449	5.541	2.014	TM 1.332	T 0.864	T 0.032	TM 0.537	T 0.302	0.891	0.716	3.040	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:31:43	16087.761	88097.220	T 294625340.000	65689.198	14516.319	33984.613	27107.026	19761.709	4130.512	5544.922	472.507	
2	13:32:05	15767.455	87624.739	T 299480700.000	63184.542	13875.774	32526.709	26786.508	19886.858	4385.577	5679.968	465.006	
3	13:32:26	15962.641	86137.014	T 303106390.000	64303.811	13475.445	32687.022	26666.316	19762.710	4335.564	5722.482	463.006	
x		15939.285	87286.324	T 299070810.000	64392.517	13955.846	33066.115	26853.283	19803.759	4283.884	5649.124	466.840	
σ		161.425	1022.984	T 4255360.600	1254.682	525.036	799.472	227.817	71.967	135.158	92.711	5.008	
%RSD		1.013	1.172	T 1.423	1.948	3.762	2.418	0.848	0.363	3.155	1.641	1.073	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	13:31:43	4740.674	213174.640	T 3231953.200	71864.602	1535.071	18370.118	967023.090	4785.687	123027.400	96172.677	127596.560	17
2	13:32:05	3930.463	216304.580	T 3320385.100	71708.934	1775.094	18335.080	973970.640	4670.654	124941.560	98088.293	128841.080	17
3	13:32:26	3575.383	217763.390	T 3361705.000	72065.467	1595.076	18595.368	979670.570	4065.496	126860.980	98947.851	132146.810	17
x		4082.174	215747.540	T 3304681.100	71879.668	1635.081	18433.522	973554.770	4507.279	124943.320	97736.274	129528.150	17
σ		597.275	2344.544	T 66286.094	178.743	124.912	141.253	6333.991	386.895	1916.790	1420.681	2351.647	
%RSD		14.631	1.087	T 2.006	0.249	7.640	0.766	0.651	8.584	1.534	1.454	1.816	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:31:43	37246.573	218599.230	170341.060	127505.870	0.000	248052.260	137257.870
2	13:32:05	38113.529	221451.510	168714.640	130367.890	0.000	256960.710	142425.970
3	13:32:26	38614.681	224339.760	169290.430	128432.950	0.000	266798.490	144347.390
x		37991.594	221463.500	169448.710	128768.900	0.000	257270.490	141343.740
σ		692.157	2870.282	824.680	1460.284	0.000	9376.950	3666.567
%RSD		1.822	1.296	0.487	1.134	0.000	3.645	2.594

CCV 10/18/2016 01:37:05 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:37:27	122992.140	85895.774	30993.792	T 13388079.000	T 3975852.000	T 37479544.000	T 13230835.000	1318066.500	150910.140	24788.420	T 2621730.800	7465
2	13:37:49	125651.870	83370.499	31579.890	T 13264194.000	T 3986292.700	T 37062897.000	T 12996475.000	T 1393871.200	150678.050	25539.553	T 2594270.000	7402
3	13:38:10	123788.000	84006.179	31945.586	T 13165684.000	T 4010729.600	T 37111022.000	T 12811869.000	1326735.400	148095.050	25679.768	T 2612408.200	7420
x		124144.010	84424.151	31506.423	T 13272652.000	T 3990958.100	T 37217821.000	T 13013060.000	T 1346224.400	149894.410	25335.914	T 2609469.700	7429
σ		1365.135	1313.498	480.132	T 111438.670	T 17900.736	T 227932.170	T 209974.370	T 41490.373	1562.606	479.298	T 13964.216	32
%RSD		1.100	1.556	1.524	T 0.840	T 0.449	T 0.612	T 1.614	T 3.082	1.042	1.892	T 0.535	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:37:27	94064.698	T 3915668.700	T 80343549.000	1120901.300	600879.900	748048.850	612470.560	80528.074	6629.318	9328.110	385.004	665
2	13:37:49	91555.785	T 3860124.000	T 80123986.000	1127451.800	599434.220	732704.260	604139.620	80574.297	6577.298	9262.573	368.504	710
3	13:38:10	92405.455	T 3849751.400	T 79501131.000	1134031.400	602579.650	756011.330	614456.700	80510.992	6641.323	9171.022	410.505	684
x		92675.313	T 3875181.400	T 79989555.000	1127461.500	600964.590	745588.150	610355.630	80537.788	6615.980	9253.902	388.005	686
σ		1276.040	T 35444.579	T 437002.280	6565.060	1574.424	11846.778	5474.050	32.751	34.033	78.902	21.161	22

%RSD		1.377	T 0.915	T 0.546	0.582	0.262	1.589	0.897	0.041	0.514	0.853	5.454	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	13:37:27	830330.770	203049.380	1710428.200	276459.030	9132.501	139768.610	912451.540	858653.100	573432.930	452747.500	584673.510	15875
2	13:37:49	834217.850	203434.030	1763721.800	275854.130	8862.356	137217.540	895445.390	859252.850	576526.970	456010.170	584911.660	15963
3	13:38:10	833713.530	201591.850	1775449.400	273053.570	9132.501	138155.240	903387.230	865656.810	584994.490	457634.800	584652.810	15847
x		832754.050	202691.750	1749866.400	275122.240	9042.453	138380.470	903761.390	861187.590	578318.130	455464.160	584745.990	15895
σ		2113.712	971.767	34654.251	1816.871	155.969	1290.360	8509.248	3882.059	5985.283	2488.977	143.842	60
%RSD		0.254	0.479	1.980	0.660	1.725	0.932	0.942	0.451	1.035	0.546	0.025	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:37:27	37291.673	1628251.900	T 8474547.400	122528.750	0.000	205124.560	118107.000
2	13:37:49	38905.356	1659119.900	T 8601552.500	123576.440	0.000	221294.450	118857.310
3	13:38:10	38469.346	1661528.000	T 8576237.400	122438.090	0.000	232155.700	119421.320
x		38222.125	1649633.300	T 8550779.100	122847.760	0.000	219524.910	118795.210
σ		834.764	18555.912	T 67221.031	632.684	0.000	13602.174	659.355
%RSD		2.184	1.125	T 0.786	0.515	0.000	6.196	0.555

CCB 10/18/2016 01:42:49 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:43:10	129521.330	15.000	1125.038	242085.480	320.003	2165.141	54248.142	430.006	156208.620	35.000	12544.719	1320.052
2	13:43:32	128009.710	7.500	1240.046	241973.880	310.003	2520.191	55783.197	430.006	152292.630	35.000	12945.025	1310.052
3	13:43:54	126377.330	12.500	1020.031	247240.330	680.014	3985.477	59094.580	510.008	154654.220	45.000	12504.689	1310.052
x		127969.460	11.667	1128.372	243766.570	436.673	2890.269	56375.306	456.673	154385.160	38.333	12664.811	1313.385
σ		1572.386	3.819	110.045	3008.887	210.798	964.948	2476.880	46.189	1971.813	5.774	243.496	5.774
%RSD		1.229	32.733	9.753	1.234	48.274	33.386	4.394	10.114	1.277	15.061	1.923	0.440

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:43:10	4380.576	290.003	204021.140	25.000	25.000	180.001	485.007	1078.035	385.004	387.004	409.505	2055.127
2	13:43:32	4265.546	350.004	199856.130	60.000	15.000	230.002	540.009	1067.034	328.003	383.504	361.004	1905.109
3	13:43:54	4510.610	435.006	204952.460	40.000	25.000	165.001	490.007	1083.035	382.004	384.504	364.504	1910.109
x		4385.577	358.337	202943.250	41.667	21.667	191.668	505.008	1076.035	365.004	385.004	378.338	1956.782
σ		122.609	72.860	2713.769	17.559	5.774	34.035	30.415	8.186	32.079	1.803	27.048	85.206
%RSD		2.796	20.333	1.337	42.143	26.647	17.757	6.023	0.761	8.789	0.468	7.149	4.354

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:43:10	30.000	204830.980	3600.389	40.000	0.000	0.000	916990.780	3345.336	1020.031	722.516	30.000	156804.170
2	13:43:32	20.000	208708.650	3535.375	35.000	5.000	20.000	916272.860	3705.412	1005.030	801.519	25.000	154734.970
3	13:43:54	35.000	204780.370	3520.372	30.000	5.000	10.000	912831.520	3855.446	1070.034	847.522	35.000	158257.820
x		28.333	206106.670	3552.045	35.000	3.333	10.000	915365.060	3635.398	1031.699	790.519	30.000	156598.990
σ		7.638	2253.524	42.534	5.000	2.887	10.000	2223.271	262.163	34.036	63.225	5.000	1770.364
%RSD		26.956	1.093	1.197	14.286	86.603	100.000	0.243	7.211	3.299	7.998	16.667	1.131

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:43:10	210.001	2155.139	520.008	121914.270	0.000	2095.132	45.000
2	13:43:32	175.001	2015.122	585.010	123767.850	0.000	2310.160	20.000
3	13:43:54	215.001	1920.111	675.014	123979.420	0.000	1975.117	30.000
x		200.001	2030.124	593.344	123220.510	0.000	2126.803	31.667
σ		21.795	118.230	77.838	1136.177	0.000	169.752	12.583
%RSD		10.897	5.824	13.119	0.922	0.000	7.982	39.736

MB 200-110229/1-A 10/18/2016 01:48:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:48:52	139783.740	25.000	1125.038	410565.390	5911.048	58507.514	113384.370	3330.333	163740.400	215.001	14446.258	3060.281
2	13:49:14	141124.970	40.000	1190.043	422149.440	7521.697	75405.193	119829.230	3730.417	165224.940	190.001	15231.957	3465.360
3	13:49:36	140529.970	30.000	1275.049	415403.070	6771.375	62351.413	114391.220	3480.363	164507.900	155.001	14781.552	3265.320
x		140479.560	31.667	1196.710	416039.300	6734.707	65421.373	115868.270	3513.704	164491.080	186.668	14819.922	3263.654
σ		672.036	7.638	75.227	5818.175	805.950	8857.279	3467.032	202.115	742.415	30.139	394.252	202.545
%RSD		0.478	24.119	6.286	1.398	11.967	13.539	2.992	5.752	0.451	16.146	2.660	6.206

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:48:52	4870.712	3765.425	343621.120	640.012	355.004	515.008	825.020	1216.044	357.004	394.005	396.505	2005.121
2	13:49:14	5235.822	3885.453	375431.370	650.013	415.005	585.010	905.025	1196.043	412.005	370.004	415.505	1880.106
3	13:49:36	5035.761	3760.424	344738.850	570.010	315.003	540.009	985.029	1221.045	374.004	385.504	403.505	1960.115
x		5047.431	3803.767	354597.110	620.012	361.671	546.676	905.025	1211.044	381.004	383.171	405.172	1948.447
σ		182.835	70.786	18051.646	43.591	50.333	35.474	80.004	13.230	28.161	12.169	9.609	63.319
%RSD		3.622	1.861	5.091	7.031	13.917	6.489	8.840	1.092	7.391	3.176	2.372	3.250

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:48:52	395.005	218482.720	3440.355	90.000	10.000	25.000	949042.440	49493.379	745.017	556.509	210.001	161276.550
2	13:49:14	400.005	216669.270	3920.461	90.000	10.000	65.000	960713.430	50371.002	780.018	689.014	275.002	163336.460
3	13:49:36	385.004	222160.860	3250.317	100.000	5.000	65.000	965456.040	52046.137	855.022	674.514	220.001	165750.110
x		393.338	219104.280	3537.044	93.334	8.333	51.667	958403.970	50636.839	793.352	640.012	235.002	163454.370
σ		7.638	2798.061	345.376	5.774	2.887	23.094	8447.000	1296.976	56.202	72.678	35.001	2239.114
%RSD		1.942	1.277	9.765	6.186	34.641	44.698	0.881	2.561	7.084	11.356	14.894	1.370

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:48:52	240.002	1590.076	2175.142	124070.090	0.000	38253.850	100.000
2	13:49:14	245.002	1985.118	2815.238	129007.360	0.000	32095.875	130.001
3	13:49:36	275.002	1550.072	2295.158	127042.350	0.000	26836.589	75.000
x		253.335	1708.422	2428.513	126706.600	0.000	32395.438	101.667
σ		18.930	240.459	340.247	2485.702	0.000	5714.523	27.538
%RSD		7.472	14.075	14.011	1.962	0.000	17.640	27.086

LCS 200-110229/2-A 10/18/2016 01:54:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:54:35	134157.780	1462.564	54142.801	T 7839968.500	281771.900	643138.940	T 7250965.300	241476.750	159873.120	110.000	116410.120	83719.743
2	13:54:57	135175.960	1402.559	54734.729	T 7667745.200	277094.450	634652.760	T 7219211.000	239955.010	158419.340	95.000	112911.180	85910.851
3	13:55:18	127274.110	1505.068	52407.266	T 7513224.200	269460.810	627343.700	T 7100508.700	241740.530	152635.740	50.000	110968.190	84192.114
x		132202.620	1456.730	53761.599	T 7673646.000	276109.050	635045.130	T 7190228.300	241057.430	156976.070	85.000	113429.830	84607.569
σ		4298.466	51.503	1209.652	T 163452.070	6214.418	7904.929	T 79305.034	963.793	3828.470	31.225	2757.791	1153.122
%RSD		3.251	3.536	2.250	T 2.130	2.251	1.245	T 1.103	0.400	2.439	36.735	2.431	1.363

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:54:35	14196.043	64931.236	T 6221249.300	25484.469	10913.572	33082.802	93793.174	8627.232	1404.059	1912.110	380.004	3380.343
2	13:54:57	14080.946	66893.975	T 6173905.600	26055.351	10698.433	33022.683	96573.988	8734.288	1477.065	1885.607	360.504	3210.309
3	13:55:18	13570.523	65975.324	T 6141495.600	26561.148	11118.708	33643.923	96508.611	8552.194	1362.056	1879.106	358.504	3325.332
x		13949.170	65933.512	T 6178883.500	26033.656	10910.237	33249.802	95625.258	8637.905	1414.393	1892.274	366.337	3305.328

σ		332.930	982.037	T 40109.203	538.667	210.157	342.640	1586.967	91.515	58.197	17.483	11.878	86.764
%RSD		2.387	1.489	T 0.649	2.069	1.926	1.031	1.660	1.059	4.115	0.924	3.242	2.625
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:54:35	220473.680	203555.500	152211.890	30422.741	495.007	6766.373	913084.850	43125.723	48179.538	36847.688	49322.875	156541.720
2	13:54:57	224593.130	205408.020	155088.230	30452.796	490.007	6786.381	903534.920	43807.497	48535.568	37431.486	49799.288	159469.280
3	13:55:18	223103.320	203707.340	154321.160	30447.787	565.010	7106.515	906984.940	44128.342	48585.714	37677.540	48726.123	157571.360
x		222723.380	204223.620	153873.760	30441.108	516.675	6886.423	907868.240	43687.187	48433.607	37318.905	49282.762	157860.790
σ		2085.845	1028.527	1489.446	16.102	41.934	190.867	4835.851	512.023	221.454	426.227	537.706	1485.085
%RSD		0.937	0.504	0.968	0.053	8.116	2.772	0.533	1.172	0.457	1.142	1.091	0.941

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:54:35	68073.738	169588.440	65106.919	122397.790	5.000	213382.270	131138.900
2	13:54:57	70071.994	172629.420	65187.232	120947.260	0.000	224937.740	134974.340
3	13:55:18	69911.321	172432.400	64655.166	121370.320	0.000	231790.680	133144.710
x		69352.351	171550.090	64983.106	121571.790	1.667	223370.230	133085.980
σ		1110.222	1701.690	286.829	745.958	2.887	9303.771	1918.393
%RSD		1.601	0.992	0.441	0.614	173.205	4.165	1.441

200-35680-A-7-B 10/18/2016 01:59:56 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	14:00:18	157046.440	475.007	4085.501	┬1336420.100	┬2233879.300	┬89489474.000	┬7274028.200	1172662.100	224532.320	11899.246	247108.400	175681.06
2	14:00:39	152655.930	622.512	4130.512	┬1339630.400	┬2279423.800	┬92390938.000	┬7479781.100	1211895.000	229347.220	11538.993	260352.750	177808.44
3	14:01:01	157218.040	605.011	4395.580	┬1348649.700	┬2290769.600	┬93681173.000	┬7585856.900	1233754.700	229864.270	11594.031	260576.200	180724.56
x		155640.140	567.510	4203.864	┬1341566.700	┬2268024.200	┬91853862.000	┬7446555.400	1206103.900	227914.610	11677.424	256012.450	178071.35
σ		2585.825	80.586	167.549	┬6340.574	┬30109.599	┬2146840.800	┬158547.260	30955.258	2940.529	194.065	7711.943	2532.00
%RSD		1.661	14.200	3.986	┬0.473	┬1.328	┬2.337	┬2.129	2.567	1.290	1.662	3.012	1.42

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	14:00:18	24232.604	┬12730857.000	┬308389420.000	129813.590	64168.290	┬2193154.500	632025.700	13077.128	1307.051	1474.565	471.007	4845.70
2	14:00:39	24883.562	┬13326746.000	┬326212070.000	136758.800	66000.423	┬2213242.100	653329.010	13544.501	1342.054	1508.568	514.008	4820.69
3	14:01:01	26596.204	┬13180996.000	┬324074170.000	137877.960	67862.880	┬2273803.600	659905.650	13698.627	1355.055	1551.572	528.508	5250.82
x		25237.456	┬13079533.000	┬319558550.000	134816.780	66010.531	┬2226733.400	648420.120	13440.086	1334.720	1511.569	504.508	4972.40
σ		1220.894	┬310631.420	┬9731641.000	4368.879	1847.316	┬41983.105	14573.803	323.639	24.828	38.591	29.905	241.44
%RSD		4.838	┬2.375	┬3.045	3.241	2.799	┬1.885	2.248	2.408	1.860	2.553	5.928	4.85

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159T
1	14:00:18	404976.110	570499.800	10373.227	8021.930	345.004	4700.663	1050931.000	63114.277	3270.321	2489.686	362637.730	210906.05
2	14:00:39	419683.320	598372.050	10243.147	8542.189	495.007	4810.694	1074451.900	65498.449	3490.365	2682.716	372905.600	210176.93
3	14:01:01	425256.960	595284.380	10478.293	8347.090	475.007	5035.761	1084406.600	67245.385	3210.309	2705.720	381082.470	220245.69
x		416638.800	588052.080	10364.889	8303.736	438.339	4849.039	1069929.800	65286.037	3323.665	2626.041	372208.600	213776.22
σ		10477.599	15278.916	117.795	262.825	81.447	170.808	17189.870	2073.729	147.452	118.645	9242.106	5614.57
%RSD		2.515	2.598	1.136	3.165	18.581	3.523	1.607	3.176	4.436	4.518	2.483	2.62

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:00:18	1405.059	5991.077	1273212.900	140408.960	0.000	230553.700	94622.844
2	14:00:39	1325.053	6126.126	1317158.800	142627.680	0.000	225459.720	97308.240
3	14:01:01	1325.053	5971.069	1344059.300	143595.940	0.000	220357.150	97408.825
x		1351.722	6029.424	1311477.000	142210.860	0.000	225456.860	96446.636
σ		46.192	84.342	35763.331	1633.865	0.000	5098.273	1580.251
%RSD		3.417	1.399	2.727	1.149	0.000	2.261	1.638

200-35680-A-14-D 10/18/2016 02:05:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	14:06:00	158924.110	565.010	4615.639	┬1567437.300	┬2755944.200	┬102949920.000	┬8882890.100	┬1782690.200	249392.040	12884.979	267250.640	200893.
2	14:06:22	159873.120	587.510	4320.560	┬1573399.200	┬2754845.200	┬103266660.000	┬8822837.600	┬1801347.200	250579.650	13025.088	271681.420	203798.
3	14:06:44	157147.380	512.508	4255.543	┬1559763.200	┬2755718.000	┬103845190.000	┬8933224.800	┬1804635.500	250001.060	14256.094	278604.310	207129.
x		158648.210	555.009	4397.247	┬1566866.500	┬2755502.500	┬103353920.000	┬8879650.800	┬1796224.300	249990.910	13388.720	272512.130	203940.
σ		1383.657	38.488	191.906	┬6835.893	┬580.334	┬453967.640	┬55264.881	┬11835.609	593.872	754.428	5722.235	3120.
%RSD		0.872	6.935	4.364	┬0.436	┬0.021	┬0.439	┬0.622	┬0.659	0.238	5.635	2.100	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:06:00	27793.154	┬21521322.000	┬432101300.000	167184.330	75018.454	1948958.500	617174.400	16974.640	1252.047	1305.051	548.509	6181.
2	14:06:22	28339.073	┬21790098.000	┬437534250.000	165103.750	74958.184	1961948.200	617999.130	17060.728	1214.044	1328.553	559.009	5941.
3	14:06:44	27788.146	┬21970332.000	┬437416880.000	163780.790	75500.624	1966820.400	627867.900	17335.010	1198.043	1323.053	546.009	5846.
x		27973.458	┬21760584.000	┬435684140.000	165356.290	75159.087	1959242.400	621013.810	17123.459	1221.378	1318.886	551.176	5989.
σ		316.642	┬225955.340	┬3103383.400	1715.768	297.311	9233.263	5950.121	188.197	27.739	12.293	6.898	172.

%RSD		1.132	T 1.038	T 0.712	1.038	0.396	0.471	0.958	1.099	2.271	0.932	1.252	2.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	14:06:00	586247.380	637763.170	12224.481	7666.763	355.004	3335.334	1148236.300	62070.367	2990.268	2366.168	479623.260	220884.
2	14:06:22	588743.080	649399.840	12479.671	7276.588	380.004	3255.318	1151093.600	62562.201	3240.315	2408.174	487054.160	229702.
3	14:06:44	597154.530	645658.610	12219.478	7606.735	435.006	3385.344	1150975.900	62446.769	3070.283	2467.683	496769.690	230938.
x		590715.000	644273.870	12307.877	7516.695	390.005	3325.332	1150101.900	62359.779	3100.289	2414.008	487815.710	227175.
σ		5714.705	5940.631	148.799	210.094	40.928	65.587	1616.780	257.198	127.695	51.008	8598.543	5483.
%RSD		0.967	0.922	1.209	2.795	10.494	1.972	0.141	0.412	4.119	2.113	1.763	2.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:06:00	1325.053	6571.295	1156740.200	150799.140	0.000	216066.520	119265.200
2	14:06:22	1310.052	6791.383	1166844.300	149941.450	0.000	220863.790	120781.060
3	14:06:44	1180.042	6766.373	1178455.100	154613.850	0.000	221578.180	121989.820
x		1271.715	6709.684	1167346.500	151784.810	0.000	219502.830	120678.690
σ		79.745	120.499	10866.157	2487.267	0.000	2997.291	1365.188
%RSD		6.271	1.796	0.931	1.639	0.000	1.365	1.131

200-35736-A-1-A 10/18/2016 02:11:21 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	14:11:43	170719.900	1367.556	3785.430	T 2022011.500	T 4511880.900	T 249686140.000	T 17244743.000	T 1620869.800	311656.910	14561.358	614570.790	417
2	14:12:05	168477.260	1332.553	3600.389	T 2050475.900	T 4491969.300	T 250589950.000	T 17390854.000	T 1637692.200	315691.790	14371.193	619757.650	416
3	14:12:26	168790.400	1342.554	3570.382	T 2013664.800	T 4506256.500	T 247476640.000	T 17220585.000	1568104.100	317566.910	14746.521	631927.070	426
x		169329.190	1347.555	3652.067	T 2028717.400	T 4503368.900	T 249250910.000	T 17285394.000	T 1608888.700	314971.870	14559.691	622085.170	420
σ		1214.531	18.029	116.466	T 19300.026	T 10265.063	T 1601641.900	T 92126.219	T 36308.178	3020.057	187.669	8909.157	5
%RSD		0.717	1.338	3.189	T 0.951	T 0.228	T 0.643	T 0.533	T 2.257	0.959	1.289	1.432	
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	14:11:43	54910.305	T 27514773.000	TM 984701370.000	345014.470	130957.480	96056.007	401672.600	54157.849	1167.041	947.027	641.512	6
2	14:12:05	53540.861	T 28097458.000	TM 1008235600.000	347556.470	132887.670	96981.343	408813.100	54689.582	1152.040	987.529	651.013	6
3	14:12:26	56435.387	T 28407567.000	TM 1017319600.000	349945.690	134429.960	99973.947	410954.810	55698.916	1229.045	939.526	675.514	7
x		54962.184	T 28006599.000	TM 1003418900.000	347505.540	132758.370	97670.432	407146.840	54848.782	1182.709	958.028	656.013	6
σ		1447.960	T 453278.990	TM 16834127.000	2466.007	1739.848	2047.852	4860.269	782.771	40.824	25.823	17.543	
%RSD		2.634	T 1.618	TM 1.678	0.710	1.311	2.097	1.194	1.427	3.452	2.695	2.674	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	14:11:43	685305.480	1035115.800	17829.532	3480.363	305.003	1630.080	1190888.900	48445.306	2380.170	1744.591	985149.810	268
2	14:12:05	694067.090	1038507.400	18840.643	3275.322	365.004	1775.094	1189644.600	48756.211	2385.171	1840.102	1004070.300	265
3	14:12:26	709350.810	1062330.700	19100.939	3445.356	235.002	1765.093	1202467.500	49608.721	2400.173	1923.111	1032383.900	274
x		696241.130	1045318.000	18590.371	3400.347	301.669	1723.423	1194333.600	48936.746	2388.505	1835.935	1007201.400	269
σ		12169.197	14830.744	671.637	109.681	65.065	80.992	7071.555	602.352	10.410	89.333	23772.222	4
%RSD		1.748	1.419	3.613	3.226	21.568	4.699	0.592	1.231	0.436	4.866	2.360	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:11:43	790.019	12504.689	1095065.800	157732.870	0.000	454226.440	142446.140
2	14:12:05	845.021	12054.358	1109633.600	159741.870	0.000	469444.530	145749.510
3	14:12:26	745.017	12249.500	1137234.000	162235.790	0.000	477827.780	145598.200
x		793.352	12269.516	1113977.800	159903.510	0.000	467166.250	144597.950
σ		50.086	225.832	21417.124	2255.805	0.000	11964.479	1865.060
%RSD		6.313	1.841	1.923	1.411	0.000	2.561	1.290

200-35736-A-2-A 10/18/2016 02:17:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:17:26	169477.320	1215.044	6001.080	T 1976333.900	T 4561401.300	T 249722250.000	T 20590100.000	1245254.500	301319.400	38890.321	596745.260	41374
2	14:17:47	169972.320	1297.551	6186.148	T 1950774.100	T 4684394.100	T 252008800.000	T 20864768.000	1289377.400	307123.920	39050.695	613170.610	41409
3	14:18:09	165841.010	1225.045	6116.122	T 1934294.700	T 4622267.400	T 255294290.000	T 20596464.000	T 1374625.800	309466.660	38659.785	612486.120	42154
x		168430.220	1245.880	6101.117	T 1953800.900	T 4622687.600	T 252341780.000	T 20683777.000	T 1303085.900	305969.990	38866.934	607467.330	41646
σ		2255.935	45.027	93.442	T 21182.443	T 61497.487	T 2800908.000	T 156774.590	T 65766.062	4194.415	196.501	9291.891	440
%RSD		1.339	3.614	1.532	T 1.084	T 1.330	T 1.110	T 0.758	T 5.047	1.371	0.506	1.530	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:17:26	56385.218	T 21002990.000	T 659429230.000	263913.090	121687.620	92048.488	364988.210	20817.994	1356.055	825.020	645.012	619
2	14:17:47	56039.053	T 21291502.000	T 670937440.000	267164.280	124402.550	93411.037	371627.530	20892.086	1370.056	847.022	619.011	594
3	14:18:09	58005.765	T 21790118.000	T 673166500.000	265467.490	124568.790	94386.510	371693.990	21078.320	1343.054	820.520	643.512	600
x		56810.012	T 21361537.000	T 667844390.000	265514.950	123552.990	93282.012	369436.570	20929.467	1356.389	830.854	635.845	604
σ		1049.917	T 398210.270	T 7372476.500	1626.113	1617.592	1174.339	3852.543	134.129	13.504	14.181	14.598	13
%RSD		1.848	T 1.864	T 1.104	0.612	1.309	1.259	1.043	0.641	0.996	1.707	2.296	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	14:17:26	576940.930	954861.070	7786.819	2685.216	230.002	1395.058	1180808.200	47793.428	1990.119	1535.571	861609.990	258448
2	14:17:47	579766.480	960194.780	7576.722	2675.215	275.002	1430.061	1191811.500	49709.019	2070.129	1609.578	878403.450	258072
3	14:18:09	591927.960	954427.250	8046.942	2730.224	300.003	1430.061	1209886.600	51208.549	2145.138	1662.083	872926.650	257991
x		582878.460	956494.360	7803.494	2696.885	268.336	1418.394	1194168.800	49570.332	2068.462	1602.410	870980.030	258170
σ		7963.420	3211.988	235.553	29.302	35.474	20.209	14681.865	1711.779	77.523	63.560	8564.291	243
%RSD		1.366	0.336	3.019	1.087	13.220	1.425	1.229	3.453	3.748	3.967	0.983	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:17:26	870.023	11263.805	949148.210	154603.760	0.000	448935.950	117402.050
2	14:17:47	800.019	11899.246	970793.060	153856.900	5.000	455058.680	119874.550
3	14:18:09	825.020	11754.143	975903.950	155027.670	0.000	457288.490	120065.920
x		831.687	11639.065	965281.740	154496.110	1.667	453761.040	119114.170
σ		35.475	332.985	14203.815	592.764	2.887	4324.824	1485.830
%RSD		4.265	2.861	1.471	0.384	173.205	0.953	1.247

200-35736-A-3-A 10/18/2016 02:22:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:23:09	167780.280	1220.045	6981.462	T 2059984.400	T 4515210.300	T 264046200.000	T 21728430.000	1458784.800	305738.800	40930.197	616007.390	42213
2	14:23:31	167972.200	1100.036	7066.498	T 2094685.900	T 4560528.500	T 266191400.000	T 22665661.000	T 1625265.800	316690.470	41792.332	625423.520	42299
3	14:23:52	165992.510	1257.547	7106.515	T 2093982.700	T 4573264.200	T 269157530.000	T 22437735.000	T 1619069.800	306645.220	42945.258	626928.510	43274
x		167248.330	1192.543	7051.492	T 2082884.300	T 4549667.600	T 266465040.000	T 22277275.000	T 1567706.800	309691.500	41889.262	622786.470	42595
σ		1091.795	82.278	63.863	T 19835.034	T 30512.829	T 2566627.500	T 488785.190	T 94380.076	6078.207	1011.021	5918.885	589
%RSD		0.653	6.899	0.906	T 0.952	T 0.671	T 0.963	T 2.194	T 6.020	1.963	2.414	0.950	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:23:09	58005.765	T 17978947.000	T 549142810.000	237708.150	121566.740	96679.597	383890.830	16682.345	1550.072	914.525	657.013	677
2	14:23:31	58954.083	T 18607854.000	T 557793280.000	243191.410	123118.070	96377.857	387375.070	16798.461	1507.068	870.523	668.513	694
3	14:23:52	59817.150	T 18603856.000	T 559493630.000	243998.070	123782.970	96297.394	391771.050	17423.102	1514.069	891.024	655.013	656
x		58925.666	T 18396886.000	T 555476570.000	241632.550	122822.590	96451.616	387678.980	16967.969	1523.736	892.024	660.180	676

σ		906.027	T 361950.820	T 5550698.000	3422.473	1137.273	201.495	3948.891	398.409	23.074	22.018	7.286	19(
%RSD		1.538	T 1.967	T 0.999	1.416	0.926	0.209	1.019	2.348	1.514	2.468	1.104	2
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	14:23:09	646515.900	1005577.200	6001.080	2920.256	265.002	2060.127	1160460.900	47407.328	1670.084	1399.559	863578.020	259839
2	14:23:31	656822.370	1015046.100	5871.034	2910.254	270.002	1870.105	1183177.700	49428.186	1890.107	1463.564	885873.670	264024
3	14:23:52	656219.300	1018847.900	6061.102	2855.245	255.002	1910.109	1201072.100	49578.632	1830.101	1470.065	896489.320	265193
x		653185.860	1013157.100	5977.739	2895.251	263.335	1946.781	1181570.200	48804.715	1796.764	1444.396	881980.340	263019
σ		5784.215	6834.043	97.160	35.006	7.638	100.178	20353.245	1212.508	113.737	38.966	16797.529	2814
%RSD		0.886	0.675	1.625	1.209	2.900	5.146	1.723	2.484	6.330	2.698	1.905	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:23:09	835.021	11058.668	984508.530	150203.800	0.000	440982.800	154149.580
2	14:23:31	1075.035	11343.859	1015837.200	158399.150	0.000	457586.500	157793.440
3	14:23:52	780.018	11559.007	1020026.800	154876.270	0.000	458131.160	158283.050
x		896.691	11320.511	1006790.900	154493.070	0.000	452233.490	156742.030
σ		156.879	250.985	19410.435	4111.091	0.000	9747.184	2258.430
%RSD		17.495	2.217	1.928	2.661	0.000	2.155	1.441

200-35736-A-4-A 10/18/2016 02:28:30 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:28:52	174741.260	1030.032	6681.339	T 1917356.700	T 4199534.100	T 222706930.000	T 20463185.000	T 1954133.400	310546.470	44278.740	563580.250	376
2	14:29:14	173195.250	1085.035	6861.412	T 1916439.500	T 4226169.100	T 224569000.000	T 20349376.000	T 2011454.200	314479.190	44178.475	567463.750	380
3	14:29:36	168406.550	1017.531	7106.515	T 1881585.100	T 4196818.900	T 223691930.000	T 20892005.000	T 2004462.100	315365.700	45241.320	570898.100	379
x		172114.350	1044.199	6883.089	T 1905127.100	T 4207507.300	T 223655950.000	T 20568189.000	T 1990016.500	313463.790	44566.178	567314.030	379
σ		3302.786	35.913	213.415	T 20393.110	T 16218.447	T 931560.760	T 286148.380	T 31271.778	2565.060	586.835	3661.217	2
%RSD		1.919	3.439	3.101	T 1.070	T 0.385	T 0.417	T 1.391	T 1.571	0.818	1.317	0.645	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:28:52	50671.912	TM 59904025.000	TM 1022281500.000	212141.580	112135.970	85714.846	329760.300	50366.990	1193.043	886.524	611.511	7
2	14:29:14	52021.059	TM 60907453.000	TM 1032502800.000	215924.700	113248.450	87117.088	334717.660	50878.540	1211.044	843.521	620.512	6
3	14:29:36	51479.381	TM 60998649.000	TM 1051092100.000	219916.390	114109.300	89062.329	339043.800	50933.709	1226.045	894.024	614.011	7
x		51390.784	TM 60603376.000	TM 1035292100.000	215994.220	113164.570	87298.088	334507.250	50726.413	1210.044	874.690	615.345	7
σ		678.923	TM 607369.540	TM 14606429.000	3887.868	989.333	1681.066	4645.325	312.489	16.524	27.252	4.646	
%RSD		1.321	TM 1.002	TM 1.411	1.800	0.874	1.926	1.389	0.616	1.366	3.116	0.755	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	14:28:52	769880.040	966345.430	7751.802	3185.304	235.002	1170.041	1216868.500	50727.080	1655.082	1259.548	953295.130	258
2	14:29:14	777355.310	970274.110	7791.821	3295.326	225.002	985.029	1206128.400	52041.122	1620.079	1346.054	961359.110	255
3	14:29:36	785651.030	969998.750	7546.708	3245.316	225.002	1050.033	1229657.900	53154.627	1990.119	1399.059	983231.350	260
x		777628.790	968872.760	7696.777	3241.982	228.335	1068.368	1217551.600	51974.276	1755.093	1334.887	965961.860	258
σ		7889.050	2193.060	131.495	55.086	5.774	93.859	11779.637	1215.154	204.289	70.423	15489.780	2
%RSD		1.015	0.226	1.708	1.699	2.529	8.785	0.967	2.338	11.640	5.276	1.604	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:28:52	910.025	10518.318	1014026.800	156652.760	0.000	380806.260	75440.352
2	14:29:14	935.026	10338.205	1030279.500	157854.010	0.000	386085.660	76374.592
3	14:29:36	870.023	10968.608	1041139.200	159933.700	0.000	388766.920	76389.661
x		905.025	10608.377	1028481.800	158146.820	0.000	385219.610	76068.202
σ		32.789	324.707	13645.290	1659.954	0.000	4050.375	543.786
%RSD		3.623	3.061	1.327	1.050	0.000	1.051	0.715

200-35736-A-5-A 10/18/2016 02:34:14 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	14:34:36	167689.370	1002.530	5901.045	T 1714284.200	T 3827323.200	T 229583670.000	T 19411906.000	1090473.900	298143.040	39411.543	546541.670	369501.
2	14:34:57	167568.160	1040.032	6231.165	T 1752868.600	T 3980991.500	T 234687200.000	T 19719457.000	1102753.700	298061.600	40378.854	563487.190	378801.
3	14:35:19	162861.850	1060.034	6381.221	T 1726146.900	T 3910848.400	T 231260160.000	T 19661697.000	1099616.200	303366.030	39501.756	567329.280	379747.
x		166039.790	1034.199	6171.144	T 1731099.900	T 3906387.700	T 231843680.000	T 19597687.000	1097614.600	299856.890	39764.051	559119.380	376016.
σ		2752.846	29.192	245.651	T 19763.295	T 76931.201	T 2601323.200	T 163462.440	6379.899	3039.276	534.342	11060.718	5662.
%RSD		1.658	2.823	3.981	T 1.142	T 1.969	T 1.122	T 0.834	0.581	1.014	1.344	1.978	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:34:36	52146.450	T 16284812.000	T 540939250.000	219262.860	107254.000	81006.384	322179.170	16983.649	1367.056	798.019	597.511	5615.
2	14:34:57	52216.669	T 16361874.000	T 548059250.000	223812.740	108617.790	83679.542	326558.170	17373.050	1404.059	837.021	643.512	5650.
3	14:35:19	53881.957	T 16679821.000	T 552151110.000	226326.340	108371.190	84302.670	330754.710	16754.417	1337.054	842.021	611.011	5495.
x		52748.359	T 16442169.000	T 547049870.000	223133.980	108080.990	82996.199	326497.350	17037.039	1369.390	825.687	617.345	5587.
σ		982.353	T 209388.520	T 5673675.500	3580.326	726.734	1751.170	4288.094	312.753	33.564	24.091	23.646	81.

%RSD		1.862	T 1.273	T 1.037	1.605	0.672	2.110	1.313	1.836	2.451	2.918	3.830	1.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	14:34:36	493309.150	861199.570	7076.502	2795.234	245.002	1555.073	1179821.900	47497.584	1880.106	1397.559	782005.440	246032.
2	14:34:57	510098.360	884103.280	7256.579	2620.206	265.002	1510.068	1188765.000	48816.387	1910.109	1396.059	795213.920	247494.
3	14:35:19	502147.290	880215.390	7156.536	2555.196	320.003	1590.076	1194407.800	49006.945	1845.102	1512.069	804698.270	248519.
x		501851.600	875172.750	7163.206	2656.879	276.669	1551.739	1187664.900	48440.305	1878.439	1435.228	793972.540	247348.
σ		8398.508	12256.272	90.224	124.150	38.838	40.108	7354.935	821.961	32.536	66.550	11397.230	1249.
%RSD		1.674	1.400	1.260	4.673	14.038	2.585	0.619	1.697	1.732	4.637	1.435	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:34:36	780.018	10278.168	956427.140	151253.230	0.000	374986.520	120710.550
2	14:34:57	855.022	10503.309	979548.720	151101.860	0.000	381916.230	122271.870
3	14:35:19	855.022	10528.324	971841.590	149850.640	0.000	386945.250	122820.890
x		830.021	10436.600	969272.480	150735.240	0.000	381282.670	121934.440
σ		43.303	137.775	11772.935	769.817	0.000	6004.489	1094.885
%RSD		5.217	1.320	1.215	0.511	0.000	1.575	0.898

200-35736-A-5-A SD@5 10/18/2016 02:39:58 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:40:19	152877.950	215.001	1625.079	602040.680	742509.200	T 47474532.000	T 3995088.400	220954.990	235045.790	8337.085	129213.950	79991.500
2	14:40:41	153422.920	232.502	1990.119	594155.140	753213.840	T 48055163.000	T 4031359.500	224005.300	239234.760	7991.916	128815.890	79629.774
3	14:41:03	152827.490	182.501	1960.115	584119.590	750495.230	T 47482670.000	T 3981640.700	225779.000	231871.790	7686.772	128815.890	79594.606
x		153042.790	210.001	1858.438	593438.470	748739.420	T 47670788.000	T 4002696.200	223579.760	235384.120	8005.257	128948.580	79738.627
σ		330.172	25.373	202.650	8982.015	5564.123	T 332903.440	T 25717.652	2439.995	3693.126	325.361	229.822	219.699
%RSD		0.216	12.082	10.904	1.514	0.743	T 0.698	T 0.643	1.091	1.569	4.064	0.178	0.276

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:40:19	16217.887	T 3264908.100	T 112362780.000	44830.211	22510.191	17914.623	77771.028	5977.072	938.026	639.012	525.508	3390.345
2	14:40:41	15637.332	T 3323798.200	T 112042600.000	46595.042	22575.279	17584.271	79132.413	6085.111	963.028	602.011	558.509	3340.335
3	14:41:03	15967.645	T 3315761.500	T 114214210.000	46895.884	22635.360	17799.500	77971.963	5910.048	935.026	593.511	575.510	3210.309
x		15940.955	T 3301489.300	T 112873200.000	46107.046	22573.610	17766.131	78291.801	5990.743	945.360	611.511	553.176	3313.663
σ		291.196	T 31934.047	T 1172332.800	1115.955	62.601	167.685	734.891	88.329	15.374	24.193	25.424	92.934
%RSD		1.827	T 0.967	T 1.039	2.420	0.277	0.944	0.939	1.474	1.626	3.956	4.596	2.805

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:40:19	102564.620	404397.310	1470.065	595.011	30.000	365.004	1186437.600	10733.455	440.006	370.004	158641.440	203778.200
2	14:40:41	103782.120	405319.300	1785.096	595.011	70.000	260.002	1193849.900	10453.277	515.008	404.005	162028.790	201419.790
3	14:41:03	103852.560	406927.790	1535.071	675.014	60.000	295.003	1191983.100	10128.076	570.010	413.505	161756.160	204375.440
x		103399.760	405548.140	1596.744	621.678	53.333	306.670	1190756.900	10438.270	508.341	395.838	160808.800	203191.140
σ		724.115	1280.668	166.324	46.190	20.817	53.464	3855.266	302.968	65.258	22.872	1881.931	1562.834
%RSD		0.700	0.316	10.416	7.430	39.031	17.434	0.324	2.902	12.837	5.778	1.170	0.769

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:40:19	200.001	2430.177	189946.250	143242.920	0.000	58818.606	23696.834
2	14:40:41	200.001	2540.194	192631.810	142224.250	0.000	62045.274	23221.165
3	14:41:03	225.002	2400.173	193056.690	144059.920	0.000	64785.671	23761.927
x		208.335	2456.848	191878.250	143175.700	0.000	61883.184	23559.975
σ		14.434	73.722	1686.592	919.677	0.000	2986.833	295.218
%RSD		6.928	3.001	0.879	0.642	0.000	4.827	1.253

CCV 10/18/2016 02:45:42 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:46:03	132796.950	90321.578	32857.356	┬15270093.000	┬4512559.700	┬42780056.000	┬15302563.000	┬1594597.800	170234.980	29551.175	┬3038257.800	8543
2	14:46:25	125601.500	88041.929	33122.881	┬15088575.000	┬4474029.500	┬42532027.000	┬14804965.000	┬1588644.100	171841.340	29335.795	┬2986685.200	8397
3	14:46:46	127082.660	87338.241	32481.621	┬14836737.000	┬4399231.800	┬41971039.000	┬14600992.000	┬1526408.200	168659.080	28148.751	┬2924885.000	8249
x		128493.700	88567.249	32820.619	┬15065135.000	┬4461940.300	┬42427707.000	┬14902840.000	┬1569883.400	170245.130	29011.907	┬2983276.000	8396
σ		3799.596	1559.502	322.205	┬217626.760	┬57623.058	┬414474.430	┬360881.310	┬37768.109	1591.154	755.233	┬56763.249	147
%RSD		2.957	1.761	0.982	┬1.445	┬1.291	┬0.977	┬2.422	┬2.406	0.935	2.603	┬1.903	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:46:03	108114.530	┬4465118.600	┬92779041.000	1337350.600	719940.700	874316.750	692972.950	93877.648	7874.860	10598.869	440.506	79
2	14:46:25	105271.420	┬4322772.700	┬90985864.000	1318833.800	713549.460	884767.160	685196.120	93027.903	7627.745	10383.734	454.006	77
3	14:46:46	104677.690	┬4332828.600	┬90285177.000	1283126.600	691081.800	847419.480	672936.470	90023.472	7493.684	10160.096	419.005	75
x		106021.210	┬4373573.300	┬91350027.000	1313103.600	708190.660	868834.460	683701.850	92309.674	7665.430	10380.900	437.839	77
σ		1837.010	┬79439.810	┬1286196.500	27562.391	15157.393	19267.951	10101.473	2024.983	193.362	219.400	17.652	2
%RSD		1.733	┬1.816	┬1.408	2.099	2.140	2.218	1.477	2.194	2.523	2.113	4.032	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	14:46:03	935455.700	231831.240	1886787.700	309278.210	9667.803	149401.640	1004197.700	931223.270	618512.660	484420.040	624997.990	1679
2	14:46:25	918537.560	224755.300	1922152.000	304669.480	10153.092	149139.300	982627.240	924921.490	621391.840	484346.960	623731.860	1638
3	14:46:46	907011.320	221552.850	1921346.600	297445.740	9472.691	146173.200	970507.100	912662.640	611360.920	477546.390	618844.650	1616
x		920334.860	226046.460	1910095.400	303797.810	9764.529	148238.050	985777.330	922935.800	617088.470	482104.460	622524.840	1644
σ		14307.107	5259.433	20189.106	5964.199	350.361	1793.015	17064.752	9438.299	5164.892	3947.579	3249.399	31
%RSD		1.555	2.327	1.057	1.963	3.588	1.210	1.731	1.023	0.837	0.819	0.522	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:46:03	37923.096	1628141.900	┬8578184.700	123999.570	0.000	196617.960	114582.530
2	14:46:25	38594.635	1655478.100	┬8540813.400	121521.410	0.000	212804.960	118993.270
3	14:46:46	38855.239	1637027.300	┬8474891.100	123616.740	0.000	221897.390	115896.560
x		38457.657	1640215.800	┬8531296.400	123045.910	0.000	210440.100	116490.790
σ		480.931	13944.241	┬52300.338	1334.053	0.000	12804.561	2264.618
%RSD		1.251	0.850	┬0.613	1.084	0.000	6.085	1.944

CCB 10/18/2016 02:51:26 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:51:48	137857.790	12.500	735.016	276677.610	760.017	6976.460	63179.523	700.015	180663.900	40.000	17759.457	1795.097
2	14:52:09	135317.100	2.500	770.018	277989.160	430.006	6436.243	61623.714	490.007	181866.880	25.000	18229.964	1940.113
3	14:52:31	137303.250	22.500	840.021	276850.440	700.015	7246.575	61121.871	700.015	180037.180	15.000	18239.975	1920.111
x		136826.050	12.500	781.685	277172.410	630.013	6886.426	61975.036	630.012	180855.990	26.667	18076.466	1885.107
σ		1335.878	10.000	53.466	712.593	175.790	412.601	1072.871	121.248	929.853	12.583	274.583	78.590
%RSD		0.976	80.000	6.840	0.257	27.903	5.992	1.731	19.245	0.514	47.187	1.519	4.169

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:51:48	5876.036	810.020	267916.200	115.000	55.000	225.002	710.015	1691.086	531.008	430.006	440.506	2295.158
2	14:52:09	6411.233	885.024	267585.960	165.001	50.000	210.001	615.011	1694.086	547.009	456.506	437.506	2375.169
3	14:52:31	5936.057	695.014	266513.990	80.000	80.000	280.002	595.011	1774.094	557.009	418.505	446.006	2315.161
x		6074.442	796.686	267338.720	120.000	61.667	238.335	640.012	1719.755	545.009	435.006	441.339	2328.496

σ		293.209	95.704	733.074	42.720	16.073	36.856	61.443	47.083	13.115	19.488	4.311	41.639
%RSD		4.827	12.013	0.274	35.600	26.064	15.464	9.600	2.738	2.406	4.480	0.977	1.788
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:51:48	70.000	233331.960	3540.376	45.000	0.000	5.000	1018019.500	3405.348	865.022	646.513	70.000	163467.740
2	14:52:09	90.000	231425.660	3350.337	55.000	0.000	10.000	1024424.700	3830.440	985.029	734.516	40.000	164386.710
3	14:52:31	130.001	234721.260	3370.341	55.000	0.000	10.000	1023245.400	4060.495	995.030	739.016	70.000	169588.440
x		96.667	233159.630	3420.351	51.667	0.000	8.333	1021896.500	3765.427	948.360	706.682	60.000	165814.300
σ		30.551	1654.549	104.425	5.774	0.000	2.887	3408.970	332.377	72.346	52.157	17.321	3300.643
%RSD		31.604	0.710	3.053	11.175	0.000	34.641	0.334	8.827	7.629	7.380	28.868	1.991

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:51:48	240.002	1670.084	700.015	127878.710	0.000	2085.130	10.000
2	14:52:09	250.002	1555.073	775.018	124563.750	0.000	2040.125	35.000
3	14:52:31	205.001	1585.075	985.029	126508.320	0.000	2060.127	45.000
x		231.668	1603.411	820.021	126316.930	0.000	2061.794	30.000
σ		23.629	59.658	147.740	1665.748	0.000	22.549	18.028
%RSD		10.200	3.721	18.017	1.319	0.000	1.094	60.093

CCVL 10/18/2016 02:57:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:57:32	143131.980	217.501	6676.337	T 1143559.300	32952.544	85559.048	826990.700	28945.113	184040.550	15.000	33102.841	12319.551
2	14:57:55	141881.350	207.501	6346.208	T 1128241.700	33233.100	83619.240	816344.640	28564.457	185698.790	15.000	32236.145	11398.897
3	14:58:18	136597.480	190.001	6531.279	T 1126407.300	33193.020	87046.722	811129.020	29235.619	184657.310	25.000	32286.242	11754.143
x		140536.940	205.001	6517.941	T 1132736.100	33126.222	85408.337	818154.790	28915.063	184798.880	18.333	32541.743	11824.197
σ		3468.499	13.920	165.468	T 9417.933	151.738	1718.704	8084.288	336.589	838.137	5.774	486.571	464.308
%RSD		2.468	6.790	2.539	T 0.831	0.458	2.012	0.988	1.164	0.454	31.492	1.495	3.927

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:57:32	8177.005	9102.485	912757.640	3460.359	1460.064	4405.582	13600.547	2882.249	756.017	693.014	480.007	2640.209
2	14:57:55	8337.085	9397.649	902923.060	3555.379	1610.078	4200.529	13995.874	2962.263	833.021	683.514	475.007	2515.190
3	14:58:18	8021.930	9557.740	891997.690	3270.321	1405.059	4395.580	13715.641	2849.244	769.018	633.012	461.006	2365.168
x		8178.673	9352.624	902559.460	3428.686	1491.734	4333.897	13770.687	2897.919	786.019	669.847	472.007	2506.856
σ		157.584	230.943	10384.749	145.145	106.115	115.608	203.331	58.116	41.221	32.252	9.849	137.710
%RSD		1.927	2.469	1.151	4.233	7.114	2.668	1.477	2.005	5.244	4.815	2.087	5.493

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:57:32	25274.149	238798.570	17604.292	3480.363	85.000	905.025	1044047.900	1590.076	5570.931	4478.101	5545.923	169234.870
2	14:57:55	25369.293	238950.730	17584.271	3805.434	60.000	970.028	1032415.800	1955.115	6021.087	4508.110	5485.903	167234.840
3	14:58:18	24758.376	236496.090	17924.634	3465.360	50.000	750.017	1047611.500	1950.114	6006.082	4566.626	5330.852	166962.120
x		25133.939	238081.800	17704.399	3583.719	65.000	875.023	1041358.400	1831.768	5866.033	4517.612	5454.226	167810.610
σ		328.708	1375.369	190.991	192.157	18.028	113.032	7946.816	209.327	255.676	45.021	110.979	1240.962
%RSD		1.308	0.578	1.079	5.362	27.735	12.918	0.763	11.428	4.359	0.997	2.035	0.740

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:57:32	3090.287	17749.446	8106.971	127808.180	0.000	10758.471	12304.540
2	14:57:55	3160.300	17369.046	8812.329	127798.100	0.000	10778.484	12899.990
3	14:58:18	3390.345	18780.575	8802.324	130075.620	0.000	11208.768	13220.241
x		3213.644	17966.356	8573.875	128560.630	0.000	10915.241	12808.257
σ		156.981	730.336	404.381	1312.026	0.000	254.399	464.692
%RSD		4.885	4.065	4.716	1.021	0.000	2.331	3.628

200-35736-A-5-A PDS 10/18/2016 03:02:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:03:20	168174.220	2580.200	65915.087	T 10411731.000	T 3979569.300	T 216308370.000	T 26994751.000	T 1364207.000	277165.620	35402.560	621588.990	4336
2	15:03:41	166699.510	2620.206	66698.193	T 10826009.000	T 4104533.800	T 221269480.000	T 27446087.000	1300288.100	282504.140	36154.171	648069.530	4542
3	15:04:03	165376.430	2582.700	67245.385	T 10612358.000	T 4118142.200	T 223407230.000	T 27686708.000	1330055.000	282036.310	36519.967	653022.330	4475
x		166750.050	2594.369	66619.555	T 10616699.000	T 4067415.100	T 220328360.000	T 27375849.000	T 1331516.700	280568.690	36025.566	640893.620	4451
σ		1399.578	22.411	668.627	T 207172.970	T 76380.417	T 3641802.000	T 351284.730	T 31984.470	2956.414	569.696	16900.709	105
%RSD		0.839	0.864	1.004	T 1.951	T 1.878	T 1.653	T 1.283	T 2.402	1.054	1.581	2.637	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:03:20	60359.099	T 14890155.000	T 504964680.000	234163.500	109815.600	111838.980	398364.610	24050.340	2523.191	2316.661	544.009	65
2	15:03:41	62532.088	T 15335642.000	T 508308370.000	233058.170	110409.500	115765.660	407896.030	24773.398	2674.215	2371.669	621.512	70
3	15:04:03	61924.827	T 15446316.000	T 521586840.000	236364.240	113188.050	117452.400	412533.090	25538.552	2593.202	2452.180	599.511	69
x		61605.338	T 15224038.000	T 511619960.000	234528.640	111137.710	115019.010	406264.580	24787.430	2596.869	2380.170	588.344	68
σ		1121.171	T 294398.030	T 8791987.900	1683.009	1800.299	2880.229	7223.762	744.205	75.579	68.158	39.940	2

%RSD		1.820	₸1.934	₸1.718	0.718	1.620	2.504	1.778	3.002	2.910	2.864	6.789	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	15:03:20	701540.430	781974.020	181821.390	35242.221	685.014	8507.171	1096863.400	43742.327	53696.360	41011.897	746088.860	2277(
2	15:03:41	722967.590	802978.220	186669.540	36068.987	810.020	8982.420	1101590.400	44760.023	54007.362	42275.549	777842.250	2308(
3	15:04:03	731330.870	814507.970	189182.640	36053.954	575.010	8982.420	1120949.400	46254.094	55482.195	42584.835	786672.560	2354(
x		718612.960	799820.070	185891.190	35788.388	690.015	8824.003	1106467.800	44918.815	54395.306	41957.427	770201.230	2313(
σ		15365.208	16495.301	3741.842	473.054	117.585	274.385	12762.245	1263.390	954.032	833.327	21343.574	39(
%RSD		2.138	2.062	2.013	1.322	17.041	3.110	1.153	2.813	1.754	1.986	2.771	
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	15:03:20	35703.201	182291.480	926807.030	140590.480	0.000	654384.220	248859.160					
2	15:03:41	36364.628	190001.880	957453.640	143858.190	0.000	656598.810	251807.960					
3	15:04:03	36760.495	193835.650	977991.120	146178.240	0.000	651572.200	259179.670					
x		36276.108	188709.670	954083.930	143542.300	0.000	654185.080	253282.260					
σ		534.177	5879.567	25757.892	2807.243	0.000	2519.216	5315.868					
%RSD		1.473	3.116	2.700	1.956	0.000	0.385	2.099					

200-35736-A-5-I MS 10/18/2016 03:08:42 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	15:09:04	162579.110	2557.696	54493.942	₸10750644.000	₸3751135.600	₸196882560.000	₸24092825.000	1311140.900	276494.610	31124.034	615094.590	4229(
2	15:09:26	165719.820	2517.690	54172.898	₸10894311.000	₸3808510.700	₸199950580.000	₸24791591.000	₸1422600.800	281365.110	30337.586	616935.800	4276(
3	15:09:48	163356.660	2647.710	55356.779	₸11072038.000	₸3794999.200	₸199286700.000	₸24452251.000	1329352.100	283500.850	31640.004	632851.160	4393(
x		163885.190	2574.366	54674.540	₸10905664.000	₸3784881.800	₸198706610.000	₸24445556.000	₸1354364.600	280453.520	31033.875	621627.180	4299(
σ		1635.702	66.594	612.254	₸160997.450	₸29995.784	₸1614173.400	₸349431.000	₸59791.673	3590.972	655.873	9763.743	84(
%RSD		0.998	2.587	1.120	₸1.476	₸0.793	₸0.812	₸1.429	₸4.415	1.280	2.113	1.571	
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	15:09:04	58447.303	₸15431370.000	₸507856450.000	231760.260	106126.810	111909.450	397468.590	26426.935	2714.221	2437.678	578.510	69(
2	15:09:26	59470.915	₸15824222.000	₸520904570.000	237337.930	109538.780	115941.880	405734.220	26644.281	2698.218	2427.677	583.510	685
3	15:09:48	60148.339	₸15829092.000	₸527007870.000	243830.650	110454.800	117517.860	410119.610	26750.450	2535.193	2403.673	579.010	679
x		59355.519	₸15694895.000	₸518589630.000	237642.950	108706.800	115123.060	404440.810	26607.222	2649.211	2423.010	580.343	685
σ		856.369	₸228231.670	₸9783323.400	6040.974	2280.792	2892.471	6423.922	164.911	99.066	17.476	2.754	(
%RSD		1.443	₸1.454	₸1.887	2.542	2.098	2.513	1.588	0.620	3.739	0.721	0.475	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	15:09:04	716345.660	774077.930	181558.550	38088.472	685.014	9197.537	1107546.400	49413.141	16207.877	12365.085	716491.740	2284(
2	15:09:26	721495.830	783890.990	188545.480	38303.965	690.014	9222.551	1137025.500	50676.928	16393.058	12869.467	729524.220	2331(
3	15:09:48	730605.050	789716.570	188580.880	38835.193	825.020	9227.554	1144202.500	50300.791	16353.019	12972.046	745696.890	2360(
x		722815.510	782561.830	186228.300	38409.210	733.350	9215.881	1129591.500	50130.287	16317.985	12735.533	730570.950	2325(
σ		7220.718	7903.591	4044.166	384.324	79.429	16.082	19425.939	648.917	97.435	324.891	14630.685	381
%RSD		0.999	1.010	2.172	1.001	10.831	0.174	1.720	1.294	0.597	2.551	2.003	
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	15:09:04	30583.034	150148.300	924435.620	142143.570	5.000	599993.820	248316.150					
2	15:09:26	31835.376	154164.720	946313.650	146833.970	0.000	598833.180	256371.740					
3	15:09:48	31710.137	152509.600	950364.680	144523.910	0.000	613466.190	263115.630					
x		31376.182	152274.210	940371.320	144500.480	1.667	604097.730	255934.510					
σ		689.735	2018.529	13948.568	2345.288	2.887	8134.054	7409.422					
%RSD		2.198	1.326	1.483	1.623	173.205	1.346	2.895					

200-35736-A-5-J MSD 10/18/2016 03:14:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:14:47	166992.420	2715.221	54955.454	┬11113466.000	┬4234864.200	┬227376100.000	┬27425624.000	┬1534819.400	290693.160	38564.565	683123.590	4685
2	15:15:09	163326.360	2705.220	56932.072	┬11201305.000	┬4335036.300	┬233220400.000	┬27599589.000	┬1570333.300	295435.460	39366.437	703078.240	4788
3	15:15:31	164073.650	2695.218	57413.720	┬11283029.000	┬4447491.500	┬236415990.000	┬27983446.000	┬1578259.900	291934.580	38083.461	700946.200	4851
x		164797.480	2705.220	56433.749	┬11199266.000	┬4339130.700	┬232337500.000	┬27669553.000	┬1561137.600	292687.730	38671.488	695716.010	4775
σ		1937.253	10.002	1302.694	┬84800.076	┬106372.750	┬4584160.500	┬285416.470	┬23134.231	2459.225	648.137	10957.334	83
%RSD		1.176	0.370	2.308	┬0.757	┬2.451	┬1.973	┬1.032	┬1.482	0.840	1.676	1.575	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:14:47	64188.367	┬16501745.000	┬551273120.000	255965.570	118867.380	123601.630	426841.710	27835.225	2633.208	2519.691	606.011	74
2	15:15:09	66135.959	┬17098505.000	┬562828400.000	262622.950	121682.580	126120.390	434480.330	27992.488	2716.221	2478.684	613.011	74
3	15:15:31	66386.954	┬17395806.000	┬573078470.000	260484.790	121813.540	125918.880	438878.330	27985.476	2763.229	2499.187	598.011	74
x		65570.427	┬16998686.000	┬562393330.000	259691.100	120787.830	125213.630	433400.120	27937.729	2704.220	2499.187	605.678	74
σ		1203.460	┬455312.220	┬10909184.000	3398.914	1664.451	1399.668	6090.584	88.841	65.836	20.503	7.506	
%RSD		1.835	┬2.679	┬1.940	1.309	1.378	1.118	1.405	0.318	2.435	0.820	1.239	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	15:14:47	770654.640	838421.080	180032.120	37447.021	675.014	9457.683	1130150.700	49944.722	15932.612	12301.038	812167.820	24006
2	15:15:09	783781.000	852593.600	183216.540	38158.632	760.017	9817.891	1132438.400	51168.426	16002.679	12429.133	828366.560	23967
3	15:15:31	792724.430	859221.290	185759.460	37707.608	785.018	9727.838	1156424.300	52723.261	16117.790	12473.666	834280.890	23818
x		782386.690	850078.660	183002.710	37771.087	740.016	9667.804	1139671.100	51278.803	16017.693	12401.279	824938.420	23930
σ		11100.768	10625.716	2869.650	360.028	57.665	187.458	14553.704	1392.554	93.498	89.621	11448.191	98
%RSD		1.419	1.250	1.568	0.953	7.792	1.939	1.277	2.716	0.584	0.723	1.388	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:14:47	28163.776	148781.120	1016591.200	146723.000	0.000	631579.250	260474.630
2	15:15:09	29631.317	149800.190	1031496.400	148549.070	0.000	643887.010	265482.730
3	15:15:31	29526.131	149759.830	1039554.700	149063.630	0.000	649171.180	273897.250
x		29107.075	149447.050	1029214.100	148111.900	0.000	641545.810	266618.200
σ		818.612	577.061	11650.665	1230.031	0.000	9026.624	6782.968
%RSD		2.812	0.386	1.132	0.830	0.000	1.407	2.544

200-35736-A-6-A 10/18/2016 03:20:08 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:20:29	169426.810	1307.551	7221.564	┬2144766.100	┬4952489.300	┬298015510.000	┬24147608.000	┬1749426.200	314662.600	30778.393	619783.590	45153
2	15:20:52	168992.430	1250.047	7201.556	┬2136939.200	┬5007213.900	┬292713660.000	┬23919956.000	┬1764794.800	316303.220	30658.172	622330.930	45586
3	15:21:13	165194.640	1432.562	7226.566	┬2181852.400	┬5047069.400	┬300901550.000	┬24389427.000	1681235.000	316333.790	30442.778	629674.160	46440
x		167871.290	1330.053	7216.562	┬2154519.200	┬5002257.500	┬297210240.000	┬24152330.000	┬1731818.700	315766.540	30626.447	623929.560	45726
σ		2328.202	93.315	13.234	┬23992.526	┬47484.411	┬4152917.800	┬234771.100	┬44475.589	956.160	170.042	5135.421	654
%RSD		1.387	7.016	0.183	┬1.114	┬0.949	┬1.397	┬0.972	┬2.568	0.303	0.555	0.823	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:20:29	62818.161	┬10926800.000	┬574807810.000	244946.840	129647.300	107223.800	410068.380	13737.659	1710.088	922.526	669.513	680
2	15:20:52	63681.428	┬11284516.000	┬591350130.000	244982.350	129012.400	107399.930	419057.880	13741.663	1608.078	889.024	705.015	702
3	15:21:13	63596.103	┬11473301.000	┬600227800.000	246930.790	131148.980	107883.040	418268.410	14056.925	1676.084	871.523	688.014	706
x		63365.231	┬11228206.000	┬588795250.000	245620.000	129936.230	107502.260	415798.220	13845.416	1664.750	894.357	687.514	696

σ		475.693	T 277567.630	T 12901147.000	1135.323	1097.202	341.321	4977.867	183.184	51.941	25.916	17.756	141
%RSD		0.751	T 2.472	T 2.191	0.462	0.844	0.318	1.197	1.323	3.120	2.898	2.583	2
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	15:20:29	691321.440	1101633.100	4930.729	2950.261	265.002	2040.125	1135314.500	45632.384	1175.041	1022.531	839188.280	260682
2	15:20:52	709382.100	1107791.900	4485.604	3045.278	210.001	2245.151	1137250.000	45898.112	1445.063	1000.030	848145.020	259900
3	15:21:13	706508.840	1112201.500	4695.661	2980.266	330.003	2085.130	1149777.300	47016.222	1430.061	1056.534	868341.180	260134
x		702404.130	1107208.900	4703.998	2991.935	268.336	2123.469	1140780.600	46182.240	1350.055	1026.365	851891.500	260239
σ		9704.811	5308.283	222.680	48.571	60.070	107.756	7851.193	734.369	151.752	28.446	14933.184	401
%RSD		1.382	0.479	4.734	1.623	22.386	5.075	0.688	1.590	11.240	2.772	1.753	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:20:29	825.020	12409.618	881769.390	147166.890	0.000	434490.590	183383.360
2	15:20:52	765.018	12659.806	906357.130	149679.110	0.000	444140.000	189212.980
3	15:21:13	845.021	11889.239	927514.820	149800.190	5.000	447338.860	189880.510
x		811.686	12319.555	905213.780	148882.060	1.667	441989.820	187492.290
σ		41.635	393.099	22894.139	1486.619	2.887	6688.571	3574.050
%RSD		5.129	3.191	2.529	0.999	173.205	1.513	1.906

200-35736-A-7-A 10/18/2016 03:25:50 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:26:12	166295.510	1087.536	6606.309	T 1786347.100	T 4024855.200	T 223230350.000	T 18699521.000	T 1438557.800	298764.010	30798.430	552705.010	370942
2	15:26:33	163760.590	1115.037	6341.206	T 1817135.100	T 4087596.100	T 224535600.000	T 18610109.000	T 1460676.200	300952.870	30357.622	557935.010	381113
3	15:26:55	168517.660	1125.038	6781.379	T 1808268.700	T 4054819.500	T 225259080.000	T 18732541.000	1352616.800	299975.480	31209.193	562360.060	382381
x		166191.250	1109.204	6576.298	T 1803917.000	T 4055756.900	T 224341680.000	T 18680724.000	T 1417283.600	299897.450	30788.415	557666.690	378145
σ		2380.247	19.420	221.616	T 15848.611	T 31380.944	T 1028173.700	T 63343.483	T 57084.619	1096.512	425.874	4833.116	6270
%RSD		1.432	1.751	3.370	T 0.879	T 0.774	T 0.458	T 0.339	T 4.028	0.366	1.383	0.867	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:26:12	51148.364	T 23603538.000	T 752310020.000	235279.050	108149.760	84704.701	366996.590	29140.453	1324.053	886.024	606.011	5921
2	15:26:33	51544.582	T 23936015.000	T 774488480.000	243181.260	110862.490	86398.361	370911.850	28985.182	1382.057	873.523	645.513	6041
3	15:26:55	50767.202	T 23796856.000	T 771401770.000	241649.220	107203.670	85046.435	369639.030	29313.756	1376.057	835.521	626.012	6321
x		51153.383	T 23778803.000	T 766066760.000	240036.510	108738.640	85383.166	369182.490	29146.464	1360.722	865.022	625.845	6094
σ		388.715	T 166971.980	T 12013231.000	4190.690	1899.165	895.635	1997.155	164.369	31.898	26.302	19.751	205
%RSD		0.760	T 0.702	T 1.568	1.746	1.747	1.049	0.541	0.564	2.344	3.041	3.156	3

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	15:26:12	565783.030	893283.910	8387.110	2680.215	205.001	1525.070	1175416.300	47913.773	1855.103	1356.055	765217.510	246590
2	15:26:33	572118.910	914573.220	8452.143	2795.234	240.002	1545.072	1160203.900	47116.505	1810.098	1466.565	760592.880	240675
3	15:26:55	583524.270	921151.040	8557.196	2505.188	295.003	1540.071	1188625.600	47472.513	1925.111	1454.564	775323.890	248823
x		573808.740	909669.390	8465.483	2660.213	246.669	1536.738	1174748.600	47500.930	1863.438	1425.728	767044.760	245363
σ		8990.526	14566.399	85.824	146.054	45.370	10.409	14222.582	399.393	57.958	60.636	7533.578	4210
%RSD		1.567	1.601	1.014	5.490	18.393	0.677	1.211	0.841	3.110	4.253	0.982	1

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:26:12	865.022	10333.202	1078032.400	147530.080	0.000	370676.700	83759.944
2	15:26:33	725.016	10463.283	1093412.400	149124.170	0.000	377635.330	87172.376
3	15:26:55	845.021	10318.193	1099899.000	149093.900	0.000	381747.430	87287.979
x		811.687	10371.560	1090447.900	148582.720	0.000	376686.490	86073.433
σ		75.722	79.789	11230.691	911.738	0.000	5596.024	2004.374
%RSD		9.329	0.769	1.030	0.614	0.000	1.486	2.329

200-35736-A-8-A 10/18/2016 03:31:32 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:31:54	167133.830	1372.556	5450.891	T 1587860.700	T 3210225.700	T 193905990.000	T 15335755.000	1219576.000	295069.050	26556.140	541000.210	33113
2	15:32:16	165972.310	1345.054	5976.071	T 1603239.400	T 3215462.200	T 192460390.000	T 15341298.000	1232722.300	291100.170	27092.001	547982.860	33798
3	15:32:37	161599.650	1397.559	5886.039	T 1595718.200	T 3229167.600	T 193192240.000	T 15274881.000	1240735.400	294376.980	27472.624	549517.150	34034
x		164901.930	1371.723	5771.001	T 1595606.100	T 3218285.200	T 193186210.000	T 15317311.000	1231011.300	293515.400	27040.255	546166.740	33648
σ		2918.229	26.262	280.854	T 7689.974	T 9781.380	T 722820.640	T 36850.117	10682.956	2120.081	460.428	4539.637	478
%RSD		1.770	1.915	4.867	T 0.482	T 0.304	T 0.374	T 0.241	0.868	0.722	1.703	0.831	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:31:54	43807.497	T 29496826.000	TM 1334529200.000	261500.510	99853.227	79700.109	387103.880	82851.420	1097.036	873.523	611.511	599
2	15:32:16	45030.751	T 30054056.000	TM 1353518100.000	265005.220	101467.930	81513.849	388521.290	83252.411	1055.033	855.022	642.512	564
3	15:32:37	45406.769	T 29977607.000	TM 1338913900.000	263212.140	101196.290	81026.481	392359.650	82683.590	1088.036	851.022	638.012	581
x		44748.339	T 29842830.000	TM 1342320400.000	263239.290	100839.150	80746.813	389328.270	82929.140	1080.035	859.856	630.679	581
σ		836.203	T 302075.900	TM 9942200.400	1752.512	864.571	938.656	2719.231	292.266	22.115	12.004	16.751	17

%RSD		1.869	T 1.012	TM 0.741	0.666	0.857	1.162	0.698	0.352	2.048	1.396	2.656	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	15:31:54	509052.090	897512.230	24192.546	2190.144	255.002	1695.086	1165890.900	49142.342	2325.162	1804.098	705945.710	24746
2	15:32:16	508407.860	907829.090	24357.786	2300.159	340.003	2105.133	1165676.700	49683.945	2560.197	1967.616	715093.570	25190
3	15:32:37	513191.160	896710.770	23987.249	2290.157	290.003	1970.116	1172951.400	49964.782	2605.204	1997.120	719972.010	24949
x		510217.040	900684.030	24179.194	2260.153	295.003	1923.445	1168173.000	49597.023	2496.854	1922.945	713670.430	24962
σ		2595.730	6200.765	185.629	60.836	42.721	208.969	4139.612	418.053	150.383	103.976	7120.620	222
%RSD		0.509	0.688	0.768	2.692	14.481	10.864	0.354	0.843	6.023	5.407	0.998	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:31:54	780.018	8497.165	1078352.100	149063.630	0.000	332447.910	101216.410
2	15:32:16	795.019	8542.189	1089034.200	144574.340	0.000	338957.060	104773.290
3	15:32:37	855.022	8607.222	1102663.000	149053.540	0.000	342268.720	105860.130
x		810.020	8548.859	1090016.400	147563.840	0.000	337891.230	103949.940
σ		39.688	55.331	12185.168	2588.983	0.000	4996.406	2428.878
%RSD		4.900	0.647	1.118	1.754	0.000	1.479	2.337

200-35736-A-9-A 10/18/2016 03:37:15 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**5**
1	15:37:37	161720.820	907.525	6221.161	T 1935578.800	T 4258945.600	T 216167550.000	T 17379870.000	T 1921873.100	288648.070	22445.103	529994.950	365003
2	15:37:58	161528.970	972.528	5906.046	T 1932521.400	T 4251834.300	T 217553080.000	T 17430923.000	T 1906193.000	288627.720	22720.476	534299.160	362683
3	15:38:20	159327.940	1007.531	5796.008	T 1936985.200	T 4188608.600	T 216150850.000	T 17116186.000	T 1927896.000	288200.430	22309.922	535579.280	367001
x		160859.240	962.528	5974.405	T 1935028.500	T 4233129.500	T 216623830.000	T 17308993.000	T 1918654.000	288492.070	22491.834	533291.130	364896
σ		1329.614	50.747	220.666	T 2282.222	T 38719.853	T 804800.110	T 168915.720	T 11203.873	252.780	209.228	2925.451	2160
%RSD		0.827	5.272	3.694	T 0.118	T 0.915	T 0.372	T 0.976	T 0.584	0.088	0.930	0.549	0

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**8**
1	15:37:37	49839.408	T 23317936.000	T 642016560.000	247367.190	112241.680	88861.260	410452.660	16103.776	1358.055	853.522	623.012	6456
2	15:37:58	51017.966	T 23998290.000	T 653527890.000	252559.190	116415.160	91636.225	417863.440	16504.168	1293.050	870.523	644.512	6946
3	15:38:20	49548.542	T 23509215.000	T 653908110.000	251275.000	115332.670	89172.918	418350.430	16211.881	1316.052	827.021	588.510	7136
x		50135.305	T 23608480.000	T 649817520.000	250400.460	114663.170	89890.134	415555.510	16273.275	1322.386	850.355	618.678	6846
σ		778.118	T 350871.270	T 6758506.000	2704.225	2165.794	1520.167	4425.900	207.136	32.962	21.923	28.251	350
%RSD		1.552	T 1.486	T 1.040	1.080	1.889	1.691	1.065	1.273	2.493	2.578	4.566	5

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	15:37:37	690691.100	848344.820	7361.625	2515.190	255.002	2440.179	1122712.300	47653.027	1950.114	1531.070	762381.900	230127
2	15:37:58	702478.740	852856.550	7806.828	2555.196	350.004	2385.171	1133411.300	48630.845	2000.120	1566.574	768969.410	234690
3	15:38:20	699497.190	851047.510	7551.711	2800.235	260.002	2355.166	1143218.300	49037.033	2265.154	1575.574	785111.470	235238
x		697555.670	850749.630	7573.388	2623.540	288.336	2393.505	1133114.000	48440.302	2071.796	1557.739	772154.260	233352
σ		6128.966	2270.572	223.391	154.324	53.464	43.115	10256.219	711.406	169.309	23.531	11694.694	2805
%RSD		0.879	0.267	2.950	5.882	18.542	1.801	0.905	1.469	8.172	1.511	1.515	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:37:37	805.019	9867.920	1171188.700	143303.440	0.000	352182.060	100929.680
2	15:37:58	950.027	10298.181	1185000.600	144322.170	0.000	362147.230	103983.370
3	15:38:20	775.018	10473.290	1207883.900	145794.910	5.000	367661.000	105382.110
x		843.355	10213.130	1188024.400	144473.510	1.667	360663.430	103431.720
σ		93.591	311.518	18533.537	1252.609	2.887	7845.419	2276.899
%RSD		11.097	3.050	1.560	0.867	173.205	2.175	2.201

200-35736-A-10-A 10/18/2016 03:42:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	15:43:19	161438.100	1137.539	5230.821	T 1801297.800	T 3914404.100	T 208304280.000	T 15374969.000	T 1757525.800	291812.470	22700.449	535517.330	356078
2	15:43:41	157742.970	1075.035	5160.799	T 1782769.900	T 3942429.000	T 208268890.000	T 15485151.000	T 1761783.400	293481.390	23616.721	533122.360	360982
3	15:44:03	157389.650	1047.533	5320.849	T 1785368.700	T 3954615.100	T 209477780.000	T 15635299.000	T 1780440.300	293359.270	22950.791	540390.910	367083
x		158856.910	1086.702	5237.490	T 1789812.200	T 3937149.400	T 208683650.000	T 15498473.000	T 1766583.200	292884.370	23089.320	536343.530	361381
σ		2242.348	46.123	80.233	T 10031.363	T 20618.870	T 687966.070	T 130675.590	T 12187.979	930.306	473.583	3704.041	5513
%RSD		1.412	4.244	1.532	T 0.560	T 0.524	T 0.330	T 0.843	T 0.690	0.318	2.051	0.691	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	15:43:19	48605.772	T 27607928.000	T 705556360.000	247407.790	108008.850	84649.421	388592.930	21939.431	1271.049	824.020	589.510	6366
2	15:43:41	48851.489	T 28118243.000	T 716113290.000	247707.190	108421.510	85352.996	391417.890	21660.066	1331.053	890.524	650.013	6336
3	15:44:03	50531.487	T 28047516.000	T 723817690.000	252239.410	109241.840	86011.367	395000.950	22126.678	1331.053	823.520	609.511	6346
x		49329.583	T 27924562.000	T 715162450.000	249118.130	108557.400	85337.928	391670.590	21908.725	1311.052	846.021	616.345	6349
σ		1048.105	T 276484.210	T 9167724.900	2707.249	627.630	681.098	3211.477	234.817	34.644	38.541	30.825	15
%RSD		2.125	T 0.990	T 1.282	1.087	0.578	0.798	0.820	1.072	2.642	4.556	5.001	0

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	15:43:19	629518.440	861241.660	8362.097	2460.182	250.002	2135.137	1137207.300	46705.350	1850.103	1550.072	755974.720	239427
2	15:43:41	634377.570	860578.700	8627.232	2335.164	285.002	2025.123	1148161.400	45687.535	2080.130	1585.075	760420.260	237703
3	15:44:03	646973.140	880605.190	8632.235	2310.160	365.004	2005.121	1152313.800	47562.770	1985.118	1619.579	778166.890	241456
x		636956.380	867475.190	8540.522	2368.502	300.003	2055.127	1145894.100	46651.885	1971.784	1584.909	764853.960	239529
σ		9008.572	11375.750	154.540	80.375	58.950	70.009	7804.281	938.760	115.592	34.754	11741.651	1878
%RSD		1.414	1.311	1.809	3.394	19.650	3.407	0.681	2.012	5.862	2.193	1.535	0

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:43:19	685.014	9342.618	1131855.800	143384.130	0.000	349853.790	97549.645
2	15:43:41	760.017	9467.688	1141795.600	142990.770	0.000	353938.690	98560.566
3	15:44:03	825.020	8907.380	1160498.400	146571.680	0.000	357600.630	99455.861
x		756.684	9239.229	1144716.600	144315.530	0.000	353797.700	98522.024
σ		70.063	294.115	14543.017	1963.758	0.000	3875.342	953.692
%RSD		9.259	3.183	1.270	1.361	0.000	1.095	0.968

200-35736-A-11-A 10/18/2016 03:48:41 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	15:49:03	149416.770	587.510	4665.653	T 1303430.800	T 2442239.800	T 93929664.000	T 8657564.600	T 3383207.000	233636.180	16007.684	255234.490	183191.
2	15:49:24	146319.470	545.009	4620.640	T 1315110.000	T 2442692.400	T 96255934.000	T 8905474.000	T 3448558.200	233301.540	16878.542	261160.230	187215.
3	15:49:46	143959.050	592.511	4740.674	T 1307955.700	T 2466773.700	T 96164111.000	T 8828996.800	T 3461296.200	232480.180	17404.082	260698.080	185354.
x		146565.100	575.010	4675.656	T 1308832.200	T 2450568.600	T 95449903.000	T 8797345.100	T 3431020.400	233139.300	16763.436	259030.930	185253.
σ		2737.138	26.102	60.639	T 5888.757	T 14035.851	T 1317365.900	T 126949.360	T 41894.629	594.831	705.280	3295.929	2014.
%RSD		1.868	4.539	1.297	T 0.450	T 0.573	T 1.380	T 1.443	T 1.221	0.255	4.207	1.272	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	15:49:03	25754.884	TM 31564553.000	T 386048710.000	166214.710	63972.539	1688392.100	478944.150	17848.552	1027.032	1076.535	512.008	7061.
2	15:49:24	25784.930	TM 31738531.000	T 389263460.000	164906.810	66130.939	1676750.200	485252.750	18018.735	1053.033	1108.537	528.508	7571.
3	15:49:46	25724.838	TM 31953643.000	T 395884310.000	166967.170	65950.225	1715623.700	487244.610	17859.564	1016.031	1104.537	519.508	6951.
x		25754.884	TM 31752242.000	T 390398830.000	166029.560	65351.235	1693588.700	483813.840	17908.950	1032.032	1096.536	520.008	7194.

σ		30.046	TM 194907.310	T 5015137.200	1042.584	1197.399	19950.934	4333.275	95.236	19.001	17.437	8.262	330.
%RSD		0.117	TM 0.614	T 1.285	0.628	1.832	1.178	0.896	0.532	1.841	1.590	1.589	4.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	15:49:03	767682.060	619306.330	9257.570	6406.231	295.003	2730.224	1058125.500	51940.810	2150.139	1741.091	447729.130	207989.
2	15:49:24	767373.320	618787.590	9787.873	6296.189	280.002	3015.273	1060329.100	52552.723	2275.155	1728.590	453394.230	205397.
3	15:49:46	778130.240	624754.100	10048.028	6481.260	305.003	2785.233	1065972.600	53264.979	2280.156	1771.594	455089.510	208212.
x		771061.870	620949.340	9697.824	6394.560	293.336	2843.576	1061475.700	52586.171	2235.150	1747.092	452070.960	207200.
σ		6123.333	3305.211	402.849	93.086	12.583	151.216	4047.265	662.718	73.664	22.121	3854.487	1564.
%RSD		0.794	0.532	4.154	1.456	4.290	5.318	0.381	1.260	3.296	1.266	0.853	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:49:03	1575.074	4895.719	1121542.400	133552.960	0.000	174448.210	72783.577
2	15:49:24	1515.069	4950.735	1131091.400	134147.700	0.000	178531.110	75701.532
3	15:49:46	1670.084	5000.750	1149680.900	136859.620	0.000	176327.840	75591.032
x		1586.742	4949.068	1134104.900	134853.430	0.000	176435.720	74692.047
σ		78.163	52.535	14309.280	1762.679	0.000	2043.584	1653.707
%RSD		4.926	1.062	1.262	1.307	0.000	1.158	2.214

200-35736-A-11-A SD@5 10/18/2016 03:54:24 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:54:46	135397.750	100.000	1230.045	469717.050	429011.360	T 17889101.000	T 1659230.800	585299.940	195388.630	3120.292	57830.156	35572.923
2	15:55:08	138805.610	120.000	1290.050	467824.930	435055.030	T 18300721.000	T 1704227.500	590094.640	196440.890	2990.268	57935.521	35948.728
3	15:55:30	134611.420	147.501	1265.048	469028.050	439335.140	T 18267469.000	T 1687666.000	592010.830	199506.990	3090.287	58668.077	36730.429
x		136271.600	122.500	1261.714	468856.670	434467.180	T 18152430.000	T 1683708.100	589135.130	197112.170	3066.949	58144.585	36084.026
σ		2229.465	23.849	30.141	957.628	5186.931	T 228655.450	T 22757.937	3456.805	2139.669	68.081	456.408	590.495
%RSD		1.636	19.468	2.389	0.204	1.194	T 1.260	T 1.352	0.587	1.086	2.220	0.785	1.636

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:54:46	7906.875	T 5916369.200	T 73167557.000	31274.315	12574.742	325059.290	102640.080	5037.761	637.012	650.513	465.507	3470.361
2	15:55:08	8312.072	T 5982068.800	T 73953284.000	31589.909	13100.146	333090.550	102529.400	4805.693	626.012	572.010	472.507	3225.312
3	15:55:30	8587.212	T 5970904.400	T 74660337.000	32166.010	12694.833	333819.920	104682.720	4944.733	614.011	594.511	498.007	3445.356
x		8268.720	T 5956447.500	T 73927059.000	31676.745	12789.907	330656.590	103284.070	4929.396	625.678	605.678	478.674	3380.343
σ		342.234	T 35154.830	T 746735.210	452.145	275.303	4861.099	1212.536	116.792	11.504	40.425	17.106	134.842
%RSD		4.139	T 0.590	T 1.010	1.427	2.153	1.470	1.174	2.369	1.839	6.674	3.574	3.989

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:54:46	142869.740	304852.790	1880.106	1310.052	60.000	640.012	1017329.200	10113.067	515.008	360.004	84569.015	171305.870
2	15:55:08	146410.270	313714.980	1770.094	1265.048	85.000	595.011	1046483.800	10503.309	560.009	424.505	85041.409	171720.100
3	15:55:30	145895.780	310108.420	1920.111	1430.061	80.000	595.011	1036285.200	10338.205	475.007	400.005	86438.569	174387.580
x		145058.600	309558.730	1856.770	1335.054	75.000	610.011	1033366.100	10318.194	516.675	394.838	85349.664	172471.180
σ		1912.981	4456.596	77.683	85.301	13.229	25.982	14794.886	195.889	42.526	32.560	972.149	1672.523
%RSD		1.319	1.440	4.184	6.389	17.638	4.259	1.432	1.898	8.231	8.246	1.139	0.970

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:54:46	410.005	1215.044	208055.560	124986.900	0.000	25564.591	13570.523
2	15:55:08	270.002	1170.041	212531.500	125641.800	0.000	26806.540	13485.454
3	15:55:30	375.004	1105.037	211098.460	124755.170	0.000	28574.474	14236.077
x		351.670	1163.374	210561.840	125127.960	0.000	26981.869	13764.018
σ		72.860	55.306	2285.715	459.835	0.000	1512.582	411.022
%RSD		20.718	4.754	1.086	0.367	0.000	5.606	2.986

CCV 10/18/2016 04:00:08 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	16:00:30	124463.000	88793.400	32311.290	T 15266882.000	T 4448978.400	T 41712616.000	T 14280198.000	1410328.600	164901.760	27808.180	T 2891486.800	81892
2	16:00:52	122347.420	87245.256	32882.406	T 14900820.000	T 4377865.600	T 41440943.000	T 14135387.000	1404647.600	165507.720	27888.313	T 2842593.300	80321
3	16:01:14	121632.220	86096.807	32100.884	T 14511307.000	T 4295698.000	T 40193158.000	T 13926966.000	1411599.800	163578.820	27758.096	T 2857943.800	80534
x		122814.220	87378.487	32431.527	T 14893003.000	T 4374180.700	T 41115572.000	T 14114184.000	1408858.700	164662.770	27818.196	T 2864007.900	80916
σ		1471.990	1353.224	404.396	T 377848.280	T 76706.616	T 810301.250	T 177568.250	3701.841	986.410	65.684	T 25004.485	851
%RSD		1.199	1.549	1.247	T 2.537	T 1.754	T 1.971	T 1.258	0.263	0.599	0.236	T 0.873	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	16:00:30	104104.120	T 4258181.600	T 86831265.000	1241235.700	674924.480	848428.940	662516.220	88424.949	7242.573	9930.458	413.505	705
2	16:00:52	99752.627	T 4212771.900	T 87334470.000	1248370.100	671729.200	823672.280	648885.370	86891.917	7146.532	9664.801	414.505	710
3	16:01:14	99294.906	T 4106314.400	T 85148650.000	1214440.600	652996.350	805558.360	640463.830	86566.229	7047.490	9426.665	405.005	708
x		101050.550	T 4192422.600	T 86438128.000	1234682.100	666550.010	825886.530	650621.810	87294.365	7145.532	9673.975	411.005	707
σ		2654.352	T 77951.805	T 1144713.800	17888.935	11846.048	21520.894	11128.266	992.564	97.546	252.021	5.220	2

%RSD		2.627	T 1.859	T 1.324	1.449	1.777	2.606	1.710	1.137	1.365	2.605	1.270	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	16:00:30	870510.050	213002.460	1774007.300	289278.870	9497.705	138205.660	936248.400	864446.350	575254.100	443843.250	585646.810	15174
2	16:00:52	853398.250	207291.120	1784598.500	282717.710	9072.469	138503.110	933278.590	865035.780	576589.060	443012.070	573614.000	15135
3	16:01:14	852840.780	207513.870	T 1962964.800	278990.690	8912.382	137867.880	917613.700	856759.270	576226.850	439438.820	575600.770	15114
x		858916.360	209269.150	T 1840523.500	283662.420	9160.852	138192.220	929046.900	862080.470	576023.340	442098.040	578287.190	15141
σ		10044.297	3235.059	T 106169.400	5208.743	302.505	317.830	10012.166	4617.702	690.358	2340.157	6450.564	30
%RSD		1.169	1.546	T 5.768	1.836	3.302	0.230	1.078	0.536	0.120	0.529	1.115	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:00:30	34726.139	1505164.200	T 7935828.200	114934.940	0.000	179228.530	106282.800
2	16:00:52	35322.391	1520163.100	T 7943417.000	112387.660	0.000	191589.910	105558.220
3	16:01:14	36535.000	1521398.600	T 7900146.500	114844.320	5.000	204314.710	107943.430
x		35527.843	1515575.300	T 7926463.900	114055.640	1.667	191711.050	106594.820
σ		921.766	9037.427	T 23105.232	1445.225	2.887	12543.525	1222.830
%RSD		2.594	0.596	T 0.291	1.267	173.205	6.543	1.147

CCB 10/18/2016 04:05:52 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	16:06:14	134530.770	17.500	655.013	281497.310	550.009	7621.742	61473.160	500.007	174923.150	25.000	17303.978	1710.088
2	16:06:35	128382.570	5.000	660.013	283205.900	620.012	8056.947	60409.280	540.009	175691.170	35.000	18630.407	1890.107
3	16:06:57	131375.750	12.500	585.010	281009.180	560.009	8592.214	61944.902	520.008	178763.580	25.000	17994.709	1915.110
x		131429.700	11.667	633.345	281904.130	576.677	8090.301	61275.781	520.008	176459.300	28.333	17976.365	1838.435
σ		3074.459	6.292	41.934	1153.479	37.861	486.095	786.608	20.001	2032.176	5.774	663.405	111.853
%RSD		2.339	53.927	6.621	0.409	6.565	6.008	1.284	3.846	1.152	20.377	3.690	6.084

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:06:14	5891.041	900.024	266646.080	105.000	85.000	285.002	630.012	1531.070	469.007	401.505	449.006	2270.155
2	16:06:35	6376.220	890.024	270969.980	105.000	40.000	285.002	610.011	1505.068	494.007	458.006	440.506	2230.149
3	16:06:57	6171.142	935.026	273978.570	60.000	30.000	225.002	640.012	1552.072	524.008	435.006	446.506	2345.165
x		6146.134	908.358	270531.540	90.000	51.667	265.002	626.678	1529.403	495.674	431.506	445.339	2281.823
σ		243.554	23.630	3685.856	25.981	29.297	34.642	15.276	23.546	27.539	28.413	4.369	58.389
%RSD		3.963	2.601	1.362	28.868	56.705	13.072	2.438	1.540	5.556	6.585	0.981	2.559

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:06:14	90.000	219161.540	3465.360	40.000	5.000	5.000	945065.750	3295.326	820.020	600.511	70.000	155017.580
2	16:06:35	105.000	216020.940	3605.390	45.000	0.000	10.000	967256.040	3785.430	805.019	682.514	60.000	154593.670
3	16:06:57	100.000	220752.330	3195.306	40.000	0.000	10.000	960988.630	3765.425	950.027	654.013	90.000	153594.490
x		98.334	218644.940	3422.019	41.667	1.667	8.333	957770.140	3615.394	858.356	645.679	73.333	154401.910
σ		7.638	2407.629	208.449	2.887	2.887	2.887	11439.900	277.367	79.743	41.632	15.275	730.664
%RSD		7.767	1.101	6.091	6.928	173.205	34.641	1.194	7.672	9.290	6.448	20.830	0.473

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:06:14	205.001	1575.074	715.015	116979.090	0.000	2500.188	50.000
2	16:06:35	205.001	1540.071	780.018	118882.480	0.000	2600.203	50.000
3	16:06:57	170.001	1545.072	730.016	120745.810	0.000	2220.148	65.000
x		193.334	1553.406	741.683	118869.130	0.000	2440.179	55.000
σ		20.207	18.931	34.036	1883.396	0.000	197.006	8.660
%RSD		10.452	1.219	4.589	1.584	0.000	8.073	15.746

CCVL 10/18/2016 04:11:36 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:11:59	135357.430	192.501	6136.129	1049813.800	32401.465	79770.444	800692.070	27372.459	181341.200	15.000	32782.209	11283.818
2	16:12:22	136446.250	227.502	6406.231	T 1122707.900	31088.969	79504.176	790397.750	28053.590	184060.770	15.000	33443.520	11784.165
3	16:12:46	131758.760	210.001	6391.225	T 1131421.400	32521.699	85066.537	813038.780	27182.148	175357.680	15.000	33117.871	12454.652
x		134520.810	210.001	6311.195	T 1101314.400	32004.044	81447.052	801376.200	27536.066	180253.220	15.000	33114.533	11840.878
σ		2453.178	17.500	151.797	T 44813.115	794.756	3137.392	11336.009	458.179	4452.383	0.000	330.669	587.473
%RSD		1.824	8.333	2.405	T 4.069	2.483	3.852	1.415	1.664	2.470	0.000	0.999	4.961

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:11:59	8277.055	8277.055	857390.520	3515.371	1330.053	4350.568	13945.832	2612.205	741.016	642.512	486.507	2495.187
2	16:12:22	8512.173	8302.067	876386.310	3165.300	1445.063	4300.555	13650.588	2686.217	748.017	653.513	461.006	2420.176
3	16:12:46	8167.001	8817.332	895772.270	3415.350	1535.071	4250.542	13825.732	2719.222	739.016	668.013	424.505	2545.194
x		8318.743	8465.485	876516.370	3365.340	1436.729	4300.555	13807.384	2672.548	742.683	654.680	457.340	2486.852
σ		176.322	304.965	19191.203	180.314	102.763	50.013	148.475	54.802	4.726	12.790	31.163	62.925
%RSD		2.120	3.602	2.189	5.358	7.153	1.163	1.075	2.051	0.636	1.954	6.814	2.530

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:11:59	23501.558	224947.870	16453.117	3245.316	40.000	895.024	967933.730	1490.067	5110.783	4116.008	5440.888	155996.650
2	16:12:22	23872.084	226539.210	16688.351	3180.303	75.000	765.018	973928.270	1670.084	5445.890	4188.026	5220.818	157329.080
3	16:12:46	24623.176	214916.800	17123.792	3310.329	95.000	790.019	931397.620	1910.109	5410.878	4371.573	5295.841	150385.430
x		23998.939	222134.630	16755.087	3245.316	70.000	816.687	957753.210	1690.087	5322.517	4225.203	5319.182	154570.390
σ		571.468	6301.258	340.282	65.013	27.839	68.984	23020.561	210.735	184.200	131.776	111.876	3685.006
%RSD		2.381	2.837	2.031	2.003	39.770	8.447	2.404	12.469	3.461	3.119	2.103	2.384

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:11:59	3355.338	15987.664	8021.930	121229.300	0.000	10138.082	11388.890
2	16:12:22	2860.245	16473.137	7821.835	116727.330	0.000	10678.420	11513.976
3	16:12:46	3280.323	17344.020	8126.981	112719.890	0.000	11398.897	12950.029
x		3165.302	16601.607	7990.249	116892.170	0.000	10738.466	11950.965
σ		266.836	687.243	155.020	4257.099	0.000	632.548	867.473
%RSD		8.430	4.140	1.940	3.642	0.000	5.890	7.259

200-35736-A-11-A PDS 10/18/2016 04:17:25 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	16:17:47	141175.390	2062.628	59736.863	T 9226285.400	T 2571051.000	T 87444741.000	T 15753112.000	T 3306640.800	212131.460	14676.459	343850.790	253554
2	16:18:09	141467.860	2007.621	58362.005	T 9252181.600	T 2602049.700	T 88860580.000	T 16002629.000	T 3359877.100	213316.440	15091.830	347837.240	259489
3	16:18:30	140519.890	2092.631	59852.276	T 9387563.300	T 2606542.700	T 89462753.000	T 16071784.000	T 3374726.500	215210.550	15947.626	348909.300	260718
x		141054.380	2054.293	59317.048	T 9288676.700	T 2593214.400	T 88589358.000	T 15942508.000	T 3347081.500	213552.820	15238.638	346865.770	257920
σ		485.432	43.114	829.102	T 86611.541	T 19325.166	T 1035984.600	T 167627.270	T 35801.023	1553.100	648.175	2665.510	3831
%RSD		0.344	2.099	1.398	T 0.932	T 0.745	T 1.169	T 1.051	T 1.070	0.727	4.253	0.768	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	16:17:47	34330.321	TM 28515074.000	T 354980510.000	171927.220	68646.078	1518282.800	525562.870	24174.520	1991.119	2634.208	483.007	7891
2	16:18:09	34575.827	TM 28689250.000	T 356753430.000	179683.390	70212.583	1556169.500	535543.140	24516.018	2114.134	2672.714	527.508	7686
3	16:18:30	34350.362	TM 29379600.000	T 363344920.000	177682.110	71593.439	1553469.200	540251.500	24493.985	2176.142	2638.709	509.008	7651
x		34418.837	TM 28861308.000	T 358359620.000	176430.910	70150.700	1542640.500	533785.840	24394.841	2093.798	2648.544	506.508	7743

σ		136.327	TM 457224.960	T 4407462.500	4026.621	1474.655	21137.571	7500.338	191.122	94.173	21.053	22.356	129
%RSD		0.396	TM 1.584	T 1.230	2.282	2.102	1.370	1.405	0.783	4.498	0.795	4.414	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	16:17:47	909580.830	559465.030	164967.410	35162.052	780.018	9027.444	943172.910	47552.741	49267.712	37243.566	444638.010	185526
2	16:18:09	922413.050	551568.260	165755.160	35197.126	725.016	9317.604	970761.280	48269.798	49724.064	38458.320	455890.970	190148
3	16:18:30	923960.320	556498.140	169861.200	36535.000	740.016	9147.510	958882.360	49057.092	50009.917	38815.146	457504.290	188641
x		918651.400	555843.810	166861.260	35631.393	748.350	9164.186	957605.520	48293.210	49667.231	38172.344	452677.760	188105
σ		7893.346	3988.842	2627.712	782.744	28.432	145.797	13838.436	752.449	374.352	823.895	7009.194	2356
%RSD		0.859	0.718	1.575	2.197	3.799	1.591	1.445	1.558	0.754	2.158	1.548	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:17:47	33157.951	162271.130	1076071.600	121390.470	0.000	433443.860	190441.860
2	16:18:09	32596.845	166305.610	1100902.100	125470.510	0.000	434331.520	194407.250
3	16:18:30	33719.075	168083.310	1100790.100	121974.710	0.000	428041.910	200088.900
x		33157.957	165553.350	1092587.900	122945.230	0.000	431939.100	194979.340
σ		561.115	2978.216	14303.689	2206.385	0.000	3404.122	4848.897
%RSD		1.692	1.799	1.309	1.795	0.000	0.788	2.487

200-35736-A-11-I MS 10/18/2016 04:23:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	16:23:31	141074.540	2150.139	52156.481	T 9665817.200	T 2824018.600	T 102760450.000	T 17047955.000	T 3973133.400	217702.610	21053.289	382821.650	2794
2	16:23:53	137726.720	2170.141	52241.748	T 9639156.700	T 2845093.800	T 104147090.000	T 17197625.000	T 4042846.000	215018.090	20407.486	388444.530	2895
3	16:24:14	135317.100	2062.628	51359.011	T 9448833.600	T 2795735.100	T 101407690.000	T 16837309.000	T 3984106.000	220073.440	21283.581	388142.620	2855
x		138039.450	2127.636	51919.080	T 9584602.500	T 2821615.800	T 102771740.000	T 17027630.000	T 4000028.500	217598.050	20914.785	386469.600	2848
σ		2891.434	57.180	486.904	T 118332.580	T 24766.942	T 1369732.300	T 181015.650	T 37484.725	2529.294	454.173	3162.820	50
%RSD		2.095	2.688	0.938	T 1.235	T 0.878	T 1.333	T 1.063	T 0.937	1.162	2.172	0.818	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	16:23:31	36725.418	TM 30377862.000	T 369730540.000	174716.000	76334.409	1780076.000	550219.770	25692.788	2158.140	2598.703	481.507	87
2	16:23:53	37336.774	TM 30770674.000	T 373508980.000	177085.810	77976.987	1820230.400	558374.360	26185.554	2154.139	2570.698	509.508	85
3	16:24:14	37361.830	TM 30615086.000	T 372599880.000	175271.790	75048.589	1795012.800	551547.600	25773.913	2182.143	2510.189	494.007	83
x		37141.341	TM 30587874.000	T 371946470.000	175691.200	76453.328	1798439.800	553380.570	25884.085	2164.807	2559.863	495.007	85
σ		360.417	TM 197814.720	T 1972142.400	1239.328	1467.816	20295.365	4375.406	264.212	15.146	45.241	14.027	2
%RSD		0.970	TM 0.647	T 0.530	0.705	1.920	1.128	0.791	1.021	0.700	1.767	2.834	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	16:23:31	1024839.000	593036.330	160064.950	36595.132	695.014	8932.393	948608.760	53806.715	13335.333	10368.224	461538.250	1926
2	16:23:53	1036258.700	604797.860	163084.010	35823.458	650.013	9002.431	963317.470	53922.087	13750.670	10556.342	470210.680	1911
3	16:24:14	1036104.500	601170.090	163477.840	36900.805	795.019	8947.401	960967.460	54799.943	13760.678	10535.829	463578.720	1905
x		1032400.700	599668.090	162208.930	36439.798	713.349	8960.742	957631.230	54176.248	13615.560	10486.798	465109.220	1914
σ		6549.100	6022.903	1867.155	555.216	74.221	36.875	7901.539	543.207	242.736	103.199	4534.264	11
%RSD		0.634	1.004	1.151	1.524	10.405	0.412	0.825	1.003	1.783	0.984	0.975	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:23:31	34711.108	137746.880	1037359.100	125389.910	0.000	413768.150	198135.770
2	16:23:53	35547.869	140529.970	1053463.600	124231.280	0.000	418693.900	199253.990
3	16:24:14	36099.052	138271.200	1065322.900	124886.150	0.000	418950.220	203626.360
x		35452.676	138849.350	1052048.500	124835.780	0.000	417137.420	200338.710
σ		698.851	1478.882	14035.549	580.954	0.000	2920.689	2901.567
%RSD		1.971	1.065	1.334	0.465	0.000	0.700	1.448

200-35736-A-11-J MSD 10/18/2016 04:28:54 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	16:29:15	144937.480	1890.107	50481.335	T 9629525.900	T 2894775.800	T 96127679.000	T 16643396.000	T 2889403.600	224461.380	16888.552	377302.930	279585.
2	16:29:37	140429.130	2017.622	51163.410	T 9652915.000	T 2956967.200	T 98949750.000	T 16680317.000	T 2900999.300	221248.850	17929.639	383123.470	284385.
3	16:29:59	143000.860	2105.133	52061.184	T 9887142.400	T 2996499.400	T 97722822.000	T 16960152.000	T 2988815.100	226478.390	17068.736	380535.180	283933.
x		142789.150	2004.287	51235.310	T 9723194.400	T 2949414.200	T 97600084.000	T 16761288.000	T 2926406.000	224062.870	17295.642	380320.520	282634.
σ		2261.618	108.131	792.375	T 142463.920	T 51280.702	T 1415033.400	T 173207.520	T 54357.901	2637.448	556.399	2916.204	2650.
%RSD		1.584	5.395	1.547	T 1.465	T 1.739	T 1.450	T 1.033	T 1.857	1.177	3.217	0.767	0.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	16:29:15	37356.819	T 27081876.000	T 360571520.000	176550.170	77760.981	1695386.500	578529.600	25144.954	2201.145	2706.220	519.508	6971.
2	16:29:37	37101.249	T 27757776.000	T 366144230.000	175964.020	77916.706	1721423.400	582137.000	26071.376	2194.144	2750.727	540.009	7501.
3	16:29:59	38078.449	T 27805027.000	T 373565530.000	179936.090	77776.051	1714700.500	589146.980	25390.325	2266.154	2702.219	528.008	7691.
x		37512.173	T 27548226.000	T 366760430.000	177483.430	77817.913	1710503.500	583271.190	25535.552	2220.481	2719.722	529.175	7388.
σ		506.785	T 404561.720	T 6518883.100	2144.194	85.889	13516.328	5398.795	479.982	39.708	26.926	10.300	373.

%RSD		1.351	T 1.469	T 1.777	1.208	0.110	0.790	0.926	1.880	1.788	0.990	1.946	5.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	16:29:15	820459.490	573407.060	162649.790	36950.916	815.020	10603.372	962205.940	53515.780	13115.158	10464.284	432233.010	191382.
2	16:29:37	827505.320	574069.280	166108.660	36750.473	805.019	10893.559	974299.020	55778.180	13655.592	10611.877	440418.160	191868.
3	16:29:59	833282.770	580993.110	166022.810	36820.628	715.015	10878.549	984524.430	55512.295	13560.514	10898.562	441819.530	191918.
x		827082.530	576156.480	164927.090	36840.672	778.352	10791.827	973676.460	54935.418	13443.755	10658.241	438156.900	191723.
σ		6422.086	4201.708	1972.660	101.713	55.078	163.379	11172.263	1236.609	288.516	220.820	5177.865	296.
%RSD		0.776	0.729	1.196	0.276	7.076	1.514	1.147	2.251	2.146	2.072	1.182	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:29:15	36489.902	141866.220	1084252.000	122992.140	0.000	388613.400	194159.390
2	16:29:37	37542.235	144216.260	1100966.100	125047.350	0.000	396337.120	197943.510
3	16:29:59	37366.842	146279.120	1108683.400	124956.680	10.000	403342.200	202396.510
x		37132.993	144120.540	1097967.200	124332.060	3.333	396097.570	198166.470
σ		563.795	2208.007	12488.703	1161.284	5.774	7367.320	4123.087
%RSD		1.518	1.532	1.137	0.934	173.205	1.860	2.081

200-35736-A-12-A 10/18/2016 04:34:38 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52**
1	16:35:00	129198.840	490.007	3780.429	T 1191254.800	T 2736646.800	T 76215045.000	T 6998641.800	T 3860464.800	204172.980	6926.439	205959.770	152110.9
2	16:35:22	129622.100	542.509	3810.436	T 1177404.700	T 2713696.800	T 76431498.000	T 7031046.200	T 3850946.000	203859.180	7066.498	209933.890	153115.1
3	16:35:43	130650.080	417.505	3810.436	T 1177618.800	T 2730537.600	T 77251798.000	T 7076487.700	T 3917024.100	203504.890	7116.519	208480.820	153740.8
x		129823.670	483.340	3800.433	T 1182092.800	T 2726960.400	T 76632780.000	T 7035391.900	T 3876144.900	203845.680	7036.485	208124.830	152988.9
σ		746.326	62.768	17.324	T 7935.254	T 11885.844	T 546900.420	T 39104.497	T 35720.860	334.253	98.530	2010.837	822.2
%RSD		0.575	12.986	0.456	T 0.671	T 0.436	T 0.714	T 0.556	T 0.922	0.164	1.400	0.966	0.5
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84**
1	16:35:00	20467.560	TM 30369806.000	T 332974560.000	128901.550	57202.997	1407417.300	431540.410	16008.685	758.017	1049.033	510.008	6786.3
2	16:35:22	20217.255	TM 30649826.000	T 344802350.000	130791.180	56696.270	1421560.300	438714.090	15883.565	815.020	995.030	522.508	7561.7
3	16:35:43	20527.634	TM 30661406.000	T 338215800.000	130776.070	57363.548	1419342.700	439227.350	16084.758	790.019	1024.532	500.508	7351.6
x		20404.149	TM 30560346.000	T 338664230.000	130156.270	57087.605	1416106.800	436493.950	15992.336	787.685	1022.865	511.008	7233.2
σ		164.619	TM 165114.090	T 5926632.900	1086.644	348.283	7606.560	4297.561	101.588	28.573	27.040	11.034	400.9
%RSD		0.807	TM 0.540	T 1.750	0.835	0.610	0.537	0.985	0.635	3.627	2.644	2.159	5.5
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	16:35:00	795544.130	513902.580	6226.163	4720.668	255.002	2465.182	934060.620	22690.435	1490.067	1209.044	384581.480	181058.1
2	16:35:22	804346.900	515315.210	5796.008	5185.807	275.002	2590.201	943817.930	22324.942	1465.064	1291.050	389908.120	182372.3
3	16:35:43	809487.010	521173.200	5831.020	4505.609	250.002	2525.191	937886.770	22234.822	1510.068	1287.050	393163.260	183615.9
x		803126.010	516797.000	5951.063	4804.028	260.002	2526.858	938588.440	22416.733	1488.400	1262.381	389217.620	182348.8
σ		7051.159	3855.158	238.885	347.676	13.229	62.526	4916.352	241.278	22.548	46.235	4332.360	1279.0
%RSD		0.878	0.746	4.014	7.237	5.088	2.474	0.524	1.076	1.515	3.663	1.113	0.7

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:35:00	1075.035	4955.737	822533.030	121299.810	0.000	138422.450	55331.696
2	16:35:22	1090.036	5040.762	832300.460	121249.440	0.000	140877.890	57202.997
3	16:35:43	1060.034	4785.687	843855.290	121279.660	0.000	141881.350	57589.324
x		1075.035	4927.395	832896.260	121276.310	0.000	140393.900	56708.006
σ		15.001	129.878	10673.608	25.350	0.000	1779.520	1207.470
%RSD		1.395	2.636	1.282	0.021	0.000	1.268	2.129

MB 200-110239/1-A 10/18/2016 04:40:22 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:40:44	140620.730	0.000	1200.043	570220.480	3260.319	107772.320	80745.121	4950.735	196137.340	30.000	13445.421	2415.175
2	16:41:05	136254.690	0.000	1065.034	561326.060	3010.272	94290.971	78494.407	4960.738	198677.160	15.000	13470.441	2300.159
3	16:41:27	136950.360	10.000	1085.035	565028.060	2860.245	92651.817	76485.097	4900.720	197796.780	35.000	13265.277	2330.163
x		137941.930	3.333	1116.704	565524.870	3043.612	98238.370	78574.875	4937.398	197537.100	26.667	13393.713	2348.499
σ		2345.844	5.774	72.863	4467.972	202.110	8297.222	2131.151	32.155	1289.669	10.408	111.930	59.660
%RSD		1.701	173.205	6.525	0.790	6.640	8.446	2.712	0.651	0.653	39.031	0.836	2.540

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:40:44	4295.554	29350.821	679838.270	220.001	150.001	2480.184	1640.081	1418.060	447.006	517.508	531.008	2750.227
2	16:41:05	4645.647	25995.257	636023.560	165.001	120.000	1985.118	1480.066	1458.064	458.006	492.007	529.008	2855.245
3	16:41:27	5020.756	25359.278	610728.350	230.002	165.001	2270.155	1345.054	1484.066	476.007	506.508	518.008	2625.207
x		4653.986	26901.785	642196.720	205.001	145.001	2245.152	1488.400	1453.397	460.340	505.341	526.008	2743.559
σ		362.673	2144.633	34966.073	35.000	22.913	248.478	147.690	33.249	14.641	12.790	7.000	115.164
%RSD		7.793	7.972	5.445	17.073	15.802	11.067	9.923	2.288	3.180	2.531	1.331	4.198

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:40:44	1500.068	236049.830	255.002	45.000	5.000	0.000	1002319.500	905.025	125.000	91.000	480.007	162488.230
2	16:41:05	1865.104	236323.670	325.003	50.000	0.000	5.000	1008209.300	815.020	100.000	98.000	505.008	164760.370
3	16:41:27	1480.066	239792.700	235.002	110.000	15.000	20.000	1005067.800	880.023	135.001	99.000	400.005	164134.240
x		1615.079	237388.730	271.669	68.334	6.667	8.333	1005198.900	866.689	120.000	96.000	461.673	163794.280
σ		216.759	2086.390	47.259	36.171	7.638	10.408	2947.087	46.460	18.028	4.359	54.850	1173.601
%RSD		13.421	0.879	17.396	52.933	114.564	124.900	0.293	5.361	15.023	4.541	11.881	0.717

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:40:44	140.001	450.006	1275.049	121732.950	0.000	6276.181	150.001
2	16:41:05	115.000	450.006	1390.058	123485.770	0.000	5776.001	195.001
3	16:41:27	145.001	435.006	1370.056	122710.080	0.000	5545.923	180.001
x		133.334	445.006	1345.054	122642.930	0.000	5866.035	175.001
σ		16.073	8.660	61.446	878.339	0.000	373.362	22.913
%RSD		12.055	1.946	4.568	0.716	0.000	6.365	13.093

LCS 200-110239/2-A 10/18/2016 04:46:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:46:26	129874.050	1545.072	53039.261	T 8419743.300	289736.720	658059.770	T 7652513.500	250884.180	177459.760	0.000	123324.590	89379.017
2	16:46:47	122689.930	1402.559	53997.330	T 8321509.000	286979.630	660103.250	T 7553623.500	243201.560	167133.830	20.000	117291.270	86720.025
3	16:47:11	121420.680	1445.063	53671.279	T 8100214.400	281080.370	648599.560	T 7399847.800	245636.880	164598.790	10.000	115992.230	87267.874
x		124661.560	1464.231	53569.290	T 8280488.900	285932.240	655587.530	T 7535328.300	246574.210	169730.790	10.000	118869.360	87788.972
σ		4558.547	73.164	487.109	T 163666.320	4422.204	6137.403	T 127322.530	3926.144	6812.435	10.000	3912.628	1404.000
%RSD		3.657	4.997	0.909	T 1.977	1.547	0.936	T 1.690	1.592	4.014	100.000	3.292	1.599

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:46:26	14606.398	67877.942	T 6598077.600	27467.615	11523.983	37632.438	109166.350	9848.909	1693.086	2233.150	432.506	3635.396
2	16:46:47	14065.933	67084.740	T 6505592.100	27552.756	11879.232	37316.729	106866.520	9608.769	1683.085	2168.641	428.005	3270.321
3	16:47:11	13395.381	67175.103	T 6339738.800	26556.140	11213.771	36900.805	103611.060	9497.705	1567.074	2248.652	414.505	3350.337
x		14022.571	67379.261	T 6481136.200	27192.170	11538.995	37283.324	106547.980	9651.795	1647.748	2216.814	425.005	3418.685

σ		606.672	434.227	T 130894.220	552.461	332.984	366.959	2791.311	179.512	70.045	42.433	9.368	191.895
%RSD		4.326	0.644	T 2.020	2.032	2.886	0.984	2.620	1.860	4.251	1.914	2.204	5.613
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:46:26	218801.860	206025.570	148069.830	29776.576	500.007	6486.262	897765.330	605.011	46845.743	34905.514	46675.266	150345.060
2	16:46:47	220412.880	206744.390	147005.470	28844.939	525.008	6746.365	883376.210	730.016	45762.741	34905.013	46514.818	149658.930
3	16:47:11	218487.780	202755.840	146016.840	28804.870	470.007	6831.400	878224.370	815.020	45351.619	34759.208	45702.576	146813.790
x		219234.170	205175.270	147030.710	29142.128	498.341	6688.009	886455.310	716.682	45986.701	34856.578	46297.553	148939.260
σ		1032.799	2125.888	1026.729	549.813	27.539	179.817	10127.828	105.637	771.829	84.325	521.473	1872.408
%RSD		0.471	1.036	0.698	1.887	5.526	2.689	1.143	14.740	1.678	0.242	1.126	1.257

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:46:26	60695.317	147873.100	56605.964	112790.360	0.000	144882.000	116636.700
2	16:46:47	61638.770	149885.960	56821.696	112448.060	0.000	152872.900	115841.180
3	16:47:11	62973.746	150814.280	56129.356	112880.970	0.000	160559.670	115272.260
x		61769.278	149524.440	56519.006	112706.470	0.000	152771.530	115916.710
σ		1144.808	1503.547	354.267	228.325	0.000	7839.330	685.350
%RSD		1.853	1.006	0.627	0.203	0.000	5.131	0.591

200-35680-A-13-A 10/18/2016 04:51:48 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:52:10	133512.640	2.500	1230.045	531006.390	1520.069	38795.099	69444.375	2930.258	182018.520	35.000	15387.100	2060.127
2	16:52:32	134772.720	5.000	1365.056	531759.850	1310.052	33994.634	68841.883	3000.270	182372.360	40.000	16217.887	1915.110
3	16:52:53	130619.850	10.000	1315.052	527136.410	1230.045	28779.827	67215.264	2570.198	183353.030	10.000	16373.038	2075.129
x		132968.400	5.833	1303.384	529967.550	1353.389	33856.520	68500.507	2833.575	182581.310	28.333	15992.675	2016.789
σ		2129.254	3.819	68.257	2480.616	149.790	5009.065	1153.099	230.762	691.355	16.073	530.150	88.375
%RSD		1.601	65.465	5.237	0.468	11.068	14.795	1.683	8.144	0.379	56.727	3.315	4.382

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:52:10	5280.837	10993.625	380115.770	115.000	80.000	1005.030	1890.107	1485.066	461.006	422.005	458.506	2490.186
2	16:52:32	5776.001	9462.685	356967.260	135.001	170.001	1055.033	1700.087	1475.065	448.006	432.006	447.506	2335.164
3	16:52:53	5806.011	8427.130	345162.480	80.000	120.000	860.022	1650.082	1430.061	478.007	462.506	463.506	2485.185
x		5620.949	9627.813	360748.510	110.000	123.334	973.362	1746.758	1463.398	462.340	438.839	456.506	2436.845
σ		294.928	1291.191	17780.786	27.839	45.093	101.289	126.636	29.300	15.045	21.098	8.186	88.094
%RSD		5.247	13.411	4.929	25.308	36.562	10.406	7.250	2.002	3.254	4.808	1.793	3.615

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:52:10	930.026	215889.250	455.006	60.000	0.000	5.000	936977.720	630.012	160.001	134.001	145.001	149891.000
2	16:52:32	875.023	215463.790	340.003	35.000	5.000	5.000	943162.340	755.017	170.001	137.001	95.000	153412.830
3	16:52:53	765.018	218280.090	385.004	45.000	5.000	10.000	936840.310	675.014	165.001	148.001	170.001	153029.330
x		856.689	216544.380	393.338	46.667	3.333	6.667	938993.460	686.681	165.001	139.667	136.667	152111.050
σ		84.018	1518.147	57.953	12.583	2.887	2.887	3611.011	63.314	5.000	7.371	38.188	1932.160
%RSD		9.807	0.701	14.734	26.964	86.603	43.301	0.385	9.220	3.030	5.278	27.943	1.270

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:52:10	275.002	550.009	780.018	114340.870	0.000	32155.990	220.001
2	16:52:32	280.002	600.011	775.018	117754.520	0.000	28975.165	180.001
3	16:52:53	270.002	485.007	665.013	117442.330	0.000	26295.728	110.000
x		275.002	545.009	740.017	116512.570	0.000	29142.294	170.001
σ		5.000	57.665	65.003	1887.214	0.000	2933.704	55.678
%RSD		1.818	10.581	8.784	1.620	0.000	10.067	32.752

200-35700-A-19-A 10/18/2016 04:57:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:57:53	141568.710	5.000	1095.036	566693.180	430.006	12594.757	64434.313	2360.167	191129.670	25.000	21443.786	2595.202
2	16:58:14	140509.800	0.000	905.025	562649.590	430.006	11844.207	66060.661	1810.098	191756.810	20.000	21593.980	2590.201
3	16:58:36	140731.660	2.500	1100.036	556146.700	510.008	12214.474	66060.661	2290.157	192232.240	30.000	21303.607	2780.232
x		140936.730	2.500	1033.366	561829.820	456.673	12217.813	65518.545	2153.474	191706.240	25.000	21447.124	2655.212
σ		558.442	2.500	111.175	5320.816	46.189	375.286	938.973	299.425	553.023	5.000	145.215	108.299
%RSD		0.396	100.000	10.759	0.947	10.114	3.072	1.433	13.904	0.288	20.000	0.677	4.079

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:57:53	7296.597	1480.066	274298.770	40.000	115.000	480.007	990.029	1876.106	584.010	455.006	444.006	2630.208
2	16:58:14	7661.761	1435.062	280760.030	20.000	90.000	645.012	1130.038	1896.108	620.012	459.506	488.507	2625.207
3	16:58:36	7706.781	1305.051	281792.240	40.000	90.000	525.008	1170.041	1810.098	590.010	509.508	483.007	2820.239
x		7555.046	1406.726	278950.350	33.333	98.334	550.009	1096.703	1860.771	598.011	474.673	471.840	2691.884
σ		224.953	90.883	4061.309	11.547	14.434	85.297	94.522	45.009	19.288	30.251	24.261	111.186

%RSD		2.978	6.461	1.456	34.641	14.678	15.508	8.619	2.419	3.225	6.373	5.142	4.130
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:57:53	355.004	230563.840	150.001	30.000	0.000	0.000	962936.360	665.013	60.000	70.500	30.000	158136.670
2	16:58:14	310.003	228799.770	135.001	40.000	0.000	0.000	981429.670	715.015	125.000	83.000	20.000	157995.340
3	16:58:36	370.004	225941.170	170.001	20.000	0.000	10.000	976301.240	655.013	130.001	80.500	25.000	158843.350
x		345.004	228434.930	151.667	30.000	0.000	3.333	973555.760	678.347	105.000	78.000	25.000	158325.120
σ		31.226	2332.829	17.560	10.000	0.000	5.774	9547.453	32.147	39.051	6.614	5.000	454.325
%RSD		9.051	1.021	11.578	33.333	0.000	173.205	0.981	4.739	37.192	8.480	20.000	0.287

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:57:53	160.001	330.003	445.006	118630.700	0.000	12074.372	25.000
2	16:58:14	130.001	340.003	405.005	119547.210	0.000	11789.168	15.000
3	16:58:36	135.001	335.003	420.005	121833.680	0.000	11348.863	25.000
x		141.667	335.003	423.339	120003.870	0.000	11737.468	21.667
σ		16.073	5.000	20.208	1649.597	0.000	365.507	5.774
%RSD		11.346	1.493	4.773	1.375	0.000	3.114	26.647

200-35736-A-14-A 10/18/2016 05:03:14 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	17:03:35	139481.220	2.500	880.023	570023.930	680.014	13185.213	65769.513	2160.140	195732.630	25.000	23075.964	2510.189
2	17:03:57	143101.720	2.500	925.026	571110.180	520.008	11138.721	67315.668	2080.130	195934.990	20.000	24112.430	2785.233
3	17:04:19	137716.640	2.500	905.025	566931.070	630.012	11513.976	63952.463	2300.159	193972.230	35.000	23616.721	2670.214
x		140099.860	2.500	903.358	569355.060	610.011	11945.970	65679.215	2180.143	195213.280	26.667	23601.705	2655.212
σ		2745.325	0.000	22.547	2168.357	81.856	1089.494	1683.420	111.370	1079.536	7.638	518.396	138.134
%RSD		1.960	0.000	2.496	0.381	13.419	9.120	2.563	5.108	0.553	28.641	2.196	5.202
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:03:35	8116.976	3835.441	309716.230	35.000	140.001	640.012	1535.071	1937.113	636.012	478.507	502.008	2565.197
2	17:03:57	8352.092	2940.259	299349.370	40.000	140.001	605.011	1600.077	2051.126	658.013	535.009	534.009	2650.211
3	17:04:19	8277.055	3395.346	302627.790	40.000	190.001	665.013	1615.078	1931.112	645.012	474.007	511.008	2725.223
x		8248.708	3390.349	303897.800	38.333	156.667	636.679	1583.409	1973.117	646.346	495.841	515.675	2646.877
σ		120.094	447.612	5298.833	2.887	28.868	30.140	42.529	67.625	11.061	33.995	16.503	80.065
%RSD		1.456	13.203	1.744	7.531	18.426	4.734	2.686	3.427	1.711	6.856	3.200	3.025
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:03:35	330.003	230310.370	60.000	15.000	0.000	5.000	967308.980	580.010	80.000	69.500	70.000	158934.210
2	17:03:57	385.004	230107.590	95.000	60.000	0.000	5.000	978695.730	650.013	135.001	93.000	55.000	162791.170
3	17:04:19	390.005	236891.650	150.001	25.000	0.000	5.000	994575.640	720.016	100.000	84.000	40.000	157571.360
x		368.337	232436.540	101.667	33.333	0.000	5.000	980193.450	650.013	105.000	82.167	55.000	159765.580
σ		33.292	3859.573	45.369	23.629	0.000	0.000	13694.891	70.003	27.839	11.857	15.000	2707.394
%RSD		9.039	1.660	44.625	70.887	0.000	0.000	1.397	10.769	26.513	14.430	27.273	1.695

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:03:35	110.000	270.002	595.011	117764.590	0.000	7006.472	50.000
2	17:03:57	100.000	320.003	595.011	122145.950	0.000	6391.225	40.000
3	17:04:19	145.001	220.001	535.009	120081.030	0.000	6336.204	35.000
x		118.334	270.002	575.010	119997.190	0.000	6577.967	41.667
σ		23.629	50.001	34.642	2191.885	0.000	372.115	7.638
%RSD		19.968	18.519	6.025	1.827	0.000	5.657	18.330

200-35736-A-14-A SD@5 10/18/2016 05:08:56 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:09:18	142052.800	2.500	545.009	355041.790	310.003	6421.237	62767.972	910.025	194215.030	15.000	24292.691	2345.165
2	17:09:40	139229.120	2.500	565.010	362407.800	240.002	6231.165	62416.657	910.025	195611.220	5.000	24347.771	2360.167
3	17:10:02	138896.360	2.500	680.014	355174.570	260.002	6136.129	63018.917	1010.031	195459.450	10.000	24863.532	2345.165
x		140059.430	2.500	596.677	357541.390	270.002	6262.844	62734.515	943.360	195095.230	10.000	24501.332	2350.166
σ		1734.310	0.000	72.861	4214.965	36.056	145.170	302.521	57.738	766.045	5.000	314.882	8.661
%RSD		1.238	0.000	12.211	1.179	13.354	2.318	0.482	6.120	0.393	50.000	1.285	0.369

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:09:18	8347.090	635.012	279687.220	25.000	50.000	260.002	855.022	2106.133	698.015	514.508	488.507	2650.211
2	17:09:40	8257.045	580.010	276204.870	15.000	40.000	245.002	960.028	2121.135	688.014	482.507	483.507	2940.259
3	17:10:02	8317.075	710.015	275015.440	20.000	35.000	290.003	915.025	2043.125	717.015	506.008	501.008	2645.210
x		8307.070	641.679	276969.170	20.000	41.667	265.002	910.025	2090.131	701.015	501.008	491.007	2745.227
σ		45.849	65.258	2427.863	5.000	7.638	22.913	52.681	41.394	14.732	16.576	9.014	168.922
%RSD		0.552	10.170	0.877	25.000	18.330	8.646	5.789	1.980	2.101	3.309	1.836	6.153

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:09:18	120.000	230401.610	40.000	30.000	0.000	5.000	959750.240	520.008	55.000	47.500	15.000	155936.090
2	17:09:40	100.000	228799.770	70.000	20.000	0.000	5.000	969098.590	475.007	65.000	60.000	25.000	159045.260
3	17:10:02	80.000	230107.590	50.000	30.000	0.000	0.000	990970.100	460.006	95.000	58.000	5.000	158722.200
x		100.000	229769.660	53.333	26.667	0.000	3.333	973272.980	485.007	71.667	55.167	15.000	157901.180
σ		20.000	852.715	15.275	5.774	0.000	2.887	16023.078	31.226	20.817	6.714	10.000	1709.472
%RSD		20.000	0.371	28.641	21.651	0.000	86.603	1.646	6.438	29.047	12.171	66.667	1.083

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:09:18	110.000	220.001	340.003	117633.670	0.000	950.027	0.000
2	17:09:40	105.000	285.002	235.002	118640.770	0.000	1115.037	0.000
3	17:10:02	75.000	260.002	240.002	119829.230	0.000	1085.035	5.000
x		96.667	255.002	271.669	118701.220	0.000	1050.033	1.667
σ		18.930	32.788	59.232	1099.026	0.000	87.897	2.887
%RSD		19.582	12.858	21.803	0.926	0.000	8.371	173.205

CCV 10/18/2016 05:14:40 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	17:15:02	123616.740	89147.784	32351.368	┬14977622.000	┬4316126.700	┬41136276.000	┬13882619.000	1371413.600	159237.080	26210.594	┬2801918.100	7830
2	17:15:23	119758.720	88574.741	32471.601	┬14684081.000	┬4263858.800	┬39869650.000	┬13613118.000	┬1459395.500	155602.990	26746.444	┬2800017.400	7818
3	17:15:45	116485.650	86740.130	32191.058	┬14418179.000	┬4143678.200	┬39415717.000	┬13394773.000	┬1448457.400	157611.740	26275.696	┬2749331.800	7686
x		119953.700	88154.218	32338.009	┬14693294.000	┬4241221.300	┬40140548.000	┬13630170.000	┬1426422.200	157483.940	26410.911	┬2783755.700	7778
σ		3569.541	1257.708	140.748	┬279835.290	┬88424.938	┬891694.740	┬244369.620	┬47951.716	1820.409	292.397	┬29827.176	79
%RSD		2.976	1.427	0.435	┬1.905	┬2.085	┬2.221	┬1.793	┬3.362	1.156	1.107	┬1.071	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	17:15:02	98444.886	┬4078878.500	┬84801909.000	1219576.000	658148.160	813306.370	631963.410	82294.672	6803.388	9137.504	396.505	70
2	17:15:23	98027.436	┬4044078.900	┬83728057.000	1203551.700	647201.770	798726.030	628734.670	82197.193	6631.319	9062.463	413.505	70
3	17:15:45	95105.580	┬3999678.700	┬83607586.000	1190964.000	639674.360	778669.570	614762.680	82144.936	6694.344	9027.944	407.505	66
x		97192.634	┬4040878.700	┬84045851.000	1204697.200	648341.430	796900.660	625153.580	82212.267	6709.684	9075.971	405.838	69

σ		1819.454	T 39696.761	T 657530.920	14340.387	9289.480	17390.398	9142.451	75.998	87.054	56.015	8.622	2
%RSD		1.872	T 0.982	T 0.782	1.190	1.433	2.182	1.462	0.092	1.297	0.617	2.124	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	17:15:02	796760.210	193142.680	1623725.700	263694.670	8652.245	124871.040	846515.220	788364.770	525299.760	400850.150	530696.760	1382
2	17:15:23	800671.100	190087.860	1666356.200	260764.100	8392.112	125314.350	836886.780	785865.810	524319.610	399224.830	529798.860	1359
3	17:15:45	794024.160	189137.130	1678101.600	260566.040	8392.112	123687.260	830372.790	790140.990	527435.650	401130.780	527368.580	1390
x		797151.820	190789.220	1656061.200	261674.940	8478.823	124624.210	837924.930	788123.860	525685.010	400401.920	529288.070	1377
σ		3340.729	2092.853	28612.511	1751.942	150.188	841.156	8121.133	2147.750	1593.342	1029.002	1721.882	16
%RSD		0.419	1.097	1.728	0.670	1.771	0.675	0.969	0.273	0.303	0.257	0.325	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:15:02	32241.155	1403056.600	T 7500946.700	107445.220	0.000	170492.590	104491.530
2	17:15:23	32581.816	1403013.200	T 7467069.100	105804.780	0.000	184465.200	103510.440
3	17:15:45	32436.533	1408731.700	T 7549858.700	105583.380	0.000	194553.950	102599.830
x		32419.835	1404933.800	T 7505958.200	106277.790	0.000	183170.580	103533.930
σ		170.944	3289.099	T 41621.680	1017.065	0.000	12082.807	946.068
%RSD		0.527	0.234	T 0.555	0.957	0.000	6.596	0.914

CCB 10/18/2016 05:20:23 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:20:45	134268.670	5.000	700.015	268444.600	630.012	7646.754	57298.324	570.010	165002.750	30.000	16923.588	1655.082
2	17:21:08	129037.590	7.500	715.015	267296.370	630.012	7266.584	57810.087	680.014	166760.120	40.000	17644.335	1620.079
3	17:21:29	125984.370	7.500	610.011	262683.900	750.017	7306.601	55131.032	690.014	165659.220	10.000	17604.292	1545.072
x		129763.550	6.667	675.014	266141.620	670.014	7406.646	56746.481	646.679	165807.360	26.667	17390.738	1606.744
σ		4189.591	1.443	56.791	3049.017	69.285	208.900	1422.227	66.586	887.998	15.275	405.059	56.204
%RSD		3.229	21.651	8.413	1.146	10.341	2.820	2.506	10.297	0.536	57.282	2.329	3.498

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:20:45	6036.093	845.021	248742.440	125.000	100.000	330.003	650.013	1400.059	435.006	398.005	432.506	2125.135
2	17:21:08	5986.075	860.022	248057.340	105.000	55.000	255.002	635.012	1284.050	483.007	421.505	424.505	2395.172
3	17:21:29	5550.924	835.021	243749.470	110.000	80.000	290.003	540.009	1329.053	458.006	434.506	455.506	2150.139
x		5857.697	846.688	246849.750	113.334	78.334	291.669	608.345	1337.720	458.673	418.005	437.506	2223.482
σ		266.848	12.584	2706.680	10.408	22.546	37.528	59.654	58.488	24.008	18.500	16.094	149.213
%RSD		4.556	1.486	1.096	9.184	28.783	12.867	9.806	4.372	5.234	4.426	3.679	6.711

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:20:45	120.000	197766.430	3410.349	45.000	0.000	10.000	858863.540	3125.293	740.016	568.510	45.000	138351.860
2	17:21:08	120.000	200589.870	3305.328	60.000	5.000	15.000	852614.640	3450.357	730.016	622.012	55.000	142062.890
3	17:21:29	125.000	200599.990	2785.233	55.000	0.000	10.000	858284.840	3505.369	825.020	658.513	45.000	143969.140
x		121.667	199652.090	3166.970	53.333	1.667	11.667	856587.670	3360.340	765.018	616.345	48.333	141461.300
σ		2.887	1633.045	334.738	7.638	2.887	2.887	3452.894	205.406	52.204	45.268	5.774	2856.550
%RSD		2.373	0.818	10.570	14.321	173.205	24.744	0.403	6.113	6.824	7.345	11.945	2.019

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:20:45	150.001	1550.072	745.017	111592.340	0.000	2500.188	35.000
2	17:21:08	200.001	1325.053	810.020	110303.800	0.000	2340.164	50.000
3	17:21:29	150.001	1290.050	820.020	108290.670	0.000	2405.173	35.000
x		166.668	1388.392	791.686	110062.270	0.000	2415.175	40.000
σ		28.868	141.109	40.725	1664.035	0.000	80.479	8.660
%RSD		17.321	10.163	5.144	1.512	0.000	3.332	21.651

CCVL 10/18/2016 05:26:07 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:26:29	132907.830	210.001	6046.096	T 1097423.200	29255.654	75661.350	758610.530	26591.196	170962.370	15.000	32441.543	11038.654
2	17:26:51	132807.030	180.001	5911.048	T 1096720.000	30457.805	77519.862	754813.840	25910.124	171608.960	20.000	32231.135	11123.711
3	17:27:12	129914.370	202.501	6096.115	998988.160	29526.131	76304.271	750997.090	26511.068	171305.870	20.000	32161.000	10568.350
x		131876.410	197.501	6017.753	T 1064377.100	29746.530	76495.161	754807.150	26337.463	171292.400	18.333	32277.893	10910.238
σ		1699.926	15.613	95.734	T 56629.567	630.653	943.846	3806.720	372.248	323.507	2.887	145.999	299.123
%RSD		1.289	7.905	1.591	T 5.320	2.120	1.234	0.504	1.413	0.189	15.746	0.452	2.742

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:26:29	8046.942	7796.823	805589.830	3275.322	1360.055	4170.522	12789.906	2422.176	632.012	613.511	440.506	2335.164
2	17:26:51	8692.266	8282.057	808343.460	3120.292	1290.050	3985.477	12024.336	2404.173	637.012	603.011	412.005	2470.183
3	17:27:12	7856.851	8282.057	814329.560	3080.285	1265.048	4045.491	12594.757	2465.182	674.014	601.011	439.506	2575.199
x		8198.687	8120.313	809420.950	3158.633	1305.051	4067.163	12469.666	2430.511	647.679	605.844	430.672	2460.182
σ		437.892	280.150	4468.387	103.016	49.248	94.407	397.819	31.347	22.943	6.715	16.174	120.330

%RSD		5.341	3.450	0.552	3.261	3.774	2.321	3.190	1.290	3.542	1.108	3.756	4.891
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:26:29	21619.012	204162.860	14846.610	3045.278	70.000	615.011	877350.080	1450.063	5100.780	3579.884	4665.653	143192.490
2	17:26:51	21438.780	199679.030	15512.216	2900.252	40.000	745.017	866356.810	1510.068	5180.805	3776.928	4610.638	142204.080
3	17:27:12	21418.754	201389.420	15797.483	2645.210	60.000	640.012	876517.970	1450.063	5035.761	3744.921	4550.621	143525.340
x		21492.182	201743.770	15385.436	2863.580	56.667	666.680	873408.290	1470.065	5105.782	3700.578	4608.971	142973.970
σ		110.294	2262.822	487.950	202.540	15.275	68.984	6120.914	34.644	72.651	105.741	57.534	687.198
%RSD		0.513	1.122	3.172	7.073	26.956	10.347	0.701	2.357	1.423	2.857	1.248	0.481

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:26:29	2685.216	15086.825	7231.569	110595.730	0.000	9317.604	11333.852
2	17:26:51	2890.251	15657.351	7106.515	112820.570	0.000	10003.001	10948.595
3	17:27:12	2985.267	15537.239	7621.742	112035.300	0.000	10303.184	11388.890
x		2853.578	15427.138	7319.942	111817.200	0.000	9874.596	11223.779
σ		153.350	300.777	268.742	1128.340	0.000	505.181	239.900
%RSD		5.374	1.950	3.671	1.009	0.000	5.116	2.137

CCVL 10/18/2016 05:30:57 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	17:31:19	138523.280	165.001	6211.157	1006712.800	30988.782	76515.235	744912.980	25779.923	175034.310	50.000	32987.613	10803.500
2	17:31:40	134661.830	190.001	6301.191	986050.820	30237.404	77238.560	745069.760	25369.293	173427.640	15.000	32897.435	10688.426
3	17:32:03	131516.860	220.001	5961.066	T 1082961.700	30878.578	77097.911	744296.320	25769.907	171154.320	15.000	30978.764	10833.520
x		134900.660	191.668	6157.805	T 1025241.800	30701.588	76950.569	744759.690	25639.708	173205.430	26.667	32287.937	10775.149
σ		3509.309	27.538	176.228	T 51043.309	405.754	383.513	408.868	234.239	1949.514	20.207	1134.674	76.589
%RSD		2.601	14.368	2.862	T 4.979	1.322	0.498	0.055	0.914	1.126	75.777	3.514	0.711
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:31:19	8407.120	7841.844	805301.370	2990.268	1425.061	4095.503	12364.585	2488.186	730.016	603.511	442.006	2460.182
2	17:31:40	8497.165	8036.937	807908.090	2920.256	1505.068	4120.509	12314.548	2520.191	631.012	589.010	424.505	2645.210
3	17:32:03	8096.966	8086.962	805380.040	2880.249	1370.056	4065.496	12179.449	2516.190	650.013	584.510	448.506	2245.151
x		8333.751	7988.581	806196.500	2930.258	1433.395	4093.836	12286.194	2508.189	670.347	592.344	438.339	2450.181
σ		209.946	129.516	1482.803	55.687	67.891	27.545	95.770	17.438	52.541	9.929	12.413	200.217
%RSD		2.519	1.621	0.184	1.900	4.736	0.673	0.779	0.695	7.838	1.676	2.832	8.172
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:31:19	21093.339	204851.230	14191.039	3060.281	45.000	665.013	864262.150	970.028	4770.683	3484.864	4520.613	142536.910
2	17:31:40	21398.728	202037.190	14986.735	3065.282	40.000	705.015	877866.220	1165.041	4625.642	3537.375	4735.673	146158.070
3	17:32:03	22159.722	206126.810	15392.104	2785.233	40.000	650.013	875812.280	1160.040	4770.683	3634.396	4205.530	144947.560
x		21550.597	204338.410	14856.626	2970.265	41.667	673.347	872646.890	1098.370	4722.336	3552.212	4487.272	144547.510
σ		549.173	2092.483	611.012	160.262	2.887	28.432	7333.655	111.175	83.739	75.862	266.639	1843.429
%RSD		2.548	1.024	4.113	5.396	6.928	4.223	0.840	10.122	1.773	2.136	5.942	1.275

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:31:19	2730.224	15777.464	7471.674	113837.450	0.000	11138.721	10733.455
2	17:31:40	2765.229	15191.921	7336.614	110968.190	0.000	11263.805	11138.721
3	17:32:03	2600.203	15912.593	7561.715	111421.200	0.000	11619.049	11178.748
x		2698.552	15627.326	7456.668	112075.610	0.000	11340.525	11016.975
σ		86.953	383.077	113.298	1542.513	0.000	249.185	246.349
%RSD		3.222	2.451	1.519	1.376	0.000	2.197	2.236

200-35736-A-14-A PDS 10/18/2016 05:36:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:37:08	130277.180	1557.573	53124.532	T 8307292.100	276392.950	633619.540	T 7359641.700	229742.610	165931.910	45.000	120539.320	83981.053
2	17:37:30	126568.770	1450.063	53540.861	T 8044508.600	270792.120	609566.970	T 7189886.200	231618.310	163548.530	10.000	118650.840	82428.330
3	17:37:52	127878.710	1552.572	54208.012	T 7976634.300	267499.590	614088.490	T 7170587.200	229732.470	161791.500	15.000	118394.030	83568.989
x		128241.560	1520.069	53624.468	T 8109478.300	271561.550	619091.670	T 7240038.300	230364.460	163757.310	23.333	119194.730	83326.124
σ		1880.643	60.679	546.557	T 174640.910	4496.327	12783.010	T 104028.010	1085.871	2078.086	18.930	1171.509	804.347
%RSD		1.466	3.992	1.019	T 2.154	1.656	2.065	T 1.437	0.471	1.269	81.127	0.983	0.965

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:37:08	15862.545	65021.587	T 6152625.900	24853.517	10923.579	34210.074	99450.831	9321.606	1667.083	1997.120	432.506	3595.388
2	17:37:30	15056.798	61985.050	T 6041283.000	24783.413	11243.791	34054.756	101266.720	9152.512	1753.092	1977.617	417.005	3275.322
3	17:37:52	14336.163	63279.903	T 6084022.500	24793.428	10773.481	32927.494	99586.639	8893.372	1541.071	1989.119	392.505	3310.329
x		15085.169	63428.847	T 6092643.800	24810.119	10980.284	33730.775	100101.400	9122.497	1653.749	1987.952	414.005	3393.679
σ		763.586	1523.738	T 56169.879	37.916	240.228	699.982	1011.480	215.689	106.638	9.803	20.169	175.559
%RSD		5.062	2.402	T 0.922	0.153	2.188	2.075	1.010	2.364	6.448	0.493	4.872	5.173

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:37:08	197285.780	197159.300	133870.490	26486.029	440.006	6061.102	842225.900	1025.032	41200.862	30885.591	41707.119	137827.550
2	17:37:30	200271.070	194113.860	136647.890	26696.364	400.005	5856.029	829374.900	1020.031	41396.346	31443.633	41962.760	140993.870
3	17:37:52	199157.850	189460.780	135211.250	26455.981	465.006	5971.069	836613.560	1050.033	42088.075	31827.861	41987.823	140913.190
x		198904.900	193577.980	135243.210	26546.124	435.006	5962.733	836071.450	1031.699	41561.761	31385.695	41885.901	139911.530
σ		1508.633	3877.136	1388.978	130.976	32.788	102.790	6442.628	16.074	466.163	473.799	155.335	1805.237
%RSD		0.758	2.003	1.027	0.493	7.537	1.724	0.771	1.558	1.122	1.510	0.371	1.290

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:37:08	26210.594	138745.110	51088.180	108703.340	0.000	162296.370	108190.020
2	17:37:30	27102.018	140076.180	52311.968	107012.450	0.000	170240.030	108965.040
3	17:37:52	28273.962	140459.380	53134.564	107777.360	0.000	176934.210	110842.360
x		27195.525	139760.220	52178.237	107831.050	0.000	169823.540	109332.470
σ		1034.858	899.750	1029.725	846.723	0.000	7327.801	1363.813
%RSD		3.805	0.644	1.973	0.785	0.000	4.315	1.247

200-35736-A-14-B MS 10/18/2016 05:42:30 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:42:52	131980.500	1560.073	56686.236	T 8472514.000	283765.290	629990.790	T 7404364.600	244997.580	167517.660	15.000	120075.990	85352.996
2	17:43:14	128725.190	1445.063	55161.132	T 8216854.200	277887.490	632550.040	T 7454630.800	244875.810	163760.590	25.000	117391.980	84131.810
3	17:43:35	127122.970	1590.076	55722.996	T 8231071.100	278162.010	630530.640	T 7415656.500	243404.490	163427.350	25.000	117457.430	86177.221
x		129276.220	1531.737	55856.788	T 8306813.100	279938.260	631023.830	T 7424884.000	244425.960	164901.860	21.667	118308.470	85220.676
σ		2475.206	76.547	771.305	T 143677.130	3317.143	1349.022	T 26372.963	886.711	2271.461	5.774	1531.073	1029.105
%RSD		1.915	4.997	1.381	T 1.730	1.185	0.214	T 0.355	0.363	1.377	26.647	1.294	1.208

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:42:52	15021.767	65081.822	T 6319480.100	25890.093	10863.539	34671.025	102876.530	9107.488	1581.075	2036.124	386.004	3025.275
2	17:43:14	14366.189	64173.309	T 6366023.100	26070.374	11023.644	35587.955	102690.390	8971.414	1572.074	2086.131	399.005	3125.293
3	17:43:35	14231.073	64529.681	T 6389765.100	26170.531	11178.748	34931.568	103595.970	8952.404	1635.080	2092.131	410.505	3275.322
x		14539.676	64594.937	T 6358422.800	26043.666	11021.977	35063.516	103054.290	9010.435	1596.076	2071.462	398.505	3141.963

σ		422.933	457.758	T 35753.570	142.114	157.611	472.491	478.245	84.586	34.077	30.750	12.258	125.854
%RSD		2.909	0.709	T 0.562	0.546	1.430	1.348	0.464	0.939	2.135	1.484	3.076	4.006
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:42:52	206116.690	193365.230	138906.450	26846.605	375.004	6246.170	833009.610	710.015	41476.545	32151.983	42559.269	139219.040
2	17:43:14	207154.440	187235.840	141518.280	27768.113	475.007	6311.195	813458.530	805.019	42253.493	32581.816	44123.329	141145.140
3	17:43:35	207473.370	188803.380	142178.870	27903.338	485.007	6321.199	824816.850	895.024	42980.348	32968.576	43657.103	138543.450
x		206914.830	189801.490	140867.870	27506.019	445.006	6292.855	823761.660	803.353	42236.795	32567.458	43446.567	139635.870
σ		709.367	3184.261	1730.453	575.058	60.829	40.738	9818.155	92.516	752.041	408.486	803.003	1350.006
%RSD		0.343	1.678	1.228	2.091	13.669	0.647	1.192	11.516	1.781	1.254	1.848	0.967

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:42:52	57744.861	144281.830	53671.279	105754.460	0.000	191574.730	109020.400
2	17:43:14	58838.677	146556.540	55416.978	106700.460	0.000	195676.980	112483.300
3	17:43:35	57875.312	147353.520	54047.492	106559.560	0.000	203768.070	113797.170
x		58152.950	146063.960	54378.583	106338.160	0.000	197006.600	111766.960
σ		597.428	1593.992	918.740	510.386	0.000	6204.458	2467.639
%RSD		1.027	1.091	1.690	0.480	0.000	3.149	2.208

200-35736-A-14-C MSD 10/18/2016 05:48:15 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:48:38	131708.360	1520.069	54669.516	T 8245165.700	275559.310	621101.310	T 7398581.700	239031.880	165154.240	30.000	117945.870	83780.045
2	17:49:00	128876.350	1630.080	54669.516	T 8336123.400	285199.460	628708.720	T 7463322.200	236252.680	165861.210	40.000	118434.310	85352.996
3	17:49:23	127344.650	1645.081	54935.388	T 8098074.200	274186.950	612828.360	T 7250452.000	240137.610	166992.420	5.000	115453.510	85368.073
x		129309.790	1598.410	54758.140	T 8226454.500	278315.240	620879.460	T 7370785.300	238474.060	166002.630	25.000	117277.890	84833.705
σ		2213.912	68.258	153.501	T 120122.580	6001.266	7942.503	T 109123.370	2001.638	927.214	18.028	1598.731	912.527
%RSD		1.712	4.270	0.280	T 1.460	2.156	1.279	T 1.480	0.839	0.559	72.111	1.363	1.076

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:48:38	13840.745	61954.939	T 6213642.300	25008.749	11609.042	34180.012	100653.020	8817.332	1568.074	2012.622	388.005	3350.337
2	17:49:00	14561.358	63857.098	T 6304306.100	25534.545	11193.758	35131.989	101870.380	8833.340	1536.071	2031.624	418.005	3165.300
3	17:49:23	14436.249	63796.868	T 6258323.600	26015.288	11373.880	35202.136	102931.870	8867.358	1585.075	1993.619	418.505	3290.325
x		14279.451	63202.968	T 6258757.300	25519.527	11392.226	34838.046	101818.420	8839.343	1563.073	2012.622	408.172	3268.654
σ		385.046	1081.245	T 45333.449	503.438	208.249	570.952	1140.315	25.548	24.882	19.002	17.467	94.402
%RSD		2.697	1.711	T 0.724	1.973	1.828	1.639	1.120	0.289	1.592	0.944	4.279	2.888

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:48:38	200615.170	190684.610	136068.180	27192.164	430.006	6041.095	825142.390	805.019	41601.857	31633.993	42885.103	140640.900
2	17:49:00	203955.340	189309.070	137978.790	27667.946	405.005	6006.082	833146.190	730.016	42032.936	31907.013	43185.878	139914.830
3	17:49:23	204390.630	191119.550	141730.070	26986.831	535.009	6201.153	831055.590	725.016	42253.493	32298.265	43461.594	139390.460
x		202987.050	190371.080	138592.350	27282.314	456.673	6082.777	829781.390	753.350	41962.762	31946.423	43177.525	139982.070
σ		2065.604	945.090	2880.381	349.392	68.983	104.001	4151.253	44.816	331.437	333.885	288.336	627.925
%RSD		1.018	0.496	2.078	1.281	15.105	1.710	0.500	5.949	0.790	1.045	0.668	0.449

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:48:38	56836.748	141175.390	51825.451	107163.420	0.000	195353.220	109669.640
2	17:49:00	58266.672	142521.780	54087.622	105804.780	0.000	199071.830	109714.940
3	17:49:23	58382.075	144897.130	54724.697	108340.990	0.000	205367.530	111924.560
x		57828.498	142864.770	53545.923	107103.060	0.000	199930.860	110436.380
σ		860.818	1884.426	1523.642	1269.184	0.000	5062.119	1288.999
%RSD		1.489	1.319	2.845	1.185	0.000	2.532	1.167

CCV 10/18/2016 05:54:01 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	17:54:23	127294.270	92895.669	33077.792	T 14816344.000	T 4341598.100	T 41051531.000	T 14250018.000	T 1492901.800	158045.820	26400.894	T 2793609.300	7915
2	17:54:44	125803.010	91847.383	33343.320	T 14805459.000	T 4324110.800	T 40576364.000	T 13822669.000	1359255.600	154028.470	26050.343	T 2794387.600	7823
3	17:55:06	124090.240	90567.910	33243.120	T 14829277.000	T 4251381.800	T 40044491.000	T 13790812.000	T 1485736.700	161115.000	26536.108	T 2766583.000	7659
x		125729.170	91770.320	33221.411	T 14817027.000	T 4305696.900	T 40557462.000	T 13954500.000	T 1445964.700	157729.760	26329.115	T 2784860.000	7799
σ		1603.289	1165.791	134.089	T 11923.246	T 47844.001	T 503785.970	T 256421.350	T 75177.685	3553.819	250.711	T 15833.118	129
%RSD		1.275	1.270	0.404	T 0.080	T 1.111	T 1.242	T 1.838	T 5.199	2.253	0.952	T 0.569	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	17:54:23	97298.181	T 4126525.100	T 84779649.000	1198270.800	651031.680	805962.200	624852.700	81396.276	6663.332	8929.892	431.006	67
2	17:54:44	99999.097	T 4099762.200	T 83931825.000	1178776.600	641933.790	790795.990	625620.720	81625.393	6603.308	8878.864	416.505	66
3	17:55:06	95915.200	T 4077473.100	T 84340343.000	1187767.500	644936.440	788516.710	616940.990	80335.147	6571.295	8896.874	394.505	65
x		97737.493	T 4101253.500	T 84350606.000	1188271.700	645967.310	795091.630	622471.470	81118.939	6612.645	8901.877	414.005	66
σ		2077.089	T 24559.982	T 424004.920	9756.869	4635.721	9482.913	4804.904	688.383	46.723	25.879	18.378	1

%RSD		2.125	T 0.599	T 0.503	0.821	0.718	1.193	0.772	0.849	0.707	0.291	4.439	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	17:54:23	784152.890	187549.340	1582696.500	255087.260	8287.060	119673.110	818611.880	769105.480	508474.860	388630.290	517975.810	1355
2	17:54:44	777611.870	185354.990	1623544.200	255107.570	8197.015	120569.540	819609.140	772627.920	511984.900	390869.750	521462.030	1354
3	17:55:06	778240.200	183656.340	1639047.100	256904.860	8412.122	121556.670	822191.800	779931.580	512129.230	391542.780	518924.650	1383
x		780001.650	185520.230	1615095.900	255699.900	8298.733	120599.770	820137.610	773888.330	510863.000	390347.610	519454.160	1364
σ		3608.779	1951.749	29109.734	1043.579	108.028	942.143	1847.542	5522.005	2069.446	1524.837	1802.421	16
%RSD		0.463	1.052	1.802	0.408	1.302	0.781	0.225	0.714	0.405	0.391	0.347	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:54:23	32010.711	1377669.300	T 7489749.600	106630.010	0.000	231821.100	100240.540
2	17:54:44	32827.297	1406265.900	T 7524114.000	105855.090	0.000	241202.830	100808.950
3	17:55:06	33248.130	1410067.900	T 7452693.300	105080.210	0.000	245459.300	101105.740
x		32695.379	1398001.000	T 7488852.300	105855.110	0.000	239494.410	100718.410
σ		629.169	17710.133	T 35718.793	774.898	0.000	6977.761	439.650
%RSD		1.924	1.267	T 0.477	0.732	0.000	2.914	0.437

CCB 10/18/2016 05:59:45 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	18:00:06	137817.460	5.000	1180.042	274298.770	870.023	7986.913	60088.123	780.018	168406.550	20.000	16838.502	1735.090
2	18:00:28	131194.330	15.000	1300.051	265792.610	770.018	7481.679	58372.040	740.016	168941.920	25.000	16593.256	1415.060
3	18:00:50	131516.860	25.000	1320.052	267113.470	890.024	8041.940	58131.201	570.010	163326.360	5.000	16373.038	1570.074
x		133509.550	15.000	1266.715	269068.280	843.355	7836.844	58863.788	696.681	166891.610	16.667	16601.599	1573.408
σ		3734.244	10.000	75.724	4577.628	64.294	308.810	1067.121	111.509	3099.177	10.408	232.844	160.041
%RSD		2.797	66.667	5.978	1.701	7.624	3.940	1.813	16.006	1.857	62.450	1.403	10.172

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	18:00:06	5851.027	1030.032	246357.400	160.001	80.000	270.002	725.016	1252.047	394.005	433.006	412.505	1890.107
2	18:00:28	5615.946	920.025	242785.560	120.000	65.000	270.002	715.015	1274.049	427.005	420.505	399.005	2145.138
3	18:00:50	5811.013	835.021	243790.060	120.000	60.000	265.002	550.009	1235.046	399.005	385.004	381.004	2160.140
x		5759.329	928.359	244311.010	133.334	68.333	268.335	663.347	1253.714	406.672	412.838	397.505	2065.128
σ		125.774	97.772	1842.024	23.094	10.408	2.887	98.281	19.555	17.786	24.902	15.804	151.758
%RSD		2.184	10.532	0.754	17.321	15.232	1.076	14.816	1.560	4.374	6.032	3.976	7.349

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	18:00:06	115.000	194488.190	3355.338	65.000	0.000	20.000	834028.720	2920.256	750.017	528.008	80.000	138694.700
2	18:00:28	180.001	195196.390	3270.321	30.000	0.000	15.000	831769.940	3270.321	725.016	626.012	50.000	139511.470
3	18:00:50	65.000	192242.360	3160.300	45.000	0.000	45.000	837569.840	3175.302	735.016	632.512	65.000	140540.060
x		120.001	193975.650	3261.986	46.667	0.000	26.667	834456.170	3121.960	736.683	595.511	65.000	139582.070
σ		57.663	1542.274	97.786	17.559	0.000	16.073	2923.483	181.026	12.584	58.549	15.000	924.705
%RSD		48.053	0.795	2.998	37.627	0.000	60.273	0.350	5.798	1.708	9.832	23.077	0.662

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	18:00:06	240.002	1775.094	765.018	108119.560	0.000	3720.415	70.000
2	18:00:28	190.001	1430.061	890.024	106619.950	0.000	3580.385	65.000
3	18:00:50	230.002	1390.058	820.020	109327.400	0.000	3495.367	35.000
x		220.001	1531.738	825.020	108022.300	0.000	3598.722	56.667
σ		26.458	211.700	62.653	1356.345	0.000	113.639	18.930
%RSD		12.026	13.821	7.594	1.256	0.000	3.158	33.405

CCVL 10/18/2016 06:05:29 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:05:50	138220.780	197.501	6206.155	T 1074890.100	28915.061	74847.689	723520.840	25148.960	173629.730	15.000	29996.970	10643.397
2	18:06:12	130488.830	182.501	6131.127	963963.250	28895.026	75113.882	721047.020	25108.899	171022.990	15.000	28459.277	10103.061
3	18:06:34	129652.340	187.501	6106.118	962587.030	29195.549	73928.600	717530.010	24618.168	169891.500	20.000	29125.426	10128.076
x		132787.320	189.168	6147.800	T 1000480.100	29001.879	74630.057	720699.290	24958.676	171514.740	16.667	29193.891	10291.512
σ		4724.071	7.638	52.061	T 64444.613	168.022	621.889	3010.515	295.568	1917.017	2.887	771.129	304.999
%RSD		3.558	4.038	0.847	T 6.441	0.579	0.833	0.418	1.184	1.118	17.321	2.641	2.964

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:05:50	7301.599	7711.784	771031.480	2950.261	1295.050	3975.474	11889.239	2337.164	618.011	575.010	418.005	2390.171
2	18:06:12	7271.586	7516.695	772910.580	2795.234	1365.056	4190.527	12594.757	2185.143	622.012	596.511	418.005	2150.139
3	18:06:34	7146.532	7651.756	771539.180	2710.220	1180.042	3725.416	11834.200	2237.150	612.011	595.511	424.005	2435.178
x		7239.906	7626.745	771827.080	2818.572	1280.049	3963.806	12106.065	2253.152	617.345	589.010	420.005	2325.163
σ		82.245	99.921	972.071	121.710	93.415	232.775	424.113	77.263	5.033	12.135	3.464	153.237
%RSD		1.136	1.310	0.126	4.318	7.298	5.873	3.503	3.429	0.815	2.060	0.825	6.590

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:05:50	20367.437	195742.750	14120.980	2780.232	55.000	625.012	850647.860	1300.051	4355.569	3389.845	4305.556	138503.110
2	18:06:12	20267.315	197392.030	14386.206	2630.208	60.000	650.013	840428.490	1500.068	4510.610	3439.855	4520.613	142688.190
3	18:06:34	20032.031	195469.570	14346.172	2680.215	25.000	645.012	849280.720	1390.058	4410.583	3484.864	4475.601	143858.190
x		20222.261	196201.450	14284.452	2696.885	46.667	640.012	846785.690	1396.725	4425.588	3438.188	4433.923	141683.160
σ		172.182	1040.080	142.980	76.389	18.930	13.229	5547.771	100.175	78.602	47.532	113.425	2815.452
%RSD		0.851	0.530	1.001	2.832	40.564	2.067	0.655	7.172	1.776	1.382	2.558	1.987

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:05:50	2550.195	14536.336	6976.460	110646.060	0.000	10643.397	10698.433
2	18:06:12	3015.273	15312.031	7416.650	111753.410	0.000	10738.458	10613.378
3	18:06:34	2920.256	14901.659	6851.408	109458.260	0.000	11123.711	10798.497
x		2828.575	14916.675	7081.506	110619.240	0.000	10835.189	10703.436
σ		245.720	388.065	296.902	1147.813	0.000	254.348	92.661
%RSD		8.687	2.602	4.193	1.038	0.000	2.347	0.866

Analyte ICPS

STD0 10/18/2016 12:40:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:40:42	98.553%	0.428	93.066	-3723.954	21.162	-643.035	1888.428	-2.075	97.833%	0.000	-64.695	51.723
2	12:41:04	98.850%	0.405	-153.743	2861.445	-12.890	-595.063	220.064	31.851	99.668%	0.000	1065.007	-21.719
3	12:41:25	102.597%	-4.746	30.724	-7323.712	-8.121	63.366	-473.192	-36.940	102.499%	14.642	1636.146	-142.834
x		100.000%	-1.304	-9.984	-2728.740	0.051	-391.577	545.100	-2.388	100.000%	4.881	878.819	-37.610
σ		2.254%	2.980	128.342	5164.997	18.438	394.722	1213.898	34.396	2.350%	8.453	865.572	98.247
%RSD		2.254	228.493	1285.425	189.281	36499.710	100.803	222.693	1440.427	2.350	173.205	98.493	261.226

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:40:42	5728.329	-58.438	3864.254	-6.885	2.395	-55.763	-223.182	-551.385	548.538	-49.202	378.065	1887.742
2	12:41:04	5532.114	-54.896	-2750.193	12.523	-8.202	-79.458	-188.418	-173.073	437.804	-8.231	343.005	1934.009
3	12:41:25	5329.126	32.832	-2125.101	-3.635	-13.635	-11.900	-116.490	-146.806	426.027	-27.937	385.641	1798.904
x		5529.857	-26.834	-337.013	0.668	-6.480	-49.040	-176.030	-290.421	470.790	-28.457	368.903	1873.552
σ		199.611	51.703	3651.804	10.395	8.153	34.278	54.414	226.382	67.589	20.490	22.747	68.661
%RSD		3.610	192.678	1083.579	1557.187	125.802	69.896	30.912	77.949	14.356	72.005	6.166	3.665

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:40:42	-1.641	98.845%	828.739	-17.529	-51.041	6.765	100.116%	4400.464	377.877	225.379	-6.805	98.341%
2	12:41:04	3.609	99.783%	526.344	2.660	-29.415	-9.393	99.271%	4684.809	251.649	249.351	3.353	101.683%
3	12:41:25	-1.764	101.372%	286.126	-2.645	-39.906	-4.194	100.613%	4289.272	417.539	179.901	3.085	99.976%
x		0.068	100.000%	547.070	-5.838	-40.120	-2.274	100.000%	4458.181	349.022	218.210	-0.123	100.000%
σ		3.067	1.278%	271.899	10.467	10.815	8.248	0.679%	203.987	86.628	35.275	5.789	1.671%
%RSD		4498.789	1.278	49.701	179.284	26.956	362.726	0.679	4.576	24.820	16.166	4725.152	1.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:40:42	223.594	2119.433	-954.296	98.272%	0.000	9897.949	1.404
2	12:41:04	124.722	1647.839	-859.186	101.051%	0.000	9906.123	-34.911
3	12:41:25	148.420	1532.132	-567.582	100.677%	0.000	9362.408	-49.718
x		165.579	1766.468	-793.688	100.000%	0.000	9722.160	-27.742
σ		51.621	311.104	201.506	1.508%	0.000	311.581	26.304
%RSD		31.176	17.612	25.389	1.508	0.000	3.205	94.819

STD1 10/18/2016 12:44:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:44:42	105.148%	185.405	5303.233	670821.440	29106.966	67594.543	658346.620	24605.465	103.950%	14.425	11196.384	8471.768
2	12:45:04	105.840%	146.352	4953.252	T 712240.390	27732.547	66463.690	650898.140	25337.134	105.981%	28.341	12024.826	8068.025
3	12:45:25	103.070%	162.606	5323.557	660163.890	27602.893	68409.207	665316.910	24501.943	104.061%	9.604	11537.789	7989.718
x		104.686%	164.788	5193.347	T 681075.240	28147.469	67489.147	658187.230	24814.847	104.664%	17.457	11586.333	8176.504
σ		1.442%	19.617	208.177	T 27510.832	833.474	977.032	7210.709	455.266	1.142%	9.729	416.349	258.687
%RSD		1.377	11.905	4.009	T 4.039	2.961	1.448	1.096	1.835	1.091	55.732	3.593	3.164

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:44:42	6069.740	6911.422	553671.590	2824.361	1366.694	3612.742	11182.623	784.193	443.325	175.920	374.022	1775.301
2	12:45:04	5991.264	6959.900	532359.850	2925.137	1222.007	3799.551	11405.554	728.784	480.279	149.075	372.268	1953.312
3	12:45:25	6097.771	7259.364	552926.100	2398.412	1317.158	3737.590	11156.149	507.496	523.483	141.997	371.000	2097.180

x		6052.925	7043.562	546319.180	2715.970	1301.953	3716.628	11248.109	673.491	482.362	155.664	372.430	1941.931
σ		55.209	188.455	12094.880	279.591	73.532	95.152	136.993	146.401	40.120	17.896	1.517	161.241
%RSD		0.912	2.676	2.214	10.294	5.648	2.560	1.218	21.738	8.317	11.496	0.407	8.303
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:44:42	22263.464	104.679%	13905.213	2759.625	-67.568	702.492	102.268%	2112.238	4094.053	3365.769	4956.203	101.335%
2	12:45:04	22358.756	103.265%	14050.417	3023.116	-25.581	839.237	102.615%	2548.552	4302.873	3408.723	5109.955	102.050%
3	12:45:25	22005.007	105.370%	14558.141	2885.414	-70.601	711.446	102.831%	2616.148	4286.625	3456.024	5113.782	102.249%
x		22209.076	104.438%	14171.257	2889.385	-54.584	751.058	102.571%	2425.646	4227.850	3410.172	5059.980	101.878%
σ		183.039	1.073%	342.827	131.791	25.163	76.496	0.284%	273.515	116.156	45.145	89.894	0.481%
%RSD		0.824	1.027	2.419	4.561	46.099	10.185	0.277	11.276	2.747	1.324	1.777	0.472

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:44:42	3056.637	17662.131	14010.599	98.630%	0.000	18259.945	12978.988
2	12:45:04	2926.774	18069.053	13666.957	100.043%	0.000	18775.026	12919.788
3	12:45:25	3375.741	18019.148	13622.907	100.848%	0.000	18472.874	12781.528
x		3119.718	17916.777	13766.821	99.840%	0.000	18502.615	12893.435
σ		231.035	221.937	212.264	1.123%	0.000	258.825	101.333
%RSD		7.406	1.239	1.542	1.125	0.000	1.399	0.786

STD2 10/18/2016 12:47:26 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:47:47	98.735%	803.087	25137.736	T 3615169.200	135805.910	306667.570	T 3556499.000	115470.960	97.801%	25.551	49646.050	40754.100
2	12:48:09	96.124%	835.497	27146.247	T 3518924.800	132098.370	301036.350	T 3410577.100	115856.110	98.569%	30.445	50693.009	40112.832
3	12:48:31	98.394%	772.865	26486.399	T 3579758.800	135152.370	310175.350	T 3571656.400	118595.000	97.111%	10.287	49596.778	41066.267
x		97.751%	803.816	26256.794	T 3571284.200	134352.220	305959.760	T 3512910.800	116640.690	97.827%	22.094	49978.612	40644.400
σ		1.419%	31.322	1023.752	T 48678.641	1979.055	4610.435	T 88947.064	1703.399	0.729%	10.514	619.176	486.092
%RSD		1.452	3.897	3.899	T 1.363	1.473	1.507	T 2.532	1.460	0.745	47.588	1.239	1.196
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:47:47	5923.845	31581.819	T 2903202.300	12497.625	5519.618	16768.573	53841.851	4174.842	388.515	941.241	370.941	1935.438
2	12:48:09	5471.483	30788.887	T 2880741.700	12709.625	5633.716	16103.990	52725.910	4290.002	297.121	891.557	413.010	2061.957
3	12:48:31	5686.524	31489.159	T 2944307.700	12633.037	5445.701	16124.449	53801.405	4143.531	361.879	916.794	376.856	1944.766
x		5693.951	31286.622	T 2909417.200	12613.429	5533.012	16332.337	53456.389	4202.792	349.172	916.530	386.936	1980.720
σ		226.272	433.534	T 32235.492	107.351	94.720	377.930	632.936	77.132	47.004	24.843	22.774	70.507
%RSD		3.974	1.386	T 1.108	0.851	1.712	2.314	1.184	1.835	13.462	2.711	5.886	3.560
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:47:47	107372.890	98.764%	71446.090	14724.398	-30.717	3564.002	97.995%	1643.018	23464.343	18529.296	24154.636	97.781%
2	12:48:09	106742.280	97.936%	73144.702	15098.879	-54.186	3773.760	98.183%	2149.190	23615.669	18189.259	23216.002	97.543%
3	12:48:31	108802.620	99.405%	71262.320	14603.240	7.830	3672.475	98.978%	2071.295	22891.391	18193.917	23833.670	98.592%
x		107639.260	98.702%	71951.038	14808.839	-25.691	3670.079	98.385%	1954.501	23323.801	18304.157	23734.769	97.972%
σ		1055.682	0.736%	1037.820	258.384	31.312	104.900	0.522%	272.549	382.046	194.990	477.069	0.550%
%RSD		0.981	0.746	1.442	1.745	121.877	2.858	0.530	13.945	1.638	1.065	2.010	0.562

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:47:47	15864.753	81393.337	57034.881	97.102%	0.000	66349.253	62746.609
2	12:48:09	15416.302	84999.706	59896.939	96.258%	0.000	69289.632	64439.588
3	12:48:31	15581.189	84959.228	58455.191	97.671%	0.000	72873.476	64698.341
x		15620.748	83784.090	58462.337	97.010%	0.000	69504.120	63961.513

σ		226.828	2070.552	1431.043	0.711%	0.000	3267.396	1060.062
%RSD		1.452	2.471	2.448	0.733	0.000	4.701	1.657

STD3 10/18/2016 12:50:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:51:01	100.176%	91038.669	32933.580	┬13840118.000	┬4211476.000	┬39118159.000	┬13576879.000	┬1440963.000	99.915%	26329.520	┬2668051.200	767392
2	12:51:23	96.617%	93440.350	33316.129	┬13585567.000	┬4204856.400	┬39144155.000	┬13538687.000	┬1458839.900	99.714%	25992.606	┬2688253.700	775531
3	12:51:45	95.925%	93622.131	33889.345	┬13849159.000	┬4281419.800	┬40034836.000	┬13740178.000	┬1488130.800	97.586%	27609.770	┬2746483.500	787015
x		97.573%	92700.383	33379.685	┬13758281.000	┬4232584.100	┬39432383.000	┬13618581.000	┬1462644.600	99.072%	26643.965	┬2700929.500	776646
σ		2.281%	1441.954	481.042	┬149643.480	┬42422.296	┬521901.490	┬107023.160	┬23812.945	1.290%	853.207	┬40723.620	9858
%RSD		2.338	1.555	1.441	┬1.088	┬1.002	┬1.324	┬0.786	┬1.628	1.302	3.202	┬1.508	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:51:01	6853.896	┬4000837.700	┬81406302.000	1177963.700	635064.100	821977.400	650621.550	87662.999	-725.154	9432.649	377.004	1747
2	12:51:23	8109.381	┬4004802.000	┬82086450.000	1178379.500	630918.590	799869.050	645275.610	86324.643	-445.044	9250.398	398.057	1113
3	12:51:45	8851.962	┬4102438.200	┬83974906.000	1202305.800	642300.800	807790.410	654267.950	88052.153	-784.455	9480.582	373.639	922
x		7938.413	┬4036026.000	┬82489220.000	1186216.300	636094.500	809878.960	650055.040	87346.598	-651.551	9387.876	382.900	1260
σ		1009.946	┬57548.856	┬1330826.700	13935.440	5760.641	11201.175	4522.862	906.176	181.282	121.448	13.234	432
%RSD		12.722	┬1.426	┬1.613	1.175	0.906	1.383	0.696	1.037	27.823	1.294	3.456	34

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	12:51:01	858451.030	97.745%	1712983.800	288325.690	364.988	142065.710	95.491%	887238.130	595459.970	469829.400	605864.660	97.5
2	12:51:23	849669.060	96.585%	1827742.400	286764.440	194.861	141732.880	96.470%	891826.600	600287.500	469131.400	606149.750	98.9
3	12:51:45	866840.210	97.861%	1826207.200	287793.960	-231.229	142347.570	96.351%	888292.500	597741.570	469698.620	602224.460	97.5
x		858320.100	97.397%	1788977.800	287628.030	109.540	142048.720	96.104%	889119.080	597829.680	469553.140	604746.290	98.0
σ		8586.324	0.706%	65817.209	793.739	307.129	307.697	0.534%	2403.319	2414.974	371.045	2188.617	0.8
%RSD		1.000	0.725	3.679	0.276	280.381	0.217	0.556	0.270	0.404	0.079	0.362	0

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:51:01	37628.405	1638080.200	┬15760673.000	97.898%	0.000	303746.500	120248.350
2	12:51:23	38372.062	1708467.300	┬16181675.000	95.502%	0.000	313833.250	121426.980
3	12:51:45	40009.933	1729662.700	┬16346891.000	95.047%	0.000	312895.890	125404.180
x		38670.133	1692070.100	┬16096413.000	96.149%	0.000	310158.550	122359.840
σ		1218.422	47942.569	┬302266.760	1.532%	0.000	5572.738	2701.539
%RSD		3.151	2.833	┬1.878	1.593	0.000	1.797	2.208

STD4 10/18/2016 12:54:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	12:54:31	103.595%	251779.300	91525.195	┬38551733.000	┬11808110.000	┬108999900.000	┬39183364.000	┬4256401.400	104.015%	75380.402	┬7694541.600
2	12:54:53	101.499%	253223.200	91146.724	┬38485983.000	┬11844997.000	┬109685830.000	┬39075267.000	┬4243877.900	104.588%	75490.338	┬7758916.900
3	12:55:15	100.407%	259977.280	96143.041	┬39415311.000	┬12223820.000	┬114274590.000	┬40678640.000	┬4366235.800	102.420%	77469.162	┬8046317.800
x		101.834%	254993.260	92938.320	┬38817676.000	┬11958976.000	┬110986770.000	┬39645757.000	┬4288838.400	103.674%	76113.301	┬7833258.800
σ		1.620%	4376.247	2781.814	┬518610.400	┬230102.460	┬2867911.500	┬896134.390	┬67320.010	1.123%	1175.496	┬187300.980
%RSD		1.591	1.716	2.993	┬1.336	┬1.924	┬2.584	┬2.260	┬1.570	1.083	1.544	┬2.391

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	12:54:31	-587.231	┬11436687.000	┬234072240.000	┬3679992.600	1752384.000	™2520150.700	1793284.700	246090.280	-2547.343	25783.554	406.303
2	12:54:53	-3583.240	┬11719273.000	┬235370760.000	┬3739074.100	1763288.700	™2491370.700	1762834.700	242876.940	-2835.305	25604.974	457.693

3	12:55:15	-1643.153	T 11976571.000	T 243155450.000	T 3831822.300	1801314.700	T 2472611.400	1774912.600	243978.520	-2742.109	25619.886	435.42
x		-1937.875	T 11710844.000	T 237532810.000	T 3750296.300	1772329.100	TM 2494710.900	1777010.700	244315.250	-2708.252	25669.471	433.14
σ		1519.593	T 270040.540	T 4912438.500	T 76534.436	25687.559	TM 23945.017	15333.021	1632.918	146.936	99.079	25.77
%RSD		78.415	T 2.306	T 2.068	T 2.041	1.449	TM 0.960	0.863	0.668	5.425	0.386	5.95

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	12:54:31	T 2706179.600	99.031%	T 5636523.300	799965.340	1019.094	391489.280	97.588%	T 2893318.600	1704835.300	1349750.300	T 1971348.10
2	12:54:53	T 2719537.900	100.848%	T 5760790.600	798882.160	2243.216	394900.420	100.178%	T 2897898.600	1695883.600	1335556.300	T 1951488.20
3	12:55:15	T 2740034.400	100.434%	T 5861044.300	799607.170	1630.528	396713.210	100.133%	T 2916556.800	1722806.600	1348154.900	T 1959705.10
x		T 2721917.300	100.104%	T 5752786.000	799484.890	1630.946	394367.640	99.300%	T 2902591.300	1707841.900	1344487.200	T 1960847.10
σ		T 17052.319	0.952%	T 112474.330	551.849	612.061	2652.404	1.482%	T 12309.339	13711.000	7775.392	T 9979.07
%RSD		T 0.626	0.951	T 1.955	0.069	37.528	0.673	1.493	T 0.424	0.803	0.578	T 0.50

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:54:31	110489.030	T 5575983.600	T 47140217.000	97.257%	0.000	789477.090	362948.810
2	12:54:53	114335.130	T 5611045.400	T 46902337.000	99.117%	0.000	790069.220	359551.540
3	12:55:15	114324.270	T 5588341.200	T 46588168.000	99.889%	5.006	783139.350	358102.330
x		113049.480	T 5591790.100	T 46876907.000	98.754%	1.669	787561.890	360200.890
σ		2217.415	T 17783.517	T 276902.010	1.353%	2.890	3841.456	2487.637
%RSD		1.961	T 0.318	T 0.591	1.370	173.205	0.488	0.691

STD5 10/18/2016 12:57:15 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	12:57:36	103.127%	423447.070	156658.200	T 66402084.000	TM 20731097.000	T 189430170.000	TM 69865125.000	TM 7477945.500	105.219%	134139.340	TM
2	12:57:58	100.950%	437291.460	162337.970	T 66589002.000	TM 21047379.000	TM 195544510.000	TM 71816019.000	TM 7765570.200	104.959%	139426.450	TM
3	12:58:20	97.483%	M 450982.640	M 167730.920	T 65567811.000	T 20505520.000	T 192367200.000	TM 70762505.000	TM 7827010.800	106.593%	137131.110	TM
x		100.520%	M 437240.390	M 162242.370	T 66186299.000	TM 20761332.000	TM 192447290.000	TM 70814550.000	TM 7690175.500	105.590%	136898.970	TM
σ		2.846%	M 13767.855	M 5536.979	T 543718.910	TM 272192.000	TM 3057961.300	TM 976488.010	TM 186346.200	0.878%	2651.184	
%RSD		2.831	M 3.149	M 3.413	T 0.821	TM 1.311	TM 1.589	TM 1.379	TM 2.423	0.831	1.937	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	
1	12:57:36	-16326.573	TM 20466608.000	T 411692950.000	TM 6499385.000	TM 3351814.000	TM 4260894.800	TM 3312901.600	411588.250	-4366.123	M 41663.110	
2	12:57:58	-13246.675	TM 20856990.000	TM 420041870.000	TM 6573851.200	TM 3420825.700	TM 4372888.600	TM 3374495.800	M 416935.220	-4673.603	M 42614.689	
3	12:58:20	-2839.824	TM 20901899.000	T 417774590.000	TM 6510710.500	TM 3322121.600	TM 4261768.400	TM 3323507.200	410381.930	-4401.521	M 41840.205	
x		-10804.357	TM 20741832.000	TM 416503140.000	TM 6527982.200	TM 3364920.400	TM 4298517.200	TM 3336968.200	M 412968.470	-4480.416	M 42039.335	
σ		7067.304	TM 239406.400	TM 4317241.400	TM 40125.274	TM 50640.514	TM 64408.989	TM 32929.607	M 3487.859	168.239	M 506.078	
%RSD		65.412	TM 1.154	TM 1.037	TM 0.615	TM 1.505	TM 1.498	TM 0.987	M 0.845	3.755	M 1.204	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	
1	12:57:36	TM 4687505.900	99.561%	TM 10186120.000	M 1358846.700	2167.434	675860.770	100.917%	T 5140369.300	TM 3316867.400	2325214.200	TI
2	12:57:58	TM 4785330.500	98.996%	TM 10456943.000	M 1368247.100	2612.042	684986.720	100.689%	T 5175560.900	TM 3372397.500	M 2394005.900	TI
3	12:58:20	TM 4731034.700	97.669%	TM 10701299.000	M 1363693.000	2607.142	676401.220	102.501%	T 5210581.800	TM 3356811.400	M 2379441.700	TI
x		TM 4734623.700	98.742%	TM 10448121.000	M 1363595.600	2462.206	679082.900	101.369%	T 5175504.000	TM 3348692.100	M 2366220.600	TI
σ		TM 49010.962	0.971%	TM 257702.770	M 4700.975	255.292	5119.993	0.987%	T 35106.289	TM 28641.553	M 36251.514	
%RSD		TM 1.035	0.984	TM 2.466	M 0.345	10.368	0.754	0.974	T 0.678	TM 0.855	M 1.532	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:57:36	M 240035.300	TM 10012792.000	TM 82502667.000	97.606%	0.000	M 1611299.000	M 765892.040
2	12:57:58	M 244147.730	TM 10175037.000	TM 84009494.000	98.028%	0.000	M 1631691.400	M 771626.020
3	12:58:20	M 242358.950	TM 10062705.000	TM 83250872.000	99.328%	0.000	M 1635189.400	M 781661.590
x		M 242180.660	TM 10083511.000	TM 83254345.000	98.321%	0.000	M 1626059.900	M 773059.880
σ		M 2062.006	TM 83099.424	TM 753419.750	0.898%	0.000	M 12902.416	M 7981.960
%RSD		M 0.851	TM 0.824	TM 0.905	0.913	0.000	M 0.793	M 1.033

ICV 10/18/2016 01:02:59 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:03:20	95.778%	46602.698	18309.579	T 7160854.200	T 2146002.500	T 20313958.000	T 7064989.100	699775.040	97.755%	13666.507	1279200.400	394554.220
2	13:03:42	91.250%	47957.298	18325.437	T 7203974.000	T 2156503.000	T 20714534.000	T 7090824.900	704354.720	98.165%	13701.433	1256740.100	391283.860
3	13:04:04	90.396%	48681.816	19883.402	T 7302393.400	T 2174521.900	T 20338269.000	T 6973032.900	703684.760	98.282%	12932.153	1289700.500	391075.880
x		92.475%	106.741%	114.916%	T 107.343%	T 104.234%	T 105.916%	T 103.798%	97.100%	98.068%	13433.364	96.710%	97.663%
σ		2.893%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.277%	434.413	n/a	n/a
%RSD		3.128	2.210	4.799	T 1.004	T 0.668	T 1.098	T 0.879	0.352	0.282	3.234	1.320	0.497

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:03:20	6558.412	T 2045317.900	T 42423545.000	610606.350	326858.430	404495.700	324226.280	43534.443	-58.641	4582.679	409.805	1693.183
2	13:03:42	6618.165	T 2067327.200	T 42818878.000	619000.740	331896.140	422406.500	333871.260	44651.068	-134.594	4695.311	380.854	1722.812
3	13:04:04	6478.551	T 2036605.900	T 42171917.000	608007.210	329005.760	407939.220	324679.960	43204.009	-88.401	4694.004	370.081	1708.338
x		6551.709	T 101.249%	T 101.355%	96.413%	102.936%	99.175%	102.404%	105.613%	-93.878	108.038%	386.913	1708.111
σ		70.048	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	38.272	n/a	20.544	14.816

%RSD		1.069	T 0.772	T 0.768	0.938	0.768	2.309	1.661	1.731	40.767	1.388	5.310	0.867
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:03:20	414292.330	98.668%	416293.470	138089.040	7.273	69245.368	97.853%	454584.720	298758.820	233619.560	296291.510	96.925%
2	13:03:42	424936.900	99.864%	421665.860	141692.810	67.916	71213.585	96.232%	467895.850	309114.700	242638.370	307070.760	96.590%
3	13:04:04	414149.390	99.112%	432767.800	138178.220	74.129	71163.818	98.763%	455753.470	298611.670	236901.650	298571.870	99.764%
x		417792.870	99.215%	91.505%	104.052%	49.773	100.374%	97.616%	459411.340	302161.730	101.397%	96.760%	97.760%
σ		6187.324	0.604%	n/a	n/a	36.936	n/a	1.282%	7370.994	6021.898	n/a	n/a	1.744%
%RSD		1.481	0.609	1.983	1.475	74.211	1.591	1.313	1.604	1.993	1.920	1.890	1.784

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:03:20	40989.221	843752.010	T 7830816.600	95.210%	0.000	209720.790	117749.790
2	13:03:42	40929.216	841692.370	T 7806852.900	96.916%	0.000	218396.040	118143.620
3	13:04:04	41337.392	842835.290	T 7774116.500	97.517%	0.000	228059.070	118421.730
x		110.708%	90.123%	T 97.797%	96.547%	0.000	86.877%	94.683%
σ		n/a	n/a	T n/a	1.197%	0.000	n/a	n/a
%RSD		0.536	0.122	T 0.365	1.239	0.000	4.194	0.286

ICVL 10/18/2016 01:08:43 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:09:05	95.546%	199.526	6479.224	658456.280	29100.836	67096.367	649859.020	24143.225	103.254%	14.521	11888.734	7862.400
2	13:09:27	94.354%	207.437	6582.064	664224.210	27625.088	68959.758	660309.320	24248.155	102.609%	24.340	11349.552	8030.074
3	13:09:50	97.374%	182.808	6457.582	648085.200	28031.201	69151.040	658157.120	24970.962	102.765%	34.049	11321.500	7966.514
x		95.758%	137.339%	124.021%	97.635%	102.299%	106.253%	96.697%	101.386%	102.876%	24.303	109.207%	98.994%
σ		1.521%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.336%	9.764	n/a	n/a
%RSD		1.588	6.396	1.022	1.245	2.698	1.659	0.841	1.843	0.327	40.174	2.775	1.064
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:09:05	4565.140	7009.257	550491.060	2843.698	1240.503	3317.273	11427.230	619.653	395.882	125.211	368.450	2111.396
2	13:09:27	4825.307	7314.233	553594.620	2822.832	1253.343	3546.986	11134.469	526.322	420.088	93.307	398.940	2102.591
3	13:09:50	4945.205	7429.054	538724.170	2813.611	1334.114	3426.434	11357.385	826.416	340.494	168.660	393.528	1969.494
x		4778.551	111.926%	98.011%	111.231%	124.662%	103.311%	110.448%	79.272%	385.488	74.846%	386.972	2061.160
σ		194.298	n/a	n/a	n/a	n/a	n/a	n/a	n/a	40.802	n/a	16.268	79.507
%RSD		4.066	2.992	1.433	0.545	3.977	3.350	1.352	23.359	10.585	29.307	4.204	3.857
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:09:05	20556.677	104.179%	16023.089	3094.636	-47.903	717.981	102.186%	4507.106	5109.049	4058.832	4759.505	99.416%
2	13:09:27	22144.774	104.891%	15717.013	2954.090	-77.617	732.172	103.651%	5437.439	5645.310	4238.724	4981.529	101.348%
3	13:09:50	21707.398	103.406%	16624.244	2959.724	-52.894	775.989	102.281%	5534.701	5655.513	4385.733	4940.881	99.249%
x		96.168%	104.159%	108.835%	112.134%	-59.471	105.587%	102.706%	5159.749	5469.958	112.707%	98.443%	100.004%
σ		n/a	0.742%	n/a	n/a	15.911	n/a	0.820%	567.294	312.597	n/a	n/a	1.167%
%RSD		3.821	0.713	2.863	2.650	26.755	4.075	0.798	10.995	5.715	3.873	2.415	1.167

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:09:05	3253.223	19427.654	14938.520	96.063%	0.000	19792.599	13363.864
2	13:09:27	3283.224	18994.135	14336.447	99.613%	0.000	18999.680	12247.526
3	13:09:50	3717.406	19239.008	15169.645	97.907%	0.000	19312.480	13310.376
x		92.100%	102.769%	116.035%	97.861%	0.000	76.930%	104.010%
σ		n/a	n/a	n/a	1.775%	0.000	n/a	n/a
%RSD		7.600	1.131	2.903	1.814	0.000	2.062	4.853

ICBIS 10/18/2016 01:19:56 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:20:18	101.127%	2.706	-34.838	3184.097	-5.077	-388.905	4855.415	-47.344	106.150%	9.416	1084.076	117.244
2	13:20:40	101.459%	12.530	74.560	-1512.163	-28.315	-403.546	1710.283	64.378	108.976%	13.759	1209.415	-4.789
3	13:21:01	100.799%	5.219	18.697	-1948.298	71.739	-324.244	1170.974	-19.282	109.341%	13.716	11.966	-188.996
x		101.128%	6.818	19.473	-92.121	12.782	-372.232	2578.891	-0.749	108.156%	12.297	768.485	-25.514
σ		0.330%	5.103	54.703	2845.656	52.363	42.198	1989.883	58.121	1.746%	2.495	658.156	154.169
%RSD		0.327	74.850	280.922	3089.028	409.653	11.337	77.160	7759.009	1.615	20.293	85.643	604.255

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:20:18	5614.006	-62.515	8139.976	-19.109	-18.848	-12.060	-292.684	-247.518	464.106	-35.056	384.005	1878.054
2	13:20:40	5444.675	-11.906	-2041.920	-10.543	-9.916	-57.415	-158.573	-114.697	434.414	-27.946	402.450	1979.372
3	13:21:01	5748.773	-26.956	3438.353	-19.796	-9.977	35.443	-248.896	-107.202	423.124	-31.851	384.540	1885.268
x		5602.485	-33.793	3178.803	-16.483	-12.914	-11.344	-233.384	-156.472	440.548	-31.618	390.332	1914.231
σ		152.376	25.988	5095.907	5.155	5.139	46.433	68.388	78.937	21.168	3.561	10.498	56.529
%RSD		2.720	76.904	160.309	31.277	39.797	409.310	29.303	50.448	4.805	11.263	2.690	2.953

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:20:18	5.931	107.415%	-267.655	5.370	-64.481	19.618	107.552%	1980.564	-636.406	-539.081	-12.145	103.531%
2	13:20:40	6.146	109.860%	-378.462	19.593	-68.322	42.139	106.847%	1946.833	-561.399	-470.495	15.964	101.754%
3	13:21:01	1.389	109.820%	-300.848	-13.190	-54.507	14.508	107.142%	2156.161	-624.189	-438.170	1.873	102.076%
x		4.488	109.032%	-315.655	3.924	-62.437	25.422	107.180%	2027.853	-607.331	-482.582	1.897	102.453%
σ		2.687	1.400%	56.868	16.439	7.131	14.702	0.354%	112.391	40.245	51.530	14.054	0.947%
%RSD		59.857	1.284	18.016	418.893	11.421	57.830	0.330	5.542	6.627	10.678	740.751	0.924

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:20:18	82.223	756.621	-766.750	100.726%	0.000	7801.362	-34.831
2	13:20:40	90.174	561.900	-885.644	101.238%	0.000	7911.474	-39.895
3	13:21:01	123.889	644.174	-846.064	100.198%	0.000	8174.660	-44.681
x		98.762	654.232	-832.819	100.720%	0.000	7962.498	-39.802
σ		22.121	97.749	60.543	0.520%	0.000	191.808	4.925
%RSD		22.398	14.941	7.270	0.516	0.000	2.409	12.375

ICSA 10/18/2016 01:25:39 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:26:00	96.815%	8.311	215.155	TM 132842910.000	T 13562579.000	T 125050330.000	TM 135540990.000	T 4963680.100	111.275%	266534.420	1063.232	2543.212
2	13:26:22	96.045%	21.450	112.300	TM 135474280.000	T 13998019.000	T 128648040.000	TM 138270470.000	T 5024374.100	110.226%	280424.420	1012.310	2797.385
3	13:26:44	93.865%	32.769	15.885	TM 131574810.000	T 13795713.000	T 127667570.000	TM 138521070.000	T 5105020.200	112.630%	276646.230	1353.612	2677.984
x		95.575%	1.#IO%	1.#IO%	TM 99.057%	T 99.832%	T 98.732%	TM 101.282%	T 104.293%	111.377%	274535.020	1.#IO%	1.#IO%
σ		1.530%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.205%	7181.636	n/a	n/a
%RSD		1.601	58.725	87.073	TM 1.492	T 1.581	T 1.463	TM 1.203	T 1.409	1.082	2.616	16.108	4.758

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:26:00	2417.210	1647.028	T 269237830.000	289.854	254.817	820.250	-692.025	-33.007	356.811	-19.880	419.365	1959.146
2	13:26:22	2583.764	2074.919	T 277676240.000	351.988	311.944	560.665	-600.251	-17.813	378.408	-9.404	460.553	1875.520
3	13:26:44	2468.997	2434.802	T 272269430.000	427.916	380.155	894.937	-562.953	-41.879	374.784	-26.314	455.243	2019.321
x		2489.990	1.#IO%	T 97.746%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	370.001	-1.#IO%	445.053	1951.329

σ		85.238	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	11.566	n/a	22.405	72.218
%RSD		3.423	19.217	T 1.565	19.391	19.881	23.128	10.741	39.387	3.126	46.056	5.034	3.701
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:26:00	3463.681	106.284%	T 3007026.700	429.174	365.067	206.514	105.160%	3533.094	-399.895	-318.051	140.110	106.140%
2	13:26:22	3303.218	107.521%	T 3090566.700	453.122	436.817	204.153	109.327%	4048.033	-243.972	-251.399	161.572	108.157%
3	13:26:44	3662.575	110.441%	T 3095014.800	542.512	432.781	220.323	108.845%	4819.551	-266.118	-182.685	254.237	110.554%
x		1.#IO%	108.082%	T 103.432%	1.#IO%	411.555	1.#IO%	107.777%	4133.559	-303.328	-1.#IO%	1.#IO%	108.284%
σ		n/a	2.134%	T n/a	n/a	40.310	n/a	2.279%	647.479	84.359	n/a	n/a	2.210%
%RSD		5.178	1.975	T 1.618	12.577	9.795	4.153	2.115	15.664	27.811	26.997	32.731	2.041

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:26:00	534.904	968.943	3636.755	98.613%	0.000	72450.339	-8.948
2	13:26:22	606.438	810.745	4502.718	101.798%	0.000	60096.001	18.936
3	13:26:44	509.889	1235.917	6936.713	104.058%	0.000	48410.924	65.280
x		1.#IO%	1.#IO%	1.#IO%	101.490%	0.000	1.#IO%	1.#IO%
σ		n/a	n/a	n/a	2.735%	0.000	n/a	n/a
%RSD		9.104	21.378	34.046	2.695	0.000	19.929	149.444

ICSAB 10/18/2016 01:31:21 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:31:43	89.414%	4220.805	61073.043	TM 133158070.000	T 13478034.000	T 123598460.000	TM 134081910.000	T 4962600.800	109.920%	271300.940	53865.228	9822
2	13:32:05	90.154%	3825.555	58297.294	TM 127549050.000	T 13181584.000	T 121444490.000	TM 130855110.000	T 4898168.600	111.874%	270133.030	51987.203	9574
3	13:32:26	89.485%	3820.673	59106.718	TM 129110900.000	T 13105697.000	T 122285020.000	TM 133099100.000	T 4935151.300	111.164%	271247.300	49515.077	9582
x		89.684%	110.538%	113.402%	TM 96.561%	T 95.991%	T 95.098%	TM 97.770%	T 102.239%	110.986%	270893.760	98.190%	96.
σ		0.408%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.989%	659.354	n/a	
%RSD		0.455	5.805	2.399	TM 2.228	T 1.484	T 0.887	TM 1.247	T 0.656	0.891	0.243	4.213	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:31:43	3237.310	79735.494	T 267841090.000	59718.184	13177.974	31204.971	22682.455	18265.000	-54.369	4732.771	437.065	184
2	13:32:05	2978.568	77913.394	T 267499850.000	56435.638	12374.766	29641.738	22195.235	17955.960	41.030	4871.302	427.059	159
3	13:32:26	3235.624	77075.302	T 272471060.000	57803.201	12093.855	29614.039	21998.385	17984.037	-39.147	4883.949	422.744	157
x		3150.501	96.620%	T 96.389%	91.269%	98.081%	90.816%	87.105%	96.824%	-17.495	89.623%	428.956	167
σ		148.900	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	51.253	n/a	7.347	15
%RSD		4.726	1.738	T 1.031	2.844	4.484	3.020	1.580	0.946	292.952	1.737	1.713	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	13:31:43	4358.479	106.279%	T 3040051.400	66451.737	386.758	16564.085	108.109%	4426.727	112489.730	88025.748	118009.150	109.
2	13:32:05	3583.098	107.840%	T 3078051.000	65834.455	580.967	16219.947	108.886%	4289.496	113172.360	89150.281	118309.950	111.
3	13:32:26	3237.861	108.567%	T 3095484.000	65776.222	393.220	16543.845	109.524%	3711.965	114245.040	89410.157	120638.700	112.
x		3726.480	107.562%	T 103.668%	98.616%	453.648	93.586%	108.840%	4142.730	113302.380	94.758%	95.736%	111.
σ		573.903	1.169%	T n/a	n/a	110.309	n/a	0.709%	379.310	884.844	n/a	n/a	1.
%RSD		15.401	1.087	T 0.923	0.567	24.316	1.174	0.651	9.156	0.781	0.828	1.210	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:31:43	34048.947	211948.940	309033.400	102.830%	0.000	246379.980	133420.200
2	13:32:05	34007.597	209994.930	300561.740	105.139%	0.000	249557.350	135405.380
3	13:32:26	34238.177	215956.670	302366.510	103.578%	0.000	262737.380	139301.310
x		91.881%	90.954%	95.237%	103.849%	0.000	100.448%	109.064%
σ		n/a	n/a	n/a	1.178%	0.000	n/a	n/a
%RSD		0.361	1.429	1.468	1.134	0.000	3.430	2.199

CCV 10/18/2016 01:37:05 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:37:27	84.830%	101249.580	35295.209	T 13518631.000	T 4086804.400	T 38525986.000	T 13553501.000	1354574.000	97.281%	25436.227	T 2667973.800	765661
2	13:37:49	86.663%	96193.602	35198.581	T 13412283.000	T 4103848.600	T 38156375.000	T 13333169.000	T 1434704.800	97.131%	26243.425	T 2649413.500	760322
3	13:38:10	85.381%	98382.794	36174.118	T 13547276.000	T 4201026.700	T 38872312.000	T 13373168.000	1389409.700	95.466%	26838.194	T 2712553.800	775513
x		85.625%	110.221%	108.441%	T 100.268%	T 99.709%	T 99.720%	T 98.891%	T 96.249%	96.626%	26172.615	T 101.496%	95.4
σ		0.941%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.007%	703.661	T n/a	
%RSD		1.099	2.571	1.512	T 0.527	T 1.492	T 0.930	T 0.875	T 2.885	1.042	2.689	T 1.212	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:37:27	9208.563	T 4024721.100	T 82394828.000	1152193.800	617649.380	742831.440	607158.080	82301.557	-794.148	9038.963	382.438	1014
2	13:37:49	7383.048	T 3973735.500	T 82295990.000	1160712.400	617112.380	741606.920	610432.830	83708.279	-721.266	9058.892	373.098	1468
3	13:38:10	8185.345	T 4032185.200	T 83082312.000	1187849.900	631171.050	758460.930	615398.210	82607.253	-633.026	8940.377	411.960	1193
x		8258.986	T 99.044%	T 98.549%	91.836%	97.226%	90.068%	95.498%	99.921%	-716.147	104.537%	389.165	1225
σ		914.983	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	80.683	n/a	20.286	228

%RSD		11.079	T 0.793	T 0.519	1.596	1.281	1.257	0.679	0.893	11.266	0.704	5.213	18
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	13:37:27	824768.780	101.231%	1688673.900	274593.500	185.469	138606.360	100.671%	852928.900	567986.290	448795.960	580759.010	101.2
2	13:37:49	844589.830	101.423%	1738025.100	279270.150	466.550	138421.470	98.769%	869963.510	580156.830	460761.060	592185.830	101.8
3	13:38:10	836642.540	100.505%	1765584.900	273999.060	180.044	138419.870	99.647%	868725.680	584756.580	458323.860	586708.690	101.0
x		835333.720	101.053%	93.474%	103.049%	277.354	98.525%	99.696%	863872.700	577633.230	97.242%	94.388%	101.3
σ		9975.131	0.484%	n/a	n/a	163.870	n/a	0.952%	9497.789	8665.276	n/a	n/a	0.3
%RSD		1.194	0.479	2.251	1.046	59.083	0.077	0.955	1.099	1.500	1.387	0.974	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:37:27	36734.495	1647120.200	T 15700554.000	98.816%	0.000	212736.700	119461.920
2	13:37:49	38116.638	1664123.300	T 15733503.000	99.661%	0.000	227201.620	119201.460
3	13:38:10	37962.805	1682039.900	T 15858054.000	98.743%	0.000	240265.560	120881.460
x		101.329%	88.995%	T 98.775%	99.074%	0.000	90.058%	96.081%
σ		n/a	n/a	T n/a	0.510%	0.000	n/a	n/a
%RSD		2.014	1.049	T 0.527	0.515	0.000	6.073	0.754

CCB 10/18/2016 01:42:49 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:43:10	89.310%	9.613	18.410	-3303.699	124.301	842.732	6668.855	87.647	100.696%	34.736	663.367	-446.643
2	13:43:32	88.323%	1.309	162.693	2764.482	122.286	1259.683	9617.771	98.628	98.172%	35.560	1415.811	-423.122
3	13:43:54	87.144%	7.162	-70.777	4283.297	488.611	2690.266	12071.633	172.187	99.694%	45.090	219.035	-443.499
x		88.259%	6.028	36.775	1248.027	245.066	1597.560	9452.753	119.487	99.521%	38.462	766.071	-437.755
σ		1.084%	4.266	117.814	4014.394	210.918	969.002	2705.167	45.968	1.271%	5.755	604.963	12.770
%RSD		1.229	70.778	320.360	321.659	86.066	60.655	28.618	38.471	1.277	14.962	78.970	2.917

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:43:10	4200.850	-123.084	7866.041	-17.833	-3.442	-54.980	-284.503	-376.945	401.335	-50.505	399.449	2004.463
2	13:43:32	4192.858	-54.560	8833.321	18.457	-12.990	-6.030	-230.436	-147.292	317.977	-24.206	352.417	1859.661
3	13:43:54	4374.649	25.259	10836.619	-2.537	-3.192	-68.877	-277.463	-296.569	376.967	-24.214	357.176	1871.477
x		4256.119	-50.795	9178.660	-0.638	-6.541	-43.296	-264.134	-273.602	365.426	-32.975	369.681	1911.867
σ		102.728	74.243	1515.100	18.220	5.586	33.013	29.395	116.536	42.860	15.181	25.890	80.408
%RSD		2.414	146.161	16.507	2856.900	85.396	76.249	11.129	42.593	11.729	46.039	7.003	4.206

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:43:10	2.652	102.119%	2573.736	16.494	-53.406	4.093	102.517%	3263.189	-170.829	-228.540	12.470	100.021%
2	13:43:32	-7.087	104.053%	2445.750	11.644	-55.693	25.864	102.437%	3617.275	-183.012	-150.860	7.612	98.701%
3	13:43:54	7.685	102.094%	2496.232	6.874	-66.633	26.882	102.052%	3777.939	-119.112	-102.830	17.503	100.949%
x		1.083	102.755%	2505.240	11.671	-58.577	18.946	102.335%	3552.801	-157.651	-160.743	12.528	99.890%
σ		7.510	1.124%	64.467	4.810	7.070	12.873	0.249%	263.362	33.927	63.435	4.946	1.129%
%RSD		693.337	1.093	2.573	41.218	12.069	67.945	0.243	7.413	21.520	39.464	39.478	1.131

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:43:10	118.318	1558.594	-863.183	98.321%	0.000	7286.264	-13.882
2	13:43:32	85.665	1385.491	-732.155	99.816%	0.000	7469.776	-39.614
3	13:43:54	121.342	1287.022	-488.962	99.986%	0.000	7130.738	-29.647
x		108.442	1410.369	-694.767	99.374%	0.000	7295.593	-27.714
σ		19.783	137.485	189.892	0.916%	0.000	169.711	12.974
%RSD		18.243	9.748	27.332	0.922	0.000	2.326	46.814

MB 200-110229/1-A 10/18/2016 01:48:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:48:52	96.415%	18.747	-74.416	145256.870	5406.681	54123.010	60216.886	2815.796	105.551%	203.407	1638.504	1141.762
2	13:49:14	97.367%	33.899	-19.071	152638.170	6868.593	69490.115	65302.751	3163.084	106.508%	178.278	1458.362	1496.038
3	13:49:36	96.913%	23.773	74.367	148004.010	6191.831	57489.151	60665.160	2942.553	106.046%	145.881	1544.770	1321.584
x		96.898%	25.473	-6.373	148633.020	6155.702	60367.426	62061.599	2973.811	106.035%	175.855	1547.212	1319.795
σ		0.477%	7.718	75.200	3730.633	731.626	8077.767	2815.854	175.742	0.479%	28.839	90.096	177.145
%RSD		0.492	30.297	1179.926	2.510	11.885	13.381	4.537	5.910	0.451	16.400	5.823	13.422

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:48:52	4284.024	3156.310	130804.340	563.692	308.064	255.164	19.880	-115.548	337.336	-32.863	373.960	1888.586
2	13:49:14	4544.976	3236.950	157745.770	567.633	361.377	314.486	84.812	-291.535	390.017	-31.407	387.121	1749.145
3	13:49:36	4397.635	3134.950	130339.520	494.852	268.775	270.097	154.961	-159.719	346.637	-32.074	374.101	1814.862
x		4408.878	3176.070	139629.880	542.059	312.739	279.916	86.551	-188.934	357.997	-32.115	378.394	1817.531
σ		130.839	53.794	15690.545	40.930	46.478	30.855	67.557	91.559	28.118	0.728	7.558	69.759
%RSD		2.968	1.694	11.237	7.551	14.862	11.023	78.055	48.461	7.854	2.268	1.997	3.838

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:48:52	345.934	108.926%	2206.517	62.360	-62.861	36.957	106.029%	46679.254	-463.604	-408.447	181.267	102.874%
2	13:49:14	346.068	108.021%	2677.407	61.329	-62.097	73.188	107.332%	46930.035	-439.475	-291.368	239.423	104.188%
3	13:49:36	330.338	110.759%	1982.648	70.190	-42.741	53.884	107.860%	48253.535	-374.302	-307.952	187.176	105.728%
x		340.780	109.235%	2288.857	64.626	-55.900	54.676	107.074%	47287.608	-425.794	-335.922	202.622	104.263%
σ		9.043	1.395%	354.623	4.846	11.402	18.129	0.943%	845.863	46.196	63.353	32.007	1.428%
%RSD		2.654	1.277	15.493	7.498	20.398	33.157	0.880	1.789	10.850	18.859	15.796	1.370

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:48:52	141.658	955.780	2453.506	100.060%	0.000	43386.446	40.290
2	13:49:14	143.515	1274.660	3251.449	104.041%	0.000	36004.515	65.300
3	13:49:36	168.466	879.556	2524.483	102.457%	0.000	31348.485	13.551
x		151.213	1036.665	2743.146	102.186%	0.000	36913.148	39.714
σ		14.970	209.603	441.632	2.005%	0.000	6070.201	25.879
%RSD		9.900	20.219	16.099	1.962	0.000	16.445	65.165

LCS 200-110229/2-A 10/18/2016 01:54:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:54:35	92.558%	1572.980	57254.908	T 7363600.600	273216.790	622746.270	T 6988587.600	233971.510	103.058%	106.811	100207.320	79477.778
2	13:54:57	93.233%	1497.170	57465.895	T 7264765.300	271145.530	620163.160	T 7022059.000	234631.600	102.121%	93.015	98779.789	82368.856
3	13:55:18	87.744%	1708.106	58485.947	T 7392227.900	273668.640	636283.170	T 7169282.800	245349.690	98.393%	50.745	101483.620	83809.720
x		91.179%	1592.752	57735.583	T 7340197.900	272676.980	626397.530	T 7059976.500	237984.270	101.191%	83.524	100156.910	81885.451
σ		2.993%	106.849	658.341	T 66876.318	1345.385	8658.084	T 96130.031	6387.176	2.468%	29.213	1352.620	2206.058
%RSD		3.283	6.708	1.140	T 0.911	0.493	1.382	T 1.362	2.684	2.439	34.976	1.351	2.694

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:54:35	4513.944	62593.311	T 5841888.100	24685.554	10561.441	32197.699	91147.240	7792.476	155.579	1478.014	372.486	1848.226
2	13:54:57	4198.063	65093.462	T 5850924.700	25471.504	10447.950	32481.472	94875.295	7791.854	214.551	1507.468	357.113	1671.693
3	13:55:18	4037.510	66641.870	T 6047064.800	26952.332	11272.049	32970.175	94447.652	7855.854	128.714	1470.158	353.781	1788.813
x		4249.839	64776.214	T 5913292.500	25703.130	10760.480	32549.782	93490.063	7813.395	166.282	1485.213	361.127	1769.577

σ		242.401	2042.839	T 115938.240	1151.004	446.651	390.742	2040.179	36.772	43.908	19.669	9.977	89.825
%RSD		5.704	3.154	T 1.961	4.478	4.151	1.200	2.182	0.471	26.406	1.324	2.763	5.076
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:54:35	216085.010	101.484%	149034.900	29798.305	30.826	6553.878	102.018%	42272.482	46196.636	35185.344	48330.230	99.854%
2	13:54:57	222453.740	102.407%	150490.930	30143.799	51.510	6623.607	100.950%	43395.394	46860.075	36146.049	49314.025	101.721%
3	13:55:18	220137.800	101.559%	150999.980	30024.179	-4.346	6968.818	101.335%	43547.046	46830.086	36247.905	48067.467	100.511%
x		219558.850	101.817%	150175.270	29988.761	25.997	6715.434	101.434%	43071.641	46628.932	35859.766	48570.574	100.695%
σ		3223.599	0.513%	1019.863	175.449	28.239	222.189	0.541%	696.233	374.680	586.283	657.115	0.947%
%RSD		1.468	0.504	0.679	0.585	108.626	3.309	0.534	1.616	0.804	1.635	1.353	0.941

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:54:35	68081.655	171169.870	120851.130	98.711%	5.065	221324.350	132791.890
2	13:54:57	68794.561	176347.970	123354.560	97.541%	0.000	235763.650	138317.320
3	13:55:18	69464.429	175529.780	121356.450	97.882%	0.000	241961.040	135965.770
x		68780.215	174349.210	121854.050	98.045%	1.688	233016.340	135691.660
σ		691.499	2783.610	1323.815	0.602%	2.924	10589.099	2772.894
%RSD		1.005	1.597	1.086	0.614	173.205	4.544	2.044

200-35680-A-7-B 10/18/2016 01:59:56 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:00:18	104.854%	445.834	2655.076	T 679613.760	T 1543188.600	T 61826764.000	T 4978405.100	809850.170	144.739%	8037.809	162878.540	119620.070
2	14:00:39	101.865%	603.932	2813.601	T 662400.850	T 1541593.000	T 62491281.000	T 5012067.600	819377.950	147.843%	7626.112	167596.980	118510.820
3	14:01:01	104.921%	569.451	2948.117	T 666449.550	T 1545781.800	T 63221455.000	T 5072275.000	832286.600	148.176%	7646.563	164535.820	120208.300
x		103.880%	539.739	2805.598	T 669488.050	T 1543521.100	T 62513167.000	T 5020915.900	820504.910	146.920%	7770.162	165003.780	119446.400
σ		1.746%	83.131	146.685	T 8999.745	T 2114.132	T 697602.910	T 47556.368	11260.589	1.896%	232.015	2393.778	861.961
%RSD		1.680	15.402	5.228	T 1.344	T 0.137	T 1.116	T 0.947	1.372	1.290	2.986	1.451	0.722

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:00:18	2905.199	T 8795309.000	T 212870800.000	89645.248	44305.455	T 1867892.900	537371.220	9754.008	159.263	871.850	401.202	1788.746
2	14:00:39	3120.471	T 9013707.500	T 220452830.000	92460.039	44613.959	T 1843757.000	543343.010	9960.766	147.366	901.761	428.251	1645.697
3	14:01:01	4044.913	T 8895068.400	T 218513710.000	93007.259	45770.461	T 1876851.400	543781.210	9884.514	162.590	863.006	436.297	1954.501
x		3356.861	T 8901361.600	T 217279110.000	91704.182	44896.625	T 1862833.800	541498.480	9866.429	156.406	878.872	421.917	1796.315
σ		605.514	T 109335.130	T 3938906.700	1803.959	772.325	T 17117.430	3581.022	104.559	8.004	20.310	18.385	154.541
%RSD		18.038	T 1.228	T 1.813	1.967	1.720	T 0.919	0.661	1.060	5.118	2.311	4.357	8.603

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:00:18	344931.020	284.425%	2695.155	6810.537	-206.698	4158.639	117.399%	53760.581	1568.102	1187.394	308877.100	134.532%
2	14:00:39	349637.270	298.321%	2481.669	7094.497	-174.516	4131.108	120.025%	54570.769	1697.328	1301.821	310673.700	134.066%
3	14:01:01	351033.680	296.782%	2578.711	6868.209	-174.361	4280.019	121.135%	55512.753	1431.233	1300.325	314576.350	140.489%
x		348533.990	293.176%	2585.178	6924.414	-185.192	4189.922	119.520%	54614.701	1565.554	1263.180	311375.720	136.362%
σ		3197.429	7.617%	106.890	150.092	18.625	79.231	1.919%	876.912	133.066	65.637	2913.755	3.581%
%RSD		0.917	2.598	4.135	2.168	10.057	1.891	1.605	1.606	8.500	5.196	0.936	2.626

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:00:18	952.770	4657.418	2116815.500	113.236%	0.000	208759.170	83502.542
2	14:00:39	896.716	4692.522	2161342.300	115.026%	0.000	201163.350	84537.250
3	14:01:01	851.533	4522.718	2187504.300	115.807%	0.000	195435.570	84053.673
x		900.340	4624.219	2155220.700	114.690%	0.000	201786.030	84031.155
σ		50.716	89.638	35739.796	1.318%	0.000	6683.591	517.721
%RSD		5.633	1.938	1.658	1.149	0.000	3.312	0.616

200-35680-A-14-D 10/18/2016 02:05:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:06:00	105.592%	527.903	3129.895	T 731274.270	T 1714081.400	T 64036443.000	T 5478203.400	T 1108544.100	160.764%	7834.878	157971.050	123203.840
2	14:06:22	106.325%	545.379	2822.252	T 730344.250	T 1705276.300	T 63929024.000	T 5414838.600	T 1114838.700	161.530%	7880.085	159565.130	124409.980
3	14:06:44	104.441%	483.531	2833.287	T 724137.260	T 1709764.900	T 64435966.000	T 5495976.400	T 1119460.100	161.157%	8645.492	165986.800	126768.710
x		105.453%	518.938	2928.478	T 728585.260	T 1709707.500	T 64133811.000	T 5463006.100	T 1114281.000	161.150%	8120.152	161174.330	124794.180
σ		0.950%	31.884	174.519	T 3880.049	T 4402.847	T 267129.150	T 42650.390	T 5479.330	0.383%	455.519	4243.256	1813.225
%RSD		0.900	6.144	5.959	T 0.533	T 0.258	T 0.417	T 0.781	T 0.492	0.238	5.610	2.633	1.453

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:06:00	3042.524	T 13386457.000	T 268584430.000	103950.700	46635.321	1519075.900	480105.590	11704.504	174.159	647.138	427.589	1719.986
2	14:06:22	3161.054	T 13489405.000	T 270673990.000	102169.780	46376.849	1525411.700	479553.480	11983.908	140.240	704.360	434.695	1515.870
3	14:06:44	2590.905	T 13632462.000	T 271228040.000	101585.420	46820.838	1529354.800	487277.400	12287.484	129.653	724.181	424.628	1397.764
x		2931.494	T 13502775.000	T 270162150.000	102568.630	46611.003	1524614.100	482312.150	11991.965	148.017	691.893	428.971	1544.540
σ		300.854	T 123546.260	T 1394149.000	1232.051	222.991	5185.696	4308.880	291.573	23.250	40.006	5.173	163.013

%RSD		10.263	T 0.915	T 0.516	1.201	0.478	0.340	0.893	2.431	15.708	5.782	1.206	10.554
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:06:00	456981.270	317.960%	2892.735	5954.085	-198.443	2746.572	128.279%	48386.821	1133.410	911.227	373872.490	140.896%
2	14:06:22	457789.410	323.761%	2902.662	5635.868	-150.126	2630.460	128.598%	48649.367	1308.515	939.321	378724.310	146.521%
3	14:06:44	464377.170	321.896%	2844.166	5893.193	-155.625	2737.236	128.585%	48564.508	1177.178	985.789	386318.250	147.310%
x		459715.950	321.206%	2879.854	5827.715	-168.065	2704.756	128.488%	48533.565	1206.368	945.446	379638.350	144.909%
σ		4056.909	2.962%	31.303	168.911	26.452	64.511	0.180%	133.980	91.129	37.657	6273.027	3.498%
%RSD		0.882	0.922	1.087	2.898	15.739	2.385	0.140	0.276	7.554	3.983	1.652	2.414

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:06:00	848.807	4769.971	1791015.700	121.616%	0.000	182818.470	98007.497
2	14:06:22	802.466	4982.884	1812686.400	120.924%	0.000	187801.900	99822.016
3	14:06:44	709.421	4793.105	1776870.000	124.692%	0.000	182855.280	97773.003
x		786.898	4848.653	1793524.000	122.411%	0.000	184491.880	98534.172
σ		70.985	116.821	18039.487	2.006%	0.000	2866.618	1121.451
%RSD		9.021	2.409	1.006	1.639	0.000	1.554	1.138

200-35736-A-1-A 10/18/2016 02:11:21 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:11:43	108.532%	1252.863	2246.546	T 762751.030	T 2245619.000	T 124281280.000	T 8536457.200	T 806457.080	200.902%	7046.983	295748.380	205861.080
2	14:12:05	106.964%	1238.619	2124.706	T 763874.520	T 2207130.700	T 123136950.000	T 8498546.700	T 804411.770	203.503%	6867.264	296498.410	202973.250
3	14:12:26	107.438%	1242.424	2081.907	T 739943.130	T 2201076.400	T 120889030.000	T 8364912.100	765666.800	204.712%	7002.870	298034.250	206495.600
x		107.645%	1244.635	2151.053	T 755522.890	T 2217942.000	T 122769090.000	T 8466638.700	T 792178.550	203.039%	6972.373	296760.340	205109.980
σ		0.805%	7.375	85.423	T 13504.161	T 24159.362	T 1725787.100	T 90113.933	T 22982.613	1.947%	93.660	1165.227	1877.463
%RSD		0.747	0.593	3.971	T 1.787	T 1.089	T 1.406	T 1.064	T 2.901	0.959	1.343	0.393	0.915

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:11:43	3663.367	T 13695212.000	TM 489945540.000	171690.110	65156.507	71954.269	300688.200	38678.733	151.984	332.105	482.088	1766.067
2	14:12:05	2970.313	T 13806495.000	TM 495245610.000	170744.300	65271.858	72726.187	306376.470	39276.708	138.556	380.432	489.741	1681.841
3	14:12:26	3827.368	T 13876456.000	TM 496757640.000	170902.980	65639.681	74175.727	304694.520	39344.776	156.794	343.240	502.756	1650.079
x		3487.016	T 13792721.000	TM 493982930.000	171112.460	65356.015	72952.061	303919.730	39100.072	149.111	351.926	491.528	1699.329
σ		454.929	T 91403.559	TM 3577278.500	506.507	252.341	1127.822	2922.211	366.474	9.452	25.308	10.449	59.939
%RSD		13.046	T 0.663	TM 0.724	0.296	0.386	1.546	0.962	0.937	6.339	7.191	2.126	3.527

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:11:43	514971.470	516.062%	2502.994	2592.924	-355.057	1525.298	133.070%	36406.013	565.163	377.724	740310.370	171.208%
2	14:12:05	522103.490	517.753%	2686.999	2441.423	-329.514	1610.593	132.930%	36678.133	572.791	450.950	755321.330	169.108%
3	14:12:26	527912.540	529.630%	2654.541	2541.706	-463.507	1720.496	134.362%	36921.627	560.471	497.974	768341.960	175.130%
x		521662.500	521.148%	2614.845	2525.351	-382.693	1618.795	133.454%	36668.591	566.142	442.216	754657.890	171.815%
σ		6481.795	7.394%	98.216	77.063	71.143	97.857	0.790%	257.940	6.218	60.599	14027.565	3.057%
%RSD		1.243	1.419	3.756	3.052	18.590	6.045	0.592	0.703	1.098	13.704	1.859	1.779

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:11:43	369.799	9196.782	1621252.700	127.208%	0.000	362229.860	111919.480
2	14:12:05	408.055	8723.592	1627640.100	128.828%	0.000	369551.820	113075.350
3	14:12:26	333.769	8728.902	1629928.300	130.839%	0.000	370357.550	111220.570
x		370.541	8883.092	1626273.700	128.958%	0.000	367379.740	112071.800
σ		37.149	271.676	4496.303	1.819%	0.000	4478.091	936.724
%RSD		10.025	3.058	0.276	1.411	0.000	1.219	0.836

200-35736-A-2-A 10/18/2016 02:17:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:17:26	107.418%	1123.951	4345.354	┬773764.110	┬2348161.800	┬128563690.000	┬10553238.000	640757.460	194.238%	19483.732	293768.340	211250.320
2	14:17:47	107.938%	1194.944	4489.915	┬741623.810	┬2365902.700	┬127288810.000	┬10491629.000	650927.580	197.980%	19199.296	297126.240	207403.170
3	14:18:09	105.159%	1157.768	4574.805	┬725903.780	┬2316848.000	┬127972140.000	┬10277353.000	┬688730.450	199.490%	18868.209	292834.910	209553.420
x		106.838%	1158.887	4470.025	┬747097.230	┬2343637.500	┬127941550.000	┬10440740.000	┬660138.490	197.236%	19183.746	294576.500	209402.300
σ		1.478%	35.510	116.012	┬24395.111	┬24838.343	┬637991.860	┬144811.680	┬25278.107	2.704%	308.056	2256.928	1928.021
%RSD		1.383	3.064	2.595	┬3.265	┬1.060	┬0.499	┬1.387	┬3.829	1.371	1.606	0.766	0.921

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:17:26	4746.015	┬10812600.000	┬339300520.000	135828.240	62620.411	69533.012	275451.020	13085.692	223.069	252.749	488.855	1731.417
2	14:17:47	4461.106	┬10753966.000	┬338697020.000	134902.520	62807.694	69913.281	277883.310	13134.665	211.523	308.588	464.826	1509.523
3	14:18:09	4987.568	┬10922499.000	┬337248900.000	133030.380	62415.340	69587.519	273770.270	13094.646	210.885	287.438	476.009	1470.390
x		4731.563	┬10829688.000	┬338415480.000	134587.050	62614.482	69677.937	275701.530	13105.001	215.159	282.925	476.563	1570.443
σ		263.528	┬85555.656	┬1054388.400	1425.358	196.244	205.628	2067.933	26.077	6.858	28.192	12.024	140.774
%RSD		5.570	┬0.790	┬0.312	1.059	0.313	0.295	0.750	0.199	3.187	9.964	2.523	8.964

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:17:26	437237.070	476.050%	683.784	2012.603	-334.702	1337.641	131.943%	36222.652	298.071	230.495	652997.640	164.858%
2	14:17:47	435329.310	478.709%	630.810	1986.338	-256.711	1277.595	133.171%	37327.298	344.822	275.344	659590.400	164.618%
3	14:18:09	437824.880	475.834%	739.195	1997.034	-272.186	1276.757	135.189%	37879.169	378.964	296.135	645690.550	164.566%
x		436797.090	476.865%	684.596	1998.658	-287.866	1297.331	133.434%	37143.039	340.619	267.325	652759.530	164.681%
σ		1304.663	1.601%	54.197	13.207	41.292	34.912	1.639%	843.490	40.610	33.547	6952.983	0.156%
%RSD		0.299	0.336	7.917	0.661	14.344	2.691	1.228	2.271	11.922	12.549	1.065	0.094

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:17:26	436.103	8400.518	1431603.000	124.684%	0.000	365213.790	94099.876
2	14:17:47	394.347	8956.485	1470117.600	124.082%	4.030	371896.040	96549.593
3	14:18:09	409.692	8768.004	1466905.600	125.026%	0.000	370909.870	95973.061
x		413.381	8708.336	1456208.700	124.597%	1.343	369339.900	95540.844
σ		21.121	282.746	21369.645	0.478%	2.326	3607.177	1280.776
%RSD		5.109	3.247	1.467	0.384	173.205	0.977	1.341

200-35736-A-3-A 10/18/2016 02:22:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:23:09	105.752%	1146.497	5360.412	┬801500.040	┬2290779.900	┬133973140.000	┬10977588.000	739833.710	197.087%	20195.239	298283.780	212429.110
2	14:23:31	105.914%	1031.430	5430.627	┬782353.090	┬2233753.200	┬130390910.000	┬11055430.000	┬795786.990	204.147%	19917.088	291347.270	205444.150
3	14:23:52	104.448%	1196.816	5562.615	┬815609.850	┬2313376.800	┬136162890.000	┬11303830.000	┬818732.460	197.671%	21122.932	302001.960	217161.910
x		105.371%	1124.915	5451.218	┬799821.000	┬2279303.300	┬133508980.000	┬11112282.000	┬784784.390	199.635%	20411.753	297211.000	211678.390
σ		0.804%	84.779	102.662	┬16691.836	┬41033.707	┬2913854.600	┬170389.640	┬40583.817	3.918%	631.406	5407.749	5894.838
%RSD		0.763	7.537	1.883	┬2.087	┬1.800	┬2.183	┬1.533	┬5.171	1.963	3.093	1.819	2.785

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:23:09	5014.274	┬9121930.400	┬278434930.000	120568.120	61653.504	74328.084	294875.590	9794.458	239.552	309.571	506.684	1845.465
2	14:23:31	5257.296	┬9114531.200	┬273036840.000	119083.150	60280.355	72669.286	291836.210	9668.589	239.184	254.553	505.661	1885.841
3	14:23:52	5304.100	┬9411100.400	┬282847700.000	123393.620	62592.342	71522.718	290754.540	10154.532	224.122	322.653	488.064	1577.517
x		5191.890	┬9215854.000	┬278106490.000	121014.960	61508.734	72840.030	292488.780	9872.526	234.286	295.593	500.136	1769.608

σ		155.590	T 169128.810	T 4913666.700	2189.699	1162.772	1410.456	2136.620	252.202	8.804	36.138	10.467	167.576
%RSD		2.997	T 1.835	T 1.767	1.809	1.890	1.936	0.730	2.555	3.758	12.226	2.093	9.470
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:23:09	498562.040	501.335%	245.091	2229.558	-350.175	1884.277	129.669%	36560.208	80.552	146.016	665968.680	165.745%
2	14:23:31	496791.350	506.056%	208.226	2178.782	-334.152	1694.327	132.206%	37387.293	218.579	173.720	670054.700	168.415%
3	14:23:52	488936.630	507.951%	241.316	2104.981	-326.749	1695.781	134.206%	36942.115	156.046	162.063	667976.860	169.160%
x		494763.340	505.114%	231.544	2171.107	-337.025	1758.128	132.027%	36963.205	151.726	160.600	668000.080	167.773%
σ		5123.154	3.407%	20.282	62.642	11.974	109.251	2.274%	413.946	69.115	13.910	2043.111	1.795%
%RSD		1.035	0.675	8.759	2.885	3.553	6.214	1.722	1.120	45.553	8.661	0.306	1.070

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:23:09	412.159	8495.804	1527155.200	121.136%	0.000	369195.590	127193.950
2	14:23:31	546.687	8246.725	1489978.300	127.745%	0.000	363358.180	123462.480
3	14:23:52	369.474	8620.965	1536454.700	124.904%	0.000	371942.070	126664.150
x		442.774	8454.498	1517862.700	124.595%	0.000	368165.280	125773.530
σ		92.488	190.509	24592.193	3.315%	0.000	4383.712	2018.882
%RSD		20.888	2.253	1.620	2.661	0.000	1.191	1.605

200-35736-A-4-A 10/18/2016 02:28:30 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	14:28:52	111.379%	917.615	4757.442	T 714071.170	T 2097621.300	T 111248620.000	T 10174875.000	T 975818.860	200.186%	21531.699	270762.240	186394.0
2	14:29:14	110.220%	977.245	4983.908	T 701641.120	T 2084525.800	T 110775930.000	T 9990902.500	T 991887.180	202.721%	21217.809	267991.220	186097.2
3	14:29:36	106.887%	944.785	5407.321	T 681838.740	T 2064228.100	T 110033090.000	T 10229605.000	T 985658.570	203.293%	21668.501	269594.890	185146.4
x		109.495%	946.548	5049.557	T 699183.680	T 2082125.000	T 110685880.000	T 10131794.000	T 984454.870	202.067%	21472.670	269449.450	185879.2
σ		2.332%	29.854	329.876	T 16256.129	T 16825.547	T 612748.600	T 125046.680	T 8101.509	1.654%	231.072	1391.223	651.7
%RSD		2.130	3.154	6.533	T 2.325	T 0.808	T 0.554	T 1.234	T 0.823	0.818	1.076	0.516	0.3

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	14:28:52	3863.113	TM 29923753.000	TM 510470750.000	105929.510	55987.586	62808.710	241399.840	35059.162	163.023	347.070	449.738	1398.6
2	14:29:14	4245.927	TM 30044516.000	TM 509126670.000	106470.440	55835.855	64411.840	247234.480	35730.419	164.404	357.756	460.430	1217.6
3	14:29:36	4015.724	TM 30004917.000	TM 516839030.000	108134.540	56102.266	64590.761	245641.010	34891.278	181.949	288.338	446.890	1681.2
x		4041.588	TM 29991062.000	TM 512145490.000	106844.830	55975.236	63937.104	244758.440	35226.953	169.792	331.055	452.353	1432.5
σ		192.713	TM 61562.057	TM 4119913.100	1149.203	133.634	981.304	3015.784	444.021	10.551	37.377	7.139	233.6
%RSD		4.768	TM 0.205	TM 0.804	1.076	0.239	1.535	1.232	1.260	6.214	11.290	1.578	16.3

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	14:28:52	566184.250	481.776%	657.077	2320.119	-366.749	1172.307	135.971%	37307.401	18.952	-6.975	701087.310	164.877
2	14:29:14	576784.600	483.735%	658.835	2422.666	-380.151	1055.866	134.768%	38615.421	4.822	65.482	713328.460	162.675
3	14:29:36	571785.730	483.597%	608.607	2339.482	-420.698	1129.009	137.397%	38686.988	245.064	84.949	715598.400	166.173
x		571584.860	483.036%	641.506	2360.756	-389.199	1119.061	136.045%	38203.270	89.613	47.818	710004.720	164.575
σ		5303.031	1.093%	28.505	54.483	28.090	58.854	1.316%	776.670	134.810	48.441	7805.662	1.768
%RSD		0.928	0.226	4.443	2.308	7.217	5.259	0.967	2.033	150.436	101.302	1.099	1.0

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:28:52	460.303	7692.276	1506928.500	126.337%	0.000	306577.170	59654.094
2	14:29:14	483.144	7487.438	1527282.400	127.305%	0.000	308430.410	59933.535
3	14:29:36	431.927	7870.590	1517731.500	128.983%	0.000	306565.570	59165.101
x		458.458	7683.435	1517314.200	127.542%	0.000	307191.050	59584.244
σ		25.659	191.729	10183.356	1.339%	0.000	1073.333	388.950
%RSD		5.597	2.495	0.671	1.050	0.000	0.349	0.653

200-35736-A-5-A 10/18/2016 02:34:14 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:34:36	107.308%	927.070	4257.862	T 648255.230	T 1991227.500	T 119454960.000	T 10053139.000	567052.650	192.191%	19992.101	269490.200	190500.060
2	14:34:57	107.225%	962.774	4570.023	T 668580.540	T 2071749.700	T 122143780.000	T 10215966.000	573598.790	192.138%	20477.200	279952.490	195393.030
3	14:35:19	104.076%	1011.334	4890.004	T 638964.450	T 1999653.000	T 118255590.000	T 10006976.000	561958.980	195.557%	19691.043	274613.810	192429.640
x		106.203%	967.059	4572.630	T 651933.410	T 2020876.700	T 119951440.000	T 10092027.000	567536.810	193.295%	20053.448	274685.500	192774.240
σ		1.842%	42.295	316.079	T 15146.775	T 44258.221	T 1991072.500	T 109788.150	5834.990	1.959%	396.653	5231.516	2464.618
%RSD		1.735	4.374	6.912	T 2.323	T 2.190	T 1.660	T 1.088	1.028	1.014	1.978	1.905	1.278

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:34:36	5215.310	T 8472852.100	T 281265100.000	114043.520	55777.800	61215.336	243272.420	10115.322	254.508	234.527	453.231	1722.860
2	14:34:57	4701.471	T 8515274.800	T 285047670.000	116442.710	56502.844	62766.208	244730.240	10349.531	246.138	274.026	484.458	1650.581
3	14:35:19	5415.668	T 8528961.100	T 282152540.000	115691.290	55388.284	62935.455	246717.440	10041.566	227.211	291.776	457.816	1566.998
x		5110.816	T 8505696.000	T 282821770.000	115392.510	55889.642	62305.666	244906.700	10168.806	242.619	266.776	465.168	1646.813
σ		368.386	T 29255.254	T 1978093.800	1227.189	565.635	948.038	1729.275	160.798	13.985	29.305	16.862	78.000

%RSD		7.208	T 0.344	T 0.699	1.063	1.012	1.522	0.706	1.581	5.764	10.985	3.625	4.736
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:34:36	374163.940	429.355%	696.241	2097.750	-323.602	1448.998	131.834%	36028.416	225.830	126.778	593159.000	156.938%
2	14:34:57	383992.560	440.774%	694.399	1950.056	-311.610	1394.481	132.831%	36750.615	237.713	117.686	598646.940	157.870%
3	14:35:19	376220.590	438.835%	678.873	1892.025	-247.047	1385.656	133.462%	36719.755	183.505	199.644	602924.760	158.524%
x		378125.700	436.321%	689.838	1979.944	-294.087	1409.711	132.709%	36499.595	215.683	148.036	598243.570	157.777%
σ		5183.869	6.110%	9.540	106.069	41.176	34.308	0.821%	408.345	28.493	44.924	4895.362	0.797%
%RSD		1.371	1.400	1.383	5.357	14.001	2.434	0.619	1.119	13.211	30.347	0.818	0.505

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:34:36	405.385	7792.617	1467782.700	121.982%	0.000	312566.530	98897.971
2	14:34:57	449.960	7985.810	1506714.900	121.860%	0.000	318561.100	100278.340
3	14:35:19	447.726	8078.478	1515499.700	120.851%	0.000	325339.310	101570.430
x		434.357	7952.302	1496665.800	121.564%	0.000	318822.310	100248.910
σ		25.115	145.847	25396.194	0.621%	0.000	6390.394	1336.473
%RSD		5.782	1.834	1.697	0.511	0.000	2.004	1.333

200-35736-A-5-A SD@5 10/18/2016 02:39:58 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:40:19	103.766%	200.015	324.805	153627.550	489858.300	T 31331610.000	T 2589531.000	145489.630	151.516%	5440.338	72010.483	51036.357
2	14:40:41	104.161%	216.032	669.331	141556.830	488218.850	T 31159478.000	T 2566881.600	144914.120	154.217%	5126.526	71574.227	49877.385
3	14:41:03	103.798%	168.640	647.097	147076.900	501909.300	T 31765958.000	T 2616627.300	150713.220	149.470%	5081.194	73133.937	51493.499
x		103.909%	194.896	547.077	147420.430	493328.820	T 31419015.000	T 2591013.300	147038.990	151.735%	5216.019	72239.549	50802.414
σ		0.219%	24.107	192.815	6042.688	7475.993	T 312544.780	T 24905.946	3194.963	2.381%	195.584	804.691	833.068
%RSD		0.211	12.369	35.244	4.099	1.515	T 0.995	T 0.961	2.173	1.569	3.750	1.114	1.640

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:40:19	4685.204	T 2154409.500	T 73964042.000	29545.021	14828.327	13276.567	57811.912	2294.167	428.269	48.213	396.219	2031.922
2	14:40:41	4253.453	T 2154865.400	T 72457916.000	30171.327	14610.396	12945.122	58467.348	2253.348	449.816	28.929	418.484	1975.642
3	14:41:03	4612.190	T 2217928.300	T 76217831.000	31332.028	15115.435	13127.229	57689.318	2225.711	427.000	42.524	431.896	1880.791
x		4516.949	T 2175734.400	T 74213263.000	30349.459	14851.386	13116.306	57989.526	2257.742	435.028	39.889	415.533	1962.785
σ		231.096	T 36541.690	T 1892306.400	906.723	253.308	165.992	418.321	34.439	12.822	9.908	18.021	76.381
%RSD		5.116	T 1.680	T 2.550	2.988	1.706	1.266	0.721	1.525	2.948	24.840	4.337	3.891

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:40:19	77304.259	201.614%	-222.781	426.098	-128.742	353.276	132.631%	8092.727	-836.524	-654.341	119594.440	129.985%
2	14:40:41	77736.083	202.074%	-68.541	423.311	-103.440	248.044	133.460%	7832.515	-781.269	-630.598	121389.430	128.481%
3	14:41:03	77910.444	202.876%	-195.273	484.047	-86.454	257.934	133.252%	7600.703	-740.137	-622.995	121374.530	130.366%
x		77650.262	202.188%	-162.199	444.485	-106.212	286.418	133.114%	7841.982	-785.977	-635.978	120786.130	129.610%
σ		312.072	0.638%	82.268	34.289	21.280	58.112	0.431%	246.148	48.366	16.351	1032.063	0.997%
%RSD		0.402	0.316	50.720	7.714	20.035	20.289	0.324	3.139	6.154	2.571	0.854	0.769

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:40:19	62.226	1470.300	308290.320	115.522%	0.000	56070.876	20453.190
2	14:40:41	64.028	1581.283	315481.880	114.700%	0.000	59248.680	20185.406
3	14:41:03	80.954	1432.544	312232.940	116.181%	0.000	60918.137	20392.884
x		69.069	1494.709	312001.710	115.468%	0.000	58745.897	20343.827
σ		10.332	77.316	3601.351	0.742%	0.000	2462.433	140.471
%RSD		14.958	5.173	1.154	0.642	0.000	4.192	0.690

CCV 10/18/2016 02:45:42 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	14:46:03	91.582%	98616.577	34636.250	┬13671357.000	┬4111935.900	┬38982582.000	┬13897458.000	┬1452758.800	109.738%	26867.079	┬2739908.500	776799
2	14:46:25	86.634%	101617.680	36991.723	┬13377416.000	┬4038713.100	┬38394257.000	┬13317900.000	┬1433800.800	110.773%	26469.002	┬2670991.400	756346
3	14:46:46	87.685%	99597.184	35802.177	┬13402784.000	┬4046121.900	┬38602720.000	┬13382463.000	┬1403616.900	108.722%	25872.134	┬2661450.300	757001
x		88.634%	111.714%	109.216%	┬100.202%	┬98.141%	┬100.087%	┬99.721%	┬98.817%	109.744%	26402.738	┬102.032%	95.0
σ		2.607%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.026%	500.771	┬n/a	
%RSD		2.941	1.531	3.289	┬1.208	┬0.991	┬0.772	┬2.347	┬1.733	0.935	1.897	┬1.591	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:46:03	9765.284	┬4068487.000	┬84351378.000	1218635.600	656027.170	788756.780	624093.620	85923.602	-426.898	9244.944	397.514	1470
2	14:46:25	8609.346	┬3901949.300	┬81942266.000	1190527.600	644124.760	815875.380	630764.230	87297.007	-517.753	9268.715	418.774	1419
3	14:46:46	9781.657	┬3984828.200	┬82847550.000	1180148.600	635613.390	791177.860	627204.780	85529.860	-508.874	9210.279	391.311	1267
x		9385.429	┬98.424%	┬99.093%	94.160%	100.865%	96.209%	98.054%	103.994%	-484.508	107.188%	402.533	1385
σ		672.158	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	50.089	n/a	14.403	105
%RSD		7.162	┬2.090	┬1.465	1.664	1.589	1.879	0.532	1.076	10.338	0.318	3.578	7

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	14:46:03	844132.790	115.581%	1631492.600	279071.520	176.887	134598.650	110.815%	840340.050	559613.420	436209.500	563984.190	107.1
2	14:46:25	847229.020	112.053%	1714447.000	281003.480	908.088	136625.450	108.413%	853144.150	574932.820	445826.530	575311.160	104.4
3	14:46:46	847034.870	110.456%	1738513.200	277763.240	225.996	136241.450	107.077%	852339.280	572775.480	445049.160	577924.690	103.1
x		846132.230	112.696%	91.533%	104.291%	436.991	96.632%	108.769%	848607.820	569107.240	94.342%	92.112%	104.9
σ		1734.284	2.622%	n/a	n/a	408.721	n/a	1.894%	7171.407	8292.345	n/a	n/a	2.0
%RSD		0.205	2.327	3.313	0.584	93.531	0.793	1.741	0.845	1.457	1.208	1.295	1

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:46:03	35315.261	1627465.400	┬15645781.000	100.003%	0.000	201768.100	114519.840
2	14:46:25	36844.240	1688559.700	┬15912806.000	98.004%	0.000	222294.230	121357.000
3	14:46:46	37590.739	1641420.100	┬15535634.000	99.694%	0.000	227734.030	116192.750
x		98.577%	88.356%	┬98.362%	99.234%	0.000	86.297%	94.083%
σ		n/a	n/a	┬n/a	1.076%	0.000	n/a	n/a
%RSD		3.171	1.937	┬1.235	1.084	0.000	6.303	3.037

CCB 10/18/2016 02:51:26 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:51:48	95.066%	5.966	-468.124	-6143.835	459.106	4682.964	7045.418	261.689	116.461%	34.348	1417.075	-216.194
2	14:52:09	93.329%	-4.504	-416.234	-6596.550	173.296	4182.545	5359.503	78.581	117.236%	21.340	468.073	-102.693
3	14:52:31	94.697%	16.578	-354.226	-5167.901	409.677	4936.562	5461.293	263.781	116.057%	12.920	1712.435	-103.110
x		94.364%	6.013	-412.861	-5969.429	347.360	4600.690	5955.404	201.350	116.584%	22.869	1199.194	-140.665
σ		0.915%	10.541	57.024	730.118	152.756	383.682	945.350	106.327	0.599%	10.796	650.164	65.410
%RSD		0.970	175.285	13.812	12.231	43.976	8.340	15.874	52.807	0.514	47.206	54.217	46.500

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:51:48	4869.800	284.449	35304.068	56.086	18.957	-32.866	-133.778	-231.871	481.822	-52.571	387.045	2016.194
2	14:52:09	5279.999	343.825	33500.695	98.082	14.380	-47.199	-220.639	-249.715	492.402	-43.402	382.007	2073.342
3	14:52:31	4926.189	187.776	34896.674	26.272	40.663	14.205	-237.496	-264.377	511.971	-65.942	389.879	2023.044
x		5025.329	272.017	34567.146	60.147	24.667	-21.953	-197.304	-248.654	495.398	-53.971	386.310	2037.527

σ		222.345	78.764	945.770	36.077	14.041	32.124	55.658	16.279	15.296	11.335	3.987	31.206
%RSD		4.424	28.955	2.736	59.982	56.922	146.327	28.209	6.547	3.088	21.002	1.032	1.532
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:51:48	34.893	116.329%	2091.495	17.015	-76.969	31.626	113.813%	2992.065	-399.678	-365.264	44.711	104.272%
2	14:52:09	51.972	115.378%	1951.855	25.500	-70.114	29.232	114.528%	3344.542	-298.310	-291.973	18.132	104.858%
3	14:52:31	87.029	117.021%	1928.179	25.555	-47.860	7.389	114.396%	3549.511	-292.568	-287.297	44.397	108.176%
x		57.965	116.243%	1990.509	22.690	-64.981	22.749	114.246%	3295.372	-330.185	-314.845	35.747	105.769%
σ		26.580	0.825%	88.254	4.915	15.218	13.356	0.381%	281.957	60.251	43.727	15.256	2.105%
%RSD		45.855	0.710	4.434	21.660	23.419	58.709	0.333	8.556	18.248	13.888	42.676	1.991

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:51:48	138.531	986.029	-446.948	103.131%	0.000	7177.178	-49.955
2	14:52:09	146.781	914.638	-345.856	100.458%	0.000	7186.184	-24.810
3	14:52:31	97.868	920.251	-157.684	102.026%	0.000	7174.573	-15.544
x		127.727	940.306	-316.829	101.872%	0.000	7179.311	-30.103
σ		26.185	39.697	146.800	1.343%	0.000	6.092	17.805
%RSD		20.501	4.222	46.334	1.319	0.000	0.085	59.147

CCVL 10/18/2016 02:57:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:57:32	98.719%	213.142	5521.714	T 720197.090	27582.404	70810.785	649871.040	24058.621	118.637%	12.642	11515.198	8626.652
2	14:57:55	97.865%	204.846	5243.385	T 698793.620	27568.743	68546.314	634752.840	23522.761	119.706%	12.533	10022.895	7764.828
3	14:58:18	94.234%	194.445	5689.628	T 702568.320	27691.653	71819.687	634217.520	24221.182	119.035%	21.011	11025.949	8116.974
x		96.939%	142.616%	104.552%	T 105.106%	99.989%	109.344%	94.266%	99.231%	119.126%	15.395	102.900%	101.689%
σ		2.381%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.540%	4.864	n/a	n/a
%RSD		2.456	4.589	4.109	T 1.616	0.244	2.381	1.389	1.527	0.454	31.593	7.009	5.304

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:57:32	5708.645	7261.456	574623.960	2874.097	1202.428	3543.747	10890.817	684.310	503.965	143.232	411.227	2115.090
2	14:57:55	5879.072	7439.516	559538.090	2927.429	1316.756	3408.641	11364.683	590.554	557.316	158.968	411.530	2030.060
3	14:58:18	5613.450	7618.285	554613.980	2704.705	1152.108	3522.386	10949.564	608.060	523.240	138.546	393.607	1876.061
x		5733.722	114.842%	100.753%	111.573%	119.560%	105.159%	108.123%	75.676%	528.174	85.202%	405.455	2007.070
σ		134.575	n/a	n/a	n/a	n/a	n/a	n/a	n/a	27.016	n/a	10.261	121.162
%RSD		2.347	2.398	1.852	4.101	6.894	2.080	2.334	7.943	5.115	7.282	2.531	6.037

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:57:32	21626.016	119.054%	13834.871	2959.140	-14.736	741.463	116.726%	1362.235	3656.354	2903.122	4734.456	107.951%
2	14:57:55	21952.517	119.130%	13808.649	3274.381	-27.074	818.637	115.424%	1693.848	4105.593	2972.365	4736.014	106.675%
3	14:58:18	21112.098	117.906%	14250.524	2936.202	-128.712	718.408	117.123%	1665.008	4028.510	2965.672	4534.690	106.501%
x		96.589%	118.697%	94.275%	114.141%	-56.841	108.071%	116.424%	1573.697	3930.152	78.565%	93.905%	107.042%
σ		n/a	0.686%	n/a	n/a	62.547	n/a	0.889%	183.698	240.228	n/a	n/a	0.792%
%RSD		1.965	0.578	1.775	6.183	110.040	6.911	0.763	11.673	6.112	1.296	2.480	0.740

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:57:32	2771.047	16586.716	13114.664	103.074%	0.000	15592.951	11877.905
2	14:57:55	2870.916	16218.990	13805.069	103.066%	0.000	15613.192	12456.582
3	14:58:18	3091.758	17269.478	13612.630	104.903%	0.000	15840.257	12542.716
x		78.446%	89.249%	105.821%	103.681%	0.000	62.289%	98.547%
σ		n/a	n/a	n/a	1.058%	0.000	n/a	n/a
%RSD		5.637	3.194	2.637	1.021	0.000	0.876	2.941

200-35736-A-5-A PDS 10/18/2016 03:02:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:03:20	107.870%	2384.770	59864.742	T 5583702.700	T 2227160.900	T 121065920.000	T 15061687.000	T 763203.660	178.668%	19327.278	330277.760	240946.070
2	15:03:41	106.954%	2442.664	61120.349	T 5701069.600	T 2253691.000	T 121502340.000	T 15024010.000	713675.740	182.109%	19361.562	338898.190	247695.770
3	15:04:03	106.144%	2426.020	62111.637	T 5593415.600	T 2264914.600	T 122879710.000	T 15181358.000	731232.820	181.808%	19583.345	341919.110	244420.010
x		106.989%	2417.818	61032.243	T 5626062.600	T 2248588.800	T 121815990.000	T 15089018.000	T 736037.410	180.862%	19424.062	337031.690	244353.950
σ		0.864%	29.806	1126.036	T 65139.253	T 19387.078	T 946702.830	T 82157.612	T 25111.089	1.906%	139.005	6040.953	3375.337
%RSD		0.807	1.233	1.845	T 1.158	T 0.862	T 0.777	T 0.544	T 3.412	1.054	0.716	1.792	1.381

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:03:20	6114.614	T 8333569.600	T 282432660.000	131018.030	61435.231	91018.506	323875.690	17049.170	241.050	1564.406	443.855	1501.137
2	15:03:41	5899.982	T 8420707.100	T 278927900.000	127934.400	60599.872	93817.956	330222.730	17176.195	272.847	1556.112	504.919	1722.101
3	15:04:03	5996.363	T 8495549.700	T 286694470.000	129965.130	62228.726	93541.200	328207.350	17909.108	227.301	1615.350	478.638	1583.207
x		6003.653	T 8416608.800	T 282685010.000	129639.190	61421.276	92792.554	327435.260	17378.158	247.066	1578.623	475.804	1602.148
σ		107.501	T 81067.743	T 3889429.000	1567.442	814.516	1542.590	3243.198	464.182	23.362	32.076	30.630	111.693

%RSD		1.791	┬0.963	┬1.376	1.209	1.326	1.662	0.990	2.671	9.456	2.032	6.438	6.971
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:03:20	572357.970	389.857%	45686.081	28731.491	-295.829	7183.126	122.565%	35689.223	41708.991	32528.161	608714.710	145.247%
2	15:03:41	587315.360	400.328%	45677.174	29280.076	-240.456	7485.133	123.091%	36363.235	41724.989	33411.523	631905.580	147.265%
3	15:04:03	583854.050	406.077%	45635.990	28762.268	-508.449	7622.339	125.253%	36928.389	42123.949	33065.608	628047.620	150.201%
x		581175.790	398.754%	45666.415	28924.612	-348.245	7430.199	123.636%	36326.949	41852.643	33001.764	622889.300	147.571%
σ		7830.112	8.224%	26.723	308.225	141.477	224.701	1.425%	620.379	235.094	445.128	12426.197	2.491%
%RSD		1.347	2.062	0.059	1.066	40.626	3.024	1.153	1.708	0.562	1.349	1.995	1.688

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:03:20	24489.359	160141.870	1531044.700	113.383%	0.000	582301.170	219426.120
2	15:03:41	24601.722	163135.750	1543420.900	116.018%	0.000	571100.270	216982.210
3	15:04:03	24382.497	163788.520	1552033.700	117.889%	0.000	557854.080	219790.540
x		24491.193	162355.380	1542166.400	115.763%	0.000	570418.510	218732.960
σ		109.624	1944.541	10550.539	2.264%	0.000	12237.800	1527.098
%RSD		0.448	1.198	0.684	1.956	0.000	2.145	0.698

200-35736-A-5-I MS 10/18/2016 03:08:42 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	15:09:04	104.824%	2432.812	50744.913	┬5787993.800	┬2104402.400	┬110460770.000	┬13470212.000	735283.650	178.235%	17035.561	328609.800	235514.660
2	15:09:26	107.050%	2344.691	49363.751	┬5762793.400	┬2099604.700	┬110240170.000	┬13621482.000	┬784002.520	181.375%	16319.375	323148.020	234037.000
3	15:09:48	105.509%	2502.279	51225.056	┬5814794.000	┬2076392.600	┬109046410.000	┬13332826.000	727068.980	182.752%	16891.818	330524.550	238664.750
x		105.794%	2426.594	50444.573	┬5788527.100	┬2093466.600	┬109915780.000	┬13474840.000	┬748785.050	180.787%	16748.918	327427.460	236072.140
σ		1.140%	78.978	966.316	┬26004.393	┬14979.764	┬760935.660	┬144383.500	┬30774.552	2.315%	378.874	3827.765	2363.702
%RSD		1.078	3.255	1.916	┬0.449	┬0.716	┬0.692	┬1.072	┬4.110	1.280	2.262	1.169	1.001
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	15:09:04	5743.156	┬8657446.700	┬284740990.000	129987.740	59514.781	90201.297	320063.070	18475.712	277.309	1609.293	467.483	1672.416
2	15:09:26	5908.329	┬8724173.200	┬287002680.000	130812.100	60365.244	91030.697	318250.070	18225.027	267.382	1575.940	459.298	1546.448
3	15:09:48	5504.433	┬8661111.600	┬288178760.000	133379.070	60411.507	91690.192	319670.440	18593.802	223.640	1567.283	452.893	1437.564
x		5718.640	┬8680910.500	┬286640810.000	131392.970	60097.177	90974.062	319327.860	18431.513	256.110	1584.172	459.891	1552.143
σ		203.061	┬37511.392	┬1747219.700	1768.706	504.900	746.062	953.819	188.319	28.555	22.182	7.313	117.530
%RSD		3.551	┬0.432	┬0.610	1.346	0.840	0.820	0.299	1.022	11.149	1.400	1.590	7.572
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:09:04	578838.410	385.920%	46093.710	30756.032	-263.497	7642.754	123.750%	39929.800	11658.878	9058.671	578966.270	145.726%
2	15:09:26	567883.950	390.812%	47292.572	30127.653	-313.068	7518.423	127.044%	39889.298	11478.126	9196.621	574213.150	148.701%
3	15:09:48	571442.000	393.717%	46945.673	30353.797	-254.041	7418.775	127.847%	39344.544	11359.050	9213.231	583256.430	150.544%
x		572721.450	390.150%	46777.319	30412.494	-276.869	7526.651	126.214%	39721.214	11498.684	9156.175	578811.950	148.324%
σ		5588.183	3.940%	616.907	318.275	31.704	112.216	2.171%	326.834	150.968	84.848	4523.614	2.431%
%RSD		0.976	1.010	1.319	1.047	11.451	1.491	1.720	0.823	1.313	0.927	0.782	1.639

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:09:04	20895.079	130345.710	1515872.900	114.635%	4.362	528548.710	216554.290
2	15:09:26	21317.396	129553.500	1498316.300	118.418%	0.000	510849.540	216437.540
3	15:09:48	20972.023	130214.360	1530434.600	116.555%	0.000	531487.120	225684.030
x		21061.499	130037.850	1514874.600	116.536%	1.454	523628.460	219558.620
σ		224.928	424.576	16082.419	1.891%	2.518	11163.963	5305.080
%RSD		1.068	0.327	1.062	1.623	173.205	2.132	2.416

200-35736-A-5-J MSD 10/18/2016 03:14:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:14:47	106.725%	2536.939	50251.146	T 5687002.800	T 2259748.500	T 121338310.000	T 14588524.000	T 818719.420	187.388%	20064.434	348041.350	248293.050
2	15:15:09	104.444%	2582.932	53268.373	T 5637926.500	T 2276071.100	T 122459340.000	T 14444939.000	T 824219.830	190.445%	20152.619	351707.240	249675.010
3	15:15:31	104.974%	2560.329	53452.024	T 5751886.100	T 2363124.800	T 125625960.000	T 14822704.000	T 838320.020	188.188%	19721.610	355543.470	256058.860
x		105.381%	2560.067	52323.847	T 5692271.800	T 2299648.100	T 123141200.000	T 14618722.000	T 827086.420	188.674%	19979.554	351764.020	251342.310
σ		1.194%	22.998	1797.360	T 57162.214	T 55574.900	T 2223667.900	T 190684.470	T 10109.840	1.585%	227.696	3751.382	4142.689
%RSD		1.133	0.898	3.435	T 1.004	T 2.417	T 1.806	T 1.304	T 1.222	0.840	1.140	1.066	1.648

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:14:47	5748.454	T 8805771.600	T 293993030.000	136553.780	63405.496	97651.218	336861.380	19539.228	224.894	1624.414	479.908	1723.682
2	15:15:09	6063.717	T 8977765.600	T 295338270.000	137856.830	63865.488	99445.478	342208.250	19350.719	247.224	1594.160	484.478	1693.375
3	15:15:31	5885.779	T 9243412.600	T 304329010.000	138374.340	64701.288	97222.650	338496.630	18887.365	250.433	1584.501	462.822	1619.075
x		5899.316	T 9008983.300	T 297886770.000	137594.980	63990.757	98106.449	339188.750	19259.104	240.850	1601.025	475.736	1678.711
σ		158.067	T 220484.240	T 5619543.000	938.106	656.916	1179.266	2739.806	335.450	13.911	20.823	11.415	53.823
%RSD		2.679	T 2.447	T 1.886	0.682	1.027	1.202	0.808	1.742	5.776	1.301	2.399	3.206

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:14:47	610265.090	417.999%	42118.101	29632.273	-381.775	7816.217	126.276%	39551.892	11146.459	8808.042	643149.750	153.132%
2	15:15:09	619414.730	425.064%	42151.317	30135.180	-313.828	8019.148	126.530%	40439.662	11181.011	8889.735	654661.620	152.880%
3	15:15:31	613491.740	428.369%	42412.464	29160.769	-333.174	7807.554	129.210%	40804.454	11050.645	8720.511	645663.610	151.935%
x		614390.520	423.811%	42227.294	29642.741	-342.925	7880.973	127.339%	40265.336	11126.038	8806.096	647824.990	152.649%
σ		4640.567	5.297%	161.220	487.290	35.007	119.742	1.625%	644.220	67.539	84.629	6052.642	0.631%
%RSD		0.755	1.250	0.382	1.644	10.208	1.519	1.276	1.600	0.607	0.961	0.934	0.413

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:14:47	18300.149	125102.260	1615572.600	118.329%	0.000	538905.870	220068.650
2	15:15:09	19290.439	124407.260	1608413.400	119.801%	0.000	542618.120	221543.020
3	15:15:31	19341.721	123942.050	1630617.000	120.216%	0.000	545158.370	227777.540
x		18977.436	124483.860	1618201.000	119.449%	0.000	542227.450	223129.740
σ		587.108	583.884	11332.707	0.992%	0.000	3144.505	4092.067
%RSD		3.094	0.469	0.700	0.830	0.000	0.580	1.834

200-35736-A-6-A 10/18/2016 03:20:08 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:20:29	105.405%	1233.321	5609.969	T 813655.260	T 2441387.000	T 146920530.000	T 11857582.000	T 862128.860	202.839%	14739.186	289521.890	220851.890
2	15:20:52	105.069%	1182.553	5612.810	T 804332.150	T 2455562.200	T 143558210.000	T 11684183.000	T 865192.800	203.897%	14605.368	288720.830	221816.090
3	15:21:13	102.327%	1392.805	5820.953	T 826256.130	T 2474869.800	T 147559650.000	T 11913276.000	824131.750	203.917%	14500.386	293875.990	225982.960
x		104.267%	1269.560	5681.244	T 814747.850	T 2457273.000	T 146012800.000	T 11818347.000	T 850484.470	203.551%	14614.980	290706.240	222883.650
σ		1.689%	109.710	121.000	T 11002.748	T 16806.836	T 2149617.800	T 119479.870	T 22873.483	0.616%	119.690	2774.154	2727.033
%RSD		1.620	8.642	2.130	T 1.350	T 0.684	T 1.472	T 1.011	T 2.689	0.303	0.819	0.954	1.224

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:20:29	5591.915	T 5386508.700	T 283185880.000	120716.290	63887.934	84290.453	322015.120	7430.133	238.208	367.835	527.756	1666.577
2	15:20:52	5744.747	T 5534006.700	T 289829100.000	120107.350	63245.028	84285.401	328541.270	7562.041	226.434	324.402	554.796	1744.516
3	15:21:13	5224.863	T 5626051.200	T 294154640.000	121051.250	64286.683	83741.224	324332.580	7501.417	242.000	298.404	535.522	1767.939
x		5520.508	T 5515522.200	T 289056540.000	120624.960	63806.549	84105.692	324962.990	7497.864	235.547	330.214	539.358	1726.344

σ		267.197	T 120836.320	T 5525042.000	478.529	525.575	315.649	3308.430	66.025	8.117	35.079	13.922	53.068
%RSD		4.840	T 2.191	T 1.911	0.397	0.824	0.375	1.018	0.881	3.446	10.623	2.581	3.074
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:20:29	544919.450	549.224%	-54.167	2303.071	-355.051	1908.472	126.861%	35970.515	-272.880	-127.286	661487.860	166.283%
2	15:20:52	558205.690	552.295%	-139.753	2373.890	-317.300	2030.009	127.077%	36118.488	-68.225	-146.363	667411.870	165.784%
3	15:21:13	549891.250	554.493%	-105.091	2297.195	-277.264	1846.903	128.475%	36595.523	-90.342	-110.951	675864.810	165.933%
x		551005.460	552.004%	-99.670	2324.719	-316.538	1928.461	127.471%	36228.175	-143.816	-128.200	668254.840	166.000%
σ		6712.835	2.646%	43.050	42.685	38.899	93.175	0.877%	326.623	112.319	17.724	7225.449	0.256%
%RSD		1.218	0.479	43.193	1.836	12.289	4.832	0.688	0.902	78.099	13.825	1.081	0.154

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:20:29	404.516	9822.443	1399824.700	118.687%	0.000	371237.820	154451.020
2	15:20:52	369.816	9854.211	1414513.500	120.713%	0.000	373087.170	156687.040
3	15:21:13	417.616	9207.902	1435127.800	120.810%	4.139	375437.620	157112.890
x		397.316	9628.185	1416488.600	120.070%	1.380	373254.200	156083.650
σ		24.700	364.323	17734.226	1.199%	2.389	2104.878	1429.842
%RSD		6.217	3.784	1.252	0.999	173.205	0.564	0.916

200-35736-A-7-A 10/18/2016 03:25:50 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:26:12	106.217%	1016.701	4978.362	T 683818.920	T 2089654.000	T 115907810.000	T 9662250.000	T 746610.850	192.591%	15579.475	273970.840	190848.940
2	15:26:33	104.425%	1060.609	4831.227	T 692942.840	T 2106794.700	T 115737590.000	T 9545544.300	T 752579.320	194.002%	15239.847	275879.700	194690.640
3	15:26:55	107.766%	1036.786	5051.424	T 691409.490	T 2096709.800	T 116488830.000	T 9640113.800	699150.810	193.372%	15715.160	280516.010	195986.740
x		106.136%	1038.032	4953.671	T 689390.420	T 2097719.500	T 116044740.000	T 9615969.400	T 732780.330	193.321%	15511.494	276788.850	193842.100
σ		1.672%	21.980	112.156	T 4885.589	T 8614.855	T 393898.400	T 61986.064	T 29276.507	0.707%	244.840	3365.970	2671.939
%RSD		1.575	2.117	2.264	T 0.709	T 0.411	T 0.339	T 0.645	T 3.995	0.366	1.578	1.216	1.378

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:26:12	4600.902	T 12255383.000	T 390431290.000	122122.560	56126.919	64261.900	278300.590	19755.732	212.681	331.303	461.405	1587.510
2	15:26:33	4174.023	T 12337624.000	T 399022320.000	125307.310	57116.802	66413.799	284973.320	19702.496	225.485	314.196	497.923	1667.782
3	15:26:55	3710.823	T 12305859.000	T 398726800.000	124923.450	55410.877	63801.751	277183.560	19336.725	236.623	246.554	471.331	1780.560
x		4161.916	T 12299622.000	T 396060140.000	124117.780	56218.199	64825.817	280152.490	19598.318	224.930	297.351	476.886	1678.617
σ		445.163	T 41473.642	T 4876961.700	1738.533	856.618	1394.346	4212.154	228.104	11.981	44.815	18.883	96.980
%RSD		10.696	T 0.337	T 1.231	1.401	1.524	2.151	1.504	1.164	5.326	15.071	3.960	5.777

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:26:12	430749.250	445.351%	931.330	2018.139	-430.311	1535.372	131.340%	36480.586	211.477	99.159	582604.480	157.294%
2	15:26:33	441283.820	455.965%	901.755	2133.613	-344.195	1481.457	129.641%	36343.853	197.442	197.937	586675.180	153.521%
3	15:26:55	439314.660	459.244%	911.393	1863.658	-366.006	1470.602	132.818%	35742.530	248.001	161.841	583732.330	158.718%
x		437115.910	453.520%	914.826	2005.137	-380.171	1495.811	131.266%	36188.990	218.974	152.979	584337.330	156.511%
σ		5600.911	7.262%	15.084	135.446	44.771	34.689	1.590%	392.643	26.100	49.982	2101.709	2.686%
%RSD		1.281	1.601	1.649	6.755	11.777	2.319	1.211	1.085	11.919	32.672	0.360	1.716

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:26:12	458.301	8051.514	1699402.200	118.979%	0.000	316702.210	70339.021
2	15:26:33	380.621	8066.837	1709824.400	120.265%	0.000	319157.940	72423.906
3	15:26:55	440.765	7947.937	1726947.600	120.241%	0.000	322641.590	72534.765
x		426.562	8022.096	1712058.100	119.828%	0.000	319500.580	71765.897
σ		40.741	64.679	13907.878	0.735%	0.000	2984.476	1236.954
%RSD		9.551	0.806	0.812	0.614	0.000	0.934	1.724

200-35736-A-8-A 10/18/2016 03:31:32 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:31:54	108.665%	1255.930	3774.961	T 591082.080	T 1687542.600	T 101942350.000	T 8015377.100	640837.470	190.209%	13597.052	275723.280	172330.990
2	15:32:16	107.599%	1242.885	4312.754	T 610659.190	T 1713343.800	T 102561880.000	T 8128257.000	656585.060	187.651%	14053.670	282472.010	178355.180
3	15:32:37	104.969%	1324.223	4366.136	T 597185.390	T 1701492.300	T 101805880.000	T 8002253.300	653495.300	189.763%	14098.966	279976.110	177595.180
x		107.077%	1274.346	4151.284	T 599642.220	T 1700792.900	T 102103370.000	T 8048629.100	650305.940	189.207%	13916.563	279390.470	176093.780
σ		1.902%	43.685	326.996	T 10017.125	T 12914.852	T 402903.370	T 69271.291	8344.198	1.367%	277.630	3412.263	3280.757
%RSD		1.777	3.428	7.877	T 1.671	T 0.759	T 0.395	T 0.861	1.283	0.722	1.995	1.221	1.863

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:31:54	3185.148	T 15507177.000	TM 701417310.000	137437.960	52468.317	60948.468	296092.740	61485.391	180.230	252.907	469.405	1953.355
2	15:32:16	3464.279	T 16015559.000	TM 721102410.000	141180.060	54044.546	62352.637	297236.880	62008.610	159.401	293.465	493.296	1684.430
3	15:32:37	3481.950	T 15796994.000	TM 705377390.000	138663.160	53299.495	61592.608	298316.150	61046.329	174.772	266.354	486.803	1782.808
x		3377.126	T 15773243.000	TM 709299040.000	139093.730	53270.786	61631.238	297215.260	61513.443	171.468	270.909	483.168	1806.864
σ		166.492	T 255021.930	TM 10412023.000	1907.844	788.507	702.881	1111.860	481.754	10.800	20.659	12.353	136.067

%RSD		4.930	T 1.617	TM 1.468	1.372	1.480	1.140	0.374	0.783	6.299	7.626	2.557	7.531
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:31:54	390729.600	447.459%	4454.725	1658.665	-367.435	1613.644	130.274%	37722.418	573.134	451.539	541877.990	157.851%
2	15:32:16	390309.390	452.602%	4429.791	1743.450	-375.109	1936.246	130.249%	38145.422	745.676	577.346	549004.550	160.687%
3	15:32:37	391538.010	447.059%	4413.635	1724.866	-360.801	1809.153	131.062%	38123.107	770.763	590.487	549321.530	159.146%
x		390859.000	449.040%	4432.717	1708.994	-367.781	1786.348	130.528%	37996.982	696.524	539.791	546734.690	159.228%
σ		624.450	3.091%	20.700	44.565	7.160	162.506	0.462%	238.041	107.593	76.710	4209.007	1.420%
%RSD		0.160	0.688	0.467	2.608	1.947	9.097	0.354	0.626	15.447	14.211	0.770	0.892

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:31:54	402.511	6434.886	1688519.800	120.216%	0.000	281697.010	84135.658
2	15:32:16	403.125	6692.982	1755963.000	116.596%	0.000	295866.780	89800.679
3	15:32:37	445.619	6526.919	1728326.700	120.208%	0.000	289885.570	88004.421
x		417.085	6551.596	1724269.800	119.007%	0.000	289149.790	87313.586
σ		24.713	130.805	33904.125	2.088%	0.000	7113.484	2895.005
%RSD		5.925	1.997	1.966	1.754	0.000	2.460	3.316

200-35736-A-9-A 10/18/2016 03:37:15 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	15:37:37	103.699%	867.969	4757.949	T 796527.200	T 2288702.500	T 116174170.000	T 9293303.200	T 1032537.800	186.070%	11755.932	272366.640	194407.210
2	15:37:58	103.575%	931.777	4460.896	T 794957.270	T 2285041.700	T 116927040.000	T 9321401.300	T 1024183.000	186.057%	11899.693	272336.740	193174.200
3	15:38:20	102.144%	979.204	4433.084	T 798899.980	T 2254397.600	T 116345630.000	T 9165878.900	T 1037384.000	185.781%	11702.146	276644.370	195787.450
x		103.139%	926.317	4550.643	T 796794.820	T 2276047.200	T 116482280.000	T 9260194.500	T 1031368.200	185.969%	11785.924	273782.580	194456.280
σ		0.865%	55.818	180.070	T 1984.930	T 18838.307	T 394599.360	T 82879.094	T 6677.762	0.163%	102.132	2478.424	1307.316
%RSD		0.838	6.026	3.957	T 0.249	T 0.828	T 0.339	T 0.895	T 0.647	0.088	0.867	0.905	0.672
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	15:37:37	4422.535	T 12531406.000	T 344845840.000	132900.520	60294.061	70604.350	326026.180	10277.970	226.048	372.406	496.628	1413.621
2	15:37:58	5198.426	T 12897960.000	T 351057170.000	135700.440	62541.437	72127.320	328791.990	10522.389	222.282	316.305	508.921	1724.249
3	15:38:20	4150.228	T 12653831.000	T 351782610.000	135210.460	62051.538	69578.198	326350.360	9973.927	244.738	245.912	460.714	1874.086
x		4590.396	T 12694399.000	T 349228540.000	134603.810	61629.012	70769.956	327056.180	10258.096	231.022	311.541	488.754	1670.652
σ		543.887	T 186613.910	T 3812820.400	1495.295	1181.766	1282.604	1511.969	274.771	12.026	63.382	25.049	234.865
%RSD		11.848	T 1.470	T 1.092	1.111	1.918	1.812	0.462	2.679	5.206	20.345	5.125	14.058
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:37:37	550551.250	422.946%	788.629	1982.436	-378.658	2268.656	125.448%	37986.159	354.511	287.164	607708.710	146.793%
2	15:37:58	554665.300	425.195%	884.127	1995.113	-308.717	2138.190	126.643%	38399.933	376.982	303.685	607177.550	149.703%
3	15:38:20	547572.730	424.294%	827.902	2169.633	-419.390	2207.225	127.739%	38388.499	568.132	300.120	614605.440	150.053%
x		550929.760	424.145%	833.553	2049.061	-368.922	2204.690	126.610%	38258.197	433.208	296.990	609830.560	148.850%
σ		3561.405	1.132%	47.999	104.611	55.975	65.270	1.146%	235.661	117.386	8.694	4143.684	1.790%
%RSD		0.646	0.267	5.758	5.105	15.173	2.961	0.905	0.616	27.097	2.927	0.679	1.202

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:37:37	456.767	7905.073	1904171.400	115.571%	0.000	309888.200	87271.853
2	15:37:58	542.968	8214.466	1918917.600	116.392%	0.000	316298.870	89279.017
3	15:38:20	424.859	8274.018	1917949.900	117.580%	4.252	317845.260	89566.180
x		474.865	8131.186	1913679.600	116.514%	1.417	314677.440	88705.683
σ		61.099	198.070	8248.575	1.010%	2.455	4219.058	1250.007
%RSD		12.867	2.436	0.431	0.867	173.205	1.341	1.409

200-35736-A-10-A 10/18/2016 03:42:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:43:19	103.666%	1090.132	3804.562	T 713862.470	T 2080722.000	T 110734220.000	T 8126200.700	T 933969.550	188.110%	11759.735	272709.760	187535.450
2	15:43:41	101.430%	1052.692	3846.730	T 698623.590	T 2083702.000	T 110085800.000	T 8137961.600	T 930906.920	189.186%	12166.440	270403.180	189051.070
3	15:44:03	101.279%	1027.119	4012.348	T 700390.120	T 2091013.600	T 110770890.000	T 8220767.800	T 941160.410	189.107%	11822.675	272773.230	192356.780
x		102.125%	1056.647	3887.880	T 704292.060	T 2085145.800	T 110530300.000	T 8161643.400	T 935345.630	188.801%	11916.283	271962.060	189647.770
σ		1.336%	31.692	109.835	T 8335.150	T 5295.538	T 385387.960	T 51539.847	T 5263.431	0.600%	218.916	1350.403	2465.430
%RSD		1.309	2.999	2.825	T 1.183	T 0.254	T 0.349	T 0.631	T 0.563	0.318	1.837	0.497	1.300

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:43:19	4259.651	T 14676092.000	T 374882300.000	131480.470	57389.738	66385.568	304680.000	14759.498	220.521	292.255	463.924	1651.116
2	15:43:41	4069.814	T 14862375.000	T 378329580.000	130890.810	57281.350	66297.228	303963.050	14410.176	219.614	351.068	506.648	1586.263
3	15:44:03	4592.098	T 14831162.000	T 382561250.000	133341.960	57738.999	66570.195	305650.880	14618.219	224.214	309.593	473.377	1522.025
x		4307.188	T 14789876.000	T 378591040.000	131904.410	57470.029	66417.664	304764.650	14595.964	221.450	317.639	481.316	1586.468
σ		264.367	T 99768.305	T 3846145.900	1279.386	239.156	139.286	847.095	175.721	2.437	30.221	22.441	64.546
%RSD		6.138	T 0.675	T 1.016	0.970	0.416	0.210	0.278	1.204	1.100	9.514	4.662	4.069

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:43:19	495382.340	429.376%	995.571	1913.553	-351.906	1977.498	127.070%	36755.474	253.435	286.538	594908.830	152.725%
2	15:43:41	494434.500	429.045%	1058.868	1797.603	-338.332	1862.359	128.297%	35610.826	418.147	302.162	592687.400	151.625%
3	15:44:03	502445.290	439.030%	1014.278	1771.663	-286.326	1790.099	128.758%	36939.641	338.082	324.532	604346.780	154.019%
x		497420.710	432.484%	1022.906	1827.607	-325.521	1876.652	128.042%	36435.313	336.555	304.411	597314.330	152.789%
σ		4377.144	5.671%	32.518	75.554	34.616	94.514	0.872%	719.941	82.366	19.097	6190.728	1.198%
%RSD		0.880	1.311	3.179	4.134	10.634	5.036	0.681	1.976	24.473	6.273	1.036	0.784

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:43:19	356.890	7445.995	1838802.600	115.636%	0.000	307703.260	84299.707
2	15:43:41	409.610	7576.677	1868738.100	115.319%	0.000	312077.820	85408.407
3	15:44:03	444.023	6902.089	1839362.100	118.207%	0.000	307677.290	84077.728
x		403.508	7308.254	1848967.600	116.387%	0.000	309152.790	84595.281
σ		43.886	357.766	17124.016	1.584%	0.000	2533.186	712.881
%RSD		10.876	4.895	0.926	1.361	0.000	0.819	0.843

200-35736-A-11-A 10/18/2016 03:48:41 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:49:03	99.703%	582.079	3438.265	T 621731.210	T 1621395.700	T 62365756.000	T 5701212.700	T 2246029.600	150.608%	10381.491	160619.160	119877.080
2	15:49:24	97.603%	551.210	3492.816	T 630738.450	T 1624022.500	T 64002016.000	T 5874300.100	T 2292705.600	150.392%	10961.823	165656.650	122727.450
3	15:49:46	95.983%	610.124	3697.772	T 629054.000	T 1645829.900	T 64166870.000	T 5844189.400	T 2309306.700	149.863%	11339.719	165621.010	121925.700
x		97.763%	581.137	3542.951	T 627174.550	T 1630416.000	T 63511547.000	T 5806567.400	T 2282680.700	150.287%	10894.345	163965.610	121510.080
σ		1.865%	29.468	136.825	T 4788.722	T 13413.254	T 995702.230	T 92473.609	T 32808.141	0.383%	482.665	2898.161	1469.938
%RSD		1.908	5.071	3.862	T 0.764	T 0.823	T 1.568	T 1.593	T 1.437	0.255	4.430	1.768	1.210

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:49:03	3234.281	TM 20957701.000	T 256132420.000	110319.950	42447.976	1427939.600	404120.920	13710.200	148.033	570.780	433.095	1570.463
2	15:49:24	2953.846	TM 21103446.000	T 258637660.000	109608.600	43944.084	1415153.700	408607.090	13601.882	175.628	508.710	446.126	1999.668
3	15:49:46	3065.720	TM 21321546.000	T 263970070.000	111370.830	43978.853	1440308.900	408114.640	13784.422	126.268	620.801	436.210	1407.039
x		3084.615	TM 21127565.000	T 259580050.000	110433.130	43456.971	1427800.700	406947.550	13698.834	149.977	566.764	438.477	1659.057

σ		141.169	TM 183117.500	T 4002911.100	886.551	873.988	12578.152	2460.283	91.799	24.737	56.153	6.805	306.087
%RSD		4.577	TM 0.867	T 1.542	0.803	2.011	0.881	0.605	0.670	16.494	9.908	1.552	18.449
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:49:03	649337.120	308.758%	2046.397	5396.353	-253.731	2510.243	118.221%	43935.478	622.553	539.433	378706.480	132.671%
2	15:49:24	647731.270	308.499%	2220.808	5292.238	-207.324	2700.504	118.466%	44360.991	726.238	525.829	382703.950	131.018%
3	15:49:46	653337.720	311.474%	2274.032	5419.527	-289.443	2574.528	119.096%	44724.438	718.406	554.222	382103.370	132.813%
x		650135.370	309.577%	2180.412	5369.373	-250.166	2595.092	118.594%	44340.302	689.066	539.828	381171.270	132.168%
σ		2887.210	1.648%	119.072	67.798	41.175	96.783	0.451%	394.887	57.734	14.200	2155.587	0.998%
%RSD		0.444	0.532	5.461	1.263	16.459	3.729	0.381	0.891	8.379	2.631	0.566	0.755

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:49:03	1095.562	3912.045	1960642.400	107.707%	0.000	167120.540	67515.736
2	15:49:24	1064.743	3942.746	1973364.300	108.187%	0.000	170176.390	69913.282
3	15:49:46	1165.827	3897.383	1963113.900	110.374%	0.000	164910.260	68426.633
x		1108.711	3917.391	1965706.800	108.756%	0.000	167402.390	68618.550
σ		51.809	23.149	6745.680	1.422%	0.000	2644.354	1210.240
%RSD		4.673	0.591	0.343	1.307	0.000	1.580	1.764

200-35736-A-11-A SD@5 10/18/2016 03:54:24 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:54:46	92.687%	100.707	85.800	129216.180	340420.230	T 14201750.000	T 1270142.600	464359.700	125.952%	2458.087	37600.909	26485.563
2	15:55:08	95.138%	118.950	114.682	125724.320	343368.360	T 14450725.000	T 1298619.800	465656.840	126.631%	2340.994	36616.448	26631.047
3	15:55:30	92.208%	152.783	130.658	120982.120	341416.410	T 14202766.000	T 1265059.100	459985.190	128.607%	2384.537	36198.114	26802.581
x		93.345%	124.147	110.380	125307.540	341735.000	T 14285080.000	T 1277940.500	463333.910	127.063%	2394.539	36805.157	26639.730
σ		1.572%	26.424	22.736	4132.821	1499.663	T 143453.560	T 18088.282	2971.715	1.379%	59.184	720.185	158.687
%RSD		1.684	21.284	20.598	3.298	0.439	T 1.004	T 1.415	0.641	1.086	2.472	1.957	0.596

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:54:46	3057.949	T 4696892.200	T 57896662.000	24787.593	9955.452	285598.740	89449.643	2819.050	342.838	104.317	409.327	2199.785
2	15:55:08	3327.720	T 4723613.300	T 58205974.000	24903.810	10316.883	284501.300	86841.142	2514.606	338.544	80.452	403.907	1908.510
3	15:55:30	3421.224	T 4642331.800	T 57858227.000	24968.377	9842.739	287932.850	89562.198	2643.187	346.797	61.670	429.895	2120.251
x		3268.964	T 4687612.400	T 57986954.000	24886.593	10038.358	286010.960	88617.661	2658.948	342.726	82.146	414.376	2076.182
σ		188.630	T 41427.762	T 190647.600	91.614	247.706	1752.524	1539.539	152.832	4.128	21.374	13.710	150.555
%RSD		5.770	T 0.884	T 0.329	0.368	2.468	0.613	1.737	5.748	1.204	26.020	3.309	7.252

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:54:46	125600.800	151.986%	285.099	1129.424	-175.118	686.387	113.725%	8892.565	-713.828	-616.757	74345.955	109.272%
2	15:55:08	125127.550	156.404%	179.815	1058.863	-114.547	572.760	116.984%	8978.419	-686.054	-570.439	72678.149	109.536%
3	15:55:30	125915.020	154.606%	290.009	1211.949	-94.784	558.358	115.844%	8924.250	-756.842	-588.018	74599.583	111.237%
x		125547.790	154.332%	251.641	1133.412	-128.150	605.835	115.518%	8931.745	-718.908	-591.738	73874.562	110.015%
σ		396.406	2.222%	62.251	76.621	41.859	70.131	1.654%	43.415	35.667	23.382	1043.856	1.067%
%RSD		0.316	1.440	24.738	6.760	32.664	11.576	1.432	0.486	4.961	3.951	1.413	0.970

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:54:46	283.578	572.064	388721.700	100.799%	0.000	30517.324	13403.314
2	15:55:08	154.858	521.367	393752.450	101.327%	0.000	31610.810	13249.185
3	15:55:30	245.482	464.965	395154.770	100.612%	0.000	33556.006	14089.827
x		227.973	519.465	392542.970	100.913%	0.000	31894.714	13580.775
σ		66.122	53.575	3382.782	0.371%	0.000	1539.106	447.537
%RSD		29.004	10.314	0.862	0.367	0.000	4.826	3.295

CCV 10/18/2016 04:00:08 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	16:00:30	85.869%	103397.880	36387.080	T 14118375.000	T 4185116.400	T 39239212.000	T 13386678.000	1326406.200	106.300%	26161.321	T 2690328.600	768630.
2	16:00:52	84.349%	103426.370	37742.424	T 13722685.000	T 4103139.600	T 38840907.000	T 13201764.000	1316223.900	106.690%	26177.875	T 2641966.100	751087.
3	16:01:14	83.906%	102603.600	37016.771	T 13517984.000	T 4073602.600	T 38115601.000	T 13160339.000	1338341.700	105.447%	26347.198	T 2689690.700	761989.
x		84.708%	115.289%	112.994%	T 102.450%	T 99.469%	T 100.274%	T 97.636%	91.695%	106.146%	26228.798	T 101.396%	94.67
σ		1.030%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.636%	102.871	T n/a	
%RSD		1.216	0.453	1.831	T 2.214	T 1.402	T 1.471	T 0.910	0.834	0.599	0.392	T 1.037	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	16:00:30	10110.137	T 4005409.600	T 81490469.000	1167631.200	634896.850	820914.820	639931.990	87391.981	-621.135	9363.344	400.208	1117.
2	16:00:52	7672.859	T 3948181.300	T 81663050.000	1170043.100	629577.330	799531.510	628777.060	85740.842	-495.880	9103.971	402.473	1277.
3	16:01:14	7098.509	T 3893784.400	T 80555400.000	1151663.900	619236.390	795372.950	631283.220	86609.840	-406.081	9028.701	400.000	1283.
x		8293.835	T 97.535%	T 96.932%	91.537%	98.153%	97.012%	98.988%	104.393%	-507.699	106.306%	400.893	1225.
σ		1598.964	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	108.013	n/a	1.372	94.

%RSD		19.279	T 1.413	T 0.734	0.859	1.268	1.702	0.924	0.954	21.275	1.915	0.342	7.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	16:00:30	842489.800	106.193%	1669592.900	279953.790	679.113	133046.040	103.323%	836647.700	560702.610	428636.940	566796.930	96.79
2	16:00:52	828598.530	103.346%	1725868.500	274488.240	488.303	133954.670	102.990%	839924.840	563775.850	429218.650	556945.890	96.54
3	16:01:14	842275.010	103.457%	T 1896421.200	275520.490	345.794	135776.230	101.251%	846171.700	571832.030	433075.050	568470.870	96.41
x		837787.780	104.332%	T 95.267%	103.310%	504.403	95.520%	102.521%	840914.750	565436.830	91.772%	90.771%	96.58
σ		7958.851	1.613%	T n/a	n/a	167.242	n/a	1.112%	4838.550	5747.623	n/a	n/a	0.19
%RSD		0.950	1.546	T 6.696	1.050	33.156	1.036	1.085	0.575	1.016	0.561	1.104	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:00:30	35783.964	1623196.300	T 15678337.000	92.692%	0.000	198514.060	114602.370
2	16:00:52	36494.838	1676548.800	T 16001929.000	90.638%	0.000	216534.750	116401.770
3	16:01:14	37803.901	1642005.700	T 15591507.000	92.619%	5.398	225751.930	116485.800
x		98.876%	88.077%	T 98.733%	91.983%	1.799	84.841%	92.860%
σ		n/a	n/a	T n/a	1.166%	3.117	n/a	n/a
%RSD		2.792	1.643	T 1.373	1.267	173.205	6.486	0.919

CCB 10/18/2016 04:05:52 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	16:06:14	92.799%	11.676	-535.451	5927.281	294.280	5451.824	7312.553	104.041	112.760%	22.203	960.076	-240.997
2	16:06:35	88.512%	-1.533	-495.613	6344.608	353.957	5806.547	6134.872	137.422	113.255%	30.976	881.747	-88.676
3	16:06:57	90.627%	6.610	-595.773	140.532	292.479	6148.777	6550.724	111.871	115.236%	21.741	881.760	-95.662
x		90.646%	5.584	-542.279	4137.473	313.572	5802.382	6666.050	117.778	113.750%	24.973	907.861	-141.778
σ		2.144%	6.664	50.428	3467.737	34.986	348.495	597.251	17.457	1.310%	5.204	45.219	85.997
%RSD		2.365	119.337	9.299	83.813	11.157	6.006	8.960	14.822	1.152	20.836	4.981	60.656

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:06:14	5051.522	387.095	41727.579	50.458	47.113	39.184	-161.343	-260.442	473.679	-77.166	424.968	2148.044
2	16:06:35	5439.714	374.776	44511.714	50.051	7.050	32.997	-193.517	-202.782	454.856	-16.087	407.361	2061.688
3	16:06:57	5165.785	400.322	43010.425	9.407	-2.235	-21.132	-161.913	-356.055	506.708	-59.221	415.602	2182.220
x		5219.007	387.398	43083.240	36.639	17.309	17.016	-172.257	-273.093	478.415	-50.825	415.977	2130.651
σ		199.494	12.776	1393.495	23.584	26.225	33.182	18.413	77.416	26.248	31.393	8.810	62.120
%RSD		3.822	3.298	3.234	64.370	151.510	195.002	10.689	28.348	5.486	61.767	2.118	2.916

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:06:14	58.571	109.264%	2219.620	15.335	-64.360	19.583	105.656%	3118.910	-385.829	-364.952	49.459	98.882%
2	16:06:35	70.488	107.698%	2395.749	19.091	-91.135	50.391	108.137%	3500.602	-414.949	-302.154	38.692	98.611%
3	16:06:57	66.468	110.057%	1951.388	14.708	-47.563	7.664	107.436%	3504.813	-273.284	-324.567	66.977	97.974%
x		65.175	109.006%	2188.919	16.378	-67.686	25.879	107.076%	3374.775	-358.021	-330.558	51.709	98.489%
σ		6.063	1.200%	223.766	2.370	21.976	22.049	1.279%	221.596	74.815	31.824	14.276	0.466%
%RSD		9.303	1.101	10.223	14.471	32.467	85.198	1.194	6.566	20.897	9.627	27.609	0.473

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:06:14	115.681	1036.208	-340.757	94.341%	0.000	7805.518	-6.652
2	16:06:35	116.250	972.968	-364.345	95.876%	0.000	7867.405	-7.500
3	16:06:57	81.878	953.315	-355.912	97.379%	0.000	7435.267	7.099
x		104.603	987.497	-353.671	95.865%	0.000	7702.730	-2.351
σ		19.683	43.314	11.953	1.519%	0.000	233.688	8.195
%RSD		18.816	4.386	3.380	1.584	0.000	3.034	348.588

CCVL 10/18/2016 04:11:36 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:11:59	93.310%	199.119	5334.748	654350.450	27524.439	66932.420	637750.090	23076.465	116.897%	12.856	10829.053	7895.205
2	16:12:22	94.075%	234.648	5568.414	T 702517.300	26008.707	65699.735	618953.430	23304.553	118.650%	12.671	10784.039	8174.279
3	16:12:46	90.894%	223.857	5790.214	T 757187.720	28576.589	73946.035	672044.390	23707.099	113.040%	13.303	12117.560	9260.344
x		92.760%	153.140%	106.068%	T 104.734%	99.104%	106.963%	94.752%	96.861%	116.196%	12.943	106.587%	105.097%
σ		1.660%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	2.870%	0.325	n/a	n/a
%RSD		1.790	8.309	4.093	T 7.302	4.716	6.460	4.187	1.367	2.470	2.508	6.735	8.542

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:11:59	5980.215	6669.549	538712.400	2964.574	1109.529	3789.706	12125.980	490.902	538.684	134.431	449.571	2158.506
2	16:12:22	6041.942	6586.011	543885.190	2625.097	1189.649	3719.040	11775.594	597.150	521.795	158.043	423.385	2074.029
3	16:12:46	5968.834	7389.105	597693.410	2978.704	1329.720	3851.382	12516.062	667.273	549.116	156.737	407.667	2283.915
x		5996.997	106.225%	100.247%	112.388%	118.180%	114.048%	118.583%	70.548%	536.532	86.838%	426.874	2172.150
σ		39.337	n/a	n/a	n/a	n/a	n/a	n/a	n/a	13.787	n/a	21.169	105.606
%RSD		0.656	6.416	5.831	7.010	9.213	1.749	3.051	15.177	2.570	8.863	4.959	4.862

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:11:59	21690.678	112.149%	13718.866	2976.404	-33.868	811.980	108.216%	1376.939	3609.911	2870.202	5011.015	99.506%
2	16:12:22	21897.350	112.942%	13824.089	2898.246	-21.628	675.475	108.886%	1533.794	3890.210	2912.941	4777.970	100.356%
3	16:12:46	23619.876	107.148%	15029.549	3156.500	-6.915	717.121	104.130%	1834.344	4087.622	3264.859	5068.986	95.927%
x		100.348%	110.746%	95.802%	112.416%	-20.804	104.564%	107.077%	1581.692	3862.581	80.403%	99.623%	98.596%
σ		n/a	3.142%	n/a	n/a	13.495	n/a	2.574%	232.434	240.051	n/a	n/a	2.351%
%RSD		4.728	2.837	5.132	4.399	64.871	9.520	2.404	14.695	6.215	7.181	3.110	2.384

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:11:59	3280.347	15719.223	13546.271	97.768%	0.000	15524.830	11589.183
2	16:12:22	2758.455	16865.617	13867.703	94.138%	0.000	16498.748	12171.333
3	16:12:46	3327.964	18445.749	14837.919	90.906%	0.000	17694.584	14185.887
x		84.132%	90.952%	110.310%	94.271%	0.000	65.826%	101.404%
σ		n/a	n/a	n/a	3.433%	0.000	n/a	n/a
%RSD		10.120	8.048	4.774	3.642	0.000	6.558	10.773

200-35736-A-11-A PDS 10/18/2016 04:17:25 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	16:17:47	94.214%	2182.129	62164.520	T 6503342.000	T 1879981.300	T 63945850.000	T 11472833.000	T 2417762.400	136.745%	10484.253	240370.070	183663.1
2	16:18:09	94.351%	2120.638	60614.952	T 6484694.200	T 1892079.900	T 64620253.000	T 11590294.000	T 2443044.500	137.509%	10725.971	242894.390	186949.4
3	16:18:30	93.671%	2226.849	62655.242	T 6523062.200	T 1878664.300	T 64485564.000	T 11537718.000	T 2432243.500	138.730%	11234.427	242340.850	186174.4
x		94.078%	2176.539	61811.572	T 6503699.500	T 1883575.200	T 64350556.000	T 11533615.000	T 2431016.800	137.662%	10814.884	241868.440	185595.6
σ		0.360%	53.326	1064.953	T 19186.513	T 7394.702	T 356897.170	T 58837.903	T 12685.613	1.001%	382.909	1326.812	1717.8
%RSD		0.382	2.450	1.723	T 0.295	T 0.393	T 0.555	T 0.510	T 0.522	0.727	3.541	0.549	0.9

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	16:17:47	3967.339	TM 20852277.000	T 259397710.000	125685.390	50171.680	1440601.100	497703.910	22375.675	46.551	2146.495	458.368	1636.9
2	16:18:09	3631.780	TM 20863105.000	T 259244970.000	130627.440	51032.018	1434571.900	492733.100	21924.807	62.952	2175.100	486.368	1321.0
3	16:18:30	3336.307	TM 21177101.000	T 261712890.000	128034.810	51577.978	1449855.300	503246.870	21939.187	92.018	2179.235	475.133	1294.9
x		3645.142	TM 20964161.000	T 260118520.000	128115.880	50927.226	1441676.100	497894.630	22079.889	67.174	2166.943	473.290	1417.6

σ		315.728	TM 184491.090	T 1382870.200	2472.023	708.981	7698.198	5259.482	256.259	23.025	17.829	14.091	190.3
%RSD		8.662	TM 0.880	T 0.532	1.930	1.392	0.534	1.056	1.161	34.277	0.823	2.977	13.4
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	16:17:47	863154.390	278.924%	58192.325	33345.831	-229.678	8744.126	105.375%	45126.966	44886.995	34410.371	421939.210	118.343
2	16:18:09	850446.640	274.987%	59325.561	32429.548	-142.603	8682.601	108.459%	44505.195	44015.764	34525.608	420318.850	121.291
3	16:18:30	862444.190	277.445%	60271.524	34081.075	-171.259	8658.568	107.129%	45792.345	44814.593	35298.686	427040.610	120.330
x		858681.740	277.118%	59263.137	33285.485	-181.180	8695.099	106.988%	45141.502	44572.451	34744.889	423099.550	119.988
σ		7140.640	1.989%	1041.004	827.415	44.377	44.127	1.547%	643.698	483.462	483.051	3507.893	1.503
%RSD		0.832	0.718	1.757	2.486	24.493	0.507	1.446	1.426	1.085	1.390	0.829	1.2

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:17:47	27926.908	165121.150	2073176.300	97.898%	0.000	447903.680	194470.310
2	16:18:09	26783.293	163718.220	2044955.100	101.189%	0.000	434383.630	192063.380
3	16:18:30	27930.615	170235.720	2116770.200	98.370%	0.000	440291.490	203345.460
x		27546.939	166358.370	2078300.500	99.152%	0.000	440859.600	196626.380
σ		661.339	3430.372	36180.735	1.779%	0.000	6777.905	5942.039
%RSD		2.401	2.062	1.741	1.795	0.000	1.537	3.022

200-35736-A-11-I MS 10/18/2016 04:23:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	16:23:31	93.575%	2290.586	54496.282	T 6643878.700	T 2012124.200	T 73222951.000	T 12100698.000	T 2830805.800	140.337%	14644.091	263217.600	197355.0
2	16:23:53	91.436%	2366.218	55893.518	T 6710635.900	T 2052453.200	T 75137577.000	T 12360347.000	T 2916448.200	138.606%	14362.103	271729.870	207113.3
3	16:24:14	89.673%	2292.986	56032.447	T 6416728.300	T 1970508.700	T 71480561.000	T 11821346.000	T 2808040.600	141.865%	14643.889	264276.890	199529.3
x		91.561%	2316.597	55474.082	T 6590414.300	T 2011695.400	T 73280363.000	T 12094130.000	T 2851764.900	140.269%	14550.028	266408.120	201332.5
σ		1.954%	42.990	849.644	T 154075.490	T 40973.927	T 1829184.200	T 269560.510	T 57162.184	1.630%	162.747	4639.106	5122.9
%RSD		2.134	1.856	1.532	T 2.338	T 2.037	T 2.496	T 2.229	T 2.004	1.162	1.119	1.741	2.5

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	16:23:31	3470.680	TM 21646015.000	T 263265030.000	124455.130	54365.523	1679507.900	518130.090	23046.150	116.858	2077.949	454.366	1739.9
2	16:23:53	3126.042	TM 22199673.000	T 269280360.000	127719.240	56229.701	1691155.100	517771.830	23244.603	103.665	2078.863	473.442	1422.9
3	16:24:14	3389.496	TM 21580037.000	T 262449380.000	123505.700	52873.174	1671826.000	512694.350	22792.277	118.815	2066.281	460.168	1236.3
x		3328.739	TM 21808575.000	T 264998260.000	125226.690	54489.466	1680829.700	516198.760	23027.677	113.113	2074.364	462.659	1466.4
σ		180.173	TM 340303.630	T 3730768.400	2210.194	1681.693	9732.089	3040.189	226.728	8.240	7.015	9.779	254.5
%RSD		5.413	TM 1.560	T 1.408	1.765	3.086	0.579	0.589	0.985	7.285	0.338	2.114	17.3

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	16:23:31	967045.290	295.661%	53186.083	34509.851	-236.260	8612.557	105.973%	50773.792	11178.045	8850.484	435505.930	122.917
2	16:23:53	962880.620	301.525%	53134.522	33265.176	-274.466	8586.369	107.618%	50105.219	11403.394	8875.799	436910.080	121.955
3	16:24:14	965105.980	299.716%	53592.309	34350.621	-214.873	8497.169	107.354%	51046.213	11445.022	8880.823	431807.340	121.536
x		965010.630	298.967%	53304.305	34041.883	-241.866	8565.365	106.982%	50641.741	11342.154	8869.036	434741.120	122.136
σ		2083.968	3.003%	250.748	677.343	30.189	60.493	0.883%	484.195	143.638	16.261	2635.942	0.708
%RSD		0.216	1.004	0.470	1.990	12.482	0.706	0.825	0.956	1.266	0.183	0.606	0.5

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:23:31	28147.864	135582.560	1934042.900	101.124%	0.000	414324.720	195873.960
2	16:23:53	29056.604	139630.790	1984616.800	100.190%	0.000	423057.220	198817.410
3	16:24:14	29610.699	136652.600	1989369.000	100.718%	0.000	421120.360	202115.780
x		28938.389	137288.650	1969342.900	100.677%	0.000	419500.770	198935.720
σ		738.548	2097.725	30662.922	0.469%	0.000	4586.005	3122.587
%RSD		2.552	1.528	1.557	0.465	0.000	1.093	1.570

200-35736-A-11-J MSD 10/18/2016 04:28:54 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	16:29:15	96.358%	1954.365	51148.081	T 6411404.300	T 2000432.600	T 66434077.000	T 11455314.000	T 1996573.900	144.693%	11410.184	250216.540	191468.49
2	16:29:37	93.348%	2154.217	53568.054	T 6524435.900	T 2073087.200	T 69377416.000	T 11648218.000	T 2033699.400	142.623%	12284.983	259630.750	197639.79
3	16:29:59	95.122%	2205.894	53489.407	T 6528591.200	T 2052291.800	T 66935015.000	T 11569838.000	T 2046882.400	145.994%	11428.090	249739.460	192725.54
x		94.943%	2104.825	52735.181	T 6488143.800	T 2041937.200	T 67582170.000	T 11557790.000	T 2025718.600	144.437%	11707.752	253195.580	193944.61
σ		1.513%	132.840	1375.031	T 66490.801	T 37417.721	T 1574775.100	T 97014.583	T 26086.503	1.700%	499.977	5578.122	3261.26
%RSD		1.594	6.311	2.607	T 1.025	T 1.832	T 2.330	T 0.839	T 1.288	1.177	4.270	2.203	1.68

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	16:29:15	3790.128	T 18716309.000	T 249002030.000	121974.000	53713.595	1576960.200	537114.660	22546.567	80.045	2230.526	483.290	1310.53
2	16:29:37	3282.281	T 19461983.000	T 256527670.000	123334.700	54603.113	1581341.200	533755.110	23011.198	92.744	2153.471	496.137	1737.55
3	16:29:59	3911.178	T 19044948.000	T 255683080.000	123206.550	53245.294	1558783.300	534574.100	21763.524	138.775	2058.883	480.068	1856.70
x		3661.196	T 19074414.000	T 253737590.000	122838.420	53854.001	1572361.600	535147.960	22440.430	103.855	2147.627	486.498	1634.93
σ		333.685	T 373709.510	T 4122803.400	751.343	689.712	11961.402	1751.746	630.572	30.901	85.970	8.502	287.18

%RSD		9.114	T 1.959	T 1.625	0.612	1.281	0.761	0.327	2.810	29.754	4.003	1.748	17.56
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	16:29:15	763233.630	285.875%	55943.562	34352.318	-168.819	9981.576	107.494%	49784.869	10832.964	8801.441	402082.620	122.078%
2	16:29:37	760250.640	286.205%	57086.457	33742.273	-189.331	10146.118	108.843%	51246.657	11187.737	8816.435	404620.980	122.388%
3	16:29:59	757598.050	289.657%	56365.162	33454.967	-212.774	10051.421	109.986%	50472.043	10989.412	8975.711	401687.630	122.420%
x		760360.770	287.245%	56465.060	33849.853	-190.308	10059.705	108.774%	50501.189	11003.371	8864.529	402797.070	122.295%
σ		2819.405	2.095%	577.959	458.247	21.993	82.583	1.247%	731.330	177.798	96.578	1591.844	0.189%
%RSD		0.371	0.729	1.024	1.354	11.557	0.821	1.147	1.448	1.616	1.089	0.395	0.15

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:29:15	29798.998	142391.100	2061905.100	99.190%	0.000	396941.480	195684.900
2	16:29:37	30583.193	142370.720	2058765.800	100.848%	0.000	398161.100	196220.060
3	16:29:59	30431.837	144521.490	2076647.000	100.775%	9.923	405397.530	200781.280
x		30271.343	143094.440	2065772.600	100.271%	3.308	400166.700	197562.080
σ		416.004	1235.911	9547.399	0.937%	5.729	4570.888	2800.718
%RSD		1.374	0.864	0.462	0.934	173.205	1.142	1.418

200-35736-A-12-A 10/18/2016 04:34:38 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	16:35:00	86.133%	561.712	3147.758	T 661389.230	T 2079087.100	T 57906224.000	T 5270303.100	T 2932808.400	131.615%	5146.430	150250.920	113815.030
2	16:35:22	86.578%	619.429	3159.862	T 652243.160	T 2064823.700	T 58160075.000	T 5303147.000	T 2930080.000	131.413%	5258.041	154350.330	114757.040
3	16:35:43	87.234%	471.422	3126.774	T 653966.110	T 2081256.300	T 58886634.000	T 5347101.100	T 2985552.100	131.184%	5302.847	152954.600	115436.870
x		86.648%	550.854	3144.798	T 655866.170	T 2075055.700	T 58317644.000	T 5306850.400	T 2949480.100	131.404%	5235.773	152518.610	114669.650
σ		0.554%	74.599	16.741	T 4860.073	T 8927.293	T 508843.530	T 38532.694	T 31268.987	0.215%	80.551	2084.190	814.441
%RSD		0.639	13.542	0.532	T 0.741	T 0.430	T 0.873	T 0.726	T 1.060	0.164	1.538	1.367	0.710

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:35:00	2375.798	TM 23074304.000	T 252796440.000	97895.620	43434.073	1347927.400	412304.150	14754.050	52.158	713.077	488.534	1333.957
2	16:35:22	2101.874	TM 23322908.000	T 262186360.000	99484.319	43115.377	1347385.400	414826.000	13831.659	137.457	516.461	495.329	1998.580
3	16:35:43	2287.756	TM 23372340.000	T 257622320.000	99646.066	43699.143	1353793.200	417944.360	14378.912	101.427	595.476	477.474	1777.549
x		2255.143	TM 23256518.000	T 257535040.000	99008.668	43416.198	1349702.000	415024.840	14321.540	97.014	608.338	487.112	1703.362
σ		139.844	TM 159725.150	T 4695569.900	967.314	292.294	3553.414	2825.356	463.864	42.820	98.937	9.012	338.465
%RSD		6.201	TM 0.687	T 1.823	0.977	0.673	0.263	0.681	3.239	44.138	16.264	1.850	19.870

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:35:00	762021.120	256.208%	1478.187	4499.381	-227.747	2536.682	104.396%	21735.054	239.439	224.823	368371.880	115.492%
2	16:35:22	762481.120	256.913%	1304.093	4893.537	-130.305	2535.077	105.487%	21163.681	202.015	290.580	369609.740	116.331%
3	16:35:43	772207.320	259.833%	1292.210	4275.735	-235.068	2591.467	104.824%	21211.562	250.758	294.505	375052.860	117.124%
x		765569.850	257.651%	1358.163	4556.218	-197.707	2554.409	104.902%	21370.099	230.737	269.969	371011.490	116.316%
σ		5752.811	1.922%	104.113	312.798	58.486	32.103	0.550%	316.966	25.510	39.147	3554.232	0.816%
%RSD		0.751	0.746	7.666	6.865	29.582	1.257	0.524	1.483	11.056	14.501	0.958	0.701

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:35:00	839.189	4432.552	1584482.800	97.825%	0.000	146654.900	56502.057
2	16:35:22	845.376	4521.608	1606650.800	97.785%	0.000	149224.750	58439.246
3	16:35:43	813.415	4259.534	1622090.000	97.809%	0.000	150214.790	58819.651
x		832.660	4404.565	1604407.900	97.806%	0.000	148698.150	57920.318
σ		16.952	133.259	18903.665	0.020%	0.000	1837.439	1242.890
%RSD		2.036	3.025	1.178	0.021	0.000	1.236	2.146

MB 200-110239/1-A 10/18/2016 04:40:22 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:40:44	96.941%	-7.182	-3.379	207282.720	2385.160	83931.798	16658.586	3576.247	126.435%	23.808	1950.111	152.638
2	16:41:05	93.967%	-7.182	-107.875	194572.470	2156.956	72315.773	14084.809	3534.002	128.072%	11.758	1093.688	38.413
3	16:41:27	94.419%	3.409	-92.122	199426.680	2049.755	71357.902	12781.733	3504.171	127.505%	27.533	45.256	69.938
x		95.109%	-3.652	-67.792	200427.290	2197.290	75868.491	14508.376	3538.140	127.337%	21.033	1029.685	86.996
σ		1.603%	6.115	56.337	6413.929	171.302	6999.434	1972.829	36.216	0.831%	8.245	954.039	58.992
%RSD		1.685	167.436	83.102	3.200	7.796	9.226	13.598	1.024	0.653	39.201	92.654	67.810

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:40:44	3179.673	22803.057	342952.540	131.343	90.370	1982.679	705.659	-249.185	406.958	-55.726	473.856	2445.142
2	16:41:05	3422.620	19886.242	301867.900	86.174	65.428	1530.546	555.196	-348.267	447.873	-96.627	469.312	2521.826
3	16:41:27	3729.363	19477.796	284239.660	137.726	101.139	1789.715	439.146	-238.260	415.067	-42.841	460.990	2327.316
x		3443.885	20722.365	309686.700	118.414	85.646	1767.647	566.667	-278.571	423.299	-65.065	468.053	2431.428
σ		275.461	1813.468	30127.245	28.103	18.318	226.873	133.626	60.606	21.664	28.083	6.525	97.977
%RSD		7.999	8.751	9.728	23.733	21.388	12.835	23.581	21.756	5.118	43.161	1.394	4.030

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:40:44	1312.002	117.684%	-735.245	17.633	-67.196	17.635	112.061%	807.616	-1056.416	-852.108	411.550	103.647%
2	16:41:05	1628.025	117.820%	-676.083	21.834	-74.477	29.221	112.720%	723.049	-1079.604	-846.373	431.226	105.096%
3	16:41:27	1290.541	119.550%	-755.357	75.369	-67.857	36.083	112.369%	783.158	-1047.856	-845.211	339.182	104.697%
x		1410.190	118.351%	-722.228	38.279	-69.843	27.646	112.383%	771.274	-1061.292	-847.897	393.986	104.480%
σ		188.956	1.040%	41.209	32.190	4.026	9.324	0.330%	43.518	16.426	3.693	48.471	0.749%
%RSD		13.399	0.879	5.706	84.092	5.765	33.727	0.293	5.642	1.548	0.436	12.303	0.717

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:40:44	43.436	-174.977	880.094	98.175%	0.000	11548.225	93.139
2	16:41:05	17.785	-181.484	816.751	99.588%	0.000	10955.232	136.156
3	16:41:27	46.857	-193.785	707.066	98.963%	0.000	10759.406	122.237
x		36.026	-183.415	801.304	98.909%	0.000	11087.621	117.177
σ		15.889	9.551	87.542	0.708%	0.000	410.736	21.951
%RSD		44.105	5.208	10.925	0.716	0.000	3.704	18.733

LCS 200-110239/2-A 10/18/2016 04:46:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:46:26	89.583%	1717.558	57965.633	T 7116517.600	253083.820	573944.490	T 6642344.800	218974.440	114.395%	0.000	97045.358	76374.316
2	16:46:47	84.598%	1650.728	62586.840	T 7480072.100	266172.840	611381.610	T 6963854.100	225393.380	107.739%	18.602	98050.254	78733.489
3	16:47:11	83.758%	1718.107	62837.916	T 7390466.000	264715.380	609976.000	T 6926905.400	231165.180	106.105%	9.446	100424.920	80489.488
x		85.980%	1695.464	61130.130	T 7329018.600	261324.010	598434.030	T 6844368.100	225177.670	109.413%	9.349	98506.843	78532.431
σ		3.149%	38.744	2743.408	T 189406.440	7173.329	21220.211	T 175929.990	6098.231	4.391%	9.301	1735.427	2064.940
%RSD		3.662	2.285	4.488	T 2.584	2.745	3.546	T 2.570	2.708	4.014	99.487	1.762	2.629

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:46:26	3861.347	58925.347	T 5573054.700	23968.531	10045.578	37262.324	107969.110	8918.188	223.311	1768.526	430.902	2143.940
2	16:46:47	3879.618	61855.065	T 5843560.700	25531.024	10997.696	37553.457	107411.980	8885.458	203.439	1809.704	433.365	1798.160
3	16:47:11	3248.535	62899.211	T 5780247.500	24985.616	10540.336	37351.556	104732.190	9352.423	43.410	1882.675	422.158	1903.497
x		3663.166	61226.541	T 5732287.600	24828.390	10527.870	37389.112	106704.430	9052.023	156.720	1820.302	428.808	1948.532

σ		359.198	2060.141	T 141486.690	793.023	476.182	149.156	1730.576	260.668	98.631	57.808	5.889	177.234
%RSD		9.806	3.365	T 2.468	3.194	4.523	0.399	1.622	2.880	62.934	3.176	1.373	9.096
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:46:26	217963.860	102.715%	143204.100	29643.631	-25.509	6438.907	100.372%	602.767	45799.388	33842.759	46485.386	95.901%
2	16:46:47	223146.330	103.073%	141670.270	29183.619	58.523	6725.024	98.763%	739.157	45384.883	34408.787	47080.494	95.464%
3	16:47:11	222495.180	101.085%	143497.860	29314.181	-15.738	6924.634	98.187%	830.068	45324.848	34467.665	46529.604	93.649%
x		221201.790	102.291%	142790.740	29380.477	5.759	6696.189	99.108%	723.998	45503.040	34239.737	46698.494	95.005%
σ		2822.965	1.060%	981.415	237.064	45.956	244.144	1.132%	114.406	258.395	345.051	331.559	1.194%
%RSD		1.276	1.036	0.687	0.807	798.037	3.646	1.143	15.802	0.568	1.008	0.710	1.257

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:46:26	63197.735	161931.190	113938.280	90.963%	0.000	164431.630	128165.110
2	16:46:47	64476.180	164645.630	114313.200	90.687%	0.000	173728.030	127678.210
3	16:47:11	67152.969	165031.490	114768.580	91.036%	0.000	181525.220	126563.380
x		64942.295	163869.440	114340.020	90.895%	0.000	173228.290	127468.900
σ		2018.394	1689.622	415.799	0.184%	0.000	8557.747	821.122
%RSD		3.108	1.031	0.364	0.203	0.000	4.940	0.644

200-35680-A-13-A 10/18/2016 04:51:48 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:52:10	92.086%	-4.468	94.460	208844.810	1102.019	31756.444	11981.023	2157.984	117.334%	29.952	1015.671	-1.787
2	16:52:32	92.948%	-1.803	227.333	208607.660	920.861	27608.940	11353.703	2212.692	117.562%	34.171	396.531	-128.548
3	16:52:53	90.059%	3.921	218.916	202276.650	847.210	23042.206	9664.275	1835.173	118.194%	8.494	500.705	-1.874
x		91.698%	-0.783	180.236	206576.370	956.697	27469.197	10999.667	2068.616	117.697%	24.205	637.636	-44.070
σ		1.483%	4.286	74.404	3725.559	131.130	4358.799	1198.264	204.010	0.446%	13.769	331.506	73.160
%RSD		1.617	547.421	41.281	1.803	13.707	15.868	10.894	9.862	0.379	56.885	51.990	166.011

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:52:10	4300.537	8958.451	129216.280	55.351	39.913	728.838	1046.554	-337.147	490.875	-99.648	437.689	2371.105
2	16:52:32	4727.450	7638.030	108897.250	72.173	116.337	769.968	854.553	-207.264	448.318	-59.852	424.387	2208.901
3	16:52:53	4712.122	6718.831	97285.574	25.025	73.259	590.535	817.703	-340.087	470.198	-60.239	442.527	2367.748
x		4580.037	7771.770	111799.700	50.850	76.503	696.447	906.270	-294.833	469.797	-73.246	434.868	2315.918
σ		242.175	1125.784	16162.014	23.894	38.315	94.000	122.879	75.851	21.282	22.865	9.393	92.695
%RSD		5.288	14.486	14.456	46.990	50.083	13.497	13.559	25.727	4.530	31.217	2.160	4.003

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:52:10	861.188	107.633%	-529.189	34.753	-55.749	11.167	104.756%	601.407	-1014.470	-805.397	121.623	95.612%
2	16:52:32	803.207	107.420%	-635.413	10.669	-57.564	12.919	105.448%	716.012	-1006.274	-803.391	73.299	97.858%
3	16:52:53	703.780	108.825%	-598.145	20.440	-54.468	14.684	104.741%	644.461	-1010.097	-792.012	145.513	97.613%
x		789.392	107.959%	-587.582	21.954	-55.927	12.923	104.982%	653.960	-1010.280	-800.267	113.478	97.028%
σ		79.609	0.757%	53.894	12.113	1.556	1.758	0.404%	57.890	4.101	7.219	36.789	1.232%
%RSD		10.085	0.701	9.172	55.176	2.782	13.607	0.384	8.852	0.406	0.902	32.420	1.270

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:52:10	195.986	-36.896	-214.579	92.213%	0.000	40026.725	178.928
2	16:52:32	194.492	-1.535	-218.829	94.966%	0.000	35666.391	129.891
3	16:52:53	184.965	-121.277	-599.967	94.714%	0.000	32918.532	56.488
x		191.814	-53.236	-344.459	93.965%	0.000	36203.882	121.769
σ		5.979	61.521	221.287	1.522%	0.000	3584.449	61.623
%RSD		3.117	115.562	64.242	1.620	0.000	9.901	50.606

200-35700-A-19-A 10/18/2016 04:57:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:57:53	97.655%	-2.062	-119.960	216236.160	155.520	8914.991	5093.284	1576.225	123.207%	20.357	1098.158	348.804
2	16:58:14	96.885%	-7.182	-307.171	211460.670	154.379	8274.373	6237.940	1124.961	123.611%	16.241	318.113	337.869
3	16:58:36	97.061%	-4.607	-107.941	205087.180	218.079	8549.476	6105.766	1508.741	123.918%	24.320	28.060	486.039
x		97.200%	-4.617	-178.357	210928.000	175.993	8579.613	5812.330	1403.309	123.579%	20.306	481.443	390.904
σ		0.403%	2.560	111.718	5593.546	36.452	321.371	626.209	243.406	0.356%	4.039	553.430	82.571
%RSD		0.415	55.447	62.637	2.652	20.712	3.746	10.774	17.345	0.288	19.893	114.952	21.123

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:57:53	5682.098	790.201	27887.548	-10.195	65.070	215.300	162.012	-317.307	563.973	-94.028	412.421	2440.868
2	16:58:14	5959.389	749.865	32386.507	-26.480	44.540	357.278	272.279	-386.242	595.985	-87.677	445.206	2390.596
3	16:58:36	5963.499	642.077	32657.738	-10.381	44.360	250.424	314.336	-355.991	569.323	-78.444	442.506	2581.457
x		5868.328	727.381	30977.265	-15.685	51.323	274.334	249.542	-353.180	576.427	-86.716	433.378	2470.973
σ		161.294	76.579	2679.208	9.349	11.905	73.948	78.666	34.553	17.148	7.836	18.199	98.928

%RSD		2.749	10.528	8.649	59.606	23.197	26.955	31.524	9.783	2.975	9.037	4.199	4.004
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:57:53	303.138	114.949%	-821.436	5.343	-71.198	21.565	107.658%	617.706	-1112.954	-867.829	11.072	100.871%
2	16:58:14	255.913	114.069%	-833.580	13.931	-63.203	13.714	109.726%	651.637	-1053.898	-857.671	1.434	100.781%
3	16:58:36	312.367	112.644%	-801.011	-4.200	-90.287	49.472	109.153%	600.089	-1048.843	-859.564	6.110	101.322%
x		290.473	113.887%	-818.675	5.024	-74.896	28.250	108.846%	623.144	-1071.898	-861.688	6.205	100.992%
σ		30.283	1.163%	16.459	9.070	13.915	18.793	1.067%	26.201	35.645	5.402	4.820	0.290%
%RSD		10.425	1.021	2.010	180.515	18.580	66.523	0.981	4.205	3.325	0.627	77.677	0.287

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:57:53	66.980	-288.421	-883.898	95.673%	0.000	17775.840	-33.520
2	16:58:14	37.354	-280.693	-942.892	96.412%	0.000	17383.266	-44.093
3	16:58:36	41.600	-292.400	-1045.753	98.256%	0.000	16705.662	-34.207
x		48.645	-287.171	-957.515	96.780%	0.000	17288.256	-37.273
σ		16.020	5.953	81.912	1.330%	0.000	541.378	5.916
%RSD		32.933	2.073	8.555	1.375	0.000	3.131	15.871

200-35736-A-14-A 10/18/2016 05:03:14 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	17:03:35	96.181%	-4.583	-326.320	208059.470	345.458	9142.564	4921.644	1372.644	126.174%	19.903	385.575	231.892
2	17:03:57	98.696%	-4.649	-304.041	208452.910	218.219	7511.489	6091.956	1307.529	126.305%	15.907	715.422	447.599
3	17:04:19	94.952%	-4.549	-288.152	209686.060	310.361	7900.834	3941.532	1500.161	125.039%	28.066	466.940	377.927
x		96.610%	-4.594	-306.171	208732.810	291.346	8184.962	4985.044	1393.445	125.839%	21.292	522.646	352.472
σ		1.908%	0.051	19.173	848.656	65.716	851.850	1076.613	97.986	0.696%	6.197	171.834	110.083
%RSD		1.975	1.106	6.262	0.407	22.556	10.407	21.597	7.032	0.553	29.106	32.878	31.232

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:03:35	6206.351	2628.716	50722.282	-14.921	82.689	361.235	661.800	-324.075	583.852	-59.786	464.188	2369.875
2	17:03:57	6361.266	1916.828	42260.950	-10.991	82.575	322.362	704.708	-189.606	575.620	-23.410	488.034	2419.658
3	17:04:19	6376.110	2304.338	47281.060	-10.670	123.684	367.495	694.841	-435.256	600.735	-91.926	459.557	2448.456
x		6314.576	2283.294	46754.764	-12.194	96.316	350.364	687.116	-316.312	586.736	-58.374	470.593	2412.663
σ		94.019	356.410	4255.147	2.367	23.702	24.452	22.472	123.009	12.804	34.280	15.281	39.754
%RSD		1.489	15.609	9.101	19.411	24.608	6.979	3.271	38.888	2.182	58.725	3.247	1.648

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:03:35	278.530	114.822%	-899.674	-8.653	-77.626	32.501	108.147%	536.314	-1094.551	-869.050	47.933	101.380%
2	17:03:57	325.246	114.721%	-869.120	32.311	-73.387	28.284	109.420%	594.051	-1044.916	-848.320	33.471	103.840%
3	17:04:19	324.125	118.103%	-824.921	-0.040	-49.238	4.497	111.196%	647.521	-1077.962	-857.771	19.179	100.511%
x		309.301	115.882%	-864.572	7.872	-66.750	21.761	109.588%	592.628	-1072.476	-858.381	33.528	101.910%
σ		26.654	1.924%	37.584	21.598	15.314	15.099	1.531%	55.617	25.268	10.378	14.377	1.727%
%RSD		8.617	1.660	4.347	274.352	22.942	69.386	1.397	9.385	2.356	1.209	42.881	1.695

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:03:35	16.864	-349.060	-792.819	94.974%	0.000	12532.583	-7.005
2	17:03:57	4.663	-308.499	-667.029	98.508%	0.000	11643.395	-19.045
3	17:04:19	52.625	-406.175	-740.240	96.842%	0.000	11698.149	-23.510
x		24.718	-354.578	-733.363	96.775%	0.000	11958.043	-16.520
σ		24.927	49.071	63.177	1.768%	0.000	498.319	8.537
%RSD		100.845	13.839	8.615	1.827	0.000	4.167	51.678

200-35736-A-14-A SD@5 10/18/2016 05:08:56 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:09:18	97.989%	-4.631	-685.095	39873.088	54.124	3821.507	2931.482	387.495	125.196%	12.030	746.988	115.625
2	17:09:40	96.048%	-4.580	-653.035	43690.555	-3.158	3634.163	2295.025	382.306	126.096%	3.984	1014.129	114.152
3	17:10:02	95.774%	-4.572	-531.272	38172.964	12.864	3562.574	2811.450	462.238	125.998%	7.972	1274.223	103.699
x		96.604%	-4.594	-623.134	40578.869	21.277	3672.748	2679.319	410.680	125.763%	7.995	1011.780	111.158
σ		1.207%	0.032	81.154	2825.694	29.553	133.709	338.176	44.726	0.494%	4.023	263.625	6.502
%RSD		1.250	0.699	13.023	6.963	138.898	3.641	12.622	10.891	0.393	50.316	26.056	5.849

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:09:18	6453.677	96.132	28654.753	-22.692	11.669	11.747	39.257	-304.266	624.514	-42.907	455.262	2469.093
2	17:09:40	6334.847	48.893	24298.554	-30.765	3.453	-4.435	128.475	-473.896	685.105	-126.641	446.255	2713.100
3	17:10:02	6388.767	152.430	23524.626	-26.787	-0.491	31.191	68.304	-428.070	647.231	-49.015	452.201	2387.034
x		6392.430	99.152	25492.645	-26.748	4.877	12.834	78.679	-402.077	652.283	-72.854	451.239	2523.075
σ		59.499	51.835	2765.671	4.037	6.203	17.838	45.505	87.751	30.610	46.680	4.580	169.603
%RSD		0.931	52.278	10.849	15.092	127.199	138.990	57.836	21.825	4.693	64.074	1.015	6.722

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:09:18	85.222	114.868%	-917.107	5.435	-64.631	19.776	107.302%	484.619	-1117.390	-889.047	-2.814	99.468%
2	17:09:40	65.684	114.069%	-890.563	-4.064	-47.163	2.578	108.348%	438.410	-1108.649	-877.937	6.280	101.451%
3	17:10:02	45.595	114.721%	-908.345	4.554	-56.005	6.646	110.793%	415.194	-1082.349	-880.964	-12.281	101.245%
x		65.501	114.553%	-905.338	1.975	-55.933	9.667	108.814%	446.074	-1102.796	-882.649	-2.938	100.721%
σ		19.814	0.425%	13.525	5.249	8.734	8.988	1.791%	35.341	18.239	5.743	9.281	1.090%
%RSD		30.250	0.371	1.494	265.752	15.615	92.980	1.646	7.923	1.654	0.651	315.861	1.083

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:09:18	18.951	-401.449	-1223.868	94.869%	0.000	6156.765	-59.651
2	17:09:40	11.860	-335.482	-1375.200	95.681%	0.000	6320.724	-59.651
3	17:10:02	-17.561	-364.306	-1322.641	96.639%	0.000	6278.120	-54.477
x		4.417	-367.079	-1307.237	95.730%	0.000	6251.870	-57.926
σ		19.360	33.071	76.833	0.886%	0.000	85.073	2.987
%RSD		438.340	9.009	5.878	0.926	0.000	1.361	5.157

CCV 10/18/2016 05:14:40 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	17:15:02	85.266%	104545.470	36700.443	┬14347493.000	┬4204580.100	┬40073680.000	┬13477252.000	1335692.700	102.648%	25610.919	┬2703396.500	761082
2	17:15:23	82.584%	107247.470	38078.387	┬14395622.000	┬4250673.200	┬39746859.000	┬13524434.000	┬1454609.300	100.306%	26735.689	┬2765486.200	777755
3	17:15:45	80.336%	107963.930	38829.024	┬13947332.000	┬4078209.000	┬38793491.000	┬13136560.000	┬1425300.400	101.601%	25952.760	┬2684602.500	754794
x		82.729%	119.138%	115.496%	┬105.748%	┬100.850%	┬102.361%	┬98.592%	┬97.099%	101.518%	26099.789	┬103.058%	95.1
σ		2.468%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.173%	576.619	┬n/a	
%RSD		2.983	1.691	2.851	┬1.729	┬2.137	┬1.682	┬1.582	┬4.409	1.156	2.209	┬1.557	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	17:15:02	8941.257	┬3973235.100	┬82419332.000	1188069.100	641140.110	870461.000	675239.040	89185.420	-393.438	9413.579	424.481	1712
2	17:15:23	8864.262	┬4031345.400	┬83278190.000	1199841.800	645201.450	864784.520	679604.380	90465.549	-508.318	9431.225	447.823	1784
3	17:15:45	7360.460	┬3936260.400	┬82095764.000	1172160.000	629569.260	849829.780	669821.880	91034.052	-479.187	9551.465	444.866	1395
x		8388.660	┬98.305%	┬98.557%	93.392%	99.830%	103.809%	105.484%	108.791%	-460.314	109.787%	439.057	1630

σ		891.278	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	59.720	n/a	12.709	207
%RSD		10.625	T 1.204	T 0.740	1.171	1.270	1.237	0.726	1.049	12.974	0.793	2.895	12
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	17:15:02	852951.330	96.292%	1685297.400	282277.890	698.503	132947.400	93.409%	843990.140	565727.800	428199.980	568124.820	88.1
2	17:15:23	867094.970	94.769%	1757379.900	282383.300	539.604	135136.380	92.337%	851087.540	571696.030	431424.570	573751.920	86.7
3	17:15:45	866796.070	94.295%	1778674.400	284433.000	468.176	134519.180	91.602%	862583.490	577183.520	436974.340	575702.520	88.7
x		862280.790	95.119%	93.998%	105.692%	568.761	95.479%	92.449%	852553.730	571535.780	92.175%	92.131%	87.8
σ		8080.934	1.043%	n/a	n/a	117.899	n/a	0.909%	9382.988	5729.543	n/a	n/a	1.0
%RSD		0.937	1.097	2.812	0.429	20.729	0.841	0.983	1.101	1.002	1.027	0.687	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:15:02	36465.763	1618552.700	T 15248023.000	86.652%	0.000	201910.940	120527.950
2	17:15:23	37487.805	1643606.400	T 15364872.000	85.329%	0.000	221336.510	121247.810
3	17:15:45	36473.960	1653769.900	T 15554478.000	85.150%	0.000	233637.960	120432.770
x		99.185%	87.616%	T 96.426%	85.710%	0.000	86.971%	96.793%
σ		n/a	n/a	T n/a	0.820%	0.000	n/a	n/a
%RSD		1.597	1.106	T 1.005	0.957	0.000	7.306	0.369

CCB 10/18/2016 05:20:23 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:20:45	92.628%	-1.784	-485.563	8664.851	398.821	5881.724	6665.239	196.514	106.365%	28.306	166.633	-201.530
2	17:21:08	88.979%	1.247	-437.716	4937.051	392.579	5452.309	6573.616	293.198	107.498%	37.337	976.325	-250.490
3	17:21:29	86.856%	1.453	-538.961	2270.214	508.851	5534.705	4422.243	306.767	106.788%	9.393	2155.486	-310.714
x		89.488%	0.305	-487.413	5290.705	433.417	5622.912	5887.033	265.493	106.884%	25.012	1099.481	-254.245
σ		2.920%	1.812	50.648	3211.954	65.402	227.892	1269.372	60.121	0.572%	14.260	1000.130	54.689
%RSD		3.263	594.339	10.391	60.709	15.090	4.053	21.562	22.645	0.536	57.013	90.964	21.510

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:20:45	5497.500	383.373	39112.647	74.860	65.747	113.125	-80.674	-225.495	468.945	-55.744	450.438	2212.399
2	17:21:08	5396.748	388.955	36010.883	55.016	22.895	36.962	-91.444	-588.301	535.900	-88.900	445.349	2511.923
3	17:21:29	5033.131	370.860	33510.355	60.348	46.646	71.671	-194.856	-291.028	459.708	-23.014	474.715	2239.927
x		5309.126	381.062	36211.295	63.408	45.096	73.919	-122.324	-368.274	488.184	-55.886	456.834	2321.416
σ		244.270	9.266	2806.518	10.270	21.468	38.131	63.044	193.345	41.581	32.943	15.693	165.556
%RSD		4.601	2.432	7.750	16.196	47.605	51.585	51.538	52.500	8.517	58.947	3.435	7.132

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:20:45	98.364	98.597%	2506.936	24.343	-68.424	29.256	96.019%	3254.872	-389.253	-341.233	30.072	88.251%
2	17:21:08	99.281	100.005%	2353.234	40.423	-59.851	26.159	95.320%	3619.771	-397.921	-280.761	40.907	90.618%
3	17:21:29	103.660	100.010%	1833.024	34.796	-68.471	29.309	95.954%	3653.191	-304.129	-247.031	30.104	91.834%
x		100.435	99.537%	2231.065	33.187	-65.582	28.241	95.764%	3509.278	-363.767	-289.675	33.694	90.235%
σ		2.830	0.814%	353.176	8.160	4.963	1.803	0.386%	220.955	51.830	47.729	6.246	1.822%
%RSD		2.818	0.818	15.830	24.588	7.568	6.385	0.403	6.296	14.248	16.477	18.538	2.019

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:20:45	78.332	1089.019	-41.840	89.997%	0.000	7933.446	-20.760
2	17:21:08	129.069	856.187	-111.068	88.957%	0.000	7786.011	-3.444
3	17:21:29	71.700	843.798	-56.506	87.334%	0.000	7909.353	-19.575
x		93.034	929.668	-69.805	88.763%	0.000	7876.270	-14.593
σ		31.383	138.141	36.480	1.342%	0.000	79.089	9.674
%RSD		33.733	14.859	52.260	1.512	0.000	1.004	66.288

CCVL 10/18/2016 05:26:07 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:26:29	91.657%	221.934	5355.131	T 752070.620	26352.682	67346.610	641148.290	23789.094	110.207%	13.662	11675.334	8258.750
2	17:26:51	91.597%	189.331	5212.002	T 747682.990	27339.365	68767.966	635122.610	23082.515	110.623%	18.171	9694.724	8297.898
3	17:27:12	89.645%	218.711	5559.025	660934.440	26544.386	67791.154	632873.540	23668.151	110.428%	18.193	11776.329	7812.773
x		90.966%	146.701%	102.464%	T 107.044%	96.843%	105.579%	93.789%	97.486%	110.419%	16.675	104.740%	101.112%
σ		1.145%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.209%	2.610	n/a	n/a
%RSD		1.259	8.555	3.244	T 7.136	1.956	1.070	0.672	1.607	0.189	15.650	10.623	3.318

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:26:29	6159.822	6663.646	536236.100	2929.321	1205.826	4021.238	12277.937	715.661	485.700	151.390	449.091	2231.239
2	17:26:51	6711.199	7075.626	535971.080	2777.981	1137.894	3884.150	11652.848	592.120	532.886	114.157	425.365	2400.214
3	17:27:12	6023.883	7088.872	542684.760	2746.742	1117.316	3897.686	12091.239	466.983	584.177	88.752	448.497	2479.689
x		6298.301	107.169%	96.345%	110.889%	112.713%	118.495%	117.295%	71.329%	534.254	68.491%	440.984	2370.380
σ		363.983	n/a	n/a	n/a	n/a	n/a	n/a	n/a	49.253	n/a	13.530	126.883

%RSD		5.779	3.482	0.706	3.465	4.015	1.920	2.672	21.018	9.219	26.676	3.068	5.353
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:26:29	22013.725	101.786%	13634.128	3082.103	-58.876	636.462	98.088%	1478.323	4083.365	2716.337	4739.786	91.339%
2	17:26:51	22107.348	99.551%	14630.269	2971.773	-86.828	806.088	96.859%	1559.034	4229.037	2966.086	4743.350	90.708%
3	17:27:12	21830.294	100.404%	14782.051	2676.798	-16.991	621.438	97.995%	1479.726	4018.878	2888.215	4626.917	91.551%
x		98.472%	100.580%	96.868%	108.676%	-54.231	97.896%	97.648%	1505.694	4110.426	76.161%	94.608%	91.199%
σ		n/a	1.128%	n/a	n/a	35.149	n/a	0.684%	46.199	107.661	n/a	n/a	0.438%
%RSD		0.641	1.122	4.346	7.200	64.814	14.905	0.701	3.068	2.619	4.473	1.408	0.481

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:26:29	2848.202	16281.500	13525.861	89.193%	0.000	15601.942	12647.490
2	17:26:51	3094.673	16574.978	13091.409	90.987%	0.000	16149.225	11973.483
3	17:27:12	3169.126	16562.658	13638.816	90.354%	0.000	16558.513	12545.126
x		81.844%	88.080%	105.100%	90.178%	0.000	63.962%	99.319%
σ		n/a	n/a	n/a	0.910%	0.000	n/a	n/a
%RSD		5.530	1.008	2.154	1.009	0.000	2.980	2.932

CCVL 10/18/2016 05:30:57 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	17:31:19	95.561%	165.483	5258.401	648510.470	27271.152	66506.244	612994.860	22508.764	112.832%	44.525	10866.277	7817.322
2	17:31:40	92.885%	197.374	5542.607	638294.340	26853.491	67781.487	619251.300	22353.131	111.796%	13.484	10595.925	7803.093
3	17:32:03	90.713%	235.341	5330.033	T 737846.360	27793.876	68571.666	627402.340	23017.643	110.330%	13.641	10134.877	8061.588
x		93.053%	139.301%	102.495%	T 100.305%	98.873%	105.037%	91.358%	93.809%	111.653%	23.883	99.845%	98.260%
σ		2.428%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.257%	17.876	n/a	n/a
%RSD		2.609	17.539	2.749	T 8.115	1.726	1.541	1.165	1.536	1.126	74.848	3.511	1.841

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:31:19	6359.498	6538.963	518975.160	2607.545	1234.730	4007.955	12034.989	386.040	608.855	116.611	457.440	2398.083
2	17:31:40	6510.693	6777.858	527918.870	2569.472	1317.996	3967.762	11785.852	590.718	560.853	61.836	432.522	2547.340
3	17:32:03	6219.450	6918.684	535226.140	2567.906	1213.507	3921.424	11677.320	730.000	506.495	141.510	458.048	2139.475
x		6363.214	104.120%	94.390%	101.587%	122.652%	119.439%	115.589%	68.596%	558.734	61.852%	449.337	2361.633
σ		145.657	n/a	n/a	n/a	n/a	n/a	n/a	n/a	51.213	n/a	14.565	206.361
%RSD		2.289	2.846	1.543	0.869	4.399	1.092	1.550	30.411	9.166	38.217	3.241	8.738
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:31:19	21803.297	102.130%	12943.212	3144.621	-70.530	709.145	96.626%	1003.901	3810.302	2673.240	4661.677	90.921%
2	17:31:40	21776.222	100.727%	13926.705	3100.645	-67.094	735.864	98.147%	1187.042	3577.670	2670.863	4808.310	93.230%
3	17:32:03	22604.535	102.765%	14025.969	2821.962	-70.979	685.191	97.917%	1184.719	3742.182	2778.400	4278.205	92.458%
x		98.819%	101.874%	92.029%	112.865%	-69.534	101.037%	97.563%	1125.221	3710.051	72.178%	92.182%	92.203%
σ		n/a	1.043%	n/a	n/a	2.125	n/a	0.820%	105.072	119.598	n/a	n/a	1.176%
%RSD		2.133	1.024	4.391	5.789	3.057	3.570	0.840	9.338	3.224	2.268	5.973	1.275

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:31:19	2911.226	16552.092	13230.722	91.807%	0.000	17288.091	11631.656
2	17:31:40	2874.375	16342.160	13418.524	89.493%	0.000	17741.571	12386.798
3	17:32:03	2720.658	17075.150	13618.229	89.859%	0.000	18085.736	12380.738
x		76.403%	89.060%	105.129%	90.386%	0.000	70.324%	97.269%
σ		n/a	n/a	n/a	1.244%	0.000	n/a	n/a
%RSD		3.565	2.266	1.444	1.376	0.000	2.260	3.579

200-35736-A-14-A PDS 10/18/2016 05:36:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:37:08	89.860%	1726.154	57878.057	T 7522727.700	258204.810	591060.120	T 6833285.800	214445.770	106.964%	42.239	95784.447	76755.872
2	17:37:30	87.304%	1653.746	60085.387	T 7386652.600	256657.960	576878.350	T 6772538.600	219354.950	105.428%	9.524	97191.000	76427.257
3	17:37:52	88.177%	1753.555	60234.797	T 7404437.700	256290.370	587492.660	T 6828095.400	219932.620	104.295%	14.450	100473.800	78370.016
x		88.447%	1711.152	59399.413	T 7437939.300	257051.050	585143.710	T 6811306.600	217911.110	105.562%	22.071	97816.415	77184.382
σ		1.299%	51.568	1319.650	T 73965.396	1015.956	7376.913	T 33674.255	3014.944	1.340%	17.639	2406.422	1039.853
%RSD		1.469	3.014	2.222	T 0.994	0.395	1.261	T 0.494	1.384	1.269	79.918	2.460	1.347

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:37:08	5879.277	60377.256	T 5557312.600	23192.762	10184.127	36100.498	104823.890	8349.002	420.435	1613.028	459.320	2397.771
2	17:37:30	5368.587	58382.909	T 5535526.200	23464.875	10636.680	36495.944	108418.940	8145.529	474.106	1691.872	449.721	2067.919
3	17:37:52	4611.250	60262.930	T 5638735.300	23729.765	10301.556	34973.005	105678.700	8511.428	258.821	1680.108	419.636	2095.524
x		5286.371	59674.365	T 5577191.400	23462.467	10374.121	35856.482	106307.180	8335.319	384.454	1661.670	442.893	2187.071
σ		637.999	1119.894	T 54400.402	268.510	234.841	790.249	1878.123	183.333	112.062	42.533	20.705	182.992
%RSD		12.069	1.877	T 0.975	1.144	2.264	2.204	1.767	2.199	29.148	2.560	4.675	8.367

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:37:08	209490.660	98.295%	135241.120	28105.609	-1.755	6390.255	94.162%	1088.582	43009.716	31867.148	44276.119	87.917%
2	17:37:30	215956.630	96.776%	140247.760	28768.290	-29.175	6295.759	92.725%	1100.057	43663.567	32977.214	45238.134	89.936%
3	17:37:52	212897.770	94.457%	142194.620	28262.194	56.182	6280.290	93.535%	1122.615	44077.181	33094.608	44873.384	89.885%
x		212781.690	96.509%	139227.830	28378.698	8.417	6322.102	93.474%	1103.752	43583.488	32646.323	44795.879	89.246%
σ		3234.545	1.933%	3587.194	346.362	43.578	59.527	0.720%	17.315	538.219	677.334	485.668	1.152%
%RSD		1.520	2.003	2.576	1.221	517.716	0.942	0.771	1.569	1.235	2.075	1.084	1.290

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:37:08	29721.358	157631.130	110151.430	87.667%	0.000	190284.410	123351.090
2	17:37:30	30043.015	161674.160	112160.910	86.303%	0.000	202413.990	126199.110
3	17:37:52	31364.095	160963.120	112667.010	86.920%	0.000	208715.590	127462.870
x		30376.156	160089.470	111659.780	86.963%	0.000	200471.330	125671.020
σ		870.565	2158.467	1330.558	0.683%	0.000	9367.901	2106.145
%RSD		2.866	1.348	1.192	0.785	0.000	4.673	1.676

200-35736-A-14-B MS 10/18/2016 05:42:30 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:42:52	91.058%	1706.100	61011.890	T 7602212.400	262585.900	582092.310	T 6809569.600	226539.360	107.986%	13.966	97270.932	77283.133
2	17:43:14	88.768%	1620.734	60899.760	T 7540032.800	263046.710	597901.250	T 7014497.200	231629.160	105.564%	23.823	98426.983	77939.700
3	17:43:35	87.642%	1807.098	62338.765	T 7569399.700	263844.070	597206.250	T 6991901.600	230705.560	105.349%	23.859	99752.636	80043.761
x		89.156%	1711.310	61416.805	T 7570548.300	263158.900	592399.940	T 6938656.100	229624.690	106.300%	20.550	98483.517	78422.198
σ		1.740%	93.291	800.407	T 31105.715	636.542	8933.432	T 112361.660	2711.587	1.464%	5.701	1241.818	1442.175
%RSD		1.952	5.451	1.303	T 0.411	0.242	1.508	T 1.619	1.181	1.377	27.743	1.261	1.839

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:42:52	4900.190	59857.606	T 5657377.300	23932.728	10031.856	36997.215	109669.400	8957.504	198.290	1810.403	414.470	1747.843
2	17:43:14	4523.467	60379.689	T 5835728.900	24653.559	10414.326	38900.251	112119.060	9145.423	167.972	1888.632	438.727	1892.094
3	17:43:35	4183.099	60841.924	T 5870562.100	24798.989	10582.847	37649.650	111546.970	8716.925	254.328	1836.272	445.157	2026.389
x		4535.585	60359.740	T 5787889.400	24461.759	10343.009	37849.039	111111.810	8939.951	206.864	1845.102	432.784	1888.775

σ		358.699	492.463	T 114360.800	463.889	282.333	967.059	1281.494	214.788	43.812	39.855	16.183	139.303
%RSD		7.909	0.816	T 1.976	1.896	2.730	2.555	1.153	2.403	21.179	2.160	3.739	7.375
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:42:52	221289.780	96.403%	143137.250	28803.835	-59.811	6717.166	93.132%	762.374	43661.779	33589.658	45680.931	88.804%
2	17:43:14	227750.500	93.347%	150652.160	30509.965	-15.507	6906.365	90.946%	885.161	45354.954	34892.092	48499.108	90.033%
3	17:43:35	224960.000	94.129%	150095.260	30236.191	27.217	6779.705	92.216%	970.575	45715.421	34818.205	47325.493	88.373%
x		224666.760	94.626%	147961.560	29849.997	-16.034	6801.079	92.098%	872.703	44910.718	34433.318	47168.511	89.070%
σ		3240.328	1.588%	4187.241	916.286	43.516	96.393	1.098%	104.658	1096.527	731.565	1415.632	0.861%
%RSD		1.442	1.678	2.830	3.070	271.405	1.417	1.192	11.992	2.442	2.125	3.001	0.967

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:42:52	64933.232	168535.970	116484.180	85.288%	0.000	229775.240	127765.920
2	17:43:14	65260.795	169679.560	117650.180	86.051%	0.000	232550.970	130656.850
3	17:43:35	65397.934	170832.150	117997.510	85.938%	0.000	242266.710	132358.550
x		65197.320	169682.560	117377.290	85.759%	0.000	234864.310	130260.440
σ		238.765	1148.095	792.708	0.412%	0.000	6559.184	2321.836
%RSD		0.366	0.677	0.675	0.480	0.000	2.793	1.782

200-35736-A-14-C MSD 10/18/2016 05:48:15 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:48:38	90.832%	1666.310	58946.106	T 7500942.700	258638.510	582091.080	T 6902260.500	224182.520	106.463%	28.332	99513.739	76936.764
2	17:49:00	88.862%	1827.216	60280.641	T 7553003.900	266551.630	586719.560	T 6933190.300	220626.140	106.918%	37.637	98008.574	78072.507
3	17:49:23	87.818%	1866.102	61314.643	T 7279051.100	254514.540	567984.070	T 6688157.600	222738.250	107.648%	4.672	94941.273	77545.741
x		89.171%	1786.543	60180.464	T 7444332.500	259901.560	578931.570	T 6841202.800	222515.640	107.010%	23.547	97487.862	77518.338
σ		1.531%	105.924	1187.442	T 145485.610	6117.136	9759.178	T 133440.230	1788.610	0.598%	16.996	2330.283	568.367
%RSD		1.717	5.929	1.973	T 1.954	2.354	1.686	T 1.951	0.804	0.559	72.176	2.390	0.733

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:48:38	4029.414	57782.999	T 5641710.000	23447.980	10876.068	36819.975	108312.850	8506.401	270.662	1722.589	420.590	2157.305
2	17:49:00	4518.511	59314.029	T 5701629.900	23839.627	10441.177	37486.000	108570.530	8714.365	185.877	1771.536	448.757	1913.616
3	17:49:23	4370.085	58853.498	T 5618971.900	24124.437	10537.582	37656.375	109989.550	8436.919	289.267	1708.449	450.424	2049.813
x		4306.003	58650.175	T 5654103.900	23804.015	10618.276	37320.783	108957.640	8552.561	248.602	1734.191	439.924	2040.245
σ		250.766	785.505	T 42700.037	339.632	228.399	442.000	902.896	144.368	55.112	33.105	16.764	122.126
%RSD		5.824	1.339	T 0.755	1.427	2.151	1.184	0.829	1.688	22.169	1.909	3.811	5.986

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:48:38	217436.720	95.067%	142177.280	29453.307	-71.981	6570.775	92.252%	872.627	44100.591	33357.381	46469.908	89.711%
2	17:49:00	218933.220	94.381%	145241.640	29680.885	-23.675	6422.832	93.147%	783.721	44224.710	33321.018	46346.162	89.248%
3	17:49:23	219952.500	95.284%	147793.710	29022.542	72.971	6554.095	92.914%	780.311	44585.734	33828.278	46759.533	88.914%
x		218774.150	94.910%	145070.880	29385.578	-7.562	6515.901	92.771%	812.220	44303.678	33502.226	46525.201	89.291%
σ		1265.409	0.471%	2812.105	334.356	73.807	81.030	0.464%	52.342	252.028	282.955	212.160	0.401%
%RSD		0.578	0.496	1.938	1.138	976.036	1.244	0.500	6.444	0.569	0.845	0.456	0.449

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:48:38	63263.576	162717.390	113592.620	86.425%	0.000	231193.980	126836.520
2	17:49:00	65194.542	166392.850	117749.030	85.329%	0.000	238454.520	128519.080
3	17:49:23	65569.931	165201.430	114733.710	87.374%	0.000	240198.510	128038.020
x		64676.016	164770.560	115358.450	86.376%	0.000	236615.670	127797.870
σ		1237.526	1875.232	2147.480	1.024%	0.000	4775.605	866.604
%RSD		1.913	1.138	1.862	1.185	0.000	2.018	0.678

CCV 10/18/2016 05:54:01 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	17:54:23	87.797%	105800.000	36433.965	T 14299172.000	T 4261274.400	T 40292561.000	T 13939810.000	T 1465008.900	101.880%	26019.055	T 2721940.200	775189
2	17:54:44	86.778%	105834.580	37182.404	T 14667516.000	T 4354809.200	T 40864939.000	T 13874216.000	1368626.900	99.291%	26325.168	T 2782175.500	786151
3	17:55:06	85.544%	105865.850	37619.606	T 14034588.000	T 4093230.800	T 38555355.000	T 13231219.000	T 1430195.700	103.859%	25705.992	T 2639589.000	735759
x		86.706%	118.297%	113.085%	T 106.518%	T 102.265%	T 103.309%	T 100.820%	T 98.210%	101.677%	26016.738	T 102.934%	95.3
σ		1.128%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.291%	309.595	T n/a	
%RSD		1.301	0.031	1.617	T 2.218	T 3.129	T 3.014	T 2.862	T 3.434	2.253	1.190	T 2.637	3

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	17:54:23	6930.502	T 4049953.300	T 83020180.000	1176112.500	638987.740	892113.200	690483.610	91215.399	-395.179	9533.337	477.200	1638
2	17:54:44	10891.914	T 4128640.300	T 84336699.000	1187155.300	646491.570	874295.300	690527.120	91471.370	-434.269	9483.841	460.605	1547
3	17:55:06	8274.612	T 3925566.000	T 81011984.000	1143594.100	620945.960	869108.610	678859.710	90017.151	-517.184	9509.202	434.941	1372
x		8699.009	T 99.649%	T 98.786%	91.997%	99.336%	105.835%	107.318%	109.602%	-448.877	110.290%	457.582	1519
σ		2014.518	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	62.301	n/a	21.291	135

%RSD		23.158	T 2.538	T 2.022	1.937	2.066	1.374	0.979	0.854	13.879	0.260	4.653	8
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	17:54:23	868170.360	93.504%	1691707.000	282404.530	859.937	131606.650	90.320%	851536.810	565249.310	429349.660	573474.720	86.4
2	17:54:44	859919.190	92.410%	1755948.700	282095.960	698.766	132600.960	90.426%	854434.160	568597.510	431321.930	576657.900	86.4
3	17:55:06	857982.710	91.563%	1789129.800	283214.920	780.773	133201.080	90.703%	859874.060	565602.540	430742.350	572097.300	88.2
x		862024.090	92.492%	94.276%	105.520%	779.825	94.247%	90.483%	855281.680	566483.120	91.806%	92.381%	87.0
σ		5410.174	0.973%	n/a	n/a	80.590	n/a	0.198%	4232.750	1839.615	n/a	n/a	1.0
%RSD		0.628	1.052	2.837	0.205	10.334	0.608	0.219	0.495	0.325	0.235	0.407	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:54:23	36941.720	1601409.700	T 15560611.000	85.995%	0.000	274731.930	116506.540
2	17:54:44	37892.085	1646634.900	T 15760327.000	85.370%	0.000	287694.920	118025.690
3	17:55:06	37588.311	1663268.600	T 15464736.000	84.745%	0.000	294801.120	119246.690
x		100.977%	87.534%	T 97.717%	85.370%	0.000	113.496%	94.540%
σ		n/a	n/a	T n/a	0.625%	0.000	n/a	n/a
%RSD		1.295	1.955	T 0.967	0.732	0.000	3.561	1.164

CCB 10/18/2016 05:59:45 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	18:00:06	95.040%	-1.921	0.343	8956.401	607.937	6049.758	8146.283	379.133	108.559%	18.523	649.980	-159.281
2	18:00:28	90.501%	9.392	195.218	344.999	513.569	5562.518	6395.105	340.125	108.904%	23.080	981.367	-458.210
3	18:00:50	90.698%	20.382	214.145	9990.979	651.863	6330.865	8009.233	202.015	105.284%	4.770	258.296	-266.301
x		92.079%	9.284	136.568	6430.793	591.123	5981.047	7516.874	307.091	107.583%	15.458	629.881	-294.597
σ		2.565%	11.152	118.354	5295.777	70.663	388.755	973.894	93.066	1.998%	9.532	361.954	151.460
%RSD		2.786	120.118	86.663	82.350	11.954	6.500	12.956	30.306	1.857	61.665	57.464	51.413

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	18:00:06	5207.509	537.739	32188.985	104.726	45.424	59.009	19.921	-22.713	365.017	31.954	442.400	2026.249
2	18:00:28	5008.647	433.720	28190.030	67.529	31.417	59.797	11.290	-284.964	451.389	-36.967	429.086	2305.547
3	18:00:50	5349.348	382.028	36809.164	71.317	28.720	52.446	-170.276	-337.712	462.024	-78.192	406.890	2306.431
x		5188.501	451.162	32396.060	81.190	35.187	57.084	-46.355	-215.130	426.143	-27.735	426.125	2212.742
σ		171.144	79.307	4313.297	20.470	8.968	4.036	107.406	168.712	53.203	55.650	17.939	161.509
%RSD		3.299	17.578	13.314	25.212	25.486	7.070	231.702	78.423	12.485	200.648	4.210	7.299

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	18:00:06	96.723	96.963%	2508.503	47.187	-58.718	30.759	93.243%	3131.889	-358.911	-367.040	69.004	88.470%
2	18:00:28	166.960	97.316%	2408.586	9.738	-47.102	14.034	92.990%	3516.870	-384.747	-260.107	36.976	88.991%
3	18:00:50	42.805	95.843%	2345.432	25.534	-58.470	57.124	93.638%	3391.036	-379.480	-257.828	52.623	89.647%
x		102.163	96.707%	2420.841	27.487	-54.763	33.972	93.290%	3346.598	-374.379	-294.992	52.868	89.036%
σ		62.256	0.769%	82.223	18.801	6.636	21.724	0.327%	196.299	13.652	62.406	16.016	0.590%
%RSD		60.938	0.795	3.396	68.399	12.117	63.945	0.350	5.866	3.647	21.155	30.294	0.662

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	18:00:06	179.642	1402.407	198.587	87.196%	0.000	9422.089	20.628
2	18:00:28	121.868	1029.775	145.489	85.986%	0.000	9319.249	15.943
3	18:00:50	164.925	943.217	-5.121	88.170%	0.000	9119.706	-19.955
x		155.479	1125.133	112.985	87.117%	0.000	9287.014	5.539
σ		30.023	243.995	105.672	1.094%	0.000	153.747	22.202
%RSD		19.310	21.686	93.528	1.256	0.000	1.656	400.852

CCVL 10/18/2016 06:05:29 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:05:50	95.342%	199.967	5268.040	T 716640.930	25640.568	65564.959	599222.810	22129.863	111.926%	13.491	11233.037	7751.734
2	18:06:12	90.004%	195.588	5570.781	630660.940	26016.160	66825.688	606831.790	22436.003	110.246%	13.680	9906.939	7406.556
3	18:06:34	89.415%	202.515	5587.678	635227.690	26465.126	66197.169	607976.290	22139.599	109.516%	18.365	10930.263	7490.431
x		91.587%	139.271%	104.372%	T 98.218%	94.291%	102.825%	89.117%	92.187%	110.563%	15.179	101.340%	93.972%
σ		3.266%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.236%	2.761	n/a	n/a
%RSD		3.566	1.758	3.285	T 7.320	1.585	0.952	0.787	0.783	1.118	18.189	6.501	2.385

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:05:50	5439.527	6478.984	494130.480	2593.240	1128.789	3949.606	11740.127	562.923	535.174	102.747	439.528	2368.037
2	18:06:12	5551.086	6407.044	506334.840	2492.797	1209.925	4229.327	12643.163	586.682	476.689	178.885	444.874	2142.102
3	18:06:34	5471.265	6575.778	509751.820	2432.057	1049.234	3692.985	11702.310	507.683	520.653	114.420	446.555	2421.648
x		5487.293	100.139%	90.100%	98.612%	110.333%	119.186%	117.502%	66.608%	510.839	76.562%	443.652	2310.596
σ		57.481	n/a	n/a	n/a	n/a	n/a	n/a	n/a	30.452	n/a	3.670	148.362
%RSD		1.048	1.305	1.631	3.248	7.115	6.779	4.428	7.337	5.961	31.061	0.827	6.421

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:05:50	21389.524	97.588%	13518.003	2900.860	-91.848	699.037	95.103%	1366.989	3458.367	2631.070	4510.451	88.348%
2	18:06:12	21543.458	98.411%	13666.612	2776.750	-48.798	691.363	93.960%	1596.490	3652.507	2727.650	4794.398	91.017%
3	18:06:34	21070.787	97.452%	13769.305	2800.235	-85.150	714.583	94.950%	1463.986	3497.943	2736.887	4696.834	91.763%
x		95.564%	97.817%	92.159%	105.529%	-75.265	99.841%	94.671%	1475.822	3536.272	71.939%	93.882%	90.376%
σ		n/a	0.519%	n/a	n/a	23.165	n/a	0.620%	115.207	102.589	n/a	n/a	1.796%
%RSD		1.130	0.530	0.926	2.333	30.778	1.686	0.655	7.806	2.901	2.172	3.091	1.987

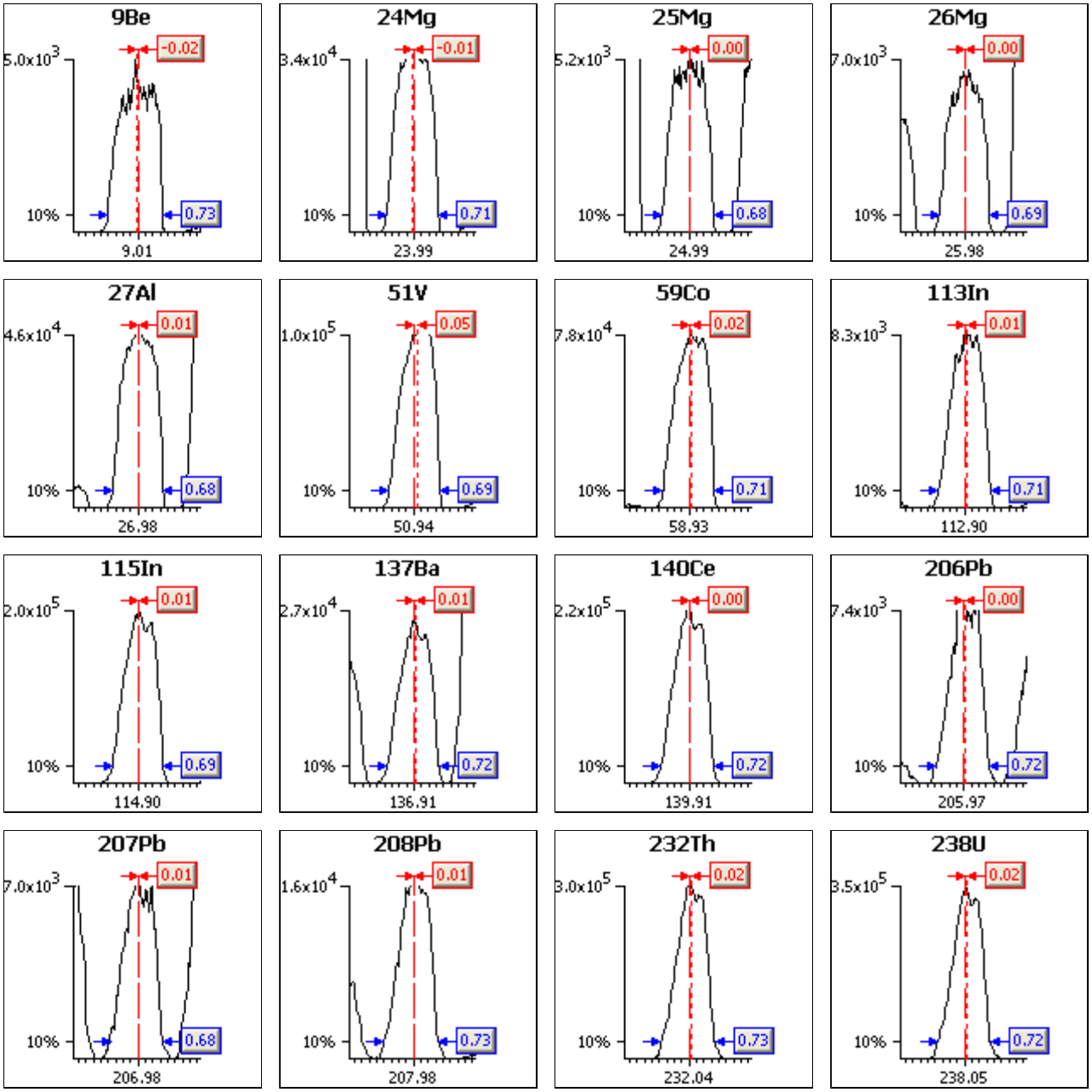
Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:05:50	2794.909	15656.897	12846.295	89.233%	0.000	17082.950	11929.622
2	18:06:12	3221.224	16356.152	13600.051	90.126%	0.000	17070.236	11716.449
3	18:06:34	3090.735	16247.517	12920.376	88.275%	0.000	17756.492	12173.080
x		81.797%	86.015%	102.778%	89.212%	0.000	68.728%	95.719%
σ		n/a	n/a	n/a	0.926%	0.000	n/a	n/a
%RSD		7.196	2.339	3.166	1.038	0.000	2.269	1.914

Performance Report

Sample details
Sample name : ITUNE
Acquired at : 10/19/2016 09:50:28 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Mass Calibration verification

Acquisition parameters
Sweeps : 20
Dwell : 1.0 mSecs
Point spacing : 0.01 amu
Peak width measured at 10% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
9Be	0.90	0.65	0.10	0.73	-0.02
24Mg	0.90	0.65	0.10	0.71	-0.01

25Mg	0.90	0.65	0.10	0.68	0.00
26Mg	0.90	0.65	0.10	0.69	0.00
27Al	0.90	0.65	0.10	0.68	0.01
51V	0.90	0.65	0.10	0.69	0.05
59Co	0.90	0.65	0.10	0.71	0.02
113In	0.90	0.65	0.10	0.71	0.01
115In	0.90	0.65	0.10	0.69	0.01
137Ba	0.90	0.65	0.10	0.72	0.01
140Ce	0.90	0.65	0.10	0.72	0.00
206Pb	0.90	0.65	0.10	0.72	0.00
207Pb	0.90	0.65	0.10	0.68	0.01
208Pb	0.90	0.65	0.10	0.73	0.01
232Th	0.90	0.65	0.10	0.73	0.02
238U	0.90	0.65	0.10	0.72	0.02

Sample details
Sample name : ITUNE
Acquired at : 10/19/2016 09:50:28 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Tune conditions

Major	
Extraction	-110
Lens 1	-4.1
Focus	18.0
D1	-43.9
Pole Bias	1.0
Hexapole Bias	-3.0
Nebuliser	0.74
Sampling Depth	133

Minor	
Lens 2	-39.2
Lens 3	-177.3
Forward power	1404
Horizontal	70
Vertical	522
D2	-158
DA	-40.8
Cool	13.0
Auxiliary	0.90

Global	
Standard resolution	135
High resolution	115
Analogue Detector	2353
PC Detector	1196

Add. Gases	
CCT1	0.00
CCT2	0.00

Sensitivity and stability results

Acquisition parameters
Sweeps : 50

Run	Time	8Bkg	9Be	24Mg	25Mg	26Mg	27Al	51V	59Co	113In
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Countrate	-	>100	>100	>100	>100	>100	>100	>100	>100
1	09:51:24 AM	0.000	4174.523	35080.881	4916.725	5823.017	44689.835	103109.97	77318.931	8458.146
2	09:51:58 AM	0.200	4190.527	34555.786	4660.652	5939.058	43991.982	102586.75	77256.644	8089.963
3	09:52:32 AM	0.100	3996.479	34026.699	4718.668	5819.016	44158.422	101667.14	76358.519	8308.070
4	09:53:06 AM	0.000	4248.541	34136.924	4594.633	5598.940	43560.852	100606.74	75896.415	8155.995
5	09:53:39 AM	0.200	4254.543	34078.805	4638.645	5692.972	43562.857	99137.976	75134.977	8023.931
x		0.100	4172.923	34375.819	4705.865	5774.601	43992.790	101421.72	76393.097	8207.221
σ		0.10	104.67	446.28	126.06	131.23	470.30	1592.75	926.50	175.43
%RSD		100.000	2.508	1.298	2.679	2.272	1.069	1.570	1.213	2.138

Run	Time	115In	137Ba	140Ce	156Ce O	206Pb	207Pb	208Pb	220Bkg	232Th
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	5.0%	5.0%	5.0%	-	5.0%	5.0%	5.0%	-	5.0%
	Countrate	>100	>100	>100	-	>100	>100	>100	-	>100
1	09:51:24 AM	196189.96	24664.236	223547.21	1476.065	7879.862	7387.637	17381.058	0.000	304141.98
2	09:51:58 AM	194109.81	24912.605	223295.88	1434.062	8153.994	7485.681	17449.129	0.000	308044.68
3	09:52:32 AM	193106.26	24666.239	222973.61	1374.057	8137.986	7219.563	17210.882	0.200	306380.42
4	09:53:06 AM	192454.79	24568.094	220478.74	1384.057	8003.921	7367.628	17086.754	0.000	303960.72
5	09:53:39 AM	190925.35	24373.809	219171.67	1374.057	7595.730	7261.582	17296.971	0.000	305347.73
x		193357.23	24636.997	221893.42	1408.460	7954.299	7344.418	17284.959	0.040	305575.10
σ		1961.01	194.66	1954.35	45.25	229.23	105.84	142.39	0.09	1692.57
%RSD		1.014	0.790	0.881	3.212	2.882	1.441	0.824	223.607	0.554

Run	Time	238U
Dwell (mSecs)		0.0
Limits	%RSD	5.0%
	Countrate	>100
1	09:51:24 AM	334542.19
2	09:51:58 AM	335411.40
3	09:52:32 AM	333324.15
4	09:53:06 AM	329807.21
5	09:53:39 AM	330737.38
x		332764.47
σ		2415.28
%RSD		0.726

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0200
1	09:51:24 AM	0.007
2	09:51:58 AM	0.006

3	09:52:32 AM	0.006
4	09:53:06 AM	0.006
5	09:53:39 AM	0.006
x		0.0063
σ		0.00
%RSD		2.6842

Result : The performance report passed.

Experiment Details

Description	PlasmaLab Template BlankExperiment
Template Filename	C:\Program Files\Thermo Fisher\PlasmaLab\TEMPLATES\6020A.tet
Created By User	user
Analyte Database	Default.tea
Creation Timestamp	8/29/2003 01:55:15 PM
Last Edited By	INORG-User
Last Edit Timestamp	10/19/2016 10:00:04 AM
Instrument Detector	Simultaneous
Database Version	3.51
Acquisition Mode	Unknown

Numerical Results report key (text indicates meaning)

Blue text indicates that cell is a statistic.
Underlining indicates that a data warning flag is set.

Column headings	Result cells	Data warning flags
No flag	Internal Standard	I - Invalid calibration
Semi Quant	Excluded	T - Tripped
Standard Addition	QC Warning	F - Interference correction failed
Multi Element	QC Failure	M - Result over max
	Transient TRA only:	V - Valley integration failed
	Peak Not Found	D - Different method used
	Manually Edited	
	Merged Peak	

Setup

Survey Scan Setup

Sweeps	10
Dwell Time	600
Channels Per Mass	10
Acquisition Duration	13247

Main Run Setup

Main Run	Peak Jumping
Sweeps	20
Dwell Time	10000
Channels Per Mass	1
Acquisition Duration	18211
Channel Spacing	0.02

Survey Scan Regions

Start AMU	End AMU	Channels	Dwell ms	Resolution

4.59	11.41	68	600	Standard
22.59	27.41	48	600	Standard
28.59	29.41	8	600	Standard
30.59	31.41	8	600	Standard
32.59	33.41	8	600	Standard
38.59	39.41	8	600	Standard
42.59	79.41	368	600	Standard
80.59	245.50	1649	600	Standard

Peak Jump Regions

Analyte	Channels	Dwell ms	Resolution
6Li	1	5000	Standard
7Li	1	5000	Standard
9Be	1	20000	Standard
11B	1	10000	Standard
23Na	1	5000	Standard
25Mg	1	5000	Standard
26Mg	1	5000	Standard
27Al	1	10000	Standard
39K	1	5000	Standard
43Ca	1	10000	Standard
44Ca	1	5000	Standard
45Sc	1	5000	Standard
47Ti	1	10000	Standard
51V	1	10000	Standard
52Cr	1	10000	Standard
53Cl O	1	10000	Standard
55Mn	1	10000	Standard
56Fe	1	10000	Standard
59Co	1	10000	Standard
60Ni	1	10000	Standard
65Cu	1	10000	Standard
66Zn	1	10000	Standard
75As	1	50000	Standard
77Ar Cl	1	50000	Standard
82Se	1	100000	Standard
83Kr	1	100000	Standard
84Kr	1	10000	Standard
88Sr	1	10000	Standard
89Y	1	5000	Standard
98Mo	1	10000	Standard
106Cd	1	10000	Standard
107Ag	1	10000	Standard
108Mo O	1	10000	Standard
111Cd	1	10000	Standard
115In	1	5000	Standard
118Sn	1	10000	Standard
121Sb	1	10000	Standard
123Sb	1	100000	Standard
135Ba	1	10000	Standard

159Tb	1	5000	Standard
182W	1	10000	Standard
205Tl	1	10000	Standard
206Pb	1	10000	Standard
207Pb	1	10000	Standard
208Pb	1	10000	Standard
209Bi	1	5000	Standard
220Bkg	1	10000	Standard
232Th	1	10000	Standard
238U	1	10000	Standard

Calibration Technique

Use External Drift Correction - No
Calibrate by - Isotope

Symbol	Interference Correction	RSF	Calibration Method	Line Fit	Weighting	Forcing	Use for Semi-Quant	Max Error	Minimum Correlation
6Li	Yes	1.00	None				No		
7Li	Yes	1.00	None				No		
9Be	Yes	0.75	Fully-Quantified	Linear	Absolute SD	None	Yes		
11B	Yes	0.58	Fully-Quantified	Linear	Absolute SD	None	Yes		
23Na	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
25Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
26Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
27Al	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
39K	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
43Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
44Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
45Sc	Yes	1.00	None				No		
47Ti	Yes	0.99	None				No		
51V	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
52Cr	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
55Mn	Yes	0.95	Fully-Quantified	Linear	Absolute SD	None	Yes		
56Fe	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
59Co	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
60Ni	No	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
65Cu	Yes	0.90	Fully-Quantified	Linear	Absolute SD	None	Yes		
66Zn	Yes	0.38	Fully-Quantified	Linear	Absolute SD	None	Yes		
75As	Yes	0.07	Fully-Quantified	Linear	Absolute SD	None	Yes		
82Se	Yes	0.10	Fully-Quantified	Linear	Absolute SD	None	Yes		
83Kr	Yes	0.01	None				No		
84Kr	Yes	0.01	None				No		
88Sr	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
89Y	Yes	0.98	None				No		
98Mo	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
107Ag	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
106Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
111Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
115In	Yes	0.99	None				No		
118Sn	Yes	0.96	None				No		

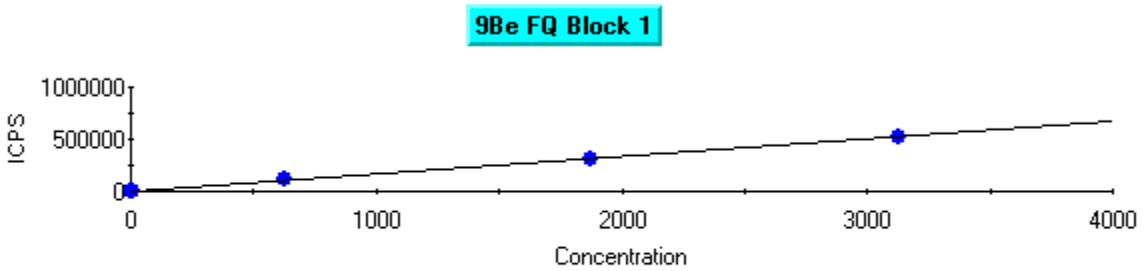
121Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
123Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
135Ba	Yes	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes
159Tb	Yes	0.99	None				No
182W	Yes	0.94	Fully-Quantified	Linear	Absolute SD	None	Yes
206Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
207Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
208Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	No
209Bi	Yes	0.92	None				No
232Th	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
238U	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
205Tl	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
220Bkg	Yes		Semi-Quantified				No
77Ar Cl	Yes		Semi-Quantified				No
53Cl O	Yes		Semi-Quantified				No
108Mo O	Yes		Semi-Quantified				No

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	STD0	Fully Quant Standard	1.000	0	1	2	144
2	STD1	Fully Quant Standard	1.000	0	1	3	144
3	STD2	Fully Quant Standard	1.000	0	1	4	144
4	STD3	Fully Quant Standard	1.000	0	1	5	144
5	STD4	Fully Quant Standard	1.000	1	1	1	144
6	STD5	Fully Quant Standard	1.000	1	1	2	144
7	ICV	QC Sample	1.000	0	1	6	144
8	ICVL	QC Sample	1.000	0	1	3	144
9	ICBIS	QC Sample	1.000	0	1	2	144
10	ICSA	QC Sample	1.000	1	1	3	144
11	ICSAB	QC Sample	1.000	1	1	4	144
12	CCV	QC Sample	1.000	0	1	5	144
13	CCB	QC Sample	1.000	0	1	2	144
14	200-35736-A-11-A	Unknown	1.000	1	2	1	144
15	200-35736-A-11-A SD@5	Unknown	1.000	1	2	2	144
16	200-35736-A-11-A PDS	Unknown	1.000	1	2	3	144
17	200-35736-A-11-I MS	Unknown	1.000	1	2	4	144
18	200-35736-A-11-J MSD	Unknown	1.000	1	2	5	144
19	200-35736-A-12-A	Unknown	1.000	1	2	6	144
20	MB 200-110239/1-A	Unknown	1.000	1	2	7	144
21	LCS 200-110239/2-A	Unknown	1.000	1	2	8	144
22	200-35680-A-13-A	Unknown	1.000	1	2	9	144
23	200-35700-A-19-A	Unknown	1.000	1	2	10	144
24	CCV	QC Sample	1.000	0	1	5	144
25	CCB	QC Sample	1.000	0	1	2	144
26	CCVL	QC Sample	1.000	0	1	3	144
27	200-35736-A-14-A	Unknown	1.000	1	2	11	144
28	200-35736-A-14-A SD@5	Unknown	1.000	1	2	12	144
29	200-35736-A-14-A PDS	Unknown	1.000	1	3	1	144
30	200-35736-A-14-B MS	Unknown	1.000	1	3	2	144
31	200-35736-A-14-C MSD	Unknown	1.000	1	3	3	144
32	CCV	QC Sample	1.000	0	1	5	144

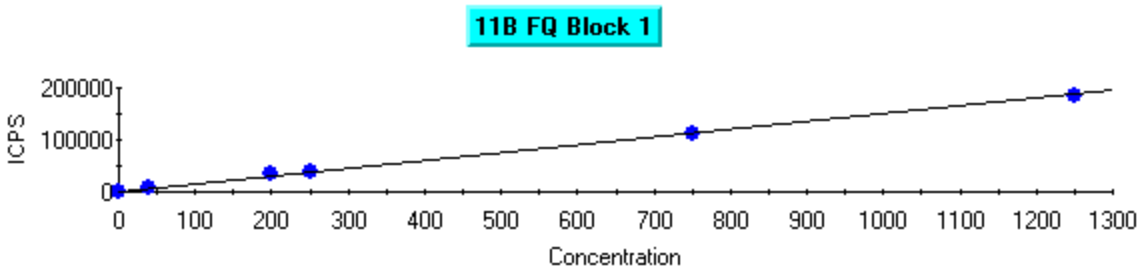
33	CCB	QC Sample	1.000	0	1	2	144
34	CCVL	QC Sample	1.000	0	1	3	144
35	MB 200-110288/1-B	Unknown	1.000	1	3	4	144
36	LCS 200-110288/2-B	Unknown	1.000	1	3	5	144
37	200-35715-A-2-B	Unknown	1.000	1	3	6	144
38	200-35730-A-2-B	Unknown	1.000	1	3	7	144
39	200-35745-A-5-B	Unknown	1.000	1	3	8	144
40	200-35754-A-2-B	Unknown	1.000	1	3	9	144
41	200-35754-A-2-B SD@5	Unknown	1.000	1	3	10	144
42	200-35754-A-2-B PDS	Unknown	1.000	1	3	11	144
43	200-35676-A-2-B	Unknown	1.000	1	3	12	144
44	CCV	QC Sample	1.000	0	1	5	144
45	CCB	QC Sample	1.000	0	1	2	144
46	CCVL	QC Sample	1.000	0	1	3	144

Fully Quant Calibration



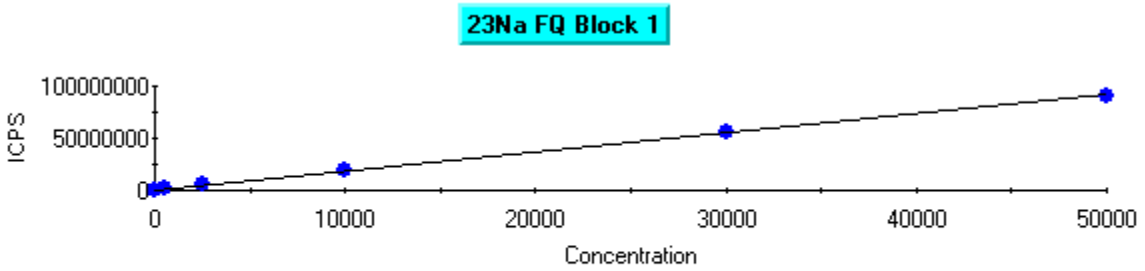
Intercept CPS=9.338365 Intercept Conc=0.055811
Sensitivity=167.321046 Correlation Coeff=0.999828

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.016	0.016	6.64	0.00
STD1	1.000	1.159	0.159	203.18	15.85
STD2	5.000	5.415	0.415	915.34	8.30
STD3	625.000	664.031	39.031	111115.64	6.24
STD4	1875.000	1869.642	5.358	312839.73	0.29
STD5	3125.000	3054.662	70.338	511118.62	2.25



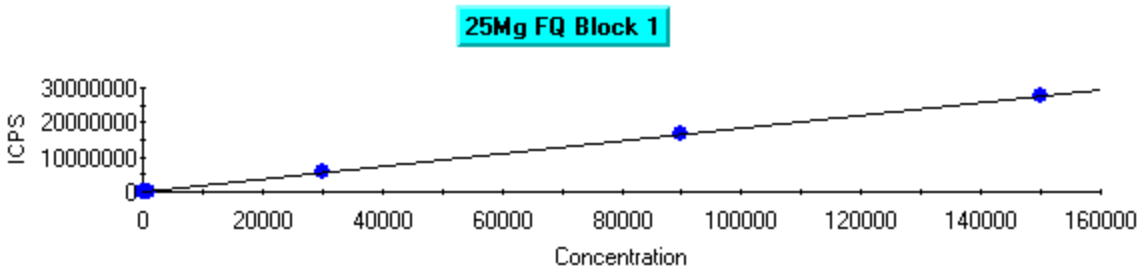
Intercept CPS=501.883406 Intercept Conc=3.315906
Sensitivity=151.356355 Correlation Coeff=0.999787

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.002	0.002	501.61	0.00
STD1	40.000	40.135	0.135	6576.51	0.34
STD2	200.000	216.129	16.129	33214.40	8.06
STD3	250.000	259.353	9.353	39756.63	3.74
STD4	750.000	740.635	9.365	112601.75	1.25
STD5	1250.000	1211.415	38.585	183857.28	3.09



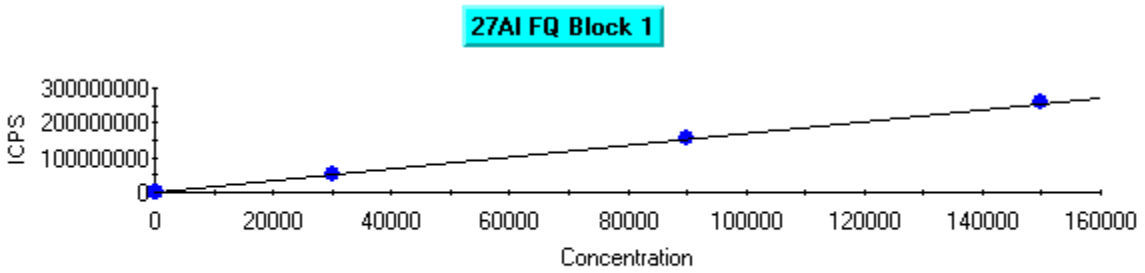
Intercept CPS=309699.266481 Intercept Conc=168.357582
Sensitivity=1839.532639 Correlation Coeff=0.999936

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.677	0.677	308453.35	0.00
STD1	500.000	505.653	5.653	1239865.08	1.13
STD2	2500.000	2593.034	93.034	5079670.34	3.72
STD3	10000.000	10204.001	204.001	19080292.33	2.04
STD4	30000.000	29632.522	367.478	54819691.39	1.22
STD5	50000.000	48635.094	1364.906	89775541.91	2.73



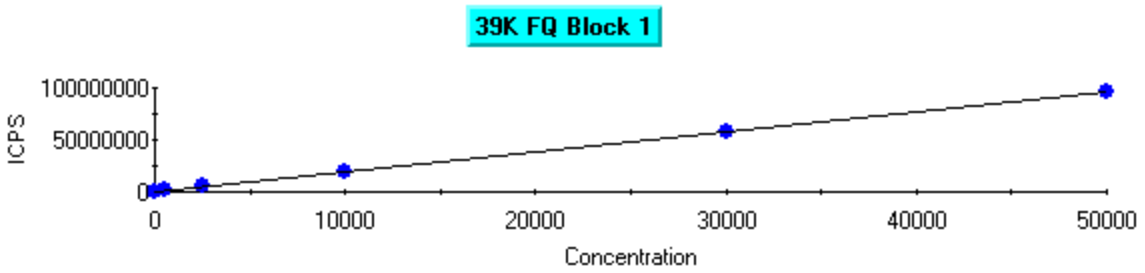
Intercept CPS=111.008221 Intercept Conc=0.607148
Sensitivity=182.835581 Correlation Coeff=0.999988

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.300	0.300	165.90	0.00
STD1	200.000	184.334	15.666	33813.90	7.83
STD2	1000.000	954.401	45.599	174609.44	4.56
STD3	30000.000	31015.455	1015.455	5670839.76	3.38
STD4	90000.000	91244.105	1244.105	16682780.00	1.38
STD5	150000.000	151455.456	1455.456	27691557.18	0.97



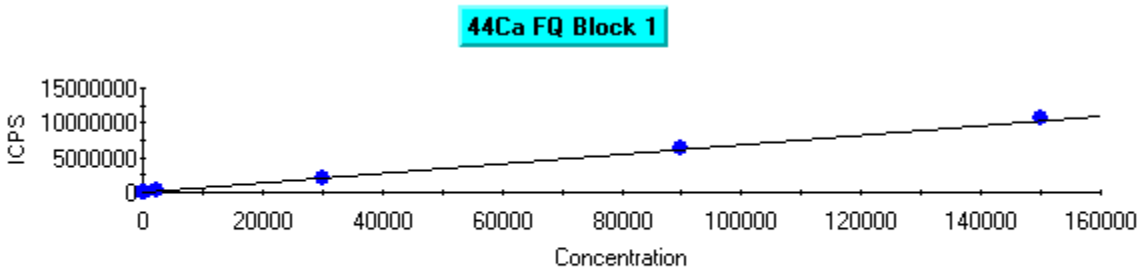
Intercept CPS=522.265924 Intercept Conc=0.307278
Sensitivity=1699.652305 Correlation Coeff=0.999975

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.006	0.006	532.50	0.00
STD1	50.000	49.536	0.464	84716.67	0.93
STD2	250.000	234.497	15.503	399085.50	6.20
STD3	30000.000	31389.132	1389.132	53351132.75	4.63
STD4	90000.000	91200.139	1200.139	155009048.09	1.33
STD5	150000.000	151461.231	1461.231	257431953.37	0.97



Intercept CPS=73232.604428 Intercept Conc=37.783712
Sensitivity=1938.205640 Correlation Coeff=0.999980

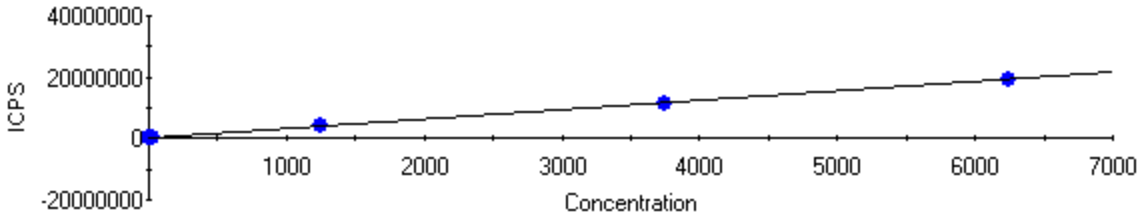
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.009	0.009	73215.41	0.00
STD1	500.000	494.260	5.740	1031209.21	1.15
STD2	2500.000	2582.011	82.011	5077699.92	3.28
STD3	10000.000	10175.088	175.088	19794646.16	1.75
STD4	30000.000	29661.443	338.557	57563208.53	1.13
STD5	50000.000	49760.178	239.822	96518690.79	0.48



Intercept CPS=1247.544985 Intercept Conc=18.406629
Sensitivity=67.776941 Correlation Coeff=0.999989

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	1.278	1.278	1334.16	0.00
STD1	500.000	491.502	8.498	34560.04	1.70
STD2	2500.000	2401.396	98.604	164006.84	3.94
STD3	30000.000	31195.496	1195.496	2115582.86	3.98
STD4	90000.000	93050.090	3050.090	6307897.98	3.39
STD5	150000.000	156414.699	6414.699	10602557.34	4.28

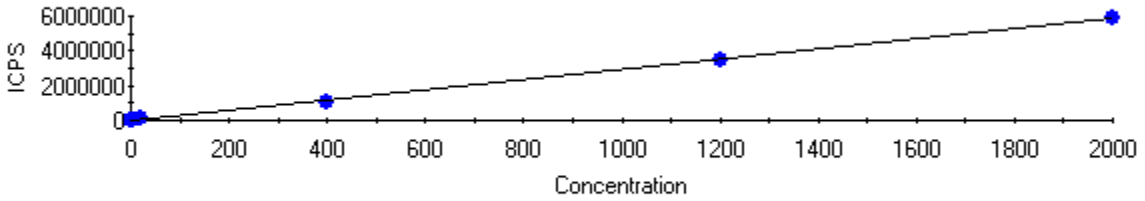
51V FQ Block 1



Intercept CPS=-789.698275 Intercept Conc=-0.256930
Sensitivity=3073.595192 Correlation Coeff=0.999999

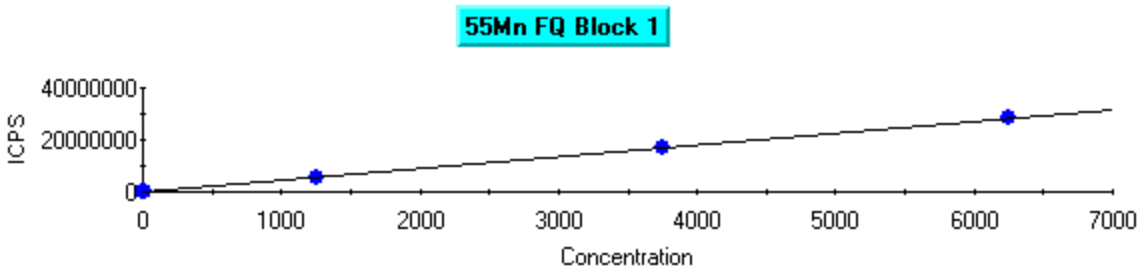
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.295	0.295	117.61	0.00
STD1	5.000	4.826	0.174	14043.26	3.48
STD2	25.000	23.281	1.719	70766.43	6.88
STD3	1250.000	1262.464	12.464	3879514.59	1.00
STD4	3750.000	3779.939	29.939	11617212.10	0.80
STD5	6250.000	6289.414	39.414	19330323.94	0.63

52Cr FQ Block 1



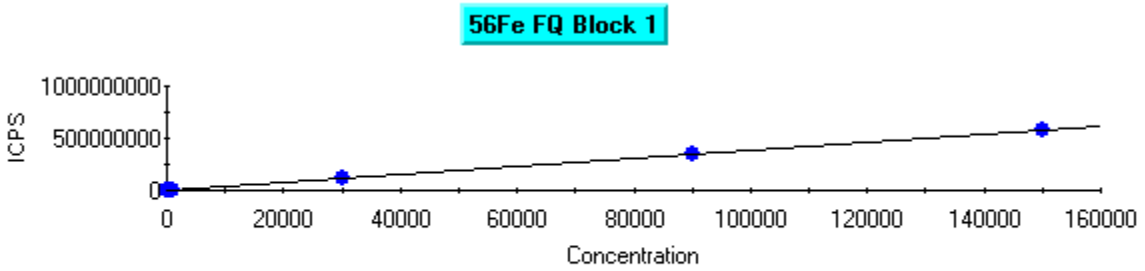
Intercept CPS=2582.828034 Intercept Conc=0.885982
Sensitivity=2915.214309 Correlation Coeff=0.999878

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.017	0.017	2631.61	0.00
STD1	4.000	3.998	0.002	14236.66	0.06
STD2	20.000	19.492	0.508	59406.73	2.54
STD3	400.000	370.107	29.893	1081523.63	7.47
STD4	1200.000	1205.787	5.787	3517711.55	0.48
STD5	2000.000	2013.437	13.437	5872183.95	0.67



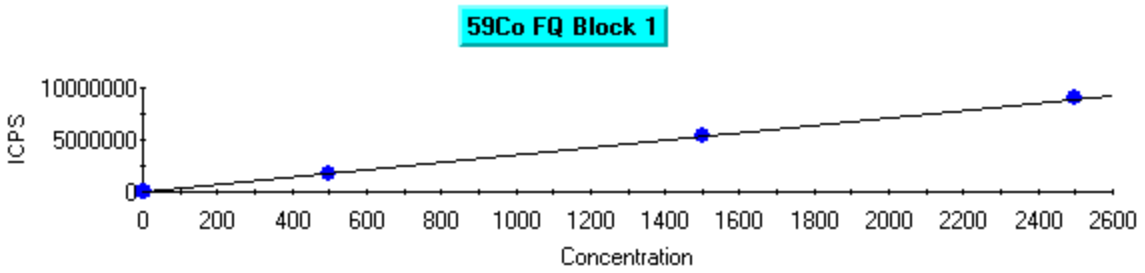
Intercept CPS=476.964906 Intercept Conc=0.106443
Sensitivity=4480.934539 Correlation Coeff=0.999948

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	476.60	0.00
STD1	2.000	2.037	0.037	9603.71	1.84
STD2	10.000	9.488	0.512	42992.71	5.12
STD3	1250.000	1268.208	18.208	5683235.86	1.46
STD4	3750.000	3729.559	20.441	16712385.94	0.55
STD5	6250.000	6331.686	81.686	28372349.01	1.31



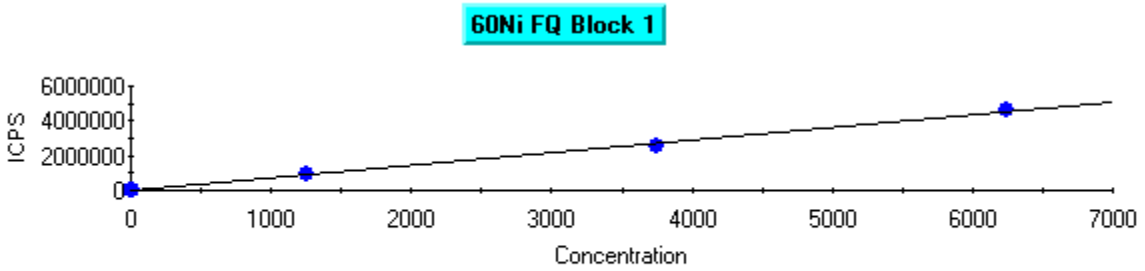
Intercept CPS=275754.767241 Intercept Conc=72.399872
Sensitivity=3808.774258 Correlation Coeff=0.999980

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.400	0.400	277277.74	0.00
STD1	200.000	188.923	11.077	995320.98	5.54
STD2	1000.000	1062.273	62.273	4321711.63	6.23
STD3	30000.000	30552.875	552.875	116644760.49	1.84
STD4	90000.000	89072.605	927.395	339533199.85	1.03
STD5	150000.000	149573.746	426.254	569968387.34	0.28



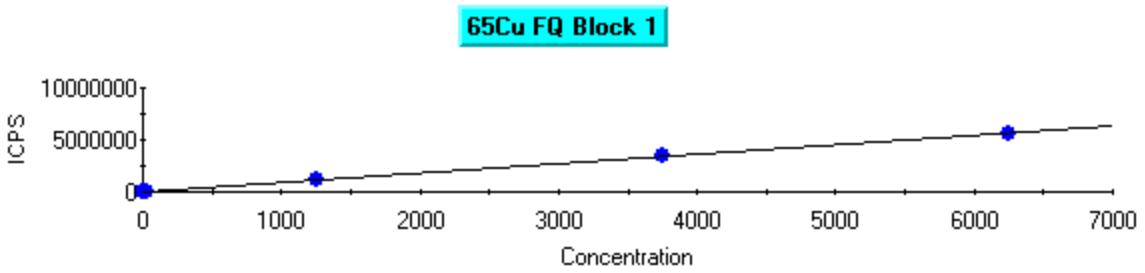
Intercept CPS=21.554480 Intercept Conc=0.006112
Sensitivity=3526.519991 Correlation Coeff=0.999838

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	19.96	0.00
STD1	1.000	1.004	0.004	3560.62	0.36
STD2	5.000	4.837	0.163	17079.65	3.26
STD3	500.000	463.872	36.128	1635876.16	7.23
STD4	1500.000	1506.491	6.491	5312691.64	0.43
STD5	2500.000	2547.754	47.754	8984726.27	1.91



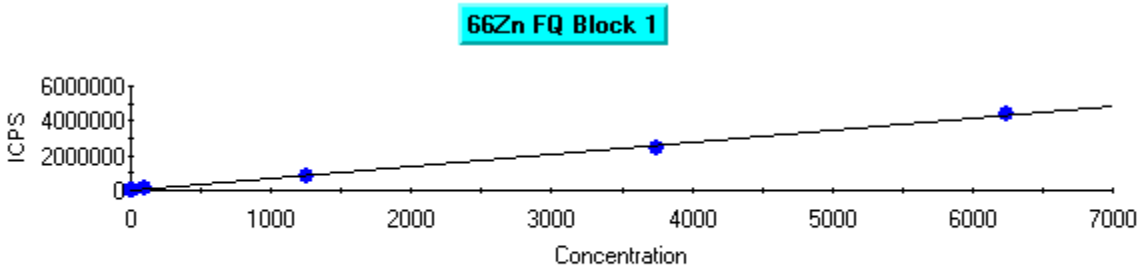
Intercept CPS=16.961394 Intercept Conc=0.023570
Sensitivity=719.621831 Correlation Coeff=0.998206

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	16.66	0.00
STD1	2.000	2.111	0.111	1536.16	5.56
STD2	10.000	10.152	0.152	7322.24	1.52
STD3	1250.000	1211.546	38.454	871872.07	3.08
STD4	3750.000	3461.067	288.933	2490676.66	7.70
STD5	6250.000	6464.880	214.880	4652285.95	3.44



Intercept CPS=258.795270 Intercept Conc=0.284972
Sensitivity=908.141241 Correlation Coeff=0.999880

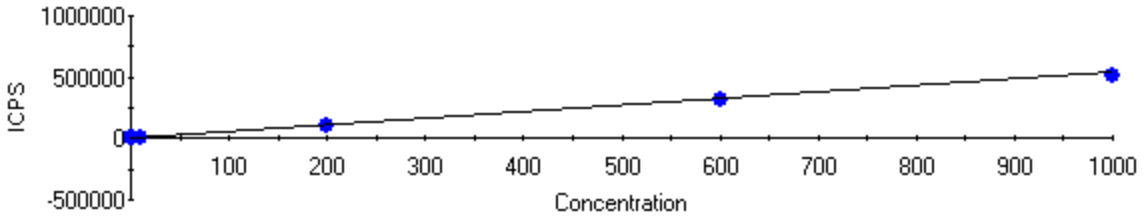
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.026	0.026	235.05	0.00
STD1	5.000	5.081	0.081	4872.63	1.61
STD2	25.000	24.525	0.475	22531.03	1.90
STD3	1250.000	1179.768	70.232	1071654.53	5.62
STD4	3750.000	3798.321	48.321	3449670.36	1.29
STD5	6250.000	6212.987	37.013	5642528.21	0.59



Intercept CPS=676.527633 Intercept Conc=0.984266
Sensitivity=687.342341 Correlation Coeff=0.998834

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.028	0.028	657.04	0.00
STD1	20.000	21.265	1.265	15292.62	6.32
STD2	100.000	105.183	5.183	72973.46	5.18
STD3	1250.000	1241.390	8.610	853936.49	0.69
STD4	3750.000	3484.137	265.863	2395471.19	7.09
STD5	6250.000	6354.757	104.757	4368569.96	1.68

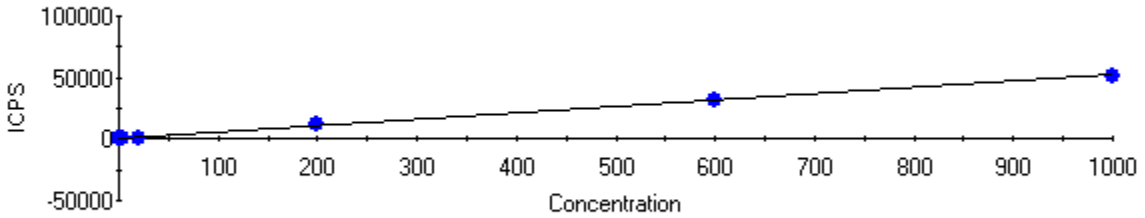
75As FQ Block 1



Intercept CPS=-17.760100 Intercept Conc=-0.033124
Sensitivity=536.171684 Correlation Coeff=0.999842

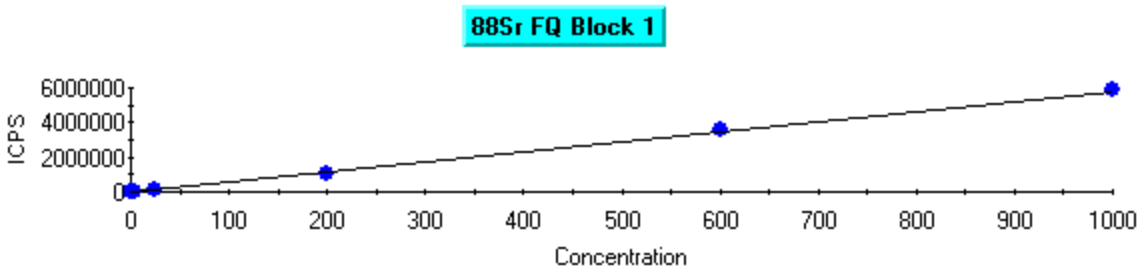
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.197	0.197	-123.59	0.00
STD1	2.000	1.986	0.014	1046.90	0.72
STD2	10.000	10.379	0.379	5547.34	3.79
STD3	200.000	203.196	3.196	108930.33	1.60
STD4	600.000	587.604	12.396	315038.84	2.07
STD5	1000.000	953.565	46.435	511256.59	4.64

82Se FQ Block 1



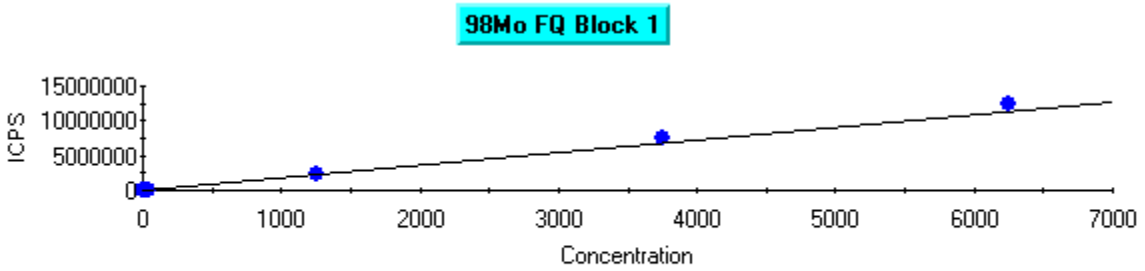
Intercept CPS=29.795038 Intercept Conc=0.565603
Sensitivity=52.678326 Correlation Coeff=0.999241

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-1.450	1.450	-46.57	0.00
STD1	4.000	3.186	0.814	197.65	20.34
STD2	20.000	21.864	1.864	1181.57	9.32
STD3	200.000	216.360	16.360	11427.27	8.18
STD4	600.000	608.120	8.120	32064.54	1.35
STD5	1000.000	955.010	44.990	50338.12	4.50



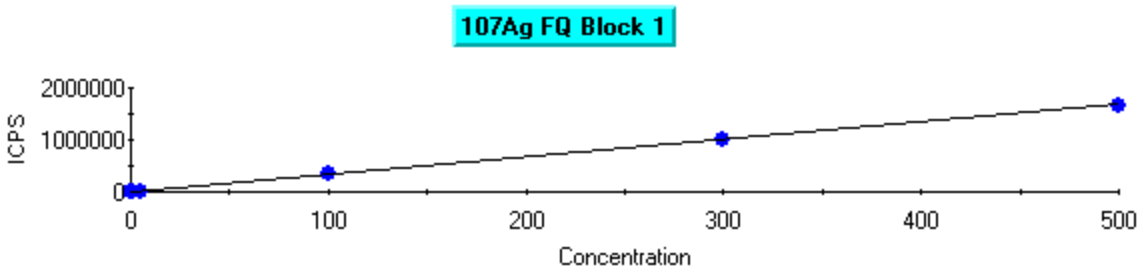
Intercept CPS=18.758929 Intercept Conc=0.003250
Sensitivity=5771.442451 Correlation Coeff=0.999808

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	20.11	0.00
STD1	5.000	4.647	0.353	26839.25	7.06
STD2	25.000	23.983	1.017	138437.30	4.07
STD3	200.000	184.202	15.798	1063131.30	7.90
STD4	600.000	614.487	14.487	3546496.92	2.41
STD5	1000.000	1011.806	11.806	5839596.28	1.18



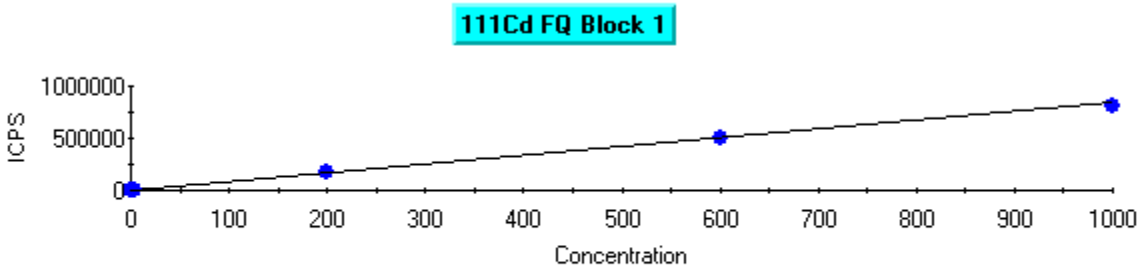
Intercept CPS=86.242709 Intercept Conc=0.047814
Sensitivity=1803.729423 Correlation Coeff=0.999947

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.004	0.004	93.34	0.00
STD1	10.000	9.686	0.314	17557.67	3.14
STD2	50.000	49.780	0.220	89876.06	0.44
STD3	1250.000	1314.951	64.951	2371902.02	5.20
STD4	3750.000	4162.275	412.275	7507704.71	10.99
STD5	6250.000	6952.003	702.003	12539618.50	11.23



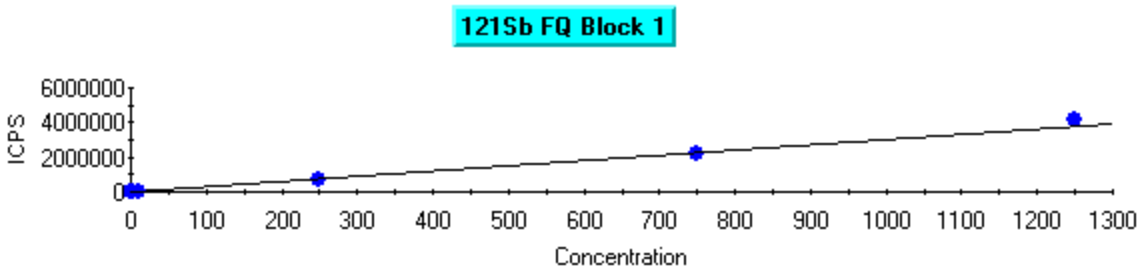
Intercept CPS=46.625155 Intercept Conc=0.013773
Sensitivity=3385.301045 Correlation Coeff=0.999790

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.004	0.004	31.73	0.00
STD1	1.000	1.100	0.100	3769.18	9.96
STD2	5.000	5.514	0.514	18713.99	10.28
STD3	100.000	103.195	3.195	349391.58	3.19
STD4	300.000	300.358	0.358	1016849.72	0.12
STD5	500.000	484.173	15.827	1639118.51	3.17



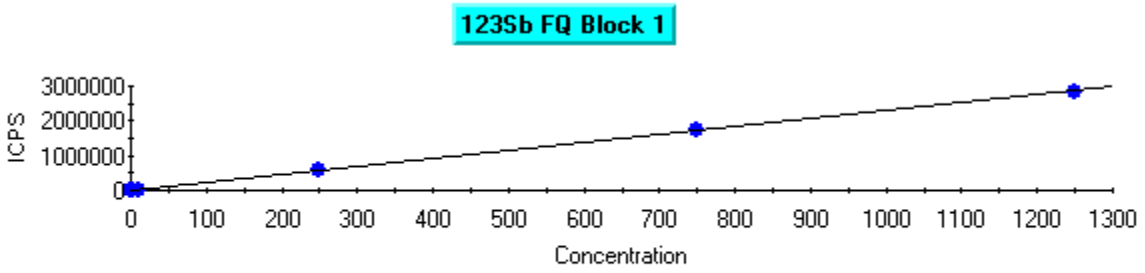
Intercept CPS=111.864190 Intercept Conc=0.133126
Sensitivity=840.288678 Correlation Coeff=0.999908

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.020	0.020	95.44	0.00
STD1	1.000	1.080	0.080	1019.75	8.04
STD2	5.000	5.365	0.365	4620.16	7.30
STD3	200.000	202.914	2.914	170618.33	1.46
STD4	600.000	594.692	5.308	499825.07	0.88
STD5	1000.000	970.071	29.929	815251.58	2.99



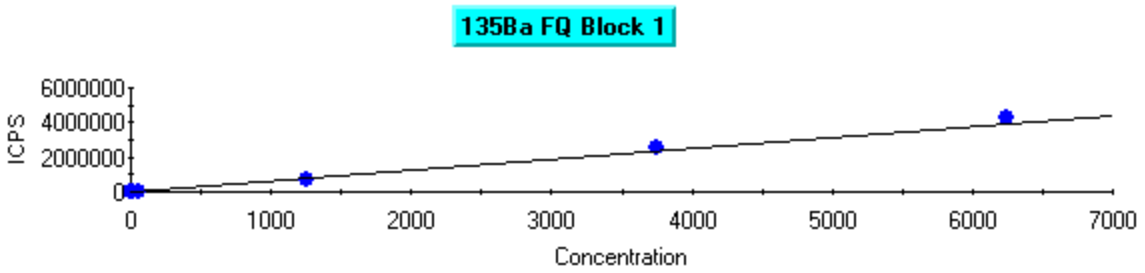
Intercept CPS=125.635052 Intercept Conc=0.042080
Sensitivity=2985.653339 Correlation Coeff=0.998004

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	125.11	0.00
STD1	2.000	1.964	0.036	5988.66	1.81
STD2	10.000	10.050	0.050	30131.21	0.50
STD3	250.000	244.960	5.040	731490.18	2.02
STD4	750.000	736.754	13.246	2199816.63	1.77
STD5	1250.000	1382.266	132.266	4127091.99	10.58



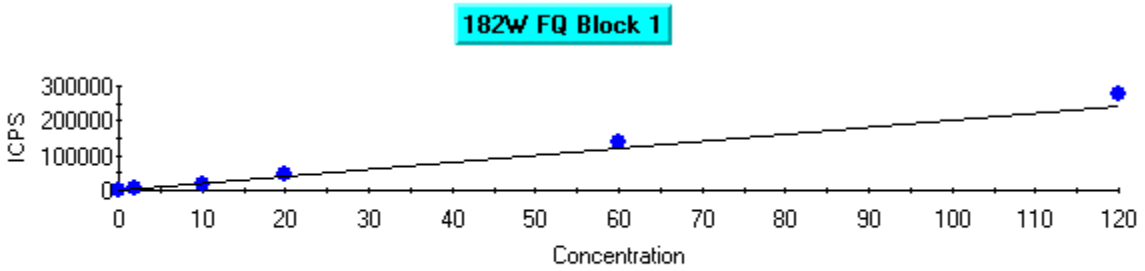
Intercept CPS=103.936491 Intercept Conc=0.045334
Sensitivity=2292.702233 Correlation Coeff=0.999992

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.001	0.001	102.57	0.00
STD1	2.000	2.022	0.022	4740.51	1.12
STD2	10.000	10.149	0.149	23373.25	1.49
STD3	250.000	248.262	1.738	569293.68	0.70
STD4	750.000	751.943	1.943	1724084.61	0.26
STD5	1250.000	1244.195	5.805	2852673.41	0.46



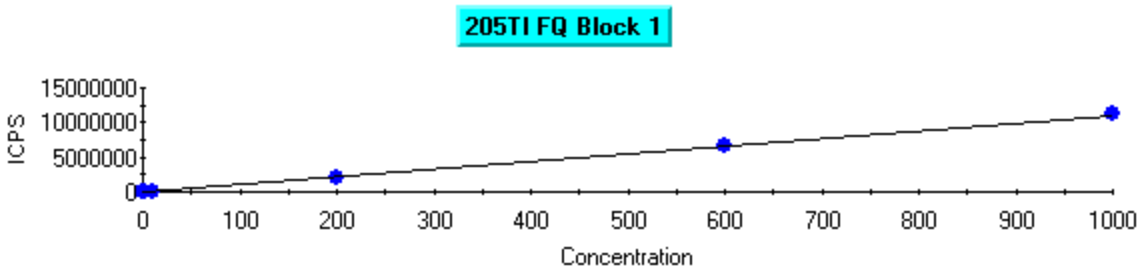
Intercept CPS=8.973608 Intercept Conc=0.014452
Sensitivity=620.930490 Correlation Coeff=0.999685

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.002	0.002	10.05	0.00
STD1	10.000	9.666	0.334	6010.73	3.34
STD2	50.000	49.346	0.654	30649.65	1.31
STD3	1250.000	1196.186	53.814	742757.26	4.31
STD4	3750.000	4122.924	372.924	2560058.29	9.94
STD5	6250.000	6785.628	535.628	4213412.41	8.57



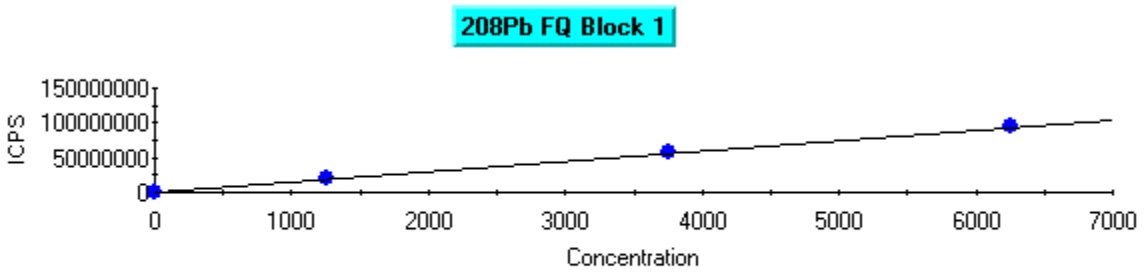
Intercept CPS=94.241526 Intercept Conc=0.047000
Sensitivity=2005.133392 Correlation Coeff=0.999873

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.005	0.005	105.03	0.00
STD1	2.000	1.806	0.194	3716.19	9.68
STD2	10.000	9.097	0.903	18334.97	9.03
STD3	20.000	22.252	2.252	44712.00	11.26
STD4	60.000	68.165	8.165	136774.28	13.61
STD5	120.000	138.436	18.436	277676.62	15.36



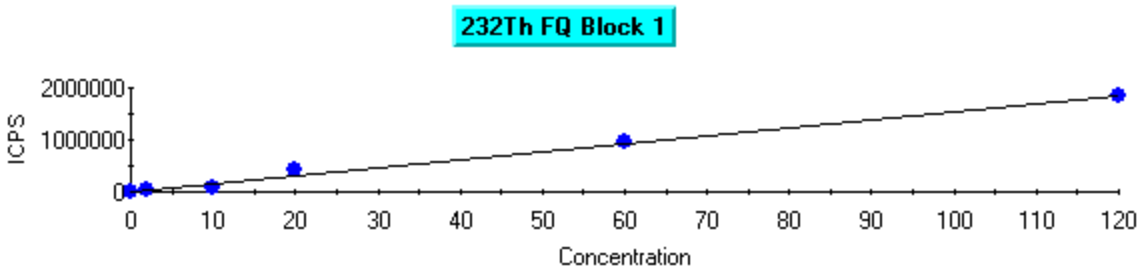
Intercept CPS=401.726763 Intercept Conc=0.037052
Sensitivity=10842.176161 Correlation Coeff=0.999600

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.002	0.002	424.78	0.00
STD1	2.000	1.685	0.315	18668.88	15.76
STD2	10.000	8.822	1.178	96047.66	11.78
STD3	200.000	178.304	21.696	1933608.87	10.85
STD4	600.000	622.198	22.198	6746386.01	3.70
STD5	1000.000	1047.681	47.681	11359544.81	4.77



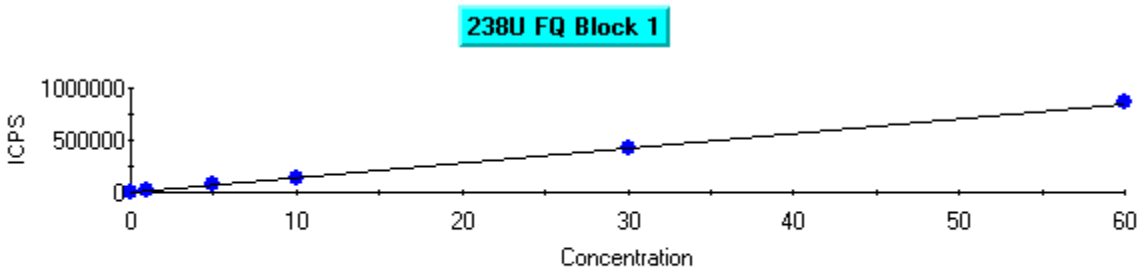
Intercept CPS=806.599560 Intercept Conc=0.054124
Sensitivity=14902.903562 Correlation Coeff=0.999999

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.002	0.002	836.08	0.00
STD1	1.000	1.016	0.016	15943.54	1.57
STD2	5.000	4.553	0.447	68657.59	8.94
STD3	1250.000	1269.286	19.286	18916847.77	1.54
STD4	3750.000	3810.796	60.796	56792734.86	1.62
STD5	6250.000	6334.224	84.224	94399140.69	1.35



Intercept CPS=3111.131963 Intercept Conc=0.202789
Sensitivity=15341.751480 Correlation Coeff=0.996731

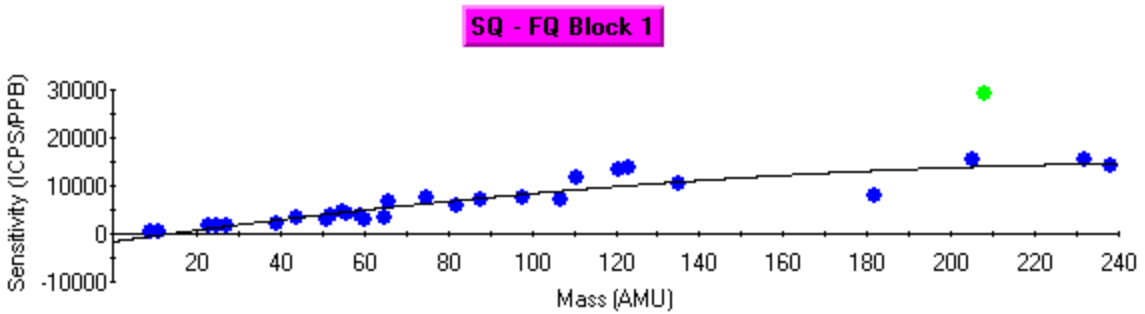
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.519	0.519	11077.33	0.00
STD1	2.000	1.558	0.442	27008.49	22.12
STD2	10.000	5.610	4.390	89176.33	43.90
STD3	20.000	27.095	7.095	418788.24	35.47
STD4	60.000	62.820	2.820	966882.01	4.70
STD5	120.000	119.781	0.219	1840768.23	0.18



Intercept CPS=207.712482 Intercept Conc=0.014567
Sensitivity=14259.094456 Correlation Coeff=0.999947

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	206.50	0.00
STD1	1.000	1.011	0.011	14629.64	1.14
STD2	5.000	5.196	0.196	74305.02	3.93
STD3	10.000	9.836	0.164	140458.14	1.64
STD4	30.000	29.928	0.072	426951.32	0.24
STD5	60.000	60.931	0.931	869032.53	1.55

Semi Quant Calibration



Coeff 0=-1613.323016 Coeff 1=123.301831 Coeff 2=-0.231175

Symbol	Mass	RSF	Available	Excluded	Sensitivity Measured	Corrected	Calculated	%Error
9Be	9.01	0.7500	1	1	167.32	223.09	-520.88	-333.5
11B	11.01	0.5800	1	1	151.36	322.09	-283.87	-188.1
23Na	22.99	1.0000	1	1	1839.53	1839.53	1099.17	-40.2
25Mg	24.99	0.9800	1	1	182.84	1845.37	1323.16	-28.3
27Al	26.98	0.9800	1	1	1699.65	1734.34	1545.25	-10.9
39K	38.96	1.0000	1	1	1938.21	2082.30	2840.01	36.4
44Ca	43.96	0.9900	1	1	67.78	3214.16	3359.83	4.5
51V	50.94	0.9900	1	1	3073.60	3112.11	4068.20	30.7
52Cr	51.94	0.9800	1	1	2915.21	3551.47	4167.37	17.3
55Mn	54.94	0.9500	1	1	4480.93	4716.77	4462.91	-5.4
56Fe	55.93	0.9600	1	1	3808.77	4335.09	4560.28	5.2
59Co	58.93	0.9300	1	1	3526.52	3791.96	4850.35	27.9
60Ni	59.93	0.9100	1	1	719.62	3022.91	4945.94	63.6
65Cu	64.93	0.9000	1	1	908.14	3264.46	5417.85	66.0
66Zn	65.93	0.3750	1	1	687.34	6590.84	5510.74	-16.4
75As	74.92	0.0700	1	1	536.17	7659.60	6327.01	-17.4
82Se	81.92	0.1000	1	1	52.68	5959.09	6935.89	16.4
88Sr	87.91	0.9600	1	1	5771.44	7281.88	7439.22	2.2
98Mo	97.91	0.9800	1	1	1803.73	7668.92	8242.67	7.5
107Ag	106.91	0.9300	1	1	3385.30	7088.82	8926.24	25.9
111Cd	110.90	0.5660	1	1	840.29	11544.39	9217.98	-20.2
121Sb	120.90	0.3900	1	1	2985.65	13372.09	9915.09	-25.9
123Sb	122.90	0.3900	1	1	2292.70	13751.40	10048.99	-26.9
135Ba	134.91	0.9100	1	1	620.93	10354.19	10813.52	4.4
182W	181.95	0.9400	1	1	2005.13	8107.64	13168.15	62.4
205Tl	204.97	1.0000	1	1	10842.18	15378.97	13947.63	-9.3
208Pb	207.98	0.9700	0	1	14902.90	29331.46	14031.28	-52.2
232Th	232.04	1.0000	1	1	15341.75	15341.75	14550.56	-5.2
238U	238.05	1.0000	1	1	14259.09	14362.50	14638.52	1.9

Dilution Corrected Concentrations

STD0 10/19/2016 10:04:01 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:04:23	98.484%	-0.056	0.005	1.827	0.115	0.022	0.522	0.786	98.403%	0.000	0.190	0.031
2	10:04:45	99.508%	0.019	-0.062	0.525	0.108	0.036	-0.452	3.125	99.362%	0.000	0.291	0.048
3	10:05:07	102.008%	-0.012	0.052	-4.384	0.677	-0.040	-0.097	-0.078	102.235%	0.000	0.405	-0.029
x		100.000%	-0.016	-0.002	-0.677	0.300	0.006	-0.009	1.278	100.000%	0.000	0.295	0.017
σ		1.813%	0.038	0.058	3.275	0.326	0.040	0.493	1.657	1.994%	0.000	0.108	0.040
%RSD		1.813	233.700	3184.000	483.500	108.600	668.000	5560.000	129.700	1.994	0.000	36.490	240.300

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:04:23	12.370	-0.003	-0.445	-0.000	-0.009	0.006	0.006	-0.394	0.479	-1.894	0.000	0.000
2	10:04:45	12.430	0.002	1.556	-0.002	0.011	-0.063	-0.018	-0.170	0.456	-1.751	0.000	0.000
3	10:05:07	11.780	0.001	0.088	0.001	-0.003	-0.021	-0.073	-0.028	0.428	-0.703	0.000	0.000
x		12.200	-0.000	0.400	-0.000	-0.000	-0.026	-0.028	-0.197	0.455	-1.450	0.000	0.000
σ		0.358	0.003	1.036	0.001	0.011	0.035	0.041	0.184	0.025	0.650	0.000	0.000
%RSD		2.938	3606.000	259.200	293.800	2596.000	133.600	144.300	93.420	5.588	44.850	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:04:23	0.002	99.582%	0.011	-0.000	-0.930	-0.042	98.721%	0.000	0.000	-0.006	0.010	101.230%
2	10:04:45	0.001	100.077%	-0.009	-0.008	-1.514	-0.008	99.921%	0.000	0.008	0.001	0.002	99.643%
3	10:05:07	-0.002	100.341%	0.010	-0.005	-1.492	-0.009	101.358%	0.000	-0.009	0.004	-0.007	99.128%
x		0.000	100.000%	0.004	-0.004	-1.312	-0.020	100.000%	0.000	-0.000	-0.001	0.002	100.000%
σ		0.002	0.385%	0.011	0.004	0.331	0.019	1.320%	0.000	0.009	0.005	0.008	1.096%
%RSD		990.300	0.385	285.400	86.730	25.220	97.740	1.320	0.000	4885.000	865.200	478.800	1.096

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:04:23	0.005	0.005	-0.002	99.485%	0.000	0.540	-0.002
2	10:04:45	-0.002	0.004	0.008	101.435%	0.000	0.513	0.002
3	10:05:07	0.013	-0.003	0.000	99.080%	0.000	0.504	-0.000
x		0.005	0.002	0.002	100.000%	0.000	0.519	-0.000
σ		0.008	0.004	0.005	1.259%	0.000	0.019	0.002
%RSD		142.800	193.000	256.300	1.259	0.000	3.633	1911.000

STD1 10/19/2016 10:09:44 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:10:06	99.600%	1.189	40.470	T 499.000	182.400	49.030	T 508.300	487.400	99.487%	0.000	4.892	3.966
2	10:10:27	98.145%	1.010	39.340	T 522.800	187.000	49.220	T 506.400	496.200	98.305%	0.000	4.441	3.923
3	10:10:49	94.214%	1.276	40.590	T 495.200	183.600	50.360	468.000	491.000	98.818%	0.000	5.145	4.104
x		97.319%	1.159	40.130	T 505.700	184.300	49.540	T 494.300	491.500	98.870%	0.000	4.826	3.998
σ		2.786%	0.136	0.692	T 14.930	2.396	0.722	T 22.760	4.419	0.593%	0.000	0.356	0.095

%RSD		2.863	11.730	1.725	T 2.953	1.300	1.457	T 4.605	0.899	0.599	0.000	7.383	2.376
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:10:06	14.310	1.984	183.900	1.004	2.037	5.029	20.180	1.836	0.506	3.517	0.000	0.000
2	10:10:27	14.510	2.074	191.400	1.006	2.337	5.143	21.610	1.988	0.490	3.679	0.000	0.000
3	10:10:49	13.670	2.053	191.500	1.000	1.959	5.070	22.000	2.132	0.479	2.362	0.000	0.000
x		14.160	2.037	188.900	1.004	2.111	5.081	21.260	1.986	0.492	3.186	0.000	0.000
σ		0.440	0.047	4.355	0.003	0.200	0.058	0.960	0.148	0.013	0.718	0.000	0.000
%RSD		3.103	2.313	2.305	0.342	9.456	1.139	4.514	7.454	2.739	22.540	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:10:06	4.529	100.042%	9.572	1.107	-1.412	1.142	99.241%	0.000	1.860	1.952	9.740	98.476%
2	10:10:27	4.664	100.537%	9.762	1.114	-1.162	0.969	97.807%	0.000	1.899	2.028	9.727	96.900%
3	10:10:49	4.748	99.389%	9.725	1.077	-1.166	1.131	97.462%	0.000	2.132	2.087	9.530	97.493%
x		4.647	99.990%	9.686	1.100	-1.247	1.080	98.170%	0.000	1.964	2.022	9.666	97.623%
σ		0.110	0.576%	0.101	0.020	0.143	0.097	0.943%	0.000	0.147	0.067	0.118	0.796%
%RSD		2.377	0.576	1.039	1.777	11.460	8.981	0.961	0.000	7.480	3.323	1.218	0.815
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	10:10:06	1.733	1.620	0.992	99.547%	0.000	1.538	0.986					
2	10:10:27	1.886	1.716	1.050	97.899%	0.000	1.566	1.012					
3	10:10:49	1.800	1.719	1.005	99.080%	0.000	1.569	1.036					
x		1.806	1.685	1.016	98.842%	0.000	1.558	1.011					
σ		0.076	0.057	0.031	0.849%	0.000	0.017	0.025					
%RSD		4.233	3.357	3.025	0.859	0.000	1.079	2.475					

STD2 10/19/2016 10:13:18 AM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:13:40	93.834%	5.279	206.100	T 2654.000	969.900	237.100	T 2626.000	2461.000	89.775%	0.000	23.370	19.730
2	10:14:01	88.714%	5.081	222.200	T 2560.000	930.700	233.700	T 2538.000	2384.000	91.325%	0.000	22.980	19.270
3	10:14:23	88.538%	5.885	220.100	T 2565.000	962.600	232.700	T 2581.000	2359.000	91.610%	0.000	23.490	19.480
x		90.362%	5.415	216.100	T 2593.000	954.400	234.500	T 2582.000	2401.000	90.903%	0.000	23.280	19.490
σ		3.008%	0.419	8.749	T 53.070	20.860	2.333	T 43.830	53.310	0.988%	0.000	0.267	0.228
%RSD		3.329	7.731	4.048	T 2.046	2.185	0.995	T 1.697	2.220	1.087	0.000	1.145	1.170
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:13:40	16.800	9.772	T 1080.000	4.846	10.470	24.980	105.800	10.220	0.551	22.070	0.000	0.000
2	10:14:01	16.460	9.456	T 1062.000	4.891	10.300	24.120	104.900	10.710	0.475	22.520	0.000	0.000
3	10:14:23	16.730	9.237	T 1045.000	4.774	9.694	24.480	104.800	10.210	0.550	21.000	0.000	0.000
x		16.670	9.488	T 1062.000	4.837	10.150	24.530	105.200	10.380	0.525	21.860	0.000	0.000
σ		0.182	0.269	T 17.140	0.059	0.405	0.434	0.569	0.285	0.044	0.779	0.000	0.000
%RSD		1.094	2.834	T 1.613	1.225	3.993	1.768	0.541	2.749	8.365	3.561	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	10:13:40	23.710	94.392%	48.810	5.393	-1.937	5.463	91.288%	0.000	10.160	10.040	50.270	91.522%
2	10:14:01	23.900	92.813%	49.980	5.611	-0.676	5.353	91.035%	0.000	9.983	10.200	49.000	92.283%
3	10:14:23	24.340	92.923%	50.550	5.539	-1.478	5.280	91.467%	0.000	10.000	10.210	48.760	93.003%
x		23.980	93.376%	49.780	5.514	-1.364	5.365	91.263%	0.000	10.050	10.150	49.350	92.269%
σ		0.322	0.881%	0.885	0.111	0.638	0.092	0.217%	0.000	0.100	0.091	0.811	0.740%
%RSD		1.343	0.944	1.777	2.015	46.780	1.722	0.238	0.000	0.993	0.892	1.644	0.802

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:13:40	9.009	8.647	4.540	93.162%	0.000	5.360	5.159
2	10:14:01	9.061	8.762	4.491	94.068%	0.000	5.550	5.132
3	10:14:23	9.221	9.055	4.628	92.070%	0.000	5.920	5.298
x		9.097	8.822	4.553	93.100%	0.000	5.610	5.196
σ		0.111	0.210	0.069	1.000%	0.000	0.285	0.089
%RSD		1.219	2.382	1.517	1.074	0.000	5.077	1.718

STD3 10/19/2016 10:17:18 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:17:40	90.768%	654.300	250.300	T 10070.000	T 30590.000	T 31090.000	T 10050.000	T 30560.000	87.254%	0.000	T 1238.000	363.500
2	10:18:02	86.150%	670.900	267.000	T 10190.000	T 31180.000	T 31410.000	T 10180.000	T 31140.000	84.845%	0.000	T 1266.000	368.600
3	10:18:23	87.341%	666.900	260.800	T 10350.000	T 31280.000	T 31670.000	T 10290.000	T 31880.000	83.568%	0.000	T 1284.000	378.200
x		88.086%	664.000	259.400	T 10200.000	T 31020.000	T 31390.000	T 10180.000	T 31200.000	85.222%	0.000	T 1262.000	370.100
σ		2.397%	8.623	8.406	T 142.300	T 372.400	T 292.600	T 120.500	T 661.000	1.872%	0.000	T 23.050	7.501
%RSD		2.722	1.299	3.241	T 1.395	T 1.201	T 0.932	T 1.184	T 2.119	2.196	0.000	T 1.826	2.027

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:17:40	19.430	T 1240.000	T 29810.000	454.100	1178.000	1154.000	1220.000	203.800	-0.441	216.900	0.000	0.000
2	10:18:02	16.360	T 1266.000	T 30680.000	468.600	1229.000	1188.000	1242.000	201.900	-0.417	218.700	0.000	0.000
3	10:18:23	20.480	T 1299.000	T 31170.000	468.900	1228.000	1197.000	1262.000	203.900	-0.439	213.500	0.000	0.000
x		18.760	T 1268.000	T 30550.000	463.900	1212.000	1180.000	1241.000	203.200	-0.432	216.400	0.000	0.000
σ		2.142	T 29.440	T 687.300	8.442	29.380	22.700	21.410	1.083	0.013	2.628	0.000	0.000
%RSD		11.420	T 2.322	T 2.249	1.820	2.425	1.924	1.725	0.533	3.029	1.215	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:17:40	182.600	89.465%	1200.000	103.000	16.930	204.000	88.376%	0.000	242.800	247.200	1184.000	91.060%
2	10:18:02	185.700	89.814%	T 1362.000	105.400	15.460	202.600	87.284%	0.000	247.200	249.900	1209.000	88.283%
3	10:18:23	184.400	88.935%	T 1383.000	101.300	13.780	202.200	88.407%	0.000	244.900	247.700	1195.000	89.847%
x		184.200	89.405%	T 1315.000	103.200	15.390	202.900	88.022%	0.000	245.000	248.300	1196.000	89.730%
σ		1.563	0.443%	T 100.200	2.068	1.574	0.946	0.639%	0.000	2.177	1.432	12.300	1.392%
%RSD		0.848	0.495	T 7.617	2.004	10.230	0.466	0.726	0.000	0.889	0.577	1.028	1.551

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:17:40	21.680	178.100	T 1257.000	90.115%	0.000	27.340	9.959
2	10:18:02	22.950	175.400	T 1253.000	91.542%	0.000	26.920	9.657
3	10:18:23	22.130	181.400	T 1298.000	88.989%	0.000	27.020	9.891

x		22.250	178.300	┬1269.000	90.215%	0.000	27.090	9.836
σ		0.642	2.992	┬24.730	1.279%	0.000	0.217	0.159
%RSD		2.887	1.678	┬1.948	1.418	0.000	0.800	1.611

STD4 10/19/2016 10:21:49 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:22:10	85.410%	1858.000	719.300	┬29470.000	┬90530.000	┬90510.000	┬29460.000	┬91340.000	80.244%	0.000	┬3720.000	┬1188.000
2	10:22:32	85.511%	1877.000	743.700	┬29420.000	┬91230.000	┬91080.000	┬29630.000	┬92340.000	81.049%	0.000	┬3736.000	┬1205.000
3	10:22:53	84.824%	1874.000	758.800	┬30010.000	┬91970.000	┬92010.000	┬29900.000	┬95470.000	80.146%	0.000	┬3884.000	┬1225.000
x		85.248%	1870.000	740.600	┬29630.000	┬91240.000	┬91200.000	┬29660.000	┬93050.000	80.480%	0.000	┬3780.000	┬1206.000
σ		0.371%	10.220	19.930	┬323.800	┬720.900	┬756.200	┬221.300	┬2158.000	0.496%	0.000	┬90.370	┬18.470
%RSD		0.435	0.547	2.691	┬1.093	┬0.790	┬0.829	┬0.746	┬2.319	0.616	0.000	┬2.391	┬1.532

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:22:10	-21.250	┬3715.000	┬88960.000	┬1506.000	3423.000	┬3764.000	3461.000	583.600	-1.802	601.500	0.000	0.000
2	10:22:32	-18.390	┬3713.000	┬88290.000	┬1491.000	3457.000	┬3813.000	3482.000	587.900	-1.688	610.000	0.000	0.000
3	10:22:53	-25.310	┬3760.000	┬89970.000	┬1522.000	3503.000	┬3817.000	3509.000	591.300	-2.048	612.900	0.000	0.000
x		-21.650	┬3730.000	┬89070.000	┬1506.000	3461.000	┬3798.000	3484.000	587.600	-1.846	608.100	0.000	0.000
σ		3.475	┬26.550	┬845.600	┬15.530	40.510	┬29.410	24.080	3.846	0.184	5.943	0.000	0.000
%RSD		16.050	┬0.712	┬0.949	┬1.031	1.171	┬0.774	0.691	0.654	9.969	0.977	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:22:10	┬606.000	83.640%	┬4076.000	301.400	18.420	590.700	82.244%	┬0.000	727.600	745.000	┬4065.000	85.502%
2	10:22:32	┬615.400	83.910%	┬4173.000	301.200	18.940	598.200	82.705%	┬0.000	736.400	754.200	┬4151.000	86.084%
3	10:22:53	┬622.000	83.134%	┬4238.000	298.500	17.640	595.200	82.885%	┬0.000	746.300	756.700	┬4153.000	86.530%
x		┬614.500	83.561%	┬4162.000	300.400	18.330	594.700	82.611%	┬0.000	736.800	751.900	┬4123.000	86.039%
σ		┬8.030	0.394%	┬81.830	1.615	0.653	3.759	0.331%	┬0.000	9.371	6.145	┬50.500	0.516%
%RSD		┬1.307	0.472	┬1.966	0.538	3.561	0.632	0.401	┬0.000	1.272	0.817	┬1.225	0.599

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:22:10	67.130	┬620.900	┬3811.000	85.443%	0.000	63.370	29.810
2	10:22:32	68.270	┬618.500	┬3780.000	87.165%	0.000	62.380	29.940
3	10:22:53	69.090	┬627.200	┬3841.000	86.780%	0.000	62.710	30.030
x		68.170	┬622.200	┬3811.000	86.463%	0.000	62.820	29.930
σ		0.983	┬4.492	┬30.530	0.904%	0.000	0.504	0.111
%RSD		1.443	┬0.722	┬0.801	1.045	0.000	0.802	0.371

STD5 10/19/2016 10:27:30 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:27:52	80.776%	3074.000	1206.000	T 49330.000	TM 152500.000	TM 151300.000	T 49840.000	TM 156100.000	75.552%	0.000	TM 6273.000	TM 2006.000
2	10:28:14	81.785%	3021.000	1188.000	T 48910.000	TM 151400.000	TM 153200.000	TM 50630.000	TM 159000.000	75.450%	0.000	TM 6313.000	TM 2022.000
3	10:28:35	78.973%	3070.000	1240.000	T 47670.000	TM 150500.000	T 149900.000	T 48810.000	TM 154200.000	77.553%	0.000	TM 6283.000	TM 2013.000
x		80.511%	3055.000	1211.000	T 48640.000	TM 151500.000	TM 151500.000	TM 49760.000	TM 156400.000	76.185%	0.000	TM 6289.000	TM 2013.000
σ		1.424%	29.510	26.480	T 866.800	TM 1007.000	TM 1646.000	TM 915.000	TM 2428.000	1.186%	0.000	TM 20.820	TM 8.318
%RSD		1.769	0.966	2.186	T 1.782	TM 0.665	TM 1.087	TM 1.839	TM 1.552	1.556	0.000	TM 0.331	TM 0.413
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:27:52	-45.940	TM 6297.000	T 148300.000	TM 2550.000	TM 6446.000	T 6201.000	TM 6328.000	927.100	-3.306	947.400	0.000	0.000
2	10:28:14	-21.900	TM 6407.000	TM 152100.000	TM 2576.000	TM 6515.000	TM 6267.000	TM 6441.000	969.600	-3.284	954.000	0.000	0.000
3	10:28:35	-36.010	TM 6291.000	T 148300.000	TM 2518.000	TM 6433.000	T 6171.000	TM 6296.000	963.900	-3.434	963.700	0.000	0.000
x		-34.620	TM 6332.000	TM 149600.000	TM 2548.000	TM 6465.000	TM 6213.000	TM 6355.000	953.600	-3.341	955.000	0.000	0.000
σ		12.080	TM 65.190	TM 2166.000	TM 28.980	TM 43.770	TM 49.020	TM 76.120	23.060	0.081	8.213	0.000	0.000
%RSD		34.890	TM 1.030	TM 1.448	TM 1.138	TM 0.677	TM 0.789	TM 1.198	2.419	2.423	0.860	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:27:52	TM 1010.000	81.758%	TM 6693.000	479.900	38.000	964.800	80.460%	T 0.000	TM 1357.000	1222.000	TM 6633.000	82.355%
2	10:28:14	TM 1010.000	78.713%	TM 7045.000	486.400	22.620	967.700	80.282%	T 0.000	TM 1389.000	M 1251.000	TM 6843.000	83.697%
3	10:28:35	TM 1015.000	79.610%	TM 7118.000	486.200	33.990	977.700	80.289%	T 0.000	TM 1400.000	M 1260.000	TM 6881.000	82.092%
x		TM 1012.000	80.027%	TM 6952.000	484.200	31.540	970.100	80.344%	T 0.000	TM 1382.000	M 1244.000	TM 6786.000	82.715%
σ		TM 2.761	1.565%	TM 227.300	3.678	7.977	6.796	0.100%	T 0.000	TM 22.310	M 19.800	TM 133.700	0.861%
%RSD		TM 0.273	1.955	TM 3.270	0.760	25.290	0.701	0.125	T 0.000	TM 1.614	M 1.591	TM 1.971	1.041
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	10:27:52	M 134.900	TM 1033.000	TM 6283.000	83.536%	0.000	117.900	M 60.090					
2	10:28:14	M 138.500	TM 1058.000	TM 6326.000	83.509%	0.000	M 120.200	M 61.200					
3	10:28:35	M 141.900	TM 1052.000	TM 6394.000	83.694%	0.000	M 121.200	M 61.510					
x		M 138.400	TM 1048.000	TM 6334.000	83.580%	0.000	M 119.800	M 60.930					
σ		M 3.456	TM 12.860	TM 56.010	0.100%	0.000	M 1.732	M 0.749					
%RSD		M 2.496	TM 1.228	TM 0.884	0.120	0.000	M 1.446	M 1.229					

ICV 10/19/2016 10:33:14 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:36	75.893%	330.600	149.500	T 5524.000	T 15970.000	T 16470.000	T 5088.000	14400.000	71.699%	0.000	586.400	188.600
2	10:33:57	75.053%	346.700	152.100	T 5558.000	T 16310.000	T 16410.000	T 5097.000	14390.000	70.890%	0.000	582.800	190.900
3	10:34:20	73.406%	349.100	150.800	T 5440.000	T 15970.000	T 16350.000	T 5060.000	14590.000	71.872%	0.000	593.200	192.000
x		74.784%	109.477%	120.653%	T 110.147%	T 107.218%	T 109.389%	T 101.636%	96.393%	71.487%	0.000	93.997%	95.269%
σ		1.265%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.524%	0.000	n/a	n/a
%RSD		1.692	2.928	0.860	T 1.105	T 1.208	T 0.364	T 0.376	0.769	0.733	0.000	0.901	0.910
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:36	12.300	T 633.400	T 15440.000	240.100	630.100	614.100	647.500	102.200	-0.147	109.800	0.000	0.000
2	10:33:57	17.060	T 655.500	T 15900.000	245.500	647.100	631.300	671.600	101.400	0.022	104.600	0.000	0.000
3	10:34:20	14.780	T 645.300	T 15780.000	241.700	636.100	629.500	658.600	102.600	-0.013	106.600	0.000	0.000
x		14.710	T 103.159%	T 104.718%	96.969%	102.045%	99.993%	105.475%	102.063%	-0.046	106.980%	0.000	0.000
σ		2.383	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.089	n/a	0.000	0.000
%RSD		16.190	T 1.716	T 1.519	1.137	1.354	1.515	1.826	0.597	194.300	2.480	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:36	91.300	79.164%	285.800	51.030	-5.144	103.900	77.373%	0.000	127.400	128.700	595.800	77.300%
2	10:33:57	91.490	78.325%	298.700	51.220	0.802	104.000	77.715%	0.000	129.600	130.600	607.400	80.231%
3	10:34:20	90.420	77.922%	303.400	51.260	6.783	104.300	78.181%	0.000	127.800	129.900	611.800	80.126%
x		91.070	78.470%	94.715%	102.341%	0.814	104.064%	77.756%	0.000	128.300	103.774%	96.799%	79.219%
σ		0.570	0.634%	n/a	n/a	5.964	n/a	0.405%	0.000	1.178	n/a	n/a	1.663%
%RSD		0.626	0.807	3.077	0.235	733.000	0.201	0.521	0.000	0.919	0.725	1.365	2.099

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:36	24.110	89.430	T 609.000	81.239%	0.000	16.060	9.561
2	10:33:57	24.020	90.760	T 614.100	80.903%	0.000	17.190	9.814
3	10:34:20	24.290	89.920	T 606.400	81.932%	0.000	17.750	9.794
x		120.708%	90.039%	T 97.577%	81.358%	0.000	84.996%	97.230%
σ		n/a	n/a	T n/a	0.524%	0.000	n/a	n/a
%RSD		0.566	0.747	T 0.645	0.645	0.000	5.071	1.442

ICVL 10/19/2016 10:38:58 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:39:20	77.342%	1.200	48.420	502.400	206.600	55.260	468.600	486.200	73.303%	0.000	4.675	3.615
2	10:39:41	76.979%	1.128	52.780	505.700	203.700	56.660	471.200	500.000	72.863%	0.000	4.331	3.682
3	10:40:03	75.761%	1.325	51.850	503.400	205.700	56.110	467.600	495.400	72.161%	0.000	4.886	3.817
x		76.694%	121.759%	127.545%	100.767%	102.679%	112.020%	93.830%	98.768%	72.776%	0.000	92.615%	92.612%
σ		0.828%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.576%	0.000	n/a	n/a
%RSD		1.080	8.168	4.507	0.345	0.719	1.261	0.392	1.423	0.792	0.000	6.054	2.777

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:39:20	10.640	2.107	195.900	1.066	2.394	5.169	21.350	2.051	0.321	3.504	0.000	0.000
2	10:39:41	11.720	2.228	200.200	1.187	2.504	5.345	23.090	2.220	0.300	4.193	0.000	0.000
3	10:40:03	10.650	2.237	202.000	1.138	2.143	5.385	22.230	2.326	0.296	3.707	0.000	0.000
x		11.000	109.535%	99.678%	112.995%	117.333%	105.988%	111.110%	109.944%	0.305	95.035%	0.000	0.000
σ		0.619	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.013	n/a	0.000	0.000
%RSD		5.626	3.301	1.557	5.399	7.875	2.171	3.922	6.306	4.387	9.323	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:39:20	4.799	78.341%	11.940	1.037	-1.870	1.195	78.121%	0.000	2.525	2.554	9.820	79.056%
2	10:39:41	4.752	79.869%	11.780	1.138	-1.675	1.108	78.361%	0.000	2.621	2.666	10.230	79.297%

3	10:40:03	4.887	78.607%	11.880	1.079	-0.600	0.994	77.150%	0.000	2.697	2.769	9.976	77.248%
x		96.253%	78.939%	118.655%	108.497%	-1.382	109.900%	77.877%	0.000	2.614	133.157%	100.094%	78.534%
σ		n/a	0.816%	n/a	n/a	0.684	n/a	0.642%	0.000	0.087	n/a	n/a	1.120%
%RSD		1.427	1.034	0.650	4.651	49.530	9.177	0.824	0.000	3.314	4.035	2.078	1.427

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:39:20	1.956	2.040	1.146	79.045%	0.000	0.956	1.077
2	10:39:41	1.959	2.062	1.175	80.238%	0.000	0.975	1.093
3	10:40:03	1.993	2.014	1.130	81.362%	0.000	0.965	1.056
x		98.482%	101.942%	115.045%	80.215%	0.000	48.275%	107.529%
σ		n/a	n/a	n/a	1.159%	0.000	n/a	n/a
%RSD		1.045	1.185	1.968	1.445	0.000	0.983	1.698

ICBIS 10/19/2016 10:44:40 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:45:02	76.397%	0.120	6.716	17.680	3.296	2.274	1.483	-3.335	71.463%	0.000	0.125	-0.144
2	10:45:24	76.740%	0.042	5.380	21.230	3.208	1.950	1.123	-4.614	71.672%	0.000	0.042	-0.156
3	10:45:45	73.821%	0.005	6.082	17.150	2.400	1.714	0.833	-5.023	72.761%	0.000	-0.242	-0.162
x		75.653%	0.056	6.059	18.690	2.968	1.980	1.146	-4.324	71.966%	0.000	-0.025	-0.154
σ		1.596%	0.059	0.668	2.219	0.494	0.281	0.326	0.881	0.697%	0.000	0.193	0.009
%RSD		2.110	106.000	11.030	11.880	16.650	14.190	28.430	20.370	0.968	0.000	774.100	5.907

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:45:02	11.290	0.101	3.421	0.057	0.103	0.100	0.176	0.006	0.324	-0.255	0.000	0.000
2	10:45:24	11.320	0.069	2.160	0.045	0.035	0.076	0.081	0.031	0.340	-1.274	0.000	0.000
3	10:45:45	11.490	0.062	-0.439	0.039	0.043	0.033	0.215	0.140	0.313	-0.223	0.000	0.000
x		11.370	0.078	1.714	0.047	0.060	0.070	0.158	0.059	0.326	-0.584	0.000	0.000
σ		0.105	0.021	1.968	0.009	0.037	0.034	0.069	0.071	0.013	0.598	0.000	0.000
%RSD		0.923	26.700	114.800	20.080	61.660	48.980	43.710	121.100	4.105	102.300	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:45:02	0.019	78.717%	0.618	0.001	-1.152	-0.012	77.961%	0.000	0.214	0.217	0.089	76.750%
2	10:45:24	0.015	79.203%	0.782	-0.006	-1.157	-0.012	79.360%	0.000	0.266	0.247	0.097	79.051%
3	10:45:45	0.014	78.552%	0.669	-0.001	-0.928	-0.052	79.378%	0.000	0.287	0.269	0.117	78.511%
x		0.016	78.824%	0.689	-0.002	-1.079	-0.025	78.899%	0.000	0.256	0.244	0.101	78.104%
σ		0.002	0.338%	0.084	0.004	0.131	0.024	0.813%	0.000	0.038	0.026	0.015	1.203%
%RSD		15.430	0.429	12.170	209.900	12.160	93.070	1.030	0.000	14.760	10.710	14.540	1.541

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:45:02	0.067	0.111	0.087	79.964%	0.000	-0.075	-0.011
2	10:45:24	0.041	0.095	0.084	80.588%	0.000	-0.078	-0.012
3	10:45:45	0.045	0.104	0.066	82.288%	0.000	-0.064	-0.013
x		0.051	0.103	0.079	80.947%	0.000	-0.072	-0.012
σ		0.014	0.008	0.011	1.203%	0.000	0.008	0.001

%RSD	26.830	8.060	14.450	1.486	0.000	10.460	9.548	

ICSA 10/19/2016 10:50:23 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:45	75.451%	0.063	6.229	TM 101500.000	T 103900.000	T 102500.000	TM 97930.000	T 103600.000	78.336%	0.000	0.832	1.271
2	10:51:06	75.945%	0.102	4.644	TM 102800.000	T 103300.000	T 103200.000	TM 99900.000	T 106200.000	78.812%	0.000	0.309	1.323
3	10:51:28	73.567%	0.168	6.249	TM 100900.000	T 103600.000	T 101900.000	TM 97870.000	T 107100.000	79.065%	0.000	0.519	1.219
x		74.988%	1.#IO%	1.#IO%	TM 101.728%	T 103.615%	T 102.542%	TM 98.566%	T 105.623%	78.738%	0.000	1.#IO%	1.#IO%
σ		1.255%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.370%	0.000	n/a	n/a
%RSD		1.674	47.770	16.130	TM 0.923	T 0.275	T 0.617	TM 1.173	T 1.736	0.470	0.000	47.590	4.120

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:45	4.340	0.502	T 101100.000	0.122	0.819	1.191	-0.872	-0.334	0.351	-0.711	0.000	0.000
2	10:51:06	4.777	0.539	T 100500.000	0.120	0.594	1.070	-0.698	-0.361	0.360	-1.487	0.000	0.000
3	10:51:28	4.618	0.578	T 102600.000	0.180	0.838	1.296	-0.863	-0.049	0.317	-1.053	0.000	0.000
x		4.578	1.#IO%	T 101.417%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	0.343	-1.#IO%	0.000	0.000
σ		0.221	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.022	n/a	0.000	0.000
%RSD		4.825	7.065	T 1.090	24.310	18.110	9.515	12.110	69.570	6.560	35.910	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:45	0.737	81.930%	T 2150.000	0.154	7.816	0.125	82.939%	0.000	0.313	0.284	0.354	84.138%
2	10:51:06	0.740	83.565%	T 2190.000	0.184	8.173	0.103	83.668%	0.000	0.413	0.336	0.255	88.530%
3	10:51:28	0.731	85.404%	T 2197.000	0.165	7.663	0.037	84.486%	0.000	0.427	0.370	0.462	88.220%
x		1.#IO%	83.633%	T 108.961%	1.#IO%	7.884	1.#IO%	83.698%	0.000	0.384	1.#IO%	1.#IO%	86.963%
σ		n/a	1.738%	T n/a	n/a	0.262	n/a	0.774%	0.000	0.062	n/a	n/a	2.451%
%RSD		0.643	2.078	T 1.154	9.174	3.321	52.210	0.925	0.000	16.230	13.060	28.990	2.819

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:45	0.264	0.112	0.381	85.223%	0.000	6.087	-0.010
2	10:51:06	0.378	0.119	0.393	85.827%	0.000	5.089	-0.007
3	10:51:28	0.343	0.139	0.470	86.554%	0.000	3.951	-0.007
x		1.#IO%	1.#IO%	1.#IO%	85.868%	0.000	1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	0.666%	0.000	n/a	n/a
%RSD		17.790	11.340	11.630	0.776	0.000	21.200	22.290

ICSAB 10/19/2016 10:56:06 AM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:56:28	68.503%	27.320	448.600	TM 103200.000	T 104500.000	T 105200.000	TM 100400.000	T 105800.000	72.828%	0.000	22.690	48.140
2	10:56:49	67.487%	27.310	466.400	TM 102300.000	T 104800.000	T 105100.000	TM 101400.000	T 106100.000	73.872%	0.000	23.280	47.990
3	10:57:11	66.708%	28.460	462.300	TM 99110.000	T 102200.000	T 102900.000	TM 99200.000	T 105800.000	75.112%	0.000	22.390	47.310
x		67.566%	110.788%	114.778%	TM 101.551%	T 103.835%	T 104.378%	TM 100.336%	T 105.904%	73.937%	0.000	91.147%	95.624%
σ		0.900%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.144%	0.000	n/a	n/a
%RSD		1.332	2.385	2.032	TM 2.134	T 1.390	T 1.217	TM 1.105	T 0.183	1.547	0.000	1.984	0.924

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:56:28	6.313	23.960	T 103000.000	23.330	23.010	45.490	44.750	43.770	-0.049	114.700	0.000	0.000
2	10:56:49	6.040	23.670	T 102800.000	23.680	23.770	46.850	46.420	45.120	0.049	113.400	0.000	0.000
3	10:57:11	6.372	23.950	T 103000.000	23.420	23.260	47.000	45.770	45.660	-0.030	116.400	0.000	0.000
x		6.242	95.439%	T 102.951%	93.892%	93.383%	92.892%	91.292%	99.666%	-0.010	91.861%	0.000	0.000
σ		0.177	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.052	n/a	0.000	0.000
%RSD		2.836	0.688	T 0.133	0.779	1.672	1.781	1.838	2.172	517.900	1.319	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:56:28	0.593	80.841%	T 2158.000	25.070	8.918	24.120	81.674%	0.000	48.580	50.190	240.000	85.864%
2	10:56:49	0.611	79.818%	T 2242.000	24.940	6.669	23.940	82.130%	0.000	50.640	50.950	243.400	85.250%
3	10:57:11	0.623	79.806%	T 2241.000	25.070	7.504	24.020	82.362%	0.000	50.470	51.720	245.200	87.480%
x		0.609	80.155%	T 110.693%	100.117%	7.697	96.098%	82.055%	0.000	49.890	101.911%	97.157%	86.198%
σ		0.015	0.594%	T n/a	n/a	1.137	n/a	0.350%	0.000	1.145	n/a	n/a	1.152%
%RSD		2.458	0.741	T 2.199	0.298	14.770	0.388	0.427	0.000	2.294	1.495	1.088	1.336

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:56:28	20.330	22.340	22.820	83.989%	0.000	18.760	11.390
2	10:56:49	21.090	22.920	23.340	84.208%	0.000	19.870	11.630
3	10:57:11	21.150	22.930	23.410	84.860%	0.000	20.380	11.690
x		104.276%	90.924%	92.755%	84.352%	0.000	98.352%	115.699%
σ		n/a	n/a	n/a	0.453%	0.000	n/a	n/a
%RSD		2.187	1.495	1.397	0.537	0.000	4.227	1.343

CCV 10/19/2016 11:01:49 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:02:11	63.208%	693.200	276.100	T 10570.000	T 31880.000	T 32390.000	T 10000.000	28950.000	62.307%	0.000	T 1263.000	379.700
2	11:02:33	60.115%	724.800	287.900	T 10740.000	T 32820.000	T 32650.000	T 10170.000	29270.000	60.337%	0.000	T 1280.000	384.000
3	11:02:55	60.848%	708.000	294.300	T 10560.000	T 31740.000	T 32260.000	T 9834.000	28970.000	61.366%	0.000	T 1280.000	387.400
x		61.391%	113.391%	114.442%	T 106.248%	T 107.154%	T 108.112%	T 100.008%	96.872%	61.337%	0.000	T 101.933%	95.924%
σ		1.616%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.985%	0.000	T n/a	n/a
%RSD		2.632	2.227	3.231	T 0.953	T 1.841	T 0.617	T 1.670	0.622	1.606	0.000	T 0.761	0.996

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:02:11	22.960	T 1294.000	T 31020.000	475.200	1261.000	1216.000	1308.000	199.600	-0.490	207.600	0.000	0.000
2	11:02:33	18.690	T 1326.000	T 32060.000	485.700	1257.000	1262.000	1346.000	198.900	-0.536	210.000	0.000	0.000
3	11:02:55	18.440	T 1303.000	T 31430.000	474.600	1269.000	1228.000	1331.000	201.700	-0.643	215.300	0.000	0.000
x		20.030	T 104.626%	T 105.016%	95.705%	100.964%	98.814%	106.301%	100.033%	-0.556	105.480%	0.000	0.000
σ		2.540	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.078	n/a	0.000	0.000
%RSD		12.680	T 1.290	T 1.669	1.308	0.489	1.942	1.443	0.719	14.100	1.881	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:02:11	178.300	71.747%	1221.000	101.900	10.580	203.800	74.308%	0.000	246.300	248.400	1190.000	75.120%
2	11:02:33	181.500	71.500%	1248.000	104.000	12.810	208.300	72.338%	0.000	250.800	254.100	1203.000	74.522%
3	11:02:55	183.100	70.886%	1261.000	103.300	16.360	208.500	71.721%	0.000	251.800	258.000	1215.000	75.508%
x		181.000	71.378%	99.483%	103.040%	13.250	103.429%	72.789%	0.000	249.600	101.406%	96.217%	75.050%
σ		2.415	0.443%	n/a	n/a	2.916	n/a	1.351%	0.000	2.906	n/a	n/a	0.496%
%RSD		1.334	0.621	1.668	1.016	22.000	1.280	1.856	0.000	1.164	1.897	1.056	0.661

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:02:11	22.560	179.000	T 1278.000	77.057%	0.000	16.510	10.250
2	11:02:33	23.020	179.300	T 1268.000	77.229%	0.000	17.630	10.230
3	11:02:55	23.050	178.300	T 1259.000	78.435%	0.000	18.250	10.070
x		114.386%	89.433%	T 101.493%	77.574%	0.000	87.317%	101.852%
σ		n/a	n/a	T n/a	0.751%	0.000	n/a	n/a
%RSD		1.207	0.296	T 0.742	0.968	0.000	5.070	0.964

CCB 10/19/2016 11:07:32 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:54	66.511%	0.124	4.730	26.210	9.515	8.364	11.510	4.502	63.763%	0.000	-0.172	-0.240
2	11:08:16	64.028%	0.038	5.662	31.870	15.020	13.630	12.940	5.715	63.004%	0.000	0.112	-0.276
3	11:08:37	66.913%	0.011	5.522	32.240	17.650	17.620	12.950	9.674	64.105%	0.000	0.451	-0.198
x		65.817%	0.058	5.305	30.110	14.060	13.200	12.470	6.630	63.624%	0.000	0.130	-0.238
σ		1.562%	0.059	0.502	3.375	4.152	4.644	0.830	2.705	0.563%	0.000	0.312	0.039
%RSD		2.374	102.500	9.465	11.210	29.530	35.170	6.654	40.790	0.886	0.000	239.300	16.350

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:54	9.924	0.081	8.775	0.036	0.085	0.112	0.213	-0.010	0.269	-0.039	0.000	0.000
2	11:08:16	9.938	0.104	14.960	0.057	0.109	0.073	0.147	-0.098	0.303	-1.115	0.000	0.000
3	11:08:37	9.183	0.073	14.750	0.038	0.074	0.084	0.184	-0.107	0.286	-1.176	0.000	0.000
x		9.682	0.086	12.830	0.044	0.089	0.090	0.181	-0.072	0.286	-0.777	0.000	0.000
σ		0.432	0.016	3.510	0.011	0.018	0.020	0.033	0.053	0.017	0.640	0.000	0.000
%RSD		4.461	19.030	27.360	26.210	19.840	22.290	18.400	74.450	6.029	82.360	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:54	0.006	73.966%	2.407	-0.012	-1.515	0.018	74.910%	0.000	0.284	0.301	0.029	75.597%
2	11:08:16	0.014	72.306%	2.839	0.012	-0.865	-0.049	74.925%	0.000	0.367	0.351	0.050	75.062%

3	11:08:37	0.024	73.947%	2.704	0.002	-1.581	0.008	75.177%	0.000	0.390	0.367	0.136	74.968%
x		0.015	73.406%	2.650	0.001	-1.320	-0.008	75.004%	0.000	0.347	0.340	0.071	75.209%
σ		0.009	0.953%	0.221	0.012	0.396	0.036	0.150%	0.000	0.056	0.034	0.057	0.339%
%RSD		62.190	1.298	8.341	1784.000	29.950	467.300	0.200	0.000	16.100	10.100	79.290	0.451

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:54	0.098	0.169	0.081	78.236%	0.000	-0.107	-0.014
2	11:08:16	0.079	0.162	0.078	79.073%	0.000	-0.113	-0.010
3	11:08:37	0.106	0.152	0.107	78.195%	0.000	-0.099	-0.011
x		0.094	0.161	0.089	78.501%	0.000	-0.106	-0.012
σ		0.014	0.008	0.016	0.495%	0.000	0.007	0.002
%RSD		14.560	5.139	18.150	0.631	0.000	6.958	15.930

200-35736-A-11-A 10/19/2016 11:13:14 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:36	75.350%	3.970	30.230	T 600.400	T 13300.000	T 55030.000	T 4401.000	T 48570.000	84.004%	0.000	76.430	60.320
2	11:13:58	74.184%	4.174	31.470	T 570.800	T 12650.000	T 52230.000	T 4296.000	T 48460.000	88.100%	0.000	76.430	58.980
3	11:14:20	71.806%	4.064	34.230	T 552.600	T 13190.000	T 54300.000	T 4386.000	T 49300.000	87.570%	0.000	76.380	61.350
x		73.780%	4.069	31.970	T 574.600	T 13050.000	T 53850.000	T 4361.000	T 48770.000	86.558%	0.000	76.410	60.220
σ		1.806%	0.102	2.049	T 24.120	T 346.000	T 1451.000	T 56.790	T 456.500	2.228%	0.000	0.029	1.184
%RSD		2.448	2.512	6.408	T 4.199	T 2.652	T 2.693	T 1.302	T 0.936	2.574	0.000	0.038	1.966

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:36	7.197	TM 6915.000	T 98310.000	44.290	86.590	1758.000	694.300	12.690	0.075	14.510	0.000	0.000
2	11:13:58	6.199	TM 6869.000	T 97730.000	44.090	83.520	1735.000	676.800	12.720	0.077	13.830	0.000	0.000
3	11:14:20	6.431	TM 7031.000	T 100400.000	44.940	87.140	1779.000	694.800	12.530	0.100	12.070	0.000	0.000
x		6.609	TM 6938.000	T 98830.000	44.440	85.750	1757.000	688.600	12.640	0.084	13.470	0.000	0.000
σ		0.522	TM 83.160	T 1430.000	0.449	1.953	21.800	10.260	0.104	0.014	1.260	0.000	0.000
%RSD		7.901	TM 1.199	T 1.447	1.010	2.277	1.241	1.490	0.822	16.570	9.352	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:36	138.600	204.758%	3.721	2.059	-7.006	3.935	80.757%	0.000	0.964	1.075	789.300	97.714%
2	11:13:58	137.000	206.041%	3.600	1.926	-4.332	3.727	82.542%	0.000	1.042	1.031	795.300	97.704%
3	11:14:20	139.600	211.064%	3.426	2.057	-5.230	3.865	83.660%	0.000	0.996	1.054	800.300	100.962%
x		138.400	207.288%	3.582	2.014	-5.523	3.842	82.320%	0.000	1.001	1.053	795.000	98.793%
σ		1.311	3.333%	0.148	0.076	1.361	0.106	1.464%	0.000	0.039	0.022	5.494	1.878%
%RSD		0.947	1.608	4.143	3.781	24.650	2.753	1.779	0.000	3.923	2.067	0.691	1.901

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:36	0.887	0.600	158.000	84.942%	0.000	17.470	6.214
2	11:13:58	0.816	0.581	155.500	89.408%	0.000	15.620	5.918
3	11:14:20	0.748	0.580	157.900	88.441%	0.000	15.380	6.094
x		0.817	0.587	157.100	87.597%	0.000	16.160	6.075
σ		0.069	0.011	1.439	2.349%	0.000	1.140	0.149

%RSD		8.491	1.913	0.916	2.682	0.000	7.058	2.449

200-35736-A-11-A SD@5 10/19/2016 11:18:56 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:19:18	71.901%	1.066	8.125	120.900	2605.000	T 11830.000	T 932.900	9653.000	79.439%	0.000	16.620	12.950
2	11:19:40	73.215%	0.699	7.288	118.800	2661.000	T 11720.000	T 925.300	9773.000	78.834%	0.000	16.680	13.340
3	11:20:02	71.042%	0.638	8.217	120.600	2633.000	T 11830.000	T 930.200	9982.000	78.251%	0.000	17.660	13.340
x		72.053%	0.801	7.876	120.100	2633.000	T 11790.000	T 929.500	9803.000	78.842%	0.000	16.990	13.210
σ		1.095%	0.232	0.512	1.121	27.740	T 61.860	T 3.886	166.200	0.594%	0.000	0.582	0.225
%RSD		1.519	28.900	6.499	0.933	1.054	T 0.525	T 0.418	1.696	0.753	0.000	3.427	1.704

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:19:18	6.545	T 1478.000	T 21290.000	9.359	18.830	388.700	161.500	5.084	0.200	2.649	0.000	0.000
2	11:19:40	6.327	T 1508.000	T 21700.000	9.977	18.540	395.500	163.900	5.194	0.199	3.016	0.000	0.000
3	11:20:02	5.888	T 1507.000	T 21990.000	10.170	18.590	399.900	168.100	5.019	0.208	1.429	0.000	0.000
x		6.253	T 1498.000	T 21660.000	9.834	18.660	394.700	164.500	5.099	0.202	2.364	0.000	0.000
σ		0.335	T 16.840	T 353.500	0.422	0.154	5.624	3.339	0.089	0.005	0.831	0.000	0.000
%RSD		5.354	T 1.124	T 1.632	4.289	0.824	1.425	2.030	1.737	2.563	35.140	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:19:18	26.580	109.195%	0.955	0.387	-1.445	0.778	84.367%	0.000	0.192	0.195	149.700	86.058%
2	11:19:40	26.810	108.503%	1.038	0.368	-0.657	0.822	84.998%	0.000	0.224	0.239	150.000	85.780%
3	11:20:02	26.540	109.916%	1.143	0.389	-1.686	0.759	85.453%	0.000	0.224	0.247	152.800	85.775%
x		26.640	109.205%	1.045	0.382	-1.263	0.786	84.939%	0.000	0.213	0.227	150.800	85.871%
σ		0.144	0.707%	0.094	0.011	0.538	0.032	0.546%	0.000	0.019	0.028	1.747	0.162%
%RSD		0.542	0.647	8.996	2.964	42.610	4.100	0.642	0.000	8.784	12.450	1.158	0.189

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:19:18	0.133	0.118	30.490	84.894%	0.000	1.894	1.074
2	11:19:40	0.168	0.127	30.470	86.822%	0.000	1.981	1.133
3	11:20:02	0.183	0.122	31.120	85.086%	0.000	2.086	1.222
x		0.161	0.122	30.690	85.601%	0.000	1.987	1.143
σ		0.026	0.004	0.368	1.062%	0.000	0.096	0.074
%RSD		15.960	3.366	1.198	1.240	0.000	4.832	6.504

200-35736-A-11-A PDS 10/19/2016 11:24:39 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:25:01	74.536%	14.360	460.500	T 4995.000	T 14330.000	T 51510.000	T 8411.000	T 50620.000	90.937%	0.000	107.900	89.380
2	11:25:22	74.846%	13.920	445.500	T 4778.000	T 14000.000	T 51370.000	T 8248.000	T 50920.000	92.394%	0.000	110.300	87.960
3	11:25:44	73.646%	13.860	461.400	T 4800.000	T 14230.000	T 51850.000	T 8479.000	T 53030.000	91.708%	0.000	113.000	90.580
x		74.343%	14.050	455.800	T 4858.000	T 14190.000	T 51580.000	T 8379.000	T 51520.000	91.680%	0.000	110.400	89.310
σ		0.623%	0.271	8.929	T 119.500	T 171.400	T 246.900	T 118.600	T 1319.000	0.729%	0.000	2.548	1.312
%RSD		0.838	1.931	1.959	T 2.460	T 1.208	T 0.479	T 1.416	T 2.559	0.795	0.000	2.307	1.469

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:25:01	8.814	TM 6612.000	T 96630.000	50.030	97.690	1711.000	809.700	19.580	0.070	46.420	0.000	0.000
2	11:25:22	6.246	TM 6544.000	T 96110.000	50.240	98.100	1718.000	800.900	20.570	0.021	48.420	0.000	0.000
3	11:25:44	7.785	TM 6728.000	T 97170.000	50.500	99.090	1730.000	822.200	20.430	0.022	48.010	0.000	0.000
x		7.615	TM 6628.000	T 96640.000	50.260	98.300	1720.000	810.900	20.190	0.038	47.620	0.000	0.000
σ		1.292	TM 92.880	T 528.200	0.235	0.720	9.883	10.700	0.534	0.028	1.053	0.000	0.000
%RSD		16.970	TM 1.401	T 0.547	0.467	0.732	0.575	1.319	2.645	74.320	2.212	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:25:01	177.100	212.112%	41.680	11.750	-0.405	12.630	86.179%	0.000	18.720	19.260	831.500	101.046%
2	11:25:22	179.100	209.262%	42.890	12.300	-2.961	13.510	85.775%	0.000	19.060	19.830	852.100	101.782%
3	11:25:44	176.800	211.172%	43.490	12.070	-4.069	13.530	87.207%	0.000	18.870	19.660	851.700	102.239%
x		177.700	210.849%	42.690	12.040	-2.478	13.230	86.387%	0.000	18.880	19.580	845.100	101.689%
σ		1.217	1.453%	0.923	0.277	1.879	0.513	0.738%	0.000	0.170	0.293	11.800	0.602%
%RSD		0.685	0.689	2.163	2.296	75.830	3.878	0.854	0.000	0.901	1.496	1.397	0.592

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:25:01	16.260	17.250	158.500	88.166%	0.000	30.350	15.850
2	11:25:22	16.490	17.380	158.800	89.902%	0.000	30.270	16.180
3	11:25:44	17.360	17.410	157.500	91.473%	0.000	30.620	15.860
x		16.700	17.350	158.300	89.847%	0.000	30.410	15.970
σ		0.582	0.086	0.644	1.654%	0.000	0.182	0.187
%RSD		3.482	0.494	0.407	1.841	0.000	0.599	1.174

200-35736-A-11-I MS 10/19/2016 11:30:21 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:43	73.782%	14.750	395.100	T 4858.000	T 15070.000	T 58510.000	T 8660.000	T 59440.000	93.254%	0.000	121.500	97.430
2	11:31:05	71.677%	15.350	410.400	T 4801.000	T 14900.000	T 57760.000	T 8475.000	T 59270.000	94.030%	0.000	122.800	96.880
3	11:31:26	71.988%	16.050	413.800	T 4835.000	T 14850.000	T 57130.000	T 8669.000	T 59870.000	94.074%	0.000	122.600	97.250
x		72.482%	15.380	406.400	T 4831.000	T 14940.000	T 57800.000	T 8601.000	T 59530.000	93.786%	0.000	122.300	97.190
σ		1.136%	0.652	9.942	T 28.670	T 111.800	T 691.400	T 109.400	T 305.200	0.461%	0.000	0.700	0.279
%RSD		1.567	4.239	2.446	T 0.594	T 0.748	T 1.196	T 1.272	T 0.513	0.492	0.000	0.572	0.287

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:43	6.739	TM 6830.000	T 97110.000	49.460	106.500	1947.000	822.800	19.900	0.032	50.490	0.000	0.000
2	11:31:05	7.655	TM 6846.000	T 97670.000	49.910	106.700	1954.000	815.900	20.030	0.041	47.840	0.000	0.000
3	11:31:26	6.327	TM 6876.000	T 97970.000	49.740	105.800	1985.000	828.400	19.760	0.072	46.850	0.000	0.000
x		6.907	TM 6851.000	T 97580.000	49.710	106.400	1962.000	822.400	19.900	0.049	48.390	0.000	0.000
σ		0.680	TM 23.390	T 434.200	0.226	0.496	20.530	6.242	0.135	0.021	1.883	0.000	0.000
%RSD		9.841	TM 0.341	T 0.445	0.454	0.467	1.046	0.759	0.678	42.780	3.891	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:43	202.000	226.235%	37.750	12.270	-5.363	13.120	84.441%	0.000	5.448	5.429	877.000	100.384%
2	11:31:05	205.400	227.506%	38.370	12.400	-6.437	12.930	84.180%	0.000	5.283	5.574	889.000	102.623%
3	11:31:26	204.800	230.392%	38.560	12.290	-5.471	12.680	85.986%	0.000	5.275	5.471	883.000	104.379%
x		204.100	228.045%	38.230	12.320	-5.757	12.910	84.869%	0.000	5.335	5.491	883.000	102.462%
σ		1.787	2.130%	0.420	0.069	0.591	0.219	0.976%	0.000	0.097	0.075	5.986	2.002%
%RSD		0.876	0.934	1.100	0.562	10.270	1.695	1.150	0.000	1.824	1.364	0.678	1.954

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:43	17.350	14.570	151.600	88.989%	0.000	31.500	16.180
2	11:31:05	17.510	15.240	156.700	87.144%	0.000	32.280	16.870
3	11:31:26	17.540	14.680	150.800	91.563%	0.000	31.120	16.310
x		17.470	14.830	153.000	89.232%	0.000	31.640	16.460
σ		0.099	0.362	3.231	2.219%	0.000	0.594	0.369
%RSD		0.564	2.443	2.111	2.487	0.000	1.878	2.240

200-35736-A-11-J MSD 10/19/2016 11:36:04 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:36:26	74.948%	14.020	385.800	T 5023.000	T 15760.000	T 56540.000	T 8587.000	T 43130.000	92.216%	0.000	120.300	98.140
2	11:36:48	73.198%	15.070	401.300	T 4830.000	T 15420.000	T 54990.000	T 8518.000	T 42560.000	95.224%	0.000	121.300	96.850
3	11:37:09	71.458%	15.420	410.000	T 4770.000	T 15260.000	T 54900.000	T 8411.000	T 42900.000	95.697%	0.000	119.300	95.090
x		73.202%	14.840	399.000	T 4874.000	T 15480.000	T 55480.000	T 8506.000	T 42860.000	94.379%	0.000	120.300	96.690
σ		1.745%	0.728	12.250	T 132.500	T 256.000	T 922.400	T 88.390	T 286.100	1.888%	0.000	1.000	1.532
%RSD		2.384	4.908	3.071	T 2.718	T 1.654	T 1.663	T 1.039	T 0.668	2.001	0.000	0.831	1.585

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:36:26	7.943	T 6220.000	T 96700.000	50.220	105.300	1863.000	858.600	19.950	0.086	47.030	0.000	0.000
2	11:36:48	5.942	T 6179.000	T 94470.000	48.990	104.800	1850.000	841.600	19.800	0.101	47.500	0.000	0.000
3	11:37:09	7.406	T 6143.000	T 95240.000	48.500	103.800	1839.000	848.500	20.790	0.065	46.800	0.000	0.000
x		7.097	T 6181.000	T 95470.000	49.240	104.700	1851.000	849.600	20.180	0.084	47.110	0.000	0.000
σ		1.036	T 38.440	T 1134.000	0.889	0.790	12.070	8.526	0.533	0.018	0.353	0.000	0.000
%RSD		14.590	T 0.622	T 1.188	1.806	0.754	0.652	1.004	2.643	21.890	0.749	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:36:26	156.700	218.842%	40.170	12.130	-3.428	14.530	87.792%	0.000	5.175	5.256	802.400	103.285%
2	11:36:48	163.400	220.747%	41.070	12.450	-3.154	14.270	85.902%	0.000	5.153	5.521	830.300	104.184%

3	11:37:09	160.900	216.632%	41.250	12.150	-2.714	14.820	87.015%	0.000	5.311	5.439	820.600	104.153%
x		160.300	218.740%	40.830	12.240	-3.099	14.540	86.903%	0.000	5.213	5.405	817.800	103.874%
σ		3.383	2.059%	0.581	0.181	0.360	0.275	0.950%	0.000	0.086	0.136	14.120	0.510%
%RSD		2.110	0.941	1.423	1.480	11.620	1.894	1.093	0.000	1.640	2.507	1.726	0.491

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:36:26	17.470	14.820	158.700	87.974%	0.000	30.050	16.110
2	11:36:48	18.470	15.180	158.100	90.327%	0.000	29.830	16.000
3	11:37:09	18.010	14.710	153.400	93.004%	0.000	29.120	15.990
x		17.980	14.910	156.700	90.435%	0.000	29.660	16.040
σ		0.497	0.246	2.887	2.517%	0.000	0.485	0.063
%RSD		2.764	1.647	1.842	2.783	0.000	1.635	0.395

200-35736-A-12-A 10/19/2016 11:41:47 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:42:09	67.604%	4.453	30.700	446.600	T 15110.000	T 45520.000	T 3786.000	T 61700.000	88.750%	0.000	69.460	54.470
2	11:42:30	67.495%	3.641	31.980	T 505.000	T 15360.000	T 45940.000	T 3837.000	T 61890.000	87.828%	0.000	70.820	56.270
3	11:42:52	68.974%	3.280	26.520	T 502.700	T 15350.000	T 46020.000	T 3815.000	T 62640.000	88.055%	0.000	70.730	55.190
x		68.024%	3.791	29.730	T 484.700	T 15270.000	T 45830.000	T 3812.000	T 62080.000	88.211%	0.000	70.340	55.310
σ		0.824%	0.601	2.851	T 33.040	T 143.200	T 269.500	T 25.690	T 497.200	0.480%	0.000	0.763	0.902
%RSD		1.212	15.840	9.588	T 6.816	T 0.937	T 0.588	T 0.674	T 0.801	0.544	0.000	1.085	1.631

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:42:09	5.387	TM 7231.000	T 94510.000	39.390	84.260	1636.000	674.100	13.870	0.064	14.040	0.000	0.000
2	11:42:30	4.506	TM 7427.000	T 96780.000	39.070	82.240	1667.000	686.400	14.270	0.047	14.740	0.000	0.000
3	11:42:52	4.691	TM 7328.000	T 95870.000	39.410	83.190	1639.000	689.300	13.870	0.051	14.820	0.000	0.000
x		4.862	TM 7329.000	T 95720.000	39.290	83.230	1648.000	683.300	14.000	0.054	14.530	0.000	0.000
σ		0.465	TM 98.260	T 1146.000	0.192	1.011	17.200	8.042	0.229	0.009	0.429	0.000	0.000
%RSD		9.561	TM 1.341	T 1.197	0.488	1.214	1.044	1.177	1.633	16.280	2.954	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:42:09	161.300	198.438%	1.711	1.722	-4.720	4.056	83.254%	0.000	0.558	0.632	749.700	97.231%
2	11:42:30	161.400	196.300%	1.663	1.588	-1.607	3.497	83.920%	0.000	0.643	0.623	749.700	97.163%
3	11:42:52	159.700	197.868%	1.709	1.642	-3.698	3.795	84.770%	0.000	0.566	0.612	746.200	96.180%
x		160.800	197.535%	1.694	1.650	-3.342	3.783	83.981%	0.000	0.589	0.622	748.600	96.858%
σ		0.985	1.107%	0.028	0.067	1.587	0.280	0.760%	0.000	0.047	0.010	2.021	0.588%
%RSD		0.613	0.561	1.626	4.070	47.480	7.403	0.905	0.000	8.027	1.614	0.270	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:42:09	0.563	0.464	122.300	86.719%	0.000	10.550	4.865
2	11:42:30	0.507	0.472	123.900	86.094%	0.000	10.670	4.858
3	11:42:52	0.498	0.501	123.700	87.377%	0.000	10.830	4.755
x		0.523	0.479	123.300	86.730%	0.000	10.680	4.826
σ		0.036	0.020	0.848	0.641%	0.000	0.141	0.062

%RSD		6.802	4.114	0.688	0.740	0.000	1.320	1.279

MB 200-110239/1-A 10/19/2016 11:47:30 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:52	71.966%	-0.056	6.370	173.400	6.099	21.630	4.587	32.180	79.928%	0.000	0.227	-0.124
2	11:48:13	71.729%	-0.056	6.770	169.400	9.251	27.070	4.938	37.880	81.005%	0.000	0.233	-0.107
3	11:48:35	69.738%	-0.013	6.300	164.800	11.230	29.600	3.459	37.830	81.334%	0.000	0.394	-0.106
x		71.144%	-0.042	6.480	169.200	8.860	26.100	4.328	35.960	80.756%	0.000	0.285	-0.112
σ		1.224%	0.025	0.254	4.320	2.587	4.076	0.772	3.280	0.735%	0.000	0.095	0.010
%RSD		1.720	59.570	3.914	2.553	29.200	15.620	17.850	9.120	0.910	0.000	33.380	9.241

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:52	6.575	2.353	44.350	0.026	0.211	0.927	0.872	-0.084	0.275	-0.422	0.000	0.000
2	11:48:13	6.857	3.132	54.040	0.031	0.122	1.224	0.812	-0.117	0.313	-0.508	0.000	0.000
3	11:48:35	6.615	3.485	57.000	0.027	0.250	1.143	0.724	-0.123	0.289	-0.679	0.000	0.000
x		6.682	2.990	51.790	0.028	0.194	1.098	0.802	-0.108	0.292	-0.536	0.000	0.000
σ		0.152	0.580	6.616	0.003	0.065	0.153	0.075	0.021	0.019	0.131	0.000	0.000
%RSD		2.278	19.380	12.770	9.037	33.640	13.960	9.302	19.670	6.626	24.450	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:52	0.165	88.794%	0.052	-0.004	-1.249	-0.034	86.492%	0.000	-0.009	-0.000	0.283	82.475%
2	11:48:13	0.192	89.210%	0.120	0.013	-1.097	-0.040	86.798%	0.000	0.010	0.012	0.310	84.558%
3	11:48:35	0.201	90.477%	0.075	0.010	-1.738	0.018	87.021%	0.000	0.020	0.018	0.235	81.767%
x		0.186	89.494%	0.082	0.007	-1.362	-0.019	86.771%	0.000	0.007	0.010	0.276	82.933%
σ		0.019	0.877%	0.035	0.009	0.335	0.032	0.265%	0.000	0.015	0.009	0.038	1.451%
%RSD		10.060	0.980	42.020	135.200	24.600	169.300	0.306	0.000	207.600	95.690	13.730	1.749

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:52	0.023	0.007	0.058	83.241%	0.000	0.264	-0.009
2	11:48:13	0.033	0.003	0.065	84.400%	0.000	0.244	-0.009
3	11:48:35	0.014	0.007	0.080	84.002%	0.000	0.198	-0.011
x		0.023	0.006	0.068	83.881%	0.000	0.235	-0.009
σ		0.009	0.003	0.011	0.589%	0.000	0.034	0.001
%RSD		40.460	44.580	16.980	0.702	0.000	14.270	12.890

LCS 200-110239/2-A 10/19/2016 11:53:13 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:35	69.147%	11.420	438.000	T 5500.000	1982.000	486.400	T 5042.000	4651.000	72.583%	0.000	45.290	38.290
2	11:53:57	65.950%	11.700	458.200	T 5438.000	1967.000	472.300	T 4863.000	4615.000	71.983%	0.000	46.210	39.000
3	11:54:18	64.390%	10.710	470.900	T 5455.000	1944.000	483.400	T 4942.000	4605.000	70.726%	0.000	46.340	38.740
x		66.496%	11.280	455.700	T 5464.000	1964.000	480.700	T 4949.000	4624.000	71.764%	0.000	45.950	38.680
σ		2.425%	0.510	16.580	T 31.970	18.860	7.398	T 89.750	24.290	0.948%	0.000	0.570	0.358
%RSD		3.647	4.527	3.638	T 0.585	0.960	1.539	T 1.814	0.525	1.321	0.000	1.240	0.925

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:35	9.194	19.960	T 2121.000	9.631	21.260	51.040	194.600	19.930	0.169	39.130	0.000	0.000
2	11:53:57	6.210	19.470	T 2101.000	9.666	20.180	50.660	196.200	19.160	0.207	38.570	0.000	0.000
3	11:54:18	7.078	20.350	T 2144.000	9.995	21.620	51.180	202.600	20.200	0.132	38.810	0.000	0.000
x		7.494	19.920	T 2122.000	9.764	21.020	50.960	197.800	19.770	0.169	38.840	0.000	0.000
σ		1.535	0.443	T 21.540	0.201	0.751	0.267	4.239	0.539	0.037	0.284	0.000	0.000
%RSD		20.480	2.225	T 1.015	2.054	3.572	0.524	2.143	2.728	22.080	0.730	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:35	45.760	79.019%	97.810	10.490	-0.962	9.775	79.117%	0.000	18.790	18.890	91.380	77.342%
2	11:53:57	45.980	79.124%	100.700	10.560	-1.979	10.030	78.402%	0.000	19.200	19.300	94.250	77.138%
3	11:54:18	46.160	77.671%	101.800	10.440	0.453	9.720	78.121%	0.000	19.800	19.190	94.880	77.200%
x		45.960	78.605%	100.100	10.500	-0.829	9.841	78.547%	0.000	19.260	19.130	93.500	77.227%
σ		0.203	0.810%	2.053	0.056	1.221	0.165	0.513%	0.000	0.509	0.215	1.864	0.105%
%RSD		0.441	1.031	2.051	0.537	147.300	1.671	0.653	0.000	2.642	1.123	1.994	0.136

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:35	38.200	17.430	8.857	77.318%	0.000	12.150	10.460
2	11:53:57	38.520	17.090	8.703	79.971%	0.000	12.350	10.240
3	11:54:18	38.840	17.720	8.964	77.263%	0.000	13.530	10.630
x		38.520	17.410	8.841	78.184%	0.000	12.680	10.440
σ		0.319	0.315	0.131	1.548%	0.000	0.748	0.192
%RSD		0.827	1.811	1.486	1.980	0.000	5.904	1.836

200-35680-A-13-A 10/19/2016 11:58:57 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:59:19	70.024%	0.051	8.667	175.700	4.560	9.415	5.041	24.590	75.161%	0.000	0.453	-0.195
2	11:59:40	71.482%	0.007	8.007	179.000	5.746	11.650	5.378	26.310	74.899%	0.000	0.119	-0.117
3	12:00:02	70.395%	0.008	6.633	186.400	8.646	18.030	7.479	29.910	73.299%	0.000	0.120	-0.041
x		70.634%	0.022	7.769	180.400	6.317	13.030	5.966	26.940	74.453%	0.000	0.231	-0.117
σ		0.757%	0.025	1.038	5.451	2.102	4.469	1.321	2.714	1.008%	0.000	0.193	0.077
%RSD		1.072	114.800	13.360	3.022	33.280	34.300	22.140	10.080	1.354	0.000	83.530	65.280

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:59:19	8.406	1.193	18.590	0.024	0.198	0.667	1.910	0.224	0.279	0.127	0.000	0.000
2	11:59:40	8.799	1.404	22.630	0.022	0.190	0.693	1.764	-0.045	0.324	-0.821	0.000	0.000
3	12:00:02	9.138	2.037	35.620	0.036	0.213	0.977	2.142	-0.235	0.333	-0.633	0.000	0.000
x		8.781	1.545	25.610	0.028	0.201	0.779	1.938	-0.019	0.312	-0.442	0.000	0.000
σ		0.366	0.440	8.897	0.008	0.012	0.172	0.190	0.230	0.029	0.502	0.000	0.000
%RSD		4.168	28.450	34.730	27.940	5.966	22.070	9.823	1244.000	9.280	113.600	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	11:59:19	0.140	80.939%	0.168	-0.005	-1.325	-0.021	81.541%	0.000	0.024	0.015	0.213	77.809%
2	11:59:40	0.145	80.994%	0.250	-0.005	-1.137	-0.029	80.796%	0.000	0.048	0.037	0.225	76.802%
3	12:00:02	0.180	79.947%	0.264	0.003	-0.884	-0.056	79.489%	0.000	0.066	0.049	0.381	76.168%
x		0.155	80.627%	0.227	-0.002	-1.115	-0.035	80.609%	0.000	0.046	0.034	0.273	76.926%
σ		0.022	0.589%	0.052	0.004	0.222	0.018	1.039%	0.000	0.021	0.017	0.094	0.827%
%RSD		14.010	0.730	22.850	206.400	19.870	51.800	1.288	0.000	45.780	50.520	34.350	1.075
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	11:59:19	0.123	0.042	0.031	79.073%	0.000	2.368	-0.007					
2	11:59:40	0.138	0.032	0.044	78.620%	0.000	2.178	-0.002					
3	12:00:02	0.166	0.037	0.060	80.855%	0.000	1.934	-0.003					
x		0.142	0.037	0.045	79.516%	0.000	2.160	-0.004					
σ		0.022	0.005	0.015	1.182%	0.000	0.218	0.002					
%RSD		15.310	13.810	32.480	1.486	0.000	10.080	62.710					

200-35700-A-19-A 10/19/2016 12:04:41 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:05:02	73.422%	0.046	4.918	183.700	11.380	32.490	7.862	44.150	76.655%	0.000	0.243	0.208
2	12:05:24	74.478%	-0.036	4.979	179.800	7.495	24.460	4.742	33.980	78.309%	0.000	0.232	0.043
3	12:05:46	72.183%	0.006	5.746	180.000	7.174	20.010	3.755	34.070	77.326%	0.000	0.224	0.066
x		73.361%	0.005	5.214	181.200	8.683	25.650	5.453	37.400	77.430%	0.000	0.233	0.106
σ		1.148%	0.041	0.461	2.217	2.342	6.326	2.144	5.850	0.832%	0.000	0.009	0.090
%RSD		1.565	743.800	8.849	1.224	26.970	24.660	39.320	15.640	1.074	0.000	4.058	84.980
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:05:02	11.540	2.911	52.910	0.023	0.149	1.137	1.179	-0.115	0.400	-0.733	0.000	0.000
2	12:05:24	11.380	2.237	38.890	0.039	0.154	1.065	0.920	0.028	0.376	-1.288	0.000	0.000
3	12:05:46	11.310	1.696	31.490	0.027	0.174	0.961	1.010	-0.597	0.441	-1.213	0.000	0.000
x		11.410	2.281	41.100	0.030	0.159	1.054	1.036	-0.228	0.405	-1.078	0.000	0.000
σ		0.117	0.608	10.880	0.008	0.013	0.089	0.132	0.328	0.033	0.301	0.000	0.000
%RSD		1.025	26.670	26.470	27.620	8.463	8.396	12.700	143.500	8.121	27.950	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:05:02	0.142	85.714%	0.146	0.015	-1.031	-0.052	81.881%	0.000	0.018	0.007	0.418	78.579%
2	12:05:24	0.149	84.796%	0.129	0.006	-1.509	0.015	82.347%	0.000	0.033	0.006	0.269	81.001%

3	12:05:46	0.114	84.620%	0.109	-0.008	-1.033	-0.044	83.651%	0.000	0.012	0.011	0.226	80.220%
x		0.135	85.044%	0.128	0.004	-1.191	-0.027	82.626%	0.000	0.021	0.008	0.304	79.934%
σ		0.019	0.587%	0.018	0.012	0.275	0.037	0.917%	0.000	0.011	0.003	0.101	1.236%
%RSD		13.860	0.691	14.370	283.600	23.100	135.000	1.110	0.000	51.980	37.570	33.100	1.547

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:02	0.058	0.017	0.078	80.889%	0.000	0.774	-0.006
2	12:05:24	0.061	0.008	0.071	79.367%	0.000	0.738	-0.010
3	12:05:46	0.059	0.001	0.066	81.472%	0.000	0.672	-0.009
x		0.059	0.009	0.072	80.576%	0.000	0.728	-0.008
σ		0.002	0.008	0.006	1.087%	0.000	0.051	0.002
%RSD		2.617	87.890	8.423	1.349	0.000	7.062	26.330

CCV 10/19/2016 12:10:25 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:47	63.364%	743.700	294.000	┬10710.000	┬32180.000	┬32230.000	┬9795.000	28690.000	66.085%	0.000	┬1250.000	374.200
2	12:11:08	63.997%	709.500	283.100	┬10880.000	┬32570.000	┬33130.000	┬10080.000	28700.000	64.029%	0.000	┬1304.000	388.900
3	12:11:31	64.377%	701.200	282.700	┬10750.000	┬32080.000	┬32810.000	┬10100.000	┬30800.000	64.131%	0.000	┬1281.000	383.500
x		63.913%	114.903%	114.639%	┬107.830%	┬107.579%	┬109.086%	┬99.900%	┬97.993%	64.748%	0.000	┬102.271%	95.548%
σ		0.512%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.158%	0.000	┬n/a	n/a
%RSD		0.801	3.133	2.223	┬0.823	┬0.801	┬1.392	┬1.689	┬4.126	1.789	0.000	┬2.120	1.942

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:47	22.250	┬1282.000	┬31060.000	477.600	1271.000	1243.000	1288.000	206.100	-0.527	221.200	0.000	0.000
2	12:11:08	19.450	┬1321.000	┬31680.000	489.600	1289.000	1278.000	1318.000	206.600	-0.497	217.400	0.000	0.000
3	12:11:31	15.060	┬1300.000	┬31700.000	487.600	1296.000	1267.000	1325.000	201.000	-0.432	216.800	0.000	0.000
x		18.920	┬104.105%	┬104.927%	96.984%	102.842%	101.006%	104.821%	102.271%	-0.485	109.221%	0.000	0.000
σ		3.624	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.048	n/a	0.000	0.000
%RSD		19.150	┬1.511	┬1.164	1.319	1.004	1.434	1.496	1.524	9.991	1.104	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:47	187.700	72.318%	1216.000	106.000	-1.755	206.000	71.242%	0.000	250.400	246.600	1193.000	70.054%
2	12:11:08	185.200	71.465%	1258.000	104.500	7.793	207.600	71.533%	0.000	248.600	247.600	1180.000	70.714%
3	12:11:31	186.600	72.518%	1254.000	105.400	-0.091	203.900	70.865%	0.000	251.500	248.500	1193.000	71.468%
x		186.500	72.100%	99.441%	105.267%	1.982	102.920%	71.213%	0.000	250.200	99.014%	95.096%	70.745%
σ		1.276	0.559%	n/a	n/a	5.101	n/a	0.335%	0.000	1.450	n/a	n/a	0.708%
%RSD		0.684	0.776	1.866	0.708	257.400	0.913	0.470	0.000	0.580	0.377	0.601	1.000

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:47	22.970	175.100	┬1211.000	73.446%	0.000	15.600	9.831
2	12:11:08	23.720	179.000	┬1267.000	73.323%	0.000	16.990	10.060
3	12:11:31	23.160	174.500	┬1203.000	74.316%	0.000	17.820	9.898
x		116.430%	88.092%	┬98.151%	73.695%	0.000	84.009%	99.305%
σ		n/a	n/a	┬n/a	0.542%	0.000	n/a	n/a

%RSD		1.665	1.389	T 2.885	0.735	0.000	6.670	1.195

CCB 10/19/2016 12:16:12 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:34	68.759%	0.053	3.843	22.470	2.623	3.315	3.529	-5.119	67.737%	0.000	0.314	-0.235
2	12:16:56	67.913%	0.032	4.127	18.250	4.397	4.611	1.061	-6.407	68.856%	0.000	0.094	-0.228
3	12:17:17	67.290%	0.055	3.017	19.430	4.480	5.283	1.761	-5.556	67.741%	0.000	0.343	-0.218
x		67.987%	0.047	3.662	20.050	3.833	4.403	2.117	-5.694	68.111%	0.000	0.250	-0.227
σ		0.738%	0.013	0.576	2.175	1.049	1.000	1.272	0.655	0.645%	0.000	0.137	0.009
%RSD		1.085	27.080	15.740	10.850	27.370	22.720	60.080	11.500	0.947	0.000	54.500	3.927

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:34	10.410	0.154	9.938	0.040	0.069	0.113	0.208	-0.340	0.316	-1.328	0.000	0.000
2	12:16:56	10.330	0.198	9.642	0.025	0.118	0.091	0.231	-0.008	0.296	-1.369	0.000	0.000
3	12:17:17	10.260	0.312	12.550	0.061	0.089	0.219	0.358	-0.262	0.322	-0.733	0.000	0.000
x		10.330	0.221	10.710	0.042	0.092	0.141	0.265	-0.203	0.311	-1.143	0.000	0.000
σ		0.072	0.082	1.600	0.018	0.025	0.068	0.081	0.174	0.014	0.356	0.000	0.000
%RSD		0.693	36.850	14.940	43.290	26.750	48.500	30.520	85.480	4.425	31.150	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:34	0.008	75.266%	2.173	0.002	-1.744	0.021	74.362%	0.000	0.240	0.265	0.126	72.400%
2	12:16:56	0.022	75.258%	2.173	0.004	-1.162	-0.009	74.378%	0.000	0.330	0.261	0.094	73.495%
3	12:17:17	0.023	75.528%	1.890	0.004	-1.578	0.015	75.310%	0.000	0.342	0.271	0.082	72.683%
x		0.018	75.351%	2.079	0.003	-1.495	0.009	74.683%	0.000	0.304	0.265	0.101	72.860%
σ		0.008	0.154%	0.164	0.001	0.300	0.016	0.543%	0.000	0.056	0.005	0.023	0.568%
%RSD		46.230	0.204	7.863	32.290	20.040	181.500	0.727	0.000	18.270	1.910	22.900	0.780

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:34	0.070	0.133	0.050	76.413%	0.000	-0.115	-0.013
2	12:16:56	0.082	0.129	0.085	76.694%	0.000	-0.118	-0.011
3	12:17:17	0.056	0.116	0.106	75.913%	0.000	-0.105	-0.009
x		0.069	0.126	0.080	76.340%	0.000	-0.113	-0.011
σ		0.013	0.009	0.028	0.396%	0.000	0.007	0.002
%RSD		18.780	7.068	35.210	0.518	0.000	5.855	19.530

CCVL 10/19/2016 12:21:55 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:22:17	69.102%	1.415	47.940	497.900	201.100	52.790	436.500	464.000	70.819%	0.000	4.852	3.494
2	12:22:39	68.691%	1.206	49.110	502.600	203.200	54.660	443.000	492.300	71.957%	0.000	4.495	3.432
3	12:23:01	67.342%	1.409	51.340	499.900	196.500	57.250	445.700	472.400	70.935%	0.000	4.365	3.719
x		68.378%	134.295%	123.661%	100.023%	100.142%	109.803%	88.346%	95.250%	71.237%	0.000	91.411%	88.707%
σ		0.921%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.626%	0.000	n/a	n/a
%RSD		1.347	8.848	3.492	0.479	1.697	4.076	1.076	3.053	0.879	0.000	5.528	4.259

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:22:17	12.100	2.128	194.500	1.031	2.488	5.686	22.670	2.423	0.339	3.723	0.000	0.000
2	12:22:39	12.180	2.183	194.200	1.105	2.448	5.271	22.440	2.012	0.354	4.260	0.000	0.000
3	12:23:01	12.890	2.450	201.100	1.017	2.543	5.219	22.110	2.475	0.303	3.744	0.000	0.000
x		12.390	112.692%	98.296%	105.122%	124.657%	107.838%	112.043%	115.175%	0.332	97.722%	0.000	0.000
σ		0.434	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.026	n/a	0.000	0.000
%RSD		3.506	7.648	1.991	4.501	1.901	4.755	1.261	11.010	7.879	7.776	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:22:17	4.399	76.300%	9.933	1.121	-0.704	1.186	75.336%	0.000	1.936	1.931	9.938	74.811%
2	12:22:39	4.647	77.044%	10.200	1.047	-1.525	1.124	75.877%	0.000	2.080	2.002	9.602	74.056%
3	12:23:01	4.601	76.649%	10.240	1.065	-1.767	1.071	76.555%	0.000	2.163	2.034	9.275	73.904%
x		90.976%	76.664%	101.261%	107.781%	-1.332	112.730%	75.923%	0.000	2.060	99.453%	96.048%	74.257%
σ		n/a	0.372%	n/a	n/a	0.557	n/a	0.611%	0.000	0.115	n/a	n/a	0.485%
%RSD		2.896	0.486	1.665	3.601	41.810	5.105	0.804	0.000	5.570	2.645	3.454	0.654

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:22:17	1.760	1.705	1.048	77.051%	0.000	0.621	0.993
2	12:22:39	1.751	1.775	1.077	78.072%	0.000	0.654	1.020
3	12:23:01	1.907	1.802	1.106	77.839%	0.000	0.732	1.007
x		90.296%	88.050%	107.721%	77.654%	0.000	33.438%	100.670%
σ		n/a	n/a	n/a	0.535%	0.000	n/a	n/a
%RSD		4.843	2.838	2.704	0.689	0.000	8.519	1.355

200-35736-A-14-A 10/19/2016 12:27:39 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:01	70.524%	-0.013	3.429	188.700	1.730	3.549	0.801	18.610	72.552%	0.000	-0.396	0.034
2	12:28:23	70.593%	-0.035	2.206	188.100	1.644	3.718	0.999	12.980	72.877%	0.000	-0.254	0.023
3	12:28:44	71.496%	-0.035	3.384	192.100	1.897	4.105	1.587	16.600	72.077%	0.000	0.120	0.190
x		70.871%	-0.028	3.007	189.600	1.757	3.791	1.129	16.060	72.502%	0.000	-0.177	0.082
σ		0.542%	0.012	0.694	2.163	0.129	0.285	0.409	2.854	0.402%	0.000	0.267	0.093
%RSD		0.765	44.540	23.070	1.140	7.314	7.523	36.220	17.770	0.555	0.000	151.000	114.000

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:01	14.340	0.438	6.976	0.008	0.264	0.330	1.723	-0.140	0.438	-1.170	0.000	0.000
2	12:28:23	14.130	0.408	6.787	0.002	0.167	0.289	1.581	-0.290	0.447	-1.533	0.000	0.000
3	12:28:44	14.190	0.449	9.227	0.014	0.160	0.296	1.660	-0.089	0.429	-1.094	0.000	0.000
x		14.220	0.432	7.664	0.008	0.197	0.305	1.655	-0.173	0.438	-1.265	0.000	0.000
σ		0.106	0.021	1.358	0.006	0.058	0.022	0.071	0.104	0.009	0.235	0.000	0.000
%RSD		0.745	4.944	17.710	78.230	29.510	7.146	4.294	60.290	1.943	18.570	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:01	0.054	77.072%	0.258	-0.002	-1.495	-0.007	75.909%	0.000	0.031	0.035	0.017	74.161%
2	12:28:23	0.067	77.103%	0.355	0.011	-1.066	-0.049	75.993%	0.000	0.031	0.045	0.060	75.654%
3	12:28:44	0.057	78.423%	0.362	-0.006	-1.246	-0.035	78.074%	0.000	0.068	0.052	0.006	76.430%
x		0.059	77.532%	0.325	0.001	-1.269	-0.030	76.659%	0.000	0.043	0.044	0.028	75.415%
σ		0.007	0.771%	0.058	0.009	0.215	0.021	1.226%	0.000	0.021	0.009	0.028	1.153%
%RSD		12.110	0.995	17.910	871.400	16.950	69.820	1.600	0.000	49.320	20.440	101.800	1.529

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:01	0.057	0.017	0.019	77.434%	0.000	1.409	-0.011
2	12:28:23	0.052	0.024	0.014	76.022%	0.000	1.309	-0.013
3	12:28:44	0.002	0.016	0.028	76.927%	0.000	1.165	-0.014
x		0.037	0.019	0.020	76.795%	0.000	1.294	-0.012
σ		0.030	0.004	0.007	0.715%	0.000	0.123	0.001
%RSD		82.380	23.660	34.960	0.931	0.000	9.504	11.070

200-35736-A-14-A SD@5 10/19/2016 12:33:24 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:46	70.957%	-0.056	1.153	60.780	1.360	4.064	0.390	-1.466	72.290%	0.000	0.216	-0.013
2	12:34:07	71.634%	-0.014	1.157	57.610	2.011	4.207	-0.558	-2.266	73.130%	0.000	-0.305	-0.023
3	12:34:29	71.608%	-0.056	1.667	59.040	1.295	4.191	-0.954	1.505	71.877%	0.000	-0.475	0.007
x		71.400%	-0.042	1.326	59.140	1.555	4.154	-0.374	-0.742	72.432%	0.000	-0.188	-0.010
σ		0.383%	0.024	0.295	1.591	0.396	0.078	0.690	1.987	0.639%	0.000	0.360	0.015
%RSD		0.537	57.470	22.260	2.690	25.440	1.888	184.500	267.700	0.882	0.000	191.500	153.600

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:46	14.390	0.087	8.236	0.012	0.063	0.103	0.505	0.098	0.422	-0.299	0.000	0.000
2	12:34:07	15.030	0.130	8.441	0.002	0.071	0.152	0.587	-0.377	0.472	-0.770	0.000	0.000
3	12:34:29	15.700	0.067	9.493	-0.000	0.015	2.557	0.554	-0.333	0.478	-0.724	0.000	0.000
x		15.040	0.095	8.723	0.004	0.050	0.937	0.549	-0.204	0.458	-0.598	0.000	0.000
σ		0.652	0.032	0.675	0.006	0.030	1.403	0.041	0.262	0.031	0.260	0.000	0.000
%RSD		4.336	33.910	7.734	145.800	60.960	149.700	7.548	128.500	6.695	43.490	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:46	0.025	79.246%	0.078	-0.000	-0.846	-0.051	76.629%	0.000	-0.014	0.002	0.017	75.151%
2	12:34:07	0.017	78.325%	0.090	-0.010	-1.673	-0.001	77.484%	0.000	0.016	0.009	0.027	75.780%

3	12:34:29	0.017	78.725%	0.104	-0.006	-0.838	-0.036	77.374%	0.000	0.027	0.017	0.027	76.257%
x		0.020	78.765%	0.091	-0.005	-1.119	-0.029	77.162%	0.000	0.010	0.010	0.024	75.729%
σ		0.005	0.462%	0.013	0.005	0.480	0.026	0.465%	0.000	0.021	0.007	0.006	0.555%
%RSD		23.930	0.586	14.060	89.300	42.900	87.260	0.603	0.000	210.600	76.460	24.450	0.732

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:46	-0.001	-0.004	-0.004	75.981%	0.000	-0.034	-0.014
2	12:34:07	0.009	0.007	-0.006	76.208%	0.000	-0.012	-0.014
3	12:34:29	-0.001	0.004	-0.009	76.735%	0.000	-0.018	-0.013
x		0.002	0.002	-0.006	76.308%	0.000	-0.021	-0.014
σ		0.006	0.005	0.003	0.387%	0.000	0.011	0.001
%RSD		237.600	237.600	43.400	0.507	0.000	53.420	3.807

200-35736-A-14-A PDS 10/19/2016 12:39:07 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:39:29	71.097%	11.080	453.900	T 5583.000	1960.000	472.100	T 4950.000	4723.000	71.472%	0.000	45.760	38.180
2	12:39:51	69.046%	11.390	457.500	T 5565.000	1966.000	481.900	T 4964.000	4721.000	70.619%	0.000	45.520	37.930
3	12:40:13	68.449%	11.470	466.200	T 5611.000	1969.000	480.700	T 5031.000	4728.000	69.544%	0.000	46.510	39.230
x		69.531%	11.310	459.200	T 5586.000	1965.000	478.200	T 4982.000	4724.000	70.545%	0.000	45.930	38.450
σ		1.389%	0.205	6.332	T 23.100	4.674	5.349	T 43.750	3.241	0.966%	0.000	0.518	0.693
%RSD		1.998	1.810	1.379	T 0.414	0.238	1.119	T 0.878	0.069	1.370	0.000	1.127	1.803

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:39:29	12.940	18.560	T 2085.000	9.415	21.160	51.310	194.900	20.010	0.324	40.890	0.000	0.000
2	12:39:51	12.520	19.060	T 2106.000	9.775	20.020	50.020	195.400	20.630	0.229	40.650	0.000	0.000
3	12:40:13	11.890	19.410	T 2153.000	9.907	21.500	51.990	202.100	21.230	0.180	40.300	0.000	0.000
x		12.450	19.010	T 2114.000	9.699	20.890	51.110	197.400	20.620	0.244	40.610	0.000	0.000
σ		0.529	0.427	T 34.950	0.255	0.774	1.000	4.045	0.609	0.073	0.294	0.000	0.000
%RSD		4.252	2.245	T 1.653	2.624	3.703	1.956	2.049	2.954	29.780	0.723	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:39:29	46.920	75.219%	99.640	10.920	-1.902	9.871	73.743%	0.000	19.690	19.020	93.040	72.872%
2	12:39:51	47.330	75.297%	101.400	10.610	1.839	9.551	74.475%	0.000	19.400	18.720	94.280	72.799%
3	12:40:13	47.550	75.203%	102.500	10.610	2.345	9.476	74.190%	0.000	19.610	19.220	92.880	73.286%
x		47.270	75.240%	101.200	10.710	0.761	9.633	74.136%	0.000	19.560	18.980	93.400	72.985%
σ		0.321	0.050%	1.453	0.176	2.320	0.210	0.369%	0.000	0.148	0.252	0.767	0.263%
%RSD		0.679	0.067	1.436	1.642	304.900	2.177	0.498	0.000	0.756	1.329	0.821	0.360

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:39:29	18.440	17.430	8.784	74.392%	0.000	12.820	10.620
2	12:39:51	18.730	18.010	9.150	73.357%	0.000	13.610	10.880
3	12:40:13	19.170	18.070	9.176	73.556%	0.000	14.610	10.950
x		18.780	17.840	9.037	73.768%	0.000	13.680	10.810
σ		0.366	0.355	0.219	0.549%	0.000	0.898	0.174

%RSD	1.951	1.992	2.425	0.744	0.000	6.562	1.612	

200-35736-A-14-B MS 10/19/2016 12:44:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:48	68.499%	11.440	467.900	T 5756.000	2032.000	488.900	T 5180.000	4847.000	68.762%	0.000	46.770	39.120
2	12:45:10	68.504%	11.000	457.300	T 5624.000	1981.000	477.400	T 5005.000	4824.000	70.442%	0.000	47.280	39.120
3	12:45:32	68.448%	11.620	455.000	T 5607.000	2025.000	486.900	T 5101.000	4844.000	69.811%	0.000	47.790	38.630
x		68.484%	11.360	460.100	T 5662.000	2013.000	484.400	T 5096.000	4838.000	69.672%	0.000	47.280	38.960
σ		0.031%	0.319	6.897	T 81.810	27.520	6.152	T 87.710	12.610	0.848%	0.000	0.510	0.281
%RSD		0.045	2.806	1.499	T 1.445	1.367	1.270	T 1.721	0.261	1.217	0.000	1.079	0.721

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:48	10.770	19.240	T 2178.000	9.766	21.840	52.310	202.500	19.940	0.245	39.910	0.000	0.000
2	12:45:10	9.670	19.260	T 2146.000	10.070	21.530	51.580	201.800	20.330	0.222	41.740	0.000	0.000
3	12:45:32	7.828	19.490	T 2158.000	9.922	20.890	51.240	205.000	20.230	0.177	42.720	0.000	0.000
x		9.424	19.330	T 2161.000	9.919	21.420	51.710	203.100	20.170	0.215	41.460	0.000	0.000
σ		1.488	0.138	T 16.210	0.152	0.482	0.545	1.670	0.201	0.034	1.426	0.000	0.000
%RSD		15.790	0.712	T 0.750	1.529	2.249	1.054	0.822	0.995	16.050	3.439	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:48	48.400	73.911%	103.300	10.930	-0.855	9.515	71.435%	0.000	19.810	19.800	94.050	71.285%
2	12:45:10	48.630	72.565%	105.200	11.370	0.214	9.940	72.080%	0.000	19.800	19.970	96.570	72.013%
3	12:45:32	48.950	74.589%	105.000	11.030	-2.629	10.230	72.230%	0.000	20.200	20.140	96.850	71.332%
x		48.660	73.688%	104.500	11.110	-1.090	9.893	71.915%	0.000	19.930	19.970	95.820	71.543%
σ		0.274	1.030%	1.032	0.232	1.436	0.357	0.422%	0.000	0.227	0.166	1.541	0.407%
%RSD		0.564	1.398	0.988	2.088	131.700	3.613	0.587	0.000	1.140	0.831	1.609	0.570

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:48	39.880	17.870	9.112	73.926%	0.000	17.030	10.550
2	12:45:10	40.450	18.300	9.359	73.398%	0.000	17.710	10.970
3	12:45:32	41.180	18.210	9.416	73.987%	0.000	17.950	11.170
x		40.500	18.130	9.295	73.770%	0.000	17.560	10.900
σ		0.650	0.228	0.162	0.324%	0.000	0.478	0.317
%RSD		1.604	1.258	1.740	0.439	0.000	2.720	2.910

200-35736-A-14-C MSD 10/19/2016 12:49:46 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:08	69.084%	10.870	447.700	T 5520.000	1941.000	473.300	T 4975.000	4612.000	69.820%	0.000	46.100	37.940
2	12:50:30	68.521%	12.050	441.200	T 5468.000	1938.000	473.400	T 4971.000	4714.000	70.495%	0.000	45.310	37.750
3	12:50:52	67.230%	12.170	464.800	T 5672.000	1993.000	486.900	T 5074.000	4740.000	68.345%	0.000	46.620	39.050
x		68.278%	11.690	451.300	T 5553.000	1957.000	477.900	T 5007.000	4689.000	69.553%	0.000	46.010	38.250
σ		0.950%	0.719	12.200	T 106.000	30.740	7.804	T 58.390	67.710	1.099%	0.000	0.663	0.704
%RSD		1.392	6.148	2.703	T 1.909	1.571	1.633	T 1.166	1.444	1.581	0.000	1.440	1.840

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:08	9.024	18.630	T 2093.000	9.555	19.970	49.630	193.600	20.590	0.101	41.560	0.000	0.000
2	12:50:30	9.499	19.140	T 2115.000	9.766	21.480	49.430	196.700	20.820	0.107	41.610	0.000	0.000
3	12:50:52	8.350	19.060	T 2155.000	10.030	20.820	51.590	201.800	19.660	0.204	39.350	0.000	0.000
x		8.958	18.940	T 2121.000	9.782	20.760	50.220	197.400	20.350	0.137	40.840	0.000	0.000
σ		0.577	0.275	T 31.470	0.235	0.760	1.193	4.108	0.613	0.058	1.292	0.000	0.000
%RSD		6.446	1.449	T 1.484	2.407	3.660	2.376	2.081	3.011	42.010	3.163	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:08	46.300	73.148%	100.500	10.600	-0.902	9.612	72.775%	0.000	18.940	18.820	93.300	71.898%
2	12:50:30	46.770	73.528%	101.300	10.960	-2.324	10.070	72.433%	0.000	19.320	19.150	95.240	71.520%
3	12:50:52	47.180	73.238%	102.200	10.790	-1.937	10.180	72.833%	0.000	19.240	19.180	94.460	71.740%
x		46.750	73.305%	101.400	10.780	-1.721	9.955	72.680%	0.000	19.170	19.050	94.330	71.719%
σ		0.441	0.198%	0.833	0.178	0.735	0.301	0.216%	0.000	0.201	0.200	0.974	0.189%
%RSD		0.944	0.271	0.822	1.654	42.710	3.021	0.298	0.000	1.050	1.051	1.032	0.264

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:08	38.850	17.400	8.779	74.344%	0.000	16.860	10.300
2	12:50:30	40.850	17.510	9.027	74.741%	0.000	17.420	10.480
3	12:50:52	40.620	17.570	8.898	75.056%	0.000	17.830	10.630
x		40.100	17.490	8.901	74.714%	0.000	17.370	10.470
σ		1.090	0.089	0.124	0.357%	0.000	0.487	0.165
%RSD		2.719	0.510	1.392	0.478	0.000	2.803	1.577

CCV 10/19/2016 12:55:04 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	64.735%	720.100	287.900	T 11030.000	T 32500.000	T 32760.000	T 10060.000	28700.000	64.154%	0.000	T 1286.000	379.100
2	12:55:48	64.969%	711.300	282.000	T 10880.000	T 32670.000	T 32760.000	T 9886.000	28420.000	63.315%	0.000	T 1283.000	381.900
3	12:56:10	62.746%	728.500	295.500	T 10900.000	T 33250.000	T 33140.000	T 9972.000	28850.000	62.556%	0.000	T 1313.000	386.900
x		64.150%	115.190%	115.385%	T 109.351%	T 109.350%	T 109.632%	T 99.723%	95.526%	63.341%	0.000	T 103.528%	95.661%
σ		1.222%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.799%	0.000	T n/a	n/a
%RSD		1.904	1.196	2.344	T 0.771	T 1.199	T 0.672	T 0.871	0.766	1.262	0.000	T 1.288	1.029

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	17.970	T 1285.000	T 31320.000	478.700	1259.000	1231.000	1285.000	207.200	-0.313	217.800	0.000	0.000
2	12:55:48	20.510	T 1301.000	T 31720.000	485.200	1287.000	1249.000	1299.000	206.600	-0.496	220.700	0.000	0.000
3	12:56:10	16.610	T 1324.000	T 31970.000	483.500	1272.000	1265.000	1320.000	212.200	-0.517	218.700	0.000	0.000
x		18.360	T 104.270%	T 105.562%	96.500%	101.808%	99.848%	104.134%	104.348%	-0.442	109.547%	0.000	0.000
σ		1.983	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.112	n/a	0.000	0.000
%RSD		10.800	T 1.477	T 1.037	0.696	1.092	1.352	1.355	1.476	25.420	0.677	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	187.100	69.055%	1218.000	105.500	14.240	199.600	68.814%	0.000	242.800	240.700	1167.000	68.682%
2	12:55:48	186.400	69.426%	1248.000	105.500	3.673	203.900	68.403%	0.000	247.100	242.300	1178.000	68.163%
3	12:56:10	188.200	67.169%	1292.000	104.700	5.830	202.100	68.076%	0.000	246.300	244.100	1192.000	69.342%
x		187.200	68.550%	100.210%	105.244%	7.913	100.942%	68.431%	0.000	245.400	96.947%	94.327%	68.729%
σ		0.913	1.210%	n/a	n/a	5.582	n/a	0.370%	0.000	2.284	n/a	n/a	0.591%
%RSD		0.488	1.765	2.987	0.413	70.540	1.071	0.541	0.000	0.931	0.691	1.083	0.859

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	22.220	177.600	T 1227.000	70.555%	0.000	21.330	10.120
2	12:55:48	23.310	175.100	T 1240.000	71.576%	0.000	21.840	9.846
3	12:56:10	23.220	181.700	T 1238.000	69.767%	0.000	22.400	10.180
x		114.591%	89.070%	T 98.799%	70.633%	0.000	109.277%	100.503%
σ		n/a	n/a	T n/a	0.907%	0.000	n/a	n/a
%RSD		2.636	1.861	T 0.565	1.284	0.000	2.456	1.788

CCB 10/19/2016 01:00:48 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:10	67.537%	0.121	6.565	19.510	4.471	2.776	2.650	-6.447	67.852%	0.000	-0.030	-0.231
2	13:01:32	67.425%	0.166	5.993	21.230	3.374	2.721	3.624	-7.667	67.319%	0.000	0.075	-0.262
3	13:01:54	67.165%	0.011	6.816	24.880	4.570	2.557	1.887	-6.215	66.560%	0.000	0.003	-0.304
x		67.376%	0.099	6.458	21.870	4.138	2.685	2.720	-6.776	67.244%	0.000	0.016	-0.266
σ		0.191%	0.080	0.422	2.743	0.664	0.114	0.870	0.780	0.649%	0.000	0.054	0.036
%RSD		0.283	80.280	6.531	12.540	16.040	4.241	31.990	11.520	0.966	0.000	342.700	13.680

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:10	10.480	0.066	6.340	0.021	0.110	0.088	0.152	-0.222	0.327	-0.815	0.000	0.000
2	13:01:32	10.510	0.048	6.679	0.028	0.018	0.018	0.388	-0.233	0.331	-0.852	0.000	0.000
3	13:01:54	10.670	0.061	8.142	0.024	0.102	0.120	0.174	-0.254	0.352	-1.246	0.000	0.000
x		10.550	0.058	7.054	0.024	0.076	0.075	0.238	-0.236	0.337	-0.971	0.000	0.000
σ		0.101	0.010	0.958	0.003	0.051	0.053	0.130	0.017	0.013	0.239	0.000	0.000
%RSD		0.960	16.410	13.580	13.620	66.700	69.670	54.740	7.045	3.977	24.620	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:10	0.021	71.422%	2.192	0.001	-1.519	-0.005	71.123%	0.000	0.256	0.248	0.065	69.488%
2	13:01:32	0.030	71.892%	2.247	-0.003	-1.767	0.006	70.340%	0.000	0.325	0.291	0.066	69.404%

3	13:01:54	0.023	73.813%	2.007	-0.001	-1.052	-0.034	71.931%	0.000	0.272	0.296	0.097	71.782%
x		0.025	72.376%	2.148	-0.001	-1.446	-0.011	71.132%	0.000	0.284	0.279	0.076	70.225%
σ		0.005	1.267%	0.126	0.002	0.363	0.021	0.795%	0.000	0.036	0.026	0.019	1.349%
%RSD		18.730	1.751	5.855	153.100	25.120	192.900	1.118	0.000	12.790	9.457	24.510	1.921

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:10	0.118	0.137	0.061	72.610%	0.000	-0.067	-0.011
2	13:01:32	0.086	0.145	0.051	72.637%	0.000	-0.050	-0.008
3	13:01:54	0.092	0.149	0.048	72.850%	0.000	-0.058	-0.008
x		0.099	0.144	0.053	72.699%	0.000	-0.058	-0.009
σ		0.017	0.006	0.007	0.131%	0.000	0.008	0.002
%RSD		17.320	4.292	13.350	0.181	0.000	14.160	20.030

CCVL 10/19/2016 01:06:06 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:27	68.163%	1.237	51.990	528.100	205.000	55.610	464.200	500.500	68.825%	0.000	4.850	3.678
2	13:06:49	69.120%	1.198	49.030	T 578.200	201.400	55.400	458.400	486.200	68.092%	0.000	4.688	3.632
3	13:07:11	69.581%	1.662	48.960	535.100	206.400	56.650	463.100	509.200	66.626%	0.000	4.507	3.865
x		68.955%	136.583%	124.985%	T 109.428%	102.132%	111.771%	92.386%	99.730%	67.848%	0.000	93.632%	93.122%
σ		0.724%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.119%	0.000	n/a	n/a
%RSD		1.049	18.840	3.461	T 4.960	1.265	1.200	0.667	2.337	1.650	0.000	3.668	3.314

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:27	12.490	2.253	194.200	1.059	2.329	5.763	21.590	2.142	0.350	3.126	0.000	0.000
2	13:06:49	12.770	2.070	198.600	1.085	2.252	5.505	23.190	2.270	0.338	4.334	0.000	0.000
3	13:07:11	13.230	2.195	207.700	1.211	2.751	5.756	23.360	1.895	0.379	3.888	0.000	0.000
x		12.830	108.640%	100.093%	111.844%	122.187%	113.500%	113.585%	105.115%	0.356	94.562%	0.000	0.000
σ		0.373	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.021	n/a	0.000	0.000
%RSD		2.904	4.300	3.431	7.279	10.980	2.594	4.303	9.077	5.953	16.150	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:27	4.590	71.739%	10.560	1.194	-1.617	1.089	70.668%	0.000	1.962	2.034	8.533	68.530%
2	13:06:49	4.795	71.586%	11.100	1.117	-0.458	0.846	70.021%	0.000	2.078	2.079	10.220	69.237%
3	13:07:11	4.847	71.230%	11.160	1.126	-0.913	1.047	70.359%	0.000	2.079	2.122	9.497	69.274%
x		94.885%	71.518%	109.381%	114.582%	-0.996	99.411%	70.349%	0.000	2.040	103.923%	94.173%	69.013%
σ		n/a	0.261%	n/a	n/a	0.584	n/a	0.324%	0.000	0.067	n/a	n/a	0.419%
%RSD		2.862	0.365	3.042	3.691	58.650	13.050	0.460	0.000	3.295	2.136	9.000	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:27	1.867	1.852	1.085	72.302%	0.000	0.808	1.071
2	13:06:49	2.082	1.819	1.034	72.542%	0.000	0.858	1.087
3	13:07:11	2.023	1.796	1.091	73.754%	0.000	0.857	1.036
x		99.530%	91.116%	106.988%	72.866%	0.000	42.039%	106.488%
σ		n/a	n/a	n/a	0.779%	0.000	n/a	n/a

%RSD		5.571	1.528	2.893	1.069	0.000	3.408	2.468

MB 200-110288/1-B 10/19/2016 01:11:51 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:13	71.184%	-0.035	5.363	309.000	98.610	14.800	22.770	460.300	69.704%	0.000	0.566	2.614
2	13:12:35	70.655%	-0.014	7.158	310.600	97.580	14.680	24.870	444.200	69.380%	0.000	0.242	2.581
3	13:12:57	71.198%	-0.056	6.753	317.400	101.500	15.750	25.120	454.500	68.740%	0.000	0.480	2.793
x		71.012%	-0.035	6.424	312.300	99.230	15.080	24.250	453.000	69.275%	0.000	0.429	2.662
σ		0.310%	0.021	0.942	4.476	2.042	0.588	1.291	8.145	0.490%	0.000	0.168	0.114
%RSD		0.436	60.910	14.660	1.433	2.058	3.900	5.321	1.798	0.708	0.000	39.110	4.283

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:13	7.779	0.590	22.600	0.037	0.285	0.616	1.256	-0.079	0.236	-0.178	0.000	0.000
2	13:12:35	8.302	0.571	22.010	0.016	0.327	0.501	1.204	-0.118	0.246	-0.402	0.000	0.000
3	13:12:57	7.853	0.684	20.400	0.023	0.300	0.668	1.447	-0.029	0.242	-1.139	0.000	0.000
x		7.978	0.615	21.670	0.025	0.304	0.595	1.302	-0.075	0.241	-0.573	0.000	0.000
σ		0.283	0.061	1.139	0.010	0.021	0.086	0.128	0.044	0.005	0.503	0.000	0.000
%RSD		3.548	9.872	5.254	40.970	6.929	14.400	9.804	58.850	2.115	87.680	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:13	1.423	72.968%	0.522	0.005	-1.645	0.013	72.248%	0.000	0.067	0.050	0.799	71.054%
2	13:12:35	1.381	73.583%	0.532	-0.003	-1.055	-0.008	71.670%	0.000	0.068	0.063	0.851	70.515%
3	13:12:57	1.331	73.692%	0.520	-0.004	-0.597	-0.070	72.395%	0.000	0.064	0.083	0.875	71.882%
x		1.378	73.414%	0.525	-0.001	-1.099	-0.022	72.104%	0.000	0.067	0.066	0.842	71.150%
σ		0.046	0.390%	0.007	0.005	0.525	0.043	0.383%	0.000	0.002	0.016	0.039	0.689%
%RSD		3.323	0.532	1.248	584.300	47.800	199.500	0.531	0.000	2.784	25.080	4.619	0.968

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:13	0.062	0.033	0.014	72.747%	0.000	6.795	-0.005
2	13:12:35	0.087	0.036	0.023	73.939%	0.000	5.088	-0.010
3	13:12:57	0.085	0.022	0.033	73.727%	0.000	3.915	-0.003
x		0.078	0.030	0.023	73.471%	0.000	5.266	-0.006
σ		0.014	0.007	0.010	0.636%	0.000	1.448	0.004
%RSD		18.070	23.330	41.590	0.866	0.000	27.500	63.020

LCS 200-110288/2-B 10/19/2016 01:17:34 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:56	69.293%	11.290	477.200	T 5839.000	2044.000	487.800	T 5003.000	5075.000	69.309%	0.000	46.350	41.110
2	13:18:17	67.512%	11.410	484.200	T 5862.000	2115.000	496.500	T 5121.000	5148.000	67.110%	0.000	47.480	43.230
3	13:18:39	69.119%	11.830	462.600	T 5797.000	2038.000	489.600	T 5073.000	5156.000	68.452%	0.000	45.080	41.820
x		68.641%	11.510	474.700	T 5833.000	2066.000	491.300	T 5066.000	5126.000	68.290%	0.000	46.300	42.060
σ		0.982%	0.287	11.040	T 32.910	42.790	4.617	T 59.540	44.540	1.108%	0.000	1.201	1.078
%RSD		1.431	2.496	2.325	T 0.564	2.071	0.940	T 1.175	0.869	1.623	0.000	2.594	2.564

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:56	5.806	18.900	T 2112.000	9.753	20.710	50.130	190.300	20.540	0.026	40.570	0.000	0.000
2	13:18:17	6.849	19.330	T 2157.000	10.010	21.570	51.880	197.100	20.620	0.009	40.280	0.000	0.000
3	13:18:39	7.011	19.360	T 2137.000	9.738	20.510	50.250	196.400	20.150	0.024	39.320	0.000	0.000
x		6.555	19.190	T 2136.000	9.834	20.930	50.750	194.600	20.440	0.020	40.060	0.000	0.000
σ		0.654	0.258	T 22.770	0.155	0.563	0.981	3.757	0.249	0.009	0.658	0.000	0.000
%RSD		9.972	1.344	T 1.066	1.574	2.692	1.934	1.931	1.217	45.630	1.642	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:56	49.770	72.721%	102.900	10.960	-0.159	10.100	69.507%	0.000	19.000	19.020	91.430	68.844%
2	13:18:17	48.780	70.960%	102.900	10.750	-1.527	9.710	69.473%	0.000	19.600	19.070	94.300	68.582%
3	13:18:39	49.300	71.892%	105.000	10.480	0.444	9.946	70.198%	0.000	19.280	19.000	92.860	70.090%
x		49.280	71.858%	103.600	10.730	-0.414	9.920	69.726%	0.000	19.290	19.030	92.860	69.172%
σ		0.494	0.881%	1.218	0.236	1.010	0.198	0.409%	0.000	0.300	0.038	1.434	0.806%
%RSD		1.003	1.226	1.176	2.197	244.000	1.992	0.587	0.000	1.553	0.201	1.544	1.165

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:56	40.410	17.700	8.896	72.562%	0.000	18.220	10.580
2	13:18:17	40.360	18.570	9.142	70.507%	0.000	19.370	11.140
3	13:18:39	41.540	18.160	9.219	71.754%	0.000	19.380	11.020
x		40.770	18.150	9.085	71.608%	0.000	18.990	10.920
σ		0.666	0.432	0.169	1.035%	0.000	0.664	0.293
%RSD		1.634	2.382	1.859	1.446	0.000	3.497	2.689

200-35715-A-2-B 10/19/2016 01:23:27 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:23:49	68.955%	0.031	5.212	234.800	126.300	9.866	35.490	534.400	67.657%	0.000	0.595	2.053
2	13:24:10	67.038%	-0.011	5.899	221.600	125.500	9.291	30.780	547.300	69.535%	0.000	0.441	2.119
3	13:24:32	68.382%	-0.056	4.220	236.500	129.300	9.626	30.430	524.900	67.812%	0.000	0.361	2.142
x		68.125%	-0.012	5.110	231.000	127.000	9.595	32.230	535.500	68.335%	0.000	0.466	2.105
σ		0.984%	0.043	0.844	8.143	2.026	0.289	2.825	11.270	1.043%	0.000	0.118	0.046
%RSD		1.445	359.300	16.510	3.525	1.595	3.012	8.764	2.104	1.526	0.000	25.450	2.204

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:23:49	6.901	0.776	16.760	0.025	0.387	1.855	1.571	-0.208	0.202	-0.647	0.000	0.000
2	13:24:10	6.942	0.744	14.030	0.037	0.436	1.505	1.491	-0.226	0.217	-0.832	0.000	0.000
3	13:24:32	7.111	0.685	15.490	0.040	0.386	1.875	1.522	0.179	0.183	-0.841	0.000	0.000
x		6.985	0.735	15.430	0.034	0.403	1.745	1.528	-0.085	0.201	-0.773	0.000	0.000
σ		0.111	0.046	1.364	0.008	0.028	0.208	0.040	0.229	0.017	0.110	0.000	0.000
%RSD		1.591	6.274	8.844	22.540	7.064	11.940	2.622	269.200	8.521	14.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:23:49	1.782	72.013%	0.302	0.020	-1.946	0.029	69.394%	0.000	0.117	0.097	1.517	70.101%
2	13:24:10	1.806	71.997%	0.203	0.009	-0.923	-0.060	70.252%	0.000	0.087	0.076	1.510	68.975%
3	13:24:32	1.812	73.199%	0.198	0.011	-0.553	-0.073	70.941%	0.000	0.104	0.076	1.734	71.138%
x		1.800	72.403%	0.234	0.014	-1.141	-0.035	70.196%	0.000	0.103	0.083	1.587	70.071%
σ		0.016	0.689%	0.059	0.006	0.722	0.056	0.775%	0.000	0.015	0.012	0.127	1.082%
%RSD		0.870	0.952	25.160	42.950	63.280	160.500	1.104	0.000	14.660	14.240	8.006	1.544

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:23:49	0.056	0.039	0.124	71.432%	0.000	1.494	0.010
2	13:24:10	0.069	0.021	0.129	73.720%	0.000	1.267	-0.004
3	13:24:32	0.023	0.011	0.119	72.178%	0.000	1.073	-0.003
x		0.049	0.024	0.124	72.443%	0.000	1.278	0.001
σ		0.024	0.014	0.005	1.167%	0.000	0.211	0.008
%RSD		47.750	61.140	4.034	1.611	0.000	16.480	790.000

200-35730-A-2-B 10/19/2016 01:29:10 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:31	69.015%	0.009	4.343	252.300	121.600	14.550	30.340	519.800	70.508%	0.000	0.312	3.881
2	13:29:53	70.546%	-0.056	4.364	248.500	125.500	14.220	31.080	537.300	69.904%	0.000	0.268	4.153
3	13:30:15	69.407%	0.030	3.919	250.300	123.500	14.670	28.720	524.100	69.953%	0.000	0.552	4.353
x		69.656%	-0.005	4.208	250.400	123.500	14.480	30.050	527.100	70.122%	0.000	0.378	4.129
σ		0.795%	0.045	0.251	1.870	1.939	0.230	1.204	9.150	0.336%	0.000	0.153	0.237
%RSD		1.142	822.000	5.967	0.747	1.570	1.590	4.008	1.736	0.479	0.000	40.540	5.739

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:31	8.232	0.653	21.810	0.026	0.420	3.253	1.529	-0.323	0.260	-0.945	0.000	0.000
2	13:29:53	8.600	0.711	23.140	0.026	0.513	3.031	1.790	0.162	0.205	-0.154	0.000	0.000
3	13:30:15	7.875	0.733	23.030	0.024	0.533	2.871	1.653	0.083	0.212	-1.005	0.000	0.000
x		8.236	0.699	22.660	0.026	0.489	3.052	1.658	-0.026	0.226	-0.702	0.000	0.000
σ		0.362	0.041	0.740	0.001	0.060	0.192	0.131	0.260	0.030	0.475	0.000	0.000
%RSD		4.401	5.872	3.265	4.349	12.340	6.274	7.873	995.000	13.160	67.710	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:31	1.782	72.623%	0.189	0.005	-0.304	-0.109	71.075%	0.000	0.078	0.070	3.521	69.499%
2	13:29:53	1.840	71.801%	0.277	0.005	-1.294	-0.023	70.981%	0.000	0.071	0.080	3.389	70.567%

3	13:30:15	1.861	72.447%	0.239	0.001	-1.144	-0.034	70.809%	0.000	0.052	0.066	3.522	71.133%
x		1.827	72.291%	0.235	0.004	-0.914	-0.055	70.955%	0.000	0.067	0.072	3.477	70.400%
σ		0.041	0.433%	0.044	0.002	0.534	0.047	0.135%	0.000	0.013	0.007	0.076	0.830%
%RSD		2.242	0.599	18.730	66.520	58.370	84.790	0.190	0.000	19.910	9.700	2.199	1.179

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:31	0.050	-0.003	0.286	73.042%	0.000	0.381	-0.009
2	13:29:53	0.045	-0.004	0.322	71.603%	0.000	0.404	-0.009
3	13:30:15	0.034	0.001	0.335	72.542%	0.000	0.349	-0.008
x		0.043	-0.002	0.314	72.395%	0.000	0.378	-0.008
σ		0.008	0.003	0.025	0.730%	0.000	0.027	0.001
%RSD		19.450	139.800	7.998	1.009	0.000	7.193	6.531

200-35745-A-5-B 10/19/2016 01:34:53 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:15	71.259%	-0.035	2.479	268.100	113.000	9.159	31.920	478.600	71.126%	0.000	0.593	2.066
2	13:35:36	70.945%	0.007	3.389	280.100	123.000	9.488	31.020	478.300	70.148%	0.000	-0.180	1.826
3	13:35:58	68.754%	-0.034	2.642	265.200	113.000	8.833	30.070	475.200	71.406%	0.000	0.314	1.764
x		70.319%	-0.021	2.837	271.200	116.300	9.160	31.010	477.300	70.893%	0.000	0.242	1.885
σ		1.365%	0.024	0.485	7.909	5.798	0.327	0.925	1.896	0.660%	0.000	0.392	0.160
%RSD		1.941	117.700	17.110	2.917	4.984	3.574	2.984	0.397	0.931	0.000	161.800	8.468

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:15	9.389	0.951	23.150	0.034	0.270	1.372	1.661	-0.021	0.252	-0.588	0.000	0.000
2	13:35:36	10.510	0.963	23.460	0.036	0.234	1.819	1.812	0.214	0.249	-0.585	0.000	0.000
3	13:35:58	9.178	1.044	20.680	0.036	0.346	1.859	2.048	0.130	0.228	0.138	0.000	0.000
x		9.694	0.986	22.430	0.035	0.283	1.683	1.840	0.108	0.243	-0.345	0.000	0.000
σ		0.717	0.051	1.524	0.001	0.057	0.270	0.195	0.119	0.013	0.418	0.000	0.000
%RSD		7.400	5.128	6.795	3.763	20.250	16.060	10.600	110.500	5.431	121.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:15	1.651	73.183%	0.161	0.030	-1.672	0.016	71.082%	0.000	0.048	0.059	1.028	69.598%
2	13:35:36	1.685	72.882%	0.112	0.019	-1.049	-0.042	72.120%	0.000	0.060	0.066	1.091	73.019%
3	13:35:58	1.691	74.287%	0.098	0.038	-1.026	-0.044	71.739%	0.000	0.077	0.050	1.276	72.484%
x		1.676	73.451%	0.123	0.029	-1.249	-0.023	71.647%	0.000	0.061	0.058	1.132	71.700%
σ		0.022	0.740%	0.033	0.009	0.366	0.034	0.525%	0.000	0.015	0.008	0.129	1.840%
%RSD		1.295	1.007	26.690	32.550	29.340	144.500	0.733	0.000	23.770	14.110	11.420	2.566

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:15	0.035	0.004	0.107	72.644%	0.000	0.203	-0.007
2	13:35:36	0.038	0.000	0.103	73.802%	0.000	0.159	-0.008
3	13:35:58	0.046	0.004	0.090	73.754%	0.000	0.190	-0.006
x		0.040	0.003	0.100	73.400%	0.000	0.184	-0.007
σ		0.005	0.002	0.009	0.655%	0.000	0.023	0.001

%RSD		13.540	71.580	8.656	0.893	0.000	12.520	17.910

200-35754-A-2-B 10/19/2016 01:40:37 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:40:59	75.217%	-0.036	2.613	223.700	134.100	14.860	31.790	555.800	72.885%	0.000	-0.183	2.689
2	13:41:20	74.953%	-0.036	2.458	231.800	133.500	15.370	29.990	575.500	73.152%	0.000	0.372	2.679
3	13:41:42	72.385%	-0.056	2.708	227.700	138.600	15.060	31.930	581.700	72.943%	0.000	0.267	2.651
x		74.185%	-0.043	2.593	227.700	135.400	15.100	31.240	571.000	72.994%	0.000	0.152	2.673
σ		1.564%	0.011	0.126	4.064	2.760	0.257	1.079	13.520	0.140%	0.000	0.295	0.020
%RSD		2.109	27.000	4.876	1.785	2.038	1.700	3.455	2.368	0.192	0.000	193.900	0.736

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:40:59	15.370	0.964	23.840	0.103	0.377	2.465	2.505	-0.068	0.404	-0.296	0.000	0.000
2	13:41:20	14.530	0.913	24.290	0.091	0.356	2.500	1.428	0.033	0.394	-0.875	0.000	0.000
3	13:41:42	14.420	0.851	24.070	0.079	0.396	2.712	1.405	-0.097	0.394	-0.353	0.000	0.000
x		14.780	0.909	24.070	0.091	0.376	2.559	1.779	-0.044	0.398	-0.508	0.000	0.000
σ		0.522	0.056	0.229	0.012	0.020	0.134	0.629	0.068	0.006	0.319	0.000	0.000
%RSD		3.535	6.197	0.950	12.860	5.210	5.220	35.330	154.600	1.473	62.840	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:40:59	1.849	74.287%	0.187	0.011	-1.040	-0.043	72.758%	0.000	0.071	0.107	1.391	70.400%
2	13:41:20	1.814	75.536%	0.194	0.000	-1.398	-0.023	73.424%	0.000	0.106	0.102	1.433	72.510%
3	13:41:42	1.978	76.688%	0.198	0.008	-1.476	-0.008	73.218%	0.000	0.120	0.110	1.151	73.495%
x		1.880	75.504%	0.193	0.006	-1.304	-0.025	73.133%	0.000	0.099	0.106	1.325	72.135%
σ		0.086	1.201%	0.005	0.005	0.233	0.017	0.341%	0.000	0.025	0.004	0.152	1.582%
%RSD		4.591	1.590	2.822	84.160	17.840	69.950	0.467	0.000	25.450	3.464	11.470	2.193

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:40:59	0.059	0.013	0.142	74.063%	0.000	0.461	-0.005
2	13:41:20	0.084	0.003	0.152	73.042%	0.000	0.439	-0.006
3	13:41:42	0.058	-0.004	0.143	74.563%	0.000	0.367	-0.009
x		0.067	0.004	0.146	73.889%	0.000	0.423	-0.007
σ		0.014	0.009	0.005	0.775%	0.000	0.049	0.002
%RSD		21.510	225.400	3.641	1.049	0.000	11.650	31.610

200-35754-A-2-B SD@5 10/19/2016 01:46:21 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:43	69.385%	-0.013	0.683	66.390	27.120	3.102	5.222	100.600	71.028%	0.000	-0.374	0.573
2	13:47:05	69.938%	-0.034	0.557	57.430	28.440	3.136	4.790	112.300	71.943%	0.000	-0.343	0.456
3	13:47:26	69.080%	-0.013	2.136	67.410	28.190	3.108	5.416	109.000	70.291%	0.000	-0.534	0.537
x		69.468%	-0.020	1.125	63.740	27.910	3.115	5.143	107.300	71.087%	0.000	-0.417	0.522
σ		0.435%	0.013	0.877	5.490	0.701	0.018	0.320	5.996	0.828%	0.000	0.102	0.060
%RSD		0.626	63.200	77.940	8.613	2.512	0.586	6.226	5.587	1.165	0.000	24.540	11.410

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:43	17.220	0.148	10.510	0.006	0.153	0.444	0.213	-0.110	0.440	-1.108	0.000	0.000
2	13:47:05	16.720	0.137	7.404	0.012	0.150	0.457	0.299	0.037	0.431	-1.267	0.000	0.000
3	13:47:26	17.660	0.160	10.510	-0.002	0.095	0.475	0.412	0.083	0.425	-0.664	0.000	0.000
x		17.200	0.148	9.473	0.005	0.133	0.459	0.308	0.003	0.432	-1.013	0.000	0.000
σ		0.469	0.012	1.792	0.007	0.033	0.016	0.100	0.100	0.008	0.312	0.000	0.000
%RSD		2.725	7.813	18.920	133.900	24.540	3.404	32.370	3051.000	1.745	30.830	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:43	0.411	74.765%	0.008	0.003	-0.919	-0.061	70.534%	0.000	0.096	0.098	0.248	70.080%
2	13:47:05	0.398	74.397%	0.049	-0.006	-1.269	-0.033	72.355%	0.000	0.104	0.071	0.175	70.557%
3	13:47:26	0.382	75.113%	0.044	0.003	-1.592	-0.007	71.278%	0.000	0.085	0.072	0.189	70.509%
x		0.397	74.758%	0.034	0.000	-1.260	-0.034	71.389%	0.000	0.095	0.080	0.204	70.382%
σ		0.014	0.358%	0.023	0.005	0.336	0.027	0.916%	0.000	0.010	0.015	0.039	0.263%
%RSD		3.614	0.479	66.950	8370.000	26.700	78.960	1.283	0.000	10.160	18.690	19.090	0.373

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:43	0.006	-0.016	0.016	72.473%	0.000	-0.169	-0.013
2	13:47:05	0.024	-0.007	0.017	74.206%	0.000	-0.174	-0.012
3	13:47:26	0.013	-0.012	0.007	73.144%	0.000	-0.159	-0.014
x		0.014	-0.012	0.013	73.275%	0.000	-0.167	-0.013
σ		0.009	0.004	0.005	0.874%	0.000	0.008	0.001
%RSD		60.620	37.740	41.560	1.193	0.000	4.714	7.610

200-35754-A-2-B PDS 10/19/2016 01:52:06 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:27	68.841%	10.510	476.600	T 5593.000	2107.000	483.000	T 4977.000	5032.000	69.011%	0.000	44.890	39.310
2	13:52:49	70.463%	10.360	452.900	T 5654.000	2119.000	490.500	T 4980.000	5197.000	67.701%	0.000	45.670	40.230
3	13:53:11	69.285%	10.920	458.800	T 5561.000	2063.000	486.000	T 4953.000	5071.000	69.042%	0.000	45.410	39.650
x		69.530%	10.600	462.800	T 5603.000	2096.000	486.500	T 4970.000	5100.000	68.585%	0.000	45.320	39.730
σ		0.838%	0.292	12.280	T 47.390	29.820	3.776	T 14.910	86.420	0.766%	0.000	0.398	0.466
%RSD		1.206	2.751	2.655	T 0.846	1.423	0.776	T 0.300	1.694	1.116	0.000	0.878	1.172

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:27	12.210	18.930	T 2092.000	9.692	21.000	51.340	175.600	18.130	0.249	33.370	0.000	0.000
2	13:52:49	10.970	19.400	T 2145.000	9.737	21.220	51.250	179.800	18.540	0.207	34.010	0.000	0.000
3	13:53:11	8.588	19.320	T 2080.000	9.628	20.720	50.390	176.100	18.190	0.168	34.040	0.000	0.000
x		10.590	19.220	T 2106.000	9.685	20.980	50.990	177.200	18.290	0.208	33.800	0.000	0.000
σ		1.842	0.254	T 34.880	0.055	0.247	0.521	2.327	0.222	0.040	0.380	0.000	0.000
%RSD		17.400	1.322	T 1.657	0.566	1.177	1.022	1.313	1.216	19.460	1.123	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:27	48.310	72.459%	98.130	10.060	-0.700	8.002	70.337%	0.000	17.530	17.530	89.670	70.049%
2	13:52:49	48.400	72.447%	98.910	10.680	-0.854	9.204	69.595%	0.000	18.410	17.980	92.600	69.745%
3	13:53:11	49.030	73.281%	99.930	10.310	-0.464	9.291	69.927%	0.000	18.390	18.220	91.630	70.300%
x		48.580	72.729%	98.990	10.350	-0.672	8.832	69.953%	0.000	18.110	17.910	91.300	70.031%
σ		0.392	0.478%	0.902	0.312	0.197	0.720	0.371%	0.000	0.505	0.348	1.491	0.278%
%RSD		0.808	0.657	0.912	3.015	29.240	8.153	0.531	0.000	2.790	1.942	1.633	0.397

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:27	18.100	16.380	8.598	73.213%	0.000	15.340	10.080
2	13:52:49	18.650	17.000	8.781	72.309%	0.000	16.320	10.240
3	13:53:11	18.900	17.570	8.911	70.856%	0.000	17.410	10.850
x		18.550	16.980	8.763	72.126%	0.000	16.360	10.390
σ		0.412	0.597	0.157	1.189%	0.000	1.034	0.403
%RSD		2.222	3.517	1.792	1.648	0.000	6.323	3.880

200-35676-A-2-B 10/19/2016 01:57:50 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:12	71.604%	-0.056	3.789	251.800	140.200	11.810	36.460	580.700	68.789%	0.000	0.428	2.122
2	13:58:33	68.677%	-0.034	2.889	250.300	132.400	11.380	34.470	546.900	69.589%	0.000	0.610	2.430
3	13:58:55	70.889%	-0.035	3.441	241.800	133.600	10.990	31.750	557.200	69.909%	0.000	-0.179	2.348
x		70.390%	-0.042	3.373	248.000	135.400	11.390	34.230	561.600	69.429%	0.000	0.286	2.300
σ		1.526%	0.012	0.454	5.413	4.193	0.413	2.367	17.350	0.577%	0.000	0.413	0.160
%RSD		2.168	29.780	13.450	2.183	3.096	3.625	6.915	3.090	0.830	0.000	144.300	6.944

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:12	9.495	1.501	22.860	0.078	0.512	0.972	1.285	-0.089	0.272	-0.996	0.000	0.000
2	13:58:33	8.800	1.290	19.340	0.053	0.486	1.021	1.228	0.098	0.251	-1.004	0.000	0.000
3	13:58:55	10.070	1.418	20.380	0.089	0.394	1.456	1.551	-0.177	0.271	-0.669	0.000	0.000
x		9.455	1.403	20.860	0.074	0.464	1.149	1.355	-0.056	0.265	-0.890	0.000	0.000
σ		0.637	0.106	1.806	0.019	0.062	0.266	0.172	0.141	0.012	0.191	0.000	0.000
%RSD		6.732	7.572	8.657	25.300	13.350	23.180	12.720	251.700	4.521	21.450	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:12	1.820	72.608%	0.155	0.014	-0.821	-0.051	69.976%	0.000	0.087	0.058	1.274	69.556%
2	13:58:33	1.856	72.878%	0.089	0.020	-1.465	-0.009	70.064%	0.000	0.061	0.068	1.123	69.300%

3	13:58:55	1.849	72.839%	0.120	0.014	-2.073	0.031	70.352%	0.000	0.072	0.071	1.313	70.572%
x		1.841	72.775%	0.121	0.016	-1.453	-0.010	70.131%	0.000	0.073	0.066	1.237	69.809%
σ		0.019	0.146%	0.033	0.004	0.626	0.041	0.196%	0.000	0.013	0.007	0.100	0.673%
%RSD		1.045	0.201	27.030	23.380	43.110	413.700	0.280	0.000	18.050	10.920	8.111	0.964

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:12	0.082	0.018	0.163	70.589%	0.000	2.147	-0.004
2	13:58:33	0.050	0.010	0.155	72.295%	0.000	1.650	-0.001
3	13:58:55	0.063	0.010	0.146	72.973%	0.000	1.313	-0.002
x		0.065	0.013	0.154	71.952%	0.000	1.703	-0.002
σ		0.016	0.005	0.008	1.228%	0.000	0.419	0.001
%RSD		24.780	36.310	5.422	1.707	0.000	24.630	67.060

CCV 10/19/2016 02:03:34 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:56	63.072%	724.800	279.500	↓10790.000	↓32060.000	↓31890.000	↓9772.000	↓29960.000	63.261%	0.000	↓1240.000	364.700
2	14:04:18	62.431%	733.800	274.600	↓11040.000	↓33060.000	↓32810.000	↓9997.000	28000.000	61.748%	0.000	↓1292.000	377.700
3	14:04:40	60.379%	742.200	293.100	↓10770.000	↓32020.000	↓32240.000	↓9696.000	↓30050.000	62.844%	0.000	↓1249.000	367.900
x		61.961%	117.378%	112.975%	↓108.676%	↓107.939%	↓107.705%	↓98.216%	↓97.790%	62.618%	0.000	↓100.842%	92.523%
σ		1.407%	n/a	n/a	↓n/a	↓n/a	↓n/a	↓n/a	↓n/a	0.782%	0.000	↓n/a	n/a
%RSD		2.271	1.181	3.392	↓1.378	↓1.820	↓1.434	↓1.593	↓3.961	1.248	0.000	↓2.201	1.840

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:56	21.150	↓1250.000	↓30240.000	466.200	1242.000	1221.000	1251.000	201.000	-0.255	219.200	0.000	0.000
2	14:04:18	15.120	↓1286.000	↓31380.000	478.900	1269.000	1241.000	1269.000	206.200	-0.401	219.200	0.000	0.000
3	14:04:40	22.240	↓1255.000	↓30390.000	460.500	1225.000	1194.000	1254.000	205.900	-0.333	218.800	0.000	0.000
x		19.500	↓101.085%	↓102.240%	93.702%	99.634%	97.498%	100.655%	102.180%	-0.330	109.531%	0.000	0.000
σ		3.837	↓n/a	↓n/a	n/a	n/a	n/a	n/a	n/a	0.073	n/a	0.000	0.000
%RSD		19.680	↓1.533	↓2.012	2.013	1.750	1.960	0.782	1.431	22.140	0.086	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:56	188.100	67.885%	1178.000	105.000	8.214	197.200	65.321%	0.000	237.700	235.600	1144.000	65.368%
2	14:04:18	189.000	66.520%	1223.000	106.100	20.910	201.400	64.918%	0.000	240.500	238.000	1176.000	64.902%
3	14:04:40	186.700	65.347%	1269.000	104.100	13.060	196.000	65.670%	0.000	239.900	237.800	1155.000	65.017%
x		187.900	66.584%	97.884%	105.064%	14.060	99.098%	65.303%	0.000	239.300	94.867%	92.650%	65.096%
σ		1.142	1.270%	n/a	n/a	6.407	n/a	0.376%	0.000	1.476	n/a	n/a	0.243%
%RSD		0.608	1.908	3.725	0.977	45.560	1.413	0.576	0.000	0.617	0.562	1.397	0.373

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:56	21.650	175.200	↓1209.000	67.281%	0.000	13.610	9.848
2	14:04:18	23.340	179.700	↓1230.000	66.850%	0.000	15.400	10.240
3	14:04:40	23.350	174.400	↓1204.000	68.438%	0.000	16.110	9.843
x		113.899%	88.216%	↓97.136%	67.523%	0.000	75.193%	99.776%
σ		n/a	n/a	↓n/a	0.822%	0.000	n/a	n/a

%RSD		4.278	1.625	T 1.124	1.217	0.000	8.588	2.289

CCB 10/19/2016 02:09:18 PM QC Status: PASS (Initial: UNKNOWN)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:09:39	68.263%	-0.012	2.927	25.490	2.594	2.659	1.224	-3.573	66.644%	0.000	-0.017	-0.230
2	14:10:01	68.447%	-0.012	2.234	18.330	2.609	2.621	-0.139	-6.911	68.025%	0.000	0.325	-0.258
3	14:10:23	68.666%	-0.012	1.880	25.680	3.190	2.818	2.633	-4.379	66.267%	0.000	0.241	-0.221
x		68.459%	-0.012	2.347	23.170	2.797	2.699	1.239	-4.955	66.979%	0.000	0.183	-0.236
σ		0.202%	0.000	0.532	4.188	0.340	0.105	1.386	1.742	0.926%	0.000	0.178	0.020
%RSD		0.294	1.057	22.690	18.080	12.140	3.880	111.800	35.150	1.382	0.000	97.290	8.263

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:09:39	10.930	0.051	6.352	0.024	0.091	0.062	0.107	0.327	0.291	-0.609	0.000	0.000
2	14:10:01	10.300	0.061	4.468	0.019	0.109	0.103	0.032	0.146	0.320	-0.945	0.000	0.000
3	14:10:23	10.750	0.062	7.756	0.039	0.050	0.114	0.124	-0.173	0.355	-0.767	0.000	0.000
x		10.660	0.058	6.192	0.027	0.083	0.093	0.088	0.100	0.322	-0.774	0.000	0.000
σ		0.326	0.006	1.650	0.010	0.030	0.027	0.049	0.253	0.033	0.168	0.000	0.000
%RSD		3.059	10.470	26.650	38.340	36.500	29.460	56.340	253.400	10.090	21.760	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:09:39	0.024	69.156%	2.478	0.024	-1.206	-0.029	67.177%	0.000	0.255	0.264	0.045	66.132%
2	14:10:01	0.017	69.563%	2.307	0.006	-1.642	0.014	67.890%	0.000	0.300	0.315	0.033	66.090%
3	14:10:23	0.021	68.980%	2.263	0.002	-1.333	-0.010	67.427%	0.000	0.306	0.306	0.033	66.383%
x		0.021	69.233%	2.349	0.010	-1.394	-0.008	67.498%	0.000	0.287	0.295	0.037	66.202%
σ		0.003	0.299%	0.113	0.012	0.224	0.022	0.362%	0.000	0.028	0.027	0.007	0.159%
%RSD		16.190	0.432	4.822	113.300	16.070	256.200	0.536	0.000	9.680	9.271	19.110	0.240

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:09:39	0.077	0.111	0.060	69.260%	0.000	-0.096	-0.014
2	14:10:01	0.059	0.101	0.069	70.781%	0.000	-0.114	-0.009
3	14:10:23	0.039	0.094	0.055	71.445%	0.000	-0.109	-0.011
x		0.058	0.102	0.061	70.496%	0.000	-0.107	-0.011
σ		0.019	0.009	0.007	1.120%	0.000	0.009	0.002
%RSD		32.510	8.591	11.000	1.589	0.000	8.663	22.210

CCVL 10/19/2016 02:15:00 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:22	66.907%	1.239	45.130	535.000	206.000	55.500	457.100	473.200	66.431%	0.000	4.196	3.806
2	14:15:44	68.071%	1.042	46.430	T 609.100	208.300	55.190	463.100	486.800	66.014%	0.000	4.950	3.691
3	14:16:05	66.299%	1.229	48.310	T 610.200	217.300	57.180	467.100	499.300	65.676%	0.000	4.884	3.921
x		67.093%	116.995%	116.561%	T 116.956%	105.258%	111.918%	92.487%	97.290%	66.040%	0.000	93.536%	95.147%
σ		0.900%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.378%	0.000	n/a	n/a
%RSD		1.342	9.506	3.434	T 7.370	2.859	1.913	1.098	2.686	0.573	0.000	8.923	3.021

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:22	13.300	2.150	195.000	1.087	2.790	5.235	23.000	2.059	0.361	3.668	0.000	0.000
2	14:15:44	12.990	2.220	198.300	1.079	2.345	5.462	22.640	1.861	0.376	3.749	0.000	0.000
3	14:16:05	13.130	2.103	202.200	1.069	2.209	5.886	24.300	1.458	0.424	3.552	0.000	0.000
x		13.140	107.874%	99.246%	107.813%	122.391%	110.554%	116.575%	89.629%	0.387	91.414%	0.000	0.000
σ		0.154	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.033	n/a	0.000	0.000
%RSD		1.172	2.734	1.819	0.820	12.420	5.972	3.754	17.090	8.474	2.714	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:22	4.808	68.460%	10.670	1.091	-1.729	1.100	67.261%	0.000	1.890	2.016	9.385	67.378%
2	14:15:44	4.843	69.508%	10.580	1.180	-0.868	0.959	68.045%	0.000	2.097	2.003	9.785	66.881%
3	14:16:05	4.990	71.261%	10.840	1.044	-1.073	1.032	68.821%	0.000	2.004	2.015	8.540	67.116%
x		97.600%	69.743%	106.946%	110.511%	-1.223	103.043%	68.042%	0.000	1.997	100.580%	92.365%	67.125%
σ		n/a	1.415%	n/a	n/a	0.450	n/a	0.780%	0.000	0.104	n/a	n/a	0.249%
%RSD		1.980	2.029	1.256	6.245	36.750	6.883	1.146	0.000	5.199	0.351	6.885	0.371

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:22	1.611	1.741	1.127	69.808%	0.000	0.675	1.025
2	14:15:44	1.862	1.831	1.099	68.404%	0.000	0.733	1.040
3	14:16:05	1.985	1.776	1.074	71.336%	0.000	0.703	1.054
x		90.978%	89.149%	109.997%	69.849%	0.000	35.197%	103.989%
σ		n/a	n/a	n/a	1.466%	0.000	n/a	n/a
%RSD		10.480	2.539	2.412	2.099	0.000	4.125	1.413

Mass Uncorrected ICPS

STD0 10/19/2016 10:04:01 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:04:23	162609.400	0.000	495.007	308060.980	130.001	550.009	73059.782	1280.049	223630.320	10.000	22465.130	2630.208
2	10:04:45	164235.230	12.500	490.007	308682.310	130.001	580.010	71894.732	1450.063	225809.400	5.000	23111.012	2705.220
3	10:05:07	168446.950	7.500	520.008	308376.740	240.002	465.006	74676.925	1270.048	232338.220	5.000	22900.722	2555.196
x		165097.190	6.667	501.674	308373.340	166.668	531.675	73210.480	1333.387	227259.310	6.667	22825.622	2630.208
σ		3012.720	6.292	16.073	310.683	63.509	59.654	1397.205	101.168	4531.400	2.887	329.425	75.012
%RSD		1.825	94.373	3.204	0.101	38.105	11.220	1.908	7.587	1.994	43.301	1.443	2.852

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:04:23	7741.798	455.006	269684.380	20.000	10.000	260.002	670.013	2144.138	704.015	579.010	634.512	3190.305
2	10:04:45	7861.854	485.007	279885.510	15.000	25.000	200.001	660.013	2162.140	677.014	573.510	584.010	3130.294
3	10:05:07	7656.758	490.007	282260.050	25.000	15.000	245.002	640.012	2104.133	679.014	592.011	599.511	2950.261
x		7753.470	476.673	277276.650	20.000	16.667	235.002	656.680	2136.804	686.681	581.510	606.011	3090.287
σ		103.045	18.930	6681.431	5.000	7.638	31.225	15.276	29.691	15.045	9.500	25.871	124.923
%RSD		1.329	3.971	2.410	25.000	45.826	13.287	2.326	1.390	2.191	1.634	4.269	4.042

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:04:23	30.000	257280.590	105.000	45.000	0.000	15.000	1129701.700	565.010	125.000	88.500	15.000	194852.400
2	10:04:45	25.000	258560.160	70.000	20.000	0.000	5.000	1143443.000	635.012	150.001	105.000	10.000	191797.270
3	10:05:07	5.000	259240.610	105.000	30.000	0.000	5.000	1159882.700	685.014	100.000	114.500	5.000	190805.990
x		20.000	258360.450	93.334	31.667	0.000	8.333	1144342.500	628.345	125.000	102.667	10.000	192485.220
σ		13.229	995.156	20.207	12.583	0.000	5.774	15110.564	60.279	25.000	13.156	5.000	2109.104
%RSD		66.144	0.385	21.651	39.736	0.000	69.282	1.320	9.593	20.000	12.814	50.000	1.096

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:04:23	105.000	450.006	430.006	146137.890	0.000	11343.859	185.001
2	10:04:45	90.000	455.006	560.009	149003.090	0.000	11138.721	235.002
3	10:05:07	120.000	370.004	450.006	145542.720	0.000	10748.465	200.001
x		105.000	425.005	480.007	146894.570	0.000	11077.015	206.668
σ		15.000	47.698	70.002	1850.127	0.000	302.456	25.658
%RSD		14.286	11.223	14.584	1.259	0.000	2.730	12.415

STD1 10/19/2016 10:09:44 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:10:06	164467.500	207.501	6601.307	T 1221339.600	33293.220	83418.237	T 1053058.900	34104.859	226093.210	35.000	40684.597	14070.937
2	10:10:27	162074.230	175.001	6336.204	T 1249773.400	33724.085	82754.943	T 1036942.300	34285.228	223407.360	0.000	39211.071	13780.695
3	10:10:49	155592.900	210.001	6261.176	T 1206205.400	33273.180	85101.716	968727.940	34114.879	224572.860	10.000	40002.950	14376.198
x		160711.540	197.501	6399.562	T 1225772.800	33430.162	83758.298	T 1019576.400	34168.322	224691.140	15.000	39966.206	14075.943
σ		4591.549	19.526	178.698	T 22119.713	254.742	1209.780	T 44767.289	101.368	1346.829	18.028	737.450	297.783
%RSD		2.857	9.886	2.792	T 1.805	0.762	1.444	T 4.391	0.297	0.599	120.185	1.845	2.116

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:10:06	10308.187	9317.604	971163.740	3545.377	1475.065	4800.691	14476.284	3485.364	981.029	806.520	603.511	3095.287
2	10:10:27	10293.178	9602.766	987561.440	3510.370	1670.084	4845.704	15271.994	3502.368	963.028	827.521	592.011	3175.302
3	10:10:49	9897.938	9562.743	993318.920	3505.369	1410.060	4805.693	15617.314	3488.365	882.023	752.517	586.010	3145.297

x		10166.434	9494.371	984014.700	3520.372	1518.403	4817.363	15121.864	3492.032	942.027	795.519	593.844	3138.629
σ		232.645	154.387	11495.541	21.799	135.321	24.672	585.142	9.076	52.738	38.693	8.893	40.422
%RSD		2.288	1.626	1.168	0.619	8.912	0.512	3.870	0.260	5.598	4.864	1.498	1.288

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:10:06	25960.202	258468.760	17359.035	3765.425	55.000	970.028	1135656.700	715.015	5630.951	4545.620	6011.084	189551.800
2	10:10:27	26345.807	259748.430	17789.489	3735.419	40.000	830.021	1119250.800	830.021	5660.961	4649.148	5916.050	186517.860
3	10:10:49	26726.412	256783.000	17519.203	3600.389	40.000	960.028	1115298.600	785.018	6326.200	4763.681	5776.001	187660.580
x		26344.140	258333.400	17555.909	3700.411	45.000	920.026	1123402.000	776.685	5872.704	4652.816	5901.045	187910.080
σ		383.108	1487.339	217.562	87.911	8.660	78.107	10795.281	57.954	393.026	109.077	118.258	1532.282
%RSD		1.454	0.576	1.239	2.376	19.245	8.490	0.961	7.462	6.692	2.344	2.004	0.815

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:10:06	3515.371	17879.585	8337.085	146228.680	0.000	26591.196	14206.052
2	10:10:27	3755.423	18605.379	8487.160	143807.750	0.000	26561.148	14326.155
3	10:10:49	3610.391	18865.671	8447.140	145542.720	0.000	26931.742	14846.610
x		3627.062	18450.212	8423.795	145193.050	0.000	26694.695	14459.605
σ		120.891	511.027	77.714	1247.767	0.000	205.838	340.493
%RSD		3.333	2.770	0.923	0.859	0.000	0.771	2.355

STD2 10/19/2016 10:13:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:13:40	154967.110	837.521	29741.513	T 4661342.600	159297.650	362295.400	T 4635204.500	150879.860	204021.140	20.000	91862.466	53947.168
2	10:14:01	146480.880	762.517	30277.477	T 4583592.900	155502.060	363184.440	T 4560096.000	148690.320	207544.240	25.000	91776.997	53666.263
3	10:14:23	146178.240	880.023	29941.871	T 4605912.000	161337.130	362785.900	T 4650739.500	147620.880	208192.250	25.000	93974.190	54383.583
x		149208.750	826.687	29986.954	T 4616949.200	158712.280	362755.250	T 4615346.700	149063.690	206585.880	23.333	92537.884	53999.005
σ		4989.185	59.497	270.811	T 40032.716	2961.251	445.311	T 48474.846	1661.266	2244.634	2.887	1244.611	361.458
%RSD		3.344	7.197	0.903	T 0.867	1.866	0.123	T 1.050	1.114	1.087	12.372	1.345	0.669

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:13:40	15372.086	39737.315	T 3938940.200	15362.077	6776.377	20597.720	65935.166	7739.797	1716.088	1646.081	543.009	3590.387
2	10:14:01	15307.026	39130.883	T 3945666.400	15772.460	6781.379	20237.279	66482.333	7502.688	1604.077	1648.082	541.509	3515.371
3	10:14:23	15572.271	38354.080	T 3899904.100	15442.150	6406.231	20602.726	66637.953	7614.739	1662.083	1620.079	565.510	3730.417
x		15417.128	39074.093	T 3928170.200	15525.562	6654.663	20479.242	66351.817	7619.075	1660.749	1638.081	550.009	3612.058
σ		138.240	693.364	T 24709.123	217.536	215.163	209.561	369.125	118.614	56.017	15.622	13.445	109.149
%RSD		0.897	1.774	T 0.629	1.401	3.233	1.023	0.556	1.557	3.373	0.954	2.444	3.022

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:13:40	124936.530	243871.240	83187.086	16708.371	220.001	4175.523	1044643.600	625.012	27828.213	21118.371	28504.354	176166.140
2	10:14:01	125596.460	239792.700	83754.919	17334.009	265.002	4155.518	1041750.700	640.012	27297.336	21376.700	27708.013	177631.570
3	10:14:23	128498.450	240076.740	84800.185	17193.864	270.002	4070.497	1046696.600	685.014	27492.657	21498.356	27703.005	179016.270
x		126343.810	241246.890	83914.063	17078.748	251.669	4133.846	1044363.600	650.013	27539.402	21331.143	27971.791	177604.660
σ		1894.924	2277.183	818.240	328.321	27.538	55.766	2484.809	31.226	268.508	194.046	461.220	1425.255
%RSD		1.500	0.944	0.975	1.922	10.942	1.349	0.238	4.804	0.975	0.910	1.649	0.802

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:13:40	16618.281	87720.239	34195.043	136849.540	0.000	79504.176	68726.408
2	10:14:01	16853.517	89745.981	33959.562	138180.450	0.000	83021.262	69032.670
3	10:14:23	17283.957	90761.458	34650.983	135246.530	0.000	86483.803	69750.650
x		16918.585	89409.226	34268.530	136758.840	0.000	83003.080	69169.909

σ		337.575	1548.324	351.519	1469.061	0.000	3489.849	525.732
%RSD		1.995	1.732	1.026	1.074	0.000	4.204	0.760

STD3 10/19/2016 10:17:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:17:40	149880.910	99385.443	34846.390	┬16432883.000	┬4879986.600	┬46104065.000	┬17064482.000	┬1808616.100	198292.620	31740.194	┬3350698.300	9268(
2	10:18:02	142254.510	96709.772	35242.221	┬16165238.000	┬4837125.000	┬45292484.000	┬16801449.000	┬1791724.500	192818.960	31905.510	┬3326387.300	91388
3	10:18:23	144170.870	97469.176	34911.526	┬16174471.000	┬4778877.100	┬44986312.000	┬16733834.000	┬1806885.400	189915.910	32236.145	┬3328215.600	9236-
x		145435.430	97854.797	35000.046	┬16257531.000	┬4831996.200	┬45460954.000	┬16866588.000	┬1802408.700	193675.830	31960.616	┬3335100.400	9214-
σ		3967.346	1378.888	212.244	┬151929.520	┬50749.476	┬577606.950	┬174683.990	┬9293.155	4253.586	252.526	┬13539.066	673
%RSD		2.728	1.409	0.606	┬0.935	┬1.050	┬1.271	┬1.036	┬0.516	2.196	0.790	┬0.406	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:17:40	116022.440	┬4848330.000	┬99306293.000	1397372.600	739442.270	914641.840	732610.260	95763.330	7623.743	10479.794	536.509	805
2	10:18:02	112669.550	┬4813490.800	┬99392113.000	1402171.600	750338.400	915977.260	725561.750	95370.085	7617.740	10396.742	512.008	790
3	10:18:23	115760.620	┬4863552.300	┬99425984.000	1381801.200	738569.830	908488.610	726266.470	95263.478	7502.688	10327.199	537.509	814
x		114817.540	┬4841791.000	┬99374797.000	1393781.800	742783.500	913035.900	728146.160	95465.631	7581.391	10401.245	528.675	803
σ		1864.811	┬25663.363	┬61695.572	10649.341	6557.262	3994.276	3882.048	263.268	68.224	76.397	14.443	12
%RSD		1.624	┬0.530	┬0.062	0.764	0.883	0.437	0.533	0.276	0.900	0.735	2.732	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	10:17:40	931154.590	231141.760	1936342.200	308096.630	10453.277	152575.190	1024700.900	956146.720	643388.300	500988.180	649945.500	17527
2	10:18:02	935313.010	232044.170	┬2207180.700	311381.840	10343.208	149552.990	1012094.500	948106.350	645227.380	500165.520	655215.960	16993
3	10:18:23	940815.090	229773.030	┬2217903.700	303065.640	10313.190	151117.000	1024987.700	951480.730	647929.230	502119.470	656125.720	17294
x		935760.900	230986.320	┬2120475.500	307514.700	10369.892	151081.730	1020594.400	951911.270	645514.970	501091.060	653762.390	17271
σ		4845.799	1143.522	┬159554.230	4188.530	73.757	1511.413	7362.504	4037.439	2284.085	981.031	3336.678	267
%RSD		0.518	0.495	┬7.524	1.362	0.711	1.000	0.721	0.424	0.354	0.196	0.510	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:17:40	39672.160	1740434.000	┬9223548.100	132373.600	0.000	380755.120	128160.870
2	10:18:02	40704.645	1741452.600	┬9373720.600	134470.290	0.000	380944.370	126246.340
3	10:18:23	39947.818	1750528.600	┬9402300.300	130720.630	0.000	371709.320	125692.180
x		40108.208	1744138.400	┬9333189.700	132521.510	0.000	377802.930	126699.790
σ		534.603	5557.458	┬96021.605	1879.198	0.000	5278.072	1295.310
%RSD		1.333	0.319	┬1.029	1.418	0.000	1.397	1.022

STD4 10/19/2016 10:21:49 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	10:22:10	141024.120	265538.600	93421.093	┬43746013.000	┬13282223.000	┬123442180.000	┬45878228.000	┬4968458.900	182362.250	87705.160	┬9143392.60(
2	10:22:32	141215.730	268609.730	96684.626	┬44120758.000	┬13519222.000	┬125474570.000	┬46598278.000	┬5073616.300	184192.210	89409.178	┬9277329.30(
3	10:22:53	140066.090	265919.610	97851.406	┬44485995.000	┬13477266.000	┬125333770.000	┬46502946.000	┬5187150.200	182139.840	89906.845	┬9529146.20(
x		140768.650	266689.310	95985.709	┬44117589.000	┬13426237.000	┬124750170.000	┬46326484.000	┬5076408.500	182898.100	89007.061	┬9316622.70(
σ		615.928	1674.005	2296.363	┬370001.440	┬126471.950	┬1134940.100	┬391116.300	┬109372.360	1126.236	1154.611	┬195855.67(
%RSD		0.438	0.628	2.392	┬0.839	┬0.942	┬0.910	┬0.844	┬2.155	0.616	1.297	┬2.10

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	10:22:10	306594.300	┬13359744.000	┬272119380.000	┬4262243.200	1976389.300	┬2743471.400	1911265.200	254218.130	18854.659	25779.923	499.00
2	10:22:32	315615.360	┬13485522.000	┬272765470.000	┬4261965.900	2016482.500	┬2806928.900	1941756.100	257433.930	19424.313	26196.572	505.50

3	10:22:53	314061.420	┬13504347.000	┬274855810.000	┬4302249.200	2020559.800	┬2778567.200	1935373.800	255088.280	19115.956	26331.284	519.508
x		312090.360	┬13449871.000	┬273246890.000	┬4275486.100	2004477.200	┬2776322.500	1929465.100	255580.110	19131.643	26102.593	508.008
σ		4822.726	┬78617.449	┬1430324.600	┬23177.925	24410.111	┬31788.219	16081.306	1663.360	285.151	287.443	10.476
%RSD		1.545	┬0.585	┬0.523	┬0.542	1.218	┬1.145	0.833	0.651	1.490	1.101	2.062

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	10:22:10	┬2876587.300	216091.850	┬6148699.500	839256.600	27492.657	409335.690	984015.670	┬3062330.500	1795979.100	1404858.300	┬2075711.500
2	10:22:32	┬2937691.500	216790.840	┬6315895.400	843208.770	27282.311	416853.620	990132.450	┬3122389.300	1828256.800	1430087.500	┬2131937.400
3	10:22:53	┬2975452.100	214785.120	┬6355363.600	837606.620	26831.581	415577.340	992836.400	┬3167845.100	1857612.100	1438016.100	┬2137247.800
x		┬2929910.300	215889.270	┬6273319.500	840024.000	27202.183	413922.220	988994.840	┬3117521.600	1827282.700	1424320.600	┬2114965.600
σ		┬49889.567	1018.089	┬109713.490	2878.837	337.744	4022.982	4519.068	┬52925.412	30828.070	17314.795	┬34098.538
%RSD		┬1.703	0.472	┬1.749	0.343	1.242	0.972	0.457	┬1.698	1.687	1.216	┬1.612

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:22:10	115176.600	┬5752542.800	┬26501167.000	125510.820	0.000	833351.060	363368.380
2	10:22:32	117920.690	┬5845294.700	┬26747388.000	128039.940	5.000	836923.560	372327.900
3	10:22:53	119960.170	┬5901485.400	┬27134159.000	127475.640	0.000	837559.330	371786.000
x		117685.820	┬5833107.600	┬26794238.000	127008.800	1.667	835944.650	369160.760
σ		2400.416	┬75215.489	┬319086.190	1327.622	2.887	2268.500	5023.660
%RSD		2.040	┬1.289	┬1.191	1.045	173.205	0.271	1.361

STD5 10/19/2016 10:27:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	10:27:52	133371.510	415418.450	147883.190	T 68798654.000	TM 21065131.000	TM 194346880.000	T 73045233.000	TM 7994587.900	171699.890	139188.790	TM
2	10:28:14	135034.830	413363.290	147454.410	T 68112268.000	TM 20883987.000	TM 196414300.000	TM 74095897.000	TM 8130967.100	171467.520	139007.280	TM
3	10:28:35	130438.440	405636.890	148624.740	T 68240098.000	TM 21338010.000	T 197557680.000	T 73419236.000	TM 8103968.100	176246.990	142930.260	TM
x		132948.260	411472.880	147987.440	T 68383673.000	TM 21095709.000	TM 196106290.000	TM 73520122.000	TM 8076507.700	173138.130	140375.440	TM
σ		2327.242	5157.514	592.088	T 365023.260	TM 228550.830	TM 1627409.800	TM 532547.690	TM 72217.558	2694.853	2214.393	
%RSD		1.750	1.253	0.400	T 0.534	TM 1.083	TM 0.830	TM 0.724	TM 0.894	1.556	1.577	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	
1	10:27:52	482576.710	TM 21318582.000	T 427061450.000	TM 6793434.900	TM 3504888.600	T 4254958.300	TM 3288982.900	392967.730	28437.240	39108.330	
2	10:28:14	497166.260	TM 21661213.000	TM 437229380.000	TM 6853347.800	TM 3537290.200	TM 4294191.200	TM 3343200.100	396349.410	28781.830	39405.028	
3	10:28:35	501869.100	TM 21862885.000	T 438299150.000	TM 6886120.700	TM 3590400.900	T 4346363.700	TM 3359167.700	397849.520	28882.003	39758.867	
x		493870.690	TM 21614226.000	TM 434196660.000	TM 6844301.100	TM 3544193.200	TM 4298504.400	TM 3330450.200	395722.220	28700.358	39424.075	
σ		10059.556	TM 275176.820	TM 6202383.400	TM 47000.469	TM 43172.099	TM 45855.085	TM 36788.483	2500.598	233.307	325.686	
%RSD		2.037	TM 1.273	TM 1.428	TM 0.687	TM 1.218	TM 1.067	TM 1.105	0.632	0.813	0.826	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	
1	10:27:52	TM 4690994.900	211230.120	TM 9869988.900	1307268.800	42413.900	654394.620	990376.320	T 4974916.600	TM 3270907.300	2254022.100	TI
2	10:28:14	TM 4680901.000	203363.170	TM 10002992.000	1322022.100	42223.417	654113.910	990121.850	T 5101770.000	TM 3348747.600	M 2303125.700	TI
3	10:28:35	TM 4703336.800	205681.360	TM 10220724.000	1321470.900	43316.216	661538.510	990090.040	T 5093829.400	TM 3366754.000	M 2318596.100	TI
x		TM 4691744.200	206758.220	TM 10031235.000	1316920.600	42651.177	656682.340	990196.070	T 5056838.700	TM 3328803.000	M 2291914.700	TI
σ		TM 11236.678	4042.513	TM 177064.840	8363.250	583.762	4207.900	156.910	T 71057.611	TM 50941.056	M 33715.225	
%RSD		TM 0.239	1.955	TM 1.765	0.635	1.369	0.641	0.016	T 1.405	TM 1.530	M 1.471	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:27:52	M 222915.840	TM 9358790.900	TM 42729440.000	122710.080	0.000	1513216.700	M 715886.550
2	10:28:14	M 232525.810	TM 9579535.900	TM 42866525.000	122669.780	0.000	M 1542907.500	M 728887.240
3	10:28:35	M 233580.400	TM 9544495.600	TM 43429328.000	122941.770	5.000	M 1559429.100	M 734239.660
x		M 229674.020	TM 9494274.100	TM 43008431.000	122773.880	1.667	M 1538517.700	M 726337.820
σ		M 5876.459	TM 118632.790	TM 370896.020	146.792	2.887	M 23416.858	M 9438.424
%RSD		M 2.559	TM 1.250	TM 0.862	0.120	173.205	M 1.522	M 1.299

ICV 10/19/2016 10:33:14 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:33:36	125299.230	41992.835	17559.245	T 7508424.100	T 2093916.400	T 20068208.000	T 7122716.200	700570.900	162942.630	13770.687	1308041.000	396152.810
2	10:33:57	123898.820	43539.296	17659.351	T 7467240.900	T 2113666.400	T 19772054.000	T 7055512.100	692358.170	161104.900	13450.425	1291891.400	396393.440
3	10:34:20	121199.080	42880.090	17118.787	T 7414592.500	T 2098506.400	T 19970846.000	T 7101980.100	711489.130	163336.460	13730.654	1329719.800	404243.650
x		123465.710	42804.074	17445.794	T 7463419.100	T 2102029.700	T 19937036.000	T 7093402.800	701472.730	162461.330	13650.588	1309884.000	398929.970
σ		2084.107	776.028	287.586	T 47032.403	T 10335.646	T 150944.180	T 34413.329	9597.308	1191.095	174.498	18981.433	4603.356
%RSD		1.688	1.813	1.648	T 0.630	T 0.492	T 0.757	T 0.485	1.368	0.733	1.278	1.449	1.154

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:33:36	50551.548	T 2035361.500	T 42367694.000	607073.390	325125.570	400023.640	319839.760	42806.902	3481.364	4863.209	454.506	4555.623
2	10:33:57	52582.818	T 2082612.200	T 43136765.000	613663.250	330142.760	406584.570	327950.100	42648.497	3535.375	4750.677	452.006	4980.744
3	10:34:20	52577.802	T 2078574.000	T 43386956.000	612672.790	329005.600	411082.910	326084.020	42783.843	3579.384	4816.696	415.005	4760.680
x		51904.056	T 2065515.900	T 42963805.000	611136.480	328091.310	405897.040	324624.630	42746.414	3532.041	4810.194	440.506	4765.682
σ		1171.309	T 26192.401	T 531187.400	3553.418	2630.590	5561.601	4247.564	85.579	49.095	56.547	22.120	212.605

%RSD		2.257	T 1.268	T 1.236	0.581	0.802	1.370	1.308	0.200	1.390	1.176	5.021	4.461
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:33:36	407726.970	204527.290	408188.050	133709.200	4345.566	67370.890	891544.370	438103.340	294351.530	228406.430	286252.280	148791.210
2	10:33:57	410375.810	202361.090	422098.170	134787.840	4415.585	68043.615	895561.380	445978.120	302088.130	232734.190	293099.760	154432.180
3	10:34:20	408013.870	201318.580	426503.210	135700.200	4680.657	68957.359	900918.850	447595.620	299323.920	232860.940	297002.950	154230.320
x		408705.550	202735.650	418929.810	134732.410	4480.603	68123.955	896008.200	443892.360	298587.860	231333.850	292118.330	152484.570
σ		1453.581	1636.821	9559.815	996.654	176.754	796.280	4703.184	5078.251	3920.468	2536.013	5442.117	3200.134
%RSD		0.356	0.807	2.282	0.740	3.945	1.169	0.525	1.144	1.313	1.096	1.863	2.099

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:33:36	37447.021	788045.180	T 4217428.300	119335.710	0.000	202654.620	110927.930
2	10:33:57	38719.925	796450.940	T 4216340.100	118842.200	0.000	215904.440	113379.340
3	10:34:20	39100.812	799140.190	T 4210927.700	120352.980	0.000	225642.160	114587.560
x		38422.586	794545.440	T 4214898.700	119510.300	0.000	214733.740	112964.940
σ		866.062	5787.747	T 3481.762	770.375	0.000	11538.399	1864.678
%RSD		2.254	0.728	T 0.083	0.645	0.000	5.373	1.651

ICVL 10/19/2016 10:38:58 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	10:39:20	127657.020	162.501	6056.100	904421.100	27773.121	69228.479	719471.060	25068.839	166588.410	20.000	24482.969	9617.774
2	10:39:41	127112.890	152.501	6536.281	903534.920	27222.213	70548.999	718803.140	25599.645	165588.520	25.000	25023.772	9702.824
3	10:40:03	125087.650	175.001	6326.200	891702.510	27222.213	69198.355	706899.910	25128.930	163992.860	10.000	24578.109	9892.935
x		126619.190	163.334	6306.194	899886.170	27405.849	69658.611	715058.040	25265.805	165389.930	18.333	24694.950	9737.844
σ		1353.966	11.273	240.715	7101.102	318.067	771.246	7073.035	290.671	1309.122	7.638	288.714	140.884
%RSD		1.069	6.902	3.817	0.789	1.161	1.107	0.989	1.150	0.792	41.660	1.169	1.447
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	10:39:20	5866.032	7271.586	749136.090	2770.230	1275.049	3630.395	11253.798	2097.132	537.009	641.512	453.506	2480.184
2	10:39:41	6326.200	7621.742	756508.130	3065.282	1325.053	3725.416	12059.361	2128.136	542.009	658.513	463.006	2420.176
3	10:40:03	5826.018	7576.722	754050.420	2910.254	1125.038	3715.414	11518.979	2122.135	512.008	646.513	470.507	2475.184
x		6006.083	7490.017	753231.550	2915.255	1241.713	3690.409	11610.713	2115.801	530.342	648.846	462.340	2458.515
σ		277.950	190.501	3753.620	147.589	104.091	52.213	410.541	16.444	16.073	8.737	8.520	33.297
%RSD		4.628	2.543	0.498	5.063	8.383	1.415	3.536	0.777	3.031	1.347	1.843	1.354
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:39:20	21654.058	202401.570	16933.598	2780.232	40.000	775.018	894021.940	3730.417	5996.078	4656.150	4770.683	152171.530
2	10:39:41	21503.864	206349.540	17043.710	3055.280	50.000	730.016	896774.050	4230.537	6241.168	4871.212	4985.746	152635.740
3	10:40:03	21774.214	203089.870	16908.573	2855.245	60.000	700.015	882912.590	4560.624	6311.195	4978.243	4785.687	148690.320
x		21644.045	203947.000	16961.960	2896.919	50.000	735.016	891236.190	4173.859	6182.814	4835.202	4847.372	151165.860
σ		135.453	2108.937	71.895	142.181	10.000	37.751	7338.617	417.995	165.465	164.038	120.070	2156.413
%RSD		0.626	1.034	0.424	4.908	20.000	5.136	0.823	10.015	2.676	3.393	2.477	1.427

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:39:20	3175.302	17799.500	7471.674	116113.060	0.000	14055.925	12299.537
2	10:39:41	3190.305	18265.003	7741.798	117865.300	0.000	14501.306	12669.814
3	10:40:03	3160.300	18094.817	7531.701	119517.000	0.000	14576.371	12424.629
x		3175.302	18053.107	7581.725	117831.790	0.000	14377.867	12464.660
σ		15.003	235.538	141.839	1702.215	0.000	281.325	188.356
%RSD		0.472	1.305	1.871	1.445	0.000	1.957	1.511

ICBIS 10/19/2016 10:44:40 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:45:02	126145.580	22.500	1160.040	244561.240	510.008	3135.295	54388.599	730.016	162407.450	5.000	14741.516	1545.072
2	10:45:24	126709.840	12.500	1010.031	249960.460	500.007	2750.227	54047.492	670.013	162882.050	10.000	14641.428	1525.070
3	10:45:45	121884.050	7.500	1050.033	248295.850	400.005	2500.188	54458.828	660.013	165356.230	10.000	14451.262	1535.071
x		124913.160	14.167	1073.368	247605.850	470.007	2795.236	54298.306	686.681	163548.580	8.333	14611.402	1535.071
σ		2638.412	7.638	77.680	2764.953	60.829	319.937	220.031	37.861	1583.359	2.887	147.438	10.001
%RSD		2.112	53.913	7.237	1.117	12.942	11.446	0.405	5.514	0.968	34.641	1.009	0.651

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:45:02	5110.783	665.013	206374.860	160.001	65.000	250.002	570.010	1257.047	417.005	486.007	477.507	2330.163
2	10:45:24	5135.791	565.010	203535.260	130.001	30.000	235.002	525.008	1338.054	405.005	433.506	461.506	2280.156
3	10:45:45	5285.838	550.009	199426.030	115.000	35.000	210.001	600.011	1269.048	404.005	481.507	447.006	2300.159
x		5177.471	593.344	203112.050	135.001	43.333	231.668	565.010	1288.050	408.672	467.007	462.006	2303.492
σ		94.678	62.519	3493.692	22.913	18.930	20.208	37.750	43.718	7.234	29.100	15.257	25.170
%RSD		1.829	10.537	1.720	16.973	43.684	8.723	6.681	3.394	1.770	6.231	3.302	1.093

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:45:02	100.000	203373.300	945.027	40.000	5.000	20.000	892155.830	1835.101	595.011	469.007	50.000	147731.850
2	10:45:24	85.000	204628.520	1185.042	20.000	0.000	20.000	908166.760	1955.115	730.016	531.508	55.000	152161.440
3	10:45:45	80.000	202948.160	1015.031	35.000	5.000	5.000	908377.810	2255.153	780.018	572.510	65.000	151122.040
x		88.334	203649.990	1048.367	31.667	3.333	15.000	902900.130	2015.123	701.682	524.342	56.667	150338.440
σ		10.408	873.683	123.431	10.408	2.887	8.660	9305.441	216.360	95.703	52.122	7.638	2316.425
%RSD		11.783	0.429	11.774	32.868	86.603	57.735	1.031	10.737	13.639	9.941	13.478	1.541

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:45:02	175.001	1285.050	890.024	117462.470	0.000	1570.074	45.000
2	10:45:24	140.001	1150.040	900.024	118378.920	0.000	1540.071	30.000
3	10:45:45	145.001	1255.047	730.016	120876.750	0.000	1755.092	20.000
x		153.334	1230.045	840.021	118906.050	0.000	1621.746	31.667
σ		18.930	70.892	95.399	1767.124	0.000	116.452	12.583
%RSD		12.346	5.763	11.357	1.486	0.000	7.181	39.736

ICSA 10/19/2016 10:50:23 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:50:45	124654.420	15.000	1090.036	TM 146482050.000	T 14882067.000	T 136448540.000	TM 148738800.000	T 5500510.700	178025.740	302902.710	7716.786	4
2	10:51:06	125420.140	20.000	915.025	TM 149230040.000	T 14890277.000	T 138243150.000	TM 152659160.000	T 5671503.900	179107.240	304893.520	7136.528	5
3	10:51:28	121481.120	27.500	1065.034	TM 147049990.000	T 14976938.000	T 136992880.000	TM 150039670.000	T 5741908.800	179683.390	310714.560	7436.659	4
x		123851.890	20.833	1023.365	TM 147587360.000	T 14916427.000	T 137228190.000	TM 150479210.000	T 5637974.500	178938.790	306170.270	7429.991	4
σ		2088.540	6.292	94.654	TM 1450668.000	T 52564.201	T 920150.170	TM 1996796.400	T 124142.740	841.563	4059.406	290.187	
%RSD		1.686	30.199	9.249	TM 0.983	T 0.352	T 0.671	TM 1.327	T 2.202	0.470	1.326	3.906	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:50:45	2640.209	2135.137	T 301912510.000	355.004	475.007	1050.033	1840.102	1268.048	453.006	483.507	562.509	2
2	10:51:06	2880.249	2280.156	T 301869970.000	350.004	350.004	970.028	1940.113	1318.052	446.006	503.008	544.509	2
3	10:51:28	2785.233	2425.176	T 309314530.000	520.008	490.007	1135.039	1855.103	1309.051	414.005	462.006	553.009	2
x		2768.564	2280.156	T 304365670.000	408.339	438.339	1051.700	1878.439	1298.384	437.672	482.840	553.343	2

σ		120.885	145.020	T 4285891.400	96.741	76.868	82.518	53.935	26.654	20.793	20.509	9.005	
%RSD		4.366	6.360	T 1.408	23.691	17.536	7.846	2.871	2.053	4.751	4.248	1.627	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	10:50:45	3545.377	211675.720	T 3178037.100	470.007	500.007	610.011	949148.210	3350.337	880.023	627.012	190.001	1619
2	10:51:06	3590.387	215899.380	T 3301006.300	560.009	535.009	620.012	957506.550	4480.602	1145.039	731.516	140.001	1704
3	10:51:28	3580.385	220651.000	T 3384765.800	510.008	525.008	550.009	966864.260	4260.545	1190.043	804.519	250.002	1698
x		3572.049	216075.360	T 3287936.400	513.341	520.008	593.344	957839.670	4030.494	1071.702	721.016	193.335	167
σ		23.634	4490.230	T 103982.250	45.094	18.028	37.861	8862.720	599.222	167.517	89.218	55.076	47
%RSD		0.662	2.078	T 3.163	8.784	3.467	6.381	0.925	14.867	15.631	12.374	28.488	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:50:45	525.008	1380.057	2905.253	125188.400	0.000	82242.415	50.000
2	10:51:06	755.017	1455.064	3010.272	126075.050	0.000	69685.378	90.000
3	10:51:28	690.014	1655.082	3635.396	127143.120	0.000	55156.115	90.000
x		656.680	1496.734	3183.641	126135.520	0.000	69027.969	76.667
σ		118.572	142.169	394.740	978.759	0.000	13555.112	23.094
%RSD		18.056	9.499	12.399	0.776	0.000	19.637	30.123

ICSAB 10/19/2016 10:56:06 AM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:56:28	113162.880	3137.795	46855.771	TM 138530090.000	T 13918423.000	T 130170480.000	TM 141756590.000	T 5225087.100	165507.720	287188.180	58768.429	10
2	10:56:49	111441.330	3090.287	47978.960	TM 139258390.000	T 14155035.000	T 131911760.000	TM 145262390.000	T 5314287.400	167881.290	292392.500	60584.916	10
3	10:57:11	110162.880	3182.804	47016.222	TM 137170070.000	T 14031978.000	T 131382420.000	TM 144476510.000	T 5384623.100	170699.700	293888.470	60017.870	10
x		111589.030	3136.962	47283.651	TM 138319520.000	T 14035145.000	T 131154890.000	TM 143831830.000	T 5307999.200	168029.570	291156.380	59790.405	10
σ		1505.443	46.264	607.476	TM 1059968.300	T 118337.640	T 892659.340	TM 1839667.200	T 79953.637	2599.161	3517.026	929.361	
%RSD		1.349	1.475	1.285	TM 0.766	T 0.843	T 0.681	TM 1.279	T 1.506	1.547	1.208	1.554	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:56:28	14676.459	78549.666	T 285974540.000	59922.528	12069.369	30277.477	24578.109	18760.553	3979.475	5431.885	563.510	
2	10:56:49	14726.503	78705.398	T 289422310.000	61698.992	12649.799	31619.966	25764.900	19487.386	4079.499	5450.391	512.508	
3	10:57:11	14956.708	80951.116	T 294975160.000	62040.255	12584.749	32251.174	25845.023	19406.292	4097.504	5562.928	531.008	
x		14786.557	79402.060	T 290124000.000	61220.592	12434.639	31382.872	25396.011	19218.077	4052.159	5481.735	535.675	
σ		149.465	1343.780	T 4541152.100	1137.032	318.001	1007.983	709.456	398.297	63.587	70.922	25.819	
%RSD		1.011	1.692	T 1.565	1.857	2.557	3.212	2.794	2.073	1.569	1.294	4.820	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	10:56:28	2810.237	208860.530	T 3146234.300	69359.021	1525.070	17128.797	934652.460	2340.164	119350.810	94076.263	121737.990	16
2	10:56:49	2910.254	206217.930	T 3228572.700	69389.146	1465.064	16973.639	939884.740	2860.245	124901.260	96030.360	124130.540	16
3	10:57:11	2975.266	206187.560	T 3226634.800	69946.468	1560.073	17123.792	942538.490	3045.278	125203.520	97746.795	125430.210	16
x		2898.586	207088.670	T 3200480.600	69564.878	1516.736	17075.409	939025.230	2748.563	123151.860	95951.139	123766.250	16
σ		83.131	1534.550	T 46988.652	330.810	48.049	88.172	4012.660	365.583	3295.274	1836.548	1872.876	
%RSD		2.868	0.741	T 1.468	0.476	3.168	0.516	0.427	13.301	2.676	1.914	1.513	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:56:28	35081.883	203757.950	151954.560	123374.960	0.000	244302.480	136632.770
2	10:56:49	36129.117	209640.230	156006.740	123697.330	0.000	259337.100	139773.650
3	10:57:11	37176.416	211311.130	158020.580	124654.420	0.000	268007.660	141619.130
x		36129.139	208236.440	155327.290	123908.910	0.000	257215.750	139341.850
σ		1047.267	3967.444	3089.560	665.456	0.000	11994.119	2521.071
%RSD		2.899	1.905	1.989	0.537	0.000	4.663	1.809

CCV 10/19/2016 11:01:49 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:02:11	104375.810	73323.436	26731.420	T 12306708.000	T 3631278.200	T 34301466.000	T 12122034.000	1223305.000	141598.960	24177.524	T 2444801.800	691352
2	11:02:33	99244.608	72909.124	26496.044	T 12109230.000	T 3621225.400	T 33485354.000	T 11935512.000	1197745.000	137121.760	23691.827	T 2393899.000	676990
3	11:02:55	100492.050	72093.086	27412.525	T 12115100.000	T 3561102.800	T 33646809.000	T 11741736.000	1205516.400	139461.050	24067.365	T 2434393.200	694556
x		101370.820	72775.215	26879.996	T 12177013.000	T 3604535.400	T 33811209.000	T 11933094.000	1208855.500	139393.920	23978.905	T 2424364.700	687633
σ		2676.096	626.010	475.963	T 112357.430	T 37948.160	T 432180.890	T 190160.960	13103.078	2239.356	254.645	T 26892.426	9355
%RSD		2.640	0.860	1.771	T 0.923	T 1.053	T 1.278	T 1.594	1.084	1.606	1.062	T 1.109	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:02:11	87559.397	T 3611934.300	T 73781205.000	1044149.000	565317.630	687982.450	561196.820	75033.522	6079.109	8372.603	406.005	6296
2	11:02:33	84071.507	T 3586596.700	T 73849227.000	1033579.800	545632.600	691628.810	559242.760	74331.386	5929.054	8310.071	403.005	6546
3	11:02:55	86096.807	T 3584399.400	T 73640314.000	1027171.200	560302.470	684529.550	562442.780	74369.556	5921.052	8417.125	432.506	6421
x		85909.237	T 3594310.100	T 73756915.000	1034966.700	557084.240	688046.940	560960.790	74578.154	5976.405	8366.600	413.838	6421
σ		1751.494	T 15302.448	T 106553.450	8573.442	10229.510	3550.069	1613.017	394.821	89.034	53.779	16.236	125

%RSD		2.039	T 0.426	T 0.144	0.828	1.836	0.516	0.288	0.529	1.490	0.643	3.923	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	11:02:11	764846.030	185365.110	1579909.800	256361.590	8812.329	127858.560	861652.080	809009.650	547414.630	423308.290	549088.360	144594
2	11:02:33	757606.360	184728.090	1610093.500	254599.890	8527.181	127294.270	839009.620	801709.260	543938.560	421556.210	540199.860	143444
3	11:02:55	757894.010	183140.720	1612885.000	250767.440	8577.207	126513.350	832022.070	806549.610	542972.820	424289.780	541289.370	145340
x		760115.470	184411.310	1600962.800	253909.640	8638.906	127222.060	844227.920	805756.170	544775.340	423051.420	543525.870	144460
σ		4099.313	1145.531	18285.778	2860.237	152.258	675.504	15488.947	3714.303	2336.144	1384.768	4847.966	955
%RSD		0.539	0.621	1.142	1.126	1.762	0.531	1.835	0.461	0.429	0.327	0.892	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:02:11	34049.746	1495821.700	T 8039408.200	113193.080	0.000	197528.630	112775.260
2	11:02:33	34475.620	1501750.900	T 7997311.800	113444.780	0.000	211306.070	112860.840
3	11:02:55	34966.642	1516424.500	T 8058079.500	115216.880	0.000	222079.790	112810.500
x		34497.336	1504665.700	T 8031599.800	113951.580	0.000	210304.830	112815.530
σ		458.833	10606.178	T 31127.264	1102.983	0.000	12306.166	43.010
%RSD		1.330	0.705	T 0.388	0.968	0.000	5.852	0.038

CCB 10/19/2016 11:07:32 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:07:54	109810.560	20.000	810.020	228221.930	1180.042	9397.649	60921.138	990.029	144907.220	30.000	10943.592	1200.043
2	11:08:16	105694.080	10.000	870.023	232054.310	1800.097	14921.677	61944.902	1030.032	143182.410	45.000	11378.883	1120.038
3	11:08:37	110444.730	7.500	895.024	236546.800	2140.137	19536.443	63038.992	1220.045	145683.940	45.000	11343.859	1285.050
x		108649.790	12.500	858.355	232274.350	1706.759	14618.590	61968.344	1080.035	144591.190	40.000	11222.111	1201.710
σ		2579.287	6.614	43.687	4166.796	486.806	5076.188	1059.122	122.890	1280.363	8.660	241.840	82.519
%RSD		2.374	52.915	5.090	1.794	28.522	34.724	1.709	11.378	0.886	21.651	2.155	6.867

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:07:54	4005.481	535.009	197139.060	95.000	50.000	230.002	525.008	972.028	334.003	454.506	438.006	2135.137
2	11:08:16	3955.469	595.011	209625.040	140.001	60.000	205.001	490.007	1040.032	332.003	414.005	409.005	2145.138
3	11:08:37	3745.421	515.008	212774.580	100.000	45.000	215.001	515.008	995.030	317.003	381.004	399.005	1995.119
x		3902.124	548.342	206512.890	111.667	51.667	216.668	510.008	1002.364	327.670	416.505	415.339	2091.798
σ		137.993	41.635	8269.308	24.665	7.638	12.583	18.028	34.590	9.292	36.815	20.257	83.875
%RSD		3.536	7.593	4.004	22.088	14.783	5.808	3.535	3.451	2.836	8.839	4.877	4.010

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:07:54	40.000	191099.320	3275.322	5.000	0.000	20.000	857264.270	2775.231	730.016	595.511	20.000	145512.460
2	11:08:16	75.000	186811.120	3765.425	65.000	0.000	10.000	857432.610	3130.294	915.025	681.514	30.000	144483.560
3	11:08:37	120.000	191048.750	3670.404	40.000	0.000	10.000	860315.630	3135.295	970.028	711.015	70.000	144302.000
x		78.334	189653.060	3570.384	36.667	0.000	13.333	858337.500	3013.607	871.690	662.680	40.000	144766.010
σ		40.104	2461.327	259.910	30.139	0.000	5.774	1715.172	206.454	125.738	60.011	26.458	652.788
%RSD		51.197	1.298	7.280	82.196	0.000	43.301	0.200	6.851	14.425	9.056	66.144	0.451

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:07:54	220.001	1745.091	830.021	114924.870	0.000	1155.040	10.000
2	11:08:16	190.001	1710.088	800.019	116153.340	0.000	1085.035	50.000
3	11:08:37	230.002	1605.077	995.030	114864.460	0.000	1250.047	40.000
x		213.335	1686.752	875.023	115314.220	0.000	1163.374	33.333
σ		20.817	72.866	105.006	727.326	0.000	82.821	20.817
%RSD		9.758	4.320	12.000	0.631	0.000	7.119	62.450

200-35736-A-11-A 10/19/2016 11:13:14 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	11:13:36	128553.880	507.508	3825.439	T 1187922.200	T 2042133.300	T 78571729.000	T 7227354.900	T 2766143.200	190907.140	14146.001	207934.060	149885.
2	11:13:58	126669.530	525.008	3905.458	T 1197858.700	T 2037866.600	T 78214542.000	T 7400292.600	T 2894457.300	200215.410	14506.310	216426.140	153766.
3	11:14:20	122770.520	495.007	4080.499	T 1161353.400	T 2112082.500	T 80818434.000	T 7508250.400	T 2926890.600	199011.110	14065.933	215372.630	158868.
x		125997.980	509.174	3937.132	T 1182378.100	T 2064027.500	T 79201568.000	T 7378632.600	T 2862497.000	196711.220	14239.415	213244.280	154173.
σ		2949.585	15.070	130.447	T 18873.604	T 41671.508	T 1411590.000	T 141694.900	T 85006.039	5062.419	234.580	4628.855	4505.
%RSD		2.341	2.960	3.313	T 1.596	T 2.019	T 1.782	T 1.920	T 2.970	2.574	1.647	2.171	2.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	11:13:36	20782.950	TM 26028089.000	T 314763490.000	131209.450	52357.109	1341678.500	401687.960	14653.439	767.018	657.513	165.501	4460.
2	11:13:58	20868.056	TM 27118992.000	T 328194300.000	136985.650	52964.022	1388516.400	410647.370	14805.573	763.017	663.513	179.001	4610.
3	11:14:20	21553.928	TM 27588390.000	T 335268500.000	138810.650	54930.371	1414816.100	419032.240	15186.916	790.019	670.513	176.001	5130.
x		21068.311	TM 26911824.000	T 326075430.000	135668.590	53417.168	1381670.300	410455.860	14881.976	773.351	663.847	173.501	4734.
σ		422.704	TM 800514.780	T 10415424.000	3968.068	1345.149	37046.289	8673.728	274.823	14.572	6.507	7.089	351.
%RSD		2.006	TM 2.975	T 3.194	2.925	2.518	2.681	2.113	1.847	1.884	0.980	4.086	7.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	11:13:36	646183.370	529014.530	13920.811	5665.963	220.001	2385.171	924815.870	49177.446	2485.185	2073.629	395804.690	188085.
2	11:13:58	652850.810	532327.550	13555.510	5420.881	295.003	2440.179	945256.100	49894.572	2730.224	2037.124	407645.000	188065.
3	11:14:20	674242.700	545307.210	13225.245	5866.032	230.002	2520.191	958067.450	51559.629	2655.211	2108.633	415731.100	194336.
x		657758.960	535549.760	13567.189	5650.959	248.335	2448.513	942713.140	50210.549	2623.540	2073.129	406393.600	190162.
σ		14659.434	8611.031	347.930	222.954	40.723	67.895	16771.013	1222.121	125.552	35.757	10021.975	3614.
%RSD		2.229	1.608	2.564	3.945	16.399	2.773	1.779	2.434	4.786	1.725	2.466	1.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:13:36	1830.101	5866.032	1059855.300	124775.320	0.000	230264.740	75435.329
2	11:13:58	1690.086	5986.075	1105694.300	131335.440	0.000	217099.820	75631.214
3	11:14:20	1610.078	5921.052	1099077.400	129914.370	0.000	211447.850	77032.610
x		1710.088	5924.386	1088209.000	128675.040	0.000	219604.140	76033.051
σ		111.367	60.091	24776.862	3451.191	0.000	9655.183	871.167
%RSD		6.512	1.014	2.277	2.682	0.000	4.397	1.146

200-35736-A-11-A SD@5 10/19/2016 11:18:56 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:19:18	119466.640	135.001	1245.046	422651.940	378489.380	T 15970434.000	T 1494608.000	520729.660	180532.490	2730.224	49638.810	32040.769
2	11:19:40	121642.290	92.500	1175.041	416469.190	383604.340	T 15706317.000	T 1471510.900	523174.460	179157.780	2805.236	49092.195	32692.032
3	11:20:02	118046.570	82.500	1240.046	416007.880	376852.910	T 15733774.000	T 1468123.300	530366.490	177833.710	2615.205	50436.199	32451.562
x		119718.500	103.334	1220.045	418376.340	379648.880	T 15803508.000	T 1478080.700	524756.870	179174.660	2716.888	49722.401	32394.788
σ		1811.041	27.876	39.054	3709.959	3521.900	T 145211.960	T 14412.929	5009.509	1349.470	95.715	675.890	329.323
%RSD		1.513	26.977	3.201	0.887	0.928	T 0.919	T 0.975	0.955	0.753	3.523	1.359	1.017

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:19:18	6831.400	T 5262342.400	T 64638255.000	26235.633	10778.484	280622.750	88765.753	4044.491	465.006	247.002	114.500	1390.058
2	11:19:40	6776.377	T 5326359.400	T 65376457.000	27753.088	10533.327	283373.710	89394.098	4073.498	474.007	255.502	157.501	1360.055
3	11:20:02	6516.274	T 5284869.100	T 65769561.000	28068.616	10483.296	284355.220	90987.687	4076.499	438.006	233.502	128.500	1595.076
x		6708.017	T 5291190.300	T 65261424.000	27352.445	10598.369	282783.890	89715.846	4064.829	459.006	245.335	133.501	1448.397

σ		168.318	T 32473.270	T 574358.310	979.970	157.977	1934.876	1145.377	17.677	18.736	11.094	21.932	127.911
%RSD		2.509	T 0.614	T 0.880	3.583	1.491	0.684	1.277	0.435	4.082	4.522	16.428	8.831
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:19:18	129415.510	282117.670	1975.117	1145.039	60.000	565.010	965572.510	9742.847	590.010	464.006	78419.053	165649.120
2	11:19:40	131521.900	280327.850	2125.135	1100.036	90.000	645.012	972805.460	10103.061	675.014	553.509	79162.556	165113.850
3	11:20:02	130917.170	283978.880	2360.167	1165.041	45.000	545.009	978017.610	10613.378	680.014	573.010	81106.871	165103.750
x		130618.190	282141.470	2153.473	1136.706	65.000	585.010	972131.860	10153.095	648.346	530.175	79562.827	165288.900
σ		1084.556	1825.633	194.083	33.294	22.913	52.917	6249.835	437.417	50.582	58.127	1387.895	311.996
%RSD		0.830	0.647	9.013	2.929	35.251	9.045	0.643	4.308	7.802	10.964	1.744	0.189

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:19:18	310.003	1430.061	205175.180	124704.800	0.000	27312.361	13175.206
2	11:19:40	370.004	1540.071	209351.640	127536.100	0.000	29085.357	14206.052
3	11:20:02	395.005	1470.065	210713.640	124986.900	0.000	29876.755	14996.744
x		358.337	1480.066	208413.490	125742.600	0.000	28758.157	14126.000
σ		43.685	55.683	2885.954	1559.610	0.000	1313.135	913.404
%RSD		12.191	3.762	1.385	1.240	0.000	4.566	6.466

200-35736-A-11-A PDS 10/19/2016 11:24:39 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:25:01	127173.350	1797.597	52327.015	T 8637338.400	T 2382989.900	T 79614841.000	T 14890784.000	T 3120798.200	206663.400	14125.984	315905.790	239305
2	11:25:22	127667.100	1750.092	50842.430	T 8406290.700	T 2364694.500	T 80670605.000	T 14838259.000	T 3189576.300	209974.400	13865.765	323275.090	239300
3	11:25:44	125742.550	1715.088	51795.358	T 8382106.700	T 2386157.700	T 80819716.000	T 15138625.000	T 3297606.600	208415.010	13820.728	331178.000	244530
x		126861.000	1754.259	51654.934	T 8475245.300	T 2377947.400	T 80368387.000	T 14955889.000	T 3202660.300	208350.930	13937.492	323452.960	241045
σ		999.571	41.412	752.188	T 140896.630	T 11586.069	T 656835.090	T 160417.930	T 89127.380	1656.430	164.784	7637.658	3018
%RSD		0.788	2.361	1.456	T 1.662	T 0.487	T 0.817	T 1.073	T 2.783	0.795	1.182	2.361	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:25:01	32181.039	TM 26944241.000	T 334935850.000	160458.710	63947.443	1413245.900	507000.960	22972.822	1976.117	2125.635	164.001	5936
2	11:25:22	30808.449	TM 27094624.000	T 338474280.000	163730.300	65242.448	1441634.500	509536.560	23256.214	1873.105	2224.648	173.001	6066
3	11:25:44	32241.155	TM 27648290.000	T 339650410.000	163336.460	65413.115	1441449.500	519177.340	23328.315	1894.108	2248.152	169.501	6116
x		31743.547	TM 27229052.000	T 337686840.000	162508.490	64867.669	1432110.000	511904.950	23185.784	1914.443	2199.479	168.834	6039
σ		810.377	TM 370775.270	T 2453935.900	1786.050	801.494	16337.055	6424.406	187.921	54.434	65.021	4.537	92
%RSD		2.553	TM 1.362	T 0.727	1.099	1.236	1.141	1.255	0.811	2.843	2.956	2.687	1

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	11:25:01	881000.270	548013.850	159640.910	34330.321	805.019	9222.551	986845.860	47848.586	49252.667	38138.086	444930.670	194498
2	11:25:22	886448.040	540649.080	162079.280	35768.340	730.016	9667.803	982224.510	47973.946	49979.827	39076.756	453825.740	195914
3	11:25:44	889931.510	545586.120	165835.960	35683.158	775.018	9777.867	998616.870	48776.269	50245.625	39408.536	461209.330	196795
x		885793.270	544749.680	162518.720	35260.606	770.018	9556.074	989229.080	48199.600	49826.040	38874.459	453321.910	195736
σ		4501.477	3752.954	3120.816	806.776	37.751	294.035	8452.051	503.328	514.032	658.942	8151.017	1158
%RSD		0.508	0.689	1.920	2.288	4.903	3.077	0.854	1.044	1.032	1.695	1.798	0

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:25:01	33032.702	165240.090	1107834.600	129511.250	0.000	413224.920	199491.810
2	11:25:22	33759.156	169810.690	1125276.900	132061.140	0.000	420334.420	207625.240
3	11:25:44	35688.168	173013.370	1142806.500	134369.480	0.000	432540.850	207068.380
x		34160.009	169354.720	1125306.000	131980.620	0.000	422033.400	204728.480
σ		1372.366	3906.650	17485.946	2430.117	0.000	9769.399	4543.627
%RSD		4.017	2.307	1.554	1.841	0.000	2.315	2.219

200-35736-A-11-I MS 10/19/2016 11:30:21 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:30:43	126447.860	1827.600	44494.313	T 8622479.500	T 2569014.500	T 92744056.000	T 15720673.000	T 3758284.300	211928.900	19886.858	359250.540	26726
2	11:31:05	122901.480	1847.602	44880.346	T 8595635.500	T 2562323.500	T 92314280.000	T 15514578.000	T 3778637.300	213691.190	20012.007	367630.330	26799
3	11:31:26	123395.110	1940.113	45446.878	T 8658801.400	T 2554792.000	T 91351467.000	T 15875407.000	T 3818235.700	213792.480	20167.194	364814.460	26913
x		124248.150	1871.772	44940.512	T 8625638.800	T 2562043.300	T 92136601.000	T 15703553.000	T 3785052.400	213137.520	20022.020	363898.450	26813
σ		1920.928	60.024	479.124	T 31701.233	T 7115.417	T 713094.130	T 181022.620	T 30486.217	1047.921	140.436	4264.332	94
%RSD		1.546	3.207	1.066	T 0.368	T 0.278	T 0.774	T 1.153	T 0.805	0.492	0.701	1.172	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:30:43	34310.280	TM 28539105.000	T 345189590.000	162685.140	71518.117	1648868.600	528348.910	24469.950	1968.116	2236.650	168.501	650
2	11:31:05	34951.610	TM 28846105.000	T 350061010.000	165517.820	72231.182	1668958.300	528286.990	24858.525	1899.108	2153.639	170.501	680
3	11:31:26	34320.300	TM 28984670.000	T 351289020.000	165048.200	71633.611	1696430.100	536591.050	25194.028	2015.122	2146.138	163.501	688
x		34527.397	TM 28789960.000	T 348846540.000	164417.050	71794.303	1671419.000	531075.650	24840.834	1960.782	2178.809	167.501	672
σ		367.414	TM 228027.200	T 3225985.700	1518.153	382.730	23876.067	4776.578	362.363	58.354	50.232	3.606	19

%RSD		1.064	TM 0.792	T 0.925	0.923	0.533	1.428	0.899	1.459	2.976	2.305	2.153	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	11:30:43	984667.520	584502.680	154255.560	35121.968	665.013	9102.485	967033.680	53741.505	14146.001	10597.368	459837.190	19322
2	11:31:05	998033.430	587785.140	157662.210	35382.518	645.012	8877.364	964069.120	54564.171	13720.645	10845.528	464678.730	19753
3	11:31:26	1016118.600	595242.940	160423.370	35828.469	675.014	8947.401	984757.620	56400.269	13985.866	10874.046	471465.390	20091
x		999606.520	589176.920	157447.050	35444.318	661.680	8975.750	971953.470	54901.982	13950.837	10772.314	465327.100	19722
σ		15784.448	5503.736	3089.533	357.282	15.276	115.207	11187.352	1361.192	214.830	152.177	5841.150	385
%RSD		1.579	0.934	1.962	1.008	2.309	1.284	1.151	2.479	1.540	1.413	1.255	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:30:43	35026.768	140898.060	1066462.500	130720.630	0.000	432874.340	205499.130
2	11:31:05	36124.106	144377.650	1082674.300	128009.710	0.000	434326.390	209868.070
3	11:31:26	36805.595	146127.800	1094025.700	134500.530	0.000	439971.600	213184.770
x		35985.489	143801.170	1081054.200	131076.960	0.000	435724.110	209517.320
σ		897.478	2662.104	13852.866	3260.046	0.000	3749.397	3854.803
%RSD		2.494	1.851	1.281	2.487	0.000	0.860	1.840

200-35736-A-11-J MSD 10/19/2016 11:36:04 AM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**5**
1	11:36:26	128201.180	1765.093	44143.382	T 8806749.000	T 2657420.700	T 88622108.000	T 15415072.000	T 2696569.100	209569.350	15492.197	353795.700	266214.
2	11:36:48	125127.950	1852.603	44825.198	T 8754712.000	T 2685510.200	T 89000083.000	T 15791778.000	T 2747832.400	216405.880	16388.053	364686.710	271325.
3	11:37:09	122286.980	1850.103	44704.875	T 8692983.100	T 2669800.800	T 89301452.000	T 15671673.000	T 2783484.800	217479.730	16498.162	363225.310	267748.
x		125205.370	1822.600	44557.818	T 8751481.400	T 2670910.600	T 88974548.000	T 15626174.000	T 2742628.800	214484.990	16126.137	360569.240	268429.
σ		2957.857	49.818	363.920	T 56951.692	T 14077.625	T 340391.010	T 192430.330	T 43690.908	4290.793	551.762	5911.392	2622.
%RSD		2.362	2.733	0.817	T 0.651	T 0.527	T 0.383	T 1.231	T 1.593	2.001	3.422	1.639	0.

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**8**
1	11:36:26	34826.348	T 25702145.000	T 339906720.000	163346.560	69911.321	1560804.300	545152.260	24306.712	2094.132	2256.653	153.501	5655.
2	11:36:48	34390.445	T 26364248.000	T 342901370.000	164533.150	71864.602	1599794.000	551836.940	24510.009	2129.136	2199.145	166.001	5610.
3	11:37:09	34856.411	T 26342968.000	T 347396830.000	163684.850	71487.988	1598805.600	559087.680	24807.449	1993.119	2180.643	160.001	5525.
x		34691.068	T 26136454.000	T 343401640.000	163854.850	71087.970	1586468.000	552025.630	24541.390	2072.129	2212.147	159.834	5597.
σ		260.781	T 376273.000	T 3770027.700	611.287	1036.261	22230.870	6969.626	251.839	70.627	39.638	6.252	66.
%RSD		0.752	T 1.440	T 1.098	0.373	1.458	1.401	1.263	1.026	3.408	1.792	3.911	1.

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	11:36:26	793924.580	565400.370	158737.340	36079.009	680.014	10618.381	1005386.200	53746.521	13960.845	10670.915	437441.290	198808.
2	11:36:48	809959.130	570323.930	163730.300	36244.367	755.017	10218.131	983761.290	54373.550	13650.588	10962.104	442856.510	200539.
3	11:37:09	808275.270	559692.480	161367.420	35823.458	815.020	10778.484	996505.980	54925.355	14226.069	10942.091	443359.630	200478.
x		804053.000	565138.930	161278.350	36048.945	750.017	10538.332	995217.820	54348.475	13945.834	10858.370	441219.140	199942.
σ		8811.776	5320.545	2497.668	212.059	67.642	288.626	10869.853	589.817	288.034	162.649	3281.376	982.
%RSD		1.096	0.941	1.549	0.588	9.019	2.739	1.092	1.085	2.065	1.498	0.744	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:36:26	36284.454	141750.240	1111379.300	129229.070	0.000	408270.030	202254.810
2	11:36:48	38674.820	149058.590	1125341.100	132686.070	0.000	416161.650	206319.170
3	11:37:09	37707.608	148740.770	1124737.300	136617.650	0.000	418376.060	212303.630
x		37555.627	146516.530	1120485.900	132844.260	0.000	414269.250	206959.200
σ		1202.409	4130.786	7892.288	3696.827	0.000	5312.145	5054.890
%RSD		3.202	2.819	0.704	2.783	0.000	1.282	2.442

200-35736-A-12-A 10/19/2016 11:41:47 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	11:42:09	115287.360	510.008	3480.363	1003996.000	T 2451516.800	T 68660647.000	T 6576836.500	T 3712663.000	201693.060	7096.511	197670.300	143227.7
2	11:42:30	115106.110	417.505	3605.390	T 1087822.900	T 2467161.600	T 68580108.000	T 6595759.000	T 3685041.100	199598.070	6826.398	197857.500	146329.5
3	11:42:52	117472.540	385.004	3115.291	T 1086905.700	T 2470814.200	T 68872159.000	T 6574749.200	T 3739592.700	200114.200	6981.462	198434.290	143948.9
x		115955.340	437.506	3400.348	T 1059574.900	T 2463164.200	T 68704305.000	T 6582448.200	T 3712432.300	200468.440	6968.123	197987.360	144502.1
σ		1317.056	64.857	254.659	T 48134.877	T 10250.956	T 150840.720	T 11574.640	T 27276.564	1091.498	135.549	398.211	1623.1
%RSD		1.136	14.824	7.489	T 4.543	T 0.416	T 0.220	T 0.176	T 0.735	0.544	1.945	0.201	1.1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	11:42:09	19251.112	TM 28756830.000	T 319704770.000	123304.440	53831.796	1318974.200	412128.260	15348.064	724.016	672.014	155.501	5410.8
2	11:42:30	19100.939	TM 29231514.000	T 323999100.000	121032.880	51995.981	1330157.700	415285.190	15441.150	699.015	709.015	155.001	5460.8
3	11:42:52	18935.751	TM 28915329.000	T 321769940.000	122412.900	52728.276	1311070.700	418053.110	15183.913	720.016	659.513	145.501	5160.7
x		19095.934	TM 28967891.000	T 321824610.000	122250.070	52852.018	1320067.600	415155.520	15324.376	714.349	680.181	152.001	5344.1
σ		157.740	TM 241667.840	T 2147686.100	1144.500	924.142	9590.375	2964.552	130.244	13.429	25.742	5.635	160.7
%RSD		0.826	TM 0.834	T 0.667	0.936	1.749	0.727	0.714	0.850	1.880	3.785	3.707	3.0

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	11:42:09	775172.060	512685.960	6296.189	4890.717	220.001	2670.214	953009.470	21578.961	1520.069	1293.550	387589.980	187154.9
2	11:42:30	781811.660	507160.720	6056.100	4550.621	325.003	2470.183	960639.330	22465.130	1750.092	1285.050	390670.670	187023.4
3	11:42:52	781167.490	511211.700	6271.180	4750.677	270.002	2590.201	970380.010	23356.354	1565.074	1278.049	392794.720	185132.5
x		779383.740	510352.790	6207.823	4730.672	271.669	2576.866	961342.940	22466.815	1611.745	1285.550	390351.790	186436.9
σ		3661.609	2861.010	131.989	170.928	52.521	100.680	8706.620	888.698	121.907	7.763	2616.983	1131.5
%RSD		0.470	0.561	2.126	3.613	19.333	3.907	0.906	3.956	7.564	0.604	0.670	0.6

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:42:09	1190.043	4710.666	844733.130	127384.950	0.000	143026.070	60334.008
2	11:42:30	1080.035	4750.677	843660.810	126468.010	0.000	143631.240	59817.150
3	11:42:52	1050.033	5100.780	857863.980	128352.330	0.000	147883.190	59420.736
x		1106.704	4854.041	848752.640	127401.770	0.000	144846.830	59857.298
σ		73.716	214.617	7908.847	942.274	0.000	2646.910	457.958
%RSD		6.661	4.421	0.932	0.740	0.000	1.827	0.765

MB 200-110239/1-A 10/19/2016 11:47:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:47:52	118882.480	0.000	1055.033	502543.980	980.029	29796.611	65639.000	2740.225	181644.480	30.000	9712.829	1775.094
2	11:48:13	118429.280	0.000	1095.036	503244.660	1460.064	37697.585	67074.699	3090.287	184091.100	15.000	10283.171	1840.102
3	11:48:35	115196.740	5.000	1015.031	498464.170	1760.093	41346.222	65016.568	3100.288	184839.310	25.000	10363.221	1850.103
x		117502.830	1.667	1055.033	501417.600	1400.062	36280.139	65910.089	2976.933	183524.960	23.333	10119.741	1821.766
σ		2009.951	2.887	40.003	2581.629	393.478	5903.833	1055.506	205.056	1670.967	7.638	354.661	40.727
%RSD		1.711	173.205	3.792	0.515	28.104	16.273	1.601	6.888	0.910	32.733	3.505	2.236

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:47:52	3415.350	8807.326	355414.610	90.000	135.001	880.023	1020.031	1157.040	394.005	140.501	136.001	665.013
2	11:48:13	3605.390	11754.143	390102.590	105.000	85.000	1110.037	1000.030	1316.052	447.006	144.501	145.001	705.015
3	11:48:35	3500.367	13090.139	400848.100	95.000	160.001	1055.033	955.027	1223.045	412.005	130.501	144.501	675.014
x		3507.036	11217.203	382121.760	96.667	126.667	1015.031	991.696	1232.046	417.672	138.501	141.834	681.681

σ		95.195	2191.312	23744.909	7.638	38.188	120.111	33.294	79.887	26.951	7.211	5.058	20.818
%RSD		2.714	19.535	6.214	7.901	30.149	11.833	3.357	6.484	6.453	5.207	3.566	3.054
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:47:52	840.021	229408.050	160.001	30.000	0.000	0.000	989771.950	760.017	85.000	89.000	160.001	158752.490
2	11:48:13	980.029	230482.720	270.002	80.000	5.000	5.000	993271.200	940.027	135.001	113.500	175.001	162760.870
3	11:48:35	1025.032	233757.870	200.001	70.000	0.000	10.000	995827.150	1025.032	160.001	125.500	135.001	157389.650
x		948.361	231216.210	210.001	60.000	1.667	5.000	992956.770	908.358	126.667	109.334	156.667	159634.340
σ		96.485	2265.774	55.678	26.458	2.887	5.000	3039.820	135.315	38.188	18.603	20.207	2792.086
%RSD		10.174	0.980	26.513	44.096	173.205	100.000	0.306	14.897	30.149	17.015	12.898	1.749

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:47:52	115.000	400.005	685.014	122276.910	0.000	5961.066	70.000
2	11:48:13	135.001	365.004	755.017	123979.420	0.000	5786.004	70.000
3	11:48:35	100.000	405.005	870.023	123395.110	0.000	5170.802	45.000
x		116.667	390.005	770.018	123217.140	0.000	5639.291	61.667
σ		17.560	21.795	93.412	865.093	0.000	415.058	14.434
%RSD		15.051	5.588	12.131	0.702	0.000	7.360	23.406

LCS 200-110239/2-A 10/19/2016 11:53:13 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:53:35	114179.780	1327.553	46188.914	T 7568104.500	263049.600	600372.080	T 7146497.700	229732.470	164952.260	45.000	112901.110	82900.664
2	11:53:57	108904.650	1297.551	46073.595	T 7423611.800	258895.310	578234.620	T 6837577.600	226062.800	163588.920	5.000	109991.750	83699.642
3	11:54:18	106348.220	1160.040	46213.983	T 7316021.900	251472.950	581438.240	T 6826285.700	221644.050	160731.320	10.000	109498.520	81704.780
x		109810.880	1261.715	46158.831	T 7435912.700	257805.950	586681.650	T 6936787.000	225813.110	163090.830	20.000	110797.130	82768.362
σ		3993.653	89.321	74.873	T 126490.700	5864.699	11963.980	T 181702.550	4049.990	2154.102	21.795	1838.716	1003.990
%RSD		3.637	7.079	0.162	T 1.701	2.275	2.039	T 2.619	1.794	1.321	108.973	1.660	1.213

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:53:35	13530.490	65257.507	T 6064144.100	24668.242	11118.708	33829.298	97594.909	9094.481	1561.073	1739.591	127.000	1835.101
2	11:53:57	12274.518	63129.333	T 5958026.100	24553.072	10463.283	33303.240	97584.850	8929.391	1578.075	1737.091	115.000	2005.121
3	11:54:18	12374.592	64830.846	T 5969957.100	24943.652	11013.638	33052.742	98993.119	8909.381	1484.066	1715.588	106.500	1880.106
x		12726.533	64405.895	T 5997375.800	24721.655	10865.210	33395.093	98057.626	8977.751	1541.071	1730.757	116.167	1906.776
σ		698.042	1125.930	T 58130.016	200.693	352.020	396.343	810.176	101.585	50.095	13.195	10.300	88.092
%RSD		5.485	1.748	T 0.969	0.812	3.240	1.187	0.826	1.132	3.251	0.762	8.866	4.620

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:53:35	208946.600	204152.740	139481.220	28123.708	445.006	6536.281	905370.620	860.022	44333.886	34340.341	44900.400	148871.930
2	11:53:57	208050.500	204426.060	143812.800	28053.590	450.006	6591.303	897195.860	855.022	44940.508	34774.741	45888.085	148478.440
3	11:54:18	208141.620	200670.830	142657.940	27657.930	440.006	6491.264	893979.770	805.019	46198.942	34457.082	46033.485	148599.510
x		208379.570	203083.210	141983.980	27945.076	445.006	6539.616	898848.750	840.021	45157.779	34524.055	45607.323	148649.960
σ		493.170	2093.644	2243.057	251.135	5.000	50.103	5872.558	30.415	951.322	224.810	616.515	201.536
%RSD		0.237	1.031	1.580	0.899	1.124	0.766	0.653	3.621	2.107	0.651	1.352	0.136

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:53:35	59320.380	146445.570	54388.599	113575.670	0.000	146541.410	115433.370
2	11:53:57	59646.541	148473.400	55231.364	117472.540	0.000	153957.820	116979.090
3	11:54:18	60198.520	148720.590	55095.917	113495.120	0.000	162826.510	117235.880
x		59721.813	147879.850	54905.293	114847.780	0.000	154441.910	116549.450
σ		443.883	1248.255	452.566	2273.468	0.000	8153.333	975.044
%RSD		0.743	0.844	0.824	1.980	0.000	5.279	0.837

200-35680-A-13-A 10/19/2016 11:58:57 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:59:19	115599.510	12.500	1270.048	475765.010	710.015	12419.626	62386.544	2190.144	170810.830	5.000	12219.478	1515.069
2	11:59:40	118086.860	7.500	1225.045	478614.890	870.023	15216.943	62657.558	2270.155	170214.780	10.000	11954.286	1680.085
3	12:00:02	116243.970	7.500	1060.034	478326.790	1240.046	22840.640	64303.811	2400.173	166578.310	50.000	12164.438	1805.098
x		116643.450	9.167	1185.042	477568.900	940.028	16825.736	63115.971	2286.824	169201.300	21.667	12112.734	1666.750
σ		1290.895	2.887	110.574	1568.838	271.862	5393.565	1037.586	106.002	2291.046	24.664	139.952	145.474
%RSD		1.107	31.492	9.331	0.329	28.921	32.055	1.644	4.635	1.354	113.836	1.155	8.728

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:59:19	4035.488	4375.574	260479.710	80.000	120.000	650.013	1495.067	1205.044	384.004	135.501	113.000	525.008
2	11:59:40	4220.534	5070.771	271102.100	75.000	115.000	665.013	1415.060	1270.048	409.005	106.000	121.000	580.010
3	12:00:02	4300.555	7041.487	301563.760	110.000	125.000	840.021	1575.074	1209.044	422.005	122.000	118.500	620.012
x		4185.526	5495.944	277715.190	88.334	120.000	718.349	1495.067	1228.045	405.005	121.167	117.500	575.010
σ		135.957	1382.878	21325.444	18.930	5.000	105.638	80.007	36.431	19.314	14.768	4.093	47.699

%RSD		3.248	25.162	7.679	21.430	4.167	14.706	5.351	2.967	4.769	12.188	3.483	8.295
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:59:19	675.014	209113.680	315.003	25.000	0.000	5.000	933109.500	580.010	160.001	113.500	115.000	149769.920
2	11:59:40	690.014	209255.440	435.006	25.000	0.000	10.000	924583.490	590.010	215.001	152.001	120.000	147832.740
3	12:00:02	840.021	206552.030	450.006	45.000	0.000	5.000	909633.600	780.018	255.002	172.001	195.001	146612.030
x		735.016	208307.050	400.005	31.667	0.000	6.667	922442.200	650.013	210.001	145.834	143.334	148071.560
σ		91.246	1521.543	73.995	11.547	0.000	2.887	11883.535	112.699	47.698	29.734	44.815	1592.435
%RSD		12.414	0.730	18.499	36.464	0.000	43.301	1.288	17.338	22.713	20.389	31.266	1.075

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:59:19	265.002	675.014	525.008	116153.340	0.000	31189.156	90.000
2	11:59:40	285.002	585.010	650.013	115488.750	0.000	28714.715	140.001
3	12:00:02	325.003	645.012	840.021	118771.700	0.000	26506.060	135.001
x		291.669	635.012	671.681	116804.600	0.000	28803.310	121.667
σ		30.551	45.827	158.620	1735.667	0.000	2342.804	27.538
%RSD		10.475	7.217	23.615	1.486	0.000	8.134	22.634

200-35700-A-19-A 10/19/2016 12:04:41 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:05:02	121279.660	12.500	915.025	496476.130	1680.085	42734.718	67817.697	3250.317	174205.700	40.000	16438.102	2445.179
2	12:05:24	122992.140	2.500	935.026	501462.120	1160.040	32962.564	64544.739	2780.232	177965.100	30.000	16538.201	2120.135
3	12:05:46	119144.340	7.500	990.029	495580.050	1100.036	26706.380	62256.058	2750.227	175731.590	30.000	16207.877	2145.138
x		121138.720	7.500	946.694	497839.430	1313.387	34134.554	64872.831	2926.925	175967.460	33.333	16394.727	2236.817
σ		1927.768	5.000	38.839	3169.168	318.983	8078.185	2795.298	280.467	1890.770	5.774	169.380	180.879
%RSD		1.591	66.667	4.103	0.637	24.287	23.666	4.309	9.582	1.074	17.321	1.033	8.086
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:05:02	5685.970	10363.221	365862.050	80.000	95.000	990.029	1140.039	1635.080	540.009	130.001	121.500	680.014
2	12:05:24	5690.971	8222.028	331922.590	125.000	100.000	960.028	1025.032	1581.075	482.007	117.000	115.000	735.016
3	12:05:46	5590.938	6246.170	305978.130	90.000	110.000	875.023	1060.034	1568.074	571.010	119.000	129.500	730.016
x		5655.960	8277.140	334587.590	98.334	101.667	941.693	1075.035	1594.743	531.009	122.000	122.000	715.015
σ		56.366	2059.079	30030.780	23.629	7.638	59.655	58.953	35.533	45.179	7.000	7.263	30.415
%RSD		0.997	24.877	8.975	24.030	7.512	6.335	5.484	2.228	8.508	5.738	5.953	4.254
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:05:02	685.014	221451.510	300.003	80.000	5.000	0.000	936998.860	685.014	145.001	97.500	220.001	151253.230
2	12:05:24	725.016	219080.490	270.002	55.000	0.000	20.000	942337.590	805.019	185.001	96.000	145.001	155915.900
3	12:05:46	565.010	218624.560	240.002	15.000	0.000	5.000	957252.570	660.013	135.001	108.000	125.000	154411.990
x		658.346	219718.850	270.002	50.000	1.667	8.333	945529.670	716.682	155.001	100.500	163.334	153860.370
σ		83.270	1517.746	30.000	32.787	2.887	10.408	10497.390	77.517	26.458	6.538	50.084	2379.778
%RSD		12.648	0.691	11.111	65.574	173.205	124.900	1.110	10.816	17.069	6.506	30.663	1.547

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:05:02	165.001	475.007	880.023	118822.060	0.000	12119.405	100.000
2	12:05:24	175.001	390.005	760.017	116586.350	0.000	11448.931	50.000
3	12:05:46	170.001	340.003	805.019	119678.150	0.000	10938.588	65.000
x		170.001	401.672	815.020	118362.180	0.000	11502.308	71.667
σ		5.000	68.254	60.625	1596.376	0.000	592.215	25.658
%RSD		2.941	16.992	7.438	1.349	0.000	5.149	35.802

CCV 10/19/2016 12:10:25 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:10:47	104657.570	78851.085	28509.363	┬13226496.000	┬3887801.400	┬36206302.000	┬12594996.000	1286011.700	150183.620	24312.720	┬2566030.900	7225
2	12:11:08	105684.010	75982.808	27743.071	┬13016024.000	┬3812615.800	┬36059259.000	┬12552942.000	1246373.700	145512.460	24973.697	┬2589165.300	7274
3	12:11:31	106287.840	75538.294	27873.288	┬12886177.000	┬3761349.900	┬35762251.000	┬12597733.000	┬1339492.600	145744.470	24082.386	┬2542444.000	7186
x		105543.140	76790.729	28041.907	┬13042899.000	┬3820589.100	┬36009271.000	┬12581890.000	┬1290626.000	147146.850	24456.268	┬2565880.100	7229
σ		824.213	1798.110	410.030	┬171743.910	┬63601.685	┬226206.960	┬25107.409	┬46730.622	2632.478	462.669	┬23360.996	44
%RSD		0.781	2.342	1.462	┬1.317	┬1.665	┬0.628	┬0.200	┬3.621	1.789	1.892	┬0.910	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:10:47	91364.741	┬3797156.100	┬78348305.000	1113114.600	604533.530	746005.240	585941.910	78002.104	6176.144	8244.038	114.500	48
2	12:11:08	90545.287	┬3791732.200	┬77440406.000	1105454.100	594030.830	743454.990	580987.930	77382.224	6127.126	8210.022	120.500	51
3	12:11:31	87835.846	┬3736939.700	┬77600654.000	1102705.700	598206.260	737880.270	584839.180	76564.460	6113.121	8101.969	115.500	51
x		89915.291	┬3775276.000	┬77796455.000	1107091.400	598923.540	742446.840	583923.010	77316.263	6138.797	8185.343	116.834	50
σ		1846.875	┬33310.800	┬484586.080	5394.164	5287.962	4155.245	2600.962	721.088	33.093	74.180	3.215	1
%RSD		2.054	┬0.882	┬0.623	0.487	0.883	0.560	0.445	0.933	0.539	0.906	2.751	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	12:10:47	771968.390	186841.450	1586657.900	255594.950	7856.851	123299.400	826203.040	782775.350	531553.420	402842.840	527611.080	1348
2	12:11:08	764615.820	184637.090	1621955.100	253046.500	8212.023	125263.970	829532.460	782942.950	530289.090	406090.230	524329.930	1361
3	12:11:31	763381.110	187357.200	1640968.000	252777.470	7801.826	121491.200	821908.320	783749.570	532859.140	403742.210	524933.490	1375
x		766655.110	186278.580	1616527.000	253806.310	7956.900	123351.520	825881.270	783155.960	531567.220	404225.090	525624.830	1361
σ		4642.666	1444.770	27558.932	1554.841	222.649	1886.927	3822.241	520.868	1285.081	1676.686	1746.410	13
%RSD		0.606	0.776	1.705	0.613	2.798	1.530	0.463	0.067	0.242	0.415	0.332	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:10:47	32336.339	1394729.400	┬7536256.100	107888.070	0.000	178045.960	103112.980
2	12:11:08	33699.034	1423174.700	┬7559394.800	107706.900	0.000	193420.870	105351.920
3	12:11:31	33263.160	1405967.200	┬7640351.600	109166.350	0.000	205433.330	105044.990
x		33099.511	1407957.100	┬7578667.500	108253.770	0.000	192300.050	104503.300
σ		695.931	14326.711	┬54658.446	795.490	0.000	13728.045	1213.789
%RSD		2.103	1.018	┬0.721	0.735	0.000	7.139	1.161

CCB 10/19/2016 12:16:12 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:16:34	113535.400	12.500	745.017	237774.080	400.005	4170.522	54238.110	610.011	153937.640	40.000	13245.261	1285.050
2	12:16:56	112156.100	10.000	765.018	236364.240	630.012	5755.994	51840.498	560.009	156481.160	15.000	12904.994	1320.052
3	12:17:17	111129.260	12.500	645.012	234001.250	630.012	6436.243	51920.747	590.010	153947.730	10.000	13125.166	1320.052
x		112273.590	11.667	718.349	236046.520	553.343	5454.253	52666.452	586.677	154788.840	21.667	13091.807	1308.385
σ		1207.362	1.443	64.294	1906.379	132.795	1162.609	1361.687	25.167	1465.599	16.073	172.569	20.209
%RSD		1.075	12.372	8.950	0.808	23.999	21.316	2.585	4.290	0.947	74.182	1.318	1.545

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:16:34	4455.596	790.019	212425.160	110.000	45.000	245.002	555.009	1033.032	355.004	95.000	106.000	615.011
2	12:16:56	4500.608	940.027	215159.910	75.000	70.000	235.002	575.010	1090.036	329.003	104.500	106.500	670.013
3	12:17:17	4400.581	1270.048	219176.740	160.001	55.000	310.003	625.012	1089.036	382.004	108.000	118.500	565.010
x		4452.261	1000.031	215587.270	115.000	56.667	263.335	585.010	1070.701	355.337	102.500	110.334	616.678

σ		50.097	245.576	3396.017	42.720	12.583	40.723	36.057	32.626	26.502	6.727	7.077	52.522
%RSD		1.125	24.557	1.575	37.148	22.205	15.464	6.163	3.047	7.458	6.563	6.414	8.517
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:16:34	50.000	194457.840	3015.273	40.000	0.000	10.000	850984.410	2740.225	625.012	529.008	65.000	139360.210
2	12:16:56	110.000	194437.600	3015.273	45.000	0.000	20.000	851173.710	3060.281	825.020	521.508	50.000	141467.860
3	12:17:17	115.000	195135.690	2640.209	45.000	0.000	15.000	861841.510	2980.266	860.022	545.509	45.000	139904.750
x		91.667	194677.040	2890.251	43.333	0.000	15.000	854666.540	2926.924	770.018	532.008	53.333	140244.270
σ		36.171	397.329	216.543	2.887	0.000	5.000	6214.423	166.562	126.793	12.278	10.408	1094.075
%RSD		39.459	0.204	7.492	6.662	0.000	33.333	0.727	5.691	16.466	2.308	19.516	0.780

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:16:34	170.001	1410.060	640.012	112246.710	0.000	1025.032	20.000
2	12:16:56	190.001	1380.057	830.021	112659.480	0.000	1000.030	35.000
3	12:17:17	150.001	1260.048	1010.031	111511.800	0.000	1135.039	65.000
x		170.001	1350.055	826.688	112139.330	0.000	1053.367	40.000
σ		20.000	79.379	185.032	581.326	0.000	71.826	22.913
%RSD		11.765	5.880	22.382	0.518	0.000	6.819	57.282

CCVL 10/19/2016 12:21:55 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:22:17	114109.300	170.001	5360.862	867904.290	26120.452	63917.328	650979.710	23156.075	160943.350	0.000	25965.210	9042.452
2	12:22:39	113434.710	145.001	5450.891	888160.700	26811.548	67225.304	670511.620	24908.599	163528.330	30.000	25694.791	9057.460
3	12:23:01	111199.730	165.001	5570.931	871936.800	25569.599	69394.166	664768.280	23596.692	161205.870	10.000	25985.241	9522.720
x		112914.580	160.001	5460.895	876000.600	26167.200	66845.600	662086.540	23887.122	161892.520	13.333	25881.748	9207.544
σ		1522.925	13.229	105.391	10722.239	622.293	2758.092	10038.309	911.645	1422.724	15.275	162.218	273.053
%RSD		1.349	8.268	1.930	1.224	2.378	4.126	1.516	3.816	0.879	114.564	0.627	2.966

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:22:17	6271.180	7091.508	719956.350	2590.201	1280.049	3840.442	11518.979	2264.154	551.009	283.002	110.000	685.014
2	12:22:39	6391.225	7381.634	730537.170	2820.239	1280.049	3630.395	11589.028	2174.142	592.011	305.003	118.000	690.014
3	12:23:01	6676.337	8126.981	738945.960	2560.197	1310.052	3545.377	11263.805	2159.140	512.008	289.003	105.500	705.015
x		6446.247	7533.374	729813.160	2656.879	1290.050	3672.072	11457.271	2199.145	551.676	292.336	111.167	693.348
σ		208.107	534.153	9515.486	142.267	17.322	151.883	171.168	56.797	40.005	11.373	6.331	10.409
%RSD		3.228	7.090	1.304	5.355	1.343	4.136	1.494	2.583	7.252	3.890	5.695	1.501

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:22:17	19140.985	197128.940	13735.658	2895.251	70.000	800.019	862115.130	1375.057	4445.593	3413.850	4655.650	143999.400
2	12:22:39	20362.431	199051.590	14246.086	2725.223	35.000	725.016	868304.340	1525.070	4790.688	3561.881	4530.616	142546.990
3	12:23:01	20342.407	198029.520	14226.069	2795.234	40.000	685.014	876065.060	1440.062	5015.755	3649.400	4415.585	142254.510
x		19948.608	198070.020	14069.271	2805.236	48.333	736.683	868828.180	1446.730	4750.679	3541.710	4533.950	142933.630
σ		699.493	961.964	289.091	85.454	18.930	58.384	6989.704	75.228	287.179	119.063	120.067	934.493
%RSD		3.506	0.486	2.055	3.046	39.165	7.925	0.804	5.200	6.045	3.362	2.648	0.654

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:22:17	2710.220	14556.354	6746.365	113183.010	0.000	9732.841	11068.674
2	12:22:39	2670.214	15342.058	7071.500	114683.210	0.000	10263.159	11518.979
3	12:23:01	2895.251	15522.225	6951.449	114340.870	0.000	11158.734	11338.856
x		2758.562	15140.212	6923.105	114069.030	0.000	10384.911	11308.836
σ		120.055	513.598	164.410	786.178	0.000	720.701	226.648
%RSD		4.352	3.392	2.375	0.689	0.000	6.940	2.004

200-35736-A-14-A 10/19/2016 12:27:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:28:01	116445.370	5.000	720.016	476516.020	310.003	4755.678	54258.175	1820.099	164881.560	30.000	17914.623	1945.113
2	12:28:23	116546.070	2.500	590.010	477894.660	300.003	4985.746	54779.877	1550.072	165618.820	15.000	18034.752	1930.112
3	12:28:44	118056.650	2.500	725.016	477946.100	330.003	5405.877	55000.602	1710.088	163800.990	15.000	18745.536	2260.153
x		117016.030	3.333	678.347	477452.260	313.336	5049.100	54679.552	1693.420	164767.120	20.000	18231.637	2045.126
σ		902.606	1.443	76.543	811.218	15.276	329.696	381.246	135.783	914.304	8.660	449.084	186.370
%RSD		0.771	43.301	11.284	0.170	4.875	6.530	0.697	8.018	0.555	43.301	2.463	9.113

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:28:01	6581.299	1770.094	219343.920	35.000	150.001	405.005	1350.055	1606.077	518.008	103.500	114.500	630.012
2	12:28:23	6516.274	1680.085	219799.860	20.000	100.000	380.004	1285.050	1578.075	517.008	100.000	130.001	685.014
3	12:28:44	6511.272	1795.097	224086.380	50.000	95.000	380.004	1310.052	1623.079	519.008	112.000	100.500	660.013
x		6536.282	1748.425	221076.720	35.000	115.000	388.338	1315.052	1602.410	518.008	105.167	115.000	658.346
σ		39.067	60.490	2616.393	15.000	30.414	14.434	32.790	22.725	1.000	6.171	14.756	27.539

%RSD		0.598	3.460	1.183	42.857	26.447	3.717	2.493	1.418	0.193	5.868	12.832	4.183
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:28:01	250.002	199122.430	425.005	30.000	0.000	5.000	868672.810	1120.038	165.001	139.001	15.000	142748.710
2	12:28:23	310.003	199203.390	560.009	65.000	0.000	0.000	869630.890	1300.051	165.001	157.501	35.000	145623.420
3	12:28:44	270.002	202614.130	580.010	20.000	0.000	0.000	893442.050	1270.048	255.002	175.001	10.000	147116.440
x		276.669	200313.320	521.675	38.333	0.000	1.667	877248.580	1230.046	195.001	157.167	20.000	145162.860
σ		30.551	1992.977	84.313	23.629	0.000	2.887	14032.135	96.443	51.962	18.002	13.229	2219.992
%RSD		11.042	0.995	16.162	61.641	0.000	173.205	1.600	7.841	26.647	11.454	66.144	1.529

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:28:01	155.001	450.006	395.005	113746.830	0.000	19150.997	40.000
2	12:28:23	150.001	505.008	445.006	111672.880	0.000	17634.324	20.000
3	12:28:44	75.000	445.006	500.007	113001.790	0.000	16137.809	10.000
x		126.667	466.673	446.673	112807.160	0.000	17641.043	23.333
σ		44.815	33.293	52.521	1050.586	0.000	1506.605	15.275
%RSD		35.380	7.134	11.758	0.931	0.000	8.540	65.465

200-35736-A-14-A SD@5 10/19/2016 12:33:24 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:33:46	117200.640	0.000	480.007	304710.220	260.002	5370.865	53485.684	830.021	164285.720	15.000	19286.152	1840.102
2	12:34:07	118278.210	5.000	485.007	303977.010	350.004	5610.944	52763.387	800.019	166194.510	15.000	19211.066	1840.102
3	12:34:29	118207.710	0.000	540.009	300667.790	250.002	5495.906	51308.857	970.028	163346.560	15.000	19396.280	1870.105
x		117895.520	1.667	501.674	303118.340	286.669	5492.572	52519.309	866.689	164608.930	15.000	19297.833	1850.103
σ		602.817	2.887	33.293	2153.670	55.077	120.074	1108.749	90.743	1451.223	0.000	93.158	17.322
%RSD		0.511	173.205	6.636	0.711	19.213	2.186	2.111	10.470	0.882	0.000	0.483	0.936
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:33:46	6571.295	625.012	222018.990	45.000	45.000	255.002	740.016	1691.086	542.009	132.501	108.000	600.011
2	12:34:07	6931.441	775.018	225170.850	20.000	50.000	290.003	790.019	1668.084	583.010	118.500	129.000	625.012
3	12:34:29	7111.517	560.009	224192.800	15.000	20.000	1855.103	760.017	1715.088	594.011	126.500	125.500	655.013
x		6871.418	653.346	223794.210	26.667	38.333	800.036	763.351	1691.419	573.010	125.834	120.834	626.678
σ		275.067	110.269	1613.293	16.073	16.073	913.883	25.167	23.504	27.405	7.024	11.251	27.539
%RSD		4.003	16.878	0.721	60.273	41.929	114.230	3.297	1.390	4.783	5.582	9.311	4.394
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:33:46	125.000	204739.880	180.001	35.000	0.000	10.000	876897.150	815.020	65.000	84.000	15.000	144655.040
2	12:34:07	90.000	202361.090	195.001	10.000	0.000	0.000	886685.170	790.019	135.001	97.000	20.000	145865.520
3	12:34:29	90.000	203393.540	215.001	20.000	0.000	20.000	885431.060	885.024	160.001	111.000	20.000	146783.530
x		101.667	203498.170	196.668	21.667	0.000	10.000	883004.460	830.021	120.000	97.334	18.333	145768.030
σ		20.207	1192.841	17.560	12.583	0.000	10.000	5326.123	49.247	49.245	13.503	2.887	1067.588
%RSD		19.876	0.586	8.929	58.076	0.000	100.000	0.603	5.933	41.037	13.873	15.746	0.732

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:33:46	70.000	275.002	260.002	111612.470	0.000	1970.116	5.000
2	12:34:07	85.000	360.004	225.002	111944.690	0.000	2230.149	5.000
3	12:34:29	70.000	340.003	275.002	112719.890	0.000	2180.143	15.000
x		75.000	325.003	253.335	112092.350	0.000	2126.803	8.333
σ		8.660	44.442	25.658	568.282	0.000	137.979	5.774
%RSD		11.547	13.674	10.128	0.507	0.000	6.488	69.282

200-35736-A-14-A PDS 10/19/2016 12:39:07 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:39:29	117412.120	1325.053	49197.505	T 7561684.000	256234.660	573846.810	T 6908922.200	229671.640	162427.640	20.000	117170.420	81393.262
2	12:39:51	114008.610	1322.553	48154.465	T 7447673.500	253970.400	578788.350	T 6845618.900	226863.580	160489.000	30.000	114713.420	79906.091
3	12:40:13	113031.990	1320.052	48640.875	T 7393007.200	250488.290	568508.460	T 6832787.100	223701.260	158045.820	20.000	114260.320	81337.993
x		114817.570	1322.553	48664.282	T 7467454.900	253564.450	573714.540	T 6862442.700	226745.490	160320.820	23.333	115381.390	80879.115
σ		2299.389	2.500	521.914	T 86060.673	2894.613	5141.223	T 40760.494	2986.943	2195.749	5.774	1565.825	843.116
%RSD		2.003	0.189	1.072	T 1.152	1.142	0.896	T 0.594	1.317	1.370	24.744	1.357	1.042

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:39:29	14931.686	59777.007	T 5872006.600	23746.905	10893.559	33488.611	96252.134	9267.576	1700.087	1681.585	98.000	1705.087
2	12:39:51	14516.319	60645.135	T 5858474.100	24357.786	10188.113	32261.193	95331.867	9171.523	1592.076	1686.085	110.000	1720.089
3	12:40:13	14326.155	60810.736	T 5894367.300	24312.720	10773.481	33012.663	97112.101	9222.551	1518.069	1692.586	121.500	1850.103
x		14591.386	60410.959	T 5874949.300	24139.137	10618.384	32920.822	96232.034	9220.550	1603.411	1686.752	109.834	1758.426
σ		309.666	555.228	T 18126.627	340.429	377.432	618.841	890.287	48.058	91.537	5.531	11.751	79.748
%RSD		2.122	0.919	T 0.309	1.410	3.555	1.880	0.925	0.521	5.709	0.328	10.699	4.535

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:39:29	199699.270	194336.430	135251.570	27287.320	325.003	6106.118	843876.320	820.020	43366.346	32235.143	42609.397	140267.780
2	12:39:51	203434.030	194538.770	137847.710	26791.516	505.008	6151.135	852257.020	915.025	43095.645	32035.759	43606.973	140126.600
3	12:40:13	203621.300	194295.960	139123.240	26686.348	530.008	6106.118	848996.790	985.029	43451.567	32764.674	42794.872	141064.460
x		202251.530	194390.390	137407.510	26921.728	453.340	6121.124	848376.710	906.691	43304.519	32345.192	43003.747	140486.280
σ		2212.307	130.086	1973.017	320.949	111.844	25.990	4224.621	82.820	185.841	376.713	530.576	505.671
%RSD		1.094	0.067	1.436	1.192	24.671	0.425	0.498	9.134	0.429	1.165	1.234	0.360

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:39:29	27016.880	140862.760	52432.345	109277.070	0.000	148614.650	112780.300
2	12:39:51	27407.517	143500.120	53254.947	107757.230	0.000	155451.590	113912.960
3	12:40:13	28238.903	144438.170	53927.103	108049.110	0.000	167159.080	114995.350
x		27554.433	142933.690	53204.798	108361.140	0.000	157075.110	113896.200
σ		624.118	1853.785	748.640	806.539	0.000	9378.212	1107.624
%RSD		2.265	1.297	1.407	0.744	0.000	5.971	0.972

200-35736-A-14-B MS 10/19/2016 12:44:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:44:48	113112.540	1317.552	48856.504	T 7494146.000	255544.180	571720.580	T 6954500.500	226741.940	156269.180	20.000	112090.670	80192.462
2	12:45:10	113172.940	1267.548	47763.342	T 7505703.000	255249.720	571886.120	T 6885174.900	231172.180	160085.140	40.000	114486.870	82156.995
3	12:45:32	112961.520	1337.554	47477.527	T 7416396.300	258560.160	578032.800	T 6953166.000	230056.900	158651.530	20.000	112161.140	80428.596
x		113082.330	1307.551	48032.458	T 7472081.800	256451.350	573879.830	T 6930947.100	229323.670	158335.290	26.667	112912.890	80926.018
σ		108.902	36.058	727.813	T 48569.975	1832.207	3597.527	T 39645.571	2304.338	1927.536	11.547	1363.562	1072.576
%RSD		0.096	2.758	1.515	T 0.650	0.714	0.627	T 0.572	1.005	1.217	43.301	1.208	1.325

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:44:48	13670.604	59621.451	T 5894827.700	23696.834	10818.510	32842.327	96211.903	8790.317	1530.070	1642.581	110.000	1940.113
2	12:45:10	13530.490	61121.871	T 5952821.300	25028.779	10923.579	33177.991	98213.527	8697.269	1566.074	1692.586	102.000	1795.097
3	12:45:32	12509.693	61297.515	T 5930780.900	24442.911	10508.312	32666.983	98862.346	8735.289	1553.072	1719.589	90.000	1740.091
x		13236.929	60680.279	T 5926143.300	24389.508	10750.133	32895.767	97762.592	8740.958	1549.739	1684.919	100.667	1825.100

σ		633.689	921.168	T 29273.621	667.576	215.912	259.662	1381.564	46.783	18.232	39.072	10.067	103.331
%RSD		4.787	1.518	T 0.494	2.737	2.008	0.789	1.413	0.535	1.176	2.319	10.000	5.662
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:44:48	199557.590	190957.710	137797.300	26460.989	415.005	5750.992	817467.720	700.015	42323.671	32510.176	41722.157	137212.500
2	12:45:10	202300.360	187478.550	137711.590	27783.138	390.005	6111.120	824848.360	775.018	42694.615	33073.283	43225.982	138614.030
3	12:45:32	204051.510	192707.680	141367.010	27011.872	390.005	6161.139	826560.110	845.021	43571.881	33421.476	43441.541	137303.250
x		201969.820	190381.320	138958.630	27085.333	398.338	6007.750	822958.730	773.351	42863.389	33001.645	42796.560	137709.930
σ		2265.122	2661.793	2086.153	664.129	14.434	223.761	4831.757	72.518	640.992	459.854	936.682	784.290
%RSD		1.122	1.398	1.501	2.452	3.624	3.725	0.587	9.377	1.495	1.393	2.189	0.570

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:44:48	57072.551	143515.250	53345.235	108592.620	0.000	195449.330	111370.860
2	12:45:10	58477.409	145915.960	54764.828	107817.610	0.000	201682.940	115015.490
3	12:45:32	58964.119	146410.270	55592.562	108683.210	0.000	206081.260	118011.330
x		58171.360	145280.490	54567.542	108364.480	0.000	201071.180	114799.230
σ		982.220	1548.595	1136.579	475.762	0.000	5342.297	3325.509
%RSD		1.688	1.066	2.083	0.439	0.000	2.657	2.897

200-35736-A-14-C MSD 10/19/2016 12:49:46 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:50:08	114079.090	1262.548	47161.632	T 7305687.900	247839.130	562044.680	T 6783547.400	219121.010	158671.720	20.000	110102.480	79016.867
2	12:50:30	113142.740	1387.558	46103.678	T 7308898.100	249838.650	567598.210	T 6844010.600	226093.210	160206.300	15.000	110082.350	79398.675
3	12:50:52	110998.390	1375.057	47637.984	T 7342468.400	249057.080	565933.000	T 6771673.800	220438.210	155320.380	15.000	108028.980	79569.487
x		112740.070	1341.721	46967.765	T 7319018.100	248911.620	565191.960	T 6799743.900	221884.150	158066.130	16.667	109404.600	79328.343
σ		1579.328	68.850	785.310	T 20371.853	1007.667	2849.958	T 38793.047	3704.178	2498.623	2.887	1191.368	282.944
%RSD		1.401	5.131	1.672	T 0.278	0.405	0.504	T 0.571	1.669	1.581	17.321	1.089	0.357

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:50:08	12859.959	58622.918	T 5758761.900	23541.614	10043.025	31650.023	93426.121	8430.131	1434.062	1670.084	101.000	1590.076
2	12:50:30	13145.182	60810.736	T 5873287.800	24292.691	10908.569	31825.357	95824.681	8584.210	1437.062	1660.083	104.500	1575.074
3	12:50:52	12559.731	58688.147	T 5798658.800	24177.524	10253.153	32196.068	95276.552	8449.141	1486.066	1663.583	114.000	1995.119
x		12854.957	59373.934	T 5810236.200	24003.943	10401.582	31890.482	94842.452	8487.828	1452.397	1664.583	106.500	1720.090
σ		292.758	1244.735	T 58134.056	404.508	451.459	278.787	1256.824	84.009	29.197	5.075	6.727	238.301
%RSD		2.277	2.096	T 1.001	1.685	4.340	0.874	1.325	0.990	2.010	0.305	6.316	13.854

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:50:08	194473.010	188985.420	132726.390	26155.507	390.005	5916.050	832799.490	640.012	41170.788	31476.695	42168.278	138392.200
2	12:50:30	195545.450	189966.480	134465.250	26906.702	390.005	6101.117	828881.230	750.017	41792.332	31870.443	42839.987	137666.220
3	12:50:52	198333.100	189218.040	135090.270	26641.276	350.004	6216.159	833461.370	845.021	41852.483	32109.902	42724.692	138089.700
x		196117.190	189389.980	134093.970	26567.828	376.671	6077.775	831714.030	745.017	41605.201	31819.013	42577.652	138049.370
σ		1992.545	512.632	1224.894	380.945	23.095	151.410	2475.499	102.596	377.413	319.721	359.185	364.664
%RSD		1.016	0.271	0.913	1.434	6.131	2.491	0.298	13.771	0.907	1.005	0.844	0.264

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:50:08	56079.188	140529.970	51880.622	109206.610	0.000	194629.830	109352.570
2	12:50:30	58642.989	142153.660	53766.586	109790.430	0.000	202087.800	111803.750
3	12:50:52	58492.461	143318.570	53972.249	110253.470	0.000	207665.740	113933.100
x		57738.213	142000.730	53206.486	109750.170	0.000	201461.120	111696.470
σ		1438.728	1400.573	1152.827	524.589	0.000	6540.514	2292.148
%RSD		2.492	0.986	2.167	0.478	0.000	3.247	2.052

CCV 10/19/2016 12:55:04 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:55:26	106851.420	78004.615	28529.397	T 13217477.000	T 3811743.100	T 35721767.000	T 12554995.000	1248924.400	145794.910	24923.622	T 2557142.800	710738
2	12:55:48	107254.000	77323.955	28058.599	T 12863277.000	T 3782101.900	T 35258431.000	T 12177673.000	1220317.500	143888.450	24152.488	T 2520160.400	706482
3	12:56:10	103621.120	76485.097	28379.141	T 12734010.000	T 3802757.000	T 35240959.000	T 12136269.000	1223971.400	142163.740	24202.560	T 2543837.900	707197
x		105908.850	77271.222	28322.379	T 12938254.000	T 3798867.300	T 35407053.000	T 12289646.000	1231071.100	143949.030	24426.223	T 2540380.400	708139
σ		1991.427	761.130	240.477	T 250302.290	T 15198.549	T 272690.780	T 230729.730	15569.002	1816.341	431.487	T 18732.054	2278
%RSD		1.880	0.985	0.849	T 1.935	T 0.400	T 0.770	T 1.877	1.265	1.262	1.766	T 0.737	0

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:55:26	88072.088	T 3695568.100	T 76700182.000	1083127.300	581293.310	717321.310	567665.440	75639.250	6108.119	7879.862	112.500	4855
2	12:55:48	88479.236	T 3691153.900	T 76665650.000	1083436.500	586345.750	718135.260	566320.840	75191.230	5950.062	7913.378	114.000	4690
3	12:56:10	86971.330	T 3710810.300	T 76341471.000	1066670.100	572532.760	718620.520	568601.560	74695.006	5855.028	7816.332	113.000	4780
x		87840.884	T 3699177.400	T 76569101.000	1077744.600	580057.270	718025.690	567529.280	75175.162	5971.070	7869.858	113.167	4775
σ		780.087	T 10313.296	T 197888.350	9592.042	6988.956	656.498	1146.438	472.327	127.847	49.290	0.764	82

%RSD		0.888	T 0.279	T 0.258	0.890	1.205	0.091	0.202	0.628	2.141	0.626	0.675	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	12:55:26	743261.650	178409.820	1517096.700	245809.400	7861.854	116163.410	797787.650	737159.400	498850.480	379872.310	498531.130	132202
2	12:55:48	735843.110	179370.040	1562398.800	244302.480	7756.805	117467.500	793112.250	739745.280	504553.340	380057.970	500488.500	131204
3	12:56:10	739473.610	173538.790	1565736.300	241420.950	7701.779	115931.810	789433.630	743893.940	501930.920	381023.650	503960.820	133472
x		739526.120	177106.220	1548410.600	243844.280	7773.479	116520.910	793444.510	740266.210	501778.250	380317.980	500993.480	132292
σ		3709.551	3126.564	27169.918	2229.818	81.330	827.915	4186.911	3397.358	2854.498	618.140	2749.841	1136
%RSD		0.502	1.765	1.755	0.914	1.046	0.711	0.528	0.459	0.569	0.163	0.549	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:55:26	30668.190	1359239.400	T 7368300.100	103641.250	0.000	233068.310	101965.960
2	12:55:48	31920.538	1359120.200	T 7400488.100	105140.590	0.000	241999.250	100637.930
3	12:56:10	32356.378	1374508.600	T 7353437.500	102484.120	0.000	241948.520	101457.870
x		31648.369	1364289.400	T 7374075.200	103755.320	0.000	239005.360	101353.920
σ		876.385	8850.301	T 24051.063	1331.904	0.000	5141.697	670.093
%RSD		2.769	0.649	T 0.326	1.284	0.000	2.151	0.661

CCB 10/19/2016 01:00:48 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:01:10	111501.740	20.000	1010.031	234488.020	630.012	3555.379	53174.691	550.009	154200.040	20.000	12644.795	1295.050
2	13:01:32	111350.730	25.000	950.027	234771.970	490.007	3465.360	54027.427	490.007	152988.960	5.000	12799.913	1225.045
3	13:01:54	110927.930	7.500	1030.032	236597.520	630.012	3240.315	51178.457	550.009	151263.320	20.000	12704.841	1130.038
x		111260.130	17.500	996.697	235285.830	583.344	3420.352	52793.525	530.008	152817.440	15.000	12716.516	1216.711
σ		297.440	9.014	41.636	1144.787	80.832	162.283	1462.233	34.642	1475.858	8.660	78.216	82.821
%RSD		0.267	51.508	4.177	0.487	13.857	4.745	2.770	6.536	0.966	57.735	0.615	6.807

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:01:10	4495.606	525.008	203489.700	65.000	65.000	230.002	530.008	1065.034	365.004	117.500	102.500	625.012
2	13:01:32	4465.598	465.006	202760.900	80.000	20.000	185.001	635.012	1079.035	370.004	105.000	107.500	570.010
3	13:01:54	4470.600	500.007	204183.110	70.000	60.000	245.002	530.008	1178.042	393.005	99.000	100.500	615.011
x		4477.268	496.674	203477.900	71.667	48.333	220.001	565.010	1107.370	376.004	107.167	103.500	603.344
σ		16.077	30.139	711.176	7.638	24.664	31.225	60.624	61.602	14.934	9.438	3.606	29.298
%RSD		0.359	6.068	0.350	10.657	51.030	14.193	10.730	5.563	3.972	8.807	3.484	4.856

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:01:10	100.000	184525.870	2885.250	35.000	0.000	5.000	813920.280	2215.147	630.012	479.007	35.000	133754.560
2	13:01:32	135.001	185739.240	2975.266	25.000	0.000	0.000	804970.970	2985.267	770.018	543.009	35.000	133593.280
3	13:01:54	110.000	190704.840	2735.224	30.000	0.000	10.000	823168.270	2585.200	675.014	563.510	50.000	138170.370
x		115.000	186989.980	2865.247	30.000	0.000	5.000	814019.840	2595.205	691.681	528.508	40.000	135172.740
σ		18.028	3273.867	121.264	5.000	0.000	5.000	9099.058	385.158	71.476	44.078	8.660	2597.277
%RSD		15.676	1.751	4.232	16.667	0.000	100.000	1.118	14.841	10.334	8.340	21.651	1.921

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:01:10	230.002	1370.056	645.012	106660.200	0.000	1515.069	35.000
2	13:01:32	185.001	1435.062	625.012	106700.460	0.000	1700.087	70.000
3	13:01:54	200.001	1470.065	580.010	107012.450	0.000	1615.078	65.000
x		205.001	1425.061	616.678	106791.040	0.000	1610.078	56.667
σ		22.913	50.749	33.293	192.803	0.000	92.610	18.930
%RSD		11.177	3.561	5.399	0.181	0.000	5.752	33.405

CCVL 10/19/2016 01:06:06 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:06:27	112568.870	147.501	5705.977	881795.730	25870.062	65408.095	669679.130	24207.567	156410.500	5.000	25729.845	9157.515
2	13:06:49	114099.230	145.001	5475.899	T 935136.360	25148.960	64469.449	654888.460	23286.256	154745.060	15.000	25459.431	8967.412
3	13:07:11	114864.460	200.001	5505.909	862125.650	25219.066	64499.565	646843.240	23827.020	151414.680	0.000	25118.915	9227.554
x		113844.190	164.167	5562.595	T 893019.250	25412.696	64792.370	657136.940	23773.614	154190.080	6.667	25436.064	9117.494
σ		1168.850	31.058	125.075	T 37777.196	397.639	533.447	11582.797	462.972	2543.728	7.638	306.135	134.610
%RSD		1.027	18.919	2.249	T 4.230	1.565	0.823	1.763	1.947	1.650	114.564	1.204	1.476

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:06:27	6301.191	7276.588	698960.350	2585.200	1165.041	3780.429	10683.423	2059.127	512.008	265.002	101.000	755.017
2	13:06:49	6336.204	6641.323	702869.720	2620.206	1115.037	3580.385	11318.842	2062.128	533.009	282.002	110.500	630.012
3	13:07:11	6441.244	6871.416	710805.880	2860.245	1330.053	3655.401	11153.731	2054.127	565.010	271.002	107.500	655.013
x		6359.547	6929.776	704211.980	2688.551	1203.377	3672.071	11051.999	2058.460	536.675	272.669	106.334	680.014
σ		72.886	321.628	6035.760	149.719	112.518	101.059	329.699	4.042	26.690	8.622	4.856	66.147
%RSD		1.146	4.641	0.857	5.569	9.350	2.752	2.983	0.196	4.973	3.162	4.567	9.727

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:06:27	18735.525	185344.880	13720.645	2890.251	25.000	650.013	808694.910	1270.048	4210.532	3368.340	3750.422	131909.950
2	13:06:49	19391.274	184950.540	14391.211	2680.215	55.000	555.009	801289.800	1465.064	4425.587	3410.849	4450.594	133270.710
3	13:07:11	19696.632	184030.440	14401.219	2715.221	15.000	655.013	805170.260	1645.081	4445.593	3496.867	4155.518	133341.270
x		19274.477	184775.290	14171.025	2761.896	31.667	620.012	805051.660	1460.065	4360.571	3425.352	4118.845	132840.640
σ		491.083	674.520	390.072	112.528	20.817	56.349	3703.981	187.566	130.322	65.479	351.524	806.777
%RSD		2.548	0.365	2.753	4.074	65.737	9.088	0.460	12.846	2.989	1.912	8.535	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:06:27	2630.208	14806.574	6416.235	106207.330	0.000	11208.768	11193.758
2	13:06:49	2955.262	14596.389	6236.167	106559.560	0.000	11804.179	11398.897
3	13:07:11	2875.248	14661.446	6636.321	108340.990	0.000	11989.311	11048.661
x		2820.239	14688.136	6429.574	107035.960	0.000	11667.419	11213.772
σ		169.365	107.605	200.410	1143.831	0.000	407.847	175.974
%RSD		6.005	0.733	3.117	1.069	0.000	3.496	1.569

MB 200-110288/1-B 10/19/2016 01:11:51 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:12:13	117532.960	2.500	935.026	612076.470	12644.795	17899.607	81810.296	22615.333	158409.240	85.000	10758.471	7111.517
2	13:12:35	116676.980	5.000	1120.038	611257.210	12454.652	17674.367	84252.417	21754.188	157672.310	70.000	10693.429	7011.475
3	13:12:57	117583.320	0.000	1085.035	614264.810	12834.940	18765.558	83810.196	22034.556	156218.710	55.000	10523.321	7371.630
x		117264.420	2.500	1046.700	612532.830	12644.796	18113.177	83290.970	22134.692	157433.420	70.000	10658.407	7164.874
σ		509.360	2.500	98.283	1554.868	190.144	576.094	1301.225	439.219	1114.632	15.000	121.424	185.912
%RSD		0.434	100.000	9.390	0.254	1.504	3.181	1.562	1.984	0.708	21.429	1.139	2.595

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:12:13	4125.511	2175.142	252214.030	105.000	155.001	570.010	1075.035	811.020	286.002	100.000	109.000	460.006
2	13:12:35	4320.560	2105.133	249488.460	55.000	175.001	495.007	1045.033	839.021	293.003	109.000	115.000	545.009
3	13:12:57	4140.514	2435.178	242968.190	70.000	160.001	595.011	1150.040	864.022	267.002	102.500	97.500	650.013
x		4195.528	2238.484	248223.560	76.667	163.334	553.343	1090.036	838.021	282.002	103.834	107.167	551.676

σ		108.540	173.901	4750.932	25.658	10.408	52.043	54.087	26.515	13.454	4.646	8.893	95.178
%RSD		2.587	7.769	1.914	33.467	6.372	9.405	4.962	3.164	4.771	4.474	8.298	17.253
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:12:13	5946.060	188520.200	750.017	45.000	0.000	10.000	827106.230	24993.727	235.002	158.501	365.004	136768.880
2	13:12:35	5725.983	190108.080	770.018	25.000	0.000	25.000	820511.980	25885.086	235.002	178.501	385.004	135730.440
3	13:12:57	5575.933	190391.290	755.017	25.000	0.000	10.000	828797.200	25835.008	230.002	213.001	400.005	138361.950
x		5749.325	189673.190	758.351	31.667	0.000	15.000	825471.800	25571.273	233.335	183.334	383.338	136953.760
σ		186.165	1008.510	10.409	11.547	0.000	8.660	4377.754	500.797	2.887	27.570	17.560	1325.458
%RSD		3.238	0.532	1.373	36.464	0.000	57.735	0.530	1.958	1.237	15.038	4.581	0.968

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:12:13	155.001	550.009	445.006	106861.490	0.000	78102.573	95.000
2	13:12:35	190.001	585.010	465.006	108612.750	0.000	60017.870	45.000
3	13:12:57	190.001	475.007	540.009	108300.730	0.000	46580.000	125.000
x		178.334	536.675	483.340	107924.990	0.000	61566.814	88.334
σ		20.207	56.201	50.085	934.141	0.000	15818.267	40.415
%RSD		11.331	10.472	10.362	0.866	0.000	25.693	45.752

LCS 200-110288/2-B 10/19/2016 01:17:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:17:56	114441.560	1315.052	50391.063	T 7658725.900	259149.210	574985.050	T 6770955.200	239265.200	157510.790	55.000	105678.980	84860.490
2	13:18:17	111491.670	1295.050	49819.348	T 7444524.400	259636.710	566724.210	T 6710081.400	234974.800	152514.640	35.000	105965.800	86312.920
3	13:18:39	114159.640	1375.057	48741.167	T 7511512.000	255198.950	569982.550	T 6781117.900	240066.600	155562.620	65.000	103238.760	85227.355
x		113364.290	1328.386	49650.526	T 7538254.100	257994.950	570563.940	T 6754051.500	238102.200	155196.020	51.667	104961.180	85466.922
σ		1627.852	41.637	837.803	T 109576.080	2433.648	4160.994	T 38416.788	2737.886	2518.167	15.275	1498.536	755.270
%RSD		1.436	3.134	1.687	T 1.454	0.943	0.729	T 0.569	1.150	1.623	29.565	1.428	0.884

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:17:56	12134.416	59019.314	T 5766449.000	23852.055	10343.208	31730.175	91143.535	8088.962	1258.047	1571.574	103.000	1675.084
2	13:18:17	12649.799	58452.321	T 5699707.400	23711.856	10428.261	31795.299	91409.988	7865.856	1229.045	1585.075	100.500	1770.094
3	13:18:39	12649.799	59696.720	T 5760943.900	23521.586	10113.067	31414.578	92888.127	7839.843	1229.045	1547.072	116.500	1710.088
x		12478.004	59056.118	T 5742366.800	23695.166	10294.846	31646.684	91813.883	7931.554	1238.713	1567.907	106.667	1718.422
σ		297.557	623.015	T 37046.542	165.866	163.068	203.630	939.813	136.939	16.744	19.265	8.607	48.050
%RSD		2.385	1.055	T 0.645	0.700	1.584	0.643	1.024	1.727	1.352	1.229	8.069	2.796

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:17:56	199653.730	187883.070	135060.030	25809.969	405.005	5971.069	795890.080	35908.641	39461.661	30383.169	39466.673	132514.720
2	13:18:17	195596.040	183332.810	131768.840	25304.194	370.004	5675.966	795512.680	36314.519	40664.548	30447.787	40684.597	132010.740
3	13:18:39	199744.810	185739.240	136244.610	24948.659	470.007	5966.068	803817.240	37191.450	40489.121	30644.647	40484.109	134913.850
x		198331.530	185651.700	134357.830	25354.274	415.005	5871.034	798406.670	36471.537	40205.110	30491.867	40211.793	133146.440
σ		2369.439	2276.389	2319.040	432.833	50.746	168.952	4689.493	655.660	649.793	136.199	653.032	1551.229
%RSD		1.195	1.226	1.726	1.707	12.228	2.878	0.587	1.798	1.616	0.447	1.624	1.165

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:17:56	55843.398	139582.060	51830.467	106589.750	0.000	205139.750	109664.610
2	13:18:17	55567.478	142234.340	51308.857	103570.810	0.000	211736.480	112171.210
3	13:18:39	58442.286	141583.840	52698.181	105402.240	0.000	215554.960	112906.140
x		56617.721	141133.410	51945.835	105187.600	0.000	210810.400	111580.650
σ		1586.131	1382.321	701.811	1520.874	0.000	5269.003	1699.545
%RSD		2.801	0.979	1.351	1.446	0.000	2.499	1.523

200-35715-A-2-B 10/19/2016 01:23:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:23:49	113837.450	10.000	890.024	501719.700	15697.389	11699.105	96086.181	25349.263	153755.970	75.000	9397.649	5796.008
2	13:24:10	110726.590	5.000	935.026	498855.630	16027.703	11343.859	92405.455	26661.308	158025.630	35.000	9382.640	6091.113
3	13:24:32	112921.240	0.000	780.018	505089.210	16107.780	11448.931	89660.523	24968.689	154109.210	35.000	9197.537	5986.075
x		112495.090	5.000	868.356	501888.180	15944.291	11497.298	92717.386	25659.753	155296.940	48.333	9325.942	5957.732
σ		1598.610	5.000	79.743	3120.207	217.540	182.495	3224.166	887.999	2369.708	23.094	111.455	149.580
%RSD		1.421	100.000	9.183	0.622	1.364	1.587	3.477	3.461	1.526	47.781	1.195	2.511

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:23:49	3515.371	2675.215	229752.750	75.000	200.001	1315.052	1190.043	629.012	229.002	104.000	95.500	575.010
2	13:24:10	3645.399	2650.211	228911.290	105.000	230.002	1130.038	1185.042	677.014	241.002	107.000	92.500	625.012
3	13:24:32	3630.395	2405.173	226995.350	110.000	200.001	1330.053	1170.041	723.016	205.001	110.500	94.500	645.012
x		3597.055	2576.866	228553.130	96.667	210.001	1258.381	1181.709	676.347	225.002	107.167	94.167	615.011
σ		71.137	149.215	1413.160	18.930	17.321	111.401	10.409	47.005	18.331	3.253	1.528	36.057

%RSD		1.978	5.791	0.618	19.582	8.248	8.853	0.881	6.950	8.147	3.036	1.622	5.863
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:23:49	7151.534	186052.700	455.006	80.000	0.000	5.000	794611.170	36259.399	330.003	226.002	660.013	134934.010
2	13:24:10	7336.614	186012.260	325.003	55.000	0.000	0.000	804436.050	37196.461	270.002	196.001	665.013	132766.710
3	13:24:32	7431.657	189116.900	325.003	60.000	10.000	10.000	812314.720	36991.005	310.003	197.501	770.018	136930.200
x		7306.602	187060.620	368.338	65.000	3.333	5.000	803787.320	36815.622	303.336	206.501	698.348	134876.970
σ		142.453	1780.907	75.057	13.229	5.774	5.000	8869.588	492.535	30.551	16.904	62.118	2082.327
%RSD		1.950	0.952	20.377	20.352	173.205	100.000	1.103	1.338	10.072	8.186	8.895	1.544

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:23:49	145.001	590.010	1010.031	104929.270	0.000	18590.362	250.002
2	13:24:10	160.001	460.006	1105.037	108290.670	0.000	16628.291	115.000
3	13:24:32	100.000	375.004	975.029	106026.180	0.000	14125.984	115.000
x		135.001	475.007	1030.032	106415.370	0.000	16448.212	160.001
σ		31.225	108.285	67.272	1714.163	0.000	2237.631	77.943
%RSD		23.130	22.797	6.531	1.611	0.000	13.604	48.714

200-35730-A-2-B 10/19/2016 01:29:10 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:29:31	113968.340	7.500	800.019	545555.130	15757.445	17804.505	93099.300	25719.830	160236.590	90.000	10928.582	9797.879
2	13:29:53	116455.440	0.000	820.020	536074.830	16117.790	17263.937	93300.420	26330.783	158863.540	60.000	11218.775	10268.162
3	13:30:15	114602.660	10.000	760.017	538687.060	15867.550	17804.505	90173.278	25719.830	158974.590	65.000	10893.559	10683.423
x		115008.810	5.833	793.352	540105.670	15914.262	17624.316	92191.000	25923.481	159358.240	71.667	11013.638	10249.821
σ		1292.339	5.204	30.552	4896.770	184.658	312.097	1750.289	352.734	762.697	16.073	178.514	443.057
%RSD		1.124	89.214	3.851	0.907	1.160	1.771	1.899	1.361	0.479	22.427	1.621	4.323
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:29:31	4665.653	2400.173	252990.660	80.000	225.002	2265.154	1220.045	799.019	289.003	91.500	97.000	570.010
2	13:29:53	4845.704	2560.197	254361.290	80.000	270.002	2105.133	1335.054	781.018	247.002	102.500	106.500	480.007
3	13:30:15	4585.631	2630.208	254269.910	75.000	280.002	2005.121	1270.048	785.018	232.002	95.000	101.500	600.011
x		4698.996	2530.192	253873.960	78.334	258.335	2125.136	1275.049	788.352	256.002	96.334	101.667	550.009
σ		133.204	117.916	766.316	2.887	29.298	131.166	57.667	9.452	29.547	5.620	4.752	62.452
%RSD		2.835	4.660	0.302	3.685	11.341	6.172	4.523	1.199	11.542	5.834	4.674	11.355
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:29:31	7321.608	187630.240	310.003	45.000	0.000	0.000	813825.830	35337.422	255.002	188.001	1560.073	133774.720
2	13:29:53	7551.711	185506.670	420.005	45.000	0.000	5.000	812765.940	35788.383	240.002	203.501	1500.068	135831.260
3	13:30:15	7616.740	187175.170	375.004	35.000	0.000	5.000	810803.750	36915.838	200.001	181.001	1555.073	136920.110
x		7496.686	186770.690	368.337	41.667	0.000	3.333	812465.170	36013.881	231.668	190.834	1538.404	135508.700
σ		155.069	1118.075	55.303	5.774	0.000	2.887	1533.325	813.011	28.432	11.515	33.295	1597.310
%RSD		2.069	0.599	15.014	13.856	0.000	86.603	0.189	2.257	12.273	6.034	2.164	1.179

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:29:31	135.001	270.002	2045.126	107294.250	0.000	6541.283	60.000
2	13:29:53	130.001	260.002	2060.127	105180.850	0.000	6661.331	60.000
3	13:30:15	115.000	300.003	2185.143	106559.560	0.000	6146.133	70.000
x		126.667	276.669	2096.799	106344.890	0.000	6449.583	63.333
σ		10.408	20.817	76.875	1072.934	0.000	269.563	5.774
%RSD		8.217	7.524	3.666	1.009	0.000	4.180	9.116

200-35745-A-5-B 10/19/2016 01:34:53 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:35:15	117684.020	2.500	625.012	571099.830	14776.547	11443.928	96096.238	23957.206	161640.040	70.000	13170.202	6121.124
2	13:35:36	117160.350	7.500	720.016	578736.600	15857.540	11679.091	93551.823	23616.721	159418.800	65.000	12789.906	5545.923
3	13:35:58	113555.530	2.500	620.012	569506.690	14826.592	11093.691	93913.851	23887.106	162276.180	100.000	12329.559	5515.913
x		116133.300	4.167	655.013	573114.370	15153.560	11405.570	94520.638	23820.344	161111.670	78.334	12763.222	5727.653
σ		2247.718	2.887	56.349	4933.722	610.178	294.579	1376.464	179.793	1500.177	18.930	420.956	341.086
%RSD		1.935	69.282	8.603	0.861	4.027	2.583	1.456	0.755	0.931	24.166	3.298	5.955

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:35:15	4780.686	3370.341	258854.680	100.000	150.001	1070.034	1295.050	895.024	293.003	97.500	102.000	530.008
2	13:35:36	5140.793	3360.339	256117.890	105.000	130.001	1340.054	1350.055	971.028	288.002	112.500	97.500	605.011
3	13:35:58	4635.645	3680.406	253148.030	105.000	190.001	1390.058	1490.067	879.023	291.003	118.500	115.500	500.007
x		4852.374	3470.362	256040.200	103.334	156.667	1266.715	1378.391	915.025	290.669	109.500	105.000	545.009
σ		260.093	181.973	2854.121	2.887	30.551	172.156	100.549	49.156	2.517	10.817	9.368	54.085
%RSD		5.360	5.244	1.115	2.794	19.500	13.591	7.295	5.372	0.866	9.878	8.921	9.924

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:35:15	6786.381	189076.450	275.002	105.000	0.000	10.000	813909.780	35177.084	190.001	170.001	460.006	133966.250
2	13:35:36	7026.481	188297.710	210.001	80.000	0.000	5.000	825793.470	35953.738	220.001	184.501	495.007	140550.140
3	13:35:58	7016.477	191928.770	195.001	125.000	5.000	5.000	821446.360	36319.530	255.002	156.501	575.010	139521.550
x		6943.113	189767.640	226.668	103.334	1.667	6.667	820383.210	35816.784	221.668	170.334	510.008	138012.650
σ		135.826	1911.668	42.525	22.546	2.887	2.887	6012.757	583.407	32.532	14.003	58.951	3541.820
%RSD		1.956	1.007	18.761	21.819	173.205	43.301	0.733	1.629	14.676	8.221	11.559	2.566

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:35:15	115.000	320.003	1015.031	106710.520	0.000	4525.614	75.000
2	13:35:36	125.000	300.003	950.027	108411.450	0.000	4090.502	70.000
3	13:35:58	135.001	325.003	820.020	108340.990	0.000	4445.593	95.000
x		125.000	315.003	928.359	107820.990	0.000	4353.903	80.000
σ		10.000	13.229	99.295	962.335	0.000	231.594	13.229
%RSD		8.000	4.200	10.696	0.893	0.000	5.319	16.536

200-35754-A-2-B 10/19/2016 01:40:37 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:40:59	124180.910	2.500	675.014	525609.300	17949.661	18790.587	98278.911	28364.115	165639.020	105.000	19881.852	7596.731
2	13:41:20	123767.850	2.500	655.013	538470.220	17939.650	19491.391	96096.238	29445.989	166245.010	110.000	20057.061	7601.733
3	13:41:42	119577.430	0.000	660.013	531377.960	18560.329	19045.876	98560.566	29666.379	165770.310	130.001	19606.526	7521.697
x		122508.730	1.667	663.347	531819.160	18149.880	19109.285	97645.238	29158.828	165884.780	115.000	19848.480	7573.387
σ		2546.969	1.443	10.409	6441.805	355.495	354.679	1348.845	697.007	318.798	13.229	227.114	44.835
%RSD		2.079	86.603	1.569	1.211	1.959	1.856	1.381	2.390	0.192	11.503	1.144	0.592

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:40:59	7716.786	3495.367	267154.120	280.002	210.001	1820.099	1750.092	1453.063	487.007	119.500	109.500	590.010
2	13:41:20	7366.628	3340.335	269404.910	250.002	200.001	1850.103	1215.044	1481.066	465.006	110.500	93.500	655.013
3	13:41:42	7286.592	3130.294	268022.900	220.001	220.001	1985.118	1200.043	1448.063	488.007	114.500	114.500	580.010
x		7456.669	3321.998	268193.980	250.002	210.001	1885.107	1388.393	1460.731	480.007	114.834	105.834	608.344

σ		228.795	183.226	1135.109	30.000	10.000	87.902	313.330	17.787	13.000	4.509	10.970	40.724
%RSD		3.068	5.516	0.423	12.000	4.762	4.663	22.568	1.218	2.708	3.927	10.365	6.694
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:40:59	7776.814	191928.770	315.003	60.000	0.000	5.000	833125.170	38113.529	245.002	254.002	635.012	135508.650
2	13:41:20	7701.779	195155.920	330.003	35.000	0.000	0.000	840775.340	39652.113	325.003	248.502	660.013	139571.970
3	13:41:42	8372.102	198130.710	340.003	55.000	0.000	5.000	838421.080	40464.061	355.004	260.002	530.008	141467.860
x		7950.232	195071.800	328.337	50.000	0.000	3.333	837440.530	39409.901	308.336	254.169	608.345	138849.490
σ		367.272	3101.827	12.583	13.229	0.000	2.887	3918.211	1193.838	56.863	5.752	68.983	3044.590
%RSD		4.620	1.590	3.832	26.458	0.000	86.603	0.468	3.029	18.442	2.263	11.339	2.193

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:40:59	150.001	405.005	1055.033	108793.930	0.000	7546.708	100.000
2	13:41:20	190.001	315.003	1265.048	107294.250	0.000	7196.553	85.000
3	13:41:42	155.001	265.002	1140.039	109528.720	0.000	6521.276	55.000
x		165.001	328.337	1153.373	108538.970	0.000	7088.179	80.000
σ		21.795	70.947	105.640	1138.842	0.000	521.236	22.913
%RSD		13.209	21.608	9.159	1.049	0.000	7.354	28.641

200-35754-A-2-B SD@5 10/19/2016 01:46:21 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:46:43	114632.870	5.000	420.005	306716.520	3600.389	4115.508	59204.970	5730.985	161417.910	25.000	21398.728	3020.274
2	13:47:05	115488.750	2.500	410.005	298814.910	3820.438	4210.532	59365.540	6371.217	163498.030	20.000	21078.320	2815.238
3	13:47:26	114099.230	5.000	570.010	304852.790	3700.411	4080.499	58853.730	6071.105	159741.870	25.000	21408.741	2915.255
x		114740.280	4.167	466.673	303461.410	3707.079	4135.513	59141.413	6057.769	161552.600	23.333	21295.263	2916.922
σ		700.960	1.443	89.632	4130.474	110.176	67.285	261.758	320.324	1881.700	2.887	187.945	102.528
%RSD		0.611	34.641	19.206	1.361	2.972	1.627	0.443	5.288	1.165	12.372	0.883	3.515

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:46:43	7821.835	810.020	224284.010	30.000	90.000	470.007	585.010	1579.075	508.008	104.500	108.000	625.012
2	13:47:05	7676.768	785.018	218675.220	45.000	90.000	485.007	635.012	1595.076	489.007	101.000	97.000	640.012
3	13:47:26	7921.882	840.021	221968.320	10.000	60.000	485.007	675.014	1608.078	506.008	115.000	114.000	595.011
x		7806.828	811.686	221642.520	28.333	80.000	480.007	631.679	1594.076	501.008	106.834	106.334	620.012
σ		123.244	27.539	2818.557	17.559	17.321	8.661	45.094	14.527	10.441	7.286	8.622	22.914
%RSD		1.579	3.393	1.272	61.974	21.651	1.804	7.139	0.911	2.084	6.820	8.108	3.696

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:46:43	1685.085	193162.910	75.000	40.000	0.000	0.000	807247.200	7701.779	290.003	231.002	115.000	134893.690
2	13:47:05	1675.084	192212.010	130.001	20.000	0.000	0.000	828093.480	8096.966	315.003	192.501	85.000	135811.090
3	13:47:26	1585.075	194063.280	125.000	40.000	0.000	0.000	815767.380	8192.013	270.002	192.501	90.000	135720.360
x		1648.415	193146.060	110.000	33.333	0.000	0.000	817036.020	7996.919	291.669	205.335	96.667	135475.050
σ		55.081	925.749	30.414	11.547	0.000	0.000	10480.887	259.979	22.547	22.228	16.073	505.511
%RSD		3.341	0.479	27.649	34.641	0.000	0.000	1.283	3.251	7.730	10.825	16.627	0.373

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:46:43	75.000	165.001	420.005	106458.920	0.000	380.004	20.000
2	13:47:05	100.000	240.002	345.004	109005.300	0.000	325.003	25.000
3	13:47:26	85.000	200.001	330.003	107445.220	0.000	495.007	5.000
x		86.667	201.668	365.004	107636.480	0.000	400.005	16.667
σ		12.583	37.528	48.219	1283.919	0.000	86.749	10.408
%RSD		14.519	18.609	13.211	1.193	0.000	21.687	62.450

200-35754-A-2-B PDS 10/19/2016 01:52:06 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:52:27	113696.490	1217.545	49999.887	T 7313667.700	265884.050	566936.240	T 6708233.600	236232.390	156834.460	115.000	110359.170	80860.679
2	13:52:49	116334.600	1227.545	48660.933	T 7251113.300	262429.950	564795.370	T 6583988.000	239326.060	153856.900	95.000	108320.860	81142.041
3	13:53:11	114371.080	1272.549	48465.364	T 7276336.800	260449.240	570634.290	T 6678395.500	238139.240	156905.120	145.001	106856.450	81579.167
x		114800.720	1239.213	49042.062	T 7280372.600	262921.080	567455.300	T 6656872.400	237899.230	155865.490	118.334	108512.160	81193.962
σ		1370.530	29.300	835.245	T 31471.875	2750.490	2953.865	T 64858.872	1560.737	1739.852	25.166	1759.176	362.047
%RSD		1.194	2.364	1.703	T 0.432	1.046	0.521	T 0.974	0.656	1.116	21.267	1.621	0.446

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:52:27	14371.193	58858.747	T 5687976.500	23601.699	10438.268	32351.368	83780.045	7927.885	1312.052	1366.056	92.000	1865.104
2	13:52:49	13790.703	59189.917	T 5718424.700	23261.221	10348.212	31685.090	84177.038	7935.889	1272.049	1342.054	93.500	1685.085
3	13:53:11	12925.010	60088.123	T 5659690.400	23456.495	10308.187	31775.261	84071.507	7746.800	1235.046	1347.555	102.500	1700.087
x		13695.635	59378.929	T 5688697.200	23439.805	10364.889	31937.240	84009.530	7870.191	1273.049	1351.888	96.000	1750.092
σ		727.764	636.109	T 29373.771	170.852	66.625	361.468	205.625	106.935	38.513	12.574	5.679	99.886

%RSD		5.314	1.071	T 0.516	0.729	0.643	1.132	0.245	1.359	3.025	0.930	5.916	5.707
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:52:27	196112.050	187205.510	128312.030	23987.249	350.004	4775.684	805390.530	36038.922	36870.738	28346.085	39170.977	134833.200
2	13:52:49	194432.540	187175.170	129314.730	25194.028	365.004	5420.881	796917.460	36710.385	38349.069	28764.801	40022.998	134248.510
3	13:53:11	197887.850	189329.290	132146.810	24427.889	365.004	5515.913	800734.020	37983.233	38514.450	29278.695	39792.447	135317.100
x		196144.150	187903.320	129924.520	24536.389	360.004	5237.493	801014.010	36910.847	37911.419	28796.527	39662.140	134799.600
σ		1727.879	1235.021	1988.791	610.662	8.660	402.751	4243.467	987.535	905.041	467.114	440.703	535.086
%RSD		0.881	0.657	1.531	2.489	2.406	7.690	0.530	2.675	2.387	1.622	1.111	0.397

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:52:27	25484.469	130287.260	49653.855	107545.870	0.000	174630.100	105422.370
2	13:52:49	26150.499	133532.800	50376.017	106217.390	0.000	183347.980	105759.490
3	13:53:11	26711.388	135266.690	50516.441	104083.990	0.000	191488.760	109750.170
x		26115.452	133028.920	50182.105	105949.080	0.000	183155.610	106977.340
σ		614.210	2527.669	462.834	1746.464	0.000	8430.972	2407.247
%RSD		2.352	1.900	0.922	1.648	0.000	4.603	2.250

200-35676-A-2-B 10/19/2016 01:57:50 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:58:12	118268.140	0.000	770.018	531718.570	17709.404	14171.022	98993.119	27933.389	156329.750	70.000	12524.704	6031.091
2	13:58:33	113424.650	2.500	645.012	535868.350	16928.593	13825.732	97454.088	26661.308	158146.770	70.000	12159.434	6726.357
3	13:58:55	117059.650	2.500	725.016	527425.340	17148.818	13420.401	94215.547	27272.295	158873.630	70.000	12174.445	6591.303
x		116250.810	1.667	713.349	531670.750	17262.272	13805.718	96887.585	27288.997	157783.380	70.000	12286.194	6449.584
σ		2521.015	1.443	63.314	4221.710	402.579	375.710	2438.646	636.205	1310.296	0.000	206.692	368.662
%RSD		2.169	86.603	8.876	0.794	2.332	2.721	2.517	2.331	0.830	0.000	1.682	5.716
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:58:12	4680.657	4955.737	249574.740	205.001	265.002	785.018	1075.035	935.026	302.003	102.000	98.500	630.012
2	13:58:33	4510.610	4355.569	243160.970	145.001	255.002	825.020	1060.034	934.026	278.002	104.500	100.000	645.012
3	13:58:55	5055.767	4775.684	247037.360	235.002	210.001	1105.037	1220.045	898.024	311.003	95.500	99.500	540.009
x		4749.011	4695.663	246591.020	195.001	243.335	905.025	1118.371	922.359	297.003	100.667	99.334	605.011
σ		278.932	307.982	3230.095	45.826	29.298	174.366	88.371	21.080	17.059	4.646	0.764	56.791
%RSD		5.873	6.559	1.310	23.501	12.040	19.266	7.902	2.285	5.744	4.615	0.769	9.387
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:58:12	7361.625	187589.790	265.002	65.000	5.000	10.000	801279.310	37246.573	270.002	165.001	560.009	133885.610
2	13:58:33	7516.695	188287.590	180.001	80.000	0.000	5.000	802296.540	37777.766	215.001	182.001	495.007	133391.670
3	13:58:55	7521.697	188186.460	220.001	65.000	0.000	0.000	805579.340	37301.696	240.002	188.001	580.010	135841.340
x		7466.672	188021.280	221.668	70.000	1.667	5.000	803051.730	37442.012	241.668	178.334	545.009	134372.870
σ		91.008	377.088	42.525	8.660	2.887	5.000	2247.285	292.075	27.538	11.930	44.442	1295.487
%RSD		1.219	0.201	19.184	12.372	173.205	100.000	0.280	0.780	11.395	6.690	8.154	0.964

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:58:12	180.001	420.005	1185.042	103691.560	0.000	25444.408	110.000
2	13:58:33	135.001	370.004	1215.044	106197.260	0.000	20552.665	140.001
3	13:58:55	155.001	370.004	1265.048	107193.610	0.000	16968.634	135.001
x		156.667	386.671	1221.711	105694.140	0.000	20988.569	128.334
σ		22.546	28.868	40.417	1804.421	0.000	4254.667	16.073
%RSD		14.391	7.466	3.308	1.707	0.000	20.271	12.524

CCV 10/19/2016 02:03:34 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:03:56	104184.620	76500.166	27001.855	T 12755626.000	T 3708080.000	T 34286370.000	T 12028517.000	T 1285564.000	143767.410	23501.558	T 2436293.900	6741
2	14:04:18	103077.770	76663.414	26265.680	T 12731350.000	T 3732678.500	T 34430028.000	T 12009389.000	1172426.400	140328.280	23246.200	T 2469293.800	6815
3	14:04:40	99777.777	74983.296	27092.001	T 12645162.000	T 3679764.200	T 34438097.000	T 11856024.000	T 1280752.600	142819.310	23461.502	T 2437995.500	6755
x		102346.720	76048.959	26786.512	T 12710712.000	T 3706840.900	T 34384831.000	T 11964643.000	T 1246247.600	142305.000	23403.087	T 2447861.100	6770
σ		2292.572	926.493	453.300	T 58051.653	T 26478.947	T 85365.613	T 94552.045	T 63976.359	1776.311	137.336	T 18580.810	39
%RSD		2.240	1.218	1.692	T 0.457	T 0.714	T 0.248	T 0.790	T 5.134	1.248	0.587	T 0.759	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:03:56	85036.384	T 3543027.900	T 73044804.000	1040022.600	565467.590	701884.470	544764.900	72283.408	5887.039	7556.212	83.000	47
2	14:04:18	83403.162	T 3557715.800	T 73969358.000	1042819.500	563756.050	696140.960	539606.090	72201.052	5698.974	7494.685	101.500	47
3	14:04:40	85559.048	T 3534951.500	T 72923312.000	1020504.800	554224.230	681368.910	542683.630	71050.121	5839.023	7576.722	120.500	47
x		84666.198	T 3545231.700	T 73312491.000	1034449.000	561149.290	693131.450	542351.540	71844.860	5808.346	7542.540	101.667	47
σ		1124.607	T 11541.034	T 572097.740	12156.701	6058.030	10583.711	2595.391	689.495	97.714	42.693	18.751	
%RSD		1.328	T 0.326	T 0.780	1.175	1.080	1.527	0.479	0.960	1.682	0.566	18.443	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	14:03:56	709131.780	175388.000	1442820.900	232155.700	7496.686	108658.050	757177.520	691602.760	463655.820	352958.740	463846.010	1258
2	14:04:18	707984.520	171861.550	1467371.700	233276.190	7616.740	110817.190	752628.260	696323.340	466138.660	354362.050	473867.080	1249
3	14:04:40	707609.070	168830.810	1496318.400	231430.730	7421.652	108824.120	761361.820	705507.740	469814.740	358144.110	471069.420	1251
x		708241.790	172026.780	1468837.000	232287.540	7511.693	109433.120	757055.860	697811.280	466536.410	355154.960	469594.170	1252
σ		793.287	3281.718	26778.835	929.767	98.406	1201.514	4368.051	7070.898	3098.665	2682.083	5170.854	4
%RSD		0.112	1.908	1.823	0.400	1.310	1.098	0.577	1.013	0.664	0.755	1.101	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:03:56	28444.252	1277966.900	T 6968584.900	98832.168	5.000	142531.870	94622.844
2	14:04:18	30432.759	1302836.000	T 7036196.800	98198.438	0.000	159989.230	97760.877
3	14:04:40	30497.878	1294562.100	T 7054553.100	100532.290	0.000	171310.920	96196.816
x		29791.630	1291788.400	T 7019778.300	99187.632	1.667	157944.000	96193.512
σ		1167.318	12664.488	T 45274.855	1206.848	2.887	14498.128	1569.019
%RSD		3.918	0.980	T 0.645	1.217	173.205	9.179	1.631

CCB 10/19/2016 02:09:18 PM QC Status: PASS (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:09:39	112689.690	5.000	645.012	237642.220	390.005	3360.339	50386.048	670.013	151455.050	15.000	13010.076	1275.049
2	14:10:01	113031.990	5.000	575.010	233615.900	400.005	3385.344	49633.796	530.008	154593.670	10.000	13190.217	1245.046
3	14:10:23	113384.370	5.000	540.009	236536.660	460.006	3520.372	51910.716	630.012	150597.330	10.000	13230.249	1285.050
x		113035.350	5.000	586.677	235931.590	416.672	3422.018	50643.520	610.011	152215.350	11.667	13143.514	1268.382
σ		347.356	0.000	53.465	2080.241	37.860	86.089	1160.091	72.114	2103.860	2.887	117.282	20.818
%RSD		0.307	0.000	9.113	0.882	9.086	2.516	2.291	11.822	1.382	24.744	0.892	1.641

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:09:39	4600.635	470.007	199896.610	70.000	55.000	210.001	500.007	1108.037	319.003	106.000	90.000	530.008
2	14:10:01	4425.587	510.008	199157.850	60.000	65.000	240.002	475.007	1150.040	344.004	95.000	93.000	535.009
3	14:10:23	4500.608	500.007	202310.480	105.000	35.000	240.002	505.008	1143.039	385.004	106.500	103.500	560.009
x		4508.943	493.341	200454.980	78.334	51.667	230.002	493.341	1133.705	349.337	102.500	95.500	541.675

σ		87.821	20.817	1648.818	23.629	15.275	17.321	16.073	22.503	33.322	6.500	7.089	16.073
%RSD		1.948	4.220	0.823	30.165	29.565	7.531	3.258	1.985	9.539	6.341	7.423	2.967
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:09:39	105.000	178672.610	3150.298	85.000	0.000	5.000	768760.080	2565.197	595.011	476.007	25.000	127294.270
2	14:10:01	80.000	179723.820	2955.262	45.000	5.000	10.000	776925.970	2790.233	690.014	560.509	20.000	127213.650
3	14:10:23	95.000	178217.780	2875.248	35.000	5.000	10.000	771628.160	2790.233	700.015	543.509	20.000	127777.950
x		93.334	178871.400	2993.603	55.000	3.333	8.333	772438.070	2715.222	661.680	526.675	21.667	127428.620
σ		12.583	772.451	141.476	26.458	2.887	2.887	4142.749	129.925	57.953	44.696	2.887	305.197
%RSD		13.482	0.432	4.726	48.105	86.603	34.641	0.536	4.785	8.759	8.486	13.323	0.240

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:09:39	165.001	1115.037	595.011	101739.580	0.000	1130.038	10.000
2	14:10:01	140.001	1060.034	650.013	103973.300	0.000	960.028	60.000
3	14:10:23	115.000	1015.031	640.012	104949.390	0.000	1025.032	35.000
x		140.001	1063.367	628.345	103554.090	0.000	1038.366	35.000
σ		25.000	50.086	29.298	1645.456	0.000	85.786	25.000
%RSD		17.857	4.710	4.663	1.589	0.000	8.262	71.429

CCVL 10/19/2016 02:15:00 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:15:22	110555.460	145.001	4905.722	859536.950	25088.869	63013.898	637140.010	22134.689	150970.680	20.000	24492.984	9087.477
2	14:15:44	112427.930	125.000	5125.788	T 944094.550	25209.050	62271.114	640879.360	22605.320	150022.170	15.000	25489.477	8807.326
3	14:16:05	109468.320	142.501	5180.805	T 940639.680	26170.531	64173.309	642738.950	23045.922	149255.340	0.000	25399.339	9202.540
x		110817.240	137.501	5070.772	T 914757.060	25489.484	63152.774	640252.770	22595.310	150082.730	11.667	25127.267	9032.448
σ		1497.066	10.897	145.560	T 47853.205	592.857	958.672	2851.578	455.699	859.275	10.408	551.151	203.272
%RSD		1.351	7.925	2.871	T 5.231	2.326	1.518	0.445	2.017	0.573	89.214	2.193	2.250

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:15:22	6436.243	6716.353	676475.500	2560.197	1345.054	3330.333	10953.598	1972.117	516.008	266.502	102.000	700.015
2	14:15:44	6246.170	6881.420	680718.110	2525.191	1125.038	3445.356	10723.449	1982.118	543.009	259.502	83.000	645.012
3	14:16:05	6321.199	6501.268	686841.820	2490.186	1055.033	3680.406	11418.910	2046.126	603.011	253.002	98.500	645.012
x		6334.537	6699.680	681345.140	2525.191	1175.042	3485.365	11031.986	2000.120	554.009	259.669	94.500	663.347
σ		95.736	190.624	5211.527	35.005	151.338	178.433	354.295	40.155	44.532	6.752	10.112	31.756
%RSD		1.511	2.845	0.765	1.386	12.879	5.119	3.212	2.008	8.038	2.600	10.700	4.787

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:15:22	18675.457	176873.570	13230.249	2515.190	20.000	620.012	769702.100	1075.035	3880.452	3179.303	3925.462	129692.650
2	14:15:44	19030.859	179582.310	13320.321	2750.227	55.000	585.010	778685.280	1410.060	4335.564	3196.307	4140.514	128735.270
3	14:16:05	19831.792	184111.320	13995.874	2465.182	45.000	625.012	787557.940	1330.053	4190.527	3250.817	3655.401	129188.760
x		19179.369	180189.070	13515.481	2576.866	40.000	610.011	778648.440	1271.716	4135.514	3208.809	3907.126	129205.560
σ		592.300	3656.825	418.463	152.203	18.028	21.795	8927.977	174.965	232.490	37.360	243.076	478.911
%RSD		3.088	2.029	3.096	5.906	45.069	3.573	1.147	13.758	5.622	1.164	6.221	0.371

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:15:22	2240.151	13460.433	6476.258	102544.490	0.000	9402.651	10348.212
2	14:15:44	2560.197	13855.757	6186.148	100481.990	0.000	9822.894	10288.174
3	14:16:05	2735.224	14025.899	6251.172	104788.390	0.000	9917.950	10873.546
x		2511.857	13780.697	6304.526	102604.960	0.000	9714.498	10503.311
σ		251.052	290.109	152.237	2153.835	0.000	274.218	322.035
%RSD		9.995	2.105	2.415	2.099	0.000	2.823	3.066

Analyte ICPS

STD0 10/19/2016 10:04:01 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:04:23	98.484%	-9.338	0.745	3360.819	21.102	36.669	1012.767	53.276	98.403%	10.157	583.341	90.062
2	10:04:45	99.508%	3.223	-9.454	965.081	19.827	61.468	-876.240	211.829	99.362%	5.030	893.538	139.762
3	10:05:07	102.008%	-1.986	7.887	-8063.639	123.747	-67.424	-188.115	-5.260	102.235%	4.895	1245.035	-83.489
x		100.000%	-2.700	-0.274	-1245.913	54.892	10.237	-17.196	86.615	100.000%	6.694	907.305	48.778
σ		1.813%	6.311	8.715	6024.610	59.634	68.391	956.032	112.319	1.994%	3.000	331.062	117.211
%RSD		1.813	233.724	3183.968	483.550	108.638	668.043	5559.587	129.676	1.994	44.810	36.488	240.294

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:04:23	7562.720	-14.575	-1694.041	-1.230	-6.799	5.426	4.338	-211.270	763.515	-99.781	642.735	3231.443
2	10:04:45	7601.959	11.156	5927.872	-6.458	8.199	-57.510	-12.292	-90.985	727.313	-92.250	584.470	3132.587
3	10:05:07	7204.457	2.331	335.088	2.899	-2.289	-19.149	-50.520	-15.227	682.685	-37.054	591.479	2910.702
x		7456.379	-0.363	1522.973	-1.596	-0.296	-23.744	-19.491	-105.827	724.504	-76.362	606.228	3091.577
σ		219.051	13.075	3947.365	4.689	7.695	31.719	28.129	98.861	40.488	34.249	31.810	164.256
%RSD		2.938	3605.681	259.188	293.755	2596.058	133.584	144.316	93.417	5.588	44.851	5.247	5.313

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:04:23	11.630	99.582%	19.198	-1.042	-62.854	-34.947	98.721%	572.332	0.558	-14.289	6.221	101.230%
2	10:04:45	6.261	100.077%	-16.297	-26.609	-102.281	-6.420	99.921%	635.512	24.541	1.146	1.034	99.643%
3	10:05:07	-13.826	100.341%	18.401	-17.027	-100.831	-7.915	101.358%	675.837	-26.672	9.030	-4.041	99.128%
x		1.355	100.000%	7.101	-14.893	-88.655	-16.427	100.000%	627.893	-0.525	-1.371	1.071	100.000%
σ		13.418	0.385%	20.267	12.917	22.356	16.056	1.320%	52.171	25.624	11.862	5.131	1.096%
%RSD		990.347	0.385	285.410	86.731	25.217	97.737	1.320	8.309	4885.265	865.177	478.849	1.096

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:04:23	9.483	50.609	-27.579	99.485%	0.000	8291.464	-21.754
2	10:04:45	-3.918	46.841	115.181	101.435%	0.000	7869.966	23.964
3	10:05:07	26.815	-28.286	0.839	99.080%	0.000	7737.168	-5.854
x		10.793	23.055	29.480	100.000%	0.000	7966.199	-1.214
σ		15.409	44.502	75.567	1.259%	0.000	289.407	23.209
%RSD		142.761	193.029	256.331	1.259	0.000	3.633	1911.011

STD1 10/19/2016 10:09:44 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:10:06	99.600%	198.997	6125.957	T 917939.510	33353.925	83326.210	T 985257.620	33033.213	99.487%	35.172	15034.700	11560.682
2	10:10:27	98.145%	168.971	5954.094	T 961622.540	34194.543	83659.525	T 981588.480	33628.824	98.305%	0.000	13651.008	11435.472
3	10:10:49	94.214%	213.561	6143.841	T 910935.400	33560.202	85597.478	907083.730	33275.433	98.818%	10.117	15813.170	11965.345
x		97.319%	193.843	6074.631	T 930165.820	33702.890	84194.405	T 957976.610	33312.490	98.870%	15.096	14832.959	11653.833
σ		2.786%	22.738	104.770	T 27466.500	438.097	1226.473	T 44112.688	299.530	0.593%	18.107	1095.107	276.946
%RSD		2.863	11.730	1.725	T 2.953	1.300	1.457	T 4.605	0.899	0.599	119.943	7.383	2.376

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:10:06	8748.992	8888.695	700417.860	3542.108	1465.712	4566.656	13870.301	984.642	806.738	185.277	608.127	2941.608
2	10:10:27	8872.565	9291.370	728834.060	3549.340	1681.918	4670.458	14854.527	1066.000	780.581	193.824	605.284	3063.867
3	10:10:49	8357.851	9200.172	729446.720	3525.747	1409.966	4604.386	15123.436	1143.349	764.168	124.452	601.272	3041.287

x		8659.802	9126.746	719566.210	3539.065	1519.199	4613.833	14616.088	1064.664	783.829	167.851	604.895	3015.587
σ		268.698	211.140	16585.787	12.087	143.649	52.542	659.717	79.362	21.470	37.827	3.444	65.055
%RSD		3.103	2.313	2.305	0.342	9.456	1.139	4.514	7.454	2.739	22.536	0.569	2.157

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:10:06	26140.022	100.042%	17265.519	3747.603	-95.375	959.242	99.241%	720.485	5554.396	4476.454	6048.091	98.476%
2	10:10:27	26917.748	100.537%	17608.188	3772.545	-78.522	813.875	97.807%	848.631	5669.637	4649.451	6039.720	96.900%
3	10:10:49	27403.704	99.389%	17540.583	3647.531	-78.801	950.548	97.462%	805.463	6365.034	4783.807	5917.455	97.493%
x		26820.492	99.990%	17471.430	3722.560	-84.233	907.889	98.170%	791.526	5863.022	4636.571	6001.755	97.623%
σ		637.430	0.576%	181.500	66.163	9.650	81.534	0.943%	65.200	438.557	154.081	73.126	0.796%
%RSD		2.377	0.576	1.039	1.777	11.457	8.981	0.961	8.237	7.480	3.323	1.218	0.815

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:10:06	3475.532	17559.277	14776.901	99.547%	0.000	23601.153	14063.030
2	10:10:27	3781.331	18603.014	15652.298	97.899%	0.000	24020.147	14425.951
3	10:10:49	3608.970	18639.175	14981.619	99.080%	0.000	24070.761	14776.798
x		3621.944	18267.156	15136.939	98.842%	0.000	23897.354	14421.926
σ		153.312	613.307	457.901	0.849%	0.000	257.763	356.901
%RSD		4.233	3.357	3.025	0.859	0.000	1.079	2.475

STD2 10/19/2016 10:13:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:13:40	93.834%	883.220	31194.081	T 4882574.000	177330.770	403038.870	T 5089925.400	166817.660	89.775%	22.229	71825.294	57508.966
2	10:14:01	88.714%	850.185	33627.434	T 4709299.000	170162.520	397161.840	T 4920036.700	161567.190	91.325%	27.355	70636.054	56181.308
3	10:14:23	88.538%	984.606	33316.044	T 4718040.200	176002.010	395488.990	T 5003439.900	159893.030	91.610%	27.272	72207.039	56781.417
x		90.362%	906.004	32712.519	T 4769971.100	174498.440	398563.230	T 5004467.300	162759.290	90.903%	25.619	71556.129	56823.897
σ		3.008%	70.047	1324.191	T 97614.908	3813.332	3965.237	T 84949.032	3612.956	0.988%	2.936	819.351	664.847
%RSD		3.329	7.731	4.048	T 2.046	2.185	0.995	T 1.697	2.220	1.087	11.461	1.145	1.170

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:13:40	10272.514	43786.462	T 4111833.800	17090.275	7531.251	22685.022	72747.211	5478.053	877.997	1162.863	594.833	3005.136
2	10:14:01	10061.962	42371.044	T 4044718.900	17249.165	7408.596	21900.866	72100.260	5741.716	756.309	1186.112	594.837	2926.164
3	10:14:23	10230.917	41389.733	T 3981317.900	16834.849	6975.977	22230.810	72043.323	5475.525	877.210	1106.358	618.267	3125.936
x		10188.464	42515.747	T 4045956.900	17058.096	7305.275	22272.233	72296.931	5565.098	837.172	1151.778	602.646	3019.079
σ		111.511	1204.899	T 65266.791	209.024	291.699	393.715	390.991	152.961	70.031	41.017	13.528	100.613
%RSD		1.094	2.834	T 1.613	1.225	3.993	1.768	0.541	2.749	8.365	3.561	2.245	3.333

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:13:40	136841.570	94.392%	88043.270	18256.375	-130.854	4590.665	91.288%	684.662	30347.836	23029.949	31215.806	91.522%
2	10:14:01	137946.590	92.813%	90154.033	18994.458	-45.699	4497.770	91.035%	703.041	29804.686	23377.966	30427.757	92.283%
3	10:14:23	140467.470	92.923%	91172.137	18751.275	-99.876	4436.452	91.467%	748.920	29864.199	23400.027	30278.477	93.003%
x		138418.540	93.376%	89789.813	18667.369	-92.143	4508.296	91.263%	712.208	30005.574	23269.314	30640.680	92.269%
σ		1858.450	0.881%	1595.915	376.127	43.101	77.643	0.217%	33.095	297.898	207.589	503.635	0.740%
%RSD		1.343	0.944	1.777	2.015	46.776	1.722	0.238	4.647	0.993	0.892	1.644	0.802

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:13:40	18063.467	93757.354	67653.040	93.162%	0.000	82228.811	73563.352
2	10:14:01	18168.576	95003.934	66934.835	94.068%	0.000	85145.726	73178.386
3	10:14:23	18490.139	98176.514	68965.094	92.070%	0.000	90821.043	75550.175
x		18240.727	95645.934	67850.990	93.100%	0.000	86065.193	74097.305

σ		222.298	2278.457	1029.503	1.000%	0.000	4369.288	1272.861
%RSD		1.219	2.382	1.517	1.074	0.000	5.077	1.718

STD3 10/19/2016 10:17:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:17:40	90.768%	109484.540	37888.714	┬18523708.000	┬5592746.600	┬52838449.000	┬19484038.000	┬2071572.200	87.254%	36335.995	┬3804771.000	1059
2	10:18:02	86.150%	112247.470	40405.869	┬18742893.000	┬5700997.000	┬53381878.000	┬19729206.000	┬2110505.800	84.845%	37509.838	┬3890850.700	1074
3	10:18:23	87.341%	111586.870	39469.667	┬19045179.000	┬5718442.700	┬53831504.000	┬19950996.000	┬2160928.000	83.568%	38469.062	┬3945291.200	1102
x		88.086%	111106.300	39254.750	┬18770593.000	┬5670728.800	┬53350610.000	┬19721414.000	┬2114335.300	85.222%	37438.298	┬3880304.300	1078
σ		2.397%	1442.796	1272.265	┬261836.690	┬68095.515	┬497265.250	┬233576.270	┬44800.842	1.872%	1068.332	┬70851.303	21
%RSD		2.722	1.299	3.241	┬1.395	┬1.201	┬0.932	┬1.184	┬2.119	2.196	2.854	┬1.826	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:17:40	11880.768	┬5556099.600	┬113537250.000	1601480.000	847443.420	1047994.400	838282.200	109250.030	-702.591	11427.563	607.076	1
2	10:18:02	10002.935	┬5672775.400	┬116869280.000	1652598.900	884343.120	1079325.700	853799.690	108278.520	-664.964	11518.384	586.599	1
3	10:18:23	12523.069	┬5819401.700	┬118700480.000	1653485.000	883778.780	1086867.100	867697.990	109315.710	-699.416	11246.477	607.996	1
x		11468.924	┬5682758.900	┬116369010.000	1635854.600	871855.100	1071395.700	853259.960	108948.090	-688.990	11397.475	600.557	1
σ		1309.573	┬131934.660	┬2617716.700	29772.614	21143.022	20613.941	14715.321	580.792	20.868	138.428	12.096	
%RSD		11.418	┬2.322	┬2.249	1.820	2.425	1.924	1.725	0.533	3.029	1.215	2.014	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	10:17:40	1053611.100	89.465%	2164275.000	348574.130	1143.654	171408.570	88.376%	1081909.300	724963.200	566779.520	735424.240	9
2	10:18:02	1071554.800	89.814%	┬2457412.300	356698.690	1044.411	170203.050	87.284%	1086230.700	737961.180	572927.900	750661.740	8
3	10:18:23	1064171.700	88.935%	┬2493760.000	342762.030	931.084	169907.790	88.407%	1076254.800	731169.260	567861.820	742158.900	8
x		1063112.500	89.405%	┬2371815.800	349344.950	1039.716	170506.470	88.022%	1081464.900	731364.550	569189.750	742748.290	8
σ		9018.585	0.443%	┬180652.080	7000.232	106.363	795.065	0.639%	5002.779	6501.188	3282.257	7635.827	
%RSD		0.848	0.495	┬7.617	2.004	10.230	0.466	0.726	0.463	0.889	0.577	1.028	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:17:40	43472.865	1930952.300	┬18728460.000	90.115%	0.000	419411.610	142012.000
2	10:18:02	46012.712	1901951.100	┬18679074.000	91.542%	0.000	413030.300	137703.060
3	10:18:23	44367.693	1966718.000	┬19340590.000	88.989%	0.000	414589.410	141036.230
x		44617.757	1933207.100	┬18916041.000	90.215%	0.000	415677.110	140250.430
σ		1288.257	32442.301	┬368498.260	1.279%	0.000	3326.799	2259.390
%RSD		2.887	1.678	┬1.948	1.418	0.000	0.800	1.611

STD4 10/19/2016 10:21:49 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51
1	10:22:10	85.410%	310889.000	108877.550	┬54206457.000	┬16552157.000	┬153832770.000	┬57100084.000	┬6190431.700	80.244%	109096.420	┬11434840.0(
2	10:22:32	85.511%	314115.260	112565.570	┬54127203.000	┬16680123.000	┬154812020.000	┬57420473.000	┬6258661.900	81.049%	110143.690	┬11481555.0(
3	10:22:53	84.824%	313486.900	114856.470	┬55196317.000	┬16815728.000	┬156380790.000	┬57949371.000	┬6470857.600	80.146%	111995.390	┬11937610.0(
x		85.248%	312830.390	112099.870	┬54509992.000	┬16682669.000	┬155008530.000	┬57489976.000	┬6306650.400	80.480%	110411.830	┬11618002.0(
σ		0.371%	1710.395	3016.543	┬595694.110	┬131803.920	┬1285323.300	┬428888.350	┬146242.420	0.496%	1467.972	┬277773.0(
%RSD		0.435	0.547	2.691	┬1.093	┬0.790	┬0.829	┬0.746	┬2.319	0.616	1.330	┬2.3(

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83K
1	10:22:10	-12994.357	┬16648398.000	┬338838630.000	┬5311573.800	2462953.800	┬3418647.400	2379145.700	312923.980	-2872.372	31683.654	606.7(
2	10:22:32	-11243.212	┬16638177.000	┬336266680.000	┬5258460.600	2487951.600	┬3462975.300	2393113.000	315205.610	-2689.422	32135.769	611.2(

3	10:22:53	-15471.172	┬16849152.000	┬342667020.000	┬5367975.900	2521073.700	┬3466612.000	2412125.300	317040.210	-3263.521	32284.798	626.7
x		-13236.247	┬16711909.000	┬339257450.000	┬5312670.100	2490659.700	┬3449411.600	2394794.700	315056.600	-2941.772	32034.740	614.9
σ		2124.334	┬118965.390	┬3220659.400	┬54765.921	29154.442	┬26704.491	16554.020	2062.156	293.274	313.048	10.5
%RSD		16.049	┬0.712	┬0.949	┬1.031	1.171	┬0.774	0.691	0.655	9.969	0.977	1.7

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135B
1	10:22:10	┬3497617.200	83.640%	┬7351328.500	1020403.500	1244.222	496376.640	82.244%	┬3723480.700	2172259.500	1708060.100	┬2523843.9
2	10:22:32	┬3552001.400	83.910%	┬7526881.400	1019493.500	1279.284	502657.720	82.705%	┬3775341.700	2198627.000	1729042.800	┬2577758.2
3	10:22:53	┬3589815.900	83.134%	┬7644645.600	1010512.200	1191.658	500105.240	82.885%	┬3821953.700	2228186.500	1734839.200	┬2578545.8
x		┬3546478.200	83.561%	┬7507618.500	1016803.100	1238.388	499713.200	82.611%	┬3773592.000	2199691.000	1723980.700	┬2560049.3
σ		┬46346.833	0.394%	┬147604.280	5467.056	44.104	3158.838	0.331%	┬49259.811	27978.679	14088.945	┬31357.2
%RSD		┬1.307	0.472	┬1.966	0.538	3.561	0.632	0.401	┬1.305	1.272	0.817	┬1.2

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:22:10	134612.180	┬6732223.500	┬56795212.000	85.443%	0.000	972221.090	425069.110
2	10:22:32	136888.510	┬6705646.500	┬56335347.000	87.165%	5.736	957054.270	426947.630
3	10:22:53	138539.410	┬6800082.800	┬57245225.000	86.780%	0.000	962037.290	428214.080
x		136680.030	┬6745984.300	┬56791928.000	86.463%	1.912	963770.880	426743.610
σ		1971.897	┬48698.824	┬454948.010	0.904%	3.312	7730.599	1582.380
%RSD		1.443	┬0.722	┬0.801	1.045	173.205	0.802	0.371

STD5 10/19/2016 10:27:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	10:27:52	80.776%	514277.790	182577.180	T 90751132.000	TM 27881369.000	TM 257234000.000	T 96608304.000	TM 10580265.000	75.552%	183593.120	TI
2	10:28:14	81.785%	505419.340	179793.970	T 89964817.000	TM 27679070.000	TM 260322720.000	TM 98131855.000	TM 10775359.000	75.450%	183890.410	TI
3	10:28:35	78.973%	513630.710	187695.050	T 87681579.000	TM 27513899.000	T 254737580.000	T 94596216.000	TM 10448305.000	77.553%	184083.250	TI
x		80.511%	511109.280	183355.400	T 89465843.000	TM 27691446.000	TM 257431430.000	TM 96445458.000	TM 10601310.000	76.185%	183855.600	TI
σ		1.424%	4938.246	4007.613	T 1594449.700	TM 184047.130	TM 2797796.600	TM 1773435.900	TM 164539.310	1.186%	246.912	
%RSD		1.769	0.966	2.186	T 1.782	TM 0.665	TM 1.087	TM 1.839	TM 1.552	1.556	0.134	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se
1	10:27:52	-28087.394	TM 28216467.000	T 564976150.000	TM 8991663.500	TM 4638999.200	T 5631538.000	TM 4349264.800	497104.170	-5268.738	49905.424
2	10:28:14	-13391.383	TM 28708823.000	TM 579218540.000	TM 9083256.300	TM 4688230.500	TM 5691168.600	TM 4426977.400	519881.640	-5232.769	50253.977
3	10:28:35	-22015.396	TM 28190326.000	T 564883200.000	TM 8879194.300	TM 4629577.300	T 5604101.600	TM 4327438.100	516837.240	-5472.044	50765.579
x		-21164.724	TM 28371872.000	TM 569692630.000	TM 8984704.700	TM 4652269.000	TM 5642269.400	TM 4367893.400	511274.350	-5324.517	50308.327
σ		7384.843	TM 292100.730	TM 8249812.100	TM 102208.810	TM 31497.836	TM 44514.490	TM 52319.133	12365.785	129.022	432.645
%RSD		34.892	TM 1.030	TM 1.448	TM 1.138	TM 0.677	TM 0.789	TM 1.198	2.419	2.423	0.860

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb
1	10:27:52	TM 5830222.600	81.758%	TM 12072126.000	1624703.000	2567.381	810686.650	80.460%	T 6183115.600	TM 4052399.800	2801325.900
2	10:28:14	TM 5830534.900	78.713%	TM 12708102.000	1646670.700	1528.373	813154.840	80.282%	T 6354790.300	TM 4147894.500	M 2868681.000
3	10:28:35	TM 5857975.100	79.610%	TM 12838368.000	1645841.900	2296.327	821577.640	80.289%	T 6344351.300	TM 4180604.700	M 2887701.600
x		TM 5839577.500	80.027%	TM 12539532.000	1639071.900	2130.694	815139.710	80.344%	T 6294085.700	TM 4126966.400	M 2852569.500
σ		TM 15933.528	1.565%	TM 409992.290	12450.693	538.943	5710.360	0.100%	T 96244.567	TM 66615.410	M 45385.863
%RSD		TM 0.273	1.955	TM 3.270	0.760	25.294	0.701	0.125	T 1.529	TM 1.614	M 1.591

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:27:52	M 270584.070	TM 11202880.000	TM 93635617.000	83.536%	0.000	1808340.000	M 856770.370
2	10:28:14	M 277723.400	TM 11470898.000	TM 94269272.000	83.509%	0.000	M 1844489.200	M 872619.930
3	10:28:35	M 284439.660	TM 11403652.000	TM 95290114.000	83.694%	5.974	M 1860142.100	M 877084.150
x		M 277582.380	TM 11359143.000	TM 94398334.000	83.580%	1.991	M 1837657.100	M 868824.820
σ		M 6928.871	TM 139442.250	TM 834765.020	0.100%	3.449	M 26568.263	M 10675.421
%RSD		M 2.496	TM 1.228	TM 0.884	0.120	173.205	M 1.446	M 1.229

ICV 10/19/2016 10:33:14 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:33:36	75.893%	55322.121	22634.888	T 10162448.000	T 2920315.600	T 27989004.000	T 9860960.600	975852.540	71.699%	19124.008	1802241.300	549939.340
2	10:33:57	75.053%	58002.272	23027.375	T 10223811.000	T 2981489.000	T 27890519.000	T 9879480.500	975413.280	70.890%	18891.779	1791399.500	556581.430
3	10:34:20	73.406%	58405.516	22818.764	T 10006645.000	T 2919660.400	T 27786053.000	T 9808156.500	988687.770	71.872%	19036.888	1823382.300	559864.360
x		74.784%	109.477%	120.653%	T 110.147%	T 107.218%	T 109.389%	T 101.636%	96.393%	71.487%	19017.558	93.997%	95.269%
σ		1.265%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.524%	117.315	n/a	n/a
%RSD		1.692	2.928	0.860	T 1.105	T 1.208	T 0.364	T 0.376	0.769	0.733	0.617	0.901	0.910

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:33:36	7517.716	T 2838282.000	T 58815306.000	846675.700	453442.100	557662.090	445058.770	54823.132	-234.411	5785.249	587.418	2315.048
2	10:33:57	10430.147	T 2937317.100	T 60574236.000	865629.900	465692.140	573281.370	461587.000	54358.536	35.204	5508.462	581.621	2828.796
3	10:34:20	9035.508	T 2891561.300	T 60090986.000	852424.970	457747.260	571704.260	452677.970	54988.133	-20.544	5612.905	530.826	2550.931
x		8994.457	T 103.159%	T 104.718%	96.969%	102.045%	99.993%	105.475%	102.063%	-73.250	106.980%	566.622	2564.925
σ		1456.649	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	142.325	n/a	31.136	257.160

%RSD		16.195	T 1.716	T 1.519	1.137	1.354	1.515	1.826	0.597	194.300	2.480	5.495	10.026
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:33:36	526940.740	79.164%	515540.070	172763.460	-347.546	87301.740	77.373%	566218.900	380353.040	295095.910	369952.710	77.300%
2	10:33:57	528034.220	78.325%	538819.120	173392.250	54.171	87390.378	77.715%	573864.410	386926.390	299367.860	377138.510	80.231%
3	10:34:20	521864.320	77.922%	547262.960	173525.010	458.282	87640.200	78.181%	572511.370	381467.620	297744.230	379882.070	80.126%
x		525613.090	78.470%	94.715%	102.341%	54.969	104.064%	77.756%	570864.890	382915.680	103.774%	96.799%	79.219%
σ		3292.251	0.634%	n/a	n/a	402.914	n/a	0.405%	4080.029	3517.796	n/a	n/a	1.663%
%RSD		0.626	0.807	3.077	0.235	732.987	0.201	0.521	0.715	0.919	0.725	1.365	2.099

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:33:36	48349.467	969631.130	T 9075839.000	81.239%	0.000	246343.650	136337.420
2	10:33:57	48166.512	984049.230	T 9152544.100	80.903%	0.000	263756.950	139934.500
3	10:34:20	48705.038	974973.800	T 9037424.100	81.932%	0.000	272292.160	139649.980
x		120.708%	90.039%	T 97.577%	81.358%	0.000	84.996%	97.230%
σ		n/a	n/a	T n/a	0.524%	0.000	n/a	n/a
%RSD		0.566	0.747	T 0.645	0.645	0.000	5.071	1.442

ICVL 10/19/2016 10:38:58 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	10:39:20	77.342%	200.768	7328.371	924108.760	37776.984	93918.978	908267.240	32951.276	73.303%	27.204	14369.932	10537.705
2	10:39:41	76.979%	188.768	7989.094	930342.770	37249.683	96301.579	913277.260	33886.278	72.863%	34.174	13310.980	10733.657
3	10:40:03	75.761%	221.651	7848.286	926011.240	37613.205	95371.974	906380.710	33575.821	72.161%	13.806	15018.026	11126.682
x		76.694%	121.759%	127.545%	100.767%	102.679%	112.020%	93.830%	98.768%	72.776%	25.062	92.615%	92.612%
σ		0.828%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.576%	10.352	n/a	n/a
%RSD		1.080	8.168	4.507	0.345	0.719	1.261	0.392	1.423	0.792	41.305	6.054	2.777
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	10:39:20	6506.679	9442.907	746214.000	3757.584	1722.456	4693.777	14671.333	1099.565	511.260	184.570	580.514	2986.851
2	10:39:41	7164.213	9983.373	762502.700	4185.342	1801.586	4854.093	15869.388	1190.434	478.161	220.903	590.861	2902.427
3	10:40:03	6510.741	10022.764	769199.160	4011.440	1542.103	4889.980	15281.645	1246.934	471.313	195.283	609.863	3016.937
x		6727.211	109.535%	99.678%	112.995%	117.333%	105.988%	111.110%	109.944%	486.911	95.035%	593.746	2968.738
σ		378.460	n/a	n/a	n/a	n/a	n/a	n/a	n/a	21.362	n/a	14.885	59.365
%RSD		5.626	3.301	1.557	5.399	7.875	2.171	3.922	6.306	4.387	9.323	2.507	2.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:39:20	27699.705	78.341%	21529.064	3512.235	-126.343	1004.273	78.121%	4775.153	7537.327	5856.209	6097.780	79.056%
2	10:39:41	27423.182	79.869%	21253.377	3852.340	-113.195	930.895	78.361%	5398.757	7826.155	6112.412	6353.536	79.297%
3	10:40:03	28204.611	78.607%	21423.971	3654.295	-40.506	835.260	77.150%	5911.404	8053.414	6348.779	6194.153	77.248%
x		96.253%	78.939%	118.655%	108.497%	-93.348	109.900%	77.877%	5361.771	7805.632	133.157%	100.094%	78.534%
σ		n/a	0.816%	n/a	n/a	46.232	n/a	0.642%	569.028	258.655	n/a	n/a	1.120%
%RSD		1.427	1.034	0.650	4.651	49.527	9.177	0.824	10.613	3.314	4.035	2.078	1.427

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:39:20	3922.271	22116.410	17078.544	79.045%	0.000	14671.010	15352.424
2	10:39:41	3928.975	22361.798	17510.810	80.238%	0.000	14961.728	15582.574
3	10:40:03	3996.885	21838.042	16845.777	81.362%	0.000	14804.226	15063.007
x		98.482%	101.942%	115.045%	80.215%	0.000	48.275%	107.529%
σ		n/a	n/a	n/a	1.159%	0.000	n/a	n/a
%RSD		1.045	1.185	1.968	1.445	0.000	0.982	1.698

ICBIS 10/19/2016 10:44:40 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:45:02	76.397%	20.113	1016.551	32519.145	602.654	3865.002	2874.223	-226.022	71.463%	6.967	384.718	-420.785
2	10:45:24	76.740%	6.950	814.281	39055.203	586.622	3314.957	2176.541	-312.716	71.672%	13.892	130.280	-454.992
3	10:45:45	73.821%	0.821	920.529	31549.104	438.743	2913.897	1613.537	-340.448	72.761%	13.698	-744.579	-473.085
x		75.653%	9.295	917.121	34374.484	542.673	3364.618	2221.434	-293.062	71.966%	11.519	-76.527	-449.621
σ		1.596%	9.857	101.178	4082.535	90.362	477.493	631.541	59.691	0.697%	3.943	592.372	26.561
%RSD		2.110	106.049	11.032	11.877	16.651	14.192	28.429	20.368	0.968	34.231	774.069	5.907

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:45:02	6905.127	453.599	13028.835	202.337	73.994	91.036	121.022	3.035	516.554	-13.442	612.497	2988.026
2	10:45:24	6923.081	311.358	8225.472	159.827	24.896	69.088	55.920	16.670	541.825	-67.111	581.538	2872.466
3	10:45:45	7024.144	278.947	-1671.223	136.498	31.141	29.823	148.025	74.993	499.459	-11.759	563.138	2897.054
x		6950.784	347.968	6527.695	166.221	43.344	63.316	108.322	31.566	519.279	-30.771	585.724	2919.182
σ		64.163	92.903	7495.650	33.382	26.727	31.012	47.347	38.222	21.314	31.483	24.945	60.875
%RSD		0.923	26.699	114.828	20.083	61.663	48.981	43.710	121.085	4.105	102.315	4.259	2.085

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:45:02	109.511	78.717%	1114.296	4.683	-77.860	-9.752	77.961%	2353.881	639.225	497.657	55.161	76.750%
2	10:45:24	88.349	79.203%	1409.971	-21.423	-78.189	-9.881	79.360%	2463.613	794.737	565.810	60.331	79.051%
3	10:45:45	82.025	78.552%	1205.929	-2.532	-62.675	-44.018	79.378%	2841.039	858.510	617.311	72.913	78.511%
x		93.295	78.824%	1243.399	-6.424	-72.908	-21.217	78.899%	2552.844	764.157	560.259	62.802	78.104%
σ		14.395	0.338%	151.357	13.481	8.863	19.746	0.813%	255.544	112.795	60.020	9.130	1.203%
%RSD		15.430	0.429	12.173	209.850	12.157	93.069	1.030	10.010	14.761	10.713	14.538	1.541

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:45:02	133.774	1205.313	1294.393	79.964%	0.000	-1147.651	-151.437
2	10:45:24	82.860	1025.340	1247.105	80.588%	0.000	-1200.082	-170.486
3	10:45:45	90.447	1123.460	979.836	82.288%	0.000	-978.269	-183.408
x		102.360	1118.037	1173.778	80.947%	0.000	-1108.667	-168.443
σ		27.468	90.109	169.614	1.203%	0.000	115.931	16.083
%RSD		26.835	8.060	14.450	1.486	0.000	10.457	9.548

ICSA 10/19/2016 10:50:23 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:50:45	75.451%	10.542	942.811	TM 186682420.000	T 18997637.000	T 174183290.000	TM 189799750.000	T 7020446.500	78.336%	385901.030	2557.901	3705.125
2	10:51:06	75.945%	16.996	702.966	TM 189040090.000	T 18893342.000	T 175408590.000	TM 193627570.000	T 7195011.500	78.812%	385863.300	949.346	3857.541
3	10:51:28	73.567%	28.043	945.830	TM 185675670.000	T 18942366.000	T 173264840.000	TM 189693400.000	T 7260983.200	79.065%	391659.850	1595.637	3552.230
x		74.988%	1.#IO%	1.#IO%	TM 101.728%	T 103.615%	T 102.542%	TM 98.566%	T 105.623%	78.738%	387808.060	1.#IO%	1.#IO%
σ		1.255%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.370%	3335.801	n/a	n/a
%RSD		1.674	47.769	16.131	TM 0.923	T 0.275	T 0.617	TM 1.173	T 1.736	0.470	0.860	47.587	4.120

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:50:45	2653.541	2248.651	T 385131600.000	431.627	589.410	1081.628	-599.601	-179.301	559.223	-37.439	678.219	2907.117
2	10:51:06	2920.387	2416.200	T 382750430.000	422.546	427.139	972.020	-479.581	-193.792	573.342	-78.348	650.795	3198.198
3	10:51:28	2823.300	2590.341	T 390937970.000	636.140	602.788	1176.775	-593.179	-26.518	505.464	-55.476	654.555	2818.090
x		2799.076	1.#IO%	T 101.417%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	546.010	-1.#IO%	661.190	2974.468

σ		135.063	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	35.816	n/a	14.867	198.803
%RSD		4.825	7.065	T 1.090	24.313	18.114	9.515	12.112	69.575	6.560	35.913	2.249	6.684
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:50:45	4255.911	81.930%	T 3878861.800	520.063	528.046	105.086	82.939%	4039.509	933.351	652.053	220.111	84.138%
2	10:51:06	4272.459	83.565%	T 3950131.200	622.696	552.191	86.920	83.668%	5355.201	1232.669	770.369	158.355	88.530%
3	10:51:28	4219.072	85.404%	T 3963139.100	557.033	517.727	30.732	84.486%	5042.885	1274.803	848.312	286.935	88.220%
x		1.#IO%	83.633%	T 108.961%	1.#IO%	532.655	1.#IO%	83.698%	4812.532	1146.941	1.#IO%	1.#IO%	86.963%
σ		n/a	1.738%	T n/a	n/a	17.688	n/a	0.774%	687.429	186.170	n/a	n/a	2.451%
%RSD		0.643	2.078	T 1.154	9.174	3.321	52.209	0.925	14.284	16.232	13.056	28.993	2.819

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:50:45	529.744	1217.616	5682.655	85.223%	0.000	93391.128	-149.043
2	10:51:06	758.598	1293.620	5852.597	85.827%	0.000	78081.803	-102.850
3	10:51:28	687.909	1510.469	7004.182	86.554%	0.000	60613.384	-103.731
x		1.#IO%	1.#IO%	1.#IO%	85.868%	0.000	1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	0.666%	0.000	n/a	n/a
%RSD		17.788	11.336	11.634	0.776	0.000	21.200	22.287

ICSAB 10/19/2016 10:56:06 AM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:56:28	68.503%	4571.197	67897.899	TM 189906520.000	T 19111332.000	T 178737090.000	TM 194573300.000	T 7173340.400	72.828%	392564.190	69728.412	1403
2	10:56:49	67.487%	4569.721	70591.374	TM 188203080.000	T 19161427.000	T 178567190.000	TM 196567100.000	T 7192653.200	73.872%	394470.020	71555.045	1398
3	10:57:11	66.708%	4761.922	69978.936	TM 182310280.000	T 18681220.000	T 174914130.000	TM 192274100.000	T 7167515.900	75.112%	390220.390	68828.435	1379
x		67.566%	110.788%	114.778%	TM 101.551%	T 103.835%	T 104.378%	TM 100.336%	T 105.904%	73.937%	392418.200	91.147%	95
σ		0.900%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.144%	2128.572	n/a	
%RSD		1.332	2.385	2.032	TM 2.134	T 1.390	T 1.217	TM 1.105	T 0.183	1.547	0.542	1.984	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:56:28	3859.636	107379.890	T 392397030.000	82258.307	16555.537	41315.329	30759.590	23468.449	-78.169	6043.553	689.952	28
2	10:56:49	3692.673	106065.790	T 391512490.000	83499.789	17106.952	42544.855	31903.182	24189.393	77.939	5971.876	624.018	31
3	10:57:11	3895.419	107296.480	T 392436440.000	82575.111	16737.617	42678.479	31460.163	24483.391	-47.707	6131.212	644.725	29
x		3815.910	95.439%	T 102.951%	93.892%	93.383%	92.892%	91.292%	99.666%	-15.979	91.861%	652.898	29
σ		108.215	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	82.749	n/a	33.718	1
%RSD		2.836	0.688	T 0.133	0.779	1.672	1.781	1.838	2.172	517.855	1.319	5.164	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	10:56:28	3422.051	80.841%	T 3891805.200	84875.469	602.490	20268.721	81.674%	2865.260	145033.650	115081.560	149045.100	85
2	10:56:49	3524.701	79.818%	T 4044836.000	84440.030	450.522	20112.442	82.130%	3482.570	151192.780	116820.460	151129.560	85
3	10:57:11	3593.667	79.806%	T 4043003.600	84879.051	506.993	20181.163	82.362%	3697.432	150678.320	118575.580	152282.430	87
x		3513.473	80.155%	T 110.693%	100.117%	520.002	96.098%	82.055%	3348.421	148968.250	101.911%	97.157%	86
σ		86.357	0.594%	T n/a	n/a	76.815	n/a	0.350%	432.001	3417.159	n/a	n/a	1
%RSD		2.458	0.741	T 2.199	0.298	14.772	0.388	0.427	12.902	2.294	1.495	1.088	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:56:28	40763.277	242199.660	340030.600	83.989%	0.000	287764.010	162472.070
2	10:56:49	42285.904	248552.800	347883.750	84.208%	0.000	304860.020	165778.000
3	10:57:11	42402.737	248610.350	348821.980	84.860%	0.000	312712.950	166678.310
x		104.276%	90.924%	92.755%	84.352%	0.000	98.352%	115.699%
σ		n/a	n/a	n/a	0.453%	0.000	n/a	n/a
%RSD		2.187	1.495	1.397	0.537	0.000	4.227	1.343

CCV 10/19/2016 11:01:49 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:02:11	63.208%	115993.880	41789.243	T 19441956.000	T 5827910.400	T 55051629.000	T 19382032.000	1962096.300	62.307%	38571.886	T 3881822.900	11070
2	11:02:33	60.115%	121272.510	43573.385	T 19759583.000	T 6001541.800	T 55496567.000	T 19708138.000	1983840.000	60.337%	38987.355	T 3933522.300	11194
3	11:02:55	60.848%	118470.450	44548.625	T 19432511.000	T 5802898.300	T 54828770.000	T 19060560.000	1963206.500	61.366%	38979.898	T 3933429.900	11292
x		61.391%	113.391%	114.442%	T 106.248%	T 107.154%	T 108.112%	T 100.008%	96.872%	61.337%	38846.380	T 101.933%	95
σ		1.616%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.985%	237.747	T n/a	
%RSD		2.632	2.227	3.231	T 0.953	T 1.841	T 0.617	T 1.670	0.622	1.606	0.612	T 0.761	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:02:11	14035.595	T 5796498.400	T 118139420.000	1675785.800	907289.800	1103918.900	899314.790	107037.120	-781.479	10934.084	546.385	14
2	11:02:33	11426.719	T 5943783.800	T 122118570.000	1712986.100	904289.480	1146015.100	925474.830	106640.390	-853.480	11062.158	557.115	19
3	11:02:55	11272.151	T 5840495.500	T 119725110.000	1673809.400	913026.180	1115219.100	915151.130	108130.190	-1024.916	11342.746	603.037	17
x		12244.822	T 104.626%	T 105.016%	95.705%	100.964%	98.814%	106.301%	100.033%	-886.625	105.480%	568.846	17
σ		1552.780	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	125.057	n/a	30.093	2

%RSD		12.681	T 1.290	T 1.669	1.308	0.489	1.942	1.443	0.719	14.105	1.881	5.290	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	11:02:11	1029279.600	71.747%	2201979.800	344954.250	715.018	171252.780	74.308%	1088731.900	735476.730	569566.930	738931.550	75
2	11:02:33	1047298.800	71.500%	2251788.300	351913.110	865.407	175010.320	72.338%	1108285.500	748812.420	582656.760	746765.100	74
3	11:02:55	1056703.000	70.886%	2275244.600	349595.150	1105.554	175198.400	71.721%	1124561.600	751760.100	591477.770	754703.740	75
x		1044427.100	71.378%	99.483%	103.040%	895.326	103.429%	72.789%	1107193.000	745349.750	101.406%	96.217%	75
σ		13935.421	0.443%	n/a	n/a	196.980	n/a	1.351%	17939.833	8676.384	n/a	n/a	0
%RSD		1.334	0.621	1.668	1.016	22.001	1.280	1.856	1.620	1.164	1.897	1.056	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:02:11	45233.016	1940777.700	T 19050658.000	77.057%	0.000	253228.590	146144.640
2	11:02:33	46167.837	1944148.300	T 18899691.000	77.229%	0.000	270499.630	145930.730
3	11:02:55	46214.530	1932948.000	T 18770184.000	78.435%	0.000	280027.210	143618.870
x		114.386%	89.433%	T 101.493%	77.574%	0.000	87.317%	101.852%
σ		n/a	n/a	T n/a	0.751%	0.000	n/a	n/a
%RSD		1.207	0.296	T 0.742	0.968	0.000	5.070	0.964

CCB 10/19/2016 11:07:32 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:07:54	66.511%	20.732	715.982	48223.279	1739.662	14216.153	22310.575	305.127	63.763%	46.755	-528.303	-700.789
2	11:08:16	64.028%	6.280	856.929	58617.655	2746.109	23161.440	25086.430	387.323	63.004%	71.007	344.409	-805.103
3	11:08:37	66.913%	1.870	835.717	59301.345	3227.494	29953.562	25104.919	655.661	64.105%	69.773	1384.870	-578.218
x		65.817%	9.627	802.876	55380.760	2571.088	22443.718	24167.308	449.370	63.624%	62.512	400.325	-694.703
σ		1.562%	9.866	75.996	6207.979	759.200	7893.216	1608.005	183.319	0.563%	13.660	957.812	113.565
%RSD		2.374	102.482	9.465	11.210	29.528	35.169	6.654	40.795	0.886	21.852	239.258	16.347

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:07:54	6067.280	362.094	33420.225	127.435	61.454	101.918	146.650	-5.501	428.658	-2.046	584.706	2849.890
2	11:08:16	6075.466	467.437	56962.391	200.655	78.271	66.583	100.882	-52.761	483.618	-58.754	545.888	2862.379
3	11:08:37	5614.135	326.421	56162.416	134.441	53.236	76.596	126.483	-57.227	455.318	-61.931	530.756	2652.826
x		5918.960	385.317	48848.344	154.177	64.320	81.699	124.672	-38.496	455.865	-40.911	553.783	2788.365
σ		264.019	73.320	13367.129	40.403	12.761	18.212	22.938	28.662	27.484	33.695	27.828	117.546
%RSD		4.461	19.029	27.365	26.206	19.840	22.292	18.398	74.454	6.029	82.363	5.025	4.216

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:07:54	34.638	73.966%	4341.892	-39.951	-102.323	15.315	74.910%	3704.732	847.678	691.027	17.725	75.597%
2	11:08:16	81.342	72.306%	5121.354	40.129	-58.459	-41.111	74.925%	4177.919	1095.320	805.662	31.067	75.062%
3	11:08:37	140.866	73.947%	4877.345	6.583	-106.815	6.331	75.177%	4170.570	1165.187	841.856	84.141	74.968%
x		85.615	73.406%	4780.197	2.254	-89.199	-6.488	75.004%	4017.740	1036.061	779.515	44.311	75.209%
σ		53.243	0.953%	398.708	40.215	26.716	30.319	0.150%	271.098	166.843	78.741	35.133	0.339%
%RSD		62.188	1.298	8.341	1784.373	29.951	467.272	0.200	6.748	16.104	10.101	79.287	0.451

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:07:54	196.778	1828.813	1200.179	78.236%	0.000	-1634.784	-194.931
2	11:08:16	158.883	1760.954	1166.306	79.073%	0.000	-1738.930	-144.479
3	11:08:37	212.559	1650.929	1597.694	78.195%	0.000	-1512.508	-156.558
x		189.407	1746.898	1321.393	78.501%	0.000	-1628.741	-165.323
σ		27.587	89.771	239.882	0.495%	0.000	113.332	26.343
%RSD		14.565	5.139	18.154	0.631	0.000	6.958	15.934

200-35736-A-11-A 10/19/2016 11:13:14 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:13:36	75.350%	664.195	4575.010	T 1104424.800	T 2430881.500	T 93532686.000	T 8530341.400	T 3291619.400	84.004%	16388.669	234916.590	175844.130
2	11:13:58	74.184%	698.373	4762.677	T 1049959.100	T 2313018.500	T 88778776.000	T 8326647.600	T 3284175.900	88.100%	16037.719	234905.970	171953.040
3	11:14:20	71.806%	680.034	5180.824	T 1016499.900	T 2411766.500	T 92289510.000	T 8500760.300	T 3341094.200	87.570%	15635.701	234757.260	178836.020
x		73.780%	680.867	4839.503	T 1056961.300	T 2385222.100	T 91533657.000	T 8452583.100	T 3305629.800	86.558%	16020.697	234859.940	175544.400
σ		1.806%	17.104	310.128	T 44378.702	T 63256.402	T 2465441.200	T 110061.670	T 30937.766	2.228%	376.772	89.085	3451.263
%RSD		2.448	2.512	6.408	T 4.199	T 2.652	T 2.693	T 1.302	T 0.936	2.574	2.352	0.038	1.966

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:13:36	4399.727	TM 30983831.000	T 374424400.000	156172.550	62309.889	1596899.600	477207.190	6801.959	119.313	764.401	204.937	98.411
2	11:13:58	3789.700	TM 30781587.000	T 372249080.000	155467.300	60101.126	1575810.100	465160.890	6820.751	122.680	728.689	216.860	223.291
3	11:14:20	3931.606	TM 31503888.000	T 382581710.000	158492.280	62710.383	1615380.300	477543.840	6716.207	159.277	635.832	210.377	668.690
x		4040.344	TM 31089769.000	T 376418390.000	156710.710	61707.133	1596030.000	473303.980	6779.639	133.757	709.640	210.725	330.131
σ		319.220	TM 372621.490	T 5447274.900	1582.667	1405.184	19799.426	7054.130	55.732	22.165	66.367	5.969	299.776
%RSD		7.901	TM 1.199	T 1.447	1.010	2.277	1.241	1.490	0.822	16.571	9.352	2.833	90.805

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:13:36	800140.830	204.758%	6712.412	6969.455	-473.351	3306.489	80.757%	60895.725	2878.946	2463.809	490110.290	97.714%
2	11:13:58	790911.490	206.041%	6492.804	6520.785	-292.650	3131.800	82.542%	60447.389	3112.079	2364.045	493853.880	97.704%
3	11:14:20	805916.540	211.064%	6179.730	6965.156	-353.348	3247.556	83.660%	61630.218	2974.058	2416.554	496922.430	100.962%
x		798989.620	207.288%	6461.649	6818.466	-373.116	3228.615	82.320%	60991.111	2988.361	2414.802	493628.870	98.793%
σ		7568.479	3.333%	267.704	257.808	91.959	88.872	1.464%	597.156	117.223	49.905	3411.639	1.878%
%RSD		0.947	1.608	4.143	3.781	24.646	2.753	1.779	0.979	3.923	2.067	0.691	1.901

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:13:36	1778.671	6504.192	2355376.300	84.942%	0.000	267973.230	88600.232
2	11:13:58	1635.566	6293.510	2316880.400	89.408%	0.000	239708.210	84383.427
3	11:14:20	1500.499	6293.224	2352482.800	88.441%	0.000	235973.590	86893.293
x		1638.245	6363.642	2341579.800	87.597%	0.000	247885.010	86625.651
σ		139.105	121.720	21439.179	2.349%	0.000	17496.839	2121.104
%RSD		8.491	1.913	0.916	2.682	0.000	7.058	2.449

200-35736-A-11-A SD@5 10/19/2016 11:18:56 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:19:18	71.901%	178.421	1229.730	222346.730	476341.930	T 20103503.000	T 1808221.500	654261.400	79.439%	3394.350	51087.838	37750.981
2	11:19:40	73.215%	117.002	1103.028	218586.490	486486.120	T 19922737.000	T 1793359.800	662392.460	78.834%	3514.220	51279.872	38886.590
3	11:20:02	71.042%	106.791	1243.639	221930.340	481481.230	T 20106164.000	T 1802928.500	676524.550	78.251%	3298.332	54279.109	38888.048
x		72.053%	134.071	1192.132	220954.520	481436.430	T 20044135.000	T 1801503.300	664392.800	78.842%	3402.301	52215.606	38508.540
σ		1.095%	38.746	77.479	2061.315	5072.245	T 105141.580	T 7532.636	11265.563	0.594%	108.163	1789.623	656.065
%RSD		1.519	28.899	6.499	0.933	1.054	T 0.525	T 0.418	1.696	0.753	3.179	3.427	1.704

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:19:18	4001.501	T 6623905.800	T 81092676.000	33004.589	13551.294	352996.920	111006.790	2725.685	319.224	139.535	135.718	607.611
2	11:19:40	3868.233	T 6755940.800	T 82653432.000	35182.877	13344.428	359197.080	112660.600	2784.833	316.414	158.861	185.299	550.996
3	11:20:02	3599.672	T 6753224.200	T 83773244.000	35848.216	13379.974	363127.720	115541.910	2690.897	331.926	75.262	150.375	827.890
x		3823.135	T 6711023.600	T 82506451.000	34678.561	13425.232	358440.570	113069.760	2733.805	322.521	124.553	157.131	662.165

σ		204.676	T 75458.467	T 1346315.000	1487.382	110.610	5107.595	2295.080	47.491	8.265	43.767	25.471	146.287
%RSD		5.354	T 1.124	T 1.632	4.289	0.824	1.425	2.030	1.737	2.563	35.139	16.210	22.092
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:19:18	153377.740	109.195%	1722.549	1310.593	-97.611	653.696	84.367%	11548.219	571.832	446.051	92941.313	86.058%
2	11:19:40	154716.010	108.503%	1872.360	1247.561	-44.413	690.603	84.998%	11886.194	667.528	547.264	93125.322	85.780%
3	11:20:02	153184.710	109.916%	2061.008	1316.743	-113.923	637.795	85.453%	12420.115	669.732	566.618	94904.886	85.775%
x		153759.490	109.205%	1885.306	1291.632	-85.316	660.698	84.939%	11951.509	636.364	519.978	93657.174	85.871%
σ		833.976	0.707%	169.600	38.290	36.349	27.091	0.546%	439.603	55.897	64.749	1084.460	0.162%
%RSD		0.542	0.647	8.996	2.964	42.606	4.100	0.642	3.678	8.784	12.452	1.158	0.189

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:19:18	265.984	1282.797	454403.300	84.894%	0.000	29061.145	15311.868
2	11:19:40	337.099	1372.109	454063.900	86.822%	0.000	30389.036	16154.649
3	11:20:02	366.272	1326.011	463718.530	85.086%	0.000	32002.411	17417.656
x		323.118	1326.972	457395.240	85.601%	0.000	30484.198	16294.724
σ		51.585	44.664	5478.758	1.062%	0.000	1472.940	1059.860
%RSD		15.965	3.366	1.198	1.240	0.000	4.832	6.504

200-35736-A-11-A PDS 10/19/2016 11:24:39 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	11:25:01	74.536%	2402.394	69702.256	T 9188429.700	T 2620365.900	T 87548673.000	T 16301555.000	T 3430567.100	90.937%	15130.779	331764.960	260571.
2	11:25:22	74.846%	2328.910	67427.242	T 8788590.300	T 2559243.200	T 87310819.000	T 15986500.000	T 3450892.000	92.394%	14626.580	339045.050	256416.
3	11:25:44	73.646%	2319.495	69828.464	T 8830294.300	T 2601796.400	T 88126688.000	T 16434185.000	T 3594519.400	91.708%	14683.196	347415.110	264057.
x		74.343%	2350.266	68985.987	T 8935771.400	T 2593801.800	T 87662060.000	T 16240747.000	T 3491992.800	91.680%	14813.519	339408.370	260348.
σ		0.623%	45.389	1351.388	T 219799.850	T 31335.765	T 419586.810	T 229953.790	T 89370.333	0.729%	276.210	7831.403	3825.
%RSD		0.838	1.931	1.959	T 2.460	T 1.208	T 0.479	T 1.416	T 2.559	0.795	1.865	2.307	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	11:25:01	5388.529	TM 29629007.000	T 368039550.000	176428.350	70303.435	1553830.100	556537.990	10498.811	112.005	2445.491	190.302	-43.
2	11:25:22	3818.605	TM 29324554.000	T 366061440.000	177186.880	70596.190	1560049.900	550499.500	11027.924	33.110	2550.529	201.691	65.
3	11:25:44	4759.283	TM 30147695.000	T 370084900.000	178083.340	71310.626	1571522.600	565130.260	10953.248	35.755	2528.974	194.367	94.
x		4655.472	TM 29700419.000	T 368061960.000	177232.860	70736.750	1561800.900	557389.250	10826.661	60.290	2508.331	195.454	38.
σ		790.094	TM 416191.090	T 2011821.300	828.452	518.099	8975.277	7352.434	286.371	44.806	55.478	5.772	72.
%RSD		16.971	TM 1.401	T 0.547	0.467	0.732	0.575	1.319	2.645	74.317	2.212	2.953	186.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	11:25:01	1022271.700	212.112%	75176.269	39789.411	-27.337	10616.596	86.179%	55522.289	55879.850	44150.533	516277.320	101.04
2	11:25:22	1033437.900	209.262%	77366.725	41653.539	-200.020	11355.668	85.775%	55929.948	56893.894	45453.312	529079.260	101.78
3	11:25:44	1020468.200	211.172%	78444.815	40871.350	-274.893	11370.388	87.207%	55931.882	56336.524	45085.940	528861.040	102.23
x		1025392.600	210.849%	76995.936	40771.433	-167.417	11114.217	86.387%	55794.707	56370.089	44896.595	524739.210	101.68
σ		7025.557	1.453%	1665.521	936.072	126.957	431.016	0.738%	235.922	507.855	671.712	7329.019	0.60
%RSD		0.685	0.689	2.163	2.296	75.833	3.878	0.854	0.423	0.901	1.496	1.397	0.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:25:01	32596.568	187017.300	2361565.900	88.166%	0.000	465577.860	226060.380
2	11:25:22	33073.954	188482.510	2366040.600	89.902%	0.000	464436.280	230738.500
3	11:25:44	34812.357	188738.880	2347636.200	91.473%	0.000	469748.490	226162.290
x		33494.293	188079.560	2358414.200	89.847%	0.000	466587.540	227653.720
σ		1166.166	928.836	9598.432	1.654%	0.000	2796.334	2671.981
%RSD		3.482	0.494	0.407	1.841	0.000	0.599	1.174

200-35736-A-11-I MS 10/19/2016 11:30:21 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	11:30:43	73.782%	2467.696	59803.391	T 8936509.000	T 2754739.700	T 99452409.000	T 16784635.000	T 4028901.700	93.254%	20756.182	373478.360	284016.
2	11:31:05	71.677%	2568.330	62112.588	T 8831708.100	T 2724904.800	T 98175167.000	T 16426429.000	T 4017310.800	94.030%	20715.621	377507.460	282425.
3	11:31:26	71.988%	2685.713	62629.322	T 8894522.000	T 2715607.900	T 97105195.000	T 16802170.000	T 4057499.700	94.074%	20861.521	376801.820	283505.
x		72.482%	2573.913	61515.100	T 8887579.700	T 2731750.800	T 98244257.000	T 16671078.000	T 4034570.700	93.786%	20777.774	375929.220	283315.
σ		1.136%	109.116	1504.731	T 52744.224	T 20444.428	T 1175131.400	T 212053.410	T 20685.510	0.461%	75.309	2151.627	812.
%RSD		1.567	4.239	2.446	T 0.593	T 0.748	T 1.196	T 1.272	T 0.513	0.492	0.362	0.572	0.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	11:30:43	4119.887	TM 30603076.000	T 369883990.000	174431.820	76674.598	1767884.900	565561.160	10672.367	51.776	2659.840	199.550	-201.
2	11:31:05	4679.879	TM 30677185.000	T 372012050.000	176005.670	76800.472	1774668.400	560827.050	10739.086	65.775	2520.186	202.542	41.
3	11:31:26	3868.051	TM 30809944.000	T 373141040.000	175423.070	76128.867	1803029.900	569392.650	10594.544	114.898	2467.976	190.148	-9.
x		4222.606	TM 30696735.000	T 371679030.000	175286.850	76534.646	1781861.000	565260.290	10668.666	77.483	2549.334	197.413	-56.
σ		415.547	TM 104810.780	T 1653867.200	795.716	357.006	18643.851	4290.724	72.342	33.150	99.198	6.467	127.

%RSD		9.841	TM 0.341	T 0.445	0.454	0.466	1.046	0.759	0.678	42.784	3.891	3.276	227.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	11:30:43	1166089.100	226.235%	68097.423	41547.112	-362.297	11023.671	84.441%	63644.214	16264.347	12446.162	544560.370	100.38
2	11:31:05	1185569.400	227.506%	69214.047	41985.127	-434.875	10860.819	84.180%	64818.105	15774.228	12779.729	551994.170	102.62
3	11:31:26	1181705.400	230.392%	69544.243	41621.115	-369.626	10656.744	85.986%	65592.301	15748.987	12542.346	548295.140	104.37
x		1177787.900	228.045%	68951.904	41717.785	-388.933	10847.078	84.869%	64684.873	15929.187	12589.412	548283.230	102.46
σ		10314.081	2.130%	758.196	234.464	39.956	183.849	0.976%	980.854	290.531	171.692	3716.914	2.00
%RSD		0.876	0.934	1.100	0.562	10.273	1.695	1.150	1.516	1.824	1.364	0.678	1.9

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:30:43	34798.675	157929.510	2258851.400	88.989%	0.000	483322.320	230717.620
2	11:31:05	35106.623	165275.490	2335938.500	87.144%	0.000	495290.010	240621.510
3	11:31:26	35167.325	159191.550	2247408.000	91.563%	0.000	477403.240	232621.740
x		35024.208	160798.850	2280732.600	89.232%	0.000	485338.520	234653.620
σ		197.661	3927.899	48150.884	2.219%	0.000	9112.243	5255.297
%RSD		0.564	2.443	2.111	2.487	0.000	1.878	2.240

200-35736-A-11-J MSD 10/19/2016 11:36:04 AM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52C**
1	11:36:26	74.948%	2345.743	58396.559	T 9240436.600	T 2881625.300	T 96102270.000	T 16643042.000	T 2922941.700	92.216%	16358.473	369658.570	286102.85
2	11:36:48	73.198%	2521.593	60735.995	T 8884088.900	T 2820086.000	T 93463194.000	T 16510553.000	T 2884397.200	95.224%	16765.561	372701.050	282350.70
3	11:37:09	71.458%	2579.724	62058.815	T 8774188.400	T 2789744.900	T 93316621.000	T 16303161.000	T 2907404.500	95.697%	16802.990	366556.400	277205.78
x		73.202%	2482.353	60397.123	T 8966238.000	T 2830485.400	T 94294028.000	T 16485585.000	T 2904914.500	94.379%	16642.342	369638.670	281886.44
σ		1.745%	121.826	1854.496	T 243737.960	T 46814.686	T 1567697.400	T 171310.320	T 19392.512	1.888%	246.549	3072.373	4466.66
%RSD		2.384	4.908	3.071	T 2.718	T 1.654	T 1.663	T 1.039	T 0.668	2.001	1.481	0.831	1.58

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84K**
1	11:36:26	4855.909	T 27871213.000	T 368322850.000	177113.260	75795.647	1692294.600	590146.630	10696.772	137.171	2477.448	174.846	311.13
2	11:36:48	3632.811	T 27686020.000	T 359823190.000	172763.440	75451.875	1679769.900	578496.530	10616.934	161.545	2502.038	193.245	139.02
3	11:37:09	4527.926	T 27527077.000	T 362742750.000	171023.850	74685.685	1670441.600	583213.630	11147.300	103.161	2465.575	183.878	52.64
x		4338.882	T 27694770.000	T 363629600.000	173633.520	75311.069	1680835.400	583952.260	10820.335	133.959	2481.687	183.990	167.60
σ		633.085	T 172234.490	T 4318671.000	3136.558	568.220	10965.420	5860.066	285.960	29.324	18.597	9.200	131.59
%RSD		14.591	T 0.622	T 1.188	1.806	0.754	0.652	1.004	2.643	21.890	0.749	5.000	78.51

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	11:36:26	904305.460	218.842%	72448.999	41049.371	-231.591	12210.484	87.792%	61220.274	15451.425	12050.829	498260.960	103.285%
2	11:36:48	942873.870	220.747%	74084.648	42146.301	-213.115	11992.584	85.902%	63297.538	15385.261	12657.308	515530.790	104.184%
3	11:37:09	928877.710	216.632%	74402.805	41122.869	-183.382	12455.205	87.015%	63122.021	15856.766	12471.073	509514.460	104.153%
x		925352.340	218.740%	73645.484	41439.514	-209.363	12219.424	86.903%	62546.611	15564.484	12393.070	507768.740	103.874%
σ		19524.386	2.059%	1048.327	613.198	24.322	231.440	0.950%	1151.989	255.277	310.673	8766.266	0.510%
%RSD		2.110	0.941	1.423	1.480	11.617	1.894	1.093	1.842	1.640	2.507	1.726	0.49

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:36:26	35036.115	160725.650	2364566.600	87.974%	0.000	460969.040	229695.150
2	11:36:48	37027.324	164618.580	2356572.800	90.327%	0.000	457614.580	228204.850
3	11:37:09	36109.919	159527.910	2286375.700	93.004%	0.000	446736.840	228066.240
x		36057.786	161624.050	2335838.300	90.435%	0.000	455106.820	228655.410
σ		996.627	2661.592	43021.985	2.517%	0.000	7440.129	903.102
%RSD		2.764	1.647	1.842	2.783	0.000	1.635	0.395

200-35736-A-12-A 10/19/2016 11:41:47 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:42:09	67.604%	745.069	4646.299	821561.520	T 2762155.700	T 77363426.000	T 7337271.900	T 4182026.000	88.750%	7795.337	213483.790	158800.260
2	11:42:30	67.495%	609.231	4839.809	T 928879.310	T 2808961.600	T 78083743.000	T 7436598.000	T 4194484.000	87.828%	7577.393	217676.540	164025.780
3	11:42:52	68.974%	548.846	4014.707	T 924643.140	T 2805864.500	T 78214015.000	T 7393368.900	T 4245613.800	88.055%	7728.666	217404.820	160892.540
x		68.024%	634.382	4500.272	T 891694.650	T 2792327.300	T 77887061.000	T 7389079.600	T 4207374.600	88.211%	7700.465	216188.390	161239.530
σ		0.824%	100.500	431.499	T 60774.001	T 26175.193	T 458135.470	T 49801.777	T 33696.884	0.480%	111.675	2346.184	2629.982
%RSD		1.212	15.842	9.588	T 6.816	T 0.937	T 0.588	T 0.674	T 0.801	0.544	1.450	1.085	1.631

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:42:09	3293.676	TM 32401517.000	T 359954220.000	138912.730	60638.456	1485906.300	463360.730	7434.551	101.807	739.511	186.778	186.431
2	11:42:30	2754.657	TM 33282079.000	T 368624680.000	137784.630	59184.869	1514238.500	471822.240	7649.124	75.239	776.290	184.701	190.910
3	11:42:52	2868.157	TM 32837161.000	T 365141670.000	138996.430	59863.806	1488656.200	473752.560	7439.127	80.900	780.685	171.641	-159.864
x		2972.163	TM 32840252.000	T 364573520.000	138564.600	59895.711	1496267.000	469645.170	7507.601	85.982	765.495	181.040	72.492
σ		284.163	TM 440288.970	T 4363060.200	676.763	727.318	15624.418	5527.410	122.585	13.994	22.610	8.205	201.239
%RSD		9.561	TM 1.341	T 1.197	0.488	1.214	1.044	1.177	1.633	16.276	2.954	4.532	277.600

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:42:09	931070.390	198.438%	3086.628	5827.805	-318.852	3408.546	83.254%	25919.324	1664.408	1449.797	465540.340	97.231%
2	11:42:30	931596.650	196.300%	2998.887	5375.945	-108.560	2938.240	83.920%	26769.697	1921.055	1427.343	465518.510	97.163%
3	11:42:52	921494.010	197.868%	3083.139	5557.563	-249.861	3189.058	84.770%	27552.579	1690.769	1403.728	463355.620	96.180%
x		928053.690	197.535%	3056.218	5587.104	-225.758	3178.615	83.981%	26747.200	1758.744	1426.956	464804.820	96.858%
σ		5686.933	1.107%	49.680	227.374	107.198	235.327	0.760%	816.860	141.182	23.037	1255.094	0.588%
%RSD		0.613	0.561	1.626	4.070	47.484	7.403	0.905	3.054	8.027	1.614	0.270	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:42:09	1129.694	5030.400	1823308.000	86.719%	0.000	161820.060	69366.737
2	11:42:30	1017.334	5116.259	1846170.500	86.094%	0.000	163718.800	69270.841
3	11:42:52	997.494	5435.931	1844092.900	87.377%	0.000	166135.780	67797.154
x		1048.174	5194.196	1837857.100	86.730%	0.000	163891.550	68811.577
σ		71.292	213.704	12642.666	0.641%	0.000	2163.039	879.824
%RSD		6.802	4.114	0.688	0.740	0.000	1.320	1.279

MB 200-110239/1-A 10/19/2016 11:47:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:47:52	71.966%	-9.338	964.126	319044.330	1115.127	36756.916	8889.762	2180.810	79.928%	37.363	697.196	-361.969
2	11:48:13	71.729%	-9.338	1024.742	311553.120	1691.432	46015.167	9570.693	2567.394	81.005%	18.440	715.774	-311.234
3	11:48:35	69.738%	-2.169	953.615	303160.750	2053.020	50312.774	6705.046	2564.249	81.334%	30.596	1212.078	-308.133
x		71.144%	-6.948	980.827	311252.730	1619.860	44361.619	8388.500	2437.484	80.756%	28.800	875.016	-327.112
σ		1.224%	4.139	38.392	7946.048	473.025	6927.553	1497.140	222.292	0.735%	9.589	292.052	30.227
%RSD		1.720	59.574	3.914	2.553	29.202	15.616	17.848	9.120	0.910	33.294	33.377	9.241

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:47:52	4019.840	10542.071	168912.100	91.047	151.941	842.221	599.483	-44.846	437.715	-22.218	157.240	762.284
2	11:48:13	4191.870	14033.452	205824.440	108.068	87.971	1111.538	557.775	-62.887	498.680	-26.777	167.055	804.593
3	11:48:35	4044.375	15617.316	217086.620	95.248	179.759	1038.365	497.431	-65.899	460.073	-35.797	166.052	767.703
x		4085.361	13397.613	197274.380	98.121	139.890	997.375	551.563	-57.877	465.489	-28.264	163.449	778.193

σ		93.051	2596.680	25199.677	8.867	47.066	139.259	51.309	11.386	30.841	6.911	5.401	23.023
%RSD		2.278	19.382	12.774	9.037	33.645	13.963	9.302	19.673	6.626	24.451	3.304	2.958
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:47:52	952.449	88.794%	93.951	-11.940	-84.401	-28.983	86.492%	878.710	-26.708	-1.037	176.015	82.475%
2	11:48:13	1110.333	89.210%	216.417	45.543	-74.138	-33.300	86.798%	1083.006	30.461	26.827	192.645	84.558%
3	11:48:35	1159.151	90.477%	134.808	33.815	-117.443	14.956	87.021%	1177.910	59.839	40.282	146.162	81.767%
x		1073.978	89.494%	148.392	22.473	-91.994	-15.775	86.771%	1046.542	21.197	22.024	171.607	82.933%
σ		108.040	0.877%	62.353	30.374	22.629	26.702	0.265%	152.897	44.011	21.074	23.553	1.451%
%RSD		10.060	0.980	42.019	135.158	24.599	169.263	0.306	14.610	207.623	95.686	13.725	1.749

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:47:52	45.195	78.810	857.264	83.241%	0.000	4050.058	-123.619
2	11:48:13	65.414	30.741	970.676	84.400%	0.000	3744.301	-124.774
3	11:48:35	28.057	80.408	1193.380	84.002%	0.000	3044.402	-154.143
x		46.222	63.319	1007.107	83.881%	0.000	3612.920	-134.179
σ		18.699	28.225	170.994	0.589%	0.000	515.540	17.299
%RSD		40.455	44.576	16.979	0.702	0.000	14.269	12.892

LCS 200-110239/2-A 10/19/2016 11:53:13 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:53:35	69.147%	1910.557	66296.113	T 10117089.000	362299.740	826627.050	T 9772696.100	315261.270	72.583%	61.769	139215.520	111631.720
2	11:53:57	65.950%	1958.123	69358.991	T 10003254.000	359548.860	802766.880	T 9425596.600	312801.100	71.983%	6.918	142027.550	113693.530
3	11:54:18	64.390%	1792.239	71269.822	T 10034483.000	355448.640	821577.970	T 9578508.100	312136.770	70.726%	14.082	142430.780	112940.220
x		66.496%	1886.973	68974.975	T 10051609.000	359099.080	816990.640	T 9592267.000	313399.710	71.764%	27.589	141224.620	112755.160
σ		2.425%	85.420	2508.993	T 58817.827	3447.625	12574.166	T 173958.320	1646.020	0.948%	29.816	1751.574	1043.286
%RSD		3.647	4.527	3.638	T 0.585	0.960	1.539	T 1.814	0.525	1.321	108.071	1.240	0.925

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:53:35	5620.874	89430.117	T 8078985.300	33964.569	15301.591	46348.769	133738.940	10687.655	269.039	2061.522	160.523	528.894
2	11:53:57	3796.375	87222.918	T 8001192.900	34087.812	14518.733	46006.389	134846.720	10274.698	329.591	2031.757	146.680	758.317
3	11:54:18	4326.908	91187.895	T 8165216.000	35246.477	15555.310	46474.745	139247.790	10831.669	210.505	2044.319	136.327	600.228
x		4581.386	89280.310	T 8081798.100	34432.953	15125.212	46276.634	135944.480	10598.007	269.711	2045.866	147.843	629.146
σ		938.492	1986.729	T 82047.743	707.222	540.329	242.367	2913.878	289.105	59.546	14.942	12.140	117.414
%RSD		20.485	2.225	T 1.015	2.054	3.572	0.524	2.143	2.728	22.078	0.730	8.211	18.662

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:53:35	264080.610	79.019%	176430.770	35500.512	-64.973	8213.513	79.117%	1087.030	56085.706	43300.754	56743.169	77.342%
2	11:53:57	265343.990	79.124%	181669.160	35734.967	-133.678	8426.435	78.402%	1090.557	57322.852	44250.300	58520.031	77.138%
3	11:54:18	266415.090	77.671%	183583.540	35357.195	30.592	8167.304	78.121%	1030.474	59107.941	44003.209	58916.667	77.200%
x		265279.900	78.605%	180561.160	35530.891	-56.020	8269.084	78.547%	1069.354	57505.500	43851.421	58059.956	77.227%
σ		1168.559	0.810%	3702.878	190.709	82.500	138.215	0.513%	33.717	1519.374	492.635	1157.487	0.105%
%RSD		0.441	1.031	2.051	0.537	147.270	1.671	0.653	3.153	2.642	1.123	1.994	0.136

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:53:35	76604.546	189005.560	132000.610	77.318%	0.000	186420.110	149089.530
2	11:53:57	77230.638	185258.140	129694.650	79.971%	0.000	189406.780	146069.810
3	11:54:18	77882.632	192084.490	133587.200	77.263%	0.000	207632.100	151528.450
x		77239.272	188782.730	131760.820	78.184%	0.000	194486.330	148895.930
σ		639.087	3418.626	1957.324	1.548%	0.000	11482.099	2734.463
%RSD		0.827	1.811	1.486	1.980	0.000	5.904	1.836

200-35680-A-13-A 10/19/2016 11:58:57 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:59:19	70.024%	8.513	1311.846	323293.570	833.648	16001.719	9771.052	1666.384	75.161%	6.631	1393.039	-567.069
2	11:59:40	71.482%	1.154	1211.909	329315.120	1050.588	19794.373	10423.551	1783.413	74.899%	13.306	365.042	-339.692
3	12:00:02	70.395%	1.316	1003.951	342872.000	1580.761	30638.743	14495.743	2026.961	73.299%	67.956	369.169	-120.171
x		70.634%	3.661	1175.902	331826.900	1154.999	22144.945	11563.449	1825.586	74.453%	29.298	709.084	-342.311
σ		0.757%	4.203	157.074	10027.984	384.344	7596.348	2560.313	183.951	1.008%	33.645	592.327	223.460
%RSD		1.072	114.802	13.358	3.022	33.277	34.303	22.141	10.076	1.354	114.840	83.534	65.280

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:59:19	5139.315	5344.622	70806.633	84.884	142.696	606.029	1312.520	119.872	444.462	6.714	138.581	638.245
2	11:59:40	5379.256	6293.188	86202.516	78.581	136.579	629.086	1212.611	-23.877	515.936	-43.266	149.761	712.080
3	12:00:02	5586.414	9129.589	135662.380	128.517	153.574	887.228	1472.103	-125.763	530.713	-33.323	149.077	772.829
x		5368.328	6922.466	97557.177	97.327	144.283	707.448	1332.411	-9.923	497.037	-23.292	145.806	707.718
σ		223.750	1969.388	33886.033	27.194	8.608	156.121	130.885	123.411	46.127	26.457	6.267	67.398

%RSD		4.168	28.449	34.735	27.941	5.966	22.068	9.823	1243.719	9.280	113.589	4.298	9.523
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:59:19	809.062	80.939%	302.944	-15.966	-89.526	-17.818	81.541%	711.311	71.869	35.258	132.060	77.809%
2	11:59:40	835.262	80.994%	450.844	-15.683	-76.799	-24.071	80.796%	730.248	142.355	84.193	139.549	76.802%
3	12:00:02	1038.014	79.947%	476.636	9.986	-59.694	-46.955	79.489%	981.287	197.072	112.446	236.344	76.168%
x		894.113	80.627%	410.141	-7.221	-75.339	-29.615	80.609%	807.615	137.099	77.299	169.318	76.926%
σ		125.309	0.589%	93.727	14.902	14.969	15.339	1.039%	150.702	62.767	39.053	58.167	0.827%
%RSD		14.015	0.730	22.852	206.383	19.869	51.796	1.288	18.660	45.782	50.522	34.354	1.075

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:59:19	246.341	451.937	458.076	79.073%	0.000	36332.568	-93.893
2	11:59:40	276.845	342.370	662.511	78.620%	0.000	33412.215	-29.640
3	12:00:02	332.451	396.012	894.006	80.855%	0.000	29671.057	-40.746
x		285.212	396.773	671.531	79.516%	0.000	33138.613	-54.760
σ		43.661	54.787	218.105	1.182%	0.000	3339.173	34.342
%RSD		15.308	13.808	32.479	1.486	0.000	10.076	62.714

200-35700-A-19-A 10/19/2016 12:04:41 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:05:02	73.422%	7.687	744.377	337976.610	2080.739	55227.132	15238.690	2992.642	76.655%	51.931	747.578	607.021
2	12:05:24	74.478%	-5.982	753.564	330661.890	1370.350	41570.535	9190.258	2302.778	78.309%	38.177	712.704	124.559
3	12:05:46	72.183%	1.052	869.667	331193.940	1311.579	34014.914	7278.071	2309.099	77.326%	38.645	689.820	191.304
x		73.361%	0.919	789.203	333277.480	1587.556	43604.194	10569.007	2534.840	77.430%	42.918	716.700	307.628
σ		1.148%	6.835	69.836	4078.250	428.119	10751.343	4155.547	396.481	0.832%	7.810	29.086	261.421
%RSD		1.565	743.804	8.849	1.224	26.967	24.657	39.318	15.641	1.074	18.197	4.058	84.980
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:05:02	7053.965	13042.332	201529.050	82.809	106.971	1032.744	810.465	-61.660	636.864	-38.598	148.387	824.821
2	12:05:24	6958.661	10022.466	148106.430	138.070	110.738	967.149	632.227	14.877	598.537	-67.837	139.653	886.613
3	12:05:46	6914.052	7600.697	119941.760	94.835	125.293	872.800	694.158	-320.253	702.273	-63.903	154.811	868.116
x		6975.559	10221.832	156525.750	105.238	114.334	957.564	712.284	-122.345	645.891	-56.779	147.617	859.850
σ		71.471	2726.290	41440.139	29.062	9.676	80.401	90.491	175.613	52.453	15.868	7.608	31.715
%RSD		1.025	26.671	26.475	27.615	8.463	8.396	12.704	143.539	8.121	27.947	5.154	3.688
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:05:02	817.840	85.714%	263.761	51.078	-69.675	-43.444	81.881%	836.599	52.467	15.139	259.712	78.579%
2	12:05:24	861.679	84.796%	232.169	20.165	-101.947	12.535	82.347%	977.592	99.534	12.643	167.111	81.001%
3	12:05:46	656.680	84.620%	197.380	-28.693	-69.814	-37.329	83.651%	789.011	36.692	25.172	140.458	80.220%
x		778.733	85.044%	231.104	14.183	-80.479	-22.746	82.626%	867.734	62.897	17.652	189.093	79.934%
σ		107.950	0.587%	33.203	40.221	18.592	30.707	0.917%	98.070	32.694	6.631	62.592	1.236%
%RSD		13.862	0.691	14.367	283.578	23.102	134.999	1.110	11.302	51.979	37.568	33.101	1.547

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:05:02	115.739	185.504	1159.087	80.889%	0.000	11871.564	-84.086
2	12:05:24	121.805	89.665	1064.478	79.367%	0.000	11314.105	-144.714
3	12:05:46	117.676	15.598	979.319	81.472%	0.000	10315.038	-127.930
x		118.407	96.922	1067.628	80.576%	0.000	11166.903	-118.910
σ		3.098	85.185	89.925	1.087%	0.000	788.635	31.304
%RSD		2.617	87.890	8.423	1.349	0.000	7.062	26.326

CCV 10/19/2016 12:10:25 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:10:47	63.364%	124433.100	44491.468	↓19704763.000	↓5882948.000	↓54787207.000	↓18985637.000	1944757.900	66.085%	36646.239	↓3842299.000	1090
2	12:11:08	63.997%	118718.680	42848.448	↓20018545.000	↓5954378.900	↓56316324.000	↓19531776.000	1945321.400	64.029%	38819.280	↓4008298.800	1133
3	12:11:31	64.377%	117328.660	42795.306	↓19783713.000	↓5864961.000	↓55763546.000	↓19570409.000	↓2087422.900	64.131%	37354.448	↓3937176.500	1118
x		63.913%	114.903%	114.639%	↓107.830%	↓107.579%	↓109.086%	↓99.900%	↓97.993%	64.748%	37606.656	↓102.271%	
σ		0.512%	n/a	n/a	↓n/a	↓n/a	↓n/a	↓n/a	↓n/a	1.158%	1108.257	↓n/a	
%RSD		0.801	3.133	2.223	↓0.823	↓0.802	↓1.392	↓1.689	↓4.126	1.789	2.947	↓2.120	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:10:47	13602.658	↓5745416.600	↓118281660.000	1684354.300	914769.060	1128603.600	885270.650	110496.330	-839.389	11652.828	160.721	
2	12:11:08	11888.696	↓5921397.300	↓120669590.000	1726461.100	927732.060	1160858.800	905980.180	110766.250	-791.178	11449.880	168.455	
3	12:11:31	9207.321	↓5826532.100	↓120726930.000	1719427.100	932765.900	1150317.700	910553.940	107745.300	-688.218	11418.864	162.986	
x		11566.225	↓104.105%	↓104.927%	96.984%	102.842%	101.006%	104.821%	102.271%	-772.928	109.221%	164.054	
σ		2215.342	↓n/a	↓n/a	n/a	n/a	n/a	n/a	n/a	77.220	n/a	3.976	
%RSD		19.154	↓1.511	↓1.164	1.319	1.004	1.434	1.496	1.524	9.991	1.104	2.424	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	12:10:47	1083570.000	72.318%	2193911.100	358724.290	-118.595	173076.250	71.242%	1098758.100	747724.410	565354.400	740582.770	
2	12:11:08	1068887.100	71.465%	2269496.000	353703.440	526.474	174485.740	71.533%	1094526.600	742369.710	567595.850	732985.720	
3	12:11:31	1077209.200	72.518%	2262763.800	356654.550	-6.178	171333.740	70.865%	1105970.400	750942.160	569627.710	740738.990	
x		1076555.400	72.100%	99.441%	105.267%	133.900	102.920%	71.213%	1099751.700	747012.090	99.014%	95.096%	
σ		7363.226	0.559%	n/a	n/a	344.594	n/a	0.335%	5786.255	4330.392	n/a	n/a	
%RSD		0.684	0.776	1.866	0.708	257.351	0.913	0.470	0.526	0.580	0.377	0.600	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:10:47	46065.027	1898586.400	↓18042169.000	73.446%	0.000	239306.630	140185.360
2	12:11:08	47561.310	1940575.400	↓18889218.000	73.323%	0.000	260683.250	143475.050
3	12:11:31	46448.472	1891472.000	↓17921039.000	74.316%	0.000	273320.570	141141.140
x		116.430%	88.092%	↓98.151%	73.695%	0.000	84.009%	99.305%
σ		n/a	n/a	↓n/a	0.542%	0.000	n/a	n/a
%RSD		1.665	1.389	↓2.885	0.735	0.000	6.670	1.195

CCB 10/19/2016 12:16:12 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:16:34	68.759%	8.841	581.628	41328.438	479.522	5634.707	6839.534	-346.981	67.737%	58.784	966.476	-685.700
2	12:16:56	67.913%	5.386	624.591	33575.131	803.965	7837.227	2055.923	-434.237	68.856%	21.701	287.959	-665.702
3	12:17:17	67.290%	9.238	456.676	35735.923	819.022	8978.985	3413.368	-376.565	67.741%	14.693	1054.497	-634.152
x		67.987%	7.822	554.299	36879.830	700.836	7483.640	4102.942	-385.928	68.111%	31.726	769.644	-661.851
σ		0.738%	2.118	87.230	4001.229	191.812	1699.946	2465.231	44.375	0.645%	23.694	419.466	25.988
%RSD		1.085	27.083	15.737	10.849	27.369	22.715	60.084	11.498	0.947	74.682	54.501	3.927

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:16:34	6361.557	689.346	37850.130	140.840	49.473	102.903	142.725	-182.263	504.016	-69.972	142.547	826.598
2	12:16:56	6317.730	888.246	36724.341	87.369	84.701	82.500	158.431	-4.127	471.244	-72.103	143.188	899.821
3	12:17:17	6274.036	1397.894	47796.323	214.640	64.230	198.834	246.020	-140.688	512.928	-38.597	157.350	749.208
x		6317.774	991.829	40790.265	147.616	66.134	128.079	182.392	-109.026	496.063	-60.224	147.695	825.209

σ		43.760	365.455	6093.480	63.906	17.691	62.119	55.660	93.194	21.951	18.760	8.367	75.316
%RSD		0.693	36.847	14.939	43.292	26.750	48.501	30.517	85.478	4.425	31.151	5.665	9.127
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:16:34	48.480	75.266%	3919.907	7.166	-117.803	17.266	74.362%	3684.995	717.970	607.462	78.437	72.400%
2	12:16:56	129.135	75.258%	3920.324	13.877	-78.518	-7.870	74.378%	4114.505	985.409	597.224	58.251	73.495%
3	12:17:17	133.943	75.528%	3409.405	13.128	-106.626	12.760	75.310%	3957.322	1021.963	620.413	50.779	72.683%
x		103.853	75.351%	3749.879	11.390	-100.982	7.386	74.683%	3918.941	908.447	608.366	62.489	72.860%
σ		48.014	0.154%	294.859	3.677	20.241	13.402	0.543%	217.312	165.968	11.621	14.308	0.568%
%RSD		46.233	0.204	7.863	32.285	20.044	181.463	0.727	5.545	18.269	1.910	22.896	0.780

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:16:34	140.565	1443.584	744.204	76.413%	0.000	-1769.698	-181.539
2	12:16:56	164.279	1397.704	1266.610	76.694%	0.000	-1807.212	-162.077
3	12:17:17	112.134	1258.135	1577.768	75.913%	0.000	-1615.945	-122.088
x		138.993	1366.474	1196.194	76.340%	0.000	-1730.951	-155.234
σ		26.108	96.589	421.220	0.396%	0.000	101.350	30.310
%RSD		18.784	7.068	35.213	0.518	0.000	5.855	19.526

CCVL 10/19/2016 12:21:55 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:22:17	69.102%	236.677	7256.043	915820.980	36772.256	89731.903	845980.300	31449.884	70.819%	0.000	14914.578	10185.525
2	12:22:39	68.691%	201.754	7433.533	924599.360	37149.656	92902.382	858593.770	33368.544	71.957%	41.567	13814.568	10004.546
3	12:23:01	67.342%	235.682	7770.759	919510.080	35935.630	97305.877	863921.770	32017.796	70.935%	14.050	13415.138	10841.787
x		68.378%	134.295%	123.661%	100.023%	100.142%	109.803%	88.346%	95.250%	71.237%	18.539	91.411%	88.707%
σ		0.921%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.626%	21.144	n/a	n/a
%RSD		1.347	8.848	3.492	0.479	1.697	4.076	1.076	3.053	0.879	114.052	5.528	4.259

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:22:17	7399.598	9536.567	740856.280	3635.927	1790.526	5164.084	15584.475	1299.268	540.362	196.126	146.013	737.015
2	12:22:39	7447.081	9781.473	739490.590	3897.800	1761.954	4786.454	15424.619	1078.829	564.383	224.390	155.516	727.439
3	12:23:01	7881.533	10980.013	765971.290	3587.672	1829.878	4739.286	15198.075	1327.104	483.202	197.221	137.810	740.766
x		7576.071	112.692%	98.296%	105.122%	124.657%	107.838%	112.043%	115.175%	529.316	97.722%	146.446	735.073
σ		265.601	n/a	n/a	n/a	n/a	n/a	n/a	n/a	41.702	n/a	8.861	6.872
%RSD		3.506	7.648	1.991	4.501	1.901	4.755	1.261	11.013	7.879	7.776	6.051	0.935

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:22:17	25388.709	76.300%	17915.938	3796.490	-47.587	996.800	75.336%	1825.230	5781.030	4427.558	6170.869	74.811%
2	12:22:39	26817.441	77.044%	18404.568	3545.020	-102.997	944.796	75.877%	2009.931	6209.299	4590.362	5962.048	74.056%
3	12:23:01	26553.510	76.649%	18473.887	3604.650	-119.392	900.179	76.555%	1881.081	6458.225	4663.092	5758.884	73.904%
x		90.976%	76.664%	101.261%	107.781%	-89.992	112.730%	75.923%	1905.414	6149.518	99.453%	96.048%	74.257%
σ		n/a	0.372%	n/a	n/a	37.627	n/a	0.611%	94.724	342.533	n/a	n/a	0.485%
%RSD		2.896	0.486	1.665	3.601	41.812	5.105	0.804	4.971	5.570	2.645	3.454	0.654

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:22:17	3528.533	18490.237	15620.144	77.051%	0.000	9520.636	14157.766
2	12:22:39	3511.423	19249.493	16052.316	78.072%	0.000	10034.665	14546.630
3	12:23:01	3823.336	19539.790	16488.241	77.839%	0.000	11224.577	14359.399
x		90.296%	88.050%	107.721%	77.654%	0.000	33.438%	100.670%
σ		n/a	n/a	n/a	0.535%	0.000	n/a	n/a
%RSD		4.843	2.838	2.704	0.689	0.000	8.519	1.355

200-35736-A-14-A 10/19/2016 12:27:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:28:01	70.524%	-2.249	519.064	347091.590	316.274	6032.574	1552.444	1261.132	72.552%	41.239	-1217.940	98.158
2	12:28:23	70.593%	-5.797	333.914	346059.620	300.650	6319.089	1935.407	879.437	72.877%	20.532	-779.527	65.638
3	12:28:44	71.496%	-5.842	512.185	353408.480	346.842	6977.908	3075.844	1125.050	72.077%	20.735	369.350	552.934
x		70.871%	-4.629	455.054	348853.230	321.256	6443.190	2187.898	1088.540	72.502%	27.502	-542.706	238.910
σ		0.542%	2.062	104.967	3978.565	23.495	484.732	792.465	193.449	0.402%	11.898	819.717	272.438
%RSD		0.765	44.537	23.067	1.140	7.314	7.523	36.220	17.771	0.555	43.261	151.043	114.034

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:28:01	8765.494	1962.788	26571.018	26.687	189.787	299.431	1184.217	-75.027	697.649	-61.607	150.838	827.719
2	12:28:23	8639.594	1828.419	25850.852	5.889	120.257	262.640	1086.745	-155.384	711.492	-80.774	171.069	898.652
3	12:28:44	8676.334	2013.572	35145.176	47.816	114.843	268.427	1140.983	-47.840	684.374	-57.610	128.725	843.027
x		8693.807	1934.926	29189.015	26.797	141.629	276.833	1137.315	-92.750	697.838	-66.664	150.211	856.466
σ		64.743	95.670	5170.739	20.964	41.794	19.783	48.840	55.919	13.560	12.382	21.179	37.328

%RSD		0.745	4.944	17.715	78.231	29.509	7.146	4.294	60.290	1.943	18.574	14.100	4.358
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:28:01	310.583	77.072%	465.200	-7.104	-100.976	-6.119	75.909%	1475.492	92.429	79.177	10.787	74.161%
2	12:28:23	389.178	77.103%	640.072	38.909	-72.046	-41.115	75.993%	1710.752	91.624	103.321	37.083	75.654%
3	12:28:44	327.071	78.423%	653.349	-21.008	-84.151	-29.227	78.074%	1626.729	201.939	120.212	3.835	76.430%
x		342.277	77.532%	586.207	3.599	-85.725	-25.487	76.659%	1604.324	128.664	100.903	17.235	75.415%
σ		41.445	0.771%	105.005	31.360	14.529	17.795	1.226%	119.220	63.459	20.624	17.537	1.153%
%RSD		12.109	0.995	17.913	871.384	16.948	69.820	1.600	7.431	49.322	20.439	101.753	1.529

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:28:01	114.765	179.419	284.658	77.434%	0.000	21620.787	-156.056
2	12:28:23	104.030	262.561	206.269	76.022%	0.000	20085.069	-181.404
3	12:28:44	3.888	176.750	415.349	76.927%	0.000	17866.912	-194.713
x		74.227	206.243	302.092	76.795%	0.000	19857.589	-177.391
σ		61.152	48.791	105.625	0.715%	0.000	1887.248	19.639
%RSD		82.385	23.657	34.965	0.931	0.000	9.504	11.071

200-35736-A-14-A SD@5 10/19/2016 12:33:24 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:33:46	70.957%	-9.338	174.589	111811.710	248.657	6907.346	755.078	-99.363	72.290%	20.667	663.749	-37.383
2	12:34:07	71.634%	-2.358	175.182	105967.940	367.597	7150.306	-1082.379	-153.575	73.130%	20.450	-937.556	-66.618
3	12:34:29	71.608%	-9.338	252.239	108611.080	236.812	7124.028	-1848.085	102.027	71.877%	20.787	-1458.620	18.995
x		71.400%	-7.012	200.670	108796.910	284.355	7060.560	-725.129	-50.304	72.432%	20.634	-577.476	-28.336
σ		0.383%	4.030	44.661	2926.312	72.332	133.336	1337.847	134.678	0.639%	0.171	1106.054	43.518
%RSD		0.537	57.474	22.256	2.690	25.437	1.888	184.498	267.731	0.882	0.828	191.533	153.579

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:33:46	8800.007	387.625	31367.983	40.695	45.288	93.953	347.114	52.356	672.878	-15.734	140.940	781.907
2	12:34:07	9191.411	582.818	32150.554	5.794	51.410	137.763	403.714	-202.027	753.038	-40.575	166.487	805.847
3	12:34:29	9597.439	302.160	36158.148	-0.685	10.864	2322.156	380.822	-178.647	761.217	-38.129	162.199	845.764
x		9196.286	424.201	33225.562	15.268	35.854	851.291	377.217	-109.439	729.044	-31.479	156.542	811.172
σ		398.738	143.860	2569.660	22.257	21.857	1273.995	28.472	140.605	48.813	13.690	13.681	32.260
%RSD		4.336	33.913	7.734	145.780	60.962	149.655	7.548	128.478	6.695	43.490	8.739	3.977
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:33:46	144.366	79.246%	140.900	-0.950	-57.159	-42.684	76.629%	1063.599	-40.583	5.684	10.601	75.151%
2	12:34:07	97.395	78.325%	162.721	-33.719	-113.056	-0.843	77.484%	1019.591	49.129	21.251	16.838	75.780%
3	12:34:29	97.559	78.725%	186.863	-20.777	-56.608	-30.427	77.374%	1143.823	81.566	39.523	16.875	76.257%
x		113.107	78.765%	163.494	-18.482	-75.608	-24.651	77.162%	1075.671	30.038	22.152	14.771	75.729%
σ		27.072	0.462%	22.991	16.505	32.432	21.510	0.465%	62.990	63.273	16.938	3.611	0.555%
%RSD		23.935	0.586	14.062	89.301	42.896	87.258	0.603	5.856	210.646	76.459	24.449	0.732

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:33:46	-1.096	-39.793	-56.411	75.981%	0.000	-518.237	-201.132
2	12:34:07	17.925	70.673	-84.882	76.208%	0.000	-184.715	-201.151
3	12:34:29	-2.447	41.360	-135.457	76.735%	0.000	-270.009	-188.165
x		4.794	24.080	-92.250	76.308%	0.000	-324.320	-196.816
σ		11.392	57.224	40.035	0.387%	0.000	173.267	7.492
%RSD		237.610	237.643	43.398	0.507	0.000	53.425	3.807

200-35736-A-14-A PDS 10/19/2016 12:39:07 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:39:29	71.097%	1854.386	68695.792	T 10270169.000	358397.630	802370.820	T 9593329.500	320095.660	71.472%	27.920	140636.490	111297.890
2	12:39:51	69.046%	1906.132	69240.887	T 10236526.000	359521.980	819066.900	T 9620457.700	320001.020	70.619%	42.361	139906.890	110567.630
3	12:40:13	68.449%	1919.189	70559.877	T 10320951.000	360074.400	816954.870	T 9751858.200	320419.900	69.544%	28.660	142953.810	114375.760
x		69.531%	1893.236	69498.852	T 10275882.000	359331.340	812797.530	T 9655215.100	320172.190	70.545%	32.980	141165.730	112080.430
σ		1.389%	34.273	958.443	T 42501.090	854.488	9091.333	T 84787.355	219.679	0.966%	8.133	1590.915	2021.076
%RSD		1.998	1.810	1.379	T 0.414	0.238	1.119	T 0.878	0.069	1.370	24.659	1.127	1.803

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:39:29	7909.144	83159.547	T 7940015.400	33203.735	15224.673	46596.522	133950.990	10730.263	515.471	2153.805	132.895	476.149
2	12:39:51	7656.579	85399.150	T 8020096.100	34470.117	14409.844	45424.440	134274.350	11061.384	364.349	2141.194	147.701	457.610
3	12:40:13	7266.772	86964.806	T 8199951.000	34938.511	15474.583	47211.205	138920.440	11383.616	287.696	2123.040	163.769	632.901
x		7610.832	85174.501	T 8053354.200	34204.121	15036.367	46410.722	135715.260	11058.421	389.172	2139.346	148.121	522.220
σ		323.620	1912.551	T 133121.040	897.456	556.787	907.758	2780.475	326.687	115.899	15.465	15.441	96.300
%RSD		4.252	2.245	T 1.653	2.624	3.703	1.956	2.049	2.954	29.781	0.723	10.425	18.440

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:39:29	270785.980	75.219%	179723.880	36956.692	-128.492	8294.595	73.743%	1111.999	58777.645	43608.940	57772.042	72.872%
2	12:39:51	273138.170	75.297%	182984.710	35927.141	124.271	8025.414	74.475%	1228.632	57921.802	42911.431	58543.406	72.799%
3	12:40:13	274439.860	75.203%	184909.600	35923.572	158.446	7962.903	74.190%	1327.709	58540.694	44059.162	57673.704	73.286%
x		272788.000	75.240%	182539.390	36269.135	51.408	8094.304	74.136%	1222.780	58413.380	43526.511	57996.384	72.985%
σ		1851.940	0.050%	2621.381	595.445	156.733	176.251	0.369%	107.974	441.897	578.289	476.280	0.263%
%RSD		0.679	0.067	1.436	1.642	304.880	2.177	0.498	8.830	0.757	1.329	0.821	0.360

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:39:29	36980.204	188951.580	130906.700	74.392%	0.000	196662.560	151396.020
2	12:39:51	37554.157	195217.530	136363.570	73.357%	0.000	208800.360	155078.350
3	12:40:13	38438.295	195964.380	136743.370	73.556%	0.000	224144.440	156130.390
x		37657.552	193377.830	134671.220	73.768%	0.000	209869.120	154201.590
σ		734.524	3851.393	3265.691	0.549%	0.000	13772.075	2485.979
%RSD		1.951	1.992	2.425	0.744	0.000	6.562	1.612

200-35736-A-14-B MS 10/19/2016 12:44:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:44:48	68.499%	1914.115	70822.215	T 10588895.000	371522.050	830920.150	T 10040566.000	328498.960	68.762%	28.994	143740.230	114039.550
2	12:45:10	68.504%	1841.002	69222.051	T 10345511.000	362245.390	811336.000	T 9701066.800	326928.010	70.442%	56.709	145308.690	114048.500
3	12:45:32	68.448%	1944.771	68860.770	T 10313867.000	370261.750	827476.910	T 9886783.100	328295.910	69.811%	28.566	146877.360	112626.570
x		68.484%	1899.963	69635.012	T 10416091.000	368009.730	823244.350	T 9876138.600	327907.620	69.672%	38.089	145308.760	113571.540
σ		0.031%	53.312	1043.896	T 150486.690	5031.680	10455.649	T 169999.640	854.428	0.848%	16.127	1568.568	818.380
%RSD		0.045	2.806	1.499	T 1.445	1.367	1.270	T 1.721	0.261	1.217	42.339	1.079	0.721

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:44:48	6585.950	86229.383	T 8296981.500	34440.303	15716.193	47503.179	139197.770	10692.647	390.438	2102.629	153.986	821.880
2	12:45:10	5912.119	86292.577	T 8174961.200	35509.683	15490.318	46841.187	138704.890	10899.423	353.805	2199.040	141.510	587.541
3	12:45:32	4785.554	87328.245	T 8219752.200	34991.527	15035.599	46534.803	140892.960	10847.879	282.423	2250.622	124.603	493.733
x		5761.208	86616.735	T 8230565.000	34980.504	15414.036	46959.723	139598.540	10813.316	342.222	2184.097	140.033	634.385

σ		909.636	616.996	T 61724.576	534.775	346.650	494.950	1147.769	107.634	54.931	75.119	14.747	169.015
%RSD		15.789	0.712	T 0.750	1.529	2.249	1.054	0.822	0.995	16.051	3.439	10.531	26.642
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:44:48	279335.640	73.911%	186349.650	36995.282	-57.749	7995.479	71.435%	979.929	59139.000	45406.038	58396.563	71.285%
2	12:45:10	280641.500	72.565%	189691.360	38498.155	14.426	8352.197	72.080%	1075.217	59114.048	45780.096	59960.349	72.013%
3	12:45:32	282485.020	74.589%	189442.500	37350.578	-177.637	8592.504	72.230%	1169.909	60301.937	46167.191	60134.662	71.332%
x		280820.720	73.688%	188494.500	37614.671	-73.653	8313.393	71.915%	1075.018	59518.328	45784.442	59497.191	71.543%
σ		1582.322	1.030%	1861.658	785.472	97.014	300.398	0.422%	94.990	678.740	380.595	957.148	0.407%
%RSD		0.563	1.398	0.988	2.088	131.718	3.613	0.587	8.836	1.140	0.831	1.609	0.570

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:44:48	79968.599	193733.110	135789.390	73.926%	0.000	261275.570	150445.020
2	12:45:10	81109.928	198399.390	139476.270	73.398%	0.000	271668.910	156493.500
3	12:45:32	82567.472	197484.160	140323.640	73.987%	0.000	275425.150	159294.600
x		81215.333	196538.880	138529.770	73.770%	0.000	269456.540	155411.040
σ		1302.639	2472.589	2410.760	0.324%	0.000	7329.636	4523.002
%RSD		1.604	1.258	1.740	0.439	0.000	2.720	2.910

200-35736-A-14-C MSD 10/19/2016 12:49:46 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:50:08	69.084%	1818.208	67764.885	T 10153952.000	354859.300	804472.390	T 9642577.500	312590.930	69.820%	28.586	141680.030	110589.950
2	12:50:30	68.521%	2015.683	66782.461	T 10058277.000	354295.530	804639.460	T 9635281.800	319475.100	70.495%	21.238	139257.580	110047.500
3	12:50:52	67.230%	2035.955	70356.039	T 10433542.000	364300.560	827531.000	T 9834842.400	321289.900	68.345%	21.881	143304.970	113840.450
x		68.278%	1956.615	68301.128	T 10215257.000	357818.460	812214.290	T 9704233.900	317785.310	69.553%	23.902	141414.190	111492.630
σ		0.950%	120.292	1846.153	T 194999.170	5620.733	13264.928	T 113169.090	4589.072	1.099%	4.069	2036.752	2051.278
%RSD		1.392	6.148	2.703	T 1.909	1.571	1.633	T 1.166	1.444	1.581	17.026	1.440	1.840

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:50:08	5517.122	83486.352	T 7972295.100	33696.181	14367.271	45072.297	133091.880	11039.620	161.187	2189.253	138.784	373.134
2	12:50:30	5807.131	85785.600	T 8055748.800	34438.641	15457.298	44886.800	135212.140	11160.582	170.505	2192.187	144.272	344.149
3	12:50:52	5104.703	85393.469	T 8208639.000	35354.149	14985.091	46849.359	138685.010	10540.670	324.886	2072.891	156.524	893.034
x		5476.318	84888.474	T 8078894.300	34496.323	14936.554	45602.819	135663.010	10913.624	218.859	2151.444	146.527	536.772
σ		352.987	1230.000	T 119859.870	830.488	546.632	1083.513	2823.691	328.602	91.940	68.045	9.082	308.872
%RSD		6.446	1.449	T 1.484	2.407	3.660	2.376	2.081	3.011	42.008	3.163	6.198	57.542

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:50:08	267205.720	73.148%	181362.940	35893.538	-60.946	8077.201	72.775%	879.438	56541.073	43148.047	57934.264	71.898%
2	12:50:30	269950.050	73.528%	182790.770	37100.596	-156.982	8465.454	72.433%	1035.468	57672.895	43896.194	59135.641	71.520%
3	12:50:52	272294.360	73.238%	184367.540	36532.084	-130.854	8551.476	72.833%	1160.222	57457.449	43983.245	58652.410	71.740%
x		269816.710	73.305%	182840.420	36508.740	-116.260	8364.711	72.680%	1025.043	57223.806	43675.829	58574.105	71.719%
σ		2546.939	0.198%	1502.916	603.868	49.653	252.678	0.216%	140.682	600.997	459.140	604.504	0.189%
%RSD		0.944	0.271	0.822	1.654	42.709	3.021	0.298	13.725	1.050	1.051	1.032	0.264

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:50:08	77904.484	188626.110	130835.490	74.344%	0.000	258686.790	146883.180
2	12:50:30	81900.518	189793.350	134527.910	74.741%	0.000	267273.090	149380.580
3	12:50:52	81439.241	190546.630	132605.810	75.056%	0.000	273569.220	151589.350
x		80414.748	189655.360	132656.400	74.714%	0.000	266509.700	149284.370
σ		2186.153	967.668	1846.728	0.357%	0.000	7470.527	2354.560
%RSD		2.719	0.510	1.392	0.478	0.000	2.803	1.577

CCV 10/19/2016 12:55:04 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:55:26	64.735%	120488.280	43568.898	T 20293178.000	T 5941482.700	T 55681150.000	T 19496995.000	1945526.200	64.154%	38724.737	T 3953298.900	11052
2	12:55:48	64.969%	119007.610	42685.881	T 20006730.000	T 5973390.800	T 55687110.000	T 19160345.000	1926138.000	63.315%	37994.262	T 3942964.900	11132
3	12:56:10	62.746%	121887.490	44726.893	T 20046563.000	T 6078878.900	T 56334772.000	T 19327496.000	1955361.700	62.556%	38568.915	T 4036379.800	11279
x		64.150%	115.190%	115.385%	T 109.351%	T 109.350%	T 109.632%	T 99.723%	95.526%	63.341%	38429.305	T 103.528%	9
σ		1.222%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.799%	384.730	T n/a	
%RSD		1.904	1.196	2.344	T 0.771	T 1.199	T 0.672	T 0.871	0.766	1.262	1.001	T 1.288	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:55:26	10986.059	T 5760027.900	T 119281440.000	1688314.300	906079.970	1117873.200	883461.780	111109.080	-498.691	11475.287	163.484	-2
2	12:55:48	12540.857	T 5829380.200	T 120810990.000	1711172.300	926065.260	1133973.500	893065.710	110787.500	-790.395	11627.618	166.661	-4
3	12:56:10	10152.318	T 5931529.300	T 121761760.000	1705130.000	915219.240	1148509.600	907549.890	113794.560	-824.563	11521.460	165.991	-3
x		11226.411	T 104.270%	T 105.562%	96.500%	101.808%	99.848%	104.134%	104.348%	-704.550	109.547%	165.378	-3
σ		1212.273	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	179.095	n/a	1.675	

%RSD		10.798	T 1.477	T 1.037	0.696	1.092	1.352	1.355	1.476	25.420	0.677	1.013	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	12:55:26	1080075.900	69.055%	2196865.700	357159.230	961.896	167750.160	68.814%	1071227.000	724985.950	551919.760	724447.610	68
2	12:55:48	1075731.800	69.426%	2250356.800	357106.340	248.147	171373.640	68.403%	1081455.300	737848.770	555513.950	731669.840	68
3	12:56:10	1086224.900	67.169%	2330945.000	354586.680	393.836	169798.460	68.076%	1092736.800	735347.820	559597.590	740280.090	69
x		1080677.500	68.550%	100.210%	105.244%	534.627	100.942%	68.431%	1081806.400	732727.510	96.947%	94.327%	68
σ		5272.322	1.210%	n/a	n/a	377.128	n/a	0.370%	10759.242	6820.007	n/a	n/a	0
%RSD		0.488	1.765	2.987	0.413	70.541	1.071	0.541	0.995	0.931	0.691	1.083	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:55:26	44558.352	1926098.500	T 18286416.000	70.555%	0.000	327225.190	144312.410
2	12:55:48	46735.219	1898459.300	T 18480427.000	71.576%	0.000	334992.100	140396.060
3	12:56:10	46568.054	1969736.100	T 18447968.000	69.767%	0.000	343683.290	145215.890
x		114.591%	89.070%	T 98.799%	70.633%	0.000	109.277%	100.503%
σ		n/a	n/a	T n/a	0.907%	0.000	n/a	n/a
%RSD		2.636	1.861	T 0.565	1.284	0.000	2.456	1.788

CCB 10/19/2016 01:00:48 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:01:10	67.537%	20.275	993.649	35888.089	817.500	4717.636	5136.010	-436.944	67.852%	29.409	-93.287	-674.189
2	13:01:32	67.425%	27.740	907.125	39045.617	616.879	4625.396	7023.095	-519.658	67.319%	7.406	229.814	-763.070
3	13:01:54	67.165%	1.828	1031.698	45766.885	835.527	4346.011	3658.351	-421.207	66.560%	29.914	8.135	-885.049
x		67.376%	16.614	977.491	40233.530	756.635	4563.014	5272.485	-459.270	67.244%	22.243	48.221	-774.103
σ		0.191%	13.338	63.839	5045.395	121.368	193.506	1686.519	52.886	0.649%	12.852	165.238	105.862
%RSD		0.283	80.280	6.531	12.540	16.040	4.241	31.987	11.515	0.966	57.779	342.669	13.675

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:01:10	6408.019	296.790	24147.419	74.242	78.835	80.180	104.520	-118.789	521.711	-42.926	144.116	877.817
2	13:01:32	6426.025	213.785	25438.884	97.283	12.748	16.017	266.667	-124.641	526.706	-44.889	152.829	809.057
3	13:01:54	6523.121	274.251	31011.698	83.614	73.183	109.298	119.661	-136.306	560.909	-65.654	139.717	853.963
x		6452.388	261.608	26866.000	85.047	54.922	68.498	163.616	-126.579	536.442	-51.156	145.554	846.946
σ		61.914	42.922	3647.886	11.587	36.633	47.725	89.565	8.918	21.336	12.594	6.673	34.913
%RSD		0.960	16.407	13.578	13.624	66.700	69.673	54.741	7.045	3.977	24.618	4.584	4.122

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:01:10	121.842	71.422%	3953.486	2.585	-102.639	-4.043	71.123%	3114.512	763.007	569.550	40.237	69.488%
2	13:01:32	173.166	71.892%	4052.306	-11.084	-119.349	5.336	70.340%	4244.028	971.079	668.036	40.784	69.404%
3	13:01:54	134.166	73.813%	3619.347	-4.919	-71.040	-28.200	71.931%	3593.994	813.047	679.465	60.537	71.782%
x		143.058	72.376%	3875.046	-4.472	-97.676	-8.969	71.132%	3650.845	849.044	639.017	47.186	70.225%
σ		26.792	1.267%	226.888	6.845	24.534	17.302	0.795%	566.900	108.606	60.431	11.566	1.349%
%RSD		18.728	1.751	5.855	153.058	25.117	192.913	1.118	15.528	12.792	9.457	24.511	1.921

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:01:10	236.752	1485.142	914.951	72.610%	0.000	-1024.549	-159.510
2	13:01:32	172.314	1573.923	762.861	72.637%	0.000	-770.622	-111.343
3	13:01:54	184.380	1616.212	710.239	72.850%	0.000	-894.136	-118.488
x		197.815	1558.426	796.017	72.699%	0.000	-896.435	-129.780
σ		34.256	66.895	106.307	0.131%	0.000	126.979	25.993
%RSD		17.317	4.292	13.355	0.181	0.000	14.165	20.029

CCVL 10/19/2016 01:06:06 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:06:27	68.163%	207.057	7869.244	971520.940	37477.342	94513.546	899789.160	33925.255	68.825%	7.251	14907.177	10722.740
2	13:06:49	69.120%	200.442	7420.391	T 1063646.300	36822.871	94157.865	888539.620	32950.759	68.092%	21.980	14408.411	10586.754
3	13:07:11	69.581%	278.097	7411.048	984270.920	37740.457	96285.565	897618.770	34514.589	66.626%	0.000	13852.235	11266.869
x		68.955%	136.583%	124.985%	T 109.428%	102.132%	111.771%	92.386%	99.730%	67.848%	9.744	93.632%	93.122%
σ		0.724%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.119%	11.200	n/a	n/a
%RSD		1.049	18.839	3.461	T 4.960	1.265	1.200	0.667	2.337	1.650	114.945	3.668	3.314

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:06:27	7638.588	10095.678	739811.650	3734.657	1675.805	5234.043	14841.568	1148.379	557.593	164.663	142.922	888.649
2	13:06:49	7804.046	9276.513	756482.960	3826.492	1620.588	4999.374	15941.833	1217.256	538.822	228.299	157.811	711.989
3	13:07:11	8088.842	9836.390	791098.560	4271.407	1979.324	5227.620	16059.582	1015.951	604.359	204.801	152.787	741.151
x		7843.825	108.640%	100.093%	111.844%	122.187%	113.500%	113.585%	105.115%	566.925	94.562%	151.174	780.596
σ		227.747	n/a	n/a	n/a	n/a	n/a	n/a	n/a	33.750	n/a	7.574	94.706
%RSD		2.904	4.300	3.431	7.279	10.984	2.594	4.303	9.077	5.953	16.149	5.010	12.132

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:06:27	26493.295	71.739%	19039.574	4043.278	-109.244	915.226	70.668%	1797.206	5857.892	4662.496	5298.131	68.530%
2	13:06:49	27674.912	71.586%	20017.076	3781.128	-30.920	711.136	70.021%	2092.333	6204.524	4767.271	6347.148	69.237%
3	13:07:11	27975.523	71.230%	20131.639	3812.444	-61.683	879.661	70.359%	2338.109	6206.264	4866.064	5897.150	69.274%
x		94.885%	71.518%	109.381%	114.582%	-67.282	99.411%	70.349%	2075.883	6089.560	103.923%	94.173%	69.013%
σ		n/a	0.261%	n/a	n/a	39.461	n/a	0.324%	270.827	200.632	n/a	n/a	0.419%
%RSD		2.862	0.365	3.042	3.691	58.650	13.052	0.460	13.046	3.295	2.136	9.000	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:06:27	3743.802	20077.137	16166.366	72.302%	0.000	12391.632	15274.291
2	13:06:49	4174.095	19719.698	15413.941	72.542%	0.000	13161.173	15505.903
3	13:07:11	4056.332	19477.053	16252.554	73.754%	0.000	13144.623	14772.659
x		99.530%	91.116%	106.988%	72.866%	0.000	42.039%	106.488%
σ		n/a	n/a	n/a	0.779%	0.000	n/a	n/a
%RSD		5.571	1.528	2.893	1.069	0.000	3.408	2.468

MB 200-110288/1-B 10/19/2016 01:11:51 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:12:13	71.184%	-5.826	811.650	568406.560	18029.647	25157.121	44135.242	31197.185	69.704%	121.697	1738.849	7619.597
2	13:12:35	70.655%	-2.262	1083.348	571329.870	17840.373	24952.496	48203.728	30107.625	69.380%	100.632	743.138	7523.087
3	13:12:57	71.198%	-9.338	1022.077	583903.030	18560.633	26776.947	48690.354	30807.245	68.740%	79.767	1474.986	8141.057
x		71.012%	-5.809	972.358	574546.480	18143.551	25628.855	47009.775	30704.018	69.275%	100.699	1318.991	7761.247
σ		0.310%	3.538	142.509	8233.778	373.395	999.527	2501.281	552.066	0.490%	20.965	515.860	332.446
%RSD		0.436	60.914	14.656	1.433	2.058	3.900	5.321	1.798	0.708	20.819	39.110	4.283

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:12:13	4755.522	2643.568	86080.093	129.083	205.408	558.960	863.614	-42.318	375.498	-9.399	150.870	580.906
2	13:12:35	5075.319	2557.246	83842.796	57.719	235.274	454.678	827.646	-63.067	391.369	-21.195	160.457	706.269
3	13:12:57	4800.894	3065.612	77703.427	80.278	215.800	606.797	994.428	-15.690	386.515	-60.013	134.679	845.654
x		4877.245	2755.476	82542.106	89.027	218.827	540.145	895.229	-40.358	384.461	-30.202	148.669	710.943

σ		173.031	272.032	4337.163	36.477	15.162	77.785	87.771	23.749	8.133	26.482	13.029	132.436
%RSD		3.548	9.872	5.254	40.973	6.929	14.401	9.804	58.845	2.115	87.681	8.764	18.628
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:12:13	8211.329	72.968%	941.630	15.661	-111.146	11.122	72.248%	34594.429	200.381	115.448	496.237	71.054%
2	13:12:35	7970.559	73.583%	960.226	-11.743	-71.299	-6.967	71.670%	36116.795	202.989	145.121	528.213	70.515%
3	13:12:57	7683.382	73.692%	938.313	-12.092	-40.335	-58.442	72.395%	35686.386	192.379	190.286	543.561	71.882%
x		7955.090	73.414%	946.723	-2.725	-74.260	-18.096	72.104%	35465.870	198.583	150.285	522.670	71.150%
σ		264.313	0.390%	11.811	15.923	35.498	36.093	0.383%	784.774	5.529	37.685	24.144	0.689%
%RSD		3.323	0.532	1.248	584.348	47.803	199.454	0.531	2.213	2.784	25.076	4.619	0.968

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:12:13	123.903	354.330	203.760	72.747%	0.000	104250.690	-77.123
2	13:12:35	175.207	389.477	336.242	73.939%	0.000	78060.728	-146.852
3	13:12:57	170.083	242.552	488.738	73.727%	0.000	60068.025	-38.167
x		156.398	328.787	342.913	73.471%	0.000	80793.147	-87.380
σ		28.258	76.721	142.606	0.636%	0.000	22217.707	55.064
%RSD		18.068	23.334	41.587	0.866	0.000	27.499	63.016

LCS 200-110288/2-B 10/19/2016 01:17:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:17:56	69.293%	1888.479	72219.998	T 10740444.000	373793.990	829076.200	T 9696019.700	343968.450	69.309%	79.186	142452.510	119855.370
2	13:18:17	67.512%	1908.925	73291.867	T 10783252.000	386768.960	843943.240	T 9925338.400	348884.160	67.110%	52.024	145932.850	126030.500
3	13:18:39	69.119%	1980.064	70015.789	T 10663766.000	372705.670	832157.480	T 9833210.300	349462.480	68.452%	94.751	138554.440	121924.660
x		68.641%	1925.823	71842.551	T 10729154.000	377756.200	835058.970	T 9818189.500	347438.360	68.290%	75.321	142313.270	122603.510
σ		0.982%	48.074	1670.336	T 60537.556	7824.219	7846.736	T 115394.930	3018.911	1.108%	21.624	3691.172	3143.036
%RSD		1.431	2.496	2.325	T 0.564	2.071	0.940	T 1.175	0.869	1.623	28.710	2.594	2.564

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:17:56	3549.792	84677.131	T 8044178.500	34392.607	14906.400	45522.055	130781.430	11010.418	41.853	2137.297	148.188	462.448
2	13:18:17	4187.318	86621.782	T 8217276.200	35311.053	15522.003	47118.806	135486.230	11055.542	15.102	2121.946	144.661	639.028
3	13:18:39	4286.066	86733.161	T 8140329.900	34340.811	14757.081	45634.335	134977.510	10805.268	37.691	2071.104	165.960	506.879
x		4007.725	86010.691	T 8133928.200	34681.490	15061.828	46091.732	133748.390	10957.076	31.549	2110.116	152.936	536.119
σ		399.643	1156.239	T 86726.225	545.832	405.456	891.242	2582.021	133.392	14.394	34.646	11.416	91.850
%RSD		9.972	1.344	T 1.066	1.574	2.692	1.934	1.931	1.217	45.625	1.642	7.465	17.132

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:17:56	287225.540	72.721%	185636.560	37086.498	-10.721	8489.316	69.507%	51662.208	56722.811	43608.706	56772.219	68.844%
2	13:18:17	281523.290	70.960%	185608.050	36376.376	-103.139	8159.436	69.473%	52271.325	58510.772	43722.780	58552.665	68.582%
3	13:18:39	284527.100	71.892%	189427.940	35493.911	29.984	8357.635	70.198%	52980.966	57565.049	43550.802	57662.541	70.090%
x		284425.310	71.858%	186890.850	36318.928	-27.959	8335.462	69.726%	52304.833	57599.544	43627.429	57662.475	69.172%
σ		2852.488	0.881%	2197.229	797.846	68.215	166.054	0.409%	660.017	894.479	87.505	890.223	0.806%
%RSD		1.003	1.226	1.176	2.197	243.985	1.992	0.587	1.262	1.553	0.201	1.544	1.165

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:17:56	81021.494	191960.530	132570.070	72.562%	0.000	279598.160	150924.400
2	13:18:17	80928.849	201329.360	136236.330	70.507%	0.000	297194.900	158884.800
3	13:18:39	83286.940	196917.580	137389.240	71.754%	0.000	297298.550	157144.720
x		81745.761	196735.820	135398.550	71.608%	0.000	291363.870	155651.310
σ		1335.504	4687.056	2516.449	1.035%	0.000	10189.533	4185.058
%RSD		1.634	2.382	1.859	1.446	0.000	3.497	2.689

200-35715-A-2-B 10/19/2016 01:23:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:23:49	68.955%	5.164	788.841	431868.520	23090.548	16769.619	68787.763	36219.983	67.657%	110.550	1827.968	5983.972
2	13:24:10	67.038%	-1.880	892.887	407713.400	22938.701	15791.529	59657.235	37094.530	69.535%	50.256	1356.113	6176.904
3	13:24:32	68.382%	-9.338	638.790	435137.650	23642.556	16361.061	58986.547	35572.883	67.812%	51.441	1111.148	6244.621
x		68.125%	-2.018	773.506	424906.520	23223.935	16307.403	62477.182	36295.799	68.335%	70.749	1431.743	6135.166
σ		0.984%	7.252	127.741	14979.131	370.401	491.248	5475.403	763.651	1.043%	34.474	364.346	135.244
%RSD		1.445	359.339	16.514	3.525	1.595	3.012	8.764	2.104	1.526	48.727	25.448	2.204

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:23:49	4219.285	3477.141	63831.735	89.300	278.651	1684.920	1079.643	-111.411	321.360	-34.072	137.620	758.739
2	13:24:10	4243.900	3334.348	53446.409	129.448	313.808	1366.332	1025.054	-121.152	345.912	-43.846	131.670	818.868
3	13:24:32	4347.284	3069.858	58987.119	140.659	277.973	1702.586	1046.053	95.919	291.533	-44.320	133.210	838.203
x		4270.156	3293.782	58755.088	119.802	290.144	1584.613	1050.250	-45.548	319.602	-40.746	134.167	805.270
σ		67.919	206.650	5196.550	27.004	20.496	189.243	27.535	122.611	27.232	5.785	3.088	41.440

%RSD		1.591	6.274	8.844	22.541	7.064	11.943	2.622	269.189	8.521	14.197	2.302	5.146
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:23:49	10286.876	72.013%	545.598	68.658	-131.495	24.469	69.394%	52251.186	349.259	221.740	942.131	70.101%
2	13:24:10	10424.549	71.997%	365.168	31.665	-62.347	-50.639	70.252%	52947.322	259.669	175.061	937.640	68.975%
3	13:24:32	10457.131	73.199%	357.758	37.953	-37.355	-61.085	70.941%	52143.651	311.189	174.467	1076.467	71.138%
x		10389.519	72.403%	422.841	46.092	-77.066	-29.085	70.196%	52447.386	306.706	190.423	985.412	70.071%
σ		90.372	0.689%	106.375	19.794	48.765	46.673	0.775%	436.283	44.963	27.123	78.888	1.082%
%RSD		0.870	0.952	25.157	42.945	63.277	160.470	1.104	0.832	14.660	14.244	8.006	1.544

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:23:49	112.604	424.252	1853.344	71.432%	0.000	22914.240	142.275
2	13:24:10	137.728	222.265	1926.783	73.720%	0.000	19444.880	-51.716
3	13:24:32	46.331	117.825	1777.332	72.178%	0.000	16459.792	-48.385
x		98.887	254.780	1852.486	72.443%	0.000	19606.304	14.058
σ		47.217	155.780	74.729	1.167%	0.000	3230.250	111.052
%RSD		47.748	61.143	4.034	1.611	0.000	16.476	789.951

200-35730-A-2-B 10/19/2016 01:29:10 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:29:31	69.015%	1.529	657.307	464047.140	22237.360	24729.392	58807.671	35230.210	70.508%	127.476	958.838	11313.245
2	13:29:53	70.546%	-9.338	660.504	457172.730	22946.000	24174.341	60236.597	36419.473	69.904%	85.729	824.484	12106.103
3	13:30:15	69.407%	5.069	593.127	460371.310	22572.167	24929.849	55673.012	35519.784	69.953%	92.775	1698.141	12689.470
x		69.656%	-0.913	636.979	460530.390	22585.176	24611.194	58239.093	35723.155	70.122%	101.993	1160.488	12036.273
σ		0.795%	7.508	38.011	3439.965	354.499	391.377	2334.317	620.167	0.336%	22.348	470.442	690.765
%RSD		1.142	821.964	5.967	0.747	1.570	1.590	4.008	1.736	0.479	21.911	40.538	5.739

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:29:31	5033.020	2927.137	83055.201	91.908	302.152	2953.813	1051.208	-173.393	413.902	-49.799	136.477	732.145
2	13:29:53	5257.395	3185.477	88117.103	92.888	369.285	2752.664	1230.536	86.688	326.545	-8.122	150.040	604.110
3	13:30:15	4814.265	3283.002	87732.293	85.661	383.311	2607.590	1136.288	44.614	338.692	-52.965	143.345	774.439
x		5034.894	3131.872	86301.532	90.152	351.583	2771.355	1139.344	-14.030	359.713	-36.962	143.287	703.564
σ		221.571	183.889	2817.982	3.921	43.379	173.867	89.703	139.606	47.321	25.027	6.782	88.688
%RSD		4.401	5.872	3.265	4.349	12.338	6.274	7.873	995.029	13.155	67.709	4.733	12.606
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:29:31	10282.534	72.623%	340.621	16.689	-20.542	-91.692	71.075%	49718.745	234.254	160.576	2186.005	69.499%
2	13:29:53	10620.229	71.801%	498.711	16.772	-87.417	-18.976	70.981%	50419.329	212.754	182.760	2104.349	70.567%
3	13:30:15	10738.038	72.447%	431.381	2.804	-77.321	-28.873	70.809%	52134.663	156.643	151.683	2187.189	71.133%
x		10546.934	72.291%	423.571	12.088	-61.760	-46.514	70.955%	50757.579	201.217	165.006	2159.181	70.400%
σ		236.432	0.433%	79.334	8.040	36.051	39.437	0.135%	1242.970	40.071	16.005	47.490	0.830%
%RSD		2.242	0.599	18.730	66.515	58.373	84.786	0.190	2.449	19.915	9.700	2.199	1.179

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:29:31	100.007	-32.072	4266.076	73.042%	0.000	5844.417	-125.567
2	13:29:53	89.981	-38.610	4793.987	71.603%	0.000	6192.019	-123.917
3	13:30:15	67.428	11.833	4990.364	72.542%	0.000	5361.440	-111.216
x		85.806	-19.616	4683.475	72.395%	0.000	5799.292	-120.233
σ		16.686	27.432	374.577	0.730%	0.000	417.124	7.853
%RSD		19.446	139.841	7.998	1.009	0.000	7.193	6.531

200-35745-A-5-B 10/19/2016 01:34:53 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:35:15	71.259%	-5.830	375.218	493243.830	20664.216	15567.430	61874.791	32435.311	71.126%	98.292	1821.331	6023.223
2	13:35:36	70.945%	1.233	513.015	515318.120	22494.693	16126.850	60130.105	32419.248	70.148%	92.503	-554.824	5323.156
3	13:35:58	68.754%	-5.702	399.900	487865.110	20652.859	15013.869	58288.839	32205.099	71.406%	139.799	964.408	5141.920
x		70.319%	-3.433	429.377	498809.020	21270.589	15569.383	60097.912	32353.219	70.893%	110.198	743.638	5496.100
σ		1.365%	4.042	73.476	14548.042	1060.120	556.493	1793.193	128.527	0.660%	25.798	1203.363	465.409
%RSD		1.941	117.728	17.112	2.917	4.984	3.574	2.984	0.397	0.931	23.411	161.821	8.468

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:35:15	5740.359	4261.597	88184.370	119.042	193.933	1245.629	1141.724	-11.278	401.291	-30.961	143.496	680.897
2	13:35:36	6427.170	4313.363	89353.831	128.129	168.361	1651.517	1245.324	114.617	395.986	-30.814	135.192	772.842
3	13:35:58	5611.357	4677.252	78765.824	125.493	249.125	1687.908	1407.732	69.844	362.562	7.261	161.000	630.666
x		5926.295	4417.404	85434.675	124.221	203.806	1528.352	1264.927	57.728	386.613	-18.171	146.563	694.802
σ		438.539	226.519	5804.919	4.675	41.278	245.520	134.083	63.816	20.997	22.025	13.174	72.101
%RSD		7.400	5.128	6.795	3.763	20.253	16.064	10.600	110.546	5.431	121.207	8.989	10.377

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:35:15	9528.474	73.183%	289.530	101.092	-112.968	13.139	71.082%	49487.908	142.440	135.225	638.174	69.598%
2	13:35:36	9724.043	72.882%	201.897	64.302	-70.855	-35.352	72.120%	49852.860	178.903	151.890	677.395	73.019%
3	13:35:58	9761.750	74.287%	176.254	127.617	-69.348	-36.794	71.739%	50627.047	229.323	114.215	792.553	72.484%
x		9671.423	73.451%	222.560	97.670	-84.390	-19.669	71.647%	49989.272	183.555	133.776	702.707	71.700%
σ		125.224	0.740%	59.398	31.796	24.761	28.422	0.525%	581.692	43.628	18.879	80.242	1.840%
%RSD		1.295	1.007	26.688	32.555	29.341	144.499	0.733	1.164	23.768	14.112	11.419	2.566

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:35:15	70.993	38.780	1588.687	72.644%	0.000	3118.696	-104.469
2	13:35:36	76.948	4.769	1530.778	73.802%	0.000	2431.387	-112.864
3	13:35:58	92.006	38.930	1342.468	73.754%	0.000	2916.443	-78.906
x		79.983	27.493	1487.311	73.400%	0.000	2822.175	-98.747
σ		10.830	19.680	128.736	0.655%	0.000	353.218	17.688
%RSD		13.541	71.582	8.656	0.893	0.000	12.516	17.912

200-35754-A-2-B 10/19/2016 01:40:37 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:40:59	75.217%	-6.015	395.536	411444.880	24516.206	25258.712	61607.592	37668.463	72.885%	143.939	-562.505	7840.005
2	13:41:20	74.953%	-6.003	372.019	426397.270	24412.751	26122.745	58132.334	39005.545	73.152%	150.157	1142.347	7808.850
3	13:41:42	72.385%	-9.338	409.927	418782.130	25333.883	25588.276	61886.924	39422.952	72.943%	177.826	821.818	7728.884
x		74.185%	-7.119	392.494	418874.760	24754.280	25656.578	60542.283	38698.987	72.994%	157.307	467.220	7792.580
σ		1.564%	1.922	19.137	7476.625	504.609	436.047	2091.745	916.538	0.140%	18.040	906.054	57.320
%RSD		2.109	27.004	4.876	1.785	2.038	1.700	3.455	2.368	0.192	11.468	193.925	0.736

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:40:59	9399.348	4318.732	90784.842	362.613	271.164	2238.409	1721.756	-36.208	644.223	-15.575	150.500	738.455
2	13:41:20	8885.635	4089.321	92525.621	320.202	256.443	2270.322	981.339	17.528	628.515	-46.089	127.342	820.973
3	13:41:42	8813.865	3814.445	91685.569	280.052	284.645	2462.661	965.632	-52.231	627.645	-18.599	156.384	714.646
x		9032.949	4074.166	91665.344	320.956	270.751	2323.797	1222.909	-23.637	633.461	-26.754	144.742	758.025

σ		319.333	252.485	870.566	41.286	14.105	121.313	432.086	36.539	9.331	16.812	15.353	55.800
%RSD		3.535	6.197	0.950	12.863	5.210	5.220	35.333	154.586	1.473	62.839	10.607	7.361
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:40:59	10669.879	74.287%	337.791	35.840	-70.233	-36.023	72.758%	52384.141	212.639	245.170	863.802	70.400%
2	13:41:20	10470.640	75.536%	350.638	1.043	-94.451	-19.113	73.424%	54003.994	317.762	234.509	889.928	72.510%
3	13:41:42	11415.777	76.688%	357.118	28.493	-99.703	-7.127	73.218%	55265.422	358.976	251.172	714.907	73.495%
x		10852.099	75.504%	348.516	21.792	-88.129	-20.754	73.133%	53884.519	296.459	243.617	822.879	72.135%
σ		498.221	1.201%	9.837	18.341	15.719	14.518	0.341%	1444.351	75.459	8.439	94.415	1.582%
%RSD		4.591	1.590	2.822	84.163	17.837	69.951	0.467	2.680	25.453	3.464	11.474	2.193

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:40:59	118.829	145.115	2123.425	74.063%	0.000	7078.503	-72.691
2	13:41:20	167.791	29.538	2267.074	73.042%	0.000	6741.536	-91.340
3	13:41:42	116.657	-46.319	2137.302	74.563%	0.000	5634.884	-133.949
x		134.426	42.778	2175.934	73.889%	0.000	6484.974	-99.327
σ		28.916	96.401	79.234	0.775%	0.000	755.233	31.400
%RSD		21.511	225.353	3.641	1.049	0.000	11.646	31.613

200-35754-A-2-B SD@5 10/19/2016 01:46:21 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:46:43	69.385%	-2.132	103.440	122125.110	4957.958	5271.934	10121.723	6821.075	71.028%	35.117	-1150.111	1669.397
2	13:47:05	69.938%	-5.764	84.354	105648.060	5199.331	5330.297	9284.424	7608.332	71.943%	27.758	-1055.557	1330.302
3	13:47:26	69.080%	-2.100	323.257	124004.400	5153.440	5282.922	10496.590	7389.610	70.291%	35.463	-1641.648	1564.606
x		69.468%	-3.332	170.351	117259.190	5103.576	5295.051	9967.579	7273.006	71.087%	32.779	-1282.439	1521.435
σ		0.435%	2.106	132.765	10099.338	128.180	31.015	620.610	406.375	0.828%	4.352	314.656	173.621
%RSD		0.626	63.201	77.936	8.613	2.512	0.586	6.226	5.587	1.165	13.277	24.536	11.412

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:46:43	10527.562	663.457	40013.369	20.682	109.749	402.924	146.502	-58.696	701.445	-58.371	153.119	869.922
2	13:47:05	10224.472	614.197	28199.833	40.995	108.137	415.356	205.515	19.692	686.564	-66.720	134.062	868.851
3	13:47:26	10797.384	718.105	40031.992	-7.328	68.399	431.208	283.152	44.292	677.672	-34.984	159.939	819.703
x		10516.472	665.253	36081.731	18.116	95.428	416.496	211.723	1.763	688.560	-53.359	149.040	852.825
σ		286.617	51.977	6825.930	24.263	23.422	14.176	68.536	53.784	12.012	16.451	13.412	28.690
%RSD		2.725	7.813	18.918	133.930	24.544	3.404	32.371	3051.264	1.745	30.832	8.999	3.364

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:46:43	2370.295	74.765%	14.072	10.085	-62.098	-50.884	70.534%	10919.310	285.883	223.569	154.070	70.080%
2	13:47:05	2296.339	74.397%	88.497	-18.984	-85.758	-27.650	72.355%	11190.644	311.236	162.115	108.503	70.557%
3	13:47:26	2205.049	75.113%	80.173	9.494	-107.538	-6.262	71.278%	11493.122	253.731	166.136	117.294	70.509%
x		2290.561	74.758%	60.914	0.199	-85.131	-28.265	71.389%	11201.026	283.617	183.940	126.622	70.382%
σ		82.774	0.358%	40.779	16.615	22.726	22.317	0.916%	287.047	28.819	34.379	24.173	0.263%
%RSD		3.614	0.479	66.946	8369.890	26.696	78.956	1.283	2.563	10.161	18.690	19.091	0.373

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:46:43	12.779	-174.055	235.177	72.473%	0.000	-2586.793	-180.116
2	13:47:05	47.489	-78.303	251.268	74.206%	0.000	-2673.161	-174.023
3	13:47:26	26.310	-128.294	102.567	73.144%	0.000	-2434.379	-200.877
x		28.859	-126.884	196.338	73.275%	0.000	-2564.777	-185.005
σ		17.495	47.892	81.605	0.874%	0.000	120.904	14.079
%RSD		60.621	37.745	41.564	1.193	0.000	4.714	7.610

200-35754-A-2-B PDS 10/19/2016 01:52:06 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:52:27	68.841%	1759.299	72129.291	T 10288094.000	385165.470	820990.720	T 9647262.500	341062.510	69.011%	166.280	137959.970	114587.490
2	13:52:49	70.463%	1732.771	68556.790	T 10400793.000	387519.650	833727.040	T 9651860.300	352256.770	67.701%	139.906	140359.910	117270.650
3	13:53:11	69.285%	1827.350	69448.887	T 10229252.000	377120.250	825976.960	T 9599667.900	343670.210	69.042%	209.465	139566.530	115575.370
x		69.530%	1773.140	70044.989	T 10306046.000	383268.460	826898.240	T 9632930.300	345663.160	68.585%	171.884	139295.470	115811.170
σ		0.838%	48.785	1859.353	T 87168.163	5453.058	6417.944	T 28897.617	5857.196	0.766%	35.117	1222.711	1357.037
%RSD		1.206	2.751	2.655	T 0.846	1.423	0.776	T 0.300	1.694	1.116	20.431	0.878	1.172

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:52:27	7467.010	84811.682	T 7966347.600	34178.239	15108.500	46619.613	120678.570	9721.549	396.604	1757.710	130.800	761.288
2	13:52:49	6706.708	86951.421	T 8170829.700	34337.186	15268.200	46542.694	123614.110	9942.448	329.913	1791.487	134.348	527.093
3	13:53:11	5250.380	86553.884	T 7921666.600	33952.525	14913.281	45764.077	121046.130	9754.064	267.644	1793.155	146.581	512.542
x		6474.700	86105.662	T 8019614.600	34155.983	15096.661	46308.794	121779.600	9806.021	331.387	1780.784	137.243	600.308
σ		1126.381	1138.111	T 132848.010	193.294	177.755	473.305	1599.327	119.263	64.493	20.000	8.279	139.603

%RSD		17.397	1.322	T 1.657	0.566	1.177	1.022	1.313	1.216	19.462	1.123	6.033	23.255
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:52:27	278800.380	72.459%	176995.910	34056.859	-47.276	6724.313	70.337%	51237.756	52324.123	40196.652	55681.731	70.049%
2	13:52:49	279356.830	72.447%	178408.660	36154.086	-57.695	7733.930	69.595%	52748.297	54961.156	41227.536	57499.139	69.745%
3	13:53:11	282971.860	73.281%	180242.490	34886.612	-31.321	7806.955	69.927%	54318.132	54912.375	41766.223	56896.435	70.300%
x		280376.360	72.729%	178549.020	35032.519	-45.431	7421.733	69.953%	52768.062	54065.885	41063.470	56692.435	70.031%
σ		2264.926	0.478%	1627.835	1056.199	13.283	605.086	0.371%	1540.283	1508.607	797.544	925.719	0.278%
%RSD		0.808	0.657	0.912	3.015	29.238	8.153	0.531	2.919	2.790	1.942	1.633	0.397

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:52:27	36286.884	177554.820	128137.680	73.213%	0.000	235412.340	143786.410
2	13:52:49	37400.287	184269.000	130859.860	72.309%	0.000	250452.080	146053.600
3	13:53:11	37902.046	190501.240	132795.980	70.856%	0.000	267138.470	154683.570
x		37196.406	184108.350	130597.840	72.126%	0.000	251000.960	148174.530
σ		826.658	6474.704	2340.181	1.189%	0.000	15870.189	5749.851
%RSD		2.222	3.517	1.792	1.648	0.000	6.323	3.880

200-35676-A-2-B 10/19/2016 01:57:50 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:58:12	71.604%	-9.338	573.495	463269.400	25633.465	20078.399	70675.440	39359.715	68.789%	101.517	1315.483	6184.676
2	13:58:33	68.677%	-5.698	437.319	460351.710	24215.638	19345.522	66810.404	37065.160	69.589%	100.385	1875.797	7083.049
3	13:58:55	70.889%	-5.812	520.862	444751.410	24419.359	18674.822	61537.150	37763.857	69.909%	99.948	-550.095	6845.640
x		70.390%	-6.949	510.559	456124.170	24756.154	19366.248	66340.998	38062.911	69.429%	100.617	880.395	6704.455
σ		1.526%	2.070	68.670	9956.557	766.571	702.018	4587.194	1176.147	0.577%	0.810	1270.124	465.531
%RSD		2.168	29.782	13.450	2.183	3.096	3.625	6.915	3.090	0.830	0.805	144.268	6.944

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:58:12	5804.859	6727.277	87056.439	276.459	368.277	882.400	883.351	-47.705	433.731	-52.450	140.763	829.000
2	13:58:33	5379.906	5782.054	73671.250	186.814	349.480	926.772	844.041	52.749	399.565	-52.898	142.727	847.865
3	13:58:55	6157.129	6354.368	77617.525	314.601	283.433	1321.894	1065.935	-94.938	431.279	-35.264	141.433	695.097
x		5780.631	6287.900	79448.405	259.292	333.730	1043.689	931.109	-29.965	421.525	-46.870	141.641	790.654
σ		389.178	476.104	6877.856	65.601	44.561	241.952	118.405	75.425	19.058	10.054	0.998	83.291
%RSD		6.732	7.572	8.657	25.300	13.352	23.182	12.717	251.713	4.521	21.451	0.705	10.534

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:58:12	10501.470	72.608%	278.735	46.264	-55.448	-43.124	69.976%	53227.710	260.532	131.860	791.315	69.556%
2	13:58:33	10709.545	72.878%	160.747	67.556	-98.981	-7.529	70.064%	53918.825	181.690	155.827	697.532	69.300%
3	13:58:55	10672.819	72.839%	215.796	45.768	-140.083	25.697	70.352%	53021.811	215.366	163.294	815.471	70.572%
x		10627.945	72.775%	218.426	53.196	-98.170	-8.318	70.131%	53389.449	219.196	150.327	768.106	69.809%
σ		111.059	0.146%	59.038	12.439	42.323	34.417	0.196%	469.870	39.561	16.423	62.301	0.673%
%RSD		1.045	0.201	27.029	23.383	43.112	413.745	0.280	0.880	18.048	10.925	8.111	0.964

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:58:12	164.543	193.273	2423.446	70.589%	0.000	32934.669	-51.881
2	13:58:33	100.565	110.072	2305.737	72.295%	0.000	25317.801	-14.060
3	13:58:55	125.392	105.315	2174.032	72.973%	0.000	20142.121	-22.712
x		130.167	136.220	2301.072	71.952%	0.000	26131.530	-29.551
σ		32.255	49.467	124.773	1.228%	0.000	6434.978	19.816
%RSD		24.780	36.314	5.422	1.707	0.000	24.625	67.056

CCV 10/19/2016 02:03:34 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:03:56	63.072%	121280.220	42309.044	↓19853666.000	↓5861410.200	↓54197414.000	↓18940760.000	↓2030898.600	63.261%	37035.018	↓3812550.000	1063
2	14:04:18	62.431%	122787.770	41569.677	↓20308509.000	↓6044899.600	↓55758333.000	↓19375772.000	1897477.400	61.748%	37524.190	↓3971620.800	1101
3	14:04:40	60.379%	124178.150	44367.946	↓19811745.000	↓5855264.400	↓54798638.000	↓18792506.000	↓2036732.900	62.844%	37267.868	↓3838807.800	1072
x		61.961%	117.378%	112.975%	↓108.676%	↓107.939%	↓107.705%	↓98.216%	↓97.790%	62.618%	37275.692	↓100.842%	9
σ		1.407%	n/a	n/a	↓n/a	↓n/a	↓n/a	↓n/a	↓n/a	0.782%	244.680	↓n/a	
%RSD		2.271	1.181	3.392	↓1.378	↓1.820	↓1.434	↓1.593	↓3.961	1.248	0.656	↓2.201	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:03:56	12933.029	↓5600139.300	↓115189300.000	1643986.800	893841.930	1109240.100	859757.080	107764.460	-406.249	11546.413	127.064	
2	14:04:18	9241.309	↓5761184.300	↓119516390.000	1688807.200	912976.560	1127129.900	872487.200	110550.630	-638.658	11544.599	156.351	
3	14:04:40	13594.716	↓5624467.300	↓115762490.000	1623843.100	881884.920	1083960.400	862161.200	110402.370	-531.142	11528.464	183.494	
x		11923.018	↓101.085%	↓102.240%	93.702%	99.634%	97.498%	100.655%	102.180%	-525.350	109.531%	155.636	
σ		2345.875	↓n/a	↓n/a	n/a	n/a	n/a	n/a	n/a	116.313	n/a	28.221	
%RSD		19.675	↓1.533	↓2.012	2.013	1.750	1.960	0.782	1.431	22.140	0.086	18.133	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	14:03:56	1085584.900	67.885%	2125303.600	355358.510	554.940	165686.840	65.321%	1058768.600	709612.520	540237.500	710088.810	6
2	14:04:18	1090562.200	66.520%	2205822.100	359292.560	1412.774	169203.850	64.918%	1072618.100	717939.960	545756.180	729936.970	6
3	14:04:40	1077502.700	65.347%	2289718.100	352367.690	882.638	164734.820	65.670%	1074321.600	716270.660	545264.930	717318.460	6
x		1084549.900	66.584%	97.884%	105.064%	950.117	99.098%	65.303%	1068569.400	714607.720	94.867%	92.650%	6
σ		6591.011	1.270%	n/a	n/a	432.880	n/a	0.376%	8530.399	4405.748	n/a	n/a	
%RSD		0.608	1.908	3.725	0.976	45.561	1.413	0.576	0.798	0.617	0.562	1.397	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:03:56	43419.991	1899044.500	↓18022646.000	67.281%	7.432	208734.440	140430.520
2	14:04:18	46796.200	1948504.400	↓18324872.000	66.850%	0.000	236215.980	146032.310
3	14:04:40	46813.308	1891171.100	↓17938068.000	68.438%	0.000	247202.910	140352.000
x		113.899%	88.216%	↓97.136%	67.523%	2.477	75.193%	99.776%
σ		n/a	n/a	↓n/a	0.822%	4.291	n/a	n/a
%RSD		4.278	1.625	↓1.124	1.217	173.205	8.588	2.289

CCB 10/19/2016 02:09:18 PM QC Status: PASS (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:09:39	68.263%	-2.014	443.005	46884.483	474.196	4519.945	2371.999	-242.185	66.644%	22.470	-51.643	-669.609
2	14:10:01	68.447%	-2.033	338.200	33726.113	477.016	4454.334	-268.798	-468.410	68.025%	14.686	998.757	-752.556
3	14:10:23	68.666%	-2.057	284.546	47247.039	583.166	4790.161	5103.406	-296.824	66.267%	15.064	740.841	-643.620
x		68.459%	-2.035	355.250	42619.212	511.459	4588.147	2402.202	-335.806	66.979%	17.407	562.652	-688.595
σ		0.202%	0.021	80.594	7703.783	62.116	177.998	2686.229	118.043	0.926%	4.390	547.402	56.896
%RSD		0.294	1.057	22.687	18.076	12.145	3.880	111.824	35.152	1.382	25.218	97.290	8.263

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:09:39	6685.177	228.283	24191.444	83.481	65.567	56.313	73.659	175.161	463.083	-32.075	133.976	787.918
2	14:10:01	6297.152	272.768	17015.804	66.648	78.592	94.018	21.656	78.442	510.432	-49.801	136.987	787.254
3	14:10:23	6570.585	277.573	29542.423	136.897	35.856	103.380	85.473	-92.896	566.573	-40.385	153.500	829.587
x		6517.638	259.541	23583.224	95.675	60.005	84.570	60.262	53.569	513.363	-40.753	141.488	801.587

σ		199.357	27.177	6285.419	36.677	21.904	24.915	33.952	135.749	51.807	8.869	10.511	24.252
%RSD		3.059	10.471	26.652	38.335	36.504	29.461	56.341	253.408	10.092	21.762	7.429	3.025
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:09:39	137.546	69.156%	4469.085	79.907	-81.502	-24.386	67.177%	3818.589	762.013	604.654	28.242	66.132%
2	14:10:01	99.079	69.563%	4162.069	19.659	-110.915	11.784	67.890%	4109.940	894.510	721.679	20.486	66.090%
3	14:10:23	122.135	68.980%	4081.974	5.283	-90.024	-8.630	67.427%	4138.159	914.772	702.134	20.688	66.383%
x		119.587	69.233%	4237.709	34.950	-94.147	-7.077	67.498%	4022.229	857.098	676.156	23.139	66.202%
σ		19.360	0.299%	204.340	39.592	15.134	18.135	0.362%	176.921	82.967	62.689	4.421	0.159%
%RSD		16.189	0.432	4.822	113.284	16.075	256.243	0.536	4.399	9.680	9.271	19.105	0.240

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:09:39	155.261	1208.197	897.142	69.260%	0.000	-1479.550	-193.274
2	14:10:01	117.591	1095.900	1023.017	70.781%	0.000	-1754.795	-122.944
3	14:10:23	78.996	1018.982	824.040	71.445%	0.000	-1676.426	-158.724
x		117.283	1107.693	914.733	70.496%	0.000	-1636.923	-158.314
σ		38.134	95.157	100.648	1.120%	0.000	141.811	35.167
%RSD		32.514	8.591	11.003	1.589	0.000	8.663	22.213

CCVL 10/19/2016 02:15:00 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:15:22	66.907%	207.381	6830.261	984179.630	37655.790	94333.868	885867.530	32072.263	66.431%	30.066	12898.139	11096.740
2	14:15:44	68.071%	174.293	7028.149	T 1120451.200	38076.623	93808.393	897595.900	32995.856	66.014%	22.671	15213.886	10758.846
3	14:16:05	66.299%	205.597	7312.372	T 1122538.500	39736.793	97189.365	905415.240	33842.661	65.676%	0.000	15011.733	11429.153
x		67.093%	116.995%	116.561%	T 116.956%	105.258%	111.918%	92.487%	97.290%	66.040%	17.579	93.536%	95.147%
σ		0.900%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.378%	15.666	n/a	n/a
%RSD		1.342	9.506	3.434	T 7.370	2.859	1.913	1.098	2.686	0.573	89.120	8.923	3.021

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:15:22	8129.139	9633.301	742557.910	3832.363	2007.777	4754.424	15807.596	1103.971	575.152	193.234	151.649	852.496
2	14:15:44	7940.986	9947.273	755423.000	3803.702	1687.289	4960.362	15563.049	997.839	599.854	197.516	121.978	758.293
3	14:16:05	8027.424	9422.002	770045.040	3770.055	1589.455	5345.069	16705.497	781.589	675.470	187.113	143.126	741.859
x		8032.516	107.874%	99.246%	107.813%	122.391%	110.554%	116.575%	89.629%	616.825	91.414%	138.918	784.216
σ		94.180	n/a	n/a	n/a	n/a	n/a	n/a	n/a	52.268	n/a	15.277	59.701
%RSD		1.172	2.734	1.819	0.820	12.422	5.972	3.754	17.094	8.474	2.714	10.997	7.613

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:15:22	27747.012	68.460%	19239.274	3692.838	-116.785	924.622	67.261%	1598.310	5642.265	4622.899	5827.215	67.378%
2	14:15:44	27949.157	69.508%	19077.361	3995.132	-58.638	805.454	68.045%	2072.236	6261.071	4593.383	6075.962	66.881%
3	14:16:05	28797.818	71.261%	19553.942	3535.407	-72.508	867.511	68.821%	1932.633	5984.486	4619.662	5302.505	67.116%
x		97.600%	69.743%	106.946%	110.511%	-82.643	103.043%	68.042%	1867.726	5962.607	100.580%	92.365%	67.125%
σ		n/a	1.415%	n/a	n/a	30.370	n/a	0.780%	243.539	309.982	n/a	n/a	0.249%
%RSD		1.980	2.029	1.256	6.245	36.748	6.883	1.146	13.039	5.199	0.351	6.885	0.371

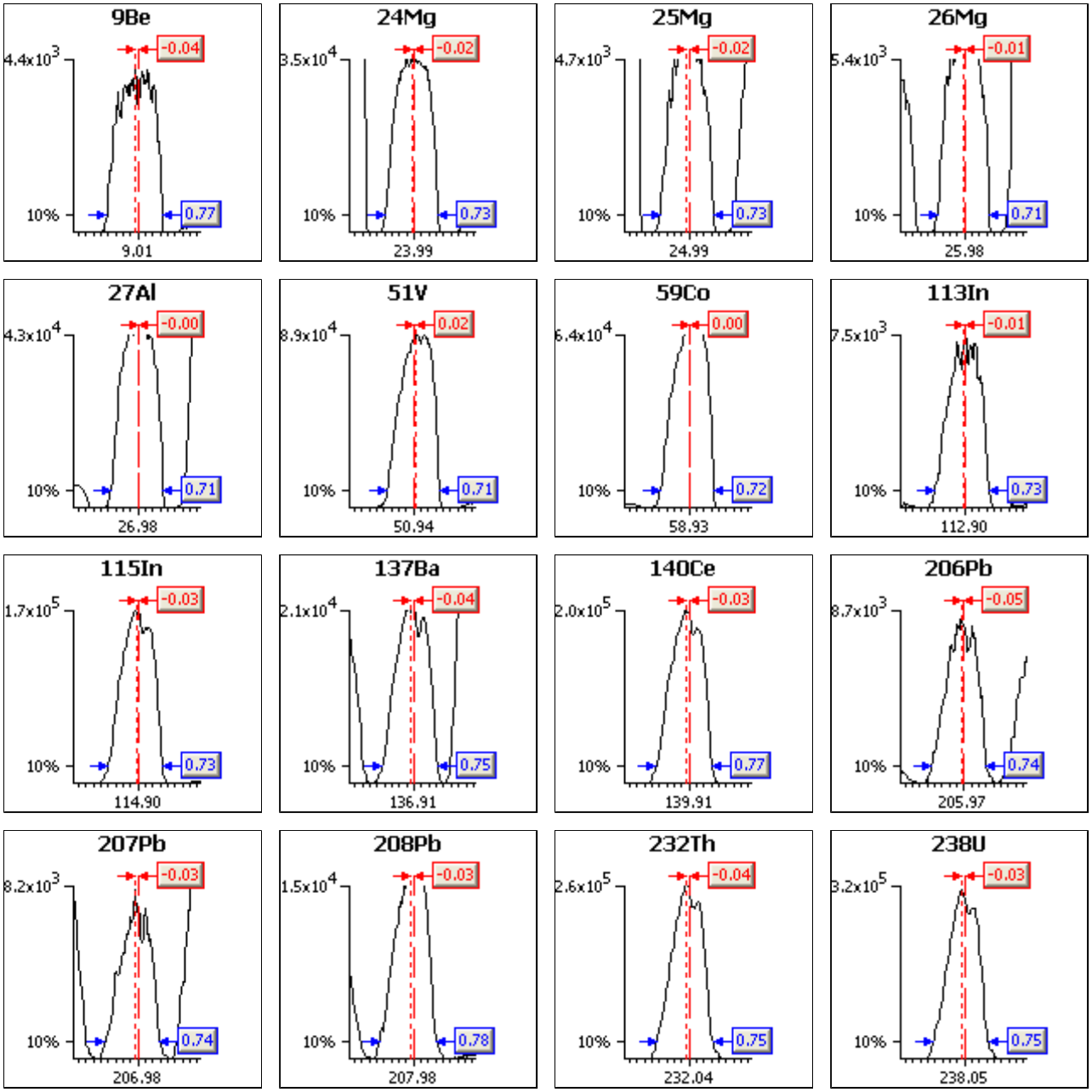
Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:15:22	3230.510	18880.289	16794.141	69.808%	0.000	10358.128	14616.058
2	14:15:44	3733.769	19853.997	16380.387	68.404%	0.000	11248.952	14832.564
3	14:16:05	3981.115	19260.074	16003.573	71.336%	0.000	10792.060	15035.053
x		90.978%	89.149%	109.997%	69.849%	0.000	35.197%	103.989%
σ		n/a	n/a	n/a	1.466%	0.000	n/a	n/a
%RSD		10.484	2.539	2.412	2.099	0.000	4.125	1.413

Performance Report

Sample details
Sample name : ITUNE
Acquired at : 10/25/2016 11:41:36 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Mass Calibration verification

Acquisition parameters
Sweeps : 20
Dwell : 1.0 mSecs
Point spacing : 0.01 amu
Peak width measured at 10% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
9Be	0.90	0.65	0.10	0.77	-0.04
24Mg	0.90	0.65	0.10	0.73	-0.02

25Mg	0.90	0.65	0.10	0.73	-0.02
26Mg	0.90	0.65	0.10	0.71	-0.01
27Al	0.90	0.65	0.10	0.71	-0.00
51V	0.90	0.65	0.10	0.71	0.02
59Co	0.90	0.65	0.10	0.72	0.00
113In	0.90	0.65	0.10	0.73	-0.01
115In	0.90	0.65	0.10	0.73	-0.03
137Ba	0.90	0.65	0.10	0.75	-0.04
140Ce	0.90	0.65	0.10	0.77	-0.03
206Pb	0.90	0.65	0.10	0.74	-0.05
207Pb	0.90	0.65	0.10	0.74	-0.03
208Pb	0.90	0.65	0.10	0.78	-0.03
232Th	0.90	0.65	0.10	0.75	-0.04
238U	0.90	0.65	0.10	0.75	-0.03

Sample details
Sample name : ITUNE
Acquired at : 10/25/2016 11:41:36 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Tune conditions

Major	
Extraction	-102
Lens 1	-4.1
Focus	18.0
D1	-43.9
Pole Bias	1.0
Hexapole Bias	-3.0
Nebuliser	0.74
Sampling Depth	123

Minor	
Lens 2	-39.2
Lens 3	-177.3
Forward power	1404
Horizontal	80
Vertical	472
D2	-158
DA	-40.8
Cool	13.0
Auxiliary	0.90

Global	
Standard resolution	135
High resolution	115
Analogue Detector	2353
PC Detector	1196

Add. Gases	
CCT1	0.00
CCT2	0.00

Sensitivity and stability results

Acquisition parameters
Sweeps : 50

Run	Time	8Bkg	9Be	24Mg	25Mg	26Mg	27Al	51V	59Co	113In
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Countrate	-	>100	>100	>100	>100	>100	>100	>100	>100
1	11:42:32 AM	0.000	3824.439	37520.185	5142.793	6399.228	45748.702	88373.678	69141.118	7509.691
2	11:43:06 AM	0.000	3852.445	38464.334	5022.757	6473.257	45020.724	87782.566	67869.909	7245.575
3	11:43:40 AM	0.200	3758.424	37566.289	5102.781	6157.137	45510.050	88550.613	68327.774	7313.604
4	11:44:14 AM	0.000	3876.451	37179.423	4988.747	6321.198	45467.936	88789.881	68494.456	7427.655
5	11:44:47 AM	0.200	3966.472	37093.231	5052.766	6131.128	45977.330	88643.103	68821.800	7561.715
x		0.080	3855.646	37564.693	5061.969	6296.390	45544.948	88427.968	68531.011	7411.648
σ		0.11	76.08	543.61	61.61	149.31	357.22	391.09	483.86	131.89
%RSD		136.931	1.973	1.447	1.217	2.371	0.784	0.442	0.706	1.780

Run	Time	115In	137Ba	140Ce	156Ce O	206Pb	207Pb	208Pb	220Bkg	232Th
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	5.0%	5.0%	5.0%	-	5.0%	5.0%	5.0%	-	5.0%
	Countrate	>100	>100	>100	-	>100	>100	>100	-	>100
1	11:42:32 AM	172724.40	21495.853	193850.83	1172.041	7775.813	7289.594	17196.867	0.000	260406.58
2	11:43:06 AM	171633.21	21475.827	193998.53	1300.051	7959.900	7251.577	17353.029	0.000	259719.99
3	11:43:40 AM	172520.30	20889.082	194241.33	1252.047	7807.828	7105.514	17066.734	0.000	261562.47
4	11:44:14 AM	172621.34	21662.068	196582.54	1216.044	8039.939	7221.564	16806.469	0.000	265784.48
5	11:44:47 AM	172035.33	21646.047	195941.06	1330.053	7671.765	7133.526	16804.467	0.000	263982.17
x		172306.91	21433.776	194922.86	1254.047	7851.049	7200.355	17045.513	0.000	262291.14
σ		459.98	316.03	1250.94	63.38	147.65	78.26	241.44	0.00	2537.54
%RSD		0.267	1.474	0.642	5.054	1.881	1.087	1.416	0.000	0.967

Run	Time	238U
Dwell (mSecs)		0.0
Limits	%RSD	5.0%
	Countrate	>100
1	11:42:32 AM	300248.33
2	11:43:06 AM	300339.96
3	11:43:40 AM	302981.12
4	11:44:14 AM	300368.46
5	11:44:47 AM	302594.19
x		301306.41
σ		1359.81
%RSD		0.451

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0200
1	11:42:32 AM	0.006
2	11:43:06 AM	0.007

3	11:43:40 AM	0.006
4	11:44:14 AM	0.006
5	11:44:47 AM	0.007
x		0.0064
σ		0.00
%RSD		4.9701

Result : The performance report passed.

Experiment Details

Description	PlasmaLab Template BlankExperiment
Template Filename	C:\Program Files\Thermo Fisher\PlasmaLab\TEMPLATES\6020A.tet
Created By User	user
Analyte Database	Default.tea
Creation Timestamp	8/29/2003 01:55:15 PM
Last Edited By	INORG-User
Last Edit Timestamp	10/25/2016 12:55:44 PM
Instrument Detector	Simultaneous
Database Version	3.51
Acquisition Mode	Unknown

Numerical Results report key (text indicates meaning)

Blue text indicates that cell is a statistic.
Underlining indicates that a data warning flag is set.

Column headings	Result cells	Data warning flags
No flag	Internal Standard	I - Invalid calibration
Semi Quant	Excluded	T - Tripped
Standard Addition	QC Warning	F - Interference correction failed
Multi Element	QC Failure	M - Result over max
	Transient TRA only:	V - Valley integration failed
	Peak Not Found	D - Different method used
	Manually Edited	
	Merged Peak	

Setup

Survey Scan Setup

Sweeps	10
Dwell Time	600
Channels Per Mass	10
Acquisition Duration	13247

Main Run Setup

Main Run	Peak Jumping
Sweeps	20
Dwell Time	10000
Channels Per Mass	1
Acquisition Duration	18211
Channel Spacing	0.02

Survey Scan Regions

Start AMU	End AMU	Channels	Dwell ms	Resolution

4.59	11.41	68	600	Standard
22.59	27.41	48	600	Standard
28.59	29.41	8	600	Standard
30.59	31.41	8	600	Standard
32.59	33.41	8	600	Standard
38.59	39.41	8	600	Standard
42.59	79.41	368	600	Standard
80.59	245.50	1649	600	Standard

Peak Jump Regions

Analyte	Channels	Dwell ms	Resolution
6Li	1	5000	Standard
7Li	1	5000	Standard
9Be	1	20000	Standard
11B	1	10000	Standard
23Na	1	5000	Standard
25Mg	1	5000	Standard
26Mg	1	5000	Standard
27Al	1	10000	Standard
39K	1	5000	Standard
43Ca	1	10000	Standard
44Ca	1	5000	Standard
45Sc	1	5000	Standard
47Ti	1	10000	Standard
51V	1	10000	Standard
52Cr	1	10000	Standard
53Cl O	1	10000	Standard
55Mn	1	10000	Standard
56Fe	1	10000	Standard
59Co	1	10000	Standard
60Ni	1	10000	Standard
65Cu	1	10000	Standard
66Zn	1	10000	Standard
75As	1	50000	Standard
77Ar Cl	1	50000	Standard
82Se	1	100000	Standard
83Kr	1	100000	Standard
84Kr	1	10000	Standard
88Sr	1	10000	Standard
89Y	1	5000	Standard
98Mo	1	10000	Standard
106Cd	1	10000	Standard
107Ag	1	10000	Standard
108Mo O	1	10000	Standard
111Cd	1	10000	Standard
115In	1	5000	Standard
118Sn	1	10000	Standard
121Sb	1	10000	Standard
123Sb	1	100000	Standard
135Ba	1	10000	Standard

159Tb	1	5000	Standard
182W	1	10000	Standard
205Tl	1	10000	Standard
206Pb	1	10000	Standard
207Pb	1	10000	Standard
208Pb	1	10000	Standard
209Bi	1	5000	Standard
220Bkg	1	10000	Standard
232Th	1	10000	Standard
238U	1	10000	Standard

Calibration Technique

Use External Drift Correction - No
Calibrate by - Isotope

Symbol	Interference Correction	RSF	Calibration Method	Line Fit	Weighting	Forcing	Use for Semi-Quant	Max Error	Minimum Correlation
6Li	Yes	1.00	None				No		
7Li	Yes	1.00	None				No		
9Be	Yes	0.75	Fully-Quantified	Linear	Absolute SD	None	Yes		
11B	Yes	0.58	Fully-Quantified	Linear	Absolute SD	None	Yes		
23Na	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
25Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
26Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
27Al	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
39K	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
43Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
44Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
45Sc	Yes	1.00	None				No		
47Ti	Yes	0.99	None				No		
51V	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
52Cr	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
55Mn	Yes	0.95	Fully-Quantified	Linear	Absolute SD	None	Yes		
56Fe	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
59Co	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
60Ni	No	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
65Cu	Yes	0.90	Fully-Quantified	Linear	Absolute SD	None	Yes		
66Zn	Yes	0.38	Fully-Quantified	Linear	Absolute SD	None	Yes		
75As	Yes	0.07	Fully-Quantified	Linear	Absolute SD	None	Yes		
82Se	Yes	0.10	Fully-Quantified	Linear	Absolute SD	None	Yes		
83Kr	Yes	0.01	None				No		
84Kr	Yes	0.01	None				No		
88Sr	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
89Y	Yes	0.98	None				No		
98Mo	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
107Ag	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
106Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
111Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
115In	Yes	0.99	None				No		
118Sn	Yes	0.96	None				No		

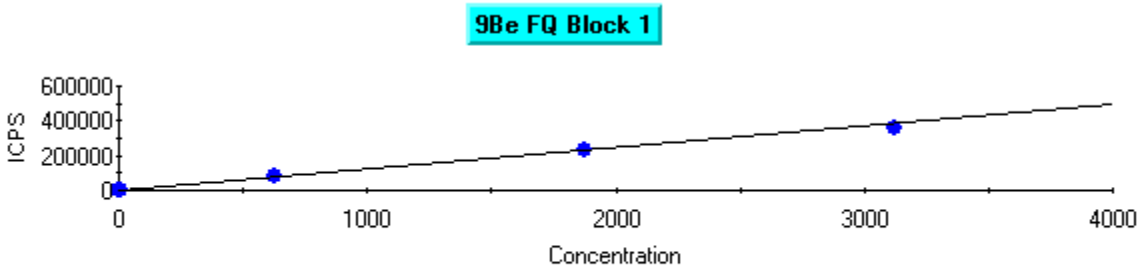
121Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
123Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
135Ba	Yes	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes
159Tb	Yes	0.99	None				No
182W	Yes	0.94	Fully-Quantified	Linear	Absolute SD	None	Yes
206Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
207Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
208Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	No
209Bi	Yes	0.92	None				No
232Th	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
238U	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
205Tl	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
220Bkg	Yes		Semi-Quantified				No
77Ar Cl	Yes		Semi-Quantified				No
53Cl O	Yes		Semi-Quantified				No
108Mo O	Yes		Semi-Quantified				No

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	STD0	Fully Quant Standard	1.000	0	1	2	144
2	STD1	Fully Quant Standard	1.000	0	1	3	144
3	STD2	Fully Quant Standard	1.000	0	1	4	144
4	STD3	Fully Quant Standard	1.000	0	1	5	144
5	STD4	Fully Quant Standard	1.000	1	1	1	144
6	STD5	Fully Quant Standard	1.000	1	1	2	144
7	ICV	QC Sample	1.000	0	1	6	144
8	ICVL	QC Sample	1.000	0	1	3	144
9	ICBIS	QC Sample	1.000	0	1	2	144
10	ICSA	QC Sample	1.000	1	1	3	144
11	ICSAB	QC Sample	1.000	1	1	4	144
12	CCV	QC Sample	1.000	0	1	5	144
13	CCB	QC Sample	1.000	0	1	2	144
14	MB 200-110491/1-A	Unknown	1.000	1	2	1	144
15	LCS 200-110491/2-A	Unknown	1.000	1	2	2	144
16	200-35680-A-8-A	Unknown	1.000	1	2	3	144
17	200-35680-A-8-A SD@5	Unknown	1.000	1	2	4	144
18	200-35680-A-8-A PDS	Unknown	1.000	1	2	5	144
19	200-35680-A-8-B MS	Unknown	1.000	1	2	6	144
20	200-35680-A-8-C MSD	Unknown	1.000	1	2	7	144
21	200-35680-A-9-A	Unknown	1.000	1	2	8	144
22	200-35680-A-10-A	Unknown	1.000	1	2	9	144
23	200-35680-A-11-A	Unknown	1.000	1	2	10	144
24	CCV	QC Sample	1.000	0	1	5	144
25	CCB	QC Sample	1.000	0	1	2	144
26	CCVL	QC Sample	1.000	0	1	3	144
27	200-35680-A-12-A	Unknown	1.000	1	2	11	144
28	200-35700-A-9-A	Unknown	1.000	1	2	12	144
29	200-35700-A-10-A	Unknown	1.000	1	3	1	144
30	200-35700-A-10-A @2	Unknown	1.000	1	3	2	144
31	CCV	QC Sample	1.000	0	1	5	144
32	CCB	QC Sample	1.000	0	1	2	144

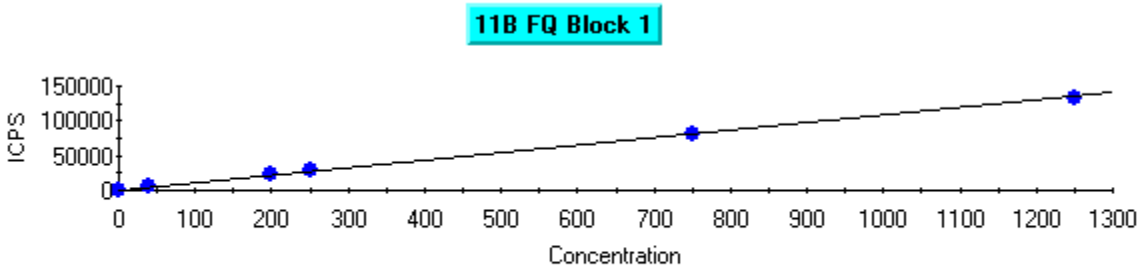
33	CCVL	QC Sample	1.000	0	1	3	144

Fully Quant Calibration



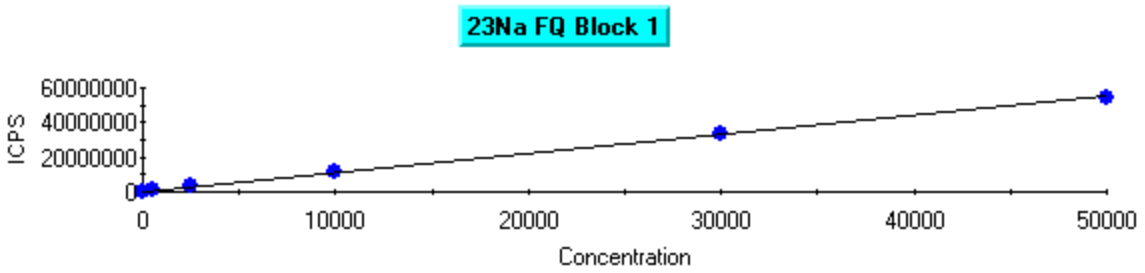
Intercept CPS=20.857217 Intercept Conc=0.169739
Sensitivity=122.878311 Correlation Coeff=0.999548

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.034	0.034	16.72	0.00
STD1	1.000	0.997	0.003	143.35	0.31
STD2	5.000	5.086	0.086	645.80	1.72
STD3	625.000	629.934	4.934	77426.08	0.79
STD4	1875.000	1836.607	38.393	225700.03	2.05
STD5	3125.000	2910.165	214.835	357616.97	6.87



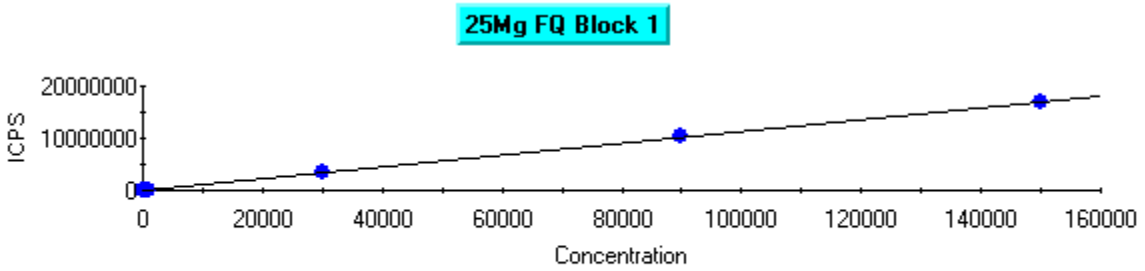
Intercept CPS=1411.043425 Intercept Conc=12.987645
Sensitivity=108.645059 Correlation Coeff=0.999838

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-4.192	4.192	955.63	0.00
STD1	40.000	42.798	2.798	6060.88	7.00
STD2	200.000	206.695	6.695	23867.48	3.35
STD3	250.000	248.193	1.807	28375.93	0.72
STD4	750.000	743.436	6.564	82181.73	0.88
STD5	1250.000	1207.282	42.718	132576.26	3.42



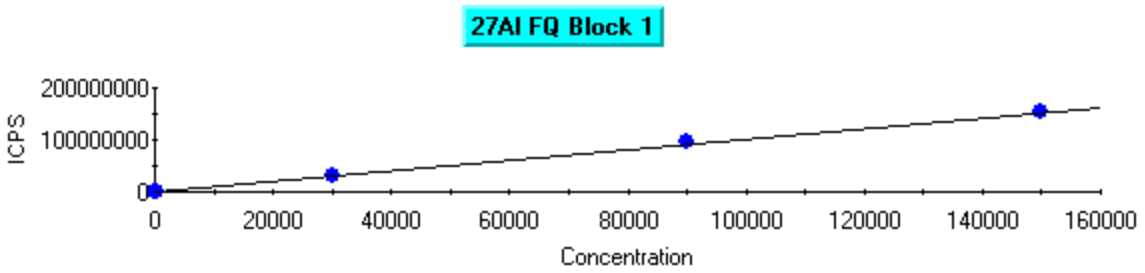
Intercept CPS=179871.308464 Intercept Conc=162.048507
Sensitivity=1109.984358 Correlation Coeff=0.999851

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	1.102	1.102	181094.94	0.00
STD1	500.000	497.646	2.354	732250.67	0.47
STD2	2500.000	2488.071	11.929	2941590.66	0.48
STD3	10000.000	9993.515	6.485	11272516.46	0.06
STD4	30000.000	30270.984	270.984	33780190.30	0.90
STD5	50000.000	48920.265	1079.735	54480599.79	2.16



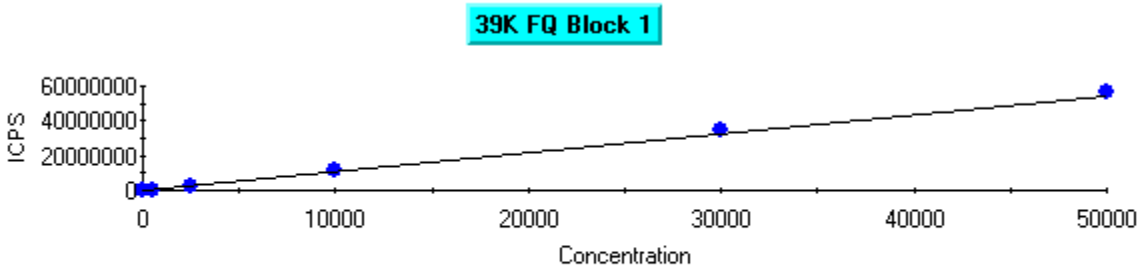
Intercept CPS=1220.394981 Intercept Conc=10.741166
Sensitivity=113.618483 Correlation Coeff=0.999990

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.468	0.468	1273.52	0.00
STD1	200.000	182.704	17.296	21978.98	8.65
STD2	1000.000	919.119	80.881	105649.25	8.09
STD3	30000.000	30041.676	41.676	3414510.04	0.14
STD4	90000.000	90704.837	704.837	10306966.36	0.78
STD5	150000.000	149951.619	48.381	17038495.90	0.03



Intercept CPS=7044.566125 Intercept Conc=6.922904
Sensitivity=1017.573883 Correlation Coeff=0.999968

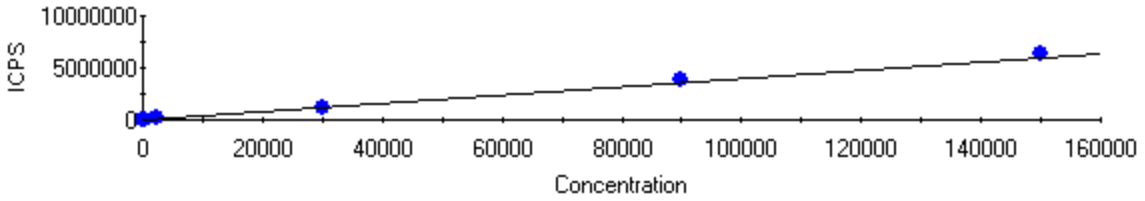
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	3.565	3.565	10672.09	0.00
STD1	50.000	44.636	5.364	52464.74	10.73
STD2	250.000	227.256	22.744	238294.75	9.10
STD3	30000.000	30746.310	746.310	31293686.33	2.49
STD4	90000.000	93098.934	3098.934	94742088.05	3.44
STD5	150000.000	152920.333	2920.333	155614781.42	1.95



Intercept CPS=44460.309758 Intercept Conc=40.895743
Sensitivity=1087.162281 Correlation Coeff=0.999972

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	1.703	1.703	46311.34	0.00
STD1	500.000	475.728	24.272	561654.01	4.85
STD2	2500.000	2472.073	27.927	2732004.65	1.12
STD3	10000.000	10053.604	53.604	10974359.85	0.54
STD4	30000.000	31337.732	1337.732	34113660.46	4.46
STD5	50000.000	51909.478	1909.478	56478486.38	3.82

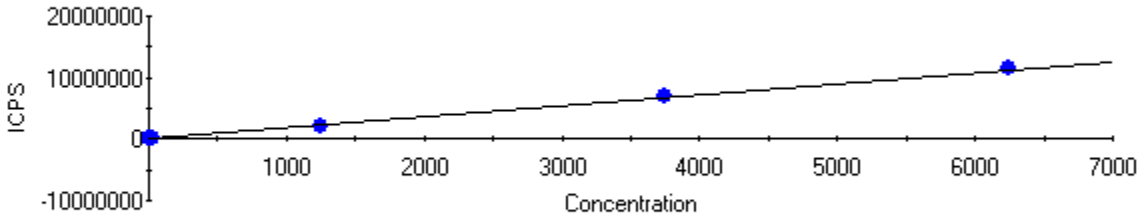
44Ca FQ Block 1



Intercept CPS=664.315529 Intercept Conc=16.790870
Sensitivity=39.564093 Correlation Coeff=0.999864

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	8.655	8.655	1006.73	0.00
STD1	500.000	496.351	3.649	20302.00	0.73
STD2	2500.000	2422.924	77.076	96525.10	3.08
STD3	30000.000	29499.224	500.776	1167774.35	1.67
STD4	90000.000	96315.232	6315.232	3811289.11	7.02
STD5	150000.000	161607.433	11607.433	6394515.79	7.74

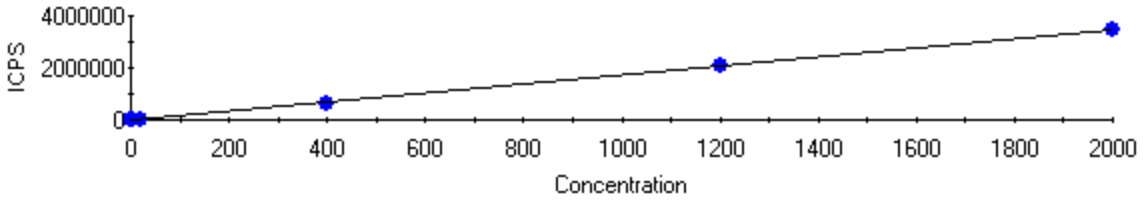
51V FQ Block 1



Intercept CPS=-1183.879819 Intercept Conc=-0.654403
Sensitivity=1809.098280 Correlation Coeff=0.999962

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	1.221	1.221	1024.47	0.00
STD1	5.000	5.349	0.349	8493.88	6.99
STD2	25.000	23.046	1.954	40509.42	7.81
STD3	1250.000	1219.315	30.685	2204677.69	2.45
STD4	3750.000	3829.566	79.566	6926877.46	2.12
STD5	6250.000	6354.154	104.154	11494104.63	1.67

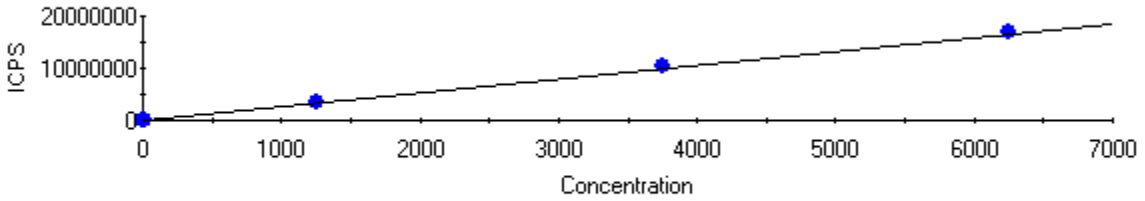
52Cr FQ Block 1



Intercept CPS=1522.192786 Intercept Conc=0.887805
Sensitivity=1714.557767 Correlation Coeff=0.999897

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.016	0.016	1549.02	0.00
STD1	4.000	3.882	0.118	8178.35	2.95
STD2	20.000	18.583	1.417	33383.62	7.09
STD3	400.000	376.935	23.065	647799.23	5.77
STD4	1200.000	1222.376	22.376	2097356.85	1.86
STD5	2000.000	2033.799	33.799	3488588.31	1.69

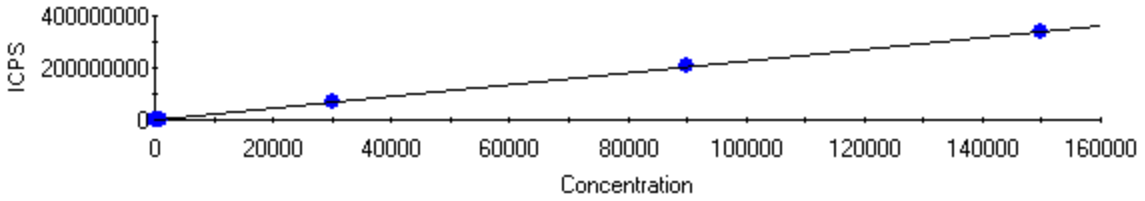
55Mn FQ Block 1



Intercept CPS=861.172057 Intercept Conc=0.328759
Sensitivity=2619.464266 Correlation Coeff=0.999980

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.111	0.111	1152.68	0.00
STD1	2.000	1.691	0.309	5289.76	15.47
STD2	10.000	9.085	0.915	24658.41	9.15
STD3	1250.000	1259.870	9.870	3301046.08	0.79
STD4	3750.000	3904.217	154.217	10227819.04	4.11
STD5	6250.000	6474.937	224.937	16961726.09	3.60

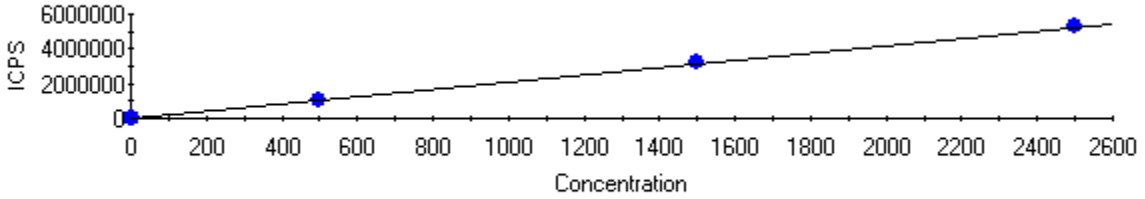
56Fe FQ Block 1



Intercept CPS=175012.320911 Intercept Conc=77.964357
Sensitivity=2244.773477 Correlation Coeff=0.999989

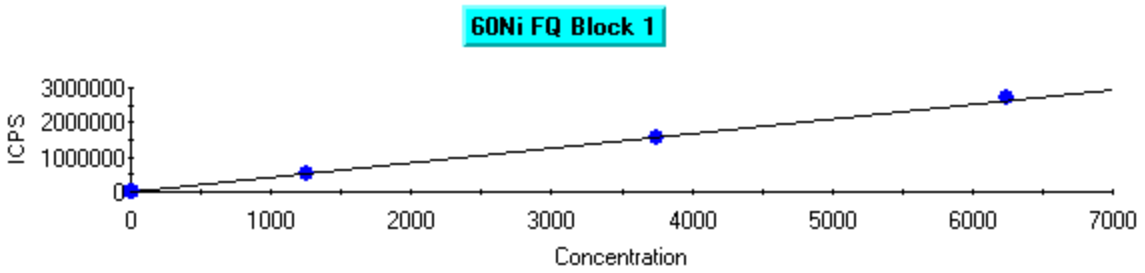
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	7.815	7.815	192555.01	0.00
STD1	200.000	189.624	10.376	600675.13	5.19
STD2	1000.000	995.895	4.105	2410571.71	0.41
STD3	30000.000	30100.209	100.209	67743162.39	0.33
STD4	90000.000	91707.823	1707.823	206038301.44	1.90
STD5	150000.000	151688.605	1688.605	340681569.53	1.13

59Co FQ Block 1



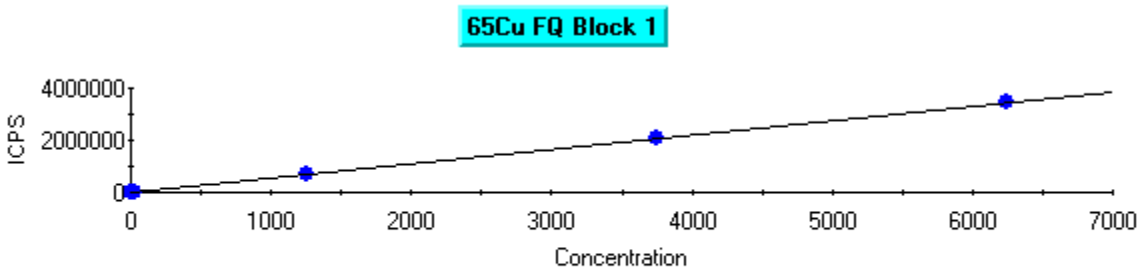
Intercept CPS=183.890667 Intercept Conc=0.088994
Sensitivity=2066.337194 Correlation Coeff=0.999876

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.060	0.060	307.33	0.00
STD1	1.000	0.888	0.112	2019.83	11.15
STD2	5.000	4.689	0.311	9872.32	6.23
STD3	500.000	475.457	24.543	982638.44	4.91
STD4	1500.000	1551.812	51.812	3206750.31	3.45
STD5	2500.000	2561.823	61.823	5293773.45	2.47



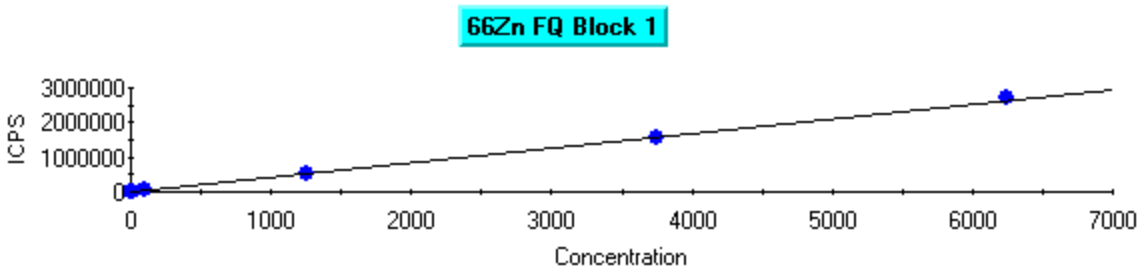
Intercept CPS=135.715184 Intercept Conc=0.320410
Sensitivity=423.567591 Correlation Coeff=0.999546

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.049	0.049	156.44	0.00
STD1	2.000	1.721	0.279	864.86	13.93
STD2	10.000	10.558	0.558	4607.88	5.58
STD3	1250.000	1242.326	7.674	526344.94	0.61
STD4	3750.000	3668.313	81.687	1553914.36	2.18
STD5	6250.000	6466.785	216.785	2739256.12	3.47



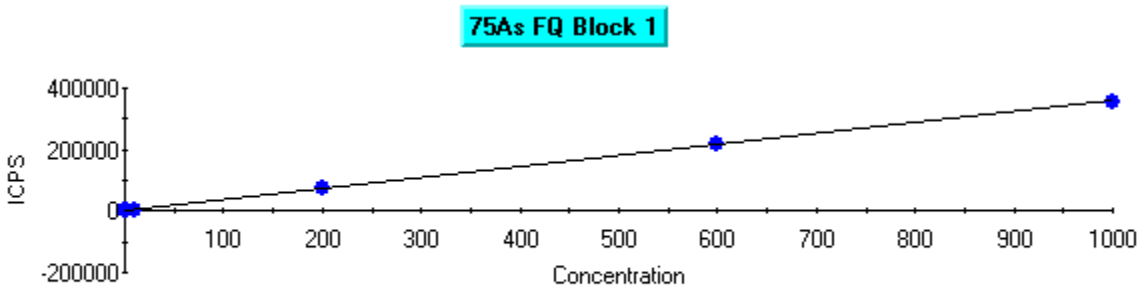
Intercept CPS=288.514838 Intercept Conc=0.520554
Sensitivity=554.245385 Correlation Coeff=0.999945

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.093	0.093	339.87	0.00
STD1	5.000	4.823	0.177	2961.47	3.55
STD2	25.000	23.651	1.349	13397.22	5.39
STD3	1250.000	1192.911	57.089	661454.06	4.57
STD4	3750.000	3783.054	33.054	2097028.97	0.88
STD5	6250.000	6269.616	19.616	3475194.22	0.31



Intercept CPS=696.227740 Intercept Conc=1.652032
Sensitivity=421.437095 Correlation Coeff=0.999863

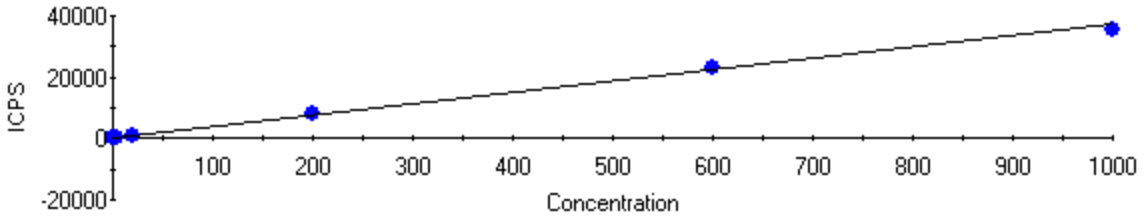
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.276	0.276	579.77	0.00
STD1	20.000	20.876	0.876	9494.13	4.38
STD2	100.000	101.244	1.244	43364.22	1.24
STD3	1250.000	1257.646	7.646	530715.09	0.61
STD4	3750.000	3716.180	33.820	1566832.40	0.90
STD5	6250.000	6385.788	135.788	2691904.08	2.17



Intercept CPS=-17.933052 Intercept Conc=-0.049457
Sensitivity=362.598689 Correlation Coeff=0.999959

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.222	0.222	-98.33	0.00
STD1	2.000	1.929	0.071	681.55	3.55
STD2	10.000	10.212	0.212	3684.87	2.12
STD3	200.000	200.396	0.396	72645.28	0.20
STD4	600.000	600.539	0.539	217736.59	0.09
STD5	1000.000	984.912	15.088	357109.90	1.51

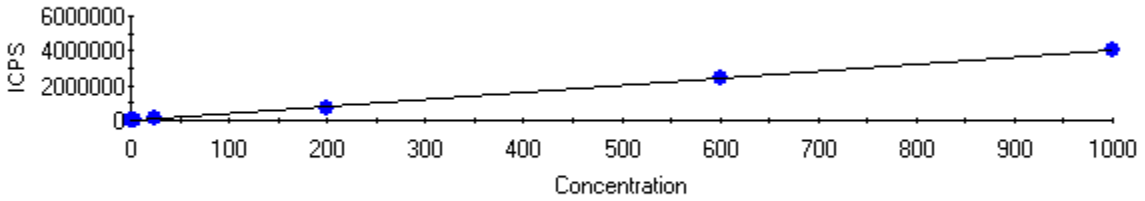
82Se FQ Block 1



Intercept CPS=-12.961658 Intercept Conc=-0.344828
Sensitivity=37.588799 Correlation Coeff=0.999187

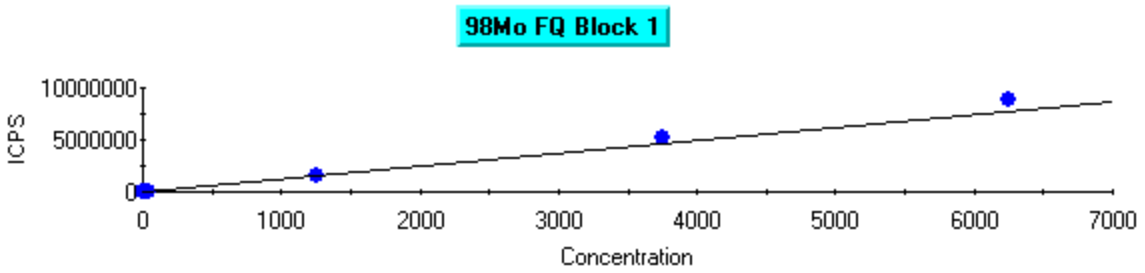
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.496	0.496	-31.61	0.00
STD1	4.000	3.409	0.591	115.18	14.78
STD2	20.000	21.413	1.413	791.91	7.06
STD3	200.000	207.029	7.029	7769.02	3.51
STD4	600.000	608.781	8.781	22870.38	1.46
STD5	1000.000	946.733	53.267	35573.60	5.33

88Sr FQ Block 1



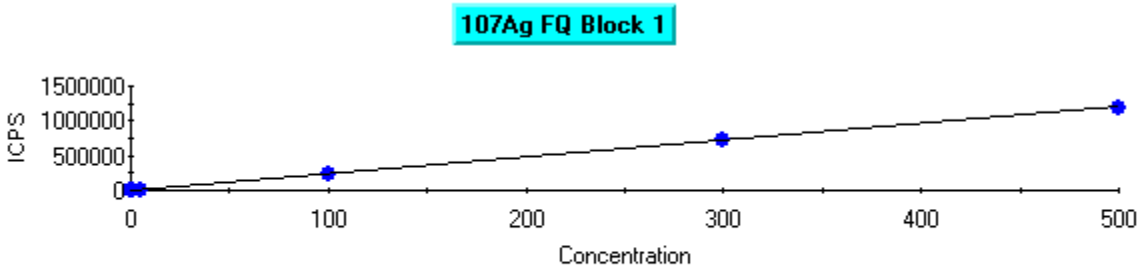
Intercept CPS=124.651350 Intercept Conc=0.031266
Sensitivity=3986.762366 Correlation Coeff=0.999788

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.014	0.014	181.77	0.00
STD1	5.000	4.583	0.417	18396.23	8.34
STD2	25.000	22.369	2.631	89305.71	10.52
STD3	200.000	182.754	17.246	728720.18	8.62
STD4	600.000	614.743	14.743	2450959.25	2.46
STD5	1000.000	1014.422	14.422	4044384.96	1.44



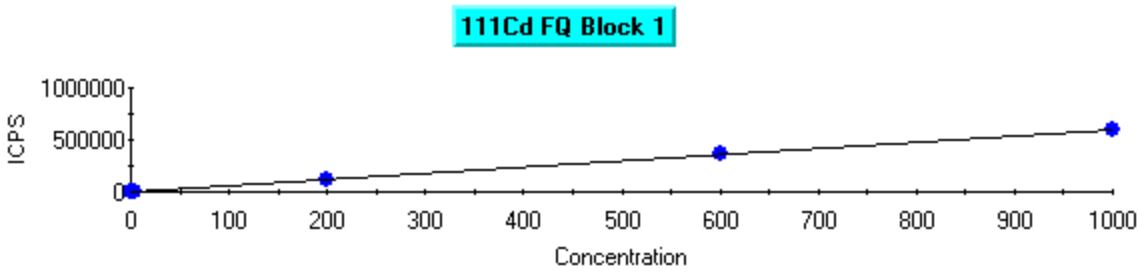
Intercept CPS=1441.939128 Intercept Conc=1.165007
Sensitivity=1237.708115 Correlation Coeff=0.999613

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	2.439	2.439	4461.26	0.00
STD1	10.000	9.347	0.653	13010.27	6.53
STD2	50.000	47.650	2.350	60418.98	4.70
STD3	1250.000	1219.140	30.860	1510381.92	2.47
STD4	3750.000	4152.582	402.582	5141126.89	10.74
STD5	6250.000	7082.293	832.293	8767253.40	13.32



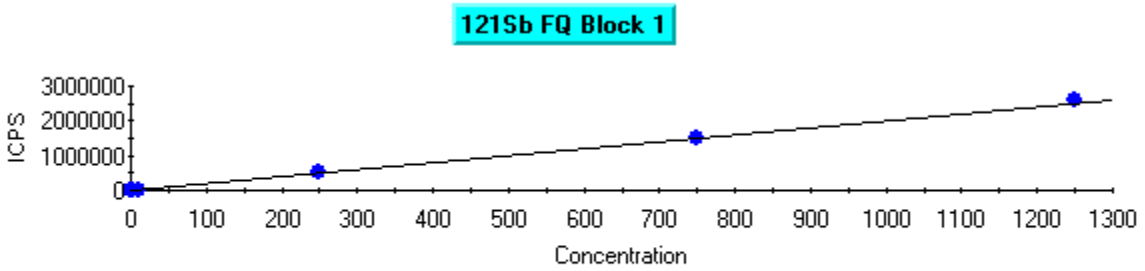
Intercept CPS=57.455254 Intercept Conc=0.023852
Sensitivity=2408.786894 Correlation Coeff=0.999871

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.001	0.001	59.92	0.00
STD1	1.000	0.980	0.020	2417.69	2.02
STD2	5.000	5.098	0.098	12337.18	1.96
STD3	100.000	99.841	0.159	240552.97	0.16
STD4	300.000	300.603	0.603	724147.21	0.20
STD5	500.000	486.726	13.274	1172477.06	2.65



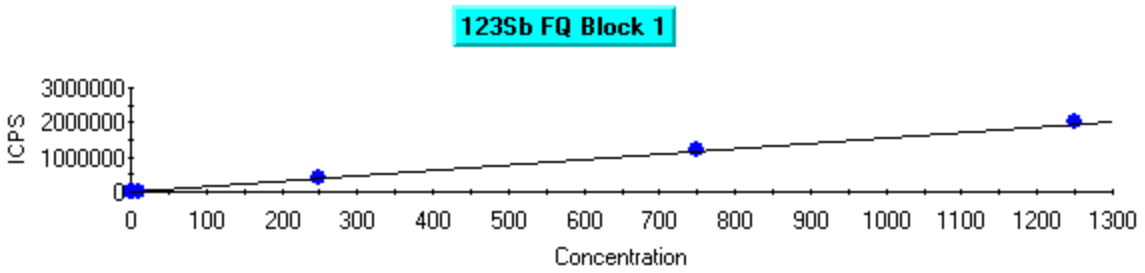
Intercept CPS=94.332771 Intercept Conc=0.156258
Sensitivity=603.697029 Correlation Coeff=0.999826

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.001	0.001	93.67	0.00
STD1	1.000	1.015	0.015	706.86	1.46
STD2	5.000	5.000	0.000	3112.88	0.00
STD3	200.000	201.129	1.129	121515.38	0.56
STD4	600.000	603.486	3.486	364417.33	0.58
STD5	1000.000	972.805	27.195	587373.62	2.72



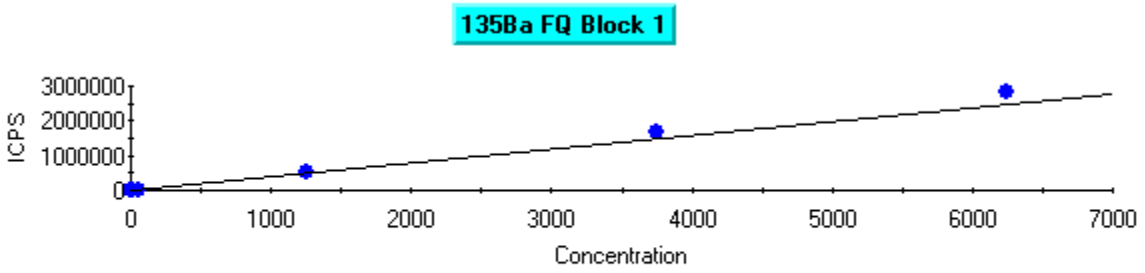
Intercept CPS=943.931198 Intercept Conc=0.472652
Sensitivity=1997.097427 Correlation Coeff=0.999910

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.151	0.151	1244.84	0.00
STD1	2.000	1.748	0.252	4434.09	12.62
STD2	10.000	9.453	0.547	19821.53	5.47
STD3	250.000	248.274	1.726	496772.22	0.69
STD4	750.000	761.016	11.016	1520766.27	1.47
STD5	1250.000	1296.795	46.795	2590769.38	3.74



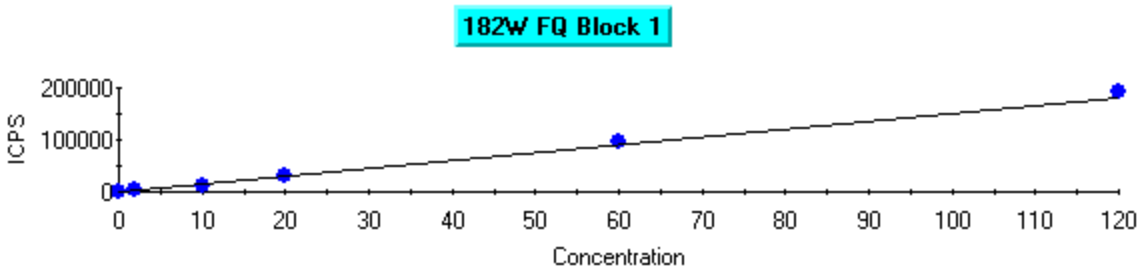
Intercept CPS=758.110078 Intercept Conc=0.483764
Sensitivity=1567.105926 Correlation Coeff=0.999978

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.106	0.106	924.05	0.00
STD1	2.000	1.679	0.321	3389.41	16.05
STD2	10.000	9.640	0.360	15865.73	3.60
STD3	250.000	249.245	0.755	391350.71	0.30
STD4	750.000	769.655	19.655	1206889.18	2.62
STD5	1250.000	1271.988	21.988	1994098.36	1.76



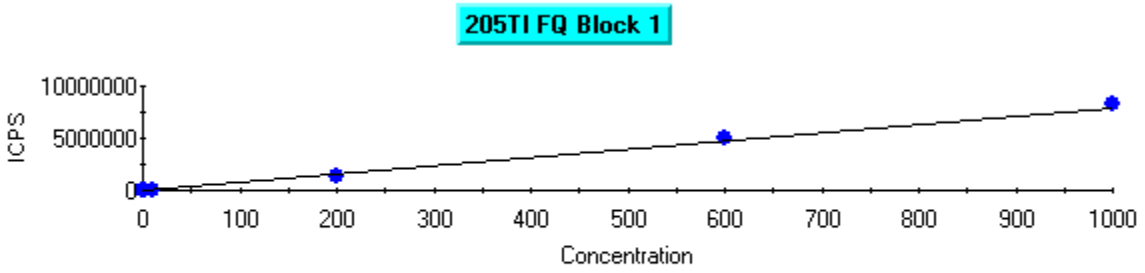
Intercept CPS=91.847451 Intercept Conc=0.230416
Sensitivity=398.615151 Correlation Coeff=0.999712

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.037	0.037	106.68	0.00
STD1	10.000	9.658	0.342	3941.67	3.42
STD2	50.000	49.202	0.798	19704.54	1.60
STD3	1250.000	1240.515	9.485	494579.79	0.76
STD4	3750.000	4173.323	423.323	1663641.55	11.29
STD5	6250.000	7073.618	823.618	2819743.11	13.18



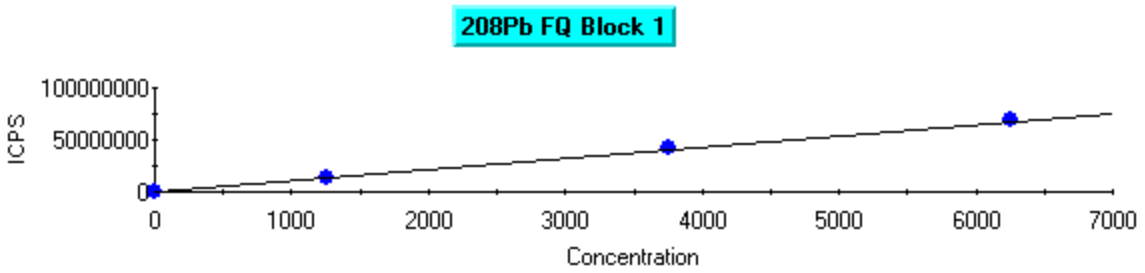
Intercept CPS=175.710247 Intercept Conc=0.117619
Sensitivity=1493.887839 Correlation Coeff=0.999881

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.056	0.056	258.67	0.00
STD1	2.000	1.719	0.281	2743.29	14.06
STD2	10.000	8.520	1.480	12903.35	14.80
STD3	20.000	20.452	0.452	30728.19	2.26
STD4	60.000	63.941	3.941	95696.43	6.57
STD5	120.000	128.212	8.212	191710.47	6.84



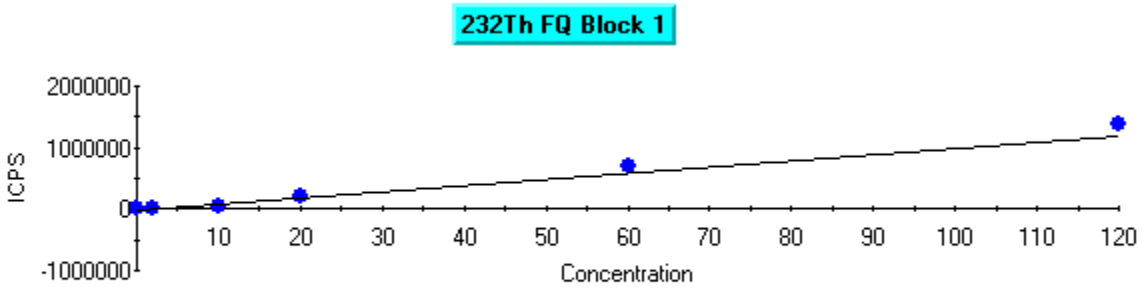
Intercept CPS=1562.715659 Intercept Conc=0.197016
Sensitivity=7931.907878 Correlation Coeff=0.999583

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.036	0.036	1851.18	0.00
STD1	2.000	1.656	0.344	14696.01	17.21
STD2	10.000	8.611	1.389	69860.71	13.89
STD3	200.000	178.704	21.296	1419029.24	10.65
STD4	600.000	631.805	31.805	5012978.28	5.30
STD5	1000.000	1048.386	48.386	8317266.82	4.84



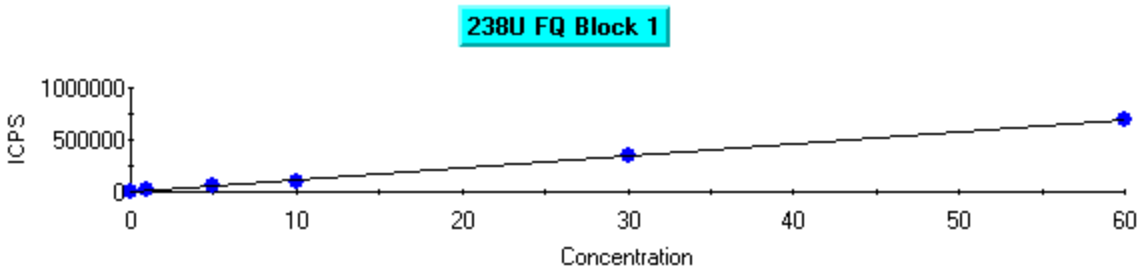
Intercept CPS=936.534687 Intercept Conc=0.087343
Sensitivity=10722.526522 Correlation Coeff=0.999881

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.214	0.214	3226.90	0.00
STD1	1.000	0.915	0.085	10751.84	8.46
STD2	5.000	4.454	0.546	48690.00	10.93
STD3	1250.000	1209.509	40.491	12969928.17	3.24
STD4	3750.000	3909.301	159.301	41918523.40	4.25
STD5	6250.000	6409.012	159.012	68721741.41	2.54



Intercept CPS=-11784.725017 Intercept Conc=-1.181290
Sensitivity=9976.151154 Correlation Coeff=0.998479

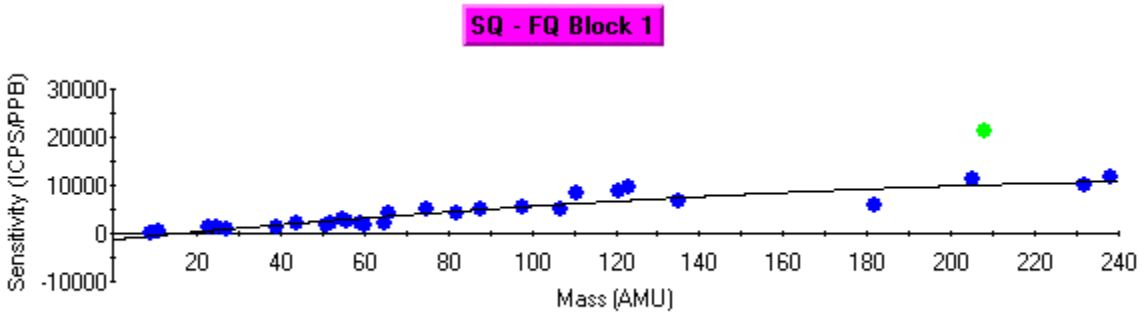
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	2.985	2.985	17991.26	0.00
STD1	2.000	2.004	0.004	8207.98	0.20
STD2	10.000	5.716	4.284	45240.21	42.84
STD3	20.000	20.396	0.396	191689.61	1.98
STD4	60.000	70.480	10.480	691338.65	17.47
STD5	120.000	140.289	20.289	1387759.11	16.91



Intercept CPS=77.921740 Intercept Conc=0.006832
Sensitivity=11404.948698 Correlation Coeff=0.999929

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	78.32	0.00
STD1	1.000	0.982	0.018	11277.05	1.80
STD2	5.000	4.801	0.199	54833.16	3.98
STD3	10.000	9.266	0.734	105759.19	7.34
STD4	30.000	29.969	0.031	341876.72	0.10
STD5	60.000	60.000	0.000	684375.14	0.00

Semi Quant Calibration



Coeff 0=-1261.591468 Coeff 1=82.335330 Coeff 2=-0.133207

Symbol	Mass	RSF	Available	Excluded	Sensitivity Measured	Corrected	Calculated	%Error
9Be	9.01	0.7500	1	1	122.88	163.84	-530.39	-423.7
11B	11.01	0.5800	1	1	108.65	231.20	-371.28	-260.6
23Na	22.99	1.0000	1	1	1109.98	1109.98	560.87	-49.5
25Mg	24.99	0.9800	1	1	113.62	1146.76	712.46	-37.9
27Al	26.98	0.9800	1	1	1017.57	1038.34	862.97	-16.9
39K	38.96	1.0000	1	1	1087.16	1167.99	1744.27	49.3
44Ca	43.96	0.9900	1	1	39.56	1876.23	2100.13	11.9
51V	50.94	0.9900	1	1	1809.10	1831.77	2587.19	41.2

52Cr	51.94	0.9800	1	1	1714.56	2088.76	2655.58	27.1
55Mn	54.94	0.9500	1	1	2619.46	2757.33	2859.71	3.7
56Fe	55.93	0.9600	1	1	2244.77	2554.97	2927.06	14.6
59Co	58.93	0.9300	1	1	2066.34	2221.87	3128.05	40.8
60Ni	59.93	0.9100	1	1	423.57	1779.28	3194.39	79.5
65Cu	64.93	0.9000	1	1	554.25	1992.33	3522.71	76.8
66Zn	65.93	0.3750	1	1	421.44	4041.11	3587.50	-11.2
75As	74.92	0.0700	1	1	362.60	5179.98	4159.38	-19.7
82Se	81.92	0.1000	1	1	37.59	4252.13	4589.18	7.9
88Sr	87.91	0.9600	1	1	3986.76	5030.13	4946.80	-1.7
98Mo	97.91	0.9800	1	1	1237.71	5262.36	5522.63	4.9
107Ag	106.91	0.9300	1	1	2408.79	5044.00	6018.09	19.3
111Cd	110.90	0.5660	1	1	603.70	8293.95	6231.33	-24.9
121Sb	120.90	0.3900	1	1	1997.10	8944.56	6745.88	-24.6
123Sb	122.90	0.3900	1	1	1567.11	9399.35	6845.61	-27.2
135Ba	134.91	0.9100	1	1	398.62	6647.02	7421.60	11.7
182W	181.95	0.9400	1	1	1493.89	6040.45	9309.33	54.1
205Tl	204.97	1.0000	1	1	7931.91	11250.93	10018.34	-11.0
208Pb	207.98	0.9700	0	1	10722.53	21103.76	10100.45	-52.1
232Th	232.04	1.0000	1	1	9976.15	9976.15	10671.24	7.0
238U	238.05	1.0000	1	1	11404.95	11487.66	10789.79	-6.1

Dilution Corrected Concentrations

STD0 10/25/2016 12:59:40 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:00:02	98.784%	0.036	-3.250	4.522	-0.163	3.685	2.568	13.840	98.184%	0.000	0.867	0.015
2	13:00:24	100.634%	-0.028	-3.887	4.111	1.284	3.921	2.057	8.788	98.816%	0.000	1.437	0.042
3	13:00:45	100.582%	-0.109	-5.438	-5.326	0.282	3.089	0.482	3.332	103.000%	0.000	1.358	-0.010
x		100.000%	-0.034	-4.192	1.102	0.468	3.565	1.703	8.655	100.000%	0.000	1.221	0.016
σ		1.053%	0.073	1.125	5.571	0.741	0.429	1.087	5.257	2.617%	0.000	0.309	0.026
%RSD		1.053	216.100	26.840	505.300	158.400	12.030	63.850	60.750	2.617	0.000	25.330	165.900

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:00:02	9.973	0.128	9.046	0.066	0.076	0.005	-0.376	-0.162	0.341	0.090	0.000	0.000
2	13:00:24	9.154	0.073	9.491	0.075	-0.022	0.208	-0.434	-0.511	0.378	-1.258	0.000	0.000
3	13:00:45	9.025	0.133	4.908	0.038	0.092	0.065	-0.019	0.008	0.339	-0.321	0.000	0.000
x		9.384	0.111	7.815	0.060	0.049	0.093	-0.276	-0.222	0.352	-0.496	0.000	0.000
σ		0.514	0.033	2.527	0.019	0.062	0.104	0.225	0.264	0.022	0.691	0.000	0.000
%RSD		5.477	29.840	32.340	32.550	126.200	112.400	81.410	119.200	6.335	139.300	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:00:02	0.024	98.388%	2.670	-0.011	-1.500	0.022	99.474%	0.000	0.103	0.071	0.047	100.193%
2	13:00:24	0.014	100.795%	2.583	0.013	-1.357	0.002	100.302%	0.000	0.183	0.128	-0.005	101.002%
3	13:00:45	0.005	100.817%	2.065	0.001	-1.409	-0.027	100.224%	0.000	0.166	0.118	0.070	98.805%
x		0.014	100.000%	2.439	0.001	-1.422	-0.001	100.000%	0.000	0.151	0.106	0.037	100.000%
σ		0.010	1.396%	0.327	0.012	0.072	0.024	0.457%	0.000	0.042	0.031	0.039	1.111%
%RSD		67.050	1.396	13.410	1209.000	5.076	2219.000	0.457	0.000	27.920	28.810	103.700	1.111

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:00:02	0.056	0.047	0.193	99.435%	0.000	3.256	0.001
2	13:00:24	0.025	0.046	0.212	99.208%	0.000	2.972	-0.001
3	13:00:45	0.086	0.016	0.236	101.357%	0.000	2.726	0.000
x		0.056	0.036	0.214	100.000%	0.000	2.985	0.000
σ		0.030	0.017	0.022	1.181%	0.000	0.265	0.001
%RSD		54.710	47.790	10.190	1.181	0.000	8.893	1861.000

STD1 10/25/2016 01:05:23 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:05:45	105.952%	0.944	42.750	507.100	188.400	45.240	473.100	501.700	102.920%	0.000	5.190	3.791
2	13:06:07	102.944%	1.016	41.920	494.100	180.900	44.510	480.500	485.800	103.109%	0.000	5.255	3.930
3	13:06:28	101.702%	1.031	43.720	491.800	178.800	44.160	473.700	501.500	105.397%	0.000	5.604	3.925
x		103.532%	0.997	42.800	497.600	182.700	44.640	475.700	496.400	103.809%	0.000	5.349	3.882
σ		2.186%	0.046	0.902	8.232	5.045	0.552	4.103	9.140	1.379%	0.000	0.223	0.079

%RSD		2.111	4.651	2.108	1.654	2.761	1.236	0.862	1.841	1.328	0.000	4.160	2.025
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:05:45	9.457	1.689	192.000	0.861	1.641	4.957	21.140	1.587	0.332	2.337	0.000	0.000
2	13:06:07	9.503	1.625	190.500	0.915	1.637	4.494	20.380	2.167	0.279	4.168	0.000	0.000
3	13:06:28	9.174	1.758	186.400	0.889	1.886	5.018	21.110	2.033	0.281	3.722	0.000	0.000
x		9.378	1.691	189.600	0.888	1.721	4.823	20.880	1.929	0.297	3.409	0.000	0.000
σ		0.178	0.067	2.927	0.027	0.143	0.287	0.432	0.304	0.030	0.955	0.000	0.000
%RSD		1.902	3.943	1.544	3.073	8.282	5.942	2.070	15.750	10.210	28.020	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:05:45	4.592	104.223%	9.134	0.926	0.286	0.930	102.455%	0.000	1.680	1.628	9.773	100.029%
2	13:06:07	4.511	103.340%	9.480	1.008	-1.852	0.984	102.379%	0.000	1.765	1.667	9.536	101.603%
3	13:06:28	4.646	102.114%	9.426	1.005	-0.856	1.130	102.305%	0.000	1.797	1.742	9.665	100.308%
x		4.583	103.226%	9.347	0.980	-0.807	1.015	102.380%	0.000	1.748	1.679	9.658	100.646%
σ		0.068	1.059%	0.186	0.046	1.070	0.103	0.075%	0.000	0.061	0.058	0.119	0.840%
%RSD		1.479	1.026	1.992	4.726	132.500	10.170	0.073	0.000	3.465	3.439	1.232	0.835
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	13:05:45	1.750	1.608	0.865	104.627%	0.000	1.990	0.934					
2	13:06:07	1.602	1.635	0.903	100.355%	0.000	2.010	0.990					
3	13:06:28	1.804	1.724	0.978	100.118%	0.000	2.012	1.022					
x		1.719	1.656	0.915	101.700%	0.000	2.004	0.982					
σ		0.105	0.061	0.058	2.538%	0.000	0.013	0.045					
%RSD		6.091	3.677	6.287	2.495	0.000	0.627	4.539					

STD2 10/25/2016 01:11:06 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:11:28	102.102%	5.211	200.400	T 2543.000	927.900	231.400	T 2511.000	2417.000	99.324%	0.000	23.280	19.300
2	13:11:50	101.790%	5.047	213.800	T 2523.000	934.800	225.500	T 2455.000	2445.000	101.721%	0.000	23.170	18.110
3	13:12:12	99.965%	5.000	205.900	T 2398.000	894.700	224.900	T 2450.000	2407.000	101.910%	0.000	22.690	18.330
x		101.286%	5.086	206.700	T 2488.000	919.100	227.300	T 2472.000	2423.000	100.985%	0.000	23.050	18.580
σ		1.154%	0.111	6.725	T 78.910	21.430	3.566	T 34.220	19.960	1.441%	0.000	0.314	0.634
%RSD		1.139	2.173	3.254	T 3.172	2.332	1.569	T 1.384	0.824	1.427	0.000	1.362	3.411
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:11:28	10.080	8.993	T 1002.000	4.768	11.270	24.060	101.400	10.010	0.219	20.040	0.000	0.000
2	13:11:50	10.310	8.980	T 1008.000	4.841	10.690	23.750	102.400	10.150	0.192	20.960	0.000	0.000
3	13:12:12	9.661	9.282	T 978.600	4.457	9.712	23.150	99.930	10.470	0.162	23.240	0.000	0.000
x		10.020	9.085	T 995.900	4.689	10.560	23.650	101.200	10.210	0.191	21.410	0.000	0.000
σ		0.329	0.171	T 15.300	0.204	0.787	0.462	1.232	0.234	0.028	1.646	0.000	0.000
%RSD		3.286	1.877	T 1.536	4.353	7.457	1.953	1.217	2.286	14.940	7.687	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	13:11:28	22.140	101.564%	46.970	5.048	-1.733	4.824	101.746%	0.000	9.559	9.502	48.100	98.655%
2	13:11:50	22.490	101.869%	48.480	5.314	-0.628	4.913	99.931%	0.000	9.556	9.785	49.510	100.572%
3	13:12:12	22.480	100.648%	47.510	4.931	-0.308	5.263	100.695%	0.000	9.242	9.635	50.000	97.732%
x		22.370	101.360%	47.650	5.098	-0.890	5.000	100.791%	0.000	9.453	9.640	49.200	98.986%
σ		0.201	0.635%	0.766	0.196	0.747	0.232	0.911%	0.000	0.182	0.142	0.986	1.449%
%RSD		0.900	0.627	1.608	3.851	84.010	4.637	0.904	0.000	1.925	1.470	2.004	1.464

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:11:28	8.340	8.347	4.425	101.102%	0.000	5.578	4.709
2	13:11:50	8.508	8.833	4.442	99.781%	0.000	5.579	4.815
3	13:12:12	8.711	8.651	4.494	99.189%	0.000	5.991	4.879
x		8.520	8.611	4.454	100.024%	0.000	5.716	4.801
σ		0.186	0.245	0.036	0.979%	0.000	0.238	0.086
%RSD		2.182	2.849	0.805	0.979	0.000	4.164	1.792

STD3 10/25/2016 01:16:50 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:12	104.044%	632.300	245.900	T 9848.000	T 29620.000	T 30600.000	T 10090.000	29490.000	104.504%	0.000	T 1206.000	372.300
2	13:17:34	100.759%	627.900	246.800	T 10180.000	T 30410.000	T 31050.000	T 10120.000	29570.000	100.203%	0.000	T 1238.000	382.300
3	13:17:56	100.924%	629.600	251.900	T 9949.000	T 30100.000	T 30580.000	T 9952.000	29430.000	101.896%	0.000	T 1215.000	376.200
x		101.909%	629.900	248.200	T 9994.000	T 30040.000	T 30750.000	T 10050.000	29500.000	102.201%	0.000	T 1219.000	376.900
σ		1.851%	2.213	3.215	T 171.900	T 400.700	T 266.300	T 89.260	69.380	2.166%	0.000	T 16.430	5.064
%RSD		1.816	0.351	1.295	T 1.720	T 1.334	T 0.866	T 0.888	0.235	2.120	0.000	T 1.348	1.343

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:12	19.360	T 1247.000	T 30000.000	472.700	1235.000	1219.000	1273.000	198.400	-0.637	209.600	0.000	0.000
2	13:17:34	17.580	T 1276.000	T 30280.000	480.100	1259.000	1176.000	1248.000	200.200	-0.607	203.200	0.000	0.000
3	13:17:56	18.850	T 1257.000	T 30020.000	473.600	1233.000	1184.000	1252.000	202.700	-0.796	208.300	0.000	0.000
x		18.600	T 1260.000	T 30100.000	475.500	1242.000	1193.000	1258.000	200.400	-0.680	207.000	0.000	0.000
σ		0.918	T 14.360	T 159.500	4.025	14.320	22.740	13.470	2.156	0.102	3.368	0.000	0.000
%RSD		4.934	T 1.140	T 0.530	0.847	1.153	1.906	1.071	1.076	14.980	1.627	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:12	185.900	102.871%	1173.000	99.840	6.679	201.300	100.472%	0.000	249.200	250.200	1249.000	99.807%
2	13:17:34	181.300	101.536%	1227.000	98.700	-2.943	199.500	101.407%	0.000	245.200	246.200	1231.000	100.186%
3	13:17:56	181.100	100.757%	1258.000	101.000	14.330	202.700	100.342%	0.000	250.500	251.300	1241.000	99.478%
x		182.800	101.722%	1219.000	99.840	6.022	201.100	100.740%	0.000	248.300	249.200	1241.000	99.823%
σ		2.759	1.069%	42.790	1.142	8.656	1.601	0.581%	0.000	2.781	2.671	9.073	0.355%
%RSD		1.510	1.051	3.510	1.143	143.700	0.796	0.576	0.000	1.120	1.071	0.731	0.355

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:12	20.180	177.600	T 1206.000	100.109%	0.000	19.050	9.287
2	13:17:34	20.370	180.800	T 1229.000	98.816%	0.000	20.790	9.368
3	13:17:56	20.810	177.700	T 1194.000	101.749%	0.000	21.340	9.145

x		20.450	178.700	↓1210.000	100.225%	0.000	20.400	9.266
σ		0.320	1.823	↓17.710	1.470%	0.000	1.195	0.113
%RSD		1.566	1.020	↓1.464	1.466	0.000	5.859	1.218

STD4 10/25/2016 01:22:34 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:55	111.660%	1799.000	701.600	↓30480.000	↓90320.000	↓93720.000	↓31730.000	↓97200.000	105.354%	0.000	↓3902.000	↓1237.000
2	13:23:17	105.374%	1867.000	775.000	↓30470.000	↓91210.000	↓92700.000	↓31020.000	↓96110.000	107.061%	0.000	↓3817.000	↓1225.000
3	13:23:39	105.227%	1844.000	753.700	↓29860.000	↓90590.000	↓92880.000	↓31270.000	↓95640.000	107.454%	0.000	↓3770.000	↓1205.000
x		107.421%	1837.000	743.400	↓30270.000	↓90700.000	↓93100.000	↓31340.000	↓96320.000	106.623%	0.000	↓3830.000	↓1222.000
σ		3.672%	34.910	37.750	↓355.000	↓454.400	↓542.400	↓359.400	↓799.500	1.117%	0.000	↓66.670	↓16.310
%RSD		3.419	1.901	5.078	↓1.173	↓0.501	↓0.583	↓1.147	↓0.830	1.047	0.000	↓1.741	↓1.334

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:55	0.027	↓3932.000	↓92910.000	↓1560.000	3660.000	↓3854.000	3726.000	598.600	-2.382	607.700	0.000	0.000
2	13:23:17	3.242	↓3941.000	↓92100.000	↓1555.000	3729.000	↓3935.000	3724.000	603.900	-2.418	607.200	0.000	0.000
3	13:23:39	0.085	↓3839.000	↓90110.000	↓1541.000	3616.000	3560.000	3698.000	599.100	-2.352	611.400	0.000	0.000
x		1.118	↓3904.000	↓91710.000	↓1552.000	3668.000	↓3783.000	3716.000	600.500	-2.384	608.800	0.000	0.000
σ		1.839	↓56.330	↓1446.000	↓9.765	56.710	↓197.200	15.410	2.963	0.033	2.277	0.000	0.000
%RSD		164.500	↓1.443	↓1.576	↓0.629	1.546	↓5.214	0.415	0.493	1.379	0.374	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:55	↓607.700	102.790%	↓4048.000	300.500	7.038	601.400	101.805%	0.000	756.400	762.500	3866.000	101.503%
2	13:23:17	↓617.000	101.885%	↓4219.000	299.700	18.930	607.500	101.941%	0.000	760.600	769.700	↓4305.000	100.072%
3	13:23:39	↓619.500	102.185%	↓4191.000	301.600	24.590	601.600	101.152%	0.000	766.100	776.800	↓4349.000	101.116%
x		↓614.700	102.286%	↓4153.000	300.600	16.850	603.500	101.633%	0.000	761.000	769.700	↓4173.000	100.897%
σ		↓6.198	0.461%	↓91.870	0.935	8.958	3.444	0.422%	0.000	4.867	7.140	↓267.000	0.740%
%RSD		↓1.008	0.450	↓2.212	0.311	53.160	0.571	0.415	0.000	0.640	0.928	↓6.398	0.734

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:55	62.010	↓633.100	↓3924.000	97.432%	0.000	68.700	30.210
2	13:23:17	64.660	↓624.200	↓3858.000	99.627%	0.000	70.300	29.850
3	13:23:39	65.150	↓638.100	↓3947.000	98.069%	0.000	72.440	29.850
x		63.940	↓631.800	↓3909.000	98.376%	0.000	70.480	29.970
σ		1.694	↓7.053	↓46.260	1.129%	0.000	1.875	0.208
%RSD		2.649	↓1.116	↓1.183	1.148	0.000	2.660	0.694

STD5 10/25/2016 01:28:16 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:28:38	105.548%	2919.000	1187.000	T 48940.000	TM 150500.000	TM 155100.000	TM 52440.000	TM 161400.000	105.390%	0.000	TM 6368.000	TM 2049.000
2	13:29:00	108.384%	2873.000	1206.000	TM 50070.000	TM 151200.000	TM 153700.000	TM 51810.000	TM 162500.000	106.218%	0.000	TM 6380.000	TM 2025.000
3	13:29:22	104.569%	2938.000	1229.000	T 47750.000	T 148200.000	TM 150000.000	TM 51480.000	TM 160900.000	108.544%	0.000	TM 6314.000	TM 2028.000
x		106.167%	2910.000	1207.000	TM 48920.000	TM 150000.000	TM 152900.000	TM 51910.000	TM 161600.000	106.717%	0.000	TM 6354.000	TM 2034.000
σ		1.981%	33.340	21.100	TM 1160.000	TM 1545.000	TM 2608.000	TM 487.000	TM 797.500	1.635%	0.000	TM 34.880	TM 12.910
%RSD		1.866	1.146	1.747	TM 2.370	TM 1.031	TM 1.706	TM 0.938	TM 0.493	1.532	0.000	TM 0.549	TM 0.635

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:28:38	11.490	TM 6548.000	TM 152600.000	TM 2578.000	TM 6548.000	TM 6260.000	TM 6328.000	971.200	-3.988	940.600	0.000	0.000
2	13:29:00	-2.705	TM 6490.000	TM 153000.000	TM 2585.000	TM 6485.000	TM 6256.000	TM 6431.000	996.700	-4.050	954.100	0.000	0.000
3	13:29:22	-4.847	TM 6387.000	T 149500.000	TM 2522.000	TM 6367.000	TM 6293.000	TM 6399.000	986.800	-3.871	945.500	0.000	0.000
x		1.311	TM 6475.000	TM 151700.000	TM 2562.000	TM 6467.000	TM 6270.000	TM 6386.000	984.900	-3.969	946.700	0.000	0.000
σ		8.876	TM 81.470	TM 1929.000	TM 34.570	TM 91.900	TM 20.090	TM 52.720	12.860	0.091	6.812	0.000	0.000
%RSD		677.000	TM 1.258	TM 1.272	TM 1.350	TM 1.421	TM 0.321	TM 0.826	1.306	2.286	0.720	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:28:38	TM 1015.000	101.776%	TM 6916.000	481.500	39.060	962.000	103.652%	T 0.000	1245.000	M 1254.000	TM 6943.000	100.637%
2	13:29:00	TM 1016.000	99.826%	TM 7207.000	492.900	36.140	982.100	102.673%	T 0.000	M 1262.000	M 1281.000	TM 7138.000	102.025%
3	13:29:22	TM 1012.000	101.144%	TM 7124.000	485.800	45.870	974.300	102.974%	T 0.000	TM 1384.000	M 1282.000	TM 7140.000	102.161%
x		TM 1014.000	100.915%	TM 7082.000	486.700	40.360	972.800	103.100%	T 0.000	TM 1297.000	M 1272.000	TM 7074.000	101.608%
σ		TM 2.504	0.995%	TM 150.100	5.787	4.991	10.110	0.502%	T 0.000	TM 76.230	M 15.890	TM 112.800	0.844%
%RSD		TM 0.247	0.986	TM 2.120	1.189	12.370	1.040	0.486	T 0.000	TM 5.879	M 1.249	TM 1.595	0.830

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:28:38	M 126.600	TM 1047.000	TM 6419.000	98.843%	0.000	M 137.800	M 60.000
2	13:29:00	M 128.000	TM 1055.000	TM 6424.000	99.754%	0.000	M 141.800	60.000
3	13:29:22	M 130.100	TM 1043.000	TM 6384.000	101.184%	0.000	M 141.200	60.000
x		M 128.200	TM 1048.000	TM 6409.000	99.927%	0.000	M 140.300	M 60.000
σ		M 1.785	TM 6.066	TM 22.100	1.180%	0.000	M 2.163	M 0.001
%RSD		M 1.392	TM 0.579	TM 0.345	1.181	0.000	M 1.542	M 0.002

ICV 10/25/2016 01:34:00 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:34:22	98.835%	318.200	138.400	T 5263.000	T 15130.000	T 15810.000	T 5066.000	14620.000	98.235%	0.000	587.400	190.700
2	13:34:43	99.199%	317.500	136.200	T 5063.000	T 14390.000	T 15350.000	T 4838.000	14030.000	100.072%	0.000	565.800	182.200
3	13:35:05	97.242%	319.600	139.500	T 5229.000	T 15020.000	T 15720.000	T 5071.000	14800.000	96.979%	0.000	588.600	190.200
x		98.425%	101.892%	110.436%	T 103.698%	T 98.969%	T 104.178%	T 99.832%	96.557%	98.429%	0.000	92.893%	93.832%
σ		1.041%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	1.556%	0.000	n/a	n/a
%RSD		1.058	0.342	1.230	T 2.071	T 2.693	T 1.578	T 2.670	2.766	1.581	0.000	2.209	2.542

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:34:22	12.620	590.800	T 15180.000	241.200	624.700	597.300	627.500	100.200	-0.206	107.100	0.000	0.000
2	13:34:43	10.450	570.400	T 14500.000	235.200	624.300	605.300	636.600	99.030	-0.104	104.200	0.000	0.000
3	13:35:05	13.540	592.300	T 15280.000	244.500	652.100	611.700	630.800	102.100	-0.225	104.600	0.000	0.000
x		12.200	93.523%	T 99.927%	96.131%	101.393%	96.763%	101.065%	100.451%	-0.178	105.278%	0.000	0.000
σ		1.585	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.065	n/a	0.000	0.000
%RSD		12.990	2.091	T 2.830	1.953	2.512	1.198	0.732	1.550	36.560	1.498	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:34:22	88.840	98.698%	284.200	48.550	2.120	100.100	97.983%	0.000	125.000	125.500	616.700	95.807%
2	13:34:43	89.990	98.349%	290.300	48.640	-0.890	101.000	96.807%	0.000	125.500	127.000	617.100	97.088%
3	13:35:05	88.730	97.652%	298.200	49.350	-1.890	100.800	97.531%	0.000	126.400	127.200	627.500	95.736%
x		89.180	98.233%	93.082%	97.691%	-0.220	100.608%	97.440%	0.000	125.600	101.238%	99.267%	96.210%
σ		0.697	0.532%	n/a	n/a	2.087	n/a	0.593%	0.000	0.723	n/a	n/a	0.761%
%RSD		0.781	0.542	2.411	0.897	947.700	0.457	0.609	0.000	0.575	0.708	0.983	0.791
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	13:34:22	22.060	87.020	T 595.600	98.543%	0.000	17.170	8.868					
2	13:34:43	23.200	90.050	T 599.900	96.348%	0.000	18.850	9.151					
3	13:35:05	23.700	89.720	T 598.300	98.388%	0.000	19.590	9.074					
x		114.927%	88.932%	T 95.670%	97.760%	0.000	92.698%	90.310%					
σ		n/a	n/a	T n/a	1.225%	0.000	n/a	n/a					
%RSD		3.659	1.868	T 0.359	1.253	0.000	6.683	1.616					

ICVL 10/25/2016 01:39:44 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:40:06	105.186%	0.933	47.840	489.000	186.400	48.230	464.100	461.000	100.559%	0.000	5.147	3.579
2	13:40:28	100.612%	1.084	47.080	508.200	194.600	49.710	468.000	488.600	97.836%	0.000	5.310	3.808
3	13:40:49	100.903%	1.383	48.510	495.200	186.500	52.890	467.700	488.900	99.172%	0.000	5.723	3.698
x		102.234%	113.321%	119.525%	99.491%	94.585%	100.555%	93.317%	95.902%	99.189%	0.000	107.865%	92.373%
σ		2.561%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.362%	0.000	n/a	n/a
%RSD		2.505	20.210	1.490	1.970	2.486	4.731	0.456	3.335	1.373	0.000	5.507	3.096
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:40:06	8.312	1.750	182.600	1.008	1.992	4.953	19.980	1.817	0.270	3.279	0.000	0.000
2	13:40:28	8.032	1.837	194.500	1.158	2.020	4.928	19.630	1.805	0.293	3.866	0.000	0.000
3	13:40:49	7.366	2.099	195.200	1.097	1.965	4.867	20.390	2.042	0.274	3.662	0.000	0.000
x		7.903	94.768%	95.360%	108.763%	99.627%	98.317%	99.989%	94.395%	0.279	90.058%	0.000	0.000
σ		0.486	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.013	n/a	0.000	0.000
%RSD		6.145	9.575	3.712	6.902	1.389	0.895	1.914	7.070	4.481	8.281	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:40:06	4.453	102.370%	9.885	1.016	-1.153	0.997	100.057%	0.000	1.872	1.929	9.587	97.166%
2	13:40:28	4.471	101.155%	10.170	1.063	-1.916	1.039	99.856%	0.000	2.194	2.068	9.481	97.510%

3	13:40:49	4.383	101.040%	10.290	1.026	-0.992	0.843	99.302%	0.000	2.059	2.069	9.674	97.052%
x		88.715%	101.522%	101.138%	103.485%	-1.354	95.979%	99.738%	0.000	2.042	101.084%	95.804%	97.243%
σ		n/a	0.737%	n/a	n/a	0.493	n/a	0.391%	0.000	0.162	n/a	n/a	0.238%
%RSD		1.058	0.726	2.053	2.438	36.450	10.750	0.392	0.000	7.932	3.992	1.009	0.245

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:40:06	1.825	1.731	1.128	95.866%	0.000	2.137	0.945
2	13:40:28	1.540	1.722	1.195	100.127%	0.000	2.026	0.929
3	13:40:49	1.979	1.781	1.253	98.188%	0.000	2.116	0.959
x		89.083%	87.231%	119.200%	98.060%	0.000	104.648%	94.407%
σ		n/a	n/a	n/a	2.134%	0.000	n/a	n/a
%RSD		12.500	1.805	5.233	2.176	0.000	2.820	1.595

ICBIS 10/25/2016 01:45:28 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:45:49	109.611%	-0.133	-3.456	2.540	-8.045	-4.267	-1.533	-1.555	101.198%	0.000	0.812	0.069
2	13:46:11	107.766%	-0.113	-2.866	-1.962	-6.885	-4.648	-3.348	-5.716	104.983%	0.000	0.541	0.054
3	13:46:33	106.345%	-0.036	-3.899	-1.625	-7.275	-4.591	-3.837	-1.980	104.104%	0.000	0.272	0.048
x		107.907%	-0.094	-3.407	-0.349	-7.401	-4.502	-2.906	-3.084	103.428%	0.000	0.542	0.057
σ		1.638%	0.051	0.518	2.508	0.591	0.206	1.214	2.289	1.981%	0.000	0.270	0.011
%RSD		1.518	54.550	15.210	718.300	7.978	4.569	41.760	74.240	1.915	0.000	49.800	19.090

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:45:49	10.860	-0.087	1.916	-0.041	-0.239	-0.184	-0.219	-0.618	0.438	-1.362	0.000	0.000
2	13:46:11	11.040	-0.071	-0.745	-0.057	-0.197	-0.003	-0.510	-0.242	0.392	-0.127	0.000	0.000
3	13:46:33	11.440	-0.107	-0.251	-0.061	-0.252	-0.197	-0.503	-0.115	0.395	0.742	0.000	0.000
x		11.110	-0.088	0.307	-0.053	-0.229	-0.128	-0.411	-0.325	0.408	-0.249	0.000	0.000
σ		0.298	0.018	1.415	0.010	0.029	0.109	0.166	0.262	0.026	1.057	0.000	0.000
%RSD		2.681	20.600	461.200	19.760	12.650	84.780	40.330	80.510	6.298	424.400	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:45:49	-0.013	105.242%	-0.351	-0.012	-0.944	-0.078	101.856%	0.000	-0.219	-0.210	-0.120	100.930%
2	13:46:11	-0.018	105.803%	-0.363	-0.014	-1.324	-0.042	102.827%	0.000	-0.165	-0.175	-0.194	100.630%
3	13:46:33	-0.014	103.700%	-0.246	-0.018	-1.552	-0.025	103.207%	0.000	-0.179	-0.176	-0.097	96.551%
x		-0.015	104.915%	-0.320	-0.014	-1.273	-0.048	102.630%	0.000	-0.188	-0.187	-0.137	99.370%
σ		0.003	1.089%	0.065	0.003	0.307	0.027	0.696%	0.000	0.028	0.020	0.051	2.446%
%RSD		17.380	1.038	20.220	21.850	24.140	55.930	0.679	0.000	15.010	10.600	37.130	2.462

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:45:49	0.015	-0.061	0.040	99.991%	0.000	2.525	-0.004
2	13:46:11	0.035	-0.083	0.028	98.998%	0.000	2.520	-0.005
3	13:46:33	-0.010	-0.071	0.011	102.323%	0.000	2.349	-0.002
x		0.013	-0.072	0.026	100.437%	0.000	2.464	-0.003
σ		0.023	0.011	0.015	1.707%	0.000	0.100	0.002

%RSD	170.000	15.080	55.990	1.699	0.000	4.062	44.830	

ICSA 10/25/2016 01:51:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:51:32	113.141%	-0.098	-4.852	TM 95310.000	T 95800.000	T 98860.000	TM 98810.000	T 101300.000	117.712%	0.000	0.855	1.198
2	13:51:54	109.820%	-0.059	-4.229	TM 95270.000	T 96200.000	T 99150.000	TM 97730.000	T 101500.000	119.407%	0.000	1.238	1.083
3	13:52:16	108.989%	-0.020	-3.782	TM 93530.000	T 94180.000	T 97170.000	TM 97470.000	T 100300.000	121.939%	0.000	0.567	1.140
x		110.650%	-1.#IO%	-1.#IO%	TM 94.703%	T 95.394%	T 98.393%	TM 98.004%	T 101.073%	119.686%	0.000	1.#IO%	1.#IO%
σ		2.197%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	2.127%	0.000	n/a	n/a
%RSD		1.985	65.680	12.530	TM 1.074	T 1.121	T 1.086	TM 0.727	T 0.645	1.777	0.000	37.980	5.046

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:51:32	3.907	0.054	T 94960.000	-0.015	0.211	0.854	-1.630	0.001	0.303	0.237	0.000	0.000
2	13:51:54	3.036	0.077	T 96160.000	-0.018	0.154	0.758	-1.820	-0.323	0.333	-0.013	0.000	0.000
3	13:52:16	4.079	0.038	T 93640.000	0.006	0.212	0.900	-1.529	-0.145	0.325	-0.754	0.000	0.000
x		3.674	1.#IO%	T 94.918%	-1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	0.320	-1.#IO%	0.000	0.000
σ		0.559	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.016	n/a	0.000	0.000
%RSD		15.220	35.500	T 1.325	148.300	17.240	8.699	8.914	104.100	4.844	291.800	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:51:32	0.618	112.494%	T 2018.000	0.082	5.325	0.245	110.232%	0.000	-0.204	-0.237	0.009	109.006%
2	13:51:54	0.631	111.736%	T 2123.000	0.072	6.521	0.072	112.934%	0.000	-0.130	-0.183	0.047	110.746%
3	13:52:16	0.630	114.589%	T 2058.000	0.072	5.861	0.296	114.926%	0.000	-0.195	-0.190	-0.078	112.931%
x		1.#IO%	112.940%	T 103.318%	1.#IO%	5.902	1.#IO%	112.697%	0.000	-0.177	-1.#IO%	-1.#IO%	110.894%
σ		n/a	1.478%	T n/a	n/a	0.599	n/a	2.356%	0.000	0.040	n/a	n/a	1.967%
%RSD		1.102	1.309	T 2.548	7.538	10.150	57.540	2.091	0.000	22.840	14.410	879.100	1.774

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:51:32	0.199	-0.090	0.235	103.051%	0.000	2.667	-0.002
2	13:51:54	0.266	-0.081	0.207	108.181%	0.000	2.506	-0.004
3	13:52:16	0.241	-0.087	0.232	107.361%	0.000	2.335	-0.004
x		1.#IO%	-1.#IO%	1.#IO%	106.198%	0.000	1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	2.756%	0.000	n/a	n/a
%RSD		14.510	5.241	6.909	2.595	0.000	6.635	29.640

ICSAB 10/25/2016 01:56:53 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:57:14	102.818%	24.070	414.600	TM 96750.000	T 95630.000	T 97970.000	TM 97520.000	T 102600.000	110.288%	0.000	22.460	47.010
2	13:57:36	102.890%	24.330	390.900	TM 94530.000	T 94390.000	T 96020.000	TM 97600.000	T 101900.000	113.087%	0.000	21.570	46.760
3	13:57:58	101.707%	23.980	413.300	TM 95740.000	T 95000.000	T 96650.000	TM 97510.000	T 101200.000	113.938%	0.000	22.970	46.840
x		102.472%	96.509%	101.573%	TM 95.673%	T 95.005%	T 96.878%	TM 97.545%	T 101.892%	112.438%	0.000	89.328%	93.738%
σ		0.663%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.910%	0.000	n/a	n/a
%RSD		0.647	0.762	3.280	TM 1.159	T 0.656	T 1.027	TM 0.048	T 0.723	1.698	0.000	3.171	0.266

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:57:14	6.343	23.120	T 96290.000	22.840	22.590	45.930	43.130	44.160	-0.162	111.200	0.000	0.000
2	13:57:36	6.202	23.130	T 96580.000	23.150	23.820	45.310	42.950	44.270	-0.101	109.100	0.000	0.000
3	13:57:58	5.399	22.940	T 96840.000	22.910	22.310	43.860	42.990	43.000	-0.099	109.600	0.000	0.000
x		5.981	92.251%	T 96.570%	91.868%	91.637%	90.071%	86.045%	97.354%	-0.121	87.978%	0.000	0.000
σ		0.509	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.036	n/a	0.000	0.000
%RSD		8.511	0.452	T 0.282	0.707	3.501	2.357	0.217	1.602	29.810	0.998	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:57:14	0.609	108.993%	T 2042.000	23.750	6.971	22.490	107.621%	0.000	45.470	46.640	245.700	107.882%
2	13:57:36	0.593	107.826%	T 2095.000	23.610	5.623	22.890	110.515%	0.000	46.300	46.900	244.200	110.531%
3	13:57:58	0.615	111.731%	T 2087.000	23.040	6.296	23.750	112.841%	0.000	46.460	47.090	247.600	113.110%
x		0.605	109.517%	T 103.732%	93.867%	6.297	92.175%	110.325%	0.000	46.080	93.753%	98.340%	110.508%
σ		0.011	2.004%	T n/a	n/a	0.674	n/a	2.615%	0.000	0.530	n/a	n/a	2.614%
%RSD		1.842	1.830	T 1.369	1.618	10.700	2.788	2.370	0.000	1.150	0.474	0.708	2.366

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:57:14	19.560	21.940	22.260	105.302%	0.000	20.600	10.280
2	13:57:36	19.470	22.280	22.380	107.151%	0.000	21.610	10.350
3	13:57:58	19.500	22.240	22.670	108.546%	0.000	22.530	10.450
x		97.544%	88.617%	89.748%	106.999%	0.000	107.901%	103.595%
σ		n/a	n/a	n/a	1.627%	0.000	n/a	n/a
%RSD		0.217	0.856	0.944	1.521	0.000	4.492	0.841

CCV 10/25/2016 02:02:37 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:02:58	93.503%	621.600	238.300	T 9857.000	T 29410.000	T 30180.000	T 9812.000	T 30220.000	93.233%	0.000	T 1172.000	365.300
2	14:03:20	90.295%	641.300	248.900	T 9752.000	T 29140.000	T 29610.000	T 9705.000	28430.000	92.739%	0.000	T 1173.000	362.600
3	14:03:42	89.190%	623.900	248.400	T 9981.000	T 29240.000	T 30090.000	T 9875.000	29040.000	90.496%	0.000	T 1203.000	368.200
x		90.996%	100.626%	98.081%	T 98.634%	T 97.543%	T 99.877%	T 97.971%	T 97.434%	92.156%	0.000	T 94.617%	91.349%
σ		2.241%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.458%	0.000	T n/a	n/a
%RSD		2.462	1.711	2.433	T 1.166	T 0.459	T 1.027	T 0.877	T 3.120	1.582	0.000	T 1.483	0.767

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:02:58	18.320	T 1217.000	T 29340.000	467.600	1233.000	1140.000	1213.000	197.800	-0.783	207.200	0.000	0.000
2	14:03:20	19.520	T 1238.000	T 29650.000	459.900	1200.000	1099.000	1177.000	193.200	-0.692	198.500	0.000	0.000
3	14:03:42	20.080	T 1247.000	T 29910.000	471.300	1218.000	1119.000	1198.000	192.000	-0.638	201.500	0.000	0.000
x		19.310	T 98.726%	T 98.772%	93.251%	97.359%	89.548%	95.660%	97.164%	-0.704	101.198%	0.000	0.000
σ		0.900	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.073	n/a	0.000	0.000
%RSD		4.660	T 1.238	T 0.973	1.256	1.389	1.856	1.534	1.558	10.400	2.187	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:02:58	179.400	95.186%	1171.000	98.640	3.502	200.200	94.303%	0.000	244.100	249.300	1246.000	95.349%
2	14:03:20	175.300	95.458%	1189.000	96.610	16.150	193.200	96.239%	0.000	242.500	243.700	1221.000	93.990%
3	14:03:42	176.600	94.826%	1214.000	97.950	5.595	199.300	93.883%	0.000	246.900	249.800	1245.000	95.149%
x		177.100	95.157%	95.316%	97.732%	8.417	98.776%	94.808%	0.000	244.500	99.033%	98.959%	94.830%
σ		2.112	0.317%	n/a	n/a	6.782	n/a	1.257%	0.000	2.264	n/a	n/a	0.734%
%RSD		1.193	0.333	1.827	1.057	80.570	1.920	1.326	0.000	0.926	1.373	1.138	0.774

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:02:58	19.500	173.200	T 1180.000	98.133%	0.000	17.640	9.045
2	14:03:20	20.290	177.400	T 1219.000	96.758%	0.000	19.350	9.367
3	14:03:42	20.920	172.400	T 1171.000	99.317%	0.000	20.060	9.170
x		101.176%	87.172%	T 95.203%	98.069%	0.000	95.077%	91.940%
σ		n/a	n/a	T n/a	1.281%	0.000	n/a	n/a
%RSD		3.523	1.521	T 2.162	1.306	0.000	6.549	1.765

CCB 10/25/2016 02:08:20 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:08:42	102.218%	-0.030	-4.928	32.690	23.610	25.320	19.880	26.750	94.038%	0.000	0.594	0.043
2	14:09:04	97.393%	0.060	-4.104	21.190	22.380	23.400	17.140	24.160	95.679%	0.000	1.236	0.075
3	14:09:25	100.585%	0.154	-3.379	22.410	17.000	19.250	15.350	20.910	95.193%	0.000	0.926	-0.048
x		100.065%	0.061	-4.137	25.430	21.000	22.660	17.460	23.940	94.970%	0.000	0.919	0.023
σ		2.454%	0.092	0.775	6.319	3.516	3.102	2.281	2.925	0.843%	0.000	0.321	0.064
%RSD		2.452	150.600	18.740	24.850	16.750	13.690	13.070	12.220	0.887	0.000	34.970	276.500

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:08:42	9.969	0.173	32.510	0.076	0.056	0.110	-0.427	-0.256	0.352	-1.071	0.000	0.000
2	14:09:04	9.064	0.086	30.040	0.065	0.062	-0.007	-0.446	-0.378	0.377	-1.599	0.000	0.000
3	14:09:25	9.848	0.137	23.380	0.076	0.064	0.212	-0.336	-0.360	0.360	-0.558	0.000	0.000
x		9.627	0.132	28.650	0.072	0.061	0.105	-0.403	-0.331	0.363	-1.076	0.000	0.000
σ		0.491	0.043	4.721	0.006	0.004	0.109	0.059	0.066	0.013	0.521	0.000	0.000
%RSD		5.103	32.930	16.480	8.528	6.713	104.200	14.620	19.920	3.540	48.400	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:08:42	0.011	99.090%	2.154	0.013	-0.888	-0.039	95.839%	0.000	-0.070	-0.063	0.215	96.065%
2	14:09:04	0.026	98.333%	2.356	0.004	-0.724	-0.010	98.337%	0.000	0.004	0.006	0.369	96.902%

3	14:09:25	0.036	97.707%	1.953	0.008	-1.152	-0.011	97.303%	0.000	0.067	0.021	0.169	97.653%
x		0.024	98.377%	2.154	0.008	-0.921	-0.020	97.160%	0.000	0.000	-0.012	0.251	96.873%
σ		0.013	0.693%	0.202	0.005	0.216	0.016	1.255%	0.000	0.069	0.045	0.105	0.795%
%RSD		52.510	0.704	9.362	56.960	23.440	81.140	1.292	0.000	14960.000	384.700	41.760	0.820

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:08:42	0.036	0.019	0.284	98.133%	0.000	2.404	0.001
2	14:09:04	0.014	-0.009	0.264	97.659%	0.000	2.289	-0.002
3	14:09:25	-0.005	0.018	0.304	99.526%	0.000	2.204	-0.001
x		0.015	0.010	0.284	98.440%	0.000	2.299	-0.001
σ		0.020	0.016	0.020	0.970%	0.000	0.100	0.001
%RSD		134.800	164.200	7.093	0.986	0.000	4.368	221.900

MB 200-110491/1-A 10/25/2016 02:14:02 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:24	106.564%	-0.170	-4.998	85.430	-8.687	7.295	10.950	19.620	98.569%	0.000	0.677	0.370
2	14:14:46	101.730%	-0.170	-4.166	82.420	-7.699	7.079	10.670	18.150	98.373%	0.000	0.773	0.381
3	14:15:08	99.944%	-0.170	-4.100	96.550	-8.841	8.473	12.650	14.900	97.291%	0.000	0.316	0.413
x		102.746%	-0.170	-4.421	88.130	-8.409	7.616	11.430	17.560	98.078%	0.000	0.589	0.388
σ		3.425%	0.000	0.500	7.442	0.620	0.750	1.070	2.414	0.688%	0.000	0.241	0.023
%RSD		3.334	0.000	11.320	8.444	7.371	9.851	9.363	13.750	0.702	0.000	40.930	5.814

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:24	5.478	0.012	3.675	-0.047	0.410	-0.009	-0.270	-0.064	0.175	0.634	0.000	0.000
2	14:14:46	5.511	-0.047	4.751	-0.023	0.244	-0.077	-0.461	0.086	0.161	0.285	0.000	0.000
3	14:15:08	5.642	-0.005	4.145	-0.049	0.226	0.075	-0.111	-0.461	0.213	-1.732	0.000	0.000
x		5.544	-0.013	4.190	-0.040	0.293	-0.003	-0.281	-0.146	0.183	-0.271	0.000	0.000
σ		0.087	0.031	0.539	0.015	0.102	0.076	0.176	0.283	0.027	1.277	0.000	0.000
%RSD		1.564	227.600	12.870	37.400	34.710	2175.000	62.600	193.500	14.580	470.900	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:24	0.055	102.223%	-0.560	-0.016	-1.196	-0.059	100.427%	0.000	-0.330	-0.333	-0.218	98.955%
2	14:14:46	0.044	105.269%	-0.459	-0.016	-1.025	-0.072	101.615%	0.000	-0.324	-0.314	-0.193	99.070%
3	14:15:08	0.071	99.766%	-0.517	-0.015	-0.894	-0.082	98.507%	0.000	-0.332	-0.295	-0.167	93.912%
x		0.057	102.419%	-0.512	-0.016	-1.038	-0.071	100.183%	0.000	-0.329	-0.314	-0.193	97.312%
σ		0.013	2.757%	0.051	0.000	0.151	0.011	1.569%	0.000	0.004	0.019	0.026	2.946%
%RSD		23.640	2.692	9.943	0.837	14.580	15.710	1.566	0.000	1.220	6.039	13.280	3.027

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:24	-0.013	-0.122	0.020	99.171%	0.000	1.548	-0.005
2	14:14:46	-0.033	-0.112	0.040	100.692%	0.000	1.539	-0.005
3	14:15:08	-0.014	-0.105	0.052	96.357%	0.000	1.565	-0.005
x		-0.020	-0.113	0.037	98.740%	0.000	1.551	-0.005
σ		0.011	0.009	0.016	2.199%	0.000	0.013	0.000

%RSD		56.650	7.674	42.390	2.227	0.000	0.836	4.331

LCS 200-110491/2-A 10/25/2016 02:19:44 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:20:06	102.919%	9.319	381.600	T 5196.000	1874.000	461.500	T 4986.000	4625.000	98.199%	0.000	45.050	39.400
2	14:20:28	105.975%	9.084	376.000	T 5278.000	1918.000	461.700	T 5039.000	4775.000	97.218%	0.000	45.710	39.800
3	14:20:50	100.557%	8.814	386.700	T 5205.000	1892.000	466.600	T 4999.000	4760.000	96.993%	0.000	45.100	39.480
x		103.150%	9.072	381.400	T 5226.000	1895.000	463.300	T 5008.000	4720.000	97.470%	0.000	45.290	39.560
σ		2.716%	0.253	5.342	T 44.650	22.260	2.881	T 27.740	82.380	0.641%	0.000	0.364	0.210
%RSD		2.633	2.788	1.400	T 0.854	1.175	0.622	T 0.554	1.745	0.658	0.000	0.804	0.530

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:20:06	5.413	19.000	T 2015.000	9.310	20.710	46.960	172.300	17.700	-0.006	32.910	0.000	0.000
2	14:20:28	4.615	18.740	T 2013.000	9.738	20.890	48.040	176.700	17.990	-0.023	33.910	0.000	0.000
3	14:20:50	4.673	18.700	T 2067.000	9.584	19.900	46.770	172.800	17.230	0.007	32.810	0.000	0.000
x		4.901	18.810	T 2032.000	9.544	20.500	47.260	173.900	17.640	-0.007	33.210	0.000	0.000
σ		0.445	0.166	T 30.340	0.217	0.526	0.685	2.400	0.380	0.015	0.609	0.000	0.000
%RSD		9.078	0.883	T 1.493	2.275	2.565	1.450	1.380	2.153	201.100	1.834	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:20:06	45.100	102.708%	95.530	10.070	-1.825	9.618	99.954%	0.000	17.790	18.320	95.480	97.889%
2	14:20:28	45.040	101.079%	97.490	10.030	-1.512	9.105	99.055%	0.000	18.910	18.560	96.560	96.909%
3	14:20:50	45.330	103.187%	97.090	9.867	-1.698	9.069	99.044%	0.000	18.550	18.600	99.850	98.769%
x		45.160	102.325%	96.710	9.989	-1.678	9.264	99.351%	0.000	18.420	18.490	97.300	97.856%
σ		0.152	1.105%	1.034	0.108	0.158	0.307	0.522%	0.000	0.569	0.152	2.276	0.931%
%RSD		0.337	1.080	1.069	1.077	9.395	3.312	0.525	0.000	3.088	0.821	2.339	0.951

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:20:06	37.400	17.350	9.454	97.751%	0.000	18.300	9.695
2	14:20:28	37.560	17.540	9.523	97.650%	0.000	19.510	9.902
3	14:20:50	37.110	17.680	9.501	98.461%	0.000	19.820	9.717
x		37.350	17.520	9.493	97.954%	0.000	19.210	9.771
σ		0.225	0.164	0.035	0.442%	0.000	0.800	0.114
%RSD		0.603	0.934	0.372	0.451	0.000	4.165	1.163

200-35680-A-8-A 10/25/2016 02:25:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:25:48	117.149%	3.356	17.930	┬718.100	┬13430.000	┬57540.000	┬4081.000	20680.000	143.911%	0.000	86.710	68.330
2	14:26:10	114.725%	3.306	19.150	┬695.600	┬13420.000	┬57660.000	┬4082.000	20380.000	147.680%	0.000	87.460	68.520
3	14:26:31	116.719%	3.578	19.150	┬683.200	┬13840.000	┬60380.000	┬4234.000	21370.000	146.098%	0.000	87.840	71.040
x		116.198%	3.413	18.740	┬699.000	┬13560.000	┬58530.000	┬4132.000	20810.000	145.896%	0.000	87.340	69.300
σ		1.293%	0.145	0.702	┬17.710	┬238.900	┬1606.000	┬88.260	508.400	1.893%	0.000	0.576	1.515
%RSD		1.113	4.241	3.747	┬2.533	┬1.762	┬2.744	┬2.136	2.443	1.297	0.000	0.660	2.187

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:25:48	5.431	┬2715.000	┬87610.000	44.360	104.100	┬3656.000	1170.000	12.050	0.047	25.500	0.000	0.000
2	14:26:10	6.430	┬2773.000	┬89060.000	43.220	102.400	┬3590.000	1153.000	11.950	0.051	23.830	0.000	0.000
3	14:26:31	6.342	┬2862.000	┬90880.000	43.880	107.800	┬3638.000	1171.000	11.580	0.073	23.280	0.000	0.000
x		6.068	┬2783.000	┬89180.000	43.820	104.700	┬3628.000	1165.000	11.860	0.057	24.200	0.000	0.000
σ		0.553	┬74.030	┬1643.000	0.574	2.750	┬34.240	9.963	0.243	0.014	1.154	0.000	0.000
%RSD		9.119	┬2.660	┬1.842	1.309	2.626	┬0.944	0.855	2.053	24.560	4.766	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:25:48	96.100	298.411%	0.935	4.900	-3.531	7.355	116.781%	0.000	0.352	0.329	755.300	130.180%
2	14:26:10	95.490	303.568%	1.290	5.026	-5.481	7.405	118.895%	0.000	0.328	0.338	761.900	133.215%
3	14:26:31	96.180	318.829%	1.095	4.774	-3.394	7.523	121.230%	0.000	0.307	0.379	765.900	138.570%
x		95.920	306.936%	1.106	4.900	-4.136	7.428	118.968%	0.000	0.329	0.348	761.100	133.988%
σ		0.378	10.618%	0.177	0.126	1.167	0.086	2.225%	0.000	0.022	0.026	5.334	4.248%
%RSD		0.394	3.459	16.040	2.566	28.220	1.161	1.870	0.000	6.822	7.569	0.701	3.170

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:25:48	0.422	0.456	214.400	115.719%	0.000	19.820	7.518
2	14:26:10	0.415	0.504	218.600	117.151%	0.000	19.880	7.614
3	14:26:31	0.465	0.468	220.700	118.026%	0.000	19.510	7.713
x		0.434	0.476	217.900	116.965%	0.000	19.730	7.615
σ		0.027	0.025	3.223	1.165%	0.000	0.197	0.097
%RSD		6.155	5.259	1.479	0.996	0.000	0.996	1.280

200-35680-A-8-A SD@5 10/25/2016 02:31:09 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:31:30	111.259%	0.470	-2.233	171.500	3058.000	┬14040.000	┬986.300	5066.000	129.894%	0.000	20.780	16.500
2	14:31:52	111.687%	0.850	-2.645	165.100	3093.000	┬13920.000	┬992.600	5146.000	128.606%	0.000	22.580	16.730
3	14:32:14	108.721%	0.541	-1.473	168.000	3131.000	┬14220.000	┬997.200	5126.000	125.003%	0.000	22.350	17.240
x		110.556%	0.621	-2.117	168.200	3094.000	┬14060.000	┬992.100	5113.000	127.834%	0.000	21.900	16.820
σ		1.603%	0.202	0.594	3.181	36.760	┬153.000	┬5.455	41.380	2.535%	0.000	0.984	0.376
%RSD		1.450	32.560	28.060	1.891	1.188	┬1.088	┬0.550	0.809	1.983	0.000	4.490	2.237

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:31:30	6.985	┬654.200	┬21500.000	11.080	25.380	722.800	273.900	5.285	0.199	6.440	0.000	0.000
2	14:31:52	6.263	┬669.800	┬22030.000	11.170	25.550	742.100	280.700	4.906	0.245	5.056	0.000	0.000
3	14:32:14	6.637	┬681.700	┬22160.000	11.150	27.250	732.100	275.700	4.984	0.248	6.082	0.000	0.000
x		6.628	┬668.600	┬21900.000	11.140	26.060	732.300	276.800	5.058	0.231	5.860	0.000	0.000
σ		0.361	┬13.780	┬345.700	0.047	1.033	9.669	3.510	0.200	0.027	0.718	0.000	0.000
%RSD		5.450	┬2.061	┬1.579	0.423	3.963	1.320	1.268	3.955	11.690	12.260	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:31:30	20.050	164.599%	-0.289	1.071	-2.135	1.634	121.315%	0.000	-0.258	-0.267	161.600	120.434%
2	14:31:52	20.530	163.436%	-0.164	1.017	-2.066	1.666	119.616%	0.000	-0.255	-0.249	163.500	119.452%
3	14:32:14	20.150	162.947%	-0.111	1.050	-1.801	1.504	120.425%	0.000	-0.215	-0.242	162.800	120.176%
x		20.240	163.661%	-0.188	1.046	-2.001	1.601	120.452%	0.000	-0.242	-0.253	162.600	120.021%
σ		0.254	0.848%	0.091	0.027	0.176	0.086	0.850%	0.000	0.024	0.013	0.941	0.509%
%RSD		1.257	0.518	48.490	2.594	8.816	5.344	0.706	0.000	9.919	5.082	0.579	0.424

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:31:30	0.055	-0.020	47.540	111.827%	0.000	3.681	1.599
2	14:31:52	0.028	-0.018	48.140	112.692%	0.000	3.891	1.616
3	14:32:14	0.019	-0.026	47.610	112.629%	0.000	3.986	1.597
x		0.034	-0.021	47.760	112.383%	0.000	3.853	1.604
σ		0.019	0.004	0.325	0.483%	0.000	0.156	0.010
%RSD		54.930	20.190	0.680	0.429	0.000	4.058	0.648

200-35680-A-8-A PDS 10/25/2016 02:36:51 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:13	111.304%	12.500	406.800	┬4682.000	┬14840.000	┬58340.000	┬8260.000	25210.000	145.989%	0.000	123.000	98.740
2	14:37:35	112.287%	13.460	413.100	┬4745.000	┬15340.000	┬58690.000	┬8474.000	25600.000	145.289%	0.000	127.300	101.700
3	14:37:57	111.816%	13.300	416.800	┬4465.000	┬14660.000	┬57290.000	┬8120.000	┬25730.000	152.785%	0.000	122.600	98.120
x		111.802%	13.080	412.200	┬4631.000	┬14940.000	┬58100.000	┬8285.000	┬25510.000	148.021%	0.000	124.300	99.520
σ		0.492%	0.513	5.039	┬146.800	┬352.000	┬729.800	┬178.100	┬270.600	4.141%	0.000	2.639	1.912
%RSD		0.440	3.922	1.223	┬3.169	┬2.356	┬1.256	┬2.150	┬1.061	2.798	0.000	2.123	1.921

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:13	8.482	┬2772.000	┬90670.000	51.790	118.400	┬3591.000	1311.000	19.210	0.030	55.460	0.000	0.000
2	14:37:35	9.411	┬2863.000	┬93140.000	53.550	122.200	┬3759.000	1358.000	18.300	0.086	55.060	0.000	0.000
3	14:37:57	6.893	┬2785.000	┬89330.000	50.910	120.600	┬3696.000	1345.000	18.790	0.038	56.030	0.000	0.000
x		8.262	┬2807.000	┬91050.000	52.080	120.400	┬3682.000	1338.000	18.770	0.051	55.520	0.000	0.000
σ		1.273	┬49.260	┬1936.000	1.345	1.925	┬84.830	24.220	0.456	0.030	0.486	0.000	0.000
%RSD		15.410	┬1.755	┬2.126	2.583	1.599	┬2.304	1.810	2.428	59.440	0.876	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:13	136.200	303.223%	38.980	13.770	-2.924	15.710	121.105%	0.000	17.960	18.040	834.100	134.808%
2	14:37:35	139.600	312.904%	38.330	14.500	-5.832	16.040	120.094%	0.000	18.350	18.640	853.300	136.818%

3	14:37:57	138.500	317.266%	39.060	14.090	-8.419	16.170	121.699%	0.000	18.160	18.610	851.900	137.213%
x		138.100	311.131%	38.790	14.120	-5.725	15.970	120.966%	0.000	18.160	18.430	846.400	136.280%
σ		1.723	7.188%	0.403	0.363	2.749	0.241	0.812%	0.000	0.194	0.339	10.700	1.290%
%RSD		1.248	2.310	1.039	2.573	48.020	1.507	0.671	0.000	1.069	1.841	1.264	0.946

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:13	14.120	16.750	225.200	115.254%	0.000	36.670	16.460
2	14:37:35	14.050	16.710	225.400	118.017%	0.000	37.280	16.480
3	14:37:57	14.230	17.020	228.900	117.078%	0.000	38.310	16.910
x		14.130	16.830	226.500	116.783%	0.000	37.420	16.610
σ		0.090	0.167	2.065	1.405%	0.000	0.831	0.257
%RSD		0.636	0.990	0.912	1.203	0.000	2.220	1.545

200-35680-A-8-B MS 10/25/2016 02:42:34 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:42:56	112.649%	13.410	358.500	┬4809.000	┬15120.000	┬59420.000	┬8475.000	25270.000	150.663%	0.000	130.000	102.200
2	14:43:18	112.256%	13.040	367.500	┬4855.000	┬15120.000	┬59180.000	┬8472.000	┬26260.000	152.450%	0.000	128.100	102.400
3	14:43:39	111.139%	13.470	366.500	┬4754.000	┬14870.000	┬58350.000	┬8292.000	┬26310.000	155.923%	0.000	126.900	100.900
x		112.014%	13.310	364.200	┬4806.000	┬15040.000	┬58980.000	┬8413.000	┬25950.000	153.012%	0.000	128.300	101.800
σ		0.784%	0.231	4.933	┬50.370	┬143.700	┬564.100	┬105.000	┬584.100	2.674%	0.000	1.547	0.824
%RSD		0.700	1.738	1.355	┬1.048	┬0.956	┬0.956	┬1.248	┬2.251	1.748	0.000	1.205	0.809

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:42:56	6.445	┬2731.000	┬90400.000	51.630	119.200	┬3560.000	1294.000	19.630	0.006	60.080	0.000	0.000
2	14:43:18	7.524	┬2743.000	┬91590.000	52.610	122.100	┬3594.000	1304.000	19.850	0.016	58.440	0.000	0.000
3	14:43:39	6.761	┬2697.000	┬89480.000	51.250	118.600	┬3531.000	1291.000	19.230	0.032	59.090	0.000	0.000
x		6.910	┬2724.000	┬90490.000	51.830	119.900	┬3562.000	1296.000	19.570	0.018	59.200	0.000	0.000
σ		0.555	┬23.800	┬1059.000	0.703	1.879	┬31.240	6.678	0.312	0.013	0.822	0.000	0.000
%RSD		8.027	┬0.874	┬1.170	1.355	1.567	┬0.877	0.515	1.593	73.630	1.388	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:42:56	142.200	317.289%	38.740	14.420	-4.801	15.730	122.098%	0.000	3.034	3.119	844.800	138.118%
2	14:43:18	142.600	316.128%	39.050	14.940	-6.691	16.240	122.276%	0.000	3.013	3.216	871.800	140.185%
3	14:43:39	143.100	322.228%	39.170	14.200	-3.003	16.020	124.518%	0.000	3.175	3.185	859.200	138.986%
x		142.600	318.548%	38.990	14.520	-4.831	15.990	122.964%	0.000	3.074	3.173	858.600	139.096%
σ		0.411	3.239%	0.223	0.383	1.844	0.259	1.349%	0.000	0.088	0.050	13.470	1.038%
%RSD		0.288	1.017	0.571	2.640	38.170	1.621	1.097	0.000	2.879	1.561	1.569	0.746

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:42:56	14.990	17.570	261.300	116.129%	0.000	38.120	17.120
2	14:43:18	15.340	17.900	260.800	118.409%	0.000	38.960	17.420
3	14:43:39	15.740	17.630	261.600	120.470%	0.000	39.120	17.290
x		15.360	17.700	261.200	118.336%	0.000	38.730	17.280
σ		0.373	0.177	0.418	2.171%	0.000	0.538	0.154

%RSD		2.427	1.003	0.160	1.835	0.000	1.390	0.892

200-35680-A-8-C MSD 10/25/2016 02:48:17 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:48:39	113.582%	11.900	332.000	T 4663.000	T 13990.000	T 55280.000	T 7997.000	23680.000	150.123%	0.000	121.700	98.590
2	14:49:00	110.058%	12.640	357.400	T 4787.000	T 14060.000	T 55810.000	T 8112.000	23880.000	150.976%	0.000	122.600	98.090
3	14:49:22	110.093%	13.230	369.100	T 4724.000	T 13930.000	T 55220.000	T 8085.000	23990.000	151.874%	0.000	124.400	98.810
x		111.245%	12.590	352.800	T 4725.000	T 14000.000	T 55430.000	T 8064.000	23850.000	150.991%	0.000	122.900	98.500
σ		2.025%	0.664	18.950	T 61.780	T 64.570	T 326.400	T 60.330	155.000	0.875%	0.000	1.385	0.367
%RSD		1.820	5.274	5.372	T 1.308	T 0.461	T 0.589	T 0.748	0.650	0.580	0.000	1.127	0.373

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:48:39	7.560	T 2357.000	T 84860.000	48.870	112.500	3163.000	1177.000	19.030	0.057	53.360	0.000	0.000
2	14:49:00	8.061	T 2372.000	T 86000.000	48.660	113.600	T 3501.000	1207.000	19.020	0.005	56.300	0.000	0.000
3	14:49:22	6.922	T 2364.000	T 85630.000	48.850	115.100	T 3496.000	1202.000	18.870	0.028	54.180	0.000	0.000
x		7.514	T 2364.000	T 85500.000	48.790	113.700	T 3387.000	1195.000	18.970	0.030	54.610	0.000	0.000
σ		0.571	T 7.537	T 579.800	0.114	1.330	T 194.100	15.930	0.089	0.026	1.518	0.000	0.000
%RSD		7.600	T 0.319	T 0.678	0.234	1.169	T 5.731	1.333	0.469	86.790	2.780	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:48:39	133.400	305.741%	39.680	14.140	-2.816	14.640	123.400%	0.000	3.361	3.356	788.900	136.036%
2	14:49:00	136.800	311.176%	39.540	14.540	-3.395	14.980	122.917%	0.000	3.388	3.457	819.500	139.503%
3	14:49:22	133.600	308.689%	39.320	14.270	-3.016	14.880	124.352%	0.000	3.369	3.396	811.300	140.588%
x		134.600	308.535%	39.520	14.320	-3.075	14.830	123.556%	0.000	3.372	3.403	806.500	138.709%
σ		1.889	2.721%	0.182	0.208	0.294	0.179	0.730%	0.000	0.014	0.051	15.860	2.378%
%RSD		1.403	0.882	0.460	1.453	9.559	1.208	0.591	0.000	0.415	1.487	1.967	1.714

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:48:39	15.340	17.240	210.500	115.628%	0.000	36.220	16.770
2	14:49:00	15.700	17.640	213.300	118.309%	0.000	36.140	16.670
3	14:49:22	15.640	17.470	210.900	119.704%	0.000	36.580	16.780
x		15.560	17.450	211.500	117.880%	0.000	36.320	16.740
σ		0.194	0.198	1.497	2.071%	0.000	0.236	0.065
%RSD		1.249	1.133	0.708	1.757	0.000	0.649	0.388

200-35680-A-9-A 10/25/2016 02:54:01 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:54:22	116.167%	3.386	28.660	T 902.500	T 12770.000	T 54390.000	T 4447.000	T 23970.000	153.581%	0.000	87.440	64.450
2	14:54:44	118.717%	3.241	30.710	T 895.200	T 12670.000	T 53560.000	T 4365.000	23050.000	155.784%	0.000	88.250	65.140
3	14:55:06	116.418%	3.133	26.350	T 944.300	T 12990.000	T 55500.000	T 4446.000	T 24500.000	154.099%	0.000	89.940	65.330
x		117.101%	3.253	28.570	T 914.000	T 12810.000	T 54480.000	T 4419.000	T 23840.000	154.488%	0.000	88.540	64.970
σ		1.406%	0.127	2.180	T 26.480	T 162.100	T 974.300	T 46.880	T 732.800	1.152%	0.000	1.277	0.462
%RSD		1.200	3.893	7.628	T 2.897	T 1.266	T 1.788	T 1.061	T 3.074	0.746	0.000	1.442	0.710

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:54:22	6.177	TM 6605.000	T 98490.000	41.480	96.830	1961.000	978.400	9.152	0.106	15.960	0.000	0.000
2	14:54:44	4.822	TM 6648.000	T 100100.000	42.440	96.920	1952.000	980.900	8.952	0.100	14.750	0.000	0.000
3	14:55:06	5.873	TM 6784.000	T 100800.000	41.870	96.800	1993.000	1001.000	9.373	0.058	15.750	0.000	0.000
x		5.624	TM 6679.000	T 99800.000	41.930	96.850	1969.000	986.800	9.159	0.088	15.480	0.000	0.000
σ		0.711	TM 93.240	T 1203.000	0.482	0.062	21.460	12.530	0.211	0.026	0.648	0.000	0.000
%RSD		12.640	TM 1.396	T 1.206	1.149	0.064	1.090	1.269	2.301	29.680	4.187	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:54:22	103.500	307.101%	0.451	2.137	-7.530	4.272	125.008%	0.000	0.095	0.194	880.500	136.876%
2	14:54:44	100.600	311.349%	0.574	2.244	-4.990	4.097	127.352%	0.000	0.193	0.197	880.500	137.464%
3	14:55:06	103.800	312.547%	0.504	2.137	-4.850	4.137	126.340%	0.000	0.220	0.205	881.300	138.871%
x		102.600	310.332%	0.509	2.173	-5.790	4.168	126.233%	0.000	0.170	0.199	880.800	137.737%
σ		1.797	2.862%	0.062	0.062	1.508	0.092	1.176%	0.000	0.066	0.006	0.461	1.025%
%RSD		1.751	0.922	12.140	2.840	26.050	2.198	0.932	0.000	38.730	2.782	0.052	0.745

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:54:22	0.349	0.437	197.100	118.518%	0.000	17.000	5.754
2	14:54:44	0.416	0.456	199.000	120.506%	0.000	16.910	5.757
3	14:55:06	0.449	0.481	201.600	120.096%	0.000	17.120	5.742
x		0.405	0.458	199.200	119.707%	0.000	17.010	5.751
σ		0.051	0.022	2.295	1.050%	0.000	0.106	0.008
%RSD		12.500	4.839	1.152	0.877	0.000	0.625	0.145

200-35680-A-10-A 10/25/2016 02:59:44 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:00:06	112.673%	2.665	23.570	T 822.300	T 10700.000	T 46350.000	T 4203.000	18960.000	147.447%	0.000	77.540	56.250
2	15:00:28	113.712%	2.675	24.860	T 812.300	T 10600.000	T 46070.000	T 4150.000	19370.000	150.240%	0.000	77.260	55.740
3	15:00:50	113.822%	2.690	23.770	T 821.300	T 10620.000	T 46760.000	T 4278.000	19280.000	149.131%	0.000	78.120	56.830
x		113.402%	2.677	24.070	T 818.700	T 10640.000	T 46390.000	T 4210.000	19200.000	148.939%	0.000	77.640	56.270
σ		0.634%	0.013	0.692	T 5.505	T 54.590	T 349.700	T 64.450	218.400	1.406%	0.000	0.437	0.548
%RSD		0.560	0.470	2.875	T 0.672	T 0.513	T 0.754	T 1.531	1.137	0.944	0.000	0.563	0.974

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:00:06	6.082	┬2962.000	┬77560.000	32.910	80.460	1599.000	928.500	7.957	0.161	10.350	0.000	0.000
2	15:00:28	6.452	┬2952.000	┬77010.000	33.540	80.130	1613.000	921.800	8.579	0.090	13.800	0.000	0.000
3	15:00:50	6.326	┬3023.000	┬77910.000	32.420	78.350	1596.000	928.200	8.000	0.143	10.780	0.000	0.000
x		6.287	┬2979.000	┬77490.000	32.960	79.650	1603.000	926.200	8.179	0.131	11.640	0.000	0.000
σ		0.188	┬38.350	┬454.600	0.562	1.136	8.957	3.754	0.348	0.037	1.883	0.000	0.000
%RSD		2.993	┬1.287	┬0.587	1.707	1.427	0.559	0.405	4.252	28.190	16.170	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:00:06	83.500	270.141%	0.986	1.585	-3.218	3.043	122.831%	0.000	0.262	0.297	623.400	132.548%
2	15:00:28	82.520	273.467%	0.915	1.661	-4.739	2.905	125.030%	0.000	0.265	0.315	628.000	132.361%
3	15:00:50	83.770	271.812%	1.066	1.543	-2.262	2.832	124.809%	0.000	0.313	0.317	635.000	135.218%
x		83.270	271.807%	0.989	1.597	-3.406	2.926	124.224%	0.000	0.280	0.310	628.800	133.376%
σ		0.657	1.663%	0.076	0.060	1.249	0.107	1.211%	0.000	0.029	0.011	5.850	1.598%
%RSD		0.788	0.612	7.635	3.761	36.680	3.658	0.975	0.000	10.350	3.586	0.930	1.198

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:00:06	0.377	0.351	147.300	116.458%	0.000	14.020	4.971
2	15:00:28	0.333	0.371	150.500	116.676%	0.000	14.460	5.191
3	15:00:50	0.338	0.363	152.900	116.950%	0.000	14.900	5.086
x		0.349	0.362	150.200	116.695%	0.000	14.460	5.083
σ		0.024	0.010	2.816	0.247%	0.000	0.438	0.110
%RSD		7.010	2.795	1.875	0.211	0.000	3.029	2.165

200-35680-A-11-A 10/25/2016 03:05:28 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:05:50	114.766%	5.308	37.790	┬655.000	┬20000.000	┬74190.000	┬8225.000	┬37580.000	169.064%	0.000	115.100	93.880
2	15:06:12	115.171%	4.635	39.250	┬647.100	┬20290.000	┬74330.000	┬8239.000	┬37350.000	174.178%	0.000	115.100	93.770
3	15:06:34	114.192%	4.944	40.500	┬644.300	┬20400.000	┬74890.000	┬8269.000	┬37560.000	172.563%	0.000	116.100	94.970
x		114.710%	4.962	39.180	┬648.800	┬20230.000	┬74470.000	┬8244.000	┬37500.000	171.935%	0.000	115.400	94.210
σ		0.492%	0.337	1.359	┬5.551	┬206.000	┬371.100	┬22.290	┬126.500	2.614%	0.000	0.551	0.665
%RSD		0.429	6.788	3.468	┬0.856	┬1.018	┬0.498	┬0.270	┬0.337	1.521	0.000	0.477	0.706

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:05:50	6.521	┬5241.000	┬133900.000	60.480	139.900	1620.000	864.100	13.970	0.083	11.790	0.000	0.000
2	15:06:12	7.472	┬5222.000	┬132400.000	60.450	140.000	1638.000	870.000	13.940	0.100	10.710	0.000	0.000
3	15:06:34	6.596	┬5254.000	┬133400.000	61.580	140.700	1636.000	872.300	13.720	0.101	10.990	0.000	0.000
x		6.863	┬5239.000	┬133300.000	60.840	140.200	1631.000	868.800	13.880	0.095	11.170	0.000	0.000
σ		0.529	┬15.870	┬776.800	0.644	0.422	9.909	4.209	0.136	0.010	0.561	0.000	0.000
%RSD		7.706	┬0.303	┬0.583	1.058	0.301	0.608	0.484	0.978	10.830	5.022	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:05:50	136.100	344.277%	0.813	1.556	-4.891	3.218	127.606%	0.000	0.090	0.103	975.800	139.561%
2	15:06:12	137.800	349.113%	0.815	1.569	-4.395	3.007	127.840%	0.000	0.094	0.124	1012.000	145.055%

3	15:06:34	139.600	351.247%	0.915	1.535	-6.988	3.359	128.234%	0.000	0.142	0.124	1028.000	145.234%
x		137.800	348.213%	0.848	1.553	-5.424	3.195	127.893%	0.000	0.109	0.117	1005.000	143.283%
σ		1.761	3.571%	0.058	0.017	1.376	0.177	0.317%	0.000	0.029	0.012	26.730	3.225%
%RSD		1.278	1.026	6.877	1.104	25.380	5.537	0.248	0.000	26.870	10.300	2.659	2.251

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:05:50	0.341	0.672	169.500	119.585%	0.000	25.940	5.571
2	15:06:12	0.293	0.617	173.300	119.841%	0.000	26.920	5.829
3	15:06:34	0.272	0.700	171.300	123.188%	0.000	26.530	5.743
x		0.302	0.663	171.400	120.871%	0.000	26.470	5.714
σ		0.035	0.042	1.905	2.010%	0.000	0.496	0.131
%RSD		11.640	6.315	1.111	1.663	0.000	1.875	2.299

CCV 10/25/2016 03:11:12 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:11:34	97.311%	644.400	242.500	┬9660.000	┬28530.000	┬29190.000	┬9656.000	28030.000	108.980%	0.000	┬1202.000	368.500
2	15:11:56	92.118%	668.300	258.200	┬9669.000	┬29060.000	┬29590.000	┬9766.000	28670.000	105.535%	0.000	┬1218.000	368.200
3	15:12:18	89.299%	668.400	255.500	┬9775.000	┬28960.000	┬30320.000	┬10010.000	29170.000	100.007%	0.000	┬1234.000	379.800
x		92.909%	105.658%	100.825%	┬97.014%	┬96.164%	┬99.003%	┬98.113%	95.411%	104.841%	0.000	┬97.425%	93.041%
σ		4.064%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	n/a	4.527%	0.000	┬n/a	n/a
%RSD		4.375	2.092	3.325	┬0.658	┬0.974	┬1.929	┬1.859	2.009	4.318	0.000	┬1.317	1.780

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:11:34	20.240	┬1231.000	┬29470.000	471.100	1232.000	1191.000	1216.000	194.300	-0.684	208.400	0.000	0.000
2	15:11:56	23.110	┬1235.000	┬29870.000	470.100	1248.000	1191.000	1235.000	199.100	-0.775	213.900	0.000	0.000
3	15:12:18	17.700	┬1264.000	┬30380.000	477.500	1258.000	1172.000	1237.000	200.300	-0.655	207.500	0.000	0.000
x		20.350	┬99.463%	┬99.686%	94.581%	99.680%	94.764%	98.351%	98.935%	-0.705	104.969%	0.000	0.000
σ		2.707	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.063	n/a	0.000	0.000
%RSD		13.300	┬1.435	┬1.517	0.853	1.017	0.921	0.954	1.613	8.911	1.648	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:11:34	182.200	111.256%	1143.000	98.110	1.771	191.200	106.749%	0.000	240.600	241.900	1222.000	104.924%
2	15:11:56	185.000	106.572%	1211.000	100.900	-1.397	197.300	104.176%	0.000	246.400	246.200	1234.000	101.245%
3	15:12:18	181.600	103.896%	1229.000	101.100	5.527	199.800	101.851%	0.000	247.100	247.100	1222.000	98.368%
x		182.900	107.241%	95.549%	100.034%	1.967	98.046%	104.258%	0.000	244.700	98.038%	98.089%	101.513%
σ		1.839	3.726%	n/a	n/a	3.466	n/a	2.450%	0.000	3.573	n/a	n/a	3.286%
%RSD		1.005	3.474	3.785	1.670	176.200	2.248	2.350	0.000	1.460	1.140	0.568	3.237

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:11:34	19.500	175.300	┬1206.000	100.009%	0.000	17.260	8.943
2	15:11:56	19.940	177.900	┬1183.000	99.572%	0.000	18.880	8.952
3	15:12:18	20.230	178.900	┬1193.000	98.051%	0.000	19.550	9.014
x		99.433%	88.684%	┬95.533%	99.211%	0.000	92.816%	89.699%
σ		n/a	n/a	┬n/a	1.028%	0.000	n/a	n/a

%RSD		1.851	1.043	T 0.961	1.036	0.000	6.329	0.430

CCB 10/25/2016 03:16:57 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:19	103.168%	-0.150	-5.092	1.661	-4.629	-0.203	0.015	1.709	106.567%	0.000	0.793	-0.007
2	15:17:41	101.540%	-0.110	-5.418	-3.743	-4.677	-1.125	1.022	0.155	107.396%	0.000	0.541	-0.016
3	15:18:03	101.349%	-0.089	-6.267	-2.233	-6.162	-1.763	1.160	1.526	107.635%	0.000	1.239	0.033
x		102.019%	-0.116	-5.592	-1.438	-5.156	-1.031	0.732	1.130	107.199%	0.000	0.858	0.004
σ		1.000%	0.031	0.607	2.788	0.872	0.784	0.625	0.850	0.561%	0.000	0.353	0.026
%RSD		0.980	26.510	10.850	193.800	16.900	76.100	85.370	75.190	0.523	0.000	41.180	738.600

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:19	11.380	0.001	14.530	-0.021	0.001	0.076	-0.403	-0.313	0.455	-0.161	0.000	0.000
2	15:17:41	11.300	-0.055	12.420	-0.006	-0.200	-0.006	-0.398	-0.401	0.456	-0.639	0.000	0.000
3	15:18:03	10.520	-0.089	11.050	-0.015	-0.178	-0.066	-0.534	0.285	0.390	-0.292	0.000	0.000
x		11.070	-0.048	12.670	-0.014	-0.126	0.001	-0.445	-0.143	0.434	-0.364	0.000	0.000
σ		0.472	0.046	1.752	0.008	0.110	0.071	0.077	0.373	0.038	0.247	0.000	0.000
%RSD		4.261	95.110	13.830	55.750	87.600	4764.000	17.290	261.500	8.792	67.800	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:19	-0.003	109.244%	1.106	-0.014	-0.793	-0.082	107.329%	0.000	-0.191	-0.174	-0.020	101.317%
2	15:17:41	-0.009	112.167%	0.939	-0.016	-0.871	-0.068	106.908%	0.000	-0.155	-0.178	-0.078	103.450%
3	15:18:03	-0.010	111.731%	0.766	-0.008	-1.121	-0.042	107.154%	0.000	-0.130	-0.157	-0.090	103.514%
x		-0.007	111.047%	0.937	-0.013	-0.928	-0.064	107.130%	0.000	-0.159	-0.170	-0.063	102.760%
σ		0.004	1.577%	0.170	0.004	0.171	0.020	0.211%	0.000	0.030	0.011	0.037	1.250%
%RSD		49.900	1.420	18.140	31.290	18.450	31.490	0.197	0.000	19.200	6.701	59.660	1.217

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:19	-0.005	-0.039	0.089	99.636%	0.000	2.185	-0.005
2	15:17:41	0.009	-0.071	0.085	100.929%	0.000	2.074	-0.002
3	15:18:03	-0.014	-0.061	0.068	99.381%	0.000	2.009	-0.005
x		-0.004	-0.057	0.081	99.982%	0.000	2.089	-0.004
σ		0.011	0.017	0.011	0.830%	0.000	0.089	0.001
%RSD		315.300	29.190	13.430	0.830	0.000	4.260	39.430

CCVL 10/25/2016 03:22:41 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:23:03	100.012%	1.092	40.950	504.400	190.100	47.880	482.800	471.000	107.120%	0.000	4.888	3.788
2	15:23:24	103.623%	0.890	41.340	507.500	191.300	50.120	493.100	478.200	105.812%	0.000	5.713	4.028
3	15:23:47	99.157%	1.041	48.010	509.500	188.200	49.670	474.100	470.800	108.355%	0.000	5.550	3.729
x		100.931%	100.762%	108.584%	101.429%	94.931%	98.445%	96.664%	94.668%	107.095%	0.000	107.669%	96.202%
σ		2.371%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.272%	0.000	n/a	n/a
%RSD		2.349	10.380	9.136	0.508	0.830	2.405	1.960	0.893	1.188	0.000	8.121	4.109

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:23:03	9.822	1.988	203.600	0.968	1.619	5.607	20.990	2.501	0.319	3.744	0.000	0.000
2	15:23:24	9.622	1.934	206.800	1.043	1.944	5.036	21.820	2.025	0.343	3.314	0.000	0.000
3	15:23:47	8.672	1.958	201.600	0.961	2.185	5.281	21.510	2.182	0.322	3.983	0.000	0.000
x		9.372	98.004%	102.009%	99.067%	95.814%	106.162%	107.189%	111.797%	0.328	92.000%	0.000	0.000
σ		0.614	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.013	n/a	0.000	0.000
%RSD		6.556	1.389	1.283	4.598	14.830	5.403	1.960	10.850	4.057	9.214	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:23:03	4.832	110.580%	8.820	0.997	-1.367	1.058	105.713%	0.000	1.751	1.651	10.010	101.982%
2	15:23:24	4.530	111.114%	9.059	0.959	-1.189	1.004	107.334%	0.000	1.712	1.609	9.868	102.025%
3	15:23:47	4.734	112.298%	9.074	1.123	-0.866	0.921	107.920%	0.000	1.751	1.671	10.210	102.054%
x		93.973%	111.331%	89.842%	102.618%	-1.140	99.437%	106.989%	0.000	1.738	82.172%	100.291%	102.021%
σ		n/a	0.879%	n/a	n/a	0.254	n/a	1.143%	0.000	0.022	n/a	n/a	0.036%
%RSD		3.287	0.790	1.588	8.352	22.250	6.926	1.069	0.000	1.283	1.923	1.704	0.035

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:23:03	1.556	1.561	1.009	102.013%	0.000	1.938	0.877
2	15:23:24	1.684	1.576	1.090	100.091%	0.000	1.955	0.921
3	15:23:47	1.696	1.650	1.074	100.200%	0.000	1.940	0.921
x		82.266%	79.778%	105.752%	100.768%	0.000	97.224%	90.611%
σ		n/a	n/a	n/a	1.079%	0.000	n/a	n/a
%RSD		4.702	2.969	4.046	1.071	0.000	0.477	2.822

200-35680-A-12-A 10/25/2016 03:28:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:28:47	120.305%	7.542	49.990	T 1286.000	T 40240.000	T 107200.000	T 12390.000	T 89030.000	192.805%	0.000	147.100	137.700
2	15:29:09	120.721%	8.105	50.650	T 1247.000	T 39160.000	T 106700.000	T 12520.000	T 88200.000	202.616%	0.000	146.300	135.500
3	15:29:31	118.217%	7.971	54.140	T 1233.000	T 38990.000	T 104300.000	T 12270.000	T 88640.000	206.389%	0.000	146.900	135.400
x		119.748%	7.873	51.600	T 1256.000	T 39460.000	T 106100.000	T 12390.000	T 88620.000	200.603%	0.000	146.800	136.200
σ		1.342%	0.294	2.230	T 27.320	T 678.300	T 1524.000	T 121.000	T 417.100	7.012%	0.000	0.418	1.340
%RSD		1.121	3.737	4.322	T 2.175	T 1.719	T 1.437	T 0.976	T 0.471	3.496	0.000	0.285	0.984

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:28:47	5.784	T 6035.000	TM 196000.000	97.360	265.000	217.900	581.400	19.830	0.070	7.947	0.000	0.000
2	15:29:09	8.117	T 6050.000	TM 195000.000	97.970	262.400	224.200	594.200	20.090	0.019	13.950	0.000	0.000
3	15:29:31	5.966	T 5969.000	TM 195800.000	96.650	260.600	228.200	601.300	19.950	0.054	8.529	0.000	0.000
x		6.622	T 6018.000	TM 195600.000	97.330	262.700	223.400	592.300	19.960	0.048	10.140	0.000	0.000
σ		1.298	T 42.750	TM 545.600	0.661	2.174	5.144	10.080	0.129	0.026	3.312	0.000	0.000
%RSD		19.600	T 0.710	TM 0.279	0.679	0.827	2.303	1.703	0.644	54.880	32.650	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:28:47	349.000	438.984%	1.393	0.275	-7.712	0.991	125.195%	0.000	-0.049	-0.043	911.500	152.370%
2	15:29:09	T 383.900	452.915%	1.437	0.275	-7.776	1.282	127.756%	0.000	-0.033	-0.023	934.100	156.978%
3	15:29:31	356.000	462.455%	1.329	0.291	-11.910	1.567	129.164%	0.000	0.018	-0.006	946.000	158.898%
x		T 362.900	451.451%	1.387	0.280	-9.132	1.280	127.372%	0.000	-0.021	-0.024	930.500	156.082%
σ		T 18.480	11.804%	0.054	0.009	2.405	0.288	2.012%	0.000	0.035	0.018	17.560	3.355%
%RSD		T 5.093	2.615	3.914	3.356	26.330	22.480	1.580	0.000	165.800	75.660	1.887	2.150

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:28:47	0.089	1.140	122.000	119.020%	0.000	51.410	5.569
2	15:29:09	0.100	1.142	122.900	122.723%	0.000	52.340	5.656
3	15:29:31	0.080	1.118	123.600	124.766%	0.000	52.060	5.649
x		0.090	1.133	122.800	122.170%	0.000	51.940	5.624
σ		0.010	0.013	0.846	2.913%	0.000	0.481	0.048
%RSD		10.890	1.177	0.689	2.384	0.000	0.925	0.859

200-35700-A-9-A 10/25/2016 03:34:10 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:32	116.878%	7.995	24.980	T 724.600	T 17490.000	T 97960.000	T 6124.000	T 21030.000	191.056%	0.000	163.200	113.500
2	15:34:54	119.020%	7.882	21.970	T 714.000	T 17660.000	T 99020.000	T 6207.000	T 21080.000	193.412%	0.000	165.700	114.100
3	15:35:16	116.405%	7.416	24.810	T 734.500	T 17570.000	T 98010.000	T 6160.000	T 21050.000	198.939%	0.000	161.700	113.100
x		117.434%	7.764	23.920	T 724.400	T 17570.000	T 98330.000	T 6164.000	T 21050.000	194.469%	0.000	163.600	113.600
σ		1.393%	0.307	1.689	T 10.210	T 84.750	T 597.900	T 41.430	T 24.040	4.047%	0.000	2.010	0.498
%RSD		1.186	3.951	7.063	T 1.410	T 0.482	T 0.608	T 0.672	T 0.114	2.081	0.000	1.229	0.439

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:32	5.569	TM 6748.000	TM 188200.000	76.690	149.300	1555.000	1048.000	15.550	0.083	12.960	0.000	0.000
2	15:34:54	3.754	TM 6769.000	TM 188900.000	75.600	148.900	1563.000	1045.000	14.980	0.092	12.920	0.000	0.000
3	15:35:16	5.995	TM 6711.000	TM 185100.000	75.360	148.100	1555.000	1044.000	14.910	0.085	14.670	0.000	0.000
x		5.106	TM 6743.000	TM 187400.000	75.880	148.800	1558.000	1045.000	15.150	0.087	13.520	0.000	0.000
σ		1.190	TM 29.120	TM 1996.000	0.708	0.609	4.706	2.074	0.351	0.005	1.003	0.000	0.000
%RSD		23.300	TM 0.432	TM 1.065	0.934	0.409	0.302	0.198	2.315	5.528	7.425	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:32	123.600	489.005%	1.247	1.241	-9.670	3.426	130.654%	0.000	0.090	0.056	1408.000	159.315%
2	15:34:54	125.100	498.270%	1.187	1.348	-8.678	3.438	131.082%	0.000	-0.001	0.073	1406.000	160.437%

3	15:35:16	123.100	502.955%	1.175	1.453	-9.143	3.536	133.276%	0.000	0.023	0.061	1399.000	164.991%
x		123.900	496.743%	1.203	1.347	-9.164	3.467	131.670%	0.000	0.037	0.063	1404.000	161.581%
σ		1.082	7.099%	0.039	0.106	0.496	0.060	1.407%	0.000	0.047	0.009	4.933	3.006%
%RSD		0.873	1.429	3.227	7.866	5.414	1.736	1.068	0.000	127.200	13.830	0.351	1.860

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:32	0.317	0.888	243.600	123.060%	0.000	30.660	9.963
2	15:34:54	0.283	0.933	249.500	122.340%	0.000	31.400	10.210
3	15:35:16	0.355	0.941	249.600	124.611%	0.000	32.040	10.120
x		0.318	0.920	247.600	123.337%	0.000	31.370	10.100
σ		0.036	0.029	3.427	1.161%	0.000	0.690	0.127
%RSD		11.330	3.118	1.384	0.941	0.000	2.198	1.252

200-35700-A-10-A 10/25/2016 03:39:54 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:40:16	109.733%	6.004	19.390	T 771.800	T 17080.000	T 83540.000	T 5226.000	18620.000	177.723%	0.000	128.500	97.470
2	15:40:37	111.035%	6.317	21.540	T 790.700	T 17400.000	T 84130.000	T 5237.000	18650.000	177.752%	0.000	133.400	100.100
3	15:40:59	111.316%	6.648	20.010	T 802.000	T 17540.000	T 85360.000	T 5319.000	T 19980.000	178.644%	0.000	131.100	98.960
x		110.695%	6.323	20.310	T 788.200	T 17340.000	T 84340.000	T 5261.000	T 19080.000	178.039%	0.000	131.000	98.850
σ		0.845%	0.322	1.107	T 15.280	T 234.800	T 927.400	T 50.630	T 775.000	0.524%	0.000	2.415	1.322
%RSD		0.763	5.088	5.449	T 1.939	T 1.354	T 1.100	T 0.963	T 4.062	0.294	0.000	1.844	1.337

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:40:16	7.011	T 2608.000	T 117700.000	59.140	140.700	TM 11220.000	1653.000	10.730	0.106	20.210	0.000	0.000
2	15:40:37	6.722	T 2696.000	T 121900.000	61.410	143.800	TM 11190.000	1660.000	10.670	0.109	18.800	0.000	0.000
3	15:40:59	8.064	T 2656.000	T 120100.000	59.830	144.000	TM 11300.000	1676.000	10.670	0.095	20.790	0.000	0.000
x		7.266	T 2653.000	T 119900.000	60.130	142.800	TM 11240.000	1663.000	10.690	0.103	19.930	0.000	0.000
σ		0.706	T 44.230	T 2137.000	1.163	1.829	TM 55.760	11.660	0.034	0.007	1.023	0.000	0.000
%RSD		9.721	T 1.667	T 1.783	1.934	1.280	TM 0.496	0.701	0.318	7.073	5.131	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:40:16	112.000	447.231%	1.200	2.306	-6.861	6.165	126.558%	0.000	0.038	0.122	1054.000	150.803%
2	15:40:37	112.700	457.729%	1.219	2.234	-5.853	6.082	128.297%	0.000	0.092	0.125	1064.000	153.182%
3	15:40:59	113.400	454.727%	1.189	2.215	-6.586	6.234	128.277%	0.000	0.119	0.112	1083.000	158.236%
x		112.700	453.229%	1.203	2.251	-6.434	6.160	127.711%	0.000	0.083	0.120	1067.000	154.074%
σ		0.694	5.407%	0.015	0.048	0.521	0.076	0.998%	0.000	0.041	0.007	14.800	3.796%
%RSD		0.616	1.193	1.248	2.134	8.098	1.236	0.782	0.000	49.420	5.644	1.387	2.464

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:40:16	0.380	0.752	268.500	117.014%	0.000	28.240	14.030
2	15:40:37	0.363	0.742	271.200	119.549%	0.000	28.800	14.070
3	15:40:59	0.325	0.806	277.000	117.534%	0.000	29.450	14.390
x		0.356	0.767	272.200	118.032%	0.000	28.830	14.160
σ		0.028	0.034	4.371	1.339%	0.000	0.608	0.198

%RSD		7.949	4.453	1.606	1.134	0.000	2.109	1.395

200-35700-A-10-A @2 10/25/2016 03:45:36 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:45:58	114.685%	3.574	3.988	T 473.400	T 9759.000	T 48190.000	T 3033.000	10660.000	157.988%	0.000	74.890	56.690
2	15:46:20	111.351%	3.211	4.413	T 451.500	T 9722.000	T 47690.000	T 3044.000	10580.000	158.557%	0.000	75.000	55.900
3	15:46:42	111.493%	2.987	6.001	T 465.600	T 9689.000	T 48040.000	T 2988.000	10670.000	157.659%	0.000	76.250	56.340
x		112.509%	3.257	4.801	T 463.500	T 9723.000	T 47970.000	T 3022.000	10640.000	158.068%	0.000	75.380	56.310
σ		1.885%	0.296	1.061	T 11.110	T 35.050	T 254.000	T 29.510	50.610	0.454%	0.000	0.758	0.397
%RSD		1.676	9.085	22.100	T 2.396	T 0.360	T 0.529	T 0.977	0.476	0.287	0.000	1.005	0.706

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:45:58	6.776	T 1506.000	T 69110.000	34.990	82.240	T 5872.000	920.000	9.022	0.167	11.770	0.000	0.000
2	15:46:20	6.560	T 1525.000	T 69570.000	34.570	82.250	T 5814.000	905.100	9.270	0.140	11.680	0.000	0.000
3	15:46:42	6.971	T 1518.000	T 69180.000	35.090	82.280	T 5756.000	902.800	9.057	0.156	11.300	0.000	0.000
x		6.769	T 1517.000	T 69290.000	34.880	82.260	T 5814.000	909.300	9.117	0.154	11.580	0.000	0.000
σ		0.205	T 9.597	T 244.900	0.276	0.022	T 58.020	9.341	0.134	0.013	0.251	0.000	0.000
%RSD		3.034	T 0.633	T 0.353	0.790	0.027	T 0.998	1.027	1.472	8.598	2.166	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:45:58	56.830	298.383%	0.632	1.088	-2.853	3.035	127.870%	0.000	-0.170	-0.161	538.300	135.698%
2	15:46:20	57.290	296.852%	0.647	1.108	-2.557	3.221	128.614%	0.000	-0.171	-0.177	538.400	133.847%
3	15:46:42	57.140	297.291%	0.644	1.132	-3.494	3.071	130.018%	0.000	-0.167	-0.169	528.800	138.161%
x		57.090	297.509%	0.641	1.109	-2.968	3.109	128.834%	0.000	-0.169	-0.169	535.200	135.902%
σ		0.231	0.788%	0.008	0.022	0.479	0.099	1.091%	0.000	0.002	0.008	5.479	2.164%
%RSD		0.405	0.265	1.223	1.983	16.140	3.175	0.847	0.000	1.090	4.886	1.024	1.592

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:45:58	0.129	0.303	138.200	115.911%	0.000	14.010	7.147
2	15:46:20	0.132	0.294	137.500	118.737%	0.000	14.150	6.970
3	15:46:42	0.173	0.309	140.000	116.202%	0.000	14.830	7.346
x		0.145	0.302	138.600	116.950%	0.000	14.330	7.154
σ		0.025	0.008	1.326	1.555%	0.000	0.437	0.188
%RSD		16.920	2.529	0.957	1.329	0.000	3.052	2.630

CCV 10/25/2016 03:51:19 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:51:41	99.604%	652.100	246.300	┬9776.000	┬29230.000	┬30100.000	┬10030.000	29130.000	110.041%	0.000	┬1235.000	378.100
2	15:52:02	97.647%	648.300	247.600	┬9765.000	┬29030.000	┬29860.000	┬9928.000	28700.000	109.060%	0.000	┬1235.000	378.800
3	15:52:24	95.653%	650.600	251.700	┬9509.000	┬28740.000	┬29380.000	┬9674.000	28670.000	108.958%	0.000	┬1214.000	367.000
x		97.635%	104.053%	99.411%	┬96.834%	┬96.659%	┬99.262%	┬98.785%	96.109%	109.353%	0.000	┬98.255%	93.657%
σ		1.975%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	n/a	0.598%	0.000	┬n/a	n/a
%RSD		2.023	0.293	1.119	┬1.559	┬0.857	┬1.233	┬1.873	0.880	0.547	0.000	┬0.989	1.759

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:51:41	17.880	┬1254.000	┬30380.000	483.700	1277.000	1224.000	1246.000	200.800	-0.401	210.500	0.000	0.000
2	15:52:02	16.160	┬1245.000	┬30080.000	474.000	1245.000	1183.000	1224.000	196.700	-0.309	201.500	0.000	0.000
3	15:52:24	18.980	┬1208.000	┬29370.000	458.500	1217.000	1214.000	1252.000	202.000	-0.614	208.500	0.000	0.000
x		17.670	┬98.850%	┬99.804%	94.415%	99.717%	96.569%	99.240%	99.916%	-0.441	103.414%	0.000	0.000
σ		1.424	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.157	n/a	0.000	0.000
%RSD		8.057	┬1.957	┬1.731	2.700	2.399	1.789	1.159	1.378	35.490	2.282	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:51:41	181.200	111.234%	1178.000	99.660	-1.570	195.700	108.702%	0.000	242.200	242.200	1218.000	102.684%
2	15:52:02	183.100	111.387%	1190.000	97.040	13.470	194.200	109.144%	0.000	240.600	240.100	1198.000	102.326%
3	15:52:24	186.800	107.461%	1230.000	99.200	6.003	194.600	104.735%	0.000	247.000	246.800	1247.000	101.081%
x		183.700	110.027%	95.936%	98.632%	5.968	97.412%	107.527%	0.000	243.300	97.215%	97.693%	102.030%
σ		2.825	2.224%	n/a	n/a	7.521	n/a	2.428%	0.000	3.328	n/a	n/a	0.842%
%RSD		1.538	2.021	2.273	1.420	126.000	0.414	2.258	0.000	1.368	1.410	1.981	0.825

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:51:41	19.270	171.900	┬1181.000	100.874%	0.000	17.140	8.735
2	15:52:02	19.680	178.400	┬1209.000	98.060%	0.000	19.050	9.058
3	15:52:24	19.340	175.700	┬1182.000	99.399%	0.000	19.670	8.887
x		97.144%	87.671%	┬95.252%	99.444%	0.000	93.081%	88.936%
σ		n/a	n/a	┬n/a	1.408%	0.000	n/a	n/a
%RSD		1.114	1.853	┬1.340	1.416	0.000	7.081	1.819

CCB 10/25/2016 03:57:03 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:57:24	100.505%	-0.008	-7.264	1.765	-2.187	7.037	2.490	4.266	108.035%	0.000	0.674	0.181
2	15:57:46	100.934%	-0.089	-7.060	1.726	-1.537	11.600	2.992	2.745	109.976%	0.000	1.603	0.136
3	15:58:08	103.682%	-0.072	-7.306	-1.804	-0.212	15.430	1.300	3.826	110.339%	0.000	1.110	0.159
x		101.707%	-0.056	-7.210	0.562	-1.312	11.360	2.261	3.612	109.450%	0.000	1.129	0.159
σ		1.724%	0.043	0.132	2.050	1.007	4.200	0.869	0.783	1.239%	0.000	0.465	0.023
%RSD		1.695	76.190	1.824	364.600	76.740	36.990	38.430	21.670	1.132	0.000	41.170	14.310

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:57:24	10.940	0.231	27.390	-0.008	0.007	0.642	-0.254	0.534	0.407	0.139	0.000	0.000
2	15:57:46	9.727	0.314	30.710	-0.003	-0.052	1.051	-0.151	-0.223	0.477	-0.696	0.000	0.000
3	15:58:08	10.510	0.495	34.700	0.010	-0.032	1.351	-0.080	-0.197	0.473	-0.350	0.000	0.000
x		10.390	0.346	30.940	-0.001	-0.025	1.015	-0.162	0.038	0.452	-0.302	0.000	0.000
σ		0.616	0.135	3.660	0.009	0.030	0.356	0.087	0.430	0.040	0.419	0.000	0.000
%RSD		5.931	38.890	11.830	1505.000	118.800	35.070	53.980	1140.000	8.740	138.800	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:57:24	-0.008	111.256%	1.025	-0.003	-0.824	-0.065	109.409%	0.000	-0.170	-0.204	-0.024	102.347%
2	15:57:46	0.015	111.513%	1.270	0.003	-0.881	-0.068	109.047%	0.000	-0.154	-0.153	0.034	105.075%
3	15:58:08	0.031	112.740%	0.670	-0.005	-1.656	-0.018	109.418%	0.000	-0.090	-0.161	0.136	104.602%
x		0.012	111.836%	0.988	-0.002	-1.121	-0.050	109.291%	0.000	-0.138	-0.173	0.049	104.008%
σ		0.020	0.793%	0.302	0.004	0.465	0.028	0.212%	0.000	0.042	0.027	0.081	1.458%
%RSD		158.800	0.709	30.530	236.800	41.480	55.240	0.194	0.000	30.490	15.840	166.300	1.401

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:57:24	-0.003	-0.046	0.135	99.107%	0.000	2.198	-0.001
2	15:57:46	-0.006	-0.037	0.141	101.476%	0.000	2.126	-0.003
3	15:58:08	-0.006	-0.076	0.136	102.523%	0.000	2.034	-0.001
x		-0.005	-0.053	0.138	101.035%	0.000	2.119	-0.001
σ		0.002	0.021	0.003	1.750%	0.000	0.082	0.001
%RSD		31.960	38.430	2.496	1.732	0.000	3.879	86.380

CCVL 10/25/2016 04:02:46 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:03:08	103.407%	1.129	39.540	505.500	188.700	51.700	475.100	467.600	112.469%	0.000	5.714	3.737
2	16:03:29	103.984%	1.024	41.640	506.000	188.800	56.010	472.400	488.400	111.837%	0.000	5.361	3.935
3	16:03:51	103.620%	0.969	42.670	505.600	191.300	57.970	473.000	506.700	111.277%	0.000	4.797	3.857
x		103.671%	104.055%	103.206%	101.137%	94.791%	110.450%	94.693%	97.514%	111.861%	0.000	105.817%	96.070%
σ		0.292%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.597%	0.000	n/a	n/a
%RSD		0.282	7.802	3.869	0.054	0.769	5.810	0.298	4.011	0.533	0.000	8.737	2.600

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:03:08	8.813	1.975	205.300	0.957	1.978	5.478	20.590	2.281	0.333	5.318	0.000	0.000
2	16:03:29	9.281	2.181	212.300	1.019	2.329	5.477	19.470	1.641	0.415	3.271	0.000	0.000
3	16:03:51	9.851	2.156	217.400	0.957	2.088	6.221	21.140	2.162	0.355	4.760	0.000	0.000
x		9.315	105.185%	105.823%	97.753%	106.583%	114.509%	102.014%	101.413%	0.368	111.236%	0.000	0.000
σ		0.520	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.043	n/a	0.000	0.000
%RSD		5.579	5.342	2.863	3.663	8.419	7.491	4.175	16.780	11.630	23.780	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:03:08	4.568	115.812%	8.564	1.003	-0.727	0.996	109.337%	0.000	1.515	1.540	10.140	101.732%
2	16:03:29	4.667	115.402%	8.553	0.987	-1.783	0.936	111.318%	0.000	1.549	1.545	9.225	102.848%

3	16:03:51	4.593	115.135%	8.902	1.119	-0.902	0.906	111.488%	0.000	1.573	1.571	9.829	103.908%
x		92.186%	115.450%	86.731%	103.654%	-1.137	94.597%	110.714%	0.000	1.546	77.600%	97.320%	102.829%
σ		n/a	0.341%	n/a	n/a	0.566	n/a	1.195%	0.000	0.030	n/a	n/a	1.088%
%RSD		1.126	0.295	2.288	6.970	49.720	4.846	1.080	0.000	1.911	1.069	4.791	1.058

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:03:08	1.541	1.546	1.039	98.761%	0.000	1.951	0.916
2	16:03:29	1.643	1.609	1.053	99.645%	0.000	1.940	0.907
3	16:03:51	1.590	1.582	1.099	101.576%	0.000	1.991	0.925
x		79.557%	78.952%	106.376%	99.994%	0.000	98.024%	91.586%
σ		n/a	n/a	n/a	1.439%	0.000	n/a	n/a
%RSD		3.220	2.025	2.913	1.439	0.000	1.363	0.985

Mass Uncorrected ICPS

STD0 10/25/2016 12:59:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:00:02	135659.870	25.000	1045.033	181533.270	1180.042	10598.369	46394.484	1190.043	136315.180	10.000	12019.332	1520.069
2	13:00:24	138150.200	17.500	995.030	182251.040	1350.055	10903.565	46143.789	1000.030	137192.340	15.000	12154.430	1575.074
3	13:00:45	138069.540	7.500	825.020	179177.990	1290.050	10493.302	46334.317	820.020	143000.860	25.000	12364.585	1550.072
x		137293.200	16.667	955.028	180987.440	1273.382	10665.079	46290.863	1003.364	138836.130	16.667	12179.449	1548.405
σ		1415.082	8.780	115.332	1607.596	86.223	213.112	130.874	185.034	3633.330	7.638	173.981	27.540
%RSD		1.031	52.678	12.076	0.888	6.771	1.998	0.283	18.441	2.617	45.826	1.428	1.779

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:00:02	3995.479	1175.041	191771.980	315.003	165.001	290.003	535.009	1022.031	344.004	427.005	465.507	2150.139
2	13:00:24	3710.413	1040.032	193992.460	335.003	125.000	405.005	515.008	1044.033	351.004	431.006	446.006	2420.176
3	13:00:45	3805.434	1245.046	191610.140	270.002	180.001	325.003	690.014	1103.036	338.003	472.507	443.006	2450.180
x		3837.109	1153.373	192458.190	306.670	156.667	340.004	580.010	1056.367	344.337	443.506	451.506	2340.165
σ		145.149	104.210	1331.175	33.292	28.431	58.950	95.790	41.887	6.507	25.195	12.217	165.250
%RSD		3.783	9.035	0.692	10.856	18.148	17.338	16.515	3.965	1.890	5.681	2.706	7.061

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:00:02	220.001	182625.110	4670.654	30.000	5.000	40.000	802055.330	4685.659	1145.039	865.022	110.000	141195.560
2	13:00:24	180.001	187094.270	4675.656	90.000	0.000	35.000	808726.380	4740.674	1315.052	962.028	90.000	142335.200
3	13:00:45	145.001	187134.720	4030.487	60.000	5.000	15.000	808107.420	5070.771	1275.049	945.527	120.000	139239.210
x		181.668	185618.030	4458.932	60.000	3.333	30.000	806296.380	4832.368	1245.047	924.192	106.667	140923.320
σ		37.528	2592.027	371.053	30.000	2.887	13.229	3685.869	208.288	88.888	51.903	15.275	1565.845
%RSD		20.658	1.396	8.322	50.000	86.603	44.096	0.457	4.310	7.139	5.616	14.321	1.111

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:00:02	260.002	1925.111	1655.082	109901.160	0.000	20582.702	85.000
2	13:00:24	215.001	1910.109	1660.083	109649.510	0.000	17724.420	70.000
3	13:00:45	300.003	1715.088	1840.102	112025.230	0.000	15617.314	80.000
x		258.335	1850.103	1718.422	110525.300	0.000	17974.812	78.334
σ		42.525	117.167	105.407	1305.058	0.000	2492.146	7.638
%RSD		16.461	6.333	6.134	1.181	0.000	13.865	9.750

STD1 10/25/2016 01:05:23 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:05:45	145462.020	145.001	6416.235	764385.610	23286.256	54629.385	575062.660	21113.365	142889.910	5.000	20017.013	8257.045
2	13:06:07	141367.010	150.001	6141.131	750934.360	22455.117	53962.216	584409.490	20502.603	143152.150	15.000	20232.273	8517.176
3	13:06:28	139632.480	150.001	6266.178	764929.750	22695.442	54784.894	589618.210	21614.006	146329.560	10.000	20933.138	8697.269
x		142153.830	148.334	6274.515	760083.240	22812.272	54458.832	583030.120	21076.658	144123.870	10.000	20394.141	8490.496
σ		2993.361	2.887	137.741	7927.832	427.709	437.053	7375.163	556.610	1914.677	5.000	479.032	221.321
%RSD		2.106	1.946	2.195	1.043	1.875	0.803	1.265	2.641	1.328	50.000	2.349	2.607

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:05:45	4740.674	5440.888	623705.920	2020.122	855.022	3110.290	9842.906	1715.088	426.005	614.511	487.007	2775.231
2	13:06:07	4795.690	5275.835	621412.600	2140.137	855.022	2845.243	9507.711	1736.090	422.005	660.013	505.008	2650.211
3	13:06:28	4765.681	5760.996	625361.250	2130.136	985.029	3140.296	9817.891	1674.084	407.005	642.012	494.507	2650.211

x		4767.348	5492.573	623493.250	2096.799	898.358	3031.943	9722.836	1708.421	418.339	638.846	495.507	2691.884
σ		27.546	246.675	1982.897	66.592	75.060	162.382	186.723	31.536	10.017	22.916	9.042	72.181
%RSD		0.578	4.491	0.318	3.176	8.355	5.356	1.920	1.846	2.394	3.587	1.825	2.681
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:05:45	18885.694	193456.280	13285.293	2345.165	90.000	685.014	826035.010	980.029	4390.578	3391.345	4085.501	140963.610
2	13:06:07	18540.307	191817.500	13615.559	2545.194	45.000	620.012	825425.920	1010.031	4570.627	3450.357	3985.477	143182.410
3	13:06:28	19075.910	189541.690	13385.373	2535.193	55.000	755.017	824827.350	985.029	4625.642	3568.382	4035.488	141356.920
x		18833.970	191605.160	13428.742	2475.184	63.333	686.681	825429.430	991.696	4528.949	3470.028	4035.488	141834.310
σ		271.522	1965.917	169.351	112.711	23.629	67.518	603.838	16.074	122.949	90.143	50.012	1183.929
%RSD		1.442	1.026	1.261	4.554	37.309	9.833	0.073	1.621	2.715	2.598	1.239	0.835

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:05:45	2790.233	14976.726	5575.933	115639.790	0.000	8437.135	11223.778
2	13:06:07	2610.204	14586.380	5745.990	110917.860	0.000	8297.065	11413.907
3	13:06:28	2880.249	15256.980	5961.066	110656.130	0.000	8302.067	11744.136
x		2760.229	14940.029	5760.996	112404.590	0.000	8345.422	11460.607
σ		137.500	336.803	193.005	2804.818	0.000	79.465	263.304
%RSD		4.981	2.254	3.350	2.495	0.000	0.952	2.297

STD2 10/25/2016 01:11:06 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:11:28	140227.440	675.014	23671.799	T 2982585.400	105925.540	240832.530	T 2756088.800	95633.589	137898.130	5.000	52557.739	34385.434
2	13:11:50	139743.400	652.513	25078.854	T 3031931.900	109277.070	240578.900	T 2760092.300	99083.654	141225.820	15.000	53902.022	33137.911
3	13:12:12	137273.000	635.012	23771.941	T 2895541.200	104838.700	240411.510	T 2759510.600	97715.613	141488.030	25.000	52332.030	33583.802
x		139081.280	654.180	24174.198	T 2970019.500	106680.440	240607.650	T 2758563.900	97477.619	140203.990	15.000	52930.597	33702.382
σ		1584.609	20.053	785.054	T 69058.139	2313.481	211.973	T 2163.144	1737.302	2001.236	10.000	848.814	632.159
%RSD		1.139	3.065	3.247	T 2.325	2.169	0.088	T 0.078	1.782	1.427	66.667	1.604	1.876
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:11:28	7826.837	24252.633	T 2406824.300	9967.980	4875.713	13860.761	44213.568	4396.580	847.022	1244.046	476.007	3025.275
2	13:11:50	7871.859	24803.443	T 2478750.700	10363.221	4745.676	13440.417	43822.537	4371.573	836.021	1246.047	502.008	2930.258
3	13:12:12	7671.765	25654.730	T 2417013.700	9572.748	4330.563	13210.233	43120.710	4335.564	877.023	1288.550	448.506	2690.217
x		7790.154	24903.602	T 2434196.200	9967.983	4650.650	13503.804	43718.938	4367.906	853.355	1259.548	475.507	2881.916
σ		104.970	706.394	T 38920.229	395.236	284.727	329.864	553.745	30.673	21.222	25.137	26.754	172.680
%RSD		1.347	2.837	T 1.599	3.965	6.122	2.443	1.267	0.702	2.487	1.996	5.626	5.992
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:11:28	89921.926	188520.200	60504.625	12429.633	135.001	2980.266	820312.510	695.014	20297.352	15921.601	19601.520	139027.450
2	13:11:50	89710.793	189086.560	62592.314	12849.952	205.001	3030.276	805684.230	680.014	20032.031	16081.254	19811.768	141730.070
3	13:12:12	90389.445	186821.230	60630.080	12019.332	245.002	3280.323	811842.530	730.016	19456.350	15966.644	20162.188	137726.720
x		90007.388	188142.660	61242.340	12432.972	195.001	3096.955	812613.090	701.681	19928.578	15989.833	19858.492	139494.750
σ		347.304	1178.912	1170.793	415.320	55.678	160.758	7344.521	25.659	429.940	82.314	283.239	2042.176
%RSD		0.386	0.627	1.912	3.340	28.553	5.191	0.904	3.657	2.157	0.515	1.426	1.464

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:11:28	12464.659	68520.563	25799.954	111743.350	0.000	44348.926	54373.550
2	13:11:50	12960.037	71467.902	25604.653	110283.670	0.000	43777.418	54875.190
3	13:12:12	12889.983	69615.085	26405.902	109629.380	0.000	47592.856	55271.496
x		12771.560	69867.850	25936.836	110552.130	0.000	45239.733	54840.079

σ	268.082	1489.839	417.795	1082.252	0.000	2057.800	450.002
%RSD	2.099	2.132	1.611	0.979	0.000	4.549	0.821

STD3 10/25/2016 01:16:50 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:17:12	142849.570	80858.167	29260.663	┬11611699.000	┬3517853.200	┬32551844.000	┬11510114.000	1220177.800	145088.790	23561.643	┬2302284.800	66863
2	13:17:34	138351.860	77760.981	28444.252	┬11506525.000	┬3463710.500	┬31670477.000	┬11067675.000	1172983.600	139118.200	23136.047	┬2263184.400	65838
3	13:17:56	138583.780	78102.573	29040.278	┬11435807.000	┬3485432.300	┬31715798.000	┬11069694.000	1187209.800	141467.860	22420.070	┬2260758.800	65878
x		139928.400	78907.240	28915.064	┬11518011.000	┬3488998.700	┬31979373.000	┬11215828.000	1193457.100	141891.620	23039.253	┬2275409.300	66193
σ		2532.459	1698.163	422.363	┬88506.826	┬27246.972	┬496292.010	┬254861.330	24209.377	3007.764	576.909	┬23306.389	580
%RSD		1.810	2.152	1.461	┬0.768	┬0.781	┬1.552	┬2.272	2.029	2.120	2.504	┬1.024	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:17:12	84121.760	┬3415765.800	┬70548477.000	1020977.500	546799.940	679010.530	540132.740	71825.434	5751.992	8335.084	494.507	7186
2	13:17:34	81930.886	┬3349056.700	┬68293713.000	994204.450	534417.870	661444.900	534392.070	71662.736	5654.959	8114.975	460.006	6851
3	13:17:56	82599.173	┬3354718.000	┬68846844.000	997301.510	532368.840	658517.320	530603.870	71391.576	5550.924	8208.021	478.507	6701
x		82883.940	┬3373180.200	┬69229678.000	1004161.100	537862.220	666324.250	535042.890	71626.582	5652.625	8219.360	477.674	6913
σ		1122.854	┬36988.722	┬1175121.800	14645.470	7807.805	11083.723	4797.657	219.177	100.554	110.492	17.266	248
%RSD		1.355	┬1.097	┬1.697	1.458	1.452	1.663	0.897	0.306	1.779	1.344	3.615	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	13:17:12	744912.980	190947.600	1495062.900	241689.800	7976.908	122463.270	820448.990	743972.330	500498.800	394761.380	500333.960	140650
2	13:17:34	732907.930	188469.630	1543181.100	241147.030	7841.844	122075.440	828072.480	750239.070	496610.040	392048.460	497686.440	141185
3	13:17:56	724476.020	187023.480	1569776.100	244135.060	8352.092	123505.920	819619.640	759363.690	502301.850	395885.060	496666.690	140187
x		734098.970	188813.570	1536006.700	242323.960	8056.948	122681.540	822713.700	751191.700	499803.560	394231.630	498229.030	140674
σ		10270.408	1984.540	37869.766	1591.760	264.373	739.798	4659.324	7739.773	2908.899	1972.400	1892.890	499
%RSD		1.399	1.051	2.465	0.657	3.281	0.603	0.566	1.030	0.582	0.500	0.380	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:17:12	30267.459	1411974.600	┬7311541.600	110646.060	0.000	178485.620	106106.690
2	13:17:34	30658.172	1418723.200	┬7225659.200	109216.680	0.000	193339.940	105648.790
3	13:17:56	31093.978	1435606.000	┬7337458.100	112458.130	0.000	204638.640	106197.260
x		30673.203	1422101.300	┬7291552.900	110773.620	0.000	192154.740	105984.250
σ		413.465	12172.496	┬58518.411	1624.485	0.000	13116.732	294.021
%RSD		1.348	0.856	┬0.803	1.466	0.000	6.826	0.277

STD4 10/25/2016 01:22:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	13:22:55	153301.820	246814.080	86689.869	┬35838292.000	┬10812637.000	┬100476710.000	┬36385368.000	┬4052157.100	146269.030	74124.467	┬7435016.400
2	13:23:17	144685.300	241816.620	90208.468	┬36398897.000	┬11095730.000	┬100999080.000	┬36150085.000	┬4071541.000	148639.870	74059.178	┬7396042.800
3	13:23:39	144493.650	238420.720	87654.897	┬35809308.000	┬11061111.000	┬101563080.000	┬36576031.000	┬4066729.600	149184.710	74445.895	┬7327490.500
x		147493.590	242350.480	88184.411	┬36015499.000	┬10989826.000	┬101012960.000	┬36370495.000	┬4063475.900	148031.200	74209.847	┬7386183.200
σ		5030.985	4222.070	1818.083	┬332348.490	┬154423.700	┬543315.580	┬213362.000	┬10093.231	1550.208	207.014	┬54436.769
%RSD		3.411	1.742	2.062	┬0.923	┬1.405	┬0.538	┬0.587	┬0.248	1.047	0.279	┬0.737

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	13:22:55	255016.180	┬10851639.000	┬219923360.000	┬3395533.300	1633615.600	┬2174813.700	1600667.200	215052.530	16373.038	23036.910	510.508
2	13:23:17	257803.580	┬11054320.000	┬221537530.000	┬3439998.500	1690947.800	┬2223676.600	1601930.300	215031.260	16367.032	22995.853	525.508

3	13:23:39	253320.620	┬10807753.000	┬217531210.000	┬3421499.800	1645895.100	1996239.200	1578620.800	214096.340	16412.077	22998.357	478.00
x		255380.130	┬10904571.000	┬219664030.000	┬3419010.500	1656819.500	┬2131576.500	1593739.400	214726.710	16384.049	23010.373	504.67
σ		2263.530	┬131529.830	┬2015711.400	┬22336.904	30186.918	┬119724.830	13108.332	546.021	24.458	23.015	24.28
%RSD		0.886	┬1.206	┬0.918	┬0.653	1.822	┬5.617	0.822	0.254	0.149	0.100	4.81

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	13:22:55	┬2466733.200	190795.880	┬5151057.300	737049.710	23837.034	370053.070	854108.270	2380410.300	1538151.600	1217260.600	1568986.70
2	13:23:17	┬2507800.700	189116.900	┬5321267.800	735999.800	24137.466	374802.450	855244.370	2383090.900	1545502.100	1230367.000	┬1749321.10
3	13:23:39	┬2498290.400	189673.170	┬5302664.100	734845.510	23656.777	368555.430	848944.210	2387815.900	1548436.700	1232085.200	┬1753721.80
x		┬2490941.400	189861.980	┬5258329.700	735965.010	23877.092	371136.980	852765.620	2383772.400	1544030.100	1226570.900	┬1690676.50
σ		┬21497.465	855.264	┬93365.163	1102.512	242.835	3261.511	3357.833	3749.562	5298.199	8108.614	┬105409.47
%RSD		┬0.863	0.450	┬1.776	0.150	1.017	0.879	0.394	0.157	0.343	0.661	┬6.23

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:22:55	94200.462	┬4894271.700	┬22507995.000	107686.770	0.000	656302.480	335763.380
2	13:23:17	96845.557	┬4934104.500	┬22665355.000	110112.550	0.000	686961.610	339201.970
3	13:23:39	98595.774	┬4965299.300	┬22745825.000	108391.320	0.000	697151.920	333967.840
x		96547.264	┬4931225.200	┬22639725.000	108730.210	0.000	680138.670	336311.070
σ		2212.787	┬35601.212	┬120968.960	1247.890	0.000	21262.259	2659.695
%RSD		2.292	┬0.722	┬0.534	1.148	0.000	3.126	0.791

STD5 10/25/2016 01:28:16 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	13:28:38	144967.740	378560.970	137570.440	T 57440046.000	TM 18020048.000	TM 166324470.000	TM 60127391.000	TM 6731730.700	146319.470	123964.310	TM
2	13:29:00	148801.300	382701.440	143575.770	TM 59223856.000	TM 18244344.000	TM 166080870.000	TM 59879892.000	TM 6828788.400	147469.540	124825.700	TM
3	13:29:22	143595.940	377589.300	141084.630	T 57726708.000	T 18279675.000	TM 165712420.000	TM 60794299.000	TM 6911100.500	150698.230	125576.310	TM
x		145788.330	379617.240	140743.610	TM 58130204.000	TM 18181356.000	TM 166039250.000	TM 60267194.000	TM 6823873.200	148162.420	124788.770	TM
σ		2697.957	2714.821	3017.155	TM 957914.590	TM 140808.900	TM 308142.010	TM 472963.060	TM 89785.834	2270.118	806.634	
%RSD		1.851	0.715	2.144	TM 1.648	TM 0.774	TM 0.186	TM 0.785	TM 1.316	1.532	0.646	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	
1	13:28:38	426913.510	TM 18076339.000	TM 361160400.000	TM 5614358.600	TM 2923303.500	TM 3596504.000	TM 2767072.100	345108.380	25596.641	36095.043	
2	13:29:00	419488.510	TM 18059711.000	TM 365012080.000	TM 5674570.200	TM 2917709.400	TM 3560511.900	TM 2785583.600	347531.970	25754.884	36278.441	
3	13:29:22	428339.410	TM 18160388.000	T 364395690.000	TM 5657031.600	TM 2927515.500	TM 3591746.500	TM 2779678.100	349055.310	25707.811	35973.280	
x		424913.810	TM 18098813.000	TM 363522730.000	TM 5648653.500	TM 2922842.800	TM 3582920.800	TM 2777444.600	347231.890	25686.445	36115.588	
σ		4752.232	TM 53970.280	TM 2068915.700	TM 30967.791	TM 4919.237	TM 19551.935	TM 9455.702	1990.502	81.257	153.614	
%RSD		1.118	TM 0.298	TM 0.569	TM 0.548	TM 0.168	TM 0.546	TM 0.340	0.573	0.316	0.425	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	
1	13:28:38	TM 4195655.400	188914.630	TM 8713031.500	1202161.600	39191.024	603890.850	896752.950	T 4362627.500	2566808.100	M 2037140.900	
2	13:29:00	TM 4160531.900	185294.330	TM 8905958.200	1219146.200	39842.566	610484.660	890258.290	T 4462635.200	M 2585498.600	M 2061379.800	
3	13:29:22	TM 4153096.500	187741.480	TM 8920147.800	1205033.200	40223.479	607897.630	892250.710	T 4431610.200	TM 2844642.200	M 2068990.400	
x		TM 4169761.300	187316.810	TM 8846379.100	1208780.400	39752.356	607424.380	893087.320	T 4418957.600	TM 2665649.600	M 2055837.000	
σ		TM 22731.087	1847.135	TM 115700.210	9091.215	522.106	3322.284	3327.177	T 51190.343	TM 155293.570	M 16632.479	
%RSD		TM 0.545	0.986	TM 1.308	0.752	1.313	0.547	0.373	T 1.158	TM 5.826	M 0.809	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:28:38	M 190462.090	TM 8210985.700	TM 37416875.000	109246.880	0.000	M 1347328.100	M 676475.500
2	13:29:00	M 195201.450	TM 8349080.400	TM 37672260.000	110253.470	0.000	M 1399685.100	682675.790
3	13:29:22	M 198753.060	TM 8373043.300	TM 38067651.000	111833.950	0.000	M 1413588.200	692478.000
x		M 194805.530	TM 8311036.500	TM 37718929.000	110444.770	0.000	M 1386867.100	M 683876.430
σ		M 4159.639	TM 87470.997	TM 327888.360	1304.102	0.000	M 34940.296	M 8068.527
%RSD		M 2.135	TM 1.052	TM 0.869	1.181	0.000	M 2.519	M 1.180

ICV 10/25/2016 01:34:00 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:34:22	135710.280	38662.291	16257.926	T 5915916.100	T 1689898.700	T 15811372.000	T 5454280.800	569020.500	136385.760	11148.728	1057428.200	322617.530
2	13:34:43	136194.200	38717.419	16077.751	T 5803403.800	T 1637178.300	T 15634429.000	T 5307725.100	556219.060	138936.700	11298.829	1035562.300	314076.700
3	13:35:05	133502.560	38208.747	16112.785	T 5802914.600	T 1655926.200	T 15522775.000	T 5389369.200	568317.100	134641.660	11398.897	1047100.800	317684.110
x		135135.680	38529.486	16149.487	T 5840744.900	T 1661001.100	T 15656192.000	T 5383791.700	564518.880	136654.710	11282.151	1046697.100	318126.120
σ		1434.874	279.132	95.530	T 65100.693	T 26724.091	T 145524.460	T 73436.874	7196.460	2160.111	125.916	10938.539	4287.536
%RSD		1.062	0.724	0.592	T 1.115	T 1.609	T 0.930	T 1.364	1.275	1.581	1.116	1.045	1.348

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:34:22	41616.894	1521076.100	T 33651219.000	489849.320	260078.510	324631.070	259997.260	35176.082	2990.268	4319.560	469.507	4265.546
2	13:34:43	39887.674	1496176.500	T 32753649.000	486637.250	264761.390	325074.590	260606.670	34964.637	2971.265	4206.031	436.506	4465.598
3	13:35:05	41341.209	1505568.400	T 33438282.000	490137.610	267987.330	330943.410	260169.930	35420.599	2884.249	4255.043	478.007	4470.600
x		40948.592	1507607.000	T 33281050.000	488874.720	264275.740	326883.020	260257.950	35187.106	2948.594	4260.211	461.340	4400.581
σ		929.065	12574.344	T 468987.380	1943.066	3976.712	3523.383	314.095	228.180	56.528	56.941	21.923	116.971

%RSD		2.269	0.834	T 1.409	0.397	1.505	1.078	0.121	0.648	1.917	1.337	4.752	2.658
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:34:22	347153.190	183201.380	348597.880	114642.940	3920.461	59390.629	795114.340	367579.220	244743.890	193479.550	240959.340	135014.660
2	13:34:43	347418.640	182554.340	354740.470	113474.990	3735.419	59059.456	785661.510	369485.690	243551.610	193338.930	238220.390	136819.290
3	13:35:05	345121.650	181260.330	361810.030	115992.230	3745.421	59340.451	791592.490	376648.370	246499.480	195098.260	244028.510	134913.850
x		346564.500	182338.680	355049.460	114703.380	3800.434	59263.512	790789.440	371237.760	244931.660	193972.250	241069.410	135582.600
σ		1256.569	988.332	6611.489	1259.708	104.067	178.490	4777.307	4781.700	1482.876	977.685	2905.627	1072.189
%RSD		0.363	0.542	1.862	1.098	2.738	0.301	0.604	1.288	0.605	0.504	1.205	0.791

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:34:22	31740.194	681743.780	T 3557030.400	108914.710	0.000	157223.090	99747.597
2	13:34:43	33814.267	689722.190	T 3487929.300	106489.110	0.000	169851.090	100627.860
3	13:35:05	34064.777	701691.600	T 3553851.700	108743.600	0.000	180709.390	101895.530
x		33206.413	691052.520	T 3532937.100	108049.140	0.000	169261.190	100757.000
σ		1275.945	10040.230	T 39010.304	1353.731	0.000	11754.258	1079.774
%RSD		3.842	1.453	T 1.104	1.253	0.000	6.944	1.072

ICVL 10/25/2016 01:39:44 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:40:06	144372.610	142.501	6951.449	726704.980	22525.211	56440.404	552115.960	19010.836	139612.310	30.000	18109.834	7701.779
2	13:40:28	138180.450	155.001	6566.293	727863.940	22825.620	56380.201	541237.730	19561.473	135831.260	30.000	17584.271	7876.861
3	13:40:49	138553.530	192.501	6741.363	723447.770	22224.808	60359.099	548303.130	19841.804	137686.390	10.000	17779.478	7796.823
x		140368.860	163.334	6753.035	726005.560	22525.213	57726.568	547218.940	19471.371	137709.980	23.333	17824.528	7791.821
σ		3472.359	26.021	192.843	2289.659	300.406	2280.037	5519.559	422.748	1890.636	11.547	265.661	87.648
%RSD		2.474	15.931	2.856	0.315	1.334	3.950	1.009	2.171	1.373	49.487	1.490	1.125

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:40:06	4140.514	5475.899	588075.110	2280.156	985.029	3035.276	9122.496	1561.073	380.004	617.011	465.507	2615.205
2	13:40:28	3965.472	5550.924	598273.610	2520.191	970.028	3015.273	8957.406	1615.078	419.005	620.512	427.505	2525.191
3	13:40:49	3740.420	6306.193	608011.680	2430.177	960.028	2965.264	9227.554	1635.080	391.005	629.012	459.506	2605.204
x		3948.802	5777.672	598120.130	2410.175	971.695	3005.271	9102.485	1603.744	396.671	622.178	450.839	2581.867
σ		200.568	459.247	9969.173	121.261	12.584	36.062	136.181	38.283	20.109	6.171	20.429	49.336
%RSD		5.079	7.949	1.667	5.031	1.295	1.200	1.496	2.387	5.069	0.992	4.531	1.911

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:40:06	17889.596	190017.050	14000.878	2505.188	35.000	645.012	806722.700	2495.187	4665.653	3782.429	3915.460	136930.200
2	13:40:28	17924.634	187761.710	14186.035	2615.205	15.000	635.012	805107.330	2970.265	5300.843	3992.978	3865.448	137414.150
3	13:40:49	17474.156	187549.340	14326.155	2510.189	50.000	555.009	800650.130	3290.325	5005.752	3971.973	3920.461	136768.880
x		17762.795	188442.700	14171.023	2543.528	33.333	611.678	804160.050	2918.592	4990.749	3915.794	3900.456	137037.740
σ		250.582	1367.559	163.157	62.125	17.559	49.331	3145.158	400.080	317.861	115.973	30.421	335.812
%RSD		1.411	0.726	1.151	2.442	52.678	8.065	0.391	13.708	6.369	2.962	0.780	0.245

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:40:06	2820.239	14661.446	6941.445	105955.730	0.000	9142.507	10403.246
2	13:40:28	2415.175	15241.966	7331.612	110666.190	0.000	8437.135	10683.423
3	13:40:49	3040.277	15402.113	7511.692	108522.170	0.000	9152.512	10813.507
x		2758.564	15101.842	7261.583	108381.360	0.000	8910.718	10633.392
σ		317.082	389.709	291.502	2358.386	0.000	410.165	209.657
%RSD		11.494	2.581	4.014	2.176	0.000	4.603	1.972

ICBIS 10/25/2016 01:45:28 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:45:49	150476.240	5.000	1135.039	184879.760	310.003	2735.224	43306.190	610.011	140499.720	25.000	13360.353	1660.083
2	13:46:11	148014.340	7.500	1185.042	186548.200	460.006	2430.177	42855.026	460.006	145754.560	15.000	13560.514	1695.086
3	13:46:33	145976.490	17.500	1050.033	185375.220	410.005	2470.183	41942.709	610.011	144534.000	35.000	13445.421	1670.084
x		148155.690	10.000	1123.371	185601.060	393.338	2545.195	42701.308	560.010	143596.090	25.000	13455.429	1675.084
σ		2253.204	6.614	68.257	856.839	76.378	165.782	694.616	86.605	2750.105	10.000	100.455	18.030
%RSD		1.521	66.144	6.076	0.462	19.418	6.514	1.627	15.465	1.915	40.000	0.747	1.076

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:45:49	4480.602	640.012	181462.510	100.000	35.000	190.001	615.011	1253.047	430.006	476.007	473.507	2665.213
2	13:46:11	4715.667	710.015	181978.090	70.000	55.000	295.003	495.007	1245.046	420.005	482.507	497.507	2465.182
3	13:46:33	4840.703	605.011	181609.090	60.000	30.000	185.001	500.007	1278.049	442.006	508.008	476.507	2425.176
x		4678.991	651.679	181683.230	76.667	40.000	223.335	536.675	1258.714	430.672	488.841	482.507	2518.524
σ		182.830	53.465	265.663	20.817	13.229	62.116	67.887	17.216	11.015	16.914	13.077	128.602
%RSD		3.907	8.204	0.146	27.152	33.072	27.813	12.650	1.368	2.558	3.460	2.710	5.106

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:45:49	75.000	195348.160	1060.034	30.000	0.000	5.000	821225.880	2205.146	515.008	436.506	45.000	142234.340
2	13:46:11	55.000	196390.300	1050.033	25.000	0.000	10.000	829059.790	2585.200	630.012	497.007	15.000	141810.750
3	13:46:33	70.000	192485.130	1180.042	15.000	0.000	10.000	832116.620	2470.183	600.011	497.007	55.000	136063.140
x		66.667	194741.200	1096.703	23.333	0.000	8.333	827467.430	2420.177	581.677	476.840	38.333	140036.080
σ		10.408	2022.097	72.347	7.638	0.000	2.887	5617.270	194.900	59.654	34.931	20.817	3447.179
%RSD		15.613	1.038	6.597	32.733	0.000	34.641	0.679	8.053	10.255	7.325	54.304	2.462

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:45:49	200.001	1075.035	750.017	110515.200	0.000	13400.385	35.000
2	13:46:11	230.002	895.024	705.015	109417.990	0.000	13220.241	25.000
3	13:46:33	155.001	1025.032	565.010	113092.400	0.000	11919.261	60.000
x		195.001	998.363	673.347	111008.530	0.000	12846.629	40.000
σ		37.750	92.921	96.483	1886.226	0.000	808.160	18.028
%RSD		19.359	9.307	14.329	1.699	0.000	6.291	45.069

ICSA 10/25/2016 01:51:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:51:32	155370.840	10.000	1000.030	TM 124748130.000	T 12813654.000	T 118426510.000	TM 126507270.000	T 4720449.600	163427.350	266193.930	5896.043	4
2	13:51:54	150809.230	15.000	1045.033	TM 126481240.000	T 13053304.000	T 120478080.000	TM 126918190.000	T 4798158.100	165780.410	265518.280	5570.931	4
3	13:52:16	149699.290	20.000	1090.036	TM 126812390.000	T 13049878.000	T 120580040.000	TM 129269650.000	T 4841114.000	169295.480	270604.110	5720.982	4
x		151959.790	15.000	1045.033	TM 126013920.000	T 12972278.000	T 119828210.000	TM 127565030.000	T 4786573.900	166167.750	267438.780	5729.318	4
σ		3005.739	5.000	45.003	TM 1108643.700	T 137383.650	T 1214978.700	TM 1490469.600	T 61160.600	2953.182	2761.996	162.716	
%RSD		1.978	33.333	4.306	TM 0.880	T 1.059	T 1.014	TM 1.168	T 1.278	1.777	1.033	2.840	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:51:32	2275.155	1180.042	T 251113100.000	180.001	265.002	840.021	1540.071	1096.036	354.004	561.509	622.012	2
2	13:51:54	1875.105	1270.048	T 257950080.000	175.001	240.002	800.019	1475.065	1067.034	378.004	543.509	589.510	2
3	13:52:16	2425.176	1170.041	T 256535560.000	240.002	275.002	905.025	1615.078	1138.039	352.004	532.509	615.511	2
x		2191.812	1206.710	T 255199580.000	198.335	260.002	848.355	1543.405	1100.370	361.337	545.842	609.011	2

σ		284.348	55.080	T 3608973.500	36.171	18.028	52.996	70.066	35.700	14.469	14.641	17.198	
%RSD		12.973	4.564	T 1.414	18.238	6.934	6.247	4.540	3.244	4.004	2.682	2.824	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	13:51:32	2855.245	208809.900	T 2811519.400	280.002	315.003	530.008	888750.950	2200.145	590.010	426.005	105.000	153
2	13:51:54	2980.266	207402.490	T 2936986.300	260.002	405.005	485.007	910541.200	2485.185	770.018	532.008	125.000	156
3	13:52:16	3030.276	212698.620	T 2921117.200	265.002	380.004	615.011	926601.040	2595.202	635.012	528.508	70.000	159
x		2955.262	209637.000	T 2889874.300	268.336	366.671	543.342	908631.060	2426.844	665.013	495.507	100.000	156
σ		90.155	2743.228	T 68319.692	10.408	46.459	66.020	18997.203	203.888	93.679	60.216	27.839	27
%RSD		3.051	1.309	T 2.364	3.879	12.670	12.151	2.091	8.401	14.087	12.152	27.839	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:51:32	515.008	875.023	1975.117	113897.860	0.000	15271.994	55.000
2	13:51:54	635.012	995.030	1830.101	119567.360	0.000	14301.133	40.000
3	13:52:16	605.011	940.027	1915.110	118660.910	0.000	12354.577	35.000
x		585.010	936.693	1906.776	117375.380	0.000	13975.901	43.333
σ		62.452	60.073	72.867	3045.532	0.000	1485.652	10.408
%RSD		10.675	6.413	3.821	2.595	0.000	10.630	24.019

ICSAB 10/25/2016 01:56:53 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:57:14	141175.390	3062.781	47768.357	TM 118635190.000	T 11984673.000	T 109953080.000	TM 116978990.000	T 4479501.600	153120.160	253330.770	51820.436	9
2	13:57:36	141286.330	3097.788	45151.076	TM 118866540.000	T 12128773.000	T 110500320.000	TM 120042120.000	T 4558248.400	157006.060	257646.170	51128.303	9
3	13:57:58	139763.570	3017.773	47106.477	TM 121285350.000	T 12299250.000	T 112061580.000	TM 120841450.000	T 4561398.300	158187.150	257036.870	53310.123	9
x		140741.760	3059.448	46675.303	TM 119595690.000	T 12137565.000	T 110838330.000	TM 119287520.000	T 4533049.400	156104.460	256004.610	52086.287	9
σ		848.955	40.111	1360.872	TM 1467846.500	T 157472.770	T 1094134.200	TM 2038801.600	T 46400.541	2651.089	2335.562	1114.940	
%RSD		0.603	1.311	2.916	TM 1.227	T 1.297	T 0.987	TM 1.709	T 1.024	1.698	0.912	2.141	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:57:14	13055.111	67742.392	T 238590910.000	52251.779	10703.436	27708.013	21729.155	16851.515	3469.361	5045.764	563.510	
2	13:57:36	13270.281	69479.521	T 245368660.000	54303.322	11564.010	28073.624	22219.802	16931.596	3567.382	5096.279	581.010	
3	13:57:58	13030.092	69454.417	T 247877510.000	54152.833	10923.579	27758.096	22680.422	17040.707	3661.402	5199.311	598.011	
x		13118.494	68892.110	T 243945690.000	53569.311	11063.675	27846.578	22209.793	16941.273	3566.048	5113.784	580.843	
σ		132.045	995.764	T 4804046.200	1143.495	447.065	198.216	475.712	94.967	96.027	78.256	17.251	
%RSD		1.007	1.445	T 1.969	2.135	4.041	0.712	2.142	0.561	2.693	1.530	2.970	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	13:57:14	2745.226	202310.480	T 2756462.000	61633.751	1280.049	15051.794	867693.740	1610.078	98786.900	79481.569	105523.000	15
2	13:57:36	2750.227	200144.560	T 2797071.400	62923.557	1360.055	15652.346	891027.820	1940.113	103228.700	82063.034	107661.610	15
3	13:57:58	2905.253	207392.370	T 2887850.300	62677.633	1375.057	16603.266	909781.340	2035.124	105809.810	84118.745	111491.670	15
x		2800.235	203282.470	T 2813794.600	62411.647	1338.387	15769.135	889500.970	1861.772	102608.470	81887.782	108225.430	15
σ		90.982	3720.383	T 67271.597	684.808	51.076	782.302	21085.306	223.090	3552.298	2323.550	3024.016	
%RSD		3.249	1.830	T 2.391	1.097	3.816	4.961	2.370	11.983	3.462	2.837	2.794	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:57:14	31705.128	184869.650	133936.010	116384.950	0.000	203955.340	123495.850
2	13:57:36	32346.358	191058.860	138256.070	118429.280	0.000	218376.340	126593.960
3	13:57:58	33147.931	193208.430	143041.200	119970.240	0.000	231222.870	129450.780
x		32399.806	189712.310	138411.100	118261.490	0.000	217851.520	126513.530
σ		722.885	4329.402	4554.574	1798.523	0.000	13641.337	2978.281
%RSD		2.231	2.282	3.291	1.521	0.000	6.262	2.354

CCV 10/25/2016 02:02:37 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:02:58	128362.410	71435.263	25529.538	T 10368530.000	T 3116162.900	T 28641630.000	T 9986831.300	T 1115436.100	129440.700	20302.358	T 1996451.500	585346
2	14:03:20	123999.570	71169.128	25689.784	T 10205081.000	T 3071620.400	T 27950644.000	T 9825732.900	1043718.200	128755.430	20247.291	T 1988251.300	578043
3	14:03:42	122458.230	68395.049	25329.232	T 10189061.000	T 3007780.500	T 27719420.000	T 9755209.600	1040304.400	125641.800	20582.702	T 1989989.100	572755
x		124940.070	70333.146	25516.185	T 10254224.000	T 3065187.900	T 28103898.000	T 9855924.600	T 1066486.300	127945.980	20377.450	T 1991563.900	578714
σ		3062.391	1683.708	180.646	T 99315.465	T 54476.758	T 479825.750	T 118725.730	T 42426.201	2024.680	179.873	T 4320.997	6322
%RSD		2.451	2.394	0.708	T 0.969	T 1.777	T 1.707	T 1.205	T 3.978	1.582	0.883	T 0.217	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:02:58	73396.255	T 2973822.600	T 61559950.000	900939.950	487172.550	596263.470	483132.470	65798.628	5193.809	7679.269	441.506	6281
2	14:03:20	72964.365	T 3007177.200	T 61879606.000	881390.090	471331.680	586350.930	478223.900	64683.275	5147.795	7512.193	446.506	6256
3	14:03:42	72386.855	T 2957551.200	T 60923742.000	881569.200	467017.760	582545.930	474864.880	64034.778	5150.796	7430.656	439.506	6116
x		72915.825	T 2979517.000	T 61454433.000	887966.410	475174.000	588386.770	478740.420	64838.893	5164.133	7540.706	442.506	6217
σ		506.448	T 25298.338	T 486589.300	11235.765	10612.559	7081.753	4157.923	892.163	25.744	126.735	3.606	88

%RSD		0.695	T 0.849	T 0.792	1.265	2.233	1.204	0.869	1.376	0.499	1.681	0.815	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	14:02:58	674622.620	176681.550	1380700.400	224116.790	7536.704	114204.950	769974.250	691050.550	461348.090	369072.180	468308.220	134369
2	14:03:20	672572.200	177186.880	1406618.900	224010.370	7831.840	113037.030	785651.030	695760.560	465408.680	368228.830	468395.630	132454
3	14:03:42	661200.480	176014.550	1426414.900	221562.980	7216.562	113258.520	766719.220	700784.610	464730.130	368260.010	465871.340	134087
x		669465.100	176627.660	1404578.100	223230.050	7528.368	113500.160	774114.830	695865.240	463828.970	368520.340	467525.060	133636
σ		7230.423	588.017	22925.521	1444.701	307.724	620.325	10122.335	4867.876	2175.123	478.162	1432.835	1033
%RSD		1.080	0.333	1.632	0.647	4.088	0.547	1.308	0.700	0.469	0.130	0.306	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:02:58	27938.397	1349969.500	T 7033705.400	108461.770	0.000	161089.750	101306.960
2	14:03:20	28654.611	1362787.300	T 7085252.000	106942.000	0.000	175403.160	103440.000
3	14:03:42	29901.799	1359873.100	T 7036340.000	109770.300	0.000	187023.480	103948.150
x		28831.603	1357543.300	T 7051765.800	108391.360	0.000	174505.460	102898.370
σ		993.595	6718.978	T 29029.802	1415.464	0.000	12990.147	1401.425
%RSD		3.446	0.495	T 0.412	1.306	0.000	7.444	1.362

CCB 10/25/2016 02:08:20 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:08:42	140338.370	17.500	895.024	203272.070	3670.404	30853.532	62135.610	1620.079	130559.380	135.001	11043.658	1500.068
2	14:09:04	133734.400	27.500	940.027	194599.470	3600.389	29526.131	60369.135	1550.072	132837.270	50.000	11318.842	1580.075
3	14:09:25	138079.620	40.000	1050.033	194902.990	3000.270	25354.271	58211.480	1420.061	132161.930	75.000	11614.045	1370.056
x		137384.130	28.333	961.695	197591.510	3423.688	28577.978	60238.742	1530.070	131852.860	86.667	11325.515	1483.400
σ		3356.467	11.273	79.744	4921.849	368.358	2869.619	1965.312	101.498	1169.976	43.685	285.252	105.997
%RSD		2.443	39.788	8.292	2.491	10.759	10.041	3.263	6.634	0.887	50.405	2.519	7.146

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:08:42	3830.440	1235.046	233210.280	320.003	150.001	335.003	495.007	1034.032	325.003	442.506	436.006	2430.177
2	14:09:04	3565.381	1040.032	231968.120	305.003	155.001	280.002	500.007	1063.034	331.003	450.006	446.006	2570.198
3	14:09:25	3815.437	1160.040	216567.970	325.003	155.001	395.005	540.009	1006.030	342.004	470.507	457.006	2480.184
x		3737.086	1145.040	227248.790	316.670	153.334	336.670	511.675	1034.365	332.670	454.340	446.339	2493.520
σ		148.890	98.368	9270.689	10.409	2.887	57.519	24.665	28.503	8.622	14.495	10.504	70.957
%RSD		3.984	8.591	4.080	3.287	1.883	17.085	4.820	2.756	2.592	3.190	2.353	2.846

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:08:42	160.001	183929.330	4070.497	85.000	5.000	30.000	772727.380	3140.296	770.018	632.512	170.001	135377.590
2	14:09:04	225.002	182524.010	4285.551	65.000	15.000	55.000	792871.170	3665.403	935.026	755.517	235.002	136557.150
3	14:09:25	260.002	181361.420	3770.426	75.000	0.000	35.000	784540.510	3850.445	1050.033	770.018	155.001	137615.810
x		215.001	182604.920	4042.158	75.000	6.667	40.000	783379.690	3552.048	918.359	719.349	186.668	136516.850
σ		50.745	1285.866	258.729	10.000	7.638	13.229	10121.945	368.395	140.750	75.552	42.525	1119.653
%RSD		23.602	0.704	6.401	13.333	114.564	33.072	1.292	10.371	15.326	10.503	22.781	0.820

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:08:42	220.001	1685.085	2005.121	108461.770	0.000	11969.296	85.000
2	14:09:04	190.001	1460.064	1935.112	107938.390	0.000	10788.491	55.000
3	14:09:25	165.001	1695.086	2255.153	110001.820	0.000	10153.092	70.000
x		191.668	1613.412	2065.128	108800.660	0.000	10970.293	70.000
σ		27.538	132.897	168.247	1072.644	0.000	921.650	15.000
%RSD		14.368	8.237	8.147	0.986	0.000	8.401	21.429

MB 200-110491/1-A 10/25/2016 02:14:02 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:14:24	146359.830	0.000	925.026	270761.630	230.002	14261.099	55562.461	1420.061	136849.540	70.000	6461.252	2125.135
2	14:14:46	139642.560	0.000	975.029	266940.740	340.003	14015.891	55151.099	1360.055	136577.320	50.000	6656.329	2140.137
3	14:15:08	137232.670	0.000	965.028	279260.150	210.001	15241.966	56636.066	1220.045	135075.150	45.000	5931.055	2170.141
x		141078.350	0.000	955.027	272320.840	260.002	14506.319	55783.209	1333.387	136167.330	55.000	6349.545	2145.138
σ		4729.945	0.000	26.459	6305.975	70.001	648.780	766.700	102.640	955.603	13.229	375.319	22.916
%RSD		3.353	0.000	2.770	2.316	26.923	4.472	1.374	7.698	0.702	24.052	5.911	1.068

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:14:24	2350.166	880.023	180638.630	85.000	305.003	285.002	585.010	545.009	197.001	463.506	433.506	2230.149
2	14:14:46	2360.167	725.016	182655.440	135.001	235.002	250.002	510.008	569.010	176.001	459.506	462.506	2275.155
3	14:15:08	2390.171	825.020	179324.560	80.000	225.002	325.003	640.012	510.008	160.001	464.006	470.007	2665.213
x		2366.835	810.020	180872.880	100.000	255.002	286.669	578.343	541.342	177.668	462.340	455.340	2390.173
σ		20.820	78.585	1677.749	30.414	43.590	37.528	65.258	29.671	18.556	2.467	19.277	239.253
%RSD		0.880	9.702	0.928	30.414	17.094	13.091	11.284	5.481	10.444	0.533	4.234	10.010

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:14:24	345.004	189743.970	765.018	20.000	0.000	5.000	810016.840	24618.168	285.002	237.002	5.000	139450.970
2	14:14:46	305.003	195398.740	920.025	20.000	0.000	5.000	819598.650	24908.599	300.003	271.002	15.000	139612.310
3	14:15:08	400.005	185183.100	800.019	20.000	0.000	5.000	794527.310	24142.473	275.002	291.003	25.000	132343.370
x		350.004	190108.600	828.354	20.000	0.000	5.000	808047.600	24556.414	286.669	266.335	15.000	137135.550
σ		47.698	5117.575	81.296	0.000	0.000	0.000	12651.142	386.778	12.583	27.301	10.000	4150.935
%RSD		13.628	2.692	9.814	0.000	0.000	0.000	1.566	1.575	4.389	10.251	66.667	3.027

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:14:24	155.001	590.010	585.010	109609.240	0.000	3625.394	20.000
2	14:14:46	125.000	680.014	750.017	111290.330	0.000	3595.388	20.000
3	14:15:08	145.001	705.015	895.024	106499.180	0.000	3685.407	15.000
x		141.667	658.346	743.350	109132.920	0.000	3635.396	18.333
σ		15.275	60.486	155.114	2430.833	0.000	45.836	2.887
%RSD		10.783	9.188	20.867	2.227	0.000	1.261	15.746

LCS 200-110491/2-A 10/25/2016 02:19:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:20:06	141316.580	1200.043	44123.329	T 5840673.500	210288.320	468051.150	T 5366990.600	180350.540	136335.350	40.000	85192.176	67832.758
2	14:20:28	145492.280	1205.044	44785.090	T 5869871.700	213073.360	463640.400	T 5369522.800	184303.430	134974.340	45.000	84569.015	67817.697
3	14:20:50	138089.700	1110.037	43662.117	T 5777752.200	209650.360	467357.080	T 5314363.400	183302.480	134661.830	60.000	83378.037	67134.941
x		141632.860	1171.708	44190.179	T 5829432.500	211004.010	466349.540	T 5350292.300	182652.150	135323.840	48.333	84379.742	67595.132
σ		3711.409	53.467	564.464	T 47077.272	1820.273	2371.711	T 31141.087	2055.124	889.821	10.408	921.761	398.608
%RSD		2.620	4.563	1.277	T 0.808	0.863	0.509	T 0.582	1.125	0.658	21.535	1.092	0.590

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:20:06	9807.885	49724.064	T 4612943.000	19070.905	8747.295	26305.743	73310.881	6553.288	991.029	1632.080	459.506	3230.313
2	14:20:28	9482.697	48555.627	T 4563977.800	19741.685	8732.287	26661.308	74481.052	6498.267	994.030	1678.084	443.506	3315.330
3	14:20:50	9422.663	48334.987	T 4669255.100	19386.268	8307.070	25960.202	72848.862	6452.249	992.030	1652.582	474.007	3400.347
x		9571.082	48871.559	T 4615392.000	19399.619	8595.550	26309.084	73546.931	6501.268	992.363	1654.249	459.006	3315.330

σ		207.263	746.488	ᵀ 52681.353	335.589	249.944	350.565	841.309	50.587	1.528	23.048	15.257	85.017
%RSD		2.166	1.527	ᵀ 1.141	1.730	2.908	1.332	1.144	0.778	0.154	1.393	3.324	2.564
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:20:06	179860.280	190644.160	122926.660	24297.698	395.005	5816.015	806376.530	37146.349	36359.617	29452.501	38133.575	137948.540
2	14:20:28	177990.370	187620.130	123425.330	23997.264	315.003	5470.898	799087.760	33849.338	38223.782	29566.702	38218.770	136567.240
3	14:20:50	179112.290	191534.270	125490.670	23596.692	365.004	5440.888	798993.400	33819.278	37617.404	29616.290	39511.780	139188.790
x		178987.650	189932.850	123947.550	23963.885	358.337	5575.933	801485.900	34938.322	37400.268	29545.164	38621.375	137901.520
σ		941.168	2051.730	1359.436	351.693	40.415	208.457	4235.677	1912.267	950.862	83.992	772.289	1311.409
%RSD		0.526	1.080	1.097	1.468	11.279	3.739	0.528	5.473	2.542	0.284	2.000	0.951

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:20:06	54860.141	136078.260	53555.909	108039.040	0.000	166982.320	108154.790
2	14:20:28	54539.090	137368.780	53686.328	107928.330	0.000	178510.890	110349.100
3	14:20:50	54930.371	139617.350	54127.752	108824.120	5.000	183090.170	109191.520
x		54776.534	137688.130	53789.996	108263.830	1.667	176194.460	109231.800
σ		208.610	1791.027	299.686	488.376	2.887	8300.003	1097.711
%RSD		0.381	1.301	0.557	0.451	173.205	4.711	1.005

200-35680-A-8-A 10/25/2016 02:25:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	14:25:48	166689.410	507.508	3935.465	┬1405976.000	┬2197159.300	┬84266372.000	┬6448724.300	1178299.600	199800.470	13815.724	233331.960	170785.57
2	14:26:10	163285.970	490.007	4005.481	┬1405914.800	┬2253435.300	┬86663505.000	┬6619301.000	1191596.900	205033.450	13515.478	243216.780	175746.75
3	14:26:31	166113.710	537.509	4075.498	┬1370693.600	┬2298592.000	┬89773455.000	┬6790356.800	1236142.200	202836.820	14406.223	241451.390	180183.75
x		165363.030	511.675	4005.481	┬1394194.800	┬2249728.900	┬86901111.000	┬6619460.700	1202012.900	202556.910	13912.475	239333.370	175572.02
σ		1821.673	24.023	70.017	┬20352.672	┬50817.834	┬2761219.600	┬170816.310	30295.405	2627.695	453.186	5271.800	4701.52
%RSD		1.102	4.695	1.748	┬1.460	┬2.259	┬3.177	┬2.581	2.520	1.297	3.257	2.203	2.67

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	14:25:48	22520.205	┬10235658.000	┬283260830.000	132192.170	63636.256	┬2366748.900	576764.990	13439.416	1047.033	1604.077	577.010	5495.90
2	14:26:10	23741.898	┬10727940.000	┬295484990.000	132166.970	64243.579	┬2365921.500	578953.960	13608.554	1018.031	1569.074	622.012	5625.94
3	14:26:31	24157.495	┬10953682.000	┬298318630.000	132751.590	66883.935	┬2444685.900	599491.210	14097.960	1096.036	1551.572	593.511	5645.95
x		23473.199	┬10639093.000	┬292354820.000	132370.250	64921.257	┬2392452.100	585070.060	13715.310	1053.700	1574.908	597.511	5589.27
σ		851.075	┬367164.690	┬8002049.000	330.496	1726.641	┬45237.719	12536.953	342.005	39.428	26.734	22.766	81.47
%RSD		3.626	┬3.451	┬2.737	0.250	2.660	┬1.891	2.143	2.494	3.742	1.698	3.810	1.45

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159T
1	14:25:48	447569.940	553903.840	7756.805	13850.753	480.007	5110.783	942041.540	37096.238	1950.114	1487.066	351727.620	183454.14
2	14:26:10	452772.670	563476.840	9222.551	14461.271	360.004	5135.791	959104.620	38654.774	1930.112	1531.570	361202.050	187731.37
3	14:26:31	465007.720	591803.660	8917.385	14010.887	495.007	5435.886	977943.440	39647.101	1920.111	1638.081	370231.980	195277.33
x		455116.780	569728.110	8632.247	14107.637	445.006	5227.487	959696.530	38466.038	1933.446	1552.239	361053.880	188820.95
σ		8952.100	19708.068	773.357	316.549	73.995	180.912	17958.268	1285.862	15.277	77.600	9253.071	5986.43
%RSD		1.967	3.459	8.959	2.244	16.628	3.461	1.871	3.343	0.790	4.999	2.563	3.17

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:25:48	1050.033	5991.077	1425164.500	127898.870	0.000	215124.450	99309.995
2	14:26:10	1060.034	6511.272	1464189.300	129481.010	0.000	218497.910	101815.040
3	14:26:31	1205.044	6221.161	1494517.000	130448.510	0.000	215813.270	103912.930
x		1105.037	6241.170	1461290.300	129276.130	0.000	216478.550	101679.320
σ		86.753	260.674	34767.064	1287.112	0.000	1782.414	2304.467
%RSD		7.851	4.177	2.379	0.996	0.000	0.823	2.266

200-35680-A-8-A SD@5 10/25/2016 02:31:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:31:30	154018.380	87.500	1300.051	480909.540	452860.000	┬18561452.000	┬1450637.900	261231.330	180340.430	2740.225	58070.991	38729.948
2	14:31:52	154472.550	140.001	1255.047	467074.310	453548.340	┬18223874.000	┬1445026.100	262683.900	178551.320	3035.276	60599.971	38840.204
3	14:32:14	150435.880	95.000	1360.055	457935.900	446245.120	┬18099176.000	┬1410773.900	254346.060	173548.900	3260.319	58923.977	38845.216
x		152975.600	107.500	1305.051	468639.920	450884.490	┬18294834.000	┬1435479.300	259420.430	177480.220	3011.940	59198.313	38805.123
σ		2211.157	28.395	52.682	11566.564	4032.523	┬239167.740	┬21578.702	4454.146	3520.182	260.831	1286.616	65.151
%RSD		1.445	26.414	4.037	2.468	0.894	┬1.307	┬1.503	1.717	1.983	8.660	2.173	0.168

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:31:30	7956.899	┬2227056.300	┬62931698.000	29986.952	14140.996	486323.280	140958.570	4199.529	571.010	868.523	605.011	3565.381
2	14:31:52	7571.720	┬2257461.400	┬63819919.000	29926.844	14090.954	492330.850	142390.670	4186.526	592.011	827.521	583.010	3695.410
3	14:32:14	7666.763	┬2233153.100	┬62393240.000	29040.278	14596.389	488994.760	140802.260	4236.538	635.012	846.521	580.510	3545.377
x		7731.794	┬2239223.600	┬63048286.000	29651.358	14276.113	489216.300	141383.830	4207.531	599.344	847.522	589.510	3602.056
σ		200.655	┬16085.887	┬720449.430	530.064	278.493	3009.906	875.441	25.949	32.625	20.519	13.482	81.463

%RSD		2.595	~0.718	~1.143	1.788	1.951	0.615	0.619	0.617	5.444	2.421	2.287	2.262

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:31:30	97117.130	305524.930	1785.096	3200.307	90.000	1195.043	978197.730	8467.150	520.008	412.005	78263.324	169719.770
2	14:31:52	98062.642	303366.030	2025.123	3000.270	110.000	1205.044	964503.180	8717.279	520.008	441.006	78052.338	168335.840
3	14:32:14	96905.906	302459.780	2125.135	3115.291	80.000	1110.037	971026.060	8702.271	620.012	455.506	78263.324	169356.100
x		97361.893	303783.580	1978.451	3105.289	93.334	1170.041	971242.320	8628.900	553.343	436.172	78192.995	169137.230
σ		615.988	1574.659	174.758	100.393	15.275	52.205	6849.837	140.280	57.737	22.150	121.813	717.454
%RSD		0.633	0.518	8.833	3.233	16.366	4.462	0.705	1.626	10.434	5.078	0.156	0.424

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:31:30	310.003	1570.074	302693.970	123596.590	0.000	27883.305	20477.572
2	14:31:52	260.002	1600.077	311697.660	124553.680	0.000	30467.823	20853.037
3	14:32:14	245.002	1525.070	306339.680	124483.150	0.000	31514.767	20597.720
x		271.669	1565.074	306910.440	124211.140	0.000	29955.298	20642.777
σ		34.035	37.753	4528.898	533.382	0.000	1869.195	191.745
%RSD		12.528	2.412	1.476	0.429	0.000	6.240	0.929

200-35680-A-8-A PDS 10/25/2016 02:36:51 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	14:37:13	158227.530	1732.590	50762.186	~7849782.800	~2462571.600	~86677182.000	~13174443.000	1457074.500	202684.990	17143.813	337911.140	249381.
2	14:37:35	159802.450	1880.106	51975.919	~7912765.200	~2533425.800	~86775826.000	~13449556.000	1472310.000	201713.310	19971.959	349256.460	255554.
3	14:37:57	159025.070	1850.103	52206.638	~7846908.800	~2546290.800	~89074366.000	~13556248.000	~1556418.500	212121.330	14421.236	349481.090	259367.
x		159018.350	1820.933	51648.248	~7869818.900	~2514096.100	~87509124.000	~13393416.000	~1495267.700	205506.540	17179.003	345549.560	254767.
σ		787.481	77.964	775.974	~37220.318	~45082.745	~1356435.800	~196996.090	~53503.266	5749.139	2775.529	6616.022	5039.
%RSD		0.495	4.282	1.502	~0.473	~1.793	~1.550	~1.471	~3.578	2.798	16.157	1.915	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:37:13	33263.160	~10600955.000	~297379440.000	156501.350	73391.233	~2410532.500	670183.820	21363.683	2139.137	2987.768	614.511	6816.
2	14:37:35	34470.610	~10897227.000	~304029950.000	161029.170	75395.148	~2502075.700	688216.840	21585.970	2294.158	2992.269	615.011	7101.
3	14:37:57	33678.994	~11147772.000	~306629490.000	160993.830	78278.395	~2493686.800	691175.580	21954.450	2201.145	3074.284	640.012	7151.
x		33804.255	~10881985.000	~302679630.000	159508.120	75688.259	~2468765.000	683192.080	21634.701	2211.480	3018.107	623.178	7023.
σ		613.393	~273727.000	~4770573.800	2604.000	2456.730	~50604.982	11362.200	298.383	78.025	48.703	14.581	180.
%RSD		1.815	~2.515	~1.576	1.633	3.246	~2.050	1.663	1.379	3.528	1.614	2.340	2.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	14:37:13	657742.620	562835.720	150662.920	40253.552	930.026	11438.924	976915.720	37792.800	45211.239	35148.524	402753.210	189976.
2	14:37:35	668352.440	580806.780	152943.550	42012.886	805.019	11428.917	968780.890	39236.130	45908.140	35992.321	408577.420	192808.
3	14:37:57	672296.400	588903.600	157965.060	41366.271	785.018	11538.993	981737.000	40073.118	45998.388	36406.720	413363.290	193365.
x		666130.480	577515.370	153857.170	41210.903	840.021	11468.945	975811.210	39034.016	45705.922	35849.188	408231.310	192050.
σ		7527.016	13341.990	3735.821	889.898	78.585	60.870	6548.296	1153.516	430.778	641.194	5313.501	1817.
%RSD		1.130	2.310	2.428	2.159	9.355	0.531	0.671	2.955	0.943	1.789	1.302	0.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:37:13	28679.654	154906.550	1478138.600	127384.950	0.000	408054.850	216385.620
2	14:37:35	28950.121	158283.050	1517063.900	130438.440	0.000	424959.520	221877.120
3	14:37:57	29400.910	159852.930	1524498.600	129400.390	0.000	433695.270	225890.490
x		29010.228	157680.840	1506567.000	129074.590	0.000	422236.550	221384.410
σ		364.365	2527.579	24898.792	1552.593	0.000	13035.288	4771.552
%RSD		1.256	1.603	1.653	1.203	0.000	3.087	2.155

200-35680-A-8-B MS 10/25/2016 02:42:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	14:42:56	160388.030	1880.106	45466.933	┬8313743.200	┬2590413.000	┬91113337.000	┬13948146.000	1507409.100	209174.430	20317.376	363986.660	266402.
2	14:43:18	159963.990	1822.600	46409.525	┬8488901.700	┬2621605.700	┬91808871.000	┬14109792.000	┬1584767.400	211655.460	20017.013	365151.730	269913.
3	14:43:39	158449.630	1862.604	45817.892	┬8508224.400	┬2636991.900	┬92585098.000	┬14124985.000	┬1623915.800	216476.790	20522.628	368616.760	272077.
x		159600.550	1855.103	45898.117	┬8436956.400	┬2616336.900	┬91835769.000	┬14060975.000	┬1572030.800	212435.560	20285.672	365918.380	269464.
σ		1019.031	29.478	476.390	┬107142.270	┬23732.223	┬736248.820	┬98006.883	┬59288.436	3713.158	254.294	2408.380	2864.
%RSD		0.638	1.589	1.038	┬1.270	┬0.907	┬0.802	┬0.697	┬3.771	1.748	1.254	0.658	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:42:56	34159.971	┬10777645.000	┬306009040.000	161014.030	76264.088	┬2409199.400	666781.350	22591.301	2253.152	3175.302	636.012	6831.
2	14:43:18	35247.232	┬10956255.000	┬313703330.000	166012.710	79036.962	┬2435860.300	672972.900	22860.668	2230.149	3130.794	634.012	6981.
3	14:43:39	35131.989	┬11017580.000	┬313457560.000	165406.730	78509.478	┬2437469.100	678698.180	22750.517	2349.166	3231.313	635.512	7186.
x		34846.397	┬10917160.000	┬311056640.000	164144.490	77936.843	┬2427509.600	672817.480	22734.162	2277.489	3179.137	635.179	6999.
σ		597.248	┬124653.700	┬4373080.800	2727.938	1472.461	┬15877.479	5959.938	135.426	63.130	50.369	1.041	178.
%RSD		1.714	┬1.142	┬1.406	1.662	1.889	┬0.654	0.886	0.596	2.772	1.584	0.164	2.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	14:42:56	692535.310	588945.030	156713.320	42474.052	795.019	11443.928	985128.610	52793.482	8687.263	6893.926	411293.000	194639.
2	14:43:18	695406.220	586791.020	157359.370	44088.236	755.017	11739.133	986580.840	53937.135	8662.251	7090.008	425015.930	197553.
3	14:43:39	710341.710	598113.000	160872.670	42659.525	910.025	11989.311	1004654.000	53821.763	9202.540	7158.537	426595.530	195864.
x		699427.740	591283.010	158315.120	43073.938	820.020	11724.124	992121.140	53517.460	8850.685	7047.490	420968.150	196019.
σ		9560.149	6012.192	2238.334	883.290	80.471	273.001	10878.007	629.632	304.972	137.334	8416.066	1463.
%RSD		1.367	1.017	1.414	2.051	9.813	2.329	1.096	1.176	3.446	1.949	1.999	0.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:42:56	31174.128	163614.170	1735170.300	128352.330	0.000	427934.190	226792.620
2	14:43:18	32381.426	169972.320	1766537.900	130871.810	0.000	446219.450	235395.680
3	14:43:39	32917.475	170356.210	1802161.000	133149.750	0.000	456014.280	237647.290
x		32157.676	167980.900	1767956.400	130791.300	0.000	443389.310	233278.530
σ		892.952	3786.570	33517.879	2399.721	0.000	14252.370	5728.675
%RSD		2.777	2.254	1.896	1.835	0.000	3.214	2.456

200-35680-A-8-C MSD 10/25/2016 02:48:17 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	14:48:39	161377.520	1685.085	42574.308	┬8040167.100	┬2388711.300	┬84454325.000	┬13117812.000	1407547.600	208425.130	23236.186	342120.720	256041.73
2	14:49:00	156541.720	1732.590	44283.753	┬8292922.300	┬2414117.900	┬85751416.000	┬13381873.000	1427611.100	209609.850	20067.073	347668.780	256219.43
3	14:49:22	156511.440	1812.599	45702.576	┬8237369.400	┬2406198.600	┬85343317.000	┬13416193.000	1442265.800	210855.420	22134.689	352473.120	259611.32
x		158143.560	1743.425	44186.879	┬8190152.900	┬2403009.300	┬85183020.000	┬13305293.000	1425808.200	209630.130	21812.649	347420.870	257290.82
σ		2800.730	64.443	1566.382	┬132828.270	┬13000.130	┬663236.420	┬163267.140	17429.166	1215.268	1608.913	5180.648	2011.56
%RSD		1.771	3.696	3.545	┬1.622	┬0.541	┬0.779	┬1.227	1.222	0.580	7.376	1.491	0.78

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	14:48:39	33618.873	┬9270117.300	┬286247790.000	151858.690	71718.977	2163356.400	613352.110	21616.008	2188.144	2958.763	628.012	6911.43
2	14:49:00	33959.562	┬9382275.700	┬291723390.000	152080.700	72853.883	┬2385779.200	626253.840	21451.797	2123.135	3124.793	606.511	7201.55
3	14:49:22	33699.034	┬9404406.600	┬292213930.000	153579.350	74260.069	┬2409843.000	631262.580	21353.671	2143.138	3017.773	629.012	6961.45
x		33759.156	┬9352266.500	┬290061710.000	152506.250	72944.310	┬2319659.500	623622.840	21473.825	2151.472	3033.776	621.178	7024.81

σ		178.125	₸71998.734	₸3312037.900	935.940	1272.957	₸135896.160	9240.557	132.549	33.296	84.164	12.712	155.09
%RSD		0.528	₸0.770	₸1.142	0.614	1.745	₸5.858	1.482	0.617	1.548	2.774	2.046	2.20
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	14:48:39	656557.220	567510.290	154583.570	42088.075	860.022	10863.539	995551.390	47663.056	9567.746	7425.654	388142.620	191706.23
2	14:49:00	670537.630	577598.110	156768.840	43130.736	945.027	11048.661	991669.940	48194.581	9632.783	7590.228	401646.990	196592.66
3	14:49:22	662724.250	572982.840	154694.600	42809.910	800.019	11118.708	1003242.600	48545.597	9692.818	7560.715	402246.180	198120.60
x		663273.030	572697.080	155349.000	42676.240	868.356	11010.303	996821.320	48134.411	9631.115	7525.532	397345.260	195473.16
σ		7006.343	5049.978	1230.869	534.028	72.862	131.838	5889.942	444.337	62.553	87.747	7975.353	3350.51
%RSD		1.056	0.882	0.792	1.251	8.391	1.197	0.591	0.923	0.649	1.166	2.007	1.71

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:48:39	31414.578	159948.840	1388624.900	127798.100	0.000	404212.920	221299.510
2	14:49:00	32972.584	167350.990	1434393.000	130760.950	0.000	412599.710	224978.280
3	14:49:22	33097.831	167775.230	1449265.700	132303.050	0.000	422764.750	229225.560
x		32494.998	165025.020	1424094.500	130287.360	0.000	413192.460	225167.790
σ		937.764	4401.213	31604.923	2289.508	0.000	9290.110	3966.422
%RSD		2.886	2.667	2.219	1.757	0.000	2.248	1.762

200-35680-A-9-A 10/25/2016 02:54:01 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	14:54:22	164669.480	507.508	5255.829	T 1814750.300	T 2230194.400	T 85009501.000	T 7493194.500	T 1457457.100	213225.280	19576.490	252401.840	172048.
2	14:54:44	168396.440	497.507	5635.953	T 1828202.900	T 2244287.600	T 84914054.000	T 7462227.200	1421924.500	216284.320	17794.494	255792.950	176348.
3	14:55:06	165053.250	472.507	4975.743	T 1892347.200	T 2275577.300	T 87040113.000	T 7516565.400	T 1494874.800	213944.410	18084.806	259672.250	174948.
x		166039.730	492.507	5289.175	T 1845100.100	T 2250019.800	T 85654556.000	T 7490662.400	T 1458085.500	214484.670	18485.264	255955.680	174448.
σ		2049.979	18.028	331.366	T 41466.295	T 23228.102	T 1200876.000	T 27257.445	T 36479.226	1599.482	956.113	3637.939	2192.
%RSD		1.235	3.661	6.265	T 2.247	T 1.032	T 1.402	T 0.364	T 2.502	0.746	5.172	1.421	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:54:22	23316.298	TM 26572947.000	T 339802490.000	131920.030	63199.599	1359369.400	516578.430	11199.762	939.026	1251.047	673.014	6046.
2	14:54:44	23035.909	TM 27131799.000	T 350181120.000	136894.910	64163.270	1378195.200	527590.440	11064.672	887.024	1200.043	631.512	5976.
3	14:55:06	23476.523	TM 27384324.000	T 349125180.000	133603.360	63390.321	1395945.100	534242.380	11158.734	786.019	1270.048	658.013	6196.
x		23276.243	TM 27029690.000	T 346369600.000	134139.430	63584.397	1377836.600	526137.080	11141.056	870.690	1240.380	654.180	6072.
σ		223.021	TM 415214.380	T 5711737.100	2530.392	510.308	18290.492	8921.211	69.258	77.801	36.201	21.015	112.
%RSD		0.958	TM 1.536	T 1.649	1.886	0.803	1.327	1.696	0.622	8.936	2.919	3.212	1.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	14:54:22	516217.500	570034.270	6141.131	6506.270	155.001	2920.256	1008326.100	34205.064	1435.062	1327.553	438878.330	192889.
2	14:54:44	510706.560	577918.950	6701.347	6956.452	225.002	2985.267	1027250.900	35813.437	1710.088	1359.055	447092.380	193719.
3	14:55:06	522870.130	580144.300	6456.250	6576.297	250.002	3000.270	1019113.400	37366.842	1770.094	1363.056	443950.040	195702.
x		516598.060	576032.510	6432.909	6679.673	210.001	2968.598	1018230.100	35795.114	1638.415	1349.888	443306.920	194103.
σ		6090.707	5312.453	280.836	242.241	49.245	42.532	9493.286	1580.969	178.646	19.446	4144.616	1445.
%RSD		1.179	0.922	4.366	3.627	23.450	1.433	0.932	4.417	10.904	1.441	0.935	0.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:54:22	955.027	5956.064	1332823.600	130992.760	0.000	187008.310	77866.472
2	14:54:44	1095.036	6241.168	1374026.200	133190.070	0.000	189076.450	79222.841
3	14:55:06	1175.041	6456.250	1374790.500	132736.470	0.000	190967.830	78735.540
x		1075.035	6217.828	1360546.800	132306.430	0.000	189017.530	78608.284
σ		111.362	250.909	24012.009	1160.063	0.000	1980.417	687.081
%RSD		10.359	4.035	1.765	0.877	0.000	1.048	0.874

200-35680-A-10-A 10/25/2016 02:59:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	15:00:06	158893.820	392.505	4475.601	T 1611066.400	T 1794337.600	T 69557281.000	T 6803222.800	1106895.200	204709.510	22895.716	215747.430	144443.21
2	15:00:28	160388.030	397.505	4675.656	T 1624916.400	T 1810661.200	T 70438990.000	T 6845037.200	1152506.400	208587.140	21939.431	219739.070	145865.52
3	15:00:50	160539.480	400.005	4545.620	T 1627820.900	T 1800964.000	T 70974865.000	T 7002542.600	1138800.700	207048.130	20192.224	220205.160	147590.61
x		159940.450	396.671	4565.626	T 1621267.900	T 1801987.600	T 70323712.000	T 6883600.800	1132734.100	206781.590	21675.790	218563.890	145966.45
σ		909.559	3.819	101.517	T 8953.346	T 8209.808	T 715787.940	T 105106.940	23402.982	1952.510	1370.892	2450.233	1576.12
%RSD		0.569	0.963	2.224	T 0.552	T 0.456	T 1.018	T 1.527	2.066	0.944	6.325	1.121	1.08

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	15:00:06	19966.953	T 11441490.000	T 256985390.000	100527.260	50451.244	1088799.600	481707.090	9166.520	832.021	1135.039	651.013	6086.11
2	15:00:28	20412.492	T 11620536.000	T 259977240.000	104411.030	51198.518	1118113.100	486827.690	9261.573	773.018	1134.539	610.011	5260.83
3	15:00:50	20507.609	T 11810924.000	T 261075390.000	100185.210	49693.974	1104669.500	489298.490	9112.490	808.020	1062.034	655.513	5645.95
x		20295.685	T 11624317.000	T 259346010.000	101707.830	50447.912	1103860.700	485944.420	9180.194	804.353	1110.537	638.846	5664.29
σ		288.635	T 184746.060	T 2116804.900	2347.275	752.277	14673.466	3872.010	75.476	29.672	42.006	25.073	412.94

%RSD		1.422	┬1.589	┬0.816	2.308	1.491	1.329	0.797	0.822	3.689	3.782	3.925	7.29
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	15:00:06	409048.780	501431.210	7191.551	4760.680	225.002	2195.145	990842.860	38815.146	1820.099	1503.068	305351.800	186790.89
2	15:00:28	411513.340	507603.910	7041.487	5075.773	230.002	2045.126	1008591.400	40123.238	1855.103	1565.074	313113.840	186527.97
3	15:00:50	417002.270	504532.730	7506.690	4710.666	240.002	2125.135	1006808.300	40053.070	1980.118	1567.074	316048.450	190553.12
x		412521.460	504522.620	7246.576	4849.039	231.668	2121.802	1002080.900	39663.818	1885.107	1545.072	311504.700	187957.33
σ		4071.456	3086.360	237.433	197.943	7.638	75.065	9773.149	735.808	84.123	36.390	5526.898	2251.86
%RSD		0.987	0.612	3.276	4.082	3.297	3.538	0.975	1.855	4.462	2.355	1.774	1.19

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:00:06	980.029	5060.768	978361.960	128715.120	0.000	149189.750	66120.900
2	15:00:28	890.024	5255.829	1002080.800	128956.970	0.000	154578.530	69173.251
3	15:00:50	920.025	5195.810	1023739.400	129259.300	0.000	160039.710	67933.166
x		930.026	5170.802	1001394.100	128977.130	0.000	154602.660	67742.439
σ		45.828	99.906	22696.518	272.653	0.000	5425.019	1535.088
%RSD		4.928	1.932	2.266	0.211	0.000	3.509	2.266

200-35680-A-11-A 10/25/2016 03:05:28 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	15:05:50	165568.320	772.518	6331.202	┬1533225.000	┬3844228.700	┬127640600.000	┬15193408.000	┬2514568.600	234721.260	37757.721	363082.250	27469
2	15:06:12	166123.810	680.014	6536.281	┬1564441.000	┬4017226.700	┬131761980.000	┬15678961.000	┬2575073.900	241821.700	41105.628	376229.050	28268
3	15:06:34	164679.580	717.515	6636.321	┬1544415.000	┬4002131.400	┬131517920.000	┬15589652.000	┬2565658.900	239579.660	40674.572	373820.770	28361
x		165457.240	723.349	6501.268	┬1547360.300	┬3954528.900	┬130306830.000	┬15487341.000	┬2551767.200	238707.540	39845.974	371044.020	28033
σ		728.493	46.527	155.544	┬15815.074	┬95820.551	┬2312249.800	┬258440.150	┬32556.989	3629.667	1821.277	6999.454	490
%RSD		0.440	6.432	2.393	┬1.022	┬2.423	┬1.774	┬1.669	┬1.276	1.521	4.571	1.886	

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	15:05:50	35618.019	┬23212191.000	┬508634390.000	211599.760	100426.660	1145925.000	466056.410	18311.053	747.017	994.530	675.014	688
2	15:06:12	37306.707	┬23829201.000	┬518038600.000	217874.840	103515.470	1160846.400	470066.700	18726.515	773.018	1072.035	694.514	758
3	15:06:34	36775.528	┬23750991.000	┬517101780.000	219891.060	103062.680	1162977.600	472781.900	18574.344	791.019	1047.033	679.514	746
x		36566.751	┬23597461.000	┬514591590.000	216455.220	102334.930	1156583.000	469635.000	18537.304	770.351	1037.866	683.014	731
σ		863.486	┬335937.470	┬5180306.200	4324.105	1668.052	9291.378	3383.467	210.193	22.122	39.557	10.211	37
%RSD		2.361	┬1.424	┬1.007	1.998	1.630	0.803	0.720	1.134	2.872	3.811	1.495	

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	15:05:50	692379.010	639040.740	8427.130	4855.707	420.005	2320.162	1029301.800	36269.421	1450.063	1173.041	496455.530	196673
2	15:06:12	702431.820	648017.570	8557.196	4905.722	390.005	2190.144	1031204.200	37221.517	1470.065	1216.544	515892.670	204415
3	15:06:34	713789.420	651977.600	9042.452	4815.696	380.004	2320.162	1034371.700	36655.264	1600.077	1221.045	525547.390	204669
x		702866.750	646345.300	8675.593	4859.042	396.671	2276.822	1031625.900	36715.401	1506.735	1203.544	512631.860	201919
σ		10711.826	6628.571	324.297	45.106	20.817	75.066	2561.116	478.888	81.453	26.511	14817.511	4544
%RSD		1.524	1.026	3.738	0.928	5.248	3.297	0.248	1.304	5.406	2.203	2.890	2

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:05:50	955.027	8242.037	1152774.000	132172.010	0.000	295359.120	76073.219
2	15:06:12	890.024	7741.798	1184871.900	132454.240	0.000	307770.690	79760.396
3	15:06:34	845.021	8762.303	1204534.000	136153.870	0.000	311565.220	80785.315
x		896.691	8248.713	1180726.600	133593.380	0.000	304898.340	78872.976
σ		55.305	510.285	26127.808	2221.942	0.000	8476.269	2478.225
%RSD		6.168	6.186	2.213	1.663	0.000	2.780	3.142

CCV 10/25/2016 03:11:12 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:11:34	133643.680	77075.307	27011.872	┬11881179.000	┬3533982.900	┬32379123.000	┬11488522.000	1209134.900	151303.680	24212.575	┬2394061.900	690154
2	15:11:56	126508.320	75661.350	27137.075	┬11516798.000	┬3485787.800	┬31785294.000	┬11251871.000	1197777.200	146521.240	23381.389	┬2353368.600	667873
3	15:12:18	122659.710	73363.612	26050.343	┬11030549.000	┬3291585.200	┬30863135.000	┬10929948.000	1154979.100	138845.950	23271.235	┬2251943.100	652783
x		127603.900	75366.756	26733.096	┬11476175.000	┬3437118.700	┬31675851.000	┬11223447.000	1187297.100	145556.950	23621.733	┬2333124.500	670270
σ		5573.342	1873.302	594.587	┬426767.410	┬128318.640	┬763896.630	┬280370.000	28558.501	6284.597	514.640	┬73190.199	18800
%RSD		4.368	2.486	2.224	┬3.719	┬3.733	┬2.412	┬2.498	2.405	4.318	2.179	┬3.137	2

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:11:34	87287.979	┬3514325.100	┬72290227.000	1060967.900	569041.190	704840.380	548173.990	75851.210	6006.082	8784.815	510.008	7396
2	15:11:56	85659.563	┬3416161.700	┬70942761.000	1025412.700	558048.720	687909.530	543334.320	74194.779	5948.061	8747.295	503.508	7106
3	15:12:18	81327.944	┬3311327.400	┬68369663.000	987004.880	532817.850	661866.140	532183.040	73212.449	5748.991	8280.557	503.008	6726
x		84758.495	┬3413938.100	┬70534217.000	1024461.800	553302.580	684872.010	541230.450	74419.480	5901.045	8604.222	505.508	7076
σ		3080.494	┬101517.130	┬1991955.100	36990.673	18572.206	21647.545	8200.444	1333.654	134.840	280.930	3.905	336
%RSD		3.634	┬2.974	┬2.824	3.611	3.357	3.161	1.515	1.792	2.285	3.265	0.773	4

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	15:11:34	775391.950	206511.530	1575960.900	252330.770	8232.032	123405.180	871473.490	774025.580	512758.130	405491.930	520234.550	147863
2	15:11:56	768592.620	197817.020	1598322.400	253254.630	7761.807	124120.460	850500.630	757658.660	511624.070	402777.280	512588.020	142678
3	15:12:18	737514.610	192849.310	1582219.200	248077.640	7726.791	123178.510	831675.390	751713.320	501230.300	395232.340	496141.380	138624
x		760499.720	199059.290	1585500.800	251221.010	7906.877	123568.050	851216.500	761132.520	508537.500	401167.180	509654.650	143055
σ		20193.918	6915.310	11536.271	2761.157	282.137	491.643	19908.704	11554.653	6353.574	5315.926	12311.524	4630
%RSD		2.655	3.474	0.728	1.099	3.568	0.398	2.339	1.518	1.249	1.325	2.416	3

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:11:34	30743.328	1392265.600	┬7208706.100	110535.330	0.000	160453.660	102086.700
2	15:11:56	30332.577	1406504.900	┬7114719.500	110052.150	0.000	175772.010	101739.580
3	15:12:18	29896.791	1392933.100	┬7096134.100	108371.190	0.000	179678.340	100879.380
x		30324.232	1397234.500	┬7139853.200	109652.890	0.000	171968.000	101568.550
σ		423.331	8035.312	┬60348.116	1135.973	0.000	10161.196	621.565
%RSD		1.396	0.575	┬0.845	1.036	0.000	5.909	0.612

CCB 10/25/2016 03:16:57 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:17:19	141629.220	2.500	885.024	193648.490	740.016	7286.592	47397.299	780.018	147953.810	30.000	14681.464	1610.078
2	15:17:41	139430.800	7.500	835.021	188712.360	740.016	6336.204	48941.754	720.016	149103.990	15.000	14211.056	1605.077
3	15:18:03	139138.370	10.000	740.016	190937.480	560.009	5650.958	49212.549	780.018	149436.950	10.000	14606.398	1700.087
x		140066.130	6.667	820.020	191099.440	680.014	6424.585	48517.201	760.017	148831.580	18.333	14499.639	1638.414
σ		1361.549	3.819	73.658	2472.051	103.927	821.391	979.268	34.643	778.192	10.408	252.723	53.469
%RSD		0.972	57.282	8.982	1.294	15.283	12.785	2.018	4.558	0.523	56.773	1.743	3.263

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:17:19	4915.725	920.025	221264.050	150.001	145.001	355.004	565.010	1484.066	505.008	497.507	509.008	2550.195
2	15:17:41	4920.726	770.018	217890.030	185.001	55.000	305.003	565.010	1493.067	505.008	515.008	514.008	2730.224
3	15:18:03	4615.639	675.014	215078.870	165.001	65.000	270.002	505.008	1521.069	436.006	503.508	505.008	2605.204
x		4817.363	788.352	218077.650	166.668	88.334	310.003	545.009	1499.401	482.007	505.341	509.341	2628.541

σ		174.716	123.531	3096.854	17.560	49.329	42.721	34.642	19.298	39.838	8.893	4.509	92.255
%RSD		3.627	15.669	1.420	10.536	55.844	13.781	6.356	1.287	8.265	1.760	0.885	3.510
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:17:19	120.000	202776.090	3070.283	25.000	5.000	10.000	865356.820	3055.280	600.011	521.508	90.000	142778.970
2	15:17:41	95.000	208202.370	2920.256	20.000	5.000	15.000	861967.790	3290.325	675.014	511.508	65.000	145784.820
3	15:18:03	90.000	207392.370	2670.214	40.000	0.000	20.000	863956.920	3750.422	730.016	549.009	60.000	145875.610
x		101.667	206123.610	2886.918	28.333	3.333	15.000	863760.510	3365.342	668.347	527.342	71.667	144813.130
σ		16.073	2927.194	202.107	10.408	2.887	5.000	1703.026	353.591	65.259	19.419	16.073	1762.224
%RSD		15.809	1.420	7.001	36.735	86.603	33.333	0.197	10.507	9.764	3.682	22.427	1.217

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:17:19	170.001	1250.047	960.028	110122.610	0.000	9972.983	25.000
2	15:17:41	195.001	1005.030	980.029	111552.070	0.000	8987.423	55.000
3	15:18:03	160.001	1070.034	900.024	109840.760	0.000	8202.018	25.000
x		175.001	1108.371	946.694	110505.150	0.000	9054.141	35.000
σ		18.028	126.927	41.636	917.549	0.000	887.366	17.321
%RSD		10.302	11.452	4.398	0.830	0.000	9.801	49.487

CCVL 10/25/2016 03:22:41 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:23:03	137363.740	155.001	5861.030	792430.960	24447.918	59736.863	609826.200	20672.813	148720.590	25.000	20712.863	8587.212
2	15:23:24	142234.340	135.001	6116.122	786363.480	24287.684	61417.957	614233.700	20722.875	146904.590	35.000	21789.234	8917.385
3	15:23:47	136163.960	147.501	6571.295	807729.760	24487.977	62396.582	606705.340	20903.100	150435.880	5.000	20767.931	8577.207
x		138587.350	145.834	6182.816	795508.060	24407.859	61183.801	610255.080	20766.263	148687.020	21.667	21090.009	8693.934
σ		3214.856	10.104	359.799	11010.490	105.985	1345.231	3782.458	121.119	1765.884	15.275	606.172	193.579
%RSD		2.320	6.928	5.819	1.384	0.434	2.199	0.620	0.583	1.188	70.501	2.874	2.227

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:23:03	5085.776	6501.268	677089.700	2340.164	880.023	3590.387	10088.052	2137.137	480.007	662.513	522.008	2735.224
2	15:23:24	4990.747	6271.180	676413.040	2475.184	1015.031	3305.328	10618.381	2045.126	498.007	676.014	538.509	2870.247
3	15:23:47	4645.647	6491.264	680051.720	2350.166	1150.040	3470.361	10538.331	2053.126	500.007	706.515	467.507	2890.251
x		4907.390	6421.237	677851.490	2388.505	1015.031	3455.359	10414.921	2078.463	492.674	681.681	509.341	2831.907
σ		231.602	130.050	1935.257	75.233	135.008	143.120	285.893	50.970	11.015	22.542	37.157	84.325
%RSD		4.719	2.025	0.285	3.150	13.301	4.142	2.745	2.452	2.236	3.307	7.295	2.978

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:23:03	20497.597	205256.170	13665.600	2600.203	40.000	710.015	852299.090	990.029	4670.654	3535.875	4315.559	143716.980
2	15:23:24	19516.420	206248.300	14060.929	2540.194	55.000	695.014	865367.340	945.027	4650.649	3519.872	4320.560	143777.500
3	15:23:47	20502.603	208445.380	14231.073	2980.266	45.000	660.013	870094.150	1030.032	4755.678	3643.898	4490.605	143817.840
x		20172.207	206649.950	13985.867	2706.888	46.667	688.348	862586.860	988.363	4692.327	3566.548	4375.574	143770.770
σ		567.933	1632.105	290.113	238.647	7.638	25.659	9217.608	42.527	55.768	67.463	99.651	50.767
%RSD		2.815	0.790	2.074	8.816	16.366	3.728	1.069	4.303	1.188	1.892	2.277	0.035

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:23:03	2550.195	14226.069	6421.237	112750.090	0.000	7701.779	10278.168
2	15:23:24	2745.226	14075.941	6586.301	110625.930	0.000	7726.791	10593.366
3	15:23:47	2765.229	14676.459	6616.313	110746.730	0.000	7586.726	10598.369
x		2686.883	14326.156	6541.284	111374.250	0.000	7671.765	10489.967
σ		118.797	312.520	105.041	1193.045	0.000	74.700	183.441
%RSD		4.421	2.181	1.606	1.071	0.000	0.974	1.749

200-35680-A-12-A 10/25/2016 03:28:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:28:47	179703.610	1140.039	8232.032	T 3099286.400	T 8816952.800	T 210348670.000	T 26065493.000	T 6792893.700	267682.490	67099.800	524102.960	458
2	15:29:09	180249.450	1227.545	8347.090	T 3170034.600	T 9016779.800	T 219993000.000	T 27659436.000	T 7071709.400	281304.090	70458.618	553464.600	473
3	15:29:31	176641.130	1182.542	8622.230	T 3196786.900	T 9144976.800	T 219164430.000	T 27631617.000	T 7238964.300	286542.200	70378.280	560772.900	482
x		178864.730	1183.375	8400.451	T 3155369.300	T 8992903.100	T 216502030.000	T 27118849.000	T 7034522.500	278509.600	69312.233	546113.490	471
σ		1944.939	43.759	200.497	T 50377.476	T 165310.310	T 5345048.500	T 912338.670	T 225348.400	9735.453	1916.444	19408.771	12
%RSD		1.087	3.698	2.387	T 1.597	T 1.838	T 2.469	T 3.364	T 3.203	3.496	2.765	3.554	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:28:47	56590.913	T 30482914.000	TM 848496430.000	388229.610	216649.010	151591.280	308677.220	32499.656	616.011	719.516	675.514	13
2	15:29:09	60414.299	T 32109608.000	TM 887052390.000	410550.020	225505.330	159090.690	321898.830	33191.016	623.012	753.517	753.017	13
3	15:29:31	59771.989	T 32274342.000	TM 907520340.000	412558.720	228130.700	163705.050	329311.560	34193.039	586.010	765.518	748.017	14
x		58925.734	T 31622288.000	TM 881023050.000	403779.450	223428.340	158129.010	319962.540	33294.570	608.344	746.183	725.516	13
σ		2047.359	T 990158.480	TM 29970319.000	13503.956	6016.034	6113.878	10452.553	851.428	19.656	23.862	43.375	

%RSD		3.474	T 3.131	TM 3.402	3.344	2.693	3.866	3.267	2.557	3.231	3.198	5.979	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	15:28:47	1741856.700	814833.310	13900.795	900.024	425.005	435.006	1009801.500	31650.023	1085.035	865.022	454976.490	214
2	15:29:09	T 1955442.200	840691.260	14586.380	920.025	405.005	665.013	1030449.600	31840.385	1150.040	921.525	475816.450	221
3	15:29:31	1833153.300	858400.580	14276.112	980.029	310.003	655.013	1041825.100	33553.742	1300.051	966.528	487193.140	223
x		T 1843484.100	837975.050	14254.429	933.360	380.004	585.011	1027358.700	32348.050	1178.375	917.692	472662.030	219
σ		T 107166.840	21910.273	343.307	41.636	61.442	130.004	16234.009	1048.489	110.273	50.861	16338.329	4
%RSD		T 5.813	2.615	2.408	4.461	16.169	22.223	1.580	3.241	9.358	5.542	3.457	
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	15:28:47	470.007	12619.776	831003.070	131547.100	0.000	596356.710	75681.441					
2	15:29:09	510.008	13030.092	866577.870	135639.710	0.000	626388.770	79252.984					
3	15:29:31	470.007	13010.076	882406.830	137898.130	0.000	633276.880	80473.813					
x		483.340	12886.648	859995.920	135028.310	0.000	618674.120	78469.413					
σ		23.095	231.334	26326.378	3219.354	0.000	19631.900	2490.421					
%RSD		4.778	1.795	3.061	2.384	0.000	3.173	3.174					

200-35700-A-9-A 10/25/2016 03:34:10 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	15:34:32	171467.520	1172.541	4820.697	T 1880331.600	T 3799233.700	T 190469650.000	T 12804684.000	T 1590928.700	265254.130	31043.885	574509.050	3747
2	15:34:54	174428.000	1177.542	4520.613	T 1880820.800	T 3883243.700	T 194896380.000	T 13136461.000	T 1614154.700	268525.900	31925.548	586211.140	3812
3	15:35:16	170689.600	1085.035	4780.686	T 1979666.500	T 3972684.200	T 198412190.000	T 13411814.000	T 1657768.300	276199.780	32090.865	593958.310	3887
x		172195.040	1145.039	4707.332	T 1913606.300	T 3885053.900	T 194592740.000	T 13117653.000	T 1620950.500	269993.270	31686.766	584892.830	3815
σ		1972.533	52.025	162.936	T 57210.354	T 86739.459	T 3979969.200	T 304001.680	T 33934.086	5618.427	562.854	9791.418	70
%RSD		1.146	4.544	3.461	T 2.990	T 2.233	T 2.045	T 2.318	T 2.093	2.081	1.776	1.674	
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	15:34:32	46870.814	TM 33773437.000	TM 807559060.000	303116.550	121098.350	1126169.300	578177.700	28822.901	932.026	1199.543	767.018	72
2	15:34:54	46299.219	TM 34293709.000	TM 820406030.000	302485.230	122236.620	1135918.700	578483.020	28486.323	988.029	1251.547	751.017	75
3	15:35:16	48976.856	TM 34974321.000	TM 827144160.000	310169.550	125082.620	1149065.600	587531.430	28514.371	1035.032	1287.050	751.517	72
x		47382.296	TM 34347156.000	TM 818369750.000	305257.110	122805.860	1137051.200	581397.380	28607.865	985.029	1246.047	756.517	73
σ		1410.194	TM 602223.110	TM 9950068.500	4265.989	2052.223	11490.094	5314.431	186.754	51.569	44.012	9.097	1
%RSD		2.976	TM 1.753	TM 1.216	1.398	1.671	1.011	0.914	0.653	5.235	3.532	1.202	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	15:34:32	643887.010	907681.360	14601.393	3980.475	490.007	2260.153	1055538.900	154957.020	1505.068	1105.537	733430.160	2245
2	15:34:54	654171.090	924879.240	14506.310	4330.563	405.005	2335.164	1058998.400	155809.910	1265.048	1144.039	735002.190	2260
3	15:35:16	654087.920	933574.490	14566.363	4740.674	390.005	2425.176	1076732.200	158999.830	1355.055	1137.539	743245.980	2325
x		650715.340	922045.030	14558.022	4350.571	428.339	2340.164	1063756.500	156588.920	1375.057	1129.038	737226.110	2277
σ		5913.653	13177.180	48.087	380.494	53.930	82.625	11369.662	2131.013	121.254	20.611	5272.275	42
%RSD		0.909	1.429	0.330	8.746	12.591	3.531	1.069	1.361	8.818	1.826	0.715	
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	15:34:32	1035.032	10588.362	1717320.800	136012.730	0.000	361876.440	139919.870					
2	15:34:54	960.028	10963.605	1744769.000	135216.290	0.000	368872.330	142577.250					
3	15:35:16	1165.041	11248.795	1775710.100	137726.720	0.000	383558.300	143989.310					
x		1053.367	10933.587	1745933.300	136318.580	0.000	371435.690	142162.150					
σ		103.729	331.238	29212.041	1282.858	0.000	11065.887	2066.233					
%RSD		9.847	3.030	1.673	0.941	0.000	2.979	1.453					

200-35700-A-10-A 10/25/2016 03:39:54 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:40:16	158984.680	832.521	3860.447	T 1842144.600	T 3451201.200	T 151098070.000	T 10175954.000	1310266.000	246743.040	40223.479	425949.310	29971(
2	15:40:37	161145.290	885.024	4165.520	T 1879720.100	T 3516818.900	T 152175560.000	T 10199770.000	1312674.900	246783.640	30057.078	440936.600	30779[
3	15:40:59	161296.740	932.526	3990.478	T 1911669.900	T 3561846.200	T 155182650.000	T 10409047.000	T 1413012.700	248021.810	27873.288	438601.180	30584(
x		160475.570	883.357	4005.482	T 1877844.900	T 3509955.400	T 152818760.000	T 10261590.000	T 1345317.900	247182.830	32717.949	435162.360	30444[
σ		1293.364	50.023	153.089	T 34800.550	T 55640.922	T 2116888.700	T 128255.300	T 58637.836	726.864	6591.053	8063.736	421(
%RSD		0.806	5.663	3.822	T 1.853	T 1.585	T 1.385	T 1.250	T 4.359	0.294	20.145	1.853	[

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:40:16	39030.648	T 12141342.000	T 469790790.000	217494.920	106187.200	TM 7870929.400	882786.150	18871.678	1269.048	1553.072	699.515	6826
2	15:40:37	39752.351	T 12554484.000	T 486888860.000	225870.220	108522.170	TM 7958105.800	898772.500	19250.111	1248.047	1490.567	672.514	6866
3	15:40:59	40489.121	T 12432309.000	T 481753710.000	221198.180	109196.550	TM 8033560.700	907101.010	18929.744	1257.047	1553.072	697.015	6726
x		39757.374	T 12376045.000	T 479477790.000	221521.110	107968.640	TM 7954198.600	896219.880	19017.178	1258.047	1532.237	689.681	6806
σ		729.250	T 212239.700	T 8773300.000	4196.977	1579.191	TM 81385.995	12356.780	203.804	10.536	36.088	14.920	72
%RSD		1.834	T 1.715	T 1.830	1.895	1.463	TM 1.023	1.379	1.072	0.838	2.355	2.163	[

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	15:40:16	565322.800	830141.700	13090.139	7101.513	535.009	4440.592	1020972.200	44644.715	1320.052	1202.043	531734.050	212516
2	15:40:37	576651.150	849627.750	13505.470	6976.460	625.012	4495.606	1034998.900	45251.347	1480.066	1224.045	544480.840	215868
3	15:40:59	580102.890	844055.040	13250.265	6916.435	480.007	4570.627	1034850.100	46138.775	1555.073	1198.043	553909.000	222991
x		574025.620	841274.830	13281.958	6998.136	546.676	4502.275	1030273.700	45344.946	1451.730	1208.044	543374.630	217125
σ		7731.936	10036.123	209.472	94.424	73.203	65.274	8055.710	751.415	120.045	14.001	11128.788	5349
%RSD		1.347	1.193	1.577	1.349	13.391	1.450	0.782	1.657	8.269	1.159	2.048	2

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:40:16	1120.038	8807.326	1792269.900	129329.850	0.000	315834.450	187382.480
2	15:40:37	1100.036	8907.380	1847712.000	132131.700	0.000	329377.850	191898.430
3	15:40:59	1045.033	9347.621	1859891.500	129904.290	0.000	331483.990	193011.170
x		1088.369	9020.776	1833291.100	130455.280	0.000	325565.430	190764.020
σ		38.840	287.443	36043.651	1479.959	0.000	8492.814	2980.887
%RSD		3.569	3.186	1.966	1.134	0.000	2.609	1.563

200-35700-A-10-A @2 10/25/2016 03:45:36 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:45:58	161791.500	527.508	2115.134	T 1114391.700	T 1753738.600	T 77477739.000	T 5279084.600	667483.640	219343.920	17203.875	224892.130	155971.410
2	15:46:20	157147.380	462.506	2105.133	T 1079843.100	T 1753350.700	T 76958020.000	T 5317648.300	664820.290	220134.230	17694.388	225616.820	154376.670
3	15:46:42	157187.760	432.506	2300.159	T 1098401.500	T 1737544.300	T 77077590.000	T 5191862.900	666869.780	218887.980	20052.055	228683.190	154689.550
x		158708.880	474.173	2173.475	T 1097545.500	T 1748211.200	T 77171116.000	T 5262865.300	666391.240	219455.380	18316.773	226397.380	155012.540
σ		2669.703	48.564	109.825	T 17290.212	T 9239.859	T 272189.660	T 64442.143	1394.670	630.559	1522.680	2012.460	845.013
%RSD		1.682	10.242	5.053	T 1.575	T 0.529	T 0.353	T 1.224	0.209	0.287	8.313	0.889	0.545

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:45:58	21959.457	T 6234930.100	T 245389880.000	114532.180	55246.413	T 4162105.000	496903.590	11337.855	970.028	1142.539	691.514	4885.716
2	15:46:20	21659.064	T 6336201.300	T 247887900.000	113555.530	55457.111	T 4144775.400	491707.860	11289.823	884.023	1155.040	676.514	4980.744
3	15:46:42	21924.411	T 6271491.500	T 245113900.000	114597.630	55161.132	T 4148383.800	495811.790	11228.781	923.026	1141.039	645.513	4990.747
x		21847.644	T 6280874.300	T 246130560.000	114228.450	55288.219	T 4151754.800	494807.750	11285.486	925.692	1146.206	671.180	4952.402

σ		164.252	T 51283.459	T 1528147.300	583.680	152.354	T 9143.342	2739.524	54.666	43.064	7.687	23.460	57.968
%RSD		0.752	T 0.817	T 0.621	0.511	0.276	T 0.220	0.554	0.484	4.652	0.671	3.495	1.171
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:45:58	289894.430	553852.160	6636.321	3425.352	290.003	2300.159	1031257.300	23501.558	780.018	647.513	274471.580	191230.820
2	15:46:20	293898.640	551010.250	6656.329	3505.369	310.003	2475.184	1037242.100	22970.819	780.018	618.011	276154.030	188621.330
3	15:46:42	296371.870	551826.610	6656.329	3620.393	220.001	2330.163	1048568.900	23316.298	800.019	641.512	274207.280	194700.650
x		293388.310	552229.670	6649.660	3517.038	273.336	2368.502	1039022.800	23262.892	786.685	635.679	274944.300	191517.600
σ		3268.736	1463.200	11.552	98.043	47.259	93.599	8792.114	269.370	11.548	15.592	1055.961	3049.785
%RSD		1.114	0.265	0.174	2.788	17.290	3.952	0.846	1.158	1.468	2.453	0.384	1.592

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:45:58	500.007	4600.635	913380.400	128110.480	0.000	148392.680	94567.532
2	15:46:20	500.007	4620.640	931508.570	131234.650	0.000	153629.820	94482.049
3	15:46:42	600.011	4660.652	927303.540	128432.950	0.000	158232.580	97449.059
x		533.342	4627.309	924064.170	129259.360	0.000	153418.360	95499.546
σ		57.737	30.559	9488.295	1718.231	0.000	4923.354	1688.868
%RSD		10.826	0.660	1.027	1.329	0.000	3.209	1.768

CCV 10/25/2016 03:51:19 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:51:41	136738.630	79830.732	28063.607	┬12138856.000	┬3655812.100	┬33712440.000	┬12052948.000	1268751.200	152777.030	25058.824	┬2481023.900	71498
2	15:52:02	134087.220	77808.703	27642.905	┬12017141.000	┬3598243.000	┬33142083.000	┬11819137.000	1239111.000	151414.680	24563.087	┬2456749.100	70993
3	15:52:24	131295.120	76490.120	27502.673	┬11696695.000	┬3558678.500	┬32580326.000	┬11507650.000	1236723.000	151273.410	24177.524	┬2416598.900	68732
x		134040.330	78043.185	27736.395	┬11950898.000	┬3604244.500	┬33144950.000	┬11793245.000	1248195.100	151821.710	24599.812	┬2451457.300	70408
σ		2722.057	1682.604	291.920	┬228402.710	┬48844.124	┬566062.550	┬273569.500	17842.112	830.344	441.796	┬32536.875	1473
%RSD		2.031	2.156	1.052	┬1.911	┬1.355	┬1.708	┬2.320	1.429	0.547	1.796	┬1.327	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:51:41	89187.998	┬3614309.700	┬75227041.000	1100096.400	595346.550	737791.470	571855.080	79503.171	6529.279	9000.930	522.008	736
2	15:52:02	87810.714	┬3558190.800	┬73830270.000	1068475.500	575373.100	715829.160	564304.140	78310.545	6365.215	8652.746	532.008	737
3	15:52:24	86428.517	┬3449080.800	┬72020017.000	1032399.900	561899.920	705273.120	553567.950	76522.267	5986.075	8583.210	514.508	720
x		87809.076	┬3540527.100	┬73692443.000	1066990.600	577539.860	719631.250	563242.390	78111.995	6293.523	8745.628	522.842	731
σ		1379.741	┬84018.749	┬1607948.300	33872.687	16828.257	16589.234	9189.683	1500.338	278.608	223.815	8.780	9
%RSD		1.571	┬2.373	┬2.182	3.175	2.914	2.305	1.632	1.921	4.427	2.559	1.679	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	15:51:41	785561.980	206471.040	1623148.300	261012.950	8247.040	128463.180	887422.920	788459.080	522663.810	413323.310	528018.690	14470
2	15:52:02	796754.970	206754.520	1642063.400	255178.640	8677.258	128689.920	890932.940	784378.130	520801.860	411567.150	521523.920	14420
3	15:52:24	780046.780	199466.510	1637352.000	250320.800	8121.979	123420.290	855286.440	777569.980	515129.600	405901.210	520549.150	14244
x		787454.570	204230.690	1634187.900	255504.130	8348.759	126857.800	877880.770	783469.060	519531.760	410263.890	523363.920	14378
σ		8513.359	4128.335	9846.514	5353.501	291.280	2979.127	19645.806	5501.176	3924.401	3878.887	4060.505	118
%RSD		1.081	2.021	0.603	2.095	3.489	2.348	2.238	0.702	0.755	0.945	0.776	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:51:41	29746.522	1377381.900	┬7213230.700	111491.670	0.000	160564.720	100572.530
2	15:52:02	30257.440	1389319.300	┬7187257.000	108381.250	0.000	174771.570	101382.420
3	15:52:24	29375.865	1386465.700	┬7136369.000	109860.890	0.000	183292.370	100829.080
x		29793.276	1384389.000	┬7178952.300	109911.270	0.000	172876.220	100928.010
σ		442.643	6233.773	┬39098.043	1555.820	0.000	11481.758	413.907
%RSD		1.486	0.450	┬0.545	1.416	0.000	6.642	0.410

CCB 10/25/2016 03:57:03 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:57:24	138019.120	20.000	625.012	196440.890	1050.033	15347.063	50957.782	900.024	149991.900	15.000	14095.958	1980.118
2	15:57:46	138593.860	10.000	650.013	199921.910	1150.040	20732.888	52472.471	850.022	152686.200	20.000	14606.398	1930.112
3	15:58:08	142395.710	12.500	640.012	196258.760	1320.052	25093.877	50616.745	900.024	153190.800	5.000	14691.472	1980.118
x		139669.560	14.167	638.346	197540.520	1173.375	20391.276	51348.999	883.357	151956.300	13.333	14464.609	1963.449
σ		2378.336	5.204	12.584	2064.356	136.514	4882.379	987.784	28.869	1719.826	7.638	322.082	28.871
%RSD		1.703	36.735	1.971	1.045	11.634	23.943	1.924	3.268	1.132	57.282	2.227	1.470

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:57:24	4840.703	1585.075	255503.560	180.001	150.001	705.015	645.012	1677.084	468.007	510.508	502.008	2555.196
2	15:57:46	4395.580	1850.103	268297.260	195.001	125.000	950.027	690.014	1633.080	524.008	528.008	530.008	2810.237
3	15:58:08	4750.677	2380.170	279056.790	225.002	135.001	1135.039	725.016	1644.081	536.009	511.508	522.508	2660.212
x		4662.320	1938.449	267619.200	200.001	136.667	930.027	686.681	1651.415	509.341	516.675	518.175	2675.215
σ		235.349	404.843	11791.241	22.913	12.583	215.708	40.106	22.901	36.296	9.828	14.495	128.181

%RSD		5.048	20.885	4.406	11.457	9.207	23.194	5.841	1.387	7.126	1.902	2.797	4.791
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:57:24	100.000	206511.530	3015.273	55.000	10.000	20.000	882132.890	3240.315	655.013	479.507	90.000	144231.390
2	15:57:46	200.001	206987.380	3360.339	70.000	0.000	15.000	879214.580	3385.344	690.014	565.010	115.000	148074.880
3	15:58:08	270.002	209265.570	2560.197	50.000	5.000	10.000	882206.640	3640.398	830.021	553.009	160.001	147409.010
x		190.001	207588.160	2978.603	58.333	5.000	15.000	881184.700	3422.019	725.016	532.509	121.667	146571.760
σ		85.441	1472.031	401.329	10.408	5.000	5.000	1706.572	202.547	92.605	46.291	35.473	2053.980
%RSD		44.969	0.709	13.474	17.843	100.000	33.333	0.194	5.919	12.773	8.693	29.156	1.401

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:57:24	175.001	1185.042	1225.045	109538.780	0.000	10048.028	70.000
2	15:57:46	175.001	1285.050	1360.055	112156.100	0.000	9562.743	45.000
3	15:58:08	175.001	980.029	1370.056	113313.900	0.000	8717.279	70.000
x		175.001	1150.040	1318.386	111669.590	0.000	9442.683	61.667
σ		0.000	155.494	80.990	1934.008	0.000	673.449	14.434
%RSD		0.000	13.521	6.143	1.732	0.000	7.132	23.406

CCVL 10/25/2016 04:02:46 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	16:03:08	141972.120	165.001	5901.045	833314.290	25479.461	67089.760	630868.060	21553.928	156148.060	20.000	22079.616	8917.385
2	16:03:29	142829.400	152.501	6171.142	829280.370	25359.278	71613.525	624038.010	22354.982	155269.910	20.000	21864.332	9247.565
3	16:03:51	142234.340	145.001	6266.178	824659.340	25539.553	73481.630	621672.010	23045.922	154492.740	20.000	21373.696	9052.458
x		142345.280	154.167	6112.788	829084.660	25459.431	70728.305	625526.020	22318.278	155303.570	20.000	21772.548	9072.469
σ		439.275	10.104	189.432	4330.791	91.791	3286.596	4775.195	746.674	828.173	0.000	361.799	165.997
%RSD		0.309	6.554	3.099	0.522	0.361	4.647	0.763	3.346	0.533	0.000	1.662	1.830

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:03:08	4885.716	6786.381	715140.530	2430.177	1095.036	3635.396	10253.153	2199.145	571.010	736.516	543.009	2755.228
2	16:03:29	5105.782	7351.621	728647.070	2560.197	1255.047	3700.411	9912.947	2236.150	603.011	688.014	531.508	2925.257
3	16:03:51	5310.846	7241.573	737713.110	2405.173	1135.039	4165.520	10713.442	2221.148	580.010	720.516	537.009	2775.231
x		5100.781	7126.525	727166.900	2465.182	1161.707	3833.776	10293.181	2218.814	584.677	715.015	537.175	2818.572
σ		212.609	299.668	11358.855	83.229	83.273	289.132	401.746	18.613	16.503	24.714	5.752	92.932
%RSD		4.168	4.205	1.562	3.376	7.168	7.542	3.903	0.839	2.823	3.456	1.071	3.297

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:03:08	20047.049	214967.450	13945.832	2705.220	55.000	725.016	881521.790	855.022	4295.554	3467.861	4520.613	143363.960
2	16:03:29	20853.037	214207.760	13880.778	2710.220	30.000	645.012	897491.140	990.029	4445.593	3538.876	4195.528	144937.480
3	16:03:51	20552.665	213711.450	14346.172	3070.283	60.000	670.013	898862.140	1155.040	4510.610	3589.887	4470.600	146430.440
x		20484.250	214295.550	14057.594	2828.574	48.333	680.014	892625.020	1000.031	4417.252	3532.208	4395.580	144910.630
σ		407.326	632.585	252.024	209.341	16.073	40.928	9640.086	150.259	110.294	61.286	175.046	1533.420
%RSD		1.988	0.295	1.793	7.401	33.254	6.019	1.080	15.025	2.497	1.735	3.982	1.058

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:03:08	2520.191	13650.588	6326.200	109156.290	0.000	7581.724	10393.240
2	16:03:29	2705.220	14276.112	6361.214	110132.680	0.000	7541.706	10383.233
3	16:03:51	2650.211	14336.163	6836.402	112266.850	0.000	8202.018	10793.494
x		2625.207	14087.621	6507.939	110518.600	0.000	7775.149	10523.322
σ		95.015	379.671	284.996	1590.786	0.000	370.220	234.029
%RSD		3.619	2.695	4.379	1.439	0.000	4.762	2.224

Analyte ICPS

STD0 10/25/2016 12:59:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:00:02	98.784%	4.451	-353.148	5019.148	-18.530	3749.803	2792.169	547.735	98.184%	10.184	1567.789	25.988
2	13:00:24	100.634%	-3.467	-422.281	4563.402	145.836	3989.642	2236.358	347.696	98.816%	15.166	2600.095	71.754
3	13:00:45	100.582%	-13.401	-590.796	-5911.662	32.084	3143.131	524.575	131.823	103.000%	24.296	2457.169	-17.265
x		100.000%	-4.139	-455.409	1223.629	53.130	3627.525	1851.034	342.418	100.000%	16.549	2208.351	26.826
σ		1.053%	8.944	122.238	6183.544	84.180	436.302	1181.885	208.006	2.617%	7.157	559.327	44.515
%RSD		1.053	216.093	26.841	505.345	158.442	12.028	63.850	60.746	2.617	43.247	25.328	165.943

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:00:02	3892.877	335.600	20306.194	136.938	32.337	3.021	-158.567	-58.755	357.522	3.398	467.967	2160.004
2	13:00:24	3573.160	191.322	21304.486	155.127	-9.217	115.272	-182.927	-185.210	397.096	-47.286	444.665	2411.683
3	13:00:45	3523.044	347.614	11017.399	78.248	39.043	35.761	-7.890	2.769	355.532	-12.054	442.015	2443.718
x		3663.027	291.512	17542.693	123.437	20.721	51.351	-116.461	-80.398	370.050	-18.648	451.549	2338.468
σ		200.627	86.975	5673.072	40.178	26.143	57.727	94.811	95.840	23.443	25.977	14.280	155.382
%RSD		5.477	29.836	32.339	32.549	126.166	112.416	81.410	119.207	6.335	139.306	3.162	6.645

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:00:02	96.513	98.388%	3305.260	-27.297	-68.360	13.008	99.474%	4710.425	206.035	111.485	18.734	100.193%
2	13:00:24	54.808	100.795%	3196.824	32.274	-61.864	1.312	100.302%	4726.421	365.928	201.025	-2.118	101.002%
3	13:00:45	20.025	100.817%	2555.882	2.411	-64.206	-16.316	100.224%	5059.427	330.756	185.301	27.885	98.805%
x		57.115	100.000%	3019.322	2.463	-64.810	-0.665	100.000%	4832.091	300.906	165.937	14.834	100.000%
σ		38.296	1.396%	404.996	29.786	3.290	14.761	0.457%	197.041	84.022	47.808	15.377	1.111%
%RSD		67.050	1.396	13.413	1209.425	5.076	2218.841	0.457	4.078	27.923	28.811	103.661	1.111

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:00:02	83.790	373.328	2065.527	99.435%	0.000	32484.318	7.561
2	13:00:24	37.158	362.650	2274.023	99.208%	0.000	29650.713	-7.362
3	13:00:45	127.921	129.409	2531.544	101.357%	0.000	27192.935	1.007
x		82.957	288.462	2290.365	100.000%	0.000	29775.989	0.402
σ		45.387	137.848	233.438	1.181%	0.000	2647.915	7.480
%RSD		54.712	47.787	10.192	1.181	0.000	8.893	1860.717

STD1 10/25/2016 01:05:23 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:05:45	105.952%	115.998	4644.750	562828.700	21405.230	46034.984	514287.830	19850.063	102.920%	4.855	9388.449	6500.600
2	13:06:07	102.944%	124.854	4554.475	548422.470	20557.703	45290.696	522329.300	19220.136	103.109%	14.546	9507.269	6738.191
3	13:06:28	101.702%	126.634	4750.297	545886.910	20312.829	44934.831	514963.960	19842.852	105.397%	9.502	10137.567	6729.695
x		103.532%	122.495	4649.841	552379.360	20758.587	45420.170	517193.700	19637.684	103.809%	9.634	9677.762	6656.162
σ		2.186%	5.697	98.010	9137.766	573.237	561.388	4460.395	361.625	1.379%	4.847	402.611	134.788
%RSD		2.111	4.651	2.108	1.654	2.761	1.236	0.862	1.841	1.328	50.307	4.160	2.025

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:05:45	3691.583	4425.358	430999.070	1778.921	695.050	2747.249	8908.272	575.399	348.760	87.833	475.338	2583.756
2	13:06:07	3709.417	4255.597	427664.760	1891.722	693.528	2490.603	8587.712	785.852	292.328	156.676	493.271	2465.836
3	13:06:28	3580.919	4604.807	418324.610	1837.163	798.871	2781.023	8897.719	737.194	294.926	139.907	483.365	2464.075

x		3660.639	4428.587	425662.810	1835.935	729.150	2672.958	8797.901	699.482	312.004	128.138	483.991	2504.556
σ		69.614	174.627	6570.110	56.410	60.385	158.825	182.106	110.178	31.858	35.899	8.983	68.595
%RSD		1.902	3.943	1.544	3.073	8.282	5.942	2.070	15.751	10.211	28.016	1.856	2.739
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:05:45	18308.516	104.223%	11305.075	2231.517	13.030	561.472	102.455%	956.546	3355.611	2551.974	3895.759	100.029%
2	13:06:07	17984.768	103.340%	11733.570	2428.587	-84.393	594.143	102.379%	986.557	3525.121	2612.059	3801.004	101.603%
3	13:06:28	18521.437	102.114%	11666.346	2420.614	-39.001	681.971	102.305%	962.834	3589.757	2729.869	3852.713	100.308%
x		18271.574	103.226%	11568.330	2360.239	-36.788	612.529	102.380%	968.646	3490.163	2631.300	3849.825	100.646%
σ		270.235	1.059%	230.450	111.549	48.749	62.318	0.075%	15.827	120.924	90.495	47.443	0.840%
%RSD		1.479	1.026	1.992	4.726	132.514	10.174	0.073	1.634	3.465	3.439	1.232	0.835

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:05:45	2613.726	12751.623	9272.378	104.627%	0.000	19848.704	10649.453
2	13:06:07	2393.311	12972.040	9687.087	100.355%	0.000	20052.425	11295.589
3	13:06:28	2695.704	13676.226	10486.460	100.118%	0.000	20076.977	11652.329
x		2567.580	13133.296	9815.308	101.700%	0.000	19992.702	11199.124
σ		156.388	482.934	617.114	2.538%	0.000	125.308	508.349
%RSD		6.091	3.677	6.287	2.495	0.000	0.627	4.539

STD2 10/25/2016 01:11:06 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:11:28	102.102%	640.258	21773.372	T 2823002.000	105425.660	235426.130	T 2730375.800	95619.784	99.324%	5.029	42117.764	33097.135
2	13:11:50	101.790%	620.182	23226.822	T 2800757.000	106207.590	229463.490	T 2668928.300	96742.738	101.721%	14.745	41914.100	31054.989
3	13:12:12	99.965%	614.375	22369.120	T 2661399.000	101653.320	228860.930	T 2663329.000	95219.820	101.910%	24.545	41048.044	31432.150
x		101.286%	624.938	22456.438	T 2761719.300	104428.860	231250.180	T 2687544.300	95860.781	100.985%	14.773	41693.303	31861.425
σ		1.154%	13.582	730.648	T 87589.044	2435.275	3629.006	T 37198.594	789.544	1.441%	9.758	568.013	1086.645
%RSD		1.139	2.173	3.254	T 3.172	2.332	1.569	T 1.384	0.824	1.427	66.054	1.362	3.411

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:11:28	3933.473	23556.430	T 2248183.400	9851.893	4773.163	13334.435	42746.371	3630.790	229.500	753.330	467.840	2374.159
2	13:11:50	4024.860	23522.570	T 2261795.300	10003.973	4529.658	13161.145	43143.438	3681.564	201.202	787.799	502.353	2323.615
3	13:12:12	3771.179	24312.713	T 2196699.400	9209.436	4113.680	12830.536	42114.178	3796.056	169.717	873.491	445.410	2063.038
x		3909.837	23797.238	T 2235559.400	9688.434	4472.167	13108.705	42667.996	3702.804	200.140	804.873	471.868	2253.604
σ		128.481	446.735	T 34335.021	421.736	333.479	256.010	519.086	84.656	29.905	61.873	28.684	166.959
%RSD		3.286	1.877	T 1.536	4.353	7.457	1.953	1.217	2.286	14.942	7.687	6.079	7.409
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:11:28	88254.471	101.564%	58131.249	12158.921	-78.973	2912.352	101.746%	683.090	19090.365	14890.322	19173.366	98.655%
2	13:11:50	89647.830	101.869%	60002.205	12801.333	-28.621	2966.132	99.931%	680.481	19084.456	15334.203	19733.544	100.572%
3	13:12:12	89640.890	100.648%	58797.660	11878.915	-14.053	3177.148	100.695%	724.977	18457.975	15098.326	19931.173	97.732%
x		89181.064	101.360%	58977.038	12279.723	-40.549	3018.544	100.791%	696.183	18877.599	15107.617	19612.695	98.986%
σ		802.461	0.635%	948.289	472.925	34.064	139.963	0.911%	24.971	363.417	222.086	393.092	1.449%
%RSD		0.900	0.627	1.608	3.851	84.007	4.637	0.904	3.587	1.925	1.470	2.004	1.464

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:11:28	12458.925	66210.945	47448.244	101.102%	0.000	55650.230	53702.935
2	13:11:50	12710.556	70061.769	47627.133	99.781%	0.000	55658.058	54917.497
3	13:12:12	13013.446	68621.283	48185.033	99.189%	0.000	59766.523	55645.269
x		12727.642	68297.999	47753.470	100.024%	0.000	57024.937	54755.234

σ		277.655	1945.661	384.298	0.979%	0.000	2374.286	981.281
%RSD		2.182	2.849	0.805	0.979	0.000	4.164	1.792

STD3 10/25/2016 01:16:50 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	13:17:12	104.044%	77694.279	26712.231	┬10931417.000	┬3365029.600	┬31141965.000	┬10969621.000	1166929.400	104.504%	22562.491	┬2181233.200	638301.
2	13:17:34	100.759%	77154.351	26818.938	┬11303323.000	┬3455467.100	┬31599217.000	┬11000774.000	1169940.900	100.203%	23075.370	┬2238879.700	655525.
3	13:17:56	100.924%	77367.036	27363.501	┬11043195.000	┬3419372.300	┬31118744.000	┬10819304.000	1164459.800	101.896%	22014.278	┬2197471.800	645004.
x		101.909%	77405.222	26964.890	┬11092645.000	┬3413289.600	┬31286642.000	┬10929900.000	1167110.000	102.201%	22550.713	┬2205861.600	646277.
σ		1.851%	271.982	349.306	┬190820.370	┬45524.574	┬270946.960	┬97036.995	2745.026	2.166%	530.644	┬29724.918	8682.
%RSD		1.816	0.351	1.295	┬1.720	┬1.334	┬0.866	┬0.888	0.235	2.120	2.353	┬1.348	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	13:17:12	7556.639	┬3267700.800	┬67333150.000	976794.160	523099.660	675532.760	536488.200	71923.540	-668.238	7876.977	492.185	2126.
2	13:17:34	6861.382	┬3341404.900	┬67980228.000	992004.700	533198.570	651981.560	525877.450	72584.746	-637.294	7638.273	453.626	1856.
3	13:17:56	7358.483	┬3291448.900	┬67391072.000	978564.790	522329.450	655982.310	527690.930	73481.340	-836.002	7830.687	476.874	1783.
x		7258.835	┬3300184.900	┬67568150.000	982454.550	526209.230	661165.540	530018.860	72663.209	-713.845	7781.979	474.228	1921.
σ		358.180	┬37620.617	┬358043.440	8317.925	6065.187	12602.152	5675.510	781.859	106.917	126.587	19.415	180.
%RSD		4.934	┬1.140	┬0.530	0.847	1.153	1.906	1.071	1.076	14.978	1.627	4.094	9.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	13:17:12	741289.540	102.871%	1451892.000	240497.150	304.404	121494.810	100.472%	740477.960	497656.560	392149.110	497892.090	99.80
2	13:17:34	722617.200	101.536%	1518390.400	237744.650	-134.134	120419.530	101.407%	739832.600	489590.870	385852.290	490691.240	100.18
3	13:17:56	721879.850	100.757%	1556537.500	243244.750	653.222	122348.790	100.342%	756773.150	500237.430	393776.410	494880.490	99.47
x		728595.530	101.722%	1508940.000	240495.520	274.498	121421.050	100.740%	745694.570	495828.290	390592.600	494487.940	99.82
σ		10999.515	1.069%	52958.988	2750.049	394.529	966.742	0.581%	9599.760	5553.761	4185.088	3616.439	0.35
%RSD		1.510	1.051	3.510	1.143	143.728	0.796	0.576	1.287	1.120	1.071	0.731	0.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:17:12	30150.354	1408870.800	┬12934097.000	100.109%	0.000	190075.540	105912.960
2	13:17:34	30425.535	1434159.400	┬13173930.000	98.816%	0.000	207441.240	106836.740
3	13:17:56	31081.563	1409369.400	┬12798948.000	101.749%	0.000	212906.220	104294.110
x		30552.484	1417466.500	┬12968992.000	100.225%	0.000	203474.330	105681.270
σ		478.409	14458.588	┬189910.950	1.470%	0.000	11921.083	1287.048
%RSD		1.566	1.020	┬1.464	1.466	0.000	5.859	1.218

STD4 10/25/2016 01:22:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	13:22:55	111.660%	221019.270	76226.098	┬33837238.000	┬10261954.000	┬95363775.000	┬34491924.000	┬3845575.600	105.354%	70437.412	┬7058344.900
2	13:23:17	105.374%	229462.580	84196.591	┬33818287.000	┬10362676.000	┬94330505.000	┬33721297.000	┬3802332.600	107.061%	69334.104	┬6905556.200
3	13:23:39	105.227%	226555.680	81889.362	┬33145432.000	┬10292608.000	┬94510850.000	┬33994380.000	┬3783966.200	107.454%	69443.998	┬6820283.000
x		107.421%	225679.180	80770.684	┬33600319.000	┬10305746.000	┬94735043.000	┬34069200.000	┬3810624.800	106.623%	69738.505	┬6928061.300
σ		3.672%	4289.352	4101.313	┬394057.460	┬51630.201	┬551913.550	┬390723.780	┬31630.699	1.117%	607.761	┬120616.030
%RSD		3.419	1.901	5.078	┬1.173	┬0.501	┬0.583	┬1.147	┬0.830	1.047	0.871	┬1.741

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	13:22:55	10.646	┬10299333.000	┬208572570.000	┬3222799.600	1550465.000	┬2135962.200	1570316.500	217033.960	-2499.879	22843.352	501.456
2	13:23:17	1265.392	┬10324356.000	┬206750710.000	┬3212924.900	1579283.300	┬2181039.100	1569439.100	218989.240	-2537.935	22825.059	515.500

3	13:23:39	33.201	₸10057184.000	₸202266590.000	₸3183974.800	1531587.700	1973220.000	1558652.900	217240.380	-2469.039	22981.609	472.564
x		436.413	₸10226958.000	₸205863290.000	₸3206566.400	1553778.600	₸2096740.500	1566136.200	217754.520	-2502.284	22883.340	496.507
σ		718.005	₸147559.420	₸3245304.200	₸20178.318	24019.858	₸109320.430	6495.537	1074.260	34.511	85.593	21.892
%RSD		164.524	₸1.443	₸1.576	₸0.629	1.546	₸5.214	0.415	0.493	1.379	0.374	4.409

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	13:22:55	₸2422869.400	102.790%	₸5009825.200	723923.170	320.800	363082.070	101.805%	2338201.800	1510547.000	1194918.500	1541074.200
2	13:23:17	₸2459916.100	101.885%	₸5221376.400	721925.550	862.610	366723.080	101.941%	2337706.000	1518985.900	1206177.100	₸1715914.200
3	13:23:39	₸2469718.300	102.185%	₸5187853.200	726420.550	1120.790	363163.830	101.152%	2360626.500	1529934.100	1217297.700	₸1733660.800
x		₸2450834.600	102.286%	₸5139685.000	724089.760	768.066	364323.000	101.633%	2345511.400	1519822.300	1206131.100	₸1663549.700
σ		₸24709.540	0.461%	₸113704.080	2252.126	408.289	2078.937	0.422%	13092.390	9720.576	11189.648	₸106437.450
%RSD		₸1.008	0.450	₸2.212	0.311	53.158	0.571	0.415	0.558	0.640	0.928	₸6.398

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:22:55	92630.012	₸5021717.500	₸42072844.000	97.432%	0.000	685386.740	344535.880
2	13:23:17	96600.625	₸4951037.100	₸41362531.000	99.627%	0.000	701321.380	340395.530
3	13:23:39	97331.510	₸5061492.100	₸42317386.000	98.069%	0.000	722661.990	340464.990
x		95520.716	₸5011415.600	₸41917587.000	98.376%	0.000	703123.370	341798.800
σ		2529.955	₸55943.471	₸495999.510	1.129%	0.000	18702.849	2370.633
%RSD		2.649	₸1.116	₸1.183	1.148	0.000	2.660	0.694

STD5 10/25/2016 01:28:16 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	13:28:38	105.548%	358641.820	128928.280	T 54322467.000	TM 17097212.000	TM 157810940.000	TM 57007781.000	TM 6386779.500	105.390%	117813.970	TM
2	13:29:00	108.384%	353078.000	131058.900	TM 55576799.000	TM 17175032.000	TM 156350830.000	TM 56329839.000	TM 6428341.300	106.218%	117859.700	TM
3	13:29:22	104.569%	361068.520	133508.460	T 53002919.000	T 16839582.000	TM 152661440.000	TM 55964458.000	TM 6366433.700	108.544%	116076.040	TM
x		106.167%	357596.110	131165.210	TM 54300728.000	TM 17037276.000	TM 155607740.000	TM 56434026.000	TM 6393851.500	106.717%	117249.900	TM
σ		1.981%	4096.611	2291.941	TM 1287077.400	TM 175573.120	TM 2653959.900	TM 529407.100	TM 31553.876	1.635%	1016.853	
%RSD		1.866	1.146	1.747	TM 2.370	TM 1.031	TM 1.706	TM 0.938	TM 0.494	1.532	0.867	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	
1	13:28:38	4483.179	TM 17150983.000	TM 342514240.000	TM 5327034.500	TM 2773658.600	TM 3469482.400	TM 2666793.000	352162.940	-4185.524	35355.809	
2	13:29:00	-1055.842	TM 17001567.000	TM 343467900.000	TM 5342175.800	TM 2746760.100	TM 3467519.500	TM 2710240.700	361418.820	-4250.575	35862.038	
3	13:29:22	-1891.993	TM 16730045.000	T 335537530.000	TM 5211558.400	TM 2696942.400	TM 3487715.200	TM 2696589.900	357801.750	-4062.983	35541.849	
x		511.781	TM 16960865.000	TM 340506560.000	TM 5293589.600	TM 2739120.400	TM 3474905.700	TM 2691207.900	357127.840	-4166.361	35586.565	
σ		3464.648	TM 213400.430	TM 4329641.300	TM 71443.314	TM 38924.514	TM 11136.686	TM 22218.231	4664.599	95.253	256.060	
%RSD		676.978	TM 1.258	TM 1.272	TM 1.350	TM 1.421	TM 0.320	TM 0.826	1.306	2.286	0.720	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	
1	13:28:38	TM 4047684.800	101.776%	TM 8559545.400	1159742.500	1780.368	580768.370	103.652%	T 4208897.800	2485529.100	M 1964598.300	
2	13:29:00	TM 4052080.800	99.826%	TM 8920074.700	1187346.300	1647.405	592877.590	102.673%	T 4346443.000	M 2519416.500	M 2006950.200	
3	13:29:22	TM 4033015.300	101.144%	TM 8817814.300	1170170.000	2090.725	588191.900	102.974%	T 4303609.100	TM 2764530.700	M 2008472.300	
x		TM 4044260.300	100.915%	TM 8765811.500	1172419.600	1839.499	587279.280	103.100%	T 4286316.600	TM 2589825.400	M 1993340.300	
σ		TM 9983.465	0.995%	TM 185805.210	13938.694	227.499	6105.977	0.502%	T 70384.266	TM 152244.990	M 24902.914	
%RSD		TM 0.247	0.986	TM 2.120	1.189	12.367	1.040	0.486	T 1.642	TM 5.879	M 1.249	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:28:38	M 189081.040	TM 8305509.000	TM 68827485.000	98.843%	0.000	M 1374879.400	M 684313.790
2	13:29:00	M 191150.740	TM 8368102.000	TM 68885688.000	99.754%	0.000	M 1414920.700	684280.980
3	13:29:22	M 194372.520	TM 8273501.300	TM 68449241.000	101.184%	0.000	M 1408831.400	684296.880
x		M 191534.760	TM 8315704.100	TM 68720805.000	99.927%	0.000	M 1399543.800	M 684297.210
σ		M 2666.563	TM 48117.344	TM 236974.780	1.180%	0.000	M 21575.906	M 16.407
%RSD		M 1.392	TM 0.579	TM 0.345	1.181	0.000	M 1.542	M 0.002

ICV 10/25/2016 01:34:00 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:34:22	98.835%	39097.270	15038.566	T 5842332.800	T 1719039.800	T 16088402.000	T 5507814.500	578579.460	98.235%	11346.613	1062607.500	326891.630
2	13:34:43	99.199%	39009.123	14796.501	T 5619331.600	T 1634772.800	T 15616067.000	T 5259422.700	555152.110	100.072%	11299.632	1023569.000	312327.160
3	13:35:05	97.242%	39271.663	15158.773	T 5803820.300	T 1706292.500	T 15999308.000	T 5512802.800	585357.440	96.979%	11750.323	1064807.000	326058.670
x		98.425%	101.892%	110.436%	T 103.698%	T 98.969%	T 104.178%	T 99.832%	96.557%	98.429%	11465.523	92.893%	93.832%
σ		1.041%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	1.556%	247.760	n/a	n/a
%RSD		1.058	0.341	1.230	T 2.071	T 2.693	T 1.578	T 2.670	2.766	1.581	2.161	2.209	2.542

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:34:22	4925.426	1547543.200	T 34080799.000	498466.280	264615.490	331024.670	264447.740	36333.310	-216.436	4025.028	479.171	1951.200
2	13:34:43	4079.974	1494232.300	T 32554927.000	486101.090	264434.020	335506.820	268299.630	35909.657	-109.070	3914.879	450.901	2179.690
3	13:35:05	5284.885	1551609.800	T 34304965.000	505222.870	276200.170	339034.250	265859.560	37027.565	-236.373	3931.913	490.110	2184.623
x		4763.429	93.523%	T 99.927%	96.131%	101.393%	96.763%	101.065%	100.451%	-187.293	105.278%	473.394	2105.171
σ		618.575	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	68.473	n/a	20.232	133.365

%RSD		12.986	2.091	T 2.830	1.953	2.512	1.198	0.732	1.550	36.559	1.498	4.274	6.335
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:34:22	354174.250	98.698%	351754.380	116945.260	96.608	60423.908	97.983%	375145.380	249610.910	196703.970	245827.340	95.807%
2	13:34:43	358751.630	98.349%	359251.910	117159.860	-40.562	60952.698	96.807%	381671.090	250540.830	198957.020	245984.900	97.088%
3	13:35:05	353735.350	97.652%	369066.410	118871.650	-86.159	60833.204	97.531%	386184.960	252442.670	199279.960	250115.380	95.736%
x		355553.750	98.233%	93.082%	97.691%	-10.038	100.608%	97.440%	381000.480	250864.800	101.238%	99.267%	96.210%
σ		2778.133	0.532%	n/a	n/a	95.130	n/a	0.593%	5550.261	1443.410	n/a	n/a	0.761%
%RSD		0.781	0.542	2.411	0.897	947.726	0.457	0.609	1.457	0.575	0.708	0.983	0.791

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:34:22	32953.533	690262.400	T 6386501.900	98.543%	0.000	171332.760	101144.700
2	13:34:43	34652.850	714301.530	T 6431935.800	96.348%	0.000	188073.570	104363.970
3	13:35:05	35406.415	711625.670	T 6415734.700	98.388%	0.000	195454.930	103487.100
x		114.927%	88.932%	T 95.670%	97.760%	0.000	92.698%	90.310%
σ		n/a	n/a	T n/a	1.225%	0.000	n/a	n/a
%RSD		3.659	1.868	T 0.359	1.253	0.000	6.683	1.616

ICVL 10/25/2016 01:39:44 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:40:06	105.186%	114.617	5197.659	542793.510	21179.586	49082.054	504586.130	18240.829	100.559%	29.809	9310.670	6136.768
2	13:40:28	100.612%	133.200	5115.300	564094.490	22110.175	50582.881	508750.720	19329.898	97.836%	30.618	9606.817	6528.921
3	13:40:49	100.903%	169.922	5270.020	549617.550	21190.000	53818.557	508421.390	19343.176	99.172%	10.075	10353.375	6339.737
x		102.234%	113.321%	119.525%	99.491%	94.585%	100.555%	93.317%	95.902%	99.189%	23.501	107.865%	92.373%
σ		2.561%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.362%	11.634	n/a	n/a
%RSD		2.505	20.211	1.490	1.970	2.486	4.731	0.456	3.335	1.373	49.505	5.507	3.096

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:40:06	3244.373	4584.284	409793.350	2083.589	843.838	2745.034	8418.510	658.797	283.355	123.247	465.242	2492.495
2	13:40:28	3135.369	4812.550	436496.340	2392.052	855.772	2731.114	8271.390	654.480	307.722	145.336	428.123	2407.135
3	13:40:49	2875.394	5497.680	438076.510	2266.579	832.329	2697.581	8593.521	740.381	287.114	137.640	462.735	2504.199
x		3085.045	94.768%	95.360%	108.763%	99.627%	98.317%	99.989%	94.395%	292.730	90.058%	452.033	2467.943
σ		189.568	n/a	n/a	n/a	n/a	n/a	n/a	n/a	13.118	n/a	20.745	52.986
%RSD		6.145	9.575	3.712	6.902	1.389	0.895	1.914	7.070	4.481	8.281	4.589	2.147

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:40:06	17754.765	102.370%	12234.809	2446.307	-52.570	601.937	100.057%	2493.767	3737.973	3022.167	3821.384	97.166%
2	13:40:28	17825.876	101.155%	12582.133	2561.528	-87.326	627.351	99.856%	2974.555	4381.976	3240.636	3779.185	97.510%
3	13:40:49	17472.269	101.040%	12736.690	2470.369	-45.216	508.978	99.302%	3313.441	4112.919	3241.768	3856.157	97.052%
x		88.715%	101.522%	101.138%	103.485%	-61.704	95.979%	99.738%	2927.254	4077.623	101.084%	95.804%	97.243%
σ		n/a	0.737%	n/a	n/a	22.492	n/a	0.391%	411.879	323.449	n/a	n/a	0.238%
%RSD		1.058	0.726	2.053	2.438	36.452	10.755	0.392	14.070	7.932	3.992	1.009	0.245

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:40:06	2726.771	13731.036	12099.329	95.866%	0.000	21321.522	10773.986
2	13:40:28	2301.142	13659.845	12808.180	100.127%	0.000	20211.118	10591.899
3	13:40:49	2956.917	14123.694	13436.304	98.188%	0.000	21106.177	10935.184
x		89.083%	87.231%	119.200%	98.060%	0.000	104.648%	94.407%
σ		n/a	n/a	n/a	2.134%	0.000	n/a	n/a
%RSD		12.500	1.805	5.233	2.176	0.000	2.820	1.595

ICBIS 10/25/2016 01:45:28 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:45:49	109.611%	-16.296	-375.526	2819.374	-914.063	-4341.728	-1666.889	-61.527	101.198%	24.661	1469.352	118.234
2	13:46:11	107.766%	-13.898	-311.404	-2177.866	-782.223	-4729.740	-3639.454	-226.144	104.983%	14.283	979.277	92.434
3	13:46:33	106.345%	-4.401	-423.658	-1804.018	-826.553	-4671.764	-4171.081	-78.352	104.104%	33.626	492.808	82.052
x		107.907%	-11.532	-370.196	-387.503	-840.946	-4581.077	-3159.141	-122.008	103.428%	24.190	980.479	97.573
σ		1.638%	6.290	56.316	2783.521	67.088	209.300	1319.382	90.576	1.981%	9.680	488.273	18.630
%RSD		1.518	54.549	15.213	718.322	7.978	4.569	41.764	74.238	1.915	40.017	49.799	19.093

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:45:49	4240.541	-228.738	4301.575	-85.074	-101.130	-101.977	-92.468	-224.132	459.198	-51.202	464.877	2616.140
2	13:46:11	4307.764	-184.859	-1672.062	-117.213	-83.326	-1.624	-214.858	-87.697	411.020	-4.780	483.828	2397.037
3	13:46:33	4466.987	-280.012	-562.685	-126.256	-106.898	-109.262	-211.796	-41.698	414.129	27.888	461.701	2349.365
x		4338.431	-231.203	688.943	-109.515	-97.118	-70.954	-173.041	-117.842	428.116	-9.365	470.135	2454.181
σ		116.296	47.625	3177.422	21.643	12.287	60.152	69.795	94.879	26.963	39.744	11.964	142.272
%RSD		2.681	20.599	461.203	19.763	12.652	84.776	40.334	80.514	6.298	424.404	2.545	5.797

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:45:49	-51.018	105.242%	-434.705	-28.002	-43.002	-47.196	101.856%	2164.957	-437.677	-329.560	-47.668	100.930%
2	13:46:11	-71.164	105.803%	-449.502	-33.143	-60.344	-25.350	102.827%	2514.118	-329.418	-274.768	-77.260	100.630%
3	13:46:33	-56.826	103.700%	-303.997	-42.921	-70.732	-15.185	103.207%	2393.433	-357.101	-276.545	-38.556	96.551%
x		-59.669	104.915%	-396.068	-34.689	-58.026	-29.244	102.630%	2357.503	-374.732	-293.624	-54.495	99.370%
σ		10.369	1.089%	80.078	7.579	14.010	16.357	0.696%	177.332	56.242	31.134	20.235	2.446%
%RSD		17.378	1.038	20.218	21.848	24.144	55.934	0.679	7.522	15.008	10.603	37.132	2.462

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:45:49	22.447	-487.583	423.612	99.991%	0.000	25186.335	-42.919
2	13:46:11	52.852	-658.634	295.831	98.998%	0.000	25138.754	-52.669
3	13:46:33	-15.173	-560.951	114.077	102.323%	0.000	23433.428	-19.284
x		20.042	-569.056	277.840	100.437%	0.000	24586.172	-38.290
σ		34.076	85.813	155.550	1.707%	0.000	998.589	17.167
%RSD		170.022	15.080	55.985	1.699	0.000	4.062	44.834

ICSA 10/25/2016 01:51:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	13:51:32	113.141%	-12.019	-527.164	TM 105797170.000	T 10884339.000	T 100599600.000	TM 107427020.000	T 4009490.400	117.712%	226615.580	1547.479	2054.77
2	13:51:54	109.820%	-7.199	-459.458	TM 105744380.000	T 10930530.000	T 100889730.000	TM 106245720.000	T 4017649.200	119.407%	223056.860	2239.644	1857.40
3	13:52:16	108.989%	-2.507	-410.910	TM 103816650.000	T 10700745.000	T 98878436.000	TM 105967210.000	T 3969444.700	121.939%	222563.850	1025.109	1955.39
x		110.650%	-1.#IO%	-1.#IO%	TM 94.703%	T 95.394%	T 98.393%	TM 98.004%	T 101.073%	119.686%	224078.760	1.#IO%	1.#IO
σ		2.197%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	2.127%	2210.732	n/a	n/
%RSD		1.985	65.680	12.534	TM 1.074	T 1.121	T 1.086	TM 0.727	T 0.645	1.777	0.987	37.981	5.04

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	13:51:32	1525.034	141.307	T 213152630.000	-30.975	89.412	473.535	-687.005	0.314	317.924	8.907	564.276	2527.29
2	13:51:54	1185.070	202.455	T 215850450.000	-37.333	65.279	419.880	-767.098	-117.166	349.377	-0.485	521.995	2435.07
3	13:52:16	1592.398	98.357	T 210205100.000	12.930	89.809	498.971	-644.285	-52.646	340.937	-28.328	535.573	2483.95
x		1434.167	1.#IO%	T 94.918%	-1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	336.079	-1.#IO%	540.615	2482.10

σ		218.338	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	16.280	n/a	21.587	46.13
%RSD		15.224	35.497	T 1.325	148.270	17.238	8.699	8.914	104.133	4.844	291.835	3.993	1.85
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	13:51:32	2465.568	112.494%	T 2497810.600	196.557	242.719	148.130	110.232%	1995.927	-407.865	-371.647	3.407	109.006%
2	13:51:54	2514.294	111.736%	T 2627058.800	172.769	297.213	43.265	112.934%	2200.564	-260.266	-287.031	18.837	110.746%
3	13:52:16	2512.072	114.589%	T 2547761.400	173.130	267.132	178.481	114.926%	2258.155	-390.060	-298.241	-30.938	112.931%
x		1.#IO%	112.940%	T 103.318%	1.#IO%	269.021	1.#IO%	112.697%	2151.548	-352.730	-1.#IO%	-1.#IO%	110.894%
σ		n/a	1.478%	T n/a	n/a	27.296	n/a	2.356%	137.814	80.570	n/a	n/a	1.967%
%RSD		1.102	1.309	T 2.548	7.538	10.147	57.545	2.091	6.405	22.842	14.409	879.148	1.77

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:51:32	296.749	-713.602	2518.202	103.051%	0.000	26604.509	-24.550
2	13:51:54	397.683	-642.933	2215.718	108.181%	0.000	25004.361	-40.947
3	13:52:16	360.024	-687.139	2486.646	107.361%	0.000	23292.249	-45.321
x		1.#IO%	-1.#IO%	1.#IO%	106.198%	0.000	1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	2.756%	0.000	n/a	n/a
%RSD		14.512	5.241	6.909	2.595	0.000	6.635	29.643

ICSAB 10/25/2016 01:56:53 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	13:57:14	102.818%	2957.971	45047.946	TM 107388270.000	T 10865445.000	T 99688905.000	TM 106021980.000	T 4060960.600	110.288%	229822.440	40628.512	80594.6
2	13:57:36	102.890%	2989.917	42471.789	TM 104930530.000	T 10723919.000	T 97705340.000	TM 106105470.000	T 4030069.000	113.087%	228334.230	39021.038	80176.0
3	13:57:58	101.707%	2946.275	44904.947	TM 106268650.000	T 10793463.000	T 98346049.000	TM 106014460.000	T 4002738.400	113.938%	225795.960	41552.997	80307.4
x		102.472%	96.509%	101.573%	TM 95.673%	T 95.005%	T 96.878%	TM 97.545%	T 101.892%	112.438%	227984.210	89.328%	93.738
σ		0.663%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.910%	2035.933	n/a	r
%RSD		0.647	0.762	3.280	TM 1.159	T 0.656	T 1.027	TM 0.048	T 0.723	1.698	0.893	3.171	0.2

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	13:57:14	2475.923	60561.775	T 216158610.000	47193.507	9569.235	25457.408	18175.968	16010.568	-170.360	4180.098	523.606	2566.0
2	13:57:36	2420.942	60577.651	T 216797720.000	47835.038	10090.020	25114.117	18101.823	16052.691	-106.430	4101.076	525.731	2575.7
3	13:57:58	2107.545	60096.890	T 217379660.000	47344.430	9451.583	24310.885	18115.803	15592.456	-103.506	4120.011	529.961	2464.1
x		2334.803	92.251%	T 96.570%	91.868%	91.637%	90.071%	86.045%	97.354%	-126.765	87.978%	526.433	2535.3
σ		198.722	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	37.783	n/a	3.235	61.8
%RSD		8.511	0.452	T 0.282	0.707	3.501	2.357	0.217	1.602	29.805	0.998	0.615	2.4

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	13:57:14	2426.177	108.993%	T 2527587.000	57211.820	317.748	13579.569	107.621%	1496.063	90817.347	73095.124	97958.743	107.882
2	13:57:36	2363.912	107.826%	T 2592617.400	56879.404	256.308	13817.118	110.515%	1755.526	92461.412	73497.251	97326.580	110.531
3	13:57:58	2450.002	111.731%	T 2583210.000	55487.859	286.964	14337.788	112.841%	1803.540	92794.924	73788.453	98712.774	113.110
x		2413.364	109.517%	T 103.732%	93.867%	287.006	92.175%	110.325%	1685.043	92024.561	93.753%	98.340%	110.508
σ		44.452	2.004%	T n/a	n/a	30.720	n/a	2.615%	165.413	1058.693	n/a	n/a	2.614
%RSD		1.842	1.830	T 1.369	1.618	10.704	2.788	2.370	9.817	1.150	0.474	0.708	2.3

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:57:14	29213.125	173999.270	238700.250	105.302%	0.000	205471.500	117200.260
2	13:57:36	29088.702	176744.870	239944.250	107.151%	0.000	215586.610	118067.150
3	13:57:58	29130.170	176434.930	243103.310	108.546%	0.000	224804.030	119181.540
x		97.544%	88.617%	89.748%	106.999%	0.000	107.901%	103.595%
σ		n/a	n/a	n/a	1.627%	0.000	n/a	n/a
%RSD		0.217	0.856	0.943	1.521	0.000	4.492	0.841

CCV 10/25/2016 02:02:37 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	14:02:58	93.503%	76377.824	25892.321	T 10941256.000	T 3341128.500	T 30713531.000	T 10667263.000	T 1195735.500	93.233%	21755.712	T 2120766.400	626311
2	14:03:20	90.295%	78797.789	27039.972	T 10824201.000	T 3310887.700	T 30131950.000	T 10550563.000	1124770.200	92.739%	21804.284	T 2121889.200	621777
3	14:03:42	89.190%	76663.948	26988.194	T 11079198.000	T 3322423.500	T 30623343.000	T 10735197.000	1148888.100	90.496%	22697.043	T 2176279.200	631381
x		90.996%	100.626%	98.081%	T 98.634%	T 97.543%	T 99.877%	T 97.971%	T 97.434%	92.156%	22085.680	T 94.617%	91.3
σ		2.241%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.458%	530.013	T n/a	
%RSD		2.462	1.711	2.433	T 1.166	T 0.459	T 1.027	T 0.877	T 3.120	1.582	2.400	T 1.483	0

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:02:58	7150.655	T 3188815.700	T 65853253.000	966150.580	522398.140	631994.830	511229.120	71708.259	-821.677	7788.334	468.177	1810
2	14:03:20	7620.780	T 3241758.200	T 66549359.000	950213.240	508098.130	608973.810	495834.010	70046.729	-726.818	7460.639	463.953	1762
3	14:03:42	7837.611	T 3267278.500	T 67146664.000	973963.690	515926.120	620216.370	504731.100	69635.046	-669.408	7574.385	468.144	1739
x		7536.349	T 98.726%	T 98.772%	93.251%	97.359%	89.548%	95.660%	97.164%	-739.301	101.198%	466.758	1770
σ		351.174	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	76.898	n/a	2.429	36

%RSD		4.660	T 1.238	T 0.973	1.256	1.389	1.856	1.534	1.558	10.401	2.187	0.520	2
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	14:02:58	715251.470	95.186%	1449093.600	237598.080	159.605	120852.930	94.303%	732796.450	487542.310	390609.470	496506.560	95.3
2	14:03:20	698728.000	95.458%	1472108.700	232706.020	736.293	116636.520	96.239%	722947.080	484227.650	381859.090	486606.130	93.9
3	14:03:42	704159.960	94.826%	1502799.200	235942.670	255.012	120293.740	93.883%	746448.060	493170.190	391497.890	496135.880	95.1
x		706046.480	95.157%	95.316%	97.732%	383.637	98.776%	94.808%	734063.860	488313.380	99.033%	98.959%	94.8
σ		8421.728	0.317%	n/a	n/a	309.113	n/a	1.257%	11801.641	4520.855	n/a	n/a	0.7
%RSD		1.193	0.333	1.827	1.057	80.574	1.920	1.326	1.608	0.926	1.373	1.138	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:02:58	29125.376	1374090.500	T 12653023.000	98.133%	0.000	175939.270	103156.440
2	14:03:20	30311.068	1406887.400	T 13073514.000	96.758%	0.000	193065.100	106828.040
3	14:03:42	31250.558	1367663.600	T 12554040.000	99.317%	0.000	200094.550	104585.180
x		101.176%	87.172%	T 95.203%	98.069%	0.000	95.077%	91.940%
σ		n/a	n/a	T n/a	1.281%	0.000	n/a	n/a
%RSD		3.523	1.521	T 2.162	1.306	0.000	6.549	1.765

CCB 10/25/2016 02:08:20 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:08:42	102.218%	-3.737	-535.439	36287.099	2682.693	25764.910	21614.357	1058.467	94.038%	143.226	1074.378	72.971
2	14:09:04	97.393%	7.379	-445.856	23516.168	2542.585	23814.948	18635.061	955.757	95.679%	52.194	2236.734	129.237
3	14:09:25	100.585%	18.910	-367.119	24874.305	1931.389	19590.098	16690.857	827.458	95.193%	78.696	1675.481	-82.948
x		100.065%	7.517	-449.471	28225.857	2385.556	23056.652	18980.092	947.227	94.970%	91.372	1662.198	39.753
σ		2.454%	11.324	84.218	7014.189	399.510	3156.475	2479.818	115.741	0.843%	46.821	581.292	109.924
%RSD		2.452	150.640	18.737	24.850	16.747	13.690	13.065	12.219	0.887	51.243	34.971	276.516

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:08:42	3891.420	452.169	72982.207	156.399	23.795	61.032	-180.170	-92.705	369.924	-40.240	454.934	2534.549
2	14:09:04	3538.129	225.828	67431.347	134.886	26.285	-3.777	-188.143	-137.035	396.161	-60.099	453.549	2612.116
3	14:09:25	3844.043	357.450	52492.354	157.525	27.113	117.437	-141.663	-130.426	377.565	-20.963	469.672	2547.111
x		3757.864	345.149	64301.969	149.603	25.731	58.231	-169.992	-120.055	381.217	-40.434	459.385	2564.592
σ		191.765	113.671	10597.324	12.758	1.727	60.656	24.856	23.916	13.494	19.569	8.936	41.634
%RSD		5.103	32.934	16.481	8.528	6.713	104.164	14.622	19.920	3.540	48.397	1.945	1.623

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:08:42	42.296	99.090%	2665.930	31.235	-40.485	-23.274	95.839%	3276.629	-140.741	-98.138	85.534	96.065%
2	14:09:04	104.156	98.333%	2916.258	8.644	-32.999	-5.998	98.337%	3727.396	8.828	10.185	147.129	96.902%
3	14:09:25	142.557	97.707%	2416.980	19.624	-52.516	-6.792	97.303%	3957.160	134.677	33.249	67.449	97.653%
x		96.336	98.377%	2666.389	19.834	-42.000	-12.021	97.160%	3653.728	0.921	-18.235	100.037	96.873%
σ		50.586	0.693%	249.639	11.297	9.847	9.754	1.255%	346.195	137.879	70.153	41.773	0.795%
%RSD		52.510	0.704	9.362	56.957	23.444	81.137	1.292	9.475	14963.361	384.719	41.757	0.820

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:08:42	53.304	154.429	3048.033	98.133%	0.000	23981.742	8.696
2	14:09:04	20.366	-67.659	2826.704	97.659%	0.000	22831.778	-21.603
3	14:09:25	-6.744	140.437	3258.543	99.526%	0.000	21986.133	-7.588
x		22.309	75.736	3044.427	98.440%	0.000	22933.218	-6.832
σ		30.071	124.380	215.942	0.970%	0.000	1001.664	15.164
%RSD		134.795	164.230	7.093	0.986	0.000	4.368	221.948

MB 200-110491/1-A 10/25/2016 02:14:02 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:14:24	106.564%	-20.857	-542.999	94820.864	-987.055	7423.555	11908.730	776.359	98.569%	70.901	1225.057	633.792
2	14:14:46	101.730%	-20.857	-452.599	91484.277	-874.768	7203.129	11602.915	718.233	98.373%	50.676	1397.770	653.340
3	14:15:08	99.944%	-20.857	-445.471	107164.440	-1004.547	8621.791	13752.707	589.700	97.291%	46.201	571.451	708.373
x		102.746%	-20.857	-480.356	97823.195	-955.456	7749.492	12421.451	694.764	98.078%	55.926	1064.759	665.168
σ		3.425%	0.000	54.367	8259.988	70.423	763.431	1162.998	95.517	0.688%	13.160	435.858	38.672
%RSD		3.334	0.000	11.318	8.444	7.371	9.851	9.363	13.748	0.702	23.532	40.935	5.814

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:14:24	2138.500	31.626	8248.571	-97.657	173.715	-4.724	-113.741	-23.062	184.023	23.820	431.662	2218.335
2	14:14:46	2151.191	-124.165	10663.995	-46.657	103.173	-42.487	-194.358	31.283	168.967	10.704	455.155	2236.959
3	14:15:08	2202.438	-13.180	9305.274	-101.663	95.551	41.415	-46.553	-167.255	223.203	-65.111	477.132	2702.863
x		2164.043	-35.240	9405.947	-81.992	124.146	-1.932	-118.217	-53.012	192.065	-10.196	454.650	2386.052
σ		33.851	80.204	1210.855	30.666	43.097	42.020	74.004	102.602	27.998	48.008	22.739	274.524
%RSD		1.564	227.596	12.873	37.402	34.714	2175.040	62.600	193.546	14.577	470.860	5.001	11.505

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:14:24	218.885	102.223%	-693.557	-37.540	-54.517	-35.818	100.427%	24513.469	-659.566	-522.116	-86.869	98.955%
2	14:14:46	175.504	105.269%	-567.966	-37.773	-46.696	-43.557	101.615%	24512.701	-647.663	-491.415	-77.086	99.070%
3	14:15:08	281.417	99.766%	-640.041	-37.152	-40.759	-49.232	98.507%	24508.458	-662.898	-462.696	-66.468	93.912%
x		225.269	102.419%	-633.854	-37.488	-47.324	-42.869	100.183%	24511.543	-656.709	-492.076	-76.808	97.312%
σ		53.245	2.757%	63.024	0.314	6.901	6.733	1.569%	2.699	8.009	29.716	10.203	2.946%
%RSD		23.636	2.692	9.943	0.837	14.582	15.707	1.566	0.011	1.220	6.039	13.284	3.027

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:14:24	-19.073	-967.774	218.050	99.171%	0.000	15440.418	-57.755
2	14:14:46	-49.536	-887.376	424.070	100.692%	0.000	15355.397	-58.059
3	14:15:08	-21.309	-831.048	552.744	96.357%	0.000	15609.456	-62.355
x		-29.973	-895.400	398.288	98.740%	0.000	15468.424	-59.389
σ		16.979	68.715	168.830	2.199%	0.000	129.324	2.572
%RSD		56.649	7.674	42.389	2.227	0.000	0.836	4.331

LCS 200-110491/2-A 10/25/2016 02:19:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:20:06	102.919%	1145.146	41460.711	T 5767936.800	212925.210	469591.970	T 5420976.200	182994.360	98.199%	40.653	81502.491	67554.811
2	14:20:28	105.975%	1116.247	40849.105	T 5857944.900	217949.260	469861.180	T 5478691.400	188912.270	97.218%	46.207	82684.874	68235.855
3	14:20:50	100.557%	1083.032	42009.243	T 5776982.000	214928.790	474799.830	T 5434639.800	188320.250	96.993%	61.691	81590.219	67693.824
x		103.150%	1114.808	41439.687	T 5800954.600	215267.750	471417.660	T 5444769.100	186742.290	97.470%	49.517	81925.861	67828.163
σ		2.716%	31.082	580.355	T 49561.875	2529.121	2932.135	T 30161.444	3259.273	0.641%	10.903	658.786	359.848
%RSD		2.633	2.788	1.400	T 0.854	1.175	0.622	T 0.554	1.745	0.658	22.019	0.804	0.531

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:20:06	2113.011	49774.973	T 4522545.200	19236.829	8772.030	26029.380	72623.197	6417.184	-6.004	1237.080	459.719	2011.789
2	14:20:28	1801.592	49083.693	T 4519546.700	20122.629	8846.414	26627.011	74469.536	6522.432	-24.223	1274.588	447.735	2128.660
3	14:20:50	1824.124	48972.122	T 4638982.200	19803.321	8428.860	25922.303	72830.513	6249.360	6.898	1233.109	478.583	2207.068
x		1912.909	49276.929	T 4560358.000	19720.926	8682.435	26192.898	73307.749	6396.325	-7.777	1248.259	462.012	2115.839

σ		173.659	434.911	T 68107.020	448.612	222.729	379.746	1011.463	137.726	15.636	22.888	15.551	98.269
%RSD		9.078	0.883	T 1.493	2.275	2.565	1.450	1.380	2.153	201.064	1.834	3.366	4.644
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:20:06	179818.710	102.708%	118243.900	24251.467	-83.193	5806.064	99.954%	37163.508	35537.058	28707.995	38059.342	97.889%
2	14:20:28	179562.870	101.079%	120666.310	24168.624	-68.904	5496.394	99.055%	34172.095	37760.817	29090.513	38491.342	96.909%
3	14:20:50	180716.770	103.187%	120172.480	23767.036	-77.394	5475.082	99.044%	34145.764	37051.022	29144.092	39801.374	98.769%
x		180032.780	102.325%	119694.230	24062.376	-76.497	5592.513	99.351%	35160.456	36782.966	28980.867	38784.019	97.856%
σ		606.001	1.105%	1280.067	259.104	7.187	185.247	0.522%	1734.744	1135.855	237.827	907.146	0.931%
%RSD		0.337	1.080	1.069	1.077	9.395	3.312	0.525	4.934	3.088	0.821	2.339	0.951

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:20:06	55867.458	137647.060	101368.140	97.751%	0.000	182609.740	110565.790
2	14:20:28	56103.013	139111.430	102109.150	97.650%	0.000	194590.940	112926.400
3	14:20:50	55439.189	140237.180	101877.090	98.461%	5.078	197737.020	110820.510
x		55803.220	138998.560	101784.790	97.954%	1.693	191645.900	111437.570
σ		336.542	1298.746	379.033	0.442%	2.932	7982.078	1295.643
%RSD		0.603	0.934	0.372	0.451	173.205	4.165	1.163

200-35680-A-8-A 10/25/2016 02:25:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:25:48	117.149%	412.358	1948.321	┬797104.650	┬1525528.200	┬58547455.000	┬4436589.700	818105.300	143.911%	9374.470	156863.200	117152.240
2	14:26:10	114.725%	406.256	2080.322	┬772128.310	┬1524668.300	┬58676186.000	┬4437725.900	806212.300	147.680%	8938.436	158229.970	117482.770
3	14:26:31	116.719%	439.657	2080.669	┬758330.090	┬1572101.500	┬61440374.000	┬4603348.900	845440.450	146.098%	9618.059	158910.450	121808.540
x		116.198%	419.424	2036.437	┬775854.350	┬1540766.000	┬59554672.000	┬4492554.800	823252.680	145.896%	9310.322	158001.210	118814.520
σ		1.293%	17.786	76.311	┬19653.987	┬27140.740	┬1634333.800	┬95952.170	20114.262	1.893%	344.323	1042.621	2598.164
%RSD		1.113	4.241	3.747	┬2.533	┬1.762	┬2.744	┬2.136	2.443	1.297	3.698	0.660	2.187

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:25:48	2119.817	┬7111630.100	┬196655540.000	91672.995	44083.456	┬2026366.800	492966.770	4367.639	49.346	958.340	494.096	2107.690
2	14:26:10	2509.997	┬7263444.200	┬199909370.000	89311.509	43366.111	┬1989641.200	486023.970	4333.818	53.521	895.899	523.162	2149.928
3	14:26:31	2475.426	┬7496627.700	┬204015740.000	90680.860	45644.467	┬2016285.500	493586.730	4200.645	76.630	875.006	489.575	2056.595
x		2368.413	┬7290567.300	┬200193550.000	90555.121	44364.678	┬2010764.500	490859.150	4300.701	59.832	909.748	502.278	2104.738
σ		215.984	┬193926.620	┬3688321.700	1185.754	1164.921	┬18975.094	4198.854	88.285	14.696	43.359	18.227	46.736
%RSD		9.119	┬2.660	┬1.842	1.309	2.626	┬0.944	0.855	2.053	24.562	4.766	3.629	2.221

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:25:48	383131.050	298.411%	1157.434	11802.993	-160.952	4440.104	116.781%	31765.637	702.532	515.270	301093.730	130.180%
2	14:26:10	380693.470	303.568%	1596.113	12105.633	-249.812	4470.595	118.895%	32511.764	655.662	530.063	303708.040	133.215%
3	14:26:31	383451.200	318.829%	1354.981	11499.853	-154.716	4541.556	121.230%	32704.125	612.917	593.111	305305.330	138.570%
x		382425.240	306.936%	1369.509	11802.826	-188.494	4484.085	118.968%	32327.175	657.037	546.148	303369.030	133.988%
σ		1508.272	10.618%	219.700	302.890	53.195	52.054	2.225%	495.726	44.823	41.338	2126.168	4.248%
%RSD		0.394	3.459	16.042	2.566	28.221	1.161	1.870	1.533	6.822	7.569	0.701	3.170

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:25:48	630.890	3614.543	2298477.900	115.719%	0.000	197687.030	85741.969
2	14:26:10	620.020	3995.321	2343554.900	117.151%	0.000	198295.060	86831.638
3	14:26:31	693.918	3708.296	2366390.900	118.026%	0.000	194637.140	87964.534
x		648.276	3772.720	2336141.200	116.965%	0.000	196873.080	86846.047
σ		39.899	198.396	34558.132	1.165%	0.000	1960.095	1111.353
%RSD		6.155	5.259	1.479	0.996	0.000	0.996	1.280

200-35680-A-8-A SD@5 10/25/2016 02:31:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:31:30	111.259%	57.789	-242.550	190359.690	347416.500	┬14282597.000	┬1072321.700	200446.140	129.894%	2089.380	37584.987	28294.282
2	14:31:52	111.687%	104.494	-287.325	183311.600	351445.130	┬14163291.000	┬1079148.500	203590.770	128.606%	2337.299	40858.247	28678.779
3	14:32:14	108.721%	66.523	-160.083	186469.520	355768.010	┬14471984.000	┬1084134.500	202808.150	125.003%	2580.618	40430.863	29553.310
x		110.556%	76.268	-229.986	186713.610	351543.210	┬14305957.000	┬1078534.900	202281.690	127.834%	2335.765	39624.699	28842.124
σ		1.603%	24.831	64.545	3530.381	4176.618	┬155666.980	┬5930.268	1637.082	2.535%	245.623	1779.321	645.212
%RSD		1.450	32.557	28.065	1.891	1.188	┬1.088	┬0.550	0.809	1.983	10.516	4.490	2.237

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:31:30	2726.587	┬1713651.000	┬48273321.000	22901.739	10750.813	400586.790	115450.820	1916.340	209.284	242.076	498.709	2396.174
2	14:31:52	2444.630	┬1754472.800	┬49449433.000	23086.322	10820.986	411303.190	118298.470	1778.936	256.593	190.057	487.400	2533.555
3	14:32:14	2590.671	┬1785622.800	┬49738505.000	23047.831	11541.144	405767.630	116180.400	1807.299	259.800	228.633	482.050	2398.460
x		2587.296	┬1751248.900	┬49153753.000	23011.964	11037.648	405885.870	116643.230	1834.191	241.893	220.256	489.386	2442.730
σ		141.009	┬36094.059	┬776054.980	97.379	437.450	5359.175	1479.169	72.542	28.285	27.003	8.506	78.665

%RSD		5.450	┬2.061	┬1.579	0.423	3.963	1.320	1.268	3.955	11.693	12.260	1.738	3.220
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:31:30	79928.805	164.599%	-357.426	2580.552	-97.310	986.297	121.315%	6979.455	-514.862	-418.495	64420.454	120.434%
2	14:31:52	81856.337	163.436%	-202.844	2450.789	-94.178	1005.574	119.616%	7287.700	-509.120	-389.426	65160.400	119.452%
3	14:32:14	80345.000	162.947%	-137.754	2529.450	-82.085	908.038	120.425%	7226.275	-428.935	-379.862	64897.199	120.176%
x		80710.048	163.661%	-232.675	2520.264	-91.191	966.636	120.452%	7164.477	-484.305	-395.928	64826.018	120.021%
σ		1014.293	0.848%	112.833	65.367	8.040	51.655	0.850%	163.150	48.038	20.120	375.074	0.509%
%RSD		1.257	0.518	48.494	2.594	8.816	5.344	0.706	2.277	9.919	5.082	0.579	0.424

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:31:30	81.694	-158.689	509763.880	111.827%	0.000	36719.155	18233.989
2	14:31:52	41.952	-142.854	516132.180	112.692%	0.000	38820.982	18426.455
3	14:32:14	28.159	-208.647	510502.270	112.629%	0.000	39765.853	18210.249
x		50.602	-170.063	512132.780	112.383%	0.000	38435.330	18290.231
σ		27.796	34.339	3483.209	0.483%	0.000	1559.531	118.569
%RSD		54.931	20.192	0.680	0.429	0.000	4.058	0.648

200-35680-A-8-A PDS 10/25/2016 02:36:51 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:37:13	111.304%	1535.776	44195.892	┬5197110.200	┬1685603.600	┬59365503.000	┬8979832.500	997409.480	145.989%	11466.720	222562.680	169300.600
2	14:37:35	112.287%	1653.517	44877.372	┬5266361.700	┬1742497.100	┬59719405.000	┬9212659.600	1012703.800	145.289%	13411.993	230381.690	174371.870
3	14:37:57	111.816%	1633.745	45278.910	┬4956031.000	┬1665359.500	┬58293269.000	┬8828277.500	┬1018031.500	152.785%	9216.665	221727.670	168237.200
x		111.802%	1607.679	44784.058	┬5139834.300	┬1697820.100	┬59126059.000	┬9006923.200	┬1009381.600	148.021%	11365.126	224890.680	170636.560
σ		0.492%	63.050	547.506	┬162900.840	┬39993.553	┬742607.620	┬193617.750	┬10704.901	4.141%	2099.508	4773.648	3278.285
%RSD		0.440	3.922	1.223	┬3.169	┬2.356	┬1.256	┬2.150	┬1.061	2.798	18.473	2.123	1.921

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:37:13	3310.959	┬7260631.300	┬203525370.000	107017.150	50136.161	┬1990153.000	552446.920	6966.397	31.116	2084.661	507.419	1946.155
2	14:37:35	3673.660	┬7499530.200	┬209084070.000	110649.980	51757.591	┬2083144.200	572121.320	6636.329	89.804	2069.794	512.109	2140.061
3	14:37:57	2690.762	┬7295498.400	┬200517920.000	105188.640	51098.497	┬2048764.800	566994.730	6814.886	39.400	2106.164	525.896	2130.958
x		3225.127	┬7351886.600	┬204375780.000	107618.590	50997.416	┬2040687.300	563854.320	6805.870	53.440	2086.873	515.141	2072.391
σ		497.039	┬129046.100	┬4345932.200	2779.905	815.427	┬47018.842	10206.231	165.218	31.764	18.285	9.605	109.419
%RSD		15.411	┬1.755	┬2.126	2.583	1.599	┬2.304	1.810	2.428	59.438	0.876	1.864	5.280

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:37:13	542991.140	303.223%	48245.301	33180.986	-133.250	9481.946	121.105%	31206.533	35870.997	28264.972	332472.320	134.808%
2	14:37:35	556400.190	312.904%	47436.760	34925.906	-265.819	9683.352	120.094%	32671.207	36646.058	29212.037	340123.100	136.818%
3	14:37:57	552298.850	317.266%	48347.471	33933.059	-383.729	9764.038	121.699%	32927.935	36270.332	29157.159	339567.260	137.213%
x		550563.390	311.131%	48009.844	34013.317	-260.933	9643.112	120.966%	32268.558	36262.462	28878.056	337387.560	136.280%
σ		6870.921	7.188%	498.927	875.224	125.311	145.287	0.812%	928.655	387.591	531.655	4265.783	1.290%
%RSD		1.248	2.310	1.039	2.573	48.024	1.507	0.671	2.878	1.069	1.841	1.264	0.946

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:37:13	21098.658	132841.640	2415085.800	115.254%	0.000	365832.690	187668.630
2	14:37:35	20983.834	132556.350	2416327.900	118.017%	0.000	371868.600	187926.740
3	14:37:57	21251.481	134973.140	2454039.200	117.078%	0.000	382218.680	192862.870
x		21111.324	133457.040	2428484.300	116.783%	0.000	373306.660	189486.080
σ		134.272	1320.701	22139.914	1.405%	0.000	8287.111	2927.232
%RSD		0.636	0.990	0.912	1.203	0.000	2.220	1.545

200-35680-A-8-B MS 10/25/2016 02:42:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:42:56	112.649%	1648.135	38950.495	T 5338240.500	T 1718124.100	T 60467951.000	T 9213395.000	999853.960	150.663%	13163.726	235111.490	175297.950
2	14:43:18	112.256%	1602.756	39931.615	T 5388452.900	T 1718430.900	T 60215299.000	T 9210906.400	T 1038869.300	152.450%	12821.505	231760.920	175528.190
3	14:43:39	111.139%	1655.073	39814.898	T 5276828.700	T 1689999.000	T 59371866.000	T 9014516.300	T 1040824.600	155.923%	12853.580	229555.060	172973.320
x		112.014%	1635.322	39565.669	T 5334507.300	T 1708851.300	T 60018372.000	T 9146272.500	T 1026515.900	153.012%	12946.270	232142.490	174599.820
σ		0.784%	28.415	535.943	T 55905.662	T 16327.340	T 573964.660	T 114111.060	T 23110.648	2.674%	189.004	2797.800	1413.286
%RSD		0.700	1.738	1.355	T 1.048	T 0.955	T 0.956	T 1.248	T 2.251	1.748	1.460	1.205	0.809

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:42:56	2515.629	T 7152625.400	T 202933510.000	106686.550	50483.332	T 1972879.400	545152.300	7119.406	5.973	2258.166	520.903	1749.422
2	14:43:18	2936.799	T 7185932.100	T 205599760.000	108712.720	51708.851	T 1991808.500	549421.330	7196.243	17.033	2196.797	518.508	1853.679
3	14:43:39	2639.207	T 7065199.500	T 200859160.000	105898.750	50215.879	T 1957233.900	544109.800	6973.617	33.557	2221.265	510.377	1903.685
x		2697.212	T 7134585.700	T 203130810.000	107099.340	50802.688	T 1973973.900	546227.810	7096.422	18.854	2225.409	516.596	1835.595
σ		216.494	T 62355.161	T 2376451.500	1451.689	796.073	T 17313.304	2814.361	113.079	13.882	30.894	5.517	78.705
%RSD		8.027	T 0.874	T 1.170	1.355	1.567	T 0.877	0.515	1.593	73.627	1.388	1.068	4.288

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:42:56	567071.420	317.289%	47949.459	34729.386	-218.822	9493.287	122.098%	43238.598	6058.583	4888.111	336762.860	138.118%
2	14:43:18	568592.980	316.128%	48335.128	35998.819	-304.953	9805.638	122.276%	44110.908	6016.885	5040.245	347494.990	140.185%
3	14:43:39	570348.130	322.228%	48483.189	34202.251	-136.866	9668.641	124.518%	43224.058	6341.736	4990.884	342505.430	138.986%
x		568670.840	318.548%	48255.926	34976.818	-220.214	9655.855	122.964%	43524.521	6139.068	4973.080	342254.430	139.096%
σ		1639.741	3.239%	275.539	923.489	84.052	156.567	1.349%	507.878	176.750	77.614	5370.470	1.038%
%RSD		0.288	1.017	0.571	2.640	38.168	1.621	1.097	1.167	2.879	1.561	1.569	0.746

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:42:56	22394.999	139326.850	2802054.900	116.129%	0.000	380282.540	195215.150
2	14:43:18	22923.289	141984.170	2796044.800	118.409%	0.000	388630.860	198721.010
3	14:43:39	23508.255	139847.020	2804802.300	120.470%	0.000	390314.270	197188.970
x		22942.181	140386.010	2800967.300	118.336%	0.000	386409.220	197041.710
σ		556.868	1408.271	4478.900	2.171%	0.000	5372.212	1757.564
%RSD		2.427	1.003	0.160	1.835	0.000	1.390	0.892

200-35680-A-8-C MSD 10/25/2016 02:48:17 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:48:39	113.582%	1462.723	36072.171	T 5175843.900	T 1589947.700	T 56249661.000	T 8693575.500	936931.160	150.123%	15120.325	220088.590	169032.300
2	14:49:00	110.058%	1553.397	38825.754	T 5312987.000	T 1597782.600	T 56790832.000	T 8819089.600	944921.010	150.976%	12980.784	221879.630	168186.020
3	14:49:22	110.093%	1625.561	40101.478	T 5243961.200	T 1583122.500	T 56186606.000	T 8789329.000	948984.510	151.874%	14238.192	225037.360	169416.880
x		111.245%	1547.227	38333.134	T 5244264.000	T 1590284.300	T 56409033.000	T 8767331.400	943612.230	150.991%	14113.100	222335.200	168878.400
σ		2.025%	81.594	2059.328	T 68572.048	T 7335.832	T 332147.020	T 65584.835	6132.332	0.875%	1075.242	2505.643	629.697
%RSD		1.820	5.274	5.372	T 1.308	T 0.461	T 0.589	T 0.748	0.650	0.580	7.619	1.127	0.373

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:48:39	2950.988	T 6174148.300	T 190500340.000	100972.210	47637.722	1752840.400	496115.270	6900.142	60.202	2005.668	508.925	1993.501
2	14:49:00	3146.549	T 6213535.800	T 193049430.000	100547.520	48119.416	T 1940673.200	508559.080	6895.597	5.168	2116.277	493.430	2160.240
3	14:49:22	2701.816	T 6191398.000	T 192231000.000	100939.250	48760.256	T 1937629.200	506713.150	6842.150	29.908	2036.518	505.831	1984.833
x		2933.117	T 6193027.300	T 191926920.000	100819.660	48172.465	T 1877047.600	503795.840	6879.297	31.760	2052.821	502.729	2046.191

σ		222.904	ᴛ 19744.210	ᴛ 1301465.800	236.255	563.144	ᴛ 107577.360	6715.293	32.250	27.564	57.078	8.200	98.864
%RSD		7.600	ᴛ 0.319	ᴛ 0.678	0.234	1.169	ᴛ 5.731	1.333	0.469	86.788	2.780	1.631	4.832
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:48:39	531932.590	305.741%	49118.374	34049.648	-128.339	8835.232	123.400%	38624.926	6711.365	5259.451	314449.040	136.036%
2	14:49:00	545394.330	311.176%	48937.595	35031.754	-154.719	9046.290	122.917%	39208.923	6765.872	5416.955	326669.910	139.503%
3	14:49:22	532816.740	308.689%	48671.440	34368.889	-137.448	8981.946	124.352%	39038.798	6728.033	5321.972	323381.520	140.588%
x		536714.550	308.535%	48909.136	34483.430	-140.169	8954.489	123.556%	38957.549	6735.090	5332.792	321500.160	138.709%
σ		7529.895	2.721%	224.822	500.972	13.398	108.175	0.730%	300.357	27.930	79.308	6323.928	2.378%
%RSD		1.403	0.882	0.460	1.453	9.559	1.208	0.591	0.771	0.415	1.487	1.967	1.714

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:48:39	22917.158	136767.930	2257066.100	115.628%	0.000	361365.460	191311.430
2	14:49:00	23459.994	139890.210	2286680.400	118.309%	0.000	360533.390	190084.290
3	14:49:22	23366.801	138595.860	2261139.200	119.704%	0.000	364960.260	191415.960
x		23247.984	138418.000	2268295.200	117.880%	0.000	362286.370	190937.220
σ		290.269	1568.719	16051.721	2.071%	0.000	2352.735	740.510
%RSD		1.249	1.133	0.708	1.757	0.000	0.649	0.388

200-35680-A-9-A 10/25/2016 02:54:01 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:54:22	116.167%	416.021	3113.331	T 1001756.400	T 1450913.000	T 55344693.000	T 4834539.500	T 948321.160	153.581%	12457.356	158185.010	110502.710
2	14:54:44	118.717%	398.211	3336.326	T 993679.360	T 1439421.300	T 54500551.000	T 4745654.500	912090.190	155.784%	11163.374	159647.870	111678.250
3	14:55:06	116.418%	385.013	2862.981	T 1048140.000	T 1475482.500	T 56476376.000	T 4833306.000	T 969413.050	154.099%	11465.690	162712.080	112008.050
x		117.101%	399.748	3104.213	T 1014525.300	T 1455272.300	T 55440540.000	T 4804500.000	T 943274.800	154.488%	11695.473	160181.650	111396.340
σ		1.406%	15.561	236.804	T 29389.994	T 18421.619	T 991393.400	T 50965.422	T 28992.705	1.152%	676.903	2310.255	791.274
%RSD		1.200	3.893	7.628	T 2.897	T 1.266	T 1.788	T 1.061	T 3.074	0.746	5.788	1.442	0.710

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:54:22	2410.965	TM 17301426.000	T 221078590.000	85712.424	41015.069	1087140.900	412330.550	3318.426	111.039	599.944	538.378	2036.790
2	14:54:44	1882.243	TM 17415445.000	T 224611460.000	87690.989	41051.644	1081903.900	413371.700	3245.884	104.436	554.299	495.879	1973.646
3	14:55:06	2292.302	TM 17769799.000	T 226384720.000	86516.074	41000.516	1104621.900	421949.630	3398.635	60.754	591.917	520.827	2098.377
x		2195.170	TM 17495557.000	T 224024920.000	86639.829	41022.409	1091222.200	415883.960	3320.981	92.076	582.053	518.361	2036.271
σ		277.422	TM 244247.600	T 2701255.500	995.071	26.343	11896.209	5278.757	76.408	27.326	24.369	21.357	62.367
%RSD		12.638	TM 1.396	T 1.206	1.149	0.064	1.090	1.269	2.301	29.678	4.187	4.120	3.063

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:54:22	412824.230	307.101%	557.773	5147.244	-343.190	2578.742	125.008%	27362.387	190.482	303.868	350989.470	136.876%
2	14:54:44	400894.580	311.349%	710.423	5404.920	-227.448	2473.125	127.352%	28121.583	385.408	309.053	350975.980	137.464%
3	14:55:06	413734.500	312.547%	623.748	5147.778	-221.038	2497.483	126.340%	29576.387	439.892	320.768	351300.930	138.871%
x		409151.110	310.332%	630.648	5233.314	-263.892	2516.450	126.233%	28353.452	338.594	311.230	351088.790	137.737%
σ		7164.831	2.862%	76.558	148.615	68.749	55.304	1.176%	1125.065	131.130	8.658	183.840	1.025%
%RSD		1.751	0.922	12.140	2.840	26.052	2.198	0.932	3.968	38.728	2.782	0.052	0.745

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:54:22	522.023	3462.721	2112929.300	118.518%	0.000	169573.210	65622.008
2	14:54:44	620.886	3616.402	2133481.300	120.506%	0.000	168686.290	65663.677
3	14:55:06	670.426	3813.192	2161935.000	120.096%	0.000	170797.360	65482.575
x		604.445	3630.771	2136115.200	119.707%	0.000	169685.620	65589.420
σ		75.555	175.677	24608.802	1.050%	0.000	1060.013	94.847
%RSD		12.500	4.839	1.152	0.877	0.000	0.625	0.145

200-35680-A-10-A 10/25/2016 02:59:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:00:06	112.673%	327.502	2561.178	T 912770.730	T 1215718.100	T 47167431.000	T 4569556.500	750043.560	147.447%	15207.839	140274.760	96440.705
2	15:00:28	113.712%	328.713	2700.779	T 901677.130	T 1203960.200	T 46877325.000	T 4511613.700	766446.860	150.240%	14304.119	139771.340	95566.266
3	15:00:50	113.822%	330.572	2582.570	T 911664.030	T 1206416.000	T 47585152.000	T 4651094.800	762958.540	149.131%	13262.377	141321.420	97444.693
x		113.402%	328.929	2614.842	T 908703.960	T 1208698.100	T 47209969.000	T 4577421.600	759816.320	148.939%	14258.112	140455.840	96483.888
σ		0.634%	1.547	75.188	T 6110.526	T 6202.232	T 355825.780	T 70072.388	8641.311	1.406%	973.547	790.744	939.958
%RSD		0.560	0.470	2.875	T 0.672	T 0.513	T 0.754	T 1.531	1.137	0.944	6.828	0.563	0.974

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:00:06	2374.026	T 7758877.100	T 174115170.000	67994.748	34080.846	886131.770	391301.510	2885.111	168.606	389.103	530.007	2697.005
2	15:00:28	2518.522	T 7733796.800	T 172866490.000	69312.353	33942.147	893985.620	388497.080	3110.912	94.149	518.901	487.891	1976.138
3	15:00:50	2469.153	T 7918954.300	T 174889100.000	66995.304	33186.580	884798.160	391168.980	2900.765	150.533	405.073	525.212	2258.392
x		2453.900	T 7803876.100	T 173956920.000	68100.801	33736.525	888305.180	390322.530	2965.596	137.763	437.692	514.370	2310.512
σ		73.446	T 100446.530	T 1020546.100	1162.160	481.288	4964.387	1582.267	126.091	38.836	70.781	23.056	363.249

%RSD		2.993	T 1.287	T 0.587	1.707	1.427	0.559	0.405	4.252	28.191	16.171	4.482	15.722
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:00:06	332892.670	270.141%	1220.204	3818.339	-146.669	1836.821	122.831%	31600.427	523.054	465.577	248503.050	132.548%
2	15:00:28	329006.400	273.467%	1132.956	4002.181	-215.995	1753.479	125.030%	32090.828	528.592	493.646	250338.640	132.361%
3	15:00:50	333987.170	271.812%	1319.779	3716.838	-103.080	1709.600	124.809%	32091.442	625.940	497.465	253133.450	135.218%
x		331962.080	271.807%	1224.313	3845.786	-155.248	1766.633	124.224%	31927.566	559.195	485.563	250658.380	133.376%
σ		2617.539	1.663%	93.479	144.638	56.944	64.623	1.211%	283.310	57.869	17.413	2331.700	1.598%
%RSD		0.789	0.612	7.635	3.761	36.679	3.658	0.975	0.887	10.349	3.586	0.930	1.198

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:00:06	563.667	2782.873	1579439.900	116.458%	0.000	139891.220	56698.876
2	15:00:28	496.710	2941.903	1613284.700	116.676%	0.000	144269.520	59208.474
3	15:00:50	504.693	2880.047	1639683.100	116.950%	0.000	148629.320	58009.452
x		521.690	2868.274	1610802.600	116.695%	0.000	144263.350	57972.267
σ		36.572	80.166	30198.166	0.247%	0.000	4369.054	1255.212
%RSD		7.010	2.795	1.875	0.211	0.000	3.029	2.165

200-35680-A-11-A 10/25/2016 03:05:28 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	15:05:50	114.766%	652.265	4105.560	T 727021.440	T 2272616.300	T 75491553.000	T 8942343.300	T 1486686.900	169.064%	21817.290	208191.420	160955.270
2	15:06:12	115.171%	569.580	4264.226	T 718314.970	T 2305174.000	T 75640938.000	T 8957239.200	T 1477752.600	174.178%	23062.791	208302.280	160775.880
3	15:06:34	114.192%	607.484	4400.506	T 715115.340	T 2318009.900	T 76207432.000	T 8989724.400	T 1486131.900	172.563%	23026.340	209969.810	162833.990
x		114.710%	609.776	4256.764	T 720150.580	T 2298600.100	T 75779974.000	T 8963102.300	T 1483523.800	171.935%	22635.474	208821.170	161521.710
σ		0.492%	41.390	147.615	T 6161.649	T 23399.964	T 377649.220	T 24228.601	T 5005.723	2.614%	708.803	996.296	1139.997
%RSD		0.429	6.788	3.468	T 0.856	T 1.018	T 0.498	T 0.270	T 0.337	1.521	3.131	0.477	0.706

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	15:05:50	2545.400	T 13729001.000	T 300678980.000	124976.010	59266.010	897731.550	364174.930	5065.267	86.974	443.337	528.984	1717.864
2	15:06:12	2916.770	T 13680103.000	T 297244420.000	124903.720	59295.208	907757.580	366630.450	5054.026	105.105	402.716	543.268	2209.197
3	15:06:34	2574.770	T 13762810.000	T 299484840.000	127242.710	59588.981	906630.480	367619.950	4975.008	106.103	413.242	529.902	2048.741
x		2678.980	T 13723971.000	T 299136080.000	125707.480	59383.399	904039.870	366141.780	5031.434	99.394	419.765	534.051	1991.934
σ		206.455	T 41582.023	T 1743634.500	1330.039	178.636	5492.155	1773.736	49.188	10.767	21.082	7.995	250.544
%RSD		7.706	T 0.303	T 0.583	1.058	0.301	0.608	0.484	0.978	10.833	5.022	1.497	12.578
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:05:50	542467.770	344.277%	1005.835	3747.787	-222.925	1942.806	127.606%	28423.035	179.163	161.160	388962.420	139.561%
2	15:06:12	549336.900	349.113%	1009.183	3779.936	-200.299	1815.552	127.840%	29115.697	187.394	193.505	403453.630	145.055%
3	15:06:34	556506.180	351.247%	1132.447	3697.945	-318.497	2027.751	128.234%	28584.691	283.941	194.091	409743.150	145.234%
x		549436.950	348.213%	1049.155	3741.889	-247.240	1928.703	127.893%	28707.808	216.833	182.919	400719.730	143.283%
σ		7019.742	3.571%	72.153	41.313	62.738	106.800	0.317%	362.372	58.263	18.846	10656.701	3.225%
%RSD		1.278	1.026	6.877	1.104	25.375	5.537	0.248	1.262	26.870	10.303	2.659	2.251

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:05:50	508.599	5329.467	1817708.000	119.585%	0.000	258770.860	63536.265
2	15:06:12	437.868	4897.361	1858530.700	119.841%	0.000	268601.320	66477.452
3	15:06:34	406.123	5550.237	1836791.500	123.188%	0.000	264703.260	65500.976
x		450.863	5259.022	1837676.700	120.871%	0.000	264025.150	65171.564
σ		52.460	332.090	20425.740	2.010%	0.000	4950.185	1498.008
%RSD		11.635	6.315	1.111	1.663	0.000	1.875	2.299

CCV 10/25/2016 03:11:12 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	15:11:34	97.311%	79184.033	26347.164	T 10722288.000	T 3241559.300	T 29704011.000	T 10497398.000	1108836.800	108.980%	22196.796	T 2173907.000	631763.
2	15:11:56	92.118%	82114.702	28048.103	T 10732865.000	T 3301736.200	T 30111095.000	T 10617244.000	1134288.900	105.535%	22145.237	T 2203634.600	631321.
3	15:12:18	89.299%	82134.353	27761.067	T 10849897.000	T 3290132.000	T 30853908.000	T 10884714.000	1154233.100	100.007%	23230.037	T 2231919.300	651214.
x		92.909%	105.658%	100.825%	T 97.014%	T 96.164%	T 99.003%	T 98.113%	95.411%	104.841%	22524.024	T 97.425%	93.04
σ		4.064%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	4.527%	611.969	T n/a	
%RSD		4.375	2.092	3.325	T 0.658	T 0.974	T 1.929	T 1.859	2.009	4.318	2.717	T 1.317	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	15:11:34	7900.860	T 3223880.500	T 66158437.000	973359.320	522015.980	659992.730	512431.000	70436.505	-718.428	7835.232	477.766	2004.
2	15:11:56	9022.517	T 3236121.200	T 67046767.000	971445.440	528643.080	660048.170	520469.140	72175.909	-813.668	8040.001	483.326	1819.
3	15:12:18	6910.166	T 3310232.000	T 68189815.000	986751.180	532644.450	649549.610	521427.450	72628.914	-687.109	7798.753	493.866	1694.
x		7944.514	T 99.463%	T 99.686%	94.581%	99.680%	94.764%	98.351%	98.935%	-739.735	104.969%	484.986	1839.
σ		1056.852	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	65.915	n/a	8.178	155.
%RSD		13.303	T 1.435	T 1.517	0.853	1.017	0.921	0.954	1.613	8.911	1.648	1.686	8.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	15:11:34	726247.980	111.256%	1415073.400	236321.280	80.710	115430.070	106.749%	725092.650	480536.420	379099.120	487254.120	104.92
2	15:11:56	737661.170	106.572%	1498315.000	243046.200	-63.653	119113.630	104.176%	727290.120	492110.560	385875.020	491950.570	101.24
3	15:12:18	723987.200	103.896%	1521448.700	243511.900	251.935	120598.270	101.851%	738052.530	493552.140	387291.730	487033.220	98.36
x		729298.780	107.241%	95.549%	100.034%	89.664	98.046%	104.258%	730145.100	488733.040	98.038%	98.089%	101.51
σ		7329.728	3.726%	n/a	n/a	157.984	n/a	2.450%	6935.620	7134.986	n/a	n/a	3.28
%RSD		1.005	3.474	3.785	1.670	176.196	2.248	2.350	0.950	1.460	1.140	0.568	3.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:11:34	29124.735	1390576.500	T 12933242.000	100.009%	0.000	172223.820	101999.510
2	15:11:56	29783.809	1410989.200	T 12688136.000	99.572%	0.000	188312.440	102099.070
3	15:12:18	30216.946	1419057.900	T 12792093.000	98.051%	0.000	195034.550	102806.650
x		99.433%	88.684%	T 95.533%	99.211%	0.000	92.816%	89.699%
σ		n/a	n/a	T n/a	1.028%	0.000	n/a	n/a
%RSD		1.851	1.043	T 0.961	1.036	0.000	6.329	0.430

CCB 10/25/2016 03:16:57 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:17:19	103.168%	-18.434	-553.200	1843.561	-525.982	-207.011	16.122	67.634	106.567%	28.120	1434.666	-11.336
2	15:17:41	101.540%	-13.471	-588.688	-4154.398	-531.339	-1144.697	1111.130	6.117	107.396%	13.940	978.915	-27.647
3	15:18:03	101.349%	-10.990	-680.878	-2478.633	-700.112	-1794.478	1261.177	60.369	107.635%	9.275	2240.693	57.292
x		102.019%	-14.298	-607.589	-1596.490	-585.811	-1048.729	796.143	44.707	107.199%	17.112	1551.425	6.103
σ		1.000%	3.790	65.904	3094.755	99.024	798.073	679.671	33.617	0.561%	9.815	638.941	45.075
%RSD		0.980	26.508	10.847	193.847	16.904	76.099	85.371	75.193	0.523	57.356	41.184	738.582

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:17:19	4440.555	2.157	32616.288	-43.134	0.350	42.249	-169.884	-113.419	477.514	-6.069	474.252	2375.305
2	15:17:41	4411.488	-144.181	27872.981	-11.630	-84.503	-3.220	-167.814	-145.290	478.953	-24.017	480.795	2553.208
3	15:18:03	4108.151	-234.043	24809.188	-30.595	-75.326	-36.538	-225.001	103.433	408.933	-10.968	471.293	2430.706
x		4320.065	-125.356	28432.819	-28.453	-53.160	0.830	-187.566	-51.759	455.133	-13.685	475.447	2453.073

σ		184.097	119.220	3933.544	15.861	46.567	39.549	32.436	135.342	40.017	9.278	4.863	91.036
%RSD		4.261	95.105	13.835	55.745	87.599	4764.266	17.293	261.486	8.792	67.796	1.023	3.711
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:17:19	-12.845	109.244%	1368.549	-34.162	-36.151	-49.516	107.329%	2846.660	-380.369	-272.212	-7.993	101.317%
2	15:17:41	-35.790	112.167%	1161.548	-38.748	-39.707	-41.310	106.908%	3077.721	-309.657	-279.653	-31.047	103.450%
3	15:18:03	-40.660	111.731%	947.926	-20.126	-51.095	-25.493	107.154%	3500.037	-259.387	-245.754	-35.853	103.514%
x		-29.765	111.047%	1159.341	-31.012	-42.318	-38.773	107.130%	3141.473	-316.471	-265.873	-24.964	102.760%
σ		14.854	1.577%	210.320	9.702	7.807	12.211	0.211%	331.321	60.778	17.816	14.893	1.250%
%RSD		49.905	1.420	18.141	31.286	18.448	31.493	0.197	10.547	19.205	6.701	59.657	1.217

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:17:19	-7.919	-308.098	950.381	99.636%	0.000	21794.176	-52.830
2	15:17:41	12.788	-566.936	916.294	100.929%	0.000	20689.423	-23.428
3	15:18:03	-21.141	-486.013	733.844	99.381%	0.000	20037.858	-52.766
x		-5.424	-453.682	866.839	99.982%	0.000	20840.486	-43.008
σ		17.102	132.413	116.432	0.830%	0.000	887.850	16.957
%RSD		315.299	29.186	13.432	0.830	0.000	4.260	39.427

CCVL 10/25/2016 03:22:41 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:23:03	100.012%	134.124	4449.267	559892.080	21602.634	48721.988	524834.830	18634.514	107.120%	23.305	8842.099	6494.284
2	15:23:24	103.623%	109.423	4491.213	563302.610	21733.333	51000.124	536037.740	18920.394	105.812%	33.006	10335.935	6905.421
3	15:23:47	99.157%	127.897	5216.089	565576.330	21379.372	50540.764	515463.430	18626.996	108.355%	4.607	10039.653	6393.646
x		100.931%	100.762%	108.584%	101.429%	94.931%	98.445%	96.664%	94.668%	107.095%	20.306	107.669%	96.202%
σ		2.371%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.272%	14.435	n/a	n/a
%RSD		2.349	10.376	9.136	0.508	0.830	2.405	1.960	0.893	1.188	71.087	8.121	4.109

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:23:03	3833.880	5208.000	457075.770	2000.739	685.819	3107.852	8844.041	906.832	334.540	140.722	493.799	2455.952
2	15:23:24	3755.892	5065.575	464249.990	2155.348	823.567	2790.976	9193.990	734.231	360.340	124.555	501.715	2550.857
3	15:23:47	3385.027	5129.566	452602.230	1985.059	925.648	2927.173	9066.085	791.188	338.150	149.704	433.198	2549.342
x		3658.266	98.004%	102.009%	99.067%	95.814%	106.162%	107.189%	111.797%	344.343	92.000%	476.238	2518.717
σ		239.823	n/a	n/a	n/a	n/a	n/a	n/a	n/a	13.971	n/a	37.483	54.361
%RSD		6.556	1.389	1.283	4.598	14.828	5.403	1.960	10.848	4.057	9.214	7.871	2.158

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:23:03	19265.279	110.580%	10916.188	2402.236	-62.292	638.485	105.713%	936.529	3496.353	2586.690	3990.503	101.982%
2	15:23:24	18058.308	111.114%	11212.526	2309.179	-54.177	606.397	107.334%	880.458	3419.687	2521.266	3933.510	102.025%
3	15:23:47	18873.363	112.298%	11230.655	2704.104	-39.474	556.009	107.920%	954.443	3497.272	2618.380	4069.213	102.054%
x		93.973%	111.331%	89.842%	102.618%	-51.981	99.437%	106.989%	923.810	3471.104	82.172%	100.291%	102.021%
σ		n/a	0.879%	n/a	n/a	11.566	n/a	1.143%	38.598	44.530	n/a	n/a	0.036%
%RSD		3.287	0.790	1.588	8.352	22.251	6.926	1.069	4.178	1.283	1.923	1.704	0.035

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:23:03	2324.913	12382.643	10818.550	102.013%	0.000	19334.532	9997.437
2	15:23:24	2515.019	12500.422	11683.824	100.091%	0.000	19504.487	10505.808
3	15:23:47	2533.865	13084.399	11515.353	100.200%	0.000	19356.282	10499.256
x		82.266%	79.778%	105.752%	100.768%	0.000	97.224%	90.611%
σ		n/a	n/a	n/a	1.079%	0.000	n/a	n/a
%RSD		4.702	2.969	4.046	1.071	0.000	0.477	2.822

200-35680-A-12-A 10/25/2016 03:28:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:28:47	120.305%	926.768	5431.598	T 1427603.700	T 4571777.900	T 109092340.000	T 13474661.000	T 3522536.000	192.805%	33915.673	266138.210	23614
2	15:29:09	120.721%	995.984	5503.298	T 1384682.300	T 4448962.900	T 108569320.000	T 13606706.000	T 3489539.900	202.616%	33901.759	264692.190	23223
3	15:29:31	118.217%	979.457	5882.514	T 1369043.700	T 4429726.100	T 106183040.000	T 13343678.000	T 3506776.300	206.389%	33242.414	265797.460	23209
x		119.748%	967.403	5605.804	T 1393776.500	T 4483489.000	T 107948230.000	T 13475015.000	T 3506284.100	200.603%	33686.615	265542.620	23349
σ		1.342%	36.148	242.305	T 30320.758	T 77063.050	T 1550908.600	T 131514.260	T 16503.536	7.012%	384.753	755.945	229
%RSD		1.121	3.737	4.322	T 2.175	T 1.719	T 1.437	T 0.976	T 0.471	3.496	1.142	0.285	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:28:47	2257.638	T 15809399.000	TM 439905910.000	201175.170	112231.400	120795.570	245028.240	7190.715	73.910	298.706	539.569	142
2	15:29:09	3168.476	T 15846664.000	TM 437624930.000	202440.870	111161.230	124238.680	250412.140	7283.916	19.979	524.411	589.419	38
3	15:29:31	2328.783	T 15636782.000	TM 439538960.000	199710.070	110398.730	126453.730	253416.630	7234.849	56.694	320.579	579.123	140
x		2584.966	T 15764281.000	TM 439023270.000	201108.700	111263.790	123829.330	249619.000	7236.493	50.194	381.232	569.370	107
σ		506.585	T 111978.850	TM 1224812.600	1366.614	920.631	2851.202	4250.065	46.622	27.547	124.478	26.317	59

%RSD		19.597	T 0.710	TM 0.279	0.680	0.827	2.303	1.703	0.644	54.881	32.651	4.622	5
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	15:28:47	1391189.800	438.984%	1724.645	661.442	-351.512	598.314	125.195%	25280.572	-98.322	-67.170	363322.290	152.
2	15:29:09	T 1530484.900	452.915%	1778.619	662.689	-354.407	774.230	127.756%	24922.853	-66.585	-36.792	372350.360	156.
3	15:29:31	1419122.700	462.455%	1645.085	701.294	-542.791	945.806	129.164%	25977.674	36.911	-9.813	377098.420	158.
x		T 1446932.500	451.451%	1716.117	675.142	-416.237	772.783	127.372%	25393.700	-42.665	-37.925	370923.690	156.
σ		T 73694.076	11.804%	67.174	22.657	109.609	173.750	2.012%	536.433	70.719	28.695	6997.996	3.
%RSD		T 5.093	2.615	3.914	3.356	26.333	22.484	1.580	2.112	165.753	75.662	1.887	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:28:47	132.755	9040.365	1307674.100	119.020%	0.000	512841.030	63509.295
2	15:29:09	149.181	9054.786	1317292.900	122.723%	0.000	522194.300	64500.953
3	15:29:31	120.081	8864.855	1325809.000	124.766%	0.000	519355.910	64421.810
x		134.006	8986.669	1316925.300	122.170%	0.000	518130.420	64144.019
σ		14.590	105.739	9073.047	2.913%	0.000	4795.549	551.110
%RSD		10.888	1.177	0.689	2.384	0.000	0.926	0.859

200-35700-A-9-A 10/25/2016 03:34:10 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52C**
1	15:34:32	116.878%	982.359	2713.502	T 804309.230	T 1987328.800	T 99686288.000	T 6657613.200	T 832040.440	191.056%	15799.029	295264.980	194606.90
2	15:34:54	119.020%	968.508	2387.157	T 792570.720	T 2006535.700	T 100760360.000	T 6747493.100	T 833903.160	193.412%	16047.864	299809.440	195606.99
3	15:35:16	116.405%	911.264	2695.900	T 815238.920	T 1995711.300	T 99727937.000	T 6697196.800	T 832638.770	198.939%	15688.185	292618.780	193907.85
x		117.434%	954.044	2598.853	T 804039.620	T 1996525.300	T 100058200.000	T 6700767.700	T 832860.790	194.469%	15845.026	295897.730	194707.25
σ		1.393%	37.690	183.545	T 11336.505	T 9629.305	T 608451.460	T 45046.251	T 951.001	4.047%	184.198	3636.851	854.00
%RSD		1.186	3.951	7.063	T 1.410	T 0.482	T 0.608	T 0.672	T 0.114	2.081	1.162	1.229	0.43

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84K**
1	15:34:32	2173.841	TM 17676425.000	TM 422507840.000	158469.730	63248.128	861659.740	441482.180	5639.507	87.378	486.974	587.061	2185.93
2	15:34:54	1465.390	TM 17730038.000	TM 424000070.000	156210.250	63064.365	866285.600	440265.730	5432.417	96.974	485.514	572.939	2373.65
3	15:35:16	2339.956	TM 17579526.000	TM 415601900.000	155727.670	62739.011	861883.940	439786.420	5408.152	89.472	551.564	563.882	2102.30
x		1993.062	TM 17661997.000	TM 420703270.000	156802.550	63017.168	863276.430	440511.440	5493.359	91.275	508.017	574.627	2220.63
σ		464.464	TM 76286.373	TM 4480480.900	1463.843	257.819	2608.430	874.173	127.149	5.046	37.719	11.681	138.96
%RSD		23.304	TM 0.432	TM 1.065	0.934	0.409	0.302	0.198	2.315	5.528	7.425	2.033	6.25

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tl**
1	15:34:32	492694.050	489.005%	1544.001	2989.124	-440.736	2068.348	130.654%	118601.110	179.773	88.046	561261.460	159.315%
2	15:34:54	498931.960	498.270%	1469.395	3246.261	-395.540	2075.546	131.082%	118864.880	-2.914	114.659	560629.520	160.437%
3	15:35:16	490653.760	502.955%	1454.219	3499.590	-416.717	2134.554	133.276%	119301.520	46.163	95.414	557584.070	164.991%
x		494093.260	496.743%	1489.205	3244.992	-417.665	2092.816	131.670%	118922.500	74.341	99.373	559825.010	161.581%
σ		4312.828	7.099%	48.057	255.236	22.613	36.324	1.407%	353.741	94.547	13.741	1966.271	3.006%
%RSD		0.873	1.429	3.227	7.866	5.414	1.736	1.068	0.297	127.181	13.828	0.351	1.86

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:34:32	473.966	7041.493	2611984.600	123.060%	0.000	305849.130	113622.360
2	15:34:54	422.673	7398.895	2674799.400	122.340%	0.000	313299.610	116464.200
3	15:35:16	530.414	7464.410	2676417.100	124.611%	0.000	319589.170	115473.090
x		475.684	7301.599	2654400.400	123.337%	0.000	312912.640	115186.550
σ		53.891	227.628	36742.065	1.161%	0.000	6878.189	1442.426
%RSD		11.329	3.118	1.384	0.941	0.000	2.198	1.252

200-35700-A-10-A 10/25/2016 03:39:54 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:40:16	109.733%	737.820	2106.984	T 856657.320	T 1940684.000	T 85012054.000	T 5681294.000	736589.500	177.723%	22013.378	232519.090	167117.550
2	15:40:37	111.035%	776.212	2340.504	T 877626.100	T 1977279.900	T 85604247.000	T 5693750.500	737823.450	177.752%	16439.887	241254.400	171635.630
3	15:40:59	111.316%	816.868	2173.761	T 890231.530	T 1992608.000	T 86860144.000	T 5782252.100	T 790303.250	178.644%	15172.548	237113.240	169679.400
x		110.695%	776.966	2207.083	T 874838.310	T 1970190.600	T 85825482.000	T 5719098.900	T 754905.400	178.039%	17875.271	236962.240	169477.530
σ		0.845%	39.530	120.273	T 16959.826	T 26678.052	T 943699.210	T 55045.776	T 30661.645	0.524%	3639.297	4369.615	2265.795
%RSD		0.763	5.088	5.449	T 1.939	T 1.354	T 1.100	T 0.962	T 4.062	0.294	20.359	1.844	1.337

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:40:16	2736.637	T 6830767.900	T 264164490.000	122195.050	59613.159	TM 6218937.400	696516.860	3889.525	111.563	759.584	552.722	2365.325
2	15:40:37	2623.980	T 7062070.300	T 273740080.000	126886.720	60916.943	TM 6202600.400	699522.270	3867.151	114.215	706.572	524.186	2304.594
3	15:40:59	3147.770	T 6958420.400	T 269498120.000	123637.070	60989.657	TM 6262389.500	706120.360	3869.459	99.794	781.295	543.368	2177.526
x		2836.129	T 6950419.500	T 269134230.000	124239.610	60506.587	TM 6227975.800	700719.830	3875.378	108.524	749.151	540.092	2282.482
σ		275.704	T 115858.550	T 4798152.800	2403.169	774.584	TM 30902.296	4912.477	12.306	7.676	38.439	14.548	95.833
%RSD		9.721	T 1.667	T 1.783	1.934	1.280	TM 0.496	0.701	0.318	7.073	5.131	2.694	4.199

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:40:16	446565.950	447.231%	1484.990	5553.815	-312.724	3721.501	126.558%	35276.084	76.254	191.686	420058.560	150.803%
2	15:40:37	449341.990	457.729%	1508.599	5380.297	-266.785	3671.718	128.297%	35270.841	184.152	195.963	424299.870	153.182%
3	15:40:59	452102.920	454.727%	1471.956	5334.351	-300.190	3763.552	128.277%	35968.147	237.065	175.842	431715.900	158.236%
x		449336.950	453.229%	1488.515	5422.821	-293.233	3718.924	127.711%	35505.024	165.824	187.830	425358.110	154.074%
σ		2768.486	5.407%	18.574	115.747	23.746	45.971	0.998%	401.085	81.957	10.600	5900.281	3.796%
%RSD		0.616	1.193	1.248	2.134	8.098	1.236	0.782	1.130	49.424	5.644	1.387	2.464

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:40:16	567.006	5964.026	2878595.500	117.014%	0.000	281696.880	160059.160
2	15:40:37	542.414	5888.114	2907820.000	119.549%	0.000	287302.150	160440.950
3	15:40:59	484.715	6390.436	2970337.200	117.534%	0.000	293818.270	164140.030
x		531.379	6080.859	2918917.600	118.032%	0.000	287605.760	161546.710
σ		42.241	270.775	46866.833	1.339%	0.000	6066.398	2253.978
%RSD		7.949	4.453	1.606	1.134	0.000	2.109	1.395

200-35700-A-10-A @2 10/25/2016 03:45:36 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:45:58	114.685%	439.106	433.258	T 525495.100	T 1108827.600	T 49033336.000	T 3296993.900	421826.740	157.988%	10656.705	135475.250	97201.616
2	15:46:20	111.351%	394.503	479.499	T 501173.300	T 1104597.700	T 48529492.000	T 3309319.200	418630.190	158.557%	10923.552	135678.000	95841.394
3	15:46:42	111.493%	367.065	652.012	T 516822.090	T 1100868.100	T 48881679.000	T 3248631.100	422317.420	157.659%	12447.328	137944.940	96594.194
x		112.509%	400.225	521.589	T 514496.830	T 1104764.500	T 48814836.000	T 3284981.400	420924.780	158.068%	11342.528	136366.060	96545.735
σ		1.885%	36.360	115.291	T 12326.499	T 3982.387	T 258487.010	T 32077.815	2002.264	0.454%	966.043	1371.103	681.404
%RSD		1.676	9.085	22.104	T 2.396	T 0.360	T 0.530	T 0.976	0.476	0.287	8.517	1.005	0.706

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:45:58	2644.964	T 3945605.900	T 155147190.000	72310.503	34833.105	T 3254650.400	387737.570	3271.485	175.070	442.510	540.793	2283.742
2	15:46:20	2560.673	T 3995308.000	T 156165030.000	71434.276	34840.446	T 3222366.400	381457.500	3361.374	147.354	439.025	526.004	2323.323
3	15:46:42	2720.933	T 3977016.400	T 155295670.000	72503.019	34851.852	T 3190334.100	380485.690	3284.164	163.717	424.711	496.479	2293.025
x		2642.190	T 3972643.400	T 155535960.000	72082.599	34841.801	T 3222450.300	383226.920	3305.674	162.047	435.415	521.092	2300.030

σ		80.166	T 25137.968	T 549825.150	569.656	9.446	T 32158.255	3936.441	48.652	13.933	9.432	22.562	20.699
%RSD		3.034	T 0.633	T 0.354	0.790	0.027	T 0.998	1.027	1.472	8.598	2.166	4.330	0.900
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:45:58	226584.830	298.383%	782.158	2621.312	-130.019	1832.166	127.870%	18379.194	-338.721	-251.728	214556.330	135.698%
2	15:46:20	228388.070	296.852%	800.369	2668.047	-116.555	1944.635	128.614%	17860.322	-340.682	-277.592	214624.050	133.847%
3	15:46:42	227822.130	297.291%	797.052	2727.077	-159.252	1854.237	130.018%	17933.130	-333.560	-264.707	210807.620	138.161%
x		227598.340	297.509%	793.193	2672.145	-135.275	1877.013	128.834%	18057.549	-337.654	-264.676	213329.330	135.902%
σ		922.218	0.788%	9.699	53.001	21.828	59.593	1.091%	280.922	3.679	12.932	2184.127	2.164%
%RSD		0.405	0.265	1.223	1.983	16.136	3.175	0.847	1.556	1.090	4.886	1.024	1.592

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:45:58	192.759	2406.410	1481363.400	115.911%	0.000	139808.170	81508.723
2	15:46:20	197.857	2328.769	1474048.500	118.737%	0.000	141171.140	79494.482
3	15:46:42	258.574	2448.092	1501502.700	116.202%	0.000	147954.630	83783.628
x		216.397	2394.424	1485638.200	116.950%	0.000	142977.980	81595.611
σ		36.616	60.558	14217.591	1.555%	0.000	4363.450	2145.892
%RSD		16.921	2.529	0.957	1.329	0.000	3.052	2.630

CCV 10/25/2016 03:51:19 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	15:51:41	99.604%	80127.431	26764.197	┬10851314.000	┬3320998.800	┬30629135.000	┬10908657.000	1152313.300	110.041%	22761.114	┬2234557.900	648224.
2	15:52:02	97.647%	79662.983	26898.037	┬10838963.000	┬3298103.800	┬30381808.000	┬10792819.000	1135509.300	109.060%	22501.176	┬2234631.800	649435.
3	15:52:24	95.653%	79945.218	27341.439	┬10555154.000	┬3264873.400	┬29894617.000	┬10517063.000	1134378.800	108.958%	22203.757	┬2196527.200	629293.
x		97.635%	104.053%	99.411%	┬96.834%	┬96.659%	┬99.262%	┬98.785%	96.109%	109.353%	22488.683	┬98.255%	93.65
σ		1.975%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	n/a	0.598%	278.889	┬n/a	
%RSD		2.023	0.293	1.119	┬1.559	┬0.857	┬1.233	┬1.873	0.880	0.547	1.240	┬0.989	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	15:51:41	6978.496	┬3283642.700	┬68187561.000	999528.740	540885.460	678441.750	524984.540	72805.929	-421.290	7911.989	480.221	1877.
2	15:52:02	6306.743	┬3261738.100	┬67521915.000	979529.510	527439.100	655568.010	515938.630	71332.997	-323.781	7574.149	487.436	1804.
3	15:52:24	7409.565	┬3164645.700	┬65923718.000	947334.940	515566.350	673102.220	527448.830	73238.103	-644.442	7837.116	491.249	1826.
x		6898.268	┬98.850%	┬99.804%	94.415%	99.717%	96.569%	99.240%	99.916%	-463.171	103.414%	486.302	1836.
σ		555.771	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	164.382	n/a	5.601	37.
%RSD		8.057	┬1.957	┬1.731	2.700	2.399	1.789	1.159	1.378	35.491	2.282	1.152	2.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	15:51:41	722552.020	111.234%	1457772.800	240061.060	-71.579	118155.490	108.702%	725341.860	483720.630	379478.110	485658.230	102.68
2	15:52:02	729877.660	111.387%	1472753.500	233742.150	614.027	117210.890	109.144%	718662.410	480558.320	376327.670	477738.460	102.32
3	15:52:24	744659.550	107.461%	1522232.600	238947.410	273.602	117477.980	104.735%	742419.360	493322.180	386794.040	496925.490	101.08
x		732363.080	110.027%	95.936%	98.632%	272.017	97.412%	107.527%	728807.880	485867.040	97.215%	97.693%	102.03
σ		11261.377	2.224%	n/a	n/a	342.805	n/a	2.428%	12251.860	6647.133	n/a	n/a	0.84
%RSD		1.538	2.021	2.273	1.420	126.024	0.414	2.258	1.681	1.368	1.410	1.981	0.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:51:41	28793.330	1363880.500	┬12661084.000	100.874%	0.000	170957.730	99622.883
2	15:52:02	29393.954	1415240.700	┬12964196.000	98.060%	0.000	190013.710	103310.090
3	15:52:24	28886.114	1393287.900	┬12674956.000	99.399%	0.000	196185.590	101360.940
x		97.144%	87.671%	┬95.252%	99.444%	0.000	93.081%	88.936%
σ		n/a	n/a	┬n/a	1.408%	0.000	n/a	n/a
%RSD		1.114	1.853	┬1.340	1.416	0.000	7.081	1.819

CCB 10/25/2016 03:57:03 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:57:24	100.505%	-0.958	-789.170	1959.119	-248.459	7161.046	2707.443	168.769	108.035%	13.866	1219.758	310.652
2	15:57:46	100.934%	-10.950	-767.045	1915.805	-174.675	11807.653	3252.414	108.601	109.976%	18.174	2900.331	232.840
3	15:58:08	103.682%	-8.801	-793.761	-2002.887	-24.038	15697.900	1413.416	151.372	110.339%	4.527	2007.244	272.379
x		101.707%	-6.903	-783.325	624.012	-149.057	11555.533	2457.758	142.914	109.450%	12.189	2042.445	271.957
σ		1.724%	5.260	14.285	2275.064	114.383	4274.008	944.582	30.963	1.239%	6.976	840.839	38.908
%RSD		1.695	76.194	1.824	364.586	76.738	36.987	38.433	21.665	1.132	57.235	41.168	14.307

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:57:24	4271.727	606.012	61487.945	-17.277	3.129	355.869	-106.817	193.538	426.860	5.222	458.835	2334.831
2	15:57:46	3796.785	821.109	68947.850	-6.578	-22.053	582.695	-63.576	-80.944	501.076	-26.144	486.037	2575.847
3	15:58:08	4100.936	1295.965	77895.573	20.027	-13.365	748.831	-33.756	-71.575	496.091	-13.148	477.536	2429.575
x		4056.483	907.695	69443.789	-1.276	-10.763	562.465	-68.049	13.673	474.676	-11.357	474.136	2446.751
σ		240.571	353.032	8215.049	19.209	12.791	197.260	36.735	155.838	41.485	15.760	13.916	121.423

%RSD		5.931	38.893	11.830	1505.338	118.844	35.071	53.983	1139.749	8.740	138.767	2.935	4.963
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:57:24	-33.251	111.256%	1268.268	-7.185	-37.566	-39.163	109.409%	2961.651	-339.619	-319.840	-9.587	102.347%
2	15:57:46	58.757	111.513%	1571.479	6.737	-40.166	-41.134	109.047%	3104.485	-307.902	-239.975	13.612	105.075%
3	15:58:08	122.112	112.740%	828.949	-11.759	-75.491	-11.061	109.418%	3327.069	-180.591	-252.698	54.382	104.602%
x		49.206	111.836%	1222.898	-4.069	-51.074	-30.453	109.291%	3131.068	-276.037	-270.838	19.469	104.008%
σ		78.121	0.793%	373.338	9.634	21.185	16.822	0.212%	184.154	84.167	42.911	32.384	1.458%
%RSD		158.762	0.709	30.529	236.774	41.480	55.241	0.194	5.882	30.491	15.844	166.338	1.401

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:57:24	-4.723	-367.001	1449.830	99.107%	0.000	21923.246	-7.291
2	15:57:46	-9.161	-296.351	1517.334	101.476%	0.000	21208.421	-33.576
3	15:58:08	-8.409	-606.805	1458.121	102.523%	0.000	20287.476	-9.644
x		-7.431	-423.386	1475.095	101.035%	0.000	21139.714	-16.837
σ		2.375	162.726	36.814	1.750%	0.000	820.047	14.544
%RSD		31.963	38.434	2.496	1.732	0.000	3.879	86.380

CCVL 10/25/2016 04:02:46 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	16:03:08	103.407%	138.707	4295.571	561054.520	21434.192	52607.040	516464.240	18499.957	112.469%	17.759	10336.805	6406.533
2	16:03:29	103.984%	125.800	4523.636	561637.940	21454.855	56989.376	513529.450	19324.613	111.837%	17.858	9699.216	6746.609
3	16:03:51	103.620%	119.077	4636.195	561215.360	21730.927	58990.285	514210.180	20046.086	111.277%	17.946	8678.931	6612.870
x		103.671%	104.055%	103.206%	101.137%	94.791%	110.450%	94.693%	97.514%	111.861%	17.854	105.817%	96.070%
σ		0.292%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.597%	0.093	n/a	n/a
%RSD		0.282	7.802	3.869	0.054	0.769	5.810	0.298	4.011	0.533	0.523	8.737	2.600
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:03:08	3440.168	5172.812	460841.510	1976.856	837.916	3036.418	8678.607	827.252	349.224	199.885	496.636	2395.619
2	16:03:29	3622.742	5712.353	476514.670	2105.334	986.498	3035.667	8206.183	595.133	436.057	122.955	477.469	2500.830
3	16:03:51	3845.237	5646.525	487939.430	1977.538	884.296	3447.790	8910.690	783.954	372.803	178.908	481.675	2364.282
x		3636.049	105.185%	105.823%	97.753%	106.583%	114.509%	102.014%	101.413%	386.028	111.236%	485.260	2420.244
σ		202.862	n/a	n/a	n/a	n/a	n/a	n/a	n/a	44.902	n/a	10.074	71.527
%RSD		5.579	5.342	2.863	3.663	8.419	7.491	4.175	16.783	11.632	23.778	2.076	2.955
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:03:08	18210.376	115.812%	10599.874	2416.738	-33.154	601.324	109.337%	782.003	3024.813	2413.595	4042.704	101.732%
2	16:03:29	18608.210	115.402%	10586.209	2377.211	-81.254	564.891	111.318%	889.371	3094.492	2420.960	3677.112	102.848%
3	16:03:51	18310.263	115.135%	11018.358	2696.465	-41.126	547.028	111.488%	1036.025	3142.131	2461.874	3918.101	103.908%
x		92.186%	115.450%	86.731%	103.654%	-51.845	94.597%	110.714%	902.466	3087.145	77.600%	97.320%	102.829%
σ		n/a	0.341%	n/a	n/a	25.779	n/a	1.195%	127.516	59.003	n/a	n/a	1.088%
%RSD		1.126	0.295	2.288	6.970	49.724	4.846	1.080	14.130	1.911	1.069	4.791	1.058

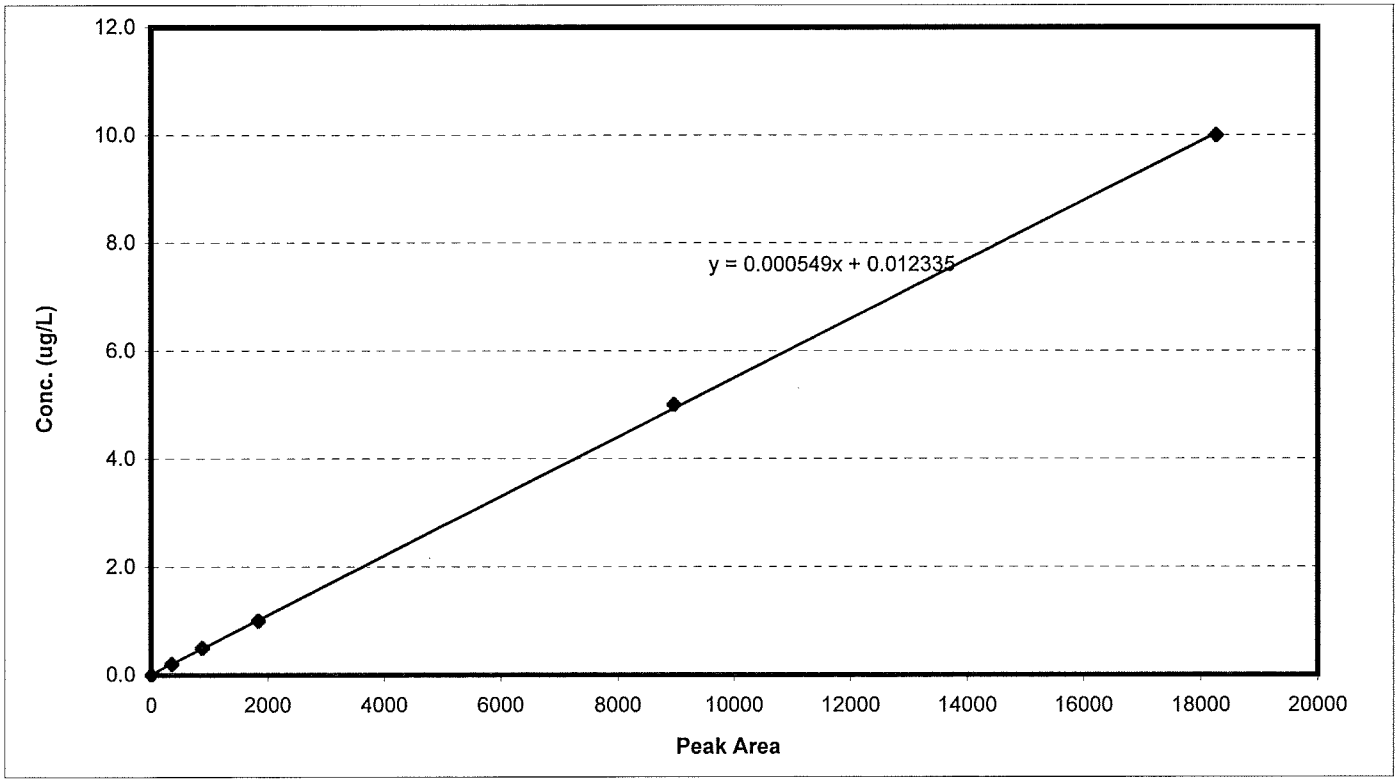
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:03:08	2301.576	12259.075	11144.782	98.761%	0.000	19461.537	10445.667
2	16:03:29	2454.586	12764.290	11293.636	99.645%	0.000	19353.317	10342.328
3	16:03:51	2374.828	12551.057	11780.048	101.576%	0.000	19859.508	10548.137
x		79.557%	78.952%	106.376%	99.994%	0.000	98.024%	91.586%
σ		n/a	n/a	n/a	1.439%	0.000	n/a	n/a
%RSD		3.220	2.025	2.913	1.439	0.000	1.363	0.985

Mercury Calibration Curve Worksheet

Instrument ID:	MEPCV3II	Analyst:	MDK
Run ID:	101716CC	Date:	10/17/2016
TALS Batch:	110261		

	ICAL Conc. (ug/L)	ICAL Peak Area	Calculated Result	% Difference
Std 0	0.0	13	0.0195	
Std 1	0.2	356	0.2076	3.8
Std 2	0.5	874	0.4918	1.6
Std 3	1.0	1832	1.0174	1.7
Std 4	5.0	8967	4.9317	1.4
Std 5	10	18264	10.0320	0.3

N =	6
r =	0.999959263
Intercept =	0.012335458
Slope =	0.000548604



MEPCV3II * 7470A *
Folder: 081216L 101716CC* Page 307
Protocol: 081216L Analyst:MDK*
POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Standard: 1 Rep: 1				Seq: 1247	16:09:14 17 Oct 16				HG
Hg	.000	ppb	13	S01 *					=
*** Standard: 2 Rep: 1				Seq: 1248	16:11:00 17 Oct 16				HG
Hg	.200	ppb	356	S02 *					=
*** Standard: 3 Rep: 1				Seq: 1249	16:12:38 17 Oct 16				HG
Hg	.500	ppb	874	S03*					=
*** Standard: 4 Rep: 1				Seq: 1250	16:14:25 17 Oct 16				HG
Hg	1.00	ppb	1832	S04*					=
*** Standard: 5 Rep: 1				Seq: 1251	16:16:04 17 Oct 16				HG
Hg	5.00	ppb	8967	S05*					=
*** Standard: 6 Rep: 1				Seq: 1252	16:17:41 17 Oct 16				HG
Hg	10.0	ppb	18264	S06*					=
*** Sample ID:				Seq: 1253	16:19:19 17 Oct 16				HG
Hg	2.76	ppb	5000	ICV*					=
*** Sample ID:				Seq: 1254	16:20:56 17 Oct 16				HG
Hg	-.124	ppb	-248	ICB*					=
*** Sample ID:				Seq: 1255	16:22:42 17 Oct 16				HG
Hg	5.03	ppb	9154	CCV*					=
*** Sample ID: CCB				Seq: 1256	16:24:18 17 Oct 16				HG
Hg	-.124	ppb	-249						=
*** Sample ID: MB 110242				Seq: 1257	16:26:05 17 Oct 16				HG
Hg	-.051	ppb	-116						=

* MDK 10/7/16

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: LCS 110242				Seq: 1258	16:27:41 17 Oct 16		HG	
Hg	2.57	ppb	4666					
*** Sample ID: 35680A13B				Seq: 1259	16:29:17 17 Oct 16		HG	
Hg	-.083	ppb	-174					
*** Sample ID: 35680A13C MS				Seq: 1260	16:30:57 17 Oct 16		HG	
Hg	2.46	ppb	4469					
*** Sample ID: 35680A13D MSD				Seq: 1261	16:32:44 17 Oct 16		HG	
Hg	2.50	ppb	4533					
*** Sample ID: 35700A19B				Seq: 1262	16:34:21 17 Oct 16		HG	
Hg	-.091	ppb	-189					
*** Sample ID: 35736A14D				Seq: 1263	16:35:59 17 Oct 16		HG	
Hg	-.062	ppb	-136					
*** Sample ID: CCV				Seq: 1264	16:37:35 17 Oct 16		HG	
Hg	5.24	ppb	9538					
*** Sample ID: CCB				Seq: 1265	16:39:11 17 Oct 16		HG	
Hg	-.030	ppb	-78					

Mercury Calibration Curve Worksheet

Instrument ID: MEPCV3II

Analyst: MDK

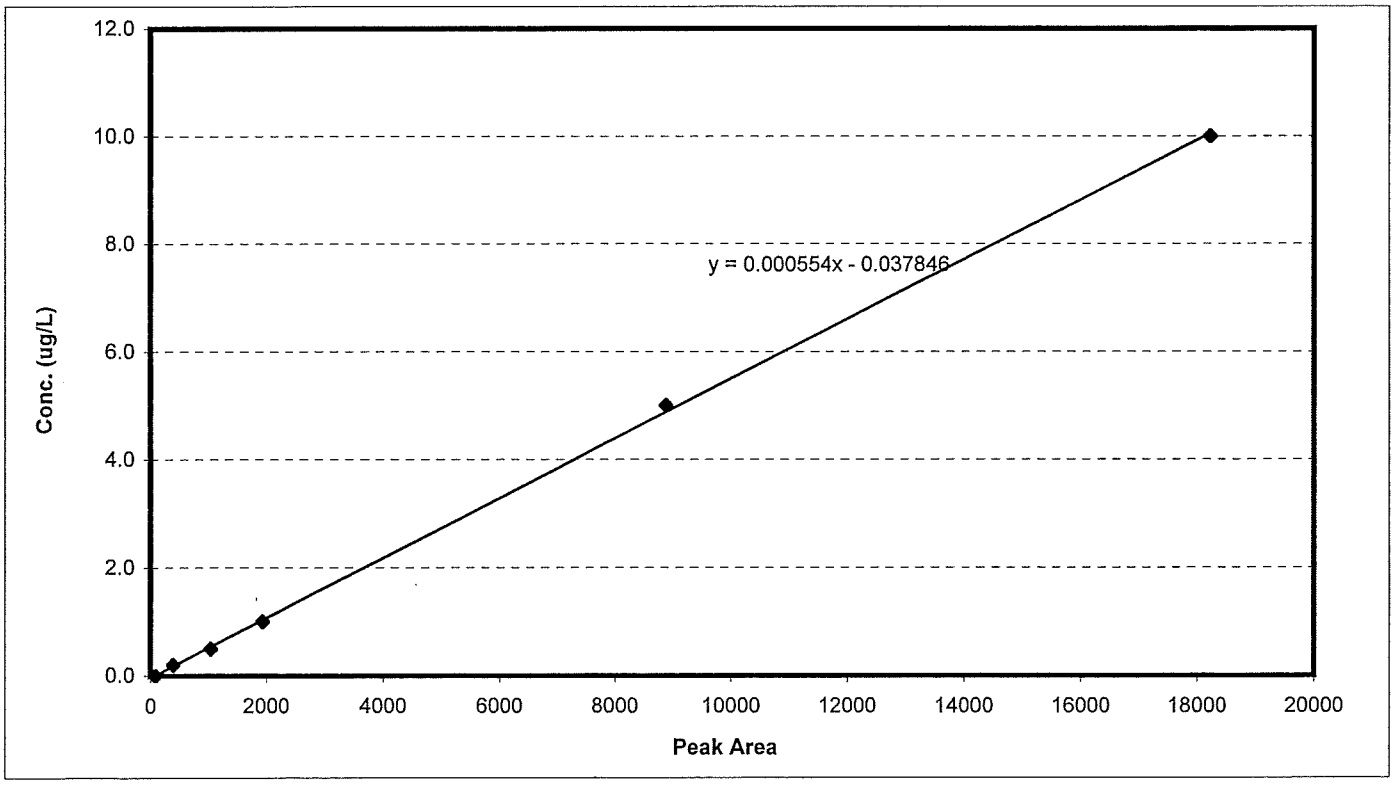
Run ID: 101716AA

Date: 10/17/2016

TALS Batch: 110260

	ICAL Conc. (ug/L)	ICAL Peak Area	Calculated Result	% Difference
Std 0	0.0	88	0.0109	
Std 1	0.2	396	0.1814	9.3
Std 2	0.5	1046	0.5414	8.3
Std 3	1.0	1933	1.0326	3.3
Std 4	5.0	8883	4.8813	2.4
Std 5	10	18221	10.0524	0.5

N =	6
r =	0.999874219
Intercept =	-0.037845846
Slope =	0.00055377



MEPCV3II *
Folder: 081216L
Protocol: 081216L
POST-RUN REPORT

7471B*
101716AA*
Analyst MDR*

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1				Seq: 1178	14:14:03 17 Oct 16			HG
Hg	.000	ppb	88	S01*				
*** Standard: 2 Rep: 1				Seq: 1179	14:15:40 17 Oct 16			HG
Hg	.200	ppb	396	S02*				
*** Standard: 3 Rep: 1				Seq: 1180	14:17:17 17 Oct 16			HG
Hg	.500	ppb	1046	S03*				
*** Standard: 4 Rep: 1				Seq: 1181	14:18:57 17 Oct 16			HG
Hg	1.00	ppb	1933	S04*				
*** Standard: 5 Rep: 1				Seq: 1182	14:20:38 17 Oct 16			HG
Hg	5.00	ppb	8883	S05*				
*** Standard: 6 Rep: 1				Seq: 1183	14:22:15 17 Oct 16			HG
Hg	10.0	ppb	18221	S06*				
*** Sample ID: ICV				Seq: 1184	14:23:53 17 Oct 16			HG
Hg	2.77	ppb	5074					
*** Sample ID: ICB				Seq: 1185	14:25:31 17 Oct 16			HG
Hg	-.038	ppb	0					
*** Sample ID: CCV				Seq: 1186	14:27:11 17 Oct 16			HG
Hg	5.00	ppb	9098					
*** Sample ID: CCB				Seq: 1187	14:29:01 17 Oct 16			HG
Hg	-.035	ppb	6					
*** Sample ID: MB 110231				Seq: 1188	14:30:37 17 Oct 16			HG
Hg	-.008	ppb	53					

* MDR
10/17/16

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: LCS 110231				Seq: 1189	14:32:13 17 Oct 16		HG	
Hg	2.46	ppb	4505					
*** Sample ID: 35680A1C				Seq: 1190	14:33:52 17 Oct 16		HG	
Hg	3.99	ppb	7271					
*** Sample ID: 35680A2C				Seq: 1191	14:35:49 17 Oct 16		HG	
Hg	6.27	ppb	11383					
*** Sample ID: 35680A3C				Seq: 1192	14:37:30 17 Oct 16		HG	
Hg	.308	ppb	625					
*** Sample ID: 35680A4C				Seq: 1193	14:39:08 17 Oct 16		HG	
Hg	5.99	ppb	10889					
*** Sample ID: 35680A5C				Seq: 1194	14:40:59 17 Oct 16		HG	
Hg	7.53	ppb	13670					
*** Sample ID: 35680A6E				Seq: 1195	14:42:36 17 Oct 16		HG	
Hg	8.91	ppb	16158					
*** Sample ID: 35680A7C				Seq: 1196	14:44:14 17 Oct 16		HG	
Hg	7.19	ppb	13052					
*** Sample ID: 35680A14E				Seq: 1197	14:45:52 17 Oct 16		HG	
Hg	8.64	ppb	15678					
*** Sample ID: CCV				Seq: 1198	14:47:54 17 Oct 16		HG	
Hg	4.87	ppb	8857					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: CCB				Seq: 1199	14:49:32 17 Oct 16		HG	
Hg	-.047	ppb	-16					
*** Sample ID: 35680A14F				Seq: 1200	14:51:10 17 Oct 16		HG	
			MS					
Hg	10.9	ppb	19728					
*** Sample ID: 35680A14G				Seq: 1201	14:52:57 17 Oct 16		HG	
			MSD					
Hg	11.2	ppb	20344					
*** Sample ID: 35700A1C				Seq: 1202	14:54:37 17 Oct 16		HG	
Hg	25.9	ppb	46820					
*** Sample ID: 35700A2C				Seq: 1203	14:56:19 17 Oct 16		HG	
Hg	37.0	ppb	66837					
*** Sample ID: 35700A3C				Seq: 1204	14:58:08 17 Oct 16		HG	
Hg	23.9	ppb	43280					
*** Sample ID: 35700A4C				Seq: 1205	14:59:51 17 Oct 16		HG	
Hg	5.48	ppb	9966					
*** Sample ID: 35700A5C				Seq: 1206	15:01:30 17 Oct 16		HG	
Hg	16.2	ppb	29292					
*** Sample ID: 35700A6C				Seq: 1207	15:03:18 17 Oct 16		HG	
Hg	13.6	ppb	24563					
*** Sample ID: 35700A7C				Seq: 1208	15:04:56 17 Oct 16		HG	
Hg	.195	ppb	421					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 35700A8C				Seq: 1209	15:06:32 17 Oct 16		HG	
Hg	17.2	ppb	31216					
*** Sample ID: CCV				Seq: 1210	15:08:10 17 Oct 16		HG	
Hg	4.91	ppb	8937					
*** Sample ID: CCB				Seq: 1211	15:09:51 17 Oct 16		HG	
Hg	-.077	ppb	-70					
*** Sample ID: MB 110232				Seq: 1212	15:11:29 17 Oct 16		HG	
Hg	-.046	ppb	-15					
*** Sample ID: LCS 110232				Seq: 1213	15:13:08 17 Oct 16		HG	
Hg	2.44	ppb	4479					
*** Sample ID: 35736A1B				Seq: 1214	15:14:46 17 Oct 16		HG	
Hg	.171	ppb	378					
*** Sample ID: 35736A2B				Seq: 1215	15:16:25 17 Oct 16		HG	
Hg	.123	ppb	291					
*** Sample ID: 35736A3B				Seq: 1216	15:18:22 17 Oct 16		HG	
Hg	.132	ppb	307					
*** Sample ID: 35736A4B				Seq: 1217	15:20:00 17 Oct 16		HG	
Hg	.173	ppb	381					
*** Sample ID: 35736A5D				Seq: 1218	15:21:38 17 Oct 16		HG	
Hg	.150	ppb	339					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 35736A5G MS				Seq: 1219	15:23:16 17 Oct 16	HG		
Hg	2.70	ppb	4940					
*** Sample ID: 35736A5H MSD				Seq: 1220	15:25:02 17 Oct 16	HG		
Hg	2.57	ppb	4709					
*** Sample ID: 35736A6B				Seq: 1221	15:26:39 17 Oct 16	HG		
Hg	.093	ppb	237					
*** Sample ID: CCV				Seq: 1222	15:28:16 17 Oct 16	HG		
Hg	4.93	ppb	8971					
*** Sample ID: CCB				Seq: 1223	15:29:56 17 Oct 16	HG		
Hg	-.071	ppb	-60					
*** Sample ID: 35736A7B				Seq: 1224	15:31:43 17 Oct 16	HG		
Hg	.147	ppb	333					
*** Sample ID: 35736A8B				Seq: 1225	15:33:30 17 Oct 16	HG		
Hg	.162	ppb	360					
*** Sample ID: 35736A9B				Seq: 1226	15:35:10 17 Oct 16	HG		
Hg	.153	ppb	344					
*** Sample ID: 35736A10B				Seq: 1227	15:36:47 17 Oct 16	HG		
Hg	.144	ppb	328					
*** Sample ID: 35736A11D				Seq: 1228	15:38:45 17 Oct 16	HG		
Hg	13.3	ppb	24011					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 35736A11G				Seq: 1229	15:40:25 17 Oct 16		HG	
			MS					
Hg	10.3	ppb	18673					
*** Sample ID: 35736A11H				Seq: 1230	15:42:03 17 Oct 16		HG	
			MSD					
Hg	11.3	ppb	20524					
*** Sample ID: 35736A12				Seq: 1231	15:43:41 17 Oct 16		HG	
Hg	6.98	ppb	12664					
*** Sample ID: CCV				Seq: 1232	15:45:23 17 Oct 16		HG	
Hg	4.95	ppb	9006					
*** Sample ID: CCB				Seq: 1233	15:47:02 17 Oct 16		HG	
Hg	-.102	ppb	-115					
*** Sample ID: 35700A1C				Seq: 1234	15:48:55 17 Oct 16		HG	
			@4					
~~Hg 3.91 ppb 7127~~ Sipper sent to wrong cup 10/17/16 MDK								
*** Sample ID: 35700A1C				Seq: 1235	15:51:08 17 Oct 16		HG	
			@4					
Hg	6.33	ppb	11507					
*** Sample ID: 35700A2C				Seq: 1236	15:52:46 17 Oct 16		HG	
			@4					
Hg	9.48	ppb	17194					
*** Sample ID: 35700A3C				Seq: 1237	15:54:23 17 Oct 16		HG	
			@4					
Hg	5.59	ppb	10168					
*** Sample ID: 35700A5C				Seq: 1238	15:56:02 17 Oct 16		HG	
			@2					
Hg	8.31	ppb	15071					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 35700A6C @2				Seq: 1239	15:57:40 17 Oct 16	HG		
Hg	6.80	ppb	12342					
*** Sample ID: 35700A8C @2				Seq: 1240	15:59:18 17 Oct 16	HG		
Hg	8.60	ppb	15603					
*** Sample ID: ~~CCV~~ 35736A11D @2 (*)				Seq: 1241	16:01:06 17 Oct 16	HG		
Hg	6.63	ppb	12038					
*** Sample ID: ~~CCB~~ 35736A11G @2 MS (*)				Seq: 1242	16:02:43 17 Oct 16	HG		
Hg	5.20	ppb	9466					
*** Sample ID: 35736A11H @2 MSD (*)				Seq: 1243	16:04:21 17 Oct 16	HG		
Hg	5.75	ppb	10445					
*** Sample ID: CCV (*)				Seq: 1244	16:06:02 17 Oct 16	HG		
Hg	4.95	ppb	9009					
*** Sample ID: CCB (*)				Seq: 1245	16:07:38 17 Oct 16	HG		
Hg	-.093	ppb	-99					

(*) Instrument did not recognize changes to worklist during Analysis. 10/19/16 MDK

Mercury Calibration Curve Worksheet

Instrument ID: MEPCV3II

Analyst: MDK

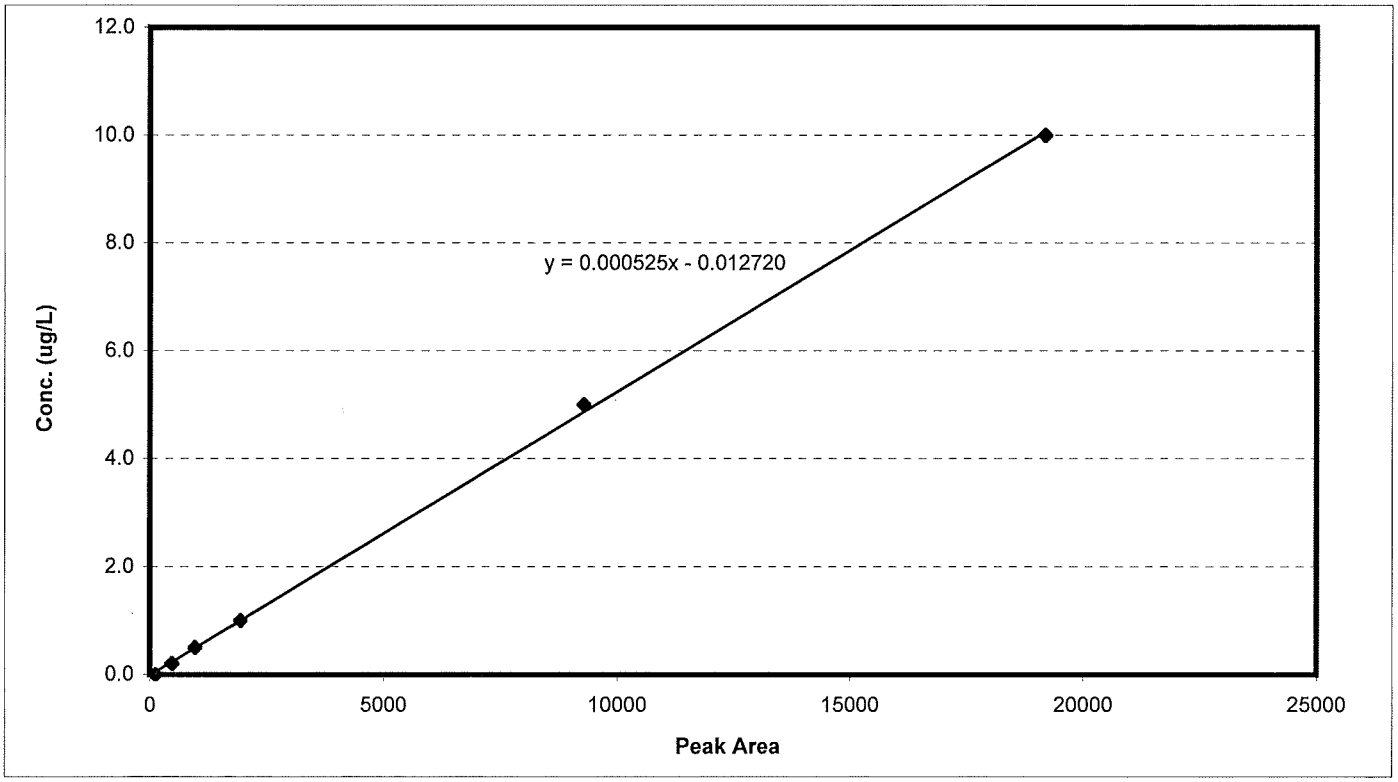
Run ID: 102616AA

Date: 10/26/2016

TALS Batch: 110575

	ICAL Conc. (ug/L)	ICAL Peak Area	Calculated Result	% Difference
Std 0	0.0	123	0.0519	
Std 1	0.2	465	0.2314	15.7
Std 2	0.5	957	0.4898	2.0
Std 3	1.0	1920	0.9954	0.5
Std 4	5.0	9294	4.8674	2.7
Std 5	10	19191	10.0641	0.6

N =	6
r =	0.999840222
Intercept =	-0.012720352
Slope =	0.000525081



MEPCV3II*
Folder: 081216L
Protocol: 081216L
POST-RUN REPORT

7471B*
102616HA*
Analyst: MDK*

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Standard: 1 Rep: 1				S01* Seq: 1283	09:53:04 26 Oct 16				HG
Hg	.000	ppb	123						=
*** Standard: 2 Rep: 1				Seq: 1284	09:54:52 26 Oct 16				HG
Hg	.200	ppb	465	S02*					=
*** Standard: 3 Rep: 1				Seq: 1285	09:56:39 26 Oct 16				HG
Hg	.500	ppb	957	S03*					=
*** Standard: 4 Rep: 1				Seq: 1286	09:58:17 26 Oct 16				HG
Hg	1.00	ppb	1920	S04*					=
*** Standard: 5 Rep: 1				Seq: 1287	09:59:55 26 Oct 16				HG
Hg	5.00	ppb	9294	S05*					=
*** Standard: 6 Rep: 1				Seq: 1288	10:01:35 26 Oct 16				HG
Hg	10.0	ppb	19191	S06*					=
*** Sample ID: ICV			102616AA	Seq: 1289	10:03:13 26 Oct 16				HG
Hg	2.77	ppb	5293						=
*** Sample ID: ICB			102616AA	Seq: 1290	10:04:50 26 Oct 16				HG
Hg	-.006	ppb	13						=
*** Sample ID: CCV			102616AA	Seq: 1291	10:06:26 26 Oct 16				HG
Hg	4.84	ppb	9247						=
*** Sample ID: CCB			102616AA	Seq: 1292	10:08:01 26 Oct 16				HG
Hg	.007	ppb	37						=
*** Sample ID: MB 110530			102616AA	Seq: 1293	10:09:38 26 Oct 16				HG
Hg	.018	ppb	58						=

* MDK 10/26/16

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: LCS 110530 102616AA Seq: 1294 10:11:16 26 Oct 16 HG								
Hg	2.43	ppb	4654					
*** Sample ID: 35680A8D 102616AA Seq: 1295 10:12:55 26 Oct 16 HG								
Hg	9.48	ppb	18075					
*** Sample ID: 35680A8E 102616AA Seq: 1296 10:14:31 26 Oct 16 HG MS								
Hg	12.5	ppb	23802					
*** Sample ID: 35680A8F 102616AA Seq: 1297 10:16:14 26 Oct 16 HG MSD								
Hg	11.4	ppb	21798					
*** Sample ID: 35680A9B 102616AA Seq: 1298 10:17:51 26 Oct 16 HG								
Hg	6.05	ppb	11538					
*** Sample ID: 35680A10B 102616AA Seq: 1299 10:19:28 26 Oct 16 HG								
Hg	5.87	ppb	11211					
*** Sample ID: 35680A11B 102616AA Seq: 1300 10:21:04 26 Oct 16 HG								
Hg	6.36	ppb	12146					
*** Sample ID: 35680A12B 102616AA Seq: 1301 10:22:45 26 Oct 16 HG								
Hg	.084	ppb	185					
*** Sample ID: 35700A9B 102616AA Seq: 1302 10:24:21 26 Oct 16 HG								
Hg	3.38	ppb	6463					
*** Sample ID: CCV 102616AA Seq: 1303 10:25:57 26 Oct 16 HG								
Hg	5.05	ppb	9644					

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: CCB 102616AA Seq: 1304 10:27:33 26 Oct 16 HG

Hg -.054 ppb -79

*** Sample ID: 35700A10B 102616AA Seq: 1305 10:29:10 26 Oct 16 HG

Hg 11.5 ppb 21948

*** Sample ID: 35720A1A 102616AA Seq: 1306 10:30:58 26 Oct 16 HG

Hg .670 ppb 1301

*** Sample ID: 35720A1B 102616AA Seq: 1307 10:32:35 26 Oct 16 HG
DU

Hg .362 ppb 714

*** Sample ID: 35720A1C 102616AA Seq: 1308 10:34:12 26 Oct 16 HG
MS

Hg 2.93 ppb 5612

*** Sample ID: 35720A2A 102616AA Seq: 1309 10:35:52 26 Oct 16 HG

Hg 2.40 ppb 4603

*** Sample ID: 35720A2B 102616AA Seq: 1310 10:37:33 26 Oct 16 HG
DU

Hg 2.79 ppb 5337

*** Sample ID: 35720A2C 102616AA Seq: 1311 10:39:10 26 Oct 16 HG
MS

Hg 4.62 ppb 8823

*** Sample ID: 35720A3A 102616AA Seq: 1312 10:40:46 26 Oct 16 HG

Hg 3.56 ppb 6805

*** Sample ID: 35720A3B 102616AA Seq: 1313 10:42:24 26 Oct 16 HG
DU

Hg 3.65 ppb 6968

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: 35720A3C 102616AA Seq: 1314 10:43:59 26 Oct 16 HG
MS

Hg	6.36	ppb	12145					

*** Sample ID: CCV 102616AA Seq: 1315 10:45:46 26 Oct 16 HG

Hg	5.17	ppb	9864					

*** Sample ID: CCB 102616AA Seq: 1316 10:47:24 26 Oct 16 HG

Hg	-.080	ppb	-128					

*** Sample ID: 35720A4A 102616AA Seq: 1317 10:49:03 26 Oct 16 HG

Hg	2.31	ppb	4428					

*** Sample ID: 35720A4B 102616AA Seq: 1318 10:50:43 26 Oct 16 HG
DU

Hg	3.45	ppb	6601					

*** Sample ID: 35720A4C 102616AA Seq: 1319 10:52:23 26 Oct 16 HG
MS

Hg	5.19	ppb	9912					

*** Sample ID: CCV 102616AA Seq: 1320 10:54:00 26 Oct 16 HG

Hg	5.16	ppb	9856					

*** Sample ID: CCB 102616AA Seq: 1321 10:55:42 26 Oct 16 HG

Hg	-.076	ppb	-121					

*** Sample ID: 35700A10B 102616AA Seq: 1322 11:09:24 26 Oct 16 HG
@2

Hg	5.15	ppb	9832					

*** Sample ID: CCV 102616AA Seq: 1323 11:11:01 26 Oct 16 HG

Hg	5.11	ppb	9763					

POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: CCB 102616AA Seq: 1324 11:12:38 26 Oct 16 HG

Hg	-.088	ppb	-144					

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG No.: 200-35660-1

Project: Port Ewen DNS Sediment

Client Sample ID	Lab Sample ID
PE1016_P1SCD-06-A-0006IN	200-35680-1
PE1016_P1SCD-06-B-0008IN	200-35680-2
PE1016_P1SCD-06-A-0613IN	200-35680-3
PE1016_P1SCD-07-A-0008IN	200-35680-4
PE1016_P1SCD-07-B-0006IN	200-35680-5
PE1016_P1SCD-08-A-0006IN	200-35680-6
PE1016_P1SCD-08-A-0006IN-D	200-35680-7
PE1016_P1SCD-09-A-0006IN	200-35680-8
PE1016_P1SCD-10-A-0005IN	200-35680-9
PE1016_P1SCD-10-B-0006IN	200-35680-10
PE1016_P1SCD-09-B-0003IN	200-35680-11
PE1016_P1SCD-09-B-0309IN	200-35680-12
PE1016_P1SCD-08-B-0006IN	200-35680-14

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016_P1SCD-06-A-0006IN
Lab Sample ID: 200-35680-1
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 16:45
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	42700	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016_P1SCD-06-B-0008IN
Lab Sample ID: 200-35680-2
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 16:30
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	43400	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016_P1SCD-06-A-0613IN
Lab Sample ID: 200-35680-3
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 16:46
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	1350	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016_P1SCD-07-A-0008IN
Lab Sample ID: 200-35680-4
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 16:10
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	43200	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016_P1SCD-07-B-0006IN
Lab Sample ID: 200-35680-5
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 15:43
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	30300	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016_P1SCD-08-A-0006IN
Lab Sample ID: 200-35680-6
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 15:10
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	53800	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016_P1SCD-08-A-0006IN-D
Lab Sample ID: 200-35680-7
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 15:11
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	45800	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016_P1SCD-09-A-0006IN
Lab Sample ID: 200-35680-8
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 14:20
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	35600	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016_P1SCD-10-A-0005IN
Lab Sample ID: 200-35680-9
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 17:50
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	69000	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016_P1SCD-10-B-0006IN
Lab Sample ID: 200-35680-10
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 17:55
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	68800	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016_P1SCD-09-B-0003IN
Lab Sample ID: 200-35680-11
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 14:40
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	58700	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016_P1SCD-09-B-0309IN
Lab Sample ID: 200-35680-12
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 14:41
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	1290	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016_P1SCD-08-B-0006IN
Lab Sample ID: 200-35680-14
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 15:15
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	46900	1000	380	mg/Kg			1	Lloyd Kahn

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Analyst: KSH Batch Start Date: 10/17/2016

Reporting Units: mg/Kg Analytical Batch No.: 110277

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	ICV	14:13	Total Organic Carbon	9330	9260	101	75-125		WCLKLCSs_00018
2	ICB	14:19	Total Organic Carbon	1000				U	
3	CCV	14:25	Total Organic Carbon	35620	35000	102	75-125		WCTOCCALs_00014
4	CCB	14:32	Total Organic Carbon	1000				U	
21	CCV	16:50	Total Organic Carbon	36740	35000	105	75-125		WCTOCCALs_00014
22	CCB	16:57	Total Organic Carbon	1000				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Analyst: KSH Batch Start Date: 10/19/2016

Reporting Units: mg/Kg Analytical Batch No.: 110363

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	ICV	12:23	Total Organic Carbon	8140	9260	88	75-125		WCLKLCSs_00018
2	ICB	12:30	Total Organic Carbon	1000				U	
3	CCV	12:36	Total Organic Carbon	34480	35000	99	75-125		WCTOCCALs_00014
4	CCB	12:42	Total Organic Carbon	1000				U	
12	CCV	13:57	Total Organic Carbon	33730	35000	96	75-125		WCTOCCALs_00014
13	CCB	14:04	Total Organic Carbon	1000				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 110277 Date: 10/17/2016 14:38							
Lloyd Kahn	MB 200-110277/5	Total Organic Carbon	1000	U	mg/Kg	1000	1
Batch ID: 110363 Date: 10/19/2016 12:48							
Lloyd Kahn	MB 200-110363/5	Total Organic Carbon	1000	U	mg/Kg	1000	1

FORM III-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Matrix: Sediment

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 110277	Date: 10/17/2016 14:51										
						LCS Source: WCLKLCSs_00018					
Lloyd Kahn	LCS 200-110277/6	Total Organic Carbon	8420		mg/Kg	9260	91	75-125			
Batch ID: 110363	Date: 10/19/2016 13:01										
						LCS Source: WCLKLCSs_00018					
Lloyd Kahn	LCS 200-110363/6	Total Organic Carbon	8943		mg/Kg	9260	97	75-125			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG Number: 200-35660-1

Matrix: Sediment Instrument ID: WCCH1

Method: Lloyd Kahn MDL Date: 07/26/2016 16:22

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Total Organic Carbon		1000	380

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG Number: 200-35660-1

Matrix: Sediment Instrument ID: WCCH1

Method: Lloyd Kahn XMDL Date: 07/26/2016 16:23

Analyte	Wavelength/ Mass	XRL (mg/Kg)	XMDL (mg/Kg)
Total Organic Carbon		1000	380

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG Number: 200-35660-1

Matrix: Sediment Instrument ID: WCCH2

Method: Lloyd Kahn MDL Date: 07/26/2016 16:22

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Total Organic Carbon		1000	380

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG Number: 200-35660-1

Matrix: Sediment Instrument ID: WCCH2

Method: Lloyd Kahn XMDL Date: 07/26/2016 16:23

Analyte	Wavelength/ Mass	XRL (mg/Kg)	XMDL (mg/Kg)
Total Organic Carbon		1000	380

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG Number: 200-35660-1

Matrix: Sediment Instrument ID: NOEQUIP

Method: Moisture RL Date: 04/01/2009 07:55

Analyte	Wavelength/ Mass	RL (%)	
Percent Solids		0.1	

11-IN
LINEAR RANGES
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: WCCH1 Date: 01/01/2014 16:02

Analyte	Integ. Time (Sec.)	Concentration (mg/Kg)	Method
Total Organic Carbon		75000	Lloyd Kahn

11-IN
LINEAR RANGES
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: WCCH2 Date: 01/01/2015 10:45

Analyte	Integ. Time (Sec.)	Concentration (mg/Kg)	Method
Total Organic Carbon		75000	Lloyd Kahn

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: WCCH1 Analysis Method: Lloyd Kahn

Start Date: 10/17/2016 14:13 End Date: 10/17/2016 20:43

Lab Sample Id	D/F	Type	Time	Analytes																								
				TOC																								
ICV 200-110277/1	1		14:13	X																								
ICB 200-110277/2	1		14:19	X																								
CCV 200-110277/3	1		14:25	X																								
CCB 200-110277/4	1		14:32	X																								
MB 200-110277/5	1	T	14:38	X																								
LCS 200-110277/6	1	T	14:51	X																								
200-35680-1	1	T	15:17	X																								
200-35680-2	1	T	15:24	X																								
ZZZZZZ			15:31																									
200-35680-4	1	T	15:37	X																								
200-35680-5	1	T	15:44	X																								
200-35680-6	1	T	15:50	X																								
200-35680-7	1	T	15:57	X																								
200-35680-8	1	T	16:03	X																								
200-35680-9	1	T	16:10	X																								
200-35680-10	1	T	16:17	X																								
200-35680-11	1	T	16:23	X																								
200-35680-12	1	T	16:30	X																								
200-35680-14	1	T	16:37	X																								
ZZZZZZ			16:43																									
CCV 200-110277/21	1		16:50	X																								
CCB 200-110277/22	1		16:57	X																								
ZZZZZZ			17:03																									
ZZZZZZ			17:10																									
ZZZZZZ			17:17																									
ZZZZZZ			17:24																									
ZZZZZZ			17:30																									
ZZZZZZ			17:37																									
ZZZZZZ			17:44																									
ZZZZZZ			17:57																									
ZZZZZZ			18:24																									
ZZZZZZ			18:31																									
ZZZZZZ			18:38																									
ZZZZZZ			18:45																									
ZZZZZZ			18:52																									
ZZZZZZ			18:59																									
ZZZZZZ			19:05																									
ZZZZZZ			19:12																									
CCV 200-110277/39			19:19																									
CCB 200-110277/40			19:26																									
ZZZZZZ			19:33																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: WCCH1 Analysis Method: Lloyd Kahn

Start Date: 10/17/2016 14:13 End Date: 10/17/2016 20:43

Lab Sample Id	D/F	Type	Time	Analytes																								
				TOC																								
ZZZZZZ			19:40																									
ZZZZZZ			19:47																									
ZZZZZZ			19:54																									
ZZZZZZ			20:01																									
ZZZZZZ			20:07																									
ZZZZZZ			20:15																									
ZZZZZZ			20:22																									
ZZZZZZ			20:29																									
CCV 200-110277/50			20:36																									
CCB 200-110277/51			20:43																									

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: WCCH2 Analysis Method: Lloyd Kahn

Start Date: 10/19/2016 12:23 End Date: 10/19/2016 14:04

Lab Sample Id	D/F	Type	Time	Analytes																								
				TOC																								
ICV 200-110363/1	1		12:23	X																								
ICB 200-110363/2	1		12:30	X																								
CCV 200-110363/3	1		12:36	X																								
CCB 200-110363/4	1		12:42	X																								
MB 200-110363/5	1	T	12:48	X																								
LCS 200-110363/6	1	T	13:01	X																								
200-35680-3	1	T	13:26	X																								
ZZZZZZ			13:32																									
ZZZZZZ			13:38																									
ZZZZZZ			13:45																									
ZZZZZZ			13:51																									
CCV 200-110363/12	1		13:57	X																								
CCB 200-110363/13	1		14:04	X																								

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: NOEQUIP Analysis Method: Moisture

Start Date: 10/14/2016 16:15 End Date: 10/14/2016 16:15

Lab Sample Id	D/F	Type	Time	Analytes																									
				% Sol																									
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
200-35680-1	1	T	16:15	X																									
200-35680-2	1	T	16:15	X																									
200-35680-3	1	T	16:15	X																									
200-35680-4	1	T	16:15	X																									
200-35680-5	1	T	16:15	X																									
200-35680-6	1	T	16:15	X																									
200-35680-7	1	T	16:15	X																									
200-35680-8	1	T	16:15	X																									
200-35680-8 DU	1	T	16:15	X																									
200-35680-9	1	T	16:15	X																									
200-35680-10	1	T	16:15	X																									
200-35680-12	1	T	16:15	X																									
200-35680-11	1	T	16:15	X																									
200-35680-14	1	T	16:15	X																									
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Instrument ID: NOEQUIP Analysis Method: Moisture

Start Date: 10/14/2016 16:15 End Date: 10/14/2016 16:15

Lab Sample Id	D/F	Type	Time	Analytes																									
				% Sol																									
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										

Prep Types:
T = Total/NA

FORM XIII-IN

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110277 Batch Start Date: 10/17/16 14:13 Batch Analyst: Henry, Kayla S

Batch Method: Lloyd Kahn Batch End Date: 10/17/16 20:43

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	WCLKLCSs 00018	WCTOCCALs 00014			
ICV 200-110277/1		Lloyd Kahn			9.5 mg				
CCV 200-110277/3		Lloyd Kahn		10 mg		35 uL			
LCS 200-110277/6		Lloyd Kahn			10.275 mg				
CCV 200-110277/21		Lloyd Kahn		10 mg		35 uL			

Batch Notes	
Phosphoric Acid ID	977837

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110363 Batch Start Date: 10/19/16 12:23 Batch Analyst: Henry, Kayla S

Batch Method: Lloyd Kahn Batch End Date: 10/19/16 14:04

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	WCLKLCSs 00018	WCTOCCALs 00014			
ICV 200-110363/1		Lloyd Kahn			9.1 mg				
CCV 200-110363/3		Lloyd Kahn		10 mg		35 uL			
LCS 200-110363/6		Lloyd Kahn			9.6 mg				
CCV 200-110363/12		Lloyd Kahn		10 mg		35 uL			

Batch Notes	
Phosphoric Acid ID	977837

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110190 Batch Start Date: 10/14/16 16:15 Batch Analyst: Henry, Kayla S

Batch Method: Moisture Batch End Date: 10/15/16 09:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
200-35680-A-1	PE1016_P1SCD-06-A-0006IN	Moisture	T	20	0.97 g	9.44 g	5.02 g		
200-35680-A-2	PE1016_P1SCD-06-B-0008IN	Moisture	T	21	0.98 g	8.72 g	4.27 g		
200-35680-A-3	PE1016_P1SCD-06-A-0613IN	Moisture	T	22	0.98 g	9.23 g	7.76 g		
200-35680-A-4	PE1016_P1SCD-07-A-0008IN	Moisture	T	23	0.97 g	9.48 g	4.78 g		
200-35680-A-5	PE1016_P1SCD-07-B-0006IN	Moisture	T	24	1.00 g	9.47 g	5.08 g		
200-35680-A-6	PE1016_P1SCD-08-A-0006IN	Moisture	T	25	0.97 g	9.29 g	4.20 g		
200-35680-A-7	PE1016_P1SCD-08-A-0006IN-D	Moisture	T	26	0.96 g	9.03 g	4.27 g		
200-35680-A-8	PE1016_P1SCD-09-A-0006IN	Moisture	T	27	1.01 g	9.17 g	3.80 g		
200-35680-A-8 DU	PE1016_P1SCD-09-A-0006IN	Moisture	T	28	1.02 g	10.01 g	4.10 g		
200-35680-A-9	PE1016_P1SCD-10-A-0005IN	Moisture	T	29	1.04 g	9.71 g	3.34 g		
200-35680-A-10	PE1016_P1SCD-10-B-0006IN	Moisture	T	30	1.02 g	9.55 g	3.39 g		
200-35680-A-12	PE1016_P1SCD-09-B-0309IN	Moisture	T	31	0.97 g	9.63 g	4.27 g		
200-35680-A-11	PE1016_P1SCD-09-B-0003IN	Moisture	T	32	1.00 g	8.92 g	7.39 g		
200-35680-A-14	PE1016_P1SCD-08-B-0006IN	Moisture	T	33	0.96 g	9.61 g	4.17 g		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110190 Batch Start Date: 10/14/16 16:15 Batch Analyst: Henry, Kayla S

Batch Method: Moisture Batch End Date: 10/15/16 09:30

Batch Notes	
Balance ID	M78711 No Unit
Date and Time Samples in Desiccator	10/15/16@0915
Date and Time Samples out of Desiccator	10/15/16@0930
Date samples were placed in the oven	10/14/16
Oven Temp In	105 Degrees C
Time samples were place in the oven	1615
Date samples were removed from oven	10/15/16
Oven Temp Out	106 Degrees C
Time Samples were removed from oven	0915
Oven ID	2
Thermometer ID	204
Uncorrected In Temperature	105 Celsius
Uncorrected Out Temperature	106 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Total Organic Carbon
by Lloyd Kahn

File:	101716B			Default Mass:	10	mg
Instrument ID:	1			TALS Batch:	110277	
STANDARD CURVE			**Reagent**	**Concentration**	**Amount**	
Lab ID	**Type**	**ICAL conc / ug/L**	**ID**	**ug/L**	**uL**	
CAL Level 1	CAL	0	NA	0	0	
CAL Level 2	CAL	1000	941210	100	100	Date Analyzed: 10/17/16
CAL Level 3	CAL	4000	941209	1001	40	Correlation Coefficient (r): 0.999994
CAL Level 4	CAL	25000	889816	10012	25	Criteria: (r) ≥ *0.995*
CAL Level 5	CAL	50000	889816	10012	50	Raw DataFile: 101716Z
CAL Level 6	CAL	750000	889816	10012	75	
STANDARD & REAGENT TRACEABILITY:						
ICAL/CCV Container ID:	889816			LCS Container ID:	895118	
ICV Container ID:	895118			1:19 Phosphoric Acid Container ID:	977837	
Matrix Spike Container ID:	889716					
PREPARATION INFORMATION:						
Date:	10/17/16	Start Time:	14:13	Balance ID:	1123452701	
Analyst:	KSH	Stop Time:	20:43	Oven ID:	2	

Drop	Weight	Sample ID	Carbon (%)	Carbon (mg/Kg)	Average Carbon (mg/Kg)	Sample RPD or RSD	RL (mg/Kg)
1	9.5	ICV	0.9332	9332.00			
2	10	ICB	0	0.00			
3	10	CCV	3.5619	35619.00			
4	10	CCB	0	0.00			
5	10	MB	0.0142	142.00	168.50	31	U1000
6	10	MB	0.0195	195.00			
7	10.1	LCS	0.8465	8465.00	8419.75	1	970
8	10.3	LCS	0.8484	8484.00			
9	10.1	LCS	0.8474	8474.00			
10	10.6	LCS	0.8256	8256.00			
11	3.9	200-35680-A-1	4.2711	42711.00			
12	3	200-35680-A-2	4.3359	43359.00			
13	4.5	200-35680-A-3	0.0528	528.00			
14	5	200-35680-A-4	4.323	43230.00			
15	3.1	200-35680-A-5	3.0285	30285.00			
16	3.9	200-35680-A-6	5.3777	53777.00			
17	3.2	200-35680-A-7	4.5758	45758.00			
18	3.6	200-35680-A-8	3.5634	35634.00			
19	3.1	200-35680-A-9	6.8953	68953.00			
20	3.5	200-35680-A-10	6.8811	68811.00			
21	3.3	200-35680-A-11	5.8656	58656.00			
22	4	200-35680-A-12	0.1294	1294.00			
23	4.3	200-35680-A-14	4.6879	46879.00			
24	4.6	200-35700-A-1	5.8499	58499.00			
25	10	CCV	3.6741	36741.00			
26	10	CCB	0.0326	326.00			
27	4.6	200-35700-A-2	3.5945	35945.00			
28	4.4	200-35700-A-3	1.5936	15936.00			
29	3.8	200-35700-A-4	1.5332	15332.00			
30	3.5	200-35700-A-5	3.2803	32803.00			
31	3.1	200-35700-A-6	4.2063	42063.00			
32	3.1	200-35700-A-7	0.4068	4068.00			
33	10	MB	0.0172	172.00	172.50	1	U1000

Date:	10/17/16	Start Time:	14:13	Balance ID:	1123452701
Analyst:	KSH	Stop Time:	20:43	Oven ID:	2

Drop	Weight	Sample ID	Carbon (%)	Carbon (mg/Kg)	Average Carbon (mg/Kg)	Sample RPD or RSD	RL (mg/Kg)
34	10	MB	0.0173	173.00			
35	9.3	LCS	0.8194	8194.00	8936.25	6	1030
36	10.2	LCS	0.9263	9263.00			
37	9.1	LCS	0.8819	8819.00			
38	10.2	LCS	0.9469	9469.00			
39	3.8	200-35700-A-8	4.995	49950.00			
40	4.1	200-35700-A-9	2.1955	21955.00			
41	4.1	200-35700-A-10	2.9461	29461.00			
42	4.8	200-35700-A-11	3.4279	34279.00			
43	3.4	200-35700-A-12	3.4702	34702.00			
44	3	200-35700-A-12 MS	15.0393	150393.00			
45	3.2	200-35700-A-12 MSD	15.5954	155954.00			
46	3.3	200-35700-A-13	0.0661	661.00			
47	10	CCV	3.6212	36212.00			
48	10	CCB	0	0.00			
49	3.3	200-35700-A-14	7.731	77310.00			
50	3.3	200-35700-A-15	6.0985	60985.00			
51	3.7	200-35700-A-16	3.0824	30824.00			
52	3.6	200-35700-A-17	3.3712	33712.00			
53	4.1	200-35700-A-18	0.4576	4576.00			
54	3.9	200-35649-A-1	3.0042	30042.00			
55	3.7	200-35649-A-2	3.2695	32695.00			
56	3.6	200-35649-A-3	1.636	16360.00			
57	3.3	200-35649-A-4	1.6336	16336.00			
58	10	CCV	3.5771	35771.00			
59	10	CCB	0	0.00			

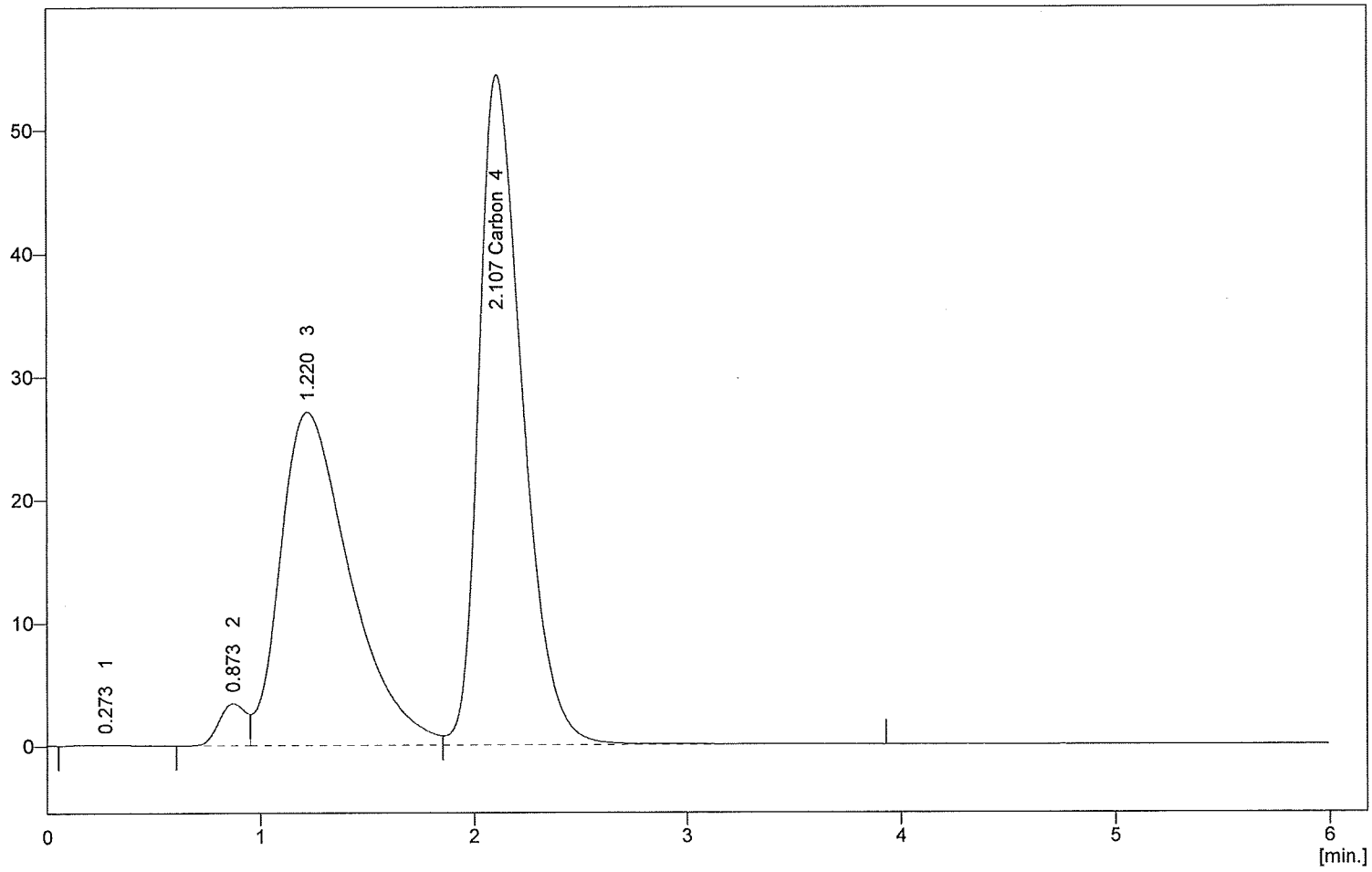
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 2:13:01 PM
Project : WORK1
Weight : 9.5 mg
Sample : ICV

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B001



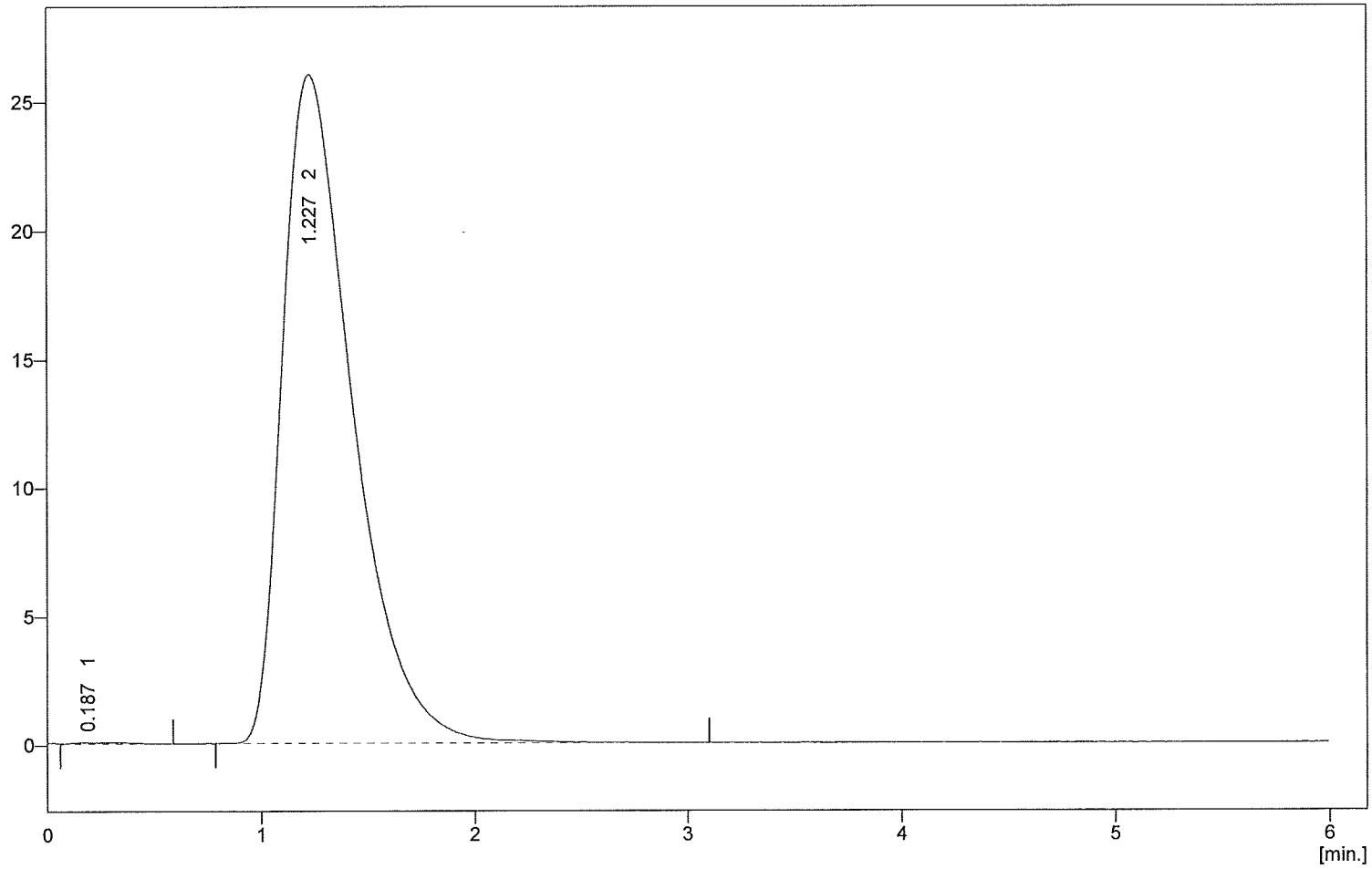
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.107	775.288	54.6	0.089	0.9332	1.0000	Ordnr
	Total	1418.813	100.0	9.500	0.9332		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 2:19:29 PM
Project : WORK1
Weight : 10 mg
Sample : ICB
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B002



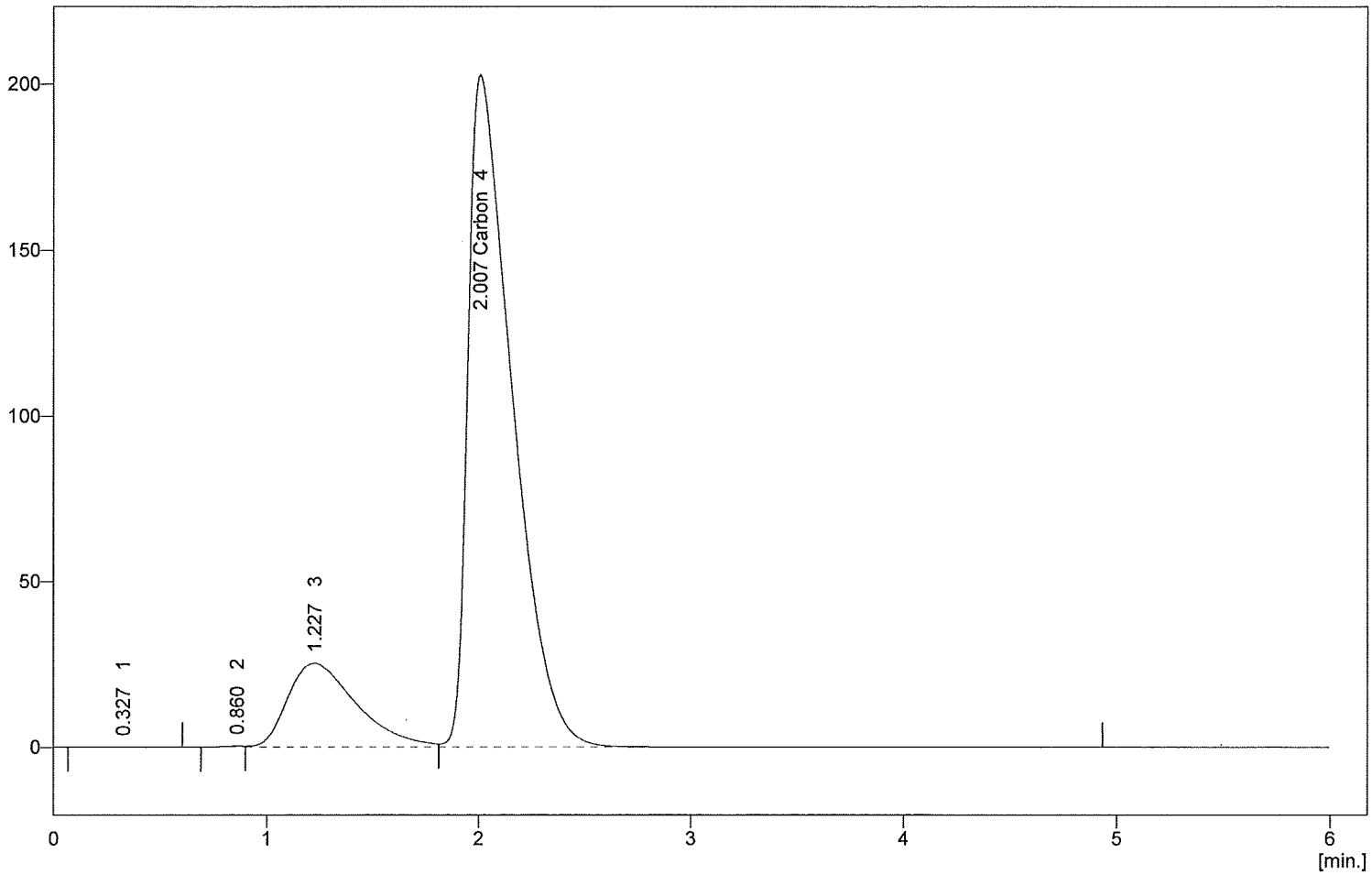
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.029						Ordnr
	Total	597.644	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 2:25:57 PM
Project : WORK1
Weight : 10 mg
Sample : CCV
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B003



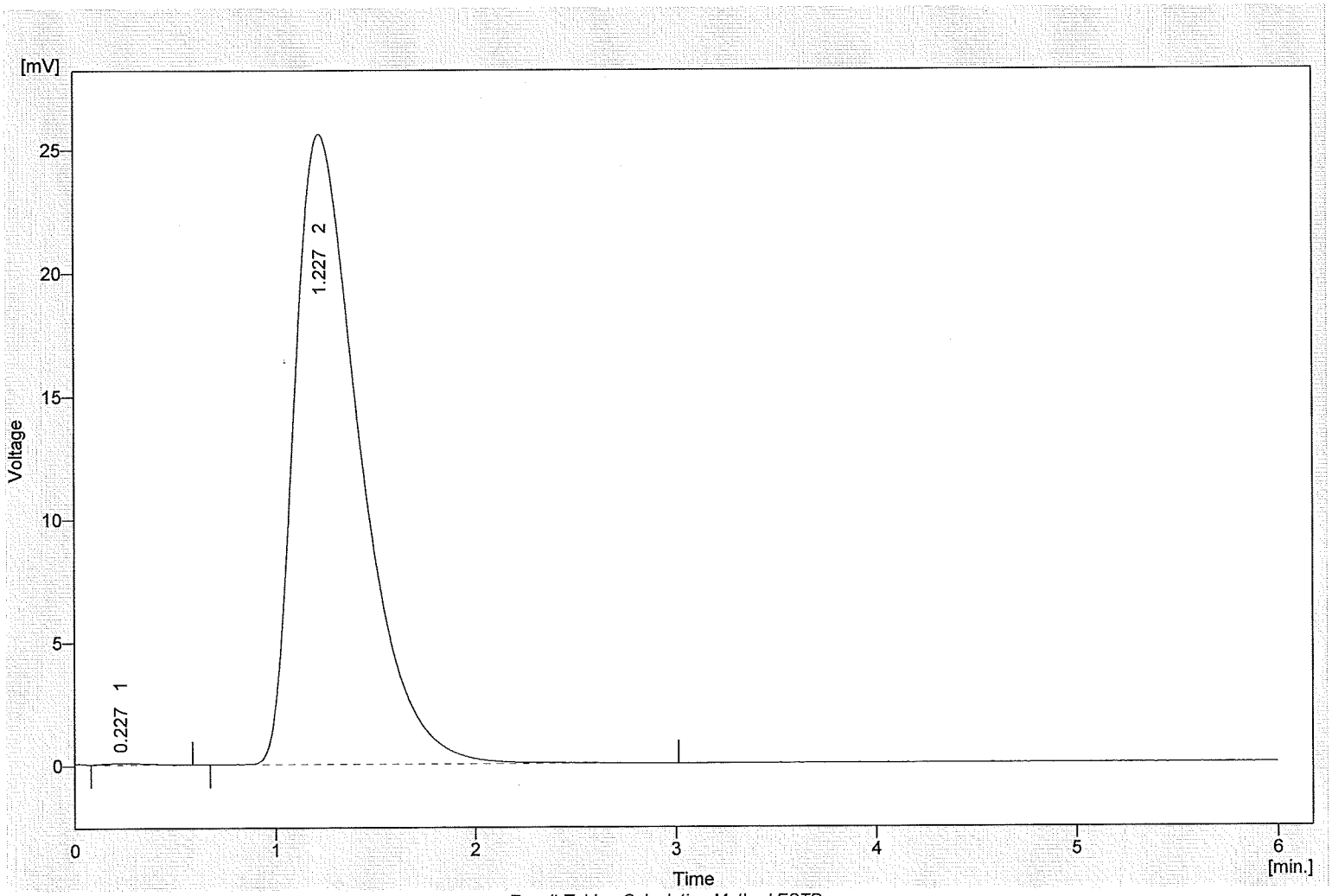
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.007	2934.812	83.6	0.356	3.5619	1.0000	Ordnr
	Total	3510.569	100.0	10.000	3.5619		

TOC BY LLOYD KAHN
Channel 1

Created : 10/17/2016 2:32:25 PM
Project : WORK1
Weight : 10 mg
Sample : CCB
Calibration : 101716B

By : None
Style : Chromatogram
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B004

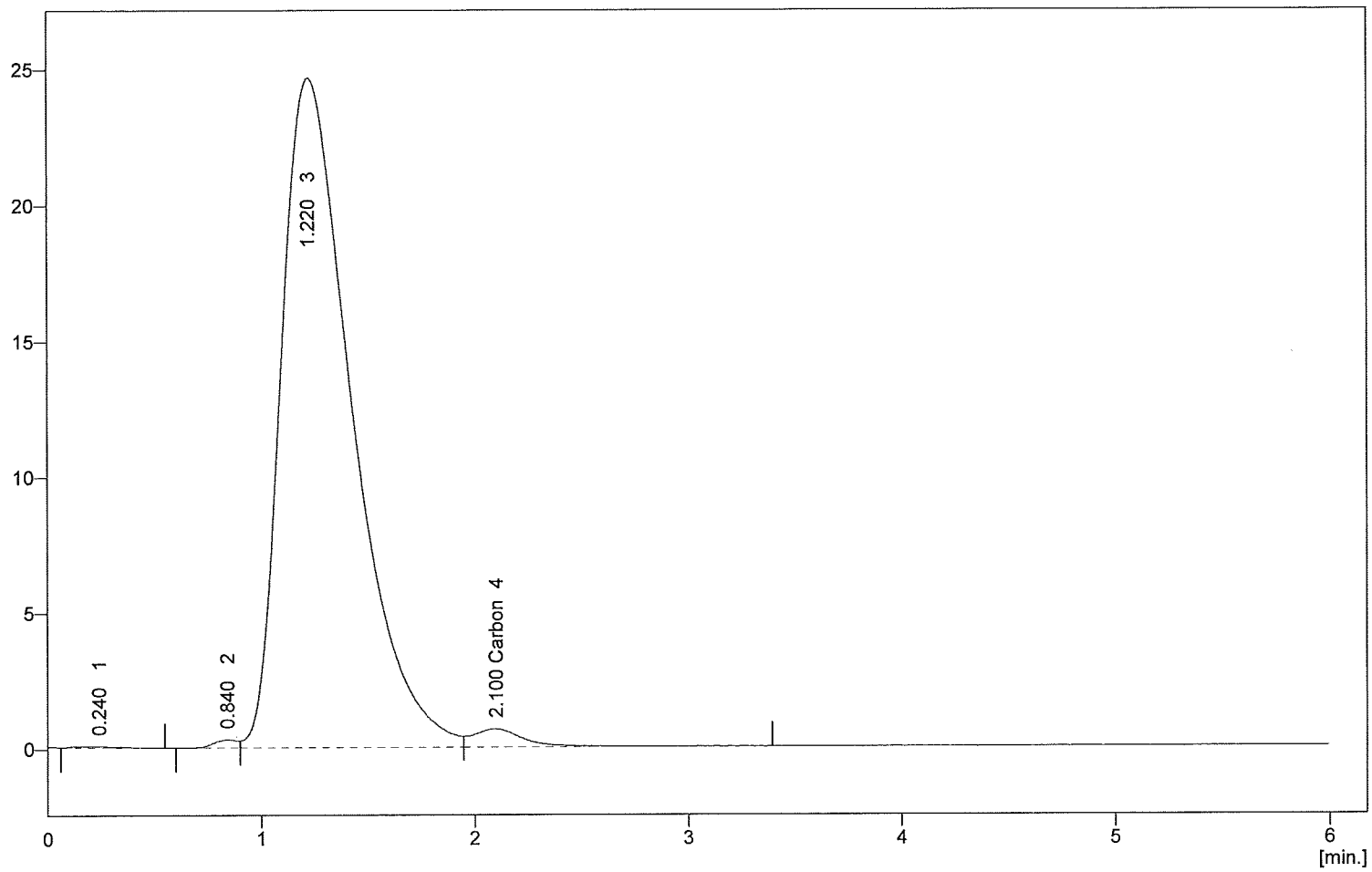


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.029						Ordnr
	Total	583.759	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 2:38:53 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 10 mg		
Sample	: MB	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B005
Calibration	: 101716B		



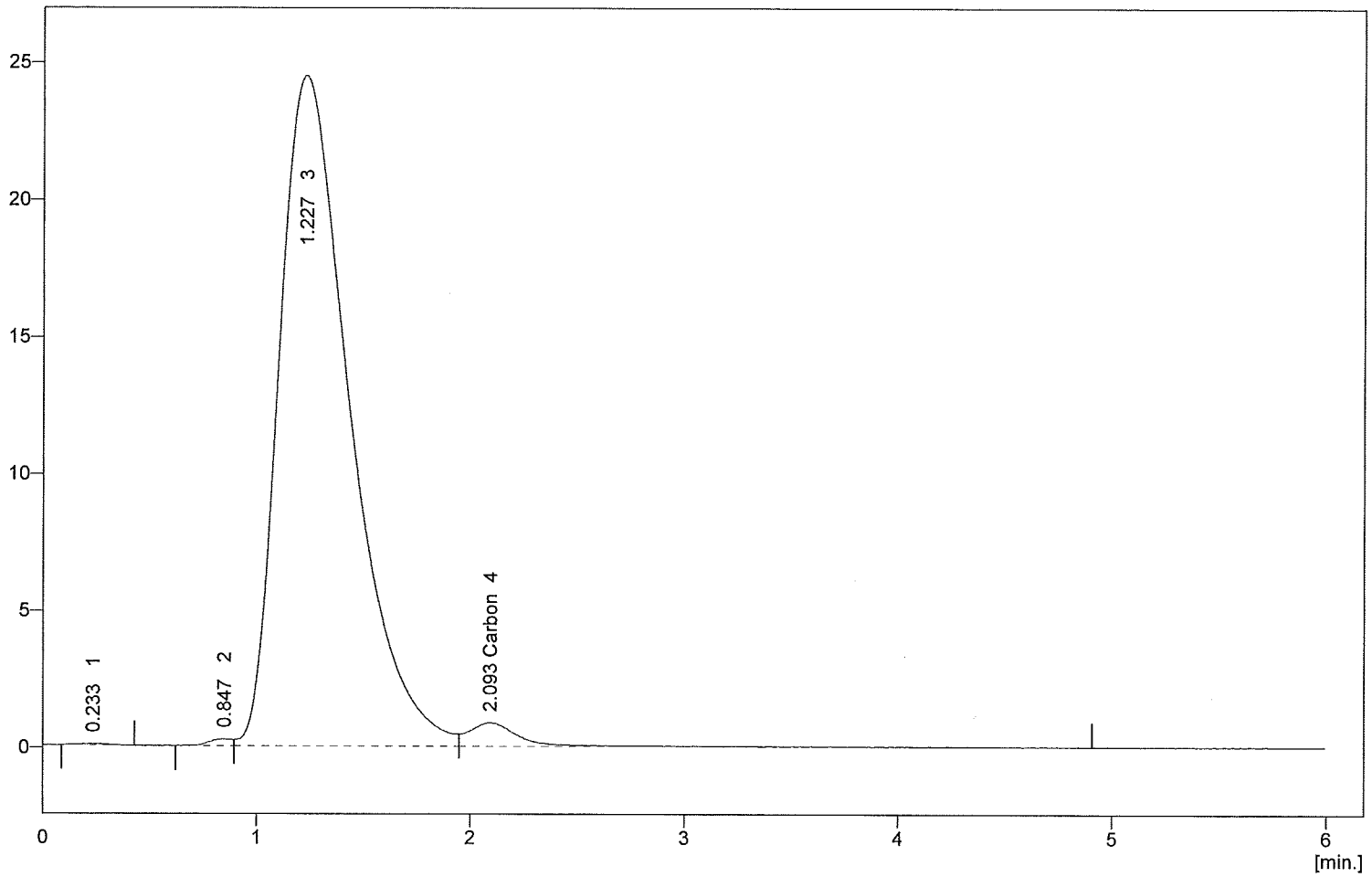
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.100	11.602	2.0	0.001	0.0142	1.0000	Free
	Total	579.716	100.0	10.000	0.0142		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 2:45:21 PM
Project : WORK1
Weight : 10 mg
Sample : MB
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B006



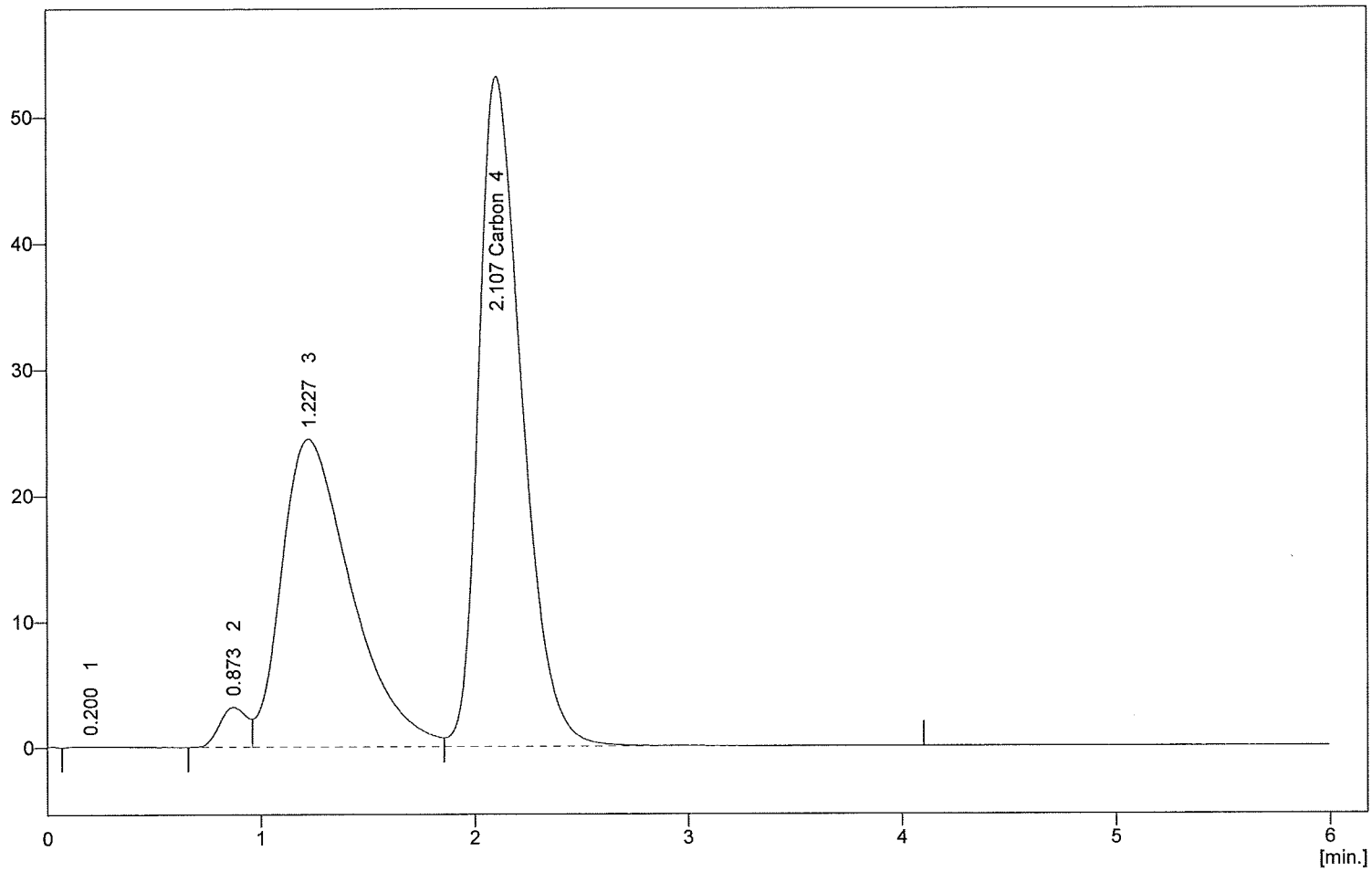
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.093	15.937	2.7	0.002	0.0195	1.0000	Free
	Total	581.059	100.0	10.000	0.0195		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 2:51:51 PM
Project : WORK1
Weight : 10.1 mg
Sample : LCS
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B007



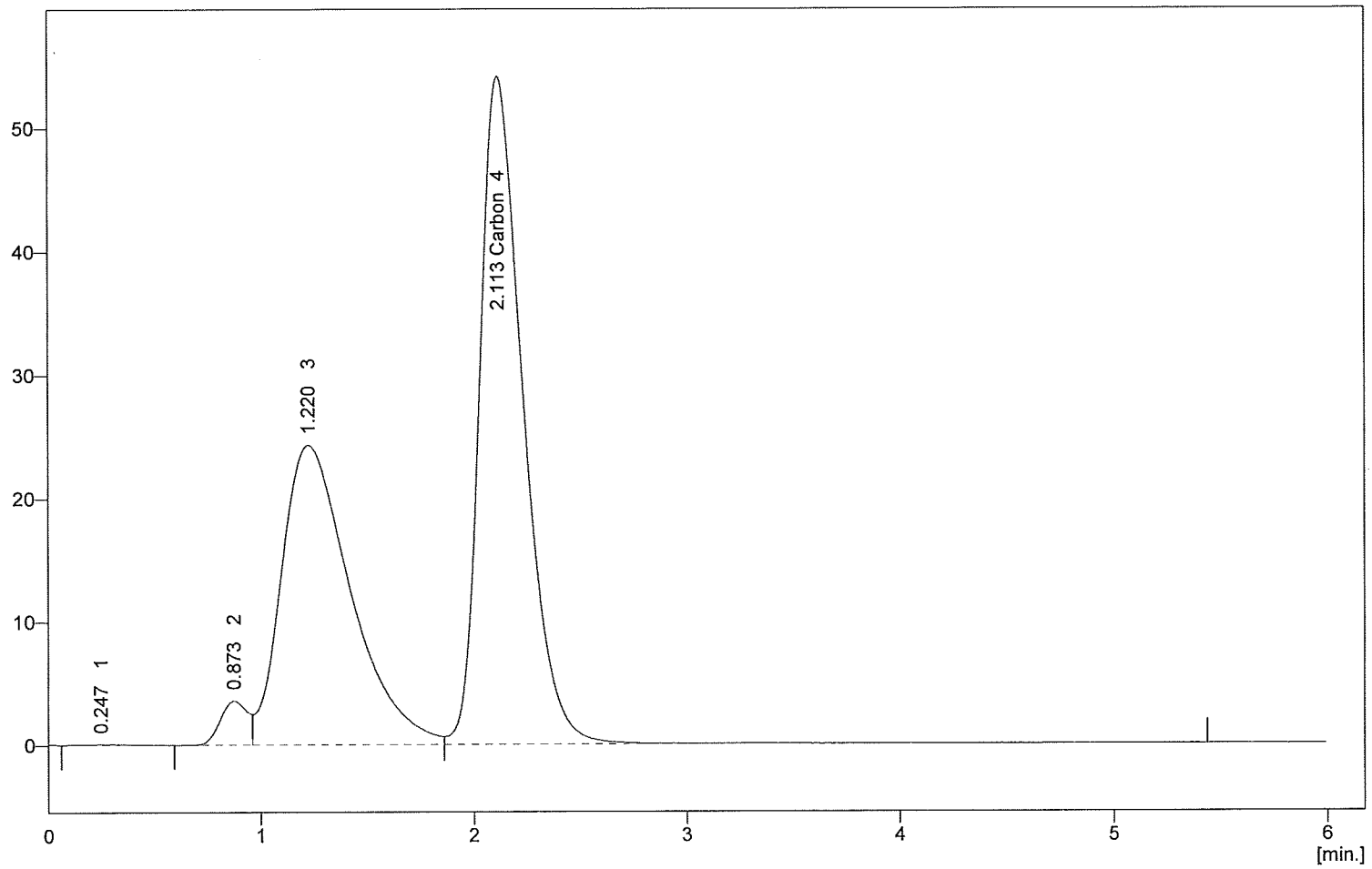
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.107	749.849	56.3	0.086	0.8465	1.0000	Ordnr
	Total	1331.915	100.0	10.100	0.8465		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 2:58:22 PM
Project : WORK1
Weight : 10.3 mg
Sample : LCS
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B008

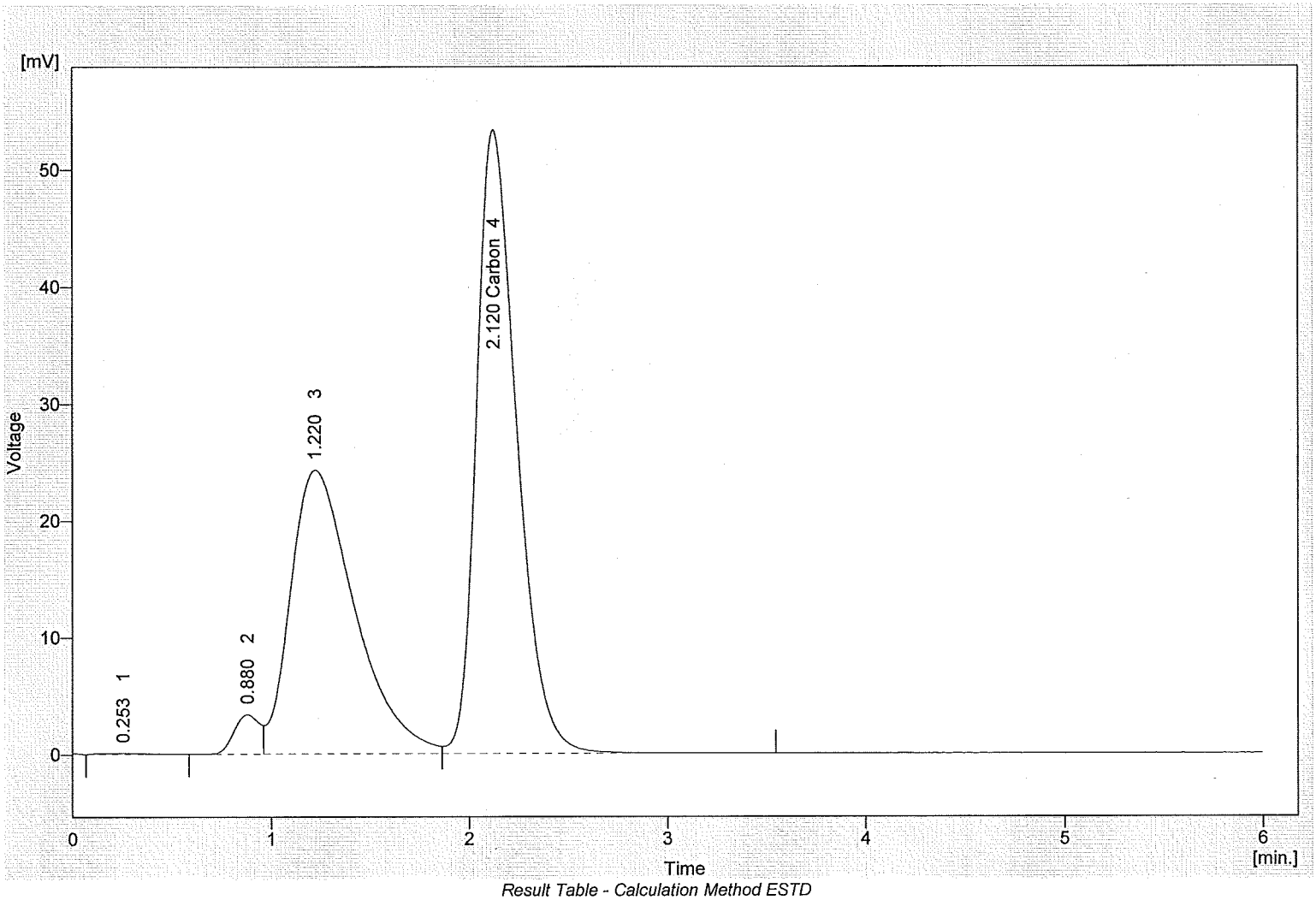


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	765.078	56.8	0.087	0.8484	1.0000	Ordnr
	Total	1347.037	100.0	10.300	0.8484		

TOC BY LLOYD KAHN
Channel 1

Created	: 10/17/2016 3:04:52 PM	By	: None
Project	: WORK1	Style	: Chromatogram
Weight	: 10.1 mg		
Sample	: LCS	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B009
Calibration	: 101716B		



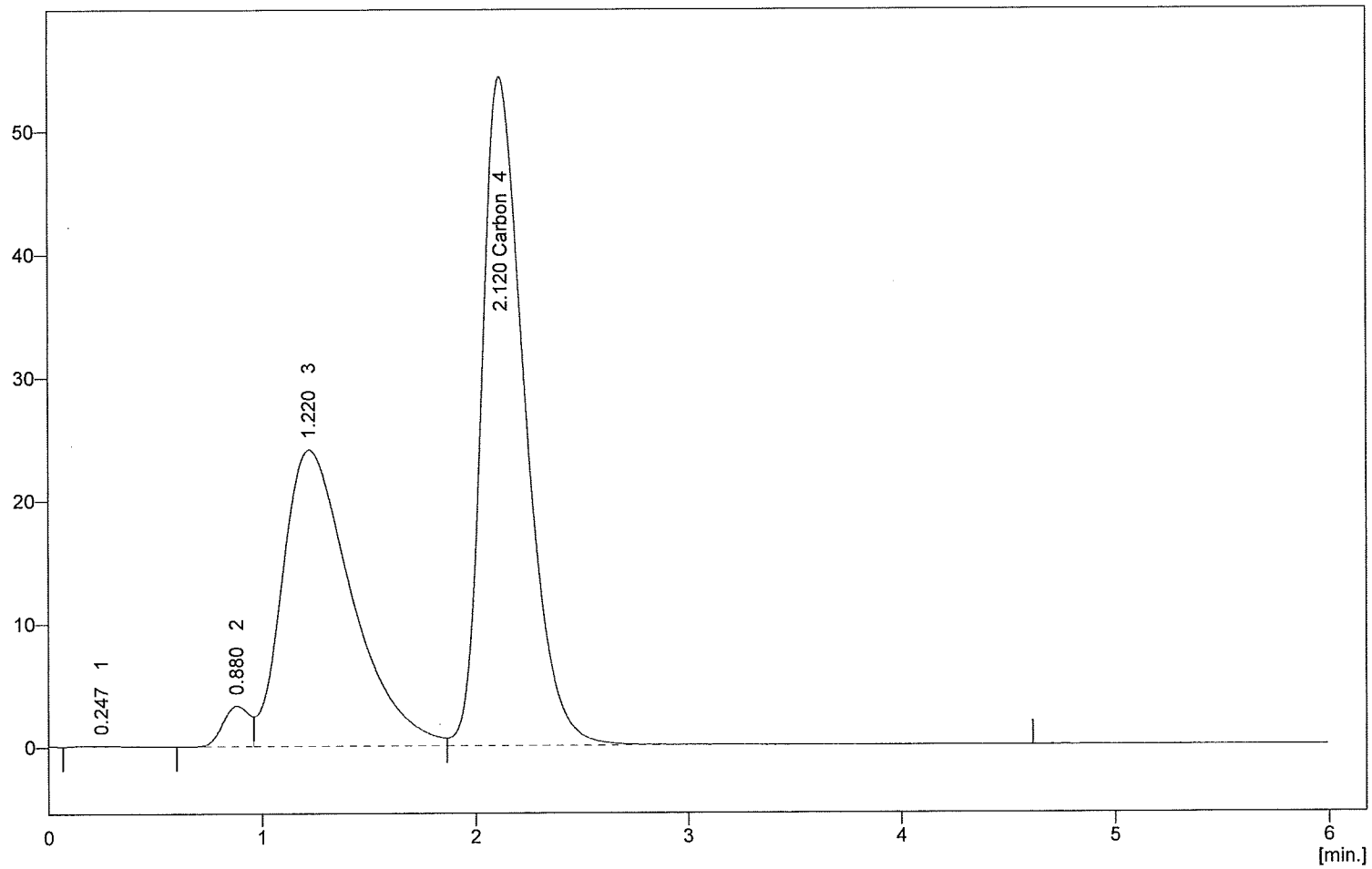
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.120	750.587	56.5	0.086	0.8474	1.0000	Ordnr
	Total	1328.821	100.0	10.100	0.8474		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:11:24 PM
Project : WORK1
Weight : 10.6 mg
Sample : LCS
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B010



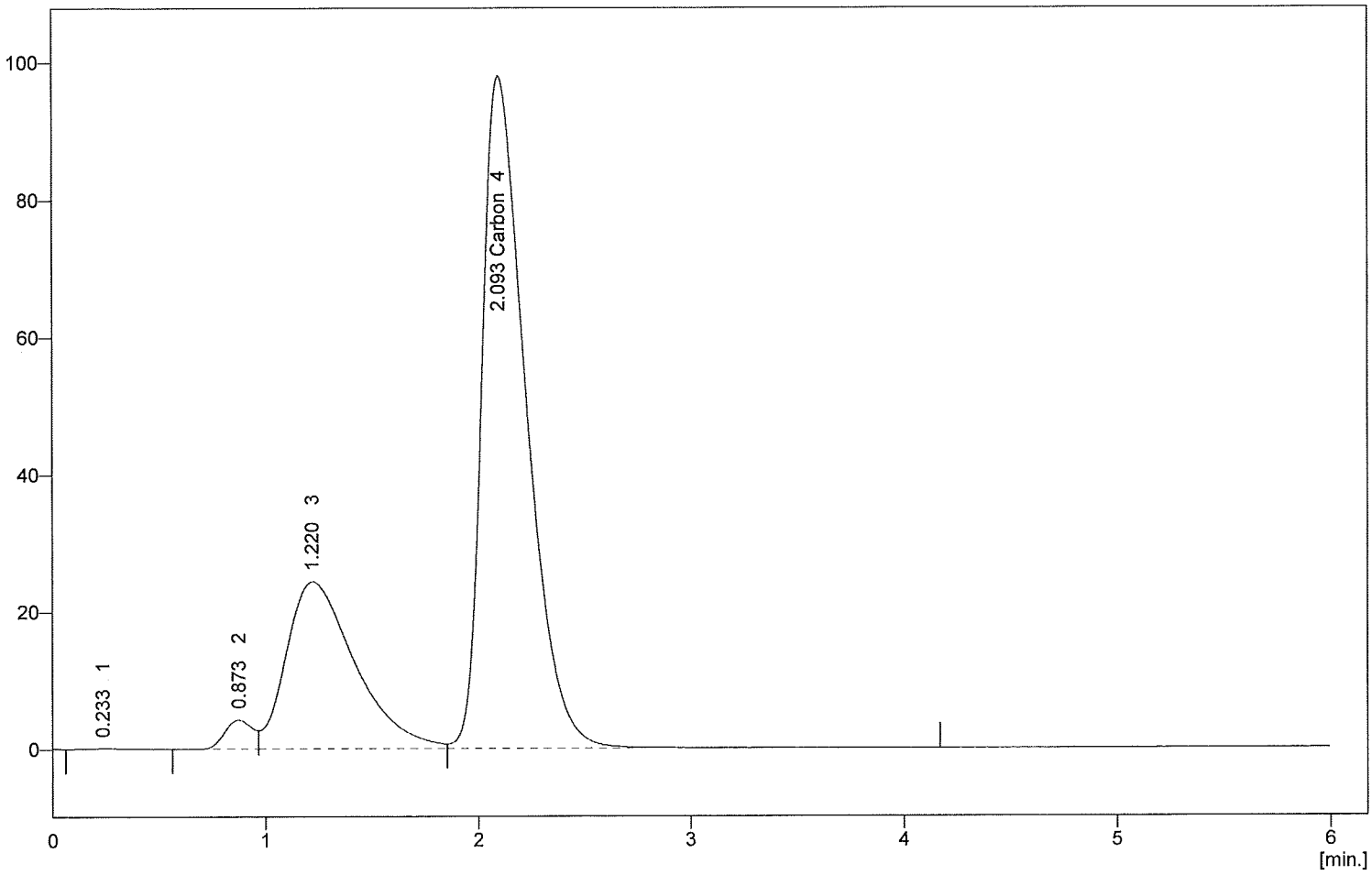
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.120	766.097	57.2	0.088	0.8256	1.0000	Ordnr
	Total	1339.527	100.0	10.600	0.8256		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:17:56 PM
Project : WORK1
Weight : 3.9 mg
Sample : 200-35680-A-1
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B011



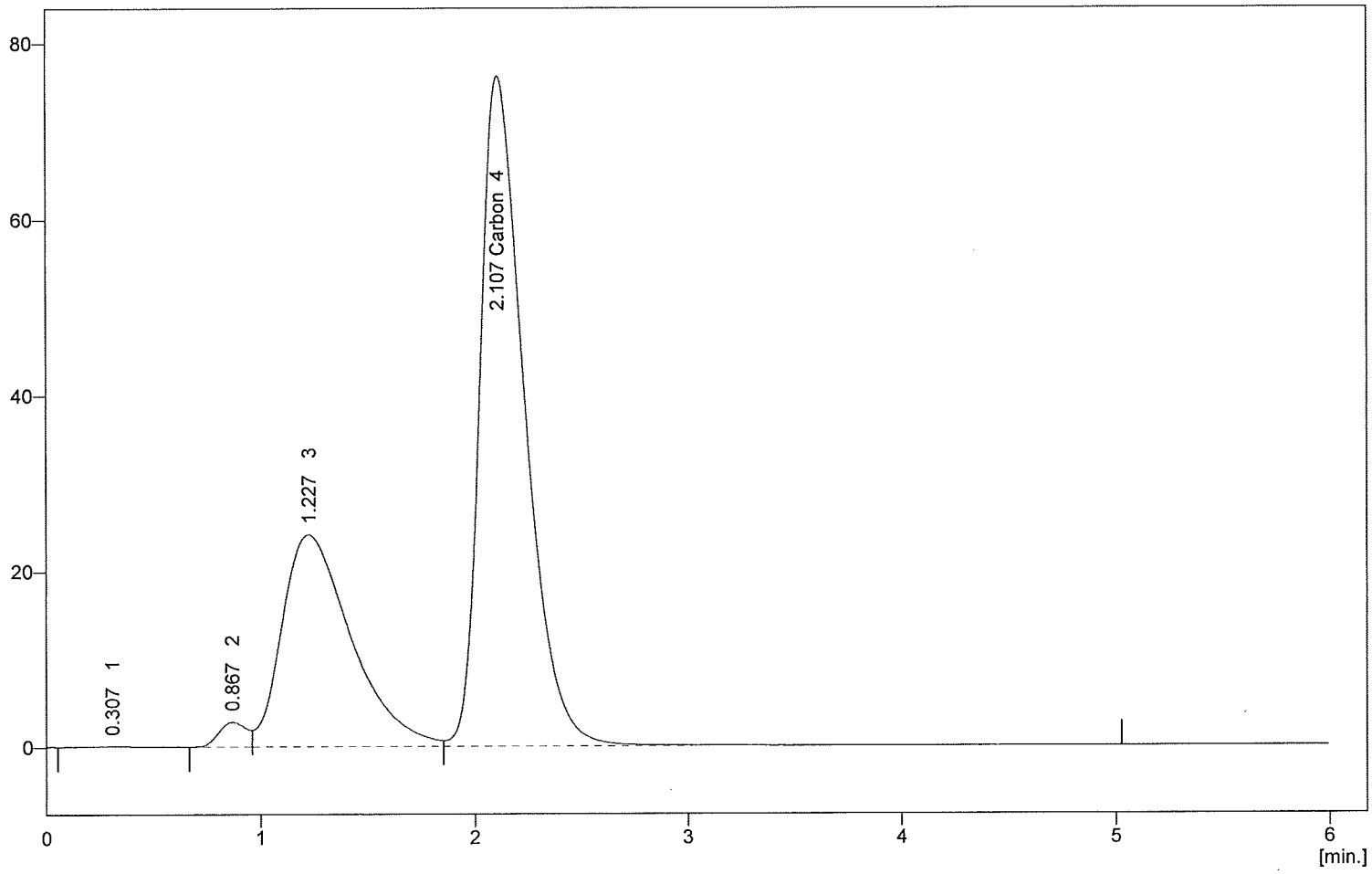
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.093	1404.244	70.5	0.167	4.2711	1.0000	Ordnr
	Total	1991.489	100.0	3.900	4.2711		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:24:29 PM
Project : WORK1
Weight : 3 mg
Sample : 200-35680-A-2
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B012



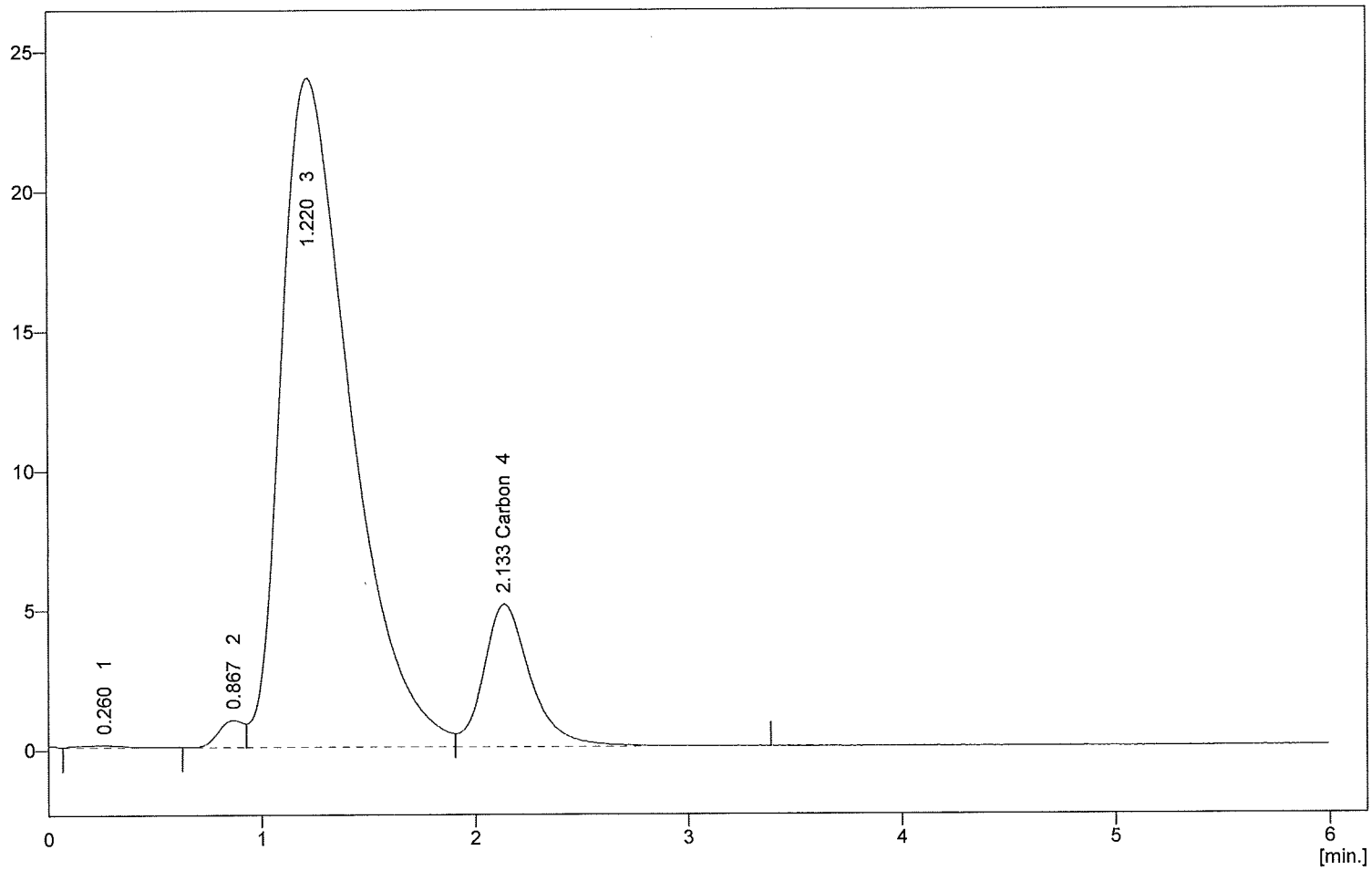
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.107	1109.672	66.2	0.130	4.3359	1.0000	Ordnr
	Total	1677.437	100.0	3.000	4.3359		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:31:01 PM
Project : WORK1
Weight : 4.5 mg
Sample : 200-35680-A-3
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B013



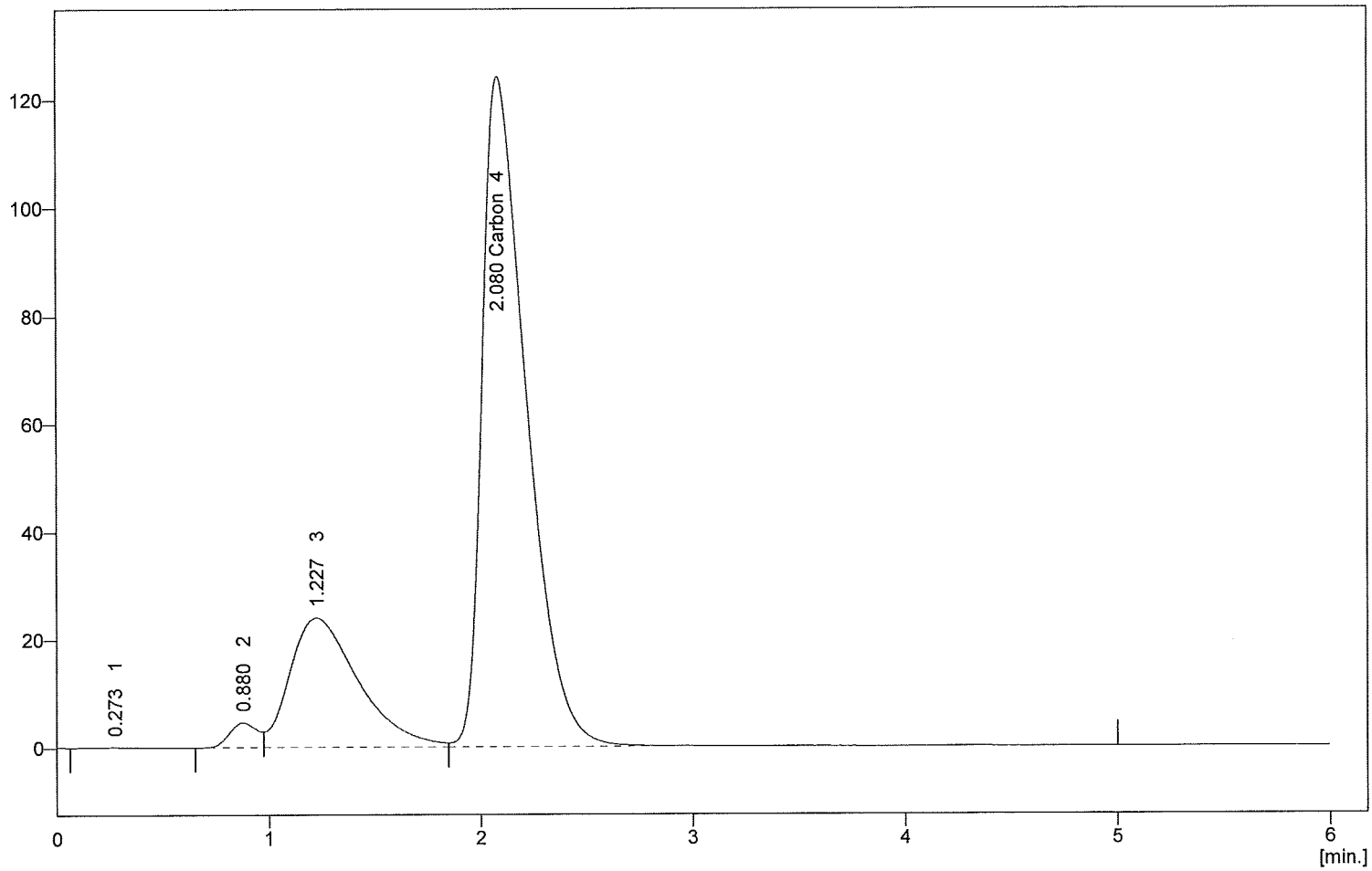
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	78.877	12.6	0.002	0.0528	1.0000	Ordnr
	Total	627.977	100.0	4.500	0.0528		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:37:36 PM
Project : WORK1
Weight : 5 mg
Sample : 200-35680-A-4
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B014



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.080	1804.446	75.6	0.216	4.3230	1.0000	Ordnr
	Total	2387.042	100.0	5.000	4.3230		

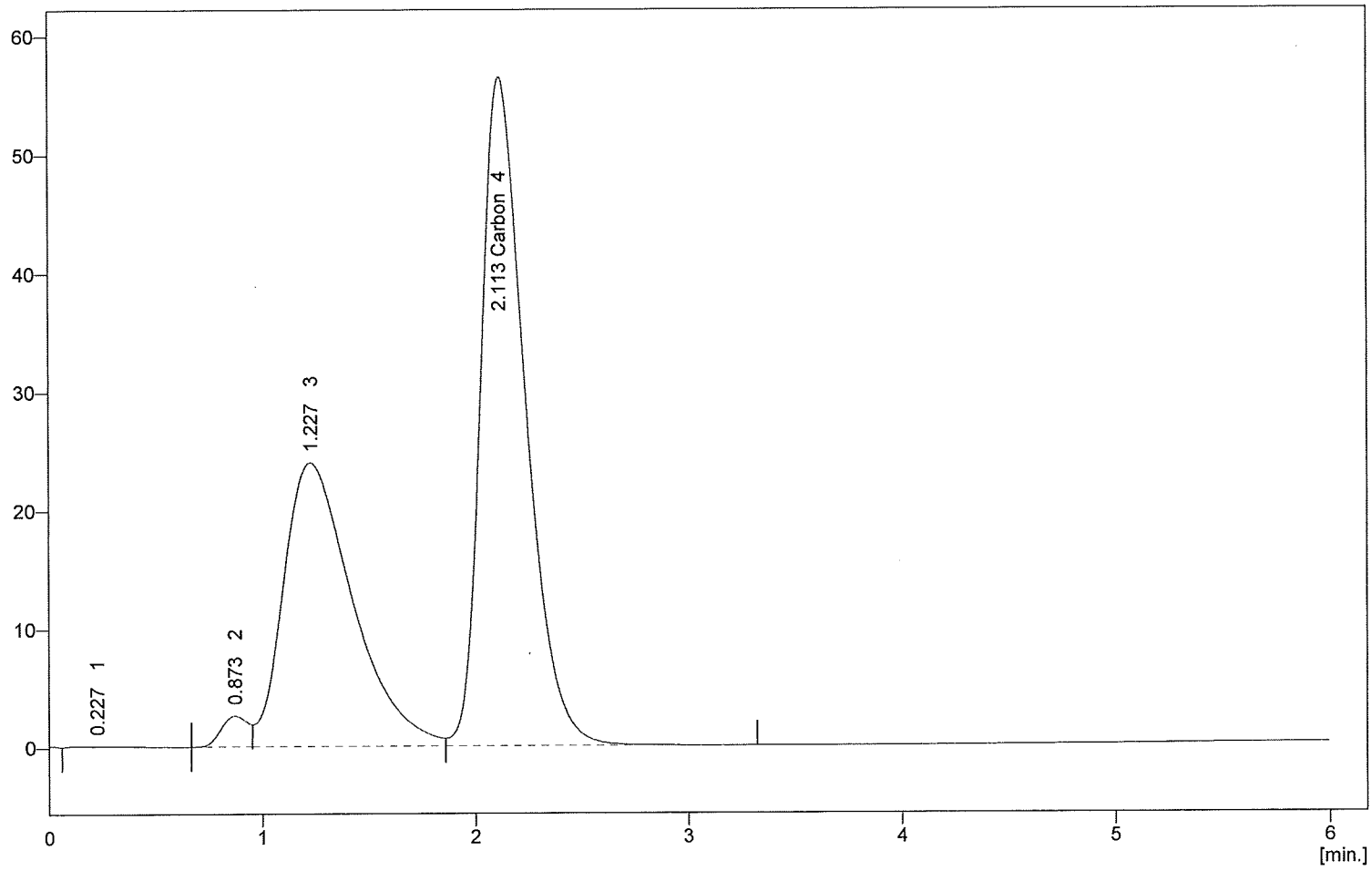
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:44:12 PM
Project : WORK1
Weight : 3.1 mg
Sample : 200-35680-A-5

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B015



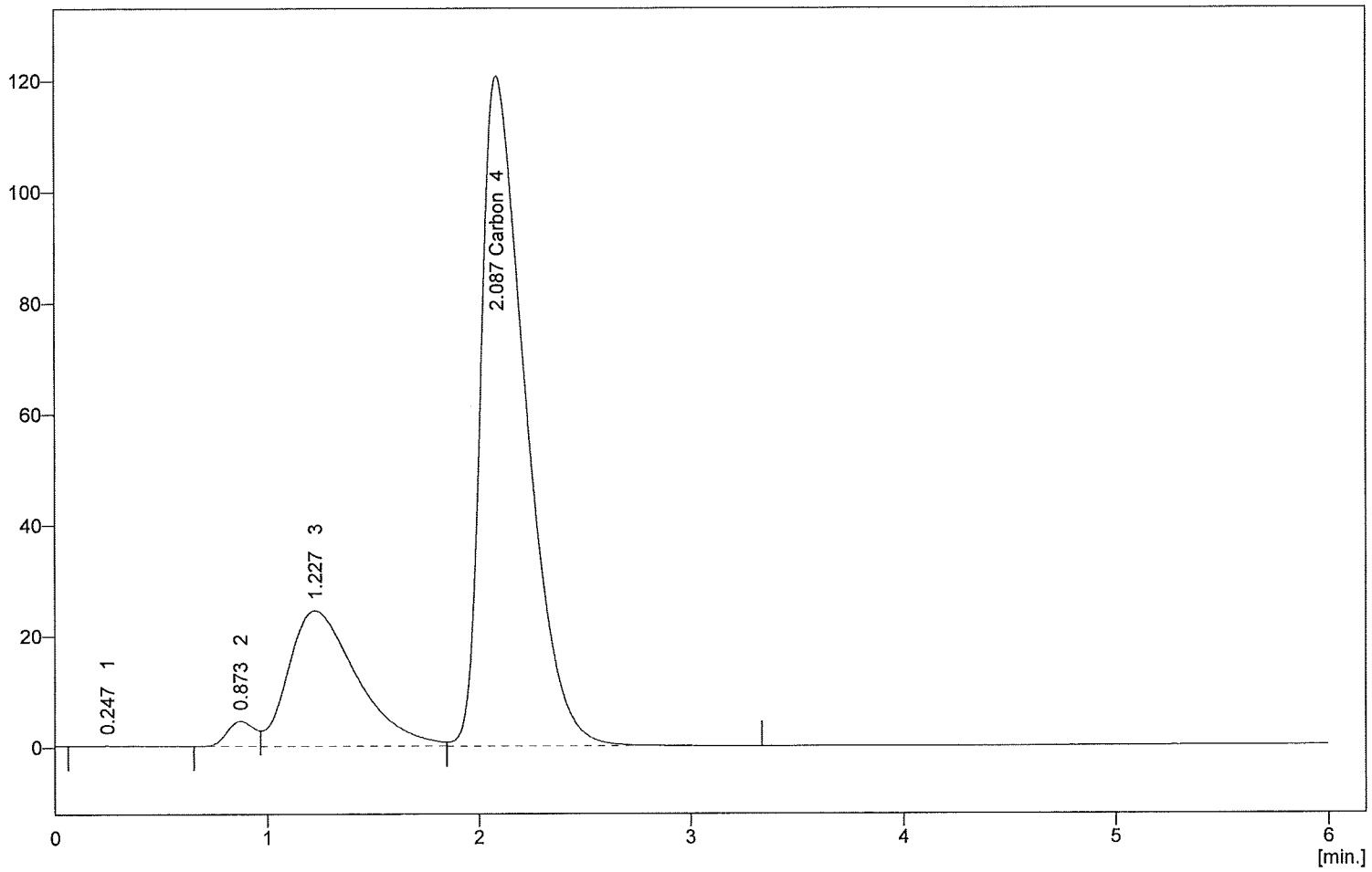
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	817.514	59.2	0.094	3.0285	1.0000	Ordnr
	Total	1380.605	100.0	3.100	3.0285		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:50:46 PM
Project : WORK1
Weight : 3.9 mg
Sample : 200-35680-A-6
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B016



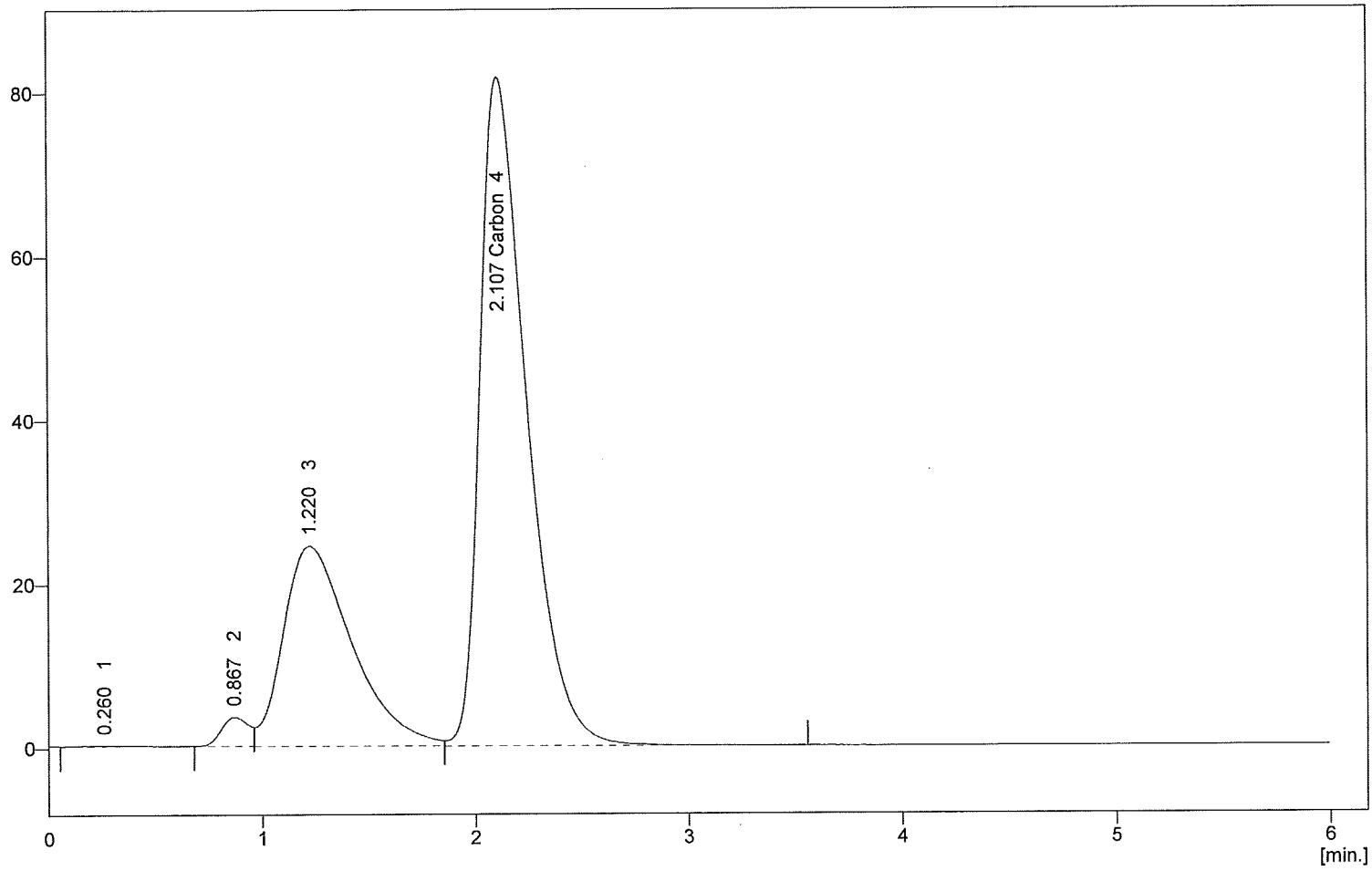
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.087	1752.608	74.8	0.210	5.3777	1.0000	Ordnr
	Total	2343.070	100.0	3.900	5.3777		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:57:20 PM
Project : WORK1
Weight : 3.2 mg
Sample : 200-35680-A-7
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B017



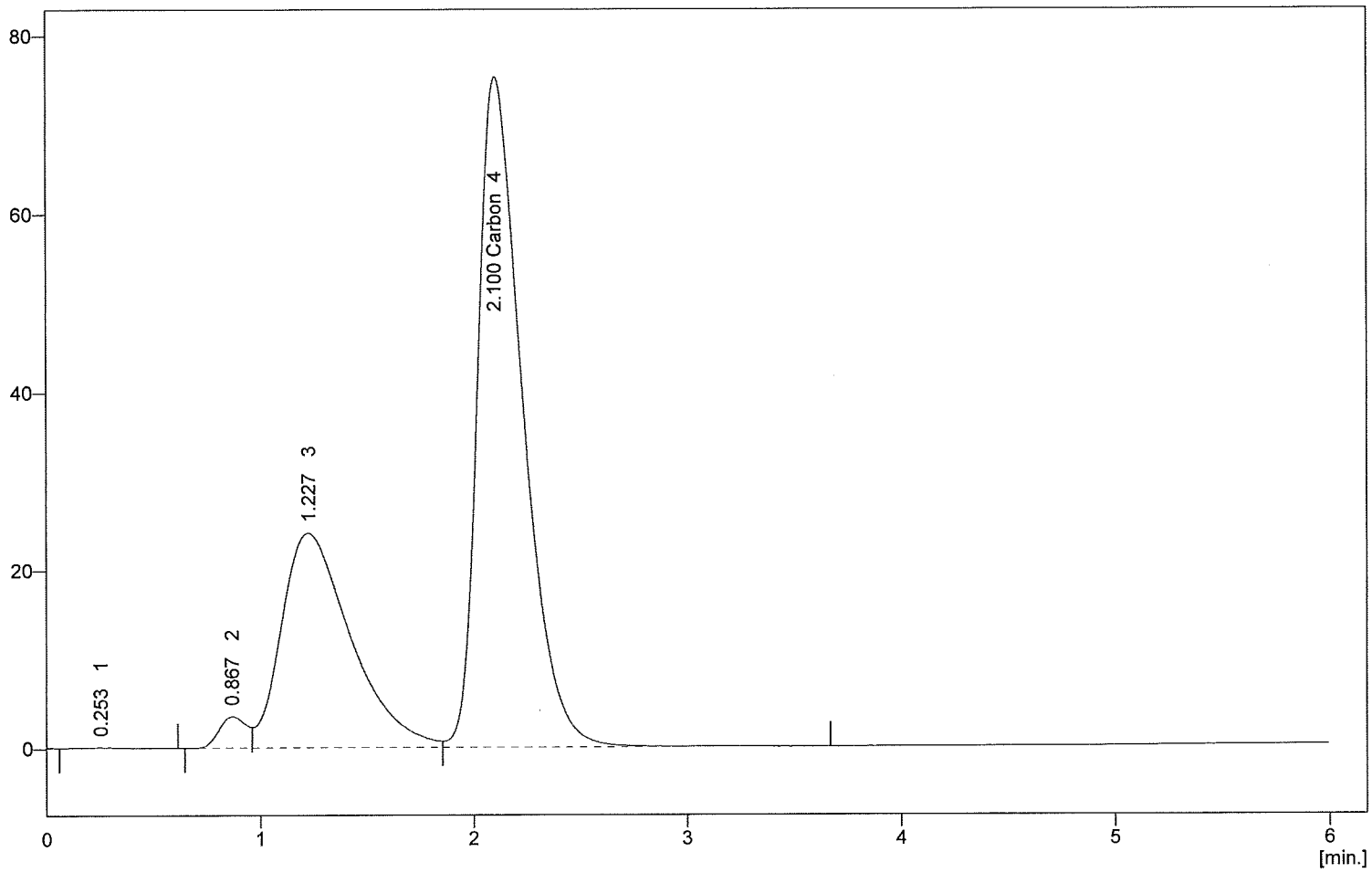
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.107	1241.625	68.1	0.146	4.5758	1.0000	Ordnr
	Total	1823.170	100.0	3.200	4.5758		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 4:03:55 PM
Project : WORK1
Weight : 3.6 mg
Sample : 200-35680-A-8
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B018

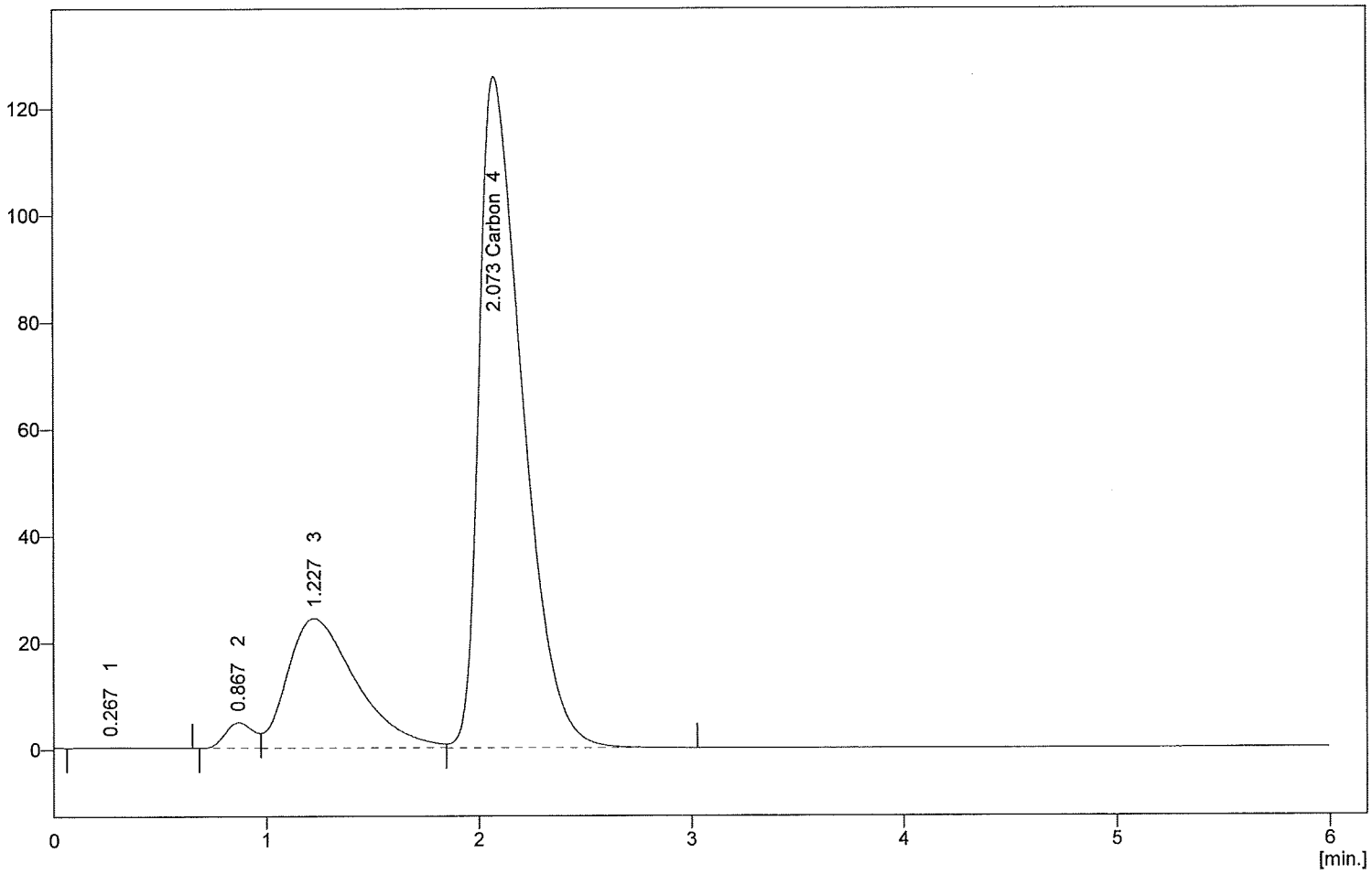


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.100	1095.178	65.4	0.128	3.5634	1.0000	Ordnr
	Total	1673.598	100.0	3.600	3.5634		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 4:10:30 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 3.1 mg		
Sample	: 200-35680-A-9	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B019
Calibration	: 101716B		



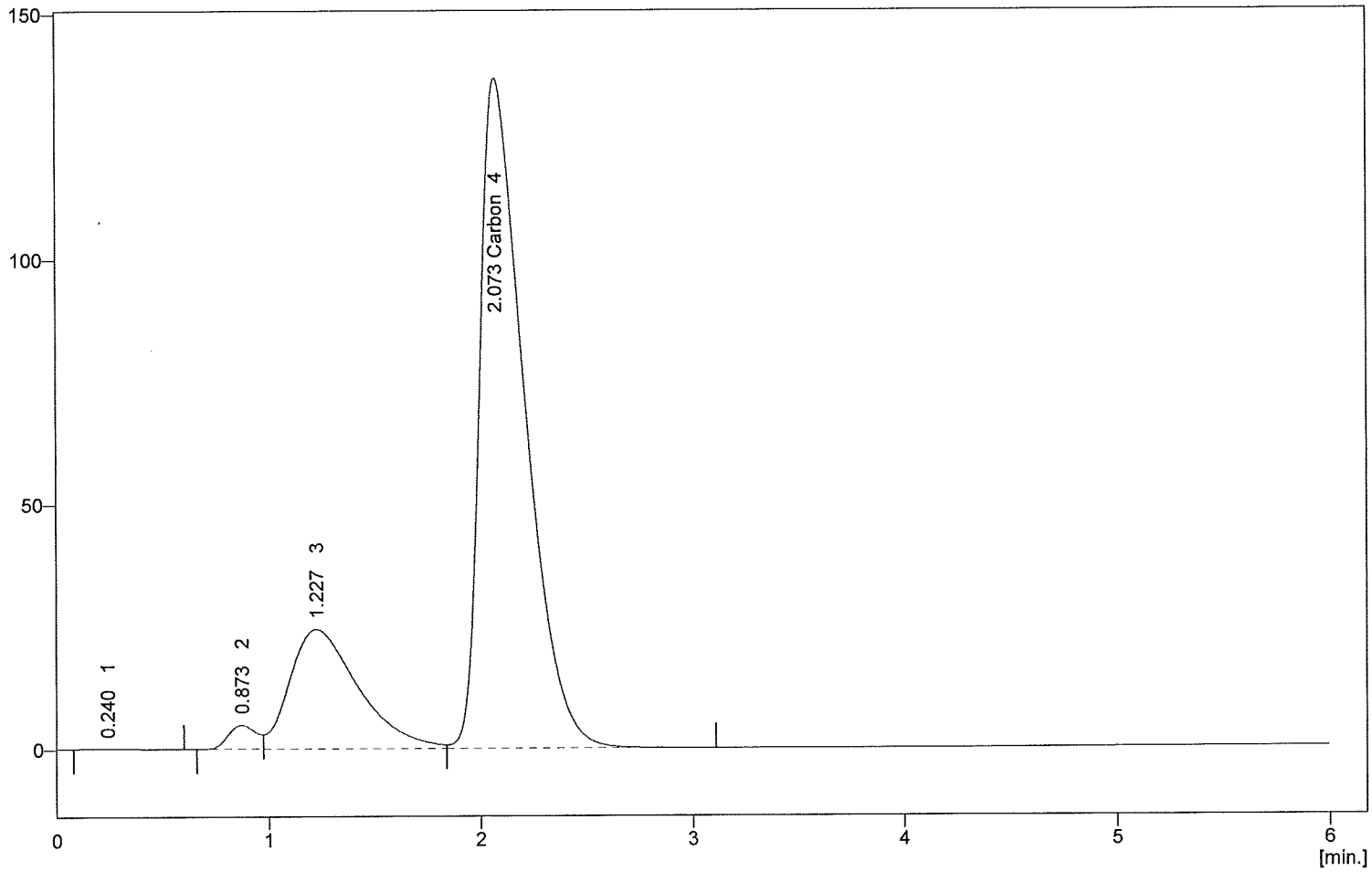
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.073	1785.100	75.2	0.214	6.8953	1.0000	Ordnr
	Total	2374.622	100.0	3.100	6.8953		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 4:17:06 PM
Project : WORK1
Weight : 3.5 mg
Sample : 200-35680-A-10
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B020



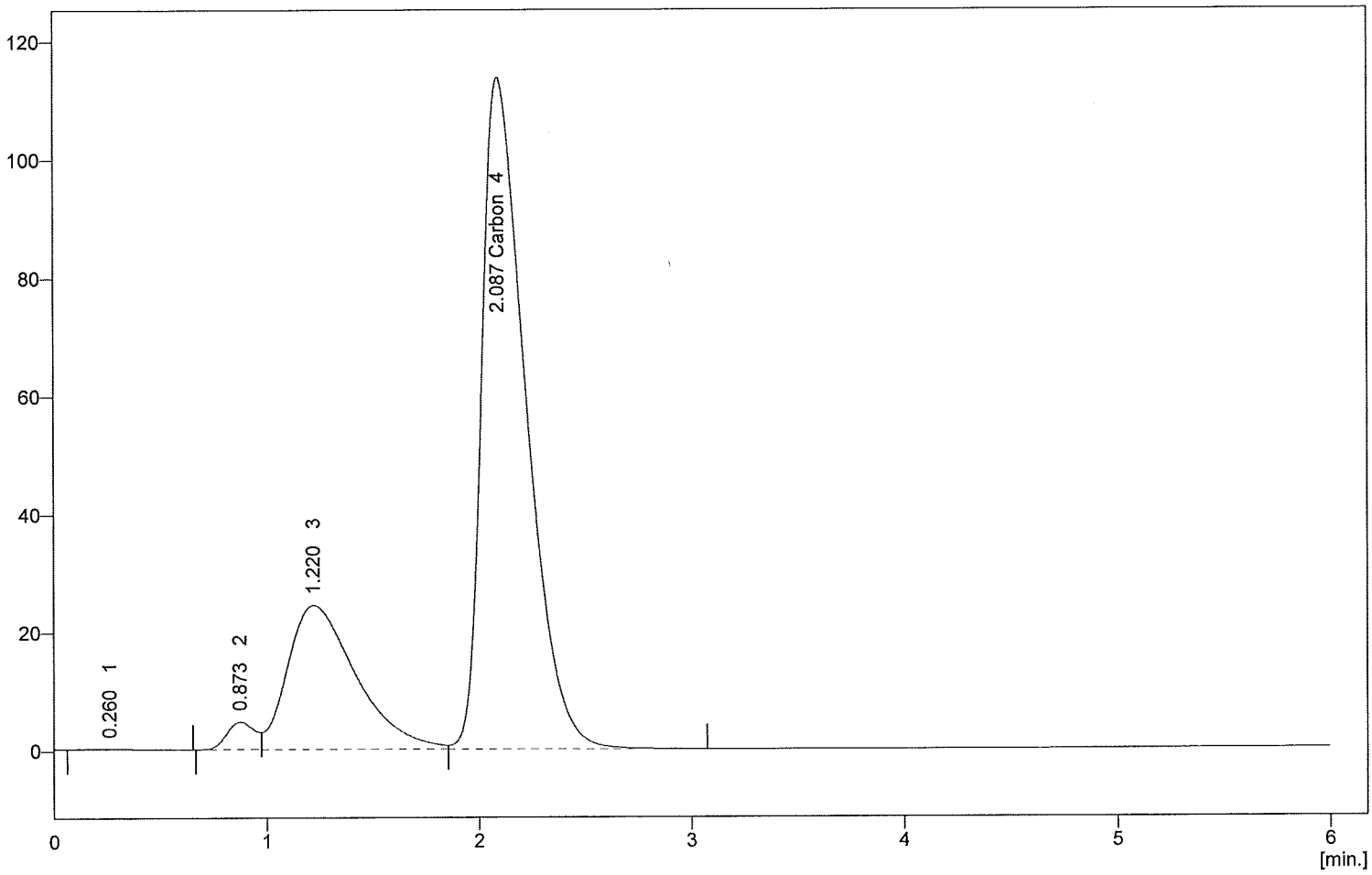
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.073	2003.733	77.1	0.241	6.8811	1.0000	Ordnr
	Total	2598.673	100.0	3.500	6.8811		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 4:23:42 PM
Project : WORK1
Weight : 3.3 mg
Sample : 200-35680-A-11
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B021



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.087	1622.126	73.4	0.194	5.8656	1.0000	Ordnr
	Total	2211.345	100.0	3.300	5.8656		

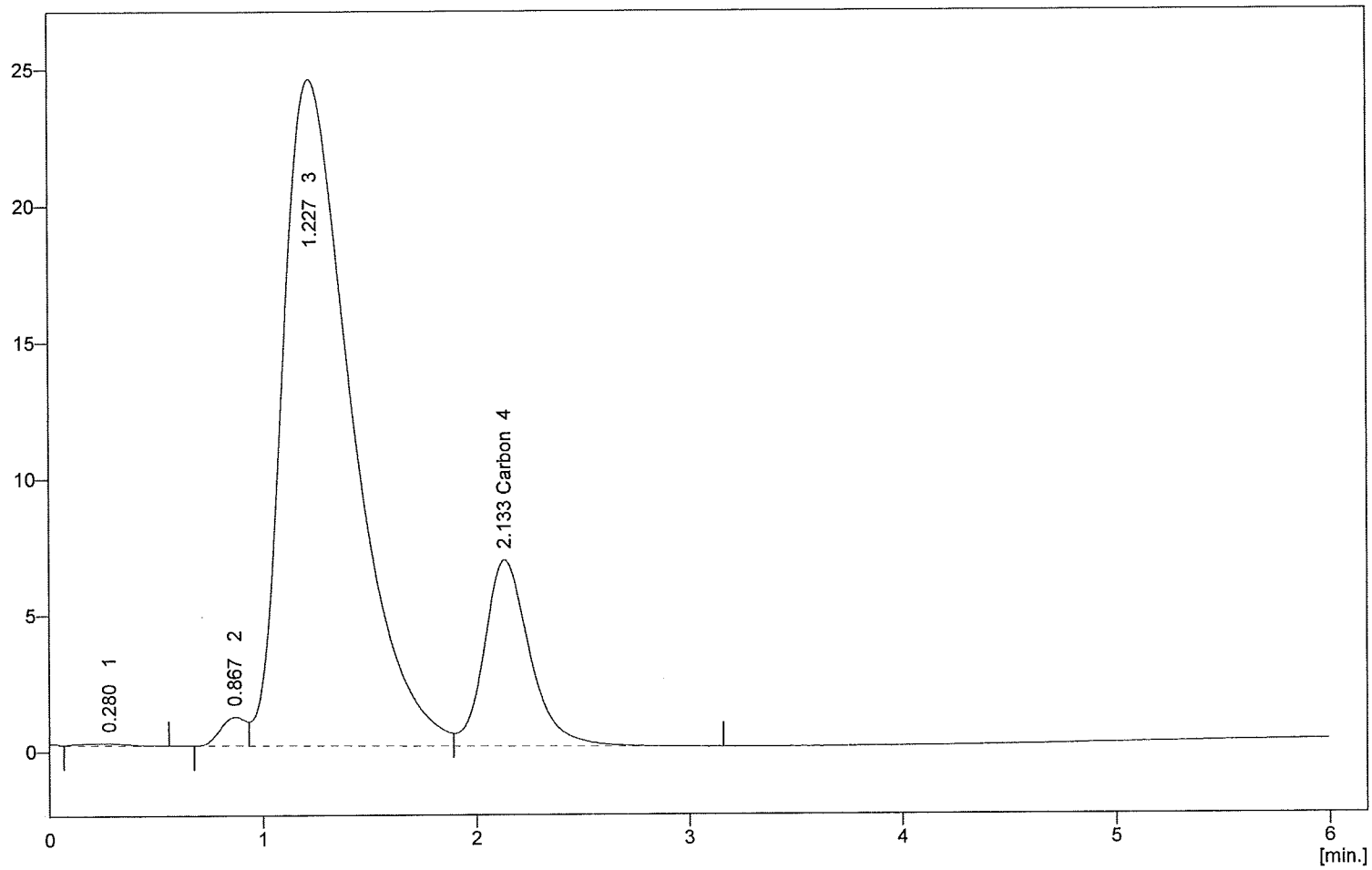
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 4:30:22 PM
Project : WORK1
Weight : 4 mg
Sample : 200-35680-A-12

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B022



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	101.476	15.5	0.005	0.1294	1.0000	Ordnr
	Total	656.749	100.0	4.000	0.1294		

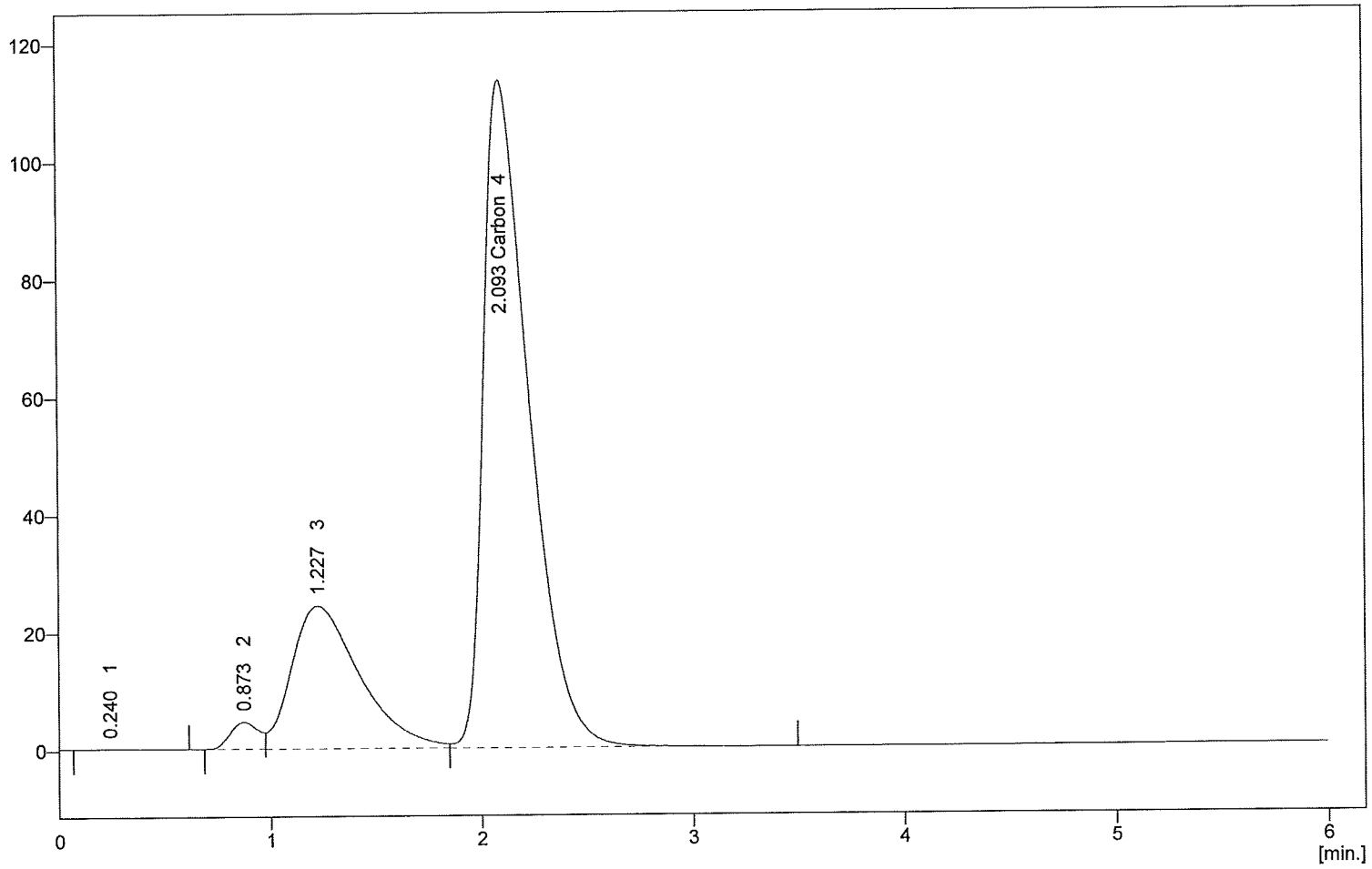
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 4:37:00 PM
Project : WORK1
Weight : 4.3 mg
Sample : 200-35680-A-14

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B023

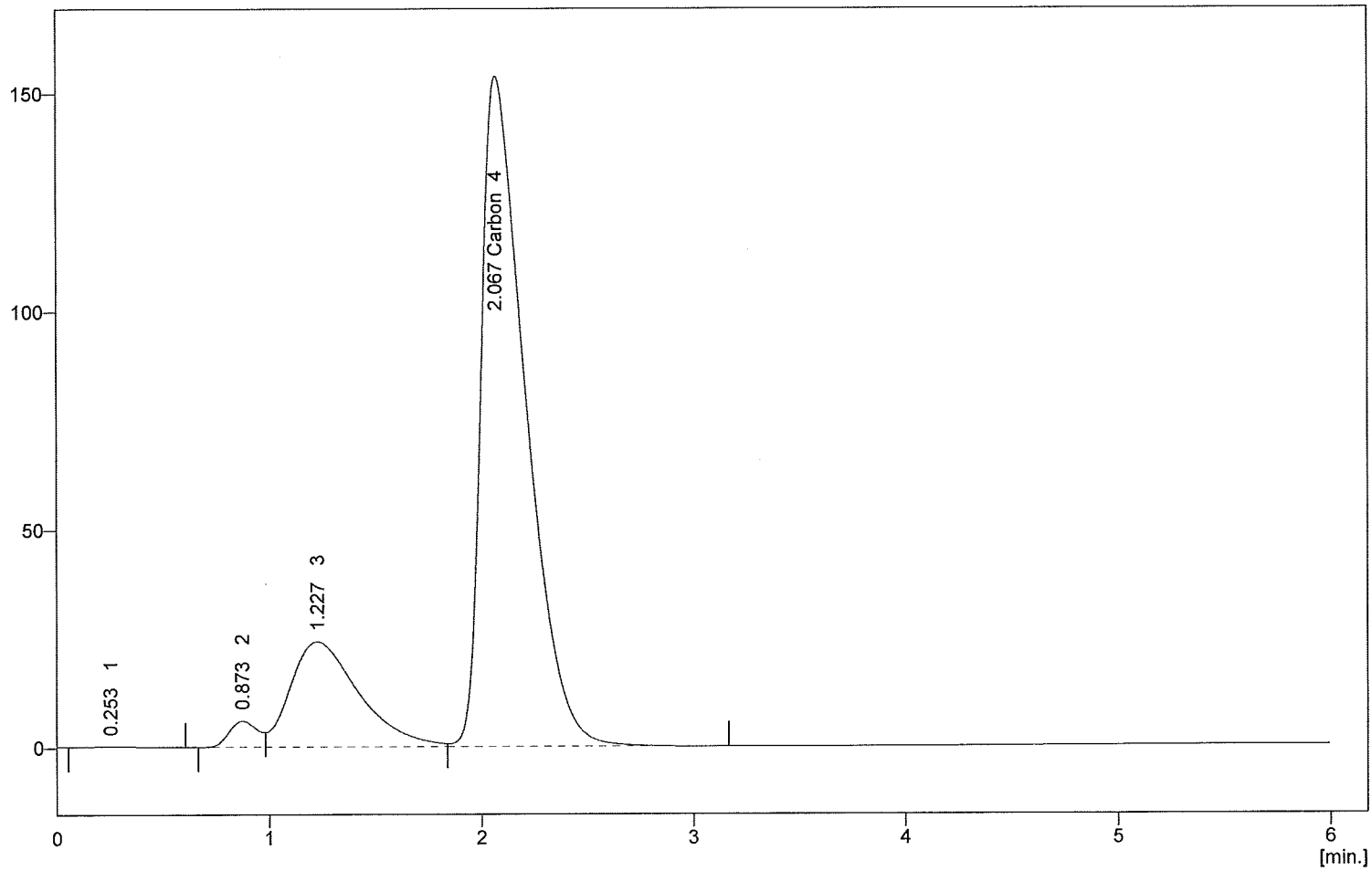


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.093	1686.843	74.1	0.202	4.6879	1.0000	Ordnr
	Total	2276.434	100.0	4.300	4.6879		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 4:43:42 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 4.6 mg		
Sample	: 200-35700-A-1	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B024
Calibration	: 101716B		



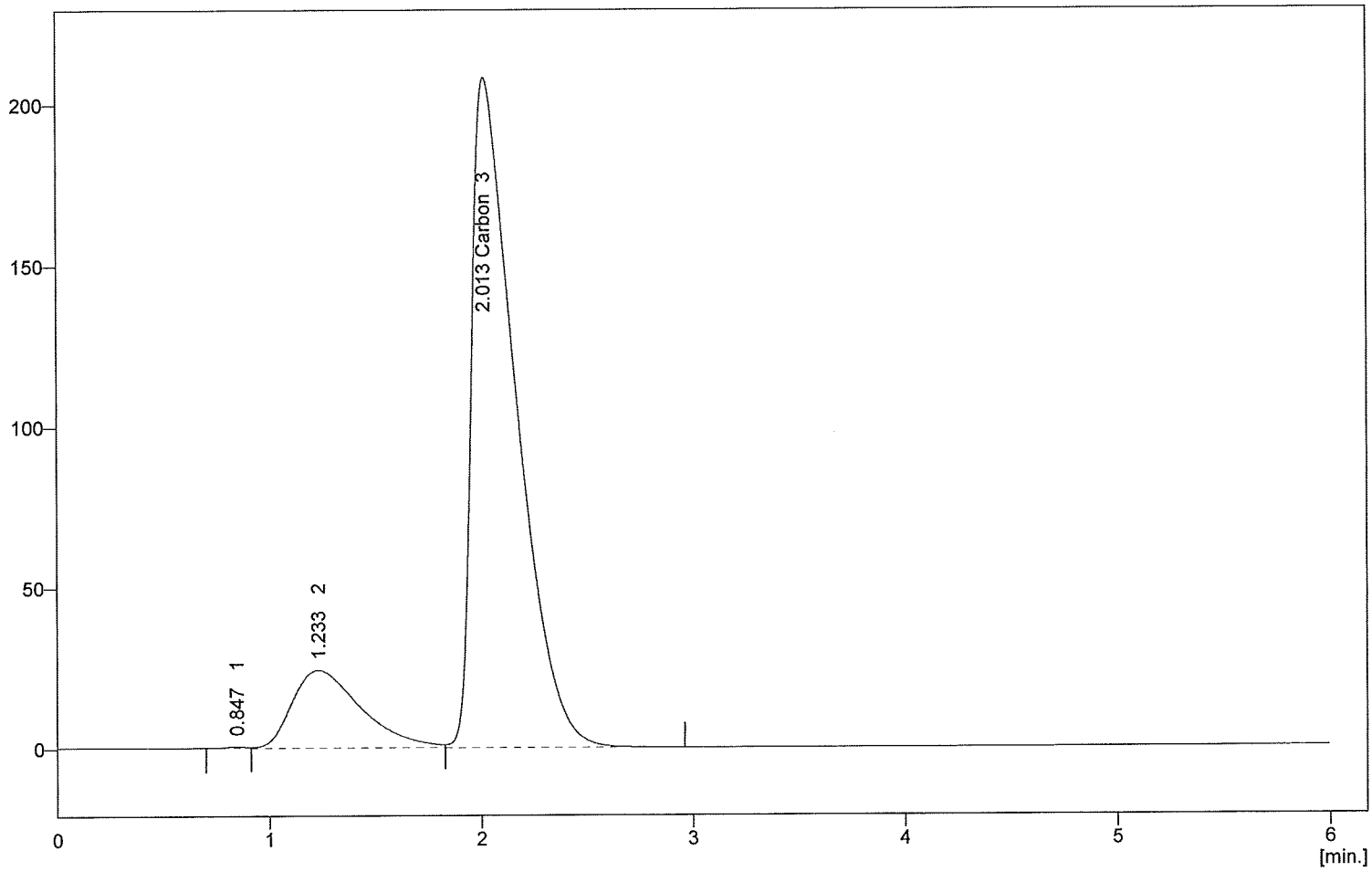
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.067	2231.804	78.9	0.269	5.8499	1.0000	Ordnr
	Total	2830.099	100.0	4.600	5.8499		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 4:50:24 PM
Project : WORK1
Weight : 10 mg
Sample : CCV
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B025



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.013	3025.422	84.6	0.367	3.6741	1.0000	Ordnr
	Total	3575.354	100.0	10.000	3.6741		

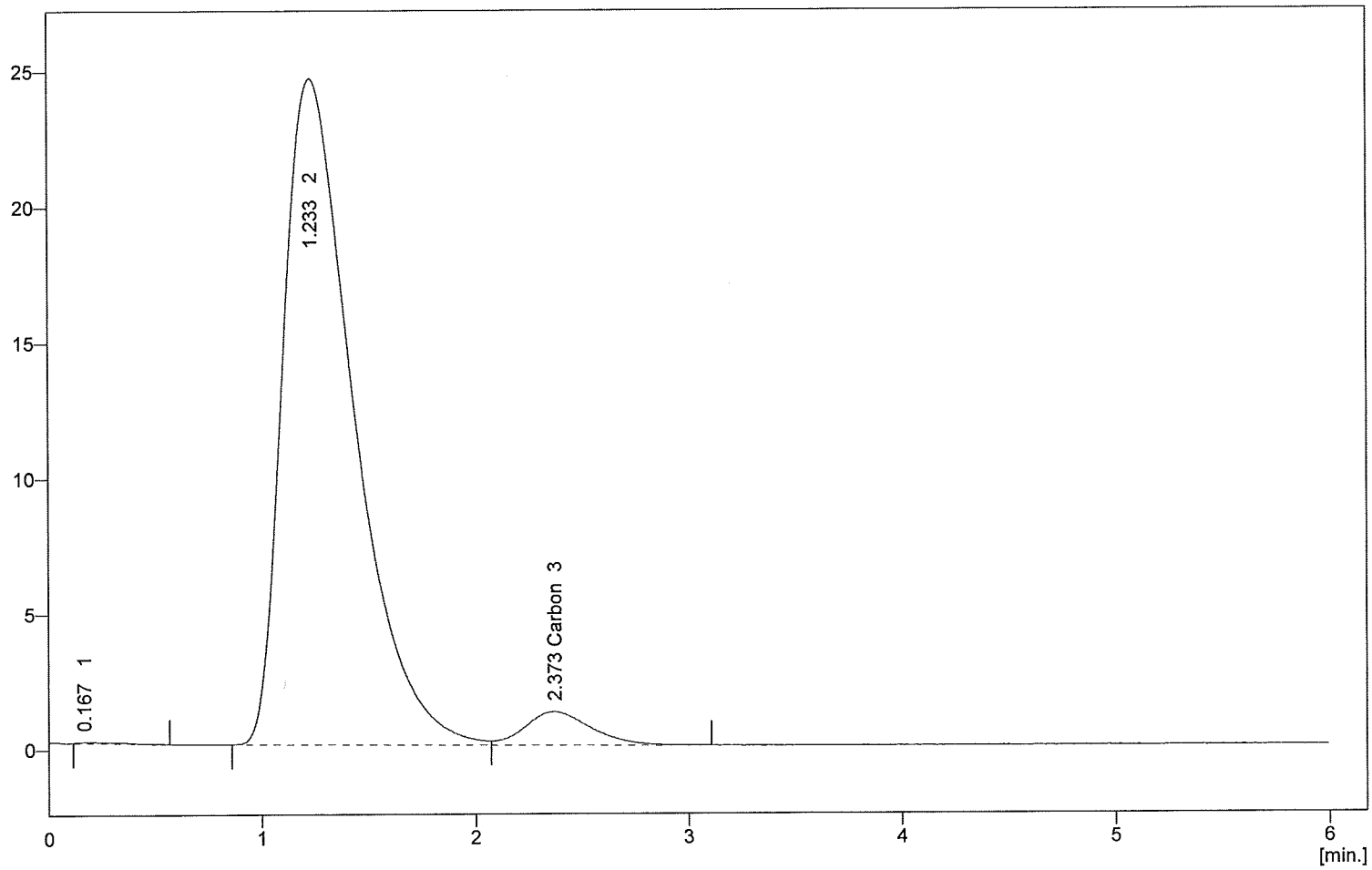
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 4:57:07 PM
Project : WORK1
Weight : 10 mg
Sample : CCB

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B026



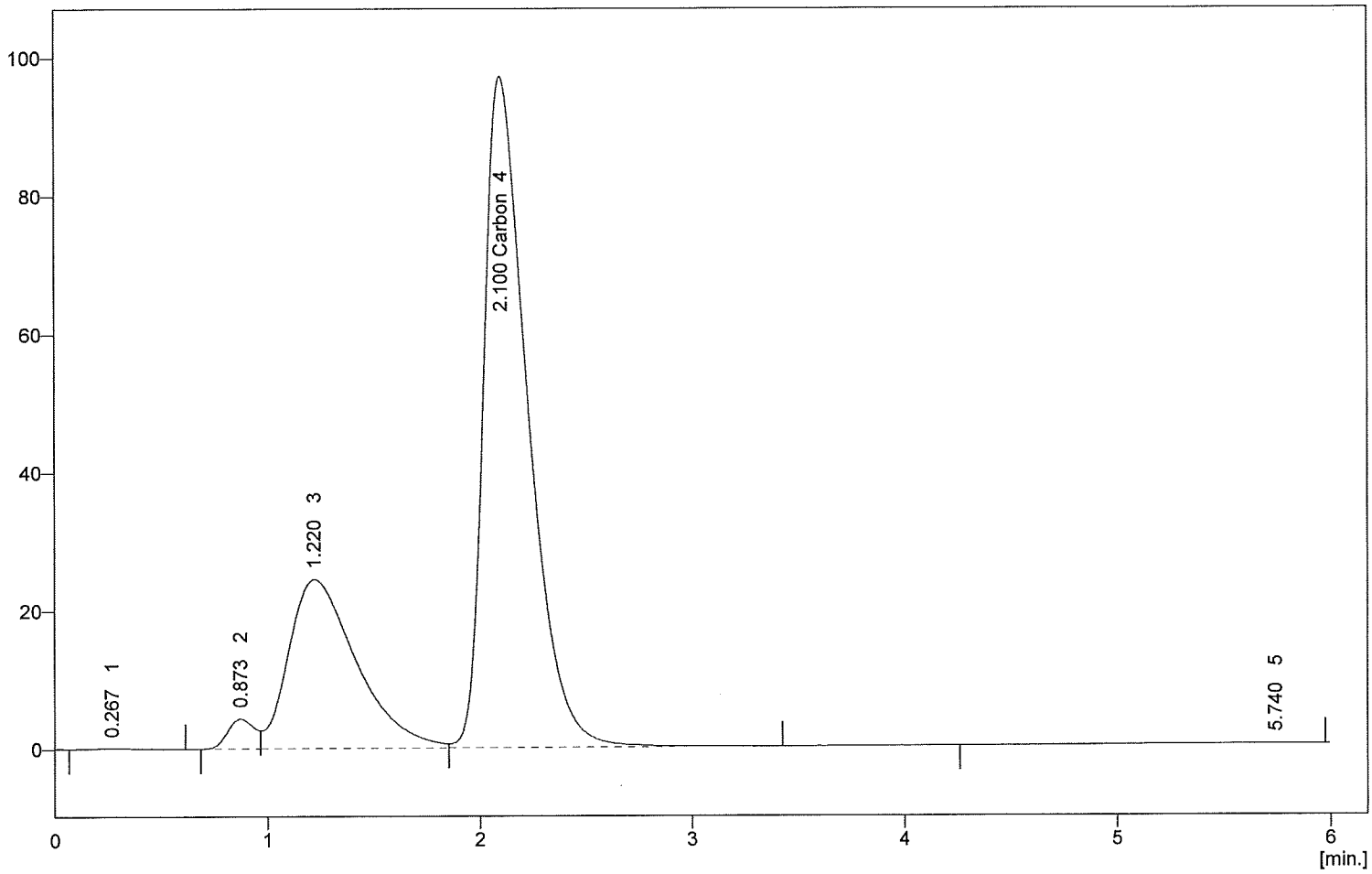
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.373	26.621	4.5	0.003	0.0326	1.0000	Free
	Total	588.713	100.0	10.000	0.0326		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:03:51 PM
Project : WORK1
Weight : 4.6 mg
Sample : 200-35700-A-2
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B027



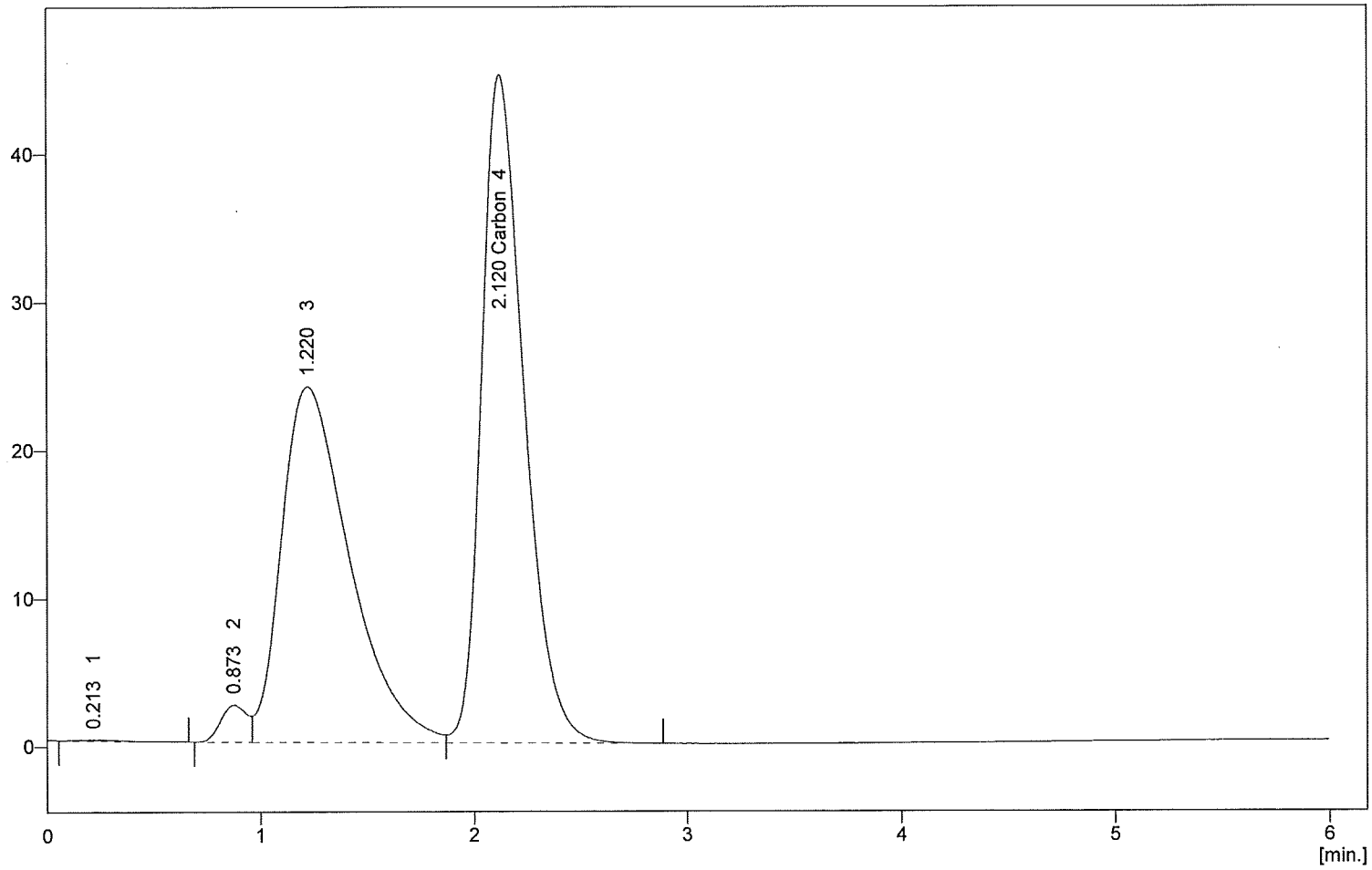
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.100	1394.379	70.5	0.165	3.5945	1.0000	Ordnr
	Total	1978.113	100.0	4.600	3.5945		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:10:31 PM
Project : WORK1
Weight : 4.4 mg
Sample : 200-35700-A-3
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B028



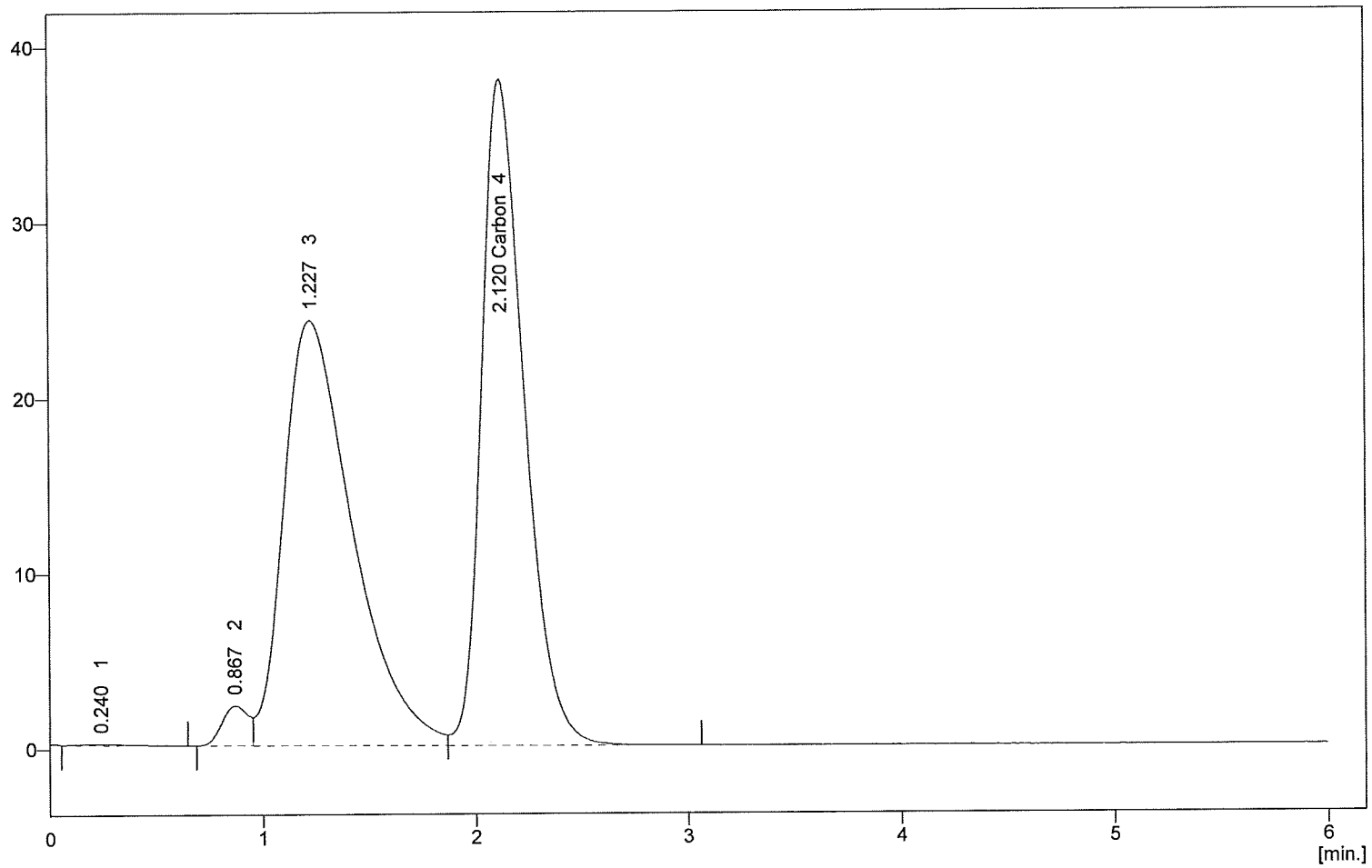
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.120	625.698	52.9	0.070	1.5936	1.0000	Ordnr
	Total	1182.027	100.0	4.400	1.5936		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:17:17 PM
Project : WORK1
Weight : 3.8 mg
Sample : 200-35700-A-4
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B029



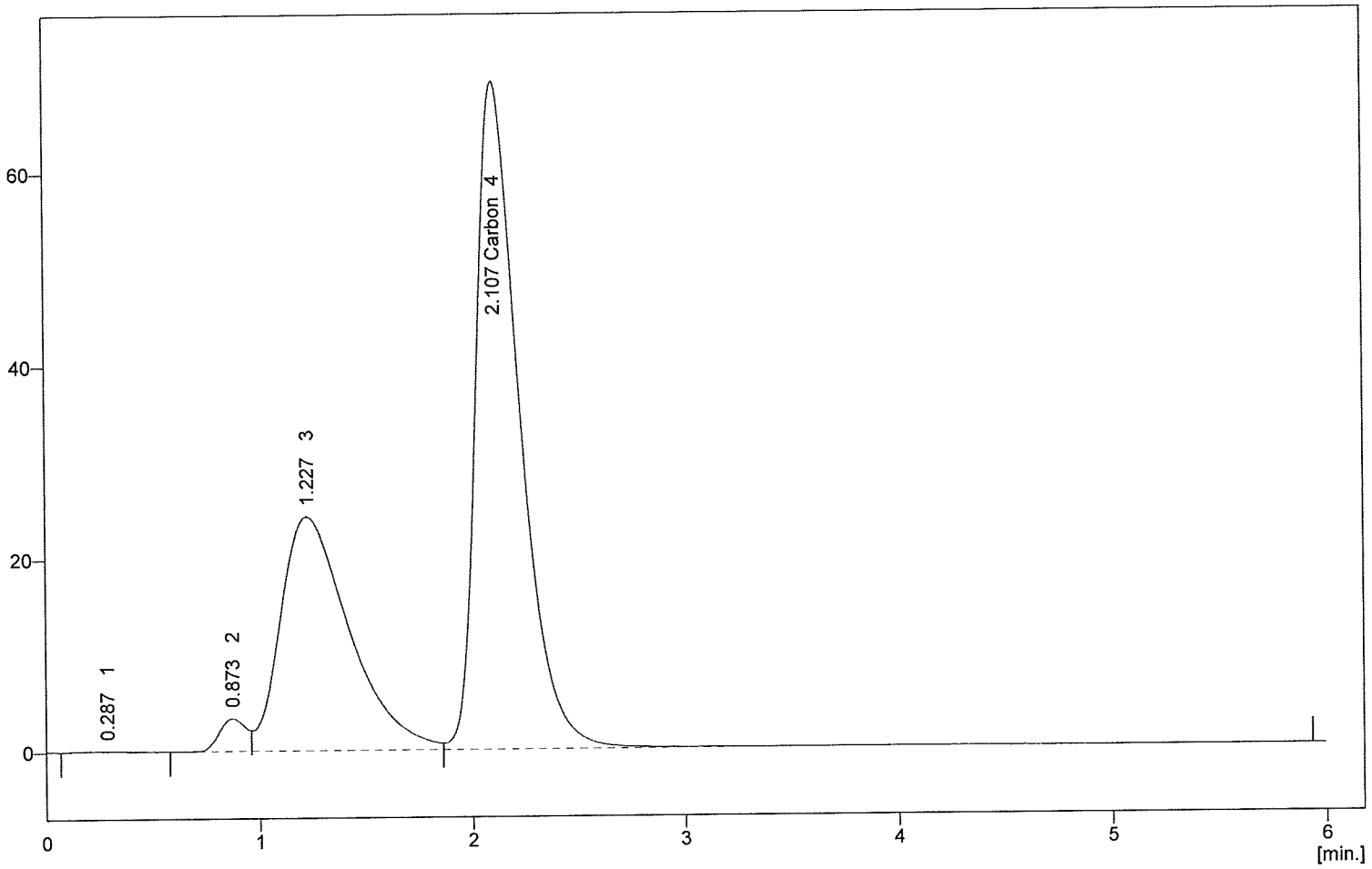
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.120	529.989	48.4	0.058	1.5332	1.0000	Ordnr
	Total	1094.912	100.0	3.800	1.5332		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:24:02 PM
Project : WORK1
Weight : 3.5 mg
Sample : 200-35700-A-5
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B030



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.107	986.431	63.1	0.115	3.2803	1.0000	Ordnr
	Total	1564.236	100.0	3.500	3.2803		

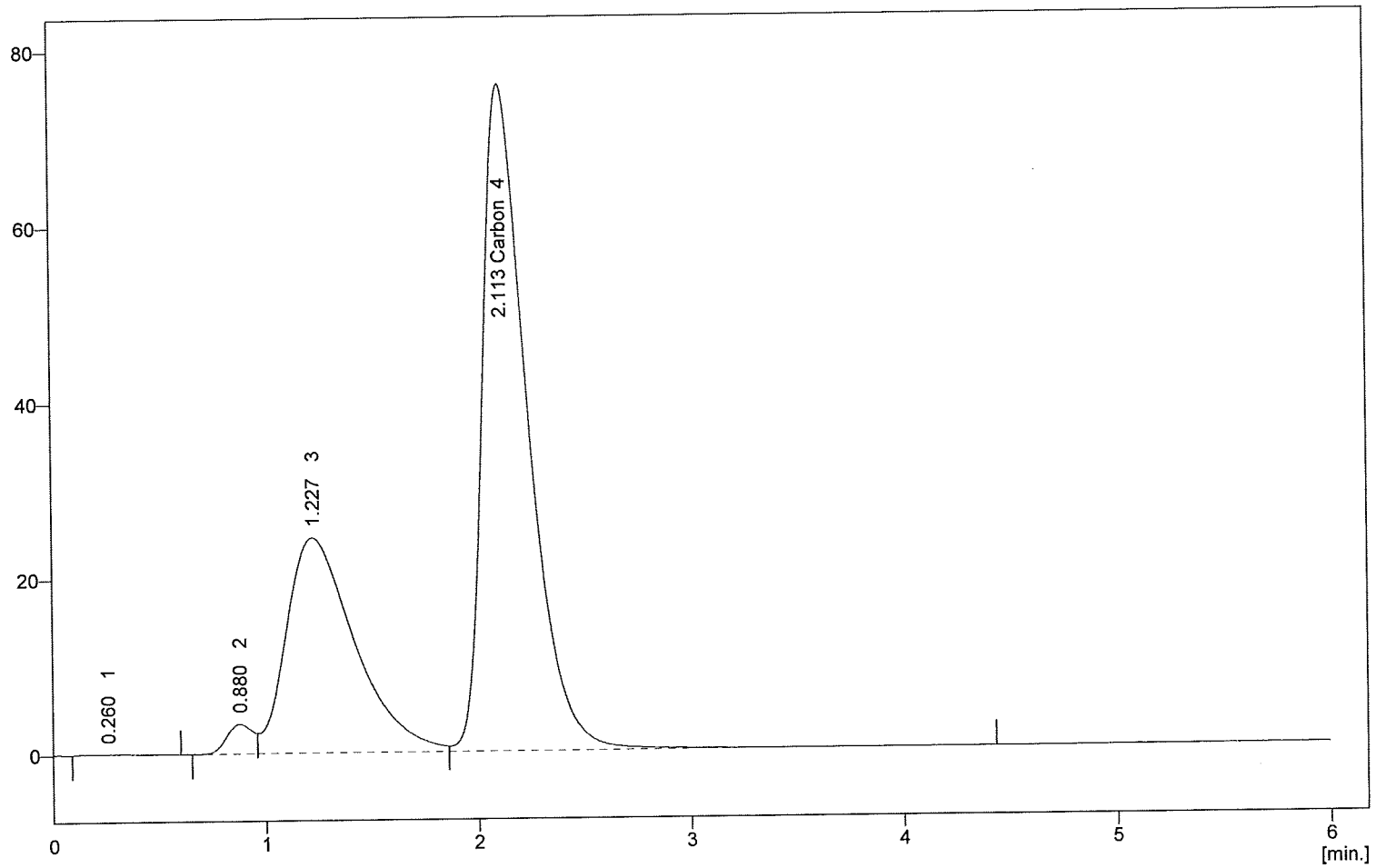
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:30:49 PM
Project : WORK1
Weight : 3.1 mg
Sample : 200-35700-A-6

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B031



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	1112.227	65.8	0.130	4.2063	1.0000	Ordnr
	Total	1689.638	100.0	3.100	4.2063		

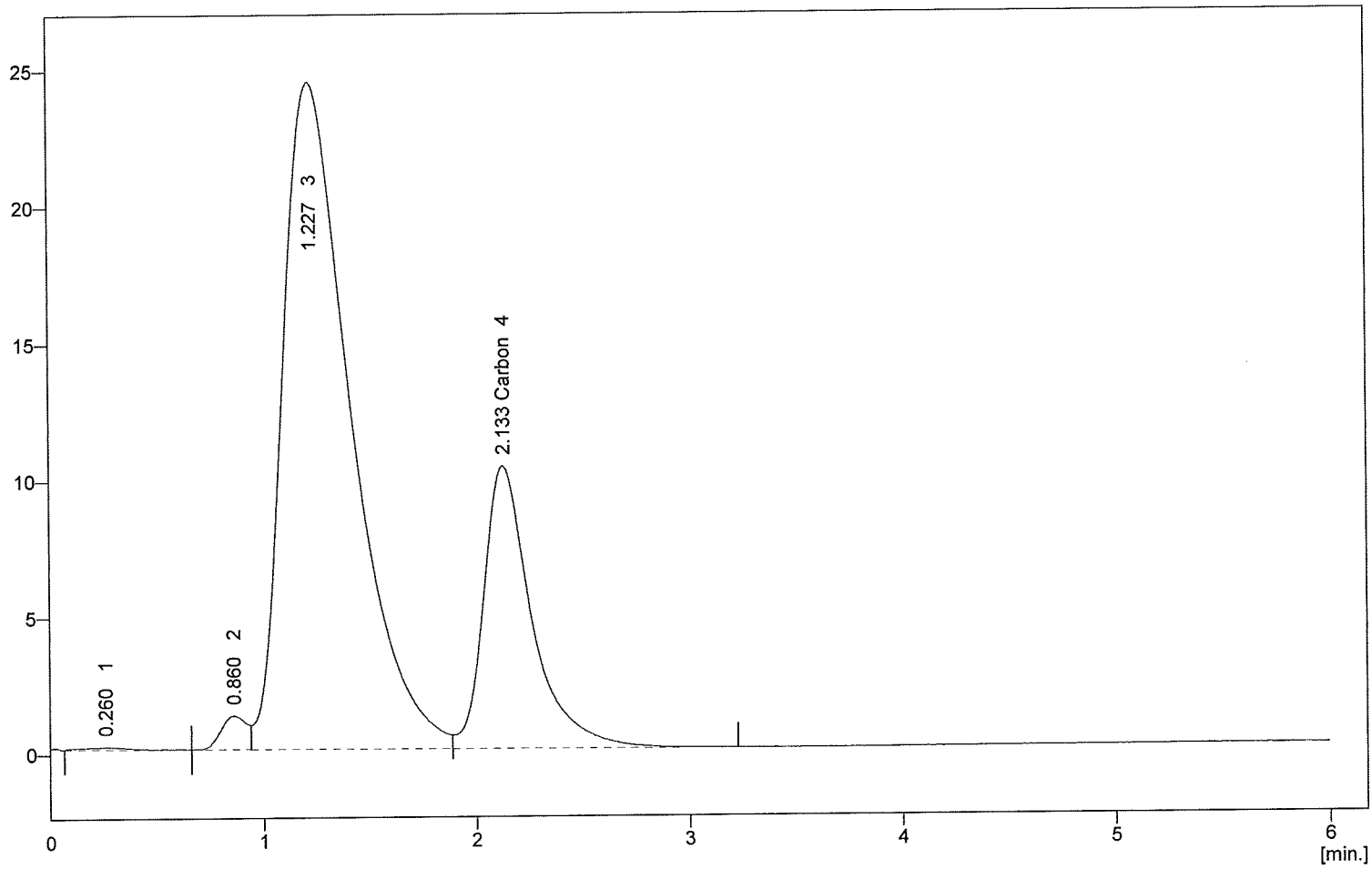
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:37:36 PM
Project : WORK1
Weight : 3.1 mg
Sample : 200-35700-A-7

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B032



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	161.488	22.6	0.013	0.4068	1.0000	Ordnr
	Total	714.130	100.0	3.100	0.4068		

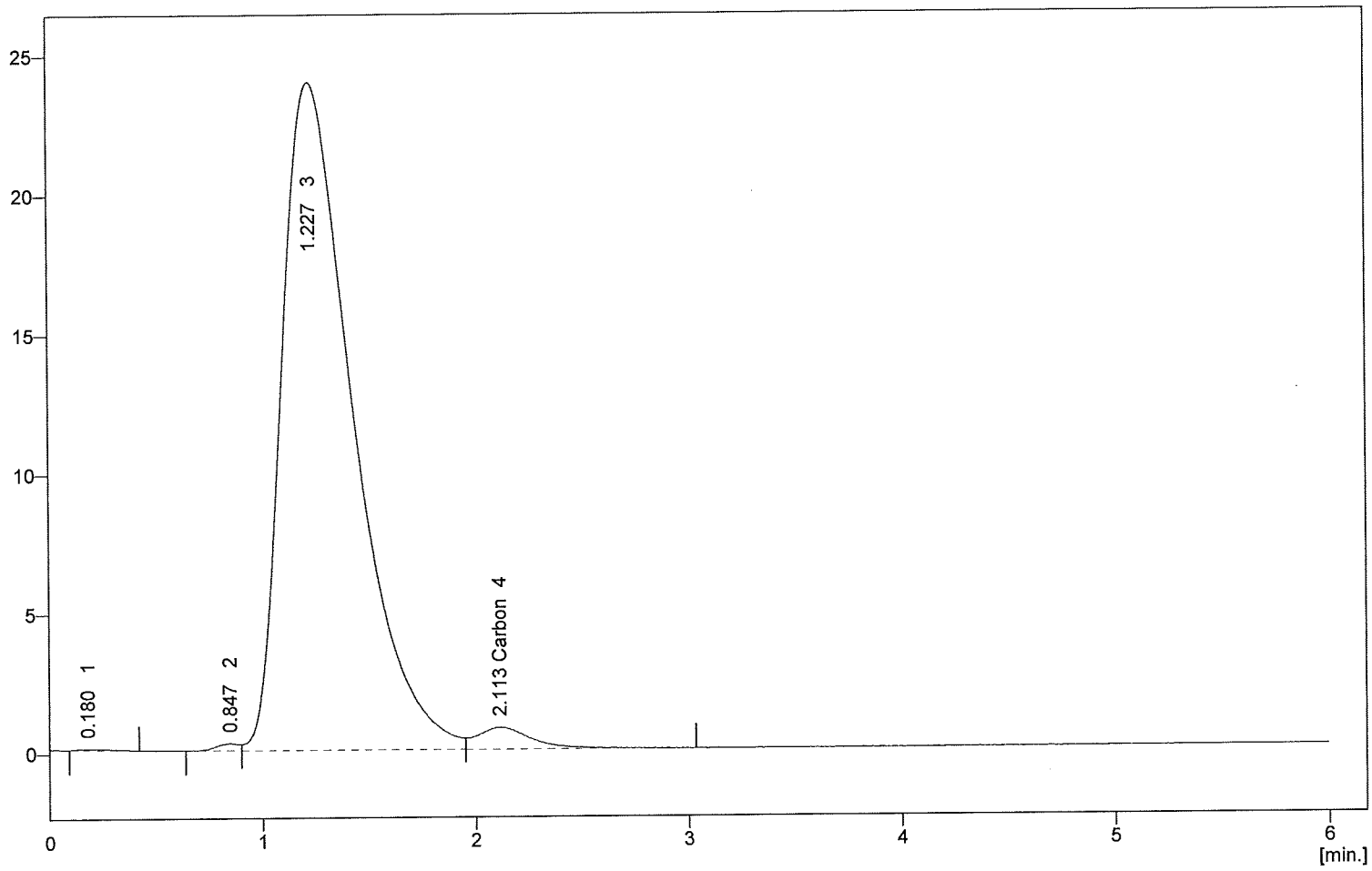
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:44:19 PM
Project : WORK1
Weight : 10 mg
Sample : MB

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B033



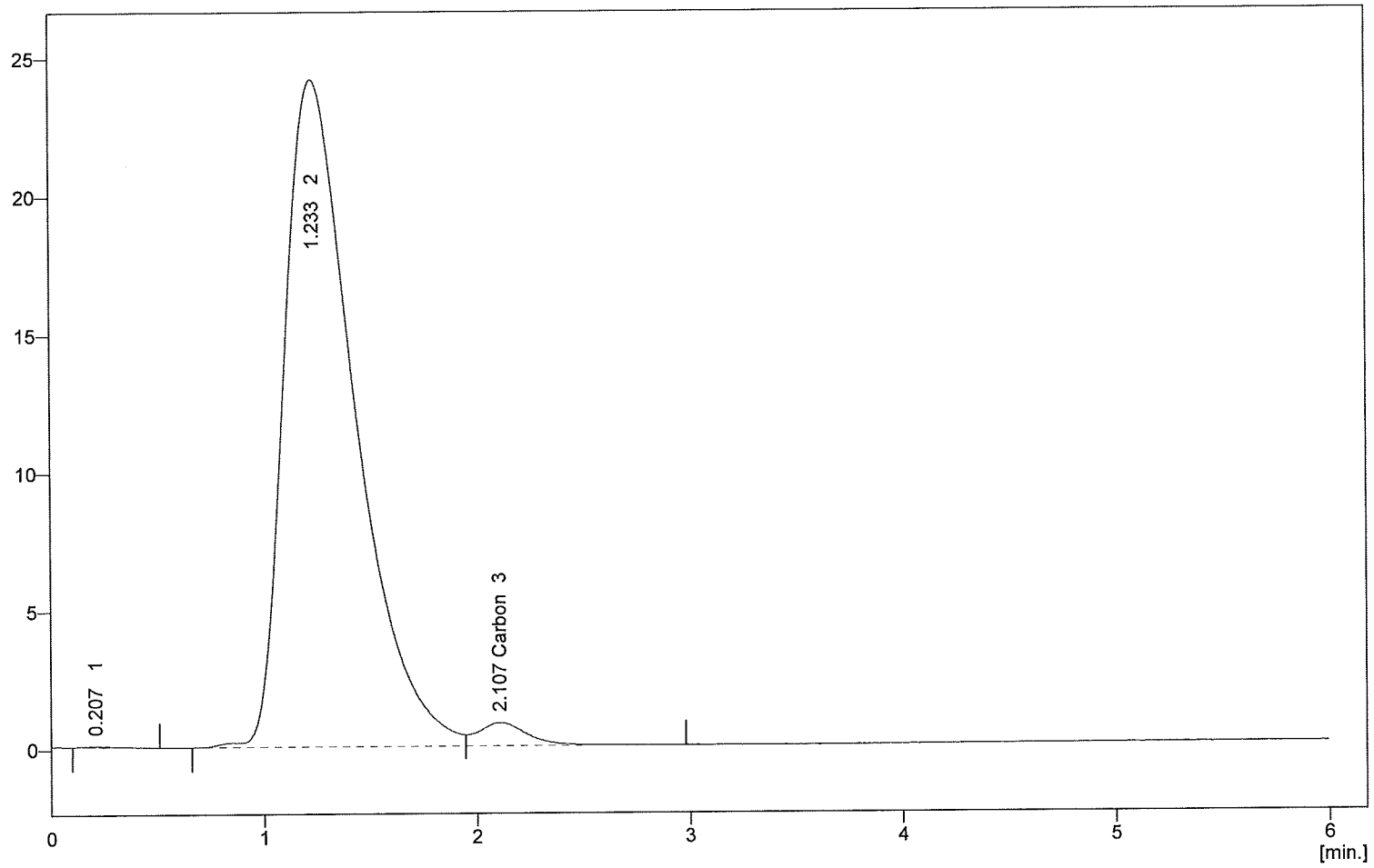
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	14.050	2.5	0.002	0.0172	1.0000	Free
	Total	567.026	100.0	10.000	0.0172		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:51:07 PM
Project : WORK1
Weight : 10 mg
Sample : MB
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B034



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.107	14.114	2.5	0.002	0.0173	1.0000	Free
	Total	571.794	100.0	10.000	0.0173		

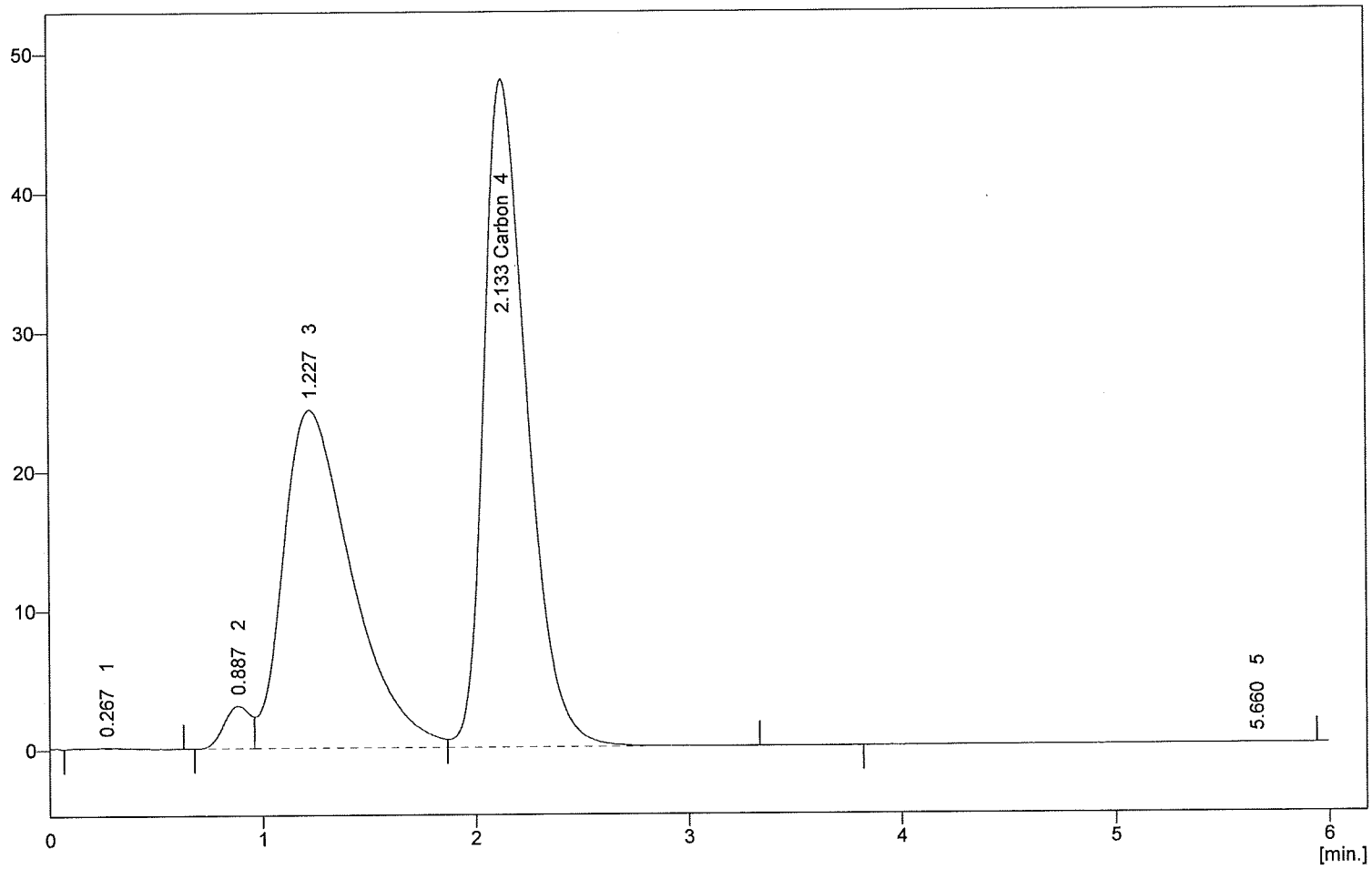
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:57:51 PM
Project : WORK1
Weight : 9.3 mg
Sample : LCS

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B035



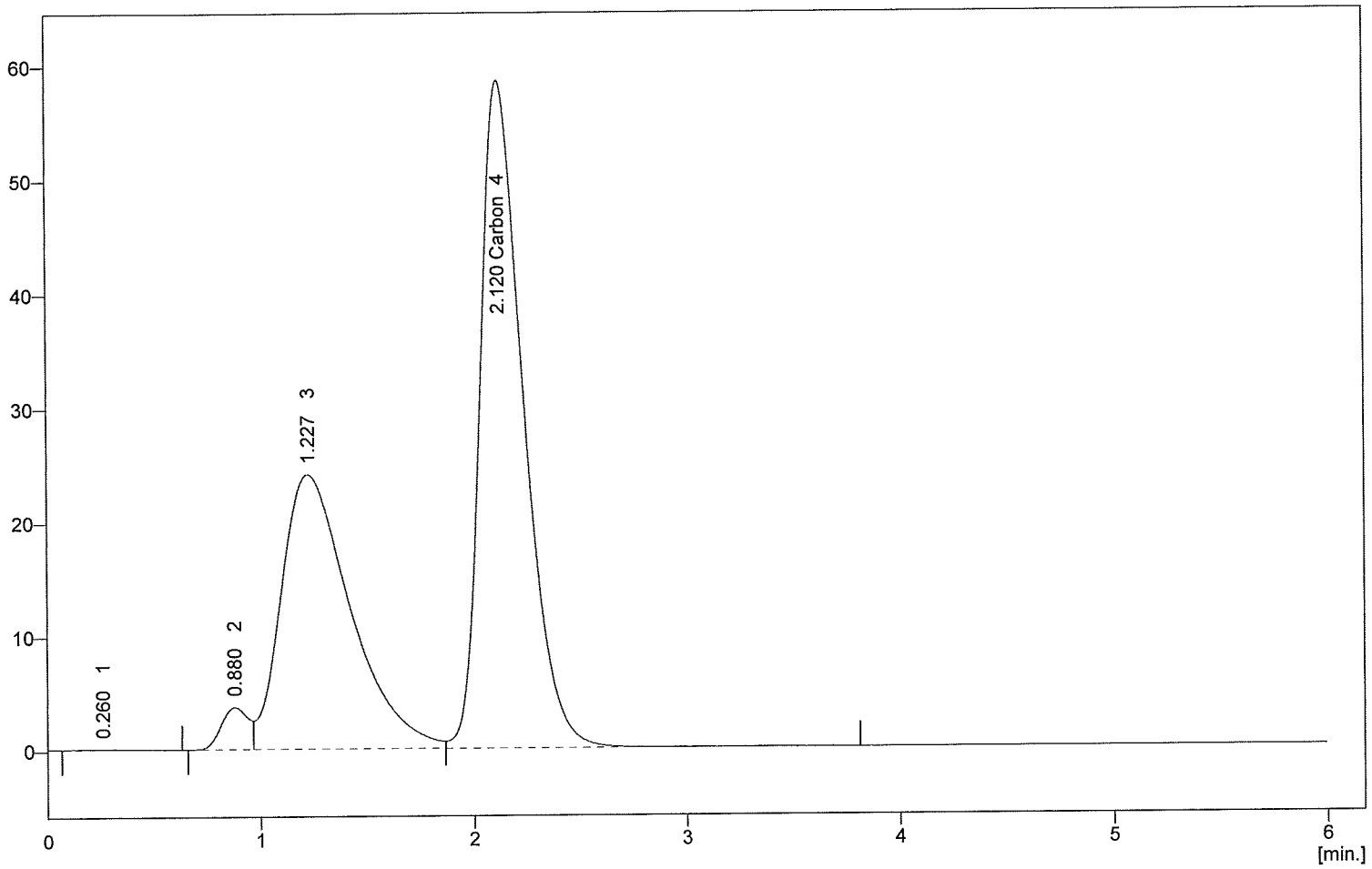
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	674.827	54.1	0.076	0.8194	1.0000	Ordnr
	Total	1248.212	100.0	9.300	0.8194		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:04:35 PM
Project : WORK1
Weight : 10.2 mg
Sample : LCS
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B036



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.120	822.388	58.8	0.094	0.9263	1.0000	Ordnr
	Total	1399.386	100.0	10.200	0.9263		

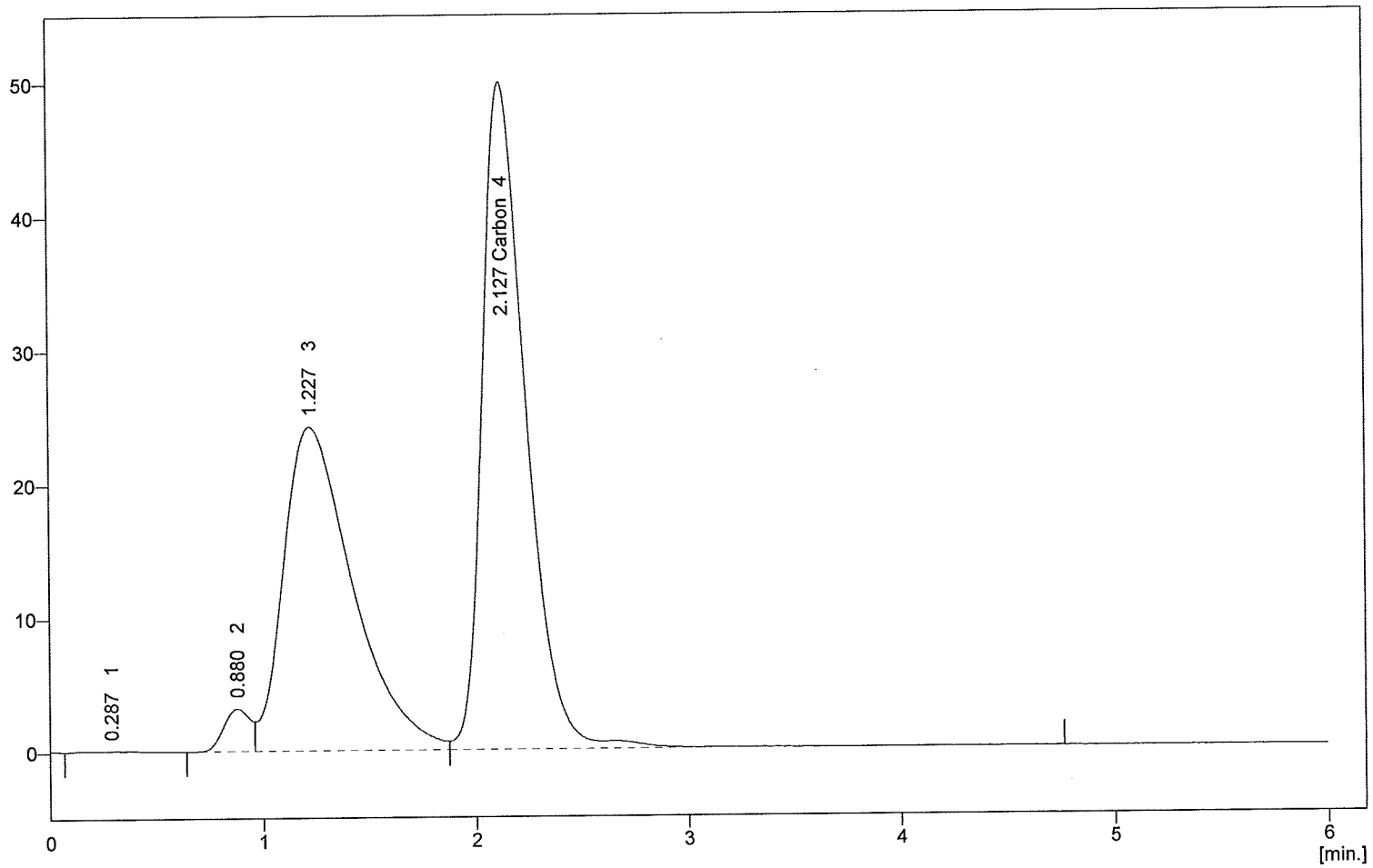
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:11:25 PM
Project : WORK1
Weight : 9.1 mg
Sample : LCS

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B037



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.127	707.457	55.1	0.080	0.8819	1.0000	Ordnr
	Total	1284.875	100.0	9.100	0.8819		

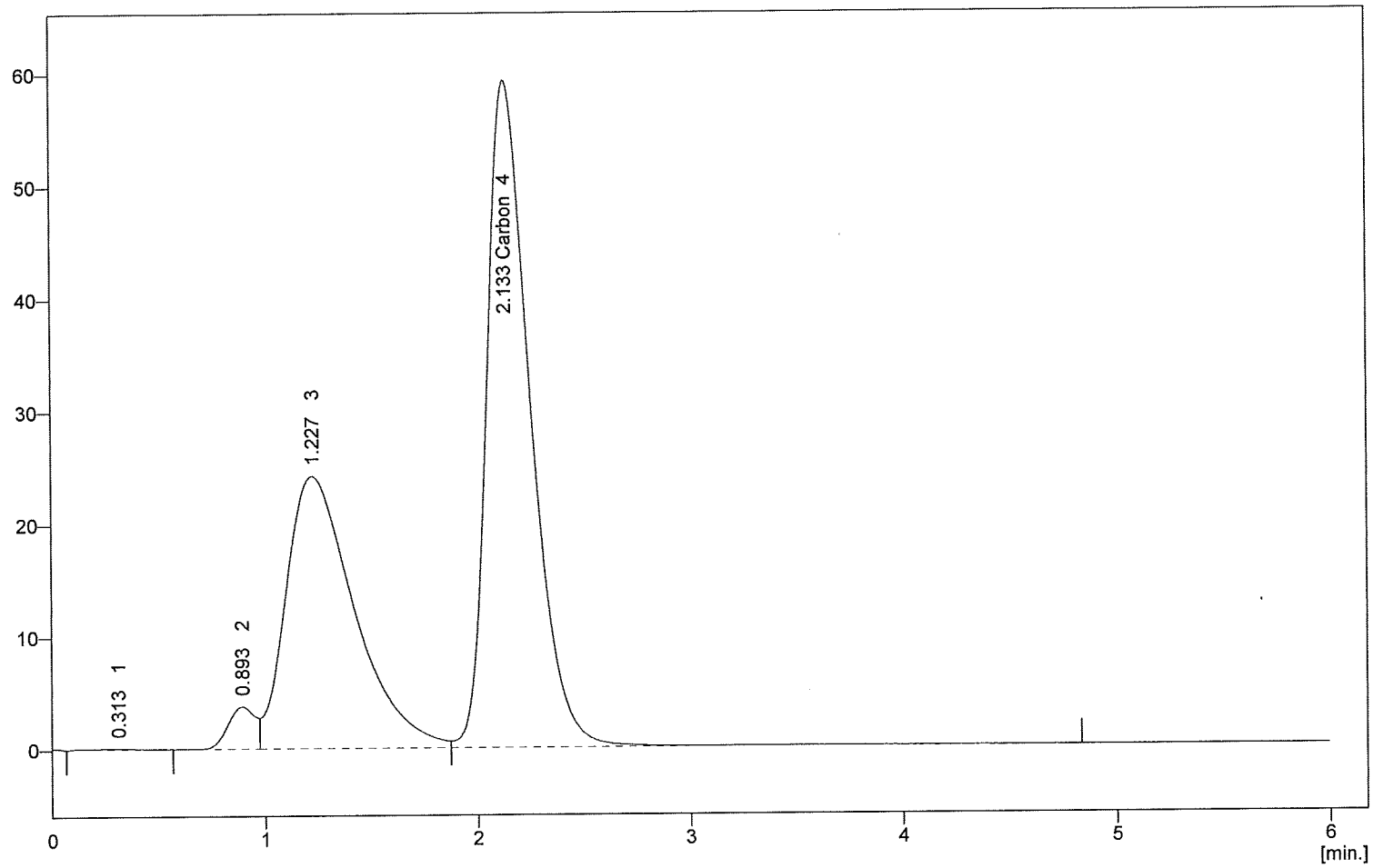
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:18:10 PM
Project : WORK1
Weight : 10.2 mg
Sample : LCS

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B038



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	839.321	59.2	0.097	0.9469	1.0000	Ordnr
	Total	1416.953	100.0	10.200	0.9469		

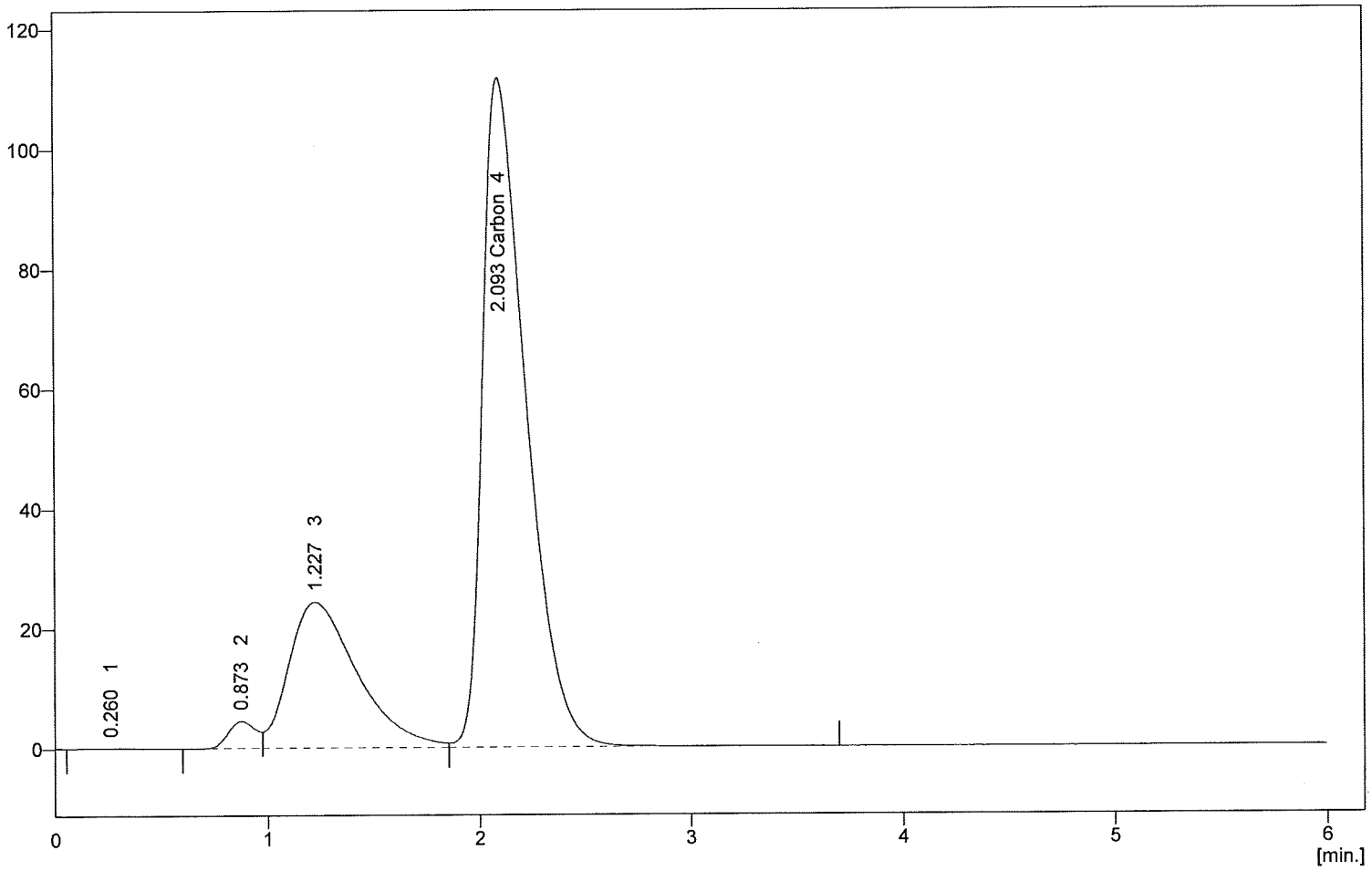
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:24:56 PM
Project : WORK1
Weight : 3.8 mg
Sample : 200-35700-A-8

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B039



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.093	1591.820	73.0	0.190	4.9950	1.0000	Ordnr
	Total	2181.840	100.0	3.800	4.9950		

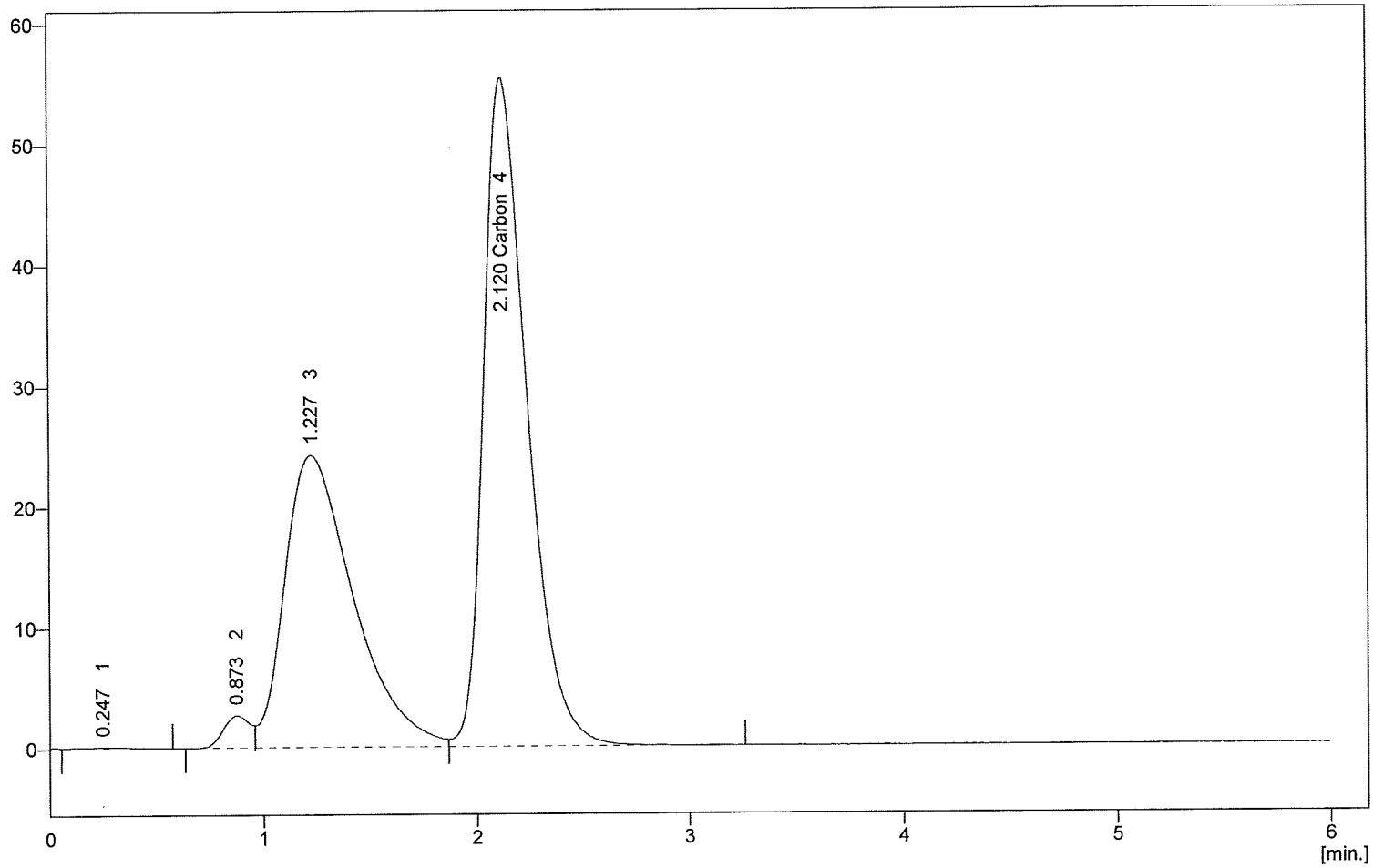
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:31:42 PM
Project : WORK1
Weight : 4.1 mg
Sample : 200-35700-A-9

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B040



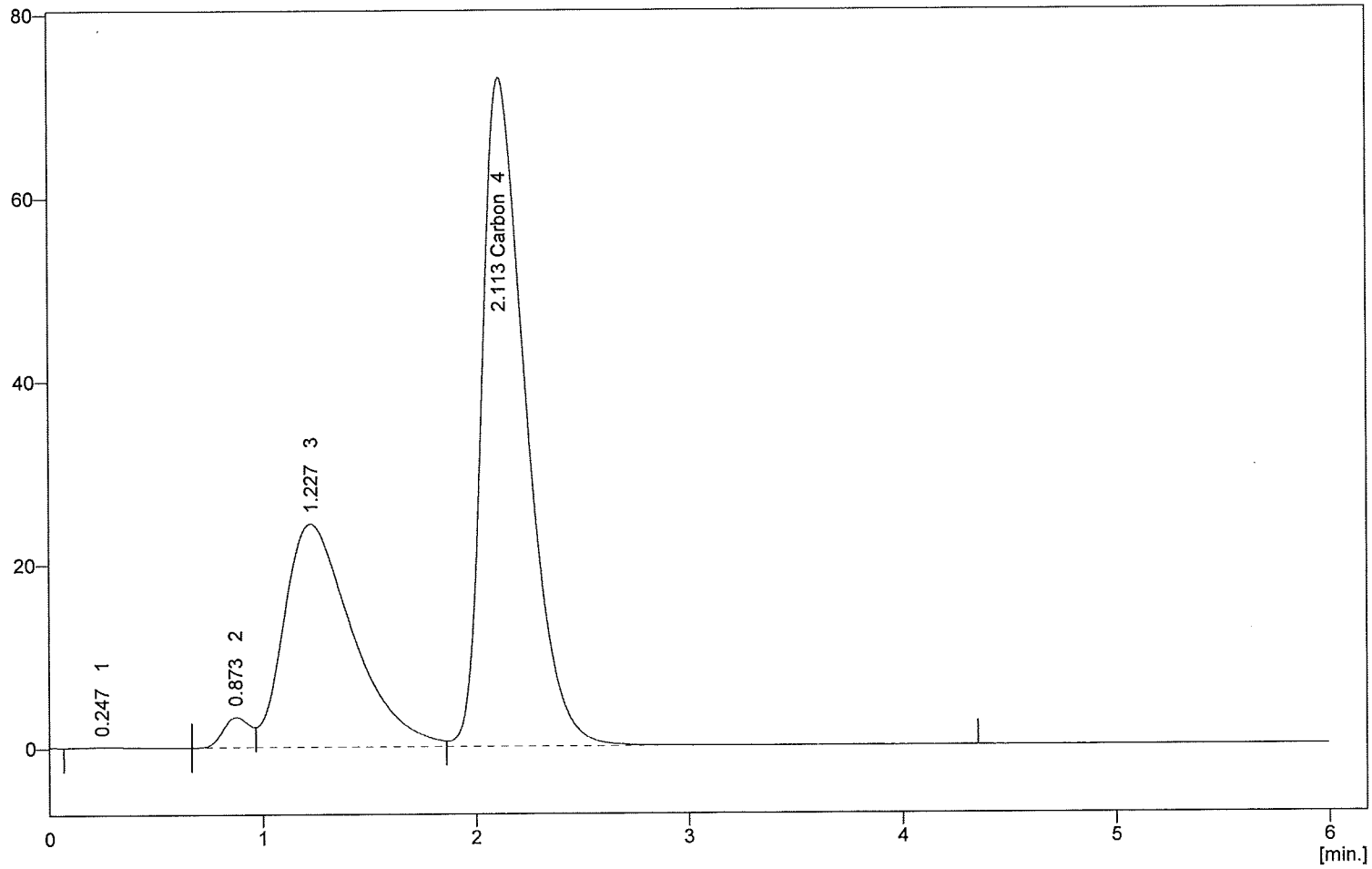
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.120	786.290	58.1	0.090	2.1955	1.0000	Ordnr
	Total	1353.698	100.0	4.100	2.1955		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:38:35 PM
Project : WORK1
Weight : 4.1 mg
Sample : 200-35700-A-10
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B041



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	1034.692	64.3	0.121	2.9461	1.0000	Ordnr
	Total	1609.331	100.0	4.100	2.9461		

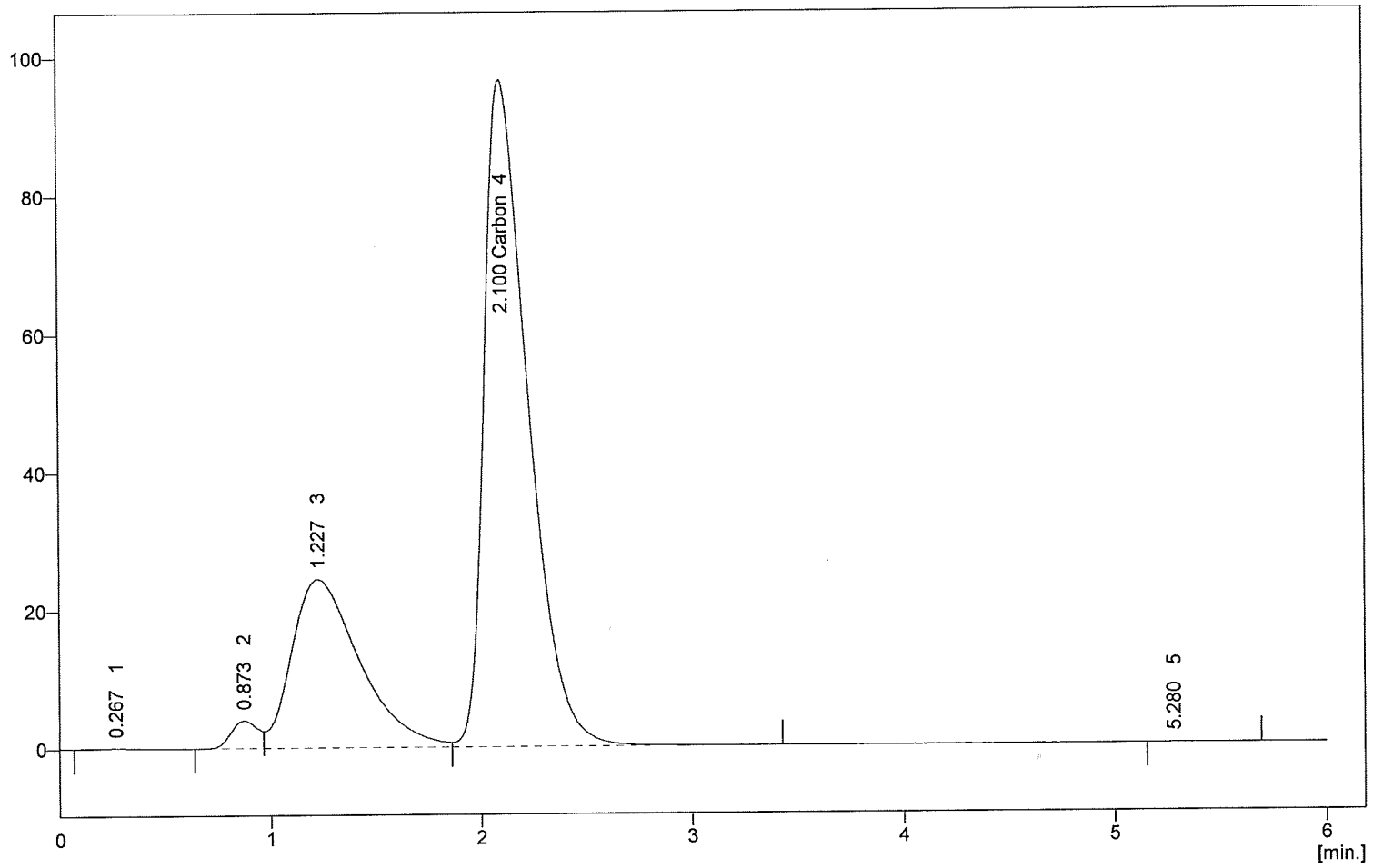
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:45:30 PM
Project : WORK1
Weight : 4.8 mg
Sample : 200-35700-A-11

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B042



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.100	1387.835	70.4	0.165	3.4279	1.0000	Ordnr
	Total	1972.620	100.0	4.800	3.4279		

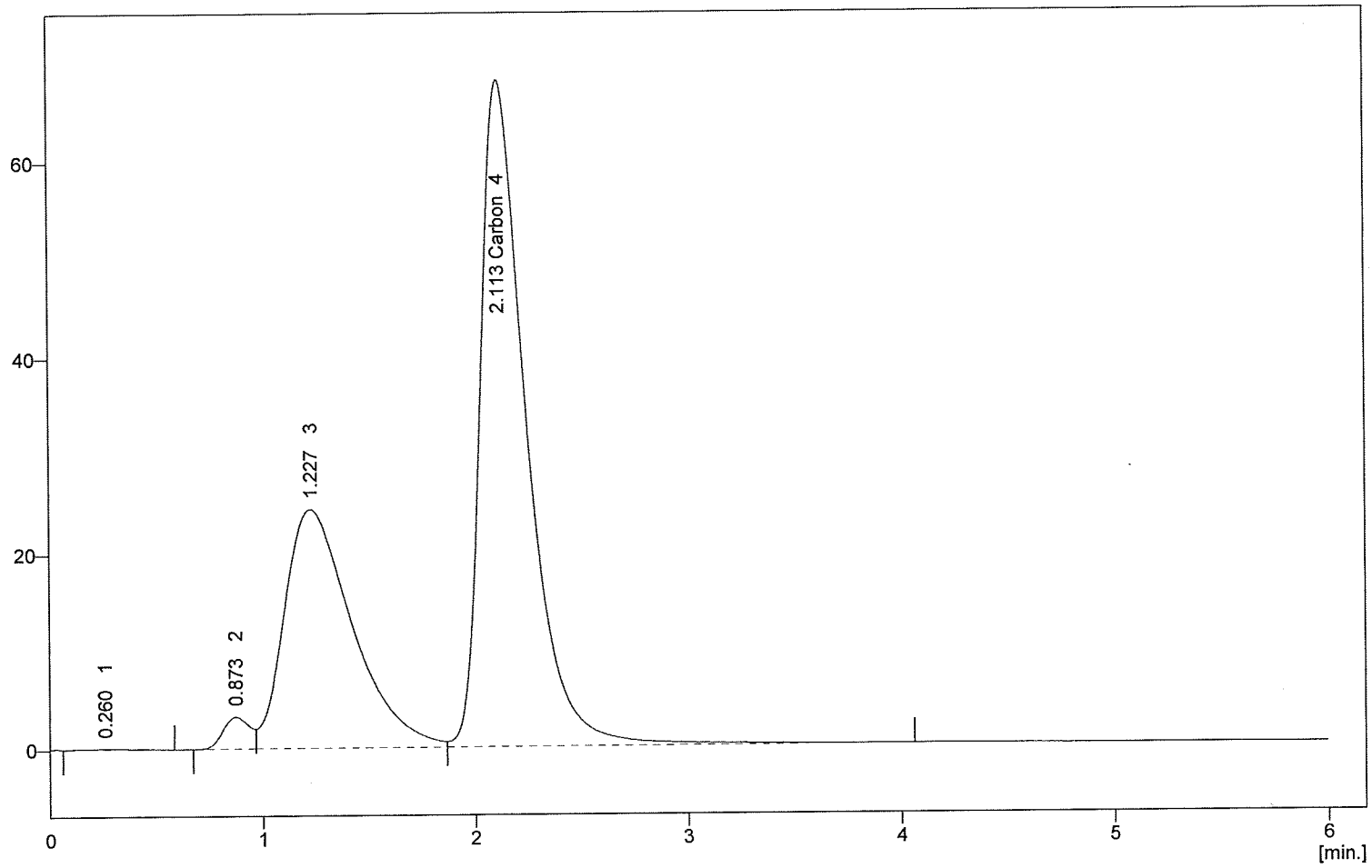
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:52:17 PM
Project : WORK1
Weight : 3.4 mg
Sample : 200-35700-A-12

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B043



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	1012.062	63.9	0.118	3.4702	1.0000	Ordnr
	Total	1583.355	100.0	3.400	3.4702		

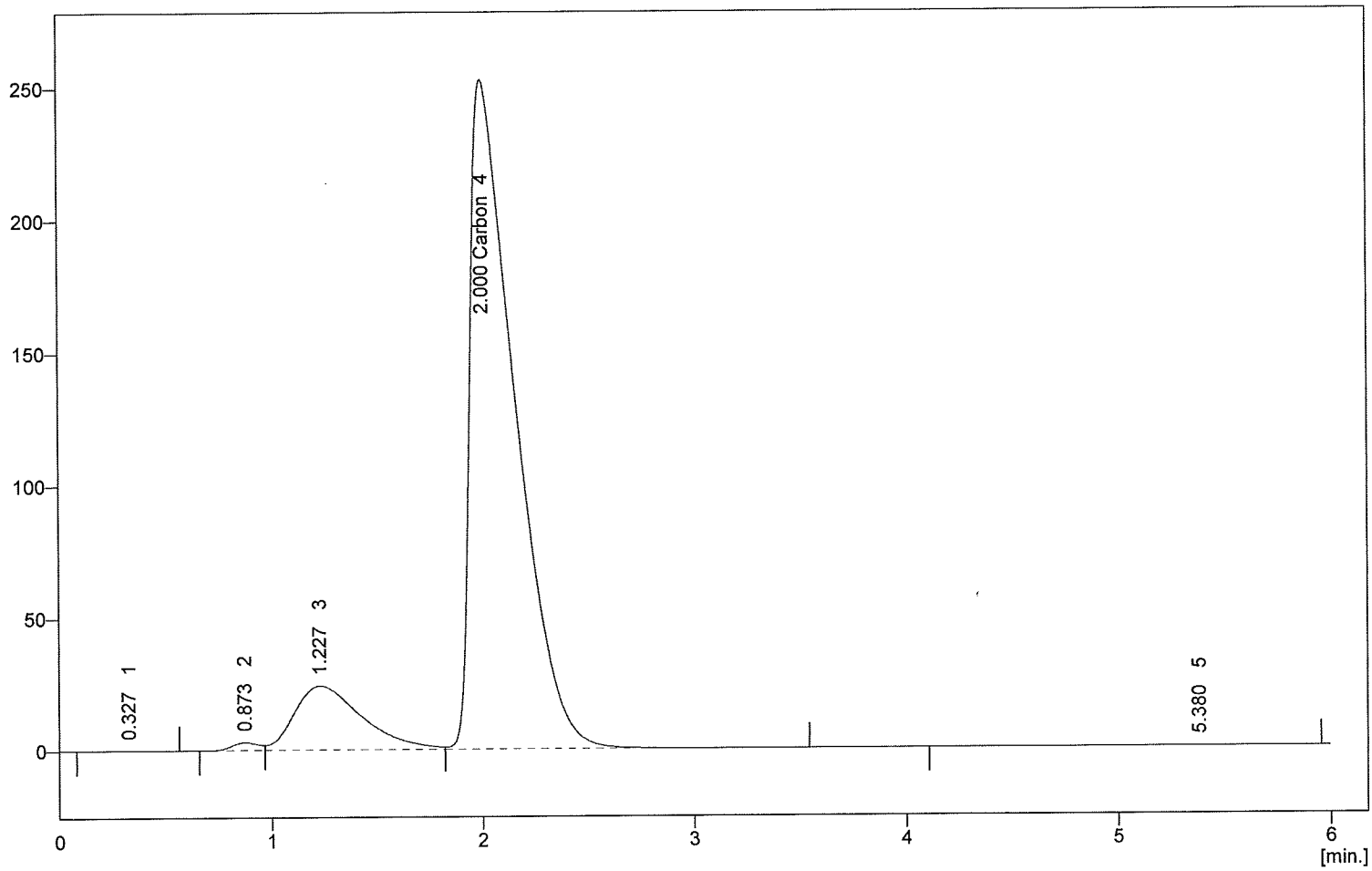
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:59:05 PM
Project : WORK1
Weight : 3 mg
Sample : 200-35700-A-12 MS

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B044



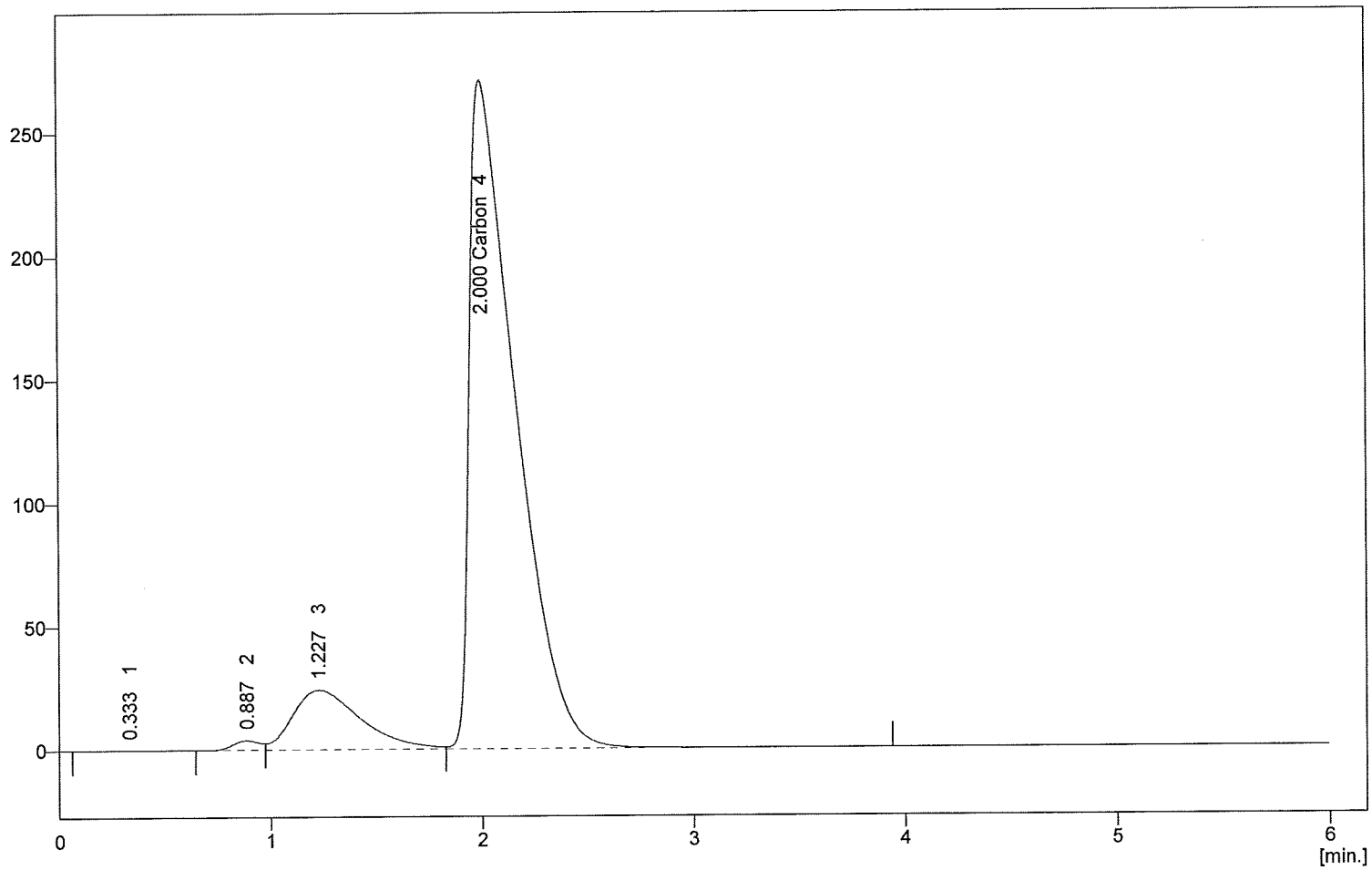
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.000	3701.588	86.7	0.451	15.0393	1.0000	Ordnr
	Total	4271.046	100.0	3.000	15.0393		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 7:05:53 PM
Project : WORK1
Weight : 3.2 mg
Sample : 200-35700-A-12 MSD
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B045



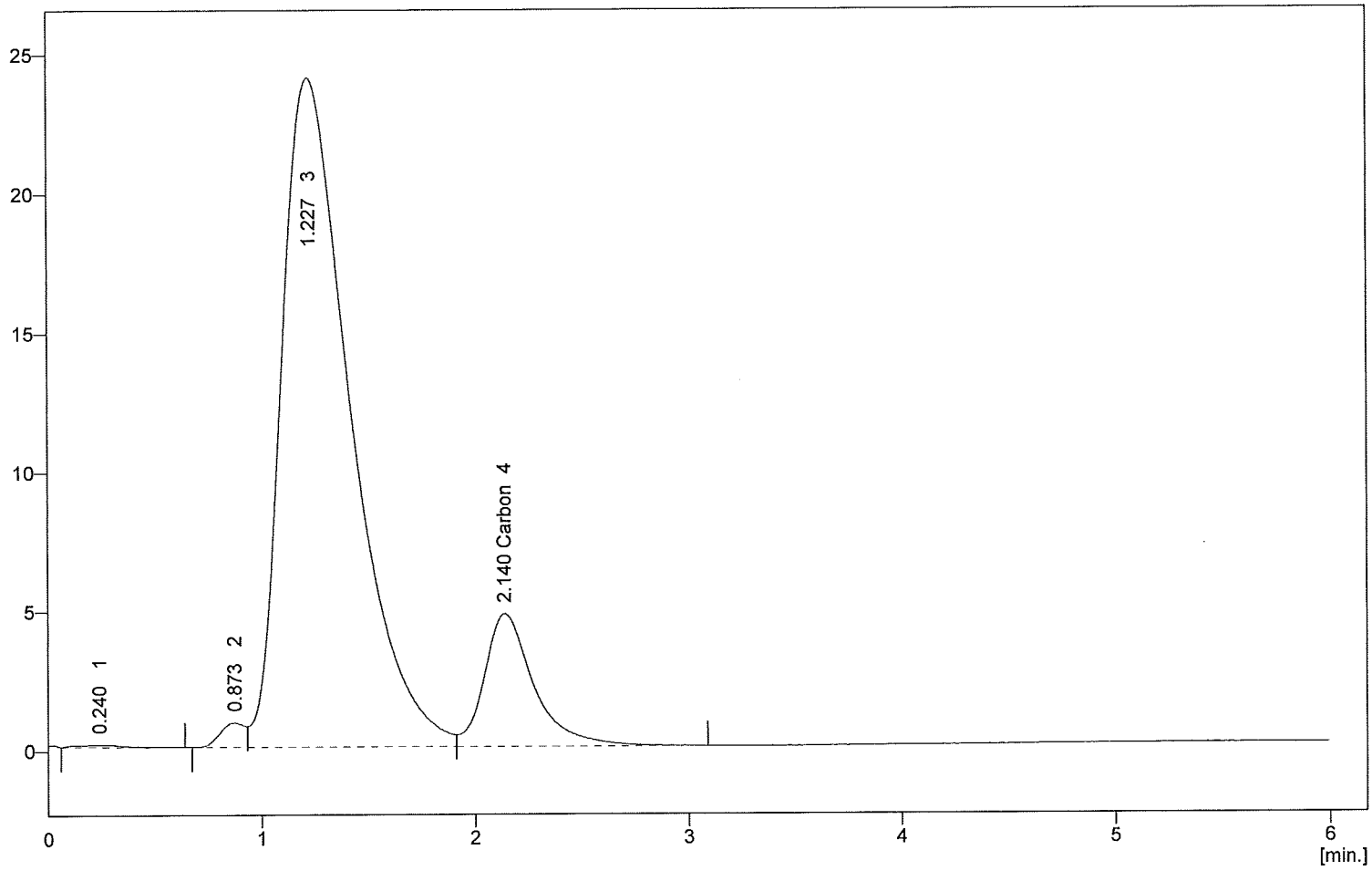
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.000	4088.011	87.7	0.499	15.5954	1.0000	Ordnr
	Total	4663.607	100.0	3.200	15.5954		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 7:12:43 PM
Project : WORK1
Weight : 3.3 mg
Sample : 200-35700-A-13
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B046



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.140	77.306	12.4	0.002	0.0661	1.0000	Ordnr
	Total	622.793	100.0	3.300	0.0661		

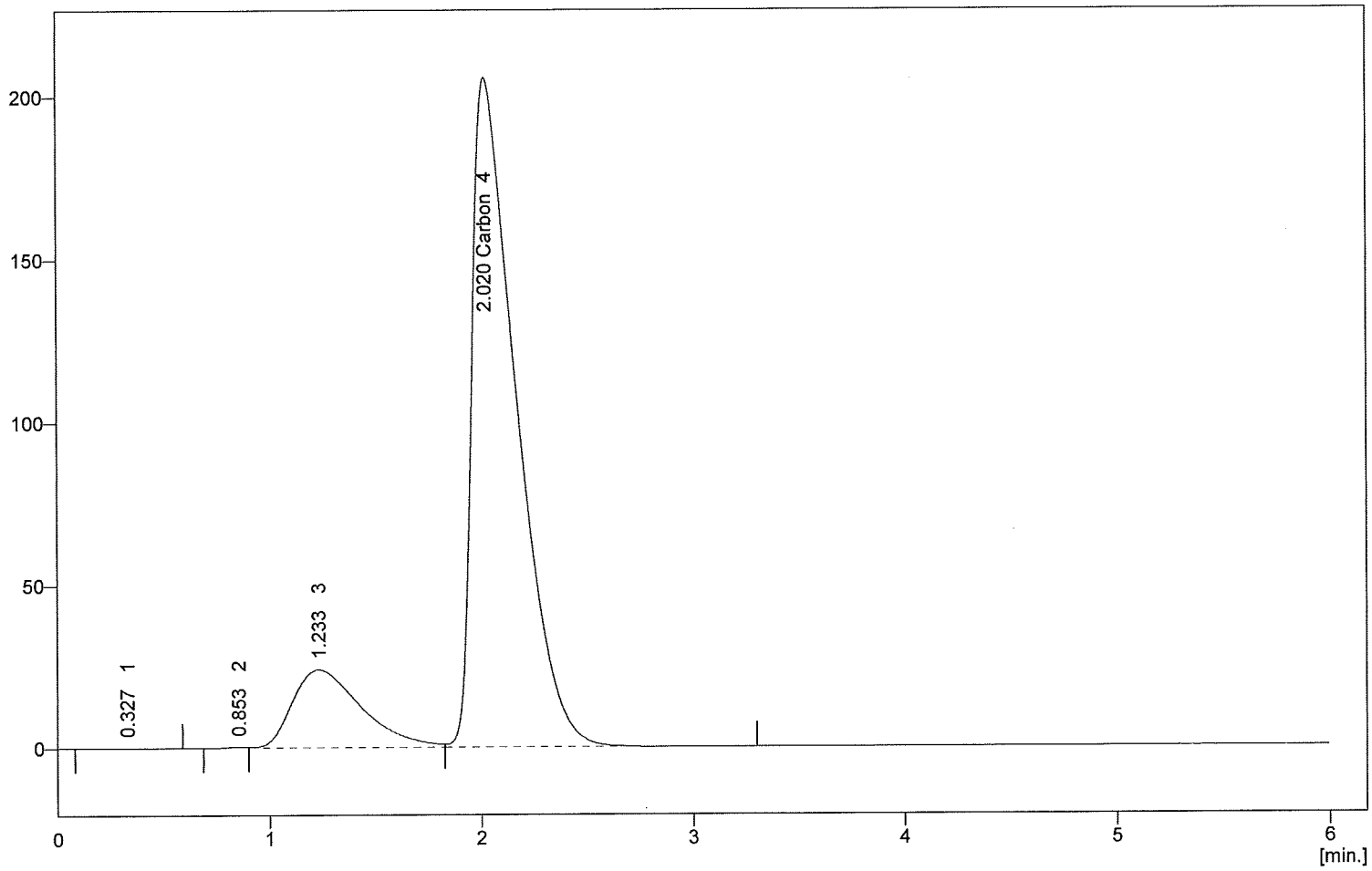
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 7:19:40 PM
Project : WORK1
Weight : 10 mg
Sample : CCV

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B047



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.020	2982.734	84.5	0.362	3.6212	1.0000	Ordnr
	Total	3529.528	100.0	10.000	3.6212		

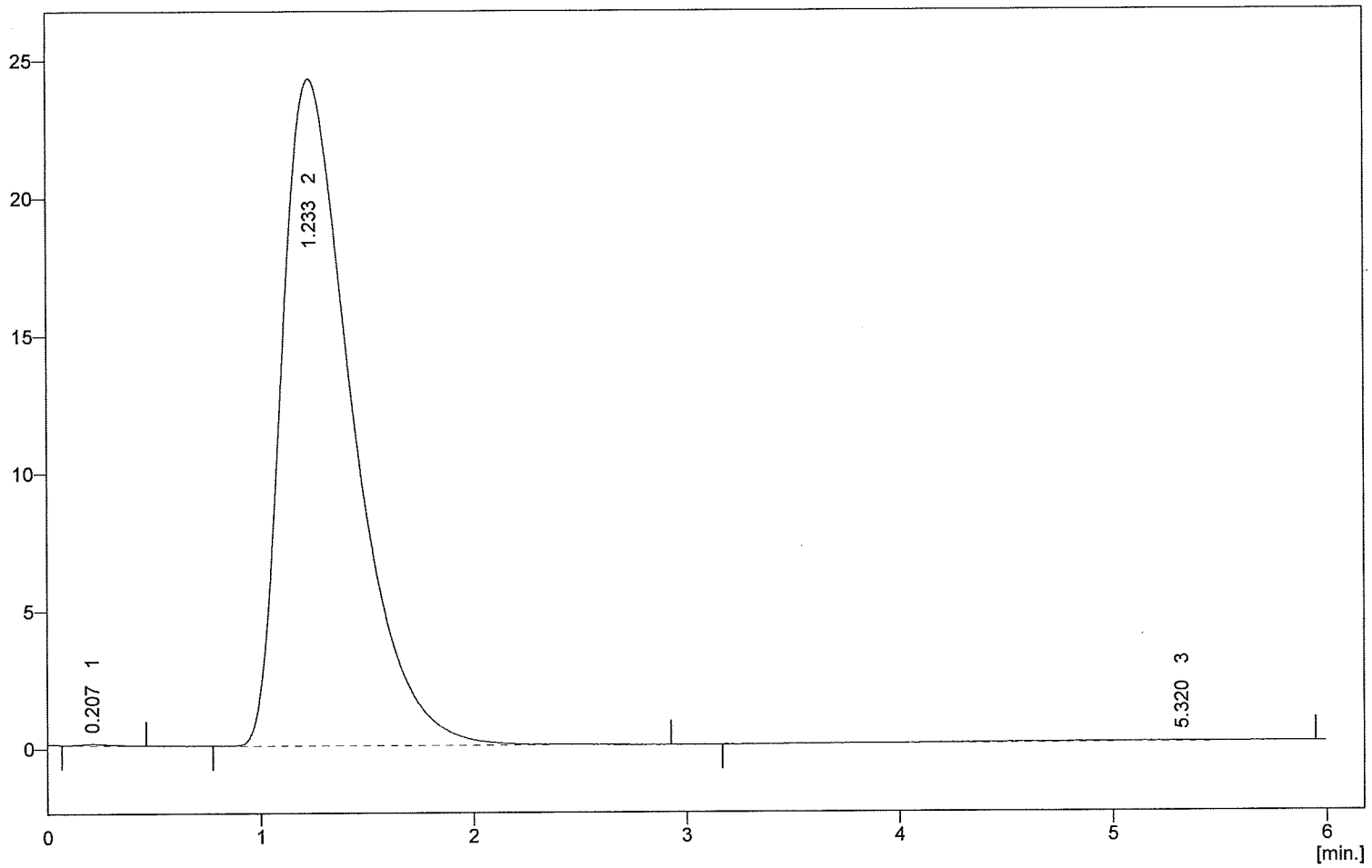
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 7:26:31 PM
Project : WORK1
Weight : 10 mg
Sample : CCB

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B048



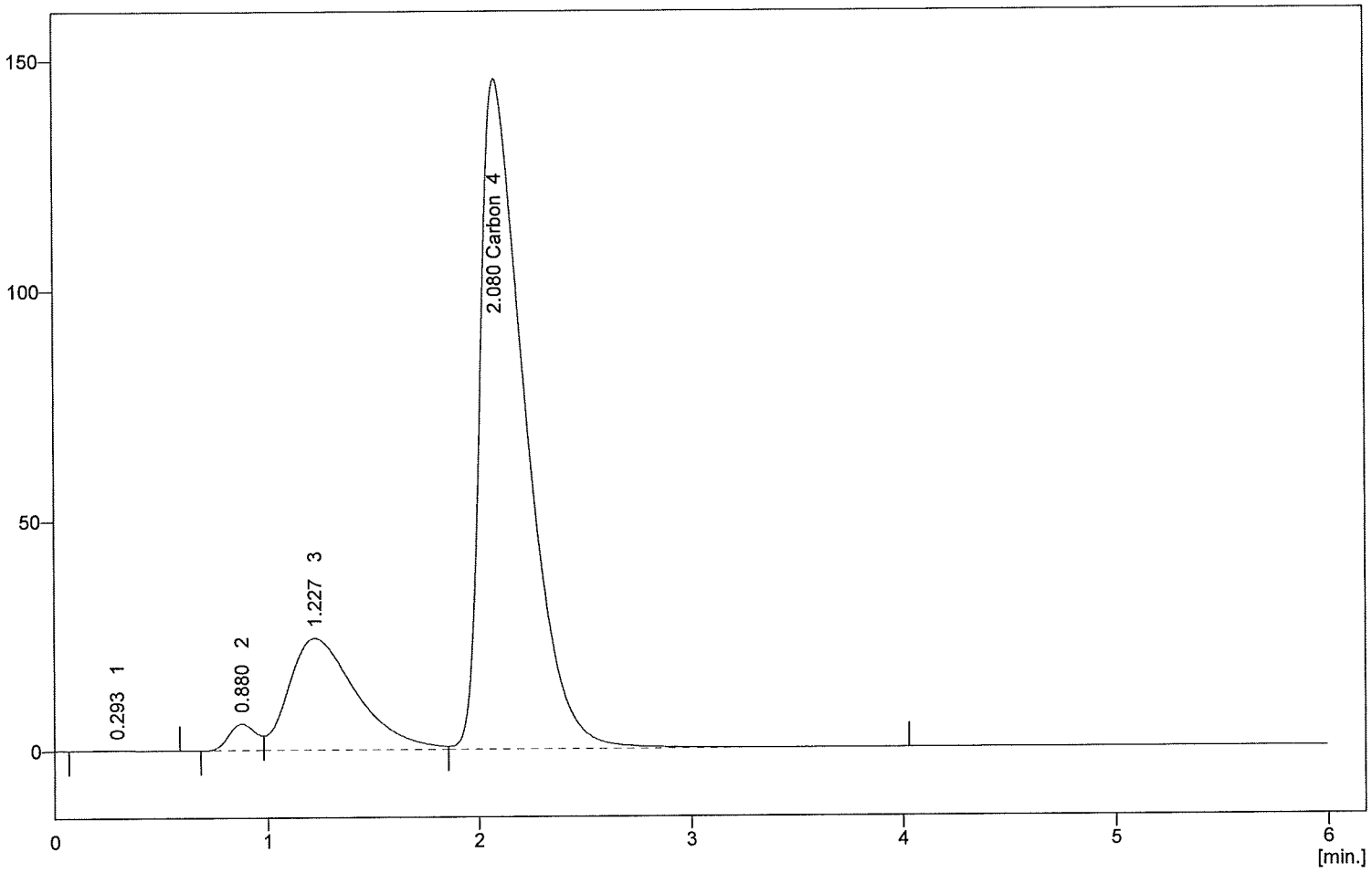
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.029						Ordnr
	Total	560.570	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 7:33:29 PM
Project : WORK1
Weight : 3.3 mg
Sample : 200-35700-A-14
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B049



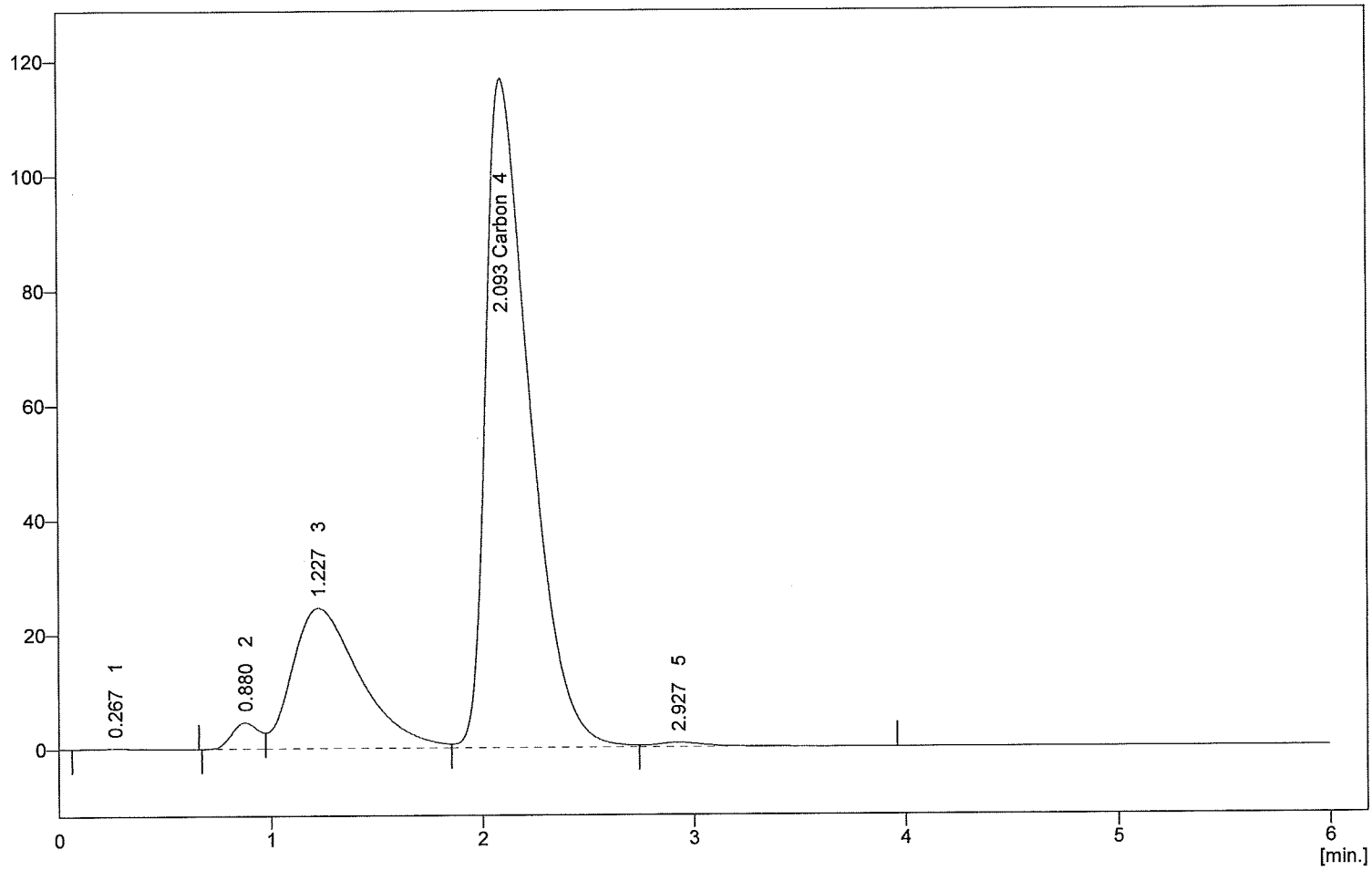
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.080	2119.038	78.2	0.255	7.7310	1.0000	Ordnr
	Total	2710.732	100.0	3.300	7.7310		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 7:40:29 PM
Project : WORK1
Weight : 3.3 mg
Sample : 200-35700-A-15
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B050



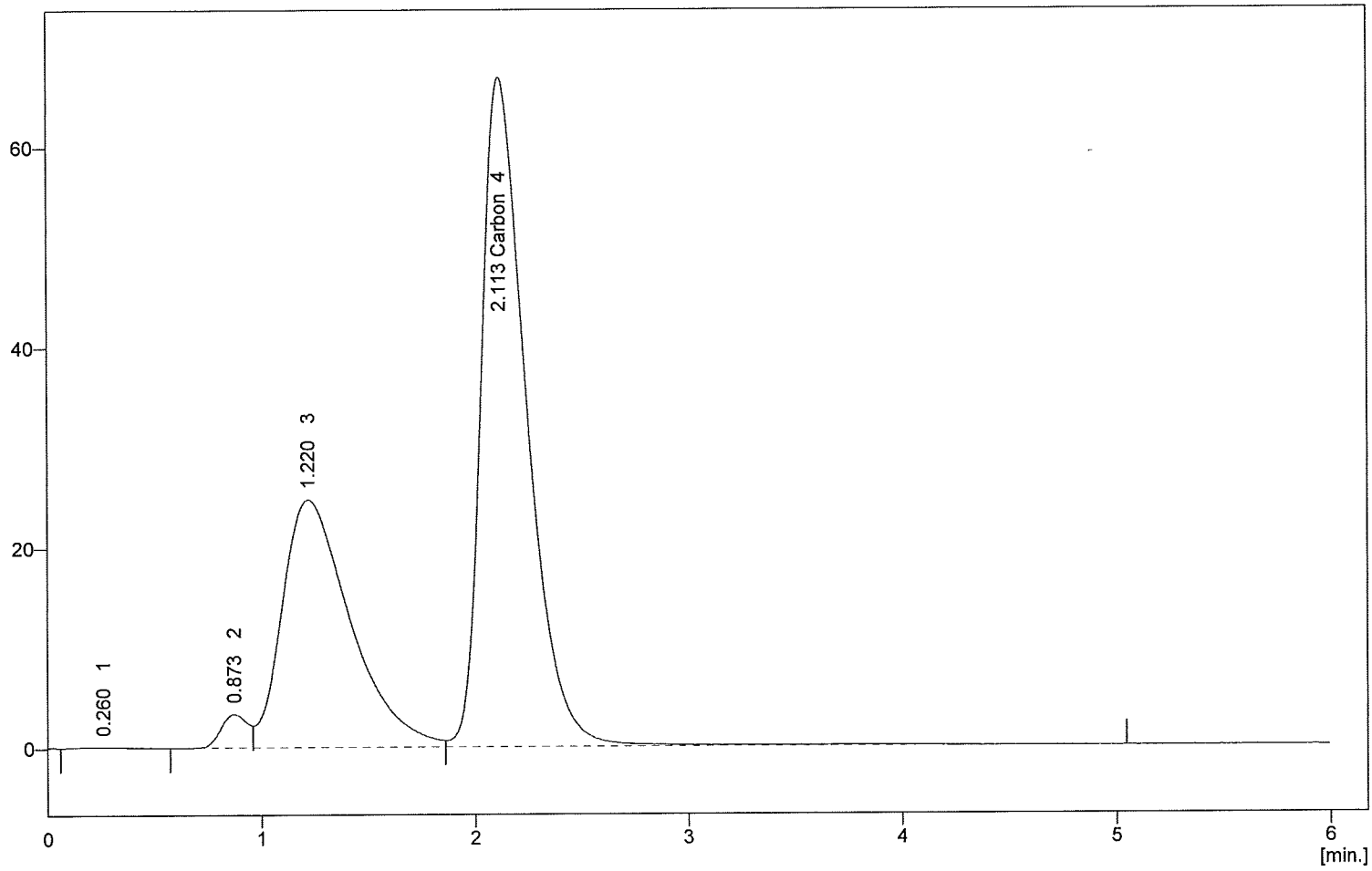
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.093	1684.182	73.7	0.201	6.0985	1.0000	Ordnr
	Total	2286.230	100.0	3.300	6.0985		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 7:47:21 PM
Project : WORK1
Weight : 3.7 mg
Sample : 200-35700-A-16
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B051



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	980.289	62.7	0.114	3.0824	1.0000	Ordnr
	Total	1563.112	100.0	3.700	3.0824		

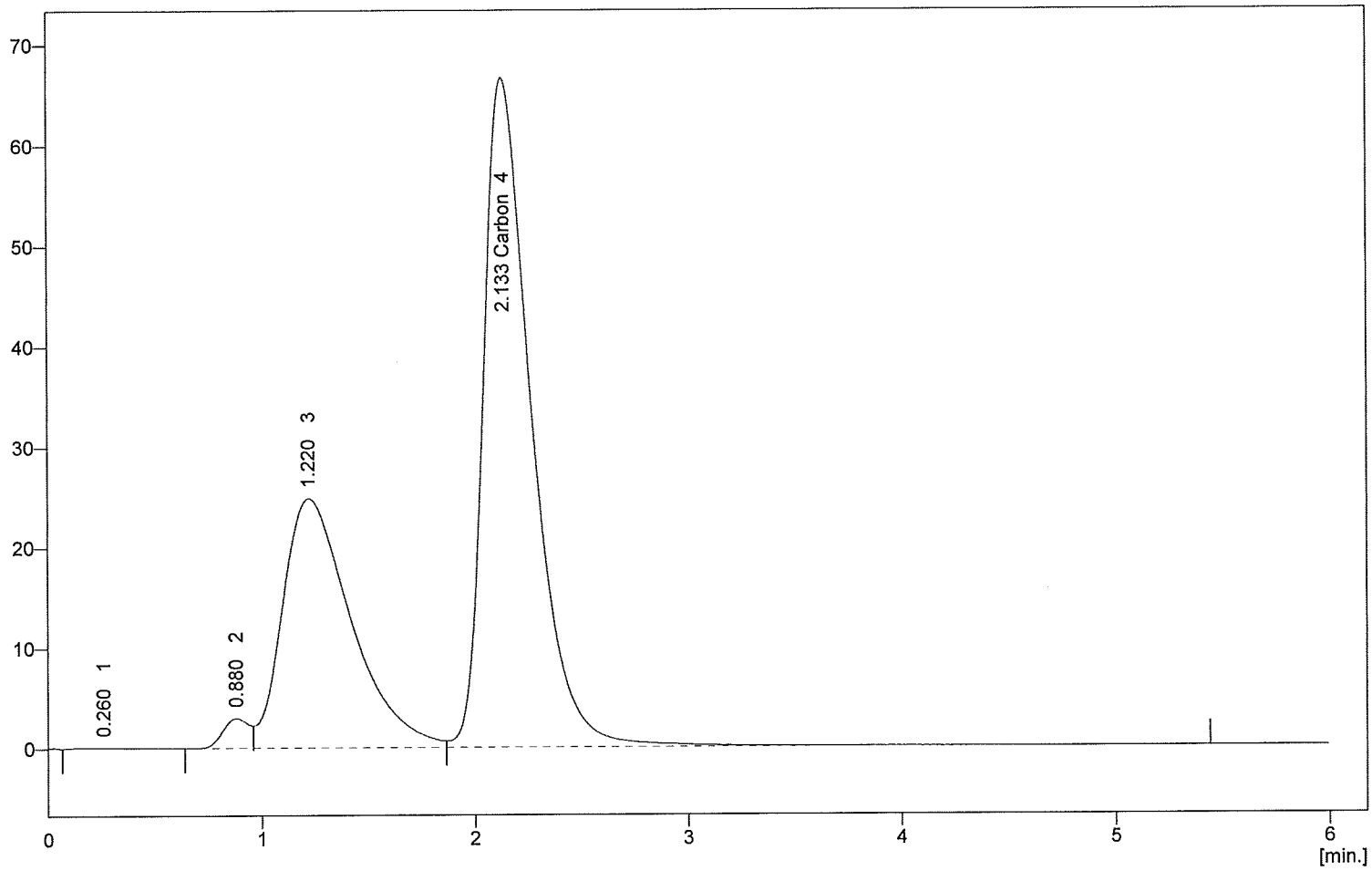
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 7:54:13 PM
Project : WORK1
Weight : 3.6 mg
Sample : 200-35700-A-17

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B052



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	1039.336	64.0	0.121	3.3712	1.0000	Ordnr
	Total	1623.361	100.0	3.600	3.3712		

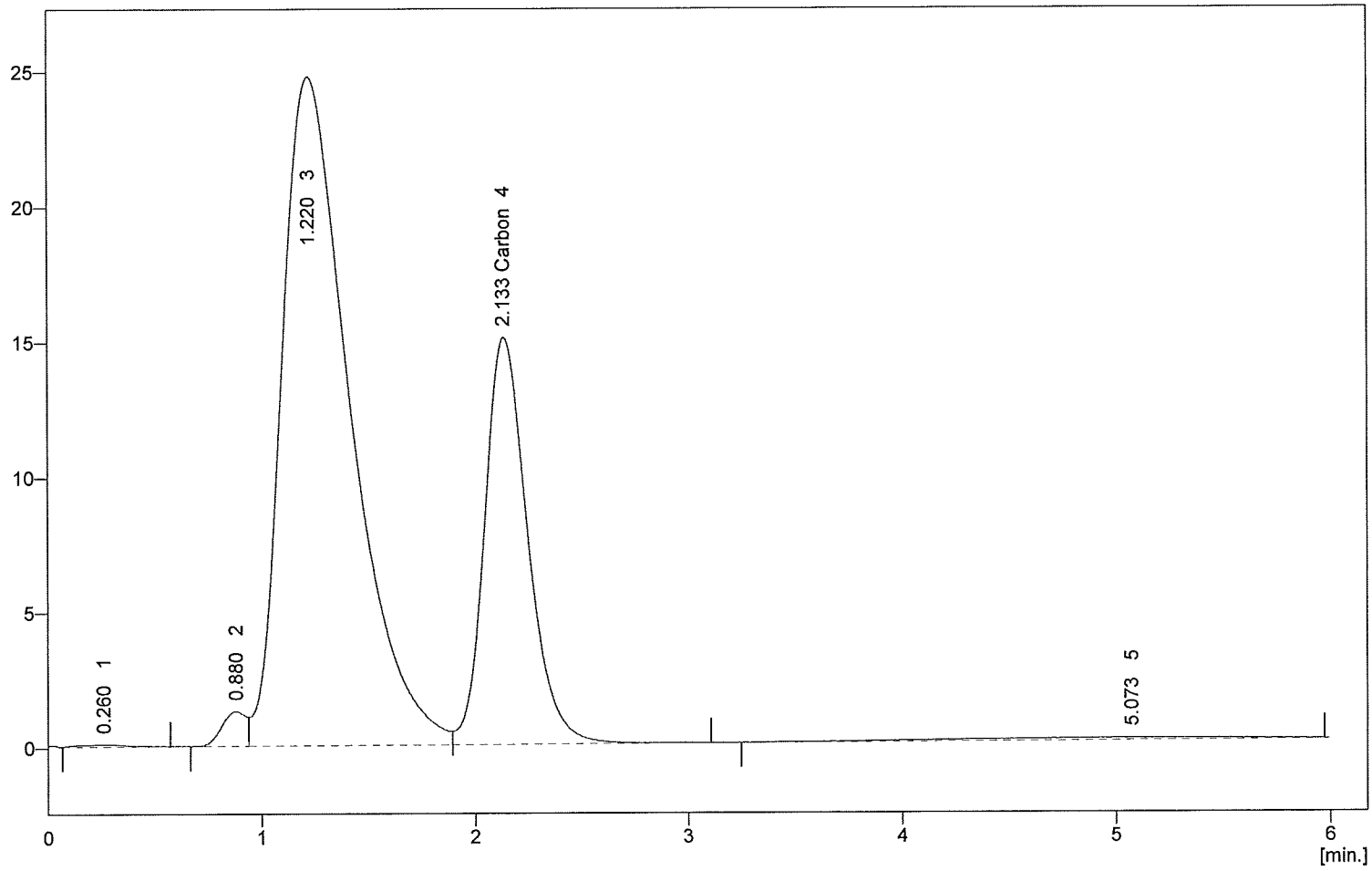
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 8:01:05 PM
Project : WORK1
Weight : 4.1 mg
Sample : 200-35700-A-18

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B053



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	211.140	27.1	0.019	0.4576	1.0000	Ordnr
	Total	780.507	100.0	4.100	0.4576		

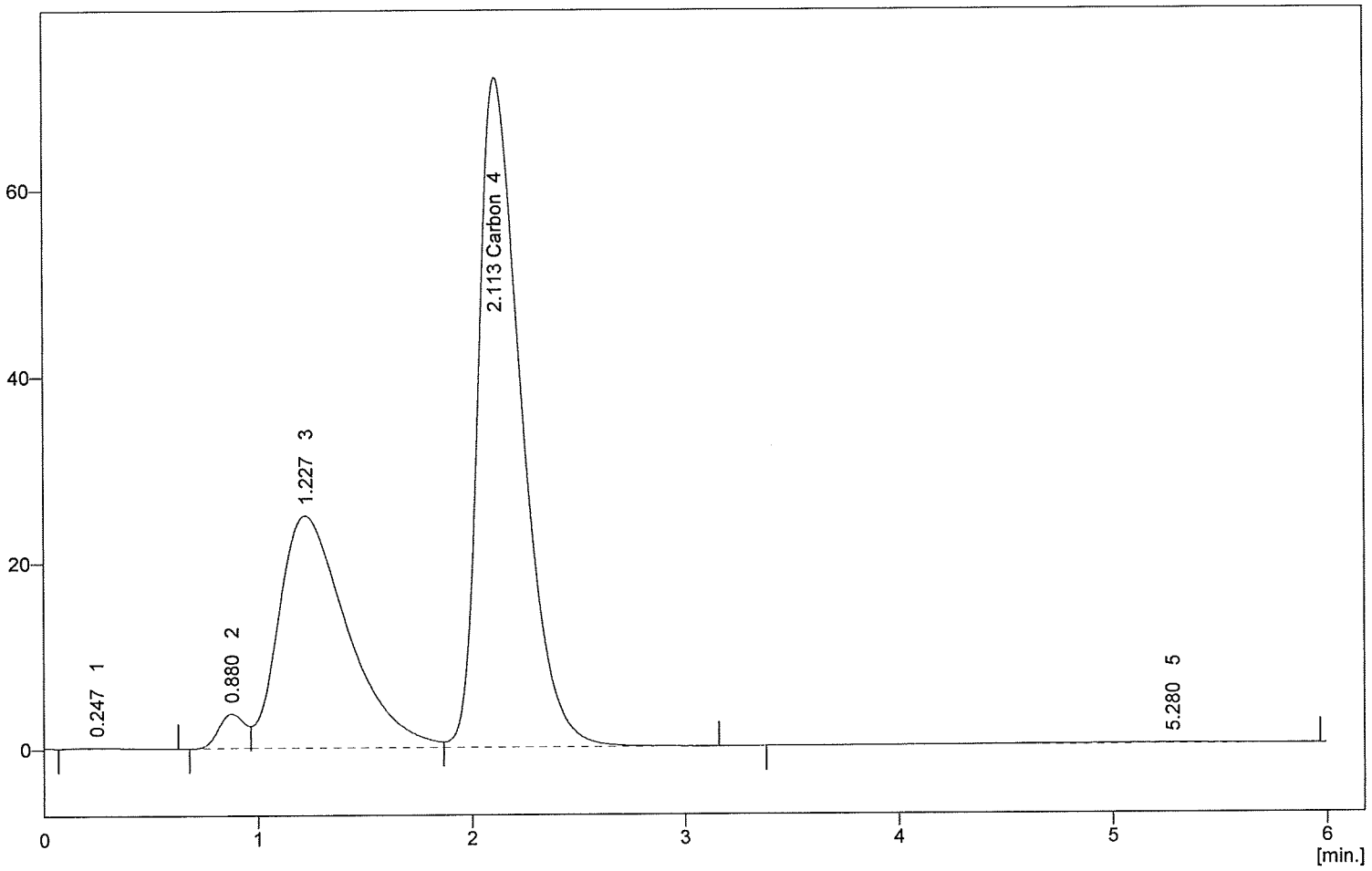
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 8:07:58 PM
Project : WORK1
Weight : 3.9 mg
Sample : 200-35649-A-1

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B054



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	1005.429	62.8	0.117	3.0042	1.0000	Ordnr
	Total	1600.799	100.0	3.900	3.0042		

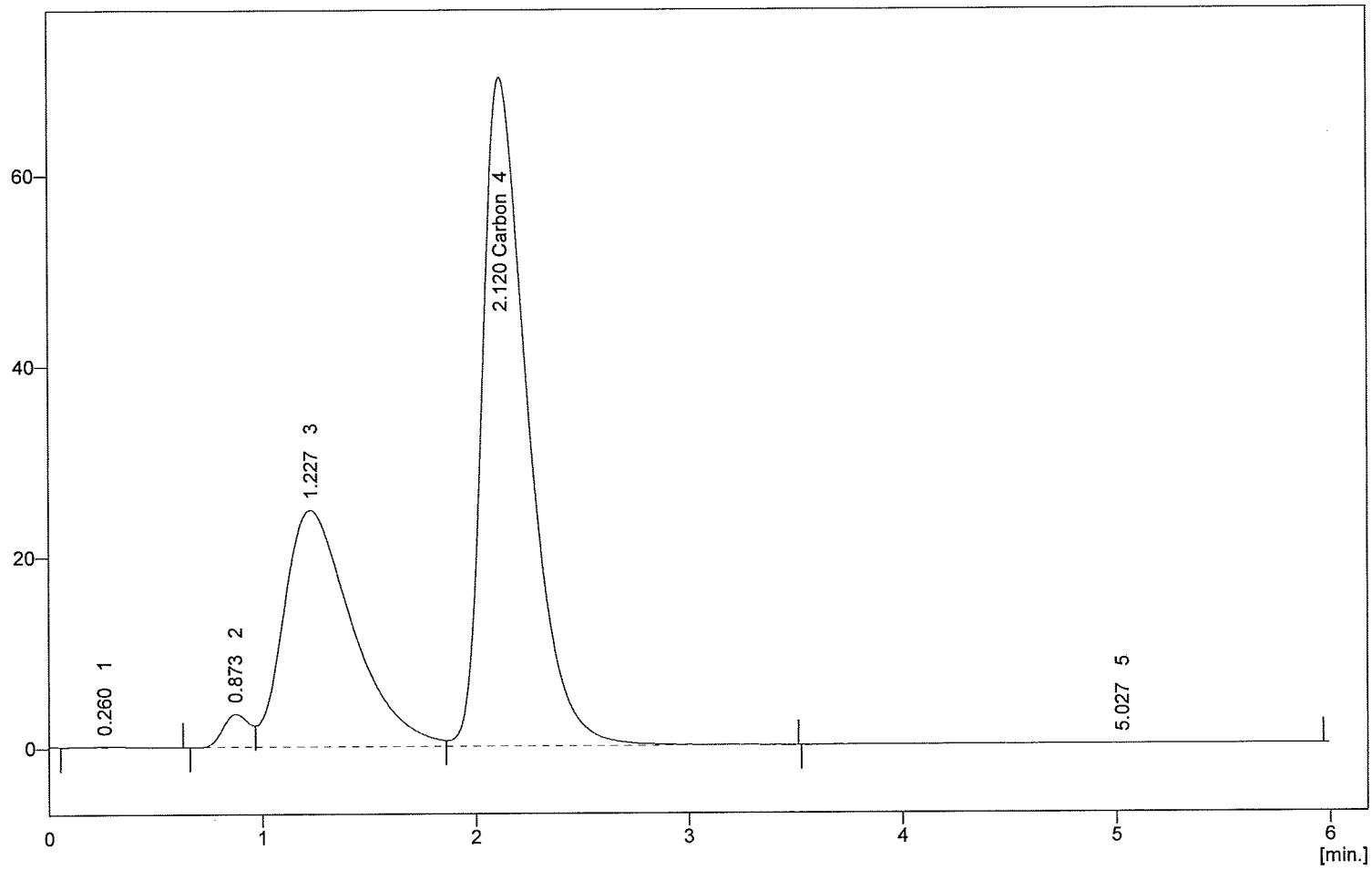
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 8:15:01 PM
Project : WORK1
Weight : 3.7 mg
Sample : 200-35649-A-2

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B055



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.120	1036.173	63.8	0.121	3.2695	1.0000	Ordnr
	Total	1625.211	100.0	3.700	3.2695		

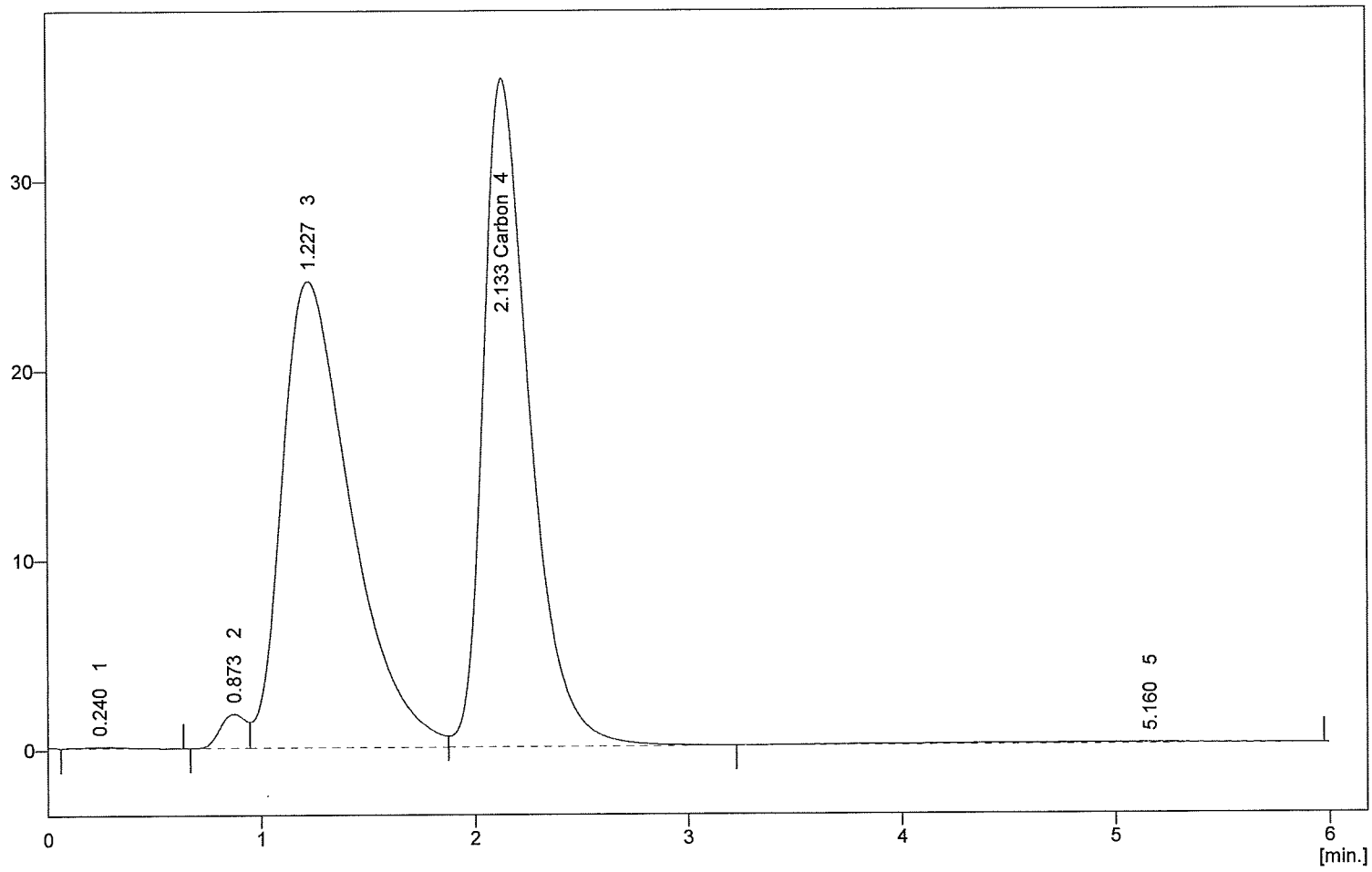
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 8:22:05 PM
Project : WORK1
Weight : 3.6 mg
Sample : 200-35649-A-3

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\Inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B056

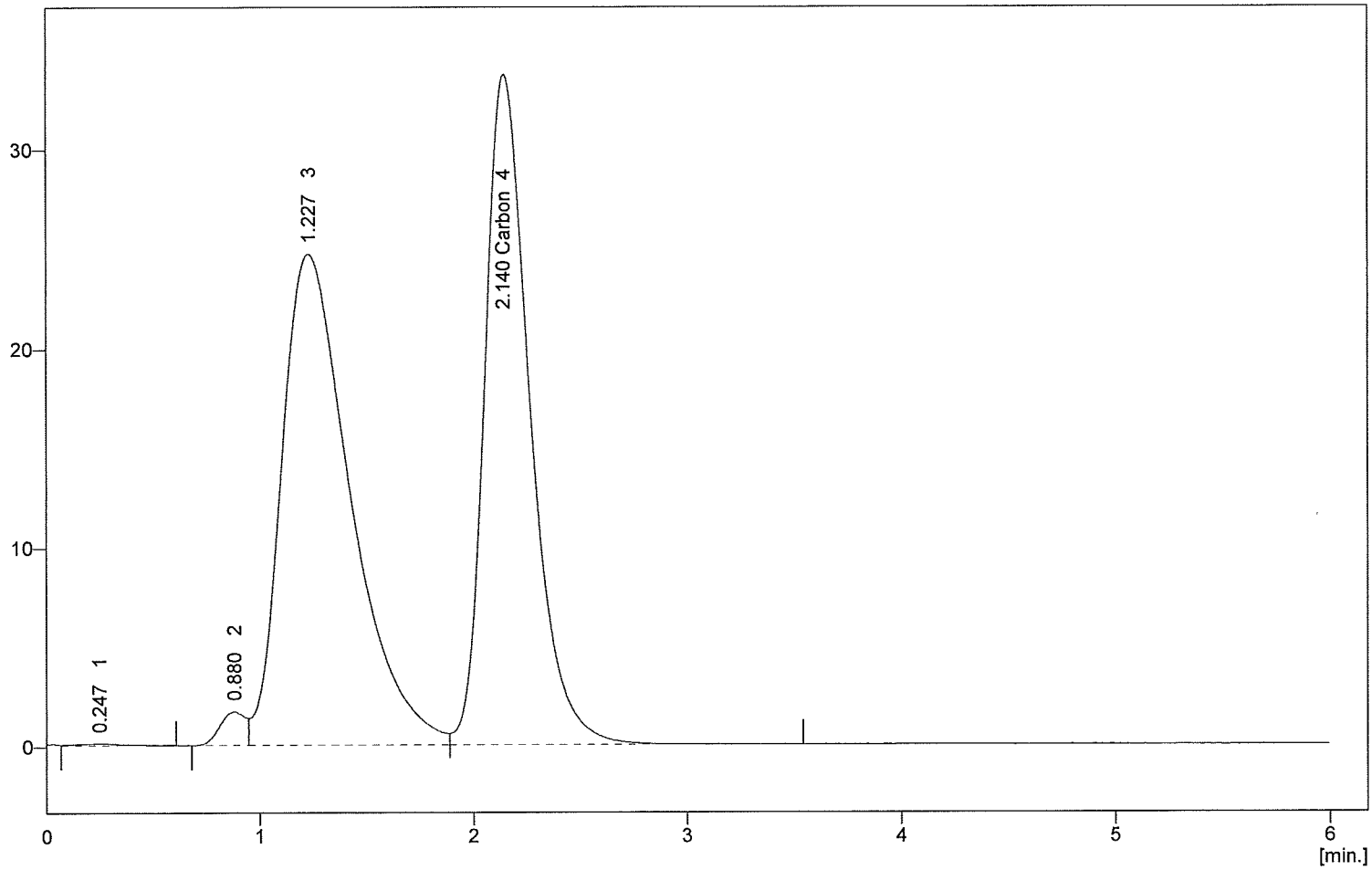


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	535.092	48.3	0.059	1.6360	1.0000	Ordnr
	Total	1108.109	100.0	3.600	1.6360		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 8:29:10 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 3.3 mg		
Sample	: 200-35649-A-4	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B057
Calibration	: 101716B		

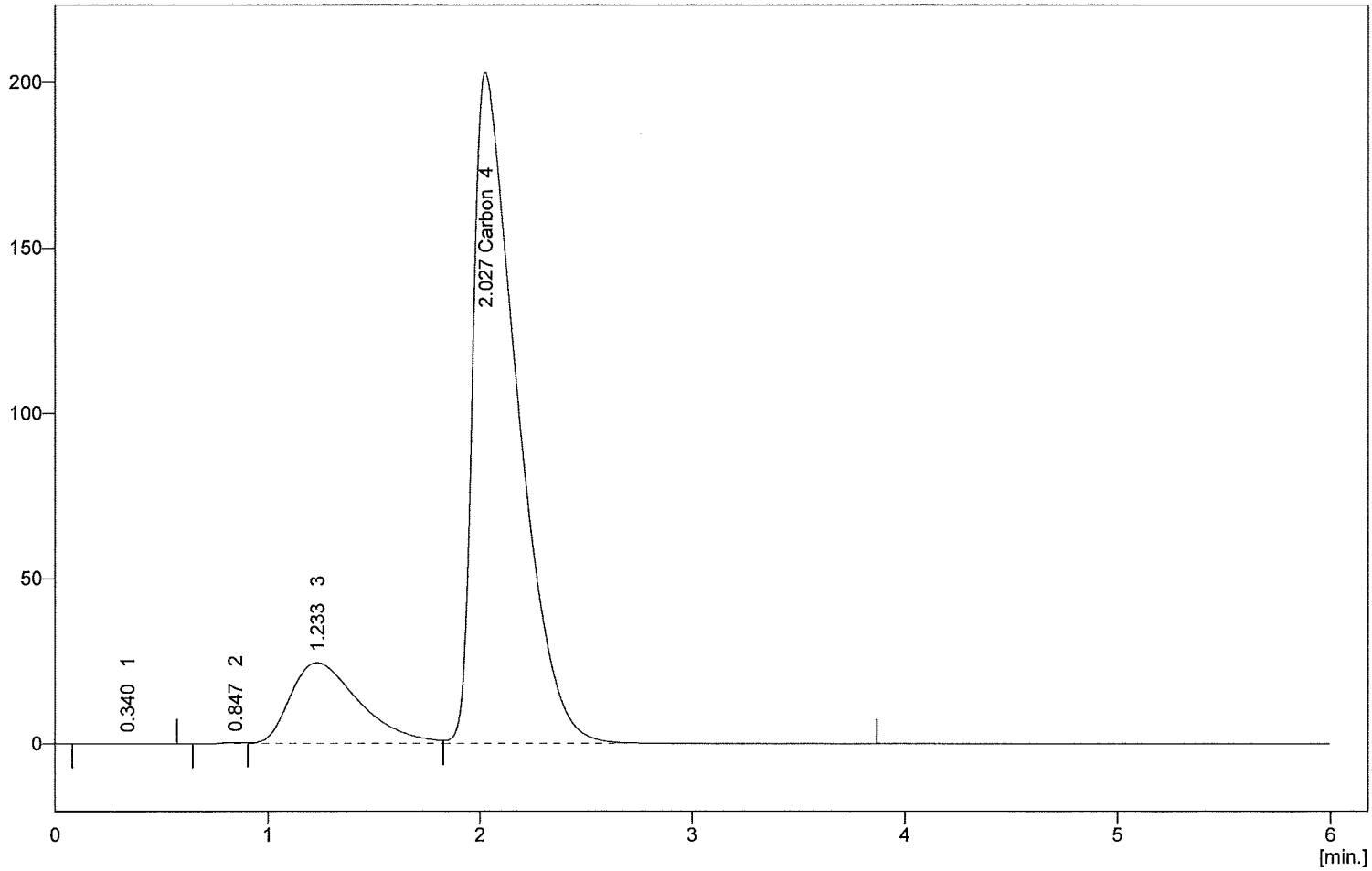


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.140	494.831	46.6	0.054	1.6336	1.0000	Ordnr
	Total	1061.923	100.0	3.300	1.6336		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 8:36:05 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 10 mg		
Sample	: CCV	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B058
Calibration	: 101716B		

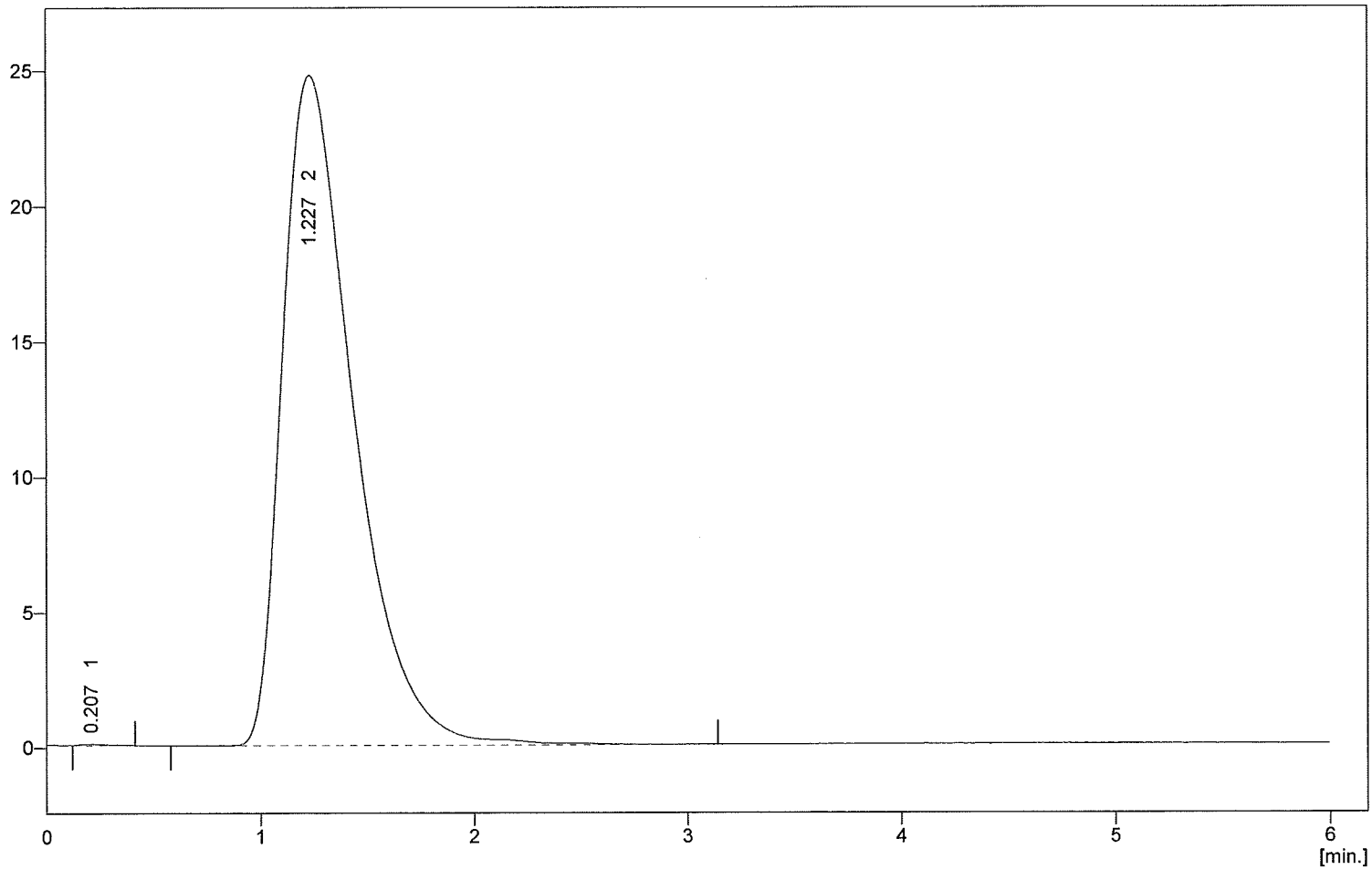


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.027	2947.140	84.1	0.358	3.5771	1.0000	Ordnr
	Total	3505.758	100.0	10.000	3.5771		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 8:43:01 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 10 mg		
Sample	: CCB	Chromatogram	: C:\Documents and Settings\Inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B059
Calibration	: 101716B		



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.029						Ordnr
	Total	573.328	100.0	10.000	0.0000		

LLOYD KAHN TOC
Channel 1
CALIBRATION
Carbon - 2.029 min.

Peak Type : Ordnr

Left Window : 0.3 min

Right Window : 0.6 min

Response Base : Area

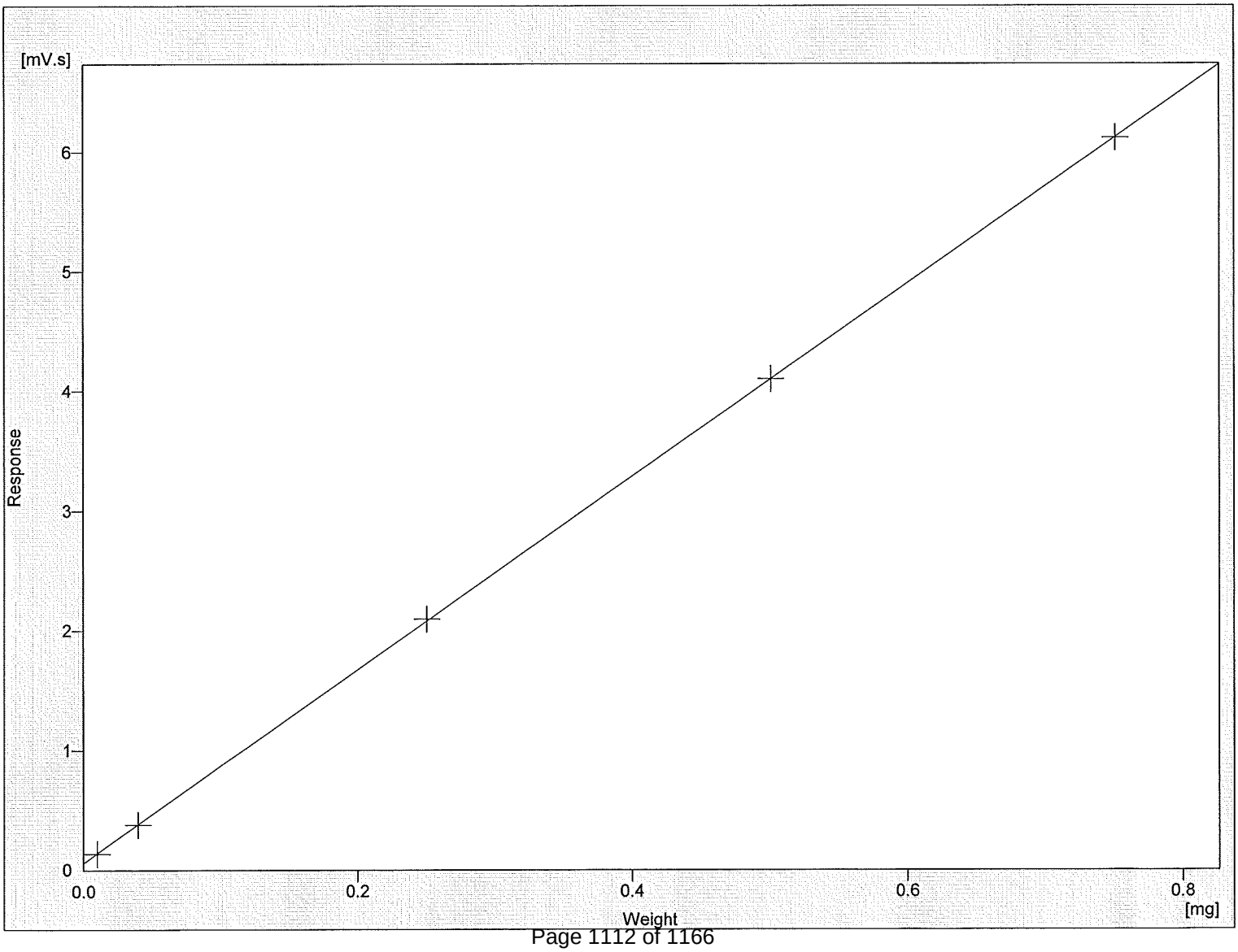
Curve Fit Type : Linear

Zero Type : Zero not used

Subst. Equation : Y = 8071.9467*X + 59.6917

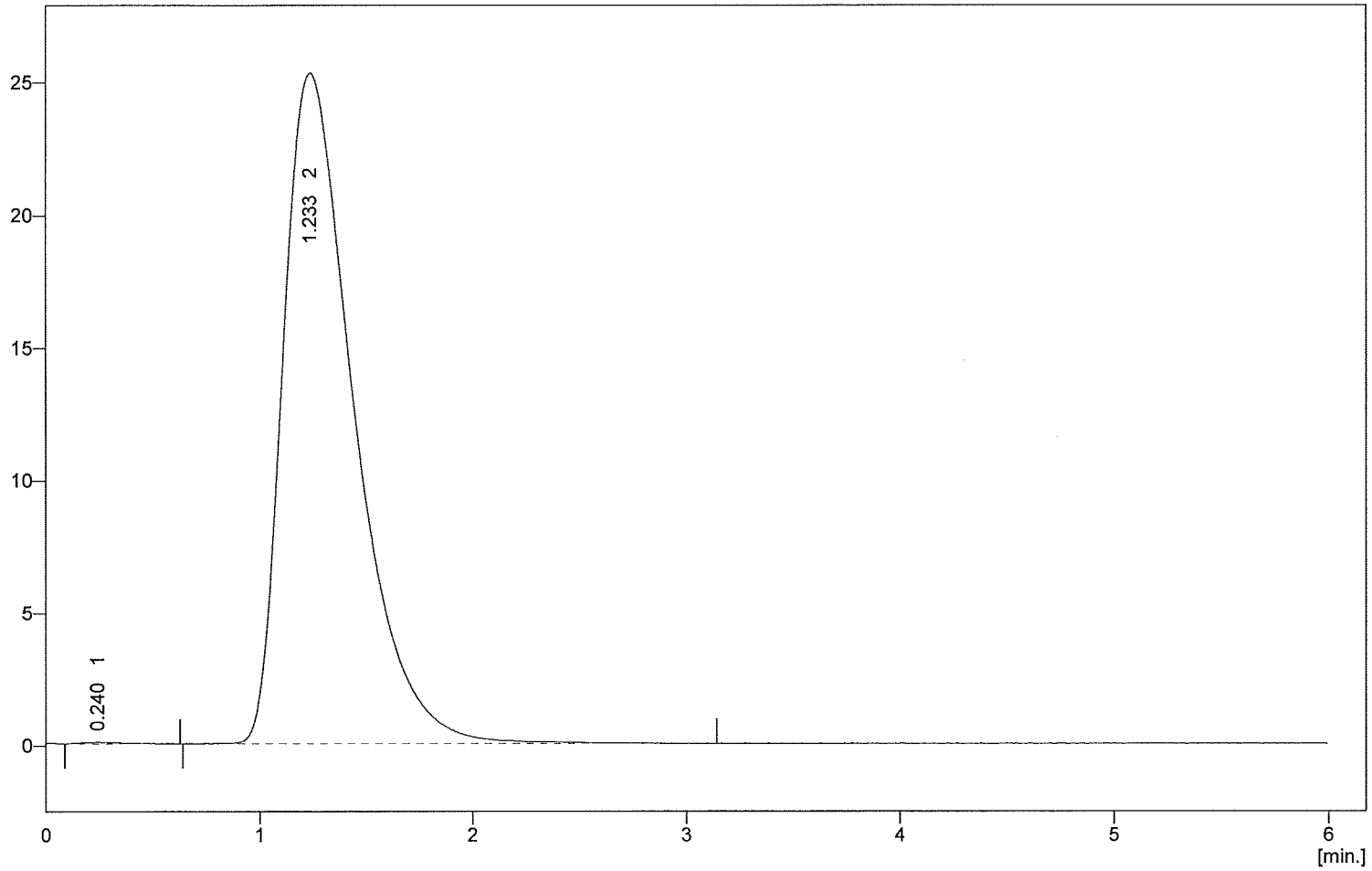
Correlation Coef. : 0.999994

	Response	Weight	Resp. Factor	Used
1	0.000	0.000	0.0000	Yes
2	135.604	0.010	0.0001	Yes
3	377.368	0.040	0.0001	Yes
4	2095.400	0.250	0.0001	Yes
5	4100.518	0.501	0.0001	Yes
6	6116.400	0.751	0.0001	Yes
7	0.000	0.000	0.0000	Yes
8	0.000	0.000	0.0000	Yes
9	0.000	0.000	0.0000	Yes
10	0.000	0.000	0.0000	Yes
11	0.000	0.000	0.0000	Yes
12	0.000	0.000	0.0000	Yes
13	0.000	0.000	0.0000	Yes
14	0.000	0.000	0.0000	Yes
15	0.000	0.000	0.0000	Yes
16	0.000	0.000	0.0000	Yes
17	0.000	0.000	0.0000	Yes
18	0.000	0.000	0.0000	Yes
19	0.000	0.000	0.0000	Yes
20	0.000	0.000	0.0000	Yes



Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 12:21:13 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 0 mg		
Sample	: STD 1	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716Z001
Calibration	: 101716Z		

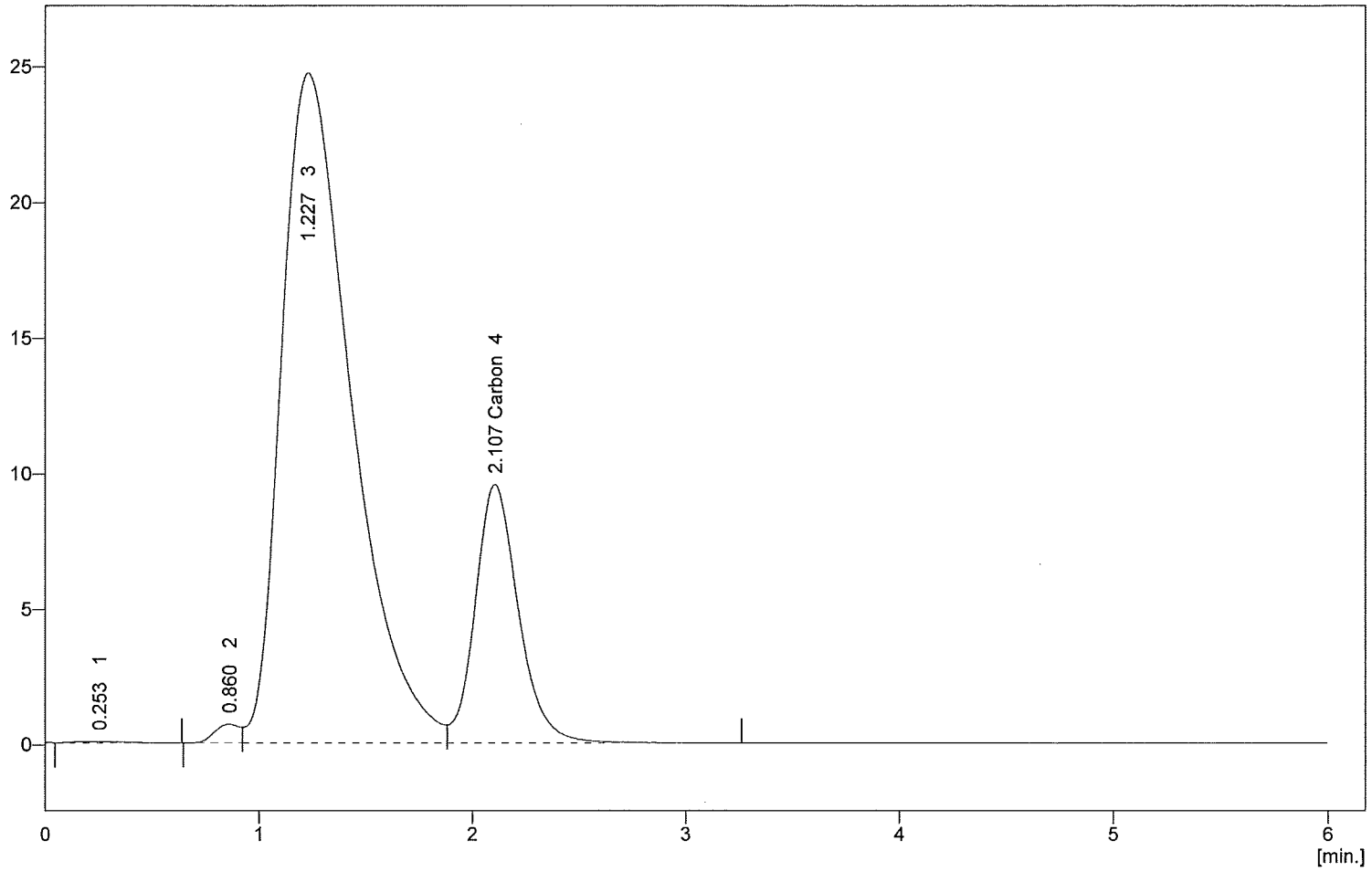


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.033						Ordnr
	Total	585.344	100.0	0.000	100.0000		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 12:27:41 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 0.0213 mg		
Sample	: STD 2	Chromatogram	: 101716Z002
Calibration	: 101716Z		

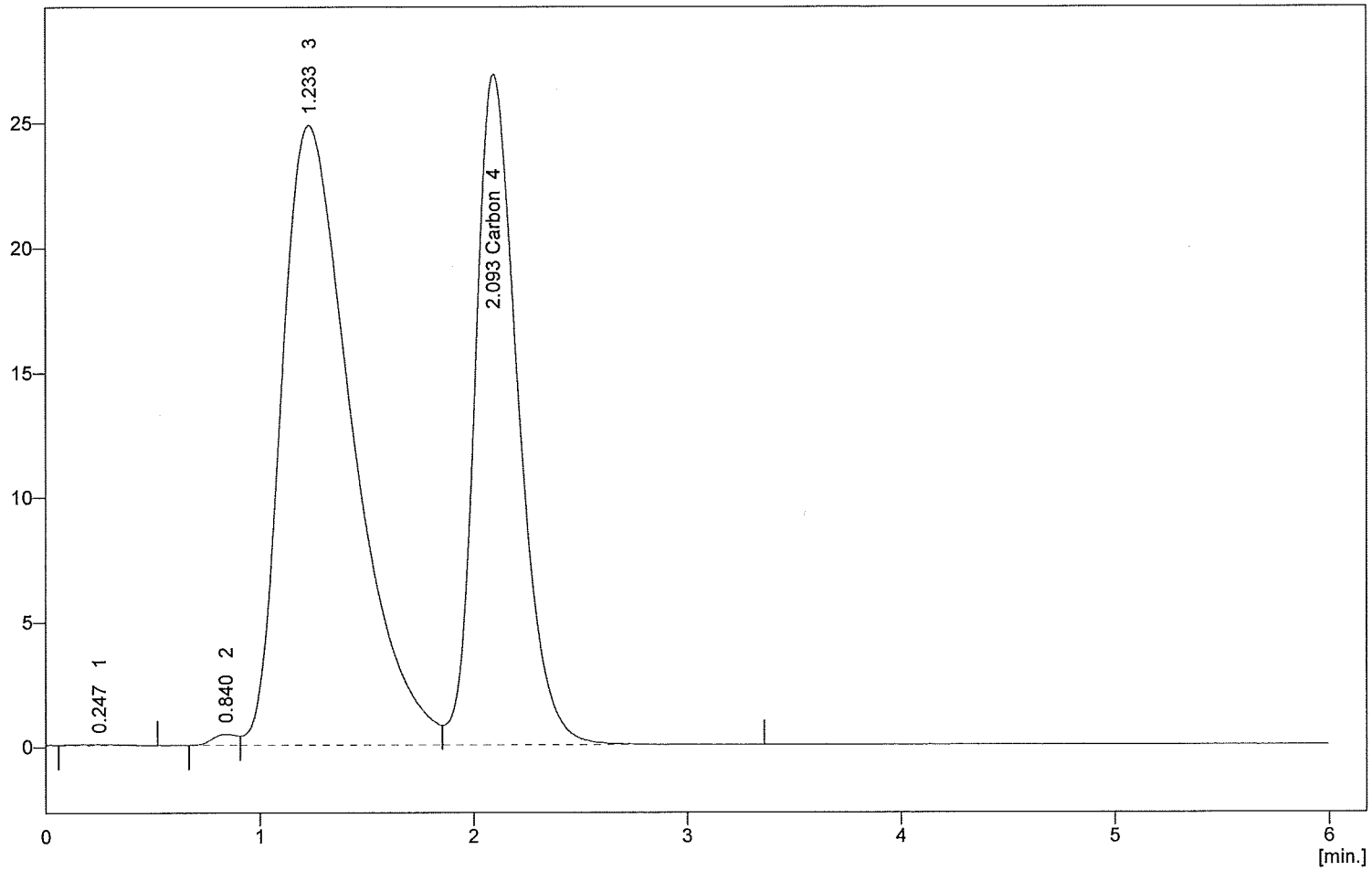


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.107	135.604	19.3	0.010	47.0500	1.0000	Ordnr
	Total	703.728	100.0	0.021	47.0500		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 12:34:08 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 0.0851 mg		
Sample	: STD 3	Chromatogram	: 101716Z003
Calibration	: 101716Z		



Result Table - Calculation Method ESTD

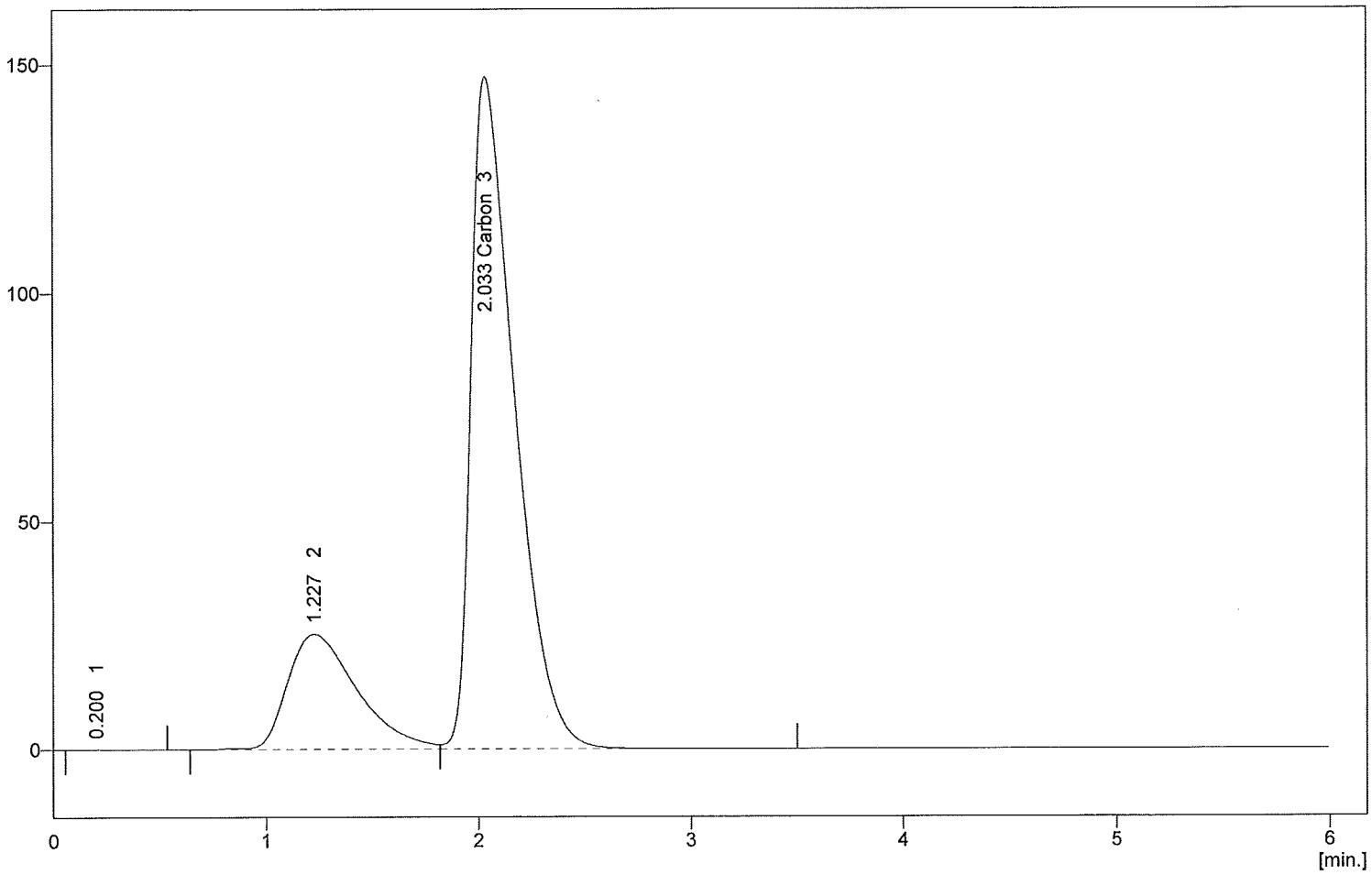
Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.093	377.368	39.7	0.040	47.0500	1.0000	Ordnr
	Total	951.373	100.0	0.085	47.0500		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 12:40:37 PM
Project : WORK1
Weight : 0.532 mg
Sample : STD 4
Calibration : 101716Z

By : None
Style : Sequence

Chromatogram : 101716Z004



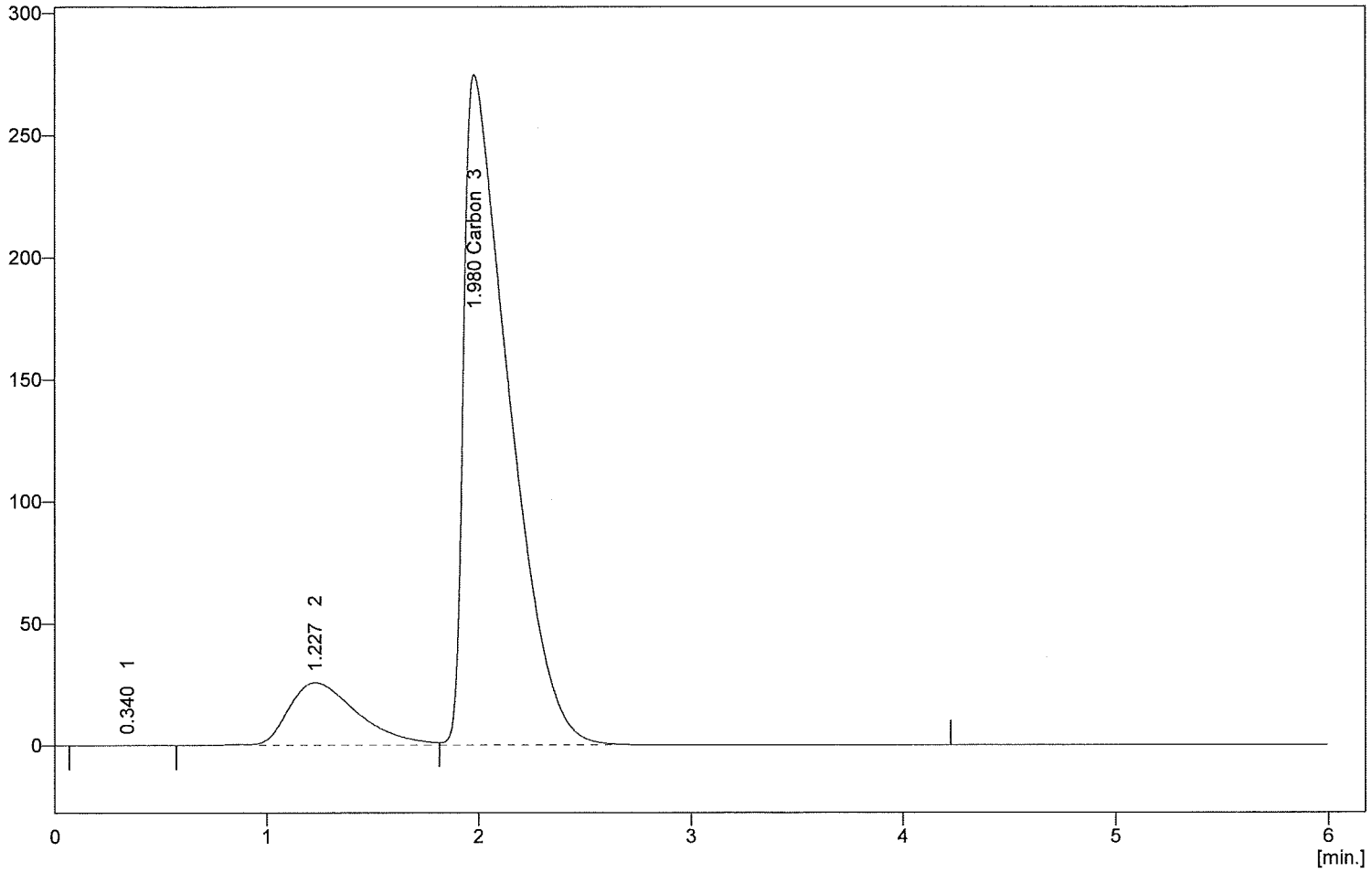
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.033	2095.400	78.4	0.250	47.0552	1.0000	Ordnr
	Total	2672.788	100.0	0.532	47.0552		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 12:47:07 PM
Project : WORK1
Weight : 1.064 mg
Sample : STD 5
Calibration : 101716Z

By : None
Style : Sequence
Chromatogram : 101716Z005

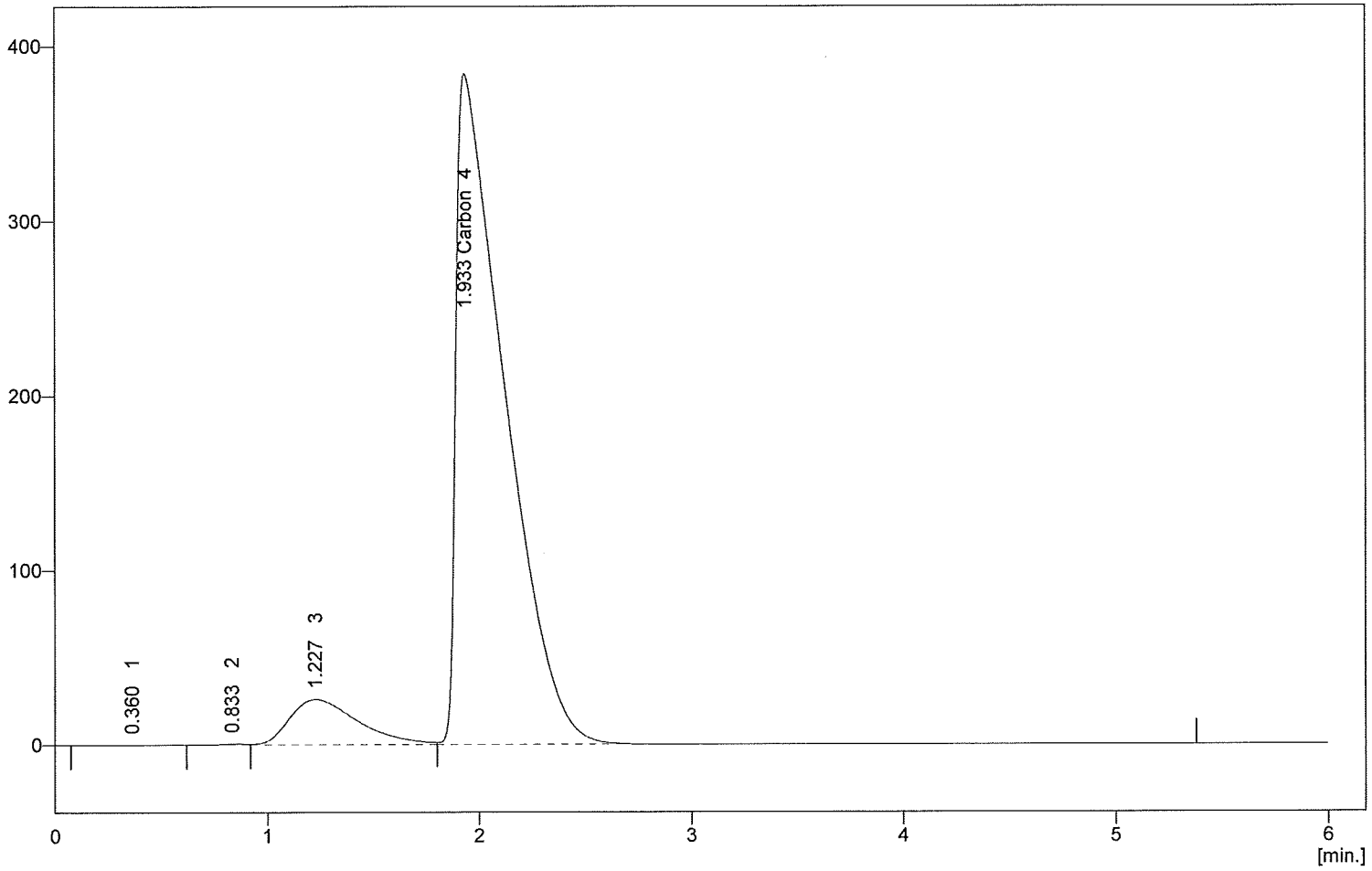


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	1.980	4100.518	87.5	0.500	46.9775	1.0000	Ordnr
	Total	4686.987	100.0	1.064	46.9775		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 12:53:35 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 1.596 mg		
Sample	: STD 6	Chromatogram	: 101716Z006
Calibration	: 101716Z		



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	1.933	6116.400	91.1	0.750	47.0138	1.0000	Ordnr
	Total	6710.782	100.0	1.596	47.0138		

Total Organic Carbon
by Lloyd Kahn

File:	101916B			Default Mass:	10 mg
Instrument ID:	2			TALS Batch:	110363

STANDARD CURVE			Reagent	Concentration	Amount	
Lab ID	Type	ICAL conc / ug/L	ID	ug/L	uL	
CAL Level 1	CAL	0	NA	0	0	
CAL Level 2	CAL	1000	941210	100	100	Date Analyzed: 10/19/16
CAL Level 3	CAL	4000	941209	1001	40	Correlation Coefficient (r) : 0.999973
CAL Level 4	CAL	25000	889816	10012	25	Criteria: (r) ≥ *0.995*
CAL Level 5	CAL	50000	889816	10012	50	Raw DataFile: 101916X
CAL Level 6	CAL	750000	889816	10012	75	

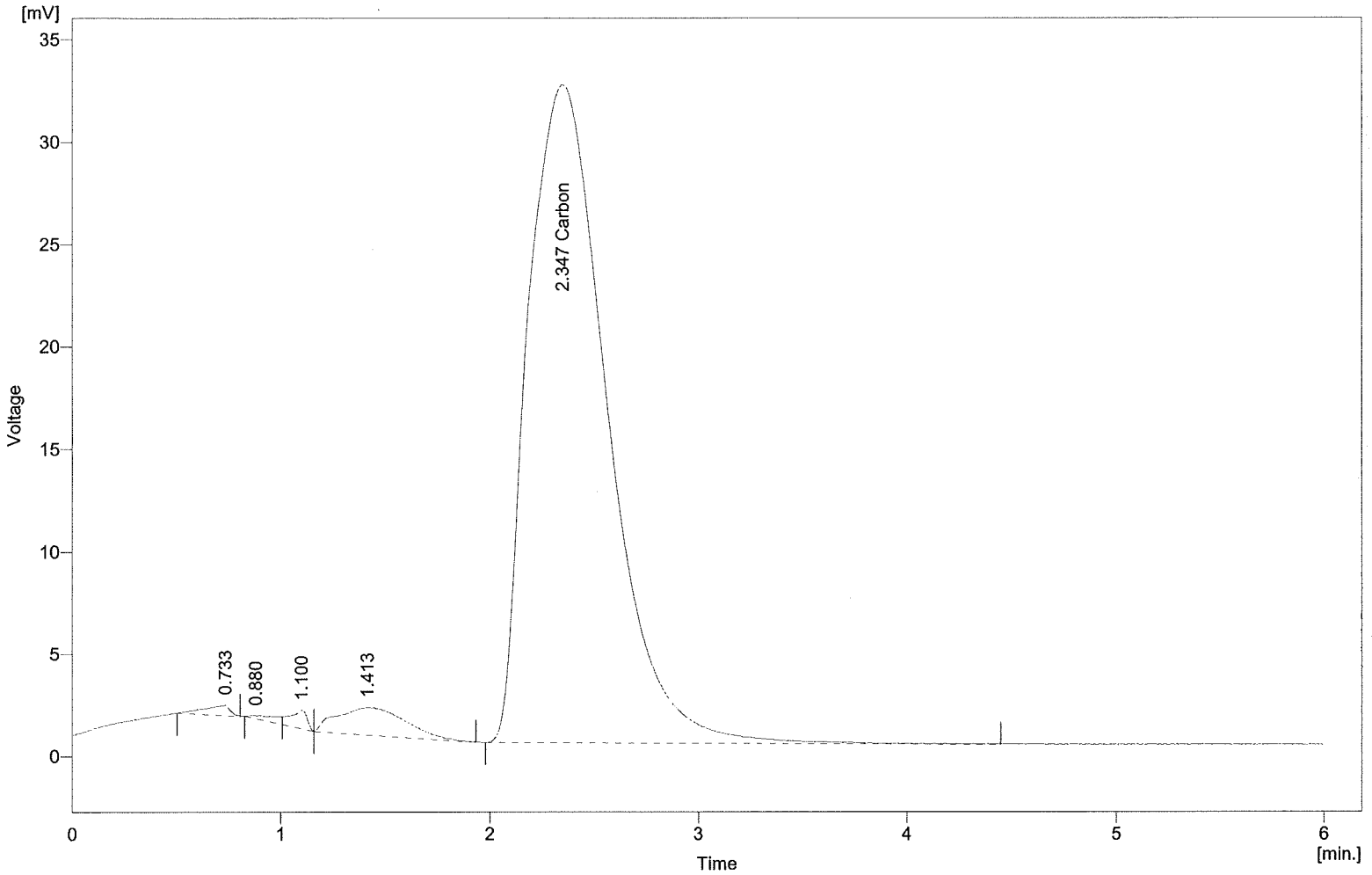
STANDARD & REAGENT TRACEABILITY:			
ICAL/CCV Container ID:	889816	LCS Container ID:	895118
ICV Container ID:	895118	1:19 Phosphoric Acid Container ID:	977837
Matrix Spike Container ID:	NA		

PREPARATION INFORMATION:					
Date:	10/19/16	Start Time:	12:23	Balance ID:	1123452701
Analyst:	KSH	Stop Time:	14:04	Oven ID:	2

Drop	Weight	Sample ID	Carbon (%)	Carbon (mg/Kg)	Average Carbon (mg/Kg)	Sample RPD or RSD	RL (mg/Kg)
1	9.1	ICV	0.8144	8144.00			
2	10	ICB	0	0.00			
3	10	CCV	3.4484	34484.00			
4	10	CCB	0	0.00			
5	10	MB	0	0.00	0.00	#DIV/0!	U1000
6	10	MB	0	0.00			
7	9.5	LCS	0.8911	8911.00	8943.75	1	1040
8	9.3	LCS	0.8803	8803.00			
9	9.9	LCS	0.9117	9117.00			
10	9.7	LCS	0.8944	8944.00			
11	10	200-35680-A-3	0.1352	1352.00			
12	9.2	200-35700-A-13	0.1449	1449.00			
13	3.7	480-107724-B-1	11.9482	119482.00			
14	4.4	480-107724-B-2	8.1072	81072.00			
15	3	480-107724-B-3	10.3607	103607.00			
16	10	CCV	3.3733	33733.00			
17	10	CCB	0.025	250.00			

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 12:23:56 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 9.1 mg		
Sample	: ICV	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B001
Calibration	: 101916B		



Result Table - Calculation Method ESTD

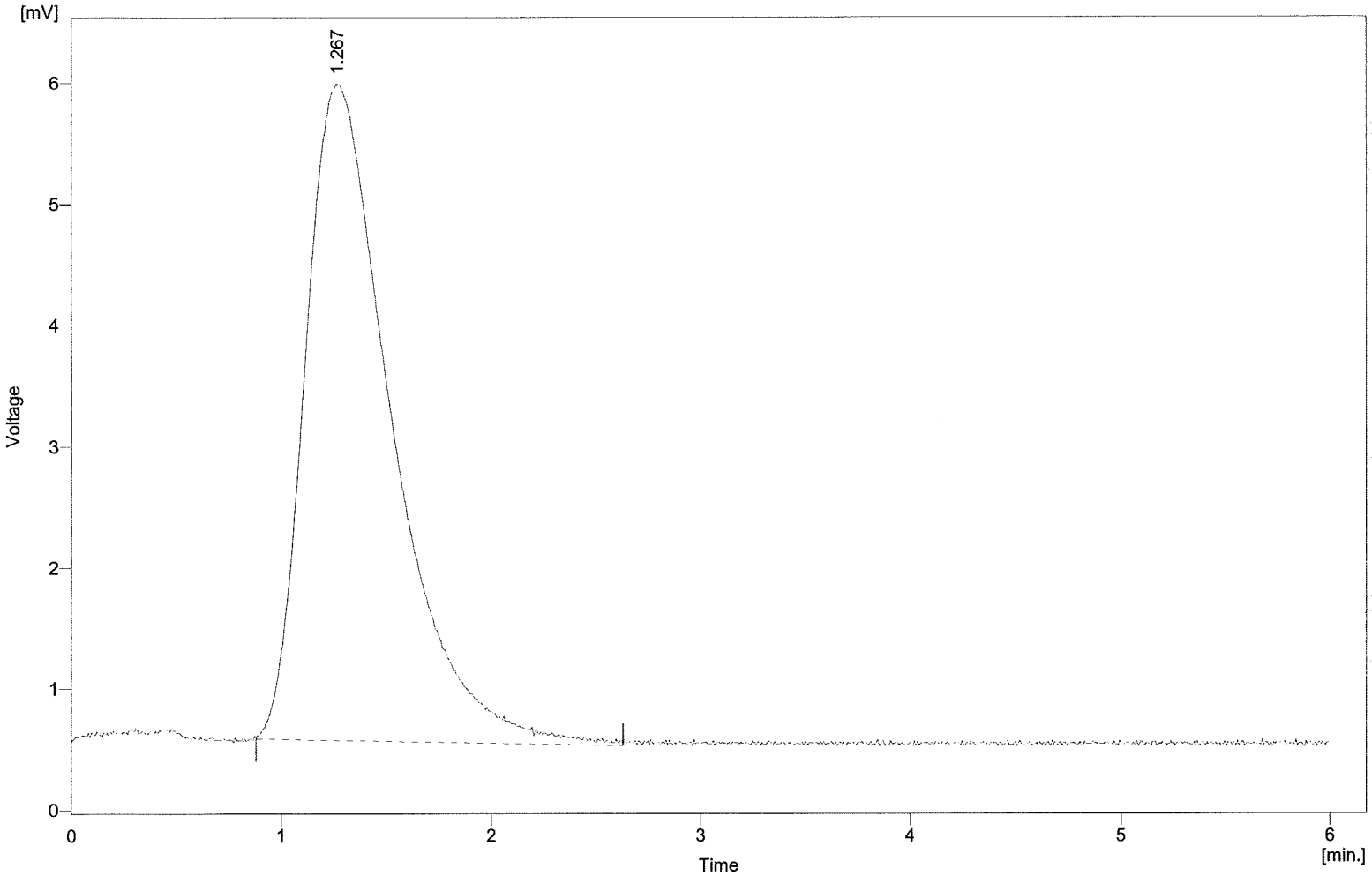
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
2.347	Carbon	845.6631	95.1	0.074	0.8144	1.0000	Ordnr
Total		888.8834	100.0	9.100	0.8144		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 12:30:09 PM
Project : WORK2
Weight : 10 mg
Sample : ICB
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B002



Result Table - Calculation Method ESTD

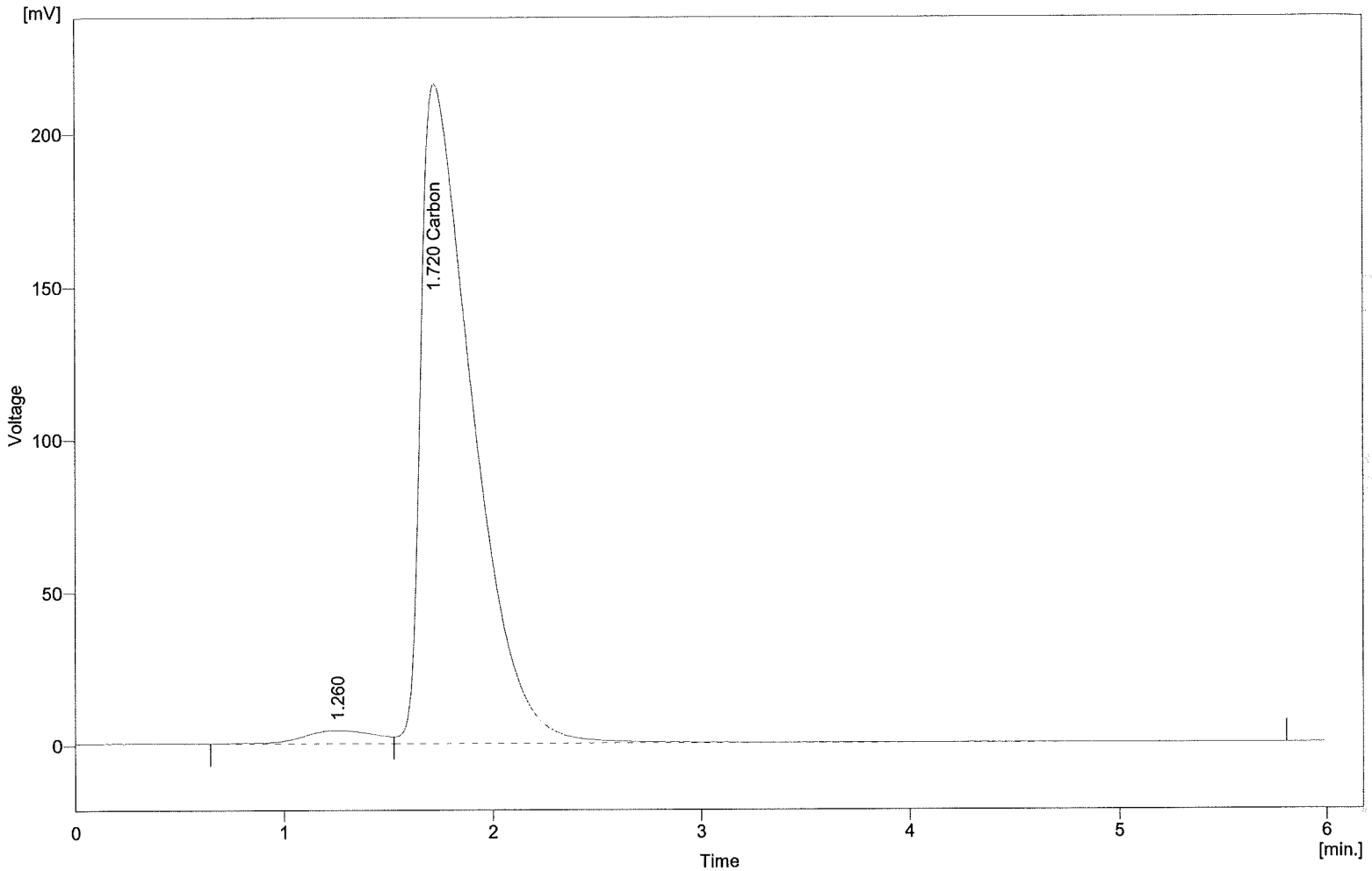
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
2.000	Carbon						Ordnr
Total		155.2176	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 12:36:21 PM
Project : WORK2
Weight : 10 mg
Sample : CCV
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B003

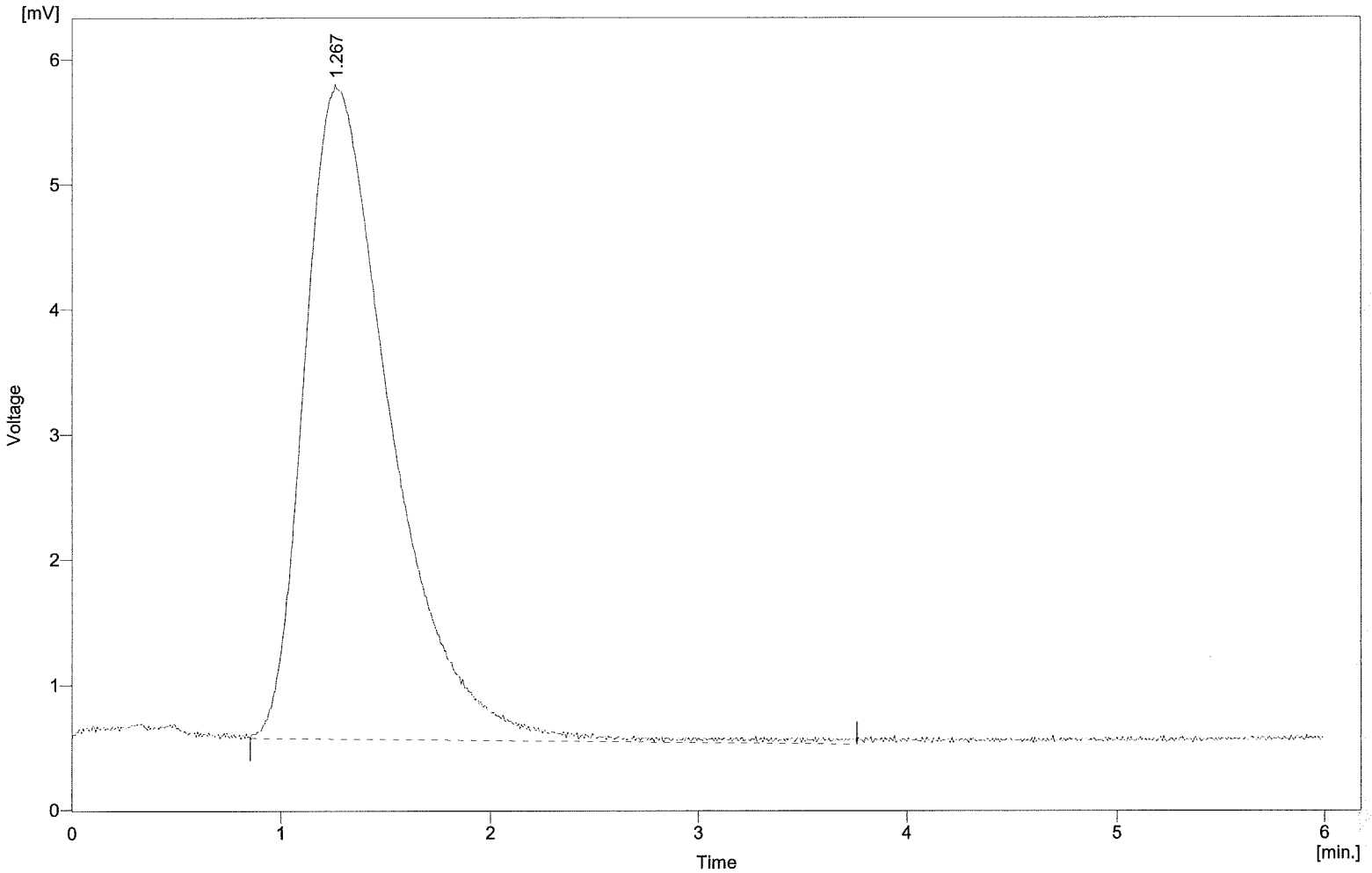


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.720	Carbon	3727.6499	97.3	0.345	3.4484	1.0000	Ordnr
Total		3832.9675	100.0	10.000	3.4484		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 12:42:35 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 10 mg		
Sample	: CCB	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B004
Calibration	: 101916B		



Result Table - Calculation Method ESTD

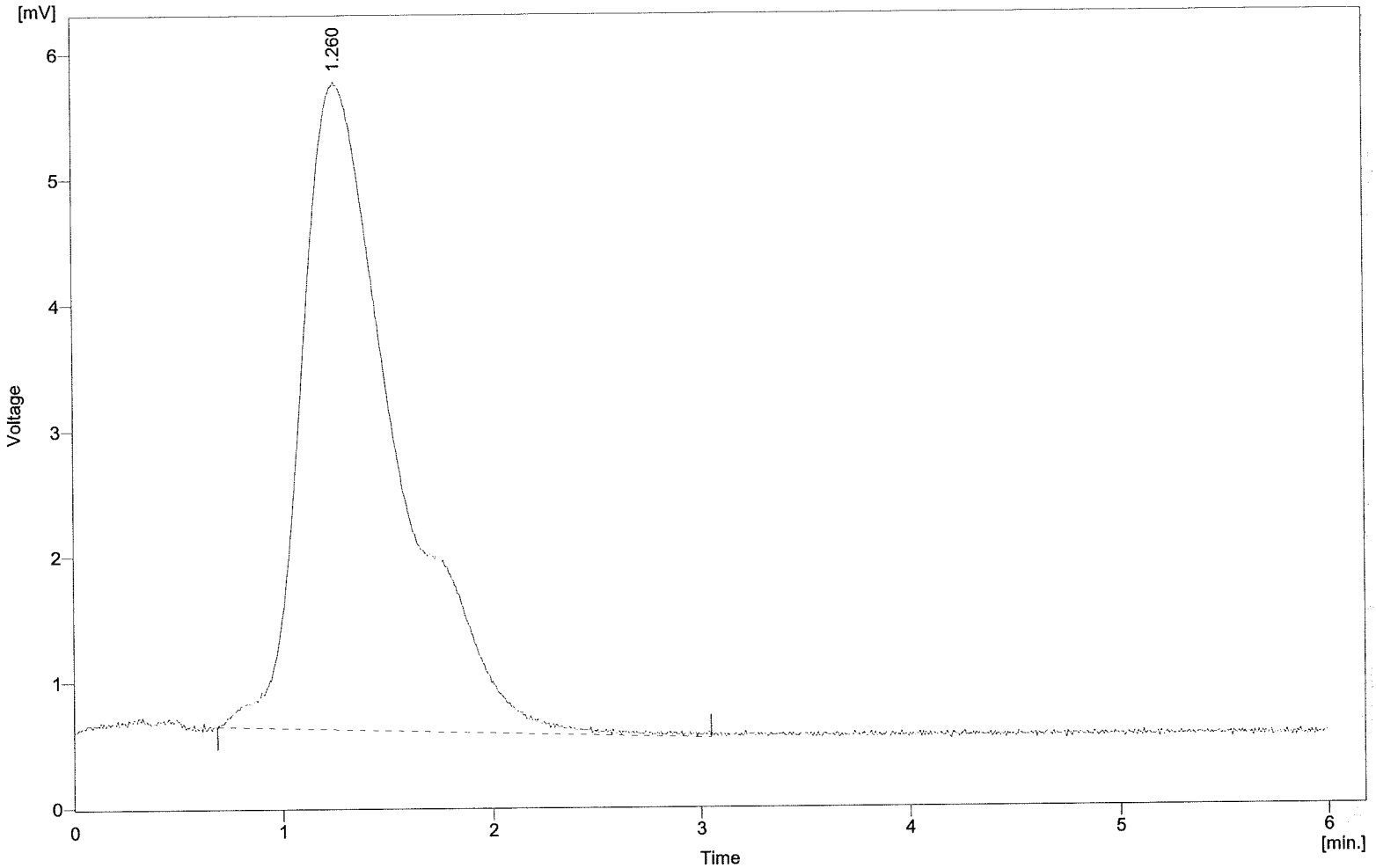
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
2.000	Carbon						Ordnr
Total		151.3360	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 12:48:48 PM
Project : WORK2
Weight : 10 mg
Sample : MB
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B005

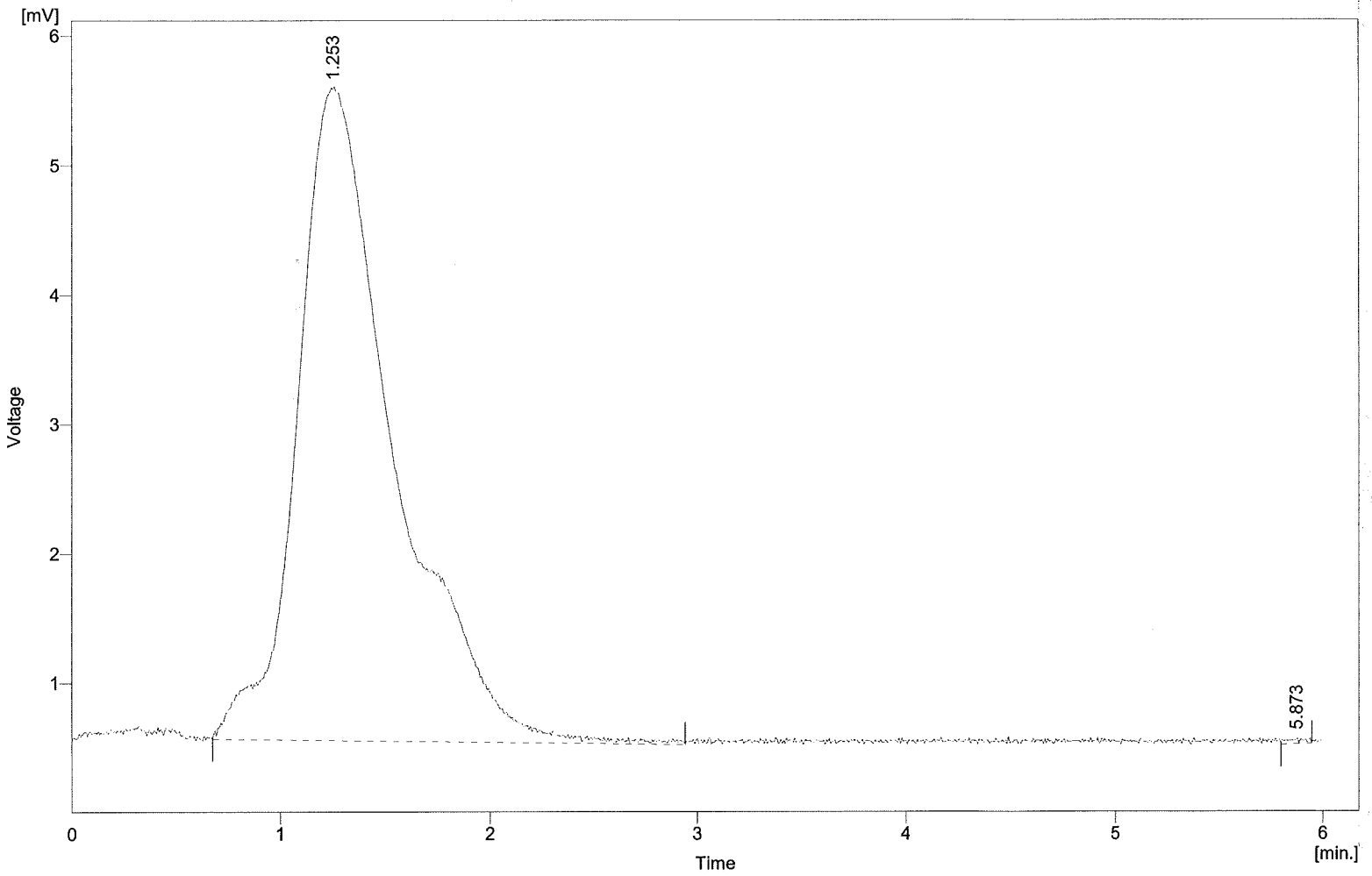


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
2.000	Carbon						Ordnr
Total		161.1788	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 12:55:02 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 10 mg		
Sample	: MB	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B006
Calibration	: 101916B		



Result Table - Calculation Method ESTD

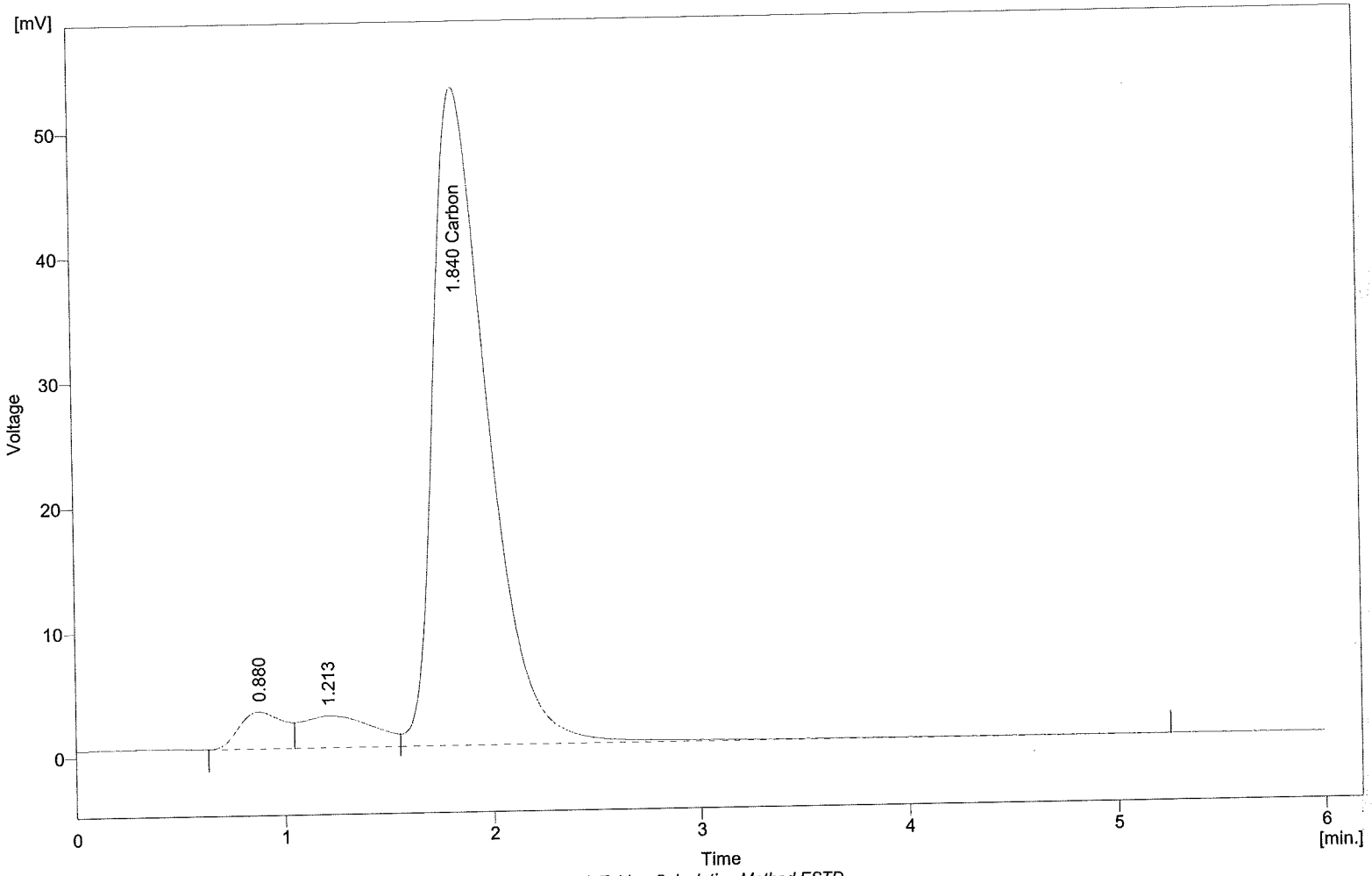
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
2.000	Carbon						Ordnr
Total		161.7248	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 1:01:16 PM
Project : WORK2
Weight : 9.5 mg
Sample : LCS
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B007



Result Table - Calculation Method ESTD

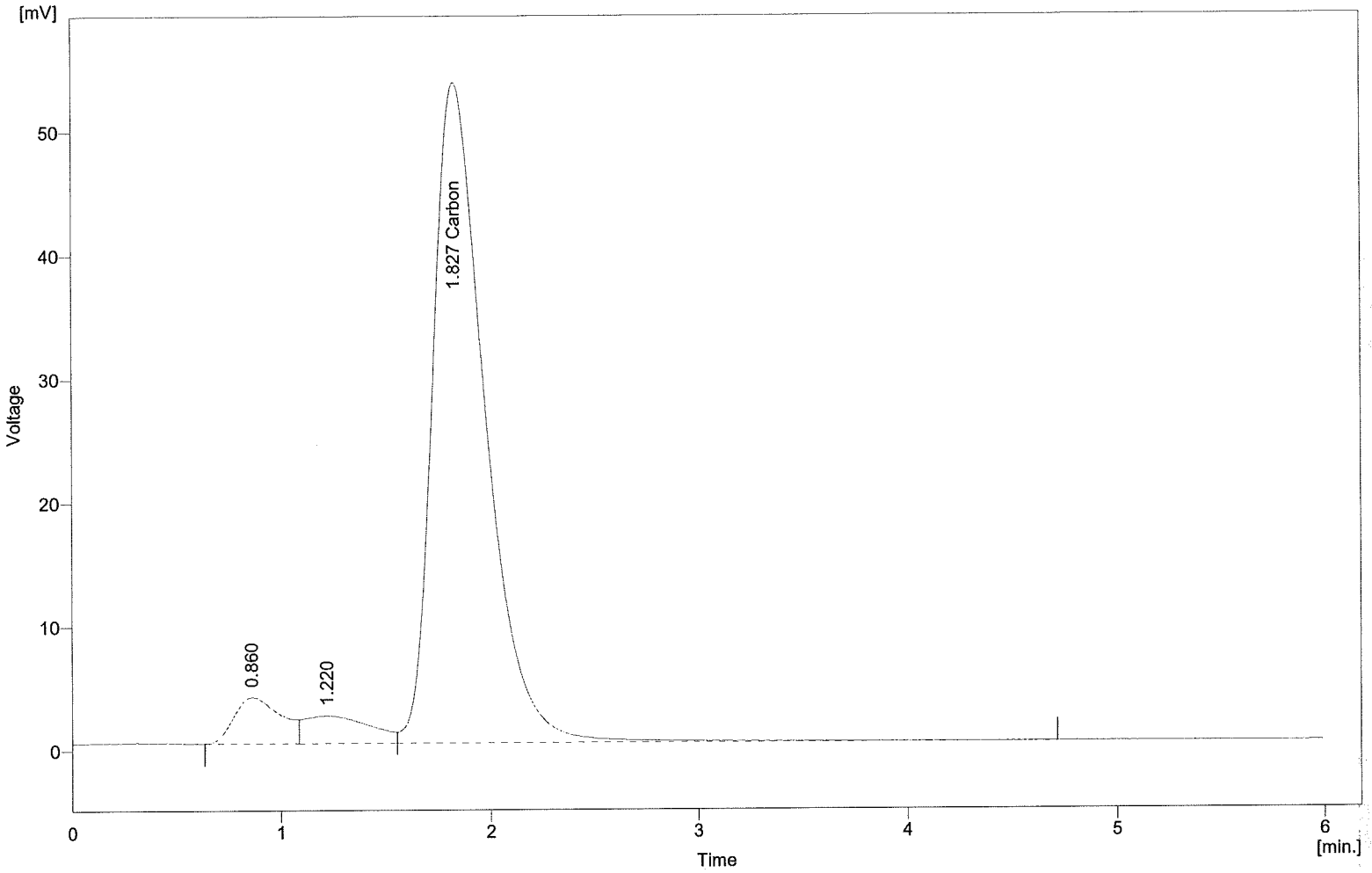
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.840	Carbon	957.9093	90.1	0.085	0.8911	1.0000	Ordnr
Total		1063.3073	100.0	9.500	0.8911		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 1:07:31 PM
Project : WORK2
Weight : 9.3 mg
Sample : LCS
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B008

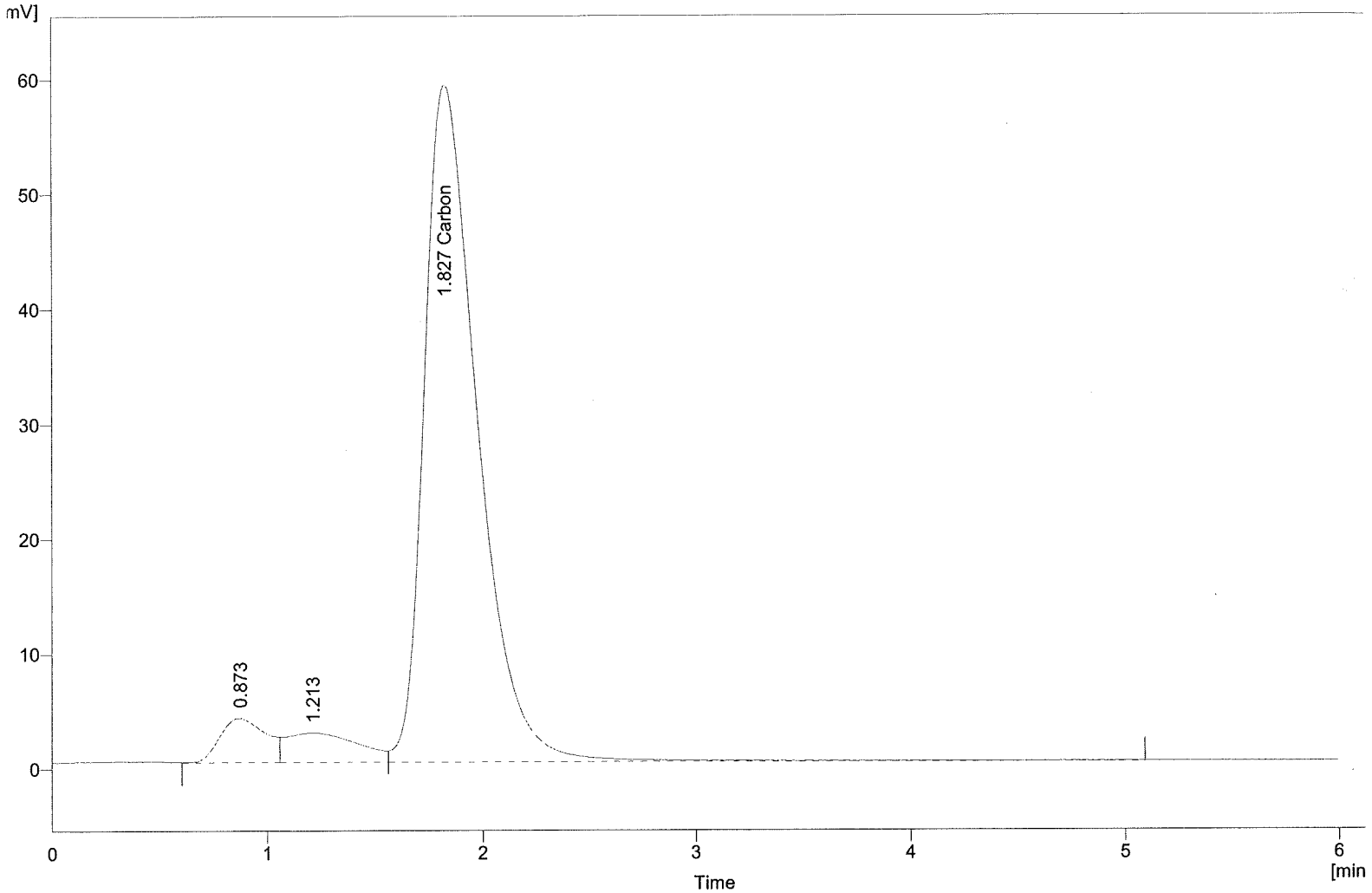


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.827	Carbon	928.1542	89.7	0.082	0.8803	1.0000	Ordnr
Total		1035.1150	100.0	9.300	0.8803		

Lloyd Kahn TOC
Instrument #2

eated	: 10/19/2016 1:13:47 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 9.9 mg		
mple	: LCS	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B009
alibration	: 101916B		



Result Table - Calculation Method ESTD

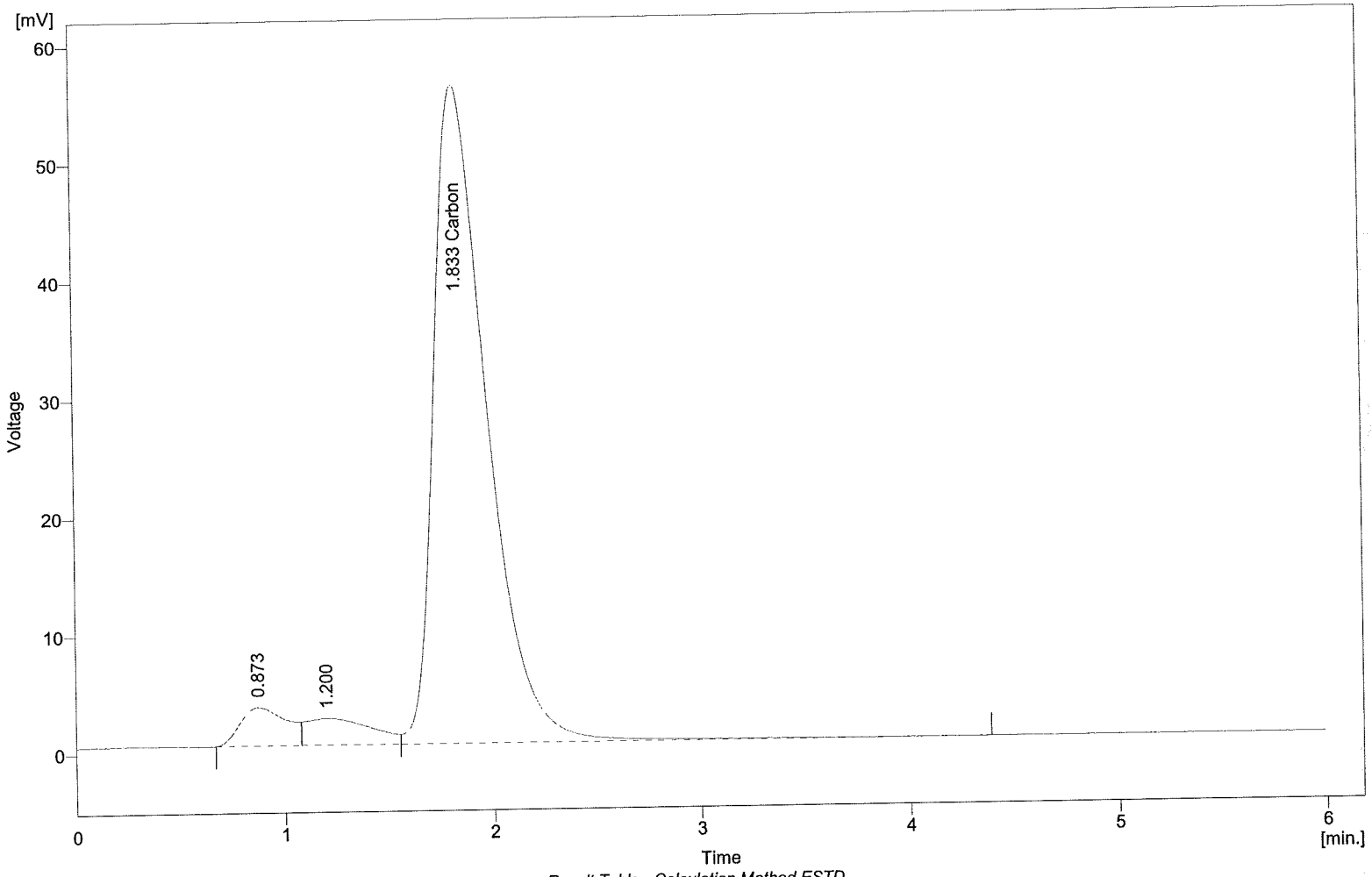
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.827	Carbon	1017.5242	89.7	0.090	0.9117	1.0000	Ordnr
Total		1134.7679	100.0	9.900	0.9117		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 1:20:02 PM
Project : WORK2
Weight : 9.7 mg
Sample : LCS
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B010



Result Table - Calculation Method ESTD

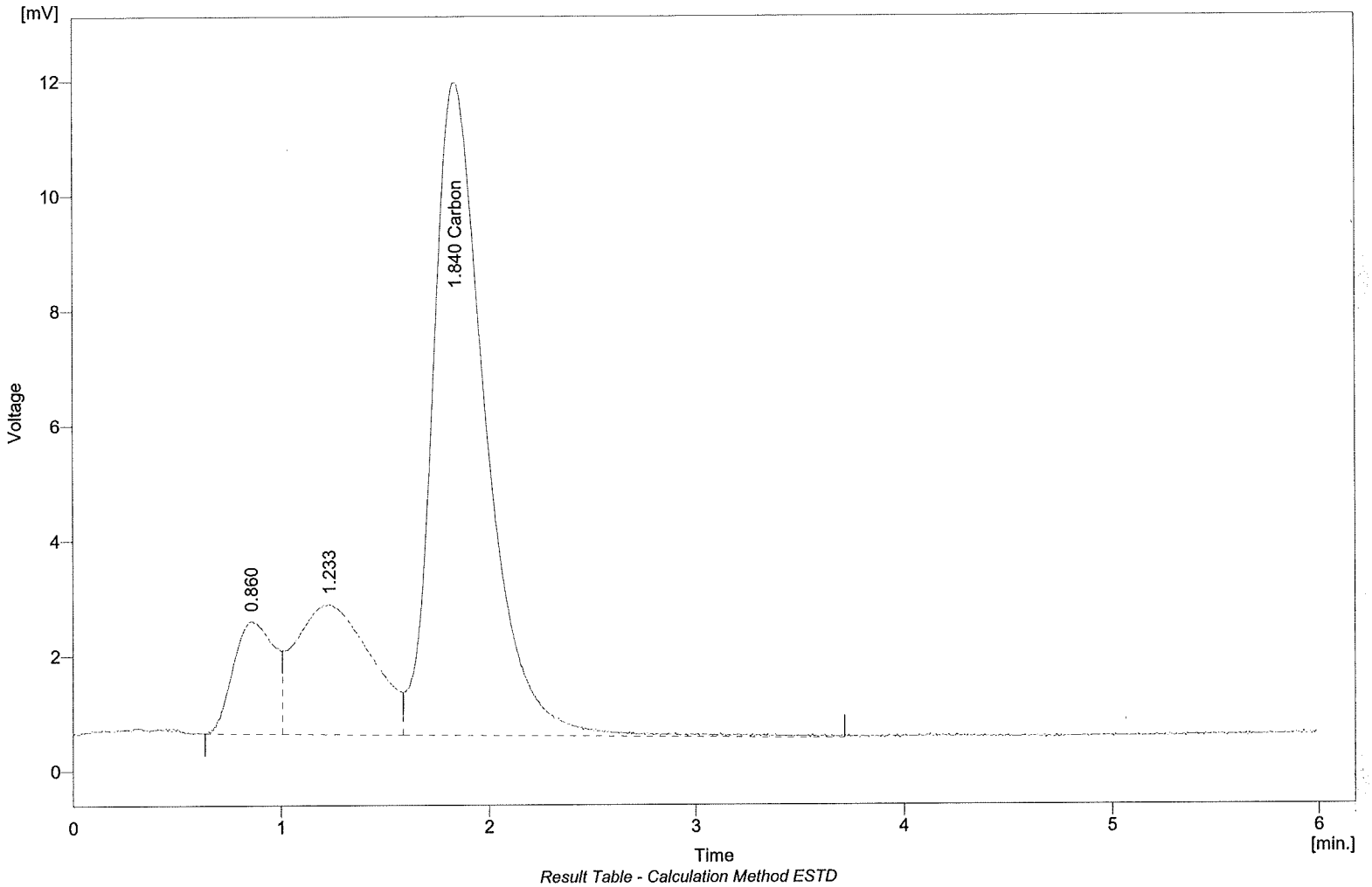
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.833	Carbon	980.2278	90.8	0.087	0.8944	1.0000	Ordnr
Total		1079.6282	100.0	9.700	0.8944		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 1:26:19 PM
Project : WORK2
Weight : 10 mg
Sample : 200-35680-A-3
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B011

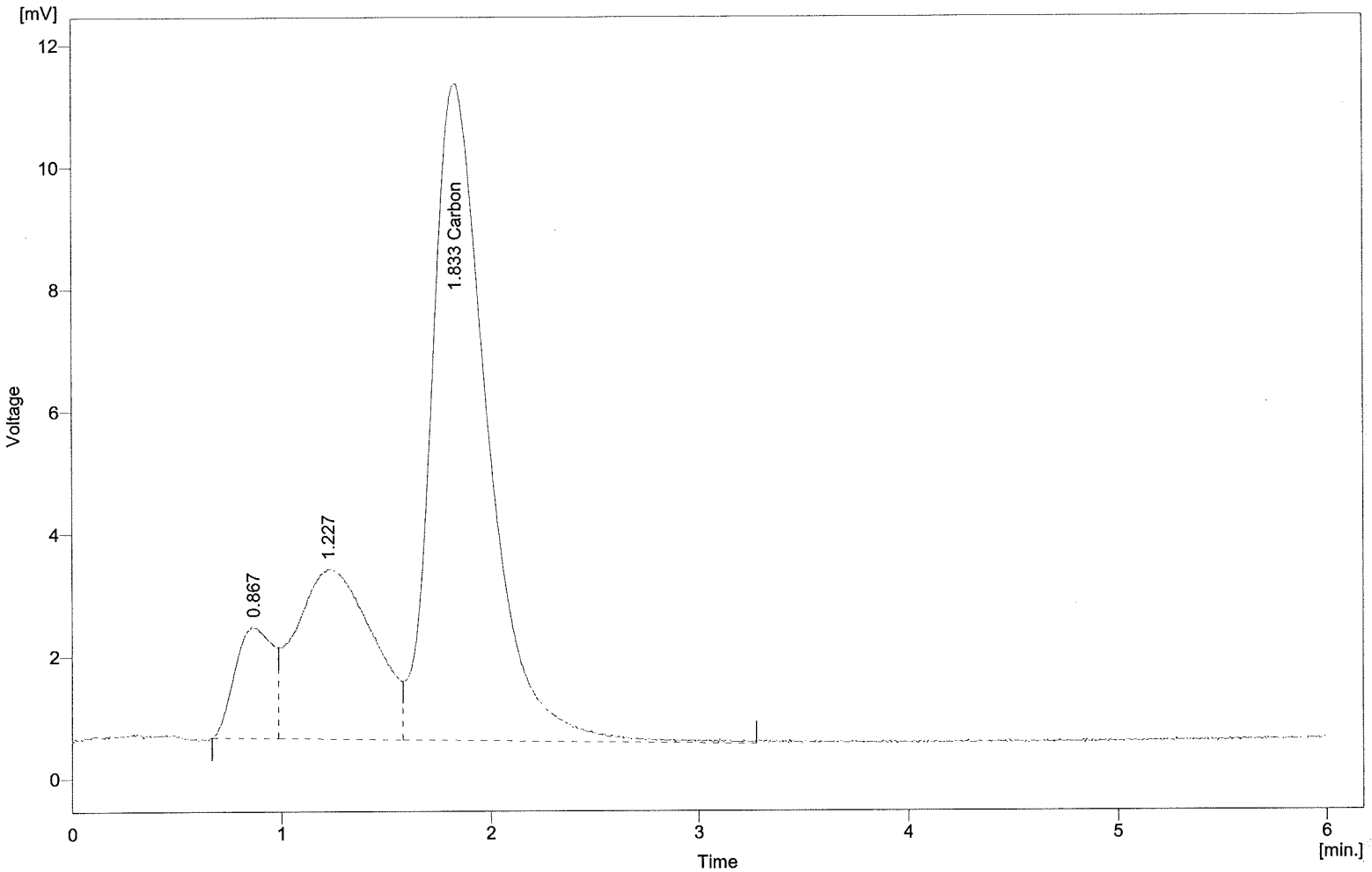


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.840	Carbon	200.6325	70.4	0.014	0.1352	1.0000	Ordnr
Total		284.8443	100.0	10.000	0.1352		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 1:32:36 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 9.2 mg		
Sample	: 200-35700-A-13	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B012
Calibration	: 101916B		

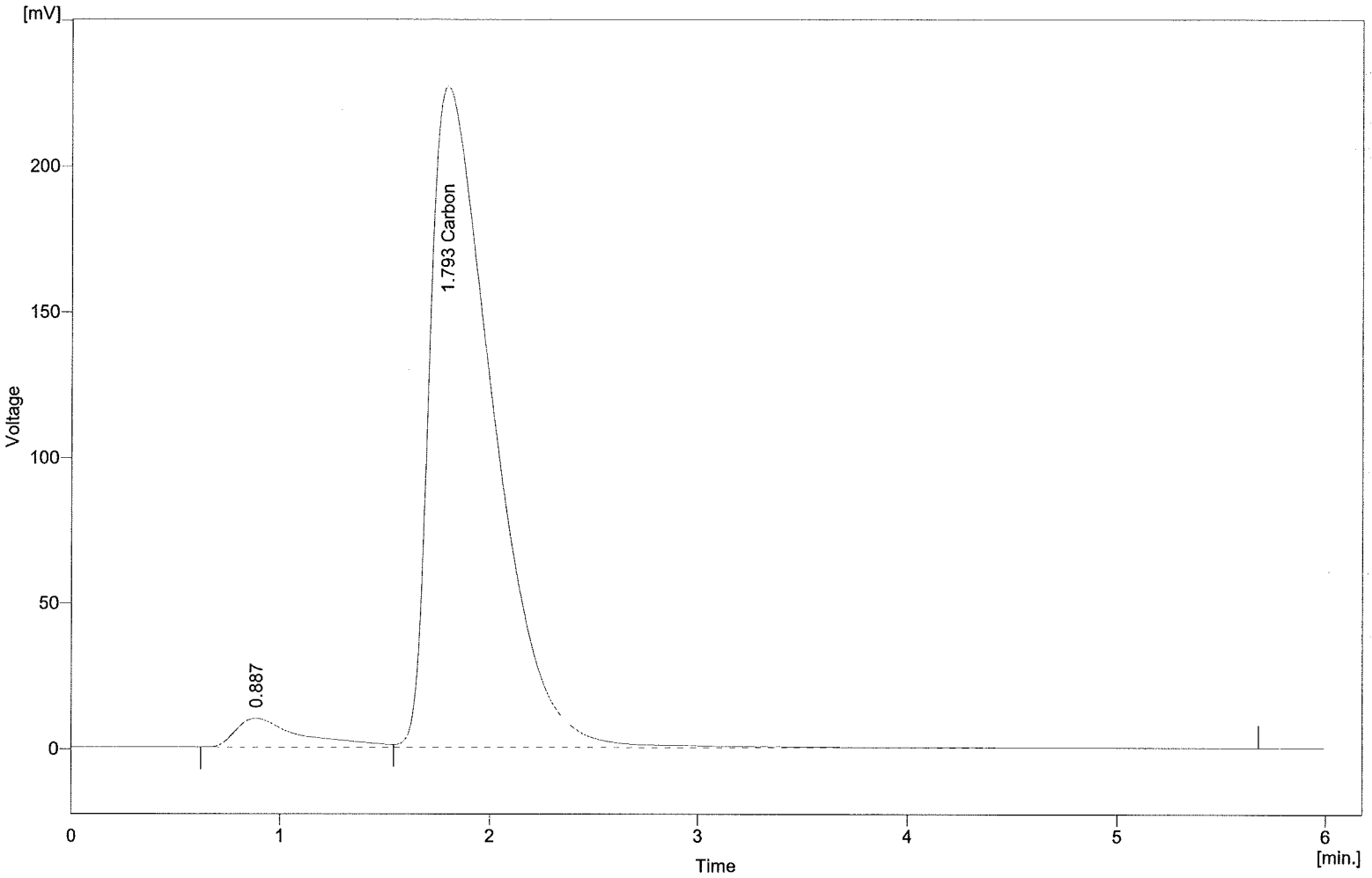


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.833	Carbon	198.5922	67.8	0.013	0.1449	1.0000	Ordnr
Total		292.7679	100.0	9.200	0.1449		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 1:38:54 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 3.7 mg		
Sample	: 480-107724-B-1	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B013
Calibration	: 101916B		

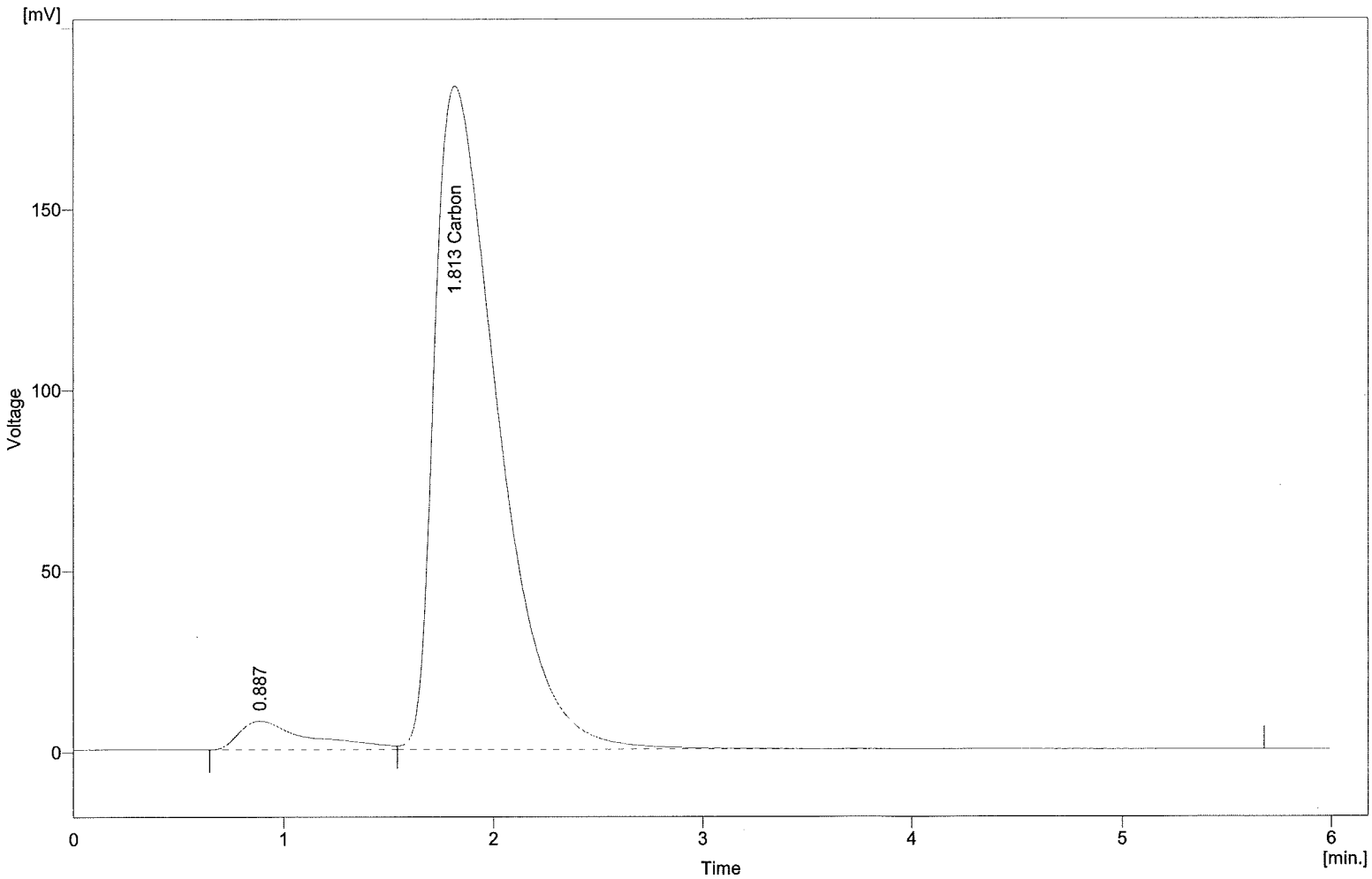


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.793	Carbon	4762.8758	95.7	0.442	11.9482	1.0000	Ordnr
Total		4977.6776	100.0	3.700	11.9482		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 1:45:12 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 4.4 mg		
Sample	: 480-107724-B-2	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B014
Calibration	: 101916B		



Result Table - Calculation Method ESTD

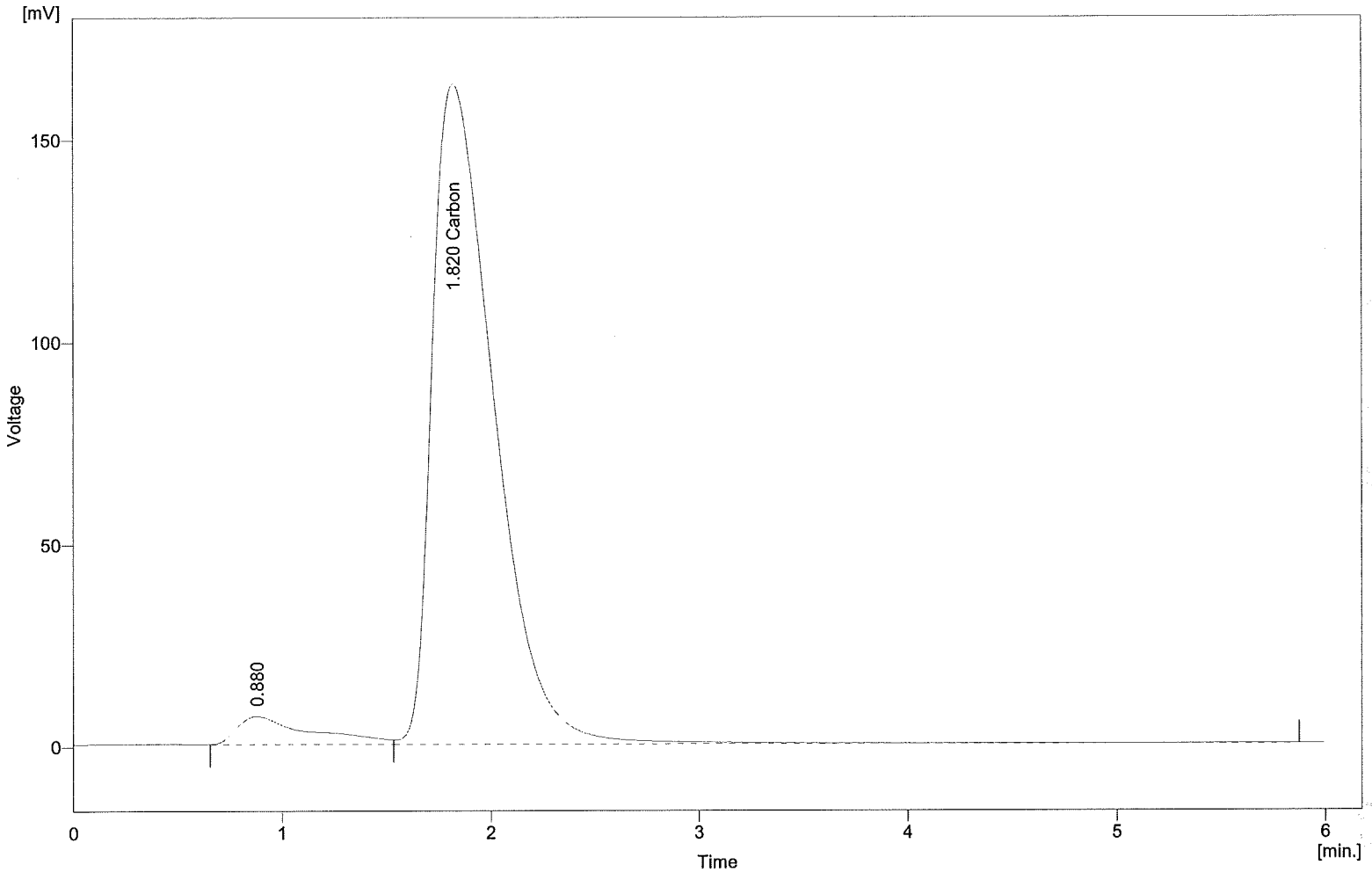
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.813	Carbon	3854.0869	95.4	0.357	8.1072	1.0000	Ordnr
Total		4038.5163	100.0	4.400	8.1072		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 1:51:30 PM
Project : WORK2
Weight : 3 mg
Sample : 480-107724-B-3
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B015

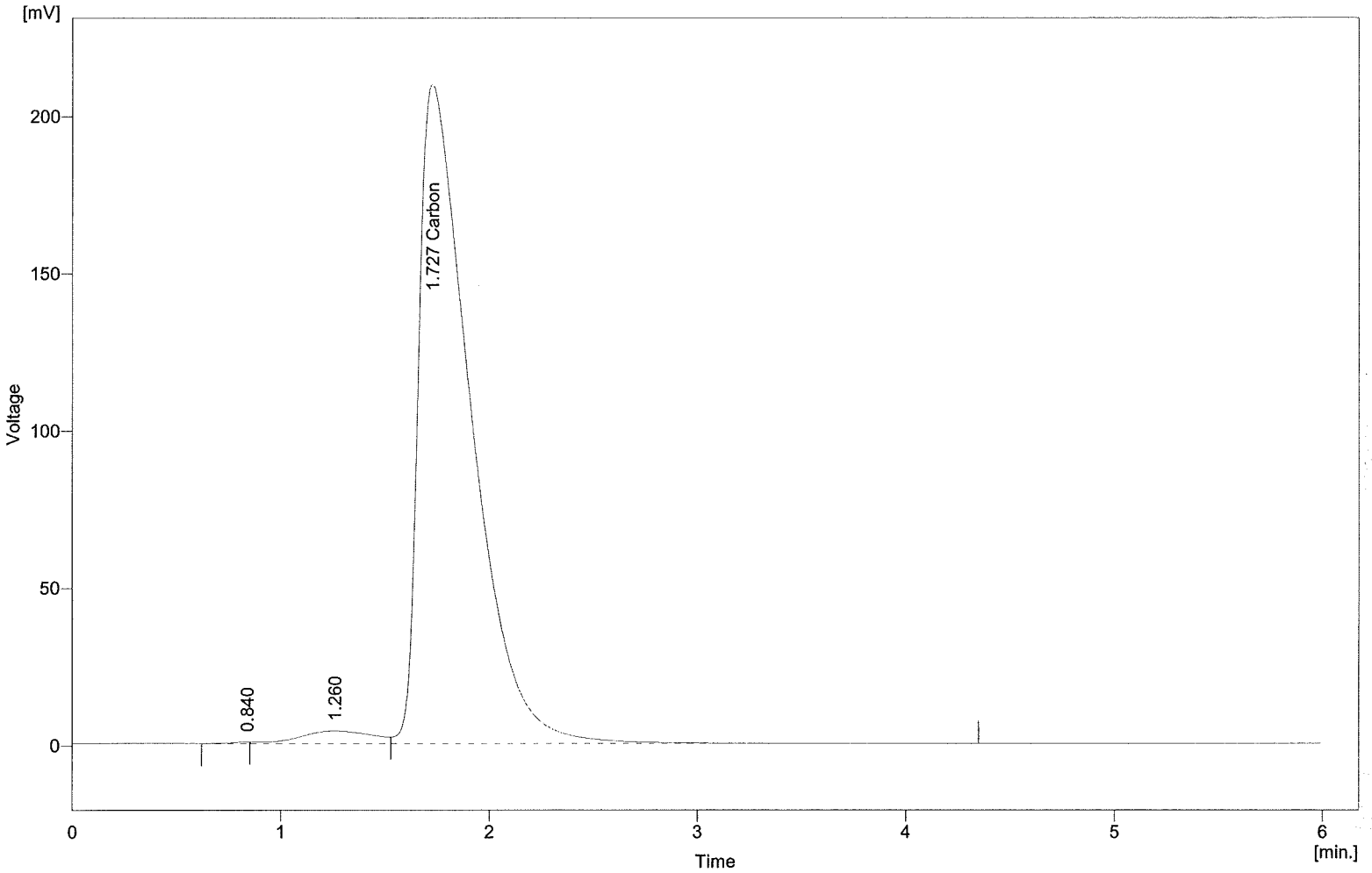


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.820	Carbon	3365.5146	95.2	0.311	10.3607	1.0000	Ordnr
Total		3536.4867	100.0	3.000	10.3607		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 1:57:50 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 10 mg		
Sample	: CCV	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B016
Calibration	: 101916B		

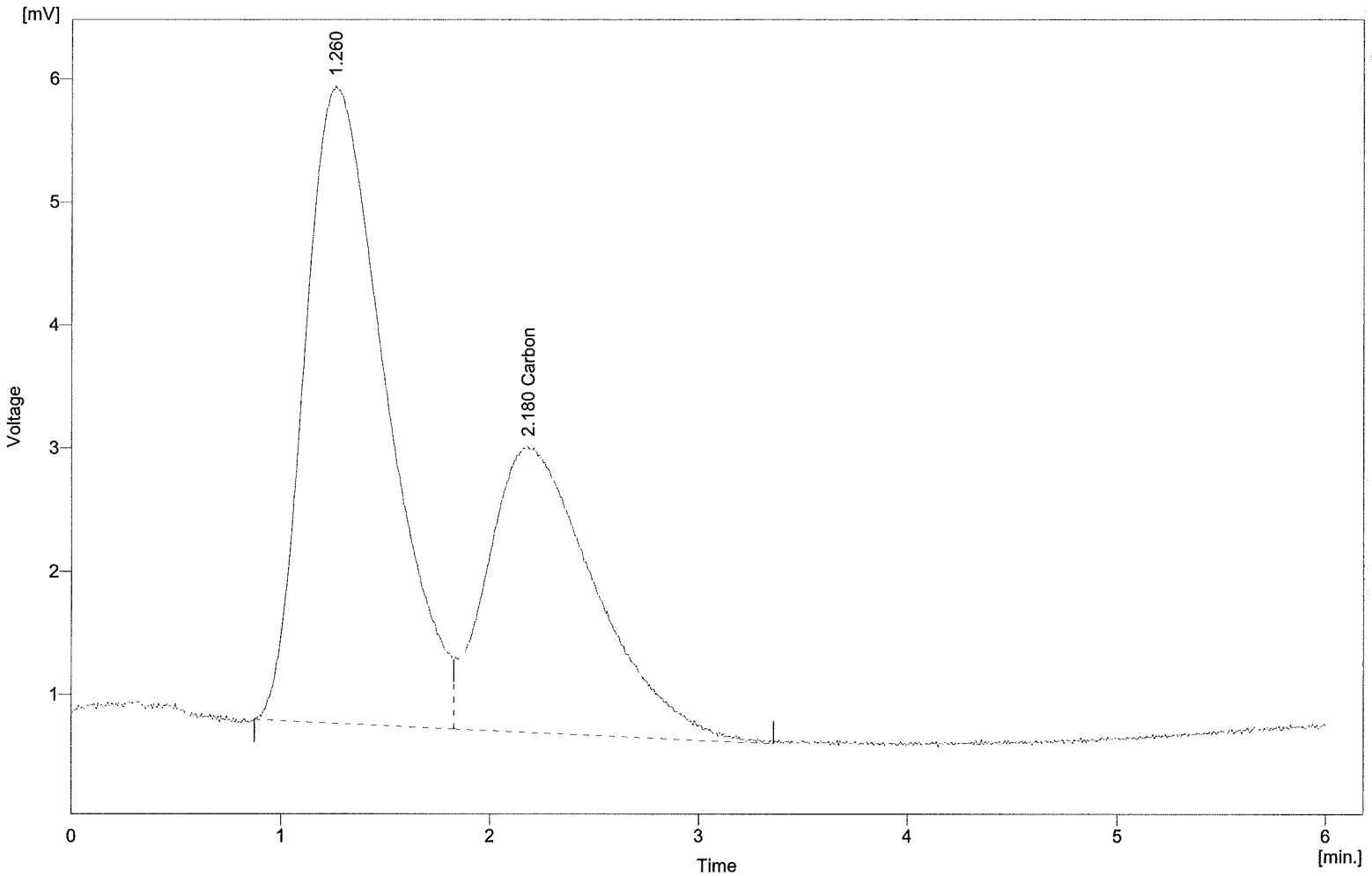


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.727	Carbon	3647.7536	97.4	0.337	3.3733	1.0000	Ordnr
Total		3746.9674	100.0	10.000	3.3733		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 2:04:09 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 10 mg		
Sample	: CCB	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B017
Calibration	: 101916B		



Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
2.180	Carbon	83.3242	37.4	0.003	0.0250	1.0000	Ordnr
Total		222.9451	100.0	10.000	0.0250		

TOC BY LLOYD KAHN

CHANNEL 2

CALIBRATION

Carbon - 1.731 min.

Peak Type : Ordnr

Left Window : 0.3 min

Right Window : 0.6 min

Response Base : Area

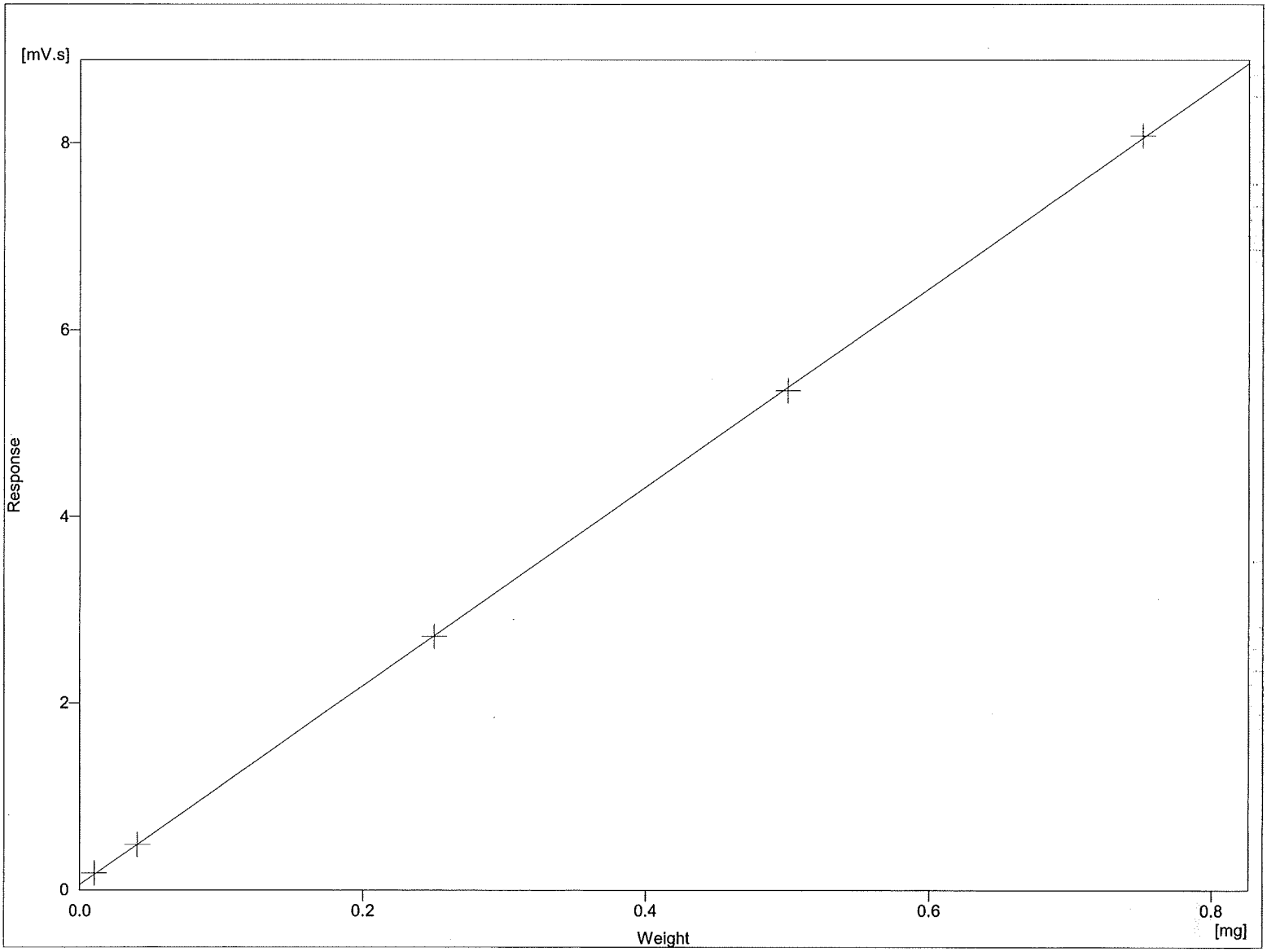
Curve Fit Type : Linear

Zero Type : Zero not used

Subst. Equation : Y = 10645.4882*X + 56.6786

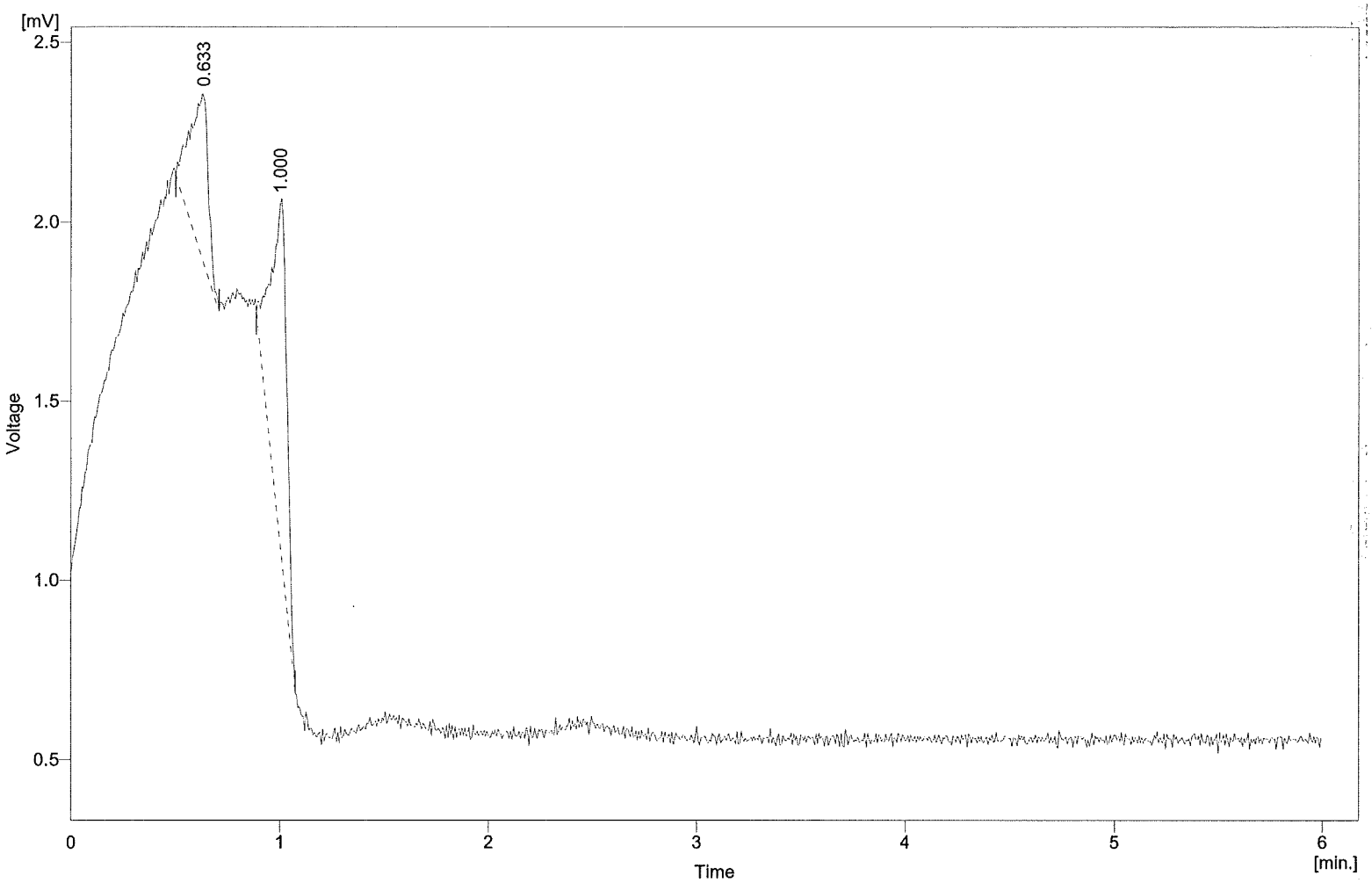
Correlation Coef. : 0.999973

	Response	Weight	Resp. Factor	Used
1	0.000	0.000	0.0000	Yes
2	178.301	0.010	0.0001	Yes
3	485.545	0.040	0.0001	Yes
4	2714.438	0.250	0.0001	Yes
5	5347.997	0.501	0.0001	Yes
6	8077.816	0.751	0.0001	Yes
7	0.000	0.000	0.0000	Yes
8	0.000	0.000	0.0000	Yes
9	0.000	0.000	0.0000	Yes
10	0.000	0.000	0.0000	Yes
11	0.000	0.000	0.0000	Yes
12	0.000	0.000	0.0000	Yes
13	0.000	0.000	0.0000	Yes
14	0.000	0.000	0.0000	Yes
15	0.000	0.000	0.0000	Yes
16	0.000	0.000	0.0000	Yes
17	0.000	0.000	0.0000	Yes
18	0.000	0.000	0.0000	Yes
19	0.000	0.000	0.0000	Yes
20	0.000	0.000	0.0000	Yes



Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 10:10:09 AM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 0 mg		
Sample	: STD 1	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916X001
Calibration	: 101916X		



Result Table - Calculation Method ESTD

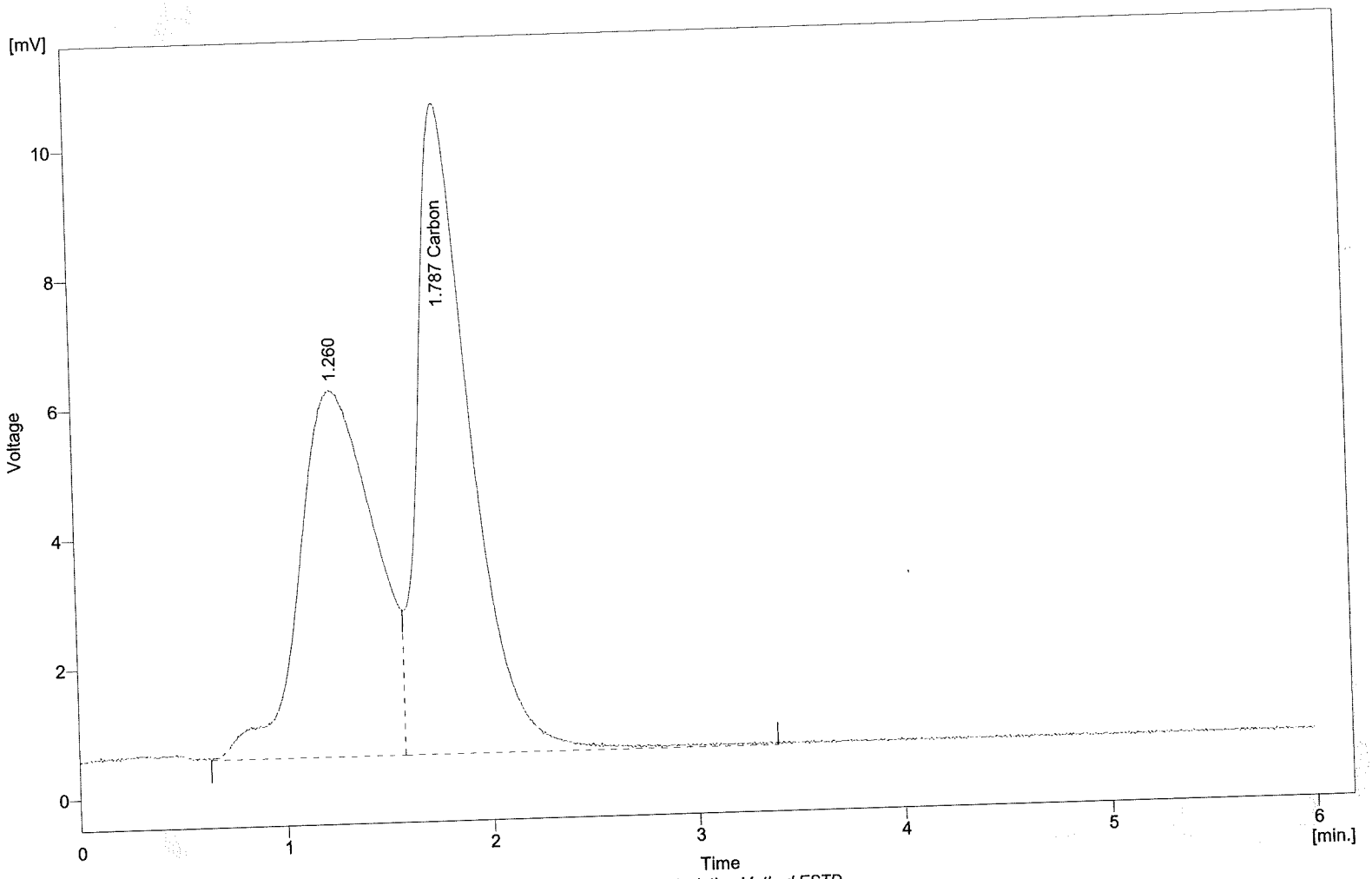
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.747	Carbon						Ordnr
Total		8.1651	100.0	0.000	100.0000		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 10:16:22 AM
Project : WORK2
Weight : 0.0213 mg
Sample : STD 2
Calibration : 101916X

By : None
Style : chromatogram

Chromatogram : 101916X002



Result Table - Calculation Method ESTD

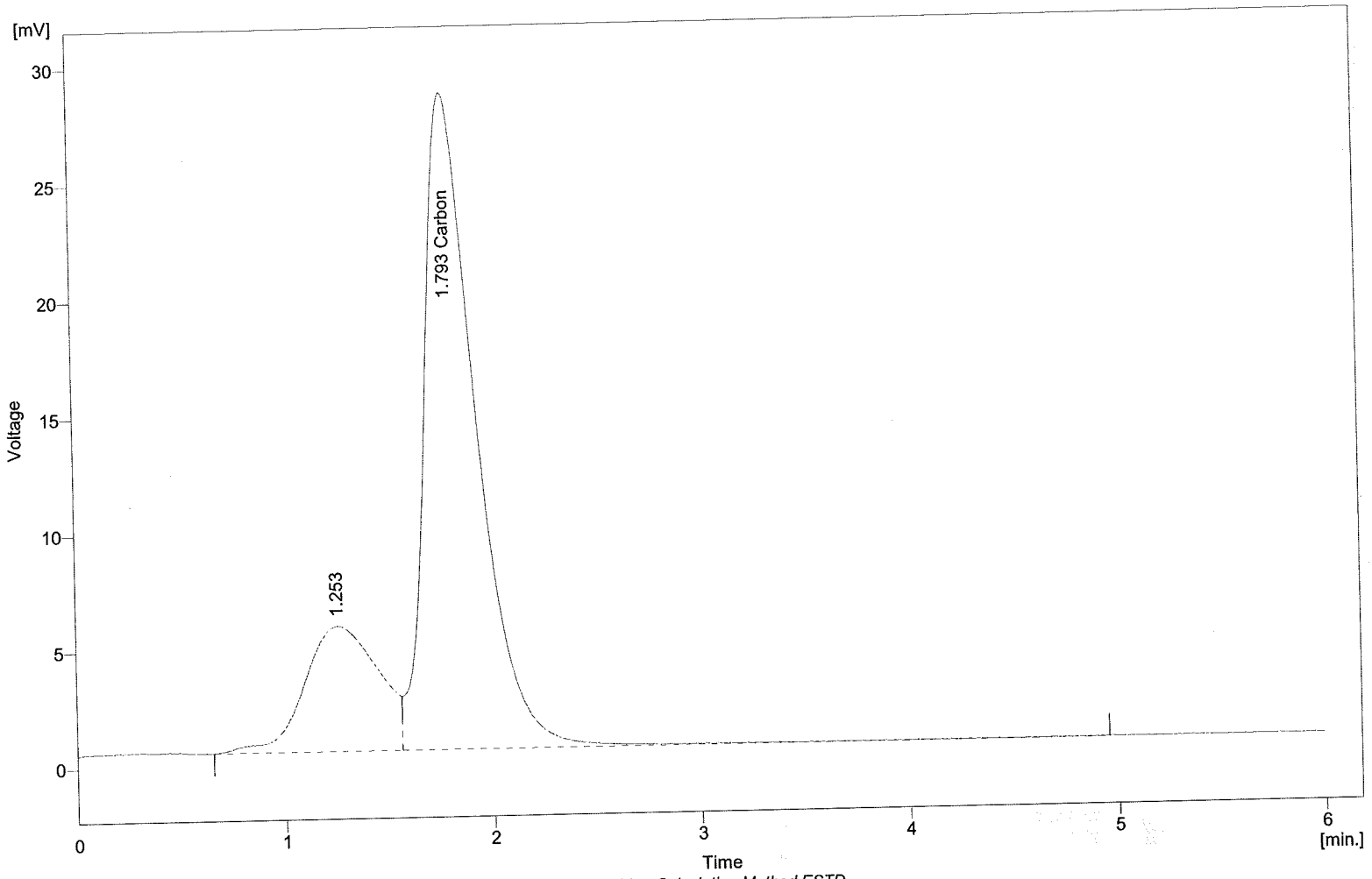
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.787	Carbon	178.3010	55.3	0.010	47.0500	1.0000	Ordnr
Total		322.3950	100.0	0.021	47.0500		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 10:22:34 AM
Project : WORK2
Weight : 0.0851 mg
Sample : STD 3
Calibration : 101916X

By : None
Style : chromatogram

Chromatogram : 101916X003



Result Table - Calculation Method ESTD

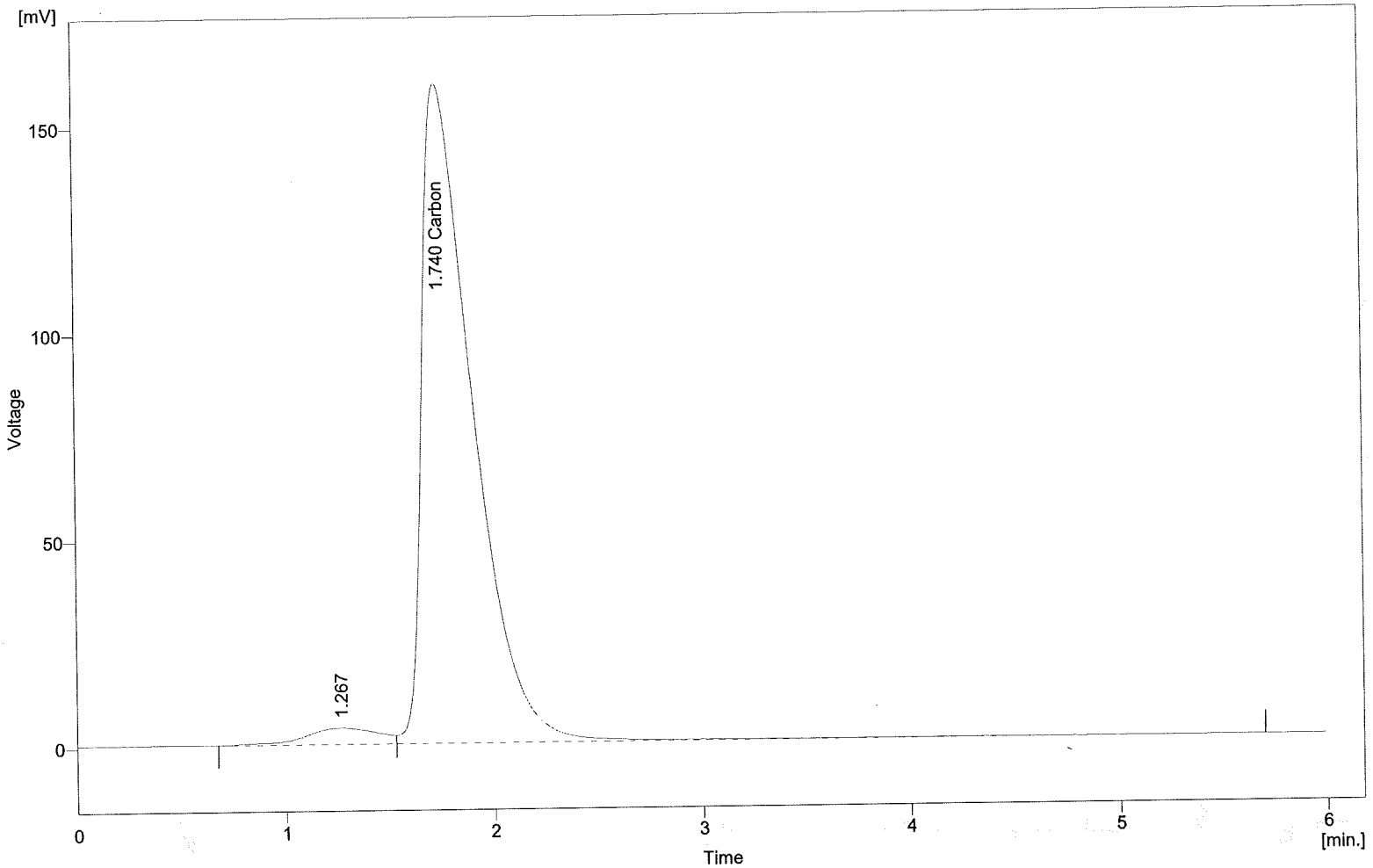
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.793	Carbon	485.5446	78.5	0.040	47.0500	1.0000	Ordnr
Total		618.7080	100.0	0.085	47.0500		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 10:28:48 AM
Project : WORK2
Weight : 0.532 mg
Sample : STD 4
Calibration : 101916X

By : None
Style : chromatogram

Chromatogram : 101916X004

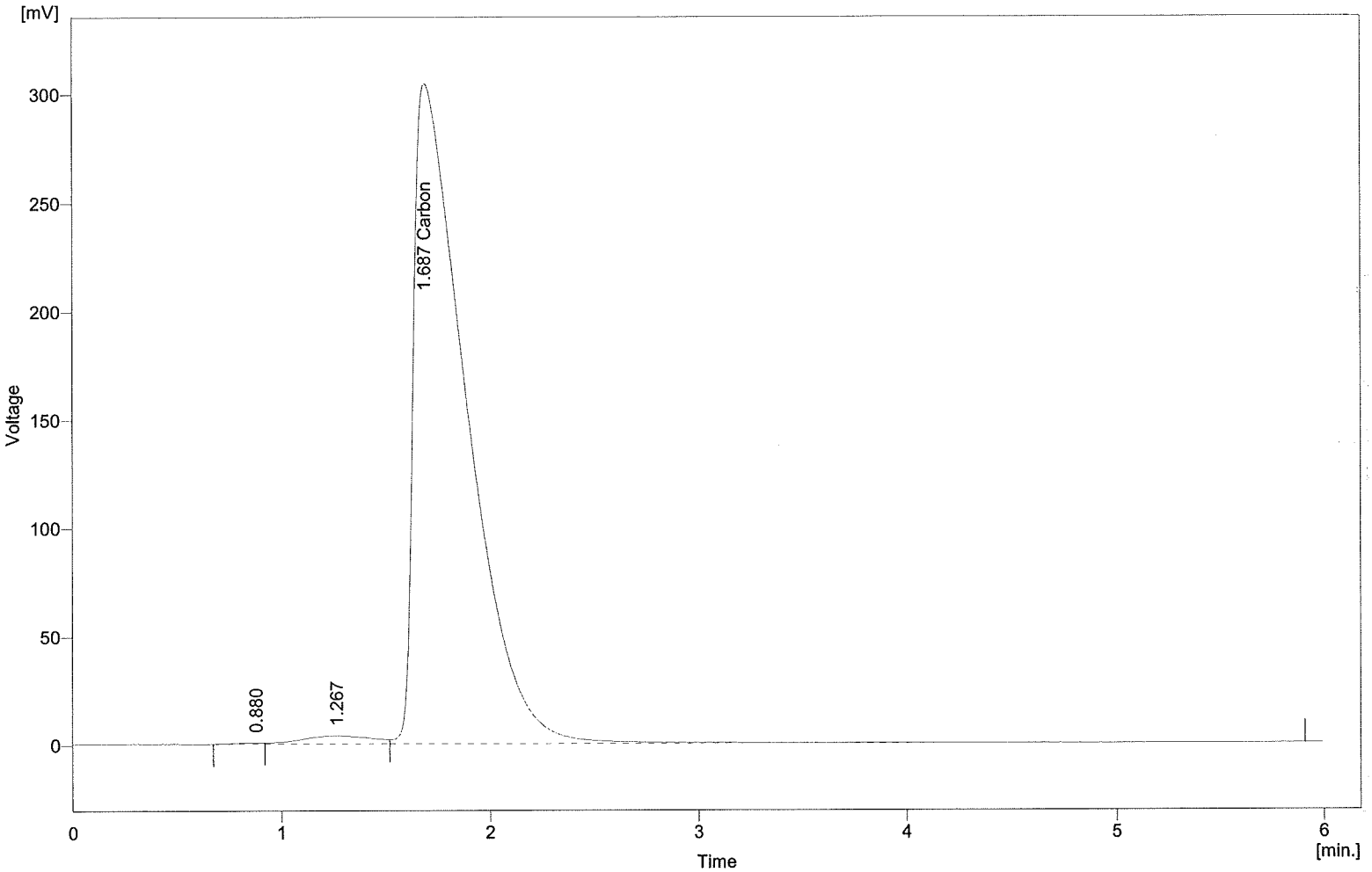


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.740	Carbon	2714.4377	96.5	0.250	47.0622	1.0000	Ordnr
Total		2812.0842	100.0	0.532	47.0622		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 10:35:03 AM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 1.064 mg		
Sample	: STD 5	Chromatogram	: 101916X005
Calibration	: 101916X		

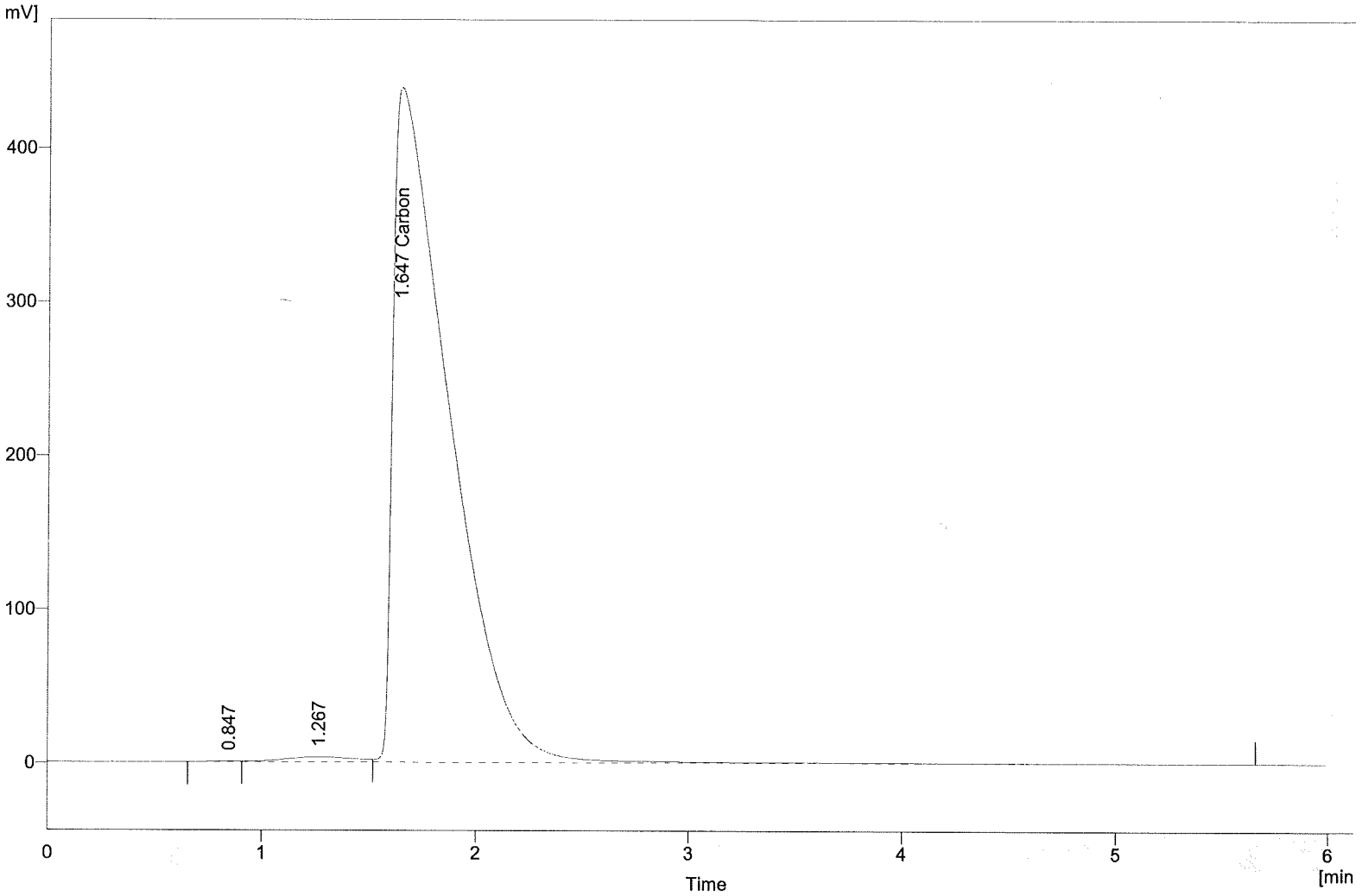


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.687	Carbon	5347.9972	98.3	0.500	47.0324	1.0000	Ordnr
Total		5441.5098	100.0	1.064	47.0324		

Lloyd Kahn TOC
Instrument #2

eated	: 10/19/2016 10:41:17 AM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 1.596 mg		
ample	: STD 6	Chromatogram	: 101916X006
alibration	: 101916X		



Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.647	Carbon	8077.8160	99.0	0.753	47.2104	1.0000	Ordnr
Total		8159.1947	100.0	1.596	47.2104		

COVER PAGE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job Number: 200-35680-1

SDG No.: 200-35660-1

Project: Port Ewen DNS Sediment

Client Sample ID	Lab Sample ID
PE1016_P1SCD-06-A-0006IN	200-35680-1
PE1016_P1SCD-06-B-0008IN	200-35680-2
PE1016_P1SCD-06-A-0613IN	200-35680-3
PE1016_P1SCD-07-A-0008IN	200-35680-4
PE1016_P1SCD-07-B-0006IN	200-35680-5
PE1016_P1SCD-08-A-0006IN	200-35680-6
PE1016_P1SCD-08-A-0006IN-D	200-35680-7
PE1016_P1SCD-09-A-0006IN	200-35680-8
PE1016_P1SCD-10-A-0005IN	200-35680-9
PE1016_P1SCD-10-B-0006IN	200-35680-10
PE1016_P1SCD-09-B-0003IN	200-35680-11
PE1016_P1SCD-09-B-0309IN	200-35680-12
PE1016_P1SCD-08-B-0006IN	200-35680-14

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016_P1SCD-06-A-0006IN
Lab Sample ID: 200-35680-1
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 16:45
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	19.7			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	52.1			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	28.4			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	13.8			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	9.9			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	93.9			% Passing			1	D422
	Sieve Size #4 - Percent Finer	80.3			% Passing			1	D422
	Silt	19.8			%			1	D422
	Clay	8.4			%			1	D422
	Sieve Size #10 - Percent Finer	51.9			% Passing			1	D422
	Sieve Size #20 - Percent Finer	44.4			% Passing			1	D422
	Sieve Size #40 - Percent Finer	38.1			% Passing			1	D422
	Sieve Size #60 - Percent Finer	33.0			% Passing			1	D422
	Sieve Size #80 - Percent Finer	31.7			% Passing			1	D422
	Sieve Size #100 - Percent Finer	31.0			% Passing			1	D422
	Sieve Size #200 - Percent Finer	28.6			% Passing			1	D422
	Sieve Size #230 - Percent Finer	28.2			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	22.4			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	20.4			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	14.4			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	10.4			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	8.4			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	5.7			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	3.7			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016_P1SCD-06-B-0008IN
Lab Sample ID: 200-35680-2
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 16:30
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	10.5			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	50.8			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	14.0			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	15.8			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	21.0			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	89.5			% Passing			1	D422
	Silt	26.0			%			1	D422
	Clay	12.7			%			1	D422
	Sieve Size #10 - Percent Finer	75.5			% Passing			1	D422
	Sieve Size #20 - Percent Finer	68.2			% Passing			1	D422
	Sieve Size #40 - Percent Finer	59.7			% Passing			1	D422
	Sieve Size #60 - Percent Finer	46.9			% Passing			1	D422
	Sieve Size #80 - Percent Finer	43.6			% Passing			1	D422
	Sieve Size #100 - Percent Finer	42.3			% Passing			1	D422
	Sieve Size #200 - Percent Finer	39.0			% Passing			1	D422
	Sieve Size #230 - Percent Finer	38.7			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	31.0			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	28.0			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	21.9			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	18.8			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	12.7			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	8.7			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	5.6			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016_P1SCD-06-A-0613IN
Lab Sample ID: 200-35680-3
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 16:46
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	0.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	13.2			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	0.5			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	1.3			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	11.4			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	100.0			% Passing			1	D422
	Silt	50.6			%			1	D422
	Clay	36.2			%			1	D422
	Sieve Size #10 - Percent Finer	99.5			% Passing			1	D422
	Sieve Size #20 - Percent Finer	99.3			% Passing			1	D422
	Sieve Size #40 - Percent Finer	98.2			% Passing			1	D422
	Sieve Size #60 - Percent Finer	96.0			% Passing			1	D422
	Sieve Size #80 - Percent Finer	94.2			% Passing			1	D422
	Sieve Size #100 - Percent Finer	92.9			% Passing			1	D422
	Sieve Size #200 - Percent Finer	87.8			% Passing			1	D422
	Sieve Size #230 - Percent Finer	86.8			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	69.2			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	62.3			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	50.0			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	44.5			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	36.2			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	24.3			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	17.4			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016_P1SCD-07-A-0008IN
Lab Sample ID: 200-35680-4
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 16:10
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	4.5			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	50.8			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	9.4			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	13.1			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	28.3			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	95.5			% Passing			1	D422
	Silt	34.0			%			1	D422
	Clay	10.7			%			1	D422
	Sieve Size #10 - Percent Finer	86.1			% Passing			1	D422
	Sieve Size #20 - Percent Finer	80.5			% Passing			1	D422
	Sieve Size #40 - Percent Finer	73.0			% Passing			1	D422
	Sieve Size #60 - Percent Finer	61.0			% Passing			1	D422
	Sieve Size #80 - Percent Finer	55.9			% Passing			1	D422
	Sieve Size #100 - Percent Finer	53.0			% Passing			1	D422
	Sieve Size #200 - Percent Finer	45.7			% Passing			1	D422
	Sieve Size #230 - Percent Finer	44.7			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	31.1			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	27.7			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	20.9			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	15.8			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	10.7			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	6.2			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	4.5			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016_P1SCD-07-B-0006IN
Lab Sample ID: 200-35680-5
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 15:43
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	5.9			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	32.0			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	6.6			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	10.9			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	14.5			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	94.1			% Passing			1	D422
	Silt	35.9			%			1	D422
	Clay	26.2			%			1	D422
	Sieve Size #10 - Percent Finer	87.5			% Passing			1	D422
	Sieve Size #20 - Percent Finer	80.6			% Passing			1	D422
	Sieve Size #40 - Percent Finer	76.6			% Passing			1	D422
	Sieve Size #60 - Percent Finer	71.2			% Passing			1	D422
	Sieve Size #80 - Percent Finer	68.4			% Passing			1	D422
	Sieve Size #100 - Percent Finer	66.7			% Passing			1	D422
	Sieve Size #200 - Percent Finer	62.6			% Passing			1	D422
	Sieve Size #230 - Percent Finer	62.1			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	49.1			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	46.2			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	37.6			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	30.5			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	26.2			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	18.1			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	11.0			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016_P1SCD-08-A-0006IN
Lab Sample ID: 200-35680-6
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 15:10
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	10.4			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	43.2			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	8.5			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	11.9			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	22.8			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	89.6			% Passing			1	D422
	Silt	27.9			%			1	D422
	Clay	18.5			%			1	D422
	Sieve Size #10 - Percent Finer	81.1			% Passing			1	D422
	Sieve Size #20 - Percent Finer	75.7			% Passing			1	D422
	Sieve Size #40 - Percent Finer	69.2			% Passing			1	D422
	Sieve Size #60 - Percent Finer	57.7			% Passing			1	D422
	Sieve Size #80 - Percent Finer	53.5			% Passing			1	D422
	Sieve Size #100 - Percent Finer	51.5			% Passing			1	D422
	Sieve Size #200 - Percent Finer	47.0			% Passing			1	D422
	Sieve Size #230 - Percent Finer	46.4			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	43.6			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	40.0			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	32.9			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	22.1			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	18.5			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	11.9			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	6.6			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016_P1SCD-08-A-0006IN-D
Lab Sample ID: 200-35680-7
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 15:11
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	10.7			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	35.5			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	4.2			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	10.1			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	21.2			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	89.3			% Passing			1	D422
	Silt	40.3			%			1	D422
	Clay	13.5			%			1	D422
	Sieve Size #10 - Percent Finer	85.1			% Passing			1	D422
	Sieve Size #20 - Percent Finer	80.9			% Passing			1	D422
	Sieve Size #40 - Percent Finer	75.0			% Passing			1	D422
	Sieve Size #60 - Percent Finer	64.7			% Passing			1	D422
	Sieve Size #80 - Percent Finer	60.8			% Passing			1	D422
	Sieve Size #100 - Percent Finer	58.9			% Passing			1	D422
	Sieve Size #200 - Percent Finer	54.4			% Passing			1	D422
	Sieve Size #230 - Percent Finer	53.8			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	35.1			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	32.2			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	26.4			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	20.7			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	13.5			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	8.2			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	5.3			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016_P1SCD-09-A-0006IN
Lab Sample ID: 200-35680-8
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 14:20
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	5.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	24.0			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	2.3			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	9.4			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	12.3			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	95.0			% Passing			1	D422
	Silt	52.5			%			1	D422
	Clay	18.5			%			1	D422
	Sieve Size #10 - Percent Finer	92.7			% Passing			1	D422
	Sieve Size #20 - Percent Finer	84.9			% Passing			1	D422
	Sieve Size #40 - Percent Finer	83.3			% Passing			1	D422
	Sieve Size #60 - Percent Finer	80.7			% Passing			1	D422
	Sieve Size #80 - Percent Finer	78.3			% Passing			1	D422
	Sieve Size #100 - Percent Finer	76.5			% Passing			1	D422
	Sieve Size #200 - Percent Finer	71.6			% Passing			1	D422
	Sieve Size #230 - Percent Finer	71.0			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	49.9			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	43.2			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	34.2			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	27.5			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	18.5			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	9.5			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	5.1			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016_P1SCD-10-A-0005IN
Lab Sample ID: 200-35680-9
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 17:50
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	5.3			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	37.9			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	5.0			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	19.7			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	13.2			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	94.7			% Passing			1	D422
	Silt	48.8			%			1	D422
	Clay	8.0			%			1	D422
	Sieve Size #10 - Percent Finer	89.7			% Passing			1	D422
	Sieve Size #20 - Percent Finer	74.9			% Passing			1	D422
	Sieve Size #40 - Percent Finer	70.0			% Passing			1	D422
	Sieve Size #60 - Percent Finer	65.7			% Passing			1	D422
	Sieve Size #80 - Percent Finer	63.2			% Passing			1	D422
	Sieve Size #100 - Percent Finer	61.5			% Passing			1	D422
	Sieve Size #200 - Percent Finer	57.3			% Passing			1	D422
	Sieve Size #230 - Percent Finer	56.8			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	37.5			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	32.5			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	22.7			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	12.9			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	8.0			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	5.5			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	0.6			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016_P1SCD-10-B-0006IN
Lab Sample ID: 200-35680-10
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 17:55
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	12.1			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	31.3			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	3.0			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	15.8			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	12.5			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	87.9			% Passing			1	D422
	Silt	49.1			%			1	D422
	Clay	7.5			%			1	D422
	Sieve Size #10 - Percent Finer	84.9			% Passing			1	D422
	Sieve Size #20 - Percent Finer	72.3			% Passing			1	D422
	Sieve Size #40 - Percent Finer	69.1			% Passing			1	D422
	Sieve Size #60 - Percent Finer	65.7			% Passing			1	D422
	Sieve Size #80 - Percent Finer	63.4			% Passing			1	D422
	Sieve Size #100 - Percent Finer	61.8			% Passing			1	D422
	Sieve Size #200 - Percent Finer	57.2			% Passing			1	D422
	Sieve Size #230 - Percent Finer	56.6			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	37.6			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	30.7			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	21.4			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	12.1			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	7.5			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	5.2			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	0.6			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016_P1SCD-09-B-0003IN
Lab Sample ID: 200-35680-11
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 14:40
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	5.9			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	27.3			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	4.3			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	11.0			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	12.0			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	94.1			% Passing			1	D422
	Silt	49.6			%			1	D422
	Clay	17.2			%			1	D422
	Sieve Size #10 - Percent Finer	89.8			% Passing			1	D422
	Sieve Size #20 - Percent Finer	82.0			% Passing			1	D422
	Sieve Size #40 - Percent Finer	78.8			% Passing			1	D422
	Sieve Size #60 - Percent Finer	75.0			% Passing			1	D422
	Sieve Size #80 - Percent Finer	72.6			% Passing			1	D422
	Sieve Size #100 - Percent Finer	71.2			% Passing			1	D422
	Sieve Size #200 - Percent Finer	67.4			% Passing			1	D422
	Sieve Size #230 - Percent Finer	66.8			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	50.8			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	45.2			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	30.3			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	21.0			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	17.2			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	11.6			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	6.1			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016_P1SCD-09-B-0309IN
Lab Sample ID: 200-35680-12
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 14:41
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	0.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	2.7			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	1.3			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	0.5			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	0.9			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	100.0			% Passing			1	D422
	Silt	53.3			%			1	D422
	Clay	44.0			%			1	D422
	Sieve Size #10 - Percent Finer	98.7			% Passing			1	D422
	Sieve Size #20 - Percent Finer	98.4			% Passing			1	D422
	Sieve Size #40 - Percent Finer	98.2			% Passing			1	D422
	Sieve Size #60 - Percent Finer	97.9			% Passing			1	D422
	Sieve Size #80 - Percent Finer	97.8			% Passing			1	D422
	Sieve Size #100 - Percent Finer	97.7			% Passing			1	D422
	Sieve Size #200 - Percent Finer	97.4			% Passing			1	D422
	Sieve Size #230 - Percent Finer	97.3			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	74.1			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	71.1			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	62.0			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	53.0			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	44.0			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	28.9			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	16.9			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016_P1SCD-08-B-0006IN
Lab Sample ID: 200-35680-14
Lab Name: TestAmerica Burlington
Job No.: 200-35680-1
SDG ID.: 200-35660-1
Matrix: Sediment
Date Sampled: 10/10/2016 15:15
Reporting Basis: WET
Date Received: 10/12/2016 10:30

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	7.9			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	31.8			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	4.4			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	9.9			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	17.5			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	92.1			% Passing			1	D422
	Silt	57.1			%			1	D422
	Clay	3.2			%			1	D422
	Sieve Size #10 - Percent Finer	87.7			% Passing			1	D422
	Sieve Size #20 - Percent Finer	80.6			% Passing			1	D422
	Sieve Size #40 - Percent Finer	77.8			% Passing			1	D422
	Sieve Size #60 - Percent Finer	72.2			% Passing			1	D422
	Sieve Size #80 - Percent Finer	68.4			% Passing			1	D422
	Sieve Size #100 - Percent Finer	66.1			% Passing			1	D422
	Sieve Size #200 - Percent Finer	61.0			% Passing			1	D422
	Sieve Size #230 - Percent Finer	60.3			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	28.6			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	23.5			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	18.4			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	10.8			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	3.2			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	0.6			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	0.6			% Passing			1	D422

6-IN
DUPLICATE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Matrix: Sediment

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
Batch ID: 110708 Date: 10/25/2016 09:51								
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Gravel	5.0	%			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Gravel	3.2	%	44	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Sieve Size 2 inch - Percent Finer	100.0	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Sieve Size 2 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Sand	24.0	%			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Sand	32.4	%	30	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Sieve Size 1.5 inch - Percent Finer	100.0	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Sieve Size 1.5 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Coarse Sand	2.3	%			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Coarse Sand	4.9	%	72	50	F3
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Sieve Size 1 inch - Percent Finer	100.0	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Sieve Size 1 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Medium Sand	9.4	%			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Medium Sand	17.2	%	59	50	F3
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Sieve Size 0.75 inch - Percent Finer	100.0	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Sieve Size 0.75 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Fine Sand	12.3	%			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Fine Sand	10.3	%	18	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Sieve Size 0.375 inch - Percent Finer	100.0	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Sieve Size 0.375 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Sieve Size #4 - Percent Finer	95.0	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Sieve Size #4 - Percent Finer	96.8	% Passing	2	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Silt	52.5	%			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Silt	45.1	%	15	50	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

6-IN
DUPLICATE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Matrix: Sediment

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Clay	18.5	%			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Clay	19.3	%	4	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Sieve Size #10 - Percent Finer	92.7	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Sieve Size #10 - Percent Finer	91.9	% Passing	0.9	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Sieve Size #20 - Percent Finer	84.9	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Sieve Size #20 - Percent Finer	76.7	% Passing	10	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Sieve Size #40 - Percent Finer	83.3	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Sieve Size #40 - Percent Finer	74.7	% Passing	11	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Sieve Size #60 - Percent Finer	80.7	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Sieve Size #60 - Percent Finer	72.2	% Passing	11	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Sieve Size #80 - Percent Finer	78.3	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Sieve Size #80 - Percent Finer	70.1	% Passing	11	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Sieve Size #100 - Percent Finer	76.5	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Sieve Size #100 - Percent Finer	68.6	% Passing	11	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Sieve Size #200 - Percent Finer	71.6	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Sieve Size #200 - Percent Finer	64.8	% Passing	10	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Sieve Size #230 - Percent Finer	71.0	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Sieve Size #230 - Percent Finer	64.4	% Passing	10	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Hydrometer Reading 1 - Percent Finer	49.9	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Hydrometer Reading 1 - Percent Finer	54.9	% Passing	10	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Hydrometer Reading 2 - Percent Finer	43.2	% Passing			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

6-IN
DUPLICATE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Matrix: Sediment

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Hydrometer Reading 2 - Percent Finer	46.5	% Passing	7	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Hydrometer Reading 3 - Percent Finer	34.2	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Hydrometer Reading 3 - Percent Finer	36.1	% Passing	5	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Hydrometer Reading 4 - Percent Finer	27.5	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Hydrometer Reading 4 - Percent Finer	27.7	% Passing	0.7	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Hydrometer Reading 5 - Percent Finer	18.5	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Hydrometer Reading 5 - Percent Finer	19.3	% Passing	4	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Hydrometer Reading 6 - Percent Finer	9.5	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Hydrometer Reading 6 - Percent Finer	11.0	% Passing	14	50	
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8	Hydrometer Reading 7 - Percent Finer	5.1	% Passing			
D422	PE1016_P1SCD-09-A-0006IN	200-35680-8 DU	Hydrometer Reading 7 - Percent Finer	4.7	% Passing	7	50	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

GEOTECHNICAL BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35680-1

SDG No.: 200-35660-1

Batch Number: 110708 Batch Start Date: 10/23/16 18:39 Batch Analyst: Pham, Vu T

Batch Method: D422 Batch End Date: 10/28/16 14:01

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	AnalysisComment				
200-35680-B-14	PE1016_P1SCD-08-B-0006IN	D422	T	87.38 g	SEE-SAMPLE-DATA SHEETS				
200-35680-B-8	PE1016_P1SCD-09-A-0006IN	D422	T	100.85 g	SEE-SAMPLE-DATA SHEETS				
200-35680-B-8 DU	PE1016_P1SCD-09-A-0006IN	D422	T	112.16 g	SEE-SAMPLE-DATA SHEETS				
200-35680-B-9	PE1016_P1SCD-10-A-0005IN	D422	T	114.67 g	SEE-SAMPLE-DATA SHEETS				
200-35680-B-10	PE1016_P1SCD-10-B-0006IN	D422	T	125.26 g	SEE-SAMPLE-DATA SHEETS				
200-35680-B-11	PE1016_P1SCD-09-B-0003IN	D422	T	107.8 g	SEE-SAMPLE-DATA SHEETS				
200-35680-B-12	PE1016_P1SCD-09-B-0309IN	D422	T	65.95 g	SEE-SAMPLE-DATA SHEETS				
200-35680-B-1	PE1016_P1SCD-06-A-0006IN	D422	T	164.87 g	SEE-SAMPLE-DATA SHEETS				
200-35680-B-2	PE1016_P1SCD-06-B-0008IN	D422	T	136.87 g	SEE-SAMPLE-DATA SHEETS				
200-35680-B-3	PE1016_P1SCD-06-A-0613IN	D422	T	70.93 g	SEE-SAMPLE-DATA SHEETS				
200-35680-B-4	PE1016_P1SCD-07-A-0008IN	D422	T	111 g	SEE-SAMPLE-DATA SHEETS				
200-35680-B-5	PE1016_P1SCD-07-B-0006IN	D422	T	104.77 g	SEE-SAMPLE-DATA SHEETS				
200-35680-B-6	PE1016_P1SCD-08-A-0006IN	D422	T	123.11 g	SEE-SAMPLE-DATA SHEETS				
200-35680-B-7	PE1016_P1SCD-08-A-0006IN-D	D422	T	133.76 g	SEE-SAMPLE-DATA SHEETS				

Batch Notes	

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802.660.1990 fax 802.660.1919

200-35680 Chain of Custody

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☒ RCRA ☐ Other:

Client Contact	Project Manager: K. VAN LANDINGHAM	Site Contact: GARY LONG	Date: 10/10/16	COC No:
EHS SUPPORT — ASHLAND	Tel/Fax: 215 498 0548	Lab Contact: KRIS DUSABLON	Carrier:	1 of 2 COCs

(215) 498 0548 Phone
( ) FAX
Project Name: DNS SED SAMPLING
Site: DN PORT EWEN NY
P O #

Analysis Turnaround Time
☐ CALENDAR DAYS ☐ WORKING DAYS
TAT if different from Below _____
☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day
SEE NOTES AND PROVIDED SPREADSHEET

Sampler:
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

METALS = Cu, Se, Zn, Hg

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Cu Se Zn (6020A)	Hg (7471B)	TOC (LLOYD KAHN)	GRAIN SIZE (D422)	MOISTURE (25406)	Sample Specific Notes:
PE1016_P1SCD-06-A-0006IN	10/10/16	16:45		SED	2			X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT
PE1016_P1SCD-06-B-0008IN	10/10/16	16:30		SED	2			X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT
PE1016_P1SCD-06-A-0613IN	10/10/16	16:46		SED	2			X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT
PE1016_P1SCD-07-A-0008IN	10/10/16	16:10		SED	2			X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT
PE1016_P1SCD-07-B-0006IN	10/10/16	15:43		SED	2			X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT
PE1016_P1SCD-08-A-0006IN	10/10/16	15:10		SED	2			X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT
PE1016_P1SCD-08-A-0006IN-D	10/10/16	15:11		SED	2			X	X	X	X	X	STANDARD TAT
~~PE1016_P1SCD-09-A-0006IN~~	~~10/10/16~~	~~14:20~~		~~SED~~	~~2~~			X	X	X	X	X	~~METALS 3-d TAT; TOC/GS STD TAT~~
~~PE1016_P1SCD-09-B-0003IN~~	~~10/10/16~~	~~14:40~~		~~SED~~	~~2~~			X	X	X	X	X	~~METALS 3-d TAT; TOC/GS STD TAT~~
~~PE1016_P1SCD-09-B-0309IN~~	~~10/10/16~~			~~SED~~	~~2~~			X	X	X	X	X	~~METALS 3-d TAT; TOC/GS STD TAT~~
PE1016_P1SCD-09-A-0006IN-MS	10/10/16	14:21		SED	1		Y	X	X			X	~~STANDARD TAT~~ HOLD
PE1016_P1SCD-09-A-0006IN-MSD	10/10/16	14:22		SED	1		Y	X	X			X	~~STANDARD TAT~~ HOLD

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☐ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:
*PLEASE REFER TO SPREADSHEET PROVIDED TO KRIS DUSABLON FOR FURTHER DETAILS REGARDING TATS AND SAMPLES ON HOLD. *

Custody Seals Intact: ☒ Yes ☐ No | Custody Seal No.: 0001 | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	EHS SUPPORT	10/11/16 17:00	[signature]	TABUN	10/12/16 1030
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802.660.1990 fax 802.660.1919

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: G. LONG	Site Contact: GARY LONG	Date: 10/10/16	COC No:
EHS SUPPORT – ASHLAND	Tel/Fax: 215 498 0548	Lab Contact:	Carrier:	2 of 2 COCs
	Analysis Turnaround Time			Sampler:
	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(215) 498 0548 Phone	TAT if different from Below ____			Walk-in Client:
( ) FAX	☐ 2 weeks SEE NOTES			Lab Sampling:
Project Name: DNS SEDIMENT SAMPLING – PHASE 2	☐ 1 week AND SPREAD-			
Site: DN PORT EWEN NY	☐ 2 days SHEET PROVIDED			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Cu, Se, Zn (6020A)	Hg (7471B)	TOC (Lloyd Kahn)	Grain Size (D422)	Moisture (D2216)	Sample Specific Notes:
PE1016 – P1SCD – 10 – A – 0005 IN	10/10/16	1750		SED	2			X	X	X	X	X	METALS = Cu, Se, Zn, Hg
PE1016 – P1SCD – 10 – B – 0006 IN JK	10/10/16	1755		SED	2			X	X	X	X	X	HOLD METALS/GS ; TOC STD THAT
PE1016 – P1SCD – 09 – A – 0004 IN	10/10/16	1420		SED	2			X	X	X	X	X	HOLD METALS/GS ; TOC STD THAT
PE1016 – P1SCD – 09 – B – 0003 IN	10/10/16	1440		SED	2			X	X	X	X	X	HOLD METALS/GS ; TOC STD THAT
PE1016 – P1SCD – 09 – B – 0309 IN	10/10/16	1441		SED	2			X	X	X	X	X	HOLD METALS/GS ; TOC STD THAT
PE1016 – P1SCD – BLK – 1 – 101016	10/10/16	2020		AQ	1			X	X				BLANK ; STANDARD THAT
PE1016 – P1SCD – 08 – B – 0006 IN	10/10/16	1515		SED	2			X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 3

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:

* SEE PAGE 1 *

Custody Seals Intact: ☑ Yes ☐ No	Custody Seal No.: 0001		Cooler Temp. (°C): Obs'd:_____ Corr'd:_____		Therm ID No.:_____
Relinquished by:	Company: EHS SUPPORT	Date/Time: 10/11/16 1700	Received by:	Company: TAB VT	Date/Time: 10/12/16 1030
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:



ORIGIN ID:SWFA (111) 111-1111
EHS SUPPORT

4504 BROWNSVILLE RD

PITTSBURGH, PA 15236
UNITED STATES US

SHIP DATE: 11OCT16
ACTWGT: 59.00 LB
CAD: 006995052/SSFE1722
DIMS: 24x14x13 IN

BILL THIRD PARTY

Part # 156297-435 RIT2 01/15

TO **TEST AMERICAN**
KRISTINE DUSABLON
30 COMMUNITY DR STE 11

SOUTH BURLINGTON VT 05403

(111) 111-1111 REF:
INV:
PO: DEPT:

FedEx Express

E

J162016070501uv

2 of 2

MPS# 0263 **7843 2580 4321**

Mstr# 7843 2580 4310 0201

XH BTVA

WED - 12 OCT 10:30A
PRIORITY OVERNIGHT

05403
VT-US **BTV**

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 200-35680-1
SDG Number: 200-35660-1

Login Number: 35680
List Number: 1
Creator: Atherton, Joel E

List Source: TestAmerica Burlington

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	Seal present with no number.
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.8ºC
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	IDs on containers do not match the COC. Logged in per COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Job Number: 200-35700-1

SDG Number: 200-35700-1

Job Description: Port Ewen DNS Sediment

For:
Ashland LLC
Ashland Hercules Research Center
500 Hercules Rd Bldg 8139
Wilmington, DE 19808

Attention: John Hoffman

Approved for release.
Kristine A Dusablon
Project Manager II
11/7/2016 4:54 PM

Kristine A Dusablon, Project Manager II
30 Community Drive, South Burlington, VT, 05403
(802)660-1990
kris.dusablon@testamericainc.com
11/07/2016

cc: Melissa Hollinger
Gary Long

The test results in this report relate only to sample(s) as received by the laboratory. These test results were derived under a quality system that adheres to the requirements of NELAC. Pursuant to NELAC, this report may not be produced in full without written approval from the laboratory

Table of Contents

Cover Title Page 1

Data Summaries 5

- Definitions 5
- Case Narrative 6
- Detection Summary 8
- Client Sample Results 22
- Default Detection Limits 81
- QC Sample Results 82
- QC Association 88
- Chronicle 93
- Certification Summary 102
- Method Summary 103
- Sample Summary 104
- Reagent Traceability 105
  - COAs 157

Inorganic Sample Data 351

- Metals Data 351
  - Met Cover Page 352
  - Met Sample Data 353
  - Met QC Data 372
    - Met ICV/CCV 372
    - Met Blanks 395
    - Met ICSA/ICSAB 416
    - Met MS/MSD/PDS 426
    - Met LCS/LCSD 429
    - Met Serial Dilution 438

Table of Contents

Met MDL 439

Met Linear Ranges 447

Met Preparation Log 450

Met Analysis Run Log 458

Met ICP/MS Tune 472

Met ICP/MS Int Stds 477

Met Prep Data 487

Met Raw Data 501

General Chemistry Data 1178

Gen Chem Cover Page 1179

Gen Chem Sample Data 1180

Gen Chem QC Data 1198

Gen Chem ICV/CCV 1198

Gen Chem Blanks 1200

Gen Chem MS/MSD/PDS 1201

Gen Chem LCS/LCSD 1203

Gen Chem MDL 1204

Gen Chem Linear Ranges 1209

Gen Chem Analysis Run Log 1211

Gen Chem Prep Data 1216

Gen Chem Raw Data 1220

Geotechnical Data 1313

Geo Cover Page 1313

Geo Sample Data 1314

Geo Duplicates 1332

Geo Prep Data 1335

Table of Contents

Shipping and Receiving Documents 1337

Client Chain of Custody 1338

Sample Receipt Checklist 1340

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
W	PS: Post-digestion spike was outside control limits
V	Serial Dilution exceeds the control limits
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	Instrument related QC is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Geotechnical

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Ashland LLC

Project: Port Ewen DNS Sediment

Report Number: 200-35700-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 10/13/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt were 3.0º C and 3.4º C.

METALS (ICPMS)
Samples PE1016-P1SCD-01-A-0007IN, PE1016-P1SCD-01-B-0006IN, PE1016-P1SCD-01-A-0718IN, PE1016-P1SCD-02-A-0004IN, PE1016-P1SCD-02-B-0004IN, PE1016-P1SCD-03-A-0006IN, PE1016-P1SCD-03-A-0612IN, PE1016-P1SCD-03-B-0006IN, PE1016-P1SCD-11-A-0004IN, PE1016-P1SCD-11-B-0006IN, PE1016-P1SCD-12-A-0008IN, PE1016-P1SCD-12-B-0006IN, PE1016-P1SCD-13-A-0002IN, PE1016-P1SCD-13-B-0006IN, PE1016-P1SCD-13-B-0006IN-D, PE1016-P1SCD-14-A-0004IN, PE1016-P1SCD-14-B-0004IN and PE1016-P1SCD-12-A-0814IN were analyzed for metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 10/13/2016, 10/24/2016 and 10/31/2016 and analyzed on 10/14/2016, 10/25/2016 and 11/01/2016.

Samples PE1016-P1SCD-01-A-0007IN[4X], PE1016-P1SCD-01-B-0006IN[2X], PE1016-P1SCD-01-A-0718IN[10X], PE1016-P1SCD-02-B-0004IN[2X] and PE1016-P1SCD-11-B-0006IN[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Internal standards for the following elements were re-associated: Copper and Zinc were re-associated from Scandium to Indium. Selenium was re-associated from Yttrium to Indium.

Selenium was detected in method blank MB 200-110769/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

For the MS of sample PE1016-P1SCD-12-B-0006IN MS and MSD of sample PE1016-P1SCD-12-B-0006IN MSD, Copper failed the recovery criteria. Due to the high concentration of Copper in the parent sample, the matrix spike and matrix spike duplcate could not be evaluated for accuracy and precision. The post digestion spike % recovery for Selenium and Zinc associated with sample PE1016-P1SCD-12-B-0006IN was outside of control limits. Refer to the QC report for details.

The serial dilution performed for the following sample associated with batch 200-110848 was outside control limits for Zinc: PE1016-P1SCD-12-B-0006IN. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample PE1016-P1SCD-BLK-3-101216 was analyzed for metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 10/17/2016 and analyzed on 10/18/2016 and 10/19/2016.

Copper was detected in method blank MB 200-110239/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY

Samples PE1016-P1SCD-01-A-0007IN, PE1016-P1SCD-01-B-0006IN, PE1016-P1SCD-01-A-0718IN, PE1016-P1SCD-02-A-0004IN, PE1016-P1SCD-02-B-0004IN, PE1016-P1SCD-03-A-0006IN, PE1016-P1SCD-03-A-0612IN, PE1016-P1SCD-03-B-0006IN, PE1016-P1SCD-11-A-0004IN, PE1016-P1SCD-11-B-0006IN, PE1016-P1SCD-12-A-0008IN, PE1016-P1SCD-12-B-0006IN, PE1016-P1SCD-13-A-0002IN, PE1016-P1SCD-13-B-0006IN, PE1016-P1SCD-13-B-0006IN-D, PE1016-P1SCD-14-A-0004IN, PE1016-P1SCD-14-B-0004IN and PE1016-P1SCD-12-A-0814IN were analyzed for mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared on 10/17/2016, 10/25/2016 and 10/31/2016 and analyzed on 10/17/2016, 10/26/2016 and 10/31/2016.

Samples PE1016-P1SCD-01-A-0007IN[4X], PE1016-P1SCD-01-B-0006IN[4X], PE1016-P1SCD-01-A-0718IN[4X], PE1016-P1SCD-02-B-0004IN[2X], PE1016-P1SCD-03-A-0006IN[2X], PE1016-P1SCD-03-B-0006IN[2X] and PE1016-P1SCD-11-B-0006IN[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Mercury failed the recovery criteria high for the MS of sample PE1016-P1SCD-12-B-0006INMS in batch 200-110792. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY

Sample PE1016-P1SCD-BLK-3-101216 was analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 10/17/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GRAIN SIZE

Samples PE1016-P1SCD-01-A-0007IN, PE1016-P1SCD-01-B-0006IN, PE1016-P1SCD-01-A-0718IN, PE1016-P1SCD-02-A-0004IN, PE1016-P1SCD-02-B-0004IN, PE1016-P1SCD-03-A-0006IN, PE1016-P1SCD-03-A-0612IN, PE1016-P1SCD-03-B-0006IN, PE1016-P1SCD-11-A-0004IN, PE1016-P1SCD-11-B-0006IN, PE1016-P1SCD-12-A-0008IN, PE1016-P1SCD-12-B-0006IN, PE1016-P1SCD-13-A-0002IN, PE1016-P1SCD-13-B-0006IN, PE1016-P1SCD-13-B-0006IN-D, PE1016-P1SCD-14-A-0004IN, PE1016-P1SCD-14-B-0004IN and PE1016-P1SCD-12-A-0814IN were analyzed for grain size in accordance with D422 grain size. The samples were analyzed on 10/18/2016 and 10/23/2016.

Gravel exceeded the RPD limit for the duplicate of sample PE1016-P1SCD-12-B-0006INDU. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Samples PE1016-P1SCD-01-A-0007IN, PE1016-P1SCD-01-B-0006IN, PE1016-P1SCD-01-A-0718IN, PE1016-P1SCD-02-A-0004IN, PE1016-P1SCD-02-B-0004IN, PE1016-P1SCD-03-A-0006IN, PE1016-P1SCD-03-A-0612IN, PE1016-P1SCD-03-B-0006IN, PE1016-P1SCD-11-A-0004IN, PE1016-P1SCD-11-B-0006IN, PE1016-P1SCD-12-A-0008IN, PE1016-P1SCD-12-B-0006IN, PE1016-P1SCD-13-A-0002IN, PE1016-P1SCD-13-B-0006IN, PE1016-P1SCD-13-B-0006IN-D, PE1016-P1SCD-14-A-0004IN, PE1016-P1SCD-14-B-0004IN and PE1016-P1SCD-12-A-0814IN were analyzed for total organic carbon in accordance with Lloyd Kahn Method. The samples were analyzed on 10/17/2016 and 10/19/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples PE1016-P1SCD-01-A-0007IN, PE1016-P1SCD-01-B-0006IN, PE1016-P1SCD-01-A-0718IN, PE1016-P1SCD-02-A-0004IN, PE1016-P1SCD-02-B-0004IN, PE1016-P1SCD-03-A-0006IN, PE1016-P1SCD-03-A-0612IN, PE1016-P1SCD-03-B-0006IN, PE1016-P1SCD-11-A-0004IN, PE1016-P1SCD-11-B-0006IN, PE1016-P1SCD-12-A-0008IN, PE1016-P1SCD-12-B-0006IN, PE1016-P1SCD-13-A-0002IN, PE1016-P1SCD-13-B-0006IN, PE1016-P1SCD-13-B-0006IN-D, PE1016-P1SCD-14-A-0004IN, PE1016-P1SCD-14-B-0004IN and PE1016-P1SCD-12-A-0814IN were analyzed for percent solids in accordance with EPA Moisture. The samples were analyzed on 10/14/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35700-1
SDG: 200-35700-1

Client Sample ID: PE1016-P1SCD-01-A-0007IN — Lab Sample ID: 200-35700-1

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	0.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	29.6				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	12.5				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	7.5				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	9.6				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Silt	42.5				%	1		D422	Total/NA
Clay	27.9				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	87.5				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	83.4				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	80.0				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	76.5				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	74.4				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	73.4				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	70.9				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	70.4				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	49.0				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	45.1				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	39.4				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	33.6				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	27.9				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	13.9				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	8.7				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	2490		3.6	0.87	mg/Kg	4	☼	6020A	Total/NA
Selenium	5.1		0.72	0.11	mg/Kg	1	☼	6020A	Total/NA
Zinc	326		3.6	1.1	mg/Kg	1	☼	6020A	Total/NA
Mercury	9.5		0.30	0.11	mg/Kg	4	☼	7471B	Total/NA
Total Organic Carbon	58500		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-01-B-0006IN — Lab Sample ID: 200-35700-2

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	12.1				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	22.8				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	4.6				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	8.4				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	9.8				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	87.9				% Passing	1		D422	Total/NA
Silt	36.3				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-01-B-0006IN (Continued) — Lab Sample ID: 200-35700-2

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Clay	28.8				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	83.3				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	78.0				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	74.9				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	71.5				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	69.7				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	68.5				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	65.6				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	65.1				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	59.5				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	54.8				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	45.3				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	38.3				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	28.8				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	17.1				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	9.4				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	2350		2.1	0.51	mg/Kg	2	☼	6020A	Total/NA
Selenium	6.0		0.84	0.13	mg/Kg	1	☼	6020A	Total/NA
Zinc	283		4.2	1.3	mg/Kg	1	☼	6020A	Total/NA
Mercury	17.9		0.37	0.14	mg/Kg	4	☼	7471B	Total/NA
Total Organic Carbon	36000		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-01-A-0718IN — Lab Sample ID: 200-35700-3

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	0.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	4.6				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	0.0				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	0.9				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	3.7				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Silt	46.1				%	1		D422	Total/NA
Clay	49.3				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	99.6				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	99.1				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	98.3				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	97.8				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	97.4				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	95.8				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	95.4				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	76.3				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	73.0				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	66.2				% Passing	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-01-A-0718IN (Continued) — Lab Sample ID: 200-35700-3

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Hydrometer Reading 4 - Percent Finer	56.1				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	49.3				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	34.2				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	25.3				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	5590		5.3	1.3	mg/Kg	10	☼	6020A	Total/NA
Selenium	1.2		0.42	0.067	mg/Kg	1	☼	6020A	Total/NA
Zinc	227		2.1	0.66	mg/Kg	1	☼	6020A	Total/NA
Mercury	6.1		0.21	0.078	mg/Kg	4	☼	7471B	Total/NA
Total Organic Carbon	15900		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-02-A-0004IN — Lab Sample ID: 200-35700-4

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	0.4				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	10.6				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	0.5				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	4.0				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	6.1				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	99.6				% Passing	1		D422	Total/NA
Silt	41.7				%	1		D422	Total/NA
Clay	47.3				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	99.1				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	96.5				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	95.1				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	93.6				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	92.4				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	91.4				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	89.2				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	89.0				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	75.7				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	67.6				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	63.5				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	55.4				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	47.3				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	37.1				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	24.4				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	373		0.78	0.19	mg/Kg	1	☼	6020A	Total/NA
Selenium	2.1		0.63	0.099	mg/Kg	1	☼	6020A	Total/NA
Zinc	105		3.1	0.97	mg/Kg	1	☼	6020A	Total/NA
Mercury	2.2		0.079	0.029	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	15300		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35700-1
SDG: 200-35700-1

Client Sample ID: PE1016-P1SCD-02-B-0004IN — Lab Sample ID: 200-35700-5

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	8.6				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	35.0				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	7.9				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	13.4				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	13.7				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	91.4				% Passing	1		D422	Total/NA
Silt	35.0				%	1		D422	Total/NA
Clay	21.4				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	83.5				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	76.4				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	70.1				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	65.0				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	62.5				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	60.9				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	57.1				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	56.4				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	51.5				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	46.9				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	39.9				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	30.7				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	21.4				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	14.5				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	6.9				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1700		1.6	0.38	mg/Kg	2	☼	6020A	Total/NA
Selenium	2.7		0.63	0.099	mg/Kg	1	☼	6020A	Total/NA
Zinc	193		3.1	0.97	mg/Kg	1	☼	6020A	Total/NA
Mercury	6.1		0.14	0.053	mg/Kg	2	☼	7471B	Total/NA
Total Organic Carbon	32800		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-03-A-0006IN — Lab Sample ID: 200-35700-6

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	12.6				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	40.3				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	9.8				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	15.8				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	14.7				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	87.4				% Passing	1		D422	Total/NA
Silt	28.6				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-03-A-0006IN (Continued) — Lab Sample ID: 200-35700-6

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Clay	18.5				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	77.6				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	68.2				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	61.8				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	56.6				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	54.0				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	52.2				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	47.6				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	47.1				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	44.1				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	39.0				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	28.8				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	23.7				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	18.5				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	10.9				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	5.1				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	805		1.1	0.25	mg/Kg	1	☼	6020A	Total/NA
Selenium	3.4		0.85	0.13	mg/Kg	1	☼	6020A	Total/NA
Zinc	175		4.2	1.3	mg/Kg	1	☼	6020A	Total/NA
Mercury	7.0		0.21	0.075	mg/Kg	2	☼	7471B	Total/NA
Total Organic Carbon	42100		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-03-A-0612IN — Lab Sample ID: 200-35700-7

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	0.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	3.6				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	1.4				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	0.3				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	1.9				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Silt	53.2				%	1		D422	Total/NA
Clay	43.2				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	98.6				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	98.3				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	98.3				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	98.1				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	97.9				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	97.7				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	96.5				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	96.4				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	79.1				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	72.3				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	61.1				% Passing	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-03-A-0612IN (Continued) — Lab Sample ID: 200-35700-7

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Hydrometer Reading 4 - Percent Finer	49.9				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	43.2				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	32.0				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	24.7				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	15.5		0.46	0.11	mg/Kg	1	☼	6020A	Total/NA
Selenium	1.7		0.37	0.058	mg/Kg	1	☼	6020A	Total/NA
Zinc	91.8		1.8	0.57	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.047	J	0.048	0.017	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	4070		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-03-B-0006IN — Lab Sample ID: 200-35700-8

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	7.2				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	28.4				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	5.5				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	7.0				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	15.9				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	92.8				% Passing	1		D422	Total/NA
Silt	47.2				%	1		D422	Total/NA
Clay	17.2				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	87.3				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	83.1				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	80.3				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	76.6				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	73.7				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	71.2				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	65.1				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	64.4				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	45.7				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	41.0				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	31.5				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	24.4				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	17.2				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	10.1				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	7.1				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	928		0.94	0.23	mg/Kg	1	☼	6020A	Total/NA
Selenium	3.7		0.75	0.12	mg/Kg	1	☼	6020A	Total/NA
Zinc	188		3.8	1.2	mg/Kg	1	☼	6020A	Total/NA
Mercury	8.7		0.20	0.072	mg/Kg	2	☼	7471B	Total/NA
Total Organic Carbon	50000		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35700-1
SDG: 200-35700-1

Client Sample ID: PE1016-P1SCD-11-A-0004IN — Lab Sample ID: 200-35700-9

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	4.9				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	51.1				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	15.8				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	19.9				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	15.4				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	95.1				% Passing	1		D422	Total/NA
Silt	30.6				%	1		D422	Total/NA
Clay	13.4				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	79.3				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	69.0				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	59.4				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	50.5				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	47.9				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	46.8				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	44.3				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	44.0				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	28.2				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	24.5				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	20.8				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	17.1				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	13.4				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	9.7				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	5.5				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	230		0.74	0.18	mg/Kg	1	☼	6020A	Total/NA
Selenium	2.0		0.59	0.093	mg/Kg	1	☼	6020A	Total/NA
Zinc	154		3.0	0.92	mg/Kg	1	☼	6020A	Total/NA
Mercury	1.2		0.073	0.026	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	22000		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-11-B-0006IN — Lab Sample ID: 200-35700-10

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	4.4				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	34.5				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	3.4				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	12.4				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	18.7				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	95.6				% Passing	1		D422	Total/NA
Silt	36.6				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-11-B-0006IN (Continued) — Lab Sample ID: 200-35700-10

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Clay	24.5				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	92.2				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	84.0				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	79.8				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	72.0				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	67.7				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	65.7				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	61.7				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	61.1				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	52.3				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	46.7				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	37.5				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	31.9				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	24.5				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	17.1				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	9.3				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	2170		1.9	0.45	mg/Kg	2	☼	6020A	Total/NA
Selenium	3.7		0.75	0.12	mg/Kg	1	☼	6020A	Total/NA
Zinc	311		3.7	1.2	mg/Kg	1	☼	6020A	Total/NA
Mercury	4.1		0.16	0.058	mg/Kg	2	☼	7471B	Total/NA
Total Organic Carbon	29500		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-12-A-0008IN — Lab Sample ID: 200-35700-11

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	7.7				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	46.0				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	3.4				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	10.4				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	32.2				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	92.3				% Passing	1		D422	Total/NA
Silt	25.3				%	1		D422	Total/NA
Clay	21.0				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	88.9				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	84.2				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	78.5				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	69.7				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	62.0				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	57.1				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	47.6				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	46.3				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	45.9				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	39.1				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	32.3				% Passing	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-12-A-0008IN (Continued) — Lab Sample ID: 200-35700-11

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Hydrometer Reading 4 - Percent Finer	25.5				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	21.0				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	14.2				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	9.1				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	293		0.96	0.23	mg/Kg	1	☼	6020A	Total/NA
Selenium	2.5	B	0.77	0.12	mg/Kg	1	☼	6020A	Total/NA
Zinc	170		3.8	1.2	mg/Kg	1	☼	6020A	Total/NA
Mercury	1.8		0.090	0.033	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	34300		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-12-B-0006IN — Lab Sample ID: 200-35700-12

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	5.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	28.0				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	3.1				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	10.1				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	14.8				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	95.0				% Passing	1		D422	Total/NA
Silt	34.8				%	1		D422	Total/NA
Clay	32.2				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	91.9				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	86.0				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	81.8				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	76.2				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	73.3				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	71.6				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	67.7				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	67.0				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	60.0				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	54.0				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	46.1				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	40.2				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	32.2				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	26.3				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	17.8				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	236		0.91	0.22	mg/Kg	1	☼	6020A	Total/NA
Selenium	2.6	B	0.73	0.11	mg/Kg	1	☼	6020A	Total/NA
Zinc	171		3.6	1.1	mg/Kg	1	☼	6020A	Total/NA
Mercury	1.9	F1	0.079	0.029	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	34700		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35700-1
SDG: 200-35700-1

Client Sample ID: PE1016-P1SCD-13-A-0002IN — Lab Sample ID: 200-35700-13

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	0.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	10.8				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	0.0				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	5.1				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	5.7				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Silt	48.9				%	1		D422	Total/NA
Clay	40.3				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	97.3				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	94.9				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	92.8				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	91.8				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	91.2				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	89.5				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	89.2				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	73.8				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	66.1				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	58.3				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	49.3				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	40.3				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	27.4				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	15.8				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	34.2		0.48	0.11	mg/Kg	1	☼	6020A	Total/NA
Selenium	0.92	B	0.38	0.060	mg/Kg	1	☼	6020A	Total/NA
Zinc	79.8		1.9	0.59	mg/Kg	1	☼	6020A	Total/NA
Total Organic Carbon	1450		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-13-B-0006IN — Lab Sample ID: 200-35700-14

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	11.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	31.8				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	3.2				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	13.8				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	14.8				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	89.0				% Passing	1		D422	Total/NA
Silt	50.4				%	1		D422	Total/NA
Clay	6.8				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-13-B-0006IN (Continued) — Lab Sample ID: 200-35700-14

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Sieve Size #10 - Percent Finer	85.8				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	75.7				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	72.0				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	67.9				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	65.4				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	63.6				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	58.1				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	57.2				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	30.8				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	24.8				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	21.8				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	12.8				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	6.8				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	0.8				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	0.8				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	547		1.4	0.34	mg/Kg	1	☼	6020A	Total/NA
Selenium	4.6	B	1.1	0.18	mg/Kg	1	☼	6020A	Total/NA
Zinc	240		5.7	1.8	mg/Kg	1	☼	6020A	Total/NA
Mercury	3.3		0.12	0.043	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	77300		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-13-B-0006IN-D — Lab Sample ID: 200-35700-15

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	5.6				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	33.9				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	4.6				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	13.0				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	16.3				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	94.4				% Passing	1		D422	Total/NA
Silt	57.3				%	1		D422	Total/NA
Clay	3.2				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	89.8				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	80.8				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	76.8				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	72.2				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	69.5				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	67.6				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	61.6				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	60.5				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	23.9				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	23.9				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	18.7				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	8.4				% Passing	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-13-B-0006IN-D (Continued) — Lab Sample ID: 200-35700-15

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Hydrometer Reading 5 - Percent Finer	3.2				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	0.6				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	0.6				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	567		1.6	0.37	mg/Kg	1	☼	6020A	Total/NA
Selenium	4.5	B	1.2	0.20	mg/Kg	1	☼	6020A	Total/NA
Zinc	246		6.2	1.9	mg/Kg	1	☼	6020A	Total/NA
Mercury	3.0		0.11	0.039	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	61000		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-14-A-0004IN — Lab Sample ID: 200-35700-16

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	3.5				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	44.2				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	5.7				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	13.1				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	25.4				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	96.5				% Passing	1		D422	Total/NA
Silt	42.9				%	1		D422	Total/NA
Clay	9.4				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	90.8				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	83.2				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	77.7				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	67.5				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	61.8				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	59.1				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	53.1				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	52.3				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	29.2				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	24.8				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	20.4				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	16.0				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	9.4				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	7.2				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	0.6				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	914		1.1	0.26	mg/Kg	1	☼	6020A	Total/NA
Selenium	3.9	B	0.86	0.14	mg/Kg	1	☼	6020A	Total/NA
Zinc	303		4.3	1.3	mg/Kg	1	☼	6020A	Total/NA
Mercury	3.8		0.091	0.033	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	30800		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-14-B-0004IN — Lab Sample ID: 200-35700-17

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-14-B-0004IN (Continued) — Lab Sample ID: 200-35700-17

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	7.8				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	40.2				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	6.3				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	11.5				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	22.4				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	92.2				% Passing	1		D422	Total/NA
Silt	40.0				%	1		D422	Total/NA
Clay	12.0				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	85.9				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	79.1				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	74.4				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	65.7				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	60.9				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	58.3				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	52.8				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	52.0				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	33.2				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	29.4				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	21.7				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	15.9				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	12.0				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	6.3				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	0.5				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	633		0.98	0.24	mg/Kg	1	☼	6020A	Total/NA
Selenium	2.9	B	0.78	0.12	mg/Kg	1	☼	6020A	Total/NA
Zinc	243		3.9	1.2	mg/Kg	1	☼	6020A	Total/NA
Mercury	2.3		0.085	0.031	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	33700		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-12-A-0814IN — Lab Sample ID: 200-35700-18

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	0.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	3.6				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	0.0				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	0.3				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	3.3				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Silt	59.9				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-12-A-0814IN (Continued) — Lab Sample ID: 200-35700-18

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Clay	36.5				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	99.7				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	99.1				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	98.7				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	98.4				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	96.8				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	96.4				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	64.8				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	61.7				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	52.3				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	46.0				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	36.5				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	28.7				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	17.7				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	16.0		0.59	0.14	mg/Kg	1	☼	6020A	Total/NA
Selenium	1.1	B	0.47	0.074	mg/Kg	1	☼	6020A	Total/NA
Zinc	87.5		2.4	0.73	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.038	J	0.047	0.017	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	4580		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-BLK-3-101216 — Lab Sample ID: 200-35700-19

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-01-A-0007IN

Date Collected: 10/12/16 14:30
Date Received: 10/13/16 12:40

Lab Sample ID: 200-35700-1

Matrix: Sediment
Percent Solids: 50.3

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	2490		3.6	0.87	mg/Kg	☼	10/13/16 13:50	10/14/16 14:44	4
Selenium	5.1		0.72	0.11	mg/Kg	☼	10/13/16 13:50	10/14/16 13:12	1
Zinc	326		3.6	1.1	mg/Kg	☼	10/13/16 13:50	10/14/16 13:12	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	9.5		0.30	0.11	mg/Kg	☼	10/17/16 10:05	10/17/16 15:51	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	58500		1000	380	mg/Kg			10/17/16 16:43	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	50.3		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			10/18/16 14:52	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/18/16 14:52	1
Sand	29.6				%			10/18/16 14:52	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/18/16 14:52	1
Coarse Sand	12.5				%			10/18/16 14:52	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/18/16 14:52	1
Medium Sand	7.5				%			10/18/16 14:52	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/18/16 14:52	1
Fine Sand	9.6				%			10/18/16 14:52	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/18/16 14:52	1
Sieve Size #4 - Percent Finer	100.0				% Passing			10/18/16 14:52	1
Silt	42.5				%			10/18/16 14:52	1
Clay	27.9				%			10/18/16 14:52	1
Sieve Size #10 - Percent Finer	87.5				% Passing			10/18/16 14:52	1
Sieve Size #20 - Percent Finer	83.4				% Passing			10/18/16 14:52	1
Sieve Size #40 - Percent Finer	80.0				% Passing			10/18/16 14:52	1
Sieve Size #60 - Percent Finer	76.5				% Passing			10/18/16 14:52	1
Sieve Size #80 - Percent Finer	74.4				% Passing			10/18/16 14:52	1
Sieve Size #100 - Percent Finer	73.4				% Passing			10/18/16 14:52	1
Sieve Size #200 - Percent Finer	70.9				% Passing			10/18/16 14:52	1
Sieve Size #230 - Percent Finer	70.4				% Passing			10/18/16 14:52	1
Hydrometer Reading 1 - Percent Finer	49.0				% Passing			10/18/16 14:52	1
Hydrometer Reading 2 - Percent Finer	45.1				% Passing			10/18/16 14:52	1
Hydrometer Reading 3 - Percent Finer	39.4				% Passing			10/18/16 14:52	1
Hydrometer Reading 4 - Percent Finer	33.6				% Passing			10/18/16 14:52	1
Hydrometer Reading 5 - Percent Finer	27.9				% Passing			10/18/16 14:52	1
Hydrometer Reading 6 - Percent Finer	13.9				% Passing			10/18/16 14:52	1

Client Sample ID: PE1016-P1SCD-01-A-0007IN

Lab Sample ID: 200-35700-1

Date Collected: 10/12/16 14:30
Matrix: Sediment
Date Received: 10/13/16 12:40

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 7 - Percent Finer	8.7				% Passing			10/18/16 14:52	1

Client Sample ID: PE1016-P1SCD-01-B-0006IN

Lab Sample ID: 200-35700-2

Date Collected: 10/12/16 14:35
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 38.5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	2350		2.1	0.51	mg/Kg	☼	10/13/16 13:50	10/14/16 14:27	2
Selenium	6.0		0.84	0.13	mg/Kg	☼	10/13/16 13:50	10/14/16 13:18	1
Zinc	283		4.2	1.3	mg/Kg	☼	10/13/16 13:50	10/14/16 13:18	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	17.9		0.37	0.14	mg/Kg	☼	10/17/16 10:05	10/17/16 15:52	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	36000		1000	380	mg/Kg			10/17/16 17:03	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	38.5		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	12.1				%			10/23/16 17:44	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 17:44	1
Sand	22.8				%			10/23/16 17:44	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 17:44	1
Coarse Sand	4.6				%			10/23/16 17:44	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 17:44	1
Medium Sand	8.4				%			10/23/16 17:44	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 17:44	1
Fine Sand	9.8				%			10/23/16 17:44	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 17:44	1
Sieve Size #4 - Percent Finer	87.9				% Passing			10/23/16 17:44	1
Silt	36.3				%			10/23/16 17:44	1
Clay	28.8				%			10/23/16 17:44	1
Sieve Size #10 - Percent Finer	83.3				% Passing			10/23/16 17:44	1
Sieve Size #20 - Percent Finer	78.0				% Passing			10/23/16 17:44	1
Sieve Size #40 - Percent Finer	74.9				% Passing			10/23/16 17:44	1
Sieve Size #60 - Percent Finer	71.5				% Passing			10/23/16 17:44	1
Sieve Size #80 - Percent Finer	69.7				% Passing			10/23/16 17:44	1
Sieve Size #100 - Percent Finer	68.5				% Passing			10/23/16 17:44	1
Sieve Size #200 - Percent Finer	65.6				% Passing			10/23/16 17:44	1
Sieve Size #230 - Percent Finer	65.1				% Passing			10/23/16 17:44	1
Hydrometer Reading 1 - Percent Finer	59.5				% Passing			10/23/16 17:44	1

Client Sample ID: PE1016-P1SCD-01-B-0006IN

Lab Sample ID: 200-35700-2

Date Collected: 10/12/16 14:35
Matrix: Sediment
Date Received: 10/13/16 12:40

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 2 - Percent Finer	54.8				% Passing			10/23/16 17:44	1
Hydrometer Reading 3 - Percent Finer	45.3				% Passing			10/23/16 17:44	1
Hydrometer Reading 4 - Percent Finer	38.3				% Passing			10/23/16 17:44	1
Hydrometer Reading 5 - Percent Finer	28.8				% Passing			10/23/16 17:44	1
Hydrometer Reading 6 - Percent Finer	17.1				% Passing			10/23/16 17:44	1
Hydrometer Reading 7 - Percent Finer	9.4				% Passing			10/23/16 17:44	1

Client Sample ID: PE1016-P1SCD-01-A-0718IN

Lab Sample ID: 200-35700-3

Date Collected: 10/12/16 14:31
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 68.4

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	5590		5.3	1.3	mg/Kg	☼	10/13/16 13:50	10/14/16 14:50	10
Selenium	1.2		0.42	0.067	mg/Kg	☼	10/13/16 13:50	10/14/16 13:24	1
Zinc	227		2.1	0.66	mg/Kg	☼	10/13/16 13:50	10/14/16 13:24	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	6.1		0.21	0.078	mg/Kg	☼	10/17/16 10:05	10/17/16 15:54	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	15900		1000	380	mg/Kg			10/17/16 17:10	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	68.4		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			10/23/16 17:47	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 17:47	1
Sand	4.6				%			10/23/16 17:47	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 17:47	1
Coarse Sand	0.0				%			10/23/16 17:47	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 17:47	1
Medium Sand	0.9				%			10/23/16 17:47	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 17:47	1
Fine Sand	3.7				%			10/23/16 17:47	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 17:47	1
Sieve Size #4 - Percent Finer	100.0				% Passing			10/23/16 17:47	1
Silt	46.1				%			10/23/16 17:47	1
Clay	49.3				%			10/23/16 17:47	1
Sieve Size #10 - Percent Finer	100.0				% Passing			10/23/16 17:47	1
Sieve Size #20 - Percent Finer	99.6				% Passing			10/23/16 17:47	1

Client Sample ID: PE1016-P1SCD-01-A-0718IN

Lab Sample ID: 200-35700-3

Date Collected: 10/12/16 14:31
Matrix: Sediment
Date Received: 10/13/16 12:40

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Sieve Size #40 - Percent Finer	99.1				% Passing			10/23/16 17:47	1
Sieve Size #60 - Percent Finer	98.3				% Passing			10/23/16 17:47	1
Sieve Size #80 - Percent Finer	97.8				% Passing			10/23/16 17:47	1
Sieve Size #100 - Percent Finer	97.4				% Passing			10/23/16 17:47	1
Sieve Size #200 - Percent Finer	95.8				% Passing			10/23/16 17:47	1
Sieve Size #230 - Percent Finer	95.4				% Passing			10/23/16 17:47	1
Hydrometer Reading 1 - Percent Finer	76.3				% Passing			10/23/16 17:47	1
Hydrometer Reading 2 - Percent Finer	73.0				% Passing			10/23/16 17:47	1
Hydrometer Reading 3 - Percent Finer	66.2				% Passing			10/23/16 17:47	1
Hydrometer Reading 4 - Percent Finer	56.1				% Passing			10/23/16 17:47	1
Hydrometer Reading 5 - Percent Finer	49.3				% Passing			10/23/16 17:47	1
Hydrometer Reading 6 - Percent Finer	34.2				% Passing			10/23/16 17:47	1
Hydrometer Reading 7 - Percent Finer	25.3				% Passing			10/23/16 17:47	1

Client Sample ID: PE1016-P1SCD-02-A-0004IN

Lab Sample ID: 200-35700-4

Date Collected: 10/12/16 14:00
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 50.2

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	373		0.78	0.19	mg/Kg	☼	10/13/16 13:50	10/14/16 13:30	1
Selenium	2.1		0.63	0.099	mg/Kg	☼	10/13/16 13:50	10/14/16 13:30	1
Zinc	105		3.1	0.97	mg/Kg	☼	10/13/16 13:50	10/14/16 13:30	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	2.2		0.079	0.029	mg/Kg	☼	10/17/16 10:05	10/17/16 14:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	15300		1000	380	mg/Kg			10/17/16 17:17	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	50.2		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.4				%			10/23/16 17:49	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 17:49	1
Sand	10.6				%			10/23/16 17:49	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 17:49	1
Coarse Sand	0.5				%			10/23/16 17:49	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 17:49	1
Medium Sand	4.0				%			10/23/16 17:49	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 17:49	1

Client Sample ID: PE1016-P1SCD-02-A-0004IN

Lab Sample ID: 200-35700-4

Date Collected: 10/12/16 14:00
Matrix: Sediment
Date Received: 10/13/16 12:40

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Fine Sand	6.1				%			10/23/16 17:49	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 17:49	1
Sieve Size #4 - Percent Finer	99.6				% Passing			10/23/16 17:49	1
Silt	41.7				%			10/23/16 17:49	1
Clay	47.3				%			10/23/16 17:49	1
Sieve Size #10 - Percent Finer	99.1				% Passing			10/23/16 17:49	1
Sieve Size #20 - Percent Finer	96.5				% Passing			10/23/16 17:49	1
Sieve Size #40 - Percent Finer	95.1				% Passing			10/23/16 17:49	1
Sieve Size #60 - Percent Finer	93.6				% Passing			10/23/16 17:49	1
Sieve Size #80 - Percent Finer	92.4				% Passing			10/23/16 17:49	1
Sieve Size #100 - Percent Finer	91.4				% Passing			10/23/16 17:49	1
Sieve Size #200 - Percent Finer	89.2				% Passing			10/23/16 17:49	1
Sieve Size #230 - Percent Finer	89.0				% Passing			10/23/16 17:49	1
Hydrometer Reading 1 - Percent Finer	75.7				% Passing			10/23/16 17:49	1
Hydrometer Reading 2 - Percent Finer	67.6				% Passing			10/23/16 17:49	1
Hydrometer Reading 3 - Percent Finer	63.5				% Passing			10/23/16 17:49	1
Hydrometer Reading 4 - Percent Finer	55.4				% Passing			10/23/16 17:49	1
Hydrometer Reading 5 - Percent Finer	47.3				% Passing			10/23/16 17:49	1
Hydrometer Reading 6 - Percent Finer	37.1				% Passing			10/23/16 17:49	1
Hydrometer Reading 7 - Percent Finer	24.4				% Passing			10/23/16 17:49	1

Client Sample ID: PE1016-P1SCD-02-B-0004IN

Lab Sample ID: 200-35700-5

Date Collected: 10/12/16 14:10
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 48.1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	1700		1.6	0.38	mg/Kg	☼	10/13/16 13:50	10/14/16 14:38	2
Selenium	2.7		0.63	0.099	mg/Kg	☼	10/13/16 13:50	10/14/16 13:35	1
Zinc	193		3.1	0.97	mg/Kg	☼	10/13/16 13:50	10/14/16 13:35	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	6.1		0.14	0.053	mg/Kg	☼	10/17/16 10:05	10/17/16 15:56	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	32800		1000	380	mg/Kg			10/17/16 17:24	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	48.1		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	8.6				%			10/23/16 17:51	1

Client Sample ID: PE1016-P1SCD-02-B-0004IN

Lab Sample ID: 200-35700-5

Date Collected: 10/12/16 14:10
Matrix: Sediment
Date Received: 10/13/16 12:40

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 17:51	1
Sand	35.0				%			10/23/16 17:51	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 17:51	1
Coarse Sand	7.9				%			10/23/16 17:51	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 17:51	1
Medium Sand	13.4				%			10/23/16 17:51	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 17:51	1
Fine Sand	13.7				%			10/23/16 17:51	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 17:51	1
Sieve Size #4 - Percent Finer	91.4				% Passing			10/23/16 17:51	1
Silt	35.0				%			10/23/16 17:51	1
Clay	21.4				%			10/23/16 17:51	1
Sieve Size #10 - Percent Finer	83.5				% Passing			10/23/16 17:51	1
Sieve Size #20 - Percent Finer	76.4				% Passing			10/23/16 17:51	1
Sieve Size #40 - Percent Finer	70.1				% Passing			10/23/16 17:51	1
Sieve Size #60 - Percent Finer	65.0				% Passing			10/23/16 17:51	1
Sieve Size #80 - Percent Finer	62.5				% Passing			10/23/16 17:51	1
Sieve Size #100 - Percent Finer	60.9				% Passing			10/23/16 17:51	1
Sieve Size #200 - Percent Finer	57.1				% Passing			10/23/16 17:51	1
Sieve Size #230 - Percent Finer	56.4				% Passing			10/23/16 17:51	1
Hydrometer Reading 1 - Percent Finer	51.5				% Passing			10/23/16 17:51	1
Hydrometer Reading 2 - Percent Finer	46.9				% Passing			10/23/16 17:51	1
Hydrometer Reading 3 - Percent Finer	39.9				% Passing			10/23/16 17:51	1
Hydrometer Reading 4 - Percent Finer	30.7				% Passing			10/23/16 17:51	1
Hydrometer Reading 5 - Percent Finer	21.4				% Passing			10/23/16 17:51	1
Hydrometer Reading 6 - Percent Finer	14.5				% Passing			10/23/16 17:51	1
Hydrometer Reading 7 - Percent Finer	6.9				% Passing			10/23/16 17:51	1

Client Sample ID: PE1016-P1SCD-03-A-0006IN

Lab Sample ID: 200-35700-6

Date Collected: 10/12/16 13:00
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 37.1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	805		1.1	0.25	mg/Kg	☼	10/13/16 13:50	10/14/16 13:41	1
Selenium	3.4		0.85	0.13	mg/Kg	☼	10/13/16 13:50	10/14/16 13:41	1
Zinc	175		4.2	1.3	mg/Kg	☼	10/13/16 13:50	10/14/16 13:41	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	7.0		0.21	0.075	mg/Kg	☼	10/17/16 10:05	10/17/16 15:57	2

Client Sample ID: PE1016-P1SCD-03-A-0006IN

Date Collected: 10/12/16 13:00
Date Received: 10/13/16 12:40

Lab Sample ID: 200-35700-6

Matrix: Sediment

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	42100		1000	380	mg/Kg			10/17/16 17:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	37.1		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	12.6				%			10/23/16 17:53	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 17:53	1
Sand	40.3				%			10/23/16 17:53	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 17:53	1
Coarse Sand	9.8				%			10/23/16 17:53	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 17:53	1
Medium Sand	15.8				%			10/23/16 17:53	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 17:53	1
Fine Sand	14.7				%			10/23/16 17:53	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 17:53	1
Sieve Size #4 - Percent Finer	87.4				% Passing			10/23/16 17:53	1
Silt	28.6				%			10/23/16 17:53	1
Clay	18.5				%			10/23/16 17:53	1
Sieve Size #10 - Percent Finer	77.6				% Passing			10/23/16 17:53	1
Sieve Size #20 - Percent Finer	68.2				% Passing			10/23/16 17:53	1
Sieve Size #40 - Percent Finer	61.8				% Passing			10/23/16 17:53	1
Sieve Size #60 - Percent Finer	56.6				% Passing			10/23/16 17:53	1
Sieve Size #80 - Percent Finer	54.0				% Passing			10/23/16 17:53	1
Sieve Size #100 - Percent Finer	52.2				% Passing			10/23/16 17:53	1
Sieve Size #200 - Percent Finer	47.6				% Passing			10/23/16 17:53	1
Sieve Size #230 - Percent Finer	47.1				% Passing			10/23/16 17:53	1
Hydrometer Reading 1 - Percent Finer	44.1				% Passing			10/23/16 17:53	1
Hydrometer Reading 2 - Percent Finer	39.0				% Passing			10/23/16 17:53	1
Hydrometer Reading 3 - Percent Finer	28.8				% Passing			10/23/16 17:53	1
Hydrometer Reading 4 - Percent Finer	23.7				% Passing			10/23/16 17:53	1
Hydrometer Reading 5 - Percent Finer	18.5				% Passing			10/23/16 17:53	1
Hydrometer Reading 6 - Percent Finer	10.9				% Passing			10/23/16 17:53	1
Hydrometer Reading 7 - Percent Finer	5.1				% Passing			10/23/16 17:53	1

Client Sample ID: PE1016-P1SCD-03-A-0612IN

Date Collected: 10/12/16 13:01
Date Received: 10/13/16 12:40

Lab Sample ID: 200-35700-7

Matrix: Sediment
Percent Solids: 75.2

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	15.5		0.46	0.11	mg/Kg	☼	10/13/16 13:50	10/14/16 13:47	1
Selenium	1.7		0.37	0.058	mg/Kg	☼	10/13/16 13:50	10/14/16 13:47	1

Client Sample ID: PE1016-P1SCD-03-A-0612IN

Date Collected: 10/12/16 13:01
Date Received: 10/13/16 12:40

Lab Sample ID: 200-35700-7

Matrix: Sediment
Percent Solids: 75.2

Method: 6020A - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	91.8		1.8	0.57	mg/Kg	☼	10/13/16 13:50	10/14/16 13:47	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.047	J	0.048	0.017	mg/Kg	☼	10/17/16 10:05	10/17/16 15:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4070		1000	380	mg/Kg			10/17/16 17:37	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	75.2		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			10/23/16 17:55	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 17:55	1
Sand	3.6				%			10/23/16 17:55	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 17:55	1
Coarse Sand	1.4				%			10/23/16 17:55	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 17:55	1
Medium Sand	0.3				%			10/23/16 17:55	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 17:55	1
Fine Sand	1.9				%			10/23/16 17:55	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 17:55	1
Sieve Size #4 - Percent Finer	100.0				% Passing			10/23/16 17:55	1
Silt	53.2				%			10/23/16 17:55	1
Clay	43.2				%			10/23/16 17:55	1
Sieve Size #10 - Percent Finer	98.6				% Passing			10/23/16 17:55	1
Sieve Size #20 - Percent Finer	98.3				% Passing			10/23/16 17:55	1
Sieve Size #40 - Percent Finer	98.3				% Passing			10/23/16 17:55	1
Sieve Size #60 - Percent Finer	98.1				% Passing			10/23/16 17:55	1
Sieve Size #80 - Percent Finer	97.9				% Passing			10/23/16 17:55	1
Sieve Size #100 - Percent Finer	97.7				% Passing			10/23/16 17:55	1
Sieve Size #200 - Percent Finer	96.5				% Passing			10/23/16 17:55	1
Sieve Size #230 - Percent Finer	96.4				% Passing			10/23/16 17:55	1
Hydrometer Reading 1 - Percent Finer	79.1				% Passing			10/23/16 17:55	1
Hydrometer Reading 2 - Percent Finer	72.3				% Passing			10/23/16 17:55	1
Hydrometer Reading 3 - Percent Finer	61.1				% Passing			10/23/16 17:55	1
Hydrometer Reading 4 - Percent Finer	49.9				% Passing			10/23/16 17:55	1
Hydrometer Reading 5 - Percent Finer	43.2				% Passing			10/23/16 17:55	1
Hydrometer Reading 6 - Percent Finer	32.0				% Passing			10/23/16 17:55	1
Hydrometer Reading 7 - Percent Finer	24.7				% Passing			10/23/16 17:55	1

Client Sample ID: PE1016-P1SCD-03-B-0006IN
Date Collected: 10/12/16 13:10
Date Received: 10/13/16 12:40

Lab Sample ID: 200-35700-8
Matrix: Sediment
Percent Solids: 38.2

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	928		0.94	0.23	mg/Kg	☼	10/13/16 13:50	10/14/16 13:52	1
Selenium	3.7		0.75	0.12	mg/Kg	☼	10/13/16 13:50	10/14/16 13:52	1
Zinc	188		3.8	1.2	mg/Kg	☼	10/13/16 13:50	10/14/16 13:52	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	8.7		0.20	0.072	mg/Kg	☼	10/17/16 10:05	10/17/16 15:59	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	50000		1000	380	mg/Kg			10/17/16 18:24	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	38.2		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	7.2				%			10/23/16 17:58	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 17:58	1
Sand	28.4				%			10/23/16 17:58	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 17:58	1
Coarse Sand	5.5				%			10/23/16 17:58	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 17:58	1
Medium Sand	7.0				%			10/23/16 17:58	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 17:58	1
Fine Sand	15.9				%			10/23/16 17:58	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 17:58	1
Sieve Size #4 - Percent Finer	92.8				% Passing			10/23/16 17:58	1
Silt	47.2				%			10/23/16 17:58	1
Clay	17.2				%			10/23/16 17:58	1
Sieve Size #10 - Percent Finer	87.3				% Passing			10/23/16 17:58	1
Sieve Size #20 - Percent Finer	83.1				% Passing			10/23/16 17:58	1
Sieve Size #40 - Percent Finer	80.3				% Passing			10/23/16 17:58	1
Sieve Size #60 - Percent Finer	76.6				% Passing			10/23/16 17:58	1
Sieve Size #80 - Percent Finer	73.7				% Passing			10/23/16 17:58	1
Sieve Size #100 - Percent Finer	71.2				% Passing			10/23/16 17:58	1
Sieve Size #200 - Percent Finer	65.1				% Passing			10/23/16 17:58	1
Sieve Size #230 - Percent Finer	64.4				% Passing			10/23/16 17:58	1
Hydrometer Reading 1 - Percent Finer	45.7				% Passing			10/23/16 17:58	1
Hydrometer Reading 2 - Percent Finer	41.0				% Passing			10/23/16 17:58	1
Hydrometer Reading 3 - Percent Finer	31.5				% Passing			10/23/16 17:58	1
Hydrometer Reading 4 - Percent Finer	24.4				% Passing			10/23/16 17:58	1
Hydrometer Reading 5 - Percent Finer	17.2				% Passing			10/23/16 17:58	1
Hydrometer Reading 6 - Percent Finer	10.1				% Passing			10/23/16 17:58	1

Client Sample ID: PE1016-P1SCD-03-B-0006IN

Lab Sample ID: 200-35700-8

Date Collected: 10/12/16 13:10
Matrix: Sediment
Date Received: 10/13/16 12:40

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 7 - Percent Finer	7.1				% Passing			10/23/16 17:58	1

Client Sample ID: PE1016-P1SCD-11-A-0004IN

Lab Sample ID: 200-35700-9

Date Collected: 10/12/16 10:30
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 51.3

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	230		0.74	0.18	mg/Kg	☼	10/24/16 14:26	10/25/16 15:34	1
Selenium	2.0		0.59	0.093	mg/Kg	☼	10/24/16 14:26	10/25/16 15:34	1
Zinc	154		3.0	0.92	mg/Kg	☼	10/24/16 14:26	10/25/16 15:34	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	1.2		0.073	0.026	mg/Kg	☼	10/25/16 11:41	10/26/16 10:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	22000		1000	380	mg/Kg			10/17/16 18:31	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	51.3		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	4.9				%			10/23/16 18:01	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:01	1
Sand	51.1				%			10/23/16 18:01	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:01	1
Coarse Sand	15.8				%			10/23/16 18:01	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:01	1
Medium Sand	19.9				%			10/23/16 18:01	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:01	1
Fine Sand	15.4				%			10/23/16 18:01	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:01	1
Sieve Size #4 - Percent Finer	95.1				% Passing			10/23/16 18:01	1
Silt	30.6				%			10/23/16 18:01	1
Clay	13.4				%			10/23/16 18:01	1
Sieve Size #10 - Percent Finer	79.3				% Passing			10/23/16 18:01	1
Sieve Size #20 - Percent Finer	69.0				% Passing			10/23/16 18:01	1
Sieve Size #40 - Percent Finer	59.4				% Passing			10/23/16 18:01	1
Sieve Size #60 - Percent Finer	50.5				% Passing			10/23/16 18:01	1
Sieve Size #80 - Percent Finer	47.9				% Passing			10/23/16 18:01	1
Sieve Size #100 - Percent Finer	46.8				% Passing			10/23/16 18:01	1
Sieve Size #200 - Percent Finer	44.3				% Passing			10/23/16 18:01	1
Sieve Size #230 - Percent Finer	44.0				% Passing			10/23/16 18:01	1
Hydrometer Reading 1 - Percent Finer	28.2				% Passing			10/23/16 18:01	1

Client Sample ID: PE1016-P1SCD-11-A-0004IN

Lab Sample ID: 200-35700-9

Date Collected: 10/12/16 10:30
Matrix: Sediment
Date Received: 10/13/16 12:40

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 2 - Percent Finer	24.5				% Passing			10/23/16 18:01	1
Hydrometer Reading 3 - Percent Finer	20.8				% Passing			10/23/16 18:01	1
Hydrometer Reading 4 - Percent Finer	17.1				% Passing			10/23/16 18:01	1
Hydrometer Reading 5 - Percent Finer	13.4				% Passing			10/23/16 18:01	1
Hydrometer Reading 6 - Percent Finer	9.7				% Passing			10/23/16 18:01	1
Hydrometer Reading 7 - Percent Finer	5.5				% Passing			10/23/16 18:01	1

Client Sample ID: PE1016-P1SCD-11-B-0006IN

Lab Sample ID: 200-35700-10

Date Collected: 10/12/16 10:40
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 43.9

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	2170		1.9	0.45	mg/Kg	☼	10/24/16 14:26	10/25/16 15:45	2
Selenium	3.7		0.75	0.12	mg/Kg	☼	10/24/16 14:26	10/25/16 15:39	1
Zinc	311		3.7	1.2	mg/Kg	☼	10/24/16 14:26	10/25/16 15:39	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	4.1		0.16	0.058	mg/Kg	☼	10/25/16 11:41	10/26/16 11:09	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	29500		1000	380	mg/Kg			10/17/16 18:38	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	43.9		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	4.4				%			10/23/16 18:03	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:03	1
Sand	34.5				%			10/23/16 18:03	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:03	1
Coarse Sand	3.4				%			10/23/16 18:03	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:03	1
Medium Sand	12.4				%			10/23/16 18:03	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:03	1
Fine Sand	18.7				%			10/23/16 18:03	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:03	1
Sieve Size #4 - Percent Finer	95.6				% Passing			10/23/16 18:03	1
Silt	36.6				%			10/23/16 18:03	1
Clay	24.5				%			10/23/16 18:03	1
Sieve Size #10 - Percent Finer	92.2				% Passing			10/23/16 18:03	1
Sieve Size #20 - Percent Finer	84.0				% Passing			10/23/16 18:03	1

Client Sample ID: PE1016-P1SCD-11-B-0006IN

Lab Sample ID: 200-35700-10

Date Collected: 10/12/16 10:40
Matrix: Sediment
Date Received: 10/13/16 12:40

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Sieve Size #40 - Percent Finer	79.8				% Passing			10/23/16 18:03	1
Sieve Size #60 - Percent Finer	72.0				% Passing			10/23/16 18:03	1
Sieve Size #80 - Percent Finer	67.7				% Passing			10/23/16 18:03	1
Sieve Size #100 - Percent Finer	65.7				% Passing			10/23/16 18:03	1
Sieve Size #200 - Percent Finer	61.7				% Passing			10/23/16 18:03	1
Sieve Size #230 - Percent Finer	61.1				% Passing			10/23/16 18:03	1
Hydrometer Reading 1 - Percent Finer	52.3				% Passing			10/23/16 18:03	1
Hydrometer Reading 2 - Percent Finer	46.7				% Passing			10/23/16 18:03	1
Hydrometer Reading 3 - Percent Finer	37.5				% Passing			10/23/16 18:03	1
Hydrometer Reading 4 - Percent Finer	31.9				% Passing			10/23/16 18:03	1
Hydrometer Reading 5 - Percent Finer	24.5				% Passing			10/23/16 18:03	1
Hydrometer Reading 6 - Percent Finer	17.1				% Passing			10/23/16 18:03	1
Hydrometer Reading 7 - Percent Finer	9.3				% Passing			10/23/16 18:03	1

Client Sample ID: PE1016-P1SCD-12-A-0008IN

Lab Sample ID: 200-35700-11

Date Collected: 10/12/16 09:20
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 40.8

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	293		0.96	0.23	mg/Kg	☼	10/31/16 11:39	11/01/16 12:15	1
Selenium	2.5	B	0.77	0.12	mg/Kg	☼	10/31/16 11:39	11/01/16 12:15	1
Zinc	170		3.8	1.2	mg/Kg	☼	10/31/16 11:39	11/01/16 12:15	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	1.8		0.090	0.033	mg/Kg	☼	10/31/16 11:40	10/31/16 14:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	34300		1000	380	mg/Kg			10/17/16 18:45	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	40.8		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	7.7				%			10/23/16 18:05	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:05	1
Sand	46.0				%			10/23/16 18:05	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:05	1
Coarse Sand	3.4				%			10/23/16 18:05	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:05	1
Medium Sand	10.4				%			10/23/16 18:05	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:05	1

Client Sample ID: PE1016-P1SCD-12-A-0008IN

Lab Sample ID: 200-35700-11

Date Collected: 10/12/16 09:20
Matrix: Sediment
Date Received: 10/13/16 12:40

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Fine Sand	32.2				%			10/23/16 18:05	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:05	1
Sieve Size #4 - Percent Finer	92.3				% Passing			10/23/16 18:05	1
Silt	25.3				%			10/23/16 18:05	1
Clay	21.0				%			10/23/16 18:05	1
Sieve Size #10 - Percent Finer	88.9				% Passing			10/23/16 18:05	1
Sieve Size #20 - Percent Finer	84.2				% Passing			10/23/16 18:05	1
Sieve Size #40 - Percent Finer	78.5				% Passing			10/23/16 18:05	1
Sieve Size #60 - Percent Finer	69.7				% Passing			10/23/16 18:05	1
Sieve Size #80 - Percent Finer	62.0				% Passing			10/23/16 18:05	1
Sieve Size #100 - Percent Finer	57.1				% Passing			10/23/16 18:05	1
Sieve Size #200 - Percent Finer	47.6				% Passing			10/23/16 18:05	1
Sieve Size #230 - Percent Finer	46.3				% Passing			10/23/16 18:05	1
Hydrometer Reading 1 - Percent Finer	45.9				% Passing			10/23/16 18:05	1
Hydrometer Reading 2 - Percent Finer	39.1				% Passing			10/23/16 18:05	1
Hydrometer Reading 3 - Percent Finer	32.3				% Passing			10/23/16 18:05	1
Hydrometer Reading 4 - Percent Finer	25.5				% Passing			10/23/16 18:05	1
Hydrometer Reading 5 - Percent Finer	21.0				% Passing			10/23/16 18:05	1
Hydrometer Reading 6 - Percent Finer	14.2				% Passing			10/23/16 18:05	1
Hydrometer Reading 7 - Percent Finer	9.1				% Passing			10/23/16 18:05	1

Client Sample ID: PE1016-P1SCD-12-B-0006IN

Lab Sample ID: 200-35700-12

Date Collected: 10/12/16 09:30
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 45.5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	236		0.91	0.22	mg/Kg	☼	10/31/16 11:39	11/01/16 12:20	1
Selenium	2.6	B	0.73	0.11	mg/Kg	☼	10/31/16 11:39	11/01/16 12:20	1
Zinc	171		3.6	1.1	mg/Kg	☼	10/31/16 11:39	11/01/16 12:20	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	1.9	F1	0.079	0.029	mg/Kg	☼	10/31/16 11:40	10/31/16 14:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	34700		1000	380	mg/Kg			10/17/16 18:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	45.5		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	5.0				%			10/23/16 18:07	1

Client Sample ID: PE1016-P1SCD-12-B-0006IN

Lab Sample ID: 200-35700-12

Date Collected: 10/12/16 09:30
Matrix: Sediment
Date Received: 10/13/16 12:40

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:07	1
Sand	28.0				%			10/23/16 18:07	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:07	1
Coarse Sand	3.1				%			10/23/16 18:07	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:07	1
Medium Sand	10.1				%			10/23/16 18:07	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:07	1
Fine Sand	14.8				%			10/23/16 18:07	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:07	1
Sieve Size #4 - Percent Finer	95.0				% Passing			10/23/16 18:07	1
Silt	34.8				%			10/23/16 18:07	1
Clay	32.2				%			10/23/16 18:07	1
Sieve Size #10 - Percent Finer	91.9				% Passing			10/23/16 18:07	1
Sieve Size #20 - Percent Finer	86.0				% Passing			10/23/16 18:07	1
Sieve Size #40 - Percent Finer	81.8				% Passing			10/23/16 18:07	1
Sieve Size #60 - Percent Finer	76.2				% Passing			10/23/16 18:07	1
Sieve Size #80 - Percent Finer	73.3				% Passing			10/23/16 18:07	1
Sieve Size #100 - Percent Finer	71.6				% Passing			10/23/16 18:07	1
Sieve Size #200 - Percent Finer	67.7				% Passing			10/23/16 18:07	1
Sieve Size #230 - Percent Finer	67.0				% Passing			10/23/16 18:07	1
Hydrometer Reading 1 - Percent Finer	60.0				% Passing			10/23/16 18:07	1
Hydrometer Reading 2 - Percent Finer	54.0				% Passing			10/23/16 18:07	1
Hydrometer Reading 3 - Percent Finer	46.1				% Passing			10/23/16 18:07	1
Hydrometer Reading 4 - Percent Finer	40.2				% Passing			10/23/16 18:07	1
Hydrometer Reading 5 - Percent Finer	32.2				% Passing			10/23/16 18:07	1
Hydrometer Reading 6 - Percent Finer	26.3				% Passing			10/23/16 18:07	1
Hydrometer Reading 7 - Percent Finer	17.8				% Passing			10/23/16 18:07	1

Client Sample ID: PE1016-P1SCD-13-A-0002IN

Lab Sample ID: 200-35700-13

Date Collected: 10/12/16 08:55
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 71.1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	34.2		0.48	0.11	mg/Kg	☼	10/31/16 11:39	11/01/16 12:49	1
Selenium	0.92	B	0.38	0.060	mg/Kg	☼	10/31/16 11:39	11/01/16 12:49	1
Zinc	79.8		1.9	0.59	mg/Kg	☼	10/31/16 11:39	11/01/16 12:49	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.053	U	0.053	0.019	mg/Kg	☼	10/31/16 11:40	10/31/16 14:18	1

Client Sample ID: PE1016-P1SCD-13-A-0002IN

Lab Sample ID: 200-35700-13

Date Collected: 10/12/16 08:55
Matrix: Sediment
Date Received: 10/13/16 12:40

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1450		1000	380	mg/Kg			10/19/16 13:32	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	71.1		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			10/23/16 18:27	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:27	1
Sand	10.8				%			10/23/16 18:27	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:27	1
Coarse Sand	0.0				%			10/23/16 18:27	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:27	1
Medium Sand	5.1				%			10/23/16 18:27	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:27	1
Fine Sand	5.7				%			10/23/16 18:27	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:27	1
Sieve Size #4 - Percent Finer	100.0				% Passing			10/23/16 18:27	1
Silt	48.9				%			10/23/16 18:27	1
Clay	40.3				%			10/23/16 18:27	1
Sieve Size #10 - Percent Finer	100.0				% Passing			10/23/16 18:27	1
Sieve Size #20 - Percent Finer	97.3				% Passing			10/23/16 18:27	1
Sieve Size #40 - Percent Finer	94.9				% Passing			10/23/16 18:27	1
Sieve Size #60 - Percent Finer	92.8				% Passing			10/23/16 18:27	1
Sieve Size #80 - Percent Finer	91.8				% Passing			10/23/16 18:27	1
Sieve Size #100 - Percent Finer	91.2				% Passing			10/23/16 18:27	1
Sieve Size #200 - Percent Finer	89.5				% Passing			10/23/16 18:27	1
Sieve Size #230 - Percent Finer	89.2				% Passing			10/23/16 18:27	1
Hydrometer Reading 1 - Percent Finer	73.8				% Passing			10/23/16 18:27	1
Hydrometer Reading 2 - Percent Finer	66.1				% Passing			10/23/16 18:27	1
Hydrometer Reading 3 - Percent Finer	58.3				% Passing			10/23/16 18:27	1
Hydrometer Reading 4 - Percent Finer	49.3				% Passing			10/23/16 18:27	1
Hydrometer Reading 5 - Percent Finer	40.3				% Passing			10/23/16 18:27	1
Hydrometer Reading 6 - Percent Finer	27.4				% Passing			10/23/16 18:27	1
Hydrometer Reading 7 - Percent Finer	15.8				% Passing			10/23/16 18:27	1

Client Sample ID: PE1016-P1SCD-13-B-0006IN

Lab Sample ID: 200-35700-14

Date Collected: 10/12/16 09:05
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 32.2

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	547		1.4	0.34	mg/Kg	☼	10/31/16 11:39	11/01/16 12:55	1
Selenium	4.6	B	1.1	0.18	mg/Kg	☼	10/31/16 11:39	11/01/16 12:55	1

Client Sample ID: PE1016-P1SCD-13-B-0006IN
Date Collected: 10/12/16 09:05
Date Received: 10/13/16 12:40

Lab Sample ID: 200-35700-14
Matrix: Sediment
Percent Solids: 32.2

Method: 6020A - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	240		5.7	1.8	mg/Kg	☼	10/31/16 11:39	11/01/16 12:55	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	3.3		0.12	0.043	mg/Kg	☼	10/31/16 11:40	10/31/16 14:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	77300		1000	380	mg/Kg			10/17/16 19:33	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	32.2		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	11.0				%			10/23/16 18:28	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:28	1
Sand	31.8				%			10/23/16 18:28	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:28	1
Coarse Sand	3.2				%			10/23/16 18:28	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:28	1
Medium Sand	13.8				%			10/23/16 18:28	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:28	1
Fine Sand	14.8				%			10/23/16 18:28	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:28	1
Sieve Size #4 - Percent Finer	89.0				% Passing			10/23/16 18:28	1
Silt	50.4				%			10/23/16 18:28	1
Clay	6.8				%			10/23/16 18:28	1
Sieve Size #10 - Percent Finer	85.8				% Passing			10/23/16 18:28	1
Sieve Size #20 - Percent Finer	75.7				% Passing			10/23/16 18:28	1
Sieve Size #40 - Percent Finer	72.0				% Passing			10/23/16 18:28	1
Sieve Size #60 - Percent Finer	67.9				% Passing			10/23/16 18:28	1
Sieve Size #80 - Percent Finer	65.4				% Passing			10/23/16 18:28	1
Sieve Size #100 - Percent Finer	63.6				% Passing			10/23/16 18:28	1
Sieve Size #200 - Percent Finer	58.1				% Passing			10/23/16 18:28	1
Sieve Size #230 - Percent Finer	57.2				% Passing			10/23/16 18:28	1
Hydrometer Reading 1 - Percent Finer	30.8				% Passing			10/23/16 18:28	1
Hydrometer Reading 2 - Percent Finer	24.8				% Passing			10/23/16 18:28	1
Hydrometer Reading 3 - Percent Finer	21.8				% Passing			10/23/16 18:28	1
Hydrometer Reading 4 - Percent Finer	12.8				% Passing			10/23/16 18:28	1
Hydrometer Reading 5 - Percent Finer	6.8				% Passing			10/23/16 18:28	1
Hydrometer Reading 6 - Percent Finer	0.8				% Passing			10/23/16 18:28	1
Hydrometer Reading 7 - Percent Finer	0.8				% Passing			10/23/16 18:28	1

Client Sample ID: PE1016-P1SCD-13-B-0006IN-D

Date Collected: 10/12/16 09:06
Date Received: 10/13/16 12:40

Lab Sample ID: 200-35700-15

Matrix: Sediment
Percent Solids: 31.5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	567		1.6	0.37	mg/Kg	☼	10/31/16 11:39	11/01/16 13:18	1
Selenium	4.5	B	1.2	0.20	mg/Kg	☼	10/31/16 11:39	11/01/16 13:18	1
Zinc	246		6.2	1.9	mg/Kg	☼	10/31/16 11:39	11/01/16 13:18	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	3.0		0.11	0.039	mg/Kg	☼	10/31/16 11:40	10/31/16 14:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	61000		1000	380	mg/Kg			10/17/16 19:40	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	31.5		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	5.6				%			10/23/16 18:30	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:30	1
Sand	33.9				%			10/23/16 18:30	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:30	1
Coarse Sand	4.6				%			10/23/16 18:30	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:30	1
Medium Sand	13.0				%			10/23/16 18:30	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:30	1
Fine Sand	16.3				%			10/23/16 18:30	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:30	1
Sieve Size #4 - Percent Finer	94.4				% Passing			10/23/16 18:30	1
Silt	57.3				%			10/23/16 18:30	1
Clay	3.2				%			10/23/16 18:30	1
Sieve Size #10 - Percent Finer	89.8				% Passing			10/23/16 18:30	1
Sieve Size #20 - Percent Finer	80.8				% Passing			10/23/16 18:30	1
Sieve Size #40 - Percent Finer	76.8				% Passing			10/23/16 18:30	1
Sieve Size #60 - Percent Finer	72.2				% Passing			10/23/16 18:30	1
Sieve Size #80 - Percent Finer	69.5				% Passing			10/23/16 18:30	1
Sieve Size #100 - Percent Finer	67.6				% Passing			10/23/16 18:30	1
Sieve Size #200 - Percent Finer	61.6				% Passing			10/23/16 18:30	1
Sieve Size #230 - Percent Finer	60.5				% Passing			10/23/16 18:30	1
Hydrometer Reading 1 - Percent Finer	23.9				% Passing			10/23/16 18:30	1
Hydrometer Reading 2 - Percent Finer	23.9				% Passing			10/23/16 18:30	1
Hydrometer Reading 3 - Percent Finer	18.7				% Passing			10/23/16 18:30	1
Hydrometer Reading 4 - Percent Finer	8.4				% Passing			10/23/16 18:30	1
Hydrometer Reading 5 - Percent Finer	3.2				% Passing			10/23/16 18:30	1
Hydrometer Reading 6 - Percent Finer	0.6				% Passing			10/23/16 18:30	1

Client Sample ID: PE1016-P1SCD-13-B-0006IN-D

Lab Sample ID: 200-35700-15

Date Collected: 10/12/16 09:06
Matrix: Sediment
Date Received: 10/13/16 12:40

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 7 - Percent Finer	0.6				% Passing			10/23/16 18:30	1

Client Sample ID: PE1016-P1SCD-14-A-0004IN

Lab Sample ID: 200-35700-16

Date Collected: 10/12/16 08:30
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 40.9

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	914		1.1	0.26	mg/Kg	☼	10/31/16 11:39	11/01/16 13:23	1
Selenium	3.9	B	0.86	0.14	mg/Kg	☼	10/31/16 11:39	11/01/16 13:23	1
Zinc	303		4.3	1.3	mg/Kg	☼	10/31/16 11:39	11/01/16 13:23	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	3.8		0.091	0.033	mg/Kg	☼	10/31/16 11:40	10/31/16 14:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	30800		1000	380	mg/Kg			10/17/16 19:47	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	40.9		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	3.5				%			10/23/16 18:32	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:32	1
Sand	44.2				%			10/23/16 18:32	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:32	1
Coarse Sand	5.7				%			10/23/16 18:32	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:32	1
Medium Sand	13.1				%			10/23/16 18:32	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:32	1
Fine Sand	25.4				%			10/23/16 18:32	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:32	1
Sieve Size #4 - Percent Finer	96.5				% Passing			10/23/16 18:32	1
Silt	42.9				%			10/23/16 18:32	1
Clay	9.4				%			10/23/16 18:32	1
Sieve Size #10 - Percent Finer	90.8				% Passing			10/23/16 18:32	1
Sieve Size #20 - Percent Finer	83.2				% Passing			10/23/16 18:32	1
Sieve Size #40 - Percent Finer	77.7				% Passing			10/23/16 18:32	1
Sieve Size #60 - Percent Finer	67.5				% Passing			10/23/16 18:32	1
Sieve Size #80 - Percent Finer	61.8				% Passing			10/23/16 18:32	1
Sieve Size #100 - Percent Finer	59.1				% Passing			10/23/16 18:32	1
Sieve Size #200 - Percent Finer	53.1				% Passing			10/23/16 18:32	1
Sieve Size #230 - Percent Finer	52.3				% Passing			10/23/16 18:32	1
Hydrometer Reading 1 - Percent Finer	29.2				% Passing			10/23/16 18:32	1

Client Sample ID: PE1016-P1SCD-14-A-0004IN

Lab Sample ID: 200-35700-16

Date Collected: 10/12/16 08:30
Matrix: Sediment
Date Received: 10/13/16 12:40

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 2 - Percent Finer	24.8				% Passing			10/23/16 18:32	1
Hydrometer Reading 3 - Percent Finer	20.4				% Passing			10/23/16 18:32	1
Hydrometer Reading 4 - Percent Finer	16.0				% Passing			10/23/16 18:32	1
Hydrometer Reading 5 - Percent Finer	9.4				% Passing			10/23/16 18:32	1
Hydrometer Reading 6 - Percent Finer	7.2				% Passing			10/23/16 18:32	1
Hydrometer Reading 7 - Percent Finer	0.6				% Passing			10/23/16 18:32	1

Client Sample ID: PE1016-P1SCD-14-B-0004IN

Lab Sample ID: 200-35700-17

Date Collected: 10/12/16 08:40
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 46.4

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	633		0.98	0.24	mg/Kg	☼	10/31/16 11:39	11/01/16 13:29	1
Selenium	2.9	B	0.78	0.12	mg/Kg	☼	10/31/16 11:39	11/01/16 13:29	1
Zinc	243		3.9	1.2	mg/Kg	☼	10/31/16 11:39	11/01/16 13:29	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	2.3		0.085	0.031	mg/Kg	☼	10/31/16 11:40	10/31/16 14:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	33700		1000	380	mg/Kg			10/17/16 19:54	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	46.4		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	7.8				%			10/23/16 18:33	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:33	1
Sand	40.2				%			10/23/16 18:33	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:33	1
Coarse Sand	6.3				%			10/23/16 18:33	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:33	1
Medium Sand	11.5				%			10/23/16 18:33	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:33	1
Fine Sand	22.4				%			10/23/16 18:33	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:33	1
Sieve Size #4 - Percent Finer	92.2				% Passing			10/23/16 18:33	1
Silt	40.0				%			10/23/16 18:33	1
Clay	12.0				%			10/23/16 18:33	1
Sieve Size #10 - Percent Finer	85.9				% Passing			10/23/16 18:33	1
Sieve Size #20 - Percent Finer	79.1				% Passing			10/23/16 18:33	1

Client Sample ID: PE1016-P1SCD-14-B-0004IN

Lab Sample ID: 200-35700-17

Date Collected: 10/12/16 08:40
Matrix: Sediment
Date Received: 10/13/16 12:40

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Sieve Size #40 - Percent Finer	74.4				% Passing			10/23/16 18:33	1
Sieve Size #60 - Percent Finer	65.7				% Passing			10/23/16 18:33	1
Sieve Size #80 - Percent Finer	60.9				% Passing			10/23/16 18:33	1
Sieve Size #100 - Percent Finer	58.3				% Passing			10/23/16 18:33	1
Sieve Size #200 - Percent Finer	52.8				% Passing			10/23/16 18:33	1
Sieve Size #230 - Percent Finer	52.0				% Passing			10/23/16 18:33	1
Hydrometer Reading 1 - Percent Finer	33.2				% Passing			10/23/16 18:33	1
Hydrometer Reading 2 - Percent Finer	29.4				% Passing			10/23/16 18:33	1
Hydrometer Reading 3 - Percent Finer	21.7				% Passing			10/23/16 18:33	1
Hydrometer Reading 4 - Percent Finer	15.9				% Passing			10/23/16 18:33	1
Hydrometer Reading 5 - Percent Finer	12.0				% Passing			10/23/16 18:33	1
Hydrometer Reading 6 - Percent Finer	6.3				% Passing			10/23/16 18:33	1
Hydrometer Reading 7 - Percent Finer	0.5				% Passing			10/23/16 18:33	1

Client Sample ID: PE1016-P1SCD-12-A-0814IN

Lab Sample ID: 200-35700-18

Date Collected: 10/12/16 09:21
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 80.7

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	16.0		0.59	0.14	mg/Kg	☼	10/31/16 11:39	11/01/16 13:35	1
Selenium	1.1	B	0.47	0.074	mg/Kg	☼	10/31/16 11:39	11/01/16 13:35	1
Zinc	87.5		2.4	0.73	mg/Kg	☼	10/31/16 11:39	11/01/16 13:35	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.038	J	0.047	0.017	mg/Kg	☼	10/31/16 11:40	10/31/16 14:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4580		1000	380	mg/Kg			10/17/16 20:01	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	80.7		0.3	0.3	%			10/14/16 16:15	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			10/23/16 18:34	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:34	1
Sand	3.6				%			10/23/16 18:34	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:34	1
Coarse Sand	0.0				%			10/23/16 18:34	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:34	1
Medium Sand	0.3				%			10/23/16 18:34	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:34	1

Client Sample ID: PE1016-P1SCD-12-A-0814IN

Lab Sample ID: 200-35700-18

Date Collected: 10/12/16 09:21
Matrix: Sediment
Date Received: 10/13/16 12:40

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Fine Sand	3.3				%			10/23/16 18:34	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:34	1
Sieve Size #4 - Percent Finer	100.0				% Passing			10/23/16 18:34	1
Silt	59.9				%			10/23/16 18:34	1
Clay	36.5				%			10/23/16 18:34	1
Sieve Size #10 - Percent Finer	100.0				% Passing			10/23/16 18:34	1
Sieve Size #20 - Percent Finer	100.0				% Passing			10/23/16 18:34	1
Sieve Size #40 - Percent Finer	99.7				% Passing			10/23/16 18:34	1
Sieve Size #60 - Percent Finer	99.1				% Passing			10/23/16 18:34	1
Sieve Size #80 - Percent Finer	98.7				% Passing			10/23/16 18:34	1
Sieve Size #100 - Percent Finer	98.4				% Passing			10/23/16 18:34	1
Sieve Size #200 - Percent Finer	96.8				% Passing			10/23/16 18:34	1
Sieve Size #230 - Percent Finer	96.4				% Passing			10/23/16 18:34	1
Hydrometer Reading 1 - Percent Finer	64.8				% Passing			10/23/16 18:34	1
Hydrometer Reading 2 - Percent Finer	61.7				% Passing			10/23/16 18:34	1
Hydrometer Reading 3 - Percent Finer	52.3				% Passing			10/23/16 18:34	1
Hydrometer Reading 4 - Percent Finer	46.0				% Passing			10/23/16 18:34	1
Hydrometer Reading 5 - Percent Finer	36.5				% Passing			10/23/16 18:34	1
Hydrometer Reading 6 - Percent Finer	28.7				% Passing			10/23/16 18:34	1
Hydrometer Reading 7 - Percent Finer	17.7				% Passing			10/23/16 18:34	1

Client Sample ID: PE1016-P1SCD-BLK-3-101216

Lab Sample ID: 200-35700-19

Date Collected: 10/12/16 18:45
Matrix: Water
Date Received: 10/13/16 12:40

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	5.0	U	5.0	2.2	ug/L		10/17/16 12:26	10/18/16 16:57	1
Selenium	4.0	U	4.0	0.97	ug/L		10/17/16 12:26	10/19/16 12:04	1
Zinc	20.0	U	20.0	2.6	ug/L		10/17/16 12:26	10/18/16 16:57	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.044	ug/L		10/17/16 12:52	10/17/16 16:34	1

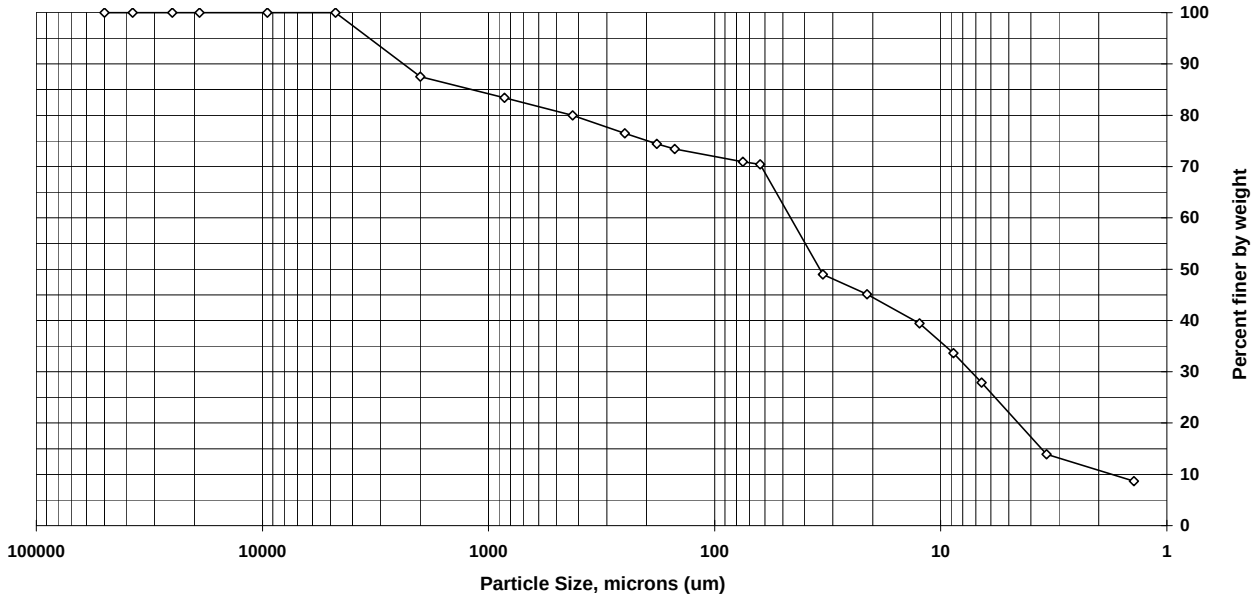
Particle Size of Soils by ASTM D422

Sample ID:	PE1016-P1SCD-01-A-0007IN	**Percent Solids:**	44.4%	**Date Received:**	10/13/2016
Lab ID:	200-35700-B-1	**Specific Gravity:**	2.650	**Start Date:**	10/18/2016
				End Date:	10/26/2016

Shape (> #10): subangular

Non-soil material: plant, wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	87.5	12.5
#20	850	83.4	4.1
#40	425	80.0	3.4
#60	250	76.5	3.5
#80	180	74.4	2.1
#100	150	73.4	1.0
#200	75	70.9	2.5
#230	63	70.4	0.5
Hyd1	33.2	49.0	21.4
Hyd2	21.2	45.1	3.9
Hyd3	12.4	39.4	5.7
Hyd4	8.8	33.6	5.8
Hyd5	6.6	27.9	5.7
Hyd6	3.4	13.9	14.0
Hyd7	1.4	8.7	5.3

Soil Classification	Percent of sample
Gravel	0.0
Sand	29.6
Coarse Sand	12.5
Medium Sand	7.5
Fine Sand	9.6
Silt	42.5
Clay	27.9

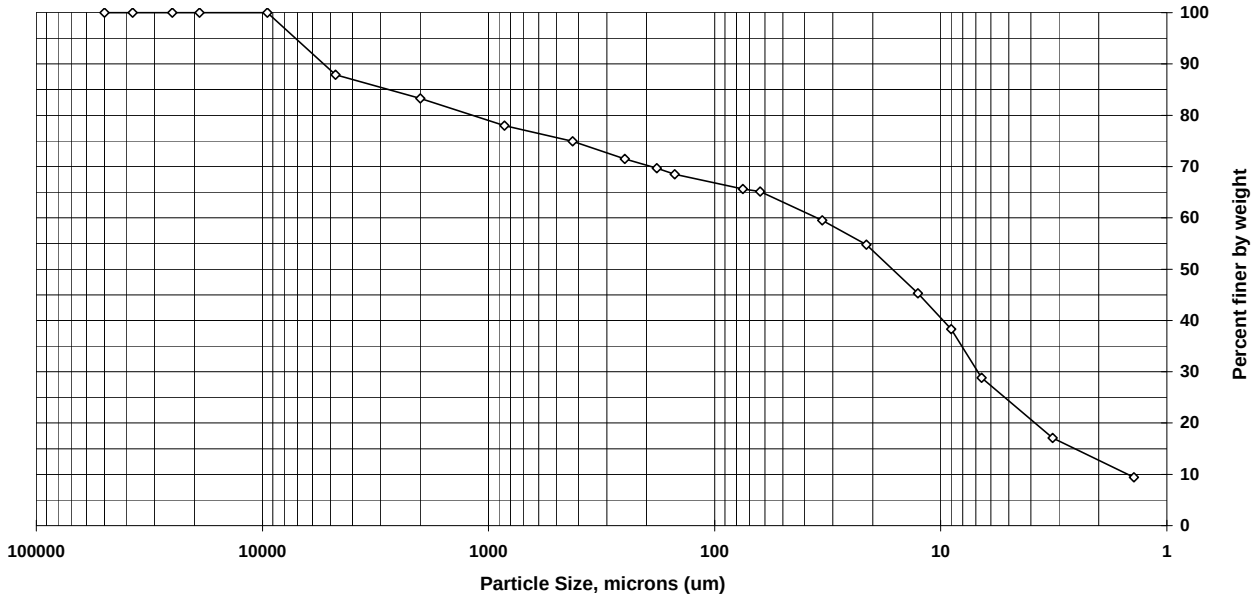
Particle Size of Soils by ASTM D422

				Date Received:	10/13/2016
Sample ID:	PE1016-P1SCD-01-B-00	**Percent Solids:**	39.6%	**Start Date:**	10/23/2016
Lab ID:	200-35700-B-2	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	87.9	12.1
#10	2000	83.3	4.6
#20	850	78.0	5.3
#40	425	74.9	3.1
#60	250	71.5	3.4
#80	180	69.7	1.8
#100	150	68.5	1.2
#200	75	65.6	2.9
#230	63	65.1	0.5
Hyd1	33.4	59.5	5.6
Hyd2	21.3	54.8	4.7
Hyd3	12.6	45.3	9.5
Hyd4	9	38.3	7.0
Hyd5	6.6	28.8	9.5
Hyd6	3.2	17.1	11.7
Hyd7	1.4	9.4	7.7

Soil Classification	Percent of sample
Gravel	12.1
Sand	22.8
Coarse Sand	4.6
Medium Sand	8.4
Fine Sand	9.8
Silt	36.3
Clay	28.8

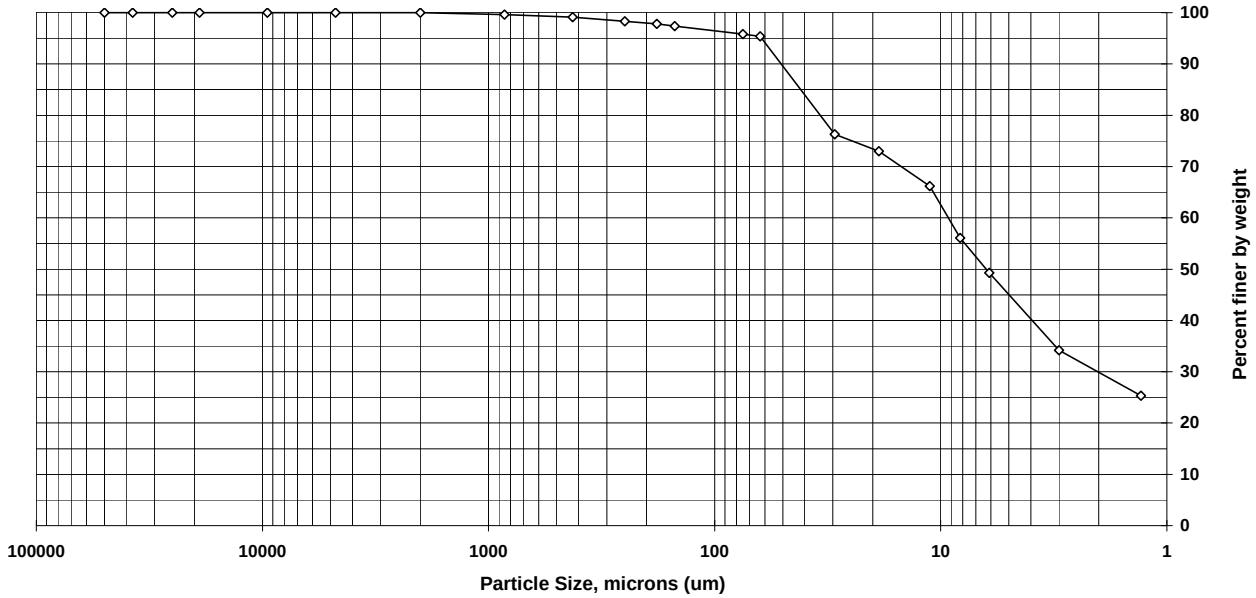
Particle Size of Soils by ASTM D422

				Date Received:	10/13/2016
Sample ID:	PE1016-P1SCD-01-A-07	**Percent Solids:**	73.0%	**Start Date:**	10/23/2016
Lab ID:	200-35700-B-3	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): na

Non-soil material: na

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	100.0	0.0
#20	850	99.6	0.4
#40	425	99.1	0.5
#60	250	98.3	0.8
#80	180	97.8	0.5
#100	150	97.4	0.4
#200	75	95.8	1.6
#230	63	95.4	0.4
Hyd1	29.4	76.3	19.1
Hyd2	18.8	73.0	3.3
Hyd3	11.2	66.2	6.8
Hyd4	8.2	56.1	10.1
Hyd5	6.1	49.3	6.8
Hyd6	3	34.2	15.1
Hyd7	1.3	25.3	8.9

Soil Classification	Percent of sample
Gravel	0.0
Sand	4.6
Coarse Sand	0.0
Medium Sand	0.9
Fine Sand	3.7
Silt	46.1
Clay	49.3

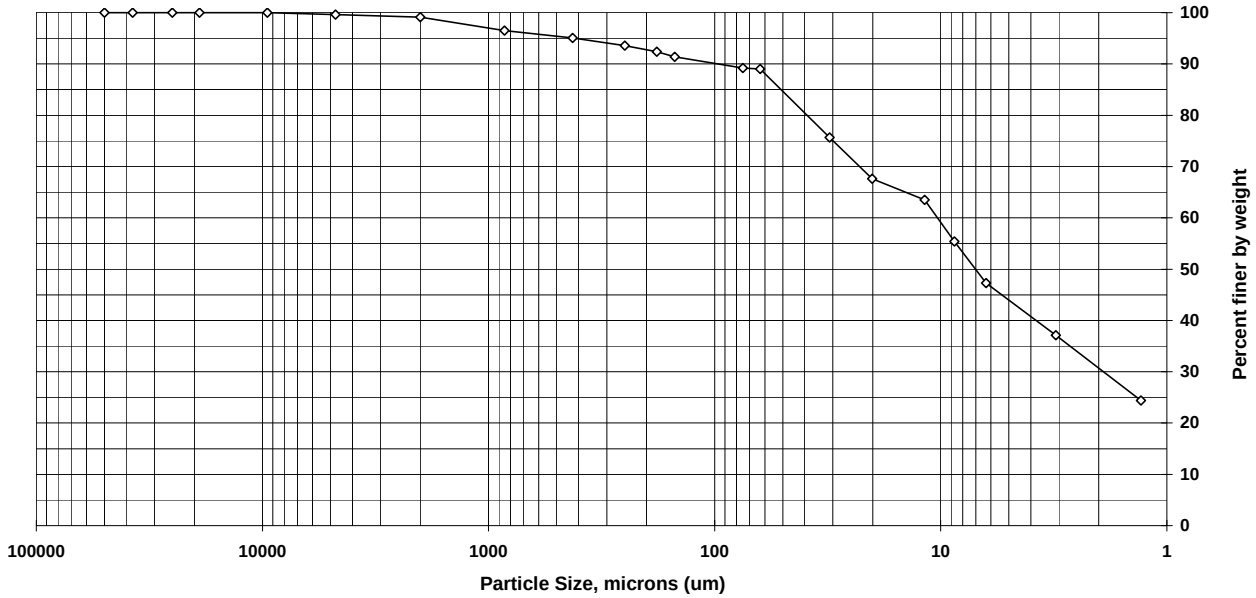
Particle Size of Soils by ASTM D422

				Date Received:	10/13/2016
Sample ID:	PE1016-P1SCD-02-A-00	**Percent Solids:**	53.6%	**Start Date:**	10/23/2016
Lab ID:	200-35700-B-4	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	99.6	0.4
#10	2000	99.1	0.5
#20	850	96.5	2.6
#40	425	95.1	1.4
#60	250	93.6	1.5
#80	180	92.4	1.2
#100	150	91.4	1.0
#200	75	89.2	2.2
#230	63	89.0	0.2
Hyd1	31	75.7	13.3
Hyd2	20.1	67.6	8.1
Hyd3	11.8	63.5	4.1
Hyd4	8.7	55.4	8.1
Hyd5	6.3	47.3	8.1
Hyd6	3.1	37.1	10.2
Hyd7	1.3	24.4	12.7

Soil Classification	Percent of sample
Gravel	0.4
Sand	10.6
Coarse Sand	0.5
Medium Sand	4.0
Fine Sand	6.1
Silt	41.7
Clay	47.3

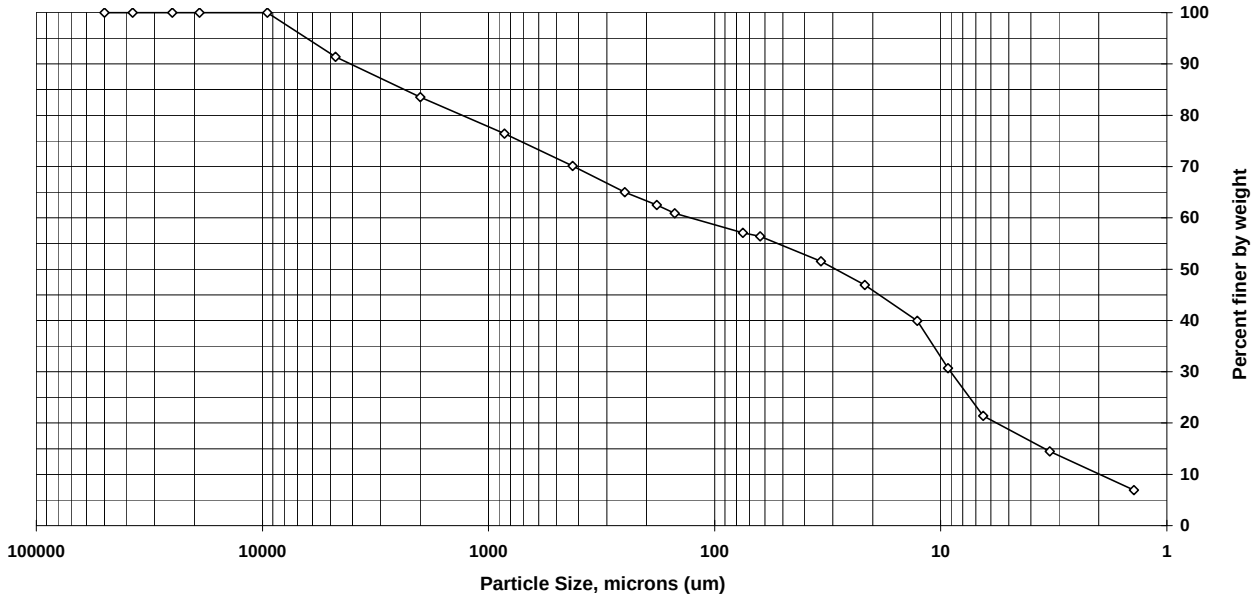
Particle Size of Soils by ASTM D422

				Date Received:	10/13/2016
Sample ID:	PE1016-P1SCD-02-B-00	**Percent Solids:**	45.3%	**Start Date:**	10/23/2016
Lab ID:	200-35700-B-5	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	91.4	8.6
#10	2000	83.5	7.9
#20	850	76.4	7.1
#40	425	70.1	6.3
#60	250	65.0	5.1
#80	180	62.5	2.5
#100	150	60.9	1.6
#200	75	57.1	3.8
#230	63	56.4	0.7
Hyd1	33.9	51.5	4.9
Hyd2	21.7	46.9	4.6
Hyd3	12.7	39.9	7.0
Hyd4	9.3	30.7	9.2
Hyd5	6.5	21.4	9.3
Hyd6	3.3	14.5	6.9
Hyd7	1.4	6.9	7.6

Soil Classification	Percent of sample
Gravel	8.6
Sand	35.0
Coarse Sand	7.9
Medium Sand	13.4
Fine Sand	13.7
Silt	35.0
Clay	21.4

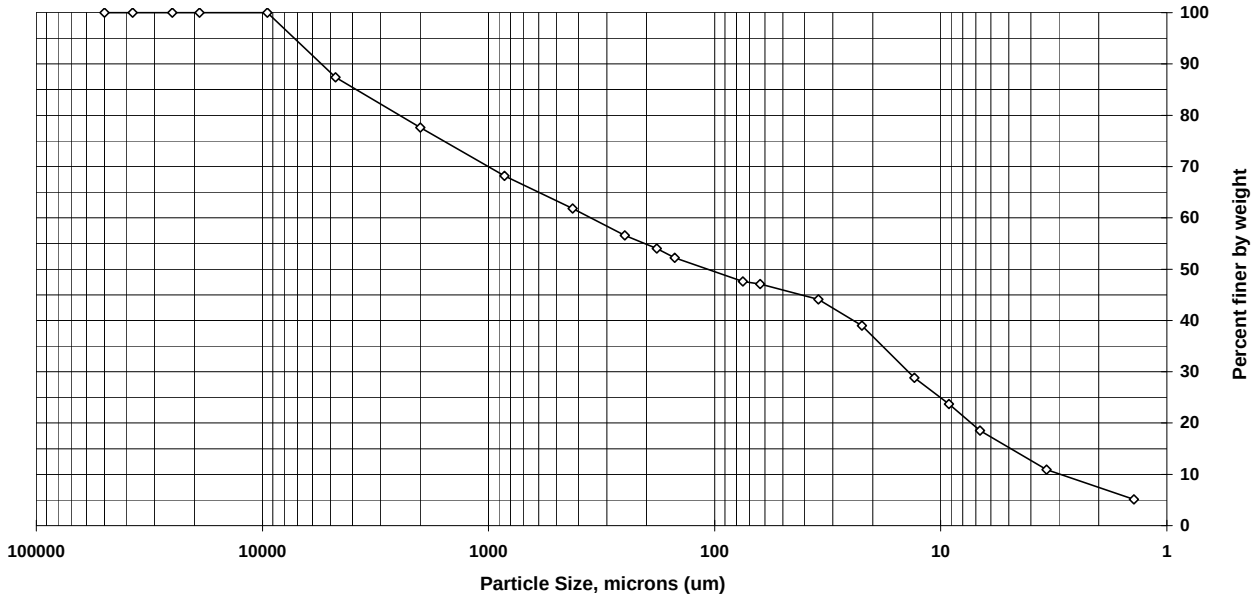
Particle Size of Soils by ASTM D422

				Date Received:	10/13/2016
Sample ID:	PE1016-P1SCD-03-A-00	**Percent Solids:**	41.3%	**Start Date:**	10/23/2016
Lab ID:	200-35700-B-6	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	87.4	12.6
#10	2000	77.6	9.8
#20	850	68.2	9.4
#40	425	61.8	6.4
#60	250	56.6	5.2
#80	180	54.0	2.6
#100	150	52.2	1.8
#200	75	47.6	4.6
#230	63	47.1	0.5
Hyd1	34.8	44.1	3.0
Hyd2	22.3	39.0	5.1
Hyd3	13.1	28.8	10.2
Hyd4	9.2	23.7	5.1
Hyd5	6.7	18.5	5.2
Hyd6	3.4	10.9	7.6
Hyd7	1.4	5.1	5.8

Soil Classification	Percent of sample
Gravel	12.6
Sand	40.3
Coarse Sand	9.8
Medium Sand	15.8
Fine Sand	14.7
Silt	28.6
Clay	18.5

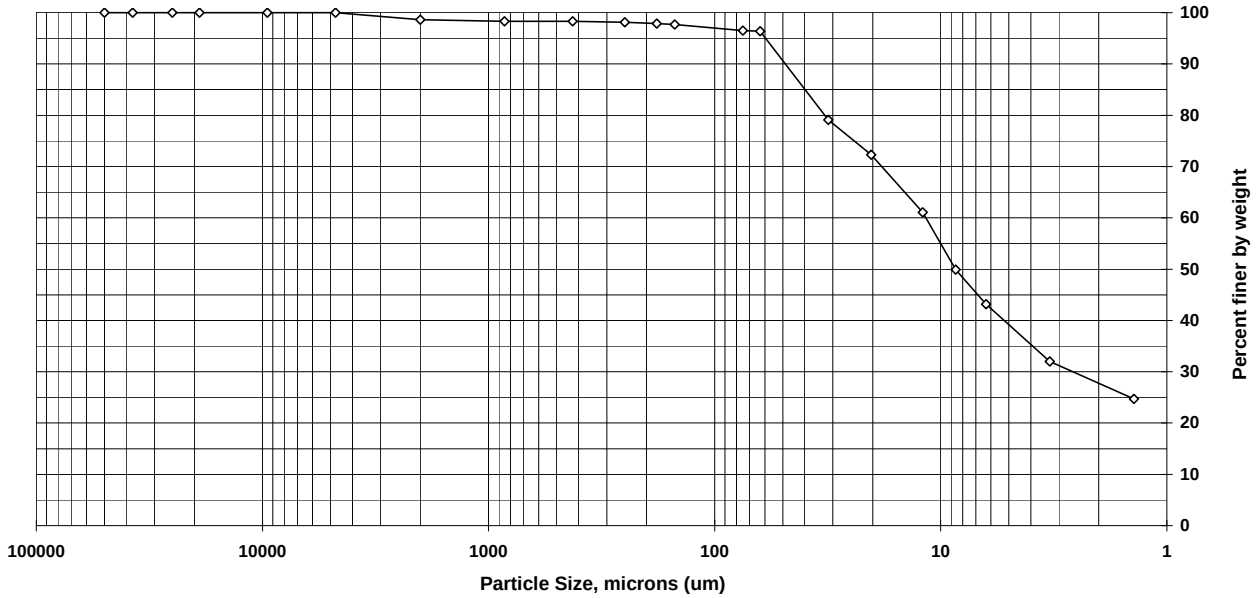
Particle Size of Soils by ASTM D422

				Date Received:	10/13/2016
Sample ID:	PE1016-P1SCD-03-A-06	**Percent Solids:**	74.9%	**Start Date:**	10/23/2016
Lab ID:	200-35700-B-7	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	98.6	1.4
#20	850	98.3	0.3
#40	425	98.3	0.0
#60	250	98.1	0.2
#80	180	97.9	0.2
#100	150	97.7	0.2
#200	75	96.5	1.2
#230	63	96.4	0.1
Hyd1	31.4	79.1	17.3
Hyd2	20.3	72.3	6.8
Hyd3	12	61.1	11.2
Hyd4	8.6	49.9	11.2
Hyd5	6.3	43.2	6.7
Hyd6	3.3	32.0	11.2
Hyd7	1.4	24.7	7.3

Soil Classification	Percent of sample
Gravel	0.0
Sand	3.6
Coarse Sand	1.4
Medium Sand	0.3
Fine Sand	1.9
Silt	53.2
Clay	43.2

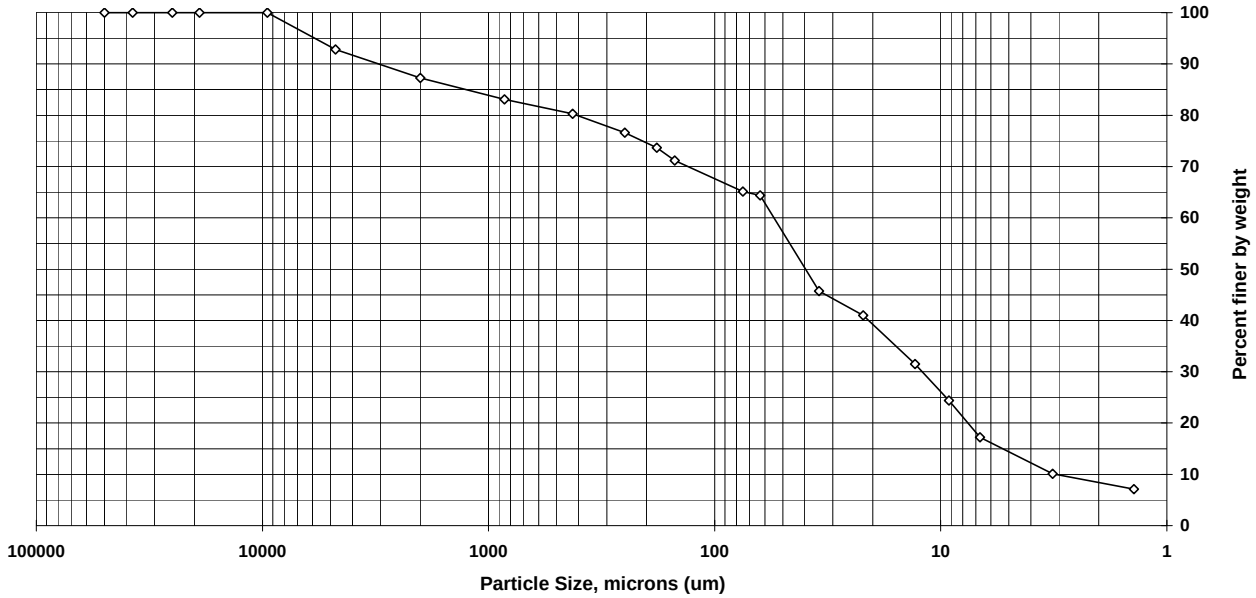
Particle Size of Soils by ASTM D422

				Date Received:	10/13/2016
Sample ID:	PE1016-P1SCD-03-B-00	**Percent Solids:**	44.6%	**Start Date:**	10/23/2016
Lab ID:	200-35700-B-8	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	92.8	7.2
#10	2000	87.3	5.5
#20	850	83.1	4.2
#40	425	80.3	2.8
#60	250	76.6	3.7
#80	180	73.7	2.9
#100	150	71.2	2.5
#200	75	65.1	6.1
#230	63	64.4	0.7
Hyd1	34.5	45.7	18.7
Hyd2	22	41.0	4.7
Hyd3	13	31.5	9.5
Hyd4	9.2	24.4	7.1
Hyd5	6.7	17.2	7.2
Hyd6	3.2	10.1	7.1
Hyd7	1.4	7.1	3.0

Soil Classification	Percent of sample
Gravel	7.2
Sand	28.4
Coarse Sand	5.5
Medium Sand	7.0
Fine Sand	15.9
Silt	47.2
Clay	17.2

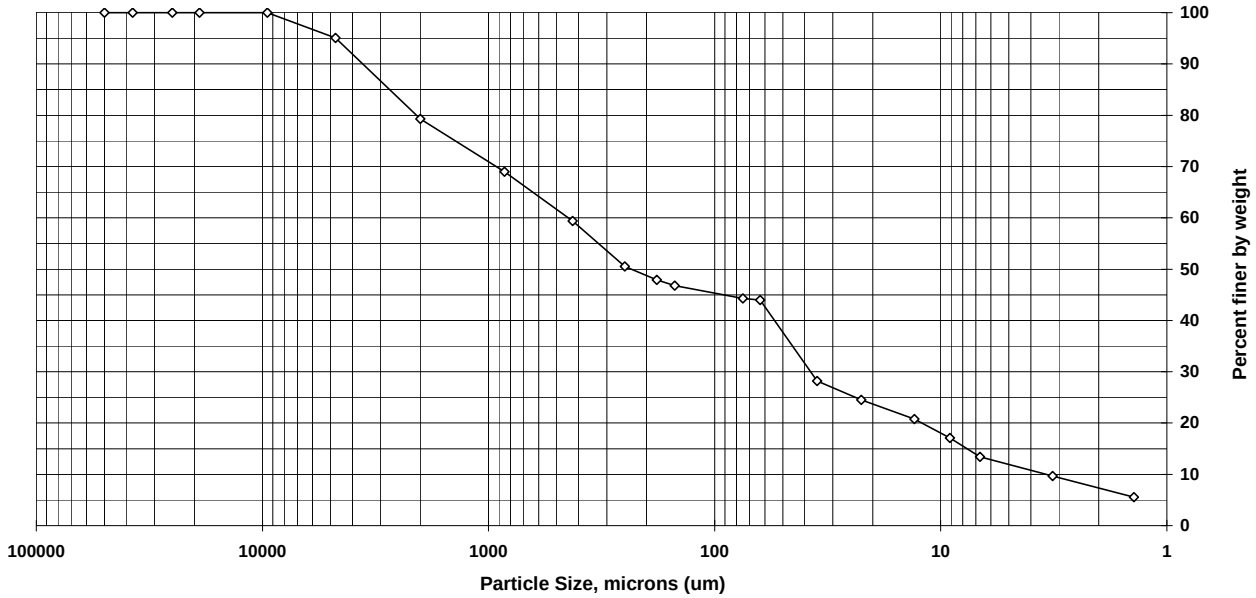
Particle Size of Soils by ASTM D422

				Date Received:	10/13/2016
Sample ID:	PE1016-P1SCD-11-A-00	**Percent Solids:**	53.5%	**Start Date:**	10/23/2016
Lab ID:	200-35700-B-9	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	95.1	4.9
#10	2000	79.3	15.8
#20	850	69.0	10.3
#40	425	59.4	9.6
#60	250	50.5	8.9
#80	180	47.9	2.6
#100	150	46.8	1.1
#200	75	44.3	2.5
#230	63	44.0	0.3
Hyd1	35.2	28.2	15.8
Hyd2	22.5	24.5	3.7
Hyd3	13.1	20.8	3.7
Hyd4	9.1	17.1	3.7
Hyd5	6.7	13.4	3.7
Hyd6	3.2	9.7	3.7
Hyd7	1.4	5.5	4.1

Soil Classification	Percent of sample
Gravel	4.9
Sand	51.1
Coarse Sand	15.8
Medium Sand	19.9
Fine Sand	15.4
Silt	30.6
Clay	13.4

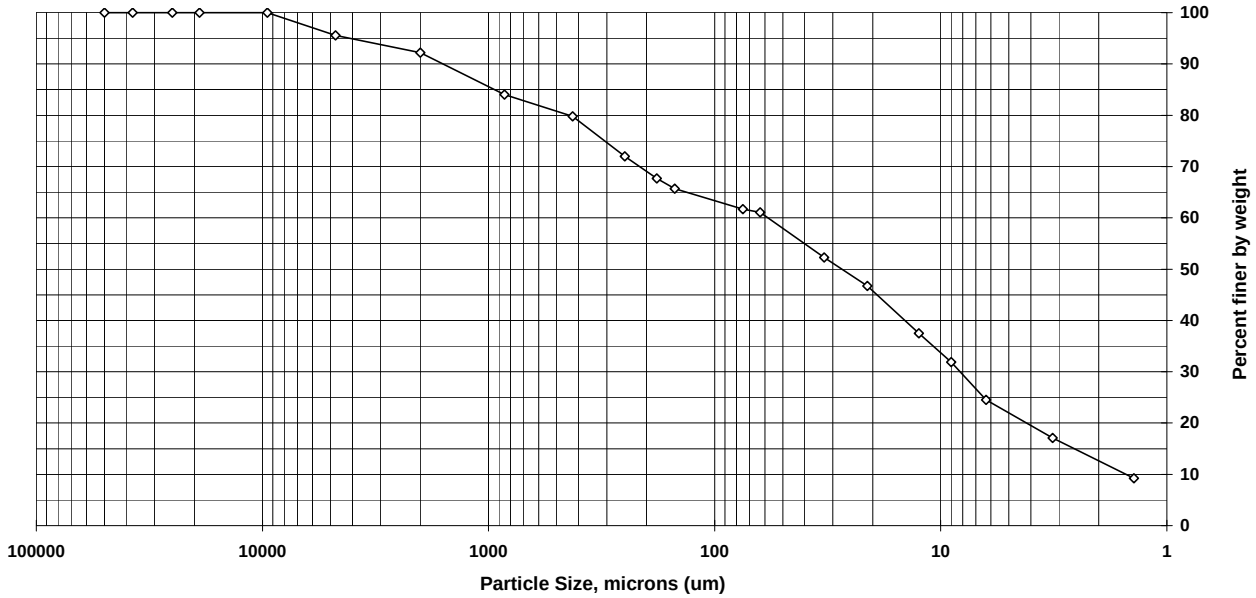
Particle Size of Soils by ASTM D422

				Date Received:	10/13/2016
Sample ID:	PE1016-P1SCD-11-B-00	**Percent Solids:**	46.1%	**Start Date:**	10/23/2016
Lab ID:	200-35700-B-10	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	95.6	4.4
#10	2000	92.2	3.4
#20	850	84.0	8.2
#40	425	79.8	4.2
#60	250	72.0	7.8
#80	180	67.7	4.3
#100	150	65.7	2.0
#200	75	61.7	4.0
#230	63	61.1	0.6
Hyd1	32.8	52.3	8.8
Hyd2	21.1	46.7	5.6
Hyd3	12.5	37.5	9.2
Hyd4	9	31.9	5.6
Hyd5	6.3	24.5	7.4
Hyd6	3.2	17.1	7.4
Hyd7	1.4	9.3	7.8

Soil Classification	Percent of sample
Gravel	4.4
Sand	34.5
Coarse Sand	3.4
Medium Sand	12.4
Fine Sand	18.7
Silt	36.6
Clay	24.5

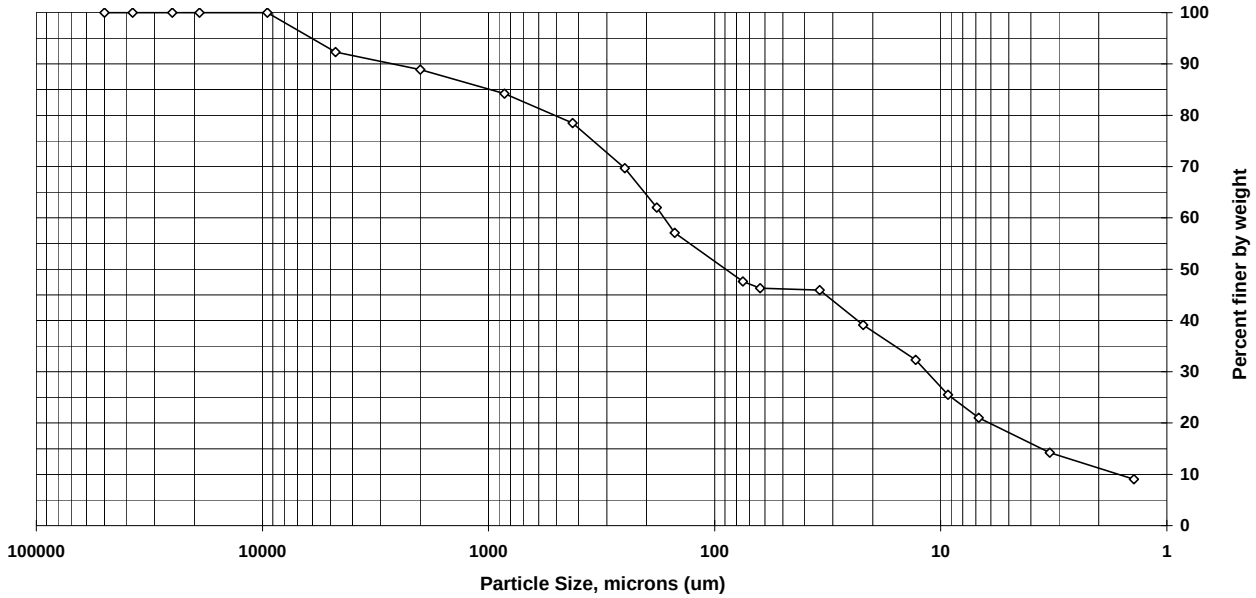
Particle Size of Soils by ASTM D422

				Date Received:	10/13/2016
Sample ID:	PE1016-P1SCD-12-A-00	**Percent Solids:**	34.8%	**Start Date:**	10/23/2016
Lab ID:	200-35700-B-11	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	92.3	7.7
#10	2000	88.9	3.4
#20	850	84.2	4.7
#40	425	78.5	5.7
#60	250	69.7	8.8
#80	180	62.0	7.7
#100	150	57.1	4.9
#200	75	47.6	9.5
#230	63	46.3	1.3
Hyd1	34.3	45.9	0.4
Hyd2	22	39.1	6.8
Hyd3	12.9	32.3	6.8
Hyd4	9.3	25.5	6.8
Hyd5	6.8	21.0	4.5
Hyd6	3.3	14.2	6.8
Hyd7	1.4	9.1	5.1

Soil Classification	Percent of sample
Gravel	7.7
Sand	46.0
Coarse Sand	3.4
Medium Sand	10.4
Fine Sand	32.2
Silt	25.3
Clay	21.0

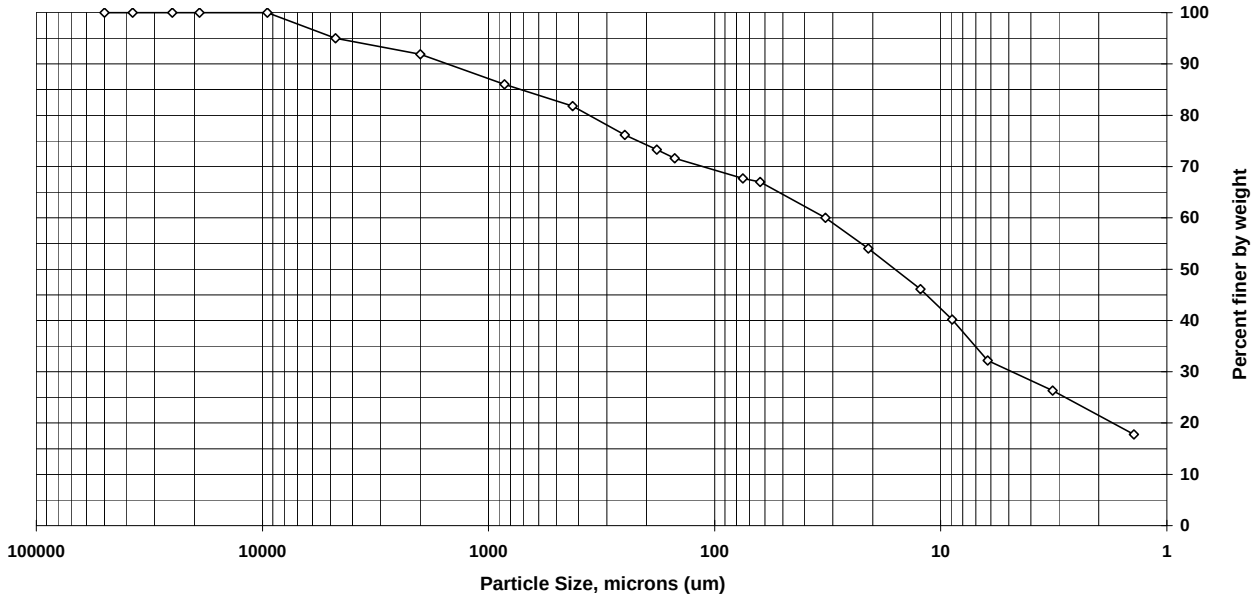
Particle Size of Soils by ASTM D422

				Date Received:	10/13/2016
Sample ID:	PE1016-P1SCD-12-B-00	**Percent Solids:**	46.7%	**Start Date:**	10/23/2016
Lab ID:	200-35700-B-12	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	95.0	5.0
#10	2000	91.9	3.1
#20	850	86.0	5.9
#40	425	81.8	4.2
#60	250	76.2	5.6
#80	180	73.3	2.9
#100	150	71.6	1.7
#200	75	67.7	3.9
#230	63	67.0	0.7
Hyd1	32.4	60.0	7.0
Hyd2	20.9	54.0	6.0
Hyd3	12.3	46.1	7.9
Hyd4	8.9	40.2	5.9
Hyd5	6.2	32.2	8.0
Hyd6	3.2	26.3	5.9
Hyd7	1.4	17.8	8.5

Soil Classification	Percent of sample
Gravel	5.0
Sand	28.0
Coarse Sand	3.1
Medium Sand	10.1
Fine Sand	14.8
Silt	34.8
Clay	32.2

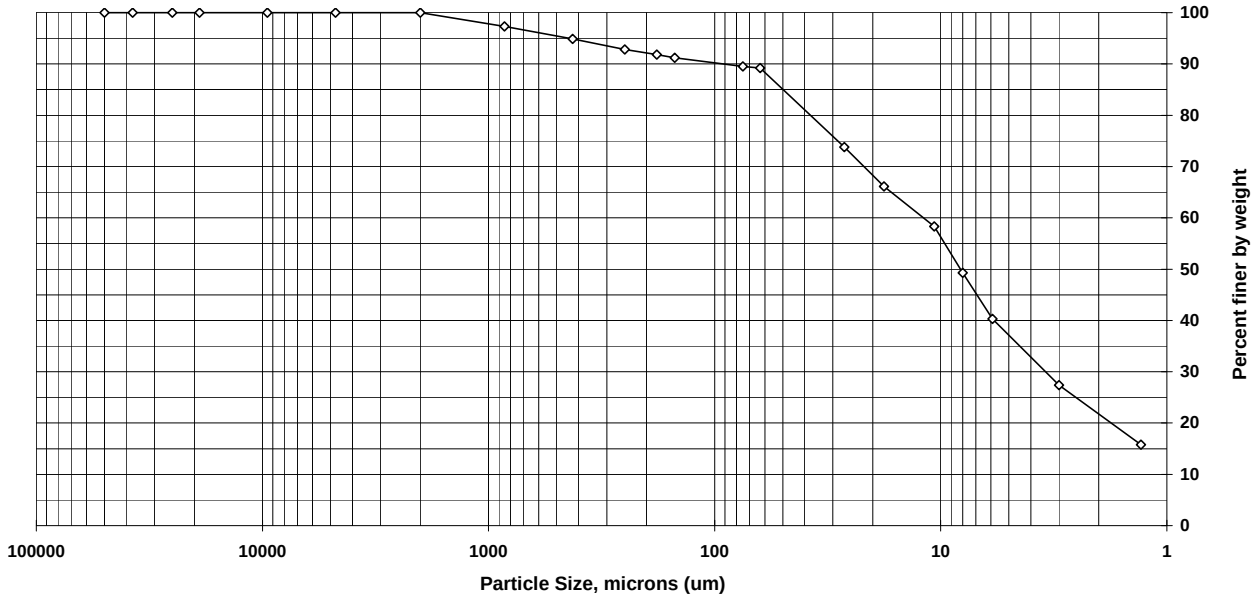
Particle Size of Soils by ASTM D422

				Date Received:	10/13/2016
Sample ID:	PE1016-P1SCD-13-A-00	**Percent Solids:**	71.7%	**Start Date:**	10/23/2016
Lab ID:	200-35700-B-13	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): na

Non-soil material: na

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	100.0	0.0
#20	850	97.3	2.7
#40	425	94.9	2.4
#60	250	92.8	2.1
#80	180	91.8	1.0
#100	150	91.2	0.6
#200	75	89.5	1.7
#230	63	89.2	0.3
Hyd1	26.7	73.8	15.4
Hyd2	17.8	66.1	7.7
Hyd3	10.7	58.3	7.8
Hyd4	8	49.3	9.0
Hyd5	5.9	40.3	9.0
Hyd6	3	27.4	12.9
Hyd7	1.3	15.8	11.6

Soil Classification	Percent of sample
Gravel	0.0
Sand	10.8
Coarse Sand	0.0
Medium Sand	5.1
Fine Sand	5.7
Silt	48.9
Clay	40.3

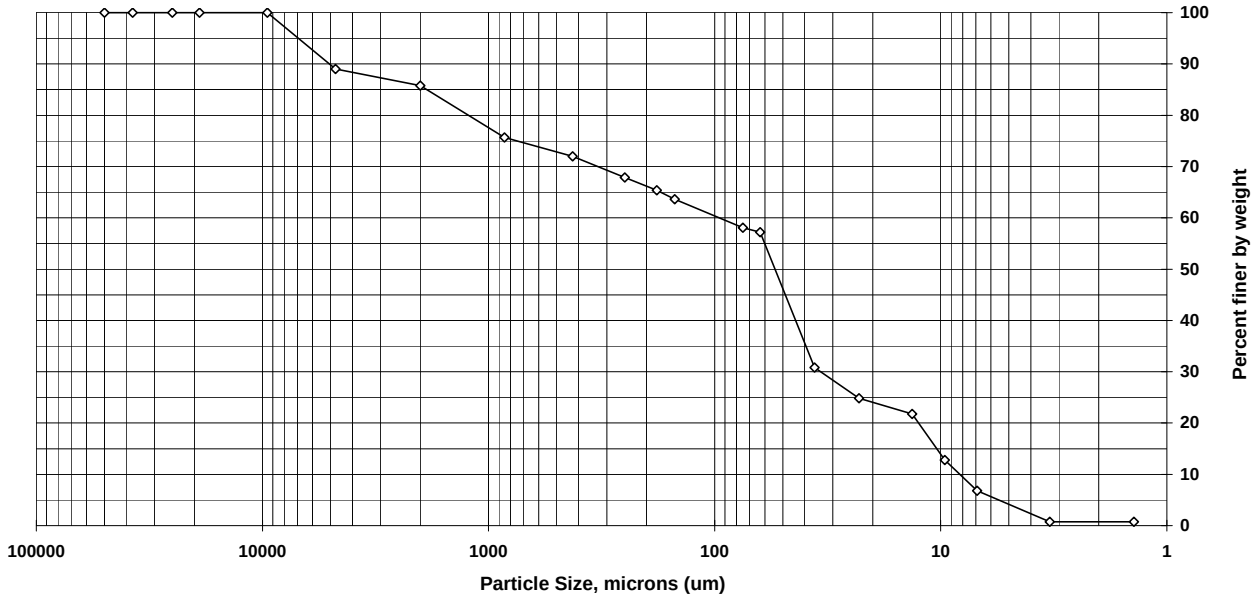
Particle Size of Soils by ASTM D422

Sample ID:	PE1016-P1SCD-13-B-00	**Percent Solids:**	32.4%	**Date Received:**	10/13/2016
Lab ID:	200-35700-B-14	**Specific Gravity:**	2.650	**Start Date:**	10/23/2016
				End Date:	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	89.0	11.0
#10	2000	85.8	3.2
#20	850	75.7	10.1
#40	425	72.0	3.7
#60	250	67.9	4.1
#80	180	65.4	2.5
#100	150	63.6	1.8
#200	75	58.1	5.5
#230	63	57.2	0.9
Hyd1	36.1	30.8	26.4
Hyd2	23	24.8	6.0
Hyd3	13.4	21.8	3.0
Hyd4	9.6	12.8	9.0
Hyd5	6.9	6.8	6.0
Hyd6	3.3	0.8	6.0
Hyd7	1.4	0.8	0.0

Soil Classification	Percent of sample
Gravel	11.0
Sand	31.8
Coarse Sand	3.2
Medium Sand	13.8
Fine Sand	14.8
Silt	50.4
Clay	6.8

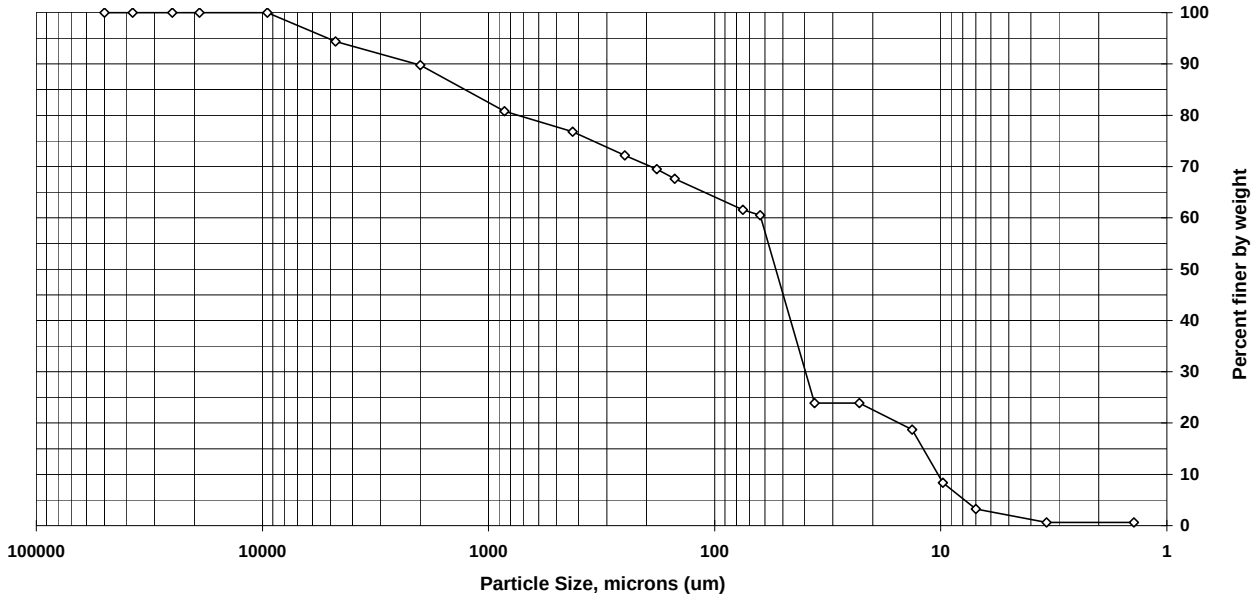
Particle Size of Soils by ASTM D422

				Date Received:	10/13/2016
Sample ID:	PE1016-P1SCD-13-B-00	**Percent Solids:**	32.3%	**Start Date:**	10/23/2016
Lab ID:	200-35700-B-15	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	94.4	5.6
#10	2000	89.8	4.6
#20	850	80.8	9.0
#40	425	76.8	4.0
#60	250	72.2	4.6
#80	180	69.5	2.7
#100	150	67.6	1.9
#200	75	61.6	6.0
#230	63	60.5	1.1
Hyd1	36.2	23.9	36.6
Hyd2	22.9	23.9	0.0
Hyd3	13.4	18.7	5.2
Hyd4	9.8	8.4	10.3
Hyd5	7	3.2	5.2
Hyd6	3.4	0.6	2.6
Hyd7	1.4	0.6	0.0

Soil Classification	Percent of sample
Gravel	5.6
Sand	33.9
Coarse Sand	4.6
Medium Sand	13.0
Fine Sand	16.3
Silt	57.3
Clay	3.2

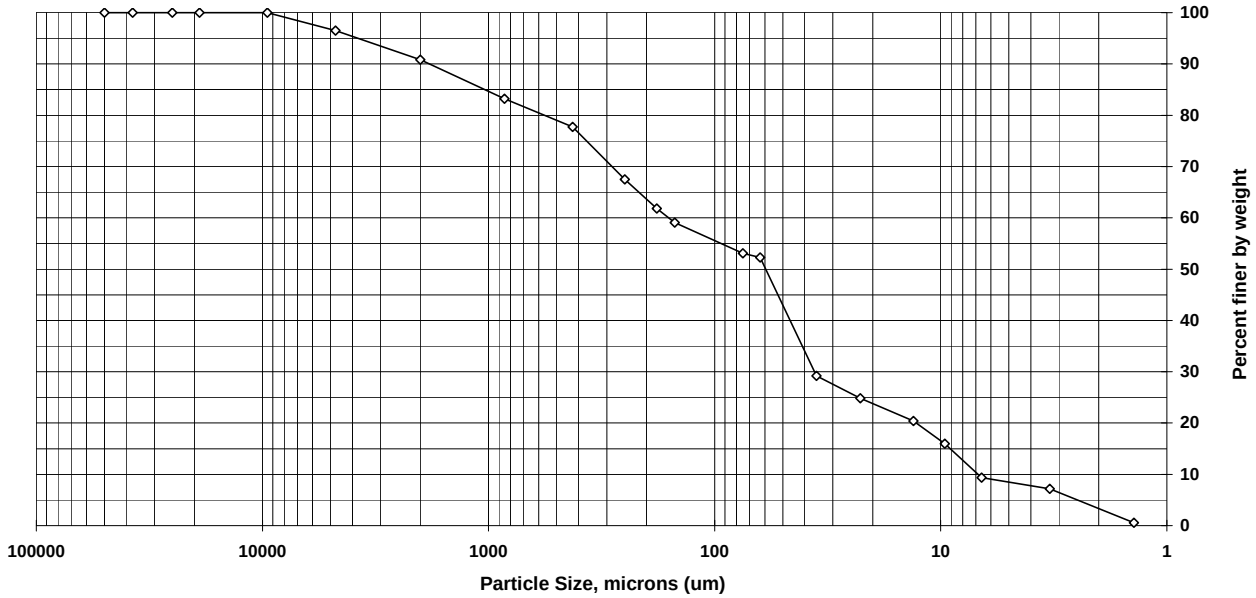
Particle Size of Soils by ASTM D422

Sample ID:	PE1016-P1SCD-14-A-00	**Percent Solids:**	45.8%	**Date Received:**	10/13/2016
Lab ID:	200-35700-B-16	**Specific Gravity:**	2.650	**Start Date:**	10/23/2016
				End Date:	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	96.5	3.5
#10	2000	90.8	5.7
#20	850	83.2	7.6
#40	425	77.7	5.5
#60	250	67.5	10.2
#80	180	61.8	5.7
#100	150	59.1	2.7
#200	75	53.1	6.0
#230	63	52.3	0.8
Hyd1	35.5	29.2	23.1
Hyd2	22.7	24.8	4.4
Hyd3	13.2	20.4	4.4
Hyd4	9.6	16.0	4.4
Hyd5	6.6	9.4	6.6
Hyd6	3.3	7.2	2.2
Hyd7	1.4	0.6	6.6

Soil Classification	Percent of sample
Gravel	3.5
Sand	44.2
Coarse Sand	5.7
Medium Sand	13.1
Fine Sand	25.4
Silt	42.9
Clay	9.4

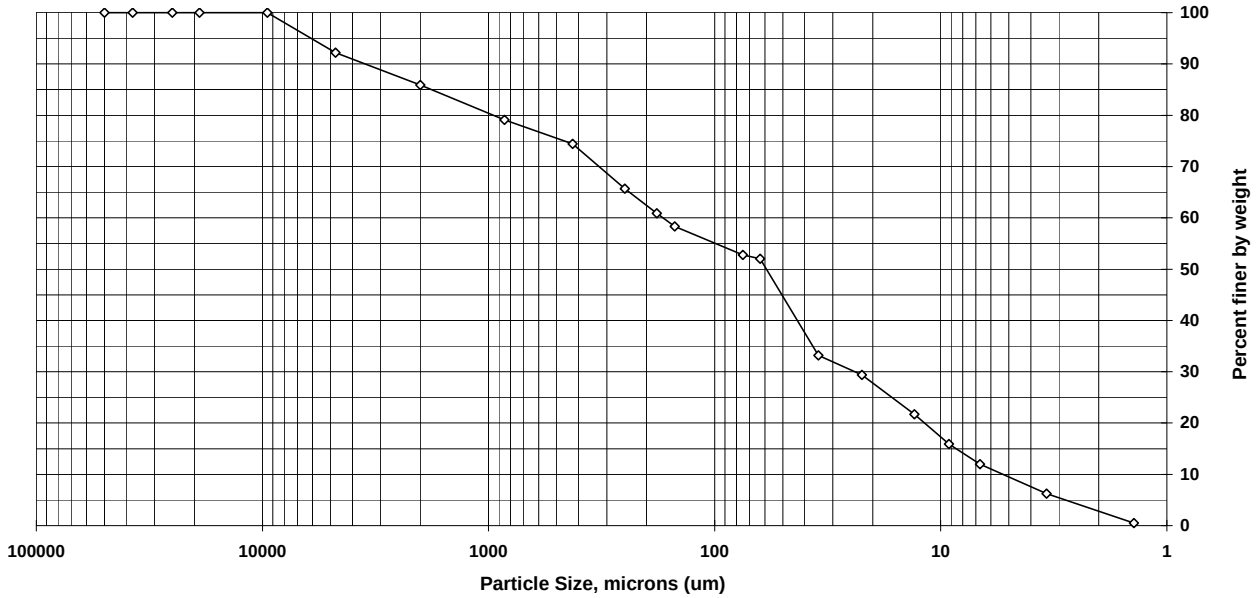
Particle Size of Soils by ASTM D422

Sample ID:	PE1016-P1SCD-14-B-00	**Percent Solids:**	49.4%	**Date Received:**	10/13/2016
Lab ID:	200-35700-B-17	**Specific Gravity:**	2.650	**Start Date:**	10/23/2016
				End Date:	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	92.2	7.8
#10	2000	85.9	6.3
#20	850	79.1	6.8
#40	425	74.4	4.7
#60	250	65.7	8.7
#80	180	60.9	4.8
#100	150	58.3	2.6
#200	75	52.8	5.5
#230	63	52.0	0.8
Hyd1	34.8	33.2	18.8
Hyd2	22.3	29.4	3.8
Hyd3	13.1	21.7	7.7
Hyd4	9.2	15.9	5.8
Hyd5	6.7	12.0	3.9
Hyd6	3.4	6.3	5.7
Hyd7	1.4	0.5	5.8

Soil Classification	Percent of sample
Gravel	7.8
Sand	40.2
Coarse Sand	6.3
Medium Sand	11.5
Fine Sand	22.4
Silt	40.0
Clay	12.0

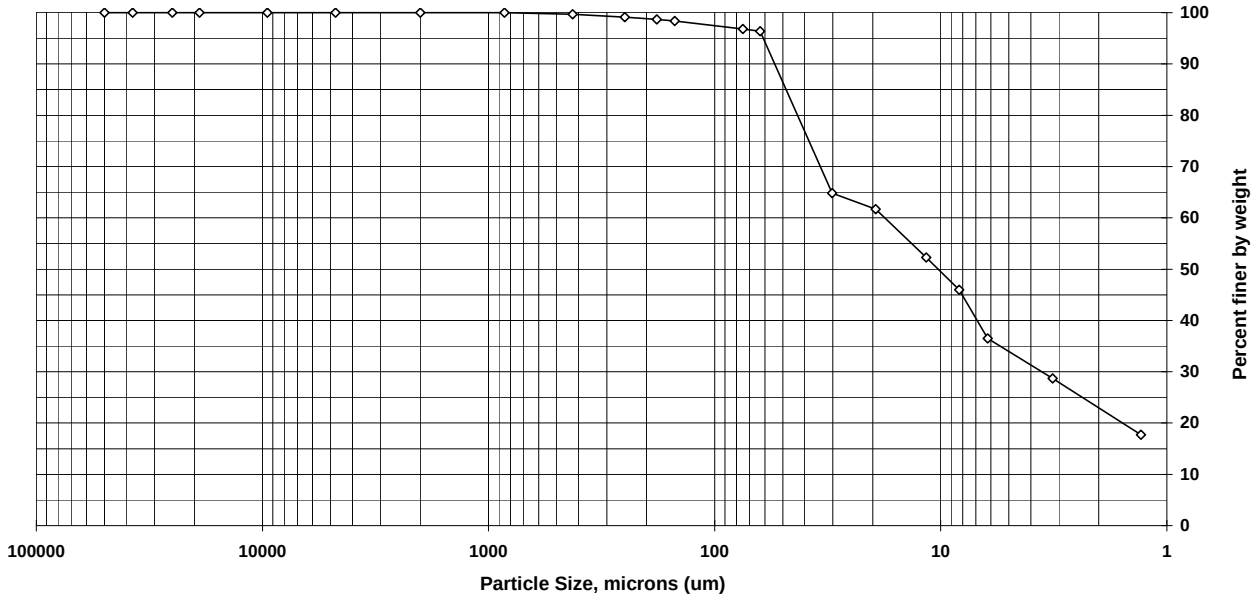
Particle Size of Soils by ASTM D422

				Date Received:	10/13/2016
Sample ID:	PE1016-P1SCD-12-A-08	**Percent Solids:**	81.9%	**Start Date:**	10/23/2016
Lab ID:	200-35700-B-18	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): na

Non-soil material: na

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	100.0	0.0
#20	850	100.0	0.0
#40	425	99.7	0.3
#60	250	99.1	0.6
#80	180	98.7	0.4
#100	150	98.4	0.3
#200	75	96.8	1.6
#230	63	96.4	0.4
Hyd1	30.2	64.8	31.6
Hyd2	19.4	61.7	3.1
Hyd3	11.6	52.3	9.4
Hyd4	8.3	46.0	6.3
Hyd5	6.2	36.5	9.5
Hyd6	3.2	28.7	7.8
Hyd7	1.3	17.7	11.0

Soil Classification	Percent of sample
Gravel	0.0
Sand	3.6
Coarse Sand	0.0
Medium Sand	0.3
Fine Sand	3.3
Silt	59.9
Clay	36.5

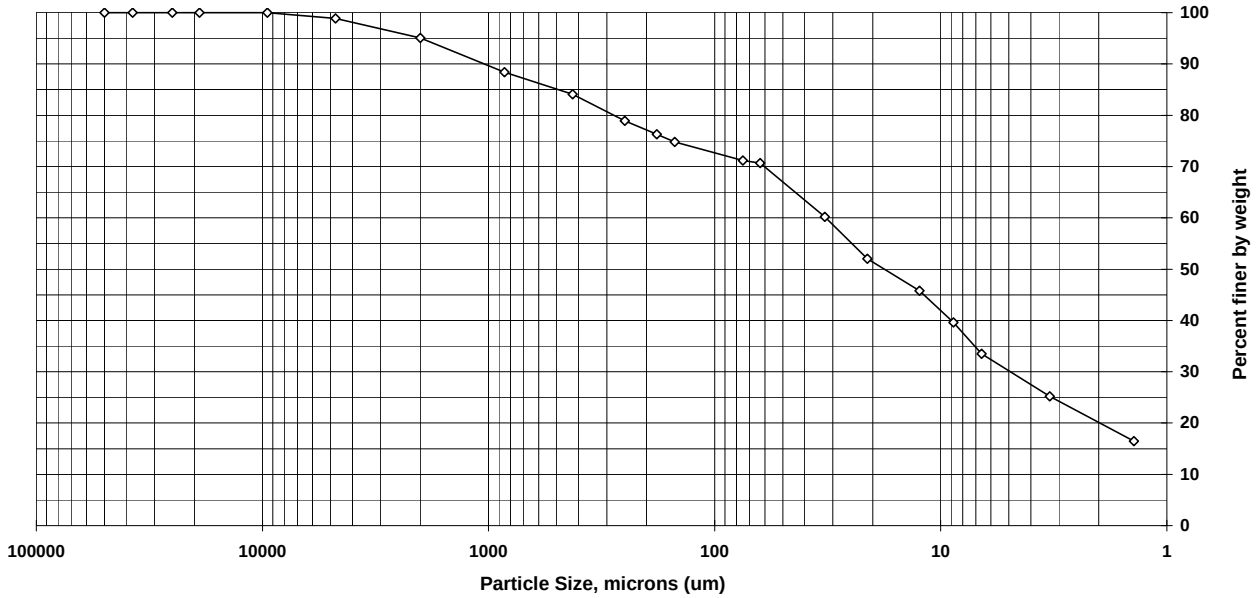
Particle Size of Soils by ASTM D422

				Date Received:	10/13/2016
Sample ID:	PE1016-P1SCD-12-B-00	**Percent Solids:**	49.9%	**Start Date:**	10/23/2016
Lab ID:	200-35700-B-12DU	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	98.9	1.1
#10	2000	95.1	3.8
#20	850	88.4	6.7
#40	425	84.1	4.3
#60	250	78.9	5.2
#80	180	76.3	2.6
#100	150	74.8	1.5
#200	75	71.2	3.6
#230	63	70.7	0.5
Hyd1	32.6	60.2	10.5
Hyd2	21.1	52.0	8.2
Hyd3	12.4	45.8	6.2
Hyd4	8.8	39.6	6.2
Hyd5	6.6	33.5	6.1
Hyd6	3.3	25.2	8.3
Hyd7	1.4	16.5	8.7

Soil Classification	Percent of sample
Gravel	1.1
Sand	28.2
Coarse Sand	3.8
Medium Sand	11.0
Fine Sand	13.4
Silt	37.2
Clay	33.5

Sediment Grain Size - D422

Client		Date Received	10/13/2016
Client Sample ID	PE1016-P1SCD-01-A-0007IN	Start Date	10/18/2016 14:52
Lab Sample ID	200-35700-B-1	End Date	10/26/2016 08:59

Dry Weight Determination

Tin Weight	1.02	g	Non-soil material:	plant, wood
Wet Sample + Tin	23.09	g	Shape (> #10):	subangular
Dry Sample + Tin	10.81	g	Hardness (> #10):	hard
% Moisture	55.64	%		
			Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	50.66	144.88	94.22
Sample Weight (Oven Dried)			41.8

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			5.23
Sample <#10			36.6
% Passing #10			38.8

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	462.83	468.06	5.23	g	87.5	Sand	Coarse
#20	850	389.53	391.24	1.71	g	83.4	Sand	Medium
#40	425	368.28	369.69	1.41	g	80.0	Sand	Medium
#60	250	349.08	350.56	1.48	g	76.5	Sand	Fine
#80	180	331.37	332.24	0.87	g	74.4	Sand	Fine
#100	150	330.61	331.04	0.43	g	73.4	Sand	Fine
#200	75	323.25	324.31	1.06	g	70.9	Sand	Fine
#230	63	341.26	341.48	0.22	g	70.4	Sand	Fine
				0.00	g	70.4		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	41.8

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0170	20.0	33.2	49	Silt	
5	5	1.0160	20.0	21.2	45.1	Silt	
15	15	1.0145	20.0	12.4	39.4	Silt	
30	31	1.0130	20.0	8.8	33.6	Silt	
60	57	1.0115	20.0	6.6	27.9	Silt	
250	235	1.0080	19.5	3.4	13.9	Clay	
1440	1382	1.0065	20.0	1.4	8.65	Clay	

Sediment Grain Size - D422

Client		Date Received	10/13/2016 12:40
Client Sample ID	PE1016-P1SCD-01-B-00	Start Date	10/23/2016 17:44
Lab Sample ID	200-35700-B-2	End Date	10/28/2016 10:07

Dry Weight Determination

Tin Weight	1.04	g	Non-soil material:	plant
Wet Sample + Tin	20.02	g	Shape (> #10):	subangular
Dry Sample + Tin	8.56	g	Hardness (> #10):	hard
% Moisture	60.38	%		
			Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.88	130.89	86.01
Sample Weight (Oven Dried)			34.1

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			5.69
Sample <#10			28.4
% Passing #10			33

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.19	492.31	4.12	g	87.9	Gravel	
#10	2000	462.84	464.41	1.57	g	83.3	Sand	Coarse
#20	850	380.39	382.19	1.80	g	78.0	Sand	Medium
#40	425	354.99	356.05	1.06	g	74.9	Sand	Medium
#60	250	352.59	353.74	1.15	g	71.5	Sand	Fine
#80	180	338.73	339.36	0.63	g	69.7	Sand	Fine
#100	150	329.04	329.44	0.40	g	68.5	Sand	Fine
#200	75	323.77	324.77	1.00	g	65.6	Sand	Fine
#230	63	341.27	341.43	0.16	g	65.1	Sand	Fine
				0.00	g	65.1		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	34.1

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0170	19.5	33.4	59.5	Silt	
5	5	1.0160	19.5	21.3	54.8	Silt	
15	15	1.0140	19.5	12.6	45.3	Silt	
30	30	1.0125	19.5	9	38.3	Silt	
60	59	1.0105	19.5	6.6	28.8	Silt	
250	256	1.0080	19.5	3.2	17.1	Clay	
1440	1440	1.0065	19.0	1.4	9.42	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-01-A-07
Lab Sample ID	200-35700-B-3

Date Received	10/13/2016
Start Date	10/23/2016 17:47
End Date	10/28/2016 10:18

Dry Weight Determination

Tin Weight	1.06	g
Wet Sample + Tin	29.17	g
Dry Sample + Tin	21.58	g
% Moisture	27.00	%

Non-soil material:	na
Shape (> #10):	na
Hardness (> #10):	na
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.67	109.84	65.17
Sample Weight (Oven Dried)			47.6

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			0
Sample <#10			47.6
% Passing #10			73

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000			0.00	g	100.0	Sand	Coarse
#20	850	380.39	380.58	0.19	g	99.6	Sand	Medium
#40	425	354.99	355.24	0.25	g	99.1	Sand	Medium
#60	250	352.59	352.99	0.40	g	98.3	Sand	Fine
#80	180	338.73	338.98	0.25	g	97.8	Sand	Fine
#100	150	329.04	329.22	0.18	g	97.4	Sand	Fine
#200	75	323.77	324.55	0.78	g	95.8	Sand	Fine
#230	63	341.27	341.47	0.20	g	95.4	Sand	Fine
				0.00	g	95.4		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	47.6

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0270	19.5	29.4	76.3	Silt	
5	5	1.0260	19.5	18.8	73	Silt	
15	15	1.0240	19.5	11.2	66.2	Silt	
30	30	1.0210	19.5	8.2	56.1	Silt	
60	58	1.0190	19.5	6.1	49.3	Silt	
250	256	1.0145	19.5	3	34.2	Clay	
1440	1440	1.0120	19.0	1.3	25.3	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-02-A-00
Lab Sample ID	200-35700-B-4

Date Received	10/13/2016
Start Date	10/23/2016 17:49
End Date	10/28/2016 10:28

Dry Weight Determination

Tin Weight	1.04	g
Wet Sample + Tin	19.27	g
Dry Sample + Tin	10.81	g
% Moisture	46.41	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.98	118.68	73.7
Sample Weight (Oven Dried)			39.5

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			0.37
Sample <#10			39.1
% Passing #10			53.1

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.19	488.36	0.17	g	99.6	Gravel	
#10	2000	462.84	463.04	0.20	g	99.1	Sand	Coarse
#20	850	380.39	381.42	1.03	g	96.5	Sand	Medium
#40	425	354.99	355.53	0.54	g	95.1	Sand	Medium
#60	250	352.59	353.18	0.59	g	93.6	Sand	Fine
#80	180	338.73	339.20	0.47	g	92.4	Sand	Fine
#100	150	329.04	329.42	0.38	g	91.4	Sand	Fine
#200	75	323.77	324.65	0.88	g	89.2	Sand	Fine
#230	63	341.27	341.35	0.08	g	89.0	Sand	Fine
				0.00	g	89.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	39.5

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0230	19.5	31	75.7	Silt	
5	5	1.0210	19.5	20.1	67.6	Silt	
15	15	1.0200	19.5	11.8	63.5	Silt	
30	29	1.0180	19.5	8.7	55.4	Silt	
60	58	1.0160	19.5	6.3	47.3	Silt	
250	250	1.0135	19.5	3.1	37.1	Clay	
1440	1434	1.0105	19.0	1.3	24.4	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-02-B-00
Lab Sample ID	200-35700-B-5

Date Received	10/13/2016
Start Date	10/23/2016 17:51
End Date	10/28/2016 10:41

Dry Weight Determination

Tin Weight	0.95	g
Wet Sample + Tin	22.04	g
Dry Sample + Tin	10.51	g
% Moisture	54.67	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.71	121.23	76.52
Sample Weight (Oven Dried)			34.7

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			5.72
Sample <#10			29
% Passing #10			37.9

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.19	491.16	2.97	g	91.4	Gravel	
#10	2000	462.84	465.59	2.75	g	83.5	Sand	Coarse
#20	850	380.39	382.85	2.46	g	76.4	Sand	Medium
#40	425	354.99	357.18	2.19	g	70.1	Sand	Medium
#60	250	352.59	354.35	1.76	g	65.0	Sand	Fine
#80	180	338.73	339.61	0.88	g	62.5	Sand	Fine
#100	150	329.04	329.58	0.54	g	60.9	Sand	Fine
#200	75	323.77	325.09	1.32	g	57.1	Sand	Fine
#230	63	341.27	341.50	0.23	g	56.4	Sand	Fine
				0.00	g	56.4		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	34.7

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0155	19.5	33.9	51.5	Silt	
5	5	1.0145	19.5	21.7	46.9	Silt	
15	15	1.0130	19.5	12.7	39.9	Silt	
30	29	1.0110	19.5	9.3	30.7	Silt	
60	63	1.0090	19.5	6.5	21.4	Silt	
250	250	1.0075	19.5	3.3	14.5	Clay	
1440	1434	1.0060	19.0	1.4	6.94	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-03-A-00
Lab Sample ID	200-35700-B-6

Date Received	10/13/2016
Start Date	10/23/2016 17:53
End Date	10/28/2016 10:52

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	23.50	g
Dry Sample + Tin	10.30	g
% Moisture	58.72	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	50.70	126.72	76.02
Sample Weight (Oven Dried)			31.4

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			7.05
Sample <#10			24.4
% Passing #10			32.1

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.19	492.16	3.97	g	87.4	Gravel	
#10	2000	462.84	465.92	3.08	g	77.6	Sand	Coarse
#20	850	380.39	383.34	2.95	g	68.2	Sand	Medium
#40	425	354.99	357.01	2.02	g	61.8	Sand	Medium
#60	250	352.59	354.22	1.63	g	56.6	Sand	Fine
#80	180	338.73	339.56	0.83	g	54.0	Sand	Fine
#100	150	329.04	329.61	0.57	g	52.2	Sand	Fine
#200	75	323.77	325.20	1.43	g	47.6	Sand	Fine
#230	63	341.27	341.43	0.16	g	47.1	Sand	Fine
				0.00	g	47.1		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	31.4

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0130	19.5	34.8	44.1	Silt	
5	5	1.0120	19.5	22.3	39	Silt	
15	15	1.0100	19.5	13.1	28.8	Silt	
30	31	1.0090	19.5	9.2	23.7	Silt	
60	60	1.0080	19.5	6.7	18.5	Silt	
250	240	1.0065	19.5	3.4	10.9	Clay	
1440	1424	1.0055	19.0	1.4	5.11	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-03-A-06
Lab Sample ID	200-35700-B-7

Date Received	10/13/2016
Start Date	10/23/2016 17:55
End Date	10/28/2016 11:02

Dry Weight Determination

Tin Weight	0.99	g
Wet Sample + Tin	24.21	g
Dry Sample + Tin	18.38	g
% Moisture	25.11	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.64	92.38	47.74
Sample Weight (Oven Dried)			35.8

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			0.49
Sample <#10			35.3
% Passing #10			73.9

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	462.84	463.33	0.49	g	98.6	Sand	Coarse
#20	850	380.39	380.51	0.12	g	98.3	Sand	Medium
#40	425	354.99	354.99	0.00	g	98.3	Sand	Medium
#60	250	352.59	352.66	0.07	g	98.1	Sand	Fine
#80	180	338.73	338.80	0.07	g	97.9	Sand	Fine
#100	150	329.04	329.12	0.08	g	97.7	Sand	Fine
#200	75	323.77	324.20	0.43	g	96.5	Sand	Fine
#230	63	341.27	341.32	0.05	g	96.4	Sand	Fine
				0.00	g	96.4		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	35.8

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0220	19.5	31.4	79.1	Silt	
5	5	1.0205	19.5	20.3	72.3	Silt	
15	15	1.0180	19.5	12	61.1	Silt	
30	31	1.0155	19.5	8.6	49.9	Silt	
60	59	1.0140	19.5	6.3	43.2	Silt	
250	234	1.0115	19.5	3.3	32	Clay	
1440	1418	1.0100	19.0	1.4	24.7	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-03-B-00
Lab Sample ID	200-35700-B-8

Date Received	10/13/2016
Start Date	10/23/2016 17:58
End Date	10/28/2016 11:13

Dry Weight Determination

Tin Weight	0.98	g
Wet Sample + Tin	23.51	g
Dry Sample + Tin	11.02	g
% Moisture	55.44	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.67	120.42	75.75
Sample Weight (Oven Dried)			33.8

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			4.31
Sample <#10			29.5
% Passing #10			38.9

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.19	490.63	2.44	g	92.8	Gravel	
#10	2000	462.84	464.71	1.87	g	87.3	Sand	Coarse
#20	850	380.39	381.81	1.42	g	83.1	Sand	Medium
#40	425	354.99	355.94	0.95	g	80.3	Sand	Medium
#60	250	352.59	353.84	1.25	g	76.6	Sand	Fine
#80	180	338.73	339.72	0.99	g	73.7	Sand	Fine
#100	150	329.04	329.90	0.86	g	71.2	Sand	Fine
#200	75	323.77	325.83	2.06	g	65.1	Sand	Fine
#230	63	341.27	341.51	0.24	g	64.4	Sand	Fine
				0.00	g	64.4		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	33.8

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0140	19.5	34.5	45.7	Silt	
5	5	1.0130	19.5	22	41	Silt	
15	15	1.0110	19.5	13	31.5	Silt	
30	31	1.0095	19.5	9.2	24.4	Silt	
60	59	1.0080	19.5	6.7	17.2	Silt	
250	265	1.0065	19.5	3.2	10.1	Clay	
1440	1412	1.0060	19.0	1.4	7.13	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-11-A-00
Lab Sample ID	200-35700-B-9

Date Received	10/13/2016
Start Date	10/23/2016 18:01
End Date	10/28/2016 11:23

Dry Weight Determination

Tin Weight	0.95	g
Wet Sample + Tin	28.88	g
Dry Sample + Tin	15.88	g
% Moisture	46.54	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.96	126.32	81.36
Sample Weight (Oven Dried)			43.5

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			9.03
Sample <#10			34.5
% Passing #10			42.4

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.19	490.34	2.15	g	95.1	Gravel	
#10	2000	462.84	469.72	6.88	g	79.3	Sand	Coarse
#20	850	380.39	384.85	4.46	g	69.0	Sand	Medium
#40	425	354.99	359.18	4.19	g	59.4	Sand	Medium
#60	250	352.59	356.47	3.88	g	50.5	Sand	Fine
#80	180	338.73	339.84	1.11	g	47.9	Sand	Fine
#100	150	329.04	329.52	0.48	g	46.8	Sand	Fine
#200	75	323.77	324.87	1.10	g	44.3	Sand	Fine
#230	63	341.27	341.39	0.12	g	44.0	Sand	Fine
				0.00	g	44.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	43.5

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0120	19.5	35.2	28.2	Silt	
5	5	1.0110	19.5	22.5	24.5	Silt	
15	15	1.0100	19.5	13.1	20.8	Silt	
30	32	1.0090	19.5	9.1	17.1	Silt	
60	60	1.0080	19.5	6.7	13.4	Silt	
250	259	1.0070	19.5	3.2	9.69	Clay	
1440	1406	1.0060	19.0	1.4	5.54	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-11-B-00
Lab Sample ID	200-35700-B-10

Date Received	10/13/2016
Start Date	10/23/2016 18:03
End Date	10/28/2016 11:33

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	21.66	g
Dry Sample + Tin	10.53	g
% Moisture	53.87	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.74	138.75	94.01
Sample Weight (Oven Dried)			43.4

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			3.35
Sample <#10			40.1
% Passing #10			42.7

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.19	490.08	1.89	g	95.6	Gravel	
#10	2000	462.84	464.30	1.46	g	92.2	Sand	Coarse
#20	850	380.39	383.96	3.57	g	84.0	Sand	Medium
#40	425	354.99	356.80	1.81	g	79.8	Sand	Medium
#60	250	352.59	355.99	3.40	g	72.0	Sand	Fine
#80	180	338.73	340.61	1.88	g	67.7	Sand	Fine
#100	150	329.04	329.90	0.86	g	65.7	Sand	Fine
#200	75	323.77	325.52	1.75	g	61.7	Sand	Fine
#230	63	341.27	341.53	0.26	g	61.1	Sand	Fine
				0.00	g	61.1		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	43.4

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0185	19.5	32.8	52.3	Silt	
5	5	1.0170	19.5	21.1	46.7	Silt	
15	15	1.0145	19.5	12.5	37.5	Silt	
30	30	1.0130	19.5	9	31.9	Silt	
60	63	1.0110	19.5	6.3	24.5	Silt	
250	253	1.0090	19.5	3.2	17.1	Clay	
1440	1400	1.0070	19.0	1.4	9.25	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-12-A-00
Lab Sample ID	200-35700-B-11

Date Received	10/13/2016
Start Date	10/23/2016 18:05
End Date	10/28/2016 11:44

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	34.96	g
Dry Sample + Tin	12.82	g
% Moisture	65.23	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.85	146.78	101.93
Sample Weight (Oven Dried)			35.4

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			3.94
Sample <#10			31.5
% Passing #10			30.9

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.19	490.93	2.74	g	92.3	Gravel	
#10	2000	462.84	464.04	1.20	g	88.9	Sand	Coarse
#20	850	380.39	382.05	1.66	g	84.2	Sand	Medium
#40	425	354.99	357.02	2.03	g	78.5	Sand	Medium
#60	250	352.59	355.72	3.13	g	69.7	Sand	Fine
#80	180	338.73	341.47	2.74	g	62.0	Sand	Fine
#100	150	329.04	330.77	1.73	g	57.1	Sand	Fine
#200	75	323.77	327.14	3.37	g	47.6	Sand	Fine
#230	63	341.27	341.73	0.46	g	46.3	Sand	Fine
				0.00	g	46.3		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	35.4

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0145	19.5	34.3	45.9	Silt	
5	5	1.0130	19.5	22	39.1	Silt	
15	15	1.0115	19.5	12.9	32.3	Silt	
30	30	1.0100	19.5	9.3	25.5	Silt	
60	57	1.0090	19.5	6.8	21	Silt	
250	247	1.0075	19.5	3.3	14.2	Clay	
1440	1394	1.0065	19.0	1.4	9.07	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-12-B-00
Lab Sample ID	200-35700-B-12

Date Received	10/13/2016
Start Date	10/23/2016 18:07
End Date	10/28/2016 11:56

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	33.88	g
Dry Sample + Tin	16.38	g
% Moisture	53.26	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.69	131.30	86.61
Sample Weight (Oven Dried)			40.5

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			3.28
Sample <#10			37.2
% Passing #10			43

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.19	490.21	2.02	g	95.0	Gravel	
#10	2000	462.84	464.10	1.26	g	91.9	Sand	Coarse
#20	850	380.39	382.76	2.37	g	86.0	Sand	Medium
#40	425	354.99	356.70	1.71	g	81.8	Sand	Medium
#60	250	352.59	354.86	2.27	g	76.2	Sand	Fine
#80	180	338.73	339.90	1.17	g	73.3	Sand	Fine
#100	150	329.04	329.71	0.67	g	71.6	Sand	Fine
#200	75	323.77	325.34	1.57	g	67.7	Sand	Fine
#230	63	341.27	341.55	0.28	g	67.0	Sand	Fine
				0.00	g	67.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	40.5

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0195	19.5	32.4	60	Silt	
5	5	1.0180	19.5	20.9	54	Silt	
15	15	1.0160	19.5	12.3	46.1	Silt	
30	30	1.0145	19.5	8.9	40.2	Silt	
60	63	1.0125	19.5	6.2	32.2	Silt	
250	241	1.0110	19.5	3.2	26.3	Clay	
1440	1388	1.0090	19.0	1.4	17.8	Clay	

Sediment Grain Size - D422

Client		Date Received	10/13/2016
Client Sample ID	PE1016-P1SCD-13-A-00	Start Date	10/23/2016 18:27
Lab Sample ID	200-35700-B-13	End Date	10/28/2016 12:25

Dry Weight Determination

Tin Weight	0.96	g	Non-soil material:	na	
Wet Sample + Tin	28.90	g	Shape (> #10):	na	
Dry Sample + Tin	20.99	g	Hardness (> #10):	na	
% Moisture	28.31	%			
			Default Soil Gravity	2.6500	

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.72	131.69	86.97
Sample Weight (Oven Dried)			62.3

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			0
Sample <#10			62.3
% Passing #10			71.6

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000			0.00	g	100.0	Sand	Coarse
#20	850	380.39	382.09	1.70	g	97.3	Sand	Medium
#40	425	354.99	356.47	1.48	g	94.9	Sand	Medium
#60	250	352.59	353.87	1.28	g	92.8	Sand	Fine
#80	180	338.73	339.33	0.60	g	91.8	Sand	Fine
#100	150	329.04	329.39	0.35	g	91.2	Sand	Fine
#200	75	323.77	324.86	1.09	g	89.5	Sand	Fine
#230	63	341.27	341.48	0.21	g	89.2	Sand	Fine
				0.00	g	89.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	62.3

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0330	19.5	26.7	73.8	Silt	
5	5	1.0300	19.5	17.8	66.1	Silt	
15	15	1.0270	19.5	10.7	58.3	Silt	
30	30	1.0235	19.5	8	49.3	Silt	
60	59	1.0200	19.5	5.9	40.3	Silt	
250	256	1.0150	19.5	3	27.4	Clay	
1440	1440	1.0105	19.5	1.3	15.8	Clay	

Sediment Grain Size - D422

Client		Date Received	10/13/2016
Client Sample ID	PE1016-P1SCD-13-B-00	Start Date	10/23/2016 18:28
Lab Sample ID	200-35700-B-14	End Date	10/28/2016 13:10

Dry Weight Determination

Tin Weight	0.98	g	Non-soil material:	plant
Wet Sample + Tin	24.56	g	Shape (> #10):	subangular
Dry Sample + Tin	8.63	g	Hardness (> #10):	hard
% Moisture	67.56	%		
			Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.69	126.84	82.15
Sample Weight (Oven Dried)			26.7

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			3.8
Sample <#10			22.9
% Passing #10			27.9

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	491.10	2.94	g	89.0	Gravel	
#10	2000	462.82	463.68	0.86	g	85.8	Sand	Coarse
#20	850	380.39	383.08	2.69	g	75.7	Sand	Medium
#40	425	354.99	355.99	1.00	g	72.0	Sand	Medium
#60	250	352.59	353.69	1.10	g	67.9	Sand	Fine
#80	180	338.73	339.40	0.67	g	65.4	Sand	Fine
#100	150	329.04	329.52	0.48	g	63.6	Sand	Fine
#200	75	323.77	325.24	1.47	g	58.1	Sand	Fine
#230	63	341.27	341.52	0.25	g	57.2	Sand	Fine
				0.00	g	57.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	26.7

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0095	19.5	36.1	30.8	Silt	
5	5	1.0085	19.5	23	24.8	Silt	
15	15	1.0080	19.5	13.4	21.8	Silt	
30	30	1.0065	19.5	9.6	12.8	Silt	
60	58	1.0055	19.5	6.9	6.77	Silt	
250	256	1.0045	19.5	3.3	0.752	Clay	
1440	1440	1.0045	19.5	1.4	0.752	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-13-B-00
Lab Sample ID	200-35700-B-15

Date Received	10/13/2016
Start Date	10/23/2016 18:30
End Date	10/28/2016 13:20

Dry Weight Determination

Tin Weight	0.95	g
Wet Sample + Tin	20.64	g
Dry Sample + Tin	7.31	g
% Moisture	67.70	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.79	141.11	96.32
Sample Weight (Oven Dried)			31.1

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			3.18
Sample <#10			27.9
% Passing #10			29

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	489.91	1.75	g	94.4	Gravel	
#10	2000	462.82	464.25	1.43	g	89.8	Sand	Coarse
#20	850	380.39	383.19	2.80	g	80.8	Sand	Medium
#40	425	354.99	356.22	1.23	g	76.8	Sand	Medium
#60	250	352.59	354.03	1.44	g	72.2	Sand	Fine
#80	180	338.73	339.58	0.85	g	69.5	Sand	Fine
#100	150	329.04	329.64	0.60	g	67.6	Sand	Fine
#200	75	323.77	325.63	1.86	g	61.6	Sand	Fine
#230	63	341.27	341.61	0.34	g	60.5	Sand	Fine
				0.00	g	60.5		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	31.1

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0090	19.5	36.2	23.9	Silt	
5	5	1.0090	19.5	22.9	23.9	Silt	
15	15	1.0080	19.5	13.4	18.7	Silt	
30	29	1.0060	19.5	9.8	8.39	Silt	
60	58	1.0050	19.5	7	3.23	Silt	
250	250	1.0045	19.5	3.4	0.646	Clay	
1440	1434	1.0045	19.5	1.4	0.646	Clay	

Sediment Grain Size - D422

Client		Date Received	10/13/2016
Client Sample ID	PE1016-P1SCD-14-A-00	Start Date	10/23/2016 18:32
Lab Sample ID	200-35700-B-16	End Date	10/28/2016 13:30

Dry Weight Determination

Tin Weight	0.98	g	Non-soil material:	plant
Wet Sample + Tin	26.22	g	Shape (> #10):	subangular
Dry Sample + Tin	12.55	g	Hardness (> #10):	hard
% Moisture	54.16	%		
			Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.73	124.18	79.45
Sample Weight (Oven Dried)			36.4

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			3.34
Sample <#10			33.1
% Passing #10			41.7

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	489.42	1.26	g	96.5	Gravel	
#10	2000	462.82	464.90	2.08	g	90.8	Sand	Coarse
#20	850	380.39	383.17	2.78	g	83.2	Sand	Medium
#40	425	354.99	357.00	2.01	g	77.7	Sand	Medium
#60	250	352.59	356.29	3.70	g	67.5	Sand	Fine
#80	180	338.73	340.80	2.07	g	61.8	Sand	Fine
#100	150	329.04	330.03	0.99	g	59.1	Sand	Fine
#200	75	323.77	325.96	2.19	g	53.1	Sand	Fine
#230	63	341.27	341.57	0.30	g	52.3	Sand	Fine
				0.00	g	52.3		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	36.4

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0110	19.5	35.5	29.2	Silt	
5	5	1.0100	19.5	22.7	24.8	Silt	
15	15	1.0090	19.5	13.2	20.4	Silt	
30	29	1.0080	19.5	9.6	16	Silt	
60	63	1.0065	19.5	6.6	9.38	Silt	
250	250	1.0060	19.5	3.3	7.17	Clay	
1440	1434	1.0045	19.5	1.4	0.552	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-14-B-00
Lab Sample ID	200-35700-B-17

Date Received	10/13/2016
Start Date	10/23/2016 18:33
End Date	10/28/2016 13:41

Dry Weight Determination

Tin Weight	0.98	g
Wet Sample + Tin	24.10	g
Dry Sample + Tin	12.40	g
% Moisture	50.61	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.72	129.07	84.35
Sample Weight (Oven Dried)			41.7

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			5.85
Sample <#10			35.9
% Passing #10			42.6

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	491.40	3.24	g	92.2	Gravel	
#10	2000	462.82	465.43	2.61	g	85.9	Sand	Coarse
#20	850	380.39	383.21	2.82	g	79.1	Sand	Medium
#40	425	354.99	356.95	1.96	g	74.4	Sand	Medium
#60	250	352.59	356.21	3.62	g	65.7	Sand	Fine
#80	180	338.73	340.75	2.02	g	60.9	Sand	Fine
#100	150	329.04	330.12	1.08	g	58.3	Sand	Fine
#200	75	323.77	326.07	2.30	g	52.8	Sand	Fine
#230	63	341.27	341.61	0.34	g	52.0	Sand	Fine
				0.00	g	52.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	41.7

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0130	19.5	34.8	33.2	Silt	
5	5	1.0120	19.5	22.3	29.4	Silt	
15	15	1.0100	19.5	13.1	21.7	Silt	
30	31	1.0085	19.5	9.2	15.9	Silt	
60	60	1.0075	19.5	6.7	12	Silt	
250	240	1.0060	19.5	3.4	6.26	Clay	
1440	1424	1.0045	19.5	1.4	0.481	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-12-A-08
Lab Sample ID	200-35700-B-18

Date Received	10/13/2016
Start Date	10/23/2016 18:34
End Date	10/28/2016 13:51

Dry Weight Determination

Tin Weight	0.99	g
Wet Sample + Tin	19.80	g
Dry Sample + Tin	16.39	g
% Moisture	18.13	%

Non-soil material:	na
Shape (> #10):	na
Hardness (> #10):	na
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.74	107.12	62.38
Sample Weight (Oven Dried)			51.1

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			0
Sample <#10			51.1
% Passing #10			81.9

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000			0.00	g	100.0	Sand	Coarse
#20	850	380.39	380.39	0.00	g	100.0	Sand	Medium
#40	425	354.99	355.12	0.13	g	99.7	Sand	Medium
#60	250	352.59	352.90	0.31	g	99.1	Sand	Fine
#80	180	338.73	338.92	0.19	g	98.7	Sand	Fine
#100	150	329.04	329.19	0.15	g	98.4	Sand	Fine
#200	75	323.77	324.57	0.80	g	96.8	Sand	Fine
#230	63	341.27	341.48	0.21	g	96.4	Sand	Fine
				0.00	g	96.4		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	51.1

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0250	19.5	30.2	64.8	Silt	
5	5	1.0240	19.5	19.4	61.7	Silt	
15	15	1.0210	19.5	11.6	52.3	Silt	
30	31	1.0190	19.5	8.3	46	Silt	
60	59	1.0160	19.5	6.2	36.5	Silt	
250	234	1.0135	19.5	3.2	28.7	Clay	
1440	1418	1.0100	19.5	1.3	17.7	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-12-B-00
Lab Sample ID	200-35700-B-12DU

Date Received	10/13/2016
Start Date	10/23/2016 18:09
End Date	10/28/2016 12:08

Dry Weight Determination

Tin Weight	1.03	g
Wet Sample + Tin	32.77	g
Dry Sample + Tin	16.88	g
% Moisture	50.06	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.77	122.85	78.08
Sample Weight (Oven Dried)			39

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			1.89
Sample <#10			37.1
% Passing #10			47.5

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.19	488.60	0.41	g	98.9	Gravel	
#10	2000	462.84	464.32	1.48	g	95.1	Sand	Coarse
#20	850	380.39	383.00	2.61	g	88.4	Sand	Medium
#40	425	354.99	356.68	1.69	g	84.1	Sand	Medium
#60	250	352.59	354.62	2.03	g	78.9	Sand	Fine
#80	180	338.73	339.73	1.00	g	76.3	Sand	Fine
#100	150	329.04	329.61	0.57	g	74.8	Sand	Fine
#200	75	323.77	325.19	1.42	g	71.2	Sand	Fine
#230	63	341.27	341.45	0.18	g	70.7	Sand	Fine
				0.00	g	70.7		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	39

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0190	19.5	32.6	60.2	Silt	
5	5	1.0170	19.5	21.1	52	Silt	
15	15	1.0155	19.5	12.4	45.8	Silt	
30	31	1.0140	19.5	8.8	39.6	Silt	
60	57	1.0125	19.5	6.6	33.5	Silt	
250	235	1.0105	19.5	3.3	25.2	Clay	
1440	1382	1.0085	19.0	1.4	16.5	Clay	

Default Detection Limits

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35700-1
SDG: 200-35700-1

Method: 6020A - Metals (ICP/MS)
Prep: 3010A

Analyte	RL	MDL	Units	Method
Copper	5.0	2.2	ug/L	6020A
Selenium	4.0	0.97	ug/L	6020A
Zinc	20.0	2.6	ug/L	6020A

Method: 6020A - Metals (ICP/MS)
Prep: 3050B

Analyte	RL	MDL	Units	Method
Copper	0.50	0.12	mg/Kg	6020A
Selenium	0.40	0.063	mg/Kg	6020A
Zinc	2.0	0.62	mg/Kg	6020A

Method: 7470A - Mercury (CVAA)
Prep: 7470A

Analyte	RL	MDL	Units	Method
Mercury	0.20	0.044	ug/L	7470A

Method: 7471B - Mercury (CVAA)
Prep: 7471B

Analyte	RL	MDL	Units	Method
Mercury	0.033	0.012	mg/Kg	7471B

General Chemistry

Analyte	RL	MDL	Units	Method
Total Organic Carbon	1000	380	mg/Kg	Lloyd Kahn
Percent Solids	0.1	0.1	%	Moisture

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 200-110153/1-A
Matrix: Sediment
Analysis Batch: 110192

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110153

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.50	U	0.50	0.12	mg/Kg		10/13/16 13:50	10/14/16 11:47	1
Selenium	0.40	U	0.40	0.063	mg/Kg		10/13/16 13:50	10/14/16 11:47	1
Zinc	2.0	U	2.0	0.62	mg/Kg		10/13/16 13:50	10/14/16 11:47	1

Lab Sample ID: LCS 200-110153/2-A
Matrix: Sediment
Analysis Batch: 110192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110153

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	5.00	5.44		mg/Kg		109	80 - 120
Selenium	4.00	3.23		mg/Kg		81	80 - 120
Zinc	20.0	17.78		mg/Kg		89	80 - 120

Lab Sample ID: MB 200-110239/1-A
Matrix: Water
Analysis Batch: 110334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110239

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	2.66	J	5.0	2.2	ug/L		10/17/16 12:26	10/18/16 16:40	1
Zinc	20.0	U	20.0	2.6	ug/L		10/17/16 12:26	10/18/16 16:40	1

Lab Sample ID: MB 200-110239/1-A
Matrix: Water
Analysis Batch: 110361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110239

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	4.0	U	4.0	0.97	ug/L		10/17/16 12:26	10/19/16 11:47	1

Lab Sample ID: LCS 200-110239/2-A
Matrix: Water
Analysis Batch: 110334

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110239

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	50.0	56.30		ug/L		113	80 - 120
Zinc	200	208.5		ug/L		104	80 - 120

Lab Sample ID: LCS 200-110239/2-A
Matrix: Water
Analysis Batch: 110361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110239

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	40.0	38.84		ug/L		97	80 - 120

Lab Sample ID: MB 200-110491/1-A
Matrix: Sediment
Analysis Batch: 110547

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110491

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.50	U	0.50	0.12	mg/Kg		10/24/16 14:26	10/25/16 14:14	1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 200-110491/1-A — **Client Sample ID: Method Blank**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110547 — **Prep Batch: 110491**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.40	U	0.40	0.063	mg/Kg		10/24/16 14:26	10/25/16 14:14	1
Zinc	2.0	U	2.0	0.62	mg/Kg		10/24/16 14:26	10/25/16 14:14	1

Lab Sample ID: LCS 200-110491/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110547 — **Prep Batch: 110491**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	5.00	4.73		mg/Kg		95	80 - 120
Selenium	4.00	3.32		mg/Kg		83	80 - 120
Zinc	20.0	17.39		mg/Kg		87	80 - 120

Lab Sample ID: MB 200-110769/1-A — **Client Sample ID: Method Blank**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110848 — **Prep Batch: 110769**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.50	U	0.50	0.12	mg/Kg		10/31/16 11:39	11/01/16 12:03	1
Selenium	0.0776	J	0.40	0.063	mg/Kg		10/31/16 11:39	11/01/16 12:03	1
Zinc	2.0	U	2.0	0.62	mg/Kg		10/31/16 11:39	11/01/16 12:03	1

Lab Sample ID: LCS 200-110769/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110848 — **Prep Batch: 110769**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	5.00	5.03		mg/Kg		101	80 - 120
Selenium	4.00	3.27		mg/Kg		82	80 - 120
Zinc	20.0	17.86		mg/Kg		89	80 - 120

Lab Sample ID: 200-35700-12 MS — **Client Sample ID: PE1016-P1SCD-12-B-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110848 — **Prep Batch: 110769**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	236		10.9	310.8	4	mg/Kg	☼	685	75 - 125
Selenium	2.6	B	8.71	9.63		mg/Kg	☼	81	75 - 125
Zinc	171		43.6	214.5		mg/Kg	☼	99	75 - 125

Lab Sample ID: 200-35700-12 MSD — **Client Sample ID: PE1016-P1SCD-12-B-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110848 — **Prep Batch: 110769**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Copper	236		9.82	284.2	4	mg/Kg	☼	489	75 - 125	9	20
Selenium	2.6	B	7.86	8.77		mg/Kg	☼	79	75 - 125	9	20
Zinc	171		39.3	207.0	4	mg/Kg	☼	91	75 - 125	4	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 200-110242/11-A
Matrix: Water
Analysis Batch: 110261

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110242

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.044	ug/L		10/17/16 12:52	10/17/16 16:26	1

Lab Sample ID: LCS 200-110242/12-A
Matrix: Water
Analysis Batch: 110261

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110242

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.50	2.57		ug/L		103	85 - 115

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 200-110231/11-A
Matrix: Sediment
Analysis Batch: 110260

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110231

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.040	U	0.040	0.014	mg/Kg		10/17/16 10:05	10/17/16 14:30	1

Lab Sample ID: LCS 200-110231/12-A
Matrix: Sediment
Analysis Batch: 110260

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110231

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.500	0.492		mg/Kg		98	80 - 120

Lab Sample ID: MB 200-110530/11-A
Matrix: Sediment
Analysis Batch: 110575

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110530

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.040	U	0.040	0.014	mg/Kg		10/25/16 11:41	10/26/16 10:09	1

Lab Sample ID: LCS 200-110530/12-A
Matrix: Sediment
Analysis Batch: 110575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110530

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.500	0.486		mg/Kg		97	80 - 120

Lab Sample ID: MB 200-110770/11-A
Matrix: Sediment
Analysis Batch: 110792

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110770

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.040	U	0.040	0.014	mg/Kg		10/31/16 11:40	10/31/16 14:08	1

Method: 7471B - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 200-110770/12-A — **Client Sample ID: Lab Control Sample**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110792 — **Prep Batch: 110770**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.500	0.494		mg/Kg		99	80 - 120		

Lab Sample ID: 200-35700-12 MS — **Client Sample ID: PE1016-P1SCD-12-B-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110792 — **Prep Batch: 110770**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	1.9	F1	1.04	3.42	F1	mg/Kg	☼	144	80 - 120		

Lab Sample ID: 200-35700-12 MSD — **Client Sample ID: PE1016-P1SCD-12-B-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110792 — **Prep Batch: 110770**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	1.9	F1	1.08	2.91		mg/Kg	☼	92	80 - 120	16	20

Method: Lloyd Kahn - Organic Carbon, Total (TOC)

Lab Sample ID: MB 200-110277/29 — **Client Sample ID: Method Blank**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110277

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1000	U	1000	380	mg/Kg			10/17/16 17:44	1

Lab Sample ID: MB 200-110277/5 — **Client Sample ID: Method Blank**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110277

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1000	U	1000	380	mg/Kg			10/17/16 14:38	1

Lab Sample ID: LCS 200-110277/30 — **Client Sample ID: Lab Control Sample**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110277

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			9260	8935		mg/Kg		96	75 - 125		

Lab Sample ID: LCS 200-110277/6 — **Client Sample ID: Lab Control Sample**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110277

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			9260	8420		mg/Kg		91	75 - 125		

Method: Lloyd Kahn - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 200-35700-12 MS — **Client Sample ID: PE1016-P1SCD-12-B-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110277

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	34700		117000	150400		mg/Kg		99	75 - 125

Lab Sample ID: 200-35700-12 MSD — **Client Sample ID: PE1016-P1SCD-12-B-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110277

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	34700		109000	156000		mg/Kg		111	75 - 125	4	20

Lab Sample ID: MB 200-110363/5 — **Client Sample ID: Method Blank**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110363

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1000	U	1000	380	mg/Kg			10/19/16 12:48	1

Lab Sample ID: LCS 200-110363/6 — **Client Sample ID: Lab Control Sample**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110363

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	9260	8943		mg/Kg		97	75 - 125

Method: Moisture - Percent Moisture

Lab Sample ID: 200-35700-12 DU — **Client Sample ID: PE1016-P1SCD-12-B-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110190

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	45.5		44.5		%		2	20

Method: D422 - Grain Size

Lab Sample ID: 200-35700-12 DU — **Client Sample ID: PE1016-P1SCD-12-B-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110554

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gravel	5.0		1.1	F3	%		128	50
Sieve Size 2 inch - Percent Finer	100.0		100.0		% Passing		0	50
Sand	28.0		28.2		%		0.7	50
Sieve Size 1.5 inch - Percent Finer	100.0		100.0		% Passing		0	50
Coarse Sand	3.1		3.8		%		20	50
Sieve Size 1 inch - Percent Finer	100.0		100.0		% Passing		0	50
Medium Sand	10.1		11.0		%		9	50
Sieve Size 0.75 inch - Percent Finer	100.0		100.0		% Passing		0	50

Method: D422 - Grain Size (Continued)

Lab Sample ID: 200-35700-12 DU
Matrix: Sediment
Analysis Batch: 110554

Client Sample ID: PE1016-P1SCD-12-B-0006IN
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Fine Sand	14.8			13.4		%				10	50
Sieve Size 0.375 inch - Percent Finer	100.0			100.0		% Passing				0	50
Sieve Size #4 - Percent Finer	95.0			98.9		% Passing				4	50
Silt	34.8			37.2		%				7	50
Clay	32.2			33.5		%				4	50
Sieve Size #10 - Percent Finer	91.9			95.1		% Passing				3	50
Sieve Size #20 - Percent Finer	86.0			88.4		% Passing				3	50
Sieve Size #40 - Percent Finer	81.8			84.1		% Passing				3	50
Sieve Size #60 - Percent Finer	76.2			78.9		% Passing				3	50
Sieve Size #80 - Percent Finer	73.3			76.3		% Passing				4	50
Sieve Size #100 - Percent Finer	71.6			74.8		% Passing				4	50
Sieve Size #200 - Percent Finer	67.7			71.2		% Passing				5	50
Sieve Size #230 - Percent Finer	67.0			70.7		% Passing				5	50
Hydrometer Reading 1 - Percent Finer	60.0			60.2		% Passing				0.3	50
Hydrometer Reading 2 - Percent Finer	54.0			52.0		% Passing				4	50
Hydrometer Reading 3 - Percent Finer	46.1			45.8		% Passing				0.7	50
Hydrometer Reading 4 - Percent Finer	40.2			39.6		% Passing				2	50
Hydrometer Reading 5 - Percent Finer	32.2			33.5		% Passing				4	50
Hydrometer Reading 6 - Percent Finer	26.3			25.2		% Passing				4	50
Hydrometer Reading 7 - Percent Finer	17.8			16.5		% Passing				8	50

Metals

Prep Batch: 110153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-1	PE1016-P1SCD-01-A-0007IN	Total/NA	Sediment	3050B	
200-35700-2	PE1016-P1SCD-01-B-0006IN	Total/NA	Sediment	3050B	
200-35700-3	PE1016-P1SCD-01-A-0718IN	Total/NA	Sediment	3050B	
200-35700-4	PE1016-P1SCD-02-A-0004IN	Total/NA	Sediment	3050B	
200-35700-5	PE1016-P1SCD-02-B-0004IN	Total/NA	Sediment	3050B	
200-35700-6	PE1016-P1SCD-03-A-0006IN	Total/NA	Sediment	3050B	
200-35700-7	PE1016-P1SCD-03-A-0612IN	Total/NA	Sediment	3050B	
200-35700-8	PE1016-P1SCD-03-B-0006IN	Total/NA	Sediment	3050B	
MB 200-110153/1-A	Method Blank	Total/NA	Sediment	3050B	
LCS 200-110153/2-A	Lab Control Sample	Total/NA	Sediment	3050B	

Analysis Batch: 110192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-1	PE1016-P1SCD-01-A-0007IN	Total/NA	Sediment	6020A	110153
200-35700-1	PE1016-P1SCD-01-A-0007IN	Total/NA	Sediment	6020A	110153
200-35700-2	PE1016-P1SCD-01-B-0006IN	Total/NA	Sediment	6020A	110153
200-35700-2	PE1016-P1SCD-01-B-0006IN	Total/NA	Sediment	6020A	110153
200-35700-3	PE1016-P1SCD-01-A-0718IN	Total/NA	Sediment	6020A	110153
200-35700-3	PE1016-P1SCD-01-A-0718IN	Total/NA	Sediment	6020A	110153
200-35700-4	PE1016-P1SCD-02-A-0004IN	Total/NA	Sediment	6020A	110153
200-35700-5	PE1016-P1SCD-02-B-0004IN	Total/NA	Sediment	6020A	110153
200-35700-5	PE1016-P1SCD-02-B-0004IN	Total/NA	Sediment	6020A	110153
200-35700-6	PE1016-P1SCD-03-A-0006IN	Total/NA	Sediment	6020A	110153
200-35700-7	PE1016-P1SCD-03-A-0612IN	Total/NA	Sediment	6020A	110153
200-35700-8	PE1016-P1SCD-03-B-0006IN	Total/NA	Sediment	6020A	110153
MB 200-110153/1-A	Method Blank	Total/NA	Sediment	6020A	110153
LCS 200-110153/2-A	Lab Control Sample	Total/NA	Sediment	6020A	110153

Prep Batch: 110231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-1	PE1016-P1SCD-01-A-0007IN	Total/NA	Sediment	7471B	
200-35700-2	PE1016-P1SCD-01-B-0006IN	Total/NA	Sediment	7471B	
200-35700-3	PE1016-P1SCD-01-A-0718IN	Total/NA	Sediment	7471B	
200-35700-4	PE1016-P1SCD-02-A-0004IN	Total/NA	Sediment	7471B	
200-35700-5	PE1016-P1SCD-02-B-0004IN	Total/NA	Sediment	7471B	
200-35700-6	PE1016-P1SCD-03-A-0006IN	Total/NA	Sediment	7471B	
200-35700-7	PE1016-P1SCD-03-A-0612IN	Total/NA	Sediment	7471B	
200-35700-8	PE1016-P1SCD-03-B-0006IN	Total/NA	Sediment	7471B	
MB 200-110231/11-A	Method Blank	Total/NA	Sediment	7471B	
LCS 200-110231/12-A	Lab Control Sample	Total/NA	Sediment	7471B	

Prep Batch: 110239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-19	PE1016-P1SCD-BLK-3-101216	Total/NA	Water	3010A	
MB 200-110239/1-A	Method Blank	Total/NA	Water	3010A	
LCS 200-110239/2-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 110242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-19	PE1016-P1SCD-BLK-3-101216	Total/NA	Water	7470A	
MB 200-110242/11-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 110242 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 200-110242/12-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 110260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-1	PE1016-P1SCD-01-A-0007IN	Total/NA	Sediment	7471B	110231
200-35700-2	PE1016-P1SCD-01-B-0006IN	Total/NA	Sediment	7471B	110231
200-35700-3	PE1016-P1SCD-01-A-0718IN	Total/NA	Sediment	7471B	110231
200-35700-4	PE1016-P1SCD-02-A-0004IN	Total/NA	Sediment	7471B	110231
200-35700-5	PE1016-P1SCD-02-B-0004IN	Total/NA	Sediment	7471B	110231
200-35700-6	PE1016-P1SCD-03-A-0006IN	Total/NA	Sediment	7471B	110231
200-35700-7	PE1016-P1SCD-03-A-0612IN	Total/NA	Sediment	7471B	110231
200-35700-8	PE1016-P1SCD-03-B-0006IN	Total/NA	Sediment	7471B	110231
MB 200-110231/11-A	Method Blank	Total/NA	Sediment	7471B	110231
LCS 200-110231/12-A	Lab Control Sample	Total/NA	Sediment	7471B	110231

Analysis Batch: 110261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-19	PE1016-P1SCD-BLK-3-101216	Total/NA	Water	7470A	110242
MB 200-110242/11-A	Method Blank	Total/NA	Water	7470A	110242
LCS 200-110242/12-A	Lab Control Sample	Total/NA	Water	7470A	110242

Analysis Batch: 110334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-19	PE1016-P1SCD-BLK-3-101216	Total/NA	Water	6020A	110239
MB 200-110239/1-A	Method Blank	Total/NA	Water	6020A	110239
LCS 200-110239/2-A	Lab Control Sample	Total/NA	Water	6020A	110239

Analysis Batch: 110361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-19	PE1016-P1SCD-BLK-3-101216	Total/NA	Water	6020A	110239
MB 200-110239/1-A	Method Blank	Total/NA	Water	6020A	110239
LCS 200-110239/2-A	Lab Control Sample	Total/NA	Water	6020A	110239

Prep Batch: 110491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-9	PE1016-P1SCD-11-A-0004IN	Total/NA	Sediment	3050B	
200-35700-10	PE1016-P1SCD-11-B-0006IN	Total/NA	Sediment	3050B	
MB 200-110491/1-A	Method Blank	Total/NA	Sediment	3050B	
LCS 200-110491/2-A	Lab Control Sample	Total/NA	Sediment	3050B	

Prep Batch: 110530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-9	PE1016-P1SCD-11-A-0004IN	Total/NA	Sediment	7471B	
200-35700-10	PE1016-P1SCD-11-B-0006IN	Total/NA	Sediment	7471B	
MB 200-110530/11-A	Method Blank	Total/NA	Sediment	7471B	
LCS 200-110530/12-A	Lab Control Sample	Total/NA	Sediment	7471B	

Analysis Batch: 110547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-9	PE1016-P1SCD-11-A-0004IN	Total/NA	Sediment	6020A	110491
200-35700-10	PE1016-P1SCD-11-B-0006IN	Total/NA	Sediment	6020A	110491

Metals (Continued)

Analysis Batch: 110547 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-10	PE1016-P1SCD-11-B-0006IN	Total/NA	Sediment	6020A	110491
MB 200-110491/1-A	Method Blank	Total/NA	Sediment	6020A	110491
LCS 200-110491/2-A	Lab Control Sample	Total/NA	Sediment	6020A	110491

Analysis Batch: 110575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-9	PE1016-P1SCD-11-A-0004IN	Total/NA	Sediment	7471B	110530
200-35700-10	PE1016-P1SCD-11-B-0006IN	Total/NA	Sediment	7471B	110530
MB 200-110530/11-A	Method Blank	Total/NA	Sediment	7471B	110530
LCS 200-110530/12-A	Lab Control Sample	Total/NA	Sediment	7471B	110530

Prep Batch: 110769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-11	PE1016-P1SCD-12-A-0008IN	Total/NA	Sediment	3050B	
200-35700-12	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	3050B	
200-35700-13	PE1016-P1SCD-13-A-0002IN	Total/NA	Sediment	3050B	
200-35700-14	PE1016-P1SCD-13-B-0006IN	Total/NA	Sediment	3050B	
200-35700-15	PE1016-P1SCD-13-B-0006IN-D	Total/NA	Sediment	3050B	
200-35700-16	PE1016-P1SCD-14-A-0004IN	Total/NA	Sediment	3050B	
200-35700-17	PE1016-P1SCD-14-B-0004IN	Total/NA	Sediment	3050B	
200-35700-18	PE1016-P1SCD-12-A-0814IN	Total/NA	Sediment	3050B	
MB 200-110769/1-A	Method Blank	Total/NA	Sediment	3050B	
LCS 200-110769/2-A	Lab Control Sample	Total/NA	Sediment	3050B	
200-35700-12 MS	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	3050B	
200-35700-12 MSD	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	3050B	

Prep Batch: 110770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-11	PE1016-P1SCD-12-A-0008IN	Total/NA	Sediment	7471B	
200-35700-12	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	7471B	
200-35700-13	PE1016-P1SCD-13-A-0002IN	Total/NA	Sediment	7471B	
200-35700-14	PE1016-P1SCD-13-B-0006IN	Total/NA	Sediment	7471B	
200-35700-15	PE1016-P1SCD-13-B-0006IN-D	Total/NA	Sediment	7471B	
200-35700-16	PE1016-P1SCD-14-A-0004IN	Total/NA	Sediment	7471B	
200-35700-17	PE1016-P1SCD-14-B-0004IN	Total/NA	Sediment	7471B	
200-35700-18	PE1016-P1SCD-12-A-0814IN	Total/NA	Sediment	7471B	
MB 200-110770/11-A	Method Blank	Total/NA	Sediment	7471B	
LCS 200-110770/12-A	Lab Control Sample	Total/NA	Sediment	7471B	
200-35700-12 MS	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	7471B	
200-35700-12 MSD	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	7471B	

Analysis Batch: 110792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-11	PE1016-P1SCD-12-A-0008IN	Total/NA	Sediment	7471B	110770
200-35700-12	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	7471B	110770
200-35700-13	PE1016-P1SCD-13-A-0002IN	Total/NA	Sediment	7471B	110770
200-35700-14	PE1016-P1SCD-13-B-0006IN	Total/NA	Sediment	7471B	110770
200-35700-15	PE1016-P1SCD-13-B-0006IN-D	Total/NA	Sediment	7471B	110770
200-35700-16	PE1016-P1SCD-14-A-0004IN	Total/NA	Sediment	7471B	110770
200-35700-17	PE1016-P1SCD-14-B-0004IN	Total/NA	Sediment	7471B	110770
200-35700-18	PE1016-P1SCD-12-A-0814IN	Total/NA	Sediment	7471B	110770

Metals (Continued)

Analysis Batch: 110792 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 200-110770/11-A	Method Blank	Total/NA	Sediment	7471B	110770
LCS 200-110770/12-A	Lab Control Sample	Total/NA	Sediment	7471B	110770
200-35700-12 MS	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	7471B	110770
200-35700-12 MSD	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	7471B	110770

Analysis Batch: 110848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-11	PE1016-P1SCD-12-A-0008IN	Total/NA	Sediment	6020A	110769
200-35700-12	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	6020A	110769
200-35700-13	PE1016-P1SCD-13-A-0002IN	Total/NA	Sediment	6020A	110769
200-35700-14	PE1016-P1SCD-13-B-0006IN	Total/NA	Sediment	6020A	110769
200-35700-15	PE1016-P1SCD-13-B-0006IN-D	Total/NA	Sediment	6020A	110769
200-35700-16	PE1016-P1SCD-14-A-0004IN	Total/NA	Sediment	6020A	110769
200-35700-17	PE1016-P1SCD-14-B-0004IN	Total/NA	Sediment	6020A	110769
200-35700-18	PE1016-P1SCD-12-A-0814IN	Total/NA	Sediment	6020A	110769
MB 200-110769/1-A	Method Blank	Total/NA	Sediment	6020A	110769
LCS 200-110769/2-A	Lab Control Sample	Total/NA	Sediment	6020A	110769
200-35700-12 MS	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	6020A	110769
200-35700-12 MSD	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	6020A	110769

General Chemistry

Analysis Batch: 110190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-1	PE1016-P1SCD-01-A-0007IN	Total/NA	Sediment	Moisture	
200-35700-2	PE1016-P1SCD-01-B-0006IN	Total/NA	Sediment	Moisture	
200-35700-3	PE1016-P1SCD-01-A-0718IN	Total/NA	Sediment	Moisture	
200-35700-4	PE1016-P1SCD-02-A-0004IN	Total/NA	Sediment	Moisture	
200-35700-5	PE1016-P1SCD-02-B-0004IN	Total/NA	Sediment	Moisture	
200-35700-6	PE1016-P1SCD-03-A-0006IN	Total/NA	Sediment	Moisture	
200-35700-7	PE1016-P1SCD-03-A-0612IN	Total/NA	Sediment	Moisture	
200-35700-8	PE1016-P1SCD-03-B-0006IN	Total/NA	Sediment	Moisture	
200-35700-9	PE1016-P1SCD-11-A-0004IN	Total/NA	Sediment	Moisture	
200-35700-10	PE1016-P1SCD-11-B-0006IN	Total/NA	Sediment	Moisture	
200-35700-11	PE1016-P1SCD-12-A-0008IN	Total/NA	Sediment	Moisture	
200-35700-12	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	Moisture	
200-35700-13	PE1016-P1SCD-13-A-0002IN	Total/NA	Sediment	Moisture	
200-35700-14	PE1016-P1SCD-13-B-0006IN	Total/NA	Sediment	Moisture	
200-35700-15	PE1016-P1SCD-13-B-0006IN-D	Total/NA	Sediment	Moisture	
200-35700-16	PE1016-P1SCD-14-A-0004IN	Total/NA	Sediment	Moisture	
200-35700-17	PE1016-P1SCD-14-B-0004IN	Total/NA	Sediment	Moisture	
200-35700-18	PE1016-P1SCD-12-A-0814IN	Total/NA	Sediment	Moisture	
200-35700-12 DU	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	Moisture	

Analysis Batch: 110277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-1	PE1016-P1SCD-01-A-0007IN	Total/NA	Sediment	Lloyd Kahn	
200-35700-2	PE1016-P1SCD-01-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35700-3	PE1016-P1SCD-01-A-0718IN	Total/NA	Sediment	Lloyd Kahn	
200-35700-4	PE1016-P1SCD-02-A-0004IN	Total/NA	Sediment	Lloyd Kahn	

General Chemistry (Continued)

Analysis Batch: 110277 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-5	PE1016-P1SCD-02-B-0004IN	Total/NA	Sediment	Lloyd Kahn	
200-35700-6	PE1016-P1SCD-03-A-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35700-7	PE1016-P1SCD-03-A-0612IN	Total/NA	Sediment	Lloyd Kahn	
200-35700-8	PE1016-P1SCD-03-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35700-9	PE1016-P1SCD-11-A-0004IN	Total/NA	Sediment	Lloyd Kahn	
200-35700-10	PE1016-P1SCD-11-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35700-11	PE1016-P1SCD-12-A-0008IN	Total/NA	Sediment	Lloyd Kahn	
200-35700-12	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35700-14	PE1016-P1SCD-13-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35700-15	PE1016-P1SCD-13-B-0006IN-D	Total/NA	Sediment	Lloyd Kahn	
200-35700-16	PE1016-P1SCD-14-A-0004IN	Total/NA	Sediment	Lloyd Kahn	
200-35700-17	PE1016-P1SCD-14-B-0004IN	Total/NA	Sediment	Lloyd Kahn	
200-35700-18	PE1016-P1SCD-12-A-0814IN	Total/NA	Sediment	Lloyd Kahn	
MB 200-110277/29	Method Blank	Total/NA	Sediment	Lloyd Kahn	
MB 200-110277/5	Method Blank	Total/NA	Sediment	Lloyd Kahn	
LCS 200-110277/30	Lab Control Sample	Total/NA	Sediment	Lloyd Kahn	
LCS 200-110277/6	Lab Control Sample	Total/NA	Sediment	Lloyd Kahn	
200-35700-12 MS	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35700-12 MSD	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	Lloyd Kahn	

Analysis Batch: 110363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-13	PE1016-P1SCD-13-A-0002IN	Total/NA	Sediment	Lloyd Kahn	
MB 200-110363/5	Method Blank	Total/NA	Sediment	Lloyd Kahn	
LCS 200-110363/6	Lab Control Sample	Total/NA	Sediment	Lloyd Kahn	

Geotechnical

Analysis Batch: 110554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35700-1	PE1016-P1SCD-01-A-0007IN	Total/NA	Sediment	D422	
200-35700-2	PE1016-P1SCD-01-B-0006IN	Total/NA	Sediment	D422	
200-35700-3	PE1016-P1SCD-01-A-0718IN	Total/NA	Sediment	D422	
200-35700-4	PE1016-P1SCD-02-A-0004IN	Total/NA	Sediment	D422	
200-35700-5	PE1016-P1SCD-02-B-0004IN	Total/NA	Sediment	D422	
200-35700-6	PE1016-P1SCD-03-A-0006IN	Total/NA	Sediment	D422	
200-35700-7	PE1016-P1SCD-03-A-0612IN	Total/NA	Sediment	D422	
200-35700-8	PE1016-P1SCD-03-B-0006IN	Total/NA	Sediment	D422	
200-35700-9	PE1016-P1SCD-11-A-0004IN	Total/NA	Sediment	D422	
200-35700-10	PE1016-P1SCD-11-B-0006IN	Total/NA	Sediment	D422	
200-35700-11	PE1016-P1SCD-12-A-0008IN	Total/NA	Sediment	D422	
200-35700-12	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	D422	
200-35700-13	PE1016-P1SCD-13-A-0002IN	Total/NA	Sediment	D422	
200-35700-14	PE1016-P1SCD-13-B-0006IN	Total/NA	Sediment	D422	
200-35700-15	PE1016-P1SCD-13-B-0006IN-D	Total/NA	Sediment	D422	
200-35700-16	PE1016-P1SCD-14-A-0004IN	Total/NA	Sediment	D422	
200-35700-17	PE1016-P1SCD-14-B-0004IN	Total/NA	Sediment	D422	
200-35700-18	PE1016-P1SCD-12-A-0814IN	Total/NA	Sediment	D422	
200-35700-12 DU	PE1016-P1SCD-12-B-0006IN	Total/NA	Sediment	D422	

Client Sample ID: PE1016-P1SCD-01-A-0007IN
Lab Sample ID: 200-35700-1

Date Collected: 10/12/16 14:30
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 16:43	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/18/16 14:52	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-01-A-0007IN
Lab Sample ID: 200-35700-1

Date Collected: 10/12/16 14:30
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 50.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110192	10/14/16 13:12	RM1	TAL BUR
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		4	110192	10/14/16 14:44	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		4	110260	10/17/16 15:51	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-01-B-0006IN
Lab Sample ID: 200-35700-2

Date Collected: 10/12/16 14:35
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 17:03	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/23/16 17:44	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-01-B-0006IN
Lab Sample ID: 200-35700-2

Date Collected: 10/12/16 14:35
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 38.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110192	10/14/16 13:18	RM1	TAL BUR
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		2	110192	10/14/16 14:27	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		4	110260	10/17/16 15:52	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-01-A-0718IN
Lab Sample ID: 200-35700-3

Date Collected: 10/12/16 14:31
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 17:10	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/23/16 17:47	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-01-A-0718IN
Lab Sample ID: 200-35700-3

Date Collected: 10/12/16 14:31
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 68.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110192	10/14/16 13:24	RM1	TAL BUR
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		10	110192	10/14/16 14:50	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		4	110260	10/17/16 15:54	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-02-A-0004IN
Lab Sample ID: 200-35700-4

Date Collected: 10/12/16 14:00
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 17:17	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/23/16 17:49	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-02-A-0004IN
Lab Sample ID: 200-35700-4

Date Collected: 10/12/16 14:00
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 50.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110192	10/14/16 13:30	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 14:59	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-02-B-0004IN
Lab Sample ID: 200-35700-5

Date Collected: 10/12/16 14:10
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 17:24	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR

Client Sample ID: PE1016-P1SCD-02-B-0004IN
Lab Sample ID: 200-35700-5
Date Collected: 10/12/16 14:10
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D422		1	110554	10/23/16 17:51	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-02-B-0004IN
Lab Sample ID: 200-35700-5
Date Collected: 10/12/16 14:10
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 48.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110192	10/14/16 13:35	RM1	TAL BUR
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		2	110192	10/14/16 14:38	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		2	110260	10/17/16 15:56	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-03-A-0006IN
Lab Sample ID: 200-35700-6
Date Collected: 10/12/16 13:00
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 17:30	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/23/16 17:53	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-03-A-0006IN
Lab Sample ID: 200-35700-6
Date Collected: 10/12/16 13:00
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 37.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110192	10/14/16 13:41	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		2	110260	10/17/16 15:57	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-03-A-0612IN
Lab Sample ID: 200-35700-7
Date Collected: 10/12/16 13:01
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 17:37	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/23/16 17:55	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-03-A-0612IN
Lab Sample ID: 200-35700-7

Date Collected: 10/12/16 13:01
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 75.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110192	10/14/16 13:47	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 15:04	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-03-B-0006IN
Lab Sample ID: 200-35700-8

Date Collected: 10/12/16 13:10
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 18:24	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/23/16 17:58	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-03-B-0006IN
Lab Sample ID: 200-35700-8

Date Collected: 10/12/16 13:10
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 38.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110153	10/13/16 13:50	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110192	10/14/16 13:52	RM1	TAL BUR
Total/NA	Prep	7471B			110231	10/17/16 10:05	MDK	TAL BUR
Total/NA	Analysis	7471B		2	110260	10/17/16 15:59	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-11-A-0004IN
Lab Sample ID: 200-35700-9

Date Collected: 10/12/16 10:30
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 18:31	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/23/16 18:01	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-11-A-0004IN
Lab Sample ID: 200-35700-9

Date Collected: 10/12/16 10:30
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 51.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110491	10/24/16 14:26	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110547	10/25/16 15:34	RM1	TAL BUR
Total/NA	Prep	7471B			110530	10/25/16 11:41	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110575	10/26/16 10:24	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-11-B-0006IN
Lab Sample ID: 200-35700-10
Date Collected: 10/12/16 10:40
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 18:38	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/23/16 18:03	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-11-B-0006IN
Lab Sample ID: 200-35700-10
Date Collected: 10/12/16 10:40
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 43.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110491	10/24/16 14:26	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110547	10/25/16 15:39	RM1	TAL BUR
Total/NA	Prep	3050B			110491	10/24/16 14:26	MDK	TAL BUR
Total/NA	Analysis	6020A		2	110547	10/25/16 15:45	RM1	TAL BUR
Total/NA	Prep	7471B			110530	10/25/16 11:41	MDK	TAL BUR
Total/NA	Analysis	7471B		2	110575	10/26/16 11:09	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-12-A-0008IN
Lab Sample ID: 200-35700-11
Date Collected: 10/12/16 09:20
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 18:45	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/23/16 18:05	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-12-A-0008IN
Lab Sample ID: 200-35700-11
Date Collected: 10/12/16 09:20
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 40.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110769	10/31/16 11:39	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110848	11/01/16 12:15	RM1	TAL BUR
Total/NA	Prep	7471B			110770	10/31/16 11:40	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110792	10/31/16 14:11	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-12-B-0006IN
Lab Sample ID: 200-35700-12
Date Collected: 10/12/16 09:30
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 18:52	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR

Client Sample ID: PE1016-P1SCD-12-B-0006IN
Lab Sample ID: 200-35700-12
Date Collected: 10/12/16 09:30
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D422		1	110554	10/23/16 18:07	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-12-B-0006IN
Lab Sample ID: 200-35700-12
Date Collected: 10/12/16 09:30
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 45.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110769	10/31/16 11:39	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110848	11/01/16 12:20	RM1	TAL BUR
Total/NA	Prep	7471B			110770	10/31/16 11:40	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110792	10/31/16 14:13	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-13-A-0002IN
Lab Sample ID: 200-35700-13
Date Collected: 10/12/16 08:55
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110363	10/19/16 13:32	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/23/16 18:27	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-13-A-0002IN
Lab Sample ID: 200-35700-13
Date Collected: 10/12/16 08:55
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 71.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110769	10/31/16 11:39	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110848	11/01/16 12:49	RM1	TAL BUR
Total/NA	Prep	7471B			110770	10/31/16 11:40	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110792	10/31/16 14:18	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-13-B-0006IN
Lab Sample ID: 200-35700-14
Date Collected: 10/12/16 09:05
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 19:33	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/23/16 18:28	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-13-B-0006IN
Lab Sample ID: 200-35700-14
Date Collected: 10/12/16 09:05
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 32.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110769	10/31/16 11:39	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110848	11/01/16 12:55	RM1	TAL BUR
Total/NA	Prep	7471B			110770	10/31/16 11:40	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110792	10/31/16 14:19	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-13-B-0006IN-D
Lab Sample ID: 200-35700-15
Date Collected: 10/12/16 09:06
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 19:40	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/23/16 18:30	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-13-B-0006IN-D
Lab Sample ID: 200-35700-15
Date Collected: 10/12/16 09:06
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 31.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110769	10/31/16 11:39	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110848	11/01/16 13:18	RM1	TAL BUR
Total/NA	Prep	7471B			110770	10/31/16 11:40	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110792	10/31/16 14:21	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-14-A-0004IN
Lab Sample ID: 200-35700-16
Date Collected: 10/12/16 08:30
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 19:47	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/23/16 18:32	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-14-A-0004IN
Lab Sample ID: 200-35700-16
Date Collected: 10/12/16 08:30
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 40.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110769	10/31/16 11:39	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110848	11/01/16 13:23	RM1	TAL BUR
Total/NA	Prep	7471B			110770	10/31/16 11:40	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110792	10/31/16 14:23	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-14-B-0004IN
Lab Sample ID: 200-35700-17

Date Collected: 10/12/16 08:40
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 19:54	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/23/16 18:33	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-14-B-0004IN
Lab Sample ID: 200-35700-17

Date Collected: 10/12/16 08:40
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 46.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110769	10/31/16 11:39	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110848	11/01/16 13:29	RM1	TAL BUR
Total/NA	Prep	7471B			110770	10/31/16 11:40	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110792	10/31/16 14:27	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-12-A-0814IN
Lab Sample ID: 200-35700-18

Date Collected: 10/12/16 09:21
Matrix: Sediment
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110277	10/17/16 20:01	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110190	10/14/16 16:15	KSH	TAL BUR
Total/NA	Analysis	D422		1	110554	10/23/16 18:34	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-12-A-0814IN
Lab Sample ID: 200-35700-18

Date Collected: 10/12/16 09:21
Matrix: Sediment
Date Received: 10/13/16 12:40
Percent Solids: 80.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110769	10/31/16 11:39	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110848	11/01/16 13:35	RM1	TAL BUR
Total/NA	Prep	7471B			110770	10/31/16 11:40	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110792	10/31/16 14:29	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-BLK-3-101216
Lab Sample ID: 200-35700-19

Date Collected: 10/12/16 18:45
Matrix: Water
Date Received: 10/13/16 12:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			110239	10/17/16 12:26	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 16:57	RM1	TAL BUR
Total/NA	Prep	3010A			110239	10/17/16 12:26	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110361	10/19/16 12:04	RM1	TAL BUR

Lab Chronicle

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35700-1
SDG: 200-35700-1

Client Sample ID: PE1016-P1SCD-BLK-3-101216
Date Collected: 10/12/16 18:45
Date Received: 10/13/16 12:40

Lab Sample ID: 200-35700-19
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			110242	10/17/16 12:52	MDK	TAL BUR
Total/NA	Analysis	7470A		1	110261	10/17/16 16:34	MDK	TAL BUR

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Certification Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35700-1
SDG: 200-35700-1

Laboratory: TestAmerica Burlington

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Connecticut	State Program	1	PH-0751	09-30-17
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	NA	02-02-17
Florida	NELAP	4	E87467	06-30-17
L-A-B	DoD ELAP		L2336	02-26-17
Maine	State Program	1	VT00008	04-17-17
Minnesota	NELAP	5	050-999-436	12-31-16 *
New Hampshire	NELAP	1	2006	12-18-16
New Jersey	NELAP	2	VT972	06-30-17
New York	NELAP	2	10391	04-01-17
Pennsylvania	NELAP	3	68-00489	04-30-17
Rhode Island	State Program	1	LAO00298	12-30-16
US Fish & Wildlife	Federal		LE-058448-0	10-31-17
USDA	Federal		P330-11-00093	10-28-16 *
Vermont	State Program	1	VT-4000	12-31-16
Virginia	NELAP	3	460209	12-14-16

* Certification renewal pending - certification considered valid.

Method Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35700-1
SDG: 200-35700-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL BUR
7470A	Mercury (CVAA)	SW846	TAL BUR
7471B	Mercury (CVAA)	SW846	TAL BUR
Lloyd Kahn	Organic Carbon, Total (TOC)	EPA	TAL BUR
Moisture	Percent Moisture	EPA	TAL BUR
D422	Grain Size	ASTM	TAL BUR

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Sample Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35700-1
SDG: 200-35700-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
200-35700-1	PE1016-P1SCD-01-A-0007IN	Sediment	10/12/16 14:30	10/13/16 12:40
200-35700-2	PE1016-P1SCD-01-B-0006IN	Sediment	10/12/16 14:35	10/13/16 12:40
200-35700-3	PE1016-P1SCD-01-A-0718IN	Sediment	10/12/16 14:31	10/13/16 12:40
200-35700-4	PE1016-P1SCD-02-A-0004IN	Sediment	10/12/16 14:00	10/13/16 12:40
200-35700-5	PE1016-P1SCD-02-B-0004IN	Sediment	10/12/16 14:10	10/13/16 12:40
200-35700-6	PE1016-P1SCD-03-A-0006IN	Sediment	10/12/16 13:00	10/13/16 12:40
200-35700-7	PE1016-P1SCD-03-A-0612IN	Sediment	10/12/16 13:01	10/13/16 12:40
200-35700-8	PE1016-P1SCD-03-B-0006IN	Sediment	10/12/16 13:10	10/13/16 12:40
200-35700-9	PE1016-P1SCD-11-A-0004IN	Sediment	10/12/16 10:30	10/13/16 12:40
200-35700-10	PE1016-P1SCD-11-B-0006IN	Sediment	10/12/16 10:40	10/13/16 12:40
200-35700-11	PE1016-P1SCD-12-A-0008IN	Sediment	10/12/16 09:20	10/13/16 12:40
200-35700-12	PE1016-P1SCD-12-B-0006IN	Sediment	10/12/16 09:30	10/13/16 12:40
200-35700-13	PE1016-P1SCD-13-A-0002IN	Sediment	10/12/16 08:55	10/13/16 12:40
200-35700-14	PE1016-P1SCD-13-B-0006IN	Sediment	10/12/16 09:05	10/13/16 12:40
200-35700-15	PE1016-P1SCD-13-B-0006IN-D	Sediment	10/12/16 09:06	10/13/16 12:40
200-35700-16	PE1016-P1SCD-14-A-0004IN	Sediment	10/12/16 08:30	10/13/16 12:40
200-35700-17	PE1016-P1SCD-14-B-0004IN	Sediment	10/12/16 08:40	10/13/16 12:40
200-35700-18	PE1016-P1SCD-12-A-0814IN	Sediment	10/12/16 09:21	10/13/16 12:40
200-35700-19	PE1016-P1SCD-BLK-3-101216	Water	10/12/16 18:45	10/13/16 12:40

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEHCLACIDs_00226	20 mL	Hydrogen Chloride	100000000 ug/L
					MEHNO3s_00187	5 mL	Nitric acid	25000000 ug/L
					MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
							Ba-137 (Tune)	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
							Be-9 (Tune)	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
							Calcium hardness as calcium carbonate	1248500 ug/L
							Hardness as calcium carbonate	2072100 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
							Co-59 (Tune)	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Hardness as calcium carbonate	2072100 ug/L
							Magnesium hardness as calcium carbonate	823600 ug/L
							Mg	200000 ug/L
							Mg-24 (Tune)	200000 ug/L
							Mg-25 (Tune)	200000 ug/L
							Mg-26 (Tune)	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Cation Exchange Capacity	500000 ug/L
							Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
							Pb-206 (Tune)	1000 ug/L
							Pb-207 (Tune)	1000 ug/L
							Pb-208 (Tune)	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVSRs_00006	1 mL	Sr	5000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
.MEHCLACIDs_00226	08/18/17	Fisher 4116020, Lot 4116020			(Purchased Reagent)		Hydrogen Chloride	1 mL/mL
.MEHNO3s_00187	08/18/17	Macron 0000138698, Lot 0000138698			(Purchased Reagent)		Nitric acid	1 mL/mL
.MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
.MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
.MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
							Ba-137 (Tune)	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
							Be-9 (Tune)	1000 ppm
.MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
							Calcium hardness as calcium carbonate	24970 ug/mL
							Hardness as calcium carbonate	24970 ug/mL
.MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
.MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
							Co-59 (Tune)	1000 ug/mL
.MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
.MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
.MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
.MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
.MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Hardness as calcium carbonate	41180 ppm
							Magnesium hardness as calcium carbonate	41180 ppm
							Mg	10000 ppm
							Mg-24 (Tune)	10000 ppm
							Mg-25 (Tune)	10000 ppm
							Mg-26 (Tune)	10000 ppm
.MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
.MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
.MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Cation Exchange Capacity	10000 ug/mL
							Na	10000 ug/mL
.MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
.MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
							Pb-206 (Tune)	1000 ug/mL
							Pb-207 (Tune)	1000 ug/mL
							Pb-208 (Tune)	1000 ug/mL
.MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
.MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
.MEIVSRs_00006	04/14/17	IV J2-SR02053, Lot J2-SR02053			(Purchased Reagent)		Sr	1000 ppm
.MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
.MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
.MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
							Th-232 (Tune)	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
					MEMS2%0.5%Riw_00230	476.5 mL	Hydrogen Chloride	4765000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Nitric acid	19060000 ppb
.MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
.MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
.MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
.MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
							Th-232 (Tune)	1000 ug/mL
.MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEMS2%0.5%Riw_00230	07/19/17	08/10/16	DI WATER, Lot na	20 L	MEHCLACIDs_00225	100 mL	Hydrogen Chloride	0.5 %
					MEHNO3s_00186	400 mL	Nitric acid	2 %
..MEHCLACIDs_00225	08/05/17	Fisher 4116020, Lot 4116020			(Purchased Reagent)		Hydrogen Chloride	1 mL/mL
..MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
ME6020ICVw_00442	12/23/16	10/14/16	DI WATER, Lot na	100 mL	MESCPICVi_00007	1 mL	Copper	625 ug/L
							Selenium	100 ug/L
							Zinc	625 ug/L
.MESCPICVi_00007	12/23/16	08/03/16	DI WATER, Lot na	250 mL	MESCPICV1_00003	25 mL	Copper	62500 ppb
							Selenium	10000 ppb
							Zinc	62500 ppb
..MESCPICV1_00003	12/31/16	SCP Science/S151210015, Lot S151210015			(Purchased Reagent)		Copper	625000 ug/L
							Selenium	100000 ug/L
							Zinc	625000 ug/L
ME6020ICVw_00443	12/23/16	10/18/16	DI WATER, Lot na	100 mL	MESCPICVi_00007	1 mL	Copper	625 ug/L
							Selenium	100 ug/L
							Zinc	625 ug/L
.MESCPICVi_00007	12/23/16	08/03/16	DI WATER, Lot na	250 mL	MESCPICV1_00003	25 mL	Copper	62500 ppb
							Selenium	10000 ppb
							Zinc	62500 ppb
..MESCPICV1_00003	12/31/16	SCP Science/S151210015, Lot S151210015			(Purchased Reagent)		Copper	625000 ug/L
							Selenium	100000 ug/L
							Zinc	625000 ug/L
ME6020ICVw_00444	12/23/16	10/19/16	DI WATER, Lot na	100 mL	MESCPICVi_00007	1 mL	Selenium	100 ug/L
.MESCPICVi_00007	12/23/16	08/03/16	DI WATER, Lot na	250 mL	MESCPICV1_00003	25 mL	Selenium	10000 ppb
..MESCPICV1_00003	12/31/16	SCP Science/S151210015, Lot S151210015			(Purchased Reagent)		Selenium	100000 ug/L
ME6020ICVw_00445	12/23/16	10/25/16	DI WATER, Lot na	100 mL	MESCPICVi_00007	1 mL	Copper	625 ug/L
							Selenium	100 ug/L
							Zinc	625 ug/L
.MESCPICVi_00007	12/23/16	08/03/16	DI WATER, Lot na	250 mL	MESCPICV1_00003	25 mL	Copper	62500 ppb
							Selenium	10000 ppb
							Zinc	62500 ppb
..MESCPICV1_00003	12/31/16	SCP Science/S151210015, Lot S151210015			(Purchased Reagent)		Copper	625000 ug/L
							Selenium	100000 ug/L
							Zinc	625000 ug/L
ME6020ICVw_00447	12/23/16	11/01/16	DI WATER, Lot na	100 mL	MESCPICVi_00007	1 mL	Copper	625 ug/L
							Selenium	100 ug/L
							Zinc	625 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MESCPICVi_00007	12/23/16	08/03/16	DI WATER, Lot na	250 mL	MESCPICV1_00003	25 mL	Copper	62500 ppb
							Selenium	10000 ppb
							Zinc	62500 ppb
..MESCPICV1_00003	12/31/16	SCP Science/S151210015, Lot S151210015			(Purchased Reagent)		Copper	625000 ug/L
							Selenium	100000 ug/L
							Zinc	625000 ug/L
ME6020STD1_00436	10/15/16	10/14/16	DI WATER, Lot na	250 mL	ME6020CALi_A_00022	0.25 mL	Ag	1 ug/L
							Al	50 ug/L
							Ba	10 ug/L
							Be	1 ug/L
							Ca	500 ug/L
							Cd	1 ug/L
							Co	1 ug/L
							Cr	4 ug/L
							Copper	5 ug/L
							Fe	200 ug/L
							K	500 ug/L
							Mg	200 ug/L
							Mn	2 ug/L
							Mo	10 ug/L
							Na	500 ug/L
							Ni	2 ug/L
							Pb	1 ug/L
							Sb	2 ug/L
							Selenium	4 ug/L
							Tl	2 ug/L
							V	5 ug/L
							Zinc	20 ug/L
					ME6020CALi_B_00019	0.25 mL	W	2 ug/L
							As	2 ug/L
							B	40 ug/L
							Th	2 ug/L
							U	1 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
ME6020STD1_00437	10/19/16	10/18/16	DI WATER, Lot na	250 mL	ME6020CALi_A_00022	0.25 mL	Ag	1 ug/L
							Al	50 ug/L
							Ba	10 ug/L
							Be	1 ug/L
							Ca	500 ug/L
							Cd	1 ug/L
							Co	1 ug/L
							Cr	4 ug/L
							Copper	5 ug/L
							Fe	200 ug/L
							K	500 ug/L
							Mg	200 ug/L
							Mn	2 ug/L
							Mo	10 ug/L
							Na	500 ug/L
							Ni	2 ug/L
							Pb	1 ug/L
							Sb	2 ug/L
							Selenium	4 ug/L
							Tl	2 ug/L
							V	5 ug/L
							Zinc	20 ug/L
					ME6020CALi_B_00019	0.25 mL	W	2 ug/L
							As	2 ug/L
							B	40 ug/L
							Th	2 ug/L
							U	1 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17		IV/J2-AG03048, Lot J2-AG03048		(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17		IV J2-AL05009, Lot J2-AL05009		(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17		IV J2-BA02093, Lot J2-BA02093		(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17		IV J2-BE02038, Lot J2-BE02038		(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17		Inorg Vent./H2-CA04105, Lot H2-CA04105		(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17		IV J2-CD02063, Lot J2-CD02063		(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17		IV J2-CO02068, Lot J2-CO02068		(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17		IV/J2-CR03111, Lot J2-CR03111		(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17		IV/J2-CU03026, Lot J2-CU03026		(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17		IV./K2-FE04057, Lot K2-FE04057		(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17		IV J2-K03054, Lot J2-K03054		(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17		IV J2-MG03145, Lot J2-MG03145		(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17		IV G2-MN02110, Lot G2-MN02110		(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17		Inorganic Ventures H2-MO02073, Lot H2-MO02073		(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17		Inorganic Ventures J2-NA03138, Lot J2-NA03138		(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17		Inorganic Ventures J2-NI02095, Lot J2-NI02095		(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17		IV/J2-PB03066, Lot J2-PB03066		(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17		IV/J2-SB03037, Lot J2-SB03037		(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17		IV J2-SE02059, Lot J2-SE02059		(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17		Inorganic Ventures J2-TL02025, Lot J2-TL02025		(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17		Inorganic Ventures J2-V02106, Lot J2-V02106		(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17		IV J2-ZN02107, Lot J2-ZN02107		(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17		High Purity 1426812, Lot 1426812		(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17		IV J2-AS02122, Lot J2-AS02122		(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17		Inorganic Ventures H2-B02125, Lot H2-B02125		(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17		IV/J2-TH01112, Lot J2-TH01112		(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17		Inorganic Ventures J2-U01107R, Lot J2-U01107R		(Purchased Reagent)		U	1000 ug/mL
ME6020STD1_00438	10/20/16	10/19/16	DI WATER, Lot na	250 mL	ME6020CALi_A_00022	0.25 mL	Ag	1 ug/L
							Al	50 ug/L
							Ba	10 ug/L
							Be	1 ug/L
							Ca	500 ug/L
							Cd	1 ug/L
							Co	1 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cr	4 ug/L
							Copper	5 ug/L
							Fe	200 ug/L
							K	500 ug/L
							Mg	200 ug/L
							Mn	2 ug/L
							Mo	10 ug/L
							Na	500 ug/L
							Ni	2 ug/L
							Pb	1 ug/L
							Sb	2 ug/L
							Selenium	4 ug/L
							Tl	2 ug/L
							V	5 ug/L
							Zinc	20 ug/L
					ME6020CALi_B_00019	0.25 mL	W	2 ug/L
							As	2 ug/L
							B	40 ug/L
							Th	2 ug/L
							U	1 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD1_00439	10/26/16	10/25/16	DI WATER, Lot na	250 mL	ME6020CALi_A_00022	0.25 mL	Ag	1 ug/L
							Al	50 ug/L
							Ba	10 ug/L
							Be	1 ug/L
							Ca	500 ug/L
							Cd	1 ug/L
							Co	1 ug/L
							Cr	4 ug/L
							Copper	5 ug/L
							Fe	200 ug/L
							K	500 ug/L
							Mg	200 ug/L
							Mn	2 ug/L
							Mo	10 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Na	500 ug/L
							Ni	2 ug/L
							Pb	1 ug/L
							Sb	2 ug/L
							Selenium	4 ug/L
							Tl	2 ug/L
							V	5 ug/L
							Zinc	20 ug/L
					ME6020CALi_B_00019	0.25 mL	W	2 ug/L
							As	2 ug/L
							B	40 ug/L
							Th	2 ug/L
							U	1 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD1_00441	11/02/16	11/01/16	DI WATER, Lot na	250 mL	ME6020CALi_A_00022	0.25 mL	Ag	1 ug/L
							Al	50 ug/L
							Ba	10 ug/L
							Be	1 ug/L
							Ca	500 ug/L
							Cd	1 ug/L
							Co	1 ug/L
							Cr	4 ug/L
							Copper	5 ug/L
							Fe	200 ug/L
							K	500 ug/L
							Mg	200 ug/L
							Mn	2 ug/L
							Mo	10 ug/L
							Na	500 ug/L
							Ni	2 ug/L
							Pb	1 ug/L
							Sb	2 ug/L
							Selenium	4 ug/L
							Tl	2 ug/L
							V	5 ug/L

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Zinc	20 ug/L
					ME6020CALi_B_00019	0.25 mL	W	2 ug/L
							As	2 ug/L
							B	40 ug/L
							Th	2 ug/L
							U	1 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17		IV/J2-AG03048, Lot J2-AG03048		(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17		IV J2-AL05009, Lot J2-AL05009		(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17		IV J2-BA02093, Lot J2-BA02093		(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17		IV J2-BE02038, Lot J2-BE02038		(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17		Inorg Vent./H2-CA04105, Lot H2-CA04105		(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17		IV J2-CD02063, Lot J2-CD02063		(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17		IV J2-CO02068, Lot J2-CO02068		(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17		IV/J2-CR03111, Lot J2-CR03111		(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17		IV/J2-CU03026, Lot J2-CU03026		(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17		IV./K2-FE04057, Lot K2-FE04057		(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17		IV J2-K03054, Lot J2-K03054		(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17		IV J2-MG03145, Lot J2-MG03145		(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17		IV G2-MN02110, Lot G2-MN02110		(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17		Inorganic Ventures H2-MO02073, Lot H2-MO02073		(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17		Inorganic Ventures J2-NA03138, Lot J2-NA03138		(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17		Inorganic Ventures J2-NI02095, Lot J2-NI02095		(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17		IV/J2-PB03066, Lot J2-PB03066		(Purchased Reagent)		Pb	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD2_00441	10/15/16	10/14/16	DI WATER, Lot na	100 mL	ME6020CALi_A_00022	0.5 mL	Ag	5 ug/L
							Al	250 ug/L
							Ba	50 ug/L
							Be	5 ug/L
							Ca	2500 ug/L
							Cd	5 ug/L
							Co	5 ug/L
							Cr	20 ug/L
							Copper	25 ug/L
							Fe	1000 ug/L
							K	2500 ug/L
							Mg	1000 ug/L
							Mn	10 ug/L
							Mo	50 ug/L
							Na	2500 ug/L
							Ni	10 ug/L
							Pb	5 ug/L
							Sb	10 ug/L
							Selenium	20 ug/L
							Tl	10 ug/L
							V	25 ug/L
							Zinc	100 ug/L
					ME6020CALi_B_00019	0.5 mL	W	10 ug/L
							As	10 ug/L
							B	200 ug/L
							Th	10 ug/L
							U	5 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17		IV/J2-AG03048, Lot J2-AG03048		(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17		IV J2-AL05009, Lot J2-AL05009		(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17		IV J2-BA02093, Lot J2-BA02093		(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17		IV J2-BE02038, Lot J2-BE02038		(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17		Inorg Vent./H2-CA04105, Lot H2-CA04105		(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17		IV J2-CD02063, Lot J2-CD02063		(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17		IV J2-CO02068, Lot J2-CO02068		(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17		IV/J2-CR03111, Lot J2-CR03111		(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17		IV/J2-CU03026, Lot J2-CU03026		(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17		IV./K2-FE04057, Lot K2-FE04057		(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17		IV J2-K03054, Lot J2-K03054		(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17		IV J2-MG03145, Lot J2-MG03145		(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17		IV G2-MN02110, Lot G2-MN02110		(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17		Inorganic Ventures H2-MO02073, Lot H2-MO02073		(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17		Inorganic Ventures J2-NA03138, Lot J2-NA03138		(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17		Inorganic Ventures J2-NI02095, Lot J2-NI02095		(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17		IV/J2-PB03066, Lot J2-PB03066		(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17		IV/J2-SB03037, Lot J2-SB03037		(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17		IV J2-SE02059, Lot J2-SE02059		(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17		Inorganic Ventures J2-TL02025, Lot J2-TL02025		(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17		Inorganic Ventures J2-V02106, Lot J2-V02106		(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17		IV J2-ZN02107, Lot J2-ZN02107		(Purchased Reagent)		Zinc	1000 ppm

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD2_00442	10/19/16	10/18/16	DI WATER, Lot na	100 mL	ME6020CALi_A_00022	0.5 mL	Ag	5 ug/L
							Al	250 ug/L
							Ba	50 ug/L
							Be	5 ug/L
							Ca	2500 ug/L
							Cd	5 ug/L
							Co	5 ug/L
							Cr	20 ug/L
							Copper	25 ug/L
							Fe	1000 ug/L
							K	2500 ug/L
							Mg	1000 ug/L
							Mn	10 ug/L
							Mo	50 ug/L
							Na	2500 ug/L
							Ni	10 ug/L
							Pb	5 ug/L
							Sb	10 ug/L
							Selenium	20 ug/L
							Tl	10 ug/L
							V	25 ug/L
							Zinc	100 ug/L
					ME6020CALi_B_00019	0.5 mL	W	10 ug/L
							As	10 ug/L
							B	200 ug/L
							Th	10 ug/L
							U	5 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD2_00443	10/20/16	10/19/16	DI WATER, Lot na	100 mL	ME6020CALi_A_00022	0.5 mL	Ag	5 ug/L
							Al	250 ug/L
							Ba	50 ug/L
							Be	5 ug/L
							Ca	2500 ug/L
							Cd	5 ug/L
							Co	5 ug/L
							Cr	20 ug/L
							Copper	25 ug/L
							Fe	1000 ug/L
							K	2500 ug/L
							Mg	1000 ug/L
							Mn	10 ug/L
							Mo	50 ug/L
							Na	2500 ug/L
							Ni	10 ug/L
							Pb	5 ug/L
							Sb	10 ug/L
							Selenium	20 ug/L
							Tl	10 ug/L
							V	25 ug/L
							Zinc	100 ug/L
					ME6020CALi_B_00019	0.5 mL	W	10 ug/L
							As	10 ug/L
							B	200 ug/L
							Th	10 ug/L
							U	5 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD2_00444	10/26/16	10/25/16	DI WATER, Lot na	100 mL	ME6020CALi_A_00022	0.5 mL	Ag	5 ug/L
							Al	250 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Ba	50 ug/L
							Be	5 ug/L
							Ca	2500 ug/L
							Cd	5 ug/L
							Co	5 ug/L
							Cr	20 ug/L
							Copper	25 ug/L
							Fe	1000 ug/L
							K	2500 ug/L
							Mg	1000 ug/L
							Mn	10 ug/L
							Mo	50 ug/L
							Na	2500 ug/L
							Ni	10 ug/L
							Pb	5 ug/L
							Sb	10 ug/L
							Selenium	20 ug/L
							Tl	10 ug/L
							V	25 ug/L
							Zinc	100 ug/L
					ME6020CALi_B_00019	0.5 mL	W	10 ug/L
							As	10 ug/L
							B	200 ug/L
							Th	10 ug/L
							U	5 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD2_00446	11/02/16	11/01/16	DI WATER, Lot na	100 mL	ME6020CALi_A_00022	0.5 mL	Ag	5 ug/L
							Al	250 ug/L
							Ba	50 ug/L
							Be	5 ug/L
							Ca	2500 ug/L
							Cd	5 ug/L
							Co	5 ug/L
							Cr	20 ug/L
							Copper	25 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Fe	1000 ug/L
							K	2500 ug/L
							Mg	1000 ug/L
							Mn	10 ug/L
							Mo	50 ug/L
							Na	2500 ug/L
							Ni	10 ug/L
							Pb	5 ug/L
							Sb	10 ug/L
							Selenium	20 ug/L
							Tl	10 ug/L
							V	25 ug/L
							Zinc	100 ug/L
					ME6020CALi_B_00019	0.5 mL	W	10 ug/L
							As	10 ug/L
							B	200 ug/L
							Th	10 ug/L
							U	5 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD3_00442	10/15/16	10/14/16	DI WATER, Lot na	30 mL	6020CALi_UWTh_00014	0.3 mL	W	20 ug/L
							Th	20 ug/L
							U	10 ug/L
					MEIVCALi_00039	0.6 mL	Ag	100 ug/L
							As	200 ug/L
							B	250 ug/L
							Ba	1250 ug/L
							Be	625 ug/L
							Cd	200 ug/L
							Co	500 ug/L
							Copper	1250 ug/L
							Cr	400 ug/L
							Mn	1250 ug/L
							Ni	1250 ug/L
							Pb	1250 ug/L
							Selenium	200 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Tl	200 ug/L
							V	1250 ug/L
							Zinc	1250 ug/L
							Ca	30000 ug/L
							K	10000 ug/L
							Mg	30000 ug/L
							Na	10000 ug/L
							Mo	1250 ug/L
							Sb	250 ug/L
							Al	30000 ug/L
							Fe	30000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD3_00443	10/19/16	10/18/16	DI WATER, Lot na	30 mL	6020CALi_UWTh_00014	0.3 mL	W	20 ug/L
							Th	20 ug/L
							U	10 ug/L
					MEIVCALi_00039	0.6 mL	Ag	100 ug/L
							As	200 ug/L
							B	250 ug/L
							Ba	1250 ug/L
							Be	625 ug/L
							Cd	200 ug/L
							Co	500 ug/L
							Copper	1250 ug/L
							Cr	400 ug/L
							Mn	1250 ug/L
							Ni	1250 ug/L
							Pb	1250 ug/L
							Selenium	200 ug/L
							Tl	200 ug/L
							V	1250 ug/L
							Zinc	1250 ug/L
							Ca	30000 ug/L
							K	10000 ug/L
							Mg	30000 ug/L
							Na	10000 ug/L
							Mo	1250 ug/L
							Sb	250 ug/L
							Al	30000 ug/L
							Fe	30000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD3_00444	10/20/16	10/19/16	DI WATER, Lot na	30 mL	6020CALi_UWTh_00014	0.3 mL	W	20 ug/L
							Th	20 ug/L
							U	10 ug/L
					MEIVCALi_00039	0.6 mL	Ag	100 ug/L
							As	200 ug/L
							B	250 ug/L
							Ba	1250 ug/L
							Be	625 ug/L
							Cd	200 ug/L
							Co	500 ug/L
							Copper	1250 ug/L
							Cr	400 ug/L
							Mn	1250 ug/L
							Ni	1250 ug/L
							Pb	1250 ug/L
							Selenium	200 ug/L
							Tl	200 ug/L
							V	1250 ug/L
							Zinc	1250 ug/L
							Ca	30000 ug/L
							K	10000 ug/L
							Mg	30000 ug/L
							Na	10000 ug/L
							Mo	1250 ug/L
							Sb	250 ug/L
							Al	30000 ug/L
							Fe	30000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD3_00445	10/26/16	10/25/16	DI WATER, Lot na	30 mL	6020CALi_UWTh_00014	0.3 mL	W	20 ug/L
							Th	20 ug/L
							U	10 ug/L
					MEIVCALi_00039	0.6 mL	Ag	100 ug/L
							As	200 ug/L
							B	250 ug/L
							Ba	1250 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Be	625 ug/L
							Cd	200 ug/L
							Co	500 ug/L
							Copper	1250 ug/L
							Cr	400 ug/L
							Mn	1250 ug/L
							Ni	1250 ug/L
							Pb	1250 ug/L
							Selenium	200 ug/L
							Tl	200 ug/L
							V	1250 ug/L
							Zinc	1250 ug/L
							Ca	30000 ug/L
							K	10000 ug/L
							Mg	30000 ug/L
							Na	10000 ug/L
							Mo	1250 ug/L
							Sb	250 ug/L
							Al	30000 ug/L
							Fe	30000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD3_00448	11/02/16	11/01/16	DI WATER, Lot na	30 mL	6020CALi_UWTh_00014	0.3 mL	W	20 ug/L
							Th	20 ug/L
							U	10 ug/L
					MEIVCALi_00039	0.6 mL	Ag	100 ug/L
							As	200 ug/L
							B	250 ug/L
							Ba	1250 ug/L
							Be	625 ug/L
							Cd	200 ug/L
							Co	500 ug/L
							Copper	1250 ug/L
							Cr	400 ug/L
							Mn	1250 ug/L
							Ni	1250 ug/L
							Pb	1250 ug/L
							Selenium	200 ug/L
							Tl	200 ug/L
							V	1250 ug/L
							Zinc	1250 ug/L
							Ca	30000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							K	10000 ug/L
							Mg	30000 ug/L
							Na	10000 ug/L
							Mo	1250 ug/L
							Sb	250 ug/L
							Al	30000 ug/L
							Fe	30000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD4_00181	10/15/16	10/14/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.3 mL	W	60 ug/L
							Th	60 ug/L
							U	30 ug/L
					MEIVCALi_00039	0.6 mL	Ag	300 ug/L
							As	600 ug/L
							B	750 ug/L
							Ba	3750 ug/L
							Be	1875 ug/L
							Cd	600 ug/L
							Co	1500 ug/L
							Copper	3750 ug/L
							Cr	1200 ug/L
							Mn	3750 ug/L
							Ni	3750 ug/L
							Pb	3750 ug/L
							Selenium	600 ug/L
							Tl	600 ug/L
							V	3750 ug/L
							Zinc	3750 ug/L
							Ca	90000 ug/L
							K	30000 ug/L
							Mg	90000 ug/L
							Na	30000 ug/L
							Mo	3750 ug/L
							Sb	750 ug/L
							Al	90000 ug/L
							Fe	90000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD4_00183	10/19/16	10/18/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.3 mL	W	60 ug/L
							Th	60 ug/L
							U	30 ug/L
					MEIVCALi_00039	0.6 mL	Ag	300 ug/L
							As	600 ug/L
							B	750 ug/L
							Ba	3750 ug/L
							Be	1875 ug/L
							Cd	600 ug/L
							Co	1500 ug/L
							Copper	3750 ug/L
							Cr	1200 ug/L
							Mn	3750 ug/L
							Ni	3750 ug/L
							Pb	3750 ug/L
							Selenium	600 ug/L
							Tl	600 ug/L
							V	3750 ug/L
							Zinc	3750 ug/L
							Ca	90000 ug/L
							K	30000 ug/L
							Mg	90000 ug/L
							Na	30000 ug/L
							Mo	3750 ug/L
							Sb	750 ug/L
							Al	90000 ug/L
							Fe	90000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD4_00184	10/20/16	10/19/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.3 mL	W	60 ug/L
							Th	60 ug/L
							U	30 ug/L
					MEIVCALi_00039	0.6 mL	Ag	300 ug/L
							As	600 ug/L
							B	750 ug/L
							Ba	3750 ug/L
							Be	1875 ug/L
							Cd	600 ug/L
							Co	1500 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Copper	3750 ug/L
							Cr	1200 ug/L
							Mn	3750 ug/L
							Ni	3750 ug/L
							Pb	3750 ug/L
							Selenium	600 ug/L
							Tl	600 ug/L
							V	3750 ug/L
							Zinc	3750 ug/L
							Ca	90000 ug/L
							K	30000 ug/L
							Mg	90000 ug/L
							Na	30000 ug/L
							Mo	3750 ug/L
							Sb	750 ug/L
							Al	90000 ug/L
							Fe	90000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD4_00186	10/26/16	10/25/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.3 mL	W	60 ug/L
							Th	60 ug/L
							U	30 ug/L
					MEIVCALi_00039	0.6 mL	Ag	300 ug/L
							As	600 ug/L
							B	750 ug/L
							Ba	3750 ug/L
							Be	1875 ug/L
							Cd	600 ug/L
							Co	1500 ug/L
							Copper	3750 ug/L
							Cr	1200 ug/L
							Mn	3750 ug/L
							Ni	3750 ug/L
							Pb	3750 ug/L
							Selenium	600 ug/L
							Tl	600 ug/L
							V	3750 ug/L
							Zinc	3750 ug/L
							Ca	90000 ug/L
							K	30000 ug/L
							Mg	90000 ug/L
							Na	30000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Mo	3750 ug/L
							Sb	750 ug/L
							Al	90000 ug/L
							Fe	90000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD4_00189	11/02/16	11/01/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.3 mL	W	60 ug/L
							Th	60 ug/L
							U	30 ug/L
					MEIVCALi_00039	0.6 mL	Ag	300 ug/L
							As	600 ug/L
							B	750 ug/L
							Ba	3750 ug/L
							Be	1875 ug/L
							Cd	600 ug/L
							Co	1500 ug/L
							Copper	3750 ug/L
							Cr	1200 ug/L
							Mn	3750 ug/L
							Ni	3750 ug/L
							Pb	3750 ug/L
							Selenium	600 ug/L
							Tl	600 ug/L
							V	3750 ug/L
							Zinc	3750 ug/L
							Ca	90000 ug/L
							K	30000 ug/L
							Mg	90000 ug/L
							Na	30000 ug/L
							Mo	3750 ug/L
							Sb	750 ug/L
							Al	90000 ug/L
							Fe	90000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD5_00174	10/15/16	10/14/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.6 mL	W	120 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Th	120 ug/L
							U	60 ug/L
					MEIVCALi_00039	1 mL	Ag	500 ug/L
							As	1000 ug/L
							B	1250 ug/L
							Ba	6250 ug/L
							Be	3125 ug/L
							Cd	1000 ug/L
							Co	2500 ug/L
							Copper	6250 ug/L
							Cr	2000 ug/L
							Mn	6250 ug/L
							Ni	6250 ug/L
							Pb	6250 ug/L
							Selenium	1000 ug/L
							Tl	1000 ug/L
							V	6250 ug/L
							Zinc	6250 ug/L
							Ca	150000 ug/L
							K	50000 ug/L
							Mg	150000 ug/L
							Na	50000 ug/L
							Mo	6250 ug/L
							Sb	1250 ug/L
							Al	150000 ug/L
							Fe	150000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD5_00175	10/19/16	10/18/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.6 mL	W	120 ug/L
							Th	120 ug/L
							U	60 ug/L
					MEIVCALi_00039	1 mL	Ag	500 ug/L
							As	1000 ug/L
							B	1250 ug/L
							Ba	6250 ug/L
							Be	3125 ug/L
							Cd	1000 ug/L
							Co	2500 ug/L
							Cr	2000 ug/L
							Mn	6250 ug/L
							Ni	6250 ug/L
							Pb	6250 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Tl	1000 ug/L
							V	6250 ug/L
							Ca	150000 ug/L
							K	50000 ug/L
							Mg	150000 ug/L
							Na	50000 ug/L
							Mo	6250 ug/L
							Sb	1250 ug/L
							Al	150000 ug/L
							Fe	150000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Tl	10000 ppb
							V	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Pb	625 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD5_00175	10/19/16	10/18/16	DI WATER, Lot na	10 mL	MEIVCALi_00039	1 mL	Copper	6250 ug/L
							Selenium	1000 ug/L
							Zinc	6250 ug/L
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Copper	62500 ppb
							Selenium	10000 ppb
							Zinc	62500 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Copper	625 ug/mL
							Selenium	100 ug/mL
							Zinc	625 ug/mL
ME6020STD5_00176	10/20/16	10/19/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.6 mL	W	120 ug/L
							Th	120 ug/L
							U	60 ug/L
					MEIVCALi_00039	1 mL	Ag	500 ug/L
							As	1000 ug/L
							B	1250 ug/L
							Ba	6250 ug/L
							Be	3125 ug/L
							Cd	1000 ug/L
							Co	2500 ug/L
							Copper	6250 ug/L
							Cr	2000 ug/L
							Mn	6250 ug/L
							Ni	6250 ug/L
							Pb	6250 ug/L
							Selenium	1000 ug/L
							Tl	1000 ug/L
							V	6250 ug/L
							Zinc	6250 ug/L
							Ca	150000 ug/L
							K	50000 ug/L
							Mg	150000 ug/L
							Na	50000 ug/L
							Mo	6250 ug/L
							Sb	1250 ug/L
							Al	150000 ug/L
							Fe	150000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD5_00177	10/26/16	10/25/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.6 mL	W	120 ug/L
							Th	120 ug/L
							U	60 ug/L
					MEIVCALi_00039	1 mL	Ag	500 ug/L
							As	1000 ug/L
							B	1250 ug/L
							Ba	6250 ug/L
							Be	3125 ug/L
							Cd	1000 ug/L
							Co	2500 ug/L
							Copper	6250 ug/L
							Cr	2000 ug/L
							Mn	6250 ug/L
							Ni	6250 ug/L
							Pb	6250 ug/L
							Selenium	1000 ug/L
							Tl	1000 ug/L
							V	6250 ug/L
							Zinc	6250 ug/L
							Ca	150000 ug/L
							K	50000 ug/L
							Mg	150000 ug/L
							Na	50000 ug/L
							Mo	6250 ug/L
							Sb	1250 ug/L
							Al	150000 ug/L
							Fe	150000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD5_00180	11/02/16	11/01/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.6 mL	W	120 ug/L
							Th	120 ug/L
							U	60 ug/L
					MEIVCALi_00039	1 mL	Ag	500 ug/L
							As	1000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							B	1250 ug/L
							Ba	6250 ug/L
							Be	3125 ug/L
							Cd	1000 ug/L
							Co	2500 ug/L
							Copper	6250 ug/L
							Cr	2000 ug/L
							Mn	6250 ug/L
							Ni	6250 ug/L
							Pb	6250 ug/L
							Selenium	1000 ug/L
							Tl	1000 ug/L
							V	6250 ug/L
							Zinc	6250 ug/L
							Ca	150000 ug/L
							K	50000 ug/L
							Mg	150000 ug/L
							Na	50000 ug/L
							Mo	6250 ug/L
							Sb	1250 ug/L
							Al	150000 ug/L
							Fe	150000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
mehgccvw_01052	10/18/16	10/17/16	DI WATER, Lot na	100 mL	MEHGCCVi_00258	1 mL	Nitric acid	3030000 ppb
							Mercury	100 ppb
					MEHNO3s_00186	0.3 mL	Nitric acid	3030000 ppb
.MEHGCCVi_00258	10/30/16	09/30/16	DI WATER, Lot na	100 mL	MEHNO3s_00185	0.3 mL	Nitric acid	3000000 ppb
					MESPEXHgs_00014	1 mL	Mercury	10000 ppb
..MEHNO3s_00185	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
..MESPEXHgs_00014	12/30/16	SPEX Certiprep 21-3HGY, Lot 21-3HGY			(Purchased Reagent)		Mercury	1000 mg/L
.MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
mehgccvw_01053	10/26/16	10/25/16	DI WATER, Lot na	100 mL	MEHGCCVi_00258	1 mL	Nitric acid	3030000 ppb
							Mercury	100 ppb
					MEHNO3s_00186	0.3 mL	Nitric acid	3030000 ppb
.MEHGCCVi_00258	10/30/16	09/30/16	DI WATER, Lot na	100 mL	MEHNO3s_00185	0.3 mL	Nitric acid	3000000 ppb
					MESPEXHgs_00014	1 mL	Mercury	10000 ppb
..MEHNO3s_00185	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
..MESPEXHgs_00014	12/30/16	SPEX Certiprep 21-3HGY, Lot 21-3HGY			(Purchased Reagent)		Mercury	1000 mg/L
.MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
mehgccvw_01056	11/01/16	10/31/16	DI WATER, Lot na	100 mL	MEHGCCVi_00259	1 mL	Nitric acid	3030000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Mercury	100 ppb
					MEHNO3s_00186	0.3 mL	Nitric acid	3030000 ppb
.MEHGCCVi_00259	11/30/16	10/31/16	DI WATER, Lot na	100 mL	MEHNO3s_00185	0.3 mL	Nitric acid	3000000 ppb
					MESPEXHgs_00014	1 mL	Mercury	10000 ppb
..MEHNO3s_00185	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
..MESPEXHgs_00014	12/30/16	SPEX Certiprep 21-3HGY, Lot 21-3HGY			(Purchased Reagent)		Mercury	1000 mg/L
.MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
MEHGICVw_00085	10/20/16	10/13/16	DI WATER, Lot na	500 mL	MEHGICVi_00032	1.5 mL	Nitric acid	2030000 ppb
							Mercury	30 ppb
					MEHNO3s_00186	1 mL	Nitric acid	2030000 ppb
.MEHGICVi_00032	11/13/16	10/13/16	DI WATER, Lot na	100 mL	MEHNO3s_00185	1 mL	Nitric acid	10000000 ppb
					MEIVHGs_00015	1 mL	Mercury	10000 ppb
..MEHNO3s_00185	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
..MEIVHGs_00015	01/06/17	Inorg. Vent. J2-HG02133, Lot J2-HG02133			(Purchased Reagent)		Mercury	1000 ug/mL
.MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
MEHGICVw_00086	11/01/16	10/25/16	DI WATER, Lot na	500 mL	MEHGICVi_00032	1.5 mL	Nitric acid	2030000 ppb
							Mercury	30 ppb
					MEHNO3s_00186	1 mL	Nitric acid	2030000 ppb
.MEHGICVi_00032	11/13/16	10/13/16	DI WATER, Lot na	100 mL	MEHNO3s_00185	1 mL	Nitric acid	10000000 ppb
					MEIVHGs_00015	1 mL	Mercury	10000 ppb
..MEHNO3s_00185	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
..MEIVHGs_00015	01/06/17	Inorg. Vent. J2-HG02133, Lot J2-HG02133			(Purchased Reagent)		Mercury	1000 ug/mL
.MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
MEMSABw_00227	01/06/17	10/07/16	DI WATER, Lot na	200 mL	CLPICPMSCRQL_00001	0.5 mL	As	45 ppb
							Ba	250 ppb
							Be	25 ppb
							Cd	25 ppb
							Co	25 ppb
							Cr	50 ppb
							Copper	50 ppb
							Mn	25 ppb
							Ni	25 ppb
							Pb	25 ppb
							Sb	50 ppb
							Selenium	125 ppb
							Tl	25 ppb
							V	25 ppb
							Zinc	50 ppb
							Ag	25 ppb
					ME6020CALi_B_00019	2 mL	W	20 ppb
							As	45 ppb
							B	400 ppb
							Th	20 ppb
							U	10 ppb
					ME6020ICS-OAs_00016	20 mL	Al	100000 ppb
							Ca	100000 ppb
							Fe	100000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							K	100000 ppb
							Mg	100000 ppb
							Mo	2000 ppb
							Na	100000 ppb
.CLPICPMSCRQL_00001	01/06/17	10/07/16	DI WATER, Lot NA	100 mL	MEIVASs_00010	1 mL	As	10 ug/mL
					MEIVBAs_00016	10 mL	Ba	100 ug/mL
					MEIVBEs_00010	1 mL	Be	10 ug/mL
					MEIVCDs_00012	1 mL	Cd	10 ug/mL
					MEIVCOs_00012	1 mL	Co	10 ug/mL
					MEIVCRs_00013	2 mL	Cr	20 ug/mL
					MEIVCUs_00014	2 mL	Copper	20 ug/mL
					MEIVMNs_00010	1 mL	Mn	10 ug/mL
					MEIVNIs_00011	1 mL	Ni	10 ug/mL
					MEIVPBs_00018	1 mL	Pb	10 ug/mL
					MEIVSBs_00011	2 mL	Sb	20 ug/mL
					MEIVSEs_00013	5 mL	Selenium	50 ug/mL
					MEIVTLs_00013	1 mL	Tl	10 ug/mL
					MEIVVs_00010	1 mL	V	10 ug/mL
					MEIVZNs_00014	2 mL	Zinc	20 ug/mL
					MESPEXAGs_00011	1 mL	Ag	10 ug/mL
..MEIVASs_00010	02/04/17	Inorganic VenturesJ2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00018	07/21/17	IV/J2-PB03074, Lot J2-PB03074			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
..MESPEXAGs_00011	02/28/17	SPEX 20-172AGY, Lot 20-172AGY			(Purchased Reagent)		Ag	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.ME6020ICS-OAs_00016	07/21/17	IV J2-MEB613036, Lot J2-MEB613036			(Purchased Reagent)		Al	1000 ug/mL
							Ca	1000 ug/mL
							Fe	1000 ug/mL
							K	1000 ug/mL
							Mg	1000 ug/mL
							Mo	20 ug/mL
							Na	1000 ug/mL
MEMSICSAw_00210	07/19/17	10/07/16	DI WATER, Lot na	200 mL	ME6020ICS-OAs_00016	20 mL	Al	100000 ppb
							Ca	100000 ppb
							Fe	100000 ppb
							K	100000 ppb
							Mg	100000 ppb
							Mo	2000 ppb
							Na	100000 ppb
.ME6020ICS-OAs_00016	07/21/17	IV J2-MEB613036, Lot J2-MEB613036			(Purchased Reagent)		Al	1000 ug/mL
							Ca	1000 ug/mL
							Fe	1000 ug/mL
							K	1000 ug/mL
							Mg	1000 ug/mL
							Mo	20 ug/mL
							Na	1000 ug/mL
MEMSISw_00184	11/17/16	10/03/16	DI WATER, Lot na	8000 mL	MEIVLi_00005	1.92 mL	Li-6 Internal Standard	240 ug/L
					MEMSINSTDi_00055	16 mL	In-115 (IS)	100 ug/L
.MEIVLi_00005	01/06/17	IV J2-LI03018, Lot J2-LI03018			(Purchased Reagent)		Li-6 Internal Standard	1000 ppm
.MEMSINSTDi_00055	11/17/16	10/03/16	DI WATER, Lot na	100 mL	MEIVINs_00024	5 mL	In-115 (IS)	50000 ug/L
..MEIVINs_00024	01/06/17	IV J2-IN011115, Lot J2-IN011115			(Purchased Reagent)		In-115 (IS)	1000 ppm
MEMSTUNEw_00073	01/06/17	10/04/16	DI WATER, Lot na	500 mL	MEMS6020TUNEi_00043	5 mL	Ba-137 (Tune)	10 ppb
							Be-9 (Tune)	10 ppb
							Ce-140 (Tune)	10 ppb
							Co-59 (Tune)	10 ppb
							In-113 (Tune)	10 ppb
							In-115 (Tune)	10 ppb
							Mg-24 (Tune)	10 ppb
							Mg-25 (Tune)	10 ppb
							Mg-26 (Tune)	10 ppb
							Pb-206 (Tune)	1 ppb
							Pb-207 (Tune)	1 ppb
							Pb-208 (Tune)	1 ppb
							Th-232 (Tune)	10 ppb
.MEMS6020TUNEi_00043	01/06/17	10/04/16	DI WATER, Lot na	1000 mL	MEIVBAs_00016	1 mL	Ba-137 (Tune)	1 ppm
					MEIVBEs_00010	1 mL	Be-9 (Tune)	1 ppm
					MEIVCEs_00010	1 mL	Ce-140 (Tune)	1 ppm

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVCOs_00012	1 mL	Co-59 (Tune)	1 ppm
					MEIVINs_00025	0.1 mL	In-113 (Tune)	1 ppm
							In-115 (Tune)	1 ppm
					MEIVMGs_00018	0.1 mL	Mg-24 (Tune)	1 ppm
							Mg-25 (Tune)	1 ppm
							Mg-26 (Tune)	1 ppm
					MEIVPBs_00018	0.1 mL	Pb-206 (Tune)	0.1 ppm
							Pb-207 (Tune)	0.1 ppm
							Pb-208 (Tune)	0.1 ppm
					MEIVTHs_00009	1 mL	Th-232 (Tune)	1 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba-137 (Tune)	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be-9 (Tune)	1000 ppm
..MEIVCEs_00010	01/06/17	Inorganic Ventures J2-CE01096, Lot J2-CE01096			(Purchased Reagent)		Ce-140 (Tune)	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co-59 (Tune)	1000 ug/mL
..MEIVINs_00025	03/14/17	IV J2-IN01114, Lot J2-IN01114			(Purchased Reagent)		In-113 (Tune)	10000 ppm
							In-115 (Tune)	10000 ppm
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg-24 (Tune)	10000 ppm
							Mg-25 (Tune)	10000 ppm
							Mg-26 (Tune)	10000 ppm
..MEIVPBs_00018	07/21/17	IV/J2-PB03074, Lot J2-PB03074			(Purchased Reagent)		Pb-206 (Tune)	1000 ug/mL
							Pb-207 (Tune)	1000 ug/mL
							Pb-208 (Tune)	1000 ug/mL
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th-232 (Tune)	1000 ug/mL
WCLKLCSs_00018	01/26/17	LECO 1017, Lot 1017			(Purchased Reagent)		Total Organic Carbon	0.00926 g/g
WCTOCCALs_00014	02/28/17	AccuSPEC, Lot S150220002			(Purchased Reagent)		Total Organic Carbon	10000 mg/L

Reagent

ME6020ICS-OAs_00016

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	6020ICS-0A
Lot Number:	J2-MEB613036
Matrix:	1% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Chloride, 2 000 µg/mL ea: Carbon, 1 000 µg/mL ea: Aluminum, Calcium, Iron, Potassium, Magnesium, Sodium, Phosphorus, Sulfur, 20 µg/mL ea: Molybdenum, Titanium

954502
ID: ME6020ICS-OAs_00016
Exp:07/21/17 Prpd:MDK Opn:07/21/16
6020ICS-OA Stock Std
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	1 001 ± 4 µg/mL	Calcium, Ca	1 001 ± 6 µg/mL
Carbon, C	2 001 ± 9 µg/mL	Chloride, Cl	10 010.0 ± 40.0 µg/mL
Iron, Fe	1 001 ± 4 µg/mL	Magnesium, Mg	1 001 ± 4 µg/mL
Molybdenum, Mo	20.01 ± 0.09 µg/mL	Phosphorus, P	1 001 ± 5 µg/mL
Potassium, K	1 001 ± 4 µg/mL	Sodium, Na	1 001 ± 4 µg/mL
Sulfur, S	1 001 ± 4 µg/mL	Titanium, Ti	20.01 ± 0.11 µg/mL

Certified Density: 1.034 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
C	Acidimetric	84L	84L
Ca	ICP Assay	3109a	050825
Ca	EDTA	928	928
Cl	Acidimetric	84L	84L
Fe	ICP Assay	3126a	051031
Fe	EDTA	928	928
K	ICP Assay	3141a	051220
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
Mo	ICP Assay	3134	891307
Mo	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
S	Acidimetric	84L	84L
S	ICP Assay	3154	892205
Ti	ICP Assay	3162a	060808
Ti	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000207	M	Eu	<	0.000103	s	Na	<		M	Se	<	0.003315	M	Zn	0.010362
s	Al	<		s	Fe	<		M	Nb	<	0.000621	n	Si	<		M	Zr	< 0.000828
O	As	<	0.041360	M	Ga	<	0.000103	M	Nd	<	0.000103	M	Sm	<	0.000103			
M	Au	<	0.000205	M	Gd	<	0.000103	O	Ni	<	0.009092	M	Sn	<	0.000414			
M	B	<	0.006320	M	Ge	<	0.005388	M	Os	<	0.000102	O	Sr		0.004446			
M	Ba		0.000932	M	Hf	<	0.000103	s	P	<		M	Ta	<	0.000103			
O	Be	<	0.000103	M	Hg	<	0.000308	M	Pb		0.004662	M	Tb	<	0.000103			
M	Bi	<	0.000414	M	Ho	<	0.000103	M	Pd	<	0.000205	M	Te	<	0.001761			
s	Ca	<		M	In	<	0.000103	M	Pr	<	0.000103	M	Th	<	0.000103			
O	Cd	<	0.000827	M	Ir	<	0.000102	M	Pt	<	0.000103	s	Ti	<				
M	Ce	<	0.000414	s	K	<		M	Rb		0.011812	M	Tl	<	0.000103			
M	Co	<	0.001036	M	La	<	0.000103	M	Re	<	0.000103	M	Tm	<	0.000103			
M	Cr		0.011294	O	Li		0.001095	M	Rh	<	0.000103	M	U	<	0.000103			
M	Cs	<	0.000103	M	Lu	<	0.000103	M	Ru	<	0.000205	O	V	<	0.006204			
O	Cu	<	0.006809	s	Mg	<		s	S	<		M	W		0.001347			
M	Dy	<	0.000103	M	Mn		0.001554	M	Sb	<	0.000621	M	Y	<	0.000103			
M	Er	<	0.000103	s	Mo	<		O	Sc	<	0.000310	M	Yb	<	0.000103			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 06, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- January 06, 2019

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MWK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

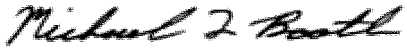
Certificate Prepared By:

James King Jr
Product Documentation Supervisor



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEAWWs_00007

HIGH-PURITY STANDARDS
www.highpuritystandards.com

P.O. Box 41727
Charleston, SC 29423
Phone (843) 767-7900
Fax (843) 767-7906

Certificate of Analysis

Product Description:

Name:	Tungsten	Source Material:	Tungsten Metal
Part Number:	**100063-3**	Material Purity:	99.99%
Lot Number:	**1411305**	Matrix:	1% (v/v) HF + 2% (v/v) HNO_3

Certified Value: 1000 µg/mL ± 4 µg/mL

The Certified value is based on gravimetric and volumetric preparation, and confirmed against SRM 3163 (lot number 080331) by inductively coupled plasma optical emission spectrometry (ICP-OES) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.

Density: 1.011 g/mL ± 0.002 g/mL @ 21.7°C

Uncertified Values:

Trace Metal Impurity Scan: The data reported are based upon a scan of this specific lot at 1000 µg/mL via ICP analysis. The values are reported in µg/L.

Ag	<	1	Cu	<	0.1	Li	<	0.02	Rb	<	0.02	Th		na
Al	<	5	Dy	<	0.02	Lu	<	0.02	Re		na	Ti	<	5
As	<	1	Er	<	0.02	Mg	<	0.5	Rh	<	0.1	Tl	<	0.02
Au		na	Eu	<	0.02	Mn	<	0.1	Ru	<	0.02	Tm	<	0.02
B	<	10	Fe	<	10	Mo	<	5	Sb	<	1	U	<	0.1
Ba	<	0.02	Ga	<	0.02	Na	<	3	Sc	<	0.02	V	<	1
Be	<	0.02	Gd	<	0.02	Nb	<	5	Se	<	0.1	W		M
Bi	<	0.02	Ge	<	0.02	Nd	<	0.02	Si	<	50	Y	<	0.02
Ca	<	5	Hf	<	0.1	Ni	<	0.02	Sm	<	0.02	Yb	<	0.02
Cd	<	0.02	Ho	<	0.02	Os	<	0.02	Sn	<	5	Zn	<	0.1
Ce	<	0.02	In	<	0.02	Pb	<	0.05	Sr	<	0.02	Zr	<	1
Co	<	0.05	Ir	<	1	Pd	<	0.02	Ta		na			
Cr	<	0.1	K	<	1	Pr	<	0.02	Tb	<	0.02			
Cs	<	0.02	La	<	0.02	Pt	<	0.02	Te	<	1	na - not analyzed		

Preparation Information:

The standard solution is prepared using high purity materials and assayed by analytical methods for conformity prior to use. This standard was prepared using the methods developed at NIST for SRM Spectrometric Standard Solutions under appropriate laboratory conditions.

Sub-boiling distilled high-purity acid has been used to place the materials in solution and to stabilize the standard. The matrix is as noted above in 18 megaohm deionized water.

Stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. This testing includes, but is not limited to, the effect of temperature and packaging on the product.

High-Purity Standards is certified to ISO 9001:2008 and accredited to ISO/IEC 17025:2005 and ISO Guide 34:2009.

Intended Use:

This Certified Reference Material (CRM) is intended for use as a calibration standard for the quantitative determination of tungsten, calibration of instruments such as ICPOES, ICPMS, AAS and XRF, and validation of analytical methods. It also can be used in EPA, ASTM and other methods.

Traceability Information:

The traceability of this standard is maintained through an unbroken chain of comparisons to appropriate standards with suitable procedure and measurement uncertainties. The maintenance of the base and derived units of International System of Units (SI) with traceability of measurement results (contemporary metrology) to SI ensures their comparability over time as follows.

a. **Standard Weight and Analytical Balance**
The standard weights (NBS weights Inventory No 20231A) are calibrated every two years by South Carolina Metrology Laboratory that is a participant in "NIST Weights and Measures Measurement Assurance Program" with a certificate of measurement traceability to NIST primary standards.
The balances are calibrated yearly by the ISO 17025 accredited metrology service, and are verified weekly by an in-house method using standard weights.

b. **Volumetric Device**
The calibration of volumetric vessels is checked annually using the ASTM method E542.

c. **Thermometer**
The standard thermometers are calibrated every year by the ISO 17025 accredited metrology service. The thermometers used in-house are verified against the standard thermometers yearly.

d. **Calibration Standards:**
The Calibration Standard is directly traceable to SRM 3100 Series Spectrometric Standard Solutions.

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Refer to Material Safety Datasheet (MSDS) for hazardous information.

Expiration Information:

The expiry date is guaranteed to be valid for eighteen months from the shipping date provided. For this reason, standards from the same lot may have different expiration dates.

Preparation Date:	**April 23, 2014**
Shipped Date:	**8/19/2015**
Expire Date:	**2/19/2017**
Certificate Issue Date:	**June 18, 2014**

Quality Information:

ACLASS ACCREDITED TESTING

ISO/IEC 17025:2005 Accreditation
Certificate Number AT-1529

ACLASS ACCREDITED REFERENCE MATERIAL PRODUCER

ISO Guide 34:2009 (RMP) Accreditation
Certificate Number AR-1436

Angel Sellers
Quality Manager

NOTICE: HPS products are intended for laboratory use only. All products should be handled and used by trained professional personnel. The responsibility for the safe handling and use of these products rests solely with the buyer and/or user. The data and information as stated was furnished by the manufacturer of the product. The information provided in this certificate pertains only to the lot number specified. None of the information provided in this certificate may be used, reproduced or transmitted in any form or by any means without written approval from High Purity Standards.

High-Purity Standards is certified to ISO 9001:2008 and accredited to ISO/IEC 17025:2005 and ISO Guide 34:2009.

Reagent

MEAWWs_00008

HIGH-PURITY STANDARDS
www.highpuritystandards.com

P.O Box 41727
Charleston, SC 29423
Phone (843) 767-7900
Fax (843) 767-7906

Certificate of Analysis

Product Description:

Name:	Tungsten	Source Material:	Tungsten Metal
Part Number:	**100063-3**	Material Purity:	99.99%
Lot Number:	**1426812**	Matrix:	1% (v/v) HF + 2% (v/v) HNO_3

Certified Value: 1000 µg/mL ± 4 µg/mL

The Certified value is based on gravimetric and volumetric preparation, and confirmed against SRM 3163 (lot number 080331) by inductively coupled plasma optical emission spectrometry (ICP-OES) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.

Density: 1.011 g/mL ± 0.002 g/mL @ 22.5°C

903063
ID: MEAWWs_00008
Exp 02/23/17 Prpd:MDK Opn 02/23/16
1000 PPM Tungsten

Rec'd 2/23/16 MDK

Uncertified Values:

Trace Metal Impurity Scan: The data reported are based upon a scan of this specific lot at 1000 µg/mL via ICP analysis. The values are reported in µg/L.

Ag	<	1	Cu	<	0.1	Li	<	0.02	Rb	<	0.02	Th		na
Al	<	5	Dy	<	0.02	Lu	<	0.02	Re		na	Ti	<	5
As	<	1	Er	<	0.02	Mg	<	1	Rh	<	0.02	Tl	<	0.02
Au		na	Eu	<	0.02	Mn	<	0.1	Ru	<	0.02	Tm	<	0.02
B	<	10	Fe	<	10	Mo	<	5	Sb	<	1	U	<	0.1
Ba	<	0.02	Ga	<	0.02	Na	<	3	Sc	<	0.02	V	<	1
Be	<	0.02	Gd	<	0.02	Nb	<	5	Se	<	0.5	W		M
Bi	<	0.02	Ge	<	0.02	Nd	<	0.02	Si	<	50	Y	<	0.02
Ca	<	5	Hf	<	0.02	Ni	<	0.02	Sm	<	0.02	Yb	<	0.02
Cd	<	0.02	Ho	<	0.02	Os	<	0.02	Sn	<	5	Zn	<	2
Ce	<	0.02	In	<	0.02	Pb	<	0.05	Sr	<	0.02	Zr	<	2
Co	<	0.05	Ir	<	0.02	Pd	<	0.02	Ta		na			
Cr	<	0.1	K	<	1	Pr	<	0.02	Tb	<	0.02			
Cs	<	0.02	La	<	0.02	Pt	<	0.02	Te	<	0.02	na - not analyzed		

Preparation Information:

The standard solution is prepared using high purity materials and assayed by analytical methods for conformity prior to use. This standard was prepared using the methods developed at NIST for SRM Spectrometric Standard Solutions under appropriate laboratory conditions.

Sub-boiling distilled high-purity acid has been used to place the materials in solution and to stabilize the standard. The matrix is as noted above in 18 megaohm deionized water.

Stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. This testing includes, but is not limited to, the effect of temperature and packaging on the product.

High-Purity Standards is certified to ISO 9001:2008 and accredited to ISO/IEC 17025:2005 and ISO Guide 34:2009.

Reagent

MEHPTHs_00004

HIGH-PURITY STANDARDS
www.highpuritystandards.com

P.O. Box 41727
Charleston, SC 29423
Phone (843) 767-7900
Fax (843) 767-7906

Certificate of Analysis

933454
ID: MEHPTHs_00004
Exp:05/20/17 Prpd:MDK Opn:05/20/16
1000 ppm Thorium
Rec'd 5/20/16

Product Description:

Name:	Thorium	Source Material:	Thorium Oxide
Part Number:	**100059-1**	Material Purity:	99.99%
Lot Number:	**1601307**	Matrix:	2% (v/v) HNO_3

Certified Value: 1000 µg/mL ± 4 µg/mL

The Certified value is based on gravimetric and volumetric preparation, and confirmed against a second source via inductively coupled plasma optical emission spectrometry (ICP-OES) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.

Density: 1.008 g/mL ± 0.002 g/mL @ 22.8°C

Uncertified Values:

Trace Metal Impurity Scan: The data reported are based upon a scan of this specific lot at 1000 µg/mL via ICP analysis. The values are reported in µg/L.

Ag	<	0.02	Cu	<	0.1	Li	<	0.02	Rb	<	0.02	Th		M
Al	<	0.1	Dy	<	0.02	Lu	<	0.02	Re	<	0.02	Ti	<	1
As	<	0.05	Er	<	0.02	Mg	<	0.5	Rh	<	0.02	Tl	<	0.02
Au	<	0.02	Eu	<	0.02	Mn	<	0.1	Ru	<	0.02	Tm	<	0.02
B	<	1	Fe	<	5	Mo	<	0.02	Sb	<	0.02	U	<	0.1
Ba	<	0.02	Ga	<	0.02	Na	<	3	Sc	<	0.02	V	<	0.05
Be	<	0.02	Gd	<	0.02	Nb	<	0.02	Se	<	0.1	W	<	0.02
Bi	<	0.02	Ge	<	0.02	Nd	<	2	Si	<	20	Y	<	0.02
Ca		20	Hf	<	0.02	Ni	<	0.02	Sm	<	0.5	Yb	<	0.02
Cd	<	0.02	Ho	<	0.02	Os	<	0.02	Sn	<	1	Zn	<	0.1
Ce	<	3	In	<	0.02	Pb	<	0.05	Sr	<	0.02	Zr	<	2
Co	<	0.05	Ir	<	0.02	Pd	<	0.02	Ta	<	0.02			
Cr	<	0.1	K	<	1	Pr	<	0.5	Tb	<	0.02			
Cs	<	0.02	La	<	1	Pt	<	0.02	Te	<	0.02			

Preparation Information:

The standard solution is prepared using high purity materials and assayed by analytical methods for conformity prior to use. This standard was prepared using the methods developed at NIST for SRM Spectrometric Standard Solutions under appropriate laboratory conditions.

Sub-boiling distilled high-purity acid has been used to place the materials in solution and to stabilize the standard. The matrix is as noted above in 18 megaohm deionized water.

Stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. This testing includes, but is not limited to, the effect of temperature and packaging on the product.

Intended Use:

This Certified Reference Material (CRM) is intended for use as a calibration standard for the quantitative determination of thorium, calibration of instruments such as ICPOES, ICPMS, AAS and XRF, and validation of analytical methods. It also can be used in EPA, ASTM and other methods.

Traceability Information:

The traceability of this standard is maintained through an unbroken chain of comparisons to appropriate standards with suitable procedure and measurement uncertainties. The maintenance of the base and derived units of International System of Units (SI) with traceability of measurement results (contemporary metrology) to SI ensures their comparability over time as follows.

a. **Standard Weight and Analytical Balance**
   The standard weights (NBS weights Inventory No 20231A) are calibrated every two years by South Carolina Metrology Laboratory that is a participant in "NIST Weights and Measures Measurement Assurance Program" with a certificate of measurement traceability to NIST primary standards.
   The balances are calibrated yearly by the ISO 17025 accredited metrology service, and are verified weekly by an in-house method using standard weights.

b. **Volumetric Device**
   The calibration of volumetric vessels is checked annually using the ASTM method E542.

c. **Thermometer**
   The standard thermometers are calibrated every year by the ISO 17025 accredited metrology service. The thermometers used in-house are verified against the standard thermometers yearly.

d. **Calibration Standards**
   The Calibration Standard is traceable to a second source.

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Refer to Material Safety Datasheet (MSDS) for hazardous information.

Expiration Information:

The expiry date is guaranteed to be valid for eighteen months from the shipping date provided. For this reason, standards from the same lot may have different expiration dates.

Preparation Date:	**January 13, 2016**
Shipped Date:	**5/13/2016**
Expire Date:	**November 13, 2017**
Certificate Issue Date:	**February 10, 2016**

Quality Information:

ISO/IEC 17025:2005 Accreditation
Certificate Number AT-1529

ISO Guide 34:2009 (RMP) Accreditation
Certificate Number AR-1436

Moven Mutuvari
Moven T. Mutuvari, Ph.D.
Laboratory Manager

NOTICE: HPS products are intended for laboratory use only. All products should be handled and used by trained professional personnel. The responsibility for the safe handling and use of these products rests solely with the buyer and/or user. The data and information as stated was furnished by the manufacturer of the product. The information provided in this certificate pertains only to the lot number specified. None of the information provided in this certificate may be used, reproduced or transmitted in any form or by any means without written approval from High Purity Standards.

Reagent

MEIVAGs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6729 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAG1
Lot Number:	J2-AG03048
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Ag
Starting Material:	Ag shot
Starting Material Lot#:	1641
Starting Material Purity:	99.9999%

929532
ID: MEIVAGs_00012
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000 ppm Silver Stock Std
Rec'd 5/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 6 µg/mL

Certified Density: 1.027 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 5 µg/mL**
ICP Assay NIST SRM 3151 Lot Number: 992212

Assay Method #2 **999 ± 2 µg/mL**
Volhard NIST SRM 999b Lot Number: 999b

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

s	Ag	<		M	Eu	<	0.007546	O	Na		0.000119	M	Se	<	0.020123	O	Zn		0.000198
O	Al		0.000158	O	Fe	<	0.001000	M	Nb	<	0.001257	O	Si	<	0.003400	M	Zr	<	0.012577
M	As	<	0.025154	M	Ga	<	0.002515	M	Nd	<	0.005030	M	Sm	<	0.002515				
O	Au	<	0.003000	M	Gd	<	0.002515	O	Ni	<	0.003000	M	Sn	<	0.012577				
M	B	<	0.176078	M	Ge	<	0.015092	n	Os	<		M	Sr	<	0.001257				
M	Ba	<	0.025154	M	Hf	<	0.005030	O	P	<	0.003000	M	Ta	<	0.017607				
M	Be	<	0.001257	O	Hg	<	0.015000	M	Pb	<	0.007546	M	Tb	<	0.000754				
M	Bi	<	0.001006	M	Ho	<	0.001257	O	Pd	<	0.004000	M	Te	<	0.075462				
O	Ca		0.000873	M	In	<	0.025154	M	Pr	<	0.000754	M	Th	<	0.002515				
O	Cd	<	0.005000	M	Ir	<	0.012577	O	Pt	<	0.017000	M	Ti	<	0.125770				
M	Ce	<	0.012577	O	K		0.000198	M	Rb	<	0.002515	M	Tl	<	0.002515				
M	Co	<	0.007546	M	La	<	0.001257	M	Re	<	0.002515	M	Tm	<	0.001006				
M	Cr	<	0.012577	O	Li	<	0.000020	M	Rh	<	0.002515	M	U	<	0.005030				
M	Cs	<	0.000754	M	Lu	<	0.001006	M	Ru	<	0.005030	M	V	<	0.005030				
O	Cu	<	0.003000	O	Mg	<	0.000030	O	S	<	0.025000	M	W	<	0.025154				
M	Dy	<	0.015092	M	Mn	<	0.010061	M	Sb	<	0.001257	M	Y	<	0.100616				
M	Er	<	0.012577	M	Mo	<	0.005030	M	Sc	<	0.025154	M	Yb	<	0.002515				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 107.87 +1 6 Ag(H2O)6+
Chemical Compatibility -Stable in HNO3, and HF. Avoid basic media. Ag forms more insoluble salts than any other metal. It also is subject to photochemical reduction to the metal in HCl media although 10 µg/mL solutions in 10% HCl [AgClx1-x] are commonly used in the analytical laboratory. The most common solubility problems exist with arsenate, arsenite , bromide, chloride, iodide, carbonate , chromate, cyanide, iodate, oxalate, oxide, sulfate, sulfide, tartrate, and thiocyanate in aqueous media. The addition of nitric acid renders many of these salts soluble.
Stability - 2-100 ppb levels stable for 75+ days when mixed with equivalent levels of all other elements including the precious metals (where chloride is present) when in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Ag Containing Samples (Preparation and Solution) -Metal (Soluble in HNO3); Oxides (Soluble in HNO3); Ores (Digestion with conc. HNO3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 107 amu	1 ppt	N/A	91Zr16O
ICP-OES 243.779 nm	0.12/0.01 µg/mL	1	Mn, Th, Ni, Rh
ICP-OES 328.068 nm	0.007/0.0007 µg/mL	1	Ce, Rh, V
ICP-OES 338.289 nm	0.013/0.001 µg/mL	1	Ce, Cr, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 30, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- March 30, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/6/16 MPK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVASs_00010

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.[illegible]
fax: 540.[illegible]
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAS1
Lot Number:	J2-AS02122
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: As
Starting Material:	As pieces
Starting Material Lot#:	1665
Starting Material Purity:	99.9980%

898416
ID: MEIVASs_00010
Exp:02/04/17 Prpd:MDK Opn:02/04/16
1000ppm Arsenic

2/4/16
MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value:	1001 ± 5 µg/mL
Certified Density:	1.012 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1	**1001 ± 4 µg/mL** ICP Assay NIST SRM 3103a Lot Number: 100818
Assay Method #2	**1001 ± 5 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.010063	M	Eu	<	0.015094	O	Na		0.002724	M	Se	<	0.040252	O	Zn		0.000656	
O	Al		0.000556	O	Fe		0.000099	O	Nb	<	0.002000	O	Si		0.007755	M	Zr	<	0.025157	
s	As	<		M	Ga	<	0.005031	M	Nd	<	0.010063	M	Sm	<	0.005031					
M	Au	<	0.015094	M	Gd	<	0.005031	O	Ni	<	0.002000	O	Sn	<	0.004000					
O	B		0.000298	M	Ge	<	0.030189	n	Os	<		M	Sr	<	0.002515					
M	Ba	<	0.050315	M	Hf	<	0.010063	O	P	<	0.002600	M	Ta	<	0.035220					
M	Be	<	0.002515	O	Hg	<	0.012000	M	Pb	<	0.015094	M	Tb	<	0.001509					
M	Bi	<	0.002012	M	Ho	<	0.002515	M	Pd	<	0.025157	M	Te	<	0.150946					
O	Ca		0.007954	M	In	<	0.050315	M	Pr	<	0.001509	M	Th	<	0.005031					
M	Cd	<	0.015094	M	Ir	<	0.025157	M	Pt	<	0.010063	M	Ti	<	0.251578					
M	Ce	<	0.025157	O	K		0.000596	M	Rb	<	0.005031	M	Tl	<	0.005031					
M	Co	<	0.015094	M	La	<	0.002515	O	Re	<	0.010000	M	Tm	<	0.002012					
O	Cr	<	0.000800	O	Li	<	0.000020	M	Rh	<	0.005031	M	U	<	0.010063					
M	Cs	<	0.001509	M	Lu	<	0.002012	M	Ru	<	0.010063	M	V	<	0.010063					
M	Cu	<	0.030189	O	Mg		0.000159	n	S	<		M	W	<	0.050315					
M	Dy	<	0.030189	O	Mn	<	0.000030	O	Sb	<	0.010000	M	Y	<	0.201262					
M	Er	<	0.025157	M	Mo	<	0.010063	M	Sc	<	0.050315	M	Yb	<	0.005031					

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 74.92 ; mix of +3 and +5 ; 6 ; H3AsO4 and HAsO2

Chemical Compatibility - Arsenic has no cationic chemistry. It is soluble in HCl, HNO3,H3PO4, H2SO4 and HF aqueous matrices water and NH4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO3 / LDPE container.

As Containing Samples (Preparation and Solution) - Metal (soluble in 1:1 H2O / HNO3); Oxides (the oxide exists in crystalline and amorphous forms where the amorphic form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (one gram of powered sample is fused in a Ni crucible with 10 grams of a 1:1 mix of K2CO3 and KNO3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of sample are fused with 15 grams of a 1:1 Na2CO3 / Na2O2 mix in a Ni crucible. The fuseate is extracted with water and acidified with HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 75 amu	20 ppt	N/A	40Ar35Cl, 59Co16O, 36Ar38Ar1H,8Ar37Cl,Ar39K, 150Nd2+,150Sm2+
ICP-OES 189.042 nm	0.05/0.005 µg/mL	1	Cr
ICP-OES 193.696 nm	0.1/0.01 µg/mL	1	V, Ge
ICP-OES 228.812 nm	0.1/0.01 µg/mL	1	Cd, Pt, Ir, Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 12, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 12, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

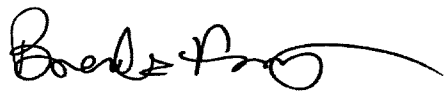
- Sealed TCT Bag Open Date: 2/4/16 mdk

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

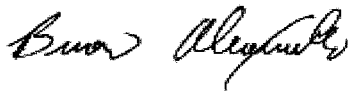
Certificate Prepared By:

Brenda Francis
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVASs_00011

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS
[illegible]

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAS1
Lot Number:	J2-AS02122
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: As
Starting Material:	As pieces
Starting Material Lot#:	1665
Starting Material Purity:	99.9980%

954503
ID: MEIVASs_00011
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000ppm Arsenic
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 5 µg/mL

Certified Density: 1.012 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1001 ± 4 µg/mL**
ICP Assay NIST SRM 3103a Lot Number: 100818

Assay Method #2 **1001 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.010063	M	Eu	<	0.015094	O	Na		0.002724	M	Se	<	0.040252	O	Zn		0.000656
O	Al		0.000556	O	Fe		0.000099	O	Nb	<	0.002000	O	Si		0.007755	M	Zr	<	0.025157
s	As	<		M	Ga	<	0.005031	M	Nd	<	0.010063	M	Sm	<	0.005031				
M	Au	<	0.015094	M	Gd	<	0.005031	O	Ni	<	0.002000	O	Sn	<	0.004000				
O	B		0.000298	M	Ge	<	0.030189	n	Os	<		M	Sr	<	0.002515				
M	Ba	<	0.050315	M	Hf	<	0.010063	O	P	<	0.002600	M	Ta	<	0.035220				
M	Be	<	0.002515	O	Hg	<	0.012000	M	Pb	<	0.015094	M	Tb	<	0.001509				
M	Bi	<	0.002012	M	Ho	<	0.002515	M	Pd	<	0.025157	M	Te	<	0.150946				
O	Ca		0.007954	M	In	<	0.050315	M	Pr	<	0.001509	M	Th	<	0.005031				
M	Cd	<	0.015094	M	Ir	<	0.025157	M	Pt	<	0.010063	M	Ti	<	0.251578				
M	Ce	<	0.025157	O	K		0.000596	M	Rb	<	0.005031	M	Tl	<	0.005031				
M	Co	<	0.015094	M	La	<	0.002515	O	Re	<	0.010000	M	Tm	<	0.002012				
O	Cr	<	0.000800	O	Li	<	0.000020	M	Rh	<	0.005031	M	U	<	0.010063				
M	Cs	<	0.001509	M	Lu	<	0.002012	M	Ru	<	0.010063	M	V	<	0.010063				
M	Cu	<	0.030189	O	Mg		0.000159	n	S	<		M	W	<	0.050315				
M	Dy	<	0.030189	O	Mn	<	0.000030	O	Sb	<	0.010000	M	Y	<	0.201262				
M	Er	<	0.025157	M	Mo	<	0.010063	M	Sc	<	0.050315	M	Yb	<	0.005031				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 74.92 ; mix of +3 and +5 ; 6 ; H_3AsO_4 and $HAsO_2$

Chemical Compatibility - Arsenic has no cationic chemistry. It is soluble in HCl, HNO_3,H_3PO_4, H_2SO_4 and HF aqueous matrices water and NH_4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO_3 / LDPE container.

As Containing Samples (Preparation and Solution) - Metal (soluble in 1:1 H_2O / HNO_3); Oxides (the oxide exists in crystalline and amorphous forms where the amorphic form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (one gram of powered sample is fused in a Ni crucible with 10 grams of a 1:1 mix of K_2CO_3 and KNO_3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of sample are fused with 15 grams of a 1:1 Na_2CO_3 / Na_2O_2 mix in a Ni crucible. The fuseate is extracted with water and acidified with HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 75 amu	20 ppt	N/A	40Ar35Cl, 59Co16O, 36Ar38Ar1H,8Ar37Cl,Ar39K, 150Nd2+,150Sm2+
ICP-OES 189.042 nm	0.05/0.005 µg/mL	1	Cr
ICP-OES 193.696 nm	0.1/0.01 µg/mL	1	V, Ge
ICP-OES 228.812 nm	0.1/0.01 µg/mL	1	Cd, Pt, Ir, Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 12, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 12, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

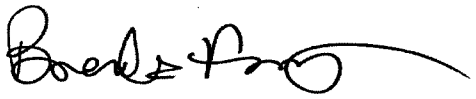
- Sealed TCT Bag Open Date: 2/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

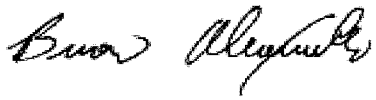
Certificate Prepared By:

Brenda Francis
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVBAs_00016

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBA1
Lot Number:	J2-BA02093
Matrix:	0.1% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Ba
Starting Material:	Ba(NO3)2
Starting Material Lot#:	1822
Starting Material Purity:	99.9991%

954505
ID: MEIVBAs_00016
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000ppm Barium Stock std
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 5 µg/mL

Certified Density: 1.000 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **997 ± 3 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

Assay Method #2 **998 ± 5 µg/mL**
ICP Assay NIST SRM 3104a Lot Number: 070222

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001998	O	Eu	<	0.001700	O	Na	<	0.020000	O	Se	<	0.050000	O	Zn	<	0.000400
O	Al	<	0.001500	O	Fe	<	0.001200	M	Nb	<	0.000199	O	Si	<	0.004000	M	Zr	<	0.000199
M	As	<	0.002997	M	Ga	<	0.000199	M	Nd	<	0.000199	O	Sm	<	0.007000				
M	Au	<	0.001998	M	Gd	<	0.000199	O	Ni	<	0.002000	M	Sn	<	0.003996				
M	B	<	0.005994	M	Ge	<	0.001198	n	Os	<		O	Sr		0.010487				
s	Ba	<		M	Hf	<	0.001998	O	P	<	0.050000	M	Ta	<	0.000999				
M	Be	<	0.000199	O	Hg	<	0.009000	M	Pb		0.001596	M	Tb	<	0.000199				
M	Bi	<	0.001398	M	Ho	<	0.000199	M	Pd	<	0.000199	M	Te	<	0.011988				
O	Ca		0.000499	M	In	<	0.000199	M	Pr	<	0.000199	M	Th	<	0.000199				
M	Cd	<	0.000199	M	Ir	<	0.000199	M	Pt	<	0.000199	O	Ti	<	0.000400				
M	Ce	<	0.000199	O	K	<	0.002000	M	Rb	<	0.000199	M	Tl	<	0.000199				
M	Co	<	0.000199	O	La	<	0.002000	M	Re	<	0.000199	M	Tm	<	0.000199				
M	Cr	<	0.000999	O	Li	<	0.000080	M	Rh	<	0.000199	M	U	<	0.000199				
M	Cs	<	0.000599	M	Lu	<	0.000199	M	Ru	<	0.000199	M	V	<	0.000199				
O	Cu	<	0.004000	O	Mg	<	0.000600	O	S		0.004994	M	W	<	0.005994				
M	Dy	<	0.000199	O	Mn	<	0.000400	M	Sb	<	0.001998	O	Y	<	0.000400				
M	Er	<	0.000199	O	Mo	<	0.000300	O	Sc	<	0.000300	M	Yb	<	0.000999				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001998	O	Eu	<	0.001700	O	Na	<	0.020000	O	Se	<	0.050000	O	Zn	<	0.000400
O	Al	<	0.001500	O	Fe	<	0.001200	M	Nb	<	0.000199	O	Si	<	0.004000	M	Zr	<	0.000199
M	As	<	0.002997	M	Ga	<	0.000199	M	Nd	<	0.000199	O	Sm	<	0.007000				
M	Au	<	0.001998	M	Gd	<	0.000199	O	Ni	<	0.002000	M	Sn	<	0.003996				
M	B	<	0.005994	M	Ge	<	0.001198	n	Os	<		O	Sr		0.010487				
s	Ba	<		M	Hf	<	0.001998	O	P	<	0.050000	M	Ta	<	0.000999				
M	Be	<	0.000199	O	Hg	<	0.009000	M	Pb		0.001596	M	Tb	<	0.000199				
M	Bi	<	0.001398	M	Ho	<	0.000199	M	Pd	<	0.000199	M	Te	<	0.011988				
O	Ca		0.000499	M	In	<	0.000199	M	Pr	<	0.000199	M	Th	<	0.000199				
M	Cd	<	0.000199	M	Ir	<	0.000199	M	Pt	<	0.000199	O	Ti	<	0.000400				
M	Ce	<	0.000199	O	K	<	0.002000	M	Rb	<	0.000199	M	Tl	<	0.000199				
M	Co	<	0.000199	O	La	<	0.002000	M	Re	<	0.000199	M	Tm	<	0.000199				
M	Cr	<	0.000999	O	Li	<	0.000080	M	Rh	<	0.000199	M	U	<	0.000199				
M	Cs	<	0.000599	M	Lu	<	0.000199	M	Ru	<	0.000199	M	V	<	0.000199				
O	Cu	<	0.004000	O	Mg	<	0.000600	O	S		0.004994	M	W	<	0.005994				
M	Dy	<	0.000199	O	Mn	<	0.000400	M	Sb	<	0.001998	O	Y	<	0.000400				
M	Er	<	0.000199	O	Mo	<	0.000300	O	Sc	<	0.000300	M	Yb	<	0.000999				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 137.33 +2 6 Ba(H2O)6+2
Chemical Compatibility - Soluble in HCl, and HNO3. Avoid H2SO4, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, iodate, molybdate, sulfite and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1 -10,000 ppm solutions chemically stable for years in 1-3.5% HNO3 / LDPE container.
Ba Containing Samples (Preparation and Solution) -Metal(is best dissolved in diluted HNO3); Ores(Carbonate fusion in Pt0 followed by HCl dissolution. If sulfate is present dissolve the fuseate using HCl / tartaric acid to prevent BaSO4 precipitate); Organic Matrices (dry ash and dissolve in dilute HCl.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 138 amu	1 ppt	N/A	122Sn16O, 122Te16O
ICP-OES 230.424 nm	0.004/0.0005 µg/mL	1	Mo, Ir, Co
ICP-OES 233.527 nm	0.004/0.0003 µg/mL	1	
ICP-OES 455.403 nm	0.002/0.0001 µg/mL	1	Zr, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 02, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 02, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MPK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVBEs_00010

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

Tel: 800.669.6799 - 540.585.3030
Fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBE1
Lot Number:	J2-BE02038
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Be
Starting Material:	Be Acetate
Starting Material Lot#:	1858
Starting Material Purity:	99.9998%

934046
ID: MEIVBEs_00010
Exp:05/23/17 Prpd:MDK Opn:05/23/16
1000ppm Beryllium stock s
Rec'd 5/23/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 4 µg/mL - weighted mean

Certified Density: 1.020 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **999 ± 4 µg/mL**
ICP Assay NIST SRM 3105a Lot Number: 090514

Assay Method #2 **999 ± 4 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001190	M	Eu	<	0.000238	O	Na		0.007553	M	Se	<	0.002379	O	Zn		0.003594
O	Al		0.000853	O	Fe		0.002314	M	Nb	<	0.000476	O	Si		0.003045	M	Zr	<	0.000714
M	As	<	0.007137	M	Ga	<	0.000238	M	Nd	<	0.000238	M	Sm	<	0.000238				
M	Au	<	0.000238	M	Gd	<	0.000238	O	Ni	<	0.002426	M	Sn	<	0.001190				
M	B	<	0.004758	M	Ge	<	0.000238	n	Os	<		O	Sr		0.000018				
O	Ba	<	0.004852	M	Hf	<	0.000238	O	P	<	0.060650	M	Ta	<	0.000238				
s	Be	<		O	Hg	<	0.011281	M	Pb	<	0.001190	M	Tb	<	0.000238				
M	Bi	<	0.000238	M	Ho	<	0.000238	M	Pd	<	0.004758	M	Te	<	0.011895				
O	Ca		0.002071	M	In	<	0.000238	M	Pr	<	0.000238	M	Th	<	0.000238				
O	Cd	<	0.000607	M	Ir	<	0.000238	M	Pt	<	0.000238	M	Ti	<	0.007137				
M	Ce	<	0.000238	O	K		0.006091	M	Rb	<	0.000238	M	Tl	<	0.000238				
O	Co	<	0.000728	M	La	<	0.000238	M	Re	<	0.000238	M	Tm	<	0.000238				
O	Cr		0.000305	O	Li	<	0.001213	M	Rh	<	0.000238	M	U	<	0.001190				
M	Cs	<	0.000476	M	Lu	<	0.000238	M	Ru	<	0.000238	M	V	<	0.000476				
O	Cu	<	0.003033	O	Mg		0.000365	i	S	<		M	W	<	0.000714				
M	Dy	<	0.000238	O	Mn	<	0.000121	M	Sb	<	0.000238	M	Y	<	0.000238				
M	Er	<	0.000238	M	Mo	<	0.000714	O	Sc	<	0.000121	M	Yb	<	0.000238				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 9.01 +2 4 Be+(H2O)4+2
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Stable with all metals and inorganic anions.
Stability - 2-100 ppb levels stable for months in 1 % HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 5-10 % HNO3 / LDPE container.
Be Containing Samples (Preparation and Solution) - Meta l(is best dissolved in diluted H2SO4); BeO (boiling nitric, hydrochloric, or sulfuric acids or KHSO4 fusion); Ores (H2SO4/HF digestion or carbonate fusion in Pt0); Organic Matrices (sulfuric/peroxide digestion or nitric/sulfuric/perchloric acid decomposition, or dry ash and dissolution according to the BeO procedure above).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 9 amu	4 ppt	N/A	
ICP-OES 234.861 nm	0.0003/0.00016 µg/mL	1	Fe, Ta, Mo
ICP-OES 313.042 nm	0.0003/0.00009 µg/mL	1	V, Ce, U
ICP-OES 313.107 nm	0.0007/0.0005 µg/mL	1	Ce, Th, Tm

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 12, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- May 12, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/23/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVBs_00006

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGB1
Lot Number:	H2-B02125
Matrix:	H2O
Value / Analyte(s):	1 000 µg/mL ea: B
Starting Material:	Recrystallized H3BO3
Starting Material Lot#:	F2-B02105
Starting Material Purity:	100.0000%

Inorganic Ventures 1,000

889361

ID: MEIVBs_00006

Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 6 µg/mL - weighted mean

Certified Density: 1.001 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1003 ± 5 µg/mL**
ICP Assay NIST SRM 3107 Lot Number: 110830

Assay Method #2 **1000 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	< 0.000100	M	Eu	< 0.000100	O	Na	0.000833	M	Se	< 0.005021	O	Zn	< 0.008176			
O	Al	< 0.008176	O	Fe	< 0.003066	M	Nb	< 0.000100	O	Si	< 0.009198	M	Zr	< 0.000100			
M	As	< 0.000502	M	Ga	< 0.000502	M	Nd	< 0.000100	M	Sm	< 0.000100						
M	Au	< 0.000100	M	Gd	< 0.000100	O	Ni	< 0.003066	M	Sn	< 0.000100						
s	B	<	M	Ge	< 0.003013	n	Os	<	M	Sr	< 0.000301						
M	Ba	< 0.000100	M	Hf	< 0.000100	O	P	< 0.153300	M	Ta	< 0.000100						
M	Be	< 0.000803	O	Hg	< 0.051100	M	Pb	< 0.000100	M	Tb	< 0.000100						
M	Bi	< 0.000100	M	Ho	< 0.001004	M	Pd	< 0.000100	M	Te	< 0.001004						
O	Ca	0.000552	M	In	< 0.000100	M	Pr	< 0.000100	M	Th	< 0.000100						
M	Cd	< 0.000100	M	Ir	< 0.000100	M	Pt	< 0.000100	O	Ti	< 0.001533						
M	Ce	< 0.000100	O	K	< 0.001635	M	Rb	< 0.001004	M	Tl	< 0.000100						
M	Co	< 0.001004	M	La	< 0.000100	M	Re	< 0.000100	M	Tm	< 0.000100						
M	Cr	< 0.002008	O	Li	< 0.000061	M	Rh	< 0.000100	M	U	< 0.000100						
M	Cs	< 0.003013	M	Lu	< 0.000100	M	Ru	< 0.000100	O	V	< 0.003066						
M	Cu	< 0.002008	O	Mg	< 0.000082	n	S	<	M	W	< 0.001004						
M	Dy	< 0.000100	O	Mn	< 0.005110	M	Sb	< 0.000100	M	Y	< 0.000100						
M	Er	< 0.000100	M	Mo	< 0.000100	O	Sc	< 0.010220	M	Yb	< 0.000100						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 10.81 +3 4 B(OH)3 and B(OH)4-1

Chemical Compatibility -Moderately soluble in HCl, HNO3, H2SO4 and HF aqueous matrices and very soluble in NH4OH . Stable with all metals and inorganic anions at low to moderate ppm levels.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-1,000 ppm solutions chemically stable for years in 1% HNO3 / LDPE container. 1000 -10,000 ppm stable for years in dilute NH4OH / LDPE container.

B Containing Samples (Preparation and Solution) -Metal (Crystalline form is scarcely attacked by acids or alkaline solutions; amorphous form is soluble in conc. HNO3 or H2SO4); B(OH)3 (water soluble); Ores(avoid acid digestions and use caustic fusions in PtE); Organic Matrices (dry ash mixed with Na2CO3 in PtE at 450EC then increase heat to 1000EC to fuse; or perform a Na2O2 fusion in a NiE crucible / Parr bomb).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 11 amu	700 ppt	N/A	
ICP-OES 208.959 nm	0.007/0.0005 µg/mL	1	Mo
ICP-OES 249.678 nm	0.004/0.003 µg/mL	1	Os, W, Co, Cr, Hf
ICP-OES 249.773 nm	0.003/0.001 µg/mL	1	W, Ce, Co, Th, Ta, Mn, Mo, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 05, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- February 05, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MBK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVCAwHRDs_00011

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6779 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCA10
Lot Number:	H2-CA04105
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Calcium
Starting Material:	CaO
Starting Material Lot#:	1748
Starting Material Purity:	99.9971%

954506
ID: MEIVCAwHRDs_00011
Exp:07/21/17 Prpd:MDK Opn:07/21/16
10000ppm Calcium stock st
Recd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9950 ± 24 µg/mL - weighted mean

Certified Density: 1.040 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **9956 ± 50 µg/mL**
ICP Assay NIST SRM 3109a Lot Number: 130213

Assay Method #2 **9948 ± 25 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stablility standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001138	M	Eu	<	0.000569	O	Na		0.051844	M	Se	<	0.017081	O	Zn		0.000607
O	Al	<	0.058400	O	Fe		0.001626	M	Nb	<	0.000569	O	Si		0.010604	M	Zr	<	0.001708
M	As	<	0.005693	M	Ga	<	0.000569	M	Nd	<	0.000569	M	Sm	<	0.000569				
M	Au	<	0.000572	M	Gd	<	0.000569	O	Ni	<	0.003504	M	Sn	<	0.001708				
O	B	<	0.023360	M	Ge	<	0.002846	M	Os	<	0.000572	O	Sr		0.336991				
O	Ba		0.010173	M	Hf	<	0.000569	O	P	<	0.058400	M	Ta	<	0.000569				
O	Be	<	0.000233	M	Hg	<	0.000572	M	Pb		0.003216	M	Tb	<	0.000569				
M	Bi	<	0.000569	M	Ho	<	0.000569	M	Pd	<	0.000569	M	Te	<	0.000569				
s	Ca	<		M	In	<	0.000569	M	Pr	<	0.000569	M	Th	<	0.000569				
O	Cd	<	0.000487	M	Ir	<	0.000572	M	Pt	<	0.000569	M	Ti	<	0.003985				
M	Ce	<	0.000569	O	K		0.016496	M	Rb		0.004135	M	Tl	<	0.000569				
O	Co	<	0.002336	M	La	<	0.000569	M	Re	<	0.000569	M	Tm	<	0.000569				
O	Cr	<	0.002336	M	Li	<	0.006832	M	Rh	<	0.000569	M	U	<	0.000569				
M	Cs		0.009190	O	Lu	<	0.000268	M	Ru	<	0.000572	O	V	<	0.001752				
O	Cu	<	0.004672	O	Mg		0.022896	n	S	<		M	W	<	0.001138				
M	Dy	<	0.000569	O	Mn	<	0.000350	M	Sb	<	0.003416	M	Y	<	0.000569				
M	Er	<	0.000569	M	Mo	<	0.005693	O	Sc	<	0.000584	M	Yb	<	0.000569				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 40.08 +2 6 Ca(H2O)6+2
Chemical Compatibility - Soluble in HCl and HNO3. Avoid H2SO4, HF, H3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO3 / LDPE container.
Ca Containing Samples (Preparation and Solution) -Metal (best dissolved in diluted HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (dry ash and dissolution in dilute HCl. Do not heat when dissolving to avoid precipitation of SiO2). The oxide, hydroxide, carbonate, phosphate, and fluoride of calcium are soluble in % levels of HCl or HNO3. The sulfates (gypsum, anhydrite, etc.), certain silicates, and complex compounds require fusion with Na2CO3 followed by HCl / water dissolution. Note that contamination is a very real problem when analyzing for trace levels.
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 44 amu	1200 ppt	n/a	16O212C, 28Si16O, 88Sr
ICP-OES 393.366 nm	0.0002 / 0.00004 µg/mL	1	U, Ce
ICP-OES 396.847 nm	0.0005 / 0.00006 µg/mL	1	Th
ICP-OES 422.673 nm	0.01 / 0.001 µg/mL	1	Ge

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 03, 2014

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- December 03, 2017

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MMK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVCDs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3014
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCO1
Lot Number:	J2-CO02068
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Cobalt
Starting Material:	Cobalt Carbonate
Starting Material Lot#:	1850
Starting Material Purity:	99.9990%

954510
ID: MEIVCDs_00012
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000 PPM Cd
Rec'd 7/21/16 MRK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value:	996 ± 3 µg/mL
Certified Density:	1.017 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1	**997 ± 3 µg/mL** EDTA NIST SRM 928 Lot Number: 928
Assay Method #2	**994 ± 4 µg/mL** ICP Assay NIST SRM 3113 Lot Number: 000630 Co

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.005549	M	Eu	<	0.000555	O	Na		0.005793	M	Se	<	0.110979	O	Zn		0.000897
O	Al	<	0.034740	O	Fe	<	0.023160	M	Nb	<	0.001665	O	Si		0.002720	M	Zr	<	0.005549
i	As	<		M	Ga	<	0.000555	M	Nd	<	0.000555	M	Sm	<	0.001665				
M	Au	<	0.000555	M	Gd	<	0.000555	O	Ni		0.002094	M	Sn	<	0.016647				
M	B	<	0.066587	M	Ge	<	0.005549	n	Os	<		M	Sr	<	0.002774				
O	Ba		0.000625	M	Hf	<	0.000555	n	P	<		M	Ta	<	0.001110				
O	Be	<	0.000116	n	Hg	<		M	Pb	<	0.011098	M	Tb	<	0.000555				
M	Bi		0.005630	M	Ho	<	0.000555	M	Pd	<	0.000555	M	Te	<	0.022196				
O	Ca		0.005793	M	In	<	0.002774	M	Pr	<	0.001665	M	Th	<	0.000555				
M	Cd	<	0.000555	M	Ir	<	0.000555	M	Pt	<	0.000555	M	Ti	<	0.016647				
M	Ce	<	0.000555	O	K		0.000816	M	Rb	<	0.000555	M	Tl	<	0.000555				
s	Co	<		M	La	<	0.002774	M	Re	<	0.000555	M	Tm	<	0.000555				
M	Cr	<	0.022196	O	Li		0.000011	M	Rh	<	0.000555	M	U	<	0.000555				
M	Cs	<	0.000555	M	Lu	<	0.000555	M	Ru	<	0.000555	O	V	<	0.001158				
M	Cu	<	0.011098	O	Mg		0.001169	n	S	<		M	W	<	0.011098				
M	Dy	<	0.000555	O	Mn	<	0.001158	M	Sb	<	0.005549	M	Y	<	0.000555				
M	Er		0.001043	M	Mo	<	0.016647	M	Sc	<	0.005549	M	Yb	<	0.005549				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.93 +2 6 $Co(H_2O)_6^{2+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Co Containing Samples (Preparation and Solution) - Metal (soluble in HNO_3); Oxides (Soluble in HCl); Ores (dissolve in HCl / HNO_3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 59 amu	2 ppt	n/a	42Ca16O1H , 40Ar18O1H , 36Ar23Na, 43Ca16O, 24Mg35Cl
ICP-OES 228.616 nm	0.01/0.001 µg/mL	1	
ICP-OES 237.862 nm	0.01/0.002 µg/mL	1	W, Re, Al, Ta
ICP-OES 238.892 nm	0.01/0.002 µg/mL	1	Fe, W, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 15, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- September 15, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVCEs_00010

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

Tel: 800.669.4799 • 540.585.3030
Fax: 540.585.3012
Info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCE1
Lot Number:	J2-CE01096
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Ce
Starting Material:	CeO2
Starting Material Lot#:	0609251 OCE
Starting Material Purity:	99.9980%

1000ppm Cerium stock std
889362
ID: MEIVCEs_00010
Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1003 ± 4 µg/mL

Certified Density: 1.040 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1003 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **1000 ± 4 µg/mL**
ICP Assay NIST SRM 3110 Lot Number: 090504

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001015	M	Eu	<	0.002031	M	Na		0.008011	M	Se	<	0.040628	O	Zn	<	0.050000
M	Al		0.008011	O	Fe	<	0.050000	M	Nb	<	0.002031	O	Si	<	0.200000	M	Zr	<	0.006094
M	As	<	0.001015	O	Ga	<	0.100000	M	Nd		0.005808	M	Sm	<	0.006094				
M	Au	<	0.000203	M	Gd	<	0.304715	M	Ni	<	0.016251	M	Sn	<	0.006094				
M	B	<	0.020314	M	Ge	<	0.002031	n	Os	<		M	Sr	<	0.002031				
M	Ba	<	0.040628	M	Hf	<	0.002031	i	P	<		M	Ta	<	0.002031				
M	Be	<	0.000203	i	Hg	<		M	Pb		0.000701	i	Tb	<					
M	Bi	<	0.000406	M	Ho	<	0.001015	M	Pd	<	0.001015	M	Te	<	0.040628				
O	Ca	<	0.100000	M	In	<	0.004062	M	Pr	<	0.406287	M	Th	<	0.001015				
M	Cd	<	0.002031	M	Ir	<	0.000203	M	Pt	<	0.000203	M	Ti	<	0.010157				
s	Ce	<		O	K	<	0.100000	M	Rb	<	0.000609	M	Tl	<	0.000203				
M	Co	<	0.000203	O	La	<	0.100000	M	Re	<	0.000203	M	Tm	<	0.000812				
M	Cr	<	0.020314	O	Li	<	0.005000	M	Rh	<	0.000203	M	U	<	0.000203				
M	Cs	<	0.002031	M	Lu		0.000630	M	Ru	<	0.000203	M	V	<	0.014220				
M	Cu	<	0.010157	O	Mg		0.000246	i	S	<		M	W	<	0.006094				
M	Dy		0.002113	M	Mn	<	0.006094	M	Sb	<	0.002031	M	Y		0.000360				
M	Er	<	0.004062	M	Mo	<	0.002031	M	Sc	<	0.001015	M	Yb		0.000650				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 140.12 +4 6 to 8,9,10 for some compounds Ce(OH)y(H2O)x+4-y
Chemical Compatibility -Soluble in HCl, and HNO3. Avoid HF, H3PO4, H2SO4 and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride and sparingly soluble sulfates (La - Eu exhibit low sulfate solubility). Avoid mixing with elements/solutions containing moderate amounts of fluoride.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5 % HNO3 / LDPE container.
Ce Containing Samples (Preparation and Solution) -Metal (Soluble in acids); Oxide (dissolved by heating in H2O / HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (dry ash and dissolve in 1:1 H2O/ HCl or HNO3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 140 amu	1 ppt	n/a	124Sn16O, 124Te16O
ICP-OES 413.765 nm	0.05 / 0.0058 µg/mL	1	a Ce 413.747 line may effect Bkg. Corr.
ICP-OES 418.660 nm	0.05 / 0.003 µg/mL	1	Zr
ICP-OES 453.975 nm	0.06 / 0.0063 µg/mL	1	

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 05, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- August 05, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDB

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVCOs_00012

300 Technology Drive
Christiansburg, VA 24073 - USA
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCD1
Lot Number:	J2-CD02063
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Cadmium
Starting Material:	Cd shot
Starting Material Lot#:	1714
Starting Material Purity:	99.9958%

954511
ID: MEIVCOs_00012
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000ppm Cobalt Stock Std
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 5 µg/mL

Certified Density: 1.016 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **997 ± 5 µg/mL**
ICP Assay NIST SRM 3108 Lot Number: 130116

Assay Method #2 **999 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.009150	M	Eu	<	0.013725	O	Na		0.005201	M	Se	<	0.036600	O	Zn		0.000570
O	Al		0.001755	O	Fe	<	0.001100	M	Nb	<	0.002287	O	Si		0.028532	M	Zr	<	0.022875
M	As	<	0.045750	M	Ga	<	0.004575	M	Nd	<	0.009150	M	Sm	<	0.004575				
M	Au	<	0.013725	M	Gd	<	0.004575	O	Ni	<	0.003000	M	Sn	<	0.022875				
O	B		0.003950	M	Ge	<	0.027450	n	Os	<		M	Sr	<	0.002287				
M	Ba	<	0.045750	M	Hf	<	0.009150	O	P	<	0.003000	M	Ta	<	0.032025				
M	Be	<	0.002287	O	Hg	<	0.012000	M	Pb	<	0.013725	M	Tb	<	0.001372				
M	Bi	<	0.001830	M	Ho	<	0.002287	M	Pd	<	0.022875	O	Te	<	0.007000				
O	Ca		0.002194	O	In	<	0.002000	M	Pr	<	0.001372	M	Th	<	0.004575				
s	Cd	<		M	Ir	<	0.022875	M	Pt	<	0.009150	M	Ti	<	0.228751				
M	Ce	<	0.022875	O	K		0.000219	M	Rb	<	0.004575	M	Tl	<	0.004575				
M	Co	<	0.013725	M	La	<	0.002287	M	Re	<	0.004575	M	Tm	<	0.001830				
M	Cr	<	0.022875	O	Li	<	0.000020	M	Rh	<	0.004575	M	U	<	0.009150				
M	Cs	<	0.001372	M	Lu	<	0.001830	M	Ru	<	0.009150	M	V	<	0.009150				
M	Cu	<	0.027450	O	Mg		0.000197	O	S	<	0.030000	M	W	<	0.045750				
M	Dy	<	0.027450	M	Mn	<	0.018300	M	Sb	<	0.002287	M	Y	<	0.183001				
M	Er	<	0.022875	M	Mo	<	0.009150	M	Sc	<	0.045750	M	Yb	<	0.004575				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 112.41 +2 4 Cd2(OH) (aq)3+ and Cd(OH)(aq)
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 , and HF. Avoid basic media forming insoluble carbonate and hydroxide.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO3 / LDPE container.
Cd Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (soluble in HCl or HNO3); Ores (dissolve in HCl /HNO3 then take to fumes with H2SO4. The silica and lead sulfate are filtered off after the addition of water); Organic based (dry ash at 450°C and dissolve ash in HCl), (sulfuric / peroxide acid digestion).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 111 amu	11 ppt	n/a	95Mo16O
ICP-OES 214.438 nm	0.003 / 0.0003 µg/mL	1	Pt, Ir
ICP-OES 226.502 nm	0.003 / 0.0003 µg/mL	1	Ir
ICP-OES 228.802 nm	0.003 / 0.0003 µg/mL	1	Co, Ir, As, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 20, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 20, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVCRs_00013

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCR(3)1
Lot Number:	J2-CR03111
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Chromium+3
Starting Material:	Cr Flake
Starting Material Lot#:	1661
Starting Material Purity:	99.9899%

929534
ID: MEIVCRs_00013
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000ppm Chromium (+3) sto

Rec'd 5/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 4 µg/mL

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **997 ± 5 µg/mL**
ICP Assay NIST SRM 3112a Lot Number: 030730Cr3

Assay Method #2 **999 ± 4 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001009	M	Eu	<	0.025220	O	Na		0.017703	M	Se	<	0.050441	O	Zn	<	0.036630
O	Al		0.002714	O	Fe		0.040127	M	Nb	<	0.025220	n	Si	<		M	Zr	<	0.015132
M	As	<	0.025220	O	Ga	<	0.024420	M	Nd	<	0.001009	M	Sm	<	0.000504				
M	Au	<	0.000504	M	Gd	<	0.000504	O	Ni		0.001210	M	Sn	<	0.015132				
O	B		0.000856	M	Ge	<	0.005044	n	Os	<		M	Sr	<	0.025220				
M	Ba	<	0.025220	M	Hf	<	0.000504	i	P	<		M	Ta	<	0.000504				
M	Be	<	0.002522	O	Hg	<	0.003663	M	Pb		0.000573	M	Tb	<	0.000504				
M	Bi	<	0.010088	M	Ho	<	0.000504	M	Pd	<	0.005044	M	Te	<	0.010088				
O	Ca		0.007435	M	In	<	0.001009	M	Pr	<	0.001513	M	Th	<	0.000504				
M	Cd	<	0.001513	M	Ir	<	0.000504	M	Pt	<	0.000504	O	Ti		0.002360				
M	Ce	<	0.001513	O	K		0.009442	i	Rb	<		M	Tl	<	0.000504				
O	Co		0.007701	M	La	<	0.000504	M	Re	<	0.015132	M	Tm	<	0.030264				
s	Cr	<		O	Li	<	0.004274	M	Rh	<	0.100881	M	U	<	0.000504				
M	Cs	<	0.005044	M	Lu	<	0.000504	M	Ru	<	0.050441	M	V	<	0.075661				
O	Cu		0.006314	O	Mg		0.000708	i	S	<		M	W		0.005461				
M	Dy	<	0.000504	O	Mn		0.000797	M	Sb	<	0.020176	M	Y	<	0.001513				
M	Er	<	0.010088	M	Mo		0.020087	M	Sc	<	0.020176	M	Yb	<	0.000504				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 52.00 +3 6 $Cr(H_2O)_6^{3+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4, HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Cr3 Containing Samples (Preparation and Solution) -Metal (soluble in HCl); Oxides/Ores (Chrome ore/oxides are very difficult to dissolve. The following procedures [A-D] are commonly used: A. Fusion with $KHSO_4$ and extraction with hot KCl. The residue fused with Na_2CO_3 and $KClO_3$, 3:1. B. Fusion with $NaKSO_4$ and NaF 2:1, C. Fusion with magnesia or lime and sodium or potassium carbonates, 4:1. D. Fusion with Na_2O_2 or NaOH and KNO_3 or NaOH and Na_2O_2. Nickel, iron, copper, or silver crucibles should be used for D. Platinum may be used for A, B, C); Organic Matrices (ash at 4500C followed by one of the fusion methods above or sulfuric/hydrogen peroxide acid digestions may be applicable to non oxide containing samples).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 52 amu	40 ppt	N/A	36S16O, 36Ar16O - The 50Cr, 53Cr, 54Cr lines suffer from many more potential interferences from sulfur, chlorine and argon compounds of oxygen, nitrogen and carbon.
ICP-OES 205.552 nm	0.006/0.0008 µg/mL	1	Os
ICP-OES 276.654 nm	0.01/0.001 µg/mL	1	Cu, Ta, V
ICP-OES 284.325 nm	0.008/0.0007 µg/mL	1	

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 17, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- November 17, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

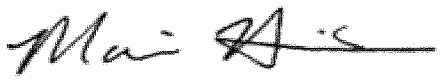
- Sealed TCT Bag Open Date: 5/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

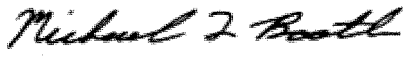
Certificate Prepared By:

Maurice Harris
Product Documentation Technician



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVCUs_00014

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

fax: 800.669.6795 - 540.585.3012
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCU1
Lot Number:	J2-CU03026
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Copper
Starting Material:	Cu Metal
Starting Material Lot#:	1806
Starting Material Purity:	99.9996%

929533
ID: MEIVCUs_00014
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000ppm Copper stock std
Rec'd 5/6/17 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 5 µg/mL

Certified Density: 1.014 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 5 µg/mL**
ICP Assay NIST SRM 3114 Lot Number: 121207

Assay Method #2 **1001 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.004691	M	Eu	<	0.000938	O	Na		0.000312	M	Se	<	0.018765	O	Zn	<	0.001230
O	Al		0.000312	O	Fe		0.000718	M	Nb	<	0.004691	O	Si		0.000983	O	Zr	<	0.002460
O	As	<	0.007380	M	Ga	<	0.000938	M	Nd	<	0.000938	M	Sm	<	0.000938				
M	Au	<	0.000938	M	Gd	<	0.000938	M	Ni	<	0.002815	O	Sn	<	0.002460				
O	B	<	0.001230	M	Ge	<	0.009383	n	Os	<		O	Sr	<	0.000062				
O	Ba	<	0.000086	M	Hf	<	0.004691	O	P	<	0.061500	M	Ta	<	0.009383				
O	Be	<	0.000062	O	Hg	<	0.002460	M	Pb		0.000155	M	Tb	<	0.000938				
M	Bi	<	0.018765	M	Ho	<	0.000938	M	Pd	<	0.002815	M	Te	<	0.037530				
O	Ca		0.000296	M	In	<	0.000938	M	Pr	<	0.000938	M	Th	<	0.000938				
M	Cd	<	0.002815	M	Ir	<	0.000938	M	Pt	<	0.000938	O	Ti	<	0.000615				
M	Ce	<	0.000938	O	K		0.000359	M	Rb	<	0.000938	M	Tl	<	0.000938				
O	Co	<	0.003690	M	La	<	0.000938	M	Re	<	0.000938	M	Tm	<	0.000938				
O	Cr	<	0.002460	M	Li	<	0.046913	O	Rh	<	0.008610	M	U	<	0.000938				
M	Cs	<	0.018765	M	Lu	<	0.000938	M	Ru	<	0.000938	O	V	<	0.000615				
s	Cu	<		O	Mg		0.001295	O	S		0.000749	M	W	<	0.005630				
M	Dy	<	0.000938	O	Mn	<	0.000615	M	Sb	<	0.004691	O	Y	<	0.000369				
M	Er	<	0.000938	O	Mo	<	0.003075	O	Sc	<	0.000369	M	Yb	<	0.000938				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 63.55 +2 6 Cu(H2O)62+
Chemical Compatibility -Stable in HCl, HNO3, H2SO4, HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Cu Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 63 amu	10 ppt	n/a	40Ar23Na 47Ti16O, 14N12C37Cl, 16O12C35Cl, 23Na40Ca
ICP-OES 219.958 nm	0.01/.002 µg/mL	1	Th, Ta, Nb, U, Hf
ICP-OES 224.700 nm	0.01/.001 µg/mL	1	Pb, Ir, Ni, W
ICP-OES 324.754 nm	0.06/.001 µg/mL		Nb, U, Th, Mo, Hf

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 01, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- December 01, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/6/16 mbh

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVFEs_00015

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGFE10
Lot Number:	K2-FE04057
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Iron
Starting Material:	Iron Metal
Starting Material Lot#:	2031
Starting Material Purity:	99.9970%

954508

ID: MEIVFEs_00015

Exp:07/21/17 Prpd:MDK Opn:07/21/16

10,000 ppm Iron

Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10 003 ± 26 µg/mL

Certified Density: 1.041 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **9998 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **10038 ± 66 µg/mL**
ICP Assay NIST SRM 3126a Lot Number: 140812

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001204	M	Eu	<	0.000602	O	Na		0.014010	M	Se	<	0.003000	M	Zn	<	0.021079
O	Al		0.005094	s	Fe	<		M	Nb	<	0.001204	O	Si		0.056296	M	Zr	<	0.002409
M	As	<	0.063841	M	Ga	<	0.018068	M	Nd	<	0.000602	M	Sm	<	0.000602				
M	Au	<	0.000600	M	Gd	<	0.000602	M	Ni		0.029566	M	Sn	<	0.006022				
O	B	<	0.037050	i	Ge	<		M	Os	<	0.000600	M	Sr	<	0.000602				
O	Ba	<	0.001852	M	Hf	<	0.000602	i	P	<		M	Ta	<	0.000602				
O	Be	<	0.000617	M	Hg	<	0.003000	M	Pb	<	0.004818	M	Tb	<	0.000602				
M	Bi	<	0.000602	M	Ho	<	0.000602	M	Pd	<	0.001204	M	Te	<	0.008431				
O	Ca		0.011717	M	In	<	0.000602	M	Pr	<	0.000602	M	Th	<	0.000602				
M	Cd	<	0.000602	M	Ir	<	0.000600	M	Pt	<	0.000602	M	Ti	<	0.001806				
M	Ce	<	0.000602	O	K		0.005604	M	Rb	<	0.001204	M	Tl	<	0.000602				
M	Co		0.038013	M	La	<	0.000602	M	Re	<	0.000602	M	Tm	<	0.000602				
O	Cr		0.030058	O	Li	<	0.000123	M	Rh	<	0.000602	M	U	<	0.000602				
M	Cs	<	0.000602	M	Lu	<	0.000602	M	Ru	<	0.000600	M	V	<	0.004818				
M	Cu		0.023230	O	Mg		0.001783	O	S		0.020124	M	W	<	0.001204				
M	Dy	<	0.000602	O	Mn		0.076420	M	Sb		0.035404	M	Y	<	0.000602				
M	Er	<	0.000602	M	Mo		0.005838	M	Sc	<	0.001204	M	Yb	<	0.000602				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 55.85 +3 6 $Fe(H_2O)_6^{3+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF and H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Fe Containing Samples (Preparation and Solution) - Metal (Soluble in HCl); Oxides (If the oxide has been at a high temperature then Na_2CO_3 fusion in Pt0 followed by HCl dissolution otherwise dissolve in dilute HCl); Ores (See Oxides above using only the fusion approach).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 56 amu	970 ppt	N/A	40Ar15N1H, 40Ar16O, 36Ar17O1H , 38Ar18O, 37Cl18O1H, 40Ca16O
ICP-OES 238.204 nm	0.005/0.001 µg/mL	1	Ru, Co
ICP-OES 239.562 nm	0.005/0.001 µg/mL	1	Co, W, Cr
ICP-OES 259.940 nm	0.006/0.001 µg/mL	1	Hf, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 27, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- February 27, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVHGs_00015

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com
tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGHG1
Lot Number:	J2-HG02133
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Hg
Starting Material:	Hg metal
Starting Material Lot#:	1780
Starting Material Purity:	99.9997%

1000ppm Mercury stock std
889371
ID: MEIVHGs_00015
Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 3 µg/mL - weighted mean

Certified Density: 1.029 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1001 ± 5 µg/mL**
ICP Assay NIST SRM 3133 Lot Number: 061204

Assay Method #2 **1002 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.006542	M	Eu	<	0.000218	O	Na		0.000553	O	Se	<	0.030000	O	Zn	<	0.000400
O	Al	<	0.001000	O	Fe	<	0.000800	M	Nb	<	0.002180	O	Si		0.000691	O	Zr	<	0.001000
M	As	<	0.006542	M	Ga	<	0.000436	M	Nd	<	0.000218	M	Sm	<	0.000218				
M	Au	<	0.004361	M	Gd	<	0.000218	O	Ni	<	0.002000	O	Sn	<	0.002000				
M	B	<	0.004361	M	Ge	<	0.001090	n	Os	<		O	Sr	<	0.000200				
O	Ba	<	0.000260	M	Hf	<	0.006542	O	P	<	0.030000	M	Ta	<	0.001090				
O	Be	<	0.000180	s	Hg	<		M	Pb	<	0.002180	M	Tb	<	0.000218				
M	Bi	<	0.002180	M	Ho	<	0.000218	M	Pd	<	0.008723	M	Te	<	0.010904				
O	Ca		0.001706	M	In	<	0.000218	M	Pr	<	0.000218	M	Th	<	0.000436				
O	Cd	<	0.000500	M	Ir	<	0.000218	M	Pt	<	0.000218	O	Ti	<	0.000600				
M	Ce	<	0.000218	O	K		0.000322	M	Rb	<	0.000218	O	Tl	<	0.010000				
M	Co	<	0.000436	M	La	<	0.000218	M	Re	<	0.000218	M	Tm	<	0.000218				
O	Cr	<	0.002000	O	Li	<	0.000040	M	Rh	<	0.000218	M	U	<	0.000218				
M	Cs	<	0.001090	M	Lu	<	0.000218	M	Ru	<	0.000218	O	V	<	0.000550				
M	Cu	<	0.002180	O	Mg		0.000359	O	S	<	0.030000	M	W	<	0.004361				
M	Dy	<	0.000218	O	Mn	<	0.000160	M	Sb	<	0.001090	M	Y	<	0.000218				
M	Er	<	0.000218	O	Mo	<	0.001500	O	Sc	<	0.000600	M	Yb	<	0.000218				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59 +2 4 Hg(OH)(aq) 1+
Chemical Compatibility - Stable in HNO3. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.
Stability - 2-100 ppb levels not stable in 1% HNO3 / LDPE container, stable in 10% HNO3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO3 / LDPE container.
Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO3); Oxide (Soluble in HNO3); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th ,Rh , Fe, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 11, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **February 11, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVINs_00024

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGIN1
Lot Number:	J2-IN01115
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: In
Starting Material:	In shot
Starting Material Lot#:	1810
Starting Material Purity:	99.9998%

1000ppm Indium stock std

889359

ID: MEIVINs_00024

Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 997 ± 3 µg/mL

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **996 ± 4 µg/mL**
ICP Assay NIST SRM 3124a Lot Number: 110516

Assay Method #2 **998 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.002886	M	Eu	<	0.000577	O	Na		0.000344	M	Se	<	0.040406	O	Zn	<	0.000400
O	Al	<	0.001000	O	Fe		0.000120	M	Nb	<	0.002886	O	Si		0.000637	M	Zr	<	0.001154
M	As	<	0.011544	M	Ga	<	0.000577	M	Nd	<	0.000577	M	Sm	<	0.000577				
M	Au	<	0.000577	M	Gd	<	0.000577	O	Ni	<	0.003000	M	Sn	<	0.028861				
O	B	<	0.020000	M	Ge	<	0.005772	n	Os	<		O	Sr	<	0.000070				
O	Ba	<	0.000500	M	Hf	<	0.001154	O	P	<	0.030000	M	Ta	<	0.002886				
O	Be	<	0.000100	O	Hg	<	0.009000	M	Pb	<	0.017316	M	Tb	<	0.000577				
M	Bi	<	0.005772	M	Ho	<	0.000577	M	Pd	<	0.001731	M	Te	<	0.034633				
O	Ca		0.000344	s	In	<		M	Pr	<	0.000577	M	Th	<	0.000577				
O	Cd	<	0.001000	M	Ir	<	0.000577	M	Pt	<	0.000577	O	Ti	<	0.000400				
M	Ce	<	0.000577	O	K		0.000258	M	Rb	<	0.000577	M	Tl	<	0.005772				
M	Co	<	0.002886	M	La	<	0.000577	M	Re	<	0.000577	M	Tm	<	0.005772				
O	Cr	<	0.002000	O	Li	<	0.000060	M	Rh	<	0.000577	M	U	<	0.000577				
M	Cs	<	0.000577	M	Lu	<	0.000577	M	Ru	<	0.000577	O	V	<	0.000400				
O	Cu	<	0.002000	O	Mg		0.000034	O	S	<	0.015000	M	W	<	0.028861				
M	Dy	<	0.000577	O	Mn	<	0.000400	M	Sb	<	0.005772	M	Y	<	0.000577				
M	Er	<	0.000577	M	Mo	<	0.005772	O	Sc	<	0.000300	M	Yb	<	0.000577				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 114.82 +3 6 In(H2O)6+3
Chemical Compatibility -Soluble in HCl, HNO3, and H2SO4. Avoid neutral and basic media. Stable with most metals and inorganic anions. The oxalate, sulfide, carbonate, hydroxide and phosphate are insoluble in water.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
In Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO3); Oxide (Soluble in mineral acids); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 115 amu	1 ppt	n/a	115Sn, 99Ru16O
ICP-OES 158.583 nm	0.05 / 0.002 µg/mL	1	
ICP-OES 230.606 nm	0.1 / 0.03 µg/mL	1	Ni, Os
ICP-OES 325.609 nm	0.2 / 0.05 µg/mL	1	Mn, Mo, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 01, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- September 01, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVKs_00013

INORGANIC VENTURES

CERTIFICATE of ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGK10
Lot Number:	J2-K03054
Matrix:	2% (v/v) HNO_3
Value / Analyte(s):	10 000 µg/mL ea: Potassium
Starting Material:	KNO_3
Starting Material Lot#:	1727
Starting Material Purity:	99.9990%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10 003 ± 24 µg/mL

Certified Density: 1.025 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **10008 ± 64 µg/mL**
ICP Assay NIST SRM 3141a Lot Number: 140813

Assay Method #2 **10003 ± 24 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

951638
ID MEIVKs_00013
Exp 07/12/17 Prpd RM1 Opn 07/12/16
10,000ppm Potassium Stock

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	< 0.000639	M	Eu	< 0.000639	O	Na	0.133153	M	Se	< 0.005751	O	Zn	0.000333			
O	Al	0.000592	O	Fe	0.000999	O	Nb	< 0.002994	O	Si	0.002589	M	Zr	< 0.000639			
O	As	< 0.005545	M	Ga	< 0.000639	M	Nd	< 0.000639	M	Sm	< 0.000639						
M	Au	< 0.000639	M	Gd	< 0.000639	O	Ni	< 0.003660	M	Sn	< 0.000639						
O	B	< 0.003327	M	Ge	< 0.001917	M	Os	< 0.000639	O	Sr	0.000142						
O	Ba	0.000592	M	Hf	< 0.000639	O	P	< 0.033270	M	Ta	< 0.000639						
O	Be	< 0.000222	M	Hg	< 0.003194	M	Pb	< 0.003834	M	Tb	< 0.000639						
M	Bi	< 0.000639	M	Ho	< 0.000639	M	Pd	< 0.000639	M	Te	< 0.007669						
O	Ca	0.007952	M	In	< 0.000639	M	Pr	< 0.000639	M	Th	< 0.000639						
M	Cd	< 0.000639	M	Ir	< 0.000639	M	Pt	< 0.000639	O	Ti	< 0.000588						
M	Ce	< 0.000639	s	K	<	M	Rb	0.102731	M	Tl	< 0.000639						
M	Co	< 0.000639	M	La	< 0.000639	M	Re	< 0.000639	M	Tm	< 0.000639						
O	Cr	< 0.002440	O	Li	< 0.000067	M	Rh	< 0.000639	M	U	< 0.000639						
M	Cs	< 0.000639	M	Lu	< 0.000639	M	Ru	< 0.001278	O	V	< 0.001331						
M	Cu	0.036233	O	Mg	0.000888	O	S	0.007212	M	W	< 0.000639						
M	Dy	< 0.000639	O	Mn	< 0.000776	M	Sb	< 0.001278	M	Y	< 0.000639						
M	Er	< 0.000639	O	Mo	< 0.001331	O	Sc	< 0.000288	M	Yb	< 0.000639						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 39.10 +1 (6) K+(aq)
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Avoid use of HClO4 due to insolubility of the perchlorate. Stable with all metals and inorganic anions except ClO4-.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
K Containing Samples (Preparation and Solution) - Metal (Dissolves very rapidly in water); Ores (Sodium carbonate fusion in Pt0 followed by HCl dissolution-blank levels of K in sodium carbonate critical); Organic Matrices (Sulfuric/peroxide digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 39 amu	10 ppt	n/a	38ArH, 23Na16O, 78Se
ICP-OES 404.721 nm	1.1 / 0.05 µg/mL	1	U, Ce
ICP-OES 766.490 nm	0.4 / 0.001 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 771.531 nm	1.0 / 0.03 µg/mL	1	2nd order radiation from R.E.s on some optical designs

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 01, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- December 01, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVMGs_00018

INORGANIC VENTURES
[illegible]

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMG10
Lot Number:	J2-MG03145
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Magnesium
Starting Material:	Mg chips
Starting Material Lot#:	1484
Starting Material Purity:	99.9987%

954509
ID: MEIVMGs_00018
Exp:07/21/17 Prpd:MDK Opn:07/21/16
10,000ppm Magnesium
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value:	9970 ± 24 µg/mL
Certified Density:	1.053 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1	**9954 ± 58 µg/mL** ICP Assay NIST SRM 3131a Lot Number: 050302
Assay Method #2	**9973 ± 26 µg/mL** EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001107	M	Eu	<	0.000554	O	Na		0.074480	M	Se	<	0.011074	O	Zn	<	0.002432
O	Al	<	0.006080	O	Fe	<	0.001459	M	Nb	<	0.000554	O	Si	<	0.006080	M	Zr	<	0.000554
M	As	<	0.003322	M	Ga	<	0.000554	M	Nd	<	0.008306	M	Sm	<	0.000554				
M	Au	<	0.002216	M	Gd	<	0.000554	M	Ni	<	0.005537	M	Sn	<	0.001107				
O	B	<	0.002432	M	Ge	<	0.000554	M	Os	<	0.002770	O	Sr		0.000056				
M	Ba	<	0.000554	M	Hf	<	0.000554	O	P	<	0.060800	M	Ta	<	0.000554				
M	Be	<	0.000554	M	Hg	<	0.005540	M	Pb		0.005869	M	Tb	<	0.000554				
M	Bi	<	0.000554	M	Ho	<	0.000554	M	Pd	<	0.000554	M	Te	<	0.002769				
O	Ca		0.018942	M	In	<	0.000554	M	Pr	<	0.002769	M	Th	<	0.000554				
M	Cd	<	0.000554	M	Ir	<	0.000554	M	Pt	<	0.000554	O	Ti	<	0.000973				
M	Ce	<	0.016611	O	K		0.018270	M	Rb	<	0.001107	M	Tl	<	0.000554				
M	Co	<	0.001661	M	La	<	0.008306	M	Re	<	0.000554	M	Tm	<	0.000554				
O	Cr	<	0.003648	O	Li		0.026060	M	Rh	<	0.000554	M	U	<	0.000554				
M	Cs	<	0.000554	M	Lu	<	0.000554	M	Ru	<	0.000554	M	V	<	0.001107				
M	Cu		0.004338	s	Mg	<		O	S		0.012301	M	W	<	0.000554				
M	Dy	<	0.000554	O	Mn		0.006725	M	Sb	<	0.000554	M	Y	<	0.000554				
M	Er	<	0.000554	M	Mo	<	0.001661	O	Sc		0.000336	M	Yb	<	0.000554				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 24.31 +2 6 $Mg(H_2O)_6^{+2}$
Chemical Compatibility -Soluble in HCl, HNO_3, and H_2SO_4 avoid HF, H_3PO_4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicates, carbonates, hydroxides, oxides, and tungstates in neutral and slightly acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO_3 / LDPE container.
Mg Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO_3); Oxide (Readily soluble in above compatible aqueous acidic solutions); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric / peroxide digestion or nitric / sulfuric / perchloric acid decomposition, or dry ash and dissolution in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 24 amu	42 ppt	n/a	7Li17O, 48Ti+2 , 48Ca+2
ICP-OES 279.553 nm	0.0002 / 0.00003 µg/mL	1	Th
ICP-OES 280.270 nm	0.0003 / 0.00005 µg/mL	1	U, V
ICP-OES 285.213 nm	0.002 / 0.00003 µg/mL	1	U, Hf, Cr, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 16, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 16, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 WDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVMOs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMO1
Lot Number:	H2-MO02073
Matrix:	H2O tr. NH4OH
Value / Analyte(s):	1 000 µg/mL ea: Mo
Starting Material:	Ammonium Molybdate
Starting Material Lot#:	1934
Starting Material Purity:	99.9942%

1000 PPM Mo
889365
ID: MEIVMOs_00012
Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 6 µg/mL - weighted mean

Certified Density: 1.000 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **999 ± 4 µg/mL**
ICP Assay NIST SRM 3134 Lot Number: 130418

Assay Method #2 **1000 ± 4 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	< 0.006076	M	Eu	< 0.001519	O	Na	< 0.010480	M	Se	< 0.005063	M	Zn	< 0.026834			
M	Al	0.002201	M	Fe	0.000618	M	Nb	< 0.126574	i	Si	<	M	Zr	< 0.003797			
M	As	0.010793	M	Ga	0.000472	i	Nd	<	M	Sm	< 0.005063						
M	Au	< 0.001519	M	Gd	< 0.002531	M	Ni	< 0.010126	M	Sn	< 0.002025						
M	B	< 0.016455	M	Ge	< 0.022277	M	Os	< 0.006077	O	Sr	< 0.001572						
M	Ba	< 0.012657	M	Hf	< 0.001519	i	P	<	M	Ta	< 0.001013						
M	Be	< 0.000506	M	Hg	< 0.015193	M	Pb	< 0.010632	M	Tb	< 0.000253						
M	Bi	< 0.000253	M	Ho	< 0.000506	M	Pd	< 0.040504	i	Te	<						
O	Ca	0.001735	M	In	< 0.025315	M	Pr	< 0.101259	M	Th	< 0.001013						
O	Cd	< 0.010480	M	Ir	< 0.001519	M	Pt	< 0.001519	O	Ti	< 0.001048						
M	Ce	< 0.063287	O	K	0.008228	M	Rb	< 0.010632	M	Tl	< 0.005569						
M	Co	< 0.006076	M	La	< 0.001519	M	Re	0.002232	M	Tm	< 0.000253						
M	Cr	< 0.011139	O	Li	< 0.005240	M	Rh	< 0.001013	M	U	< 0.002531						
M	Cs	< 0.006582	M	Lu	< 0.000253	M	Ru	< 0.001519	O	V	<						
M	Cu	< 0.014176	M	Mg	0.000566	i	S	<	M	W	0.111288						
M	Dy	< 0.010632	M	Mn	< 0.037972	M	Sb	< 0.012657	M	Y	< 0.000253						
M	Er	< 0.001519	s	Mo	<	O	Sc	< 0.010480	M	Yb	< 0.002025						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 95.94 +6 6,7,8,9 [MoO4] -2(chemical form as received)

Chemical Compatibility -Mo is received in a NH4OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO4]-2 is soluble in concentrated HCl [MoOCl5]-2, dilute HF / HNO3 [MoOF5] -2 and basic media [MoO4]-2. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO4]-2 chemical form.

Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [MoO4] -2 chemically stable for years in 1% NH4OH in a LDPE container.

Mo Containing Samples (Preparation and Solution) -Metal (Soluble in HF / HNO3 or hot dilute HCl); Oxide (soluble in HF or NH4OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 95 amu	3 ppt	n/a	40Ar39K16O,79Br1 6O,190Os2+,190Pt 2+
ICP-OES 202.030 nm	0.008 / 0.0002 µg/mL	1	Os, Hf
ICP-OES 203.844 nm	0.012 / 0.002 µg/mL	1	
ICP-OES 204.598 nm	0.012 / 0.001 µg/mL	1	Ir, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 09, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- January 09, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MGA

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVNIs_00011

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS
300 Technology Drive
Christiansburg, VA 24073 - USA
Inorganicventures.com
Tel: 800.669.6795 - 540.961.4000
Fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGNI1
Lot Number:	J2-NI02095
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Ni
Starting Material:	Ni pieces
Starting Material Lot#:	1559
Starting Material Purity:	99.9993%

1000 PPM NI
889360
ID: MEIVNIs_00011
Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/26/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 4 µg/mL - weighted mean

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1000 ± 4 µg/mL**
ICP Assay NIST SRM 3136 Lot Number: 120619

Assay Method #2 **1001 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.015884	M	Eu	<	0.023826	O	Na		0.000739	O	Se	<	0.006000	M	Zn	<	0.158844
O	Al	<	0.003000	O	Fe		0.001402	M	Nb	<	0.003971	O	Si		0.001784	M	Zr	<	0.039711
O	As	<	0.005400	M	Ga	<	0.007942	M	Nd	<	0.015884	M	Sm	<	0.007942				
M	Au	<	0.023826	M	Gd	<	0.007942	s	Ni	<	0.000900	M	Sn	<	0.039711				
O	B	<	0.009900	M	Ge	<	0.047653	n	Os	<		M	Sr	<	0.003971				
M	Ba	<	0.079422	M	Hf	<	0.015884	O	P	<	0.100000	M	Ta	<	0.055595				
O	Be	<	0.002000	O	Hg	<	0.011000	M	Pb	<	0.023826	M	Tb	<	0.002382				
M	Bi	<	0.003176	M	Ho	<	0.003971	M	Pd	<	0.039711	M	Te	<	0.238267				
O	Ca		0.002294	M	In	<	0.079422	M	Pr	<	0.002382	M	Th	<	0.007942				
M	Cd	<	0.023826	M	Ir	<	0.039711	M	Pt	<	0.015884	M	Ti	<	0.397111				
M	Ce	<	0.039711	O	K		0.000280	M	Rb	<	0.007942	M	Tl	<	0.007942				
O	Co		0.000446	M	La	<	0.003971	M	Re	<	0.007942	M	Tm	<	0.003176				
M	Cr	<	0.039711	O	Li	<	0.000020	M	Rh	<	0.007942	M	U	<	0.015884				
M	Cs	<	0.002382	M	Lu	<	0.003176	M	Ru	<	0.015884	M	V	<	0.015884				
M	Cu	<	0.047653	O	Mg		0.000025	O	S	<	0.025000	M	W	<	0.079422				
M	Dy	<	0.047653	M	Mn	<	0.031768	M	Sb	<	0.003971	M	Y	<	0.317689				
M	Er	<	0.039711	M	Mo	<	0.015884	M	Sc	<	0.079422	M	Yb	<	0.007942				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.69 +2 6 $Ni(H_2O)_6^{2+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Ni Containing Samples (Preparation and Solution) -Metal (Soluble in HNO_3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO_3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 60 amu	100 ppt	n/a	43Ca16O1H , 44Ca16O, 23Na37Cl
ICP-OES 221.647 nm	0.01 / 0.0009 µg/mL	1	Si
ICP-OES 231.604 nm	0.02 / 0.002 µg/mL	1	Sb, Ta, Co
ICP-OES 232.003 nm	0.02 / 0.006 µg/mL	1	Cr, Re, Os, Nb, Ag, Pt, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 24, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- February 24, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVPBs_00017

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGPB1
Lot Number:	J2-PB03066
Matrix:	0.5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Pb
Starting Material:	Lead nitrate
Starting Material Lot#:	1840 and 1908
Starting Material Purity:	99.9994%

929535
ID: MEIVPBs_00017
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000 PPM Pb

Rec'd 5/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 3 µg/mL

Certified Density: 1.002 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 3 µg/mL**
ICP Assay NIST SRM 3128 Lot Number: 101026

Assay Method #2 **1004 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000304	M	Eu	<	0.000304	O	Na		0.000155	M	Se	<	0.006074	O	Zn		0.000323
O	Al		0.003019	O	Fe		0.000359	M	Nb	<	0.000304	O	Si		0.001006	M	Zr	<	0.000911
M	As	<	0.000607	M	Ga	<	0.000304	M	Nd	<	0.000304	M	Sm	<	0.000304				
M	Au	<	0.000611	M	Gd	<	0.000304	M	Ni	<	0.000607	M	Sn	<	0.000304				
O	B	<	0.000624	M	Ge	<	0.000304	M	Os	<	0.000306	O	Sr		0.000012				
O	Ba		0.000647	M	Hf	<	0.000304	O	P	<	0.020800	M	Ta	<	0.000304				
O	Be	<	0.000031	O	Hg	<	0.002080	s	Pb	<		M	Tb	<	0.000304				
O	Bi		0.002588	M	Ho	<	0.000304	M	Pd	<	0.000304	M	Te	<	0.003037				
O	Ca		0.000359	M	In	<	0.000304	M	Pr	<	0.000304	M	Th	<	0.004555				
O	Cd	<	0.000208	M	Ir	<	0.000306	M	Pt	<	0.000304	O	Ti		0.000115				
M	Ce	<	0.000304	O	K		0.000575	M	Rb	<	0.000304	M	Tl	<	0.003037				
M	Co	<	0.000304	M	La	<	0.000304	M	Re	<	0.000304	M	Tm	<	0.000304				
O	Cr	<	0.000520	O	Li	<	0.000416	O	Rh	<	0.010400	M	U	<	0.000304				
M	Cs		0.000168	M	Lu	<	0.000304	M	Ru	<	0.000306	M	V	<	0.000304				
M	Cu	<	0.000304	O	Mg		0.000043	O	S	<	0.010400	M	W	<	0.000304				
M	Dy	<	0.000304	M	Mn	<	0.000607	M	Sb	<	0.000304	M	Y	<	0.000304				
M	Er	<	0.000304	M	Mo	<	0.000304	M	Sc	<	0.000304	M	Yb	<	0.000304				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 207.20 +2 6 $Pb(H_2O)_6^{+2}$
Chemical Compatibility - Soluble in HCl, HF and HNO_3. Avoid H_2SO_4. Stable with most metals and inorganic anions forming insoluble carbonate, borate, sulfate, sulfite, sulfide, phosphate, oxalate, chromate, tannate, iodate, and cyanide in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO_3 / LDPE container.
Pb Containing Samples (Preparation and Solution) -Metal (Best dissolved in 1:1 H_2O / HNO_3); Oxides (The many different Pb oxides are soluble in HNO_3 with the exception of PbO_2 which is soluble in HCl or HF); Ores and Alloys (Best attacked using 1:1 H_2O / HNO_3); Organic Matrices (Dry ash and dissolve in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 208 amu	5 ppt	n/a	192Pt16O, 192Os16O
ICP-OES 168.215 nm	0.03 / 0.003 µg/mL	1	Co
ICP-OES 217.000 nm	0.09 / 0.03 µg/mL	1	W, Ir, Hf, Sb, Th
ICP-OES 220.353 nm	0.04 / 0.006 µg/mL	1	Bi, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 08, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 08, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/6/16 MBK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVPBs_00018

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGPB1
Lot Number:	K2-PB03074
Matrix:	0.5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Lead
Starting Material:	Lead nitrate
Starting Material Lot#:	1840 and 1908
Starting Material Purity:	99.9994%

954504
ID: MEIVPBs_00018
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000 PPM Pb
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1003 ± 4 µg/mL

Certified Density: 1.002 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1003 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **1003 ± 4 µg/mL**
ICP Assay NIST SRM 3128 Lot Number: 101026

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000304	M	Eu	<	0.000304	O	Na		0.000155	M	Se	<	0.006074	O	Zn		0.000324
O	Al		0.003025	O	Fe		0.000360	M	Nb	<	0.000304	O	Si		0.001008	M	Zr	<	0.000911
M	As	<	0.000607	M	Ga	<	0.000304	M	Nd	<	0.000304	M	Sm	<	0.000304				
M	Au	<	0.000611	M	Gd	<	0.000304	M	Ni	<	0.000607	M	Sn	<	0.000304				
O	B	<	0.000624	M	Ge	<	0.000304	M	Os	<	0.000306	O	Sr		0.000012				
O	Ba		0.000648	M	Hf	<	0.000304	O	P	<	0.020800	M	Ta	<	0.000304				
O	Be	<	0.000031	O	Hg	<	0.002080	s	Pb	<		M	Tb	<	0.000304				
O	Bi		0.002593	M	Ho	<	0.000304	M	Pd	<	0.000304	M	Te	<	0.003037				
O	Ca		0.000360	M	In	<	0.000304	M	Pr	<	0.000304	M	Th	<	0.004555				
O	Cd	<	0.000208	M	Ir	<	0.000306	M	Pt	<	0.000304	O	Ti		0.000115				
M	Ce	<	0.000304	O	K		0.000576	M	Rb	<	0.000304	M	Tl	<	0.003037				
M	Co	<	0.000304	M	La	<	0.000304	M	Re	<	0.000304	M	Tm	<	0.000304				
O	Cr	<	0.000520	O	Li	<	0.000416	O	Rh	<	0.010400	M	U	<	0.000304				
M	Cs		0.000168	M	Lu	<	0.000304	M	Ru	<	0.000306	M	V	<	0.000304				
M	Cu	<	0.000304	O	Mg		0.000043	O	S	<	0.010400	M	W	<	0.000304				
M	Dy	<	0.000304	M	Mn	<	0.000607	M	Sb	<	0.000304	M	Y	<	0.000304				
M	Er	<	0.000304	M	Mo	<	0.000304	M	Sc	<	0.000304	M	Yb	<	0.000304				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 207.20 +2 6 $Pb(H_2O)_6^{+2}$
Chemical Compatibility - Soluble in HCl, HF and HNO_3. Avoid H_2SO_4. Stable with most metals and inorganic anions forming insoluble carbonate, borate, sulfate, sulfite, sulfide, phosphate, oxalate, chromate, tannate, iodate, and cyanide in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO_3 / LDPE container.
Pb Containing Samples (Preparation and Solution) -Metal (Best dissolved in 1:1 H_2O / HNO_3); Oxides (The many different Pb oxides are soluble in HNO_3 with the exception of PbO_2 which is soluble in HCl or HF); Ores and Alloys (Best attacked using 1:1 H_2O / HNO_3); Organic Matrices (Dry ash and dissolve in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 208 amu	5 ppt	n/a	192Pt16O, 192Os16O
ICP-OES 168.215 nm	0.03 / 0.003 µg/mL	1	Co
ICP-OES 217.000 nm	0.09 / 0.03 µg/mL	1	W, Ir, Hf, Sb, Th
ICP-OES 220.353 nm	0.04 / 0.006 µg/mL	1	Bi, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 19, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 19, 2020**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVSBs_00011

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 540.961.0330
fax: 540.961.0329
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSB1
Lot Number:	J2-SB03037
Matrix:	1% (v/v) HNO3 3% Tartaric Acid
Value / Analyte(s):	1 000 µg/mL ea: Sb
Starting Material:	Sb Metal
Starting Material Lot#:	1857
Starting Material Purity:	99.9898%

929536
ID: MEIVSBs_00011
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000 PPM Sb
Rec'd 5/12/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 7 µg/mL

Certified Density: 1.022 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **996 ± 5 µg/mL**
ICP Assay NIST SRM 3102A Lot Number: 061229

Assay Method #2 **1002 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000101	M	Eu	<	0.000101	O	Na		0.007416	M	Se	<	0.003733	M	Zn	0.000243
O	Al		0.000971	O	Fe		0.002142	O	Nb	<	0.001814	O	Si		0.019082	M	Zr	< 0.001211
M	As	<	0.003228	M	Ga	<	0.000101	M	Nd	<	0.000101	M	Sm	<	0.000101			
M	Au	<	0.001994	M	Gd	<	0.000101	O	Ni		0.000525	M	Sn	<	0.001816			
O	B		0.003127	M	Ge	<	0.000807	M	Os	<	0.000100	O	Sr	<	0.000085			
O	Ba	<	0.001067	M	Hf	<	0.000101	O	P		0.006812	O	Ta	<	0.001014			
O	Be	<	0.000028	M	Hg	<	0.000299	M	Pb	<	0.000605	M	Tb	<	0.000101			
M	Bi	<	0.000101	M	Ho	<	0.000101	M	Pd	<	0.000202	M	Te	<	0.001110			
O	Ca		0.001111	M	In	<	0.000101	M	Pr	<	0.001009	M	Th	<	0.000101			
M	Cd	<	0.000101	M	Ir	<	0.000399	M	Pt	<	0.000101	O	Ti		0.001104			
O	Ce	<	0.007469	O	K		0.052182	M	Rb	<	0.002825	M	Tl	<	0.000101			
M	Co	<	0.000101	O	La	<	0.000760	M	Re	<	0.000101	M	Tm	<	0.000101			
O	Cr		0.010294	O	Li	<	0.000053	M	Rh	<	0.000101	M	U	<	0.000101			
M	Cs	<	0.002018	M	Lu	<	0.000101	M	Ru	<	0.000100	M	V	<	0.000101			
O	Cu	<	0.000598	O	Mg		0.000486	n	S	<		M	W	<	0.001009			
M	Dy	<	0.000404	O	Mn		0.000172	s	Sb	<		M	Y	<	0.000101			
M	Er	<	0.000101	M	Mo		0.000317	O	Sc	<	0.000049	O	Yb	<	0.000064			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 121.75 +3 6 Sb(O)C4H4O6-1
Chemical Compatibility -Stable in conc. HCl, dilute or conc. HF. Stable in dilute HNO3 as the fluoride or tartrate complex. Avoid basic media. Stable with most metals and inorganic anions in acidic media as the tartrate provided the acidity is not too high or the acid is oxidizing causing loss of the stabilizing tartrate ion. The fluoride complex of antimony is stable in strong acid but you should only mix with other metals that are fluorinated.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-2% HNO3 / LDPE container.
Sb Containing Samples (Preparation and Solution) -Metal and alloys (Soluble in H2O / HF / HNO3 mixture); Oxides (Soluble in HCl and tartaric acid or H2O / HF / HNO3 mixtures); Ores (fusion with Na2CO3 in Pt0 followed by dissolving the fuseate in a H2O / HF / HNO3 mixture); Organic based (sulfuric acid / hydrogen peroxide digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 121 amu	5 ppt	N/A	105Pd16O, 89Y16O2
ICP-OES 206.833 nm	0.03/0.003 µg/mL	1	Ta, Cr, Ge, Hf
ICP-OES 217.581 nm	0.05/0.005 µg/mL	1	Nb, W, Re, Fe
ICP-OES 231.147 nm	0.06/0.006 µg/mL	1	Ni, Co, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 21, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 21, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/6/16 MBL

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVSEs_00013

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

toll: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSE(4)1
Lot Number:	J2-SE02059
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Se
Starting Material:	Se shot
Starting Material Lot#:	1616
Starting Material Purity:	99.9996%

934044
ID: MEIVSEs_00013
Exp:05/23/17 Prpd:MDK Opn:05/23/16
1000 ppm Se
Rec'd 5/23/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1003 ± 4 µg/mL

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1006 ± 5 µg/mL**
ICP Assay NIST SRM 3149 Lot Number: 100901

Assay Method #2 **1001 ± 4 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.007579	M	Eu	<	0.011369	O	Na		0.002646	s	Se	<		O	Zn	<	0.000200
O	Al		0.000169	O	Fe		0.000198	O	Nb	<	0.004000	O	Si	<	0.003000	O	Zr	<	0.000400
O	As	<	0.005000	M	Ga	<	0.003789	M	Nd	<	0.007579	M	Sm	<	0.003789				
M	Au	<	0.011369	M	Gd	<	0.003789	O	Ni	<	0.000900	M	Sn	<	0.018949				
O	B		0.000688	M	Ge	<	0.022739	n	Os	<		M	Sr	<	0.001894				
M	Ba	<	0.037899	M	Hf	<	0.007579	O	P	<	0.003000	M	Ta	<	0.026529				
O	Be	<	0.000090	O	Hg	<	0.014000	M	Pb	<	0.011369	M	Tb	<	0.001136				
M	Bi	<	0.001515	M	Ho	<	0.001894	M	Pd	<	0.018949	M	Te	<	0.113699				
O	Ca		0.000436	M	In	<	0.037899	M	Pr	<	0.001136	M	Th	<	0.003789				
M	Cd	<	0.011369	M	Ir	<	0.018949	M	Pt	<	0.007579	M	Ti	<	0.189499				
M	Ce	<	0.018949	O	K		0.000211	M	Rb	<	0.003789	M	Tl	<	0.003789				
M	Co	<	0.011369	M	La	<	0.001894	O	Re	<	0.009000	M	Tm	<	0.001515				
M	Cr	<	0.018949	O	Li	<	0.000030	M	Rh	<	0.003789	M	U	<	0.007579				
M	Cs	<	0.001136	M	Lu	<	0.001515	O	Ru	<	0.007000	M	V	<	0.007579				
M	Cu	<	0.022739	O	Mg		0.000066	O	S	<	0.040000	M	W	<	0.037899				
M	Dy	<	0.022739	M	Mn	<	0.015159	M	Sb	<	0.001894	M	Y	<	0.151599				
M	Er	<	0.018949	O	Mo	<	0.004000	M	Sc	<	0.037899	M	Yb	<	0.003789				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 78.96 +4 6 H2SeO3
Chemical Compatibility -Soluble in HCl, HNO3,H3PO4, H2SO4 and HF aqueous matrices and water. It is stable with most inorganic anions but many cationic metals form the insoluble selenites under pH neutral conditions. When fluorinated and/or under acidic conditions precipitation is typically not a problem at moderate to low concentrations.
Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Se Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (readily soluble in water); Minerals and alloys (acid digestion with HNO3or HNO3 / HF); Organic Matrices (acid digestion with hot concentrated H2SO4 accompanied by the careful dropwise addition of H2O2 until clear).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 82 amu	200 ppt	N/A	12C35Cl2
ICP-OES 196.026 nm	0.08/0.006 µg/mL	1	Fe
ICP-OES 203.985 nm	0.2/0.05 µg/mL	1	Sb, Ir, Cr, Ta
ICP-OES 206.279 nm	0.3/0.16 µg/mL	1	Cr, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 09, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 09, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/23/16 MOK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVSRs_00006

[illegible]

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 863.01

ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSR1
Lot Number:	J2-SR02053
Matrix:	0.1% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Sr
Starting Material:	SrCO3
Starting Material Lot#:	1716
Starting Material Purity:	99.9989%

919362

ID: MEIVSRs_00006

Exp:04/14/17 Prpd:MDK Opn:04/14/16

1000ppm Strontium Stock S

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL

Certified Density: 1.001 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1001 ± 5 µg/mL**
ICP Assay NIST SRM 3153a Lot Number: 990906

Assay Method #2 **1002 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.009865	M	Eu	<	0.014798	O	Na		0.000711	O	Se	<	0.050000	O	Zn	<	0.000400				
O	Al		0.000325	O	Fe		0.000732	M	Nb	<	0.002466	O	Si		0.001423	M	Zr	<	0.024664				
O	As	<	0.005000	M	Ga	<	0.004932	M	Nd	<	0.009865	M	Sm	<	0.004932								
M	Au	<	0.014798	M	Gd	<	0.004932	O	Ni	<	0.003000	M	Sn	<	0.024664								
O	B	<	0.000600	M	Ge	<	0.029597	n	Os	<		s	Sr	<									
O	Ba		0.009965	M	Hf	<	0.009865	O	P	<	0.004800	M	Ta	<	0.034530								
O	Be	<	0.000090	O	Hg	<	0.015000	M	Pb	<	0.014798	M	Tb	<	0.001479								
M	Bi	<	0.001973	M	Ho	<	0.002466	O	Pd	<	0.004000	O	Te	<	0.100000								
O	Ca		0.006101	O	In	<	0.002000	M	Pr	<	0.001479	M	Th	<	0.004932								
M	Cd	<	0.014798	M	Ir	<	0.024664	M	Pt	<	0.009865	M	Ti	<	0.246648								
M	Ce	<	0.024664	O	K	<	0.001700	i	Rb	<		M	Tl	<	0.004932								
M	Co	<	0.014798	M	La	<	0.002466	M	Re	<	0.004932	M	Tm	<	0.001973								
O	Cr	<	0.000800	O	Li	<	0.000030	O	Rh	<	0.006000	M	U	<	0.009865								
M	Cs	<	0.001479	M	Lu	<	0.001973	O	Ru	<	0.003000	M	V	<	0.009865								
O	Cu	<	0.001400	O	Mg		0.000101	n	S	<		M	W	<	0.049329								
M	Dy	<	0.029597	O	Mn	<	0.000030	M	Sb	<	0.002466	O	Y	<	0.000040								
M	Er	<	0.024664	M	Mo	<	0.009865	M	Sc	<	0.049329	M	Yb	<	0.004932								

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 87.62 +2 6 $Sr(H_2O)_{6+2}$
Chemical Compatibility - Soluble in HCl, and HNO_3. Avoid H_2SO_4, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% HNO_3 / LDPE container.
Sr Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO_3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolution in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 88 amu	1200 ppt	N/A	72Ge16O, 176Yb+2, 176Lu+2 , 176Hf+2
ICP-OES 407.771 nm	0.0004 / 0.00006 µg/mL	1	U, Ce
ICP-OES 421.552 nm	0.0008 / 0.00004 µg/mL	1	Rb
ICP-OES 460.733 nm	0.07 / 0.003 µg/mL	1	Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 09, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 09, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 4/14/16

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVTA-68-R1_00003

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

RATION

redited to ISO Guide 34, "General Requirements for
Material Producers" and ISO/IEC 17025, "General
nce of Testing and Calibration Laboratories".
SO 9001 registered manufacturer (SAI Global File

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

lti Analyte Custom Grade Solution

929531

-68-REV1

ID: MEIVTA-68-R1_00003

Exp:05/06/17 Prpd:MDK Opn:05/06/16

-MEB628028

6010 ICV stock part 1

(v/v) HNO3

Rec'd 5/6/17 MDK

5 µg/mL ea:

ium,	Copper,	Manganese,
kel,	Lead,	Vanadium,
c,		

2.5 µg/mL ea:

yllium,

) µg/mL ea:

balt, Phosphorus,

) µg/mL ea:

omium+3,

5 µg/mL ea:

on,

) µg/mL ea:

enic,	Cadmium,	Selenium,
ntium,	Thallium,	

ug/mL ea:

er

NCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	100.0 ± 0.8 µg/mL	Barium, Ba	625.0 ± 2.6 µg/mL
Beryllium, Be	312.6 ± 1.5 µg/mL	Boron, B	125.0 ± 1.0 µg/mL
Cadmium, Cd	100.1 ± 0.4 µg/mL	Chromium+3, Cr3	200.0 ± 0.8 µg/mL
Cobalt, Co	250.0 ± 1.1 µg/mL	Copper, Cu	624.9 ± 2.5 µg/mL
Lead, Pb	625.0 ± 2.8 µg/mL	Manganese, Mn	625.2 ± 2.3 µg/mL
Nickel, Ni	625.1 ± 2.6 µg/mL	Phosphorus, P	250.3 ± 1.1 µg/mL
Selenium, Se	100.0 ± 0.6 µg/mL	Silver, Ag	50.00 ± 0.30 µg/mL
Strontium, Sr	100.1 ± 0.5 µg/mL	Thallium, Tl	100.0 ± 0.7 µg/mL
Vanadium, V	625.0 ± 2.6 µg/mL	Zinc, Zn	625.1 ± 2.6 µg/mL

Certified Density: 1.059 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	992212
Ag	Volhard	999b	999b
As	ICP Assay	3103a	100818
B	ICP Assay	3107	110830
Ba	ICP Assay	3104a	070222
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Cd	ICP Assay	3108	060531
Cd	EDTA	928	928
Co	ICP Assay	3113	000630 Co
Co	EDTA	928	928
Cr3	ICP Assay	3112a	030730Cr3
Cr3	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric		traceable to 84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	3153a	990906
Tl	ICP Assay	3158	993012
V	EDTA	928	928
V	ICP Assay	3165	992706
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 21, 2016

11.2 Expiration Date

EXPIRES
1 APR 2017

11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVTHs_00009

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com
tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTH1
Lot Number:	J2-TH01112
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Th
Starting Material:	Th(NO3)4x4H2O
Starting Material Lot#:	1803
Starting Material Purity:	99.9934%

929537
ID: MEIVTHs_00009
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000ppm Thorium stock std
Rec'd 5/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 4 µg/mL

Certified Density: 1.026 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1000 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.012727	M	Eu	<	0.000848	i	Na	<	2.121309	M	Se	<	0.006363	M	Zn	<	0.019091
M	Al	<	0.063639	M	Fe	<	0.530327	M	Nb	<	0.004242	i	Si	<		M	Zr		0.014506
M	As	<	0.004242	M	Ga	<	0.001060	M	Nd		0.000725	M	Sm	<	0.002121				
M	Au	<	0.006363	M	Gd	<	0.021213	M	Ni		0.010361	M	Sn	<	0.001484				
M	B	<	0.010606	M	Ge	<	0.006363	n	Os	<		M	Sr		0.000725				
M	Ba	<	0.042426	M	Hf	<	0.001272	i	P	<		M	Ta	<	0.004242				
M	Be	<	0.001060	i	Hg	<		M	Pb	<	0.006363	M	Tb	<	0.004242				
M	Bi	<	0.014849	M	Ho	<	0.000212	M	Pd	<	0.010606	M	Te	<	0.063639				
O	Ca	<	0.100000	M	In	<	0.000212	M	Pr	<	0.004242	s	Th	<					
M	Cd	<	0.000636	M	Ir	<	0.010606	M	Pt	<	0.004242	M	Ti	<	0.106065				
M	Ce		0.001450	i	K	<		M	Rb		0.045590	M	Tl	<	0.001484				
M	Co	<	0.004242	M	La	<	0.008485	M	Re	<	0.002121	M	Tm	<	0.000212				
M	Cr		0.023831	O	Li		0.000634	M	Rh	<	0.002121	M	U		0.044554				
M	Cs	<	0.106065	M	Lu	<	0.000212	M	Ru	<	0.004242	M	V	<	0.004242				
M	Cu	<	0.021213	M	Mg		0.051807	i	S	<		M	W	<	0.021213				
M	Dy	<	0.001484	M	Mn	<	0.008485	M	Sb	<	0.001060	M	Y	<	0.001060				
M	Er	<	0.004242	M	Mo	<	0.042426	M	Sc		0.003108	M	Yb	<	0.000636				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 232.04 +4 8 Th(OH) 3+ and Th(OH)22+

Chemical Compatibility -Soluble in HCl, and HNO3. Avoid H3PO4, H2SO4 and HF although solubilities may not be a problem depending upon pH and matrix (For example: ThF4 is soluble in acids). Avoid neutral to basic media. Th4+ is stable with most metals and inorganic anions forming an insoluble carbonate, oxide, fluoride, oxalate, sulfate and phosphate in neutral to slightly acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

Th Containing Samples (Preparation and Solution) -Metal (Soluble in Aqua Regia); Oxide (The heated oxide is not soluble in acids except hot conc. H2SO4); Ores (Na2O2 fusion at 480 ± 20EC for 7 minutes, cool and treat sintered mass with 50 mL cold water and stand until disintegrated. The mass is transferred to a beaker and acidified with HCl with 25 mL excess HCl added. Any residue is collected on a Whatman No. 42 filter, dried and ignited to 1000 EC in Pt0 crucible and the ash treated with H2SO4 / HF and fumed. If residue remains, then treat it by peroxide fusion as above.)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 232 amu	1 ppt	N/A	
ICP-OES 274.716 nm	0.08 / 0.008 µg/mL	1	Ti, Ta, Fe, V
ICP-OES 283.231 nm	0.07 / 0.007 µg/mL	1	U, Mo, Ti, Fe, Cr
ICP-OES 283.730 nm	0.07 / 0.007 µg/mL	1	U, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 14, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **September 14, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/6/16

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVTLs_00013

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTL1
Lot Number:	J2-TL02025
Matrix:	0.7% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Tl
Starting Material:	TlNO3
Starting Material Lot#:	1741 and 1793
Starting Material Purity:	99.9988%

1000 PPM Tl

889366

ID: MEIVTLs_00013

Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 11/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 6 µg/mL

Certified Density: 1.003 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 5 µg/mL**
ICP Assay NIST SRM 3158 Lot Number: 993012

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.000267	M	Eu	<	0.001195	O	Na		0.000939	M	Se	<	0.002988	O	Zn		0.000917
M	Al	<	0.007170	O	Fe		0.000345	M	Nb	<	0.000199	O	Si		0.000755	M	Zr	<	0.000199
M	As	<	0.002390	M	Ga	<	0.000199	M	Nd	<	0.000199	M	Sm	<	0.000199				
M	Au	<	0.001395	M	Gd	<	0.000199	O	Ni	<	0.000628	M	Sn	<	0.000398				
O	B	<	0.000647	M	Ge	<	0.000996	M	Os	<	0.000797	O	Sr		0.000016				
O	Ba	<	0.002092	M	Hf	<	0.000199	O	P	<	0.031380	M	Ta	<	0.000199				
O	Be	<	0.000084	O	Hg	<	0.003138	M	Pb		0.003339	M	Tb	<	0.000199				
M	Bi		0.000134	M	Ho	<	0.000199	M	Pd	<	0.001195	M	Te	<	0.001593				
O	Ca		0.001873	M	In	<	0.000199	M	Pr	<	0.000199	M	Th	<	0.000199				
M	Cd		0.000709	M	Ir	<	0.003188	M	Pt	<	0.000398	O	Ti	<	0.000209				
M	Ce	<	0.004780	O	K		0.002374	M	Rb	<	0.011950	s	Tl	<					
M	Co	<	0.000797	M	La	<	0.000797	M	Re		0.003843	M	Tm	<	0.000199				
M	Cr	<	0.000598	O	Li	<	0.000066	M	Rh	<	0.000199	M	U	<	0.000199				
M	Cs	<	0.005975	M	Lu	<	0.000199	M	Ru	<	0.000199	M	V	<	0.000199				
M	Cu		0.000370	O	Mg		0.000305	O	S	<	0.047818	M	W		0.000092				
M	Dy	<	0.000199	M	Mn	<	0.000199	M	Sb	<	0.000199	M	Y	<	0.000199				
M	Er	<	0.000199	M	Mo		0.000277	O	Sc	<	0.000146	M	Yb	<	0.000199				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 204.38 +1 6 Tl(H2O)61+
Chemical Compatibility - Soluble in HCl, HNO3, and H2SO4. Stable with most metals and inorganic anions. The sulfite, thiocyanate and oxalate are moderately soluble; the phosphate and arsenite are slightly soluble and the sulfide is insoluble.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
Tl Containing Samples (Preparation and Solution) -Metal (Best dissolved in HNO3 which forms chiefly the Tl1+ ion.); Oxide (The thallous oxide is readily soluble in water. The thallic oxide requires high levels of acid); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 205 amu	2 ppt	N/A	189Os16O
ICP-OES 190.864 nm	0.04 / 0.004 µg/mL	1	V, Ti
ICP-OES 276.787 nm	0.1 / 0.01 µg/mL	1	Ta, V, Fe, Cr
ICP-OES 351.924 nm	0.2 / 0.02 µg/mL	1	Th, Ce, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 24, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 24, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVUs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGU1
Lot Number:	J2-U01107R
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: U
Starting Material:	UO2(NO3)2.6H2O
Starting Material Lot#:	1841
Starting Material Purity:	99.9817%

1000 ppm U

889368

ID: MEIVUs_00012

Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1005 ± 4 µg/mL - weighted mean

Certified Density: 1.026 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1005 ± 3 µg/mL**
ICP Assay NIST SRM 3164 Lot Number: 080521

Assay Method #2 **1005 ± 3 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.21 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.025329	M	Eu	<	0.000253	O	Na		0.008722	M	Se	<	0.012664	M	Zn	<	0.050658
M	Al	<	0.037993	M	Fe	<	1.266462	M	Nb	<	0.002532	i	Si	<		M	Zr	<	0.005065
M	As	<	0.151975	M	Ga	<	0.002532	M	Nd	<	0.012664	M	Sm	<	0.002532				
M	Au	<	0.000253	M	Gd	<	0.002532	M	Ni	<	0.050658	M	Sn	<	0.050658				
M	B	<	0.025329	M	Ge	<	0.005065	n	Os	<		M	Sr	<	0.012664				
M	Ba	<	0.025329	M	Hf	<	0.002532	i	P	<		M	Ta	<	0.002532				
M	Be	<	0.001266	i	Hg	<		M	Pb	<	0.075987	M	Tb	<	0.007598				
M	Bi	<	0.007598	M	Ho	<	0.000759	M	Pd	<	0.001266	M	Te	<	0.075987				
O	Ca		0.030527	M	In	<	0.050658	M	Pr	<	0.002532	M	Th	<	0.007598				
M	Cd	<	0.007598	M	Ir	<	0.000253	M	Pt	<	0.000253	M	Ti	<	0.012664				
M	Ce		0.351469	i	K	<		M	Rb	<	0.002532	M	Tl	<	0.012664				
M	Co	<	0.007598	M	La	<	0.025329	M	Re	<	0.000759	M	Tm	<	0.000506				
M	Cr	<	0.050658	O	Li	<	0.014000	M	Rh	<	0.000253	s	U	<	0.005065				
M	Cs	<	0.017730	M	Lu	<	0.005065	M	Ru	<	0.000253	M	V	<	0.075987				
M	Cu	<	0.025329	M	Mg	<	0.075987	i	S	<		M	W	<	0.126646				
M	Dy	<	0.002532	M	Mn	<	0.015197	M	Sb	<	0.012664	M	Y	<	0.012664				
M	Er	<	0.002532	M	Mo	<	0.037993	M	Sc	<	0.025329	M	Yb	<	0.005065				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 238.03 +6 8 UO22+(uranyl)
Chemical Compatibility - Soluble in HCl and HNO3. Avoid H3PO4. H2SO4 and HF matrices should not be a problem depending upon [U]. Although the UO22+ ion is distinctly basic, any U+4 will precipitate in basic media. UO22+salts are generally soluble in water and UO22+ is stable with most metals and inorganic anions. The uranyl phosphate is insoluble in water. UF4 and UF6 are water soluble.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
U Containing Samples (Preparation and Solution) -Metal (Dissolves rapidly in HCl and HNO3); Oxide (Soluble in HNO3); Ores (Digest for 1-2 hours with 1 gram of ore to 30 mL 1:1 HNO3. Silica insolubles are removed by filtration after bringing the sample to fumes with conc. H2SO4.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 238 amu	2 ppt	N/A	206Pb16O2
ICP-OES 263.553 nm	0.3 / 0.01 µg/mL	1	Ce, Ir, Th, Rh, W, Zr, Ta, Ti, V, Hf, Fe, Re, Ru
ICP-OES 367.007 nm	0.3 / 0.02 µg/mL	1	Th, Ce
ICP-OES 385.958 nm	0.3 / 0.01 µg/mL	1	Th, Fe

Uranium Note: If uranium is present in this standard, it is natural abundance unless specified in Section 3.0

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 16, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 16, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

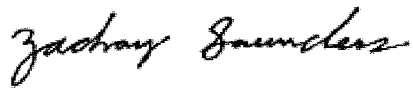
- Sealed TCT Bag Open Date: 1/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

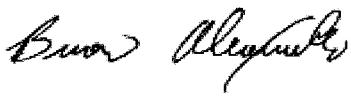
Certificate Prepared By:

Zach Saunders
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVVs_00010

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

fax: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGV1
Lot Number:	J2-V02106
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: V
Starting Material:	V2O5
Starting Material Lot#:	1782
Starting Material Purity:	99.9947%

1000 ppm V
889367
ID: MEIVVs_00010
Exp:01/06/17 Prpd:MDK Opn:01/06/16

Recd 11/16/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 996 ± 5 µg/mL - weighted mean

Certified Density: 1.016 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **995 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **998 ± 4 µg/mL**
ICP Assay NIST SRM 3165 Lot Number: 992706

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

0	Ag	< 0.000200	0	Eu	< 0.000100	0	Na	0.007884	0	Se	< 0.006683	0	Zn	< 0.006624			
0	Al	0.009315	0	Fe	0.033448	0	Nb	0.001123	0	Si	0.002628	0	Zr	< 0.001995			
0	As	< 0.001596	0	Ga	0.000432	0	Nd	< 0.000399	0	Sm	< 0.000100						
0	Au	< 0.000300	0	Gd	< 0.000100	0	Ni	< 0.006983	0	Sn	< 0.001397						
0	B	< 0.016459	0	Ge	< 0.000399	0	Os	< 0.000100	0	Sr	0.000143						
0	Ba	0.000183	0	Hf	< 0.000100	0	P	< 0.055200	0	Ta	< 0.000100						
0	Be	< 0.000499	0	Hg	< 0.008002	0	Pb	0.000237	0	Tb	< 0.000100						
0	Bi	< 0.000399	0	Ho	< 0.000100	0	Pd	< 0.000100	0	Te	< 0.001197						
0	Ca	0.011946	0	In	< 0.000100	0	Pr	< 0.000100	0	Th	< 0.000200						
0	Cd	< 0.000100	0	Ir	< 0.000100	0	Pt	< 0.000200	0	Ti	0.001446						
0	Ce	< 0.000399	0	K	< 0.110400	0	Rb	< 0.000599	0	Tl	< 0.001397						
0	Co	< 0.000100	0	La	< 0.000200	0	Re	< 0.000100	0	Tm	< 0.000100						
0	Cr	0.016246	0	Li	< 0.003312	0	Rh	< 0.000399	0	U	< 0.000200						
0	Cs	< 0.006185	0	Lu	< 0.000100	0	Ru	< 0.000100	s	V	<						
0	Cu	< 0.002793	0	Mg	< 0.033120	n	S	<	0	W	0.000367						
0	Dy	< 0.000100	0	Mn	0.000648	0	Sb	0.009326	0	Y	< 0.000100						
0	Er	< 0.000100	0	Mo	0.010977	0	Sc	< 0.000499	0	Yb	< 0.000100						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 50.94 +5 6 H2V10O284-
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4, HF, H3PO4 and strong basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
V Containing Samples (Preparation and Solution) -Metal (Fusion with NaOH or KOH in Ni0 or Na2CO3 / KNO3); Oxides (V2O3 - use HCl, V2O4 - use HCl or HNO3, V2O5 - use concentrated acids); Ores (Na2CO3 / KNO3 in Pt0 caution - nitrates attack Pto followed by water extraction of fuseate); Organic Matrices (Ash at 450 EC followed by dissolving according to V2O5 above) .
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 51 amu	4 ppt	N/A	34S16O1H, 35Cl16O, 38Ar13C, 36Ar15N, 36Ar14N1H, 37Cl14N,36S15N, 33S18O, 34S17O, 102Ru+2,02Pd+2
ICP-OES 290.882 nm	0.008 / 0.0008 µg/mL	1	Hf, Nb
ICP-OES 292.402 nm	0.006 / 0.001 µg/mL	1	Th
ICP-OES 309.311 nm	0.005 / 0.001 µg/mL	1	Mg, U, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 04, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- August 04, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/26/16 mok

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Michael Booth
QC Supervisor

Michael 2 Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGU1
Lot Number:	J2-U01107R
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: U
Starting Material:	UO2(NO3)2.6H2O
Starting Material Lot#:	1841
Starting Material Purity:	99.9817%

1000 ppm U

889368

ID: MEIVUs_00012

Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1005 ± 4 µg/mL - weighted mean

Certified Density: 1.026 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1005 ± 3 µg/mL**
ICP Assay NIST SRM 3164 Lot Number: 080521

Assay Method #2 **1005 ± 3 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Reagent

MEIVZNs_00014

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGZN1
Lot Number:	J2-ZN02107
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Zn
Starting Material:	Zn Shot
Starting Material Lot#:	1887
Starting Material Purity:	99.9994%

1000 ppm Zinc
889364
ID: MEIVZNs_00014
Exp:01/06/17 Prpd:MDK Opn:01/06/16

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 5 µg/mL

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 4 µg/mL**
ICP Assay NIST SRM 3168a Lot Number: 120629

Assay Method #2 **1000 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001528	M	Eu	<	0.000509	O	Na		0.000718	M	Se	<	0.050920	s	Zn	<	
O	Al	<	0.011300	O	Fe		0.000470	M	Nb	<	0.000509	O	Si	<	0.022600	O	Zr	<	0.001130
M	As	<	0.005092	M	Ga	<	0.005092	M	Nd	<	0.001018	M	Sm	<	0.000509				
M	Au	<	0.000509	M	Gd	<	0.002037	O	Ni	<	0.000904	M	Sn	<	0.000509				
O	B	<	0.001130	M	Ge	<	0.001018	n	Os	<		O	Sr		0.000009				
O	Ba	<	0.001130	M	Hf	<	0.000509	O	P	<	0.033900	M	Ta	<	0.000509				
O	Be	<	0.000113	O	Hg	<	0.002260	O	Pb		0.004232	M	Tb	<	0.000509				
M	Bi	<	0.010184	M	Ho	<	0.000509	M	Pd	<	0.000509	M	Te	<	0.005092				
O	Ca		0.000601	M	In	<	0.000509	M	Pr	<	0.000509	M	Th	<	0.000509				
O	Cd		0.000290	M	Ir	<	0.000509	M	Pt	<	0.000509	O	Ti	<	0.000565				
M	Ce	<	0.000509	O	K		0.000322	M	Rb	<	0.000509	M	Tl		0.000312				
M	Co	<	0.000509	M	La	<	0.000509	M	Re	<	0.000509	O	Tm	<	0.000379				
O	Cr	<	0.002260	O	Li	<	0.000565	M	Rh	<	0.000509	M	U	<	0.000509				
M	Cs	<	0.001528	M	Lu	<	0.000509	O	Ru	<	0.006780	O	V	<	0.001130				
O	Cu		0.000148	O	Mg		0.000023	O	S	<	0.011300	M	W	<	0.000509				
M	Dy	<	0.000509	O	Mn	<	0.000226	M	Sb	<	0.000509	O	Y		0.000082				
M	Er	<	0.000509	M	Mo	<	0.001528	O	Sc	<	0.000565	M	Yb	<	0.000509				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 65.39 +2 4 Zn(OH)(aq)1+
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media forming insoluble carbonate and hydroxide. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Zn Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3); Organic based (dry ash at 4500C and dissolve ash in HCl) (sulfuric/peroxide acid digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 66 amu	7 ppt	N/A	50Ti16O,50Cr16O, 50V16O, 34S16O2, 32S16O18O, 32S17O2, 33S16O17O, 32S34S, 33S2
ICP-OES 202.548 nm	0.004/0.0002 µg/mL	1	Nb, Cu, Co, Hf
ICP-OES 206.200 nm	0.006/0.0006 µg/mL	1	Sb, Ta, Bi, Os
ICP-OES 213.856 nm	0.002/0.0004 µg/mL	1	Ni, Cu, V

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 20, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- April 20, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/16/16 mwh

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MESCPICV1_00003

SCP SCIENCE
Providing Innovative Solutions to Analytical Chemists

Certificate of Analysis

1.0 DESCRIPTION :

Plasma CAL – Custom Standard

Catalogue Number : **600-304-822** **Cal #1**
Lot Number : **S151210015**
Matrix: **7.0% HNO3**
Expiration Date : **December 2016**

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Method of Analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)

Traceability: Applicable NIST Standard Reference Materials (see list below):

3101a	Al	3109a	Ca	3117a	Eu	3126a	Fe	3134	Mo	3142a	Pr	3151	Ag	3159	Th	3167a	Y
3102a	Sb	3110	Ce	3118a	Gd	3127a	La	3135a	Nd	3143	Re	3152a	Na	3160a	Tm	3168a	Zn
3103a	As	3111a	Cs	3119a	Ga	3128	Pb	3136	Ni	3144	Rh	3153a	Sr	3161a	Sn	3169	Zr
3104a	Ba	3112a	Cr	3120a	Ge	3129a	Li	3137	Nb	3145a	Rb	3154	S	3162a	Ti		
3105a	Be	3113	Co	3121	Au	3130a	Lu	3138	Pd	3147a	Sm	3155	Ta	3163	W		
3106	Bi	3114	Cu	3122	Hf	3131a	Mg	3139a	P	3148a	Sc	3156	Te	3164	U		
3107	B	3115a	Dy	3123a	Ho	3132	Mn	3140	Pt	3149	Se	3157a	Tb	3165	V		
3108	Cd	3116a	Er	3124a	In	3133	Hg	3141a	K	3150	Si	3158	Tl	3166a	Yb		

Certified Concentrations:

Ag	49.58 ± 0.46	µg/ml	P	251.6 ± 1.9	µg/ml
As	100.2 ± 0.7	µg/ml	Pb	625 ± 6	µg/ml
B	124.5 ± 0.9	µg/ml	Se	100.1 ± 0.6	µg/ml
Ba	626 ± 4	µg/ml	Sr	99.9 ± 0.8	µg/ml
Be	313.0 ± 2.0	µg/ml	Tl	99.6 ± 0.7	µg/ml
Cd	100.4 ± 0.9	µg/ml	V	625 ± 6	µg/ml
Co	251.4 ± 2.3	µg/ml	Zn	625 ± 6	µg/ml
Cr	199.5 ± 1.9	µg/ml			
Cu	626 ± 5	µg/ml			
Mn	627 ± 5	µg/ml			
Ni	628 ± 6	µg/ml			

ACCREDITED
Reference Material Producer
ISO Guide 34
CERTIFICATE #2885.02

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) such as the SRM inherited uncertainty, weighing and dilution errors and instrument variability. The combined uncertainty ($uc = v\Sigma u_i^2$) has been multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:

Density: **1.043 g/ml** @ **21.2 °C**

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Yaling Sui, Chemist
Certification Date: **December 11, 2015**

Yaling Sui

888892
ID: MESCPICV1_00003
Exp:12/31/16 Prpd:MDK Opn:01/05/16

Rec'd 1/5/16 MPK

Reagent

MESPEXAGs_00011

ACCREDITED
Reference Materials Producer
Cert #2495.01

SPEXertificate®

Certificate of Reference Material

ilac-MRA ACCREDITED
Chemical Testing
Cert #2495.02

Catalog Number: PLAG2-2Y **Lot No.** 20-172AGY

Description: 1000 µg/mL Silver

Matrix: 2% HNO_3

This **ASSURANCE®** Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for inorganic spectroscopic instrumentation such as ICP-OES, DCP, AA, ICP-MS, and XRF. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

Certified Value: 1001 µg/mL ±5 µg/mL

903018
ID: MESPEXAGs_00011
Exp:02/28/17 Prpd:MDK Opn:02/23/16
1000ppm Silver stock

Certified Value is Traceable to: 3151*

* - indicates NIST SRM † - indicates SPEX CertiPrep CRM (when NIST SRM is not available)

The CRM is prepared gravimetrically using high purity Silver nitrate, Lot# 12141H. The certified value listed is the average of values obtained by classical wet assay and ICP spectrometer analysis.

Refer to side 2 for details of measurement uncertainties.

Classical Wet Assay: 1001 µg/mL

Method: Precipitation using Hydrochloric Acid. Filter, dry, and weigh as AgCl.

Instrumental Analysis by ICP Spectrometer: 1001 µg/mL

Rec'd 2/23/16 MDK

Uncertified Properties

Density: 1.010 g/mL @ 20.0°C

Trace Metallic Impurities in the Actual Solution via ICP-MS Analysis:

Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL
Al	0.002	Cs	<0.001	Ho	<0.001	Nb	<0.001	Ru	<0.001	Th	<0.001
As	<0.001	Cu	<0.001	In	<0.001	Nd	<0.001	Sb	<0.001	Ti	<0.001
Au	<0.001	Dy	<0.001	Ir	<0.001	Ni	<0.001	Sc	<0.001	Tl	<0.001
B	<0.001	Er	<0.001	K	<0.1	P	<0.1	Se	<0.003	Tm	<0.001
Ba	<0.001	Eu	<0.001	La	<0.001	Pb	<0.001	Si	<0.1	U	<0.001
Be	<0.001	Fe	<0.1	Li	<0.001	Pd	<0.001	Sm	<0.001	V	<0.001
Bi	<0.001	Ga	<0.001	Lu	<0.001	Pr	<0.001	Sn	<0.001	W	<0.002
Ca	0.002	Gd	<0.001	Mg	<0.001	Pt	<0.001	Sr	<0.001	Y	<0.001
Cd	<0.001	Ge	<0.001	Mn	<0.001	Rb	<0.001	Ta	<0.001	Yb	<0.001
Ce	<0.001	Hf	<0.001	Mo	<0.001	Re	<0.001	Tb	<0.001	Zn	0.005
Co	<0.001	Hg	<0.001	Na	0.003	Rh	<0.001	Te	<0.001	Zr	<0.001
Cr	<0.001										

Balances are calibrated regularly with weight sets traceable to NIST #32856, #32867 and others. This CRM is guaranteed stable and accurate to +/- 0.5% of the certified value. This includes uncertainty components due to preparation, homogeneity by the most precise method, and short-term and long-term stability. This guarantee is valid for a period of one year from the date of certification only when the material is unopened and stored under ambient laboratory conditions.

Date of Certification: FEB 2016 Certifying Officer:

©2013 SPEX CertiPrep, Inc.

Reagent

MESPEXHgs_00014

ACCREDITED
Reference Materials Producer
Cert #2495.01

SPEXertificate®

Certificate of Reference Material

ilac-MRA ACCREDITED
Chemical Testing
Cert #2495.02

Catalog Number: PLHG4-2Y **Lot No.** 21-3HGY

Description: 1000 µg/mL Mercury

Matrix: 10% HNO_3

This **ASSURANCE®** Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for inorganic spectroscopic instrumentation such as ICP-OES, DCP, AA, ICP-MS, and XRF. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

Certified Value: 1000 µg/mL ±5 µg/mL

Certified Value is Traceable to: 3133*

* - indicates NIST SRM † - indicates SPEX CertiPrep CRM (when NIST SRM is not available)

The CRM is prepared gravimetrically using high purity Mercury Metal, Lot# 03141E. The certified value listed is the average of values obtained by classical wet assay and ICP spectrometer analysis.

Refer to side 2 for details of measurement uncertainties.

Classical Wet Assay: 999 µg/mL

Method: Titration with Ammonium Thiocyanate using Ferric Nitrate as indicator.

Instrumental Analysis by ICP Spectrometer: 1000 µg/mL

Uncertified Properties

Density: 1.047 g/mL @ 20.0°C

Trace Metallic Impurities in the Actual Solution via ICP-MS Analysis:

Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL
Ag	<0.001	Cr	<0.002	Ho	<0.001	Nb	<0.001	Ru	<0.001	Th	<0.001
Al	<0.001	Cs	<0.001	In	<0.001	Nd	<0.001	Sb	<0.001	Ti	<0.001
As	<0.001	Cu	<0.001	Ir	<0.001	Ni	<0.001	Sc	<0.001	Tl	0.002
Au	<0.01	Dy	<0.001	K	<0.1	P	<0.1	Se	<0.005	Tm	<0.001
B	0.003	Er	<0.001	La	<0.001	Pb	<0.001	Si	<0.1	U	<0.001
Ba	<0.001	Eu	<0.001	Li	<0.001	Pd	<0.01	Sm	<0.001	V	<0.001
Be	<0.001	Fe	<0.004	Lu	<0.001	Pr	<0.001	Sn	<0.001	W	<0.001
Bi	<0.001	Ga	<0.001	Mg	0.003	Pt	<0.001	Sr	<0.001	Y	<0.001
Ca	<0.05	Gd	<0.001	Mn	<0.001	Rb	<0.001	Ta	<0.001	Yb	<0.001
Cd	<0.001	Ge	<0.001	Mo	<0.001	Re	<0.001	Tb	<0.001	Zn	0.004
Ce	<0.001	Hf	<0.001	Na	0.002	Rh	<0.001	Te	<0.001	Zr	<0.001
Co	<0.001										

Balances are calibrated regularly with weight sets traceable to NIST #32856, #32867 and others. This CRM is guaranteed stable and accurate to +/- 0.5% of the certified value. This includes uncertainty components due to preparation, homogeneity by the most precise method, and short-term and long-term stability. This guarantee is valid for a period of one year from the date of certification only when the material is unopened and stored under ambient laboratory conditions.

888957
ID: MESPEXHgs_00014
Exp:12/30/16 Prpd:RRP Opn:01/05/16
1000ppm Mercury stock sta

Date of Certification: DEC 2015 Certifying Officer:

72

©2015 SPEX CertiPrep, LLC

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/21/2015 Reviewed on 05/21/2015

1 Identification

· **Product identifier**

· **Product Name: 1000 µg/mL Mercury**

· **Part Number:** PLHG4-2M / 2Y / 2T / 2X
· **Relevant identified uses of the substance or mixture and uses advised against** No further relevant information available.
· **Application of the substance / the mixture** Certified Reference Material

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA

· **Information department:** product safety department
· **Emergency telephone number:**
Emergency Phone Number (24 hours)
CHEMTREC (800-424-9300)
Outside US: 703-527-3887

2 Hazard(s) identification

· **Classification of the substance or mixture**



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Corrosive
Causes burns.
· **Information concerning particular hazards for human and environment:**
The product has to be labeled due to the calculation procedure of international guidelines.
· **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**



GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
nitric acid
· **Hazard statements**
Causes severe skin burns and eye damage.
· **Precautionary statements**
Do not breathe dusts or mists.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**



Health = 3
Fire = 0
Reactivity = 0

(Contd. on page 2)

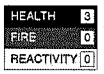
Safety Data Sheet
acc. to OSHA HCS

Printing date 05/21/2015 Reviewed on 05/21/2015

Product Name: 1000 µg/mL Mercury

(Contd. of page 1)

· **HMIS-ratings (scale 0 - 4)**



Health = 3
Fire = 0
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**		
7697-37-2	nitric acid	10.0%
7439-97-6	mercury	0.1%
· **Chemical identification of the substance/preparation**		
7732-18-5	water, distilled, conductivity or of similar purity	89.9%

4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.
· **Information for Doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/21/2015 Reviewed on 05/21/2015

Product Name: 1000 µg/mL Mercury

(Contd. of page 4)

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)		
7439-97-6	mercury	3

· NTP (National Toxicology Program)
None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· UN-Number	
· DOT, ADR, IMDG, IATA	UN3264
· UN proper shipping name	
· DOT	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution)
· ADR	3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution)
· IMDG, IATA	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/21/2015 Reviewed on 05/21/2015

Product Name: 1000 µg/mL Mercury

(Contd. of page 5)

· Transport hazard class(es)	
· DOT	
	
· Class	8 Corrosive substances
· Label	8
· ADR, IMDG, IATA	
	
· Class	8 Corrosive substances
· Label	8
· Packing group	
· DOT, ADR, IMDG, IATA	II
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Corrosive substances
· Danger code (Kemler):	80
· EMS Number:	F-A,S-B
· Segregation groups	Acids
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution), 8, II

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· Section 355 (extremely hazardous substances):	
7697-37-2	nitric acid

· Section 313 (Specific toxic chemical listings):	
7697-37-2	nitric acid
7439-97-6	mercury

· TSCA (Toxic Substances Control Act):
All ingredients are listed.

· **Proposition 65**

· Chemicals known to cause cancer:
None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:
None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:
None of the ingredients is listed.

(Contd. on page 7)

Reagent

META-69_00010

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-69
Lot Number:	K2-MEB637108
Matrix:	1% (v/v) HNO3
Value / Analyte(s):	15 000 µg/mL ea: Calcium, Magnesium, 5 000 µg/mL ea: Potassium, Sodium

934537
ID: META-69_00010
Exp:05/24/17 Prpd:MDK Opn:05/24/16
6010 ICV stock part 2
Rec'd 5/24/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Calcium, Ca	15 000.0 ± 60.0 µg/mL	Magnesium, Mg	15 000.0 ± 60.0 µg/mL
Potassium, K	5 000 ± 18 µg/mL	Sodium, Na	5 000 ± 18 µg/mL

Certified Density: 1.136 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ca	ICP Assay	3109a	050825
Ca	EDTA	928	928
K	ICP Assay	3141a	051220
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 19, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 19, 2019**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

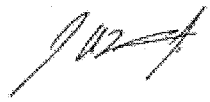
- Sealed TCT Bag Open Date: 5/24/16 MDE

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

META-70_00007

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 29, 2015

11.2 Expiration Date

EXPIRES
1 FEB 2017

11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-70
Lot Number:	J2-MEB615044
Matrix:	5% (v/v) HNO3 0.4% (v/v) HF
Value / Analyte(s):	625 µg/mL ea: Molybdenum, 500 µg/mL ea: Silicon, 250 µg/mL ea: Tin, 125 µg/mL ea: Antimony, 100 µg/mL ea: Titanium

Rec'd 12/31/15 MDK

6010 ICV stock part 3

888263
ID: META-70_00007
Exp:01/04/17 Prpd:MDK Opn:01/04/16

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	125.0 ± 0.9 µg/mL	Molybdenum, Mo	625.0 ± 3.3 µg/mL
Silicon, Si	500.0 ± 3.6 µg/mL	Tin, Sn	250.1 ± 0.9 µg/mL
Titanium, Ti	100.0 ± 0.6 µg/mL		

Certified Density: 1.027 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	891307
Sb	ICP Assay	3102A	061229
Sb	Calculated		See Sec. 4.2
Si	ICP Assay	3150	071204
Si	Calculated		See Sec. 4.2
Sn	ICP Assay	3161a	070330
Sn	Calculated		See Sec. 4.2
Ti	ICP Assay	3162a	060808
Ti	Calculated		See Sec. 4.2

Reagent

META-71_00007

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

920731
ID: META-71_00007
Exp:04/16/17 Prpd:MDK Opn:04/16/16
6010 Cal stock part 4

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-71QC
Lot Number:	K2-MEB628027
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	15 000 µg/mL ea: Aluminum, Iron

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	15 000.0 ± 70.0 µg/mL	Iron, Fe	15 000.0 ± 60.0 µg/mL

Certified Density: 1.144 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 21, 2016

11.2 Expiration Date

EXPIRES
1 APR 2017

11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

WCLKLCSs_00018

LECO Reference Material

LECO Corporation; Saint Joseph, Michigan USA

Part No: 502-062
Lot No: 1017

895118
ID: WCLKLCSs_00018
Exp:01/26/17 Prpd:KSH Opn:01/26/16
Lloyd Kahn LCS

ACCREDITED
Reference Material Producer
Certificate # 3285.02

LECO Reference Materials are traceable to national or international Certified Reference Materials whenever possible. When these Certified Reference Materials do not exist or are inadequate for calibration purposes, other appropriate materials are used. The accuracy of the reported results for LECO Reference Materials is greatly influenced by the accuracy of the primary reference materials used. The intended use of this reference material is for calibration purposes.

Category	Reference Value	+/-
% Carbon	0.926	0.04
% Hydrogen	0.36	0.03
% Nitrogen	0.092	0.016
% Sulfur	0.016	0.003

- +/- indicates two times the standard deviation (2s).
- Refer to the reverse side of certificate for additional information regarding calculations.

Homogeneity:
Homogeneity of this material was confirmed through analysis of a random selection of bottled material and was found to be highly homogeneous.

Material:
LECO 502-062 Lot: 1017 is a soil calibration material.

Traceability: The following Certified Reference Materials were used to validate the analytical data:
NIST SRM 915b, Calcium Carbonate @ 12.0% Carbon
NIST SRM 2690, Coal Fly Ash @ 0.15% Sulfur
LECO CRM EDTA 502-812 (HS10007A) @ 41.1% Carbon, 5.55% Hydrogen and 9.56% Nitrogen

Preparation:
A separate portion of this reference material must be dried for one hour at 105°Celsius prior to usage. The dried sample should be stored in a desiccator and must be used for analysis within 24 hours. Any unused portion of the dried sample should be discarded.

Analysis:
LECO analytical instruments were used to characterize this material. This material was analyzed by high temperature combustion using a resistance furnace utilizing LECO infrared (IR) and thermal conductivity (TC) detection technology.

Category	Method/Detection	n
% Carbon	Combustion/IR	60
% Hydrogen	Combustion/IR	30
% Nitrogen	Combustion/TC	40
% Sulfur	Combustion/IR	40

Expiration:
ISO Guide 31 States that the certificate should contain an expiration date for all materials where instability has been demonstrated or considered possible, after which the certified value is no longer guaranteed by the certifying body. This reference material is valid within the stated deviation until **August 5th, 2019** provided the RM is stored in its original bottle at room temperature. This reference material is nullified if it is contaminated or otherwise altered.

Certificate of Analysis

Analysis Data:

Data Set	Number of Analyses	% Carbon	Carbon Standard Dev.	% Hydrogen	Hydrogen Standard Dev.	% Nitrogen	Nitrogen Standard Dev.	% Sulfur	Sulfur Standard Dev.	Method	Instrument
1	10	0.9420	0.0078	0.371	0.010	0.0921	0.0121	-	-	TSL-C001	LECO CHN628-Argon
2	10	-	-	-	-	-	-	0.0158	0.0004	TSL-C001	LECO 628 S-Module
3	10	0.9250	0.0032	-	-	0.0842	0.0015	0.0156	0.0029	TSL-C001	LECO TruMac CNS
4	10	0.8905	0.0054	-	-	-	-	0.0159	0.0011	TSL-C001	LECO SC632
5	10	-	-	-	-	-	-	0.0146	0.0005	TSL-C001	LECO S632
6	10	0.9380	0.0063	0.365	0.012	0.0936	0.0019	-	-	TSL-C001	LECO CHN628
7	10	0.9288	0.0069	0.348	0.011	-	-	-	-	TSL-C001	LECO TruSpec CHN
8	10	0.9286	0.0066	-	-	0.0980	0.0005	-	-	TSL-C001	LECO TruMac CN
Average		0.9255		0.361		0.0920		0.0155			
Std Dev		0.0179		0.014		0.0078		0.0016			

- Each Data Set value represents an average of the sample analyses.
- Underline indicates last significant digit.

Participating Laboratories:

Lab:
LECO Technical Services Laboratory

Accreditation:
A2LA Accredited to ISO 17025:2005

Calculations:
In compliance with the requirements of ISO Guides 31, 34 and 35 for the production of Reference Materials, the values for this material were calculated using a mean and standard deviation of the overall data.

References:
LECO TSL-C001: In house method for the analysis of Plant Tissue and Soil materials

ISO Standard 17025:2005 General requirements for the competence of testing and calibration laboratories.
ISO Guide 30:1992 Terms and definitions used in connection with reference materials.
ISO Guide 31:2000 Reference Materials-Contents of certificates and labels.
ISO Guide 33:2000 Uses of certified reference materials.
ISO Guide 34:2009 General requirements for the competence of reference material producers.
ISO Guide 35:2006 Reference Materials-General and statistical principles for certification.

ASTM Documents available from ASTM, 1916 Race Street, Philadelphia, PA, 19103
ISO Guides and Standards available from Global Engineering – www.global.ihs.com

Approved by: Dennis Lawrenz
Technical Services Laboratory Director
Date of release: August 5th, 2014

No warranties of description, merchantability, or fitness for a particular purpose or any other express or implied warranties arise out of LECO's sale of this product. Remedies for any claimed defect in this product will be limited to replacement of the product or refund of the purchase price. In no event shall LECO be liable for incidental or consequential damages.

LECO Corporation • Technical Services Laboratory
3000 Lakeview Avenue • St. Joseph, MI. USA 49085
Phone: 800-292-6141 • Fax: 269-982-8977 • www.leco.com
info@leco.com • A2LA Accredited to ISO 17025:2005
LECO is a registered trademark of LECO Corporation.

METALS

COVER PAGE
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG No.: 200-35700-1

Project: Port Ewen DNS Sediment

Client Sample ID	Lab Sample ID
PE1016-P1SCD-01-A-0007IN	200-35700-1
PE1016-P1SCD-01-B-0006IN	200-35700-2
PE1016-P1SCD-01-A-0718IN	200-35700-3
PE1016-P1SCD-02-A-0004IN	200-35700-4
PE1016-P1SCD-02-B-0004IN	200-35700-5
PE1016-P1SCD-03-A-0006IN	200-35700-6
PE1016-P1SCD-03-A-0612IN	200-35700-7
PE1016-P1SCD-03-B-0006IN	200-35700-8
PE1016-P1SCD-11-A-0004IN	200-35700-9
PE1016-P1SCD-11-B-0006IN	200-35700-10
PE1016-P1SCD-12-A-0008IN	200-35700-11
PE1016-P1SCD-12-B-0006IN	200-35700-12
PE1016-P1SCD-13-A-0002IN	200-35700-13
PE1016-P1SCD-13-B-0006IN	200-35700-14
PE1016-P1SCD-13-B-0006IN-D	200-35700-15
PE1016-P1SCD-14-A-0004IN	200-35700-16
PE1016-P1SCD-14-B-0004IN	200-35700-17
PE1016-P1SCD-12-A-0814IN	200-35700-18
PE1016-P1SCD-BLK-3-101216	200-35700-19

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-01-A-0007IN
Lab Sample ID: 200-35700-1
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 14:30
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 50.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	2490	3.6	0.87	mg/Kg			4	6020A
7782-49-2	Selenium	5.1	0.72	0.11	mg/Kg			1	6020A
7440-66-6	Zinc	326	3.6	1.1	mg/Kg			1	6020A
7439-97-6	Mercury	9.5	0.30	0.11	mg/Kg			4	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-01-B-0006IN
Lab Sample ID: 200-35700-2
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 14:35
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 38.5

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	2350	2.1	0.51	mg/Kg			2	6020A
7782-49-2	Selenium	6.0	0.84	0.13	mg/Kg			1	6020A
7440-66-6	Zinc	283	4.2	1.3	mg/Kg			1	6020A
7439-97-6	Mercury	17.9	0.37	0.14	mg/Kg			4	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-01-A-0718IN
Lab Sample ID: 200-35700-3
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 14:31
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 68.4

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	5590	5.3	1.3	mg/Kg			10	6020A
7782-49-2	Selenium	1.2	0.42	0.067	mg/Kg			1	6020A
7440-66-6	Zinc	227	2.1	0.66	mg/Kg			1	6020A
7439-97-6	Mercury	6.1	0.21	0.078	mg/Kg			4	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-02-A-0004IN
Lab Sample ID: 200-35700-4
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 14:00
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 50.2

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	373	0.78	0.19	mg/Kg			1	6020A
7782-49-2	Selenium	2.1	0.63	0.099	mg/Kg			1	6020A
7440-66-6	Zinc	105	3.1	0.97	mg/Kg			1	6020A
7439-97-6	Mercury	2.2	0.079	0.029	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-02-B-0004IN
Lab Sample ID: 200-35700-5
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 14:10
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 48.1

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	1700	1.6	0.38	mg/Kg			2	6020A
7782-49-2	Selenium	2.7	0.63	0.099	mg/Kg			1	6020A
7440-66-6	Zinc	193	3.1	0.97	mg/Kg			1	6020A
7439-97-6	Mercury	6.1	0.14	0.053	mg/Kg			2	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-03-A-0006IN
Lab Sample ID: 200-35700-6
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 13:00
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 37.1

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	805	1.1	0.25	mg/Kg			1	6020A
7782-49-2	Selenium	3.4	0.85	0.13	mg/Kg			1	6020A
7440-66-6	Zinc	175	4.2	1.3	mg/Kg			1	6020A
7439-97-6	Mercury	7.0	0.21	0.075	mg/Kg			2	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-03-A-0612IN
Lab Sample ID: 200-35700-7
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 13:01
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 75.2

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	15.5	0.46	0.11	mg/Kg			1	6020A
7782-49-2	Selenium	1.7	0.37	0.058	mg/Kg			1	6020A
7440-66-6	Zinc	91.8	1.8	0.57	mg/Kg			1	6020A
7439-97-6	Mercury	0.047	0.048	0.017	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-03-B-0006IN
Lab Sample ID: 200-35700-8
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 13:10
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 38.2

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	928	0.94	0.23	mg/Kg			1	6020A
7782-49-2	Selenium	3.7	0.75	0.12	mg/Kg			1	6020A
7440-66-6	Zinc	188	3.8	1.2	mg/Kg			1	6020A
7439-97-6	Mercury	8.7	0.20	0.072	mg/Kg			2	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-11-A-0004IN
Lab Sample ID: 200-35700-9
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 10:30
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 51.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	230	0.74	0.18	mg/Kg			1	6020A
7782-49-2	Selenium	2.0	0.59	0.093	mg/Kg			1	6020A
7440-66-6	Zinc	154	3.0	0.92	mg/Kg			1	6020A
7439-97-6	Mercury	1.2	0.073	0.026	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-11-B-0006IN
Lab Sample ID: 200-35700-10
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 10:40
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 43.9

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	2170	1.9	0.45	mg/Kg			2	6020A
7782-49-2	Selenium	3.7	0.75	0.12	mg/Kg			1	6020A
7440-66-6	Zinc	311	3.7	1.2	mg/Kg			1	6020A
7439-97-6	Mercury	4.1	0.16	0.058	mg/Kg			2	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-12-A-0008IN
Lab Sample ID: 200-35700-11
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 09:20
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 40.8

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	293	0.96	0.23	mg/Kg			1	6020A
7782-49-2	Selenium	2.5	0.77	0.12	mg/Kg		B	1	6020A
7440-66-6	Zinc	170	3.8	1.2	mg/Kg			1	6020A
7439-97-6	Mercury	1.8	0.090	0.033	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-12-B-0006IN
Lab Sample ID: 200-35700-12
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 09:30
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 45.5

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	236	0.91	0.22	mg/Kg			1	6020A
7782-49-2	Selenium	2.6	0.73	0.11	mg/Kg		B	1	6020A
7440-66-6	Zinc	171	3.6	1.1	mg/Kg			1	6020A
7439-97-6	Mercury	1.9	0.079	0.029	mg/Kg		F1	1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-13-A-0002IN
Lab Sample ID: 200-35700-13
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 08:55
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 71.1

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	34.2	0.48	0.11	mg/Kg			1	6020A
7782-49-2	Selenium	0.92	0.38	0.060	mg/Kg		B	1	6020A
7440-66-6	Zinc	79.8	1.9	0.59	mg/Kg			1	6020A
7439-97-6	Mercury	0.053	0.053	0.019	mg/Kg	U		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-13-B-0006IN
Lab Sample ID: 200-35700-14
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 09:05
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 32.2

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	547	1.4	0.34	mg/Kg			1	6020A
7782-49-2	Selenium	4.6	1.1	0.18	mg/Kg		B	1	6020A
7440-66-6	Zinc	240	5.7	1.8	mg/Kg			1	6020A
7439-97-6	Mercury	3.3	0.12	0.043	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-13-B-0006IN-D
Lab Sample ID: 200-35700-15
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 09:06
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 31.5

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	567	1.6	0.37	mg/Kg			1	6020A
7782-49-2	Selenium	4.5	1.2	0.20	mg/Kg		B	1	6020A
7440-66-6	Zinc	246	6.2	1.9	mg/Kg			1	6020A
7439-97-6	Mercury	3.0	0.11	0.039	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-14-A-0004IN
Lab Sample ID: 200-35700-16
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 08:30
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 40.9

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	914	1.1	0.26	mg/Kg			1	6020A
7782-49-2	Selenium	3.9	0.86	0.14	mg/Kg		B	1	6020A
7440-66-6	Zinc	303	4.3	1.3	mg/Kg			1	6020A
7439-97-6	Mercury	3.8	0.091	0.033	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-14-B-0004IN
Lab Sample ID: 200-35700-17
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 08:40
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 46.4

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	633	0.98	0.24	mg/Kg			1	6020A
7782-49-2	Selenium	2.9	0.78	0.12	mg/Kg		B	1	6020A
7440-66-6	Zinc	243	3.9	1.2	mg/Kg			1	6020A
7439-97-6	Mercury	2.3	0.085	0.031	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-12-A-0814IN
Lab Sample ID: 200-35700-18
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 09:21
Reporting Basis: DRY
Date Received: 10/13/2016 12:40
% Solids: 80.7

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	16.0	0.59	0.14	mg/Kg			1	6020A
7782-49-2	Selenium	1.1	0.47	0.074	mg/Kg		B	1	6020A
7440-66-6	Zinc	87.5	2.4	0.73	mg/Kg			1	6020A
7439-97-6	Mercury	0.038	0.047	0.017	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-BLK-3-101216 Lab Sample ID: 200-35700-19

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG ID.: 200-35700-1

Matrix: Water Date Sampled: 10/12/2016 18:45

Reporting Basis: WET Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	5.0	5.0	2.2	ug/L	U		1	6020A
7782-49-2	Selenium	4.0	4.0	0.97	ug/L	U		1	6020A
7440-66-6	Zinc	20.0	20.0	2.6	ug/L	U		1	6020A
7439-97-6	Mercury	0.20	0.20	0.044	ug/L	U		1	7470A

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: ME6020ICVw_00442 Concentration Units: ug/L

CCV Source: ME6020STD3_00442

Analyte	ICV 200-110192/8 10/14/2016 11:07				CCV 200-110192/13 10/14/2016 11:35				CCV 200-110192/25 10/14/2016 12:44			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	625.4		625	100	1151		1250	92	1214		1250	97
Selenium	107.4		100	107	195.3		200	98	196.3		200	98
Zinc	636.3		625	102	1161		1250	93	1184		1250	95

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: ME6020ICVw_00442 Concentration Units: ug/L

CCV Source: ME6020STD3_00442

Analyte	CCV 200-110192/38 10/14/2016 13:58				CCV 200-110192/48 10/14/2016 14:55							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	1264		1250	101	1295		1250	104				
Selenium	195.6		200	98	197.2		200	99				
Zinc	1212		1250	97	1224		1250	98				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: ME6020STD1_00436 Concentration Units: ug/L

CCV Source: ME6020STD1_00436

Analyte	ICVL 200-110192/9 10/14/2016 11:12				CCVL 200-110192/27 10/14/2016 12:55				CCVL 200-110192/40 10/14/2016 14:09			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	5.59		5.00	112	4.77	J	5.00	95	4.97	J	5.00	99
Selenium	4.45		4.00	111	4.19		4.00	105	3.38	J	4.00	84
Zinc	20.70		20.0	104	20.11		20.0	101	20.18		20.0	101

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: ME6020STD1_00436 Concentration Units: ug/L

CCV Source: ME6020STD1_00436

Analyte	CCVL 200-110192/50 10/14/2016 15:07											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	5.23		5.00	105								
Selenium	3.63	J	4.00	91								
Zinc	21.06		20.0	105								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: ME6020ICVw_00443 Concentration Units: ug/L

CCV Source: ME6020STD3_00443

Analyte	ICV 200-110334/8 10/18/2016 13:02				CCV 200-110334/13 10/18/2016 13:37				CCV 200-110334/38 10/18/2016 16:00			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	619.8		625	99	1126		1250	90	1213		1250	97
Zinc	640.0		625	102	1194		1250	95	1237		1250	99
Selenium	108.0		100	108	209.1		200	105	212.6		200	106

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: ME6020ICVw_00443 Concentration Units: ug/L

CCV Source: ME6020STD3_00443

Analyte	CCV 200-110334/51 10/18/2016 17:14											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	1298		1250	104								
Zinc	1319		1250	105								
Selenium												

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: ME6020STD1_00437 Concentration Units: ug/L

CCV Source: ME6020STD1_00437

Analyte	ICVL 200-110334/9 10/18/2016 13:08				CCVL 200-110334/40 10/18/2016 16:11				CCVL 200-110334/53 10/18/2016 17:26			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	5.17		5.00	103	5.70		5.00	114	5.93		5.00	119
Zinc	22.09		20.0	110	23.72		20.0	119	23.46		20.0	117
Selenium	2.99	J	4.00	75	3.47	J	4.00	87				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: ME6020ICVw_00444 Concentration Units: ug/L

CCV Source: ME6020STD3_00444

Analyte	ICV 200-110361/8 10/19/2016 10:33				CCV 200-110361/13 10/19/2016 11:01				CCV 200-110361/25 10/19/2016 12:10			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Selenium	107.0		100	107	211.0		200	105	218.5		200	109

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: ME6020STD1_00438 Concentration Units: ug/L

CCV Source: ME6020STD1_00438

Analyte	ICVL 200-110361/9 10/19/2016 10:38				CCVL 200-110361/27 10/19/2016 12:21							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Selenium	3.80	J	4.00	95	3.91	J	4.00	98				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: ME6020ICVw_00445 Concentration Units: ug/L

CCV Source: ME6020STD3_00445

Analyte	ICV 200-110547/8 10/25/2016 13:34				CCV 200-110547/13 10/25/2016 14:02				CCV 200-110547/25 10/25/2016 15:11			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	604.8		625	97	1119		1250	90	1185		1250	95
Selenium	105.3		100	105	202.4		200	101	209.9		200	105
Zinc	631.6		625	101	1196		1250	96	1229		1250	98

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: ME6020ICVw_00445 Concentration Units: ug/L

CCV Source: ME6020STD3_00445

Analyte	CCV 200-110547/32 10/25/2016 15:51											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	1207		1250	97								
Selenium	206.8		200	103								
Zinc	1241		1250	99								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: ME6020STD1_00439 Concentration Units: ug/L

CCV Source: ME6020STD1_00439

Analyte	ICVL 200-110547/9 10/25/2016 13:39				CCVL 200-110547/27 10/25/2016 15:22				CCVL 200-110547/34 10/25/2016 16:02			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	4.92	J	5.00	98	5.31		5.00	106	5.73		5.00	115
Selenium	3.60	J	4.00	90	3.68	J	4.00	92	4.45		4.00	111
Zinc	20.00		20.0	100	21.44		20.0	107	20.40		20.0	102

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: ME6020ICVw_00447 Concentration Units: ug/L

CCV Source: ME6020STD3_00448

Analyte	ICV 200-110848/8 11/01/2016 11:23				CCV 200-110848/13 11/01/2016 11:52				CCV 200-110848/25 11/01/2016 13:00			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	661.9		625	106	1166		1250	93	1173		1250	94
Selenium	104.9		100	105	200.3		200	100	200.5		200	100
Zinc	662.0		625	106	1200		1250	96	1191		1250	95

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: ME6020ICVw_00447 Concentration Units: ug/L

CCV Source: ME6020STD3_00448

Analyte	CCV 200-110848/34 11/01/2016 13:52											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	1191		1250	95								
Selenium	204.9		200	102								
Zinc	1222		1250	98								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: ME6020STD1_00441 Concentration Units: ug/L

CCV Source: ME6020STD1_00441

Analyte	ICVL 200-110848/9 11/01/2016 11:29				CCVL 200-110848/27 11/01/2016 13:12				CCVL 200-110848/36 11/01/2016 14:03			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	5.62		5.00	112	5.48		5.00	110	5.40		5.00	108
Selenium	4.05		4.00	101	3.46	J	4.00	86	4.68		4.00	117
Zinc	20.12		20.0	101	19.12	J	20.0	96	19.61	J	20.0	98

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: MEHGICVw_00085 Concentration Units: ug/L

CCV Source: mehgccvw_01052

Analyte	ICV 200-110231/7-A 10/17/2016 14:23				CCV 200-110231/9-A 10/17/2016 14:27				CCV 200-110231/9-A 10/17/2016 14:47			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	2.77		3.00	92	5.00		5.00	100	4.87		5.00	97

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: MEHGICVw_00085 Concentration Units: ug/L

CCV Source: mehgccvw_01052

Analyte	CCV 200-110231/9-A 10/17/2016 15:08				CCV 200-110231/9-A 10/17/2016 15:28				CCV 200-110231/9-A 10/17/2016 15:45			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	4.91		5.00	98	4.93		5.00	99	4.95		5.00	99

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: MEHGICVw_00085 Concentration Units: ug/L

CCV Source: mehgccvw_01052

Analyte	CCV 200-110231/9-A 10/17/2016 16:06											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	4.95		5.00	99								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: MEHGICVw_00085 Concentration Units: ug/L

CCV Source: mehgccvw_01052

Analyte	ICV 200-110242/7-A 10/17/2016 16:19				CCV 200-110242/9-A 10/17/2016 16:22				CCV 200-110242/9-A 10/17/2016 16:37			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	2.76		3.00	92	5.03		5.00	101	5.24		5.00	105

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: MEHGICVw_00086 Concentration Units: ug/L

CCV Source: mehgccvw_01053

Analyte	ICV 200-110530/7-A 10/26/2016 10:03				CCV 200-110530/9-A 10/26/2016 10:06				CCV 200-110530/9-A 10/26/2016 10:25			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	2.77		3.00	92	4.84		5.00	97	5.05		5.00	101

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: MEHGICVw_00086 Concentration Units: ug/L

CCV Source: mehgccvw_01053

Analyte	CCV 200-110530/9-A 10/26/2016 10:45				CCV 200-110530/9-A 10/26/2016 10:54				CCV 200-110530/9-A 10/26/2016 11:11			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	5.17		5.00	103	5.16		5.00	103	5.11		5.00	102

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: MEHGICVw_00086 Concentration Units: ug/L

CCV Source: mehgccvw_01056

Analyte	ICV 200-110770/7-A 10/31/2016 14:01				CCV 200-110770/9-A 10/31/2016 14:05				CCV 200-110770/9-A 10/31/2016 14:24			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	2.92		3.00	97	5.05		5.00	101	5.02		5.00	100

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICV Source: MEHGICVw_00086 Concentration Units: ug/L

CCV Source: mehgccvw_01056

Analyte	CCV 200-110770/9-A 10/31/2016 14:32											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	5.08		5.00	102								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: ug/L

Analyte	RL	ICBIS 200-110192/10 10/14/2016 11:18		CCB 200-110192/14 10/14/2016 11:41		CCB 200-110192/26 10/14/2016 12:50		CCB 200-110192/39 10/14/2016 14:04	
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U	5.0	U	5.0	U	5.0	U
Selenium	4.0	4.0	U	4.0	U	4.0	U	4.0	U
Zinc	20.0	20.0	U	20.0	U	20.0	U	20.0	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: ug/L

Analyte	RL	CCB 200-110192/49 10/14/2016 15:01							
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U						
Selenium	4.0	4.0	U						
Zinc	20.0	20.0	U						

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: ug/L

Analyte	RL	ICBIS 200-110334/10 10/18/2016 13:19		CCB 200-110334/14 10/18/2016 13:42		CCB 200-110334/39 10/18/2016 16:05		CCB 200-110334/52 10/18/2016 17:20	
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U	5.0	U	5.0	U	5.0	U
Zinc	20.0	20.0	U	20.0	U	20.0	U	20.0	U
Selenium	4.0	4.0	U	4.0	U	4.0	U		

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: ug/L

Analyte	RL	ICBIS 200-110361/10 10/19/2016 10:44		CCB 200-110361/14 10/19/2016 11:07		CCB 200-110361/26 10/19/2016 12:16			
		Found	C	Found	C	Found	C	Found	C
Selenium	4.0	4.0	U	4.0	U	4.0	U		

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: ug/L

Analyte	RL	ICBIS 200-110547/10 10/25/2016 13:45		CCB 200-110547/14 10/25/2016 14:08		CCB 200-110547/26 10/25/2016 15:16		CCB 200-110547/33 10/25/2016 15:57	
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U	5.0	U	5.0	U	5.0	U
Selenium	4.0	4.0	U	4.0	U	4.0	U	4.0	U
Zinc	20.0	20.0	U	20.0	U	20.0	U	20.0	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: ug/L

Analyte	RL	ICBIS 200-110848/10 11/01/2016 11:35		CCB 200-110848/14 11/01/2016 11:57		CCB 200-110848/26 11/01/2016 13:06		CCB 200-110848/35 11/01/2016 13:58	
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U	5.0	U	5.0	U	5.0	U
Selenium	4.0	4.0	U	4.0	U	4.0	U	4.0	U
Zinc	20.0	20.0	U	20.0	U	20.0	U	20.0	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: ug/L

Analyte	RL	ICB 200-110231/8-A 10/17/2016 14:25		CCB 200-110231/10-A 10/17/2016 14:29		CCB 200-110231/10-A 10/17/2016 14:49		CCB 200-110231/10-A 10/17/2016 15:09	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U	0.20	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: ug/L

Analyte	RL	CCB 200-110231/10-A 10/17/2016 15:29		CCB 200-110231/10-A 10/17/2016 15:47		CCB 200-110231/10-A 10/17/2016 16:07			
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U		

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: ug/L

Analyte	RL	ICB 200-110242/8-A 10/17/2016 16:20		CCB 200-110242/10-A 10/17/2016 16:24		CCB 200-110242/10-A 10/17/2016 16:39			
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U		

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: ug/L

Analyte	RL	ICB 200-110530/8-A 10/26/2016 10:04		CCB 200-110530/10-A 10/26/2016 10:08		CCB 200-110530/10-A 10/26/2016 10:27		CCB 200-110530/10-A 10/26/2016 10:47	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U	0.20	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: ug/L

Analyte	RL	CCB 200-110530/10-A 10/26/2016 10:55		CCB 200-110530/10-A 10/26/2016 11:12					
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U				

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: ug/L

Analyte	RL	ICB 200-110770/8-A 10/31/2016 14:03		CCB 200-110770/10-A 10/31/2016 14:06		CCB 200-110770/10-A 10/31/2016 14:26		CCB 200-110770/10-A 10/31/2016 14:34	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U	0.20	U

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-110153/1-A

Instrument Code: METICPMS2 Batch No.: 110192

CAS No.	Analyte	Concentration	C	Q	Method
7440-50-8	Copper	0.50	U		6020A
7782-49-2	Selenium	0.40	U		6020A
7440-66-6	Zinc	2.0	U		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: ug/L Lab Sample ID: MB 200-110239/1-A

Instrument Code: METICPMS2 Batch No.: 110334

CAS No.	Analyte	Concentration	C	Q	Method
7440-50-8	Copper	2.66	J		6020A
7440-66-6	Zinc	20.0	U		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: ug/L Lab Sample ID: MB 200-110239/1-A

Instrument Code: METICPMS2 Batch No.: 110361

CAS No.	Analyte	Concentration	C	Q	Method
7782-49-2	Selenium	4.0	U		6020A

FORM III-IN

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-110491/1-A

Instrument Code: METICPMS2 Batch No.: 110547

CAS No.	Analyte	Concentration	C	Q	Method
7440-50-8	Copper	0.50	U		6020A
7782-49-2	Selenium	0.40	U		6020A
7440-66-6	Zinc	2.0	U		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-110769/1-A

Instrument Code: METICPMS2 Batch No.: 110848

CAS No.	Analyte	Concentration	C	Q	Method
7440-50-8	Copper	0.50	U		6020A
7782-49-2	Selenium	0.0776	J		6020A
7440-66-6	Zinc	2.0	U		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: ug/L Lab Sample ID: MB 200-110242/11-A

Instrument Code: MEPCV3 II Batch No.: 110261

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.20	U		7470A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-110231/11-A

Instrument Code: MEPCV3 II Batch No.: 110260

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.040	U		7471B

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-110530/11-A

Instrument Code: MEPCV3 II Batch No.: 110575

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.040	U		7471B

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-110770/11-A

Instrument Code: MEPCV3 II Batch No.: 110792

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.040	U		7471B

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Lab Sample ID: ICSA 200-110192/11 Instrument ID: METICPMS2

Lab File ID: 101416-03 6020A.xml ICS Source: MEMSICSAw_00210

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Copper		**0.605**	
Selenium		**0.0677**	
Zinc		**-1.59**	
Aluminum	*100000*	*94130*	*94*
Antimony		*0.189*	
Arsenic		*-0.0330*	
Barium		*-0.231*	
Beryllium		*-0.0940*	
Boron		*-0.113*	
Cadmium		*0.137*	
Calcium	*100000*	*96443*	*96*
Chromium		*0.778*	
Cobalt		*-0.134*	
Iron	*100000*	*96193*	*96*
Lead		*0.289*	
Magnesium	*100000*	*95857*	*96*
Manganese		*0.0260*	
Molybdenum	*2000*	*1978*	*99*
Nickel		*0.0627*	
Potassium	*100000*	*95983*	*96*
Silver		*0.0483*	
Sodium	*100000*	*94820*	*95*
Thallium		*-0.0570*	
Thorium		*0.780*	
Tungsten		*0.232*	
Uranium		*-0.0017*	
Vanadium		*0.603*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Lab Sample ID: ICSAB 200-110192/12 Instrument ID: METICPMS2

Lab File ID: 101416-03 6020A.xml ICS Source: MEMSABw_00227

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Copper	**50.0**	**44.5**	**89**
Selenium	**125**	**119**	**95**
Zinc	**50.0**	**43.2**	**86**
Aluminum	*100000*	*94557*	*95*
Antimony	*50.0*	*44.5*	*89*
Arsenic	*45.0*	*44.4*	*99*
Barium	*250*	*221*	*89*
Beryllium	*25.0*	*25.8*	*103*
Boron	*400*	*419*	*105*
Cadmium	*25.0*	*23.1*	*93*
Calcium	*100000*	*97163*	*97*
Chromium	*50.0*	*45.6*	*91*
Cobalt	*25.0*	*22.7*	*91*
Iron	*100000*	*96553*	*97*
Lead	*25.0*	*22.4*	*89*
Magnesium	*100000*	*95670*	*96*
Manganese	*25.0*	*22.0*	*88*
Molybdenum	*2000*	*1989*	*99*
Nickel	*25.0*	*22.6*	*90*
Potassium	*100000*	*96280*	*96*
Silver	*25.0*	*23.1*	*92*
Sodium	*100000*	*94530*	*95*
Thallium	*25.0*	*21.8*	*87*
Thorium	*20.0*	*18.2*	*91*
Tungsten	*20.0*	*18.7*	*94*
Uranium	*10.0*	*10.3*	*103*
Vanadium	*25.0*	*21.8*	*87*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Lab Sample ID: ICSA 200-110334/11 Instrument ID: METICPMS2

Lab File ID: 101816-05 6020A.xml ICS Source: MEMSICSAw_00210

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Copper		**1.14**	
Zinc		**-1.21**	
Aluminum	*100000*	*98733*	*99*
Antimony		*-0.134*	
Arsenic		*-0.0747*	
Barium		*0.373*	
Beryllium		*0.146*	
Boron		*0.872*	
Cadmium		*0.299*	
Calcium	*100000*	*104300*	*104*
Chromium		*1.33*	
Cobalt		*0.140*	
Iron	*100000*	*97747*	*98*
Lead		*0.394*	
Magnesium	*100000*	*99843*	*100*
Manganese		*0.634*	
Molybdenum	*2000*	*2068*	*103*
Nickel		*0.617*	
Potassium	*100000*	*101293*	*101*
Selenium		*-0.430*	
Silver		*0.177*	
Sodium	*100000*	*99067*	*99*
Thallium		*0.108*	
Thorium		*4.79*	
Tungsten		*0.297*	
Uranium		*0.0020*	
Vanadium		*0.542*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Lab Sample ID: ICSAB 200-110334/12 Instrument ID: METICPMS2

Lab File ID: 101816-05 6020A.xml ICS Source: MEMSABw_00227

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Copper	**50.0**	**45.4**	**91**
Zinc	**50.0**	**43.6**	**87**
Aluminum	*100000*	*95100*	*95*
Antimony	*50.0*	*47.4*	*95*
Arsenic	*45.0*	*43.6*	*97*
Barium	*250*	*239*	*96*
Beryllium	*25.0*	*27.6*	*111*
Boron	*400*	*454*	*113*
Cadmium	*25.0*	*23.4*	*94*
Calcium	*100000*	*102233*	*102*
Chromium	*50.0*	*48.1*	*96*
Cobalt	*25.0*	*22.8*	*91*
Iron	*100000*	*96390*	*96*
Lead	*25.0*	*23.8*	*95*
Magnesium	*100000*	*95993*	*96*
Manganese	*25.0*	*24.2*	*97*
Molybdenum	*2000*	*2073*	*104*
Nickel	*25.0*	*24.5*	*98*
Potassium	*100000*	*97770*	*98*
Selenium	*125*	*112*	*90*
Silver	*25.0*	*24.7*	*99*
Sodium	*100000*	*96563*	*97*
Thallium	*25.0*	*22.7*	*91*
Thorium	*20.0*	*20.1*	*100*
Tungsten	*20.0*	*18.4*	*92*
Uranium	*10.0*	*10.9*	*109*
Vanadium	*25.0*	*24.5*	*98*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Lab Sample ID: ICSA 200-110361/11 Instrument ID: METICPMS2

Lab File ID: 101916-03 6020A.xml ICS Source: MEMSICSAw_00210

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Selenium		**-1.08**	
Aluminum	*100000*	*102533*	*103*
Antimony		*0.330*	
Arsenic		*-0.248*	
Barium		*0.357*	
Beryllium		*0.111*	
Boron		*5.71*	
Cadmium		*0.0883*	
Calcium	*100000*	*105633*	*106*
Chromium		*1.27*	
Cobalt		*0.141*	
Copper		*1.19*	
Iron	*100000*	*101400*	*101*
Lead		*0.415*	
Magnesium	*100000*	*103600*	*104*
Manganese		*0.540*	
Molybdenum	*2000*	*2179*	*109*
Nickel		*0.750*	
Potassium	*100000*	*98567*	*99*
Silver		*0.168*	
Sodium	*100000*	*101733*	*102*
Thallium		*0.123*	
Thorium		*5.04*	
Tungsten		*0.328*	
Uranium		*-0.0080*	
Vanadium		*0.553*	
Zinc		*-0.811*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Lab Sample ID: ICSAB 200-110361/12 Instrument ID: METICPMS2

Lab File ID: 101916-03 6020A.xml ICS Source: MEMSABw_00227

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Selenium	**125**	**115**	**92**
Aluminum	*100000*	*104400*	*104*
Antimony	*50.0*	*51.0*	*102*
Arsenic	*45.0*	*44.9*	*100*
Barium	*250*	*243*	*97*
Beryllium	*25.0*	*27.7*	*111*
Boron	*400*	*459*	*115*
Cadmium	*25.0*	*24.0*	*96*
Calcium	*100000*	*105900*	*106*
Chromium	*50.0*	*47.8*	*96*
Cobalt	*25.0*	*23.5*	*94*
Copper	*50.0*	*46.4*	*93*
Iron	*100000*	*102933*	*103*
Lead	*25.0*	*23.2*	*93*
Magnesium	*100000*	*103833*	*104*
Manganese	*25.0*	*23.9*	*95*
Molybdenum	*2000*	*2214*	*111*
Nickel	*25.0*	*23.3*	*93*
Potassium	*100000*	*100333*	*100*
Silver	*25.0*	*25.0*	*100*
Sodium	*100000*	*101537*	*102*
Thallium	*25.0*	*22.7*	*91*
Thorium	*20.0*	*19.7*	*98*
Tungsten	*20.0*	*20.9*	*104*
Uranium	*10.0*	*11.6*	*116*
Vanadium	*25.0*	*22.8*	*91*
Zinc	*50.0*	*45.6*	*91*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Lab Sample ID: ICSA 200-110547/11 Instrument ID: METICPMS2

Lab File ID: 102516-03 6020A.xml ICS Source: MEMSICSAw_00210

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Copper		**0.837**	
Selenium		**-0.177**	
Zinc		**-1.66**	
Aluminum	*100000*	*98393*	*98*
Antimony		*-0.203*	
Arsenic		*-0.156*	
Barium		*-0.0073*	
Beryllium		*-0.0590*	
Boron		*-4.29*	
Cadmium		*0.204*	
Calcium	*100000*	*101033*	*101*
Chromium		*1.14*	
Cobalt		*-0.0090*	
Iron	*100000*	*94920*	*95*
Lead		*0.225*	
Magnesium	*100000*	*95393*	*95*
Manganese		*0.0563*	
Molybdenum	*2000*	*2066*	*103*
Nickel		*0.192*	
Potassium	*100000*	*98003*	*98*
Silver		*0.0753*	
Sodium	*100000*	*94703*	*95*
Thallium		*-0.0860*	
Thorium		*2.50*	
Tungsten		*0.235*	
Uranium		*-0.0033*	
Vanadium		*0.887*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Lab Sample ID: ICSAB 200-110547/12 Instrument ID: METICPMS2

Lab File ID: 102516-03 6020A.xml ICS Source: MEMSABw_00227

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Copper	**50.0**	**45.0**	**90**
Selenium	**125**	**110**	**88**
Zinc	**50.0**	**43.0**	**86**
Aluminum	*100000*	*96880*	*97*
Antimony	*50.0*	*46.9*	*94*
Arsenic	*45.0*	*43.8*	*97*
Barium	*250*	*246*	*98*
Beryllium	*25.0*	*24.1*	*97*
Boron	*400*	*406*	*102*
Cadmium	*25.0*	*23.0*	*92*
Calcium	*100000*	*101900*	*102*
Chromium	*50.0*	*46.9*	*94*
Cobalt	*25.0*	*23.0*	*92*
Iron	*100000*	*96570*	*97*
Lead	*25.0*	*22.4*	*90*
Magnesium	*100000*	*95007*	*95*
Manganese	*25.0*	*23.1*	*92*
Molybdenum	*2000*	*2075*	*104*
Nickel	*25.0*	*22.9*	*92*
Potassium	*100000*	*97543*	*98*
Silver	*25.0*	*23.5*	*94*
Sodium	*100000*	*95673*	*96*
Thallium	*25.0*	*22.2*	*89*
Thorium	*20.0*	*21.6*	*108*
Tungsten	*20.0*	*19.5*	*98*
Uranium	*10.0*	*10.4*	*104*
Vanadium	*25.0*	*22.3*	*89*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Lab Sample ID: ICSA 200-110848/11 Instrument ID: METICPMS2

Lab File ID: 110116-04 6020A.xml ICS Source: MEMSICSAw_00210

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Copper		**1.00**	
Selenium		**-0.0233**	
Zinc		**-0.668**	
Aluminum	*100000*	*91980*	*92*
Antimony		*0.218*	
Arsenic		*0.0180*	
Barium		*0.195*	
Beryllium		*0.0143*	
Boron		*6.27*	
Cadmium		*0.160*	
Calcium	*100000*	*92433*	*92*
Chromium		*1.55*	
Cobalt		*0.0530*	
Iron	*100000*	*92700*	*93*
Lead		*0.262*	
Magnesium	*100000*	*92573*	*93*
Manganese		*0.274*	
Molybdenum	*2000*	*1759*	*88*
Nickel		*0.402*	
Potassium	*100000*	*93707*	*94*
Silver		*0.0840*	
Sodium	*100000*	*94597*	*95*
Thallium		*0.0963*	
Thorium		*-0.452*	
Tungsten		*0.315*	
Uranium		*-0.0090*	
Vanadium		*0.749*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Lab Sample ID: ICSAB 200-110848/12 Instrument ID: METICPMS2

Lab File ID: 110116-04 6020A.xml ICS Source: MEMSABw_00227

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Copper	**50.0**	**47.2**	**94**
Selenium	**125**	**113**	**90**
Zinc	**50.0**	**46.2**	**92**
Aluminum	*100000*	*91937*	*92*
Antimony	*50.0*	*51.5*	*103*
Arsenic	*45.0*	*43.6*	*97*
Barium	*250*	*249*	*100*
Beryllium	*25.0*	*25.1*	*100*
Boron	*400*	*434*	*108*
Cadmium	*25.0*	*22.2*	*89*
Calcium	*100000*	*94327*	*94*
Chromium	*50.0*	*49.5*	*99*
Cobalt	*25.0*	*23.4*	*94*
Iron	*100000*	*93710*	*94*
Lead	*25.0*	*24.2*	*97*
Magnesium	*100000*	*93053*	*93*
Manganese	*25.0*	*24.5*	*98*
Molybdenum	*2000*	*1786*	*89*
Nickel	*25.0*	*23.3*	*93*
Potassium	*100000*	*93720*	*94*
Silver	*25.0*	*23.6*	*95*
Sodium	*100000*	*96053*	*96*
Thallium	*25.0*	*24.6*	*98*
Thorium	*20.0*	*17.4*	*87*
Tungsten	*20.0*	*22.8*	*114*
Uranium	*10.0*	*10.5*	*105*
Vanadium	*25.0*	*24.0*	*96*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: PE1016-P1SCD-12-B-0006IN MS
Lab ID: 200-35700-12 MS
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG No.: 200-35700-1
Matrix: Sediment
Concentration Units: mg/Kg
% Solids: 45.5

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	310.8		236		10.9	685	75-125	4	6020A
Selenium	9.63		2.6		8.71	81	75-125		6020A
Zinc	214.5		171		43.6	99	75-125		6020A
Mercury	3.42		1.9		1.04	144	80-120	F1	7471B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: PE1016-P1SCD-12-B-0006IN MSD Lab ID: 200-35700-12 MSD

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Matrix: Sediment Concentration Units: mg/Kg

% Solids: 45.5

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Copper	284.2		9.82	489	75-125	9	20	4	6020A
Selenium	8.77		7.86	79	75-125	9	20		6020A
Zinc	207.0		39.3	91	75-125	4	20	4	6020A
Mercury	2.91		1.08	92	80-120	16	20		7471B

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VD - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: PE1016-P1SCD-12-B-0006IN PDS Lab ID: 200-35700-12 PDS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Matrix: Sediment Concentration Units: mg/Kg

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	231.6		236		9.09	NC	80-120		6020A
Selenium	8.14		2.6		7.27	77	80-120	W	6020A
Zinc	194.9		171		36.4	64	80-120	W	6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VB - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110153/2-A

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

Sample Matrix: Sediment LCS Source: ME6020CALi_A_00022

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Copper	5.00	5.44		109	80	120		6020A
Selenium	4.00	3.23		81	80	120		6020A
Zinc	20.0	17.78		89	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110239/2-A

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

Sample Matrix: Water LCS Source: ME6020CALi_A_00022

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Copper	50.0	56.30		113	80	120		6020A
Zinc	200	208.5		104	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110239/2-A

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

Sample Matrix: Water LCS Source: ME6020CALi_A_00022

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Selenium	40.0	38.84		97	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110491/2-A

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

Sample Matrix: Sediment LCS Source: ME6020CALi_A_00022

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Copper	5.00	4.73		95	80	120		6020A
Selenium	4.00	3.32		83	80	120		6020A
Zinc	20.0	17.39		87	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110769/2-A

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

Sample Matrix: Sediment LCS Source: ME6020CALi_A_00022

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Copper	5.00	5.03		101	80	120		6020A
Selenium	4.00	3.27		82	80	120		6020A
Zinc	20.0	17.86		89	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110242/12-A

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

Sample Matrix: Water LCS Source: mehgccvw_01052

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Mercury	2.50	2.57		103	85	115		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110231/12-A

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

Sample Matrix: Sediment LCS Source: mehgccvw_01052

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Mercury	0.500	0.492		98	80	120		7471B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110530/12-A

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

Sample Matrix: Sediment LCS Source: mehgccvw_01053

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Mercury	0.500	0.486		97	80	120		7471B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110770/12-A

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

Sample Matrix: Sediment LCS Source: mehgccvw_01056

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Mercury	0.500	0.494		99	80	120		7471B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 200-35700-12

SDG No: 200-35700-1

Lab Name: TestAmerica Burlington Job No: 200-35700-1

Matrix: Sediment Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Copper	236		250.4		6.0		6020A
Selenium	2.6		3.64		NC		6020A
Zinc	171		197.5		15	V	6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG Number: 200-35700-1

Matrix: Water Instrument ID: METICPMS2

Method: 6020A MDL Date: 08/25/2016 17:21

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Copper		5	2.2
Selenium		4	0.97
Zinc		20	2.6

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG Number: 200-35700-1

Matrix: Water Instrument ID: METICPMS2

Method: 6020A XMDL Date: 08/25/2016 17:21

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Copper		5	2.2
Selenium		4	0.97
Zinc		20	2.6

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG Number: 200-35700-1

Matrix: Sediment Instrument ID: METICPMS2

Method: 6020A MDL Date: 09/04/2014 14:11

Prep Method: 3050B

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Copper		0.5	0.12
Selenium		0.4	0.063
Zinc		2	0.62

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG Number: 200-35700-1

Matrix: Sediment Instrument ID: METICPMS2

Method: 6020A XMDL Date: 09/19/2014 14:34

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Copper		5	2.1
Selenium		4	0.79
Zinc		20	9.3

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG Number: 200-35700-1

Matrix: Water Instrument ID: MEPCV3 II

Method: 7470A MDL Date: 03/16/2016 14:58

Prep Method: 7470A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Mercury	253.7	0.2	0.044

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG Number: 200-35700-1

Matrix: Water Instrument ID: MEPCV3 II

Method: 7470A XMDL Date: 03/16/2016 14:58

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury	253.7	0.2	0.044

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG Number: 200-35700-1

Matrix: Sediment Instrument ID: MEPCV3 II

Method: 7471B MDL Date: 02/23/2015 16:26

Prep Method: 7471B

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Mercury	253.7	0.033	0.012

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG Number: 200-35700-1

Matrix: Sediment Instrument ID: MEPCV3 II

Method: 7471B XMDL Date: 03/16/2016 14:59

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury	253.7	0.2	0.044

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Burlington Job No: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: METICPMS2 Date: 03/25/2015 10:58

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Copper		6250	6020A
Selenium		1000	6020A
Zinc		6250	6020A

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Burlington Job No: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: MEPCV3 II Date: 01/01/2011 09:52

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Mercury	10	10	7470A

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Burlington Job No: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: MEPCV3 II Date: 04/18/2011 17:05

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Mercury	10	10	7471B

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Prep Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-110153/1-A	10/13/2016 13:50	110153	1.00		100.00
LCS 200-110153/2-A	10/13/2016 13:50	110153	1.00		100.00
200-35700-1	10/13/2016 13:50	110153	1.10		100.00
200-35700-2	10/13/2016 13:50	110153	1.23		100.00
200-35700-3	10/13/2016 13:50	110153	1.38		100.00
200-35700-4	10/13/2016 13:50	110153	1.27		100.00
200-35700-5	10/13/2016 13:50	110153	1.33		100.00
200-35700-6	10/13/2016 13:50	110153	1.27		100.00
200-35700-7	10/13/2016 13:50	110153	1.44		100.00
200-35700-8	10/13/2016 13:50	110153	1.39		100.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 200-110239/1-A	10/17/2016 12:26	110239		50.00	50.00
LCS 200-110239/2-A	10/17/2016 12:26	110239		50.00	50.00
200-35700-19	10/17/2016 12:26	110239		50.00	50.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Prep Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-110491/1-A	10/24/2016 14:26	110491	1.00		100.00
LCS 200-110491/2-A	10/24/2016 14:26	110491	1.00		100.00
200-35700-9	10/24/2016 14:26	110491	1.32		100.00
200-35700-10	10/24/2016 14:26	110491	1.22		100.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Prep Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-110769/1-A	10/31/2016 11:39	110769	1.00		100.00
LCS 200-110769/2-A	10/31/2016 11:39	110769	1.00		100.00
200-35700-11	10/31/2016 11:39	110769	1.28		100.00
200-35700-12	10/31/2016 11:39	110769	1.21		100.00
200-35700-12 MS	10/31/2016 11:39	110769	1.01		100.00
200-35700-12 MSD	10/31/2016 11:39	110769	1.12		100.00
200-35700-13	10/31/2016 11:39	110769	1.47		100.00
200-35700-14	10/31/2016 11:39	110769	1.09		100.00
200-35700-15	10/31/2016 11:39	110769	1.02		100.00
200-35700-16	10/31/2016 11:39	110769	1.14		100.00
200-35700-17	10/31/2016 11:39	110769	1.10		100.00
200-35700-18	10/31/2016 11:39	110769	1.05		100.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Prep Method: 7471B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-110231/11-A	10/17/2016 10:05	110231	0.50		100.00
LCS 200-110231/12-A	10/17/2016 10:05	110231	0.50		100.00
200-35700-1	10/17/2016 10:05	110231	0.53		100.00
200-35700-2	10/17/2016 10:05	110231	0.55		100.00
200-35700-3	10/17/2016 10:05	110231	0.54		100.00
200-35700-4	10/17/2016 10:05	110231	0.50		100.00
200-35700-5	10/17/2016 10:05	110231	0.57		100.00
200-35700-6	10/17/2016 10:05	110231	0.52		100.00
200-35700-7	10/17/2016 10:05	110231	0.55		100.00
200-35700-8	10/17/2016 10:05	110231	0.52		100.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Prep Method: 7470A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 200-110242/11-A	10/17/2016 12:52	110242		50.00	50.00
LCS 200-110242/12-A	10/17/2016 12:52	110242		50.00	50.00
200-35700-19	10/17/2016 12:52	110242		50.00	50.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Prep Method: 7471B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-110530/11-A	10/25/2016 11:41	110530	0.50		100.00
LCS 200-110530/12-A	10/25/2016 11:41	110530	0.50		100.00
200-35700-9	10/25/2016 11:41	110530	0.53		100.00
200-35700-10	10/25/2016 11:41	110530	0.57		100.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Prep Method: 7471B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-110770/11-A	10/31/2016 11:40	110770	0.50		100.00
LCS 200-110770/12-A	10/31/2016 11:40	110770	0.50		100.00
200-35700-11	10/31/2016 11:40	110770	0.54		100.00
200-35700-12	10/31/2016 11:40	110770	0.55		100.00
200-35700-12 MS	10/31/2016 11:40	110770	0.53		100.00
200-35700-12 MSD	10/31/2016 11:40	110770	0.51		100.00
200-35700-13	10/31/2016 11:40	110770	0.53		100.00
200-35700-14	10/31/2016 11:40	110770	0.52		100.00
200-35700-15	10/31/2016 11:40	110770	0.59		100.00
200-35700-16	10/31/2016 11:40	110770	0.53		100.00
200-35700-17	10/31/2016 11:40	110770	0.50		100.00
200-35700-18	10/31/2016 11:40	110770	0.52		100.00

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/14/2016 09:32 End Date: 10/14/2016 15:07

Lab Sample Id	D/F	Type	Time	Analytes																										
				Cu	Se	Zn																								
ITUNE 200-110192/1	1		09:32																											
STD0 200-110192/2 IC	1		10:32	X	X	X																								
STD1 200-110192/3 IC	1		10:38	X	X	X																								
STD2 200-110192/4 IC	1		10:44	X	X	X																								
STD3 200-110192/5 IC	1		10:49	X	X	X																								
STD4 200-110192/6 IC	1		10:55	X	X	X																								
STD5 200-110192/7 IC	1		11:01	X	X	X																								
ICV 200-110192/8	1		11:07	X	X	X																								
ICVL 200-110192/9	1		11:12	X	X	X																								
ICBIS 200-110192/10	1		11:18	X	X	X																								
ICSA 200-110192/11	1		11:24	X	X	X																								
ICSAB 200-110192/12	1		11:29	X	X	X																								
CCV 200-110192/13	1		11:35	X	X	X																								
CCB 200-110192/14	1		11:41	X	X	X																								
MB 200-110153/1-A	1	T	11:47	X	X	X																								
ZZZZZZ			11:52																											
ZZZZZZ			11:58																											
ZZZZZZ			12:04																											
ZZZZZZ			12:09																											
ZZZZZZ			12:15																											
ZZZZZZ			12:21																											
ZZZZZZ			12:27																											
ZZZZZZ			12:32																											
ZZZZZZ			12:38																											
CCV 200-110192/25	1		12:44	X	X	X																								
CCB 200-110192/26	1		12:50	X	X	X																								
CCVL 200-110192/27	1		12:55	X	X	X																								
ZZZZZZ			13:01																											
ZZZZZZ			13:07																											
200-35700-1	1	T	13:12		X	X																								
200-35700-2	1	T	13:18		X	X																								
200-35700-3	1	T	13:24		X	X																								
200-35700-4	1	T	13:30	X	X	X																								
200-35700-5	1	T	13:35		X	X																								
200-35700-6	1	T	13:41	X	X	X																								
200-35700-7	1	T	13:47	X	X	X																								
200-35700-8	1	T	13:52	X	X	X																								
CCV 200-110192/38	1		13:58	X	X	X																								
CCB 200-110192/39	1		14:04	X	X	X																								
CCVL 200-110192/40	1		14:09	X	X	X																								
LCS 200-110153/2-A	1	T	14:15	X	X	X																								
ZZZZZZ			14:21																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/14/2016 09:32 End Date: 10/14/2016 15:07

Lab Sample Id	D/F	Type	Time	Analytes																									
				Cu	Se	Zn																							
200-35700-2	2	T	14:27	X																									
ZZZZZZ			14:32																										
200-35700-5	2	T	14:38	X																									
200-35700-1	4	T	14:44	X																									
200-35700-3	10	T	14:50	X																									
CCV 200-110192/48	1		14:55	X	X	X																							
CCB 200-110192/49	1		15:01	X	X	X																							
CCVL 200-110192/50	1		15:07	X	X	X																							

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/18/2016 09:54 End Date: 10/18/2016 18:05

Lab Sample Id	D/F	Type	Time	Analytes																									
				Cu	Zn																								
ITUNE 200-110334/1	1		09:54																										
STD0 200-110334/2 IC	1		12:40	X	X																								
STD1 200-110334/3 IC	1		12:44	X	X																								
STD2 200-110334/4 IC	1		12:47	X	X																								
STD3 200-110334/5 IC	1		12:50	X	X																								
STD4 200-110334/6 IC	1		12:54	X	X																								
STD5 200-110334/7 IC	1		12:57	X	X																								
ICV 200-110334/8	1		13:02	X	X																								
ICVL 200-110334/9	1		13:08	X	X																								
ICBIS 200-110334/10	1		13:19	X	X																								
ICSA 200-110334/11	1		13:25	X	X																								
ICSAB 200-110334/12	1		13:31	X	X																								
CCV 200-110334/13	1		13:37	X	X																								
CCB 200-110334/14	1		13:42	X	X																								
ZZZZZZ			13:48																										
ZZZZZZ			13:54																										
ZZZZZZ			13:59																										
ZZZZZZ			14:05																										
ZZZZZZ			14:11																										
ZZZZZZ			14:17																										
ZZZZZZ			14:22																										
ZZZZZZ			14:28																										
ZZZZZZ			14:34																										
ZZZZZZ			14:39																										
CCV 200-110334/25			14:45																										
CCB 200-110334/26			14:51																										
CCVL 200-110334/27			14:57																										
ZZZZZZ			15:02																										
ZZZZZZ			15:08																										
ZZZZZZ			15:14																										
ZZZZZZ			15:20																										
ZZZZZZ			15:25																										
ZZZZZZ			15:31																										
ZZZZZZ			15:37																										
ZZZZZZ			15:42																										
ZZZZZZ			15:48																										
ZZZZZZ			15:54																										
CCV 200-110334/38	1		16:00	X	X																								
CCB 200-110334/39	1		16:05	X	X																								
CCVL 200-110334/40	1		16:11	X	X																								
ZZZZZZ			16:17																										
ZZZZZZ			16:23																										

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/18/2016 09:54 End Date: 10/18/2016 18:05

Lab Sample Id	D/F	Type	Time	Analytes																									
				Cu	Zn																								
ZZZZZZ			16:28																										
ZZZZZZ			16:34																										
MB 200-110239/1-A	1	T	16:40	X	X																								
LCS 200-110239/2-A	1	T	16:46	X	X																								
ZZZZZZ			16:51																										
200-35700-19	1	T	16:57	X	X																								
ZZZZZZ			17:03																										
ZZZZZZ			17:08																										
CCV 200-110334/51	1		17:14	X	X																								
CCB 200-110334/52	1		17:20	X	X																								
CCVL 200-110334/53	1		17:26	X	X																								
CCVL 200-110334/54			17:30																										
ZZZZZZ			17:36																										
ZZZZZZ			17:42																										
ZZZZZZ			17:48																										
CCV 200-110334/58			17:54																										
CCB 200-110334/59			17:59																										
CCVL 200-110334/60			18:05																										

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/19/2016 09:50 End Date: 10/19/2016 14:15

Lab Sample Id	D/F	Type	Time	Analytes
				Se
ITUNE 200-110361/1	1		09:50	
STD0 200-110361/2 IC	1		10:04	X
STD1 200-110361/3 IC	1		10:09	X
STD2 200-110361/4 IC	1		10:13	X
STD3 200-110361/5 IC	1		10:17	X
STD4 200-110361/6 IC	1		10:21	X
STD5 200-110361/7 IC	1		10:27	X
ICV 200-110361/8	1		10:33	X
ICVL 200-110361/9	1		10:38	X
ICBIS 200-110361/10	1		10:44	X
ICSA 200-110361/11	1		10:50	X
ICSAB 200-110361/12	1		10:56	X
CCV 200-110361/13	1		11:01	X
CCB 200-110361/14	1		11:07	X
ZZZZZZ			11:13	
ZZZZZZ			11:18	
ZZZZZZ			11:24	
ZZZZZZ			11:30	
ZZZZZZ			11:36	
ZZZZZZ			11:41	
MB 200-110239/1-A	1	T	11:47	X
LCS 200-110239/2-A	1	T	11:53	X
ZZZZZZ			11:58	
200-35700-19	1	T	12:04	X
CCV 200-110361/25	1		12:10	X
CCB 200-110361/26	1		12:16	X
CCVL 200-110361/27	1		12:21	X
ZZZZZZ			12:27	
ZZZZZZ			12:33	
ZZZZZZ			12:39	
ZZZZZZ			12:44	
ZZZZZZ			12:49	
CCV 200-110361/33			12:55	
CCB 200-110361/34			13:00	
CCVL 200-110361/35			13:06	
ZZZZZZ			13:11	
ZZZZZZ			13:17	
ZZZZZZ			13:23	
ZZZZZZ			13:29	
ZZZZZZ			13:34	
ZZZZZZ			13:40	
ZZZZZZ			13:46	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/19/2016 09:50 End Date: 10/19/2016 14:15

Lab Sample Id	D/F	Type	Time	Analytes
				Se
ZZZZZZ			13:52	
ZZZZZZ			13:57	
CCV 200-110361/45			14:03	
CCB 200-110361/46			14:09	
CCVL 200-110361/47			14:15	

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/25/2016 11:41 End Date: 10/25/2016 16:02

Lab Sample Id	D/F	Type	Time	Analytes																										
				Cu	Se	Zn																								
ITUNE 200-110547/1	1		11:41																											
STD0 200-110547/2 IC	1		12:59	X	X	X																								
STD1 200-110547/3 IC	1		13:05	X	X	X																								
STD2 200-110547/4 IC	1		13:11	X	X	X																								
STD3 200-110547/5 IC	1		13:16	X	X	X																								
STD4 200-110547/6 IC	1		13:22	X	X	X																								
STD5 200-110547/7 IC	1		13:28	X	X	X																								
ICV 200-110547/8	1		13:34	X	X	X																								
ICVL 200-110547/9	1		13:39	X	X	X																								
ICBIS 200-110547/10	1		13:45	X	X	X																								
ICSA 200-110547/11	1		13:51	X	X	X																								
ICSAB 200-110547/12	1		13:56	X	X	X																								
CCV 200-110547/13	1		14:02	X	X	X																								
CCB 200-110547/14	1		14:08	X	X	X																								
MB 200-110491/1-A	1	T	14:14	X	X	X																								
LCS 200-110491/2-A	1	T	14:19	X	X	X																								
ZZZZZZ			14:25																											
ZZZZZZ			14:31																											
ZZZZZZ			14:36																											
ZZZZZZ			14:42																											
ZZZZZZ			14:48																											
ZZZZZZ			14:54																											
ZZZZZZ			14:59																											
ZZZZZZ			15:05																											
CCV 200-110547/25	1		15:11	X	X	X																								
CCB 200-110547/26	1		15:16	X	X	X																								
CCVL 200-110547/27	1		15:22	X	X	X																								
ZZZZZZ			15:28																											
200-35700-9	1	T	15:34	X	X	X																								
200-35700-10	1	T	15:39		X	X																								
200-35700-10	2	T	15:45	X																										
CCV 200-110547/32	1		15:51	X	X	X																								
CCB 200-110547/33	1		15:57	X	X	X																								
CCVL 200-110547/34	1		16:02	X	X	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 11/01/2016 10:39 End Date: 11/01/2016 14:03

Lab Sample Id	D/F	Type	Time	Analytes																										
				Cu	Se	Zn																								
ITUNE 200-110848/1	1		10:39																											
STD0 200-110848/2 IC	1		10:50	X	X	X																								
STD1 200-110848/3 IC	1		10:55	X	X	X																								
STD2 200-110848/4 IC	1		11:00	X	X	X																								
STD3 200-110848/5 IC	1		11:06	X	X	X																								
STD4 200-110848/6 IC	1		11:12	X	X	X																								
STD5 200-110848/7 IC	1		11:17	X	X	X																								
ICV 200-110848/8	1		11:23	X	X	X																								
ICVL 200-110848/9	1		11:29	X	X	X																								
ICBIS 200-110848/10	1		11:35	X	X	X																								
ICSA 200-110848/11	1		11:40	X	X	X																								
ICSAB 200-110848/12	1		11:46	X	X	X																								
CCV 200-110848/13	1		11:52	X	X	X																								
CCB 200-110848/14	1		11:57	X	X	X																								
MB 200-110769/1-A	1	T	12:03	X	X	X																								
LCS 200-110769/2-A	1	T	12:09	X	X	X																								
200-35700-11	1	T	12:15	X	X	X																								
200-35700-12	1	T	12:20	X	X	X																								
200-35700-12 SD	5	T	12:26	X	X	X																								
200-35700-12 PDS	1	T	12:32	X	X	X																								
200-35700-12 MS	1	T	12:37	X	X	X																								
200-35700-12 MSD	1	T	12:43	X	X	X																								
200-35700-13	1	T	12:49	X	X	X																								
200-35700-14	1	T	12:55	X	X	X																								
CCV 200-110848/25	1		13:00	X	X	X																								
CCB 200-110848/26	1		13:06	X	X	X																								
CCVL 200-110848/27	1		13:12	X	X	X																								
200-35700-15	1	T	13:18	X	X	X																								
200-35700-16	1	T	13:23	X	X	X																								
200-35700-17	1	T	13:29	X	X	X																								
200-35700-18	1	T	13:35	X	X	X																								
ZZZZZZ			13:40																											
ZZZZZZ			13:46																											
CCV 200-110848/34	1		13:52	X	X	X																								
CCB 200-110848/35	1		13:58	X	X	X																								
CCVL 200-110848/36	1		14:03	X	X	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: MEPCV3 II Analysis Method: 7470A

Start Date: 10/17/2016 16:09 End Date: 10/17/2016 16:39

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
IC 200-110242/1-A	1		16:09	X																								
IC 200-110242/2-A	1		16:11	X																								
IC 200-110242/3-A	1		16:12	X																								
IC 200-110242/4-A	1		16:14	X																								
IC 200-110242/5-A	1		16:16	X																								
IC 200-110242/6-A	1		16:17	X																								
ICV 200-110242/7-A	1		16:19	X																								
ICB 200-110242/8-A	1		16:20	X																								
CCV 200-110242/9-A	1		16:22	X																								
CCB 200-110242/10-A	1		16:24	X																								
MB 200-110242/11-A	1	T	16:26	X																								
LCS 200-110242/12-A	1	T	16:27	X																								
ZZZZZZ			16:29																									
ZZZZZZ			16:30																									
ZZZZZZ			16:32																									
200-35700-19	1	T	16:34	X																								
ZZZZZZ			16:35																									
CCV 200-110242/9-A	1		16:37	X																								
CCB 200-110242/10-A	1		16:39	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: MEPCV3 II Analysis Method: 7471B

Start Date: 10/17/2016 14:14 End Date: 10/17/2016 16:07

Lab Sample Id	D/F	Type	Time	Analytes
				Hg
IC 200-110231/1-A	1		14:14	X
IC 200-110231/2-A	1		14:15	X
IC 200-110231/3-A	1		14:17	X
IC 200-110231/4-A	1		14:18	X
IC 200-110231/5-A	1		14:20	X
IC 200-110231/6-A	1		14:22	X
ICV 200-110231/7-A	1		14:23	X
ICB 200-110231/8-A	1		14:25	X
CCV 200-110231/9-A	1		14:27	X
CCB 200-110231/10-A	1		14:29	X
MB 200-110231/11-A	1	T	14:30	X
LCS 200-110231/12-A	1	T	14:32	X
ZZZZZZ			14:33	
ZZZZZZ			14:35	
ZZZZZZ			14:37	
ZZZZZZ			14:39	
ZZZZZZ			14:40	
ZZZZZZ			14:42	
ZZZZZZ			14:44	
ZZZZZZ			14:45	
CCV 200-110231/9-A	1		14:47	X
CCB 200-110231/10-A	1		14:49	X
ZZZZZZ			14:51	
ZZZZZZ			14:52	
ZZZZZZ			14:54	
ZZZZZZ			14:56	
ZZZZZZ			14:58	
200-35700-4	1	T	14:59	X
ZZZZZZ			15:01	
ZZZZZZ			15:03	
200-35700-7	1	T	15:04	X
ZZZZZZ			15:06	
CCV 200-110231/9-A	1		15:08	X
CCB 200-110231/10-A	1		15:09	X
ZZZZZZ			15:11	
ZZZZZZ			15:13	
ZZZZZZ			15:14	
ZZZZZZ			15:16	
ZZZZZZ			15:18	
ZZZZZZ			15:20	
ZZZZZZ			15:21	
ZZZZZZ			15:23	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: MEPCV3 II Analysis Method: 7471B

Start Date: 10/17/2016 14:14 End Date: 10/17/2016 16:07

Lab Sample Id	D/F	Type	Time	Analytes
				Hg
ZZZZZZ			15:25	
ZZZZZZ			15:26	
CCV 200-110231/9-A	1		15:28	X
CCB 200-110231/10-A	1		15:29	X
ZZZZZZ			15:31	
ZZZZZZ			15:33	
ZZZZZZ			15:35	
ZZZZZZ			15:36	
ZZZZZZ			15:38	
ZZZZZZ			15:40	
ZZZZZZ			15:42	
ZZZZZZ			15:43	
CCV 200-110231/9-A	1		15:45	X
CCB 200-110231/10-A	1		15:47	X
ZZZZZZ			15:48	
200-35700-1	4	T	15:51	X
200-35700-2	4	T	15:52	X
200-35700-3	4	T	15:54	X
200-35700-5	2	T	15:56	X
200-35700-6	2	T	15:57	X
200-35700-8	2	T	15:59	X
ZZZZZZ			16:01	
ZZZZZZ			16:02	
ZZZZZZ			16:04	
CCV 200-110231/9-A	1		16:06	X
CCB 200-110231/10-A	1		16:07	X

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: MEPCV3 II Analysis Method: 7471B

Start Date: 10/26/2016 09:53 End Date: 10/26/2016 11:12

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
IC 200-110530/1-A	1		09:53	X																								
IC 200-110530/2-A	1		09:54	X																								
IC 200-110530/3-A	1		09:56	X																								
IC 200-110530/4-A	1		09:58	X																								
IC 200-110530/5-A	1		09:59	X																								
IC 200-110530/6-A	1		10:01	X																								
ICV 200-110530/7-A	1		10:03	X																								
ICB 200-110530/8-A	1		10:04	X																								
CCV 200-110530/9-A	1		10:06	X																								
CCB 200-110530/10-A	1		10:08	X																								
MB 200-110530/11-A	1	T	10:09	X																								
LCS 200-110530/12-A	1	T	10:11	X																								
ZZZZZZ			10:12																									
ZZZZZZ			10:14																									
ZZZZZZ			10:16																									
ZZZZZZ			10:17																									
ZZZZZZ			10:19																									
ZZZZZZ			10:21																									
ZZZZZZ			10:22																									
200-35700-9	1	T	10:24	X																								
CCV 200-110530/9-A	1		10:25	X																								
CCB 200-110530/10-A	1		10:27	X																								
ZZZZZZ			10:29																									
ZZZZZZ			10:30																									
ZZZZZZ			10:32																									
ZZZZZZ			10:34																									
ZZZZZZ			10:35																									
ZZZZZZ			10:37																									
ZZZZZZ			10:39																									
ZZZZZZ			10:40																									
ZZZZZZ			10:42																									
ZZZZZZ			10:43																									
CCV 200-110530/9-A	1		10:45	X																								
CCB 200-110530/10-A	1		10:47	X																								
ZZZZZZ			10:49																									
ZZZZZZ			10:50																									
ZZZZZZ			10:52																									
CCV 200-110530/9-A	1		10:54	X																								
CCB 200-110530/10-A	1		10:55	X																								
200-35700-10	2	T	11:09	X																								
CCV 200-110530/9-A	1		11:11	X																								
CCB 200-110530/10-A	1		11:12	X																								

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: MEPCV3 II Analysis Method: 7471B

Start Date: 10/26/2016 09:53 End Date: 10/26/2016 11:12

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: MEPCV3 II Analysis Method: 7471B

Start Date: 10/31/2016 13:52 End Date: 10/31/2016 14:34

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
IC 200-110770/1-A	1		13:52	X																								
IC 200-110770/2-A	1		13:53	X																								
IC 200-110770/3-A	1		13:55	X																								
IC 200-110770/4-A	1		13:57	X																								
IC 200-110770/5-A	1		13:58	X																								
IC 200-110770/6-A	1		14:00	X																								
ICV 200-110770/7-A	1		14:01	X																								
ICB 200-110770/8-A	1		14:03	X																								
CCV 200-110770/9-A	1		14:05	X																								
CCB 200-110770/10-A	1		14:06	X																								
MB 200-110770/11-A	1	T	14:08	X																								
LCS 200-110770/12-A	1	T	14:10	X																								
200-35700-11	1	T	14:11	X																								
200-35700-12	1	T	14:13	X																								
200-35700-12 MS	1	T	14:14	X																								
200-35700-12 MSD	1	T	14:16	X																								
200-35700-13	1	T	14:18	X																								
200-35700-14	1	T	14:19	X																								
200-35700-15	1	T	14:21	X																								
200-35700-16	1	T	14:23	X																								
CCV 200-110770/9-A	1		14:24	X																								
CCB 200-110770/10-A	1		14:26	X																								
200-35700-17	1	T	14:27	X																								
200-35700-18	1	T	14:29	X																								
ZZZZZZ			14:31																									
CCV 200-110770/9-A	1		14:32	X																								
CCB 200-110770/10-A	1		14:34	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICP-MS Instrument ID: METICPMS2 Analysis Date: 10/14/16

Lab ID: ITUNE 200-110192/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	8.9722	0.75	3.078	
Mg-24	23.965	0.72	2.753	
Mg-25	24.9758	0.69	2.362	
Mg-26	25.9726	0.71	3.341	
Al-27	26.9815	0.71	4.131	
V-51	50.964	0.71	0.642	
Co-59	58.9432	0.72	0.442	
In-113	112.9041	0.71	2.312	
In-115	114.9039	0.73	0.700	
Ba-137	136.8858	0.74	0.890	
Ce-140	139.8854	0.74	0.688	
Pb-206	205.9545	0.73	1.928	
Pb-207	206.9559	0.74	1.321	
Pb-208	207.9566	0.75	1.446	
Th-232	232.0281	0.74	0.740	
U-238	238.0408	0.74	0.645	

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICP-MS Instrument ID: METICPMS2 Analysis Date: 10/18/16

Lab ID: ITUNE 200-110334/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	8.9922	0.73	1.079	
Mg-24	23.975	0.72	1.468	
Mg-25	24.9858	0.69	1.872	
Mg-26	25.9926	0.71	3.116	
Al-27	26.9915	0.69	0.406	
V-51	50.994	0.68	0.808	
Co-59	58.9532	0.69	0.472	
In-113	112.9441	0.68	1.952	
In-115	114.9239	0.69	0.378	
Ba-137	136.9158	0.68	1.055	
Ce-140	139.9154	0.71	0.577	
Pb-206	205.9845	0.72	1.154	
Pb-207	206.9859	0.72	1.327	
Pb-208	207.9866	0.72	1.288	
Th-232	232.0681	0.72	0.416	
U-238	238.0908	0.71	0.167	

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICP-MS Instrument ID: METICPMS2 Analysis Date: 10/19/16

Lab ID: ITUNE 200-110361/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	8.9922	0.73	2.508	
Mg-24	23.975	0.71	1.298	
Mg-25	24.9858	0.68	2.679	
Mg-26	25.9826	0.69	2.272	
Al-27	26.9915	0.68	1.069	
V-51	50.994	0.69	1.570	
Co-59	58.9532	0.71	1.213	
In-113	112.9141	0.71	2.138	
In-115	114.9139	0.69	1.014	
Ba-137	136.9158	0.72	0.790	
Ce-140	139.9054	0.72	0.881	
Pb-206	205.9745	0.72	2.882	
Pb-207	206.9859	0.68	1.441	
Pb-208	207.9866	0.73	0.824	
Th-232	232.0581	0.73	0.554	
U-238	238.0708	0.72	0.726	

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICP-MS Instrument ID: METICPMS2 Analysis Date: 10/25/16

Lab ID: ITUNE 200-110547/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	8.9722	0.77	1.973	
Mg-24	23.965	0.73	1.447	
Mg-25	24.9658	0.73	1.217	
Mg-26	25.9726	0.71	2.371	
Al-27	26.9815	0.71	0.784	
V-51	50.964	0.71	0.442	
Co-59	58.9332	0.72	0.706	
In-113	112.8941	0.73	1.780	
In-115	114.8739	0.73	0.267	
Ba-137	136.8658	0.75	1.474	
Ce-140	139.8754	0.77	0.642	
Pb-206	205.9245	0.74	1.881	
Pb-207	206.9459	0.74	1.087	
Pb-208	207.9466	0.78	1.416	
Th-232	231.9981	0.75	0.967	
U-238	238.0208	0.75	0.451	

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICP-MS Instrument ID: METICPMS2 Analysis Date: 11/01/16

Lab ID: ITUNE 200-110848/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	8.9722	0.75	1.279	
Mg-24	23.975	0.73	0.819	
Mg-25	24.9758	0.73	2.592	
Mg-26	25.9826	0.72	2.349	
Al-27	26.9915	0.71	0.989	
V-51	50.984	0.71	0.343	
Co-59	58.9432	0.72	0.282	
In-113	112.8941	0.72	0.986	
In-115	114.8939	0.73	0.538	
Ba-137	136.8858	0.74	1.672	
Ce-140	139.8754	0.75	0.762	
Pb-206	205.9445	0.77	1.583	
Pb-207	206.9459	0.72	1.464	
Pb-208	207.9466	0.77	0.987	
Th-232	232.0181	0.76	0.488	
U-238	238.0308	0.75	0.697	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/14/2016 End Date: 10/14/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
STD0 200-110192/2 I	10:32	100		100		100		100		100	
STD1 200-110192/3 I	10:38	102		103		101		101		101	
STD2 200-110192/4 I	10:44	95		95		96		95		96	
STD3 200-110192/5 I	10:49	95		94		95		94		98	
STD4 200-110192/6 I	10:55	95		94		94		93		97	
STD5 200-110192/7 I	11:01	95		97		95		95		101	
ICV 200-110192/8	11:07	88		89		92		92		94	
ICVL 200-110192/9	11:12	94		96		97		97		97	
ICBIS 200-110192/10	11:18	97		98		99		99		98	
ICSA 200-110192/11	11:24	88		97		97		97		102	
ICSAB 200-110192/12	11:29	85		97		98		99		106	
CCV 200-110192/13	11:35	82		87		91		92		95	
CCB 200-110192/14	11:41	85		89		94		94		95	
MB 200-110153/1-A	11:47	93		95		98		97		99	
CCV 200-110192/25	12:44	81		99		99		100		100	
CCB 200-110192/26	12:50	89		104		105		106		102	
CCVL 200-110192/27	12:55	88		106		105		105		102	
200-35700-1	13:12	103		177		513		122		168	
200-35700-2	13:18	96		152		342		117		142	
200-35700-3	13:24	100		211		728		123		187	
200-35700-4	13:30	96		189		646		116		177	
200-35700-5	13:35	101		185		555		121		170	
200-35700-6	13:41	101		161		403		119		150	
200-35700-7	13:47	99		246		1048		119		215	
200-35700-8	13:52	98		166		454		118		154	
CCV 200-110192/38	13:58	82		101		99		99		97	
CCB 200-110192/39	14:04	92		109		104		104		99	
CCVL 200-110192/40	14:09	94		112		107		106		101	
LCS 200-110153/2-A	14:15	90		105		101		101		99	
200-35700-2	14:27	94		132		215		109		117	
200-35700-5	14:38	94		148		333		110		134	
200-35700-1	14:44	96		134		211		113		118	
200-35700-3	14:50	97		131		175		113		113	
CCV 200-110192/48	14:55	81		95		92		92		90	
CCB 200-110192/49	15:01	87		102		97		97		92	
CCVL 200-110192/50	15:07	89		105		98		98		94	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/14/2016 End Date: 10/14/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
STD0 200-110192/2 I	10:32	100									
STD1 200-110192/3 I	10:38	100									
STD2 200-110192/4 I	10:44	96									
STD3 200-110192/5 I	10:49	95									
STD4 200-110192/6 I	10:55	97									
STD5 200-110192/7 I	11:01	96									
ICV 200-110192/8	11:07	93									
ICVL 200-110192/9	11:12	97									
ICBIS 200-110192/10	11:18	95									
ICSA 200-110192/11	11:24	96									
ICSAB 200-110192/12	11:29	99									
CCV 200-110192/13	11:35	93									
CCB 200-110192/14	11:41	95									
MB 200-110153/1-A	11:47	96									
CCV 200-110192/25	12:44	95									
CCB 200-110192/26	12:50	99									
CCVL 200-110192/27	12:55	98									
200-35700-1	13:12	120									
200-35700-2	13:18	112									
200-35700-3	13:24	125									
200-35700-4	13:30	115									
200-35700-5	13:35	119									
200-35700-6	13:41	113									
200-35700-7	13:47	126									
200-35700-8	13:52	114									
CCV 200-110192/38	13:58	91									
CCB 200-110192/39	14:04	95									
CCVL 200-110192/40	14:09	97									
LCS 200-110153/2-A	14:15	92									
200-35700-2	14:27	100									
200-35700-5	14:38	105									
200-35700-1	14:44	102									
200-35700-3	14:50	102									
CCV 200-110192/48	14:55	85									
CCB 200-110192/49	15:01	89									
CCVL 200-110192/50	15:07	90									

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/18/2016 End Date: 10/18/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
STD0 200-110334/2 I	12:40	100		100		100		100		100	
STD1 200-110334/3 I	12:44	105		105		104		103		102	
STD2 200-110334/4 I	12:47	98		98		99		98		98	
STD3 200-110334/5 I	12:50	98		99		97		96		98	
STD4 200-110334/6 I	12:54	102		104		100		99		102	
STD5 200-110334/7 I	12:57	101		106		99		101		103	
ICV 200-110334/8	13:02	93		98		99		98		98	
ICVL 200-110334/9	13:08	96		103		104		103		100	
ICBIS 200-110334/10	13:19	101		108		109		107		103	
ICSA 200-110334/11	13:25	96		111		108		108		108	
ICSAB 200-110334/12	13:31	90		111		108		109		111	
CCV 200-110334/13	13:37	86		97		101		100		101	
CCB 200-110334/14	13:42	88		100		103		102		100	
CCV 200-110334/38	16:00	85		106		104		103		97	
CCB 200-110334/39	16:05	91		114		109		107		99	
CCVL 200-110334/40	16:11	93		116		111		107		99	
MB 200-110239/1-A	16:40	95		127		118		112		105	
LCS 200-110239/2-A	16:46	86		109		102		99		95	
200-35700-19	16:57	97		124		114		109		101	
CCV 200-110334/51	17:14	83		102		95		92		88	
CCB 200-110334/52	17:20	90		107		100		96		90	
CCVL 200-110334/53	17:26	91		110		101		98		91	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/18/2016 End Date: 10/18/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
STD0 200-110334/2 I	12:40	100									
STD1 200-110334/3 I	12:44	100									
STD2 200-110334/4 I	12:47	97									
STD3 200-110334/5 I	12:50	96									
STD4 200-110334/6 I	12:54	99									
STD5 200-110334/7 I	12:57	98									
ICV 200-110334/8	13:02	97									
ICVL 200-110334/9	13:08	98									
ICBIS 200-110334/10	13:19	101									
ICSA 200-110334/11	13:25	102									
ICSAB 200-110334/12	13:31	104									
CCV 200-110334/13	13:37	99									
CCB 200-110334/14	13:42	99									
CCV 200-110334/38	16:00	92									
CCB 200-110334/39	16:05	96									
CCVL 200-110334/40	16:11	94									
MB 200-110239/1-A	16:40	99									
LCS 200-110239/2-A	16:46	91									
200-35700-19	16:57	97									
CCV 200-110334/51	17:14	86									
CCB 200-110334/52	17:20	89									
CCVL 200-110334/53	17:26	90									

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/19/2016 End Date: 10/19/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
STD0 200-110361/2 I	10:04	100		100		100		100		100	
STD1 200-110361/3 I	10:09	97		99		100		98		98	
STD2 200-110361/4 I	10:13	90		91		93		91		92	
STD3 200-110361/5 I	10:17	88		85		89		88		90	
STD4 200-110361/6 I	10:21	85		81		84		83		86	
STD5 200-110361/7 I	10:27	81		76		80		80		83	
ICV 200-110361/8	10:33	75		72		79		78		79	
ICVL 200-110361/9	10:38	77		73		79		78		79	
ICBIS 200-110361/10	10:44	76		72		79		79		78	
ICSA 200-110361/11	10:50	75		79		84		84		87	
ICSAB 200-110361/12	10:56	68		74		80		82		86	
CCV 200-110361/13	11:01	61		61		71		73		75	
CCB 200-110361/14	11:07	66		64		73		75		75	
MB 200-110239/1-A	11:47	71		81		90		87		83	
LCS 200-110239/2-A	11:53	67		72		79		79		77	
200-35700-19	12:04	73		77		85		83		80	
CCV 200-110361/25	12:10	64		65		72		71		71	
CCB 200-110361/26	12:16	68		68		75		75		73	
CCVL 200-110361/27	12:21	68		71		77		76		74	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/19/2016 End Date: 10/19/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
STD0 200-110361/2 I	10:04	100									
STD1 200-110361/3 I	10:09	99									
STD2 200-110361/4 I	10:13	93									
STD3 200-110361/5 I	10:17	90									
STD4 200-110361/6 I	10:21	87									
STD5 200-110361/7 I	10:27	84									
ICV 200-110361/8	10:33	81									
ICVL 200-110361/9	10:38	80									
ICBIS 200-110361/10	10:44	81									
ICSA 200-110361/11	10:50	86									
ICSAB 200-110361/12	10:56	84									
CCV 200-110361/13	11:01	78									
CCB 200-110361/14	11:07	79									
MB 200-110239/1-A	11:47	84									
LCS 200-110239/2-A	11:53	78									
200-35700-19	12:04	81									
CCV 200-110361/25	12:10	74									
CCB 200-110361/26	12:16	76									
CCVL 200-110361/27	12:21	78									

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/25/2016 End Date: 10/25/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
STD0 200-110547/2 I	12:59	100		100		100		100		100	
STD1 200-110547/3 I	13:05	104		104		103		102		101	
STD2 200-110547/4 I	13:11	101		101		101		101		99	
STD3 200-110547/5 I	13:16	102		102		102		101		100	
STD4 200-110547/6 I	13:22	107		107		102		102		101	
STD5 200-110547/7 I	13:28	106		107		101		103		102	
ICV 200-110547/8	13:34	98		98		98		97		96	
ICVL 200-110547/9	13:39	102		99		102		100		97	
ICBIS 200-110547/10	13:45	108		103		105		103		99	
ICSA 200-110547/11	13:51	111		120		113		113		111	
ICSAB 200-110547/12	13:56	103		112		110		110		111	
CCV 200-110547/13	14:02	91		92		95		95		95	
CCB 200-110547/14	14:08	100		95		98		97		97	
MB 200-110491/1-A	14:14	103		98		102		100		97	
LCS 200-110491/2-A	14:19	103		98		102		99		98	
CCV 200-110547/25	15:11	93		105		107		104		102	
CCB 200-110547/26	15:16	102		107		111		107		103	
CCVL 200-110547/27	15:22	101		107		111		107		102	
200-35700-9	15:34	117		195		497		132		162	
200-35700-10	15:39	111		178		453		128		154	
200-35700-10	15:45	113		158		298		129		136	
CCV 200-110547/32	15:51	98		109		110		108		102	
CCB 200-110547/33	15:57	102		109		112		109		104	
CCVL 200-110547/34	16:02	104		112		115		111		103	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/25/2016 End Date: 10/25/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
STD0 200-110547/2 I	12:59	100									
STD1 200-110547/3 I	13:05	102									
STD2 200-110547/4 I	13:11	100									
STD3 200-110547/5 I	13:16	100									
STD4 200-110547/6 I	13:22	98									
STD5 200-110547/7 I	13:28	100									
ICV 200-110547/8	13:34	98									
ICVL 200-110547/9	13:39	98									
ICBIS 200-110547/10	13:45	100									
ICSA 200-110547/11	13:51	106									
ICSAB 200-110547/12	13:56	107									
CCV 200-110547/13	14:02	98									
CCB 200-110547/14	14:08	98									
MB 200-110491/1-A	14:14	99									
LCS 200-110491/2-A	14:19	98									
CCV 200-110547/25	15:11	99									
CCB 200-110547/26	15:16	100									
CCVL 200-110547/27	15:22	101									
200-35700-9	15:34	123									
200-35700-10	15:39	118									
200-35700-10	15:45	117									
CCV 200-110547/32	15:51	99									
CCB 200-110547/33	15:57	101									
CCVL 200-110547/34	16:02	100									

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICP-MS Instrument ID: METICPMS2 Start Date: 11/01/2016 End Date: 11/01/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
STD0 200-110848/2 I	10:50	100		100		100		100		100	
STD1 200-110848/3 I	10:55	104		108		106		104		102	
STD2 200-110848/4 I	11:00	103		110		106		104		102	
STD3 200-110848/5 I	11:06	97		97		97		95		94	
STD4 200-110848/6 I	11:12	95		93		92		92		93	
STD5 200-110848/7 I	11:17	92		90		88		89		91	
ICV 200-110848/8	11:23	92		88		89		88		89	
ICVL 200-110848/9	11:29	98		91		94		92		91	
ICBIS 200-110848/10	11:35	93		90		93		92		89	
ICSA 200-110848/11	11:40	97		107		105		104		105	
ICSAB 200-110848/12	11:46	91		102		102		101		104	
CCV 200-110848/13	11:52	80		76		81		82		86	
CCB 200-110848/14	11:57	82		77		83		83		84	
MB 200-110769/1-A	12:03	90		84		89		89		88	
LCS 200-110769/2-A	12:09	91		87		92		91		91	
200-35700-11	12:15	102		171		573		111		168	
200-35700-12	12:20	100		186		625		118		177	
200-35700-12 SD	12:26	91		115		202		105		114	
200-35700-12 PDS	12:32	94		169		572		111		166	
200-35700-12 MS	12:37	91		138		394		104		139	
200-35700-12 MSD	12:43	90		149		455		107		148	
200-35700-13	12:49	90		210		698		110		183	
200-35700-14	12:55	86		120		300		101		124	
CCV 200-110848/25	13:00	74		71		80		79		81	
CCB 200-110848/26	13:06	77		76		84		82		82	
CCVL 200-110848/27	13:12	86		82		89		88		87	
200-35700-15	13:18	92		118		289		99		120	
200-35700-16	13:23	95		146		433		108		145	
200-35700-17	13:29	94		144		458		106		147	
200-35700-18	13:35	88		173		656		103		172	
CCV 200-110848/34	13:52	76		74		80		80		81	
CCB 200-110848/35	13:58	80		78		86		84		83	
CCVL 200-110848/36	14:03	86		83		89		87		87	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

ICP-MS Instrument ID: METICPMS2 Start Date: 11/01/2016 End Date: 11/01/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
STD0 200-110848/2 I	10:50	100									
STD1 200-110848/3 I	10:55	101									
STD2 200-110848/4 I	11:00	99									
STD3 200-110848/5 I	11:06	96									
STD4 200-110848/6 I	11:12	93									
STD5 200-110848/7 I	11:17	91									
ICV 200-110848/8	11:23	89									
ICVL 200-110848/9	11:29	91									
ICBIS 200-110848/10	11:35	90									
ICSA 200-110848/11	11:40	99									
ICSAB 200-110848/12	11:46	99									
CCV 200-110848/13	11:52	87									
CCB 200-110848/14	11:57	86									
MB 200-110769/1-A	12:03	88									
LCS 200-110769/2-A	12:09	90									
200-35700-11	12:15	118									
200-35700-12	12:20	124									
200-35700-12 SD	12:26	104									
200-35700-12 PDS	12:32	119									
200-35700-12 MS	12:37	109									
200-35700-12 MSD	12:43	112									
200-35700-13	12:49	126									
200-35700-14	12:55	103									
CCV 200-110848/25	13:00	83									
CCB 200-110848/26	13:06	84									
CCVL 200-110848/27	13:12	88									
200-35700-15	13:18	101									
200-35700-16	13:23	111									
200-35700-17	13:29	110									
200-35700-18	13:35	111									
CCV 200-110848/34	13:52	82									
CCB 200-110848/35	13:58	83									
CCVL 200-110848/36	14:03	87									

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110153 Batch Start Date: 10/13/16 13:50 Batch Analyst: Kirk, Matthew D

Batch Method: 3050B Batch End Date: 10/13/16 17:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	CalcMsg	InitialAmount	FinalAmount	ME6020CALi_A 00022	ME6020CALi_B 00019	
MB 200-110153/1		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL			
LCS 200-110153/2		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL	1 mL	1 mL	
200-35700-A-1	PE1016-P1SCD-01-A-0007IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.10 g	100.00 mL			
200-35700-A-2	PE1016-P1SCD-01-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.23 g	100.00 mL			
200-35700-A-3	PE1016-P1SCD-01-A-0718IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.38 g	100.00 mL			
200-35700-A-4	PE1016-P1SCD-02-A-0004IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.27 g	100.00 mL			
200-35700-A-5	PE1016-P1SCD-02-B-0004IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.33 g	100.00 mL			
200-35700-A-6	PE1016-P1SCD-03-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.27 g	100.00 mL			
200-35700-A-7	PE1016-P1SCD-03-A-0612IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.44 g	100.00 mL			
200-35700-A-8	PE1016-P1SCD-03-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.39 g	100.00 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110153 Batch Start Date: 10/13/16 13:50 Batch Analyst: Kirk, Matthew D

Batch Method: 3050B Batch End Date: 10/13/16 17:15

Batch Notes	
Balance ID	L92017
First End time	1715
Hydrogen Peroxide ID	975367
Lot # of hydrochloric acid	933665
Lot # of Nitric Acid	1:1 978119, Conc.974279
Hot Block ID	B5
Nominal Amount Used	1.0g g
Oven, Bath or Block Temperature 1	93 Degrees C
Pipette ID	HJ17902
Analyst ID - Reagent Drop Witness	MJZ
Perform Calculation (0=No, 1=Yes)	0
First Start time	1425
Thermometer ID	73, CF=-2
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	95 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110239 Batch Start Date: 10/17/16 12:26 Batch Analyst: Kirk, Matthew D

Batch Method: 3010A Batch End Date: 10/17/16 15:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	ME6020CALi_A 00022	ME6020CALi_B 00019	
MB 200-110239/1		3010A, 6020A			50.00 mL	50.00 mL			
LCS 200-110239/2		3010A, 6020A			50.00 mL	50.00 mL	0.5 mL	0.5 mL	
200-35700-A-19	PE1016-P1SCD-BLK -3-101216	3010A, 6020A	T	<2	50.00 mL	50.00 mL			

Batch Notes	
First End time	1530
Lot # of hydrochloric acid	1:1 933665
Lot # of Nitric Acid	974279
Hot Block ID	B5
Oven, Bath or Block Temperature 1	93 Degrees C
pH Paper ID	HC682547
Pipette ID	129654
Analyst ID - Spike Witness Analyst	JWM
First Start time	1230
Thermometer ID	73, CF=-2
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	95 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110491 Batch Start Date: 10/24/16 14:26 Batch Analyst: Kirk, Matthew D

Batch Method: 3050B Batch End Date: 10/24/16 18:05

Lab Sample ID	Client Sample ID	Method Chain	Basis	CalcMsg	InitialAmount	FinalAmount	ME6020CALi_A 00022	ME6020CALi_B 00019	
MB 200-110491/1		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL			
LCS 200-110491/2		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL	1 mL	1 mL	
200-35700-A-9	PE1016-P1SCD-11-A-0004IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.32 g	100.00 mL			
200-35700-A-10	PE1016-P1SCD-11-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.22 g	100.00 mL			

Batch Notes	
Balance ID	L92017
First End time	1805
Hydrogen Peroxide ID	984249
Lot # of hydrochloric acid	933665
Lot # of Nitric Acid	1:1 978119 Conc. 983882
Hot Block ID	B5
Nominal Amount Used	1.00g g
Oven, Bath or Block Temperature 1	95 Degrees C
Pipette ID	HJ17902
Analyst ID - Reagent Drop Witness	MJZ
Perform Calculation (0=No, 1=Yes)	0
First Start time	1500
Thermometer ID	73, CF=-2
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	97 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110769 Batch Start Date: 10/31/16 11:39 Batch Analyst: Kirk, Matthew D

Batch Method: 3050B Batch End Date: 10/31/16 15:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	CalcMsg	InitialAmount	FinalAmount	ME6020CALi_A 00022	ME6020CALi_B 00019	
MB 200-110769/1		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL			
LCS 200-110769/2		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL	1 mL	1 mL	
200-35700-A-11	PE1016-P1SCD-12-A-0008IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.28 g	100.00 mL			
200-35700-A-12	PE1016-P1SCD-12-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.21 g	100.00 mL			
200-35700-A-12 MS	PE1016-P1SCD-12-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.01 g	100.00 mL	1 mL	1 mL	
200-35700-A-12 MSD	PE1016-P1SCD-12-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.12 g	100.00 mL	1 mL	1 mL	
200-35700-A-13	PE1016-P1SCD-13-A-0002IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.47 g	100.00 mL			
200-35700-A-14	PE1016-P1SCD-13-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.09 g	100.00 mL			
200-35700-A-15	PE1016-P1SCD-13-B-0006IN-D	3050B, 6020A	T	CALC NOT SET TO RUN	1.02 g	100.00 mL			
200-35700-A-16	PE1016-P1SCD-14-A-0004IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.14 g	100.00 mL			
200-35700-A-17	PE1016-P1SCD-14-B-0004IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.10 g	100.00 mL			
200-35700-A-18	PE1016-P1SCD-12-A-0814IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.05 g	100.00 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110769 Batch Start Date: 10/31/16 11:39 Batch Analyst: Kirk, Matthew D

Batch Method: 3050B Batch End Date: 10/31/16 15:15

Batch Notes	
Balance ID	L92017
First End time	1515
Hydrogen Peroxide ID	984249
Lot # of hydrochloric acid	933665
Lot # of Nitric Acid	1:1 978119 Conc. 983882
Hot Block ID	B2
Nominal Amount Used	1.00g g
Oven, Bath or Block Temperature 1	93 Degrees C
Pipette ID	129654
Analyst ID - Reagent Drop Witness	KNK
Perform Calculation (0=No, 1=Yes)	0
First Start time	1200
Thermometer ID	153, CF=-1
Digestion Tube/Cup ID	252941-0026
Uncorrected Temperature	94 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110242 Batch Start Date: 10/17/16 12:52 Batch Analyst: Kirk, Matthew D

Batch Method: 7470A Batch End Date: 10/17/16 15:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	mehgccvw 01052	MEHGICVw 00085	
IC 200-110242/1	S01	7470A, 7470A			50.00 mL	50.00 mL			
IC 200-110242/2	S02	7470A, 7470A			50.00 mL	50.00 mL	0.1 mL		
IC 200-110242/3	S03	7470A, 7470A			50.00 mL	50.00 mL	0.25 mL		
IC 200-110242/4	S04	7470A, 7470A			50.00 mL	50.00 mL	0.5 mL		
IC 200-110242/5	S05	7470A, 7470A			50.00 mL	50.00 mL	2.5 mL		
IC 200-110242/6	S06	7470A, 7470A			50.00 mL	50.00 mL	5 mL		
ICV 200-110242/7	ICV	7470A, 7470A			50.00 mL	50.00 mL		5 mL	
ICB 200-110242/8	ICB	7470A, 7470A			50.00 mL	50.00 mL			
CCV 200-110242/9	CCV	7470A, 7470A			50.00 mL	50.00 mL	2.5 mL		
CCB 200-110242/10	CCB	7470A, 7470A			50.00 mL	50.00 mL			
MB 200-110242/11		7470A, 7470A			50.00 mL	50.00 mL			
LCS 200-110242/12		7470A, 7470A			50.00 mL	50.00 mL	1.25 mL		
200-35700-A-19	PE1016-P1SCD-BLK -3-101216	7470A, 7470A	T	<2	50.00 mL	50.00 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110242 Batch Start Date: 10/17/16 12:52 Batch Analyst: Kirk, Matthew D

Batch Method: 7470A Batch End Date: 10/17/16 15:15

Batch Notes	
Hydroxylamine Hydrochloride ID	981762
Batch Comment	LCS+ MS/MSD inadvertantly spiked with 1.25mL
Digestion End Time	1515
Digestion Start Time	1300
Sulfuric Acid Lot Number	921859
Lot # of hydrochloric acid	969548
Lot # of Nitric Acid	974279
Hot Block ID	B4
Potassium Persulfate ID	921392
Potassium Permanganate ID	971259
Oven, Bath or Block Temperature 1	93 Celsius
pH Paper ID	HC682547
Pipette ID	HJ17902
Stannous Chloride ID	978394
SOP Number	BR-ME-015 r16.3
Analyst ID - Spike Witness Analyst	KSH
Temperature	93
Thermometer ID	36, CF=-2
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	95 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110231 Batch Start Date: 10/17/16 10:05 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/17/16 13:10

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	mehgccvw 01052	MEHGICVw 00085		
IC 200-110231/1	S01	7471B, 7471B		100.00 mL	100.00 mL				
IC 200-110231/2	S02	7471B, 7471B		100.00 mL	100.00 mL	0.2 mL			
IC 200-110231/3	S03	7471B, 7471B		100.00 mL	100.00 mL	0.5 mL			
IC 200-110231/4	S04	7471B, 7471B		100.00 mL	100.00 mL	1 mL			
IC 200-110231/5	S05	7471B, 7471B		100.00 mL	100.00 mL	5 mL			
IC 200-110231/6	S06	7471B, 7471B		100.00 mL	100.00 mL	10 mL			
ICV 200-110231/7	ICV	7471B, 7471B		100.00 mL	100.00 mL		10 mL		
ICB 200-110231/8	ICB	7471B, 7471B		100.00 mL	100.00 mL				
CCV 200-110231/9	CCV	7471B, 7471B		100.00 mL	100.00 mL	5 mL			
CCB 200-110231/10	CCB	7471B, 7471B		100.00 mL	100.00 mL				
MB 200-110231/11		7471B, 7471B		0.50 g	100.00 mL				
LCS 200-110231/12		7471B, 7471B		0.50 g	100.00 mL	2.5 mL			
200-35700-A-1	PE1016-P1SCD-01-A-0007IN	7471B, 7471B	T	0.53 g	100.00 mL				
200-35700-A-2	PE1016-P1SCD-01-B-0006IN	7471B, 7471B	T	0.55 g	100.00 mL				
200-35700-A-3	PE1016-P1SCD-01-A-0718IN	7471B, 7471B	T	0.54 g	100.00 mL				
200-35700-A-4	PE1016-P1SCD-02-A-0004IN	7471B, 7471B	T	0.50 g	100.00 mL				
200-35700-A-5	PE1016-P1SCD-02-B-0004IN	7471B, 7471B	T	0.57 g	100.00 mL				
200-35700-A-6	PE1016-P1SCD-03-A-0006IN	7471B, 7471B	T	0.52 g	100.00 mL				
200-35700-A-7	PE1016-P1SCD-03-A-0612IN	7471B, 7471B	T	0.55 g	100.00 mL				
200-35700-A-8	PE1016-P1SCD-03-B-0006IN	7471B, 7471B	T	0.52 g	100.00 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110231 Batch Start Date: 10/17/16 10:05 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/17/16 13:10

Batch Notes	
Hydroxylamine Hydrochloride ID	981762
Balance ID	L92017
Digestion End Time	1310
Digestion Start Time	1210
Lot # of hydrochloric acid	968481
Lot # of Nitric Acid	974279
Hot Block ID	B4\B1
Potassium Permanganate ID	971259
Nominal Amount Used	0.60g g
Oven, Bath or Block Temperature 1	94\95 Celsius
Pipette ID	HJ17902 and 129654
Stannous Chloride ID	978394
SOP Number	BR-ME-004 r15.1
Analyst ID - Spike Witness Analyst	ERJ
Thermometer ID	74\36 (CF=0\-2)
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	94\93 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110530 Batch Start Date: 10/25/16 11:41 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/25/16 13:40

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	mehgccvw 01053	MEHGICVw 00086		
IC 200-110530/1	S01	7471B, 7471B		100.00 mL	100.00 mL				
IC 200-110530/2	S02	7471B, 7471B		100.00 mL	100.00 mL	0.2 mL			
IC 200-110530/3	S03	7471B, 7471B		100.00 mL	100.00 mL	0.5 mL			
IC 200-110530/4	S04	7471B, 7471B		100.00 mL	100.00 mL	1 mL			
IC 200-110530/5	S05	7471B, 7471B		100.00 mL	100.00 mL	5 mL			
IC 200-110530/6	S06	7471B, 7471B		100.00 mL	100.00 mL	10 mL			
ICV 200-110530/7	ICV	7471B, 7471B		100.00 mL	100.00 mL		10 mL		
ICB 200-110530/8	ICB	7471B, 7471B		100.00 mL	100.00 mL				
CCV 200-110530/9	CCV	7471B, 7471B		100.00 mL	100.00 mL	5 mL			
CCB 200-110530/10	CCB	7471B, 7471B		100.00 mL	100.00 mL				
MB 200-110530/11		7471B, 7471B		0.50 g	100.00 mL				
LCS 200-110530/12		7471B, 7471B		0.50 g	100.00 mL	2.5 mL			
200-35700-A-9	PE1016-P1SCD-11-A-0004IN	7471B, 7471B	T	0.53 g	100.00 mL				
200-35700-A-10	PE1016-P1SCD-11-B-0006IN	7471B, 7471B	T	0.57 g	100.00 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110530 Batch Start Date: 10/25/16 11:41 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/25/16 13:40

Batch Notes	
Hydroxylamine Hydrochloride ID	981762
Balance ID	L92017
Digestion End Time	1340
Digestion Start Time	1230
Lot # of hydrochloric acid	968479
Lot # of Nitric Acid	983882
Hot Block ID	B4 and B1
Potassium Permanganate ID	971259
Nominal Amount Used	0.6g g
Oven, Bath or Block Temperature 1	93 and 94 Celsius
Pipette ID	HJ17902 and 129654
Stannous Chloride ID	978394
SOP Number	BR-ME-004 r.15.1
Analyst ID - Spike Witness Analyst	KNK
Thermometer ID	36 and 74 (CF=-2 and 0)
Digestion Tube/Cup ID	246757-9884 and 252941-0026
Uncorrected Temperature	95 and 94 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110770 Batch Start Date: 10/31/16 11:40 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/31/16 12:55

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	mehgccvw 01056	MEHGICVw 00086		
IC 200-110770/1	S01	7471B, 7471B		100.00 mL	100.00 mL				
IC 200-110770/2	S02	7471B, 7471B		100.00 mL	100.00 mL	0.2 mL			
IC 200-110770/3	S03	7471B, 7471B		100.00 mL	100.00 mL	0.5 mL			
IC 200-110770/4	S04	7471B, 7471B		100.00 mL	100.00 mL	1 mL			
IC 200-110770/5	S05	7471B, 7471B		100.00 mL	100.00 mL	5 mL			
IC 200-110770/6	S06	7471B, 7471B		100.00 mL	100.00 mL	10 mL			
ICV 200-110770/7	ICV	7471B, 7471B		100.00 mL	100.00 mL		10 mL		
ICB 200-110770/8	ICB	7471B, 7471B		100.00 mL	100.00 mL				
CCV 200-110770/9	CCV	7471B, 7471B		100.00 mL	100.00 mL	5 mL			
CCB 200-110770/10	CCB	7471B, 7471B		100.00 mL	100.00 mL				
MB 200-110770/11		7471B, 7471B		0.50 g	100.00 mL				
LCS 200-110770/12		7471B, 7471B		0.50 g	100.00 mL	2.5 mL			
200-35700-A-11	PE1016-P1SCD-12-A-0008IN	7471B, 7471B	T	0.54 g	100.00 mL				
200-35700-A-12	PE1016-P1SCD-12-B-0006IN	7471B, 7471B	T	0.55 g	100.00 mL				
200-35700-A-12 MS	PE1016-P1SCD-12-B-0006IN	7471B, 7471B	T	0.53 g	100.00 mL	2.5 mL			
200-35700-A-12 MSD	PE1016-P1SCD-12-B-0006IN	7471B, 7471B	T	0.51 g	100.00 mL	2.5 mL			
200-35700-A-13	PE1016-P1SCD-13-A-0002IN	7471B, 7471B	T	0.53 g	100.00 mL				
200-35700-A-14	PE1016-P1SCD-13-B-0006IN	7471B, 7471B	T	0.52 g	100.00 mL				
200-35700-A-15	PE1016-P1SCD-13-B-0006IN-D	7471B, 7471B	T	0.59 g	100.00 mL				
200-35700-A-16	PE1016-P1SCD-14-A-0004IN	7471B, 7471B	T	0.53 g	100.00 mL				
200-35700-A-17	PE1016-P1SCD-14-B-0004IN	7471B, 7471B	T	0.50 g	100.00 mL				
200-35700-A-18	PE1016-P1SCD-12-A-0814IN	7471B, 7471B	T	0.52 g	100.00 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110770 Batch Start Date: 10/31/16 11:40 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/31/16 12:55

Batch Notes	
Hydroxylamine Hydrochloride ID	981762
Balance ID	L92017
Digestion End Time	1230
Digestion Start Time	1145
Lot # of hydrochloric acid	968479 (10% 982732)
Lot # of Nitric Acid	983882
Hot Block ID	B1
Potassium Permanganate ID	985839
Nominal Amount Used	0.6g g
Oven, Bath or Block Temperature 1	94 Celsius
Pipette ID	HJ17902 and 129654
Stannous Chloride ID	978394
SOP Number	BR-ME-005 r.15.1
Analyst ID - Spike Witness Analyst	VTP
Thermometer ID	74, CF=0
Digestion Tube/Cup ID	252941-0026
Uncorrected Temperature	94 Celsius

Basis	Basis Description
T	Total/NA

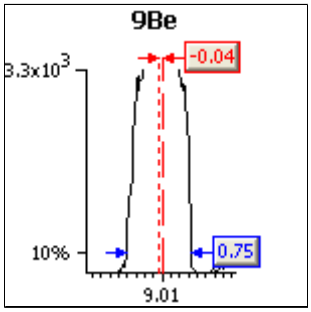
The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

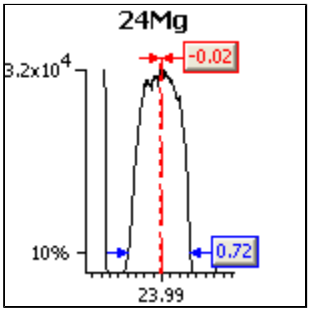
Performance Report

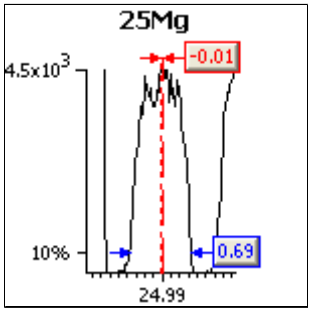
Sample details
Sample name : ITUNE
Acquired at : 10/14/2016 09:32:18 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

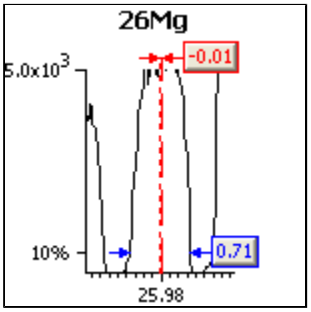
Mass Calibration verification

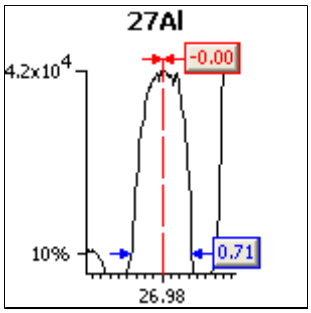
Acquisition parameters
Sweeps : 20
Dwell : 1.0 mSecs
Point spacing : 0.01 amu
Peak width measured at 10% of the peak maximum

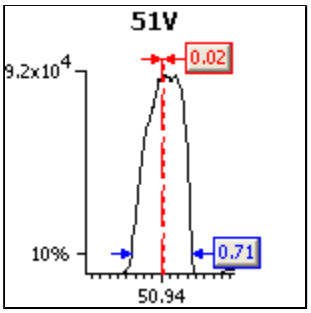


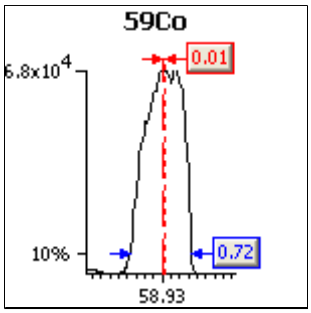


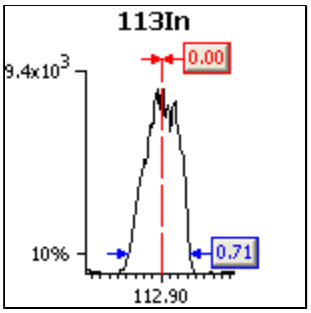


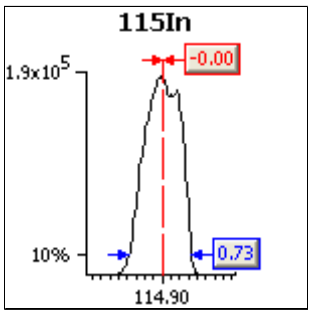


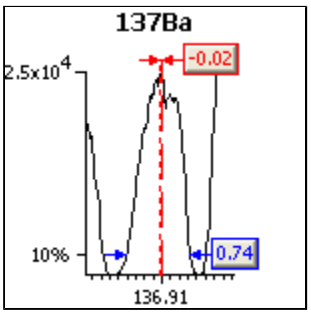


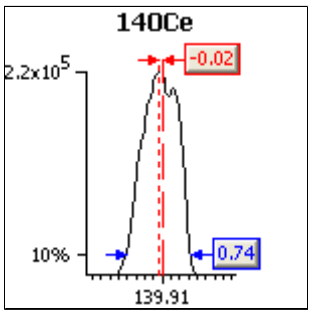


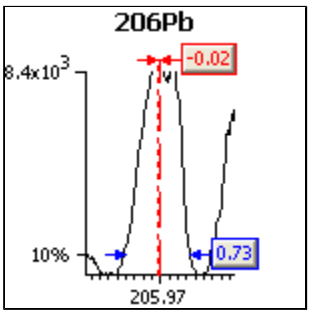


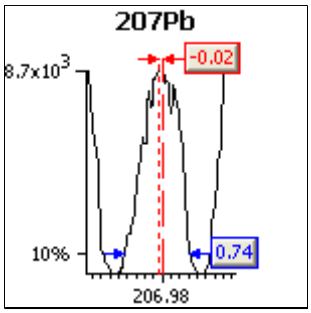


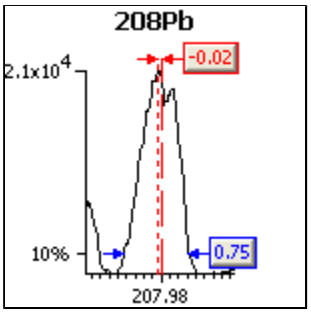


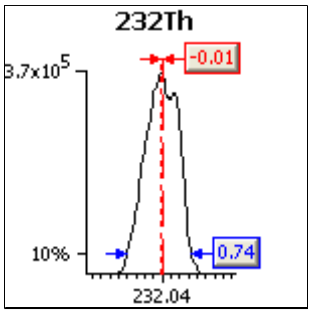


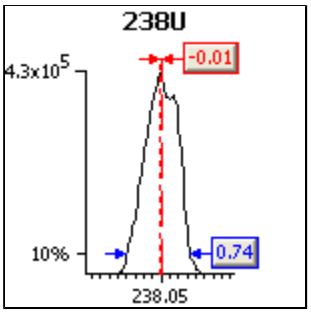












Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
9Be	0.90	0.65	0.10	0.75	-0.04
24Mg	0.90	0.65	0.10	0.72	-0.02

25Mg	0.90	0.65	0.10	0.69	-0.01
26Mg	0.90	0.65	0.10	0.71	-0.01
27Al	0.90	0.65	0.10	0.71	-0.00
51V	0.90	0.65	0.10	0.71	0.02
59Co	0.90	0.65	0.10	0.72	0.01
113In	0.90	0.65	0.10	0.71	0.00
115In	0.90	0.65	0.10	0.73	-0.00
137Ba	0.90	0.65	0.10	0.74	-0.02
140Ce	0.90	0.65	0.10	0.74	-0.02
206Pb	0.90	0.65	0.10	0.73	-0.02
207Pb	0.90	0.65	0.10	0.74	-0.02
208Pb	0.90	0.65	0.10	0.75	-0.02
232Th	0.90	0.65	0.10	0.74	-0.01
238U	0.90	0.65	0.10	0.74	-0.01

Sample details
Sample name : ITUNE
Acquired at : 10/14/2016 09:32:18 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Tune conditions

Major	
Extraction	-118
Lens 1	-4.1
Focus	18.0
D1	-43.9
Pole Bias	1.0
Hexapole Bias	-3.0
Nebuliser	0.76
Sampling Depth	147

Minor	
Lens 2	-39.2
Lens 3	-177.3
Forward power	1404
Horizontal	70
Vertical	522
D2	-158
DA	-40.8
Cool	13.0
Auxiliary	0.90

Global	
Standard resolution	135
High resolution	115
Analogue Detector	2353
PC Detector	1196

Add. Gases	
CCT1	0.00
CCT2	0.00

Sensitivity and stability results

Acquisition parameters
Sweeps : 50

Run	Time	8Bkg	9Be	24Mg	25Mg	26Mg	27Al	51V	59Co	113In
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Countrate	-	>100	>100	>100	>100	>100	>100	>100	>100
1	09:33:15 AM	0.300	3760.424	31748.210	4164.520	5356.861	41198.858	89576.071	68281.585	7997.919
2	09:33:49 AM	0.100	3760.424	31163.107	4252.542	5212.815	40310.690	89477.544	68426.176	8392.112
3	09:34:22 AM	0.200	3598.388	30666.187	4266.546	5114.785	39829.535	90871.053	68474.374	8149.992
4	09:34:56 AM	0.300	3656.401	29748.526	4108.506	5150.796	42538.216	89929.969	67827.738	8190.012
5	09:35:30 AM	0.000	3898.456	29898.794	4032.488	4884.716	38035.351	89574.060	68612.942	7903.874
x		0.180	3734.819	30644.965	4164.921	5143.994	40382.530	89885.739	68324.563	8126.782
σ		0.13	114.95	843.57	98.40	171.88	1668.35	577.16	301.92	187.90
%RSD		72.436	3.078	2.753	2.362	3.341	4.131	0.642	0.442	2.312

Run	Time	115In	137Ba	140Ce	156Ce O	206Pb	207Pb	208Pb	220Bkg	232Th
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	5.0%	5.0%	5.0%	-	5.0%	5.0%	5.0%	-	5.0%
	Countrate	>100	>100	>100	-	>100	>100	>100	-	>100
1	09:33:15 AM	189869.39	24690.275	221613.65	1450.063	9630.782	8604.220	20778.945	0.000	370848.46
2	09:33:49 AM	191044.70	24435.900	221254.93	1564.073	9332.612	8830.339	20788.957	0.000	369779.09
3	09:34:22 AM	190191.02	24429.891	223224.94	1400.059	9356.626	8802.324	20708.858	0.000	371445.54
4	09:34:56 AM	193221.58	24185.535	222742.55	1474.065	9394.647	8576.206	20466.559	0.000	373819.74
5	09:35:30 AM	191706.23	24159.498	225128.28	1636.080	9124.497	8670.255	20088.099	0.000	376677.00
x		191206.59	24380.220	222792.87	1504.868	9367.833	8696.669	20566.283	0.000	372513.97
σ		1337.49	216.98	1532.91	94.42	180.58	114.88	297.38	0.00	2758.21
%RSD		0.700	0.890	0.688	6.274	1.928	1.321	1.446	0.000	0.740

Run	Time	238U
Dwell (mSecs)		0.0
Limits	%RSD	5.0%
	Countrate	>100
1	09:33:15 AM	423667.24
2	09:33:49 AM	419801.24
3	09:34:22 AM	423708.26
4	09:34:56 AM	422586.31
5	09:35:30 AM	427413.08
x		423435.22
σ		2733.05
%RSD		0.645

Ratio results

Run	Time	156Ce O/140Ce
	Ratio limits	<0.0200
1	09:33:15 AM	0.007
2	09:33:49 AM	0.007

3	09:34:22 AM	0.006
4	09:34:56 AM	0.007
5	09:35:30 AM	0.007
x		0.0068
σ		0.00
%RSD		6.0058

Result : The performance report passed.

Experiment Details

Description	PlasmaLab Template BlankExperiment
Template Filename	C:\Program Files\Thermo Fisher\PlasmaLab\TEMPLATES\6020A.tet
Created By User	user
Analyte Database	Default.tea
Creation Timestamp	8/29/2003 01:55:15 PM
Last Edited By	INORG-User
Last Edit Timestamp	10/14/2016 10:28:42 AM
Instrument Detector	Simultaneous
Database Version	3.51
Acquisition Mode	Unknown

Numerical Results report key (text indicates meaning)

Blue text indicates that cell is a statistic.
Underlining indicates that a data warning flag is set.

Column headings	Result cells	Data warning flags
No flag	Internal Standard	I - Invalid calibration
Semi Quant	Excluded	T - Tripped
Standard Addition	QC Warning	F - Interference correction failed
Multi Element	QC Failure	M - Result over max
	Transient TRA only:	V - Valley integration failed
	Peak Not Found	D - Different method used
	Manually Edited	
	Merged Peak	

Setup

Survey Scan Setup

Sweeps	10
Dwell Time	600
Channels Per Mass	10
Acquisition Duration	13247

Main Run Setup

Main Run	Peak Jumping
Sweeps	20
Dwell Time	10000
Channels Per Mass	1
Acquisition Duration	18211
Channel Spacing	0.02

Survey Scan Regions

Start AMU	End AMU	Channels	Dwell ms	Resolution

4.59	11.41	68	600	Standard
22.59	27.41	48	600	Standard
28.59	29.41	8	600	Standard
30.59	31.41	8	600	Standard
32.59	33.41	8	600	Standard
38.59	39.41	8	600	Standard
42.59	79.41	368	600	Standard
80.59	245.50	1649	600	Standard

Peak Jump Regions

Analyte	Channels	Dwell ms	Resolution
6Li	1	5000	Standard
7Li	1	5000	Standard
9Be	1	20000	Standard
11B	1	10000	Standard
23Na	1	5000	Standard
25Mg	1	5000	Standard
26Mg	1	5000	Standard
27Al	1	10000	Standard
39K	1	5000	Standard
43Ca	1	10000	Standard
44Ca	1	5000	Standard
45Sc	1	5000	Standard
47Ti	1	10000	Standard
51V	1	10000	Standard
52Cr	1	10000	Standard
53Cl O	1	10000	Standard
55Mn	1	10000	Standard
56Fe	1	10000	Standard
59Co	1	10000	Standard
60Ni	1	10000	Standard
65Cu	1	10000	Standard
66Zn	1	10000	Standard
75As	1	50000	Standard
77Ar Cl	1	50000	Standard
82Se	1	100000	Standard
83Kr	1	100000	Standard
84Kr	1	10000	Standard
88Sr	1	10000	Standard
89Y	1	5000	Standard
98Mo	1	10000	Standard
106Cd	1	10000	Standard
107Ag	1	10000	Standard
108Mo O	1	10000	Standard
111Cd	1	10000	Standard
115In	1	5000	Standard
118Sn	1	10000	Standard
121Sb	1	10000	Standard
123Sb	1	100000	Standard
135Ba	1	10000	Standard

159Tb	1	5000	Standard
182W	1	10000	Standard
205Tl	1	10000	Standard
206Pb	1	10000	Standard
207Pb	1	10000	Standard
208Pb	1	10000	Standard
209Bi	1	5000	Standard
220Bkg	1	10000	Standard
232Th	1	10000	Standard
238U	1	10000	Standard

Calibration Technique

Use External Drift Correction - No
Calibrate by - Isotope

Symbol	Interference Correction	RSF	Calibration Method	Line Fit	Weighting	Forcing	Use for Semi-Quant	Max Error	Minimum Correlation
6Li	Yes	1.00	None				No		
7Li	Yes	1.00	None				No		
9Be	Yes	0.75	Fully-Quantified	Linear	Absolute SD	None	Yes		
11B	Yes	0.58	Fully-Quantified	Linear	Absolute SD	None	Yes		
23Na	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
25Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
26Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
27Al	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
39K	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
43Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
44Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
45Sc	Yes	1.00	None				No		
47Ti	Yes	0.99	None				No		
51V	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
52Cr	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
55Mn	Yes	0.95	Fully-Quantified	Linear	Absolute SD	None	Yes		
56Fe	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
59Co	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
60Ni	No	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
65Cu	Yes	0.90	Fully-Quantified	Linear	Absolute SD	None	Yes		
66Zn	Yes	0.38	Fully-Quantified	Linear	Absolute SD	None	Yes		
75As	Yes	0.07	Fully-Quantified	Linear	Absolute SD	None	Yes		
82Se	Yes	0.10	Fully-Quantified	Linear	Absolute SD	None	Yes		
83Kr	Yes	0.01	None				No		
84Kr	Yes	0.01	None				No		
88Sr	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
89Y	Yes	0.98	None				No		
98Mo	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
107Ag	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
106Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
111Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
115In	Yes	0.99	None				No		
118Sn	Yes	0.96	None				No		

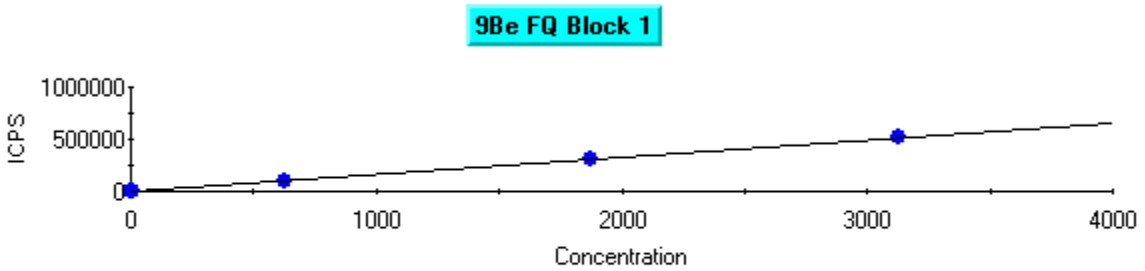
121Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
123Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
135Ba	Yes	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes
159Tb	Yes	0.99	None				No
182W	Yes	0.94	Fully-Quantified	Linear	Absolute SD	None	Yes
206Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
207Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
208Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	No
209Bi	Yes	0.92	None				No
232Th	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
238U	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
205Tl	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
220Bkg	Yes		Semi-Quantified				No
77Ar Cl	Yes		Semi-Quantified				No
53Cl O	Yes		Semi-Quantified				No
108Mo O	Yes		Semi-Quantified				No

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	STD0	Fully Quant Standard	1.000	0	1	2	144
2	STD1	Fully Quant Standard	1.000	0	1	3	144
3	STD2	Fully Quant Standard	1.000	0	1	4	144
4	STD3	Fully Quant Standard	1.000	0	1	5	144
5	STD4	Fully Quant Standard	1.000	1	1	1	144
6	STD5	Fully Quant Standard	1.000	1	1	2	144
7	ICV	QC Sample	1.000	0	1	6	144
8	ICVL	QC Sample	1.000	0	1	3	144
9	ICBIS	QC Sample	1.000	0	1	2	144
10	ICSA	QC Sample	1.000	1	1	3	144
11	ICSAB	QC Sample	1.000	1	1	4	144
12	CCV	QC Sample	1.000	0	1	5	144
13	CCB	QC Sample	1.000	0	1	2	144
14	MB 200-110153/1-A	Unknown	1.000	1	2	1	144
15	LCS 200-110153/2-A	Unknown	1.000	1	2	2	144
16	200-35680-A-1-O	Unknown	1.000	1	2	3	144
17	200-35680-A-2-A	Unknown	1.000	1	2	4	144
18	200-35680-A-3-A	Unknown	1.000	1	2	5	144
19	200-35680-A-4-A	Unknown	1.000	1	2	6	144
20	200-35680-A-5-A	Unknown	1.000	1	2	7	144
21	200-35680-A-6-A	Unknown	1.000	1	2	8	144
22	200-35680-A-6-A SD@5	Unknown	1.000	1	2	9	144
23	200-35680-A-6-A PDS	Unknown	1.000	1	2	10	144
24	CCV	QC Sample	1.000	0	1	5	144
25	CCB	QC Sample	1.000	0	1	2	144
26	CCVL	QC Sample	1.000	0	1	3	144
27	200-35680-A-6-B MS	Unknown	1.000	1	2	11	144
28	200-35680-A-6-C MSD	Unknown	1.000	1	2	12	144
29	200-35700-A-1-B	Unknown	1.000	1	3	1	144
30	200-35700-A-2-B	Unknown	1.000	1	3	2	144
31	200-35700-A-3-B	Unknown	1.000	1	3	3	144
32	200-35700-A-4-B	Unknown	1.000	1	3	4	144

33	200-35700-A-5-B	Unknown	1.000	1	3	5	144
34	200-35700-A-6-B	Unknown	1.000	1	3	6	144
35	200-35700-A-7-B	Unknown	1.000	1	3	7	144
36	200-35700-A-8-B	Unknown	1.000	1	3	8	144
37	CCV	QC Sample	1.000	0	1	5	144
38	CCB	QC Sample	1.000	0	1	2	144
39	CCVL	QC Sample	1.000	0	1	3	144
40	LCS 200-110153/2-A	Unknown	1.000	1	3	9	144
41	200-35700-A-1-B @2	Unknown	1.000	1	3	10	144
42	200-35700-A-2-B @2	Unknown	1.000	1	3	11	144
43	200-35700-A-3-B @8	Unknown	1.000	1	3	12	144
44	200-35700-A-5-B @2	Unknown	1.000	1	4	1	144
45	200-35700-A-1-B @4	Unknown	1.000	1	4	2	144
46	200-35700-A-3-B @10	Unknown	1.000	1	4	3	144
47	CCV	QC Sample	1.000	0	1	5	144
48	CCB	QC Sample	1.000	0	1	2	144
49	CCVL	QC Sample	1.000	0	1	3	144

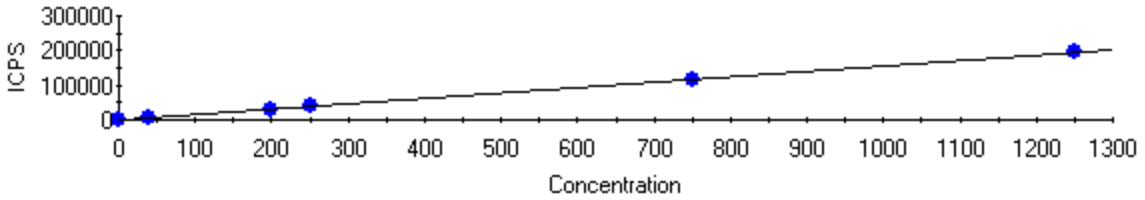
Fully Quant Calibration



Intercept CPS=28.498158 Intercept Conc=0.175282
Sensitivity=162.584319 Correlation Coeff=0.999972

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.147	0.147	52.48	0.00
STD1	1.000	0.910	0.090	176.49	8.98
STD2	5.000	5.084	0.084	855.04	1.68
STD3	625.000	625.281	0.281	101689.47	0.05
STD4	1875.000	1859.844	15.156	302409.93	0.81
STD5	3125.000	3142.495	17.495	510948.98	0.56

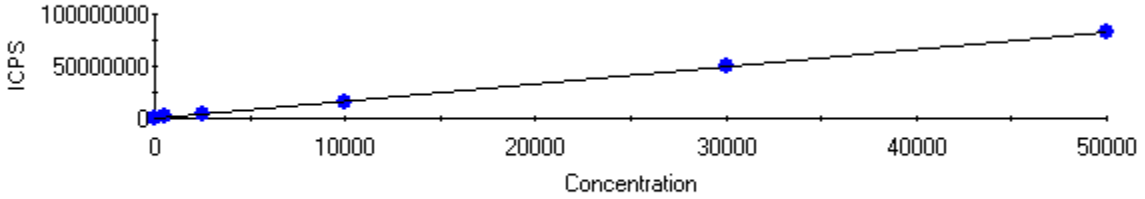
11B FQ Block 1



Intercept CPS=1293.204431 Intercept Conc=8.436857
Sensitivity=153.280355 Correlation Coeff=0.999954

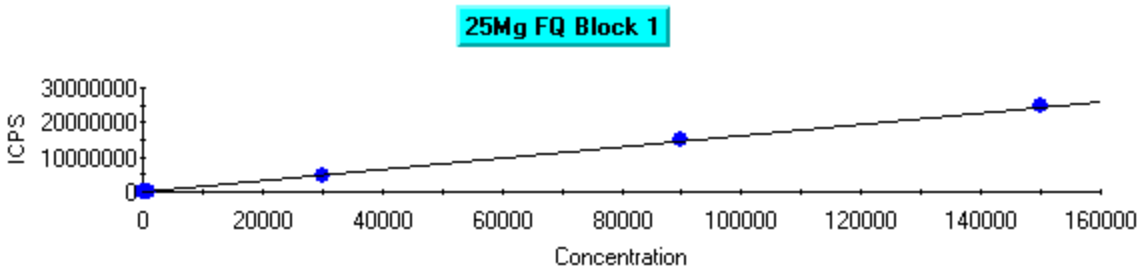
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-1.119	1.119	1121.65	0.00
STD1	40.000	41.966	1.966	7725.83	4.92
STD2	200.000	197.401	2.599	31550.96	1.30
STD3	250.000	246.060	3.940	39009.39	1.58
STD4	750.000	758.766	8.766	117597.17	1.17
STD5	1250.000	1279.122	29.122	197357.45	2.33

23Na FQ Block 1



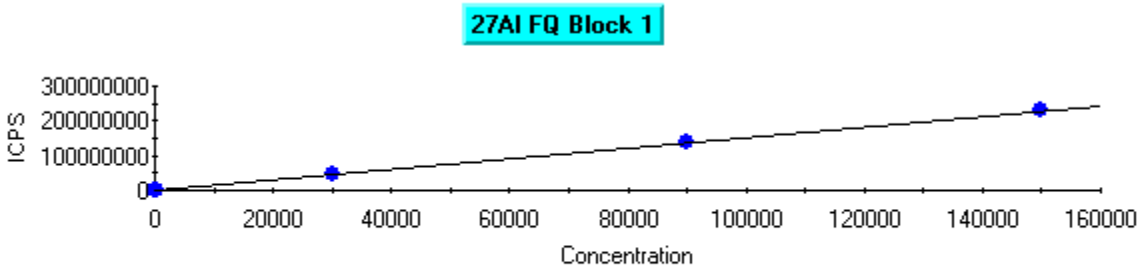
Intercept CPS=265124.681265 Intercept Conc=162.651099
Sensitivity=1630.020839 Correlation Coeff=0.999966

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	1.108	1.108	266930.85	0.00
STD1	500.000	497.365	2.635	1075840.77	0.53
STD2	2500.000	2508.371	8.371	4353821.21	0.33
STD3	10000.000	9772.200	227.800	16194014.67	2.28
STD4	30000.000	30327.396	327.396	49699412.84	1.09
STD5	50000.000	49998.338	1.662	81763457.45	0.00



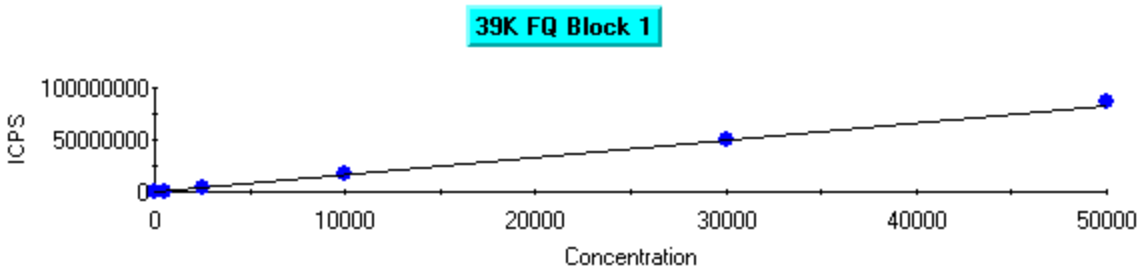
Intercept CPS=1123.122963 Intercept Conc=6.879583
Sensitivity=163.254514 Correlation Coeff=0.999984

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	7.104	7.104	2282.81	0.00
STD1	200.000	178.989	21.011	30343.83	10.51
STD2	1000.000	922.172	77.828	151671.89	7.78
STD3	30000.000	29877.115	122.885	4878696.97	0.41
STD4	90000.000	92382.266	2382.266	15082945.01	2.65
STD5	150000.000	153399.981	3399.981	25044362.53	2.27



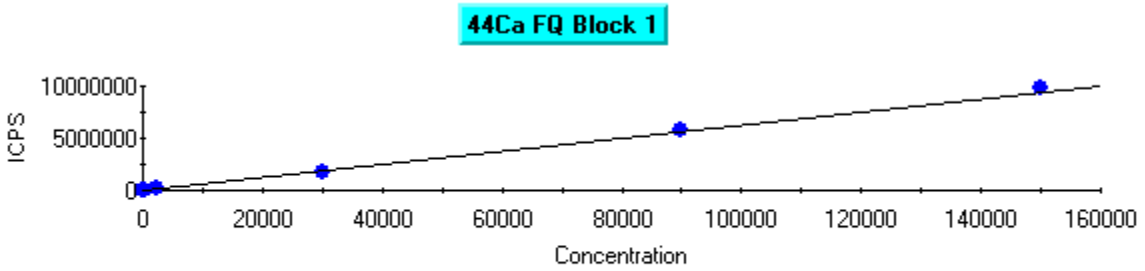
Intercept CPS=5562.782990 Intercept Conc=3.649030
Sensitivity=1524.455093 Correlation Coeff=0.999993

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	9.299	9.299	19738.51	0.00
STD1	50.000	49.826	0.174	81519.78	0.35
STD2	250.000	223.928	26.072	346931.67	10.43
STD3	30000.000	30051.228	51.228	45817310.06	0.17
STD4	90000.000	91395.371	1395.371	139333701.84	1.55
STD5	150000.000	152968.046	2968.046	233198479.51	1.98



Intercept CPS=56913.934150 Intercept Conc=34.537858
Sensitivity=1647.870988 Correlation Coeff=0.999893

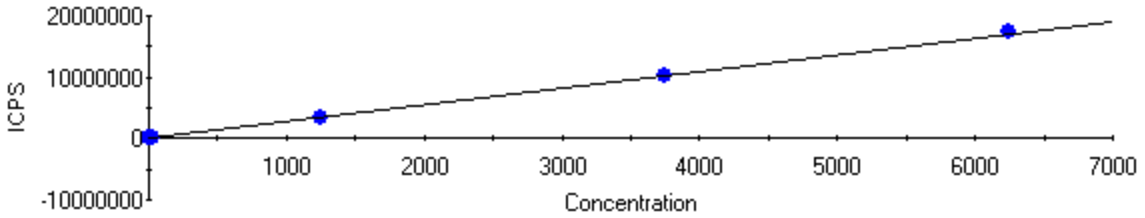
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.799	0.799	58230.95	0.00
STD1	500.000	457.002	42.998	809995.03	8.60
STD2	2500.000	2508.272	8.272	4190222.06	0.33
STD3	10000.000	9940.392	59.608	16437398.28	0.60
STD4	30000.000	30855.672	855.672	50903081.31	2.85
STD5	50000.000	52608.494	2608.494	86748924.27	5.22



Intercept CPS=1250.881738 Intercept Conc=20.203064
Sensitivity=61.915446 Correlation Coeff=0.999775

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	1.882	1.882	1367.42	0.00
STD1	500.000	444.768	55.232	28788.91	11.05
STD2	2500.000	2300.847	199.153	143708.85	7.97
STD3	30000.000	29177.003	822.997	1807758.04	2.74
STD4	90000.000	91683.061	1683.061	5677848.47	1.87
STD5	150000.000	158008.731	8008.731	9784431.91	5.34

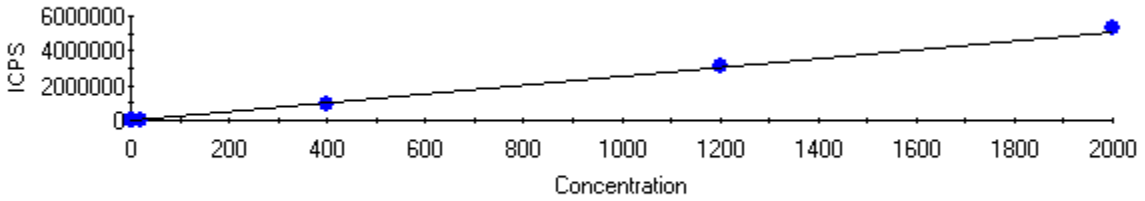
51V FQ Block 1



Intercept CPS=-1666.746064 Intercept Conc=-0.610870
Sensitivity=2728.480155 Correlation Coeff=0.999925

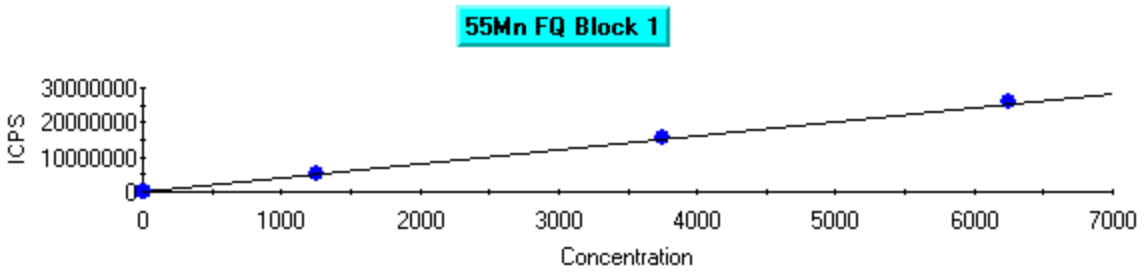
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.393	0.393	-594.72	0.00
STD1	5.000	4.922	0.078	11763.15	1.56
STD2	25.000	21.598	3.402	57264.18	13.61
STD3	1250.000	1210.137	39.863	3300167.35	3.19
STD4	3750.000	3789.894	39.894	10338983.70	1.06
STD5	6250.000	6408.207	158.207	17482997.54	2.53

52Cr FQ Block 1



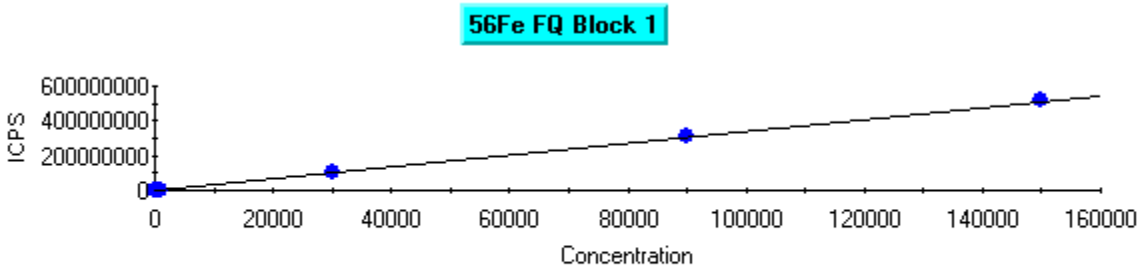
Intercept CPS=3040.114330 Intercept Conc=1.195221
Sensitivity=2543.558112 Correlation Coeff=0.999742

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.126	0.126	3359.39	0.00
STD1	4.000	3.833	0.167	12788.50	4.19
STD2	20.000	19.019	0.981	51417.24	4.90
STD3	400.000	370.919	29.081	946495.11	7.27
STD4	1200.000	1242.136	42.136	3162483.99	3.51
STD5	2000.000	2100.235	100.235	5345109.08	5.01



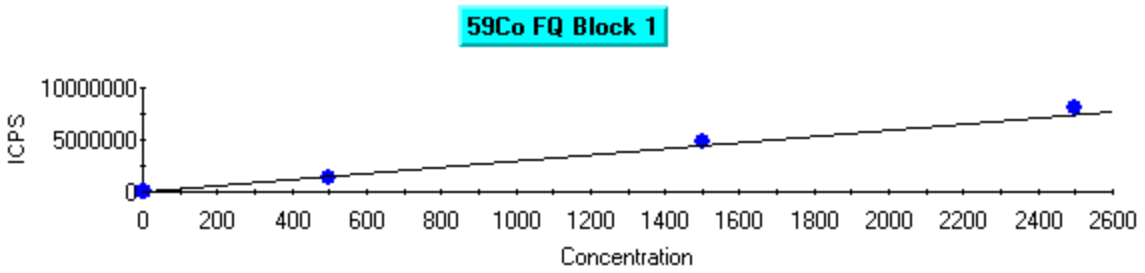
Intercept CPS=1393.627343 Intercept Conc=0.343551
Sensitivity=4056.535749 Correlation Coeff=0.999941

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.351	0.351	2818.25	0.00
STD1	2.000	1.714	0.286	8347.03	14.29
STD2	10.000	8.864	1.136	37350.43	11.36
STD3	1250.000	1228.449	21.551	4984639.01	1.72
STD4	3750.000	3807.437	57.437	15446398.38	1.53
STD5	6250.000	6437.875	187.875	26116865.24	3.01



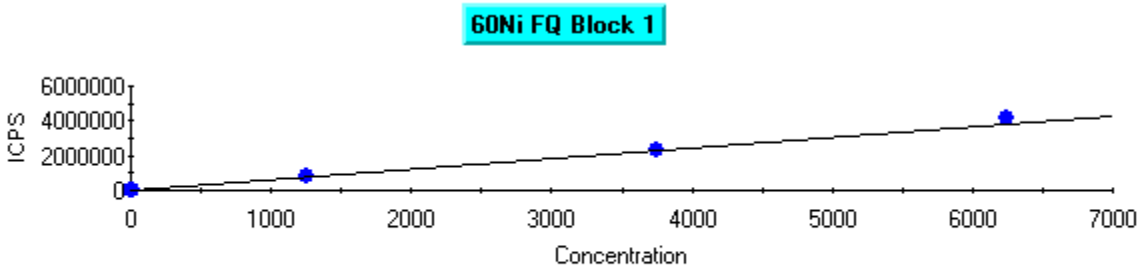
Intercept CPS=209229.350136 Intercept Conc=61.579338
Sensitivity=3397.720046 Correlation Coeff=0.999987

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	17.714	17.714	269416.73	0.00
STD1	200.000	196.878	3.122	878165.99	1.56
STD2	1000.000	1033.045	33.045	3719225.73	3.30
STD3	30000.000	29780.982	219.018	101396669.06	0.73
STD4	90000.000	91313.668	1313.668	310467509.09	1.46
STD5	150000.000	152772.477	2772.477	519287336.11	1.85



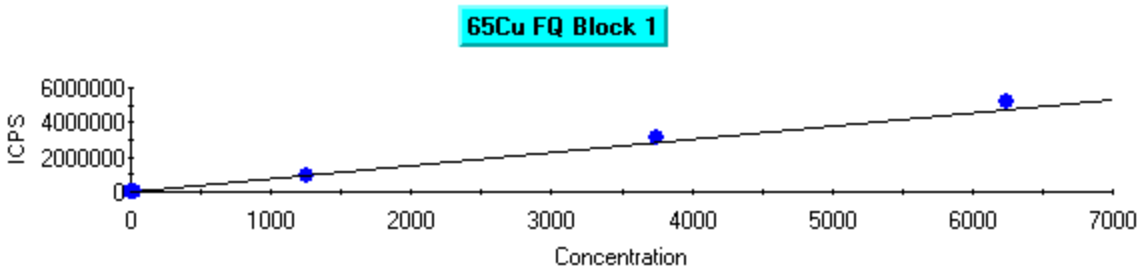
Intercept CPS=669.504172 Intercept Conc=0.225659
Sensitivity=2966.882376 Correlation Coeff=0.999748

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.002	0.002	675.24	0.00
STD1	1.000	0.811	0.189	3076.40	18.87
STD2	5.000	4.801	0.199	14914.90	3.97
STD3	500.000	482.553	17.447	1432348.58	3.49
STD4	1500.000	1631.913	131.913	4842364.46	8.79
STD5	2500.000	2732.202	232.202	8106791.37	9.29



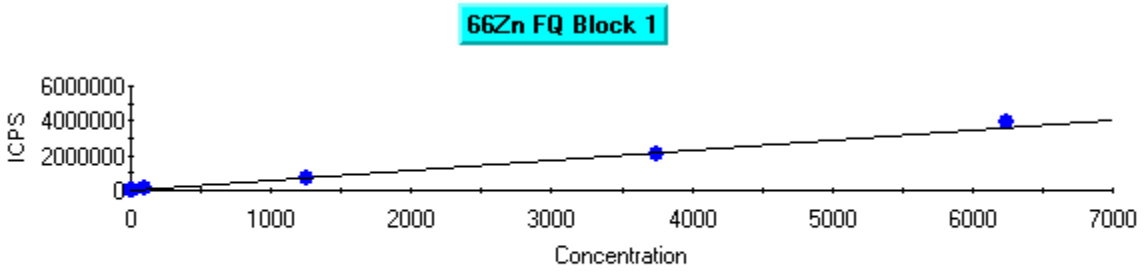
Intercept CPS=283.927654 Intercept Conc=0.461733
Sensitivity=614.917480 Correlation Coeff=0.999533

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.125	0.125	361.09	0.00
STD1	2.000	1.731	0.269	1348.32	13.45
STD2	10.000	10.151	0.151	6526.16	1.51
STD3	1250.000	1239.375	10.625	762397.53	0.85
STD4	3750.000	3813.066	63.066	2345005.09	1.68
STD5	6250.000	6707.698	457.698	4124964.89	7.32



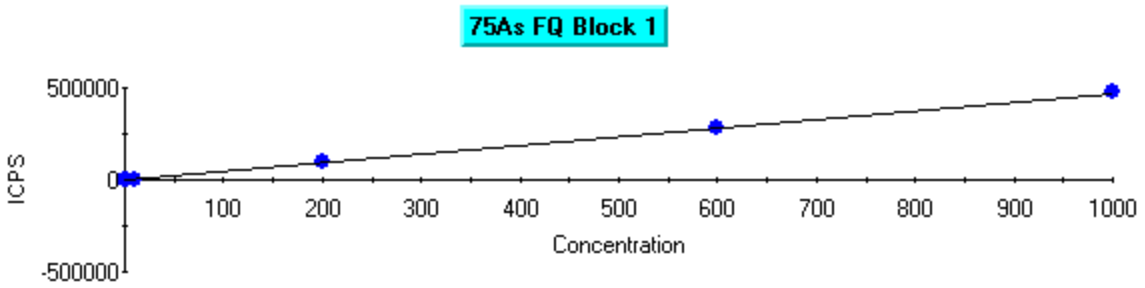
Intercept CPS=646.689401 Intercept Conc=0.853200
Sensitivity=757.957700 Correlation Coeff=0.999842

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.004	0.004	650.09	0.00
STD1	5.000	4.909	0.091	4367.84	1.81
STD2	25.000	24.971	0.029	19573.62	0.12
STD3	1250.000	1241.940	8.060	941984.55	0.64
STD4	3750.000	4069.145	319.145	3084886.10	8.51
STD5	6250.000	6840.831	590.831	5185707.07	9.45



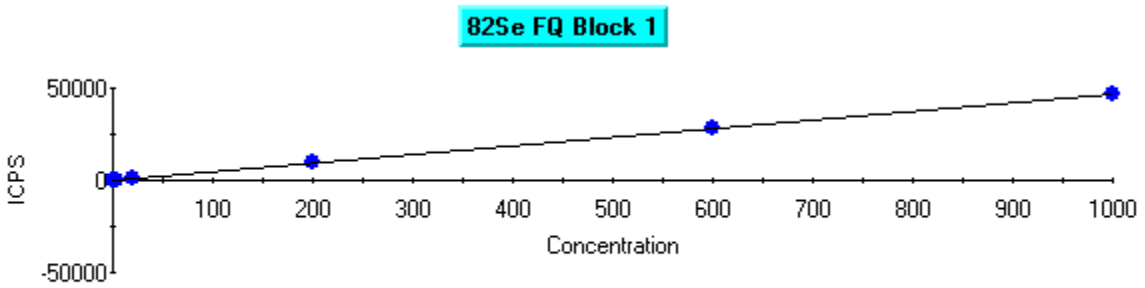
Intercept CPS=950.640654 Intercept Conc=1.629625
Sensitivity=583.349240 Correlation Coeff=0.998580

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.114	0.114	884.40	0.00
STD1	20.000	20.471	0.471	12892.16	2.35
STD2	100.000	104.644	4.644	61994.70	4.64
STD3	1250.000	1231.279	18.721	719216.11	1.50
STD4	3750.000	3635.781	114.219	2121880.98	3.05
STD5	6250.000	6694.872	444.872	3906399.19	7.12



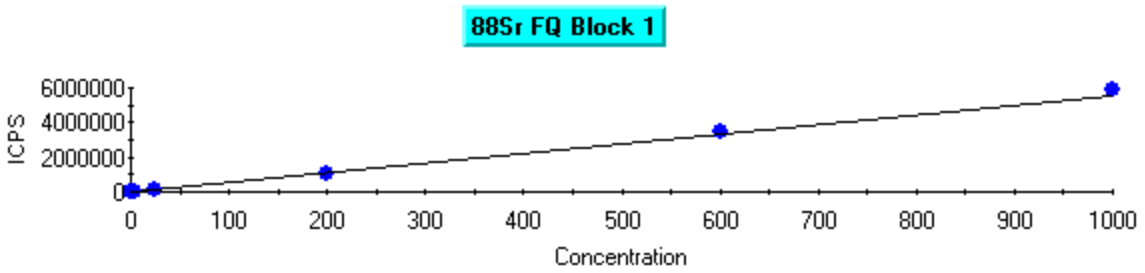
Intercept CPS=-113.524051 Intercept Conc=-0.240825
Sensitivity=471.395690 Correlation Coeff=0.999984

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.026	0.026	-125.73	0.00
STD1	2.000	1.936	0.064	799.29	3.18
STD2	10.000	10.167	0.167	4678.93	1.67
STD3	200.000	199.471	0.529	93916.17	0.26
STD4	600.000	597.917	2.083	281742.09	0.35
STD5	1000.000	1006.786	6.786	474480.87	0.68



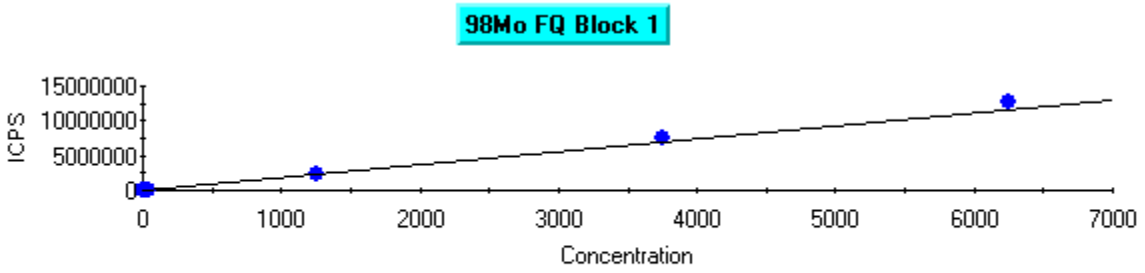
Intercept CPS=-12.985698 Intercept Conc=-0.278244
Sensitivity=46.670241 Correlation Coeff=0.999942

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.450	0.450	-33.99	0.00
STD1	4.000	3.427	0.573	146.94	14.33
STD2	20.000	22.757	2.757	1049.10	13.79
STD3	200.000	202.957	2.957	9459.06	1.48
STD4	600.000	605.429	5.429	28242.52	0.90
STD5	1000.000	990.458	9.542	46211.93	0.95



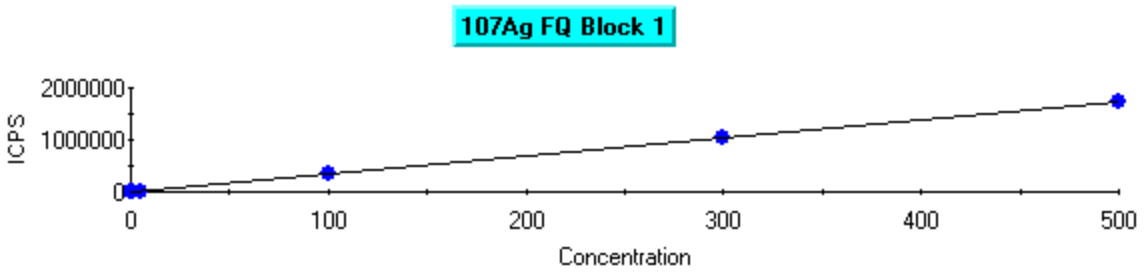
Intercept CPS=380.350802 Intercept Conc=0.068942
Sensitivity=5516.978460 Correlation Coeff=0.999555

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.012	0.012	444.52	0.00
STD1	5.000	4.569	0.431	25588.51	8.62
STD2	25.000	22.754	2.246	125915.57	8.98
STD3	200.000	183.600	16.400	1013298.71	8.20
STD4	600.000	625.376	25.376	3450567.12	4.23
STD5	1000.000	1074.986	74.986	5931056.47	7.50



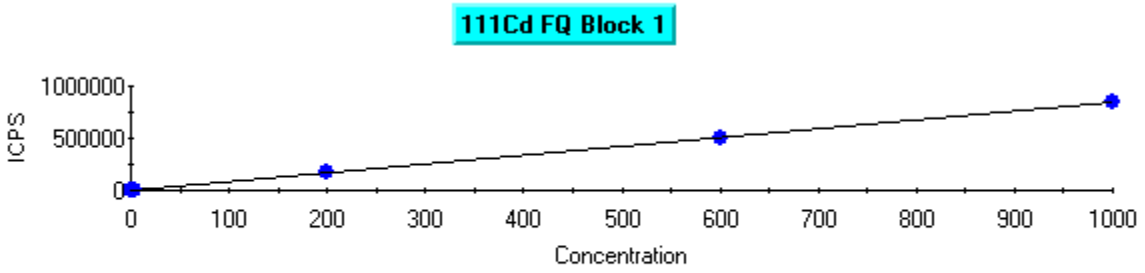
Intercept CPS=1259.509239 Intercept Conc=0.686638
Sensitivity=1834.312762 Correlation Coeff=0.999619

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.271	0.271	1756.91	0.00
STD1	10.000	8.910	1.090	17602.36	10.90
STD2	50.000	46.536	3.464	86621.12	6.93
STD3	1250.000	1214.269	35.731	2228608.71	2.86
STD4	3750.000	4040.822	290.822	7413390.14	7.76
STD5	6250.000	6954.766	704.766	12758474.75	11.28



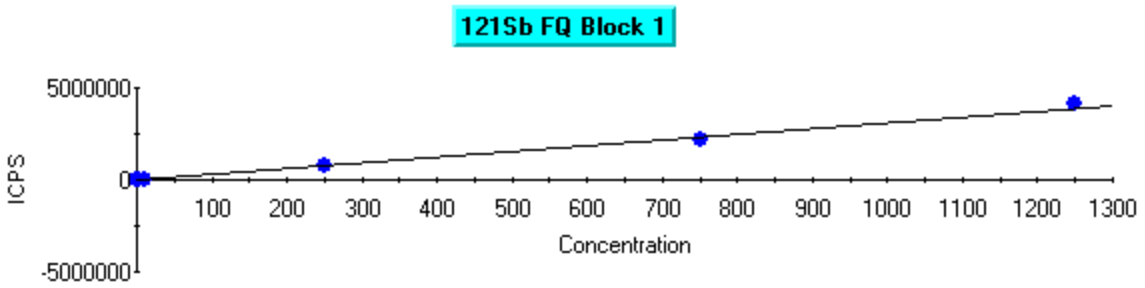
Intercept CPS=145.550322 Intercept Conc=0.042508
Sensitivity=3424.075800 Correlation Coeff=0.999990

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.001	0.001	143.23	0.00
STD1	1.000	0.979	0.021	3499.18	2.06
STD2	5.000	5.079	0.079	17536.44	1.58
STD3	100.000	99.390	0.610	340463.01	0.61
STD4	300.000	297.902	2.098	1020184.05	0.70
STD5	500.000	500.565	0.565	1714117.50	0.11



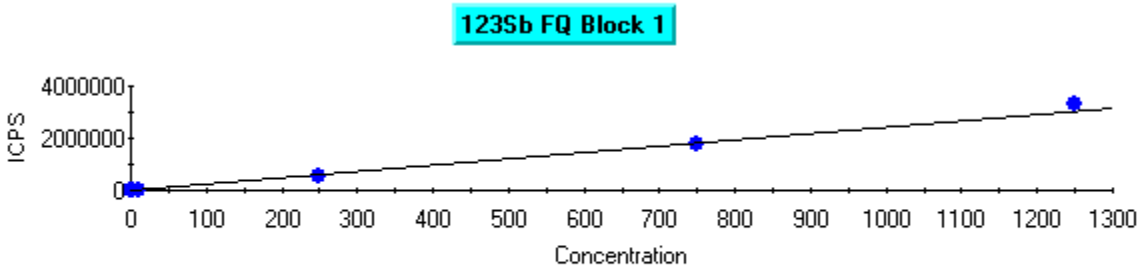
Intercept CPS=125.464690 Intercept Conc=0.149497
Sensitivity=839.243177 Correlation Coeff=0.999997

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.009	0.009	133.07	0.00
STD1	1.000	0.963	0.037	933.94	3.67
STD2	5.000	4.805	0.195	4158.03	3.90
STD3	200.000	197.268	2.732	165681.55	1.37
STD4	600.000	599.523	0.477	503271.34	0.08
STD5	1000.000	1000.184	0.184	839523.42	0.02



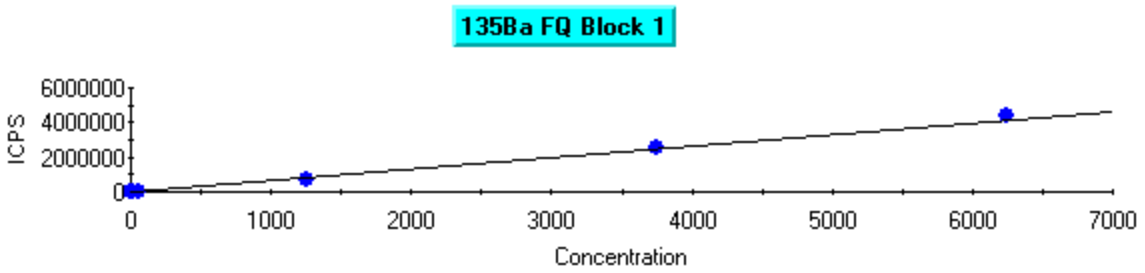
Intercept CPS=-109.066766 Intercept Conc=-0.035517
Sensitivity=3070.845664 Correlation Coeff=0.997698

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.344	0.344	947.14	0.00
STD1	2.000	2.006	0.006	6051.37	0.31
STD2	10.000	9.461	0.539	28942.69	5.39
STD3	250.000	232.935	17.065	715199.03	6.83
STD4	750.000	717.609	32.391	2203558.25	4.32
STD5	1250.000	1356.387	106.387	4165144.88	8.51



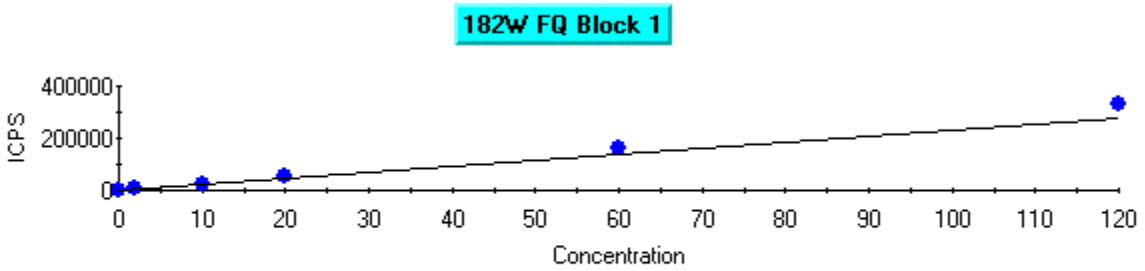
Intercept CPS=169.174099 Intercept Conc=0.069171
Sensitivity=2445.748792 Correlation Coeff=0.997809

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.245	0.245	768.33	0.00
STD1	2.000	1.886	0.114	4781.00	5.72
STD2	10.000	9.203	0.797	22677.21	7.97
STD3	250.000	229.036	20.964	560332.50	8.39
STD4	750.000	712.600	37.400	1743010.17	4.99
STD5	1250.000	1341.541	91.541	3281242.63	7.32



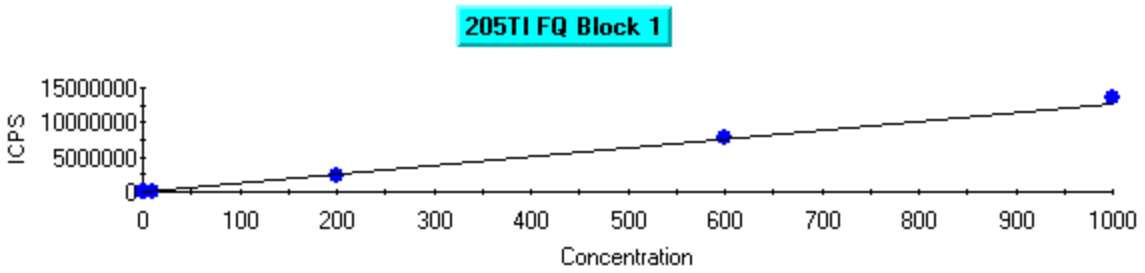
Intercept CPS=256.637557 Intercept Conc=0.386209
Sensitivity=664.505102 Correlation Coeff=0.999364

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.097	0.097	321.20	0.00
STD1	10.000	8.419	1.581	5851.08	15.81
STD2	50.000	43.813	6.187	29370.42	12.37
STD3	1250.000	1110.897	139.103	738453.25	11.13
STD4	3750.000	3856.966	106.966	2563230.22	2.85
STD5	6250.000	6680.758	430.758	4439654.73	6.89



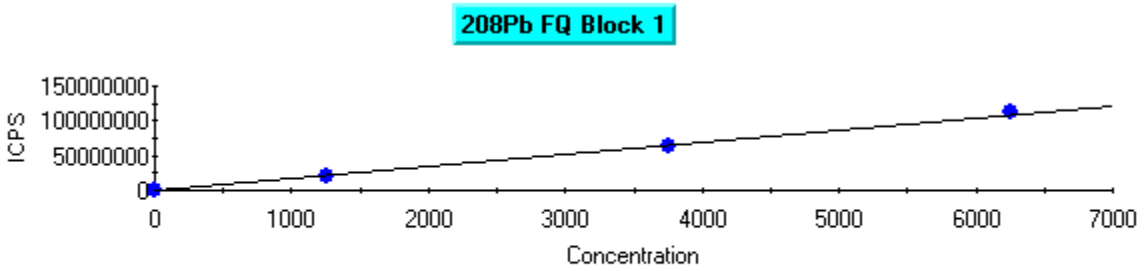
Intercept CPS=192.718733 Intercept Conc=0.082871
Sensitivity=2325.527754 Correlation Coeff=0.999833

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.007	0.007	209.96	0.00
STD1	2.000	1.781	0.219	4334.78	10.94
STD2	10.000	8.864	1.136	20805.14	11.36
STD3	20.000	22.501	2.501	52520.31	12.51
STD4	60.000	69.750	9.750	162398.77	16.25
STD5	120.000	141.395	21.395	329010.04	17.83



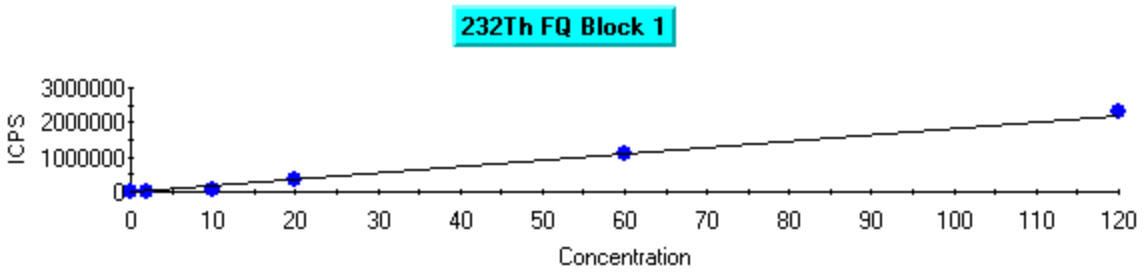
Intercept CPS=2429.013960 Intercept Conc=0.190516
Sensitivity=12749.655616 Correlation Coeff=0.999244

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.002	0.002	2453.52	0.00
STD1	2.000	1.589	0.411	22688.66	20.55
STD2	10.000	8.320	1.680	108502.72	16.80
STD3	200.000	175.548	24.452	2240600.45	12.23
STD4	600.000	606.883	6.883	7739980.81	1.15
STD5	1000.000	1061.979	61.979	13542289.34	6.20



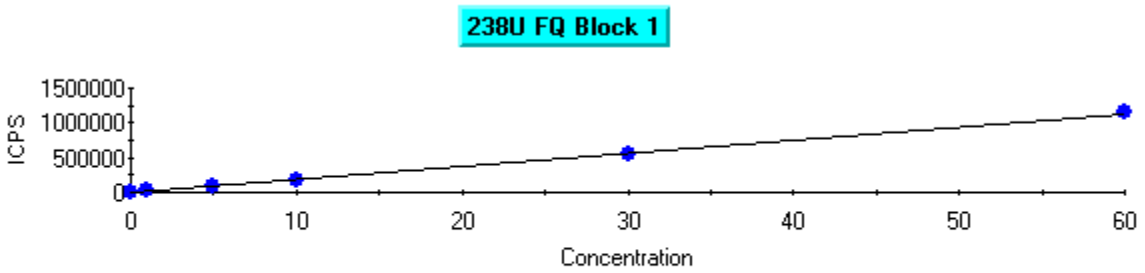
Intercept CPS=429.208263 Intercept Conc=0.024825
Sensitivity=17289.325612 Correlation Coeff=0.999712

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.502	0.502	9104.85	0.00
STD1	1.000	1.007	0.007	17834.85	0.67
STD2	5.000	4.377	0.623	76097.92	12.47
STD3	1250.000	1212.069	37.931	20956276.24	3.03
STD4	3750.000	3736.988	13.012	64610439.37	0.35
STD5	6250.000	6490.580	240.580	112218181.22	3.85



Intercept CPS=550.294304 Intercept Conc=0.029944
Sensitivity=18377.326900 Correlation Coeff=0.998964

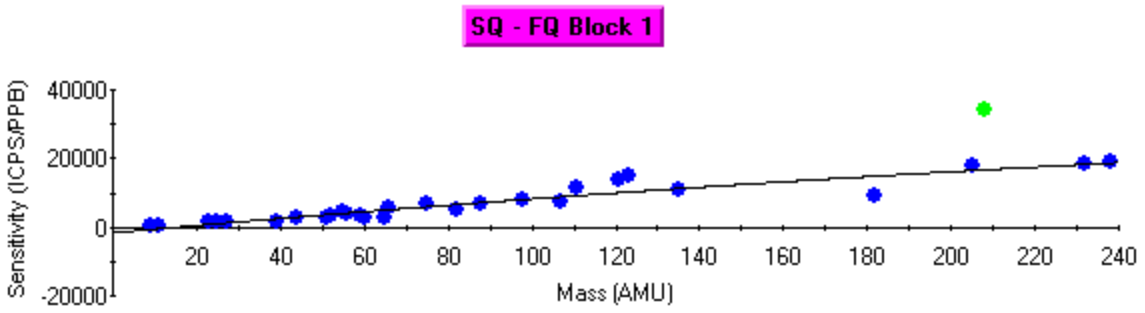
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.317	0.317	6379.80	0.00
STD1	2.000	1.049	0.951	19822.30	47.57
STD2	10.000	4.428	5.572	81929.04	55.72
STD3	20.000	19.310	0.690	355417.98	3.45
STD4	60.000	60.506	0.506	1112492.37	0.84
STD5	120.000	126.536	6.536	2325936.71	5.45



Intercept CPS=75.081841 Intercept Conc=0.003982
Sensitivity=18853.420514 Correlation Coeff=0.999748

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.001	0.001	86.57	0.00
STD1	1.000	0.932	0.068	17646.35	6.80
STD2	5.000	4.617	0.383	87129.95	7.65
STD3	10.000	9.274	0.726	174924.60	7.26
STD4	30.000	28.927	1.073	545439.15	3.58
STD5	60.000	60.471	0.471	1140157.72	0.78

Semi Quant Calibration



Coeff 0=-1601.090267 Coeff 1=108.113933 Coeff 2=-0.096075

Symbol	Mass	RSF	Available	Excluded	Sensitivity Measured	Corrected	Calculated	%Error
9Be	9.01	0.7500	1	1	162.58	216.78	-634.55	-392.7
11B	11.01	0.5800	1	1	153.28	326.19	-422.48	-229.5
23Na	22.99	1.0000	1	1	1630.02	1630.02	833.64	-48.9
25Mg	24.99	0.9800	1	1	163.25	1647.74	1040.25	-36.9
27Al	26.98	0.9800	1	1	1524.46	1555.57	1246.05	-19.9
39K	38.96	1.0000	1	1	1647.87	1770.38	2465.57	39.3
44Ca	43.96	0.9900	1	1	61.92	2936.19	2965.49	1.0
51V	50.94	0.9900	1	1	2728.48	2762.67	3657.32	32.4
52Cr	51.94	0.9800	1	1	2543.56	3098.70	3755.21	21.2
55Mn	54.94	0.9500	1	1	4056.54	4270.04	4048.51	-5.2
56Fe	55.93	0.9600	1	1	3397.72	3867.23	4145.66	7.2
59Co	58.93	0.9300	1	1	2966.88	3190.20	4436.73	39.1
60Ni	59.93	0.9100	1	1	614.92	2583.08	4533.19	75.5
65Cu	64.93	0.9000	1	1	757.96	2724.60	5013.49	84.0
66Zn	65.93	0.3750	1	1	583.35	5593.66	5108.87	-8.7
75As	74.92	0.0700	1	1	471.40	6734.22	5959.69	-11.5
82Se	81.92	0.1000	1	1	46.67	5279.44	6610.55	25.2
88Sr	87.91	0.9600	1	1	5516.98	6960.82	7160.32	2.9
98Mo	97.91	0.9800	1	1	1834.31	7798.95	8062.92	3.4
107Ag	106.91	0.9300	1	1	3424.08	7170.01	8858.83	23.6
111Cd	110.90	0.5660	1	1	839.24	11530.03	9207.50	-20.1
121Sb	120.90	0.3900	1	1	3070.85	13753.65	10065.90	-26.8
123Sb	122.90	0.3900	1	1	2445.75	14669.36	10235.31	-30.2
135Ba	134.91	0.9100	1	1	664.51	11080.81	11235.57	1.4
182W	181.95	0.9400	1	1	2325.53	9403.14	14889.47	58.3
205Tl	204.97	1.0000	1	1	12749.66	18084.62	16522.79	-8.6
208Pb	207.98	0.9700	0	1	17289.33	34028.34	16728.43	-50.8
232Th	232.04	1.0000	1	1	18377.33	18377.33	18312.62	-0.4
238U	238.05	1.0000	1	1	18853.42	18990.15	18691.13	-1.6

Dilution Corrected Concentrations

STD0 10/14/2016 10:32:42 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:04	100.756%	0.099	-0.731	-4.607	4.250	6.395	0.087	0.323	100.721%	0.000	0.403	0.046
2	10:33:26	99.141%	0.073	-0.968	5.343	9.198	10.060	1.509	3.293	98.303%	0.000	0.158	0.165
3	10:33:48	100.102%	0.270	-1.659	2.588	7.862	11.450	0.802	2.031	100.976%	0.000	0.618	0.166
x		100.000%	0.147	-1.119	1.108	7.104	9.299	0.799	1.882	100.000%	0.000	0.393	0.126
σ		0.812%	0.107	0.482	5.137	2.560	2.609	0.711	1.490	1.475%	0.000	0.230	0.069
%RSD		0.812	72.600	43.050	463.600	36.030	28.060	88.950	79.190	1.475	0.000	58.550	54.760

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:04	18.280	0.267	14.180	-0.001	-0.026	0.024	-0.177	0.200	0.512	0.189	0.000	0.000
2	10:33:26	19.430	0.396	19.730	0.011	0.035	-0.040	-0.198	-0.133	0.534	-0.705	0.000	0.000
3	10:33:48	18.960	0.390	19.230	-0.004	0.368	0.029	0.035	-0.144	0.535	-0.834	0.000	0.000
x		18.890	0.351	17.710	0.002	0.126	0.004	-0.114	-0.026	0.527	-0.450	0.000	0.000
σ		0.578	0.073	3.067	0.008	0.212	0.038	0.129	0.195	0.013	0.557	0.000	0.000
%RSD		3.061	20.740	17.310	406.800	168.900	857.100	113.600	754.800	2.475	123.900	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:04	-0.001	98.568%	0.243	-0.005	-0.917	-0.029	98.535%	0.000	0.288	0.199	0.003	99.967%
2	10:33:26	0.021	100.038%	0.349	0.007	-1.095	0.055	100.568%	0.000	0.344	0.257	0.130	99.337%
3	10:33:48	0.015	101.394%	0.222	-0.003	-0.640	0.001	100.898%	0.000	0.400	0.279	0.158	100.696%
x		0.012	100.000%	0.271	-0.001	-0.884	0.009	100.000%	0.000	0.344	0.245	0.097	100.000%
σ		0.011	1.414%	0.068	0.007	0.229	0.043	1.280%	0.000	0.056	0.041	0.083	0.680%
%RSD		97.340	1.414	25.090	976.200	25.900	469.700	1.280	0.000	16.350	16.830	84.950	0.680

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:04	0.003	0.001	0.426	99.354%	0.000	0.333	-0.001
2	10:33:26	0.006	0.005	0.534	99.942%	0.000	0.330	0.001
3	10:33:48	0.013	0.001	0.546	100.704%	0.000	0.289	0.002
x		0.007	0.002	0.502	100.000%	0.000	0.317	0.001
σ		0.005	0.002	0.066	0.677%	0.000	0.025	0.001
%RSD		70.160	117.100	13.160	0.677	0.000	7.819	201.400

STD1 10/14/2016 10:38:26 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:38:47	102.742%	0.947	41.390	T 488.000	176.400	49.450	456.900	436.200	104.176%	0.000	4.736	3.743
2	10:39:09	102.460%	0.965	42.510	T 506.300	184.200	49.620	451.900	453.000	102.892%	0.000	4.999	3.931
3	10:39:31	100.602%	0.818	42.000	T 497.700	176.400	50.410	462.200	445.100	102.691%	0.000	5.031	3.824
x		101.935%	0.910	41.970	T 497.400	179.000	49.830	457.000	444.800	103.253%	0.000	4.922	3.833
σ		1.163%	0.080	0.563	T 9.133	4.534	0.513	5.176	8.435	0.806%	0.000	0.162	0.094

%RSD		1.141	8.810	1.341	T 1.836	2.533	1.030	1.133	1.897	0.780	0.000	3.289	2.458
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:38:47	19.370	1.649	195.900	0.721	1.560	4.891	20.260	1.766	0.533	3.033	0.000	0.000
2	10:39:09	20.290	1.699	196.400	0.887	1.885	5.136	20.900	1.909	0.565	2.895	0.000	0.000
3	10:39:31	19.930	1.794	198.300	0.826	1.748	4.701	20.250	2.134	0.505	4.351	0.000	0.000
x		19.860	1.714	196.900	0.811	1.731	4.909	20.470	1.936	0.534	3.427	0.000	0.000
σ		0.461	0.073	1.276	0.084	0.163	0.218	0.369	0.185	0.030	0.804	0.000	0.000
%RSD		2.322	4.268	0.648	10.350	9.440	4.441	1.803	9.570	5.649	23.460	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:38:47	4.491	100.510%	8.732	1.004	-1.723	1.044	101.878%	0.000	2.002	1.849	7.946	100.638%
2	10:39:09	4.557	100.080%	9.001	1.041	-1.187	1.011	100.461%	0.000	2.003	1.894	8.813	100.673%
3	10:39:31	4.659	101.626%	8.996	0.894	-0.708	0.834	100.131%	0.000	2.014	1.914	8.498	101.181%
x		4.569	100.739%	8.910	0.979	-1.206	0.963	100.823%	0.000	2.006	1.886	8.419	100.831%
σ		0.085	0.798%	0.154	0.076	0.508	0.113	0.928%	0.000	0.007	0.033	0.439	0.304%
%RSD		1.857	0.792	1.730	7.795	42.120	11.720	0.920	0.000	0.327	1.755	5.210	0.302
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	10:38:47	1.723	1.628	0.994	98.197%	0.000	1.027	0.916					
2	10:39:09	1.897	1.568	1.005	101.113%	0.000	1.018	0.941					
3	10:39:31	1.724	1.570	1.021	100.864%	0.000	1.100	0.939					
x		1.781	1.589	1.007	100.058%	0.000	1.049	0.932					
σ		0.101	0.034	0.014	1.616%	0.000	0.045	0.014					
%RSD		5.643	2.138	1.360	1.615	0.000	4.296	1.485					

STD2 10/14/2016 10:44:08 AM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:44:30	96.217%	5.386	196.800	T 2476.000	885.500	217.500	T 2454.000	2239.000	98.652%	0.000	20.630	18.770
2	10:44:52	95.655%	4.840	196.300	T 2564.000	954.900	229.600	T 2545.000	2319.000	93.379%	0.000	21.800	18.850
3	10:45:13	92.853%	5.025	199.100	T 2485.000	926.200	224.700	T 2526.000	2345.000	92.640%	0.000	22.370	19.440
x		94.908%	5.084	197.400	T 2508.000	922.200	223.900	T 2508.000	2301.000	94.890%	0.000	21.600	19.020
σ		1.802%	0.278	1.507	T 48.780	34.860	6.075	T 48.080	54.890	3.279%	0.000	0.884	0.363
%RSD		1.899	5.464	0.763	T 1.945	3.781	2.713	T 1.917	2.385	3.455	0.000	4.094	1.909
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:44:30	19.700	8.521	T 998.800	4.681	10.030	24.470	103.400	9.892	0.475	21.590	0.000	0.000
2	10:44:52	19.710	9.063	T 1059.000	5.086	10.110	25.310	105.400	10.380	0.367	22.680	0.000	0.000
3	10:45:13	17.780	9.008	T 1042.000	4.637	10.310	25.130	105.200	10.220	0.372	24.000	0.000	0.000
x		19.060	8.864	T 1033.000	4.801	10.150	24.970	104.600	10.170	0.405	22.760	0.000	0.000
σ		1.111	0.299	T 30.890	0.248	0.143	0.443	1.090	0.251	0.061	1.205	0.000	0.000
%RSD		5.828	3.369	T 2.990	5.158	1.407	1.773	1.042	2.464	15.070	5.295	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	10:44:30	22.440	95.615%	45.960	5.019	-0.516	4.423	97.299%	0.000	9.426	9.051	42.620	97.320%
2	10:44:52	22.880	96.021%	46.690	5.146	-0.462	4.976	94.956%	0.000	9.514	9.345	44.760	95.990%
3	10:45:13	22.940	94.737%	46.960	5.072	-0.329	5.016	93.548%	0.000	9.442	9.213	44.070	95.615%
x		22.750	95.458%	46.540	5.079	-0.436	4.805	95.267%	0.000	9.461	9.203	43.810	96.308%
σ		0.271	0.657%	0.517	0.064	0.097	0.332	1.894%	0.000	0.047	0.147	1.092	0.896%
%RSD		1.190	0.688	1.112	1.250	22.170	6.903	1.989	0.000	0.493	1.598	2.494	0.930

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:44:30	8.875	7.993	4.304	98.183%	0.000	4.135	4.459
2	10:44:52	8.797	8.397	4.400	95.399%	0.000	4.401	4.682
3	10:45:13	8.919	8.569	4.426	94.541%	0.000	4.749	4.712
x		8.864	8.320	4.377	96.041%	0.000	4.428	4.617
σ		0.062	0.295	0.064	1.904%	0.000	0.308	0.138
%RSD		0.700	3.551	1.470	1.982	0.000	6.954	2.994

STD3 10/14/2016 10:49:52 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:14	96.461%	624.400	244.100	T 9720.000	T 29440.000	T 29480.000	T 9773.000	T 28900.000	96.015%	0.000	T 1195.000	362.800
2	10:50:36	94.993%	622.000	243.800	T 9892.000	T 30530.000	T 30930.000	T 10190.000	T 29290.000	93.426%	0.000	T 1225.000	377.300
3	10:50:57	94.104%	629.500	250.300	T 9706.000	T 29660.000	T 29740.000	T 9862.000	T 29340.000	93.497%	0.000	T 1210.000	372.700
x		95.186%	625.300	246.100	T 9772.000	T 29880.000	T 30050.000	T 9940.000	T 29180.000	94.312%	0.000	T 1210.000	370.900
σ		1.190%	3.803	3.682	T 103.600	T 575.000	T 774.800	T 217.900	T 239.100	1.475%	0.000	T 14.940	7.441
%RSD		1.250	0.608	1.496	T 1.060	T 1.925	T 2.578	T 2.192	T 0.820	1.564	0.000	T 1.234	2.006

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:14	22.130	T 1215.000	T 29430.000	478.900	1234.000	1244.000	1229.000	197.000	-0.377	205.200	0.000	0.000
2	10:50:36	20.700	T 1243.000	T 29980.000	484.800	1249.000	1239.000	1225.000	199.300	-0.294	200.100	0.000	0.000
3	10:50:57	20.790	T 1228.000	T 29940.000	483.900	1235.000	1243.000	1239.000	202.100	-0.490	203.500	0.000	0.000
x		21.200	T 1228.000	T 29780.000	482.600	1239.000	1242.000	1231.000	199.500	-0.387	203.000	0.000	0.000
σ		0.802	T 14.090	T 307.300	3.173	8.104	2.462	7.203	2.564	0.098	2.603	0.000	0.000
%RSD		3.785	T 1.147	T 1.032	0.658	0.654	0.198	0.585	1.286	25.440	1.282	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:14	184.000	96.078%	1160.000	100.300	-0.870	195.100	94.089%	0.000	233.100	227.500	1102.000	97.360%
2	10:50:36	180.500	94.869%	T 1293.000	97.390	4.580	196.500	94.594%	0.000	230.900	227.800	1108.000	97.239%
3	10:50:57	186.300	93.296%	1190.000	100.400	11.130	200.200	92.728%	0.000	234.800	231.800	1123.000	98.169%
x		183.600	94.748%	T 1214.000	99.390	4.947	197.300	93.804%	0.000	232.900	229.000	1111.000	97.589%
σ		2.929	1.395%	T 69.850	1.731	6.009	2.610	0.965%	0.000	1.924	2.415	10.820	0.506%
%RSD		1.595	1.472	T 5.753	1.742	121.500	1.323	1.029	0.000	0.826	1.054	0.974	0.518

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:14	22.160	175.600	T 1209.000	94.846%	0.000	18.470	9.220
2	10:50:36	22.880	177.400	T 1222.000	94.229%	0.000	19.610	9.423
3	10:50:57	22.460	173.600	T 1206.000	96.216%	0.000	19.850	9.179

x		22.500	175.500	┬1212.000	95.097%	0.000	19.310	9.274
σ		0.366	1.908	┬8.441	1.017%	0.000	0.733	0.131
%RSD		1.625	1.087	┬0.696	1.070	0.000	3.796	1.411

STD4 10/14/2016 10:55:36 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:55:57	95.999%	1834.000	733.400	┬30380.000	┬92140.000	┬92470.000	┬31090.000	┬91340.000	93.012%	0.000	┬3778.000	┬1241.000
2	10:56:19	93.455%	1884.000	782.200	┬30090.000	┬91020.000	┬90510.000	┬30570.000	┬91480.000	95.057%	0.000	┬3771.000	┬1223.000
3	10:56:41	95.473%	1861.000	760.600	┬30510.000	┬93980.000	┬91200.000	┬30910.000	┬92230.000	93.727%	0.000	┬3820.000	┬1262.000
x		94.976%	1860.000	758.800	┬30330.000	┬92380.000	┬91400.000	┬30860.000	┬91680.000	93.932%	0.000	┬3790.000	┬1242.000
σ		1.343%	24.940	24.470	┬211.500	┬1496.000	┬993.600	┬266.000	┬481.800	1.038%	0.000	┬26.600	┬19.340
%RSD		1.414	1.341	3.225	┬0.698	┬1.620	┬1.087	┬0.862	┬0.526	1.105	0.000	┬0.702	┬1.557

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:55:57	-11.830	┬3817.000	┬91670.000	┬1639.000	3714.000	┬4023.000	3633.000	602.900	-2.037	609.600	0.000	0.000
2	10:56:19	-16.190	┬3767.000	┬89980.000	┬1611.000	3640.000	┬4093.000	3653.000	597.300	-1.905	605.600	0.000	0.000
3	10:56:41	-15.640	┬3839.000	┬92290.000	┬1645.000	┬4085.000	┬4091.000	3621.000	593.600	-1.921	601.100	0.000	0.000
x		-14.550	┬3807.000	┬91310.000	┬1632.000	┬3813.000	┬4069.000	3636.000	597.900	-1.954	605.400	0.000	0.000
σ		2.377	┬37.100	┬1199.000	┬18.120	┬238.400	┬39.700	16.050	4.700	0.072	4.211	0.000	0.000
%RSD		16.340	┬0.974	┬1.313	┬1.111	┬6.252	┬0.976	0.442	0.786	3.699	0.696	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:55:57	┬619.400	92.961%	┬4005.000	296.300	25.470	598.700	92.516%	┬0.000	710.700	706.100	┬3818.000	97.227%
2	10:56:19	┬633.100	94.141%	┬4040.000	297.300	21.910	601.900	93.075%	┬0.000	722.700	716.100	┬3868.000	96.516%
3	10:56:41	┬623.500	94.670%	┬4078.000	300.200	10.140	598.000	93.539%	┬0.000	719.400	715.700	┬3885.000	98.216%
x		┬625.400	93.924%	┬4041.000	297.900	19.170	599.500	93.043%	┬0.000	717.600	712.600	┬3857.000	97.320%
σ		┬7.026	0.875%	┬36.390	2.017	8.024	2.100	0.512%	┬0.000	6.180	5.672	┬34.640	0.853%
%RSD		┬1.123	0.932	┬0.901	0.677	41.850	0.350	0.550	┬0.000	0.861	0.796	┬0.898	0.877

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:55:57	68.010	┬605.100	┬3733.000	95.102%	0.000	59.480	28.540
2	10:56:19	70.890	┬615.300	┬3765.000	95.856%	0.000	61.520	29.550
3	10:56:41	70.350	┬600.200	┬3713.000	98.557%	0.000	60.510	28.690
x		69.750	┬606.900	┬3737.000	96.505%	0.000	60.510	28.930
σ		1.534	┬7.720	┬26.120	1.817%	0.000	1.019	0.545
%RSD		2.200	┬1.272	┬0.699	1.883	0.000	1.684	1.884

STD5 10/14/2016 11:01:18 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:01:40	96.029%	M 3154.000	M 1286.000	TM 50860.000	TM 155000.000	TM 154100.000	TM 52830.000	TM 156600.000	97.168%	0.000	TM 6412.000	TM 2093.000
2	11:02:02	95.457%	3102.000	1247.000	T 49460.000	TM 151700.000	TM 150300.000	TM 51990.000	TM 157300.000	98.445%	0.000	TM 6321.000	TM 2078.000
3	11:02:23	92.909%	M 3171.000	M 1304.000	T 49670.000	TM 153500.000	TM 154600.000	TM 53000.000	TM 160200.000	95.938%	0.000	TM 6492.000	TM 2129.000
x		94.798%	M 3142.000	M 1279.000	TM 50000.000	TM 153400.000	TM 153000.000	TM 52610.000	TM 158000.000	97.183%	0.000	TM 6408.000	TM 2100.000
σ		1.661%	M 36.060	M 29.340	TM 756.600	TM 1666.000	TM 2360.000	TM 542.600	TM 1900.000	1.253%	0.000	TM 85.420	TM 25.890
%RSD		1.752	M 1.148	M 2.293	TM 1.513	TM 1.086	TM 1.543	TM 1.031	TM 1.202	1.290	0.000	TM 1.333	TM 1.233

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:01:40	-28.870	TM 6411.000	TM 152600.000	TM 2709.000	TM 6666.000	TM 6908.000	TM 6734.000	M 1003.000	-3.402	996.800	0.000	0.000
2	11:02:02	-29.790	TM 6381.000	TM 151800.000	TM 2705.000	TM 6593.000	TM 6781.000	TM 6652.000	997.600	-3.096	988.200	0.000	0.000
3	11:02:23	-37.300	TM 6522.000	TM 154000.000	TM 2782.000	TM 6865.000	TM 6834.000	TM 6698.000	M 1020.000	-3.359	986.400	0.000	0.000
x		-31.990	TM 6438.000	TM 152800.000	TM 2732.000	TM 6708.000	TM 6841.000	TM 6695.000	M 1007.000	-3.286	990.500	0.000	0.000
σ		4.622	TM 74.170	TM 1112.000	TM 43.490	TM 140.900	TM 63.500	TM 41.010	M 11.670	0.166	5.590	0.000	0.000
%RSD		14.450	TM 1.152	TM 0.728	TM 1.592	TM 2.101	TM 0.928	TM 0.613	M 1.159	5.045	0.564	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:01:40	TM 1077.000	94.959%	TM 6818.000	M 502.400	44.090	999.900	93.872%	T 0.000	TM 1354.000	TM 1337.000	TM 6651.000	100.152%
2	11:02:02	TM 1082.000	95.511%	TM 6990.000	M 500.600	40.990	M 1001.000	95.273%	T 0.000	TM 1352.000	TM 1338.000	TM 6662.000	100.002%
3	11:02:23	TM 1066.000	94.179%	TM 7056.000	498.700	48.620	999.300	95.271%	T 0.000	TM 1363.000	TM 1350.000	TM 6729.000	101.684%
x		TM 1075.000	94.883%	TM 6955.000	M 500.600	44.570	M 1000.000	94.806%	T 0.000	TM 1356.000	TM 1342.000	TM 6681.000	100.613%
σ		TM 8.116	0.669%	TM 122.900	M 1.872	3.840	M 1.085	0.808%	T 0.000	TM 5.774	TM 6.981	TM 42.470	0.931%
%RSD		TM 0.755	0.705	TM 1.768	M 0.374	8.617	M 0.108	0.853	T 0.000	TM 0.426	TM 0.520	TM 0.636	0.925

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:01:40	M 140.400	TM 1067.000	TM 6510.000	95.337%	0.000	M 126.100	M 60.380
2	11:02:02	M 142.400	TM 1056.000	TM 6453.000	97.117%	0.000	M 126.100	M 60.360
3	11:02:23	M 141.400	TM 1063.000	TM 6509.000	96.791%	0.000	M 127.400	M 60.670
x		M 141.400	TM 1062.000	TM 6491.000	96.415%	0.000	M 126.500	M 60.470
σ		M 1.041	TM 5.333	TM 32.160	0.948%	0.000	M 0.718	M 0.169
%RSD		M 0.736	TM 0.502	TM 0.496	0.983	0.000	M 0.567	M 0.280

ICV 10/14/2016 11:07:02 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:24	86.986%	334.800	145.000	T 5210.000	T 15360.000	T 15540.000	T 5022.000	13590.000	89.910%	0.000	T 604.900	185.400
2	11:07:46	89.490%	329.000	135.700	T 5303.000	T 15530.000	T 15720.000	T 5107.000	13950.000	88.020%	0.000	573.000	189.500
3	11:08:08	85.941%	336.900	145.100	T 5153.000	T 15310.000	T 15460.000	T 4961.000	13720.000	89.213%	0.000	562.400	185.700
x		87.472%	106.733%	113.550%	T 104.446%	T 102.662%	T 103.830%	T 100.598%	91.679%	89.048%	0.000	T 92.813%	93.415%
σ		1.824%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.956%	0.000	T n/a	n/a
%RSD		2.085	1.223	3.827	T 1.452	T 0.725	T 0.847	T 1.461	1.311	1.074	0.000	T 3.814	1.218

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:24	13.920	T 616.100	T 15100.000	246.400	641.400	621.300	634.400	103.500	0.038	107.700	0.000	0.000
2	11:07:46	17.040	T 631.000	T 15490.000	254.700	653.800	629.600	636.500	101.900	0.064	105.500	0.000	0.000
3	11:08:08	15.100	T 622.200	T 15140.000	248.800	643.900	625.400	637.900	102.800	-0.057	108.900	0.000	0.000
x		15.350	T 99.700%	T 101.623%	99.977%	103.423%	100.070%	101.804%	102.718%	0.015	107.362%	0.000	0.000
σ		1.578	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.064	n/a	0.000	0.000
%RSD		10.280	T 1.201	T 1.412	1.704	1.013	0.659	0.276	0.772	426.300	1.575	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:24	88.300	91.851%	279.400	47.660	2.049	100.100	92.386%	0.000	116.200	115.200	553.000	94.817%
2	11:07:46	90.010	91.672%	283.800	48.910	5.329	99.200	92.287%	0.000	119.000	117.100	558.700	93.581%
3	11:08:08	88.660	91.228%	280.200	48.550	5.018	101.800	91.634%	0.000	118.600	117.700	562.400	94.661%
x		88.990	91.584%	89.962%	96.744%	4.132	100.367%	92.102%	0.000	118.000	93.346%	89.284%	94.353%
σ		0.900	0.321%	n/a	n/a	1.811	n/a	0.409%	0.000	1.526	n/a	n/a	0.673%
%RSD		1.011	0.350	0.828	1.328	43.820	1.310	0.444	0.000	1.294	1.090	0.846	0.714

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:24	23.690	87.840	T 589.300	92.526%	0.000	14.820	8.964
2	11:07:46	24.080	86.630	T 588.600	93.461%	0.000	15.820	8.961
3	11:08:08	23.920	88.130	T 589.300	92.409%	0.000	16.850	9.024
x		119.480%	87.534%	T 94.247%	92.799%	0.000	79.153%	89.829%
σ		n/a	n/a	T n/a	0.577%	0.000	n/a	n/a
%RSD		0.819	0.910	T 0.073	0.621	0.000	6.431	0.395

ICVL 10/14/2016 11:12:46 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:08	93.812%	1.447	46.380	441.700	199.300	69.530	446.600	454.000	97.528%	0.000	5.384	3.602
2	11:13:30	95.022%	1.313	48.910	T 511.100	209.100	78.660	451.500	463.500	94.502%	0.000	6.148	3.874
3	11:13:51	94.061%	1.410	46.340	450.600	199.300	74.520	440.900	463.500	96.074%	0.000	5.720	3.574
x		94.298%	139.045%	118.015%	T 93.558%	101.283%	148.467%	89.261%	92.071%	96.035%	0.000	115.010%	92.076%
σ		0.639%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.514%	0.000	n/a	n/a
%RSD		0.677	4.974	3.121	T 8.070	2.800	6.156	1.185	1.196	1.576	0.000	6.655	4.501

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:08	14.780	2.367	213.200	1.069	2.540	5.344	20.300	2.853	0.340	5.409	0.000	0.000
2	11:13:30	15.320	2.640	221.900	1.162	3.075	5.660	21.200	1.979	0.452	4.158	0.000	0.000
3	11:13:51	15.070	2.572	221.000	1.087	2.645	5.766	20.610	2.005	0.428	3.783	0.000	0.000
x		15.060	126.327%	109.359%	110.575%	137.653%	111.798%	103.523%	113.956%	0.407	111.249%	0.000	0.000
σ		0.268	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.059	n/a	0.000	0.000
%RSD		1.781	5.634	2.206	4.473	10.300	3.928	2.189	21.820	14.530	19.130	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:08	4.452	97.963%	10.220	0.941	-1.374	1.032	96.562%	0.000	2.407	2.255	9.270	96.522%
2	11:13:30	4.476	96.484%	10.650	1.008	-0.862	1.049	97.448%	0.000	2.474	2.394	9.406	96.794%

3	11:13:51	4.707	97.415%	10.740	1.013	-0.559	1.054	97.582%	0.000	2.421	2.352	8.598	97.528%
x		90.893%	97.287%	105.348%	98.706%	-0.932	104.529%	97.197%	0.000	2.434	116.687%	90.917%	96.948%
σ		n/a	0.748%	n/a	n/a	0.412	n/a	0.554%	0.000	0.036	n/a	n/a	0.520%
%RSD		3.098	0.768	2.611	4.088	44.200	1.124	0.570	0.000	1.466	3.062	4.758	0.537

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:08	1.686	1.775	1.695	95.649%	0.000	1.528	0.903
2	11:13:30	1.861	1.829	1.826	96.549%	0.000	1.555	0.934
3	11:13:51	1.785	1.811	1.783	97.428%	0.000	1.598	0.913
x		88.860%	90.248%	176.818%	96.542%	0.000	78.009%	91.680%
σ		n/a	n/a	n/a	0.890%	0.000	n/a	n/a
%RSD		4.937	1.534	3.778	0.922	0.000	2.274	1.736

ICBIS 10/14/2016 11:18:29 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:51	98.885%	0.011	0.437	4.218	-2.606	-0.239	-1.204	-11.060	98.906%	0.000	0.654	-0.058
2	11:19:13	96.769%	0.031	0.496	2.671	-3.598	-1.119	-3.216	-9.919	98.941%	0.000	0.521	-0.071
3	11:19:34	94.948%	-0.030	0.256	4.766	-3.645	-1.224	-1.409	-6.157	96.594%	0.000	0.049	-0.121
x		96.867%	0.004	0.396	3.885	-3.283	-0.861	-1.943	-9.045	98.147%	0.000	0.408	-0.083
σ		1.970%	0.031	0.126	1.086	0.587	0.541	1.107	2.565	1.345%	0.000	0.318	0.033
%RSD		2.034	711.100	31.680	27.960	17.870	62.810	56.980	28.350	1.370	0.000	77.980	39.700

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:51	18.310	-0.086	9.883	-0.135	-0.314	-0.409	-0.519	-0.038	0.509	-0.781	0.000	0.000
2	11:19:13	18.410	-0.102	8.525	-0.169	-0.297	-0.554	-0.514	0.076	0.522	-0.106	0.000	0.000
3	11:19:34	19.860	-0.127	8.400	-0.152	-0.403	-0.512	-0.760	0.237	0.476	0.650	0.000	0.000
x		18.860	-0.105	8.936	-0.152	-0.338	-0.492	-0.598	0.092	0.502	-0.079	0.000	0.000
σ		0.865	0.021	0.823	0.017	0.057	0.074	0.140	0.138	0.024	0.716	0.000	0.000
%RSD		4.584	19.740	9.204	11.190	16.790	15.140	23.490	150.700	4.697	902.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:51	-0.028	99.896%	-0.114	-0.026	-0.776	-0.040	98.043%	0.000	0.286	0.154	-0.279	98.984%
2	11:19:13	-0.050	98.525%	-0.092	-0.020	-0.713	-0.063	99.120%	0.000	0.271	0.163	-0.272	97.747%
3	11:19:34	-0.043	98.294%	-0.018	-0.029	-0.662	-0.079	98.560%	0.000	0.313	0.178	-0.310	98.418%
x		-0.040	98.905%	-0.075	-0.025	-0.717	-0.061	98.574%	0.000	0.290	0.165	-0.287	98.383%
σ		0.011	0.866%	0.050	0.004	0.057	0.020	0.539%	0.000	0.021	0.013	0.020	0.619%
%RSD		27.240	0.875	66.980	17.630	7.992	32.600	0.547	0.000	7.382	7.611	6.993	0.629

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:51	0.006	-0.043	0.165	93.080%	0.000	0.550	0.000
2	11:19:13	0.023	-0.073	0.115	97.407%	0.000	0.565	-0.001
3	11:19:34	0.000	-0.045	0.125	95.337%	0.000	0.521	-0.001
x		0.010	-0.054	0.135	95.275%	0.000	0.545	-0.001
σ		0.012	0.017	0.026	2.164%	0.000	0.022	0.001

%RSD	120.700	30.920	19.420	2.272	0.000	4.073	121.600	

ICSA 10/14/2016 11:24:11 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:24:33	88.370%	-0.106	-0.205	TM 94140.000	T 94750.000	T 92730.000	TM 95090.000	T 95490.000	96.624%	0.000	0.512	0.691
2	11:24:55	87.790%	-0.088	0.370	TM 96510.000	T 96890.000	T 96030.000	TM 96950.000	T 97590.000	96.157%	0.000	0.727	0.843
3	11:25:17	87.988%	-0.088	-0.503	TM 93810.000	T 95930.000	T 93630.000	TM 95910.000	T 96250.000	98.409%	0.000	0.569	0.801
x		88.049%	-1.#IO%	-1.#IO%	TM 94.820%	T 95.859%	T 94.127%	TM 95.983%	T 96.442%	97.063%	0.000	1.#IO%	1.#IO%
σ		0.295%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.189%	0.000	n/a	n/a
%RSD		0.335	11.010	393.300	TM 1.554	T 1.120	T 1.812	TM 0.971	T 1.102	1.225	0.000	18.430	10.100

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:24:33	6.620	0.006	T 94540.000	-0.133	-0.033	0.661	-1.524	0.080	0.377	0.083	0.000	0.000
2	11:24:55	6.492	0.029	T 96960.000	-0.131	0.096	0.576	-1.891	-0.262	0.410	-0.366	0.000	0.000
3	11:25:17	6.507	0.043	T 97080.000	-0.138	0.125	0.578	-1.363	0.083	0.376	0.486	0.000	0.000
x		6.540	1.#IO%	T 96.193%	-1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	0.388	1.#IO%	0.000	0.000
σ		0.070	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.020	n/a	0.000	0.000
%RSD		1.068	71.990	T 1.492	2.792	133.300	8.020	16.990	599.800	5.088	630.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:24:33	0.613	96.102%	T 1945.000	0.046	7.382	0.128	95.867%	0.000	0.279	0.174	-0.269	98.678%
2	11:24:55	0.605	96.669%	T 2001.000	0.045	6.768	0.191	96.952%	0.000	0.287	0.194	-0.200	103.234%
3	11:25:17	0.645	99.050%	T 1987.000	0.054	9.047	0.092	98.198%	0.000	0.346	0.200	-0.225	104.813%
x		1.#IO%	97.273%	T 98.889%	1.#IO%	7.732	1.#IO%	97.006%	0.000	0.304	1.#IO%	-1.#IO%	102.242%
σ		n/a	1.564%	T n/a	n/a	1.179	n/a	1.167%	0.000	0.037	n/a	n/a	3.186%
%RSD		3.370	1.608	T 1.459	10.580	15.250	36.600	1.203	0.000	12.050	7.024	14.980	3.116

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:24:33	0.264	-0.047	0.289	93.911%	0.000	0.908	-0.001
2	11:24:55	0.213	-0.061	0.290	97.359%	0.000	0.765	-0.001
3	11:25:17	0.219	-0.063	0.289	96.895%	0.000	0.668	-0.003
x		1.#IO%	-1.#IO%	1.#IO%	96.055%	0.000	1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	1.871%	0.000	n/a	n/a
%RSD		11.980	15.280	0.106	1.948	0.000	15.460	60.320

ICSAB 10/14/2016 11:29:54 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:16	86.598%	26.210	403.800	TM 94250.000	T 95880.000	T 93920.000	TM 95950.000	T 97080.000	96.080%	0.000	21.520	45.230
2	11:30:38	84.718%	25.290	427.000	TM 94740.000	T 95670.000	T 94410.000	TM 96450.000	T 96530.000	97.375%	0.000	21.320	46.210
3	11:30:59	84.009%	25.930	427.000	TM 94600.000	T 95460.000	T 95340.000	TM 96440.000	T 97880.000	97.369%	0.000	22.620	45.340
x		85.108%	103.246%	104.820%	TM 94.528%	T 95.668%	T 94.555%	TM 96.282%	T 97.164%	96.941%	0.000	87.286%	91.189%
σ		1.338%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.746%	0.000	n/a	n/a
%RSD		1.572	1.827	3.189	TM 0.269	T 0.220	T 0.759	TM 0.298	T 0.699	0.769	0.000	3.189	1.183

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:16	8.965	22.020	T 95130.000	22.610	21.960	44.160	42.210	42.970	0.088	119.100	0.000	0.000
2	11:30:38	8.878	21.720	T 96780.000	22.700	22.780	44.520	43.960	45.540	0.001	119.500	0.000	0.000
3	11:30:59	7.709	22.260	T 97750.000	22.830	23.060	44.750	43.390	44.680	0.068	118.200	0.000	0.000
x		8.517	87.991%	T 96.554%	90.854%	90.400%	88.955%	86.376%	98.664%	0.052	95.142%	0.000	0.000
σ		0.702	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.046	n/a	0.000	0.000
%RSD		8.236	1.238	T 1.373	0.473	2.544	0.669	2.069	2.946	87.390	0.567	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:16	0.568	97.613%	T 1941.000	23.030	9.086	23.080	97.405%	0.000	44.730	44.070	222.200	104.125%
2	11:30:38	0.539	97.080%	T 2013.000	23.170	9.335	22.780	100.000%	0.000	44.520	44.300	218.600	106.311%
3	11:30:59	0.610	99.324%	T 2014.000	23.130	7.240	23.560	100.186%	0.000	45.960	45.210	223.500	107.173%
x		0.572	98.006%	T 99.473%	92.436%	8.554	92.569%	99.197%	0.000	45.070	89.051%	88.570%	105.870%
σ		0.035	1.173%	T n/a	n/a	1.144	n/a	1.555%	0.000	0.774	n/a	n/a	1.572%
%RSD		6.187	1.196	T 2.108	0.310	13.380	1.715	1.567	0.000	1.718	1.357	1.147	1.484

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:16	18.530	21.690	22.320	97.304%	0.000	17.330	10.200
2	11:30:38	18.660	22.080	22.780	97.262%	0.000	18.490	10.390
3	11:30:59	18.960	21.560	22.010	101.113%	0.000	18.720	10.230
x		93.585%	87.103%	89.474%	98.560%	0.000	90.898%	102.754%
σ		n/a	n/a	n/a	2.211%	0.000	n/a	n/a
%RSD		1.175	1.228	1.718	2.244	0.000	4.107	0.995

CCV 10/14/2016 11:35:38 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:59	83.493%	634.100	252.600	T 9597.000	T 28680.000	T 28930.000	T 9492.000	T 27770.000	89.420%	0.000	T 1157.000	352.900
2	11:36:21	82.595%	637.400	256.900	T 9817.000	T 29430.000	T 29610.000	T 9689.000	26990.000	86.567%	0.000	T 1180.000	361.300
3	11:36:43	80.083%	650.100	268.600	T 9927.000	T 30010.000	T 29930.000	T 9792.000	T 29150.000	85.061%	0.000	T 1214.000	370.800
x		82.057%	102.483%	103.753%	T 97.804%	T 97.913%	T 98.304%	T 96.577%	T 93.231%	87.016%	0.000	T 94.692%	90.419%
σ		1.767%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.214%	0.000	T n/a	n/a
%RSD		2.154	1.320	3.180	T 1.718	T 2.278	T 1.734	T 1.581	T 3.898	2.544	0.000	T 2.420	2.468

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:59	20.470	T 1182.000	T 29100.000	467.000	1196.000	1134.000	1150.000	189.400	-0.284	192.700	0.000	0.000
2	11:36:21	24.620	T 1209.000	T 29600.000	480.100	1217.000	1150.000	1167.000	190.800	-0.299	195.400	0.000	0.000
3	11:36:43	22.080	T 1224.000	T 30360.000	493.900	1248.000	1169.000	1167.000	193.500	-0.396	197.800	0.000	0.000
x		22.390	T 96.403%	T 98.952%	96.068%	97.640%	92.085%	92.922%	95.613%	-0.326	97.650%	0.000	0.000
σ		2.088	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.061	n/a	0.000	0.000
%RSD		9.327	T 1.761	T 2.132	2.794	2.148	1.493	0.863	1.080	18.660	1.294	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:59	175.900	93.041%	1141.000	96.430	11.780	192.800	93.364%	0.000	225.300	222.700	1081.000	95.262%
2	11:36:21	178.900	90.780%	1173.000	99.000	8.061	193.700	91.675%	0.000	226.700	226.500	1107.000	96.170%
3	11:36:43	180.500	90.038%	T 1286.000	97.490	10.330	192.400	91.323%	0.000	231.300	228.000	1111.000	94.829%
x		178.400	91.286%	T 96.015%	97.638%	10.060	96.481%	92.121%	0.000	227.800	90.286%	87.983%	95.420%
σ		2.323	1.564%	T n/a	n/a	1.874	n/a	1.091%	0.000	3.188	n/a	n/a	0.684%
%RSD		1.302	1.714	T 6.367	1.320	18.630	0.322	1.184	0.000	1.400	1.207	1.476	0.717

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:59	21.630	174.000	T 1203.000	92.990%	0.000	18.330	9.265
2	11:36:21	22.280	173.800	T 1204.000	93.018%	0.000	18.810	9.282
3	11:36:43	22.350	176.100	T 1216.000	92.042%	0.000	19.600	9.435
x		110.438%	87.325%	T 96.624%	92.683%	0.000	94.565%	93.277%
σ		n/a	n/a	T n/a	0.556%	0.000	n/a	n/a
%RSD		1.797	0.722	T 0.605	0.600	0.000	3.398	1.003

CCB 10/14/2016 11:41:21 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:43	84.958%	0.042	0.164	14.640	10.580	10.750	11.260	6.334	89.473%	0.000	0.575	-0.180
2	11:42:05	84.637%	0.152	-0.343	18.740	23.210	23.650	14.820	15.350	90.400%	0.000	1.114	-0.158
3	11:42:26	84.690%	0.224	-1.388	25.070	29.230	29.810	19.820	14.340	87.896%	0.000	0.481	-0.104
x		84.762%	0.139	-0.522	19.480	21.000	21.400	15.300	12.010	89.256%	0.000	0.723	-0.147
σ		0.172%	0.092	0.791	5.254	9.516	9.728	4.297	4.942	1.266%	0.000	0.341	0.039
%RSD		0.203	65.890	151.500	26.960	45.310	45.450	28.080	41.150	1.419	0.000	47.180	26.680

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:43	14.600	0.097	20.800	-0.071	0.002	-0.169	-0.469	0.649	0.348	-0.117	0.000	0.000
2	11:42:05	13.740	0.301	30.920	0.007	0.078	0.043	-0.038	-0.358	0.454	-0.969	0.000	0.000
3	11:42:26	14.980	0.424	38.940	0.102	0.306	0.093	-0.065	-0.152	0.407	0.185	0.000	0.000
x		14.440	0.274	30.220	0.013	0.129	-0.011	-0.191	0.046	0.403	-0.300	0.000	0.000
σ		0.633	0.165	9.095	0.087	0.158	0.139	0.241	0.532	0.053	0.598	0.000	0.000
%RSD		4.381	60.140	30.100	678.700	123.200	1270.000	126.600	1148.000	13.120	199.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:43	-0.013	92.536%	1.269	-0.002	-0.978	0.003	94.451%	0.000	0.399	0.257	-0.147	94.679%
2	11:42:05	0.023	93.764%	1.602	0.021	-0.635	0.014	94.181%	0.000	0.400	0.349	0.173	95.621%

3	11:42:26	0.031	95.044%	1.706	0.013	-0.498	-0.047	94.163%	0.000	0.540	0.339	0.261	94.823%
x		0.014	93.781%	1.526	0.011	-0.704	-0.010	94.265%	0.000	0.446	0.315	0.096	95.041%
σ		0.024	1.254%	0.228	0.012	0.247	0.033	0.161%	0.000	0.081	0.051	0.215	0.507%
%RSD		172.500	1.337	14.930	111.400	35.150	329.200	0.171	0.000	18.190	16.110	224.700	0.534

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:43	0.015	0.035	0.348	94.631%	0.000	0.502	-0.000
2	11:42:05	0.016	0.048	0.525	94.361%	0.000	0.472	0.004
3	11:42:26	0.017	0.043	0.607	94.887%	0.000	0.436	0.004
x		0.016	0.042	0.494	94.626%	0.000	0.470	0.002
σ		0.001	0.007	0.132	0.263%	0.000	0.033	0.002
%RSD		6.708	15.740	26.810	0.278	0.000	6.966	88.800

MB 200-110153/1-A 10/14/2016 11:47:04 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:26	93.671%	0.104	-1.785	90.940	31.130	40.200	35.560	40.050	94.626%	0.000	0.737	0.299
2	11:47:48	94.405%	0.265	-1.802	99.000	39.850	44.950	39.430	44.720	94.791%	0.000	1.022	0.354
3	11:48:09	91.413%	0.094	-1.371	90.090	32.610	39.760	35.660	38.300	96.352%	0.000	0.667	0.360
x		93.163%	0.154	-1.653	93.340	34.530	41.630	36.880	41.030	95.256%	0.000	0.809	0.337
σ		1.559%	0.096	0.244	4.916	4.669	2.876	2.208	3.317	0.952%	0.000	0.188	0.034
%RSD		1.674	62.180	14.770	5.267	13.520	6.908	5.986	8.085	1.000	0.000	23.240	9.997

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:26	12.740	0.729	49.090	0.091	0.337	0.138	0.261	0.196	0.319	-0.504	0.000	0.000
2	11:47:48	12.130	0.718	54.110	0.139	0.473	0.360	0.087	0.364	0.300	-0.796	0.000	0.000
3	11:48:09	12.590	0.667	48.040	0.122	0.273	0.198	0.298	-0.226	0.347	-0.497	0.000	0.000
x		12.490	0.705	50.410	0.117	0.361	0.232	0.215	0.111	0.322	-0.599	0.000	0.000
σ		0.316	0.033	3.242	0.024	0.102	0.115	0.113	0.304	0.023	0.171	0.000	0.000
%RSD		2.529	4.651	6.430	20.500	28.380	49.540	52.500	273.700	7.238	28.550	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:26	0.036	98.053%	0.982	0.007	-0.944	0.040	97.851%	0.000	0.241	0.143	0.083	99.297%
2	11:47:48	0.074	98.266%	1.203	0.004	-0.618	-0.046	96.810%	0.000	0.264	0.178	0.166	97.516%
3	11:48:09	0.041	98.369%	0.973	0.009	-1.117	0.055	97.296%	0.000	0.289	0.178	0.287	99.684%
x		0.050	98.229%	1.052	0.007	-0.893	0.016	97.319%	0.000	0.265	0.166	0.178	98.832%
σ		0.021	0.161%	0.130	0.002	0.254	0.054	0.521%	0.000	0.024	0.020	0.102	1.156%
%RSD		41.570	0.164	12.360	32.970	28.410	329.000	0.536	0.000	8.993	12.090	57.450	1.170

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:26	0.034	-0.032	0.442	96.763%	0.000	1.005	0.005
2	11:47:48	0.038	-0.021	0.513	94.326%	0.000	0.840	0.006
3	11:48:09	0.010	-0.039	0.421	96.777%	0.000	0.702	0.006
x		0.027	-0.031	0.459	95.956%	0.000	0.849	0.006
σ		0.015	0.009	0.048	1.411%	0.000	0.152	0.001

%RSD		56.000	29.780	10.500	1.471	0.000	17.870	9.220

LCS 200-110153/2-A 10/14/2016 11:52:47 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:09	87.837%	9.663	389.100	T 5032.000	1825.000	440.100	T 4842.000	4443.000	89.656%	0.000	43.280	37.190
2	11:53:31	85.301%	9.650	405.100	T 5194.000	1893.000	453.600	T 4913.000	4504.000	87.878%	0.000	44.400	37.370
3	11:53:53	84.781%	9.546	393.400	T 5129.000	1832.000	453.900	T 4934.000	4581.000	87.087%	0.000	43.300	37.310
x		85.973%	9.620	395.900	T 5118.000	1850.000	449.200	T 4896.000	4509.000	88.207%	0.000	43.660	37.290
σ		1.635%	0.064	8.298	T 81.540	37.170	7.867	T 48.270	69.010	1.316%	0.000	0.644	0.092
%RSD		1.902	0.664	2.096	T 1.593	2.009	1.751	T 0.986	1.530	1.492	0.000	1.476	0.248

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:09	11.480	18.000	T 2011.000	9.878	20.360	48.750	168.200	18.400	0.119	32.970	0.000	0.000
2	11:53:31	9.508	18.540	T 2017.000	9.800	20.230	47.240	167.200	18.690	0.141	31.750	0.000	0.000
3	11:53:53	9.777	18.620	T 2046.000	10.170	20.430	48.200	167.100	17.320	0.184	30.550	0.000	0.000
x		10.250	18.390	T 2025.000	9.949	20.340	48.060	167.500	18.140	0.148	31.760	0.000	0.000
σ		1.069	0.341	T 18.420	0.194	0.105	0.767	0.604	0.723	0.033	1.211	0.000	0.000
%RSD		10.420	1.853	T 0.910	1.951	0.516	1.597	0.360	3.987	22.360	3.814	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:09	43.770	92.215%	92.890	9.742	-0.309	9.285	92.896%	0.000	17.570	17.090	88.380	96.204%
2	11:53:31	43.630	91.020%	94.290	9.861	-1.941	8.964	93.968%	0.000	17.440	17.080	85.610	93.650%
3	11:53:53	44.250	91.431%	93.990	9.830	0.286	8.911	91.981%	0.000	17.990	17.410	87.110	96.435%
x		43.880	91.555%	93.720	9.811	-0.655	9.053	92.948%	0.000	17.670	17.190	87.030	95.430%
σ		0.323	0.607%	0.736	0.062	1.153	0.203	0.994%	0.000	0.287	0.188	1.388	1.546%
%RSD		0.736	0.663	0.785	0.628	176.100	2.238	1.070	0.000	1.627	1.095	1.594	1.620

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:09	35.420	16.580	8.732	93.115%	0.000	16.620	9.711
2	11:53:31	37.020	17.110	9.052	92.132%	0.000	17.620	9.956
3	11:53:53	35.110	17.660	9.080	90.907%	0.000	18.370	10.160
x		35.850	17.120	8.955	92.051%	0.000	17.540	9.943
σ		1.026	0.539	0.193	1.106%	0.000	0.878	0.226
%RSD		2.861	3.152	2.158	1.202	0.000	5.004	2.272

200-35680-A-1-O 10/14/2016 11:58:30 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	83.724%	6.051	34.230	T 656.800	T 23550.000	T 67150.000	T 5039.000	TM 156100.000	126.299%	0.000	107.300	83.060
2	11:59:14	83.122%	6.114	32.970	T 653.400	T 23750.000	T 67600.000	T 5159.000	TM 159900.000	124.834%	0.000	108.200	83.080
3	11:59:35	85.548%	5.918	34.620	T 666.500	T 23790.000	T 68640.000	T 5251.000	TM 160700.000	124.739%	0.000	110.000	85.440
x		84.131%	6.028	33.940	T 658.900	T 23700.000	T 67800.000	T 5150.000	TM 158900.000	125.291%	0.000	108.500	83.860
σ		1.263%	0.100	0.862	T 6.803	T 127.300	T 767.900	T 106.100	TM 2498.000	0.874%	0.000	1.354	1.366
%RSD		1.501	1.662	2.540	T 1.033	T 0.537	T 1.133	T 2.061	TM 1.572	0.698	0.000	1.248	1.629

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	4.736	T 4858.000	T 149600.000	58.330	120.200	2362.000	1235.000	13.070	-0.021	31.430	0.000	0.000
2	11:59:14	5.194	T 4983.000	TM 151200.000	57.210	120.200	2336.000	1224.000	12.330	0.049	23.200	0.000	0.000
3	11:59:35	5.564	T 5103.000	TM 155100.000	58.760	124.400	T 2624.000	1238.000	13.050	-0.023	32.500	0.000	0.000
x		5.165	T 4981.000	TM 152000.000	58.100	121.600	T 2441.000	1232.000	12.810	0.002	29.050	0.000	0.000
σ		0.415	T 122.800	TM 2850.000	0.798	2.436	T 159.400	7.226	0.423	0.041	5.089	0.000	0.000
%RSD		8.033	T 2.466	TM 1.875	1.373	2.003	T 6.529	0.586	3.301	2465.000	17.520	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	T 396.500	369.506%	1.687	2.018	-4.018	4.821	93.440%	0.000	1.629	1.554	1037.000	135.554%
2	11:59:14	365.600	371.815%	1.743	1.996	-3.405	4.977	94.916%	0.000	1.560	1.558	1044.000	134.811%
3	11:59:35	T 404.300	378.618%	1.680	2.038	-4.946	5.195	94.625%	0.000	1.633	1.592	1075.000	138.566%
x		T 388.800	373.313%	1.703	2.017	-4.123	4.998	94.327%	0.000	1.607	1.568	1052.000	136.310%
σ		T 20.490	4.737%	0.034	0.021	0.776	0.188	0.782%	0.000	0.041	0.021	20.160	1.988%
%RSD		T 5.269	1.269	2.011	1.036	18.820	3.755	0.829	0.000	2.549	1.349	1.917	1.459

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:52	0.661	0.655	193.400	102.374%	0.000	22.460	10.140
2	11:59:14	0.678	0.661	191.700	104.348%	0.000	22.490	10.160
3	11:59:35	0.651	0.677	191.300	105.679%	0.000	22.300	10.320
x		0.663	0.665	192.100	104.134%	0.000	22.410	10.210
σ		0.014	0.011	1.142	1.663%	0.000	0.103	0.098
%RSD		2.044	1.723	0.595	1.597	0.000	0.459	0.959

200-35680-A-2-A 10/14/2016 12:04:13 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:04:34	89.567%	3.756	25.580	T 421.400	T 13390.000	T 45280.000	T 3777.000	T 73720.000	118.072%	0.000	74.610	55.980
2	12:04:56	87.689%	3.858	25.270	T 426.800	T 13650.000	T 45750.000	T 3760.000	T 75420.000	117.402%	0.000	75.610	56.160
3	12:05:18	82.521%	3.607	30.230	T 427.700	T 13550.000	T 45550.000	T 3747.000	T 74540.000	118.836%	0.000	75.700	56.270
x		86.592%	3.741	27.030	T 425.300	T 13530.000	T 45530.000	T 3761.000	T 74560.000	118.103%	0.000	75.300	56.140
σ		3.649%	0.126	2.776	T 3.365	T 129.800	T 238.700	T 15.080	T 847.500	0.717%	0.000	0.606	0.146
%RSD		4.214	3.368	10.270	T 0.791	T 0.960	T 0.524	T 0.401	T 1.137	0.607	0.000	0.805	0.260

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:04:34	4.372	T 2907.000	T 91150.000	42.770	91.070	2118.000	993.700	11.010	0.089	15.060	0.000	0.000
2	12:04:56	4.473	T 2944.000	T 92580.000	43.030	91.320	2156.000	993.300	11.300	0.069	17.940	0.000	0.000
3	12:05:18	3.205	T 2898.000	T 91520.000	43.420	91.200	2178.000	1002.000	11.570	0.071	17.240	0.000	0.000
x		4.017	T 2916.000	T 91750.000	43.070	91.190	2151.000	996.400	11.290	0.076	16.740	0.000	0.000
σ		0.705	T 24.290	T 741.000	0.327	0.122	30.350	4.944	0.283	0.011	1.502	0.000	0.000
%RSD		17.540	T 0.833	T 0.808	0.760	0.134	1.411	0.496	2.509	14.810	8.972	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:04:34	160.600	271.632%	1.660	2.028	-6.810	5.026	100.167%	0.000	1.407	1.307	587.300	126.007%
2	12:04:56	162.400	271.202%	1.653	2.164	-2.831	4.803	100.030%	0.000	1.397	1.343	597.200	126.848%
3	12:05:18	164.300	270.555%	1.572	2.127	-3.402	4.713	100.238%	0.000	1.450	1.342	611.700	128.651%
x		162.400	271.129%	1.628	2.106	-4.348	4.847	100.145%	0.000	1.418	1.331	598.700	127.168%
σ		1.843	0.542%	0.049	0.070	2.151	0.161	0.106%	0.000	0.028	0.020	12.260	1.351%
%RSD		1.135	0.200	3.014	3.334	49.480	3.322	0.106	0.000	2.007	1.521	2.048	1.062

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:04:34	0.588	0.389	150.600	105.298%	0.000	13.020	6.659
2	12:04:56	0.588	0.385	152.500	105.499%	0.000	13.200	6.755
3	12:05:18	0.515	0.367	157.000	104.196%	0.000	13.400	6.985
x		0.564	0.380	153.400	104.997%	0.000	13.210	6.800
σ		0.042	0.012	3.282	0.701%	0.000	0.189	0.168
%RSD		7.434	3.133	2.140	0.668	0.000	1.432	2.464

200-35680-A-3-A 10/14/2016 12:09:56 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:17	107.761%	8.729	23.560	T 464.900	T 25310.000	T 95290.000	T 5187.000	T 19490.000	204.323%	0.000	113.600	119.500
2	12:10:39	105.539%	9.193	20.810	T 439.500	T 24690.000	T 93650.000	T 5074.000	T 19190.000	211.163%	0.000	113.000	116.000
3	12:11:01	105.143%	8.146	20.080	T 453.300	T 25020.000	T 93940.000	T 5147.000	T 19510.000	209.686%	0.000	112.000	116.700
x		106.148%	8.690	21.480	T 452.600	T 25010.000	T 94300.000	T 5136.000	T 19400.000	208.390%	0.000	112.900	117.400
σ		1.411%	0.525	1.839	T 12.690	T 311.900	T 876.100	T 57.470	T 177.300	3.599%	0.000	0.818	1.891
%RSD		1.330	6.037	8.559	T 2.804	T 1.247	T 0.929	T 1.119	T 0.914	1.727	0.000	0.725	1.611

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:17	9.528	TM 6455.000	T 130900.000	70.190	168.700	159.100	761.500	3.619	0.113	7.703	0.000	0.000
2	12:10:39	8.439	TM 6385.000	T 128900.000	69.520	164.500	158.000	768.500	3.600	0.106	7.529	0.000	0.000
3	12:11:01	10.040	TM 6441.000	T 131200.000	70.370	165.800	160.400	775.500	3.871	0.097	10.420	0.000	0.000
x		9.334	TM 6427.000	T 130300.000	70.030	166.300	159.100	768.500	3.696	0.105	8.550	0.000	0.000
σ		0.816	TM 37.140	T 1261.000	0.448	2.133	1.205	7.012	0.152	0.008	1.619	0.000	0.000
%RSD		8.744	TM 0.578	T 0.967	0.640	1.282	0.757	0.912	4.103	7.344	18.940	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:17	160.600	644.238%	-0.112	0.929	-11.030	2.767	121.179%	0.000	0.538	0.450	1575.000	186.043%
2	12:10:39	164.300	661.473%	-0.088	0.951	-10.870	2.714	122.144%	0.000	0.545	0.487	1583.000	190.903%

3	12:11:01	T 184.400	660.317%	-0.068	0.997	-9.086	2.484	121.669%	0.000	0.569	0.499	1617.000	189.917%
x		T 169.800	655.343%	-0.089	0.959	-10.330	2.655	121.664%	0.000	0.551	0.479	1592.000	188.955%
σ		T 12.820	9.634%	0.022	0.035	1.079	0.151	0.482%	0.000	0.016	0.026	22.800	2.569%
%RSD		T 7.549	1.470	24.800	3.622	10.450	5.673	0.397	0.000	2.892	5.400	1.432	1.360

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:17	0.104	0.687	125.500	128.508%	0.000	49.700	7.436
2	12:10:39	0.104	0.724	127.700	127.591%	0.000	51.700	7.692
3	12:11:01	0.130	0.716	127.600	129.563%	0.000	51.100	7.619
x		0.113	0.709	126.900	128.554%	0.000	50.830	7.582
σ		0.015	0.020	1.238	0.987%	0.000	1.025	0.132
%RSD		13.180	2.788	0.976	0.768	0.000	2.017	1.738

200-35680-A-4-A 10/14/2016 12:15:39 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:00	103.321%	4.691	37.480	T 439.100	T 18820.000	T 62600.000	T 5504.000	T 37270.000	159.794%	0.000	97.350	83.550
2	12:16:22	103.290%	4.916	38.250	T 435.400	T 18610.000	T 62550.000	T 5493.000	T 37110.000	160.674%	0.000	97.340	81.660
3	12:16:44	101.212%	5.097	35.530	T 422.000	T 18400.000	T 62350.000	T 5501.000	T 37250.000	162.186%	0.000	98.720	82.960
x		102.608%	4.901	37.090	T 432.200	T 18610.000	T 62500.000	T 5499.000	T 37210.000	160.885%	0.000	97.800	82.720
σ		1.208%	0.203	1.400	T 9.007	T 211.900	T 134.200	T 5.428	T 84.170	1.210%	0.000	0.793	0.967
%RSD		1.178	4.142	3.776	T 2.084	T 1.139	T 0.215	T 0.099	T 0.226	0.752	0.000	0.811	1.169

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:00	9.086	TM 8688.000	T 124900.000	52.200	117.700	T 2702.000	1184.000	11.480	0.138	15.980	0.000	0.000
2	12:16:22	8.084	TM 8717.000	T 124900.000	51.560	116.400	T 2686.000	1180.000	11.340	0.132	15.970	0.000	0.000
3	12:16:44	8.200	TM 8680.000	T 124700.000	51.860	116.100	T 2696.000	1188.000	11.420	0.130	17.280	0.000	0.000
x		8.456	TM 8695.000	T 124800.000	51.870	116.700	T 2695.000	1184.000	11.410	0.133	16.410	0.000	0.000
σ		0.548	TM 19.810	T 89.860	0.316	0.833	T 8.012	4.259	0.068	0.004	0.755	0.000	0.000
%RSD		6.486	TM 0.228	T 0.072	0.610	0.713	T 0.297	0.360	0.593	3.360	4.602	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:00	142.100	393.221%	1.361	2.208	-9.230	4.577	119.732%	0.000	1.387	1.350	1078.000	152.495%
2	12:16:22	143.400	396.361%	1.403	2.198	-7.391	4.344	120.594%	0.000	1.512	1.366	1083.000	154.088%
3	12:16:44	141.700	393.687%	1.489	2.184	-6.418	4.102	120.045%	0.000	1.501	1.387	1107.000	154.426%
x		142.400	394.423%	1.418	2.197	-7.680	4.341	120.124%	0.000	1.467	1.367	1089.000	153.670%
σ		0.851	1.694%	0.065	0.012	1.428	0.237	0.436%	0.000	0.069	0.019	15.310	1.031%
%RSD		0.597	0.430	4.600	0.552	18.590	5.467	0.363	0.000	4.705	1.358	1.405	0.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:00	0.533	0.616	185.100	119.512%	0.000	18.950	7.444
2	12:16:22	0.541	0.649	184.100	120.782%	0.000	18.750	7.472
3	12:16:44	0.566	0.648	188.800	118.458%	0.000	19.360	7.762
x		0.547	0.638	186.000	119.584%	0.000	19.020	7.559
σ		0.017	0.019	2.480	1.164%	0.000	0.312	0.176

%RSD		3.128	2.965	1.333	0.973	0.000	1.641	2.332

200-35680-A-5-A 10/14/2016 12:21:22 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:44	103.717%	7.297	31.390	┬466.200	┬16840.000	┬84420.000	┬6291.000	┬16550.000	178.190%	0.000	133.300	98.060
2	12:22:05	102.782%	7.021	31.050	┬457.000	┬16820.000	┬84990.000	┬6253.000	┬16580.000	180.623%	0.000	130.800	96.720
3	12:22:27	100.212%	7.819	33.200	┬434.200	┬16340.000	┬83300.000	┬6199.000	┬16600.000	181.857%	0.000	133.200	98.640
x		102.237%	7.379	31.880	┬452.500	┬16670.000	┬84240.000	┬6247.000	┬16570.000	180.223%	0.000	132.400	97.810
σ		1.814%	0.405	1.158	┬16.490	┬285.600	┬862.600	┬46.000	┬25.520	1.866%	0.000	1.441	0.989
%RSD		1.775	5.494	3.631	┬3.644	┬1.714	┬1.024	┬0.736	┬0.154	1.035	0.000	1.088	1.011

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:44	9.794	┬4288.000	┬128300.000	58.780	138.900	2054.000	1026.000	8.624	0.124	18.500	0.000	0.000
2	12:22:05	10.650	┬4266.000	┬128700.000	58.180	136.500	2029.000	1020.000	8.629	0.132	18.910	0.000	0.000
3	12:22:27	10.760	┬4290.000	┬127800.000	58.740	134.700	2003.000	1023.000	8.637	0.140	18.320	0.000	0.000
x		10.400	┬4281.000	┬128300.000	58.570	136.700	2028.000	1023.000	8.630	0.132	18.580	0.000	0.000
σ		0.529	┬13.200	┬436.500	0.334	2.142	25.750	3.098	0.006	0.008	0.302	0.000	0.000
%RSD		5.089	┬0.308	┬0.340	0.571	1.567	1.269	0.303	0.075	6.047	1.626	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:44	109.400	531.133%	1.354	2.484	-8.647	5.053	121.740%	0.000	1.170	1.100	1265.000	169.409%
2	12:22:05	111.200	534.821%	1.530	2.479	-5.535	4.880	122.288%	0.000	1.260	1.139	1295.000	173.201%
3	12:22:27	109.900	537.573%	1.505	2.497	-6.787	5.049	124.138%	0.000	1.233	1.122	1293.000	173.841%
x		110.200	534.509%	1.463	2.487	-6.990	4.994	122.722%	0.000	1.221	1.121	1284.000	172.150%
σ		0.913	3.231%	0.095	0.009	1.566	0.099	1.257%	0.000	0.046	0.020	16.550	2.396%
%RSD		0.829	0.605	6.506	0.366	22.400	1.973	1.024	0.000	3.786	1.757	1.288	1.392

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:44	0.320	0.858	189.500	122.017%	0.000	27.000	17.640
2	12:22:05	0.318	0.858	190.400	124.148%	0.000	27.360	17.790
3	12:22:27	0.349	0.870	192.800	122.399%	0.000	28.060	18.040
x		0.329	0.862	190.900	122.855%	0.000	27.470	17.830
σ		0.017	0.007	1.695	1.136%	0.000	0.536	0.203
%RSD		5.272	0.801	0.888	0.925	0.000	1.950	1.138

200-35680-A-6-A 10/14/2016 12:27:05 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:27:27	101.372%	4.345	30.250	┬462.800	┬12670.000	┬57960.000	┬4929.000	┬18890.000	156.337%	0.000	92.550	70.280
2	12:27:48	101.170%	5.190	30.520	┬457.200	┬12640.000	┬57970.000	┬4926.000	┬18830.000	156.403%	0.000	94.280	70.910
3	12:28:10	102.131%	4.793	32.680	┬456.800	┬12560.000	┬57720.000	┬4917.000	┬18780.000	157.979%	0.000	93.230	71.180
x		101.558%	4.776	31.150	┬458.900	┬12620.000	┬57880.000	┬4924.000	┬18830.000	156.906%	0.000	93.350	70.790
σ		0.506%	0.423	1.331	┬3.370	┬60.090	┬143.100	┬6.209	┬57.680	0.930%	0.000	0.875	0.463
%RSD		0.499	8.852	4.273	┬0.734	┬0.476	┬0.247	┬0.126	┬0.306	0.592	0.000	0.937	0.654

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:27:27	11.120	┬3304.000	┬95180.000	44.950	99.230	┬3451.000	1304.000	9.683	0.178	22.970	0.000	0.000
2	12:27:48	9.301	┬3354.000	┬96980.000	44.850	100.700	┬3523.000	1321.000	9.650	0.169	24.450	0.000	0.000
3	12:28:10	10.470	┬3301.000	┬96040.000	44.460	101.700	┬3578.000	1341.000	9.892	0.176	23.290	0.000	0.000
x		10.300	┬3320.000	┬96070.000	44.750	100.500	┬3517.000	1322.000	9.742	0.174	23.570	0.000	0.000
σ		0.924	┬30.050	┬900.400	0.258	1.224	┬63.610	18.710	0.132	0.005	0.779	0.000	0.000
%RSD		8.969	┬0.905	┬0.937	0.577	1.218	┬1.808	1.416	1.351	2.660	3.305	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:27:27	90.870	370.323%	1.675	2.536	-3.620	7.588	123.048%	0.000	1.530	1.549	976.900	150.258%
2	12:27:48	92.330	372.074%	1.578	2.530	-2.779	7.419	122.582%	0.000	1.595	1.551	990.300	151.077%
3	12:28:10	91.530	369.888%	1.570	2.564	-4.524	7.556	122.096%	0.000	1.707	1.583	993.300	154.367%
x		91.580	370.762%	1.608	2.544	-3.641	7.521	122.575%	0.000	1.611	1.561	986.800	151.901%
σ		0.733	1.157%	0.058	0.018	0.873	0.090	0.476%	0.000	0.089	0.019	8.725	2.175%
%RSD		0.800	0.312	3.632	0.720	23.960	1.194	0.389	0.000	5.553	1.200	0.884	1.432

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:27:27	0.574	0.513	196.500	117.785%	0.000	16.020	7.139
2	12:27:48	0.555	0.567	200.400	117.618%	0.000	16.160	7.034
3	12:28:10	0.573	0.528	198.600	120.845%	0.000	16.200	7.034
x		0.567	0.536	198.500	118.749%	0.000	16.130	7.069
σ		0.011	0.028	1.955	1.817%	0.000	0.093	0.060
%RSD		1.918	5.213	0.985	1.530	0.000	0.575	0.855

200-35680-A-6-A SD@5 10/14/2016 12:32:49 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:11	104.576%	0.692	3.791	86.940	2817.000	┬14210.000	┬1217.000	4273.000	142.667%	0.000	22.870	17.820
2	12:33:32	100.225%	0.883	5.006	91.690	2949.000	┬14580.000	┬1214.000	4385.000	138.296%	0.000	23.110	18.110
3	12:33:54	100.633%	0.940	4.206	88.390	2956.000	┬14580.000	┬1244.000	4460.000	136.278%	0.000	24.270	19.100
x		101.811%	0.839	4.334	89.010	2908.000	┬14460.000	┬1225.000	4373.000	139.080%	0.000	23.420	18.340
σ		2.403%	0.130	0.617	2.433	78.620	┬211.100	┬16.570	94.130	3.266%	0.000	0.749	0.672
%RSD		2.360	15.490	14.240	2.734	2.704	┬1.460	┬1.353	2.153	2.348	0.000	3.199	3.662

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:11	30.900	┬795.100	┬23450.000	11.050	24.950	688.000	312.700	4.583	1.150	6.690	0.000	0.000
2	12:33:32	31.820	┬816.700	┬24140.000	11.180	25.780	686.000	310.700	4.606	1.185	5.356	0.000	0.000
3	12:33:54	32.730	┬827.200	┬24330.000	11.370	25.460	694.800	315.100	4.936	1.118	5.425	0.000	0.000
x		31.820	┬813.000	┬23970.000	11.200	25.400	689.600	312.800	4.709	1.151	5.823	0.000	0.000
σ		0.915	┬16.380	┬460.200	0.159	0.420	4.581	2.174	0.198	0.034	0.751	0.000	0.000
%RSD		2.877	┬2.015	┬1.919	1.422	1.653	0.664	0.695	4.197	2.911	12.900	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:11	19.030	184.302%	0.288	0.548	-2.634	1.693	128.934%	0.000	0.429	0.337	202.900	129.509%
2	12:33:32	19.220	181.364%	0.278	0.538	-1.353	1.540	127.994%	0.000	0.429	0.353	206.900	129.329%
3	12:33:54	19.600	183.657%	0.283	0.578	-2.407	1.799	126.966%	0.000	0.453	0.336	208.700	131.029%
x		19.280	183.107%	0.283	0.554	-2.132	1.677	127.965%	0.000	0.437	0.342	206.200	129.956%
σ		0.289	1.544%	0.005	0.020	0.684	0.131	0.985%	0.000	0.014	0.009	2.993	0.934%
%RSD		1.499	0.843	1.730	3.694	32.080	7.791	0.769	0.000	3.142	2.724	1.452	0.718

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:11	0.053	-0.015	42.030	116.245%	0.000	3.102	1.465
2	12:33:32	0.097	-0.016	42.120	117.008%	0.000	3.160	1.448
3	12:33:54	0.099	-0.018	42.700	116.321%	0.000	3.206	1.523
x		0.083	-0.017	42.280	116.525%	0.000	3.156	1.479
σ		0.026	0.002	0.366	0.420%	0.000	0.052	0.039
%RSD		31.110	9.660	0.867	0.361	0.000	1.657	2.660

200-35680-A-6-A PDS 10/14/2016 12:38:32 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:54	97.007%	14.600	436.700	┬4030.000	┬13550.000	┬57430.000	┬8595.000	┬21960.000	148.977%	0.000	124.200	96.680
2	12:39:16	96.353%	14.570	443.500	┬4092.000	┬13880.000	┬57040.000	┬8757.000	┬22360.000	149.725%	0.000	125.900	97.640
3	12:39:37	93.400%	15.150	476.200	┬4223.000	┬14200.000	┬57940.000	┬8758.000	┬22610.000	146.368%	0.000	128.200	99.570
x		95.587%	14.770	452.100	┬4115.000	┬13880.000	┬57470.000	┬8703.000	┬22310.000	148.357%	0.000	126.100	97.970
σ		1.922%	0.328	21.150	┬98.800	┬324.000	┬454.400	┬93.300	┬329.400	1.763%	0.000	1.979	1.469
%RSD		2.010	2.221	4.679	┬2.401	┬2.335	┬0.791	┬1.072	┬1.476	1.188	0.000	1.569	1.499

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:54	11.490	┬3239.000	┬94420.000	50.890	110.700	┬3478.000	1469.000	15.850	0.126	57.640	0.000	0.000
2	12:39:16	11.970	┬3300.000	┬96650.000	51.620	112.600	┬3495.000	1458.000	15.380	0.167	55.180	0.000	0.000
3	12:39:37	11.060	┬3364.000	┬98450.000	52.760	114.200	┬3432.000	1467.000	15.560	0.142	55.830	0.000	0.000
x		11.510	┬3301.000	┬96510.000	51.760	112.500	┬3468.000	1465.000	15.600	0.145	56.220	0.000	0.000
σ		0.455	┬62.270	┬2020.000	0.941	1.781	┬32.730	5.691	0.239	0.021	1.272	0.000	0.000
%RSD		3.956	┬1.887	┬2.093	1.818	1.583	┬0.944	0.389	1.530	14.550	2.262	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:54	133.600	339.662%	32.050	12.030	-6.248	16.530	113.969%	0.000	18.080	17.940	1065.000	144.012%
2	12:39:16	135.000	347.461%	32.510	11.850	-2.732	16.050	116.512%	0.000	18.080	18.050	1068.000	143.925%

3	12:39:37	133.600	349.471%	32.260	11.950	-4.014	16.490	116.844%	0.000	18.370	18.090	1071.000	145.639%
x		134.100	345.531%	32.280	11.940	-4.331	16.360	115.775%	0.000	18.170	18.030	1068.000	144.525%
σ		0.812	5.181%	0.233	0.088	1.779	0.265	1.573%	0.000	0.168	0.077	2.890	0.965%
%RSD		0.606	1.500	0.722	0.737	41.080	1.620	1.359	0.000	0.922	0.425	0.271	0.668

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:54	14.250	16.250	201.400	112.493%	0.000	32.710	15.780
2	12:39:16	13.910	16.420	204.400	114.220%	0.000	33.270	16.250
3	12:39:37	14.360	16.250	202.400	115.905%	0.000	33.330	16.000
x		14.170	16.300	202.700	114.206%	0.000	33.100	16.010
σ		0.234	0.099	1.532	1.706%	0.000	0.341	0.234
%RSD		1.654	0.606	0.756	1.494	0.000	1.031	1.462

CCV 10/14/2016 12:44:17 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:38	83.266%	683.500	270.400	┬9375.000	┬28290.000	┬28240.000	┬9501.000	┬28100.000	101.987%	0.000	┬1173.000	354.000
2	12:45:00	81.108%	665.200	276.400	┬9596.000	┬29560.000	┬29270.000	┬9446.000	┬28520.000	97.451%	0.000	┬1205.000	362.500
3	12:45:22	79.787%	679.000	276.800	┬9603.000	┬28940.000	┬28900.000	┬9546.000	┬28370.000	96.127%	0.000	┬1207.000	366.100
x		81.387%	108.146%	109.811%	┬95.244%	┬96.435%	┬96.005%	┬94.976%	┬94.434%	98.522%	0.000	┬95.596%	90.218%
σ		1.756%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	3.073%	0.000	┬n/a	n/a
%RSD		2.158	1.409	1.292	┬1.362	┬2.192	┬1.798	┬0.530	┬0.745	3.119	0.000	┬1.581	1.731

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:38	25.790	┬1179.000	┬29050.000	476.900	1213.000	1228.000	1189.000	194.500	-0.063	198.900	0.000	0.000
2	12:45:00	21.970	┬1195.000	┬29340.000	480.600	1244.000	1204.000	1176.000	192.800	-0.090	194.600	0.000	0.000
3	12:45:22	21.740	┬1211.000	┬29590.000	481.400	1243.000	1211.000	1186.000	198.500	-0.237	195.300	0.000	0.000
x		23.170	┬95.593%	┬97.756%	95.926%	98.659%	97.134%	94.693%	97.633%	-0.130	98.128%	0.000	0.000
σ		2.278	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.094	n/a	0.000	0.000
%RSD		9.832	┬1.302	┬0.925	0.495	1.449	1.011	0.564	1.505	71.810	1.188	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:38	181.800	100.936%	┬1253.000	97.070	8.201	191.100	100.668%	0.000	227.500	222.200	1100.000	101.945%
2	12:45:00	177.000	99.575%	┬1283.000	96.150	3.718	191.200	100.384%	0.000	225.900	220.500	1088.000	100.251%
3	12:45:22	176.400	96.527%	┬1294.000	98.100	12.340	191.000	98.731%	0.000	227.000	222.200	1097.000	97.470%
x		178.400	99.012%	┬102.149%	97.107%	8.086	95.539%	99.927%	0.000	226.800	88.652%	87.624%	99.888%
σ		2.959	2.258%	┬n/a	n/a	4.312	n/a	1.046%	0.000	0.825	n/a	n/a	2.259%
%RSD		1.659	2.280	┬1.668	1.006	53.320	0.063	1.047	0.000	0.364	0.440	0.573	2.262

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:38	21.350	170.200	┬1183.000	96.535%	0.000	17.480	8.893
2	12:45:00	21.380	171.000	┬1195.000	95.753%	0.000	18.320	8.986
3	12:45:22	22.080	173.200	┬1210.000	93.835%	0.000	18.950	9.213
x		108.014%	85.744%	┬95.671%	95.374%	0.000	91.243%	90.308%
σ		n/a	n/a	┬n/a	1.389%	0.000	n/a	n/a

%RSD	1.895	0.909	T 1.125	1.457	0.000	4.053	1.825	

CCB 10/14/2016 12:50:00 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:22	91.260%	-0.040	-1.038	-3.377	1.117	7.739	3.536	-3.648	103.419%	0.000	0.424	-0.203
2	12:50:44	86.199%	-0.050	-1.171	0.613	2.186	10.290	3.859	-2.198	104.058%	0.000	0.397	-0.228
3	12:51:05	88.310%	-0.019	-1.271	-2.630	2.247	11.470	2.823	-3.544	104.709%	0.000	0.512	-0.146
x		88.590%	-0.036	-1.160	-1.798	1.850	9.834	3.406	-3.130	104.062%	0.000	0.444	-0.192
σ		2.542%	0.016	0.117	2.121	0.636	1.907	0.530	0.809	0.645%	0.000	0.060	0.042
%RSD		2.869	44.650	10.080	117.900	34.360	19.390	15.560	25.850	0.620	0.000	13.490	21.940

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:22	16.170	0.180	25.260	-0.170	-0.194	-0.276	-0.440	-0.118	0.494	-0.396	0.000	0.000
2	12:50:44	16.180	0.359	26.520	-0.156	-0.259	-0.124	-0.311	0.214	0.486	-0.225	0.000	0.000
3	12:51:05	15.960	0.444	27.610	-0.150	-0.291	-0.058	-0.499	-0.079	0.479	0.554	0.000	0.000
x		16.100	0.328	26.460	-0.159	-0.248	-0.153	-0.416	0.006	0.486	-0.022	0.000	0.000
σ		0.123	0.135	1.176	0.010	0.049	0.112	0.096	0.181	0.007	0.507	0.000	0.000
%RSD		0.764	41.190	4.445	6.548	19.800	73.190	23.150	3289.000	1.496	2271.000	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:22	-0.022	104.978%	0.627	-0.022	-1.085	-0.008	105.151%	0.000	0.300	0.157	-0.186	101.638%
2	12:50:44	-0.018	104.453%	0.728	-0.004	-1.335	-0.005	105.890%	0.000	0.286	0.174	-0.145	102.066%
3	12:51:05	-0.016	105.522%	0.538	-0.012	-0.755	-0.045	105.346%	0.000	0.322	0.180	-0.065	102.731%
x		-0.018	104.985%	0.631	-0.013	-1.058	-0.019	105.462%	0.000	0.303	0.170	-0.132	102.145%
σ		0.003	0.534%	0.095	0.009	0.291	0.022	0.383%	0.000	0.018	0.012	0.062	0.551%
%RSD		16.560	0.509	15.060	71.060	27.480	115.800	0.363	0.000	6.089	7.224	46.710	0.539

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:22	0.002	-0.025	0.177	98.578%	0.000	0.442	0.000
2	12:50:44	-0.022	-0.048	0.210	98.481%	0.000	0.419	-0.001
3	12:51:05	-0.012	-0.057	0.202	99.083%	0.000	0.383	0.001
x		-0.011	-0.043	0.196	98.714%	0.000	0.414	0.000
σ		0.012	0.017	0.017	0.324%	0.000	0.030	0.001
%RSD		111.500	38.540	8.617	0.328	0.000	7.189	1513.000

CCVL 10/14/2016 12:55:43 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:56:05	88.634%	0.970	43.690	436.300	171.300	54.460	453.300	438.700	104.448%	0.000	4.908	3.476
2	12:56:27	88.817%	0.985	44.060	T 475.400	172.800	53.250	430.800	426.400	106.537%	0.000	4.502	3.515
3	12:56:48	86.075%	1.165	45.120	425.600	174.200	53.110	432.300	441.300	105.815%	0.000	5.137	3.648
x		87.842%	103.965%	110.723%	T 89.154%	86.385%	107.209%	87.766%	87.091%	105.600%	0.000	96.988%	88.659%
σ		1.533%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.061%	0.000	n/a	n/a
%RSD		1.745	10.430	1.683	T 5.880	0.861	1.385	2.869	1.836	1.005	0.000	6.632	2.541

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:56:05	16.890	1.797	207.400	0.914	1.827	4.724	20.090	2.103	0.485	4.474	0.000	0.000
2	12:56:27	17.180	1.860	203.200	0.864	1.874	4.749	19.950	2.158	0.492	4.014	0.000	0.000
3	12:56:48	16.440	1.944	204.900	0.835	1.921	4.839	20.280	2.246	0.514	4.080	0.000	0.000
x		16.840	93.336%	102.577%	87.104%	93.691%	95.413%	100.523%	108.443%	0.497	104.731%	0.000	0.000
σ		0.369	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.015	n/a	0.000	0.000
%RSD		2.190	3.955	1.023	4.551	2.492	1.262	0.828	3.331	3.014	5.931	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:56:05	4.524	106.539%	9.077	1.025	-0.989	0.822	104.683%	0.000	1.955	1.800	8.183	99.539%
2	12:56:27	4.422	105.844%	8.819	0.953	-0.702	0.770	106.113%	0.000	1.894	1.823	8.678	103.604%
3	12:56:48	4.430	103.834%	9.069	0.969	-1.367	1.036	105.015%	0.000	2.008	1.831	8.371	103.188%
x		89.173%	105.406%	89.883%	98.192%	-1.019	87.598%	105.270%	0.000	1.952	90.893%	84.107%	102.111%
σ		n/a	1.405%	n/a	n/a	0.333	n/a	0.748%	0.000	0.057	n/a	n/a	2.236%
%RSD		1.273	1.333	1.632	3.862	32.700	16.080	0.711	0.000	2.926	0.900	2.968	2.190

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:56:05	1.712	1.533	0.988	98.266%	0.000	1.041	0.903
2	12:56:27	1.712	1.611	1.058	96.840%	0.000	1.082	0.934
3	12:56:48	1.582	1.547	1.060	99.167%	0.000	1.122	0.934
x		83.448%	78.182%	103.494%	98.091%	0.000	54.087%	92.368%
σ		n/a	n/a	n/a	1.173%	0.000	n/a	n/a
%RSD		4.505	2.648	3.973	1.196	0.000	3.728	1.939

200-35680-A-6-B MS 10/14/2016 01:01:27 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:49	95.345%	14.870	410.000	T 4241.000	T 16590.000	T 67200.000	T 8930.000	T 27140.000	144.300%	0.000	133.300	106.300
2	13:02:10	94.289%	15.580	418.300	T 4281.000	T 16800.000	T 66640.000	T 8893.000	T 27550.000	146.879%	0.000	134.300	106.900
3	13:02:32	97.170%	15.190	398.300	T 4204.000	T 16580.000	T 66020.000	T 8928.000	T 27530.000	150.017%	0.000	134.000	107.800
x		95.601%	15.210	408.900	T 4242.000	T 16660.000	T 66620.000	T 8917.000	T 27400.000	147.065%	0.000	133.900	107.000
σ		1.457%	0.354	10.030	T 38.670	T 125.700	T 591.600	T 20.980	T 230.700	2.863%	0.000	0.512	0.760
%RSD		1.524	2.326	2.453	T 0.912	T 0.755	T 0.888	T 0.235	T 0.842	1.947	0.000	0.383	0.711

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:49	11.670	┬3540.000	┬106200.000	63.670	139.500	┬4394.000	1670.000	16.510	0.114	62.890	0.000	0.000
2	13:02:10	11.230	┬3491.000	┬105800.000	63.400	137.900	┬4368.000	1665.000	16.230	0.135	60.180	0.000	0.000
3	13:02:32	10.690	┬3531.000	┬106400.000	62.410	135.100	┬4412.000	1688.000	16.460	0.123	63.860	0.000	0.000
x		11.200	┬3521.000	┬106100.000	63.160	137.500	┬4391.000	1674.000	16.400	0.124	62.310	0.000	0.000
σ		0.490	┬26.210	┬283.600	0.663	2.199	┬21.860	12.040	0.151	0.011	1.908	0.000	0.000
%RSD		4.377	┬0.745	┬0.267	1.049	1.599	┬0.498	0.719	0.922	8.682	3.063	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:49	155.900	365.228%	28.820	13.000	-3.064	15.370	109.719%	0.000	7.543	7.723	962.000	139.773%
2	13:02:10	156.400	368.978%	28.940	12.920	-6.613	16.360	111.140%	0.000	7.834	7.684	971.000	142.485%
3	13:02:32	155.600	371.600%	29.170	12.870	-3.048	15.890	112.187%	0.000	7.629	7.885	982.000	144.779%
x		156.000	368.602%	28.980	12.930	-4.242	15.870	111.016%	0.000	7.669	7.764	971.700	142.346%
σ		0.407	3.202%	0.176	0.066	2.054	0.495	1.239%	0.000	0.149	0.107	10.020	2.506%
%RSD		0.261	0.869	0.607	0.510	48.420	3.120	1.116	0.000	1.946	1.374	1.031	1.760

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:49	16.060	16.670	232.400	108.756%	0.000	35.850	17.760
2	13:02:10	15.750	16.480	234.800	110.815%	0.000	35.920	17.800
3	13:02:32	15.800	16.500	233.600	112.958%	0.000	35.540	17.800
x		15.870	16.550	233.600	110.843%	0.000	35.770	17.790
σ		0.170	0.107	1.175	2.101%	0.000	0.202	0.024
%RSD		1.070	0.646	0.503	1.895	0.000	0.565	0.136

200-35680-A-6-C MSD 10/14/2016 01:07:12 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:07:33	96.855%	15.100	411.800	┬4326.000	┬13710.000	┬54250.000	┬8024.000	┬21900.000	143.546%	0.000	119.100	94.070
2	13:07:55	96.787%	14.430	407.400	┬4288.000	┬13460.000	┬53820.000	┬8002.000	┬21850.000	144.983%	0.000	118.400	93.270
3	13:08:17	91.756%	13.430	434.400	┬4323.000	┬13680.000	┬55150.000	┬8061.000	┬22150.000	144.158%	0.000	120.900	95.720
x		95.132%	14.320	417.900	┬4312.000	┬13620.000	┬54410.000	┬8029.000	┬21970.000	144.229%	0.000	119.500	94.350
σ		2.924%	0.838	14.510	┬20.950	┬135.000	┬680.800	┬29.620	┬161.800	0.721%	0.000	1.292	1.251
%RSD		3.074	5.851	3.471	┬0.486	┬0.992	┬1.251	┬0.369	┬0.736	0.500	0.000	1.081	1.325

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:07:33	12.820	┬2725.000	┬86200.000	52.240	118.800	┬3578.000	1398.000	16.290	0.170	57.640	0.000	0.000
2	13:07:55	12.020	┬2712.000	┬85420.000	52.280	117.900	┬3561.000	1397.000	16.370	0.162	57.530	0.000	0.000
3	13:08:17	11.710	┬2755.000	┬87400.000	52.900	118.500	┬3549.000	1410.000	16.310	0.171	57.380	0.000	0.000
x		12.180	┬2731.000	┬86340.000	52.470	118.400	┬3563.000	1401.000	16.320	0.168	57.520	0.000	0.000
σ		0.571	┬22.180	┬995.600	0.369	0.493	┬14.510	7.583	0.041	0.005	0.134	0.000	0.000
%RSD		4.686	┬0.812	┬1.153	0.703	0.416	┬0.407	0.541	0.249	3.070	0.232	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:07:33	127.900	324.606%	33.660	12.580	-1.825	15.470	113.618%	0.000	8.135	7.941	752.800	138.624%
2	13:07:55	129.700	326.275%	33.930	12.520	-2.667	15.850	113.263%	0.000	8.382	8.045	777.400	140.638%

3	13:08:17	129.600	326.596%	34.050	12.410	-2.501	15.920	114.725%	0.000	7.983	8.023	766.900	141.318%
x		129.000	325.826%	33.880	12.500	-2.331	15.750	113.869%	0.000	8.166	8.003	765.700	140.193%
σ		1.032	1.068%	0.201	0.083	0.446	0.238	0.763%	0.000	0.202	0.055	12.360	1.401%
%RSD		0.800	0.328	0.593	0.661	19.120	1.515	0.670	0.000	2.469	0.682	1.614	0.999

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:07:33	17.570	16.820	194.300	110.212%	0.000	31.840	16.200
2	13:07:55	17.560	17.220	197.800	109.020%	0.000	32.730	16.710
3	13:08:17	17.790	17.200	197.000	110.531%	0.000	33.220	16.320
x		17.640	17.080	196.400	109.921%	0.000	32.600	16.410
σ		0.127	0.228	1.856	0.797%	0.000	0.695	0.269
%RSD		0.720	1.336	0.945	0.725	0.000	2.133	1.641

200-35700-A-1-B 10/14/2016 01:12:55 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:13:17	104.996%	9.271	36.870	T 385.100	T 13620.000	T 84760.000	T 4896.000	T 19770.000	176.647%	0.000	129.000	94.030
2	13:13:38	104.087%	9.132	35.230	T 375.900	T 13550.000	T 84540.000	T 4813.000	T 19490.000	178.125%	0.000	126.700	93.410
3	13:14:01	100.120%	9.562	36.470	T 374.600	T 13690.000	T 85780.000	T 4897.000	T 19890.000	177.147%	0.000	128.400	95.490
x		103.068%	9.322	36.190	T 378.500	T 13620.000	T 85030.000	T 4869.000	T 19720.000	177.306%	0.000	128.000	94.310
σ		2.593%	0.220	0.856	T 5.760	T 67.770	T 659.500	T 48.040	T 203.200	0.752%	0.000	1.205	1.065
%RSD		2.515	2.355	2.366	T 1.522	T 0.498	T 0.776	T 0.987	T 1.030	0.424	0.000	0.941	1.129

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:13:17	8.610	TM 14280.000	TM 190400.000	72.270	121.600	TM 12040.000	1806.000	15.430	0.129	28.200	0.000	0.000
2	13:13:38	10.010	TM 14490.000	TM 192300.000	72.960	122.200	TM 12180.000	1795.000	15.130	0.130	27.300	0.000	0.000
3	13:14:01	8.817	TM 14500.000	TM 193200.000	75.170	124.500	TM 12150.000	1811.000	15.240	0.111	29.480	0.000	0.000
x		9.145	TM 14420.000	TM 192000.000	73.470	122.800	TM 12120.000	1804.000	15.270	0.123	28.330	0.000	0.000
σ		0.754	TM 123.700	TM 1424.000	1.516	1.519	TM 77.740	7.899	0.151	0.011	1.096	0.000	0.000
%RSD		8.248	TM 0.857	TM 0.742	2.063	1.237	TM 0.641	0.438	0.987	8.570	3.869	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:13:17	147.500	503.559%	1.536	5.389	-6.364	8.527	121.569%	0.000	1.512	1.428	1465.000	167.092%
2	13:13:38	149.500	516.579%	1.449	5.611	-6.908	9.219	122.281%	0.000	1.601	1.457	1488.000	166.515%
3	13:14:01	149.200	517.595%	1.485	5.497	-4.012	8.958	122.889%	0.000	1.504	1.452	1485.000	170.748%
x		148.700	512.578%	1.490	5.499	-5.762	8.901	122.246%	0.000	1.539	1.446	1479.000	168.118%
σ		1.048	7.827%	0.044	0.111	1.539	0.349	0.661%	0.000	0.054	0.015	12.340	2.296%
%RSD		0.704	1.527	2.939	2.017	26.710	3.927	0.541	0.000	3.514	1.057	0.834	1.366

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:13:17	0.636	0.909	280.000	118.721%	0.000	22.800	7.727
2	13:13:38	0.609	0.883	281.300	119.734%	0.000	22.780	7.616
3	13:14:01	0.658	0.919	278.900	120.727%	0.000	22.660	7.720
x		0.634	0.904	280.000	119.728%	0.000	22.750	7.688
σ		0.024	0.019	1.187	1.003%	0.000	0.075	0.062

%RSD		3.819	2.074	0.424	0.837	0.000	0.330	0.806

200-35700-A-2-B 10/14/2016 01:18:38 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:19:00	96.504%	4.860	35.140	T 392.400	T 11850.000	T 64510.000	T 4556.000	16320.000	150.908%	0.000	96.250	72.160
2	13:19:21	97.481%	4.762	37.150	T 387.800	T 11910.000	T 65230.000	T 4505.000	T 17170.000	151.711%	0.000	95.370	71.910
3	13:19:43	94.614%	4.782	39.770	T 379.800	T 11710.000	T 65810.000	T 4499.000	T 17520.000	152.597%	0.000	98.860	73.200
x		96.200%	4.801	37.350	T 386.600	T 11820.000	T 65180.000	T 4520.000	T 17000.000	151.739%	0.000	96.830	72.430
σ		1.458%	0.052	2.322	T 6.396	T 102.300	T 651.100	T 31.250	T 615.600	0.845%	0.000	1.815	0.684
%RSD		1.515	1.078	6.216	T 1.654	T 0.865	T 0.999	T 0.691	T 3.620	0.557	0.000	1.874	0.944

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:19:00	11.640	TM 8958.000	T 98850.000	53.230	103.900	TM 10640.000	1347.000	13.970	0.198	29.810	0.000	0.000
2	13:19:21	11.250	TM 8964.000	T 98770.000	53.290	101.400	TM 10400.000	1327.000	13.650	0.182	28.620	0.000	0.000
3	13:19:43	9.965	TM 8968.000	T 98490.000	53.980	103.900	TM 10630.000	1354.000	13.890	0.217	27.220	0.000	0.000
x		10.950	TM 8963.000	T 98700.000	53.500	103.000	TM 10560.000	1342.000	13.830	0.199	28.550	0.000	0.000
σ		0.875	TM 5.229	T 188.200	0.417	1.451	TM 134.400	13.890	0.166	0.017	1.295	0.000	0.000
%RSD		7.991	TM 0.058	T 0.191	0.779	1.408	TM 1.274	1.035	1.200	8.709	4.536	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:19:00	91.010	339.496%	1.227	7.037	-4.409	8.989	115.978%	0.000	1.792	1.723	912.100	139.826%
2	13:19:21	91.270	345.827%	1.231	6.942	-4.001	9.036	117.424%	0.000	1.770	1.727	907.600	142.427%
3	13:19:43	92.270	340.315%	1.289	7.304	-2.573	8.858	117.291%	0.000	1.882	1.742	926.200	142.113%
x		91.520	341.879%	1.249	7.095	-3.661	8.961	116.898%	0.000	1.815	1.731	915.300	141.455%
σ		0.662	3.444%	0.035	0.188	0.964	0.092	0.799%	0.000	0.059	0.010	9.694	1.420%
%RSD		0.724	1.007	2.782	2.647	26.330	1.031	0.684	0.000	3.261	0.584	1.059	1.004

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:19:00	0.915	0.640	269.500	109.602%	0.000	15.970	5.351
2	13:19:21	0.898	0.640	264.600	113.263%	0.000	15.570	5.229
3	13:19:43	0.870	0.669	270.600	112.112%	0.000	15.910	5.356
x		0.895	0.650	268.200	111.659%	0.000	15.820	5.312
σ		0.023	0.017	3.213	1.872%	0.000	0.218	0.072
%RSD		2.531	2.586	1.198	1.677	0.000	1.376	1.358

200-35700-A-3-B 10/14/2016 01:24:20 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:24:42	99.595%	11.000	44.670	T 498.000	T 22830.000	T 119000.000	T 7336.000	11730.000	207.515%	0.000	138.700	129.000
2	13:25:04	100.908%	11.030	44.270	T 493.000	T 22830.000	T 120100.000	T 7373.000	T 12770.000	210.720%	0.000	139.500	129.400
3	13:25:26	98.906%	11.590	47.510	T 479.900	T 21960.000	T 115800.000	T 7168.000	T 12260.000	215.698%	0.000	136.100	126.400
x		99.803%	11.210	45.480	T 490.300	T 22540.000	T 118300.000	T 7292.000	T 12250.000	211.311%	0.000	138.100	128.300
σ		1.017%	0.335	1.769	T 9.372	T 504.600	T 2223.000	T 108.900	T 521.900	4.123%	0.000	1.777	1.662
%RSD		1.019	2.989	3.890	T 1.911	T 2.239	T 1.879	T 1.494	T 4.260	1.951	0.000	1.287	1.296

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:24:42	10.680	T 4491.000	T 147500.000	62.980	169.000	TM 45450.000	2132.000	4.195	0.126	12.270	0.000	0.000
2	13:25:04	9.992	T 4517.000	T 148900.000	63.880	168.200	TM 45940.000	2145.000	4.233	0.117	11.780	0.000	0.000
3	13:25:26	9.787	T 4402.000	T 146400.000	62.810	164.500	TM 45360.000	2137.000	4.280	0.120	10.950	0.000	0.000
x		10.150	T 4470.000	T 147600.000	63.220	167.200	TM 45580.000	2138.000	4.236	0.121	11.670	0.000	0.000
σ		0.469	T 60.100	T 1283.000	0.579	2.410	TM 309.100	6.250	0.043	0.004	0.667	0.000	0.000
%RSD		4.615	T 1.345	T 0.869	0.916	1.441	TM 0.678	0.292	1.007	3.563	5.716	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:24:42	134.700	718.596%	-0.045	1.050	-10.370	2.128	121.428%	0.000	1.004	0.933	1710.000	184.976%
2	13:25:04	135.400	729.165%	-0.085	1.014	-9.463	2.061	122.238%	0.000	1.078	0.950	1738.000	186.889%
3	13:25:26	132.500	734.777%	-0.068	1.024	-9.698	2.043	124.504%	0.000	1.071	0.957	1714.000	188.978%
x		134.200	727.512%	-0.066	1.029	-9.844	2.077	122.723%	0.000	1.051	0.947	1721.000	186.947%
σ		1.503	8.216%	0.020	0.019	0.471	0.044	1.594%	0.000	0.040	0.012	15.400	2.002%
%RSD		1.120	1.129	29.810	1.800	4.787	2.137	1.299	0.000	3.844	1.307	0.895	1.071

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:24:42	0.176	1.313	166.000	123.891%	0.000	39.090	10.800
2	13:25:04	0.181	1.332	164.900	127.119%	0.000	39.240	10.860
3	13:25:26	0.185	1.377	171.000	124.100%	0.000	40.520	11.070
x		0.180	1.341	167.300	125.037%	0.000	39.620	10.910
σ		0.004	0.033	3.268	1.807%	0.000	0.785	0.144
%RSD		2.262	2.459	1.953	1.445	0.000	1.982	1.323

200-35700-A-4-B 10/14/2016 01:30:03 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:30:25	98.835%	9.207	27.840	T 335.100	T 16100.000	T 88940.000	T 6426.000	T 11490.000	189.171%	0.000	132.200	101.300
2	13:30:47	95.233%	10.580	33.460	T 353.600	T 16970.000	T 93650.000	T 6853.000	11160.000	187.464%	0.000	140.700	109.700
3	13:31:08	93.495%	9.989	30.160	T 337.000	T 16240.000	T 91110.000	T 6433.000	10820.000	189.983%	0.000	135.200	104.200
x		95.854%	9.925	30.490	T 341.900	T 16440.000	T 91230.000	T 6571.000	T 11160.000	188.873%	0.000	136.100	105.100
σ		2.724%	0.688	2.825	T 10.200	T 469.500	T 2357.000	T 244.500	T 338.500	1.285%	0.000	4.339	4.271
%RSD		2.842	6.936	9.266	T 2.984	T 2.856	T 2.583	T 3.721	T 3.034	0.681	0.000	3.189	4.065

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:30:25	10.210	T 3439.000	T 117100.000	52.110	139.900	2178.000	654.700	4.032	0.156	12.300	0.000	0.000
2	13:30:47	12.580	T 3696.000	T 122400.000	54.960	145.300	T 2546.000	696.500	4.105	0.150	13.870	0.000	0.000
3	13:31:08	11.410	T 3589.000	T 120300.000	52.970	140.700	T 2412.000	661.500	4.148	0.140	13.430	0.000	0.000
x		11.400	T 3575.000	T 119900.000	53.350	142.000	T 2379.000	670.900	4.095	0.149	13.200	0.000	0.000
σ		1.182	T 129.000	T 2665.000	1.465	2.923	T 186.200	22.400	0.058	0.008	0.808	0.000	0.000
%RSD		10.370	T 3.608	T 2.222	2.747	2.059	T 7.828	3.340	1.426	5.185	6.123	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:30:25	102.900	635.215%	0.276	2.004	-10.640	2.969	115.415%	0.000	0.666	0.561	1318.000	177.035%
2	13:30:47	108.800	657.696%	0.302	2.134	-7.854	2.999	113.473%	0.000	0.682	0.582	1413.000	177.227%
3	13:31:08	101.400	644.102%	0.255	2.076	-9.034	2.812	117.479%	0.000	0.687	0.571	1328.000	177.874%
x		104.400	645.671%	0.278	2.071	-9.177	2.926	115.456%	0.000	0.678	0.572	1353.000	177.379%
σ		3.909	11.322%	0.023	0.065	1.400	0.100	2.003%	0.000	0.011	0.010	52.100	0.440%
%RSD		3.746	1.754	8.390	3.151	15.260	3.419	1.735	0.000	1.654	1.826	3.851	0.248

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:30:25	0.211	0.988	130.500	115.426%	0.000	31.750	29.940
2	13:30:47	0.247	1.059	140.500	113.492%	0.000	34.490	32.510
3	13:31:08	0.172	0.941	133.300	116.980%	0.000	32.670	30.790
x		0.210	0.996	134.700	115.299%	0.000	32.970	31.080
σ		0.037	0.059	5.157	1.748%	0.000	1.399	1.308
%RSD		17.840	5.958	3.827	1.516	0.000	4.243	4.209

200-35700-A-5-B 10/14/2016 01:35:46 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:07	103.278%	8.461	27.260	T 358.800	T 16110.000	T 84970.000	T 5166.000	T 14230.000	184.672%	0.000	121.400	94.460
2	13:36:29	101.556%	8.637	26.190	T 361.200	T 15920.000	T 85330.000	T 5154.000	T 14510.000	184.631%	0.000	123.700	95.460
3	13:36:50	98.713%	9.016	29.670	T 352.800	T 16130.000	T 84540.000	T 5150.000	T 14160.000	184.899%	0.000	123.700	94.810
x		101.182%	8.704	27.710	T 357.600	T 16050.000	T 84950.000	T 5157.000	T 14300.000	184.734%	0.000	122.900	94.910
σ		2.305%	0.284	1.781	T 4.319	T 112.900	T 391.900	T 8.164	T 184.100	0.144%	0.000	1.327	0.507
%RSD		2.278	3.258	6.428	T 1.208	T 0.704	T 0.461	T 0.158	T 1.288	0.078	0.000	1.080	0.535

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:07	10.270	T 5961.000	TM 151000.000	57.480	126.900	TM 9307.000	1226.000	12.120	0.135	16.870	0.000	0.000
2	13:36:29	10.480	T 6067.000	TM 152000.000	57.910	128.800	TM 9413.000	1237.000	12.050	0.142	17.030	0.000	0.000
3	13:36:50	9.335	T 6186.000	TM 154500.000	58.330	129.300	TM 9382.000	1231.000	11.930	0.132	18.000	0.000	0.000
x		10.030	T 6071.000	TM 152500.000	57.910	128.400	TM 9367.000	1232.000	12.030	0.136	17.300	0.000	0.000
σ		0.610	T 112.900	TM 1774.000	0.423	1.279	TM 54.280	5.156	0.093	0.005	0.608	0.000	0.000
%RSD		6.079	T 1.859	TM 1.163	0.731	0.997	TM 0.580	0.419	0.775	3.861	3.517	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:07	107.500	549.333%	0.665	2.725	-7.451	3.456	120.346%	0.000	1.218	1.124	1292.000	167.976%
2	13:36:29	109.800	552.970%	0.660	2.705	-7.824	3.706	120.054%	0.000	1.304	1.153	1308.000	171.325%

3	13:36:50	109.400	561.160%	0.655	2.728	-8.653	4.097	121.464%	0.000	1.167	1.131	1300.000	171.436%
x		108.900	554.487%	0.660	2.719	-7.976	3.753	120.621%	0.000	1.230	1.136	1300.000	170.246%
σ		1.253	6.058%	0.005	0.013	0.615	0.323	0.744%	0.000	0.069	0.015	8.271	1.966%
%RSD		1.151	1.093	0.722	0.466	7.713	8.603	0.617	0.000	5.630	1.346	0.636	1.155

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:36:07	0.404	0.823	246.600	117.244%	0.000	26.440	8.780
2	13:36:29	0.369	0.795	244.600	119.901%	0.000	26.300	8.732
3	13:36:50	0.382	0.861	246.800	118.867%	0.000	26.600	8.767
x		0.385	0.827	246.000	118.671%	0.000	26.450	8.760
σ		0.017	0.033	1.235	1.339%	0.000	0.153	0.025
%RSD		4.531	4.009	0.502	1.129	0.000	0.579	0.281

200-35700-A-6-B 10/14/2016 01:41:28 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:50	102.692%	5.230	26.890	T 361.900	T 12220.000	T 59820.000	T 4102.000	T 17120.000	159.901%	0.000	93.110	68.600
2	13:42:12	101.385%	6.149	25.610	T 365.400	T 11980.000	T 59570.000	T 4137.000	T 17410.000	160.192%	0.000	93.880	69.380
3	13:42:33	99.925%	5.334	27.180	T 342.700	T 11880.000	T 58240.000	T 4056.000	T 17240.000	162.168%	0.000	92.260	67.260
x		101.334%	5.571	26.560	T 356.700	T 12020.000	T 59210.000	T 4098.000	T 17260.000	160.754%	0.000	93.080	68.410
σ		1.385%	0.503	0.838	T 12.240	T 174.300	T 848.600	T 40.780	T 143.400	1.233%	0.000	0.810	1.073
%RSD		1.366	9.036	3.154	T 3.433	T 1.450	T 1.433	T 0.995	T 0.831	0.767	0.000	0.870	1.568

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:50	10.210	TM 7170.000	T 132300.000	52.750	101.600	T 3787.000	819.500	11.860	0.189	15.580	0.000	0.000
2	13:42:12	9.434	TM 7195.000	T 133500.000	53.770	103.000	T 3821.000	821.300	11.920	0.183	15.760	0.000	0.000
3	13:42:33	9.824	TM 7083.000	T 129900.000	52.380	101.600	T 3775.000	829.700	11.990	0.164	17.430	0.000	0.000
x		9.824	TM 7149.000	T 131900.000	52.970	102.100	T 3794.000	823.500	11.920	0.178	16.260	0.000	0.000
σ		0.390	TM 58.650	T 1841.000	0.720	0.813	T 23.570	5.389	0.062	0.013	1.019	0.000	0.000
%RSD		3.966	TM 0.820	T 1.395	1.358	0.796	T 0.621	0.654	0.523	7.388	6.266	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:50	90.240	404.005%	0.857	2.748	-6.213	3.998	118.529%	0.000	1.200	1.080	935.800	148.712%
2	13:42:12	90.770	404.300%	0.904	2.882	-4.954	3.947	119.590%	0.000	1.173	1.120	934.400	151.176%
3	13:42:33	90.580	401.957%	0.928	2.747	-4.680	3.996	119.237%	0.000	1.218	1.115	941.500	148.549%
x		90.530	403.421%	0.896	2.792	-5.282	3.980	119.119%	0.000	1.197	1.105	937.200	149.479%
σ		0.265	1.276%	0.036	0.078	0.817	0.029	0.540%	0.000	0.023	0.022	3.727	1.472%
%RSD		0.293	0.316	4.026	2.779	15.470	0.734	0.454	0.000	1.897	1.988	0.398	0.985

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:50	0.478	0.502	174.300	112.625%	0.000	17.320	5.837
2	13:42:12	0.509	0.506	173.500	113.623%	0.000	17.450	5.862
3	13:42:33	0.498	0.512	176.000	112.659%	0.000	17.600	5.942
x		0.495	0.507	174.600	112.969%	0.000	17.460	5.880
σ		0.016	0.005	1.281	0.567%	0.000	0.141	0.055

%RSD		3.137	0.943	0.734	0.502	0.000	0.808	0.939

200-35700-A-7-B 10/14/2016 01:47:11 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:47:33	101.473%	14.480	36.190	T 479.400	T 22570.000	T 118700.000	T 6560.000	T 16580.000	245.074%	0.000	165.800	137.400
2	13:47:55	97.568%	16.180	42.390	T 476.600	T 22950.000	T 119300.000	T 6527.000	T 16750.000	246.323%	0.000	166.900	139.100
3	13:48:16	96.595%	16.490	42.770	T 463.900	T 22640.000	T 117700.000	T 6518.000	T 16720.000	246.167%	0.000	171.500	139.400
x		98.545%	15.720	40.450	T 473.300	T 22720.000	T 118600.000	T 6535.000	T 16690.000	245.854%	0.000	168.100	138.600
σ		2.582%	1.085	3.694	T 8.276	T 202.600	T 812.700	T 22.520	T 87.990	0.680%	0.000	3.027	1.088
%RSD		2.620	6.901	9.132	T 1.749	T 0.892	T 0.685	T 0.345	T 0.527	0.277	0.000	1.801	0.785

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:47:33	10.720	T 2025.000	TM 197800.000	67.490	182.200	167.300	984.500	6.163	0.097	15.750	0.000	0.000
2	13:47:55	10.040	T 2041.000	TM 196800.000	66.720	180.300	170.900	1005.000	6.969	0.096	18.140	0.000	0.000
3	13:48:16	10.690	T 2050.000	TM 197400.000	67.720	182.500	165.000	992.400	6.344	0.075	21.750	0.000	0.000
x		10.480	T 2039.000	TM 197400.000	67.310	181.700	167.700	993.900	6.492	0.090	18.540	0.000	0.000
σ		0.386	T 12.930	TM 505.700	0.526	1.190	2.960	10.360	0.423	0.012	3.020	0.000	0.000
%RSD		3.681	T 0.634	TM 0.256	0.781	0.655	1.765	1.042	6.513	13.770	16.290	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:47:33	239.400	T 1073.509%	1.168	1.654	-12.760	4.075	118.549%	0.000	0.472	0.398	T 2683.000	211.025%
2	13:47:55	241.300	981.817%	1.405	1.673	-12.940	4.320	118.398%	0.000	0.479	0.426	T 2738.000	216.764%
3	13:48:16	T 267.300	T 1088.171%	1.178	1.667	-13.610	4.065	119.728%	0.000	0.485	0.429	T 2722.000	217.384%
x		T 249.400	T 1047.832%	1.250	1.665	-13.100	4.153	118.892%	0.000	0.479	0.417	T 2714.000	215.058%
σ		T 15.600	T 57.639%	0.134	0.010	0.451	0.144	0.728%	0.000	0.006	0.017	T 28.200	3.506%
%RSD		T 6.258	T 5.501	10.710	0.592	3.444	3.473	0.612	0.000	1.350	4.104	T 1.039	1.630

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:47:33	0.155	1.451	147.700	125.425%	0.000	53.900	30.400
2	13:47:55	0.164	1.396	148.200	128.064%	0.000	54.310	30.400
3	13:48:16	0.153	1.466	152.500	124.322%	0.000	56.770	31.510
x		0.157	1.438	149.500	125.937%	0.000	54.990	30.770
σ		0.006	0.037	2.597	1.923%	0.000	1.551	0.640
%RSD		3.943	2.543	1.738	1.527	0.000	2.820	2.079

200-35700-A-8-B 10/14/2016 01:52:40 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:53:02	100.000%	6.837	22.560	T 344.100	T 13950.000	T 67100.000	T 4268.000	T 16320.000	165.603%	0.000	101.500	81.490
2	13:53:24	96.442%	7.016	26.310	T 349.400	T 14330.000	T 69160.000	T 4401.000	T 16580.000	165.382%	0.000	103.100	82.510
3	13:53:46	96.914%	6.394	26.140	T 330.100	T 14040.000	T 66920.000	T 4263.000	T 16850.000	167.990%	0.000	101.500	80.880
x		97.785%	6.749	25.000	T 341.200	T 14110.000	T 67730.000	T 4311.000	T 16580.000	166.325%	0.000	102.000	81.630
σ		1.932%	0.320	2.117	T 9.991	T 197.500	T 1248.000	T 78.590	T 264.600	1.446%	0.000	0.888	0.821
%RSD		1.976	4.746	8.468	T 2.928	T 1.400	T 1.842	T 1.823	T 1.596	0.870	0.000	0.871	1.006

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:53:02	10.520	TM 7842.000	T 146600.000	56.150	120.000	T 4905.000	988.000	10.530	0.159	20.230	0.000	0.000
2	13:53:24	9.595	TM 7949.000	T 148900.000	57.290	121.400	T 4915.000	993.900	10.520	0.163	20.240	0.000	0.000
3	13:53:46	8.822	TM 7857.000	T 148300.000	56.880	120.500	T 4972.000	1018.000	10.540	0.158	19.190	0.000	0.000
x		9.647	TM 7883.000	T 147900.000	56.780	120.600	T 4931.000	1000.000	10.530	0.160	19.890	0.000	0.000
σ		0.852	TM 57.780	T 1192.000	0.576	0.732	T 36.290	15.940	0.012	0.003	0.602	0.000	0.000
%RSD		8.833	TM 0.733	T 0.806	1.015	0.607	T 0.736	1.594	0.115	1.671	3.025	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:53:02	95.250	450.181%	1.029	4.691	-7.790	4.806	117.147%	0.000	1.312	1.109	1123.000	152.548%
2	13:53:24	94.790	455.933%	1.067	4.884	-5.558	4.565	118.394%	0.000	1.196	1.098	1119.000	155.304%
3	13:53:46	96.400	457.233%	1.082	4.847	-7.054	4.900	118.118%	0.000	1.176	1.141	1133.000	153.914%
x		95.480	454.449%	1.059	4.807	-6.801	4.757	117.887%	0.000	1.228	1.116	1125.000	153.922%
σ		0.830	3.753%	0.027	0.103	1.138	0.173	0.655%	0.000	0.073	0.022	7.206	1.378%
%RSD		0.869	0.826	2.578	2.137	16.730	3.629	0.555	0.000	5.976	1.984	0.641	0.895

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:53:02	0.506	0.592	225.200	112.895%	0.000	20.020	6.499
2	13:53:24	0.522	0.572	224.300	114.775%	0.000	20.330	6.493
3	13:53:46	0.472	0.588	226.900	115.302%	0.000	20.440	6.568
x		0.500	0.584	225.500	114.324%	0.000	20.260	6.520
σ		0.026	0.011	1.310	1.265%	0.000	0.221	0.041
%RSD		5.156	1.831	0.581	1.106	0.000	1.089	0.634

CCV 10/14/2016 01:58:24 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:46	82.386%	689.700	260.300	T 9590.000	T 29120.000	T 29320.000	T 9787.000	T 27650.000	103.176%	0.000	T 1191.000	367.600
2	13:59:07	82.031%	681.400	274.900	T 9743.000	T 29730.000	T 29890.000	T 9815.000	T 28230.000	98.870%	0.000	T 1218.000	369.400
3	13:59:29	80.477%	682.600	276.000	T 9580.000	T 28770.000	T 28640.000	T 9434.000	T 27920.000	99.474%	0.000	T 1185.000	360.900
x		81.632%	109.532%	108.160%	T 96.376%	T 97.364%	T 97.611%	T 96.787%	T 93.114%	100.507%	0.000	T 95.848%	91.498%
σ		1.015%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.331%	0.000	T n/a	n/a
%RSD		1.244	0.660	3.246	T 0.945	T 1.662	T 2.151	T 2.193	T 1.045	2.320	0.000	T 1.463	1.221

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:46	20.720	T 1192.000	T 28790.000	469.900	1234.000	1271.000	1219.000	198.300	-0.045	196.700	0.000	0.000
2	13:59:07	23.310	T 1220.000	T 30030.000	489.700	1277.000	1271.000	1215.000	197.000	-0.134	197.400	0.000	0.000
3	13:59:29	22.660	T 1188.000	T 29540.000	480.700	1230.000	1249.000	1203.000	194.700	-0.103	192.800	0.000	0.000
x		22.230	T 96.015%	T 98.179%	96.024%	99.749%	101.088%	97.010%	98.331%	-0.094	97.819%	0.000	0.000
σ		1.349	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.045	n/a	0.000	0.000
%RSD		6.069	T 1.465	T 2.105	2.068	2.117	1.003	0.693	0.912	48.160	1.272	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:46	178.800	100.756%	T 1256.000	97.790	16.600	185.400	100.371%	0.000	221.100	212.800	1068.000	99.447%
2	13:59:07	181.900	98.889%	T 1272.000	97.630	10.730	187.200	98.390%	0.000	225.000	215.900	1078.000	96.233%
3	13:59:29	176.600	98.299%	T 1275.000	96.600	10.890	185.500	98.496%	0.000	223.200	213.100	1069.000	94.344%
x		179.100	99.315%	T 101.417%	97.338%	12.740	93.028%	99.085%	0.000	223.100	85.568%	85.736%	96.675%
σ		2.651	1.283%	T n/a	n/a	3.340	n/a	1.114%	0.000	1.969	n/a	n/a	2.580%
%RSD		1.481	1.292	T 0.794	0.666	26.220	0.527	1.124	0.000	0.883	0.798	0.512	2.669

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:46	20.450	166.400	T 1153.000	93.018%	0.000	17.090	8.741
2	13:59:07	21.050	174.400	T 1206.000	89.128%	0.000	18.350	9.012
3	13:59:29	21.890	169.800	T 1177.000	90.353%	0.000	18.480	8.851
x		105.647%	85.099%	T 94.288%	90.833%	0.000	89.856%	88.682%
σ		n/a	n/a	T n/a	1.989%	0.000	n/a	n/a
%RSD		3.424	2.364	T 2.245	2.189	0.000	4.274	1.538

CCB 10/14/2016 02:04:07 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:29	91.927%	0.059	-2.546	4.607	5.533	18.530	5.425	-4.661	108.076%	0.000	0.812	-0.153
2	14:04:51	93.858%	0.021	-3.745	2.368	5.991	20.700	5.444	-1.067	108.040%	0.000	0.792	-0.016
3	14:05:13	91.089%	0.027	-3.781	2.015	6.385	21.340	3.357	-0.577	109.455%	0.000	0.681	-0.064
x		92.291%	0.036	-3.357	2.997	5.970	20.190	4.742	-2.102	108.524%	0.000	0.762	-0.078
σ		1.420%	0.020	0.703	1.406	0.426	1.473	1.199	2.230	0.807%	0.000	0.070	0.069
%RSD		1.539	56.360	20.930	46.910	7.135	7.294	25.290	106.100	0.743	0.000	9.218	89.560

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:29	16.460	1.095	45.910	-0.101	-0.116	0.290	-0.388	0.075	0.539	-0.221	0.000	0.000
2	14:04:51	16.490	1.231	50.760	-0.092	-0.161	0.306	-0.323	0.795	0.477	-0.117	0.000	0.000
3	14:05:13	16.560	1.355	52.220	-0.087	-0.105	0.219	-0.245	-0.161	0.558	-1.556	0.000	0.000
x		16.500	1.227	49.630	-0.093	-0.127	0.272	-0.318	0.237	0.525	-0.631	0.000	0.000
σ		0.052	0.130	3.304	0.007	0.030	0.046	0.072	0.498	0.043	0.802	0.000	0.000
%RSD		0.318	10.600	6.658	7.578	23.200	16.960	22.540	210.600	8.126	127.100	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:29	-0.014	102.680%	0.750	-0.007	-0.798	-0.028	102.131%	0.000	0.257	0.171	0.063	97.435%
2	14:04:51	-0.002	103.697%	0.725	-0.013	-0.944	-0.035	103.589%	0.000	0.256	0.168	-0.001	98.643%

3	14:05:13	-0.006	105.451%	0.466	-0.019	-0.873	-0.019	105.793%	0.000	0.299	0.168	0.119	99.990%
x		-0.008	103.943%	0.647	-0.013	-0.872	-0.027	103.838%	0.000	0.271	0.169	0.060	98.690%
σ		0.006	1.402%	0.157	0.006	0.073	0.008	1.844%	0.000	0.025	0.002	0.060	1.278%
%RSD		76.770	1.349	24.260	47.580	8.382	29.480	1.776	0.000	9.179	1.077	99.680	1.295

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:29	-0.014	-0.039	0.274	92.956%	0.000	0.409	0.003
2	14:04:51	0.022	-0.055	0.256	96.050%	0.000	0.363	0.004
3	14:05:13	-0.003	-0.063	0.281	94.797%	0.000	0.341	-0.000
x		0.001	-0.052	0.270	94.601%	0.000	0.371	0.002
σ		0.019	0.012	0.013	1.557%	0.000	0.035	0.002
%RSD		1400.000	23.840	4.757	1.645	0.000	9.381	91.480

CCVL 10/14/2016 02:09:50 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:12	96.572%	0.923	41.900	424.900	169.300	50.690	440.900	414.200	113.286%	0.000	5.302	3.629
2	14:10:34	95.682%	0.837	40.800	436.300	176.800	52.730	439.200	416.700	110.822%	0.000	5.514	3.715
3	14:10:56	90.987%	1.058	42.950	T 490.100	180.000	52.160	440.200	439.200	110.556%	0.000	5.017	3.568
x		94.414%	93.965%	104.712%	T 90.083%	87.678%	103.721%	88.024%	84.673%	111.555%	0.000	105.553%	90.935%
σ		3.001%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.505%	0.000	n/a	n/a
%RSD		3.179	11.870	2.563	T 7.727	3.137	2.034	0.195	3.261	1.349	0.000	4.724	2.024

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:12	16.050	1.732	197.400	0.725	1.649	5.054	19.800	2.090	0.531	3.664	0.000	0.000
2	14:10:34	16.460	1.672	200.300	0.804	1.571	4.851	20.640	2.180	0.584	3.851	0.000	0.000
3	14:10:56	17.230	1.817	202.400	0.817	1.649	5.009	20.100	1.353	0.618	2.610	0.000	0.000
x		16.580	87.014%	100.013%	78.203%	81.142%	99.424%	100.891%	93.728%	0.578	84.372%	0.000	0.000
σ		0.599	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.044	n/a	0.000	0.000
%RSD		3.611	4.167	1.276	6.368	2.780	2.145	2.103	24.210	7.575	19.830	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:12	4.333	109.435%	8.667	0.868	-1.445	0.878	106.885%	0.000	1.846	1.678	8.056	101.199%
2	14:10:34	4.455	106.052%	8.620	1.024	-1.019	0.782	105.717%	0.000	1.902	1.722	8.519	101.407%
3	14:10:56	4.393	106.624%	8.987	0.922	-1.064	0.843	105.573%	0.000	2.007	1.733	8.111	100.256%
x		87.874%	107.370%	87.581%	93.770%	-1.176	83.416%	106.058%	0.000	1.918	85.551%	82.288%	100.954%
σ		n/a	1.811%	n/a	n/a	0.234	n/a	0.719%	0.000	0.082	n/a	n/a	0.613%
%RSD		1.393	1.686	2.283	8.475	19.880	5.859	0.678	0.000	4.272	1.713	3.077	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:10:12	1.594	1.523	1.034	96.272%	0.000	1.055	0.874
2	14:10:34	1.650	1.488	1.006	97.719%	0.000	1.045	0.845
3	14:10:56	1.646	1.565	1.022	97.054%	0.000	1.096	0.894
x		81.484%	76.257%	102.087%	97.015%	0.000	53.265%	87.100%
σ		n/a	n/a	n/a	0.724%	0.000	n/a	n/a

%RSD	1.919	2.516	1.340	0.747	0.000	2.521	2.878	

LCS 200-110153/2-A 10/14/2016 02:15:36 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:59	91.824%	10.360	399.500	T 4855.000	1751.000	488.000	T 4781.000	4233.000	107.277%	0.000	42.150	35.740
2	14:16:20	88.227%	9.812	410.300	T 4877.000	1759.000	482.300	T 4836.000	4255.000	105.732%	0.000	42.980	36.760
3	14:16:44	89.763%	9.983	398.900	T 4959.000	1836.000	475.200	T 4842.000	4325.000	102.171%	0.000	43.980	37.610
x		89.938%	10.050	402.900	T 4897.000	1782.000	481.800	T 4820.000	4271.000	105.060%	0.000	43.030	36.700
σ		1.805%	0.280	6.417	T 55.100	47.140	6.393	T 33.780	48.280	2.619%	0.000	0.917	0.936
%RSD		2.007	2.781	1.593	T 1.125	2.645	1.327	T 0.701	1.130	2.493	0.000	2.131	2.550

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:59	12.700	21.570	T 2087.000	9.330	19.750	54.820	178.100	18.110	0.342	32.180	0.000	0.000
2	14:16:20	10.510	21.120	T 2097.000	9.546	19.960	54.550	179.200	18.080	0.299	32.060	0.000	0.000
3	14:16:44	10.480	20.640	T 2105.000	9.710	20.830	53.670	176.300	18.330	0.287	32.640	0.000	0.000
x		11.230	21.110	T 2096.000	9.529	20.180	54.350	177.800	18.170	0.309	32.300	0.000	0.000
σ		1.270	0.462	T 9.026	0.191	0.572	0.598	1.440	0.137	0.029	0.302	0.000	0.000
%RSD		11.310	2.187	T 0.431	2.001	2.834	1.100	0.810	0.755	9.265	0.935	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:59	43.720	102.420%	90.780	9.919	-1.173	8.249	101.298%	0.000	16.720	15.690	83.980	98.586%
2	14:16:20	44.020	100.922%	92.860	9.907	0.308	8.272	100.891%	0.000	16.540	15.990	84.370	99.129%
3	14:16:44	44.540	100.066%	92.530	9.881	-1.722	8.184	101.035%	0.000	16.970	15.920	82.790	99.771%
x		44.090	101.136%	92.060	9.902	-0.862	8.235	101.075%	0.000	16.740	15.870	83.710	99.162%
σ		0.416	1.192%	1.116	0.019	1.050	0.046	0.206%	0.000	0.214	0.159	0.822	0.593%
%RSD		0.943	1.178	1.213	0.195	121.800	0.557	0.204	0.000	1.279	1.004	0.982	0.598

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:59	34.450	16.940	8.855	91.121%	0.000	17.810	9.410
2	14:16:20	34.450	16.690	8.912	91.370%	0.000	18.110	9.435
3	14:16:44	33.880	16.620	8.729	91.993%	0.000	18.220	9.523
x		34.260	16.750	8.832	91.495%	0.000	18.040	9.456
σ		0.329	0.167	0.093	0.449%	0.000	0.209	0.059
%RSD		0.960	0.995	1.058	0.491	0.000	1.157	0.625

200-35700-A-1-B @2 10/14/2016 02:21:24 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:45	97.379%	4.815	17.330	209.100	T 8341.000	T 52320.000	T 2903.000	10950.000	140.891%	0.000	78.410	56.470
2	14:22:07	94.472%	5.164	17.120	205.700	T 8283.000	T 52000.000	T 2920.000	10760.000	142.892%	0.000	76.270	56.460
3	14:22:28	97.039%	5.450	17.950	205.400	T 8400.000	T 52320.000	T 2888.000	10920.000	139.317%	0.000	78.500	58.320
x		96.297%	5.143	17.470	206.700	T 8341.000	T 52210.000	T 2904.000	10870.000	141.033%	0.000	77.730	57.080
σ		1.589%	0.318	0.436	2.061	T 58.690	T 182.300	T 15.770	104.200	1.792%	0.000	1.260	1.069
%RSD		1.650	6.188	2.494	0.997	T 0.704	T 0.349	T 0.543	0.958	1.270	0.000	1.621	1.873

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:45	6.902	TM 8607.000	T 116800.000	44.590	76.300	TM 6714.000	1027.000	13.820	0.164	16.600	0.000	0.000
2	14:22:07	8.453	TM 8728.000	T 118200.000	44.960	76.750	TM 6887.000	1051.000	13.940	0.155	16.460	0.000	0.000
3	14:22:28	8.236	TM 8895.000	T 119500.000	45.470	76.680	TM 6647.000	1018.000	13.530	0.176	15.860	0.000	0.000
x		7.864	TM 8743.000	T 118200.000	45.000	76.580	TM 6749.000	1032.000	13.760	0.165	16.310	0.000	0.000
σ		0.839	TM 144.500	T 1347.000	0.443	0.241	TM 123.500	17.260	0.212	0.011	0.392	0.000	0.000
%RSD		10.680	TM 1.652	T 1.140	0.983	0.315	TM 1.831	1.672	1.538	6.541	2.406	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:45	77.920	290.634%	1.040	2.861	-3.776	4.514	109.171%	0.000	0.896	0.745	761.200	126.987%
2	14:22:07	78.910	292.871%	1.161	2.943	-1.931	4.514	108.425%	0.000	0.946	0.782	772.100	128.210%
3	14:22:28	77.710	296.069%	1.129	2.928	-3.793	4.729	110.187%	0.000	0.935	0.748	755.700	127.914%
x		78.180	293.191%	1.110	2.911	-3.167	4.585	109.261%	0.000	0.925	0.758	763.000	127.704%
σ		0.642	2.731%	0.063	0.044	1.070	0.124	0.884%	0.000	0.026	0.021	8.323	0.638%
%RSD		0.822	0.932	5.680	1.502	33.790	2.707	0.809	0.000	2.825	2.716	1.091	0.500

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:21:45	0.385	0.429	148.300	103.136%	0.000	12.370	4.099
2	14:22:07	0.400	0.405	150.000	103.080%	0.000	12.600	4.081
3	14:22:28	0.391	0.405	149.800	103.614%	0.000	12.370	4.141
x		0.392	0.413	149.400	103.277%	0.000	12.450	4.107
σ		0.008	0.014	0.924	0.293%	0.000	0.134	0.031
%RSD		2.006	3.337	0.619	0.284	0.000	1.074	0.754

200-35700-A-2-B @2 10/14/2016 02:27:08 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:27:30	94.830%	2.533	17.330	194.100	6008.000	T 36600.000	T 2466.000	8725.000	133.595%	0.000	53.190	38.770
2	14:27:52	93.607%	2.141	15.960	189.400	T 6590.000	T 36910.000	T 2527.000	8967.000	130.996%	0.000	55.040	40.120
3	14:28:14	92.639%	1.684	15.860	193.100	6102.000	T 36200.000	T 2509.000	8956.000	130.522%	0.000	54.550	40.120
x		93.692%	2.119	16.380	192.200	T 6233.000	T 36570.000	T 2501.000	8883.000	131.704%	0.000	54.260	39.670
σ		1.098%	0.425	0.821	2.458	T 312.500	T 355.800	T 31.510	136.700	1.655%	0.000	0.957	0.780
%RSD		1.172	20.050	5.012	1.279	T 5.014	T 0.973	T 1.260	1.538	1.256	0.000	1.764	1.965

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:27:30	9.704	T 4837.000	T 54650.000	29.510	57.050	T 5591.000	729.300	11.280	0.246	16.640	0.000	0.000
2	14:27:52	9.125	T 4945.000	T 55820.000	30.180	57.990	T 5478.000	723.400	11.570	0.251	17.090	0.000	0.000
3	14:28:14	9.205	T 4956.000	T 55540.000	29.950	58.140	T 5625.000	734.400	11.070	0.282	16.880	0.000	0.000
x		9.345	T 4913.000	T 55340.000	29.880	57.720	T 5565.000	729.000	11.310	0.260	16.870	0.000	0.000
σ		0.314	T 65.780	T 609.400	0.342	0.588	T 76.760	5.496	0.250	0.019	0.224	0.000	0.000
%RSD		3.358	T 1.339	T 1.101	1.144	1.019	T 1.379	0.754	2.214	7.428	1.326	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:27:30	45.550	218.505%	0.818	3.454	-4.409	4.544	109.665%	0.000	0.910	0.827	443.900	116.591%
2	14:27:52	46.310	212.846%	0.795	3.452	-1.403	4.185	109.871%	0.000	0.957	0.830	443.100	115.815%
3	14:28:14	46.580	213.699%	0.816	3.665	-1.491	4.171	108.014%	0.000	0.980	0.849	456.500	118.346%
x		46.150	215.017%	0.810	3.523	-2.435	4.300	109.183%	0.000	0.949	0.836	447.800	116.918%
σ		0.535	3.051%	0.013	0.122	1.711	0.211	1.018%	0.000	0.035	0.012	7.537	1.297%
%RSD		1.160	1.419	1.560	3.468	70.260	4.909	0.932	0.000	3.732	1.415	1.683	1.109

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:27:30	0.496	0.249	132.700	101.494%	0.000	7.679	2.627
2	14:27:52	0.454	0.248	135.900	100.469%	0.000	7.934	2.659
3	14:28:14	0.460	0.255	138.200	98.758%	0.000	8.365	2.727
x		0.470	0.251	135.600	100.240%	0.000	7.993	2.671
σ		0.023	0.004	2.755	1.382%	0.000	0.347	0.052
%RSD		4.865	1.545	2.032	1.379	0.000	4.344	1.928

200-35700-A-3-B @8 10/14/2016 02:32:53 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:33:15	96.560%	1.369	2.543	87.520	4190.000	T 24410.000	T 1439.000	2238.000	134.046%	0.000	27.400	25.410
2	14:33:36	93.916%	1.511	2.157	83.660	4222.000	T 24760.000	T 1458.000	2292.000	132.990%	0.000	28.910	25.940
3	14:33:58	94.861%	1.608	0.745	82.850	4282.000	T 24920.000	T 1474.000	2306.000	131.945%	0.000	28.220	26.190
x		95.113%	1.496	1.815	84.680	4231.000	T 24700.000	T 1457.000	2279.000	132.994%	0.000	28.180	25.850
σ		1.340%	0.120	0.947	2.495	46.840	T 262.100	T 17.750	35.530	1.050%	0.000	0.758	0.400
%RSD		1.409	8.015	52.150	2.947	1.107	T 1.061	T 1.218	1.559	0.790	0.000	2.690	1.548

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:33:15	9.780	T 873.000	T 29970.000	12.800	34.470	TM 6718.000	343.800	2.254	0.313	1.611	0.000	0.000
2	14:33:36	8.750	T 888.600	T 30470.000	12.920	35.250	TM 6689.000	344.400	2.312	0.302	1.361	0.000	0.000
3	14:33:58	8.977	T 903.700	T 31270.000	13.270	36.500	TM 6767.000	351.300	2.321	0.312	2.210	0.000	0.000
x		9.169	T 888.400	T 30570.000	13.000	35.400	TM 6725.000	346.500	2.296	0.309	1.727	0.000	0.000
σ		0.541	T 15.350	T 654.800	0.243	1.025	TM 39.540	4.166	0.037	0.006	0.436	0.000	0.000
%RSD		5.903	T 1.727	T 2.142	1.869	2.895	TM 0.588	1.202	1.596	1.952	25.260	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:33:15	18.250	192.030%	-0.377	0.106	-1.936	0.278	112.423%	0.000	0.218	0.097	223.300	113.331%
2	14:33:36	18.200	193.016%	-0.373	0.121	-1.382	0.181	112.775%	0.000	0.191	0.102	229.200	115.346%

3	14:33:58	18.510	192.083%	-0.367	0.124	-1.850	0.249	113.188%	0.000	0.255	0.111	228.600	116.516%
x		18.320	192.376%	-0.373	0.117	-1.722	0.236	112.795%	0.000	0.221	0.103	227.000	115.065%
σ		0.168	0.554%	0.005	0.010	0.298	0.050	0.383%	0.000	0.032	0.007	3.264	1.611%
%RSD		0.914	0.288	1.329	8.386	17.310	21.120	0.340	0.000	14.480	6.403	1.438	1.400

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:33:15	0.006	0.035	25.040	100.864%	0.000	4.058	1.599
2	14:33:36	-0.005	0.038	24.800	103.718%	0.000	4.219	1.550
3	14:33:58	-0.004	0.066	24.900	102.789%	0.000	4.457	1.550
x		-0.001	0.046	24.910	102.457%	0.000	4.245	1.566
σ		0.006	0.017	0.119	1.456%	0.000	0.201	0.028
%RSD		993.500	36.880	0.479	1.421	0.000	4.731	1.799

200-35700-A-5-B @2 10/14/2016 02:38:36 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:38:58	94.041%	4.796	13.380	T 249.700	T 10490.000	T 54980.000	T 3333.000	8348.000	149.702%	0.000	78.840	60.140
2	14:39:20	95.479%	4.302	12.750	T 247.400	T 10460.000	T 56050.000	T 3355.000	8507.000	147.277%	0.000	81.190	61.340
3	14:39:42	93.576%	5.083	13.560	207.300	T 10300.000	T 55970.000	T 3363.000	8506.000	147.122%	0.000	79.910	61.810
x		94.366%	4.727	13.230	T 234.800	T 10420.000	T 55670.000	T 3350.000	8454.000	148.034%	0.000	79.980	61.090
σ		0.992%	0.395	0.428	T 23.850	T 102.800	T 596.700	T 15.350	91.680	1.447%	0.000	1.177	0.862
%RSD		1.051	8.359	3.236	T 10.160	T 0.987	T 1.072	T 0.458	1.084	0.977	0.000	1.471	1.411

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:38:58	9.166	T 3805.000	T 97780.000	36.890	85.400	T 5518.000	738.500	10.840	0.197	10.560	0.000	0.000
2	14:39:20	8.485	T 3919.000	T 99370.000	37.190	83.820	T 5383.000	729.700	10.820	0.193	9.354	0.000	0.000
3	14:39:42	9.210	T 3923.000	T 100600.000	37.210	84.640	T 5389.000	735.500	10.950	0.181	11.990	0.000	0.000
x		8.953	T 3882.000	T 99250.000	37.100	84.620	T 5430.000	734.500	10.870	0.190	10.630	0.000	0.000
σ		0.407	T 66.920	T 1417.000	0.176	0.788	T 76.030	4.489	0.071	0.008	1.320	0.000	0.000
%RSD		4.541	T 1.724	T 1.428	0.473	0.931	T 1.400	0.611	0.657	4.341	12.410	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:38:58	60.900	331.291%	0.477	1.592	-5.893	2.124	109.260%	0.000	0.713	0.621	717.100	132.653%
2	14:39:20	61.290	335.098%	0.448	1.451	-3.519	2.280	110.688%	0.000	0.705	0.597	713.100	134.057%
3	14:39:42	61.630	333.856%	0.408	1.567	-4.317	2.032	110.260%	0.000	0.733	0.619	713.200	134.103%
x		61.270	333.415%	0.444	1.537	-4.576	2.146	110.069%	0.000	0.717	0.612	714.500	133.604%
σ		0.366	1.941%	0.034	0.075	1.208	0.125	0.732%	0.000	0.014	0.013	2.293	0.824%
%RSD		0.597	0.582	7.741	4.897	26.400	5.838	0.665	0.000	2.018	2.145	0.321	0.617

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:38:58	0.201	0.370	139.000	104.348%	0.000	15.300	4.994
2	14:39:20	0.193	0.400	138.500	105.138%	0.000	15.150	5.043
3	14:39:42	0.206	0.401	141.200	104.979%	0.000	15.300	5.020
x		0.200	0.390	139.500	104.822%	0.000	15.250	5.019
σ		0.006	0.018	1.426	0.418%	0.000	0.089	0.024

%RSD		3.212	4.608	1.022	0.399	0.000	0.586	0.488

200-35700-A-1-B @4 10/14/2016 02:44:19 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:44:40	96.034%	2.098	3.996	109.500	4167.000	T 28560.000	T 1585.000	5844.000	135.821%	0.000	42.240	30.310
2	14:45:02	94.840%	2.630	5.872	114.900	4284.000	T 29090.000	T 1602.000	5921.000	133.150%	0.000	42.720	30.570
3	14:45:24	95.603%	2.366	4.837	108.700	4252.000	T 28660.000	T 1587.000	5900.000	133.013%	0.000	43.250	31.070
x		95.492%	2.365	4.902	111.000	4234.000	T 28770.000	T 1591.000	5889.000	133.995%	0.000	42.740	30.650
σ		0.605%	0.266	0.940	3.383	60.180	T 283.100	T 9.346	39.900	1.583%	0.000	0.505	0.387
%RSD		0.633	11.230	19.180	3.046	1.421	T 0.984	T 0.587	0.678	1.181	0.000	1.181	1.264

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:44:40	7.682	T 4681.000	T 64430.000	24.850	42.130	T 3427.000	539.300	10.340	0.270	7.982	0.000	0.000
2	14:45:02	8.529	T 4778.000	T 65390.000	24.830	43.050	T 3474.000	557.700	10.370	0.269	7.628	0.000	0.000
3	14:45:24	7.609	T 4776.000	T 65810.000	24.830	41.600	T 3443.000	552.300	10.720	0.247	8.325	0.000	0.000
x		7.940	T 4745.000	T 65210.000	24.840	42.260	T 3448.000	549.800	10.480	0.262	7.978	0.000	0.000
σ		0.512	T 55.410	T 709.100	0.009	0.731	T 23.730	9.444	0.211	0.013	0.349	0.000	0.000
%RSD		6.444	T 1.168	T 1.087	0.036	1.730	T 0.688	1.718	2.016	5.091	4.371	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:44:40	38.970	208.215%	0.633	1.475	-1.311	2.366	113.384%	0.000	0.472	0.368	375.100	116.939%
2	14:45:02	40.050	212.913%	0.607	1.575	-2.921	2.496	112.218%	0.000	0.462	0.353	384.100	117.489%
3	14:45:24	39.960	210.382%	0.595	1.547	-2.258	2.422	112.995%	0.000	0.480	0.351	378.800	118.207%
x		39.660	210.503%	0.612	1.532	-2.164	2.428	112.866%	0.000	0.471	0.358	379.300	117.545%
σ		0.599	2.351%	0.020	0.052	0.809	0.065	0.593%	0.000	0.009	0.009	4.527	0.636%
%RSD		1.509	1.117	3.202	3.380	37.400	2.692	0.526	0.000	1.823	2.532	1.193	0.541

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:44:40	0.193	0.098	74.990	102.755%	0.000	5.367	2.004
2	14:45:02	0.151	0.112	76.550	101.466%	0.000	5.659	2.078
3	14:45:24	0.165	0.097	75.890	102.457%	0.000	5.791	2.029
x		0.170	0.102	75.810	102.226%	0.000	5.606	2.037
σ		0.021	0.008	0.781	0.675%	0.000	0.217	0.038
%RSD		12.520	8.172	1.030	0.660	0.000	3.875	1.859

200-35700-A-3-B @10 10/14/2016 02:50:01 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:23	99.577%	0.767	-0.444	68.720	3361.000	┬19310.000	┬1141.000	1793.000	131.536%	0.000	22.480	20.170
2	14:50:45	96.579%	1.130	-0.297	68.650	3336.000	┬19430.000	┬1147.000	1780.000	131.228%	0.000	22.440	20.300
3	14:51:06	94.070%	1.165	0.163	62.420	3361.000	┬19670.000	┬1149.000	1800.000	131.572%	0.000	22.590	20.100
x		96.742%	1.021	-0.192	66.590	3353.000	┬19470.000	┬1146.000	1791.000	131.445%	0.000	22.500	20.190
σ		2.757%	0.221	0.317	3.617	14.360	┬183.600	┬3.797	10.240	0.189%	0.000	0.076	0.102
%RSD		2.850	21.620	164.600	5.432	0.428	┬0.943	┬0.332	0.572	0.144	0.000	0.338	0.502

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:23	7.532	┬701.300	┬23800.000	9.997	27.310	┬5196.000	266.400	1.845	0.338	0.706	0.000	0.000
2	14:50:45	8.434	┬698.600	┬24160.000	10.150	27.410	┬5239.000	267.500	1.753	0.357	0.089	0.000	0.000
3	14:51:06	7.929	┬712.300	┬24610.000	10.340	28.540	┬5371.000	272.300	1.826	0.331	1.307	0.000	0.000
x		7.965	┬704.100	┬24190.000	10.160	27.750	┬5269.000	268.700	1.808	0.342	0.700	0.000	0.000
σ		0.452	┬7.282	┬405.300	0.171	0.684	┬91.370	3.141	0.048	0.013	0.609	0.000	0.000
%RSD		5.676	┬1.034	┬1.675	1.682	2.465	┬1.734	1.169	2.673	3.922	86.910	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:23	13.920	175.053%	-0.422	0.068	-2.387	0.238	113.331%	0.000	0.166	0.053	169.800	112.284%
2	14:50:45	14.210	175.168%	-0.436	0.088	-2.112	0.158	113.357%	0.000	0.155	0.053	173.200	113.470%
3	14:51:06	14.270	175.869%	-0.462	0.096	-1.951	0.184	112.601%	0.000	0.153	0.064	177.000	113.534%
x		14.130	175.363%	-0.440	0.084	-2.150	0.193	113.096%	0.000	0.158	0.057	173.300	113.096%
σ		0.185	0.442%	0.020	0.014	0.221	0.041	0.429%	0.000	0.007	0.006	3.599	0.704%
%RSD		1.308	0.252	4.607	17.020	10.270	21.020	0.379	0.000	4.735	10.440	2.076	0.623

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:50:23	-0.029	-0.018	18.740	101.674%	0.000	2.938	1.202
2	14:50:45	-0.003	-0.014	18.720	101.889%	0.000	3.097	1.175
3	14:51:06	-0.011	-0.008	19.100	101.889%	0.000	3.333	1.180
x		-0.014	-0.013	18.860	101.817%	0.000	3.122	1.186
σ		0.013	0.005	0.216	0.124%	0.000	0.199	0.014
%RSD		92.150	38.770	1.145	0.122	0.000	6.372	1.202

CCV 10/14/2016 02:55:44 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:56:06	82.830%	664.900	252.500	┬9653.000	┬28790.000	┬28710.000	┬9508.000	┬27180.000	98.344%	0.000	┬1173.000	356.900
2	14:56:28	80.339%	672.200	268.500	┬10030.000	┬30020.000	┬30340.000	┬9905.000	┬28130.000	92.534%	0.000	┬1213.000	370.900
3	14:56:51	79.486%	670.100	260.800	┬9617.000	┬28750.000	┬29210.000	┬9609.000	┬27970.000	95.370%	0.000	┬1191.000	359.900
x		80.885%	107.052%	104.235%	┬97.677%	┬97.286%	┬98.064%	┬96.738%	┬92.538%	95.416%	0.000	┬95.396%	90.645%
σ		1.738%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	2.906%	0.000	┬n/a	n/a
%RSD		2.148	0.562	3.075	┬2.358	┬2.468	┬2.834	┬2.132	┬1.823	3.045	0.000	┬1.697	2.036

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:56:06	22.370	┬1161.000	┬28820.000	471.700	1224.000	1293.000	1222.000	198.400	0.143	195.200	0.000	0.000
2	14:56:28	21.750	┬1223.000	┬30000.000	486.600	1285.000	1295.000	1223.000	198.500	0.006	196.000	0.000	0.000
3	14:56:51	16.640	┬1175.000	┬28790.000	468.900	1212.000	1297.000	1227.000	200.300	-0.087	200.300	0.000	0.000
x		20.250	┬94.898%	┬97.341%	95.147%	99.225%	103.573%	97.940%	99.538%	0.021	98.569%	0.000	0.000
σ		3.142	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.116	n/a	0.000	0.000
%RSD		15.510	┬2.725	┬2.357	2.004	3.140	0.160	0.204	0.533	559.300	1.398	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:56:06	178.700	93.716%	1127.000	96.210	8.787	184.600	93.180%	0.000	219.400	208.400	1050.000	88.879%
2	14:56:28	180.900	92.456%	1154.000	97.680	7.873	182.500	91.418%	0.000	220.500	211.300	1063.000	89.024%
3	14:56:51	181.100	90.496%	1179.000	96.710	12.230	184.200	90.174%	0.000	223.300	214.100	1077.000	91.062%
x		180.200	92.223%	92.294%	96.867%	9.631	91.876%	91.591%	0.000	221.000	84.504%	85.058%	89.655%
σ		1.334	1.623%	n/a	n/a	2.300	n/a	1.510%	0.000	1.988	n/a	n/a	1.221%
%RSD		0.740	1.759	2.239	0.773	23.880	0.604	1.649	0.000	0.900	1.363	1.309	1.362

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:56:06	21.000	164.400	┬1168.000	86.264%	0.000	18.130	8.690
2	14:56:28	20.730	169.200	┬1204.000	83.939%	0.000	18.980	8.936
3	14:56:51	21.110	169.400	┬1195.000	83.953%	0.000	19.200	8.861
x		104.736%	83.828%	┬95.120%	84.719%	0.000	93.839%	88.291%
σ		n/a	n/a	┬n/a	1.338%	0.000	n/a	n/a
%RSD		0.920	1.706	┬1.593	1.579	0.000	3.001	1.426

CCB 10/14/2016 03:01:33 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:01:55	87.325%	0.195	-3.020	7.305	10.160	16.860	7.204	1.862	101.017%	0.000	0.957	-0.164
2	15:02:17	88.779%	0.102	-3.954	7.867	10.020	19.280	7.058	2.073	102.236%	0.000	0.973	-0.003
3	15:02:39	86.062%	0.343	-3.055	7.986	12.130	20.350	5.807	8.479	102.490%	0.000	0.243	-0.067
x		87.389%	0.213	-3.343	7.719	10.770	18.830	6.690	4.138	101.914%	0.000	0.725	-0.078
σ		1.360%	0.122	0.530	0.364	1.179	1.786	0.768	3.761	0.787%	0.000	0.417	0.081
%RSD		1.556	57.060	15.840	4.710	10.950	9.484	11.480	90.890	0.772	0.000	57.540	103.700

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:01:55	15.680	0.702	35.540	-0.009	0.118	0.453	0.004	0.075	0.533	0.656	0.000	0.000
2	15:02:17	15.590	0.724	39.210	0.020	0.191	0.624	0.351	0.307	0.539	-0.413	0.000	0.000
3	15:02:39	17.050	0.764	37.590	0.039	0.443	0.771	0.199	0.036	0.540	-0.879	0.000	0.000
x		16.100	0.730	37.450	0.017	0.250	0.616	0.185	0.139	0.537	-0.212	0.000	0.000
σ		0.818	0.031	1.839	0.024	0.171	0.159	0.174	0.146	0.004	0.787	0.000	0.000
%RSD		5.082	4.312	4.912	143.800	68.120	25.840	94.170	105.300	0.745	370.700	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:01:55	0.011	96.139%	0.981	0.017	-0.998	0.047	95.984%	0.000	0.326	0.183	0.116	92.004%
2	15:02:17	0.038	96.031%	1.000	0.009	-1.019	0.036	96.020%	0.000	0.322	0.233	0.225	91.559%

3	15:02:39	0.041	97.368%	0.909	0.014	-0.979	0.043	97.912%	0.000	0.341	0.237	0.298	92.616%
x		0.030	96.513%	0.963	0.013	-0.999	0.042	96.639%	0.000	0.330	0.218	0.213	92.060%
σ		0.016	0.743%	0.048	0.004	0.020	0.005	1.103%	0.000	0.010	0.030	0.092	0.531%
%RSD		54.330	0.769	4.948	28.900	2.014	13.080	1.141	0.000	2.950	13.870	43.120	0.577

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:01:55	-0.022	0.012	0.493	87.461%	0.000	0.444	0.003
2	15:02:17	0.002	0.014	0.567	88.609%	0.000	0.425	0.004
3	15:02:39	-0.004	0.008	0.608	92.083%	0.000	0.380	0.004
x		-0.008	0.011	0.556	89.384%	0.000	0.416	0.003
σ		0.012	0.003	0.058	2.407%	0.000	0.033	0.000
%RSD		152.900	27.080	10.500	2.693	0.000	7.916	8.854

CCVL 10/14/2016 03:07:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:07:38	86.318%	1.285	43.570	T 494.000	170.100	53.370	431.600	416.100	104.933%	0.000	4.613	3.340
2	15:08:00	90.958%	1.245	38.160	435.000	180.500	56.480	438.700	429.500	105.182%	0.000	4.990	3.569
3	15:08:22	89.336%	1.202	41.490	T 492.600	183.600	55.830	438.400	433.000	104.892%	0.000	4.414	3.711
x		88.871%	124.398%	102.683%	T 94.769%	89.032%	110.453%	87.247%	85.240%	105.002%	0.000	93.453%	88.497%
σ		2.355%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.157%	0.000	n/a	n/a
%RSD		2.649	3.368	6.650	T 7.107	3.968	2.966	0.917	2.102	0.149	0.000	6.261	5.291

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:07:38	17.110	1.807	200.700	0.785	2.010	5.133	21.530	2.275	0.561	3.096	0.000	0.000
2	15:08:00	16.530	1.902	201.900	0.813	2.306	5.293	21.330	1.778	0.562	4.206	0.000	0.000
3	15:08:22	17.290	1.953	201.300	0.935	1.980	5.263	20.330	1.806	0.554	3.574	0.000	0.000
x		16.980	94.371%	100.646%	84.394%	104.942%	104.593%	105.314%	97.636%	0.559	90.629%	0.000	0.000
σ		0.399	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.004	n/a	0.000	0.000
%RSD		2.348	3.945	0.292	9.439	8.577	1.623	3.038	14.290	0.783	15.360	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:07:38	4.456	95.861%	8.821	0.962	-0.323	0.893	96.101%	0.000	1.871	1.710	8.220	93.379%
2	15:08:00	4.661	100.198%	8.971	0.910	-0.897	0.922	98.755%	0.000	1.892	1.704	8.309	95.563%
3	15:08:22	4.543	98.766%	8.945	0.958	-0.272	0.801	98.707%	0.000	1.910	1.668	8.069	92.714%
x		91.067%	98.275%	89.122%	94.315%	-0.497	87.216%	97.855%	0.000	1.891	84.709%	81.993%	93.885%
σ		n/a	2.210%	n/a	n/a	0.347	n/a	1.518%	0.000	0.019	n/a	n/a	1.490%
%RSD		2.256	2.249	0.896	3.068	69.840	7.234	1.552	0.000	1.017	1.332	1.478	1.587

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:07:38	1.649	1.528	1.073	89.896%	0.000	1.071	0.929
2	15:08:00	1.681	1.569	1.151	89.419%	0.000	1.098	0.941
3	15:08:22	1.573	1.552	1.170	91.156%	0.000	1.108	0.900
x		81.719%	77.481%	113.133%	90.157%	0.000	54.626%	92.339%
σ		n/a	n/a	n/a	0.897%	0.000	n/a	n/a

%RSD	3.396	1.307	4.535	0.995	0.000	1.765	2.304

Mass Uncorrected ICPS

STD0 10/14/2016 10:32:42 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:33:04	139642.560	45.000	1190.043	259474.200	1830.101	15422.132	57468.910	1280.049	172063.620	10.000	30392.686	3180.303
2	10:33:26	137343.580	40.000	1135.039	269186.430	2580.200	20537.646	58392.110	1430.061	167931.790	20.000	30908.634	3400.347
3	10:33:48	138704.780	72.500	1040.032	271971.090	2430.177	23236.186	58803.553	1390.058	172498.070	10.000	32216.106	3495.367
x		138563.640	52.500	1121.705	266877.240	2280.159	19731.988	58221.524	1366.723	170831.160	13.333	31172.475	3358.672
σ		1155.973	17.500	75.889	6560.662	396.915	3968.838	683.479	77.681	2520.305	5.774	939.907	161.613
%RSD		0.834	33.333	6.765	2.458	17.407	20.114	1.174	5.684	1.475	43.301	3.015	4.812

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:33:04	10528.324	2495.187	259281.240	670.013	270.002	655.013	835.021	2353.166	757.017	450.506	418.005	2240.151
2	10:33:26	10933.585	2950.261	271569.620	690.014	300.003	620.012	840.021	2334.163	767.018	422.505	446.006	2310.160
3	10:33:48	10968.608	3005.271	277246.950	665.013	515.008	675.014	980.029	2367.168	775.018	429.506	414.505	2375.169
x		10810.173	2816.906	269365.940	675.014	361.671	650.013	885.024	2351.499	766.351	434.172	426.172	2308.493
σ		244.715	279.972	9183.351	13.229	133.638	27.840	82.315	16.565	9.019	14.572	17.266	67.525
%RSD		2.264	9.939	3.409	1.960	36.950	4.283	9.301	0.704	1.177	3.356	4.051	2.925

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:33:04	370.004	211240.240	1680.085	125.000	5.000	40.000	970591.830	2200.145	765.018	646.513	255.002	174731.150
2	10:33:26	500.007	214390.080	1900.108	170.001	10.000	100.000	990620.190	2530.192	950.027	802.019	345.004	173629.730
3	10:33:48	465.006	217297.370	1690.086	135.001	15.000	85.000	993875.680	2650.211	1130.038	859.022	365.004	176004.450
x		445.006	214309.230	1756.760	143.334	10.000	75.000	985029.230	2460.183	948.361	769.185	321.670	174788.440
σ		67.270	3029.373	124.244	23.629	5.000	31.225	12608.670	233.057	182.516	109.994	58.596	1188.393
%RSD		15.117	1.414	7.072	16.485	50.000	41.633	1.280	9.473	19.245	14.300	18.216	0.680

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:33:04	200.001	2420.176	4185.525	144695.390	0.000	6631.319	60.000
2	10:33:26	205.001	2485.185	5150.796	145552.810	0.000	6606.309	95.000
3	10:33:48	225.002	2455.181	5615.946	146662.470	0.000	5896.043	105.000
x		210.001	2453.514	4984.089	145636.890	0.000	6377.890	86.667
σ		13.229	32.537	729.636	986.233	0.000	417.480	23.629
%RSD		6.299	1.326	14.639	0.677	0.000	6.546	27.264

STD1 10/14/2016 10:38:26 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:38:47	142345.280	187.501	7846.847	T 1104944.400	31169.118	84327.797	843687.090	29435.971	177965.100	25.000	45667.480	13085.135
2	10:39:09	141931.780	190.001	8001.921	T 1121943.500	32100.884	83548.889	824711.840	30147.241	175772.010	15.000	47427.385	13415.397
3	10:39:31	139380.380	162.501	7776.814	T 1105433.500	30718.282	84629.320	840617.680	29586.237	175428.420	20.000	46805.631	13110.154
x		141219.150	180.001	7875.194	T 1110773.800	31329.428	84168.668	836338.870	29723.150	176388.510	20.000	46633.499	13203.562
σ		1605.784	15.207	115.199	T 9676.337	705.104	557.516	10185.586	374.880	1376.133	5.000	892.490	183.881
%RSD		1.137	8.448	1.463	T 0.871	2.251	0.662	1.218	1.261	0.780	25.000	1.914	1.393

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:38:47	12634.787	8422.127	911374.970	2925.257	1295.050	4435.590	13015.080	3238.315	913.025	628.012	459.006	2620.206
2	10:39:09	13055.111	8527.181	901942.020	3395.346	1485.066	4560.624	13205.229	3445.356	952.027	607.511	440.506	2560.197
3	10:39:31	12794.909	8902.377	906831.950	3205.308	1395.058	4215.533	12784.902	3318.330	928.026	644.012	424.005	2410.174

x		12828.269	8617.228	906716.310	3175.304	1391.725	4403.916	13001.737	3334.000	931.026	626.512	441.173	2530.192
σ		212.138	252.470	4717.536	236.477	95.052	174.712	210.481	104.406	19.673	18.297	17.510	108.183
%RSD		1.654	2.930	0.520	7.447	6.830	3.967	1.619	3.132	2.113	2.920	3.969	4.276
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:38:47	25629.691	215403.020	17364.041	3650.400	50.000	905.025	1003507.900	1400.059	6141.131	4779.685	5640.954	175903.390
2	10:39:09	25639.707	214481.240	17784.484	3725.416	55.000	900.024	989559.900	1390.058	6071.105	4824.198	6141.131	175964.020
3	10:39:31	26120.452	217793.790	18049.769	3210.309	40.000	780.018	986305.230	1380.057	6091.113	4855.707	5911.048	176853.360
x		25796.617	215892.680	17732.764	3528.708	48.333	861.689	993124.350	1390.058	6101.117	4819.864	5897.711	176240.260
σ		280.495	1709.698	345.777	278.281	7.638	70.773	9138.496	10.001	36.069	38.196	250.355	531.829
%RSD		1.087	0.792	1.950	7.886	15.802	8.213	0.920	0.719	0.591	0.792	4.245	0.302

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:38:47	4225.536	22770.544	9347.621	143010.940	0.000	19075.910	17033.700
2	10:39:09	4635.645	22675.415	9527.722	147257.680	0.000	19481.379	18019.736
3	10:39:31	4250.542	22645.374	9882.929	146894.500	0.000	20953.163	17924.634
x		4370.574	22697.111	9586.091	145721.040	0.000	19836.817	17659.357
σ		229.898	65.345	272.386	2354.029	0.000	987.811	543.917
%RSD		5.260	0.288	2.841	1.615	0.000	4.980	3.080

STD2 10/14/2016 10:44:08 AM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	10:44:30	133311.030	870.023	30262.450	T 4242845.700	143716.980	332580.510	T 4045217.700	138009.040	168527.760	15.000	86574.271	50110.218
2	10:44:52	132494.560	780.018	30022.015	T 4150909.700	146612.030	331988.890	T 3969185.300	135226.370	159519.760	20.000	84930.848	47602.884
3	10:45:13	128664.730	785.018	29541.157	T 3997764.500	141114.880	322515.590	T 3908961.700	135639.710	158257.820	10.000	82689.620	48615.802
x		131490.110	811.686	29941.874	T 4130506.600	143814.630	329028.330	T 3974454.900	136291.700	162101.780	15.000	84731.579	48776.301
σ		2480.670	50.582	367.264	T 123807.960	2749.873	5647.954	T 68280.714	1501.546	5600.720	5.000	1949.977	1261.349
%RSD		1.887	6.232	1.227	T 2.997	1.912	1.717	T 1.718	1.102	3.455	33.333	2.301	2.586
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	10:44:30	16443.107	35472.709	T 3554304.700	14361.185	6366.216	18675.457	59626.469	6485.261	1473.065	1390.558	429.006	2900.252
2	10:44:52	15587.285	35633.051	T 3554725.100	14716.494	6071.105	18830.632	59290.273	6247.171	1340.054	1386.058	403.505	2750.227
3	10:45:13	14636.424	35142.010	T 3472148.800	13365.357	6136.129	18425.179	58296.777	6115.122	1375.057	1388.058	410.505	2540.194
x		15555.606	35415.923	T 3527059.500	14147.679	6191.150	18643.756	59071.173	6282.518	1396.059	1388.225	414.338	2730.224
σ		903.758	250.397	T 47554.565	700.415	155.058	204.577	691.392	187.585	68.948	2.255	13.175	180.861
%RSD		5.810	0.707	T 1.348	4.951	2.505	1.097	1.170	2.986	4.939	0.162	3.180	6.624
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:44:30	120846.530	204911.970	81810.296	16863.527	240.002	3700.411	958395.530	725.016	28058.599	21703.122	27803.171	170103.650
2	10:44:52	120211.970	205782.600	83448.387	16868.532	310.003	4055.493	935318.300	775.018	27677.963	21862.329	28484.320	167780.280
3	10:45:13	118756.590	203029.140	82795.142	16383.048	275.002	4035.488	921457.290	790.019	27102.018	21237.522	27632.888	167123.730
x		119938.370	204574.570	82684.608	16705.036	275.002	3930.464	938390.370	763.351	27612.860	21600.991	27973.460	168335.890
σ		1071.498	1407.397	824.620	278.861	35.001	199.483	18659.756	34.036	481.602	324.683	450.536	1565.729
%RSD		0.893	0.688	0.997	1.669	12.727	5.075	1.988	4.459	1.744	1.503	1.611	0.930

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:44:30	20272.322	102443.880	39251.165	142990.770	0.000	75144.018	82609.222
2	10:44:52	19821.780	104456.310	38800.111	138936.700	0.000	77685.631	84282.569
3	10:45:13	20017.013	105578.350	38479.369	137686.390	0.000	83026.287	84051.406
x		20037.038	104159.510	38843.548	139871.290	0.000	78618.645	83647.733

σ		225.937	1588.173	387.727	2772.943	0.000	4023.112	906.773
%RSD		1.128	1.525	0.998	1.982	0.000	5.117	1.084

STD3 10/14/2016 10:49:52 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:50:14	133623.520	97946.965	37341.785	┬15466255.000	┬4616093.500	┬43156664.000	┬15516939.000	┬1719381.200	164023.160	29671.388	┬3165714.000	88885
2	10:50:36	131526.940	96093.724	36720.407	┬15311123.000	┬4657403.500	┬44061640.000	┬15735866.000	┬1695497.600	159600.530	31319.400	┬3154237.300	89952
3	10:50:57	130367.890	96332.597	37321.741	┬15039259.000	┬4528301.500	┬42393191.000	┬15247507.000	┬1699512.800	159721.680	29991.961	┬3117363.500	88907
x		131839.450	96791.095	37127.978	┬15272212.000	┬4600599.500	┬43203832.000	┬15500104.000	┬1704797.200	161115.120	30327.583	┬3145771.600	89248
σ		1650.161	1008.113	353.109	┬216141.200	┬65930.892	┬835224.460	┬244614.530	┬12788.706	2519.160	873.766	┬25262.470	609
%RSD		1.252	1.042	0.951	┬1.415	┬1.433	┬1.933	┬1.578	┬0.750	1.564	2.881	┬0.803	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:50:14	113062.200	┬4732133.300	┬96201424.000	1364921.800	728996.880	887644.250	676053.900	87417.656	6790.383	9176.526	442.506	734
2	10:50:36	113223.280	┬4711269.400	┬95363970.000	1344389.400	717644.790	889061.890	677667.490	87700.134	6770.375	9090.478	384.004	770
3	10:50:57	112085.630	┬4658555.300	┬95293025.000	1343063.700	710383.430	874121.920	671812.460	86639.609	6479.259	8953.905	388.505	724
x		112790.370	┬4700652.700	┬95619473.000	1350791.600	719008.370	883609.350	675177.950	87252.466	6680.006	9073.636	405.005	743
σ		615.613	┬37920.537	┬505231.300	12255.022	9381.346	8246.879	3024.204	549.221	174.139	112.262	32.555	24
%RSD		0.546	┬0.807	┬0.528	0.907	1.305	0.933	0.448	0.629	2.607	1.237	8.038	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	10:50:14	955638.800	205904.090	2045122.400	323387.230	9982.989	154144.540	941417.730	1046074.300	676491.120	523707.310	689065.860	17017
2	10:50:36	942237.150	203312.560	┬2251278.300	315584.790	10033.019	156400.410	946239.620	1035275.300	673222.690	527122.990	696802.770	16996
3	10:50:57	953369.190	199942.160	2037751.200	319044.740	10738.458	156577.050	927984.940	1044266.000	673508.910	525898.710	692102.890	17158
x		950415.050	203052.930	┬2111383.900	319338.920	10251.489	155707.330	938547.430	1041871.800	674407.570	525576.340	692657.170	17057
σ		7172.608	2989.433	┬121208.080	3909.532	422.469	1356.300	9459.775	5783.894	1810.070	1730.512	3898.124	88
%RSD		0.755	1.472	┬5.741	1.224	4.121	0.871	1.008	0.555	0.268	0.329	0.563	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:50:14	50350.942	2125747.000	┬10879168.000	138130.040	0.000	322541.070	164932.060
2	10:50:36	51935.794	2133896.500	┬10895033.000	137232.670	10.000	340084.690	167482.300
3	10:50:57	51474.366	2132107.800	┬11025617.000	140126.600	0.000	351451.890	166588.410
x		51253.700	2130583.800	┬10933273.000	138496.430	3.333	338025.880	166334.260
σ		815.144	4283.167	┬80365.368	1481.349	5.774	14564.953	1293.978
%RSD		1.590	0.201	┬0.735	1.070	173.205	4.309	0.778

STD4 10/14/2016 10:55:36 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	10:55:57	132988.470	286354.010	109161.320	┬46309857.000	┬13992219.000	┬131123240.000	┬47704546.000	┬5261051.100	158893.820	91867.493	┬9567902.600
2	10:56:19	129501.170	286343.830	113263.560	┬46880887.000	┬14126299.000	┬131167830.000	┬47933806.000	┬5385315.300	162387.250	94225.603	┬9753810.100
3	10:56:41	132272.810	288849.010	112548.740	┬46854838.000	┬14382047.000	┬130317030.000	┬47795737.000	┬5353608.900	160115.430	93235.056	┬9743709.200
x		131587.480	287182.280	111657.870	┬46681861.000	┬14166855.000	┬130869370.000	┬47811363.000	┬5333325.100	160465.500	93109.384	┬9688474.000
σ		1841.893	1443.436	2191.420	┬322428.130	┬198052.870	┬478857.580	┬115426.340	┬64567.609	1772.830	1184.067	┬104539.950
%RSD		1.400	0.503	1.963	┬0.691	┬1.398	┬0.366	┬0.241	┬1.211	1.105	1.272	┬1.079

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	10:55:57	329041.300	┬14401476.000	┬289912120.000	┬4524468.800	2124440.100	┬2821868.200	1963422.600	255194.890	18587.359	25666.247	461.506
2	10:56:19	328985.210	┬14525531.000	┬290799640.000	┬4544759.800	2128067.000	┬2887922.700	1985969.100	256523.050	18728.517	25747.873	433.006

3	10:56:41	335176.750	┬14597961.000	┬294106100.000	┬4575420.400	┬2354661.600	┬2901322.100	1978499.000	256240.750	18638.416	25661.741	478.00
x		331067.750	┬14508323.000	┬291605950.000	┬4548216.400	┬2202389.500	┬2870371.000	1975963.600	255986.230	18651.431	25691.954	457.50
σ		3558.609	┬99366.512	┬2210195.100	┬25651.043	┬131883.900	┬42535.637	11485.057	699.705	71.473	48.480	22.76
%RSD		1.075	┬0.685	┬0.758	┬0.564	┬5.988	┬1.482	0.581	0.273	0.383	0.189	4.97

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	10:55:57	┬3162050.000	199223.630	┬6830015.000	938637.300	30598.061	466498.520	960724.010	┬3531909.500	2032544.200	1597750.200	┬2347523.30
2	10:56:19	┬3251469.200	201753.790	┬6978026.000	947588.090	31640.004	471635.090	967150.150	┬3597303.000	2075636.600	1630181.600	┬2392612.20
3	10:56:41	┬3218182.900	202887.430	┬7082004.000	961480.840	30673.199	470169.540	971767.450	┬3601236.400	2079761.500	1637456.000	┬2414837.00
x		┬3210567.400	201288.280	┬6963348.300	949235.410	30970.422	469434.380	966547.200	┬3576816.300	2062647.400	1621795.900	┬2384990.80
σ		┬45193.414	1875.735	┬126634.070	11510.516	581.091	2646.021	5546.355	┬38940.104	26151.637	21139.453	┬34297.93
%RSD		┬1.408	0.932	┬1.819	1.213	1.876	0.564	0.574	┬1.089	1.268	1.303	┬1.43

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:55:57	153952.770	┬7339484.800	┬33523675.000	138503.110	0.000	1040144.900	511845.720
2	10:56:19	159307.750	┬7522520.600	┬34108156.000	139602.230	10.000	1084294.700	534113.340
3	10:56:41	160872.670	┬7544273.700	┬34746847.000	143535.420	0.000	1096538.000	533101.710
x		158044.400	┬7468759.700	┬34126226.000	140546.920	3.333	1073659.200	526353.590
σ		3628.813	┬112482.460	┬611786.270	2645.822	5.774	29662.801	12574.363
%RSD		2.296	┬1.506	┬1.793	1.883	173.205	2.763	2.389

STD5 10/14/2016 11:01:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti
1	11:01:40	133119.510	M 492518.780	M 190558.180	TM 80818272.000	TM 24594006.000	TM 228244880.000	TM 84647085.000	TM 9422657.700	165992.510	164482.650
2	11:02:02	132242.570	481447.240	183676.570	T 79630625.000	TM 24382155.000	TM 225502630.000	TM 84396644.000	TM 9586278.100	168174.220	167179.280
3	11:02:23	128755.430	M 479039.330	M 186947.640	T 77928051.000	TM 24037064.000	TM 226060430.000	TM 83851893.000	TM 9515354.000	163891.870	164038.300
x		131372.500	M 484335.120	M 187060.790	TM 79458983.000	TM 24337742.000	TM 226602650.000	TM 84298541.000	TM 9508096.600	166019.530	165233.410
σ		2308.478	M 7188.798	M 3442.202	TM 1452735.600	TM 281114.990	TM 1449305.800	TM 406571.970	TM 82051.261	2141.300	1699.756
%RSD		1.757	M 1.484	M 1.840	TM 1.828	TM 1.155	TM 0.640	TM 0.482	TM 0.863	1.290	1.029

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se
1	11:01:40	574674.610	TM 25271406.000	TM 503904700.000	TM 7809777.800	TM 3983038.300	TM 4915435.200	TM 3691534.300	M 433598.810	30717.280	42464.027
2	11:02:02	577448.050	TM 25482915.000	TM 507881380.000	TM 7902420.800	TM 3991089.400	TM 4897508.000	TM 3701074.000	435163.820	31345.448	42626.942
3	11:02:23	572791.420	TM 25382317.000	TM 502103920.000	TM 7920322.200	TM 4050123.200	TM 4935361.900	TM 3726308.700	M 437827.220	30968.745	42589.346
x		574971.360	TM 25378879.000	TM 504630000.000	TM 7877506.900	TM 4008083.600	TM 4916101.700	TM 3706305.600	M 435529.950	31010.491	42560.105
σ		2342.451	TM 105796.690	TM 2956230.800	TM 59334.172	TM 36629.203	TM 18935.712	TM 17967.805	M 2137.851	316.158	85.303
%RSD		0.407	TM 0.417	TM 0.586	TM 0.753	TM 0.914	TM 0.385	TM 0.485	M 0.491	1.020	0.200

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb
1	11:01:40	TM 5579588.600	203504.890	TM 11877202.000	M 1615023.000	51509.474	790560.180	1011202.700	T 6183269.300	TM 3935824.200	TM 3070793.200
2	11:02:02	TM 5685975.200	204689.260	TM 12247208.000	M 1633247.000	52668.087	M 803381.990	1026677.100	T 6302895.100	TM 3982391.600	TM 3116888.200
3	11:02:23	TM 5603170.100	201834.760	TM 12191354.000	1626876.900	53325.171	802165.450	1026772.700	T 6311229.100	TM 4022142.400	TM 3144858.300
x		TM 5622911.300	203342.970	TM 12105255.000	M 1625048.900	52500.910	M 798702.540	1021550.900	T 6265797.800	TM 3980119.400	TM 3110846.600
σ		TM 55873.187	1434.120	TM 199464.040	M 9248.514	919.320	M 7077.675	8961.866	T 71593.137	TM 43203.963	TM 37400.361
%RSD		TM 0.994	0.705	TM 1.648	M 0.569	1.751	M 0.886	0.877	T 1.143	TM 1.085	TM 1.202

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:01:40	M 327078.220	TM 12971582.000	TM 58723548.000	138845.950	0.000	M 2209764.100	M 1085408.800
2	11:02:02	M 331427.890	TM 13082299.000	TM 59333745.000	141437.600	0.000	M 2251944.900	M 1105326.000
3	11:02:23	M 334569.740	TM 13115330.000	TM 59711553.000	140963.610	5.000	M 2266037.000	M 1107130.000
x		M 331025.280	TM 13056404.000	TM 59256282.000	140415.720	1.667	M 2242582.000	M 1099288.300
σ		M 3761.952	TM 75291.512	TM 498536.790	1379.967	2.887	M 29281.507	M 12053.772
%RSD		M 1.136	TM 0.577	TM 0.841	0.983	173.205	M 1.306	M 1.097

ICV 10/14/2016 11:07:02 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	11:07:24	120594.720	47372.228	20462.554	T 7874242.000	T 2255504.100	T 21306540.000	T 7491928.400	757721.420	153594.490	14776.547	T 1503461.600	426636.5
2	11:07:46	123989.490	47891.208	19766.715	T 7842506.200	T 2231939.900	T 21097986.000	T 7457539.400	761173.500	150365.250	14476.284	1399788.200	426826.3
3	11:08:08	119093.990	47091.434	20227.267	T 7730330.200	T 2231261.100	T 21033893.000	T 7343456.500	758830.190	152403.630	14671.455	1390127.700	424046.7
x		121226.070	47451.624	20152.178	T 7815692.800	T 2239568.300	T 21146139.000	T 7430974.800	759241.710	152121.120	14641.429	T 1431125.800	425836.5
σ		2508.076	405.755	353.944	T 75609.997	T 13804.922	T 142559.410	T 77718.941	1762.449	1633.055	152.367	T 62830.551	1552.9
%RSD		2.069	0.855	1.756	T 0.967	T 0.616	T 0.674	T 1.046	0.232	1.074	1.041	T 4.390	0.3

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	11:07:24	55547.411	T 2248474.500	T 46303291.000	657805.010	354888.570	435686.200	343054.630	44859.290	3826.439	4981.744	394.505	4780.6
2	11:07:46	56942.106	T 2254333.800	T 46510382.000	665610.930	354127.640	440987.940	343809.960	44202.538	3783.429	4893.218	380.004	4880.7
3	11:08:08	55778.180	T 2252987.700	T 46092856.000	659120.480	353504.620	434962.670	342130.930	43858.632	3706.412	4990.247	428.005	4745.6
x		56089.233	T 2251932.000	T 46302177.000	660845.470	354173.610	437212.270	342998.510	44306.820	3772.094	4955.070	400.838	4802.3
σ		747.568	T 3069.012	T 208765.160	4179.093	693.119	3289.776	840.918	508.414	60.811	53.734	24.619	70.0

%RSD		1.333	T 0.136	T 0.451	0.632	0.196	0.752	0.245	1.147	1.612	1.084	6.142	1.4
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	11:07:24	450435.610	196845.620	471917.930	150905.090	5095.779	77856.425	917191.380	513660.280	330729.220	260560.460	339742.820	165729.9
2	11:07:46	458639.870	196461.120	478342.230	154689.550	5320.849	77273.723	916293.980	519512.540	337855.020	264533.810	342835.180	163568.7
3	11:08:08	448586.740	195510.040	470046.130	152449.050	5200.811	78700.375	909844.660	518274.890	335151.250	263868.900	342687.180	165457.2
x		452554.070	196272.260	473435.430	152681.230	5205.813	77943.507	914443.340	517149.240	334578.490	262987.720	341755.060	164918.6
σ		5350.911	687.530	4351.253	1902.883	112.619	717.302	4007.767	3084.244	3597.264	2128.204	1744.224	1176.9
%RSD		1.182	0.350	0.919	1.246	2.163	0.920	0.438	0.596	1.075	0.809	0.510	0.7

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:07:24	52422.314	1038512.700	T 5277369.500	134752.550	0.000	252488.130	156440.780
2	11:07:46	52587.834	1034536.500	T 5343463.700	136113.550	5.000	272199.780	157965.060
3	11:08:08	52828.593	1040575.600	T 5276023.600	134581.180	0.000	286740.570	157283.660
x		52612.914	1037874.900	T 5298952.300	135149.090	1.667	270476.160	157229.830
σ		204.298	3069.651	T 38553.915	839.625	2.887	17191.146	763.562
%RSD		0.388	0.296	T 0.728	0.621	173.205	6.356	0.486

ICVL 10/14/2016 11:12:46 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:13:08	129944.600	247.502	7881.863	960734.600	32832.307	108798.960	773229.890	28634.577	166608.610	35.000	36950.916	11899.246
2	11:13:30	131647.890	230.002	8352.092	T 1037803.900	33323.280	118570.270	756811.440	28304.013	161438.100	55.000	38624.704	12184.452
3	11:13:51	130297.340	242.502	7896.870	960374.720	32331.329	114481.840	752670.080	28774.818	164124.140	60.000	37742.687	11654.073
x		130629.940	240.002	8043.609	T 986304.390	32828.972	113950.360	760903.810	28571.136	164056.950	50.000	37772.769	11912.591
σ		899.037	9.014	267.260	T 44600.209	495.984	4907.289	10873.686	241.729	2585.911	13.229	837.300	265.441
%RSD		0.688	3.756	3.323	T 4.522	1.511	4.307	1.429	0.846	1.576	26.458	2.217	2.228
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:13:08	9317.604	10723.449	910456.770	3745.421	1800.097	4535.617	12359.581	2771.230	690.014	612.511	421.005	2040.125
2	11:13:30	9382.640	11438.924	910377.620	3890.454	2055.127	4810.694	12980.052	2841.242	801.019	604.011	378.004	2270.155
3	11:13:51	9322.607	11363.873	922545.060	3740.420	1835.101	4895.719	12664.810	2769.230	758.017	592.511	418.005	2305.159
x		9340.950	11175.415	914459.820	3792.098	1896.775	4747.343	12668.148	2793.901	749.684	603.011	405.672	2205.146
σ		36.191	393.209	7002.140	85.215	138.249	188.224	310.249	41.011	55.970	10.038	24.008	143.981
%RSD		0.387	3.519	0.766	2.247	7.289	3.965	2.449	1.468	7.466	1.665	5.918	6.529
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:13:08	24082.386	209944.020	19601.520	3250.317	35.000	870.023	951179.230	3370.341	7031.483	5488.404	6196.152	168709.590
2	11:13:30	24432.896	206774.770	20057.061	3505.369	75.000	925.026	959909.000	3930.463	7291.595	5870.534	6341.206	169184.360
3	11:13:51	25709.815	208769.400	20412.492	3525.373	40.000	950.027	961242.670	4305.556	7146.532	5779.502	5826.018	170467.340
x		24741.699	208496.060	20023.691	3427.019	50.000	915.025	957443.640	3868.787	7156.537	5712.813	6121.125	169453.760
σ		856.534	1602.210	406.515	153.355	21.795	40.929	5465.962	470.648	130.344	199.603	265.662	909.315
%RSD		3.462	0.768	2.030	4.475	43.589	4.473	0.571	12.165	1.821	3.494	4.340	0.537

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:13:08	3970.473	23967.220	15477.183	139299.710	0.000	27382.476	16358.024
2	11:13:30	4375.574	24863.532	16272.940	140610.650	0.000	28113.691	17078.746
3	11:13:51	4235.538	24858.525	16338.004	141891.440	0.000	29150.470	16843.507
x		4193.862	24563.092	16029.376	140600.600	0.000	28215.546	16760.092
σ		205.741	516.046	479.318	1295.892	0.000	888.387	367.531
%RSD		4.906	2.101	2.990	0.922	0.000	3.149	2.193

ICBIS 10/14/2016 11:18:29 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:18:51	136930.200	30.000	1345.054	269023.830	690.014	5140.793	54328.403	560.009	168962.130	5.000	30583.034	2860.245
2	11:19:13	134097.300	32.500	1325.053	266625.760	530.008	3815.437	51068.119	630.012	169022.740	0.000	30402.704	2830.240
3	11:19:34	131567.260	22.500	1265.048	263598.160	510.008	3570.382	52733.292	840.021	165012.850	10.000	30783.402	2640.209
x		134198.250	28.333	1311.718	266415.920	576.677	4175.537	52709.938	676.681	167665.910	5.000	30589.714	2776.898
σ		2682.894	5.204	41.637	2718.913	98.661	844.868	1630.268	145.723	2297.811	5.000	190.437	119.323
%RSD		1.999	18.368	3.174	1.021	17.109	20.234	3.093	21.535	1.370	100.000	0.623	4.297

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:18:51	10328.199	1035.032	240152.830	265.002	90.000	330.003	635.012	2260.153	727.016	386.004	459.006	2140.137
2	11:19:13	10383.233	970.028	235674.580	165.001	100.000	225.002	645.012	2340.164	760.017	394.505	440.006	2030.124
3	11:19:34	10893.559	850.022	229671.640	210.001	35.000	255.002	500.007	2198.145	719.016	440.506	452.006	2085.130
x		10534.997	951.694	235166.350	213.335	75.000	270.002	593.344	2266.154	735.350	407.005	450.339	2085.131
σ		311.740	93.858	5259.041	50.084	35.000	54.084	80.986	71.200	21.734	29.322	9.609	55.007
%RSD		2.959	9.862	2.236	23.477	46.667	20.031	13.649	3.142	2.956	7.204	2.134	2.638

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:18:51	220.001	214086.210	1050.033	55.000	0.000	40.000	965741.910	1985.118	755.017	534.009	70.000	173013.370
2	11:19:13	105.000	211149.100	1075.035	75.000	0.000	25.000	976364.800	2395.172	715.015	561.509	75.000	170851.240
3	11:19:34	140.001	210652.880	1205.044	45.000	0.000	15.000	970846.010	2375.169	840.021	596.511	50.000	172023.200
x		155.001	211962.730	1110.037	58.333	0.000	26.667	970984.240	2251.820	770.018	564.010	65.000	171962.600
σ		58.950	1855.651	83.222	15.275	0.000	12.583	5312.795	231.187	63.839	31.326	13.229	1082.340
%RSD		38.032	0.875	7.497	26.186	0.000	47.187	0.547	10.267	8.291	5.554	20.352	0.629

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:18:51	205.001	1745.091	1650.082	135559.050	0.000	9927.956	75.000
2	11:19:13	240.002	1460.064	1305.051	141861.180	0.000	10648.401	50.000
3	11:19:34	190.001	1770.094	1270.048	138845.950	0.000	9657.797	50.000
x		211.668	1658.416	1408.394	138755.390	0.000	10078.051	58.333
σ		25.658	172.233	210.038	3152.038	0.000	512.074	14.434
%RSD		12.122	10.385	14.913	2.272	0.000	5.081	24.744

ICSA 10/14/2016 11:24:11 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	11:24:33	122458.230	10.000	1115.037	TM 148518520.000	T 14947102.000	T 136591110.000	TM 151465120.000	T 5713975.300	165063.350	310393.660	10498.305
2	11:24:55	121712.800	12.500	1185.042	TM 151523610.000	T 15211351.000	T 140767400.000	TM 153677380.000	T 5811275.200	164265.530	314560.700	10803.500
3	11:25:17	121914.270	12.500	1070.034	TM 150747030.000	T 15413667.000	T 140464940.000	TM 155583220.000	T 5865584.600	168113.610	320833.590	10658.407
x		122028.440	11.667	1123.371	TM 150263060.000	T 15190707.000	T 139274480.000	TM 153575240.000	T 5796945.000	165814.160	315262.650	10653.404
σ		385.606	1.443	57.955	TM 1559908.000	T 233966.400	T 2328788.100	TM 2060950.200	T 76813.816	2030.943	5255.241	152.659
%RSD		0.316	12.372	5.159	TM 1.038	T 1.540	T 1.672	TM 1.342	T 1.325	1.225	1.667	1.433

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	11:24:33	4060.495	1370.056	T 310568450.000	265.002	255.002	1100.036	1840.102	1631.080	539.009	416.005	454.506
2	11:24:55	4015.484	1455.064	T 316984960.000	270.002	330.003	1050.033	1690.086	1636.080	574.010	422.005	481.507
3	11:25:17	4105.506	1545.072	T 324812870.000	255.002	355.004	1065.034	2000.120	1674.084	568.010	440.006	488.007
x		4060.495	1456.730	T 317455430.000	263.335	313.336	1071.701	1843.436	1647.081	560.343	426.005	474.673

σ		45.011	87.520	T 7133856.500	7.638	52.043	25.660	155.044	23.518	18.718	12.490	17.765	
%RSD		1.109	6.008	T 2.247	2.900	16.609	2.394	8.411	1.428	3.340	2.932	3.743	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	11:24:33	3605.390	205954.710	T 3430478.200	290.003	530.008	690.014	944304.360	1610.078	720.016	571.010	75.000	172
2	11:24:55	3605.390	207169.620	T 3548645.900	290.003	510.008	710.015	954998.620	2045.126	755.017	623.512	120.000	180
3	11:25:17	3865.448	212273.240	T 3612208.300	325.003	655.013	785.018	967277.220	2195.145	945.027	646.013	105.000	183
x		3692.076	208465.860	T 3530444.100	301.669	565.010	728.349	955526.730	1950.116	806.686	613.511	100.000	178
σ		150.145	3352.782	T 92222.190	20.208	78.584	50.085	11495.532	303.885	121.078	38.488	22.913	5
%RSD		4.067	1.608	T 2.612	6.699	13.908	6.877	1.203	15.583	15.009	6.273	22.913	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:24:33	795.019	1715.088	2565.197	136768.880	0.000	16192.862	45.000
2	11:24:55	710.015	1605.077	2810.237	141790.580	0.000	14226.069	60.000
3	11:25:17	735.016	1570.074	2755.228	141114.880	0.000	12434.637	25.000
x		746.683	1630.080	2710.221	139891.450	0.000	14284.523	43.333
σ		43.686	75.671	128.570	2725.247	0.000	1879.795	17.559
%RSD		5.851	4.642	4.744	1.948	0.000	13.160	40.522

ICSAB 10/14/2016 11:29:54 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:30:16	120000.450	3715.414	54724.697	TM 147856320.000	T 15039872.000	T 137572330.000	TM 151969360.000	T 5776315.100	164134.240	313047.610	69313.833	1
2	11:30:38	117371.830	3507.869	56545.760	TM 150633150.000	T 15209735.000	T 140148970.000	TM 154825330.000	T 5821071.000	166346.010	318326.190	69569.897	1
3	11:30:59	116425.230	3565.381	56069.154	TM 150394880.000	T 15174793.000	T 141515130.000	TM 154796310.000	T 5902171.600	166335.910	318912.240	71086.275	1
x		117932.510	3596.222	55779.870	TM 149628120.000	T 15141467.000	T 139745480.000	TM 153863670.000	T 5833185.900	165605.390	316762.010	69990.002	1
σ		1852.382	107.154	944.369	TM 1539036.200	T 89701.150	T 2002129.400	TM 1640583.400	T 63796.889	1274.058	3230.085	957.995	
%RSD		1.571	2.980	1.693	TM 1.029	T 0.592	T 1.433	TM 1.066	T 1.094	0.769	1.020	1.369	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:30:16	17689.382	87152.271	T 310754340.000	65101.900	13245.261	33233.100	26711.388	20067.073	4530.616	5820.016	464.506	
2	11:30:38	18159.888	87137.193	T 320403780.000	66236.357	13915.807	34390.445	28424.217	20734.890	4536.617	5988.075	510.008	
3	11:30:59	17283.957	89278.481	T 323595430.000	66592.773	14085.950	34630.942	28158.767	21126.381	4595.633	5944.060	480.507	
x		17711.076	87855.982	T 318251180.000	65977.010	13749.006	34084.829	27764.791	20642.782	4554.289	5917.384	485.007	
σ		438.368	1231.943	T 6685703.500	778.538	444.473	747.356	921.878	535.627	35.931	87.148	23.082	
%RSD		2.475	1.402	T 2.101	1.180	3.233	2.193	3.320	2.595	0.789	1.473	4.759	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	11:30:16	3420.351	209194.680	T 3476729.000	76947.217	1755.092	19576.490	959453.890	1595.076	134873.530	105141.600	144054.880	18
2	11:30:38	3355.338	208050.500	T 3586563.700	79469.009	1835.101	19856.822	985012.010	1515.069	137726.720	108515.620	145512.460	18
3	11:30:59	3750.422	212860.660	T 3670517.000	79499.152	1750.092	20417.499	986856.470	1895.108	142541.950	110947.560	149053.540	18
x		3508.704	210035.280	T 3577936.600	78638.460	1780.095	19950.270	977107.460	1668.418	138380.730	108201.590	146206.960	18
σ		211.843	2512.844	T 97181.624	1464.736	47.702	428.221	15316.227	200.354	3875.820	2915.689	2570.684	
%RSD		6.038	1.196	T 2.716	1.863	2.680	2.146	1.568	12.009	2.801	2.695	1.758	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:30:16	45075.873	271452.740	200402.640	141709.900	0.000	310378.380	187271.240
2	11:30:38	46334.317	276108.280	204790.490	141649.390	0.000	331070.900	190644.160
3	11:30:59	47462.485	280414.290	205134.690	147257.680	0.000	348388.570	195080.040
x		46290.891	275991.770	203442.600	143538.990	0.000	329945.950	190998.480
σ		1193.898	4481.909	2638.309	3220.624	0.000	19030.051	3916.443
%RSD		2.579	1.624	1.297	2.244	0.000	5.768	2.051

CCV 10/14/2016 11:35:38 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:35:59	115680.070	86096.807	33413.460	T 14225471.000	T 4187251.000	T 39441874.000	T 14037147.000	T 1538523.100	152756.850	28243.911	T 2852006.300	8054
2	11:36:21	114431.490	85616.844	33593.822	T 14081498.000	T 4160777.600	T 39083456.000	T 13870951.000	1447893.800	147883.190	27152.099	T 2821757.900	7981
3	11:36:43	110927.930	84667.010	34004.654	T 13989806.000	T 4168373.700	T 38817118.000	T 13774182.000	T 1536065.500	145310.710	27557.764	T 2847480.800	8047
x		113679.830	85460.220	33670.646	T 14098925.000	T 4172134.100	T 39114149.000	T 13894093.000	T 1507494.100	148650.250	27651.258	T 2840415.000	8028
σ		2463.628	727.652	302.992	T 118794.810	T 13631.393	T 313506.990	T 133001.440	T 51630.018	3781.869	551.878	T 16315.219	40
%RSD		2.167	0.851	0.900	T 0.843	T 0.327	T 0.802	T 0.957	T 3.425	2.544	1.996	T 0.574	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:35:59	101930.750	T 4289517.100	T 88608687.000	1239632.700	658137.760	803334.800	627701.810	81731.913	6437.243	8572.204	390.005	70
2	11:36:21	102760.820	T 4245968.100	T 87229172.000	1233690.200	647861.680	799769.310	625584.390	80264.809	6394.226	8543.689	380.004	71
3	11:36:43	102116.880	T 4225124.000	T 87919350.000	1246933.300	653251.040	809549.960	623296.000	80342.180	6324.200	8555.195	388.505	68
x		102269.480	T 4253536.400	T 87919070.000	1240085.400	653083.490	804218.020	625527.400	80779.634	6385.223	8557.030	386.171	70
σ		435.570	T 32856.935	T 689757.480	6633.163	5140.092	4949.778	2203.457	825.605	57.057	14.346	5.393	1

%RSD		0.426	T 0.772	T 0.785	0.535	0.787	0.615	0.352	1.022	0.894	0.168	1.397	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	11:35:59	906415.170	199395.670	1948583.200	308412.390	10013.007	151904.110	933870.400	1017175.200	647503.140	508669.160	670995.520	1665
2	11:36:21	905286.220	194548.890	1954471.500	310882.650	10063.037	149593.350	917011.890	1001354.000	642074.040	507928.060	674809.980	1680
3	11:36:43	909623.040	192960.580	T 2125854.400	304969.900	10098.058	148231.260	913665.410	1009631.700	651982.800	509369.050	674367.610	1657
x		907108.140	195635.050	T 2009636.400	308088.310	10058.034	149909.570	921515.900	1009387.000	647186.660	508655.420	673391.040	1667
σ		2249.928	3352.219	T 100690.790	2969.665	42.746	1856.732	10829.357	7913.462	4961.954	720.594	2086.337	11
%RSD		0.248	1.714	T 5.010	0.964	0.425	1.239	1.175	0.784	0.767	0.142	0.310	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:35:59	48104.321	2065280.800	T 10607460.000	135428.000	0.000	313714.980	162508.430
2	11:36:21	50014.932	2063916.300	T 10659064.000	135468.320	0.000	322061.940	162856.800
3	11:36:43	49473.319	2068811.000	T 10618456.000	134046.900	0.000	332050.090	163800.990
x		49197.524	2066002.700	T 10628327.000	134981.070	0.000	322609.010	163055.400
σ		984.711	2525.969	T 27180.984	809.269	0.000	9179.788	668.776
%RSD		2.002	0.122	T 0.256	0.600	0.000	2.845	0.410

CCB 10/14/2016 11:41:21 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:41:43	117734.380	30.000	1120.038	258570.320	2550.195	19636.561	67526.518	1470.065	152847.670	85.000	21884.358	2310.160
2	11:42:05	117291.270	45.000	1050.033	267286.210	4440.592	37627.427	73531.851	1990.119	154432.180	50.000	22134.689	2385.171
3	11:42:26	117341.620	55.000	915.025	268952.700	5180.805	44830.211	78725.493	1880.106	150153.350	85.000	21829.286	2440.179
x		117455.760	43.333	1028.365	264936.410	4057.197	34031.400	73261.287	1780.097	152477.730	73.334	21949.444	2378.503
σ		242.603	12.583	104.210	5575.806	1356.566	12976.077	5604.388	274.072	2163.271	20.207	162.772	65.265
%RSD		0.207	29.038	10.134	2.105	33.436	38.130	7.650	15.396	1.419	27.555	0.742	2.744

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:41:43	7476.677	1600.077	250422.310	410.005	255.002	490.007	640.012	1692.086	471.007	388.505	390.005	2000.120
2	11:42:05	7131.525	2365.168	284121.280	625.012	300.003	640.012	875.023	1734.090	596.011	359.004	371.504	2040.125
3	11:42:26	7546.708	2735.224	300209.640	855.022	415.005	675.014	860.022	1644.081	580.010	399.505	390.005	1990.119
x		7384.970	2233.490	278251.080	630.013	323.337	601.678	791.686	1690.086	549.009	382.338	383.838	2010.121
σ		222.265	578.917	25407.460	222.551	82.514	98.280	131.567	45.038	68.024	20.943	10.681	26.461
%RSD		3.010	25.920	9.131	35.325	25.520	16.334	16.619	2.665	12.390	5.478	2.783	1.316

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:41:43	290.003	198312.860	3320.331	130.001	0.000	60.000	930372.690	2400.173	1055.033	752.517	150.001	165487.520
2	11:42:05	480.007	200944.100	3935.465	205.001	0.000	90.000	927720.820	2960.263	1055.033	963.028	350.004	167133.830
3	11:42:26	520.008	203687.090	4170.522	180.001	5.000	50.000	927541.230	2780.232	1460.064	940.527	405.005	165740.020
x		430.006	200981.350	3808.772	171.668	1.667	66.667	928544.910	2713.556	1190.044	885.357	301.670	166120.460
σ		122.885	2687.309	439.027	38.189	2.887	20.817	1585.444	285.936	233.845	115.592	134.197	886.641
%RSD		28.578	1.337	11.527	22.246	173.205	31.225	0.171	10.537	19.650	13.056	44.485	0.534

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:41:43	215.001	2720.222	3315.330	137817.460	0.000	9247.565	70.000
2	11:42:05	220.001	2870.247	4650.649	137424.240	0.000	8702.271	135.001
3	11:42:26	220.001	2820.239	5575.933	138190.530	0.000	8131.983	140.001
x		218.335	2803.569	4513.970	137810.740	0.000	8693.940	115.000
σ		2.887	76.389	1136.482	383.193	0.000	557.837	39.051
%RSD		1.322	2.725	25.177	0.278	0.000	6.416	33.958

MB 200-110153/1-A 10/14/2016 11:47:04 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:47:26	129813.590	42.500	955.027	391136.400	5871.034	63249.789	109297.210	3530.374	161650.140	150.001	20602.726	3595.388
2	11:47:48	130801.260	67.500	960.028	404274.380	7231.569	70222.626	115539.100	3810.436	161932.860	180.001	20407.486	3735.419
3	11:48:09	126609.080	40.000	990.029	396941.240	6211.157	63761.734	111451.400	3490.365	164598.790	135.001	20547.658	3810.436
x		129074.640	50.000	968.361	397450.670	6437.920	65744.716	112095.900	3610.392	162727.260	155.001	20519.290	3713.747
σ		2191.606	15.207	18.931	6583.788	708.046	3886.422	3170.463	174.394	1626.941	22.913	100.664	109.150
%RSD		1.698	30.414	1.955	1.657	10.998	5.911	2.828	4.830	1.000	14.783	0.491	2.939

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:47:26	7066.498	4115.508	355807.860	890.024	465.006	735.016	1080.035	1449.063	442.006	412.505	376.004	2210.146
2	11:47:48	6776.377	4080.499	372598.860	1025.032	545.009	890.024	970.028	1444.063	405.005	374.004	371.004	2085.130
3	11:48:09	7131.525	3950.468	358882.750	995.030	435.006	775.018	1095.036	1386.058	485.007	412.005	390.505	2205.146
x		6991.467	4048.825	362429.820	970.028	481.674	800.019	1048.366	1426.394	444.006	399.505	379.171	2166.808
σ		189.089	86.960	8939.836	70.891	56.864	80.471	68.256	35.022	40.039	22.086	10.129	70.779
%RSD		2.705	2.148	2.467	7.308	11.806	10.059	6.511	2.455	9.018	5.528	2.671	3.266

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:47:26	565.010	210136.420	3000.270	165.001	0.000	95.000	964482.010	46569.972	620.012	508.008	305.003	173559.000
2	11:47:48	765.018	210592.120	3405.348	155.001	0.000	45.000	954215.630	46198.942	680.014	584.510	355.004	170447.130
3	11:48:09	590.010	210814.910	2995.269	170.001	0.000	95.000	959019.950	47056.335	760.017	588.510	435.006	174236.010
x		640.013	210514.480	3133.629	163.334	0.000	78.334	959239.200	46608.416	686.681	560.343	365.004	172747.380
σ		108.977	345.842	235.329	7.638	0.000	28.868	5136.698	429.988	70.241	45.368	65.576	2020.629
%RSD		17.027	0.164	7.510	4.676	0.000	36.852	0.535	0.923	10.229	8.096	17.966	1.170

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:47:26	270.002	1955.115	4080.499	140923.270	0.000	18410.162	170.001
2	11:47:48	275.002	2040.125	4835.701	137373.820	0.000	15071.812	185.001
3	11:48:09	215.001	1870.105	3920.461	140943.440	0.000	13025.088	180.001
x		253.335	1955.115	4278.887	139746.850	0.000	15502.354	178.334
σ		33.292	85.010	488.809	2055.123	0.000	2718.231	7.638
%RSD		13.142	4.348	11.424	1.471	0.000	17.534	4.283

LCS 200-110153/2-A 10/14/2016 11:52:47 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:53:09	121692.660	1405.059	53520.797	T 7590973.900	268149.920	606492.810	T 7204394.600	247757.930	153160.530	60.000	121682.580	87539.292
2	11:53:31	118157.360	1362.556	54072.573	T 7672484.200	272509.780	612532.790	T 7164222.700	246154.440	150123.080	65.000	119053.700	86207.376
3	11:53:53	117462.470	1340.054	52221.685	T 7511450.900	261414.170	607379.230	T 7130210.000	248082.710	148771.030	70.000	115745.520	85302.740
x		119104.160	1369.223	53271.685	T 7591636.300	267357.960	608801.610	T 7166275.700	247331.690	150684.880	65.000	118827.270	86349.802
σ		2268.469	33.012	950.257	T 80518.673	5590.041	3261.546	T 37134.902	1032.387	2248.027	5.000	2975.002	1125.058
%RSD		1.905	2.411	1.784	T 1.061	2.091	0.536	T 0.518	0.417	1.492	7.692	2.504	1.303

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:53:09	15662.356	66698.193	T 6314495.500	26876.653	11478.952	34926.558	92053.515	8408.120	1320.052	1762.093	366.004	3220.311
2	11:53:31	14441.254	67305.628	T 6206535.700	26140.484	11178.748	34250.156	92566.344	8519.177	1318.052	1736.591	396.005	3290.325
3	11:53:53	14426.241	67009.438	T 6235322.300	26856.621	11188.754	34200.053	90565.396	8149.992	1312.052	1688.585	368.004	3440.355
x		14843.283	67004.419	T 6252117.900	26624.586	11282.151	34458.922	91728.418	8359.096	1316.719	1729.090	376.671	3316.997

σ		709.377	303.748	T 55905.234	419.364	170.508	405.758	1039.334	189.412	4.164	37.323	16.773	112.421
%RSD		4.779	0.453	T 0.894	1.575	1.511	1.178	1.133	2.266	0.316	2.159	4.453	3.389
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:53:09	224679.280	197624.760	158283.050	31124.034	510.008	7336.614	915607.770	42143.214	50250.640	38990.053	54794.927	168154.020
2	11:53:31	226534.140	195064.870	158565.720	31865.433	425.005	7066.498	926167.930	42223.417	50205.504	39405.529	53696.360	163689.900
3	11:53:53	224876.920	195945.100	158777.730	31093.978	525.008	7011.475	906605.090	42474.052	51038.027	39322.333	53480.668	168558.070
x		225363.450	196211.580	158542.170	31361.148	486.674	7138.196	916126.930	42280.228	50498.057	39239.305	53990.652	166800.660
σ		1018.653	1300.584	248.176	436.982	53.930	174.024	9791.749	172.581	468.172	219.830	704.822	2701.560
%RSD		0.452	0.663	0.157	1.393	11.081	2.438	1.069	0.408	0.927	0.560	1.305	1.620

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:53:09	79428.818	199097.130	75661.350	135609.460	0.000	284935.000	170543.110
2	11:53:31	80805.412	203206.280	77243.583	134177.950	0.000	298921.800	173013.370
3	11:53:53	78921.416	206881.070	76781.455	132393.760	0.000	307393.830	174230.960
x		79718.549	203061.490	76562.130	134060.390	0.000	297083.540	172595.810
σ		974.842	3893.991	813.599	1611.070	0.000	11341.701	1879.050
%RSD		1.223	1.918	1.063	1.202	0.000	3.818	1.089

200-35680-A-1-O 10/14/2016 11:58:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:58:52	123687.260	847.522	5475.899	T 1686920.400	T 4857489.100	T 129286810.000	T 10559777.000	TM 12205866.000	215757.560	21814.267	377691.580	2
2	11:59:14	122730.220	850.022	5275.835	T 1660504.500	T 4841779.600	T 128652840.000	T 10682654.000	TM 12363117.000	213255.670	20918.119	377328.490	2
3	11:59:35	126216.110	847.522	5645.956	T 1685880.900	T 4845723.200	T 130538800.000	T 10864523.000	TM 12416215.000	213093.610	20127.146	383824.320	2
x		124211.200	848.355	5465.897	T 1677768.600	T 4848330.600	T 129492810.000	T 10702318.000	TM 12328399.000	214035.610	20953.177	379614.800	2
σ		1801.038	1.443	185.263	T 14960.197	T 8172.881	T 959709.640	T 153321.420	TM 109387.850	1493.448	844.107	3650.071	
%RSD		1.450	0.170	3.389	T 0.892	T 0.169	T 0.741	T 1.433	TM 0.887	0.698	4.029	0.962	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:58:52	34159.971	T 24888788.000	T 642118650.000	219424.970	93672.498	1673413.500	674648.650	21977.481	988.029	1105.537	447.006	
2	11:59:14	34084.818	T 25234805.000	TM 641721300.000	212739.130	92601.539	1681400.500	679213.560	22039.563	1102.036	1107.537	471.507	
3	11:59:35	35167.063	T 25824438.000	TM 657725870.000	218295.280	95759.307	T 1882762.400	684664.940	22453.114	1031.032	1146.039	478.007	
x		34470.617	T 25316010.000	TM 647188610.000	216819.790	94011.115	T 1745858.800	679509.050	22156.719	1040.366	1119.704	465.507	
σ		604.309	T 473081.520	TM 9127701.300	3578.817	1605.887	T 118629.200	5014.682	258.556	57.574	22.829	16.348	
%RSD		1.753	T 1.869	TM 1.410	1.651	1.708	T 6.795	0.738	1.167	5.534	2.039	3.512	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	11:58:52	T 2044342.600	791885.950	16087.761	6591.303	445.006	3650.400	921214.400	59701.738	4775.684	3708.913	643933.770	2
2	11:59:14	1914776.000	796833.590	16568.231	6626.317	440.006	3870.449	935762.200	60369.135	4630.643	3777.928	658517.320	2
3	11:59:35	T 2111174.700	811412.320	16438.102	6741.363	350.004	3935.465	932919.290	62095.460	4850.706	3845.444	675918.580	2
x		T 2023431.100	800043.960	16364.698	6652.994	411.672	3818.771	929965.300	60722.111	4752.344	3777.428	659456.560	2
σ		T 99855.293	10151.335	248.504	78.506	53.465	149.394	7710.653	1235.282	111.872	68.267	16013.077	
%RSD		T 4.935	1.269	1.519	1.180	12.987	3.912	0.829	2.034	2.354	1.807	2.428	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:58:52	2345.165	11038.654	1823200.300	149093.900	0.000	423077.540	195773.100
2	11:59:14	2385.171	11333.852	1839114.500	151969.700	0.000	431832.840	199942.160
3	11:59:35	2365.168	11694.101	1859417.800	153907.360	0.000	433618.310	205650.990
x		2365.168	11355.536	1840577.500	151656.990	0.000	429509.560	200455.410
σ		20.003	328.261	18153.044	2421.918	0.000	5641.382	4958.907
%RSD		0.846	2.891	0.986	1.597	0.000	1.313	2.474

200-35680-A-2-A 10/14/2016 12:04:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	12:04:34	128614.340	572.510	4670.654	T 1124144.800	T 2581911.800	T 81502838.000	T 7415964.500	T 5390853.600	201703.180	23791.970	247062.730	171710.0
2	12:04:56	126014.600	575.010	4530.616	T 1127936.000	T 2616627.800	T 81891601.000	T 7340411.100	T 5483480.700	200559.510	25128.930	249072.310	171275.5
3	12:05:18	118691.130	507.508	4890.717	T 1143498.200	T 2629201.800	T 82529282.000	T 7405151.600	T 5486042.100	203008.890	24533.043	249869.100	173695.4
x		124440.020	551.676	4697.329	T 1131859.700	T 2609247.200	T 81974573.000	T 7387175.700	T 5453458.800	201757.190	24484.647	248668.050	172226.9
σ		5145.581	38.271	181.527	T 10255.940	T 24493.709	T 518227.820	T 40858.604	T 54232.808	1225.587	669.793	1446.204	1290.1
%RSD		4.135	6.937	3.864	T 0.906	T 0.939	T 0.632	T 0.553	T 0.994	0.607	2.736	0.582	0.7

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	12:04:34	22425.076	T 13924219.000	T 365924650.000	150602.370	66457.233	1608593.500	581914.430	14927.682	929.026	1051.533	474.507	7796.8
2	12:04:56	22425.076	T 14021472.000	T 369545230.000	150678.050	66256.436	1635475.500	580889.590	15017.763	953.027	1077.035	441.506	7321.6
3	12:05:18	21904.385	T 13972142.000	T 369787340.000	153872.030	66979.317	1655263.300	587220.760	15357.072	936.026	1095.536	445.006	7651.7
x		22251.512	T 13972611.000	T 368419070.000	151717.490	66564.329	1633110.800	583341.590	15100.839	939.360	1074.701	453.673	7590.0
σ		300.622	T 48628.110	T 2163624.600	1866.277	373.150	23424.559	3398.311	226.429	12.343	22.094	18.127	243.5

%RSD		1.351	T 0.348	T 0.587	1.230	0.561	1.434	0.583	1.499	1.314	2.056	3.996	3.2
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	12:04:34	888123.810	582131.830	11694.101	7101.513	250.002	3900.456	987895.380	89937.007	4340.565	3372.341	391192.700	220245.6
2	12:04:56	896468.230	581210.490	11639.063	7556.713	350.004	3970.473	986559.640	90892.168	4305.556	3453.858	397207.480	221714.9
3	12:05:18	909132.330	579823.410	11208.768	7446.663	355.004	3865.448	988626.900	91736.776	4490.605	3460.359	407706.480	224866.7
x		897908.120	581055.250	11513.977	7368.296	318.336	3912.126	987693.980	90855.317	4378.909	3428.853	398702.220	222275.8
σ		10578.015	1162.011	265.748	237.503	59.232	53.476	1048.244	900.450	98.303	49.048	8357.747	2361.0
%RSD		1.178	0.200	2.308	3.223	18.607	1.367	0.106	0.991	2.245	1.430	2.096	1.0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:04:34	1965.116	7781.816	1454182.500	153352.280	5.000	252579.500	132277.850
2	12:04:56	1980.118	7736.795	1476879.000	153644.950	0.000	256412.360	134440.050
3	12:05:18	1790.096	7401.643	1507884.300	151747.690	0.000	257168.880	137298.200
x		1911.776	7640.085	1479648.600	152914.970	1.667	255386.920	134672.030
σ		105.645	207.720	26957.835	1021.434	2.887	2460.543	2518.205
%RSD		5.526	2.719	1.822	0.668	173.205	0.963	1.870

200-35680-A-3-A 10/14/2016 12:09:56 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	12:10:17	163548.530	1560.073	5285.838	T 2090008.100	T 8445323.800	T 296837130.000	T 17582030.000	T 2467770.500	349047.140	69359.021	662724.250	62
2	12:10:39	160297.170	1607.578	4730.671	T 2072733.800	T 8513107.200	T 301487600.000	T 17776080.000	T 2512111.000	360732.030	67365.870	677303.120	62
3	12:11:01	159630.820	1422.561	4595.633	T 2105264.500	T 8566926.700	T 300312420.000	T 17904089.000	T 2536029.300	358208.470	66437.153	672613.830	62
x		161158.840	1530.070	4870.714	T 2089335.400	T 8508452.600	T 299545720.000	T 17754066.000	T 2505303.600	355995.880	67720.681	670880.400	62
σ		2096.179	96.088	365.793	T 16275.795	T 60934.924	T 2418180.500	T 162154.490	T 34634.837	6148.646	1492.898	7442.411	
%RSD		1.301	6.280	7.510	T 0.779	T 0.716	T 0.807	T 0.913	T 1.382	1.727	2.204	1.109	

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	12:10:17	82282.613	TM 53504915.000	T 908859700.000	426831.450	212511.250	146899.540	540494.180	13667.602	1435.062	746.517	729.016	
2	12:10:39	81569.118	TM 54695268.000	T 924967180.000	436948.610	214217.890	147040.780	549765.130	13771.687	1394.058	784.018	741.016	
3	12:11:01	83312.711	TM 54791115.000	T 935110300.000	439191.420	214374.890	148690.320	552648.170	14317.147	1436.062	777.018	676.014	
x		82388.147	TM 54330433.000	T 922979060.000	434323.830	213701.340	147543.550	547635.830	13918.812	1421.727	769.184	715.349	
σ		876.574	TM 716523.560	T 13237748.000	6584.780	1033.636	995.640	6350.615	348.872	23.967	19.940	34.590	
%RSD		1.064	TM 1.319	T 1.434	1.516	0.484	0.675	1.160	2.506	1.686	2.592	4.835	

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	12:10:17	1074451.900	1380662.400	6791.383	4030.487	475.007	2085.130	1194418.500	58035.869	1965.116	1537.571	1268163.900	32
2	12:10:39	1107359.500	1417598.200	7261.582	4155.518	510.008	2060.127	1203948.900	59902.456	2010.121	1661.083	1284900.800	33
3	12:11:01	T 1238446.000	1415120.400	7496.686	4330.563	725.016	1960.115	1199279.700	60218.592	2095.132	1691.586	1308008.600	33
x		T 1140085.800	1404460.300	7183.217	4172.189	570.010	2035.124	1199215.700	59385.639	2023.456	1630.080	1287024.400	33
σ		T 86756.976	20646.817	359.122	150.731	135.375	66.152	4765.531	1179.574	66.026	81.554	20007.044	
%RSD		T 7.610	1.470	4.999	3.613	23.750	3.251	0.397	1.986	3.263	5.003	1.555	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:10:17	810.020	14371.193	1481640.000	187154.940	0.000	1174516.100	180259.560
2	12:10:39	830.021	14881.641	1510238.900	185820.130	0.000	1213022.700	185127.490
3	12:11:01	940.027	14971.722	1527112.400	188692.130	0.000	1217378.800	186209.440
x		860.022	14741.519	1506330.400	187222.400	0.000	1201639.200	183865.500
σ		70.004	323.858	22986.780	1437.187	0.000	23590.088	3169.342
%RSD		8.140	2.197	1.526	0.768	0.000	1.963	1.724

200-35680-A-4-A 10/14/2016 12:15:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:16:00	151263.320	817.520	7271.586	T 1567467.800	T 4911502.500	T 152497810.000	T 14583335.000	T 3689194.700	272977.340	44604.607	446188.640	34442
2	12:16:22	151485.320	855.022	7391.639	T 1566183.700	T 4882281.600	T 153221740.000	T 14636202.000	T 3694248.400	274481.750	45572.220	445921.630	33860
3	12:16:44	148478.440	867.523	6821.396	T 1545607.400	T 4872843.000	T 154156480.000	T 14795076.000	T 3742708.000	277063.950	46645.182	456517.780	34717
x		150409.030	846.688	7161.540	T 1559753.000	T 4888875.700	T 153292010.000	T 14671538.000	T 3708717.000	274841.010	45607.336	449542.690	34340
σ		1675.615	26.022	300.627	T 12267.237	T 20155.666	T 831565.280	T 110204.470	T 29545.274	2066.856	1020.741	6042.087	437
%RSD		1.114	3.073	4.198	T 0.786	T 0.412	T 0.542	T 0.751	T 0.797	0.752	2.238	1.344	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:16:00	47281.973	TM 56319982.000	T 678376000.000	248524.220	116077.820	T 2453097.900	828618.640	23377.384	1533.071	1309.551	618.011	849
2	12:16:22	45772.768	TM 56820973.000	T 682014460.000	246880.050	115423.300	T 2456223.700	831796.200	23189.121	1505.068	1323.553	639.012	863
3	12:16:44	46920.954	TM 57107090.000	T 687627890.000	250605.030	116274.180	T 2453856.400	833976.190	23145.060	1545.072	1370.056	613.511	842
x		46658.565	TM 56749349.000	T 682672780.000	248669.760	115925.100	T 2454392.600	831463.680	23237.188	1527.737	1334.387	623.512	851
σ		788.074	TM 398412.570	T 4660945.000	1866.749	445.526	T 1630.425	2694.209	123.395	20.528	31.674	13.611	10
%RSD		1.689	TM 0.702	T 0.683	0.751	0.384	T 0.066	0.324	0.531	1.344	2.374	2.183	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	12:16:00	939382.580	842709.450	14771.543	9227.554	550.009	4020.485	1180508.000	82563.999	5120.787	4154.518	858337.450	26654
2	12:16:22	954347.890	849438.460	15191.921	9252.568	460.006	3960.470	1189022.400	84317.746	5635.953	4231.537	868125.370	26932
3	12:16:44	939202.870	843708.120	15712.403	9152.512	490.007	3775.428	1183628.000	84770.032	5570.931	4274.048	883307.720	26991
x		944311.110	845285.340	15225.289	9210.878	500.008	3918.794	1184386.100	83883.926	5442.557	4220.034	869923.510	26859
σ		8692.567	3631.204	471.317	52.070	45.827	127.734	4307.555	1165.245	280.551	60.590	12581.878	180
%RSD		0.921	0.430	3.096	0.565	9.165	3.260	0.364	1.389	5.155	1.436	1.446	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:16:00	2185.143	12289.529	2030214.200	174054.120	0.000	416817.740	167810.580
2	12:16:22	2235.150	12935.017	2040617.100	175903.390	0.000	416848.500	170250.130
3	12:16:44	2330.163	12664.810	2057743.400	172518.280	0.000	422144.320	173447.850
x		2250.152	12629.786	2042858.200	174158.600	0.000	418603.520	170502.860
σ		73.665	324.166	13900.755	1694.970	0.000	3066.460	2827.121
%RSD		3.274	2.567	0.680	0.973	0.000	0.733	1.658

200-35680-A-5-A 10/14/2016 12:21:22 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:21:44	155098.320	1260.048	6331.202	T 1826551.900	T 4902128.500	T 229321030.000	T 18572607.000	T 1827619.200	304404.710	53736.489	674653.850	44986
2	12:22:05	154008.280	1202.543	6221.161	T 1824381.200	T 4961701.700	T 234044360.000	T 18714201.000	T 1856071.900	308560.080	51017.966	673883.610	44982
3	12:22:27	150395.520	1302.551	6396.227	T 1769195.100	T 4852575.900	T 230939640.000	T 18680530.000	T 1870921.300	310668.710	54905.289	690925.520	46182
x		153167.370	1255.047	6316.197	T 1806709.400	T 4905468.700	T 231435010.000	T 18655779.000	T 1851537.500	307877.840	53219.915	679820.990	45383
σ		2461.593	50.191	88.492	T 32506.460	T 54639.535	T 2400315.300	T 73970.811	T 22004.297	3187.245	1994.482	9624.511	691
%RSD		1.607	3.999	1.401	T 1.799	T 1.114	T 1.037	T 0.397	T 1.188	1.035	3.748	1.416	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:21:44	60921.138	T 30996416.000	T 776873500.000	311926.890	152726.570	1896101.000	730531.950	24073.373	1832.101	1513.569	665.513	734
2	12:22:05	61899.734	T 31259294.000	T 790170850.000	312996.670	152141.250	1881089.300	729404.130	24455.930	1927.111	1468.065	669.513	708
3	12:22:27	63455.569	T 31648048.000	T 790176820.000	318163.120	151091.770	1885007.100	742728.660	24799.437	1981.118	1514.069	649.013	741
x		62092.147	T 31301253.000	T 785740390.000	314362.230	151986.530	1887399.100	734221.580	24442.913	1913.443	1498.567	661.346	727

σ		1278.124	T 327835.850	T 7678950.500	3334.847	828.309	7786.471	7388.898	363.207	75.443	26.417	10.867	17
%RSD		2.058	T 1.047	T 0.977	1.061	0.545	0.413	1.006	1.486	3.943	1.763	1.643	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	12:21:44	735545.390	1138266.000	19881.852	10533.327	410.005	4620.640	1200127.600	71287.130	4410.583	3480.863	1023941.300	29610
2	12:22:05	750631.150	1146171.100	21744.175	10558.343	520.008	4715.667	1205548.600	72873.971	4790.688	3613.892	1052851.700	30273
3	12:22:27	752832.160	1152067.600	21614.006	10793.494	500.007	4860.709	1223788.600	73767.891	4750.677	3617.893	1066574.300	30385
x		746336.230	1145501.600	21080.011	10628.388	476.674	4732.339	1209821.600	72642.997	4650.650	3570.883	1047789.100	30089
σ		9409.723	6925.111	1039.676	143.532	58.596	120.899	12395.793	1256.405	208.864	77.985	21762.727	418
%RSD		1.261	0.605	4.932	1.350	12.293	2.555	1.025	1.730	4.491	2.184	2.077	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:21:44	1585.075	16312.979	2133087.100	177702.320	0.000	606171.430	405954.480
2	12:22:05	1615.078	16603.266	2174966.800	180805.430	0.000	624966.860	416489.690
3	12:22:27	1745.091	16553.216	2167813.600	178258.210	0.000	631776.520	416479.440
x		1648.415	16489.821	2158622.500	178921.990	0.000	620971.600	412974.540
σ		85.058	155.180	22401.700	1654.620	0.000	13261.848	6079.547
%RSD		5.160	0.941	1.038	0.925	0.000	2.136	1.472

200-35680-A-6-A 10/14/2016 12:27:05 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:27:27	147419.100	745.017	6011.084	┬1593883.800	┬3235341.500	┬138143850.000	┬12788088.000	┬1830526.800	267072.830	39657.125	421416.230	284212
2	12:27:48	147217.330	882.523	6041.095	┬1580278.300	┬3230298.900	┬138219640.000	┬12783776.000	┬1825127.000	267184.600	41506.620	424205.670	286862
3	12:28:10	148538.980	825.020	6436.243	┬1595045.600	┬3239834.500	┬139007030.000	┬12890810.000	┬1838488.000	269877.470	41902.609	427051.990	290820
x		147725.140	817.520	6162.807	┬1589735.900	┬3235158.300	┬138456840.000	┬12820891.000	┬1831380.600	268044.960	41022.118	424224.630	287298
σ		711.992	69.060	237.277	┬8211.059	┬4770.428	┬477982.210	┬60589.801	┬6721.298	1587.977	1198.585	2817.928	3325
%RSD		0.482	8.447	3.850	┬0.517	┬0.147	┬0.345	┬0.473	┬0.367	0.592	2.922	0.664	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:27:27	42002.861	┬20954888.000	┬505936360.000	209554.160	95839.768	┬3219597.600	937411.100	19577.492	2054.127	1767.594	630.512	6471
2	12:27:48	40734.719	┬21283505.000	┬515713510.000	209154.180	97283.094	┬3274183.400	946176.170	19460.355	2075.129	1848.103	610.511	6526
3	12:28:10	42288.582	┬21154818.000	┬515821210.000	209457.960	99209.399	┬3312060.300	956792.230	19893.866	2051.126	1804.598	581.510	6611
x		41675.387	┬21131070.000	┬512490360.000	209388.770	97444.087	┬3268613.800	946793.160	19643.904	2060.127	1806.765	607.511	6536
σ		827.074	┬165590.470	┬5676189.000	208.773	1690.575	┬46482.254	9705.286	224.257	13.078	40.298	24.638	70
%RSD		1.985	┬0.784	┬1.108	0.100	1.735	┬1.422	1.025	1.142	0.635	2.230	4.056	1

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	12:27:27	617330.000	793636.330	16042.717	10863.539	690.014	7696.777	1213140.900	80051.788	5791.006	4871.212	799108.730	262633
2	12:27:48	624883.830	797389.250	15457.164	10798.497	775.018	7561.715	1208565.800	81448.531	6026.089	4858.708	806963.970	264065
3	12:28:10	616987.670	792703.470	15312.031	10898.562	600.011	7531.701	1203787.900	82071.576	6451.248	4933.230	806229.680	269816
x		619733.840	794576.350	15603.971	10853.533	688.348	7596.731	1208498.200	81190.632	6089.448	4887.717	804100.790	265505
σ		4463.310	2480.292	386.833	50.777	87.516	87.932	4676.862	1034.297	334.650	39.908	4338.811	3801
%RSD		0.720	0.312	2.479	0.468	12.714	1.158	0.387	1.274	5.496	0.817	0.540	1

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:27:27	2295.158	10568.350	2136710.100	171538.240	0.000	347464.580	158621.250
2	12:27:48	2240.151	11363.873	2156270.200	171295.770	0.000	349915.060	156072.350
3	12:28:10	2355.166	11068.674	2210702.200	175994.340	0.000	360420.400	160357.740
x		2296.825	11000.299	2167894.200	172942.780	0.000	352600.010	158350.450
σ		57.526	402.145	38341.144	2645.506	0.000	6882.589	2155.492
%RSD		2.505	3.656	1.769	1.530	0.000	1.952	1.361

200-35680-A-6-A SD@5 10/14/2016 12:32:49 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:33:11	146359.830	147.501	1960.115	580434.130	657675.030	┬30923057.000	┬2942919.100	379225.840	243719.030	8952.404	160801.990	69007.566
2	12:33:32	140388.790	172.501	2065.128	573355.320	667462.830	┬30755465.000	┬2844302.800	377169.970	236252.680	8972.415	158908.970	67898.023
3	12:33:54	140882.930	182.501	1950.114	557655.890	659255.670	┬30288556.000	┬2870992.900	378029.100	232804.660	9242.562	163008.270	70353.174
x		142543.850	167.501	1991.786	570481.780	661464.510	┬30655692.000	┬2886071.600	378141.640	237592.120	9055.793	160906.410	69086.255
σ		3313.955	18.028	63.713	11657.828	5254.474	┬328806.540	┬51008.025	1032.544	5579.110	162.056	2051.646	1229.466
%RSD		2.325	10.763	3.199	2.044	0.794	┬1.073	┬1.767	0.273	2.348	1.790	1.275	1.780

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:33:11	32211.097	┬4603465.800	┬113985500.000	47738.271	22294.902	673227.890	236485.950	13731.654	3506.369	954.527	585.510	3720.415
2	12:33:32	32035.759	┬4583413.500	┬113719150.000	46805.631	22319.935	666359.990	233306.610	13831.737	3484.364	872.523	583.510	3725.416
3	12:33:54	32651.953	┬4575000.600	┬112928380.000	46880.842	21724.149	669424.190	234645.210	13714.640	3341.335	900.524	590.010	3865.448
x		32299.603	┬4587293.300	┬113544340.000	47141.581	22112.995	669670.690	234812.590	13759.344	3444.023	909.192	586.344	3770.427
σ		317.488	┬14623.843	┬549811.320	518.115	336.983	3440.581	1596.265	63.269	89.608	41.684	3.329	82.329

%RSD		0.983	₸0.319	₸0.484	1.099	1.524	0.514	0.680	0.460	2.602	4.585	0.568	2.184
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:33:11	135841.340	394975.360	3295.326	2605.204	115.000	1770.094	1270281.400	20622.751	1560.073	1282.049	174155.170	226366.890
2	12:33:32	136224.450	388679.920	3210.309	2545.194	110.000	1700.087	1261037.500	21403.735	1550.072	1320.552	176262.150	226052.670
3	12:33:54	137751.920	393593.230	3265.320	2695.218	105.000	1875.105	1250905.000	21498.857	1635.080	1257.547	176444.060	229022.810
x		136605.900	392416.170	3256.985	2615.205	110.000	1781.762	1260741.300	21175.114	1581.742	1286.716	175620.460	227147.450
σ		1010.800	3308.659	43.117	75.510	5.000	88.091	9691.601	480.719	46.462	31.761	1272.232	1631.683
%RSD		0.740	0.843	1.324	2.887	4.545	4.944	0.769	2.270	2.937	2.468	0.724	0.718

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:33:11	410.005	2600.203	443549.580	169295.480	0.000	66904.015	32186.048
2	12:33:32	540.009	2600.203	450810.550	170406.720	0.000	68600.893	32035.759
3	12:33:54	555.009	2555.196	453866.840	169406.600	0.000	69178.272	33488.611
x		501.674	2585.200	449408.990	169702.940	0.000	68227.727	32570.139
σ		79.741	25.985	5299.502	612.023	0.000	1182.159	798.961
%RSD		15.895	1.005	1.179	0.361	0.000	1.733	2.453

200-35680-A-6-A PDS 10/14/2016 12:38:32 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	12:38:54	141024.120	2330.163	66186.158	₸10180561.000	₸3297274.300	₸130442650.000	₸21186075.000	₸2027584.300	254498.360	38484.380	531197.330	3708
2	12:39:16	140197.190	2310.160	66743.373	₸10384215.000	₸3393567.500	₸130197310.000	₸21690106.000	₸2075178.500	255777.720	38780.064	542053.620	3764
3	12:39:37	136012.730	2327.662	69389.146	₸10464135.000	₸3394375.600	₸129299940.000	₸21205990.000	₸2051225.600	250041.660	37898.039	536606.540	3751
x		139078.010	2322.662	67439.559	₸10342970.000	₸3361739.100	₸129979960.000	₸21360723.000	₸2051329.500	253439.250	38387.494	536619.160	3741
σ		2686.620	10.899	1711.224	₸146216.800	₸55829.643	₸601561.840	₸285427.330	₸23797.295	3011.128	448.924	5428.152	28
%RSD		1.932	0.469	2.537	₸1.414	₸1.661	₸0.463	₸1.336	₸1.160	1.188	1.169	1.012	
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	12:38:54	51730.156	₸19576661.000	₸478253480.000	225941.170	101820.070	₸3005276.500	977927.550	26997.849	3129.294	3457.859	544.509	77
2	12:39:16	52808.530	₸20043190.000	₸491993550.000	230290.090	104114.180	₸3087028.800	992491.760	27523.708	3309.329	3357.338	547.009	77
3	12:39:37	51705.078	₸19973254.000	₸489928630.000	230087.320	103238.760	₸3039912.600	1001290.300	27568.782	3214.310	3400.347	560.009	76
x		52081.255	₸19864368.000	₸486725220.000	228772.860	103057.670	₸3044072.600	990569.880	27363.446	3217.644	3405.181	550.509	76
σ		629.964	₸251603.450	₸7409034.800	2454.409	1157.725	₸41034.611	11799.368	317.418	90.064	50.434	8.322	
%RSD		1.210	₸1.267	₸1.522	1.073	1.123	₸1.348	1.191	1.160	2.799	1.481	1.512	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	12:38:54	840554.620	727926.590	203960.410	47096.448	1095.036	15487.192	1123609.900	73125.067	64991.470	50206.006	806670.250	2517
2	12:39:16	868262.230	744641.230	211609.890	47447.442	1155.040	15632.328	1148707.100	76304.271	66266.476	51632.855	827069.470	2515
3	12:39:37	861583.680	748947.910	211209.860	47978.960	1240.046	16002.679	1151971.300	75766.828	67596.802	51896.171	831507.310	2545
x		856800.170	740505.240	208926.720	47507.617	1163.374	15707.400	1141429.400	75065.389	66284.916	51245.010	821749.010	2526
σ		14459.921	11104.220	4305.601	444.323	72.863	265.817	15518.216	1701.719	1302.764	909.386	13245.768	16
%RSD		1.688	1.500	2.061	0.935	6.263	1.692	1.360	2.267	1.965	1.775	1.612	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:38:54	47994.003	235745.570	2086382.400	163831.280	0.000	676824.240	334707.460
2	12:39:16	46830.701	241877.500	2150637.300	166346.010	0.000	698970.780	349920.160
3	12:39:37	48911.665	242937.750	2171602.600	168800.500	0.000	710508.600	349741.470
x		47912.123	240186.940	2136207.400	166325.930	0.000	695434.540	344789.700
σ		1042.896	3882.700	44404.797	2484.670	0.000	17118.344	8731.931
%RSD		2.177	1.617	2.079	1.494	0.000	2.462	2.533

CCV 10/14/2016 12:44:17 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:44:38	115428.330	92553.774	35592.965	┬15854943.000	┬4711449.300	┬43915777.000	┬16025727.000	┬1775905.900	174225.910	32105.894	┬3307108.700	92
2	12:45:00	112397.720	87745.371	35407.571	┬15501568.000	┬4703691.500	┬43481607.000	┬15223930.000	┬1722115.700	166477.310	31319.400	┬3237741.800	90
3	12:45:22	110545.400	88107.273	34881.463	┬15301064.000	┬4543041.200	┬42351921.000	┬15176299.000	┬1689474.700	164215.030	31479.701	┬3199057.800	89
x		112790.480	89468.806	35294.000	┬15552525.000	┬4652727.300	┬43249769.000	┬15475319.000	┬1729165.400	168306.080	31634.998	┬3247969.500	90
σ		2465.047	2677.782	369.097	┬280433.250	┬95070.117	┬807294.130	┬477261.840	┬43644.704	5250.020	415.609	┬54746.682	1
%RSD		2.186	2.993	1.046	┬1.803	┬2.043	┬1.867	┬3.084	┬2.524	3.119	1.314	┬1.686	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:44:38	119557.290	┬4881150.100	┬100869320.000	1443795.100	760775.950	937384.670	699471.130	92108.820	7509.691	9555.739	458.006	
2	12:45:00	114592.590	┬4724017.400	┬97365180.000	1390144.000	745932.070	916489.290	690191.010	89971.191	7283.591	9423.663	411.005	
3	12:45:22	113928.060	┬4721978.500	┬96843858.000	1373538.300	734876.840	907016.600	684800.340	89147.784	6977.460	9181.528	426.505	
x		116025.980	┬4775715.300	┬98359452.000	1402492.500	747194.960	920296.850	691487.490	90409.265	7256.914	9386.977	431.839	
σ		3076.197	┬91314.879	┬2189181.400	36720.114	12995.658	15537.959	7420.825	1528.354	267.117	189.783	23.950	
%RSD		2.651	┬1.912	┬2.226	2.618	1.739	1.688	1.073	1.690	3.681	2.022	5.546	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	12:44:38	1010093.400	216314.710	┬2321300.300	334743.170	10373.227	162094.420	1006872.000	1092831.000	704246.030	547131.560	736375.880	17
2	12:45:00	980724.950	213397.460	┬2345265.400	330632.320	10628.388	161453.250	1004112.800	1095396.500	696005.470	541540.850	726214.270	17
3	12:45:22	961205.620	206865.890	┬2292684.300	331789.990	10538.331	159156.310	987428.920	1066957.700	686945.990	536789.280	720092.030	17
x		984008.000	212192.690	┬2319750.000	332388.490	10513.315	160901.330	999471.230	1085061.800	695732.490	541820.560	727560.730	17
σ		24608.693	4838.252	┬26324.832	2119.768	129.407	1544.858	10519.798	15730.954	8653.251	5176.810	8225.002	3
%RSD		2.501	2.280	┬1.135	0.638	1.231	0.960	1.053	1.450	1.244	0.955	1.130	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:44:38	50812.339	2097739.200	┬10825359.000	140590.480	0.000	310587.220	161922.770
2	12:45:00	50045.022	2089651.500	┬10854139.000	139450.970	0.000	322841.810	162296.370
3	12:45:22	50225.564	2074835.500	┬10754769.000	136657.970	5.000	327328.050	163063.810
x		50360.975	2087408.700	┬10811422.000	138899.810	1.667	320252.360	162427.650
σ		401.180	11615.384	┬51130.145	2023.359	2.887	8665.612	581.739
%RSD		0.797	0.556	┬0.473	1.457	173.205	2.706	0.358

CCB 10/14/2016 12:50:00 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:50:22	126407.560	20.000	1035.032	268495.410	1350.055	17954.666	64886.061	1060.034	176671.450	40.000	27602.839	2610.204
2	12:50:44	119466.640	17.500	960.028	276921.610	1540.071	22114.662	65839.790	1160.040	177762.960	40.000	27708.013	2560.197
3	12:51:05	122397.790	22.500	970.028	273119.640	1560.073	24132.459	64464.429	1080.035	178874.760	40.000	27828.213	2795.234
x		122757.330	20.000	988.363	272845.560	1483.400	21400.596	65063.427	1100.036	177769.720	40.000	27713.021	2655.212
σ		3484.398	2.500	40.725	4219.781	115.912	3150.190	704.626	52.919	1101.673	0.000	112.771	123.814
%RSD		2.838	12.500	4.120	1.547	7.814	14.720	1.083	4.811	0.620	0.000	0.407	4.663

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:50:22	9532.725	2195.145	305153.210	170.001	170.001	460.006	730.016	2259.153	754.017	476.507	438.006	2510.189
2	12:50:44	9587.757	2965.264	311468.430	215.001	130.001	585.010	815.020	2371.169	744.017	442.006	426.505	2300.159
3	12:51:05	9547.734	3345.336	317322.320	235.002	110.000	635.012	695.014	2218.148	773.018	484.507	460.006	2320.162
x		9556.072	2835.248	311314.650	206.668	136.667	560.010	746.683	2282.823	757.017	467.673	441.506	2376.836

σ		28.448	586.015	6086.010	33.292	30.551	90.142	61.715	79.209	14.732	22.586	17.022	115.919
%RSD		0.298	20.669	1.955	16.109	22.354	16.096	8.265	3.470	1.946	4.829	3.856	4.877
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:50:22	275.002	224978.280	2530.192	75.000	0.000	50.000	1035764.300	2050.126	850.022	580.510	140.001	177651.790
2	12:50:44	300.003	223853.280	2710.220	140.001	0.000	35.000	1043037.500	2180.143	810.020	630.512	170.001	178399.710
3	12:51:05	310.003	226143.890	2370.169	110.000	5.000	40.000	1037688.700	2320.162	925.026	642.512	225.002	179562.090
x		295.003	224991.820	2536.860	108.334	1.667	41.667	1038830.200	2183.477	861.689	617.845	178.334	178537.860
σ		18.028	1145.366	170.124	32.532	2.887	7.638	3768.584	135.049	58.384	32.885	43.109	962.618
%RSD		6.111	0.509	6.706	30.030	173.205	18.330	0.363	6.185	6.776	5.323	24.173	0.539

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:50:22	200.001	2085.130	1820.099	143565.680	0.000	8542.189	80.000
2	12:50:44	145.001	1785.096	2130.136	143424.470	0.000	8131.983	60.000
3	12:51:05	170.001	1690.086	2080.130	144302.000	0.000	7511.692	85.000
x		171.668	1853.437	2010.122	143764.050	0.000	8061.955	75.000
σ		27.538	206.199	166.453	471.196	0.000	518.805	13.229
%RSD		16.042	11.125	8.281	0.328	0.000	6.435	17.638

CCVL 10/14/2016 12:55:43 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:56:05	122820.890	165.001	7081.504	1019687.000	30377.659	92521.094	839724.290	29676.397	178430.030	30.000	41912.634	12409.618
2	12:56:27	123082.810	167.501	7146.532	T 1108032.300	31249.268	92410.483	817016.380	29456.007	181998.310	25.000	42088.075	12764.886
3	12:56:48	119295.420	187.501	7066.498	1014663.900	31289.343	91550.758	814035.720	30237.404	180764.990	30.000	42333.696	13035.095
x		121733.040	173.334	7098.178	T 1047461.100	30972.090	92160.778	823592.130	29789.936	180397.780	28.333	42111.468	12736.533
σ		2115.099	12.332	42.543	T 52516.354	515.182	531.180	14050.128	402.882	1812.258	2.887	211.504	313.701
%RSD		1.737	7.115	0.599	T 5.014	1.663	0.576	1.706	1.352	1.005	10.189	0.502	2.463

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:56:05	11153.731	9067.466	954453.700	3530.374	1470.065	4425.587	13265.277	3362.339	945.027	685.514	479.007	2545.194
2	12:56:27	11559.007	9522.720	958427.280	3445.356	1530.070	4505.609	13360.353	3403.347	935.026	641.512	468.507	2425.176
3	12:56:48	11093.691	9817.891	958083.320	3330.333	1550.072	4530.616	13425.405	3487.365	955.027	637.012	466.007	2395.172
x		11268.810	9469.359	956988.100	3435.354	1516.736	4487.271	13350.345	3417.684	945.027	654.680	471.173	2455.181
σ		253.105	378.048	2201.582	100.395	41.637	54.863	80.532	63.734	10.001	26.798	6.898	79.384
%RSD		2.246	3.992	0.230	2.922	2.745	1.223	0.603	1.865	1.058	4.093	1.464	3.233

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:56:05	26526.092	228323.310	19080.916	3825.439	40.000	785.018	1031140.400	1360.055	6126.126	4784.687	5961.066	173983.390
2	12:56:27	26290.720	226833.170	18455.212	3615.392	85.000	770.018	1045228.600	1400.059	6036.093	4909.723	6391.225	181088.480
3	12:56:48	26065.366	222525.680	18580.351	3635.396	35.000	950.027	1034414.200	1280.049	6346.208	4881.215	6111.120	180360.650
x		26294.059	225894.050	18705.493	3692.076	53.333	835.021	1036927.700	1346.721	6169.475	4858.542	6154.470	178477.500
σ		230.381	3010.743	331.092	115.928	27.538	99.880	7372.772	61.106	159.538	65.529	218.332	3908.993
%RSD		0.876	1.333	1.770	3.140	51.634	11.961	0.711	4.537	2.586	1.349	3.548	2.190

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:56:05	4155.518	21593.980	9342.618	143111.800	0.000	19346.222	16803.466
2	12:56:27	4325.561	22239.828	9602.766	141034.210	0.000	19786.738	17118.787
3	12:56:48	3995.479	21969.470	9827.897	144423.040	0.000	20993.213	17544.229
x		4158.853	21934.426	9591.093	142856.350	0.000	20042.058	17155.494
σ		165.066	324.347	242.850	1708.799	0.000	852.664	371.743
%RSD		3.969	1.479	2.532	1.196	0.000	4.254	2.167

200-35680-A-6-B MS 10/14/2016 01:01:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:01:49	139803.900	2332.663	61157.000	T 10357554.000	T 3910008.000	T 147840650.000	T 21316445.000	T 2426476.000	246509.630	40048.058	550886.250	39451
2	13:02:10	138563.610	2415.175	61673.899	T 10638468.000	T 4030156.300	T 149217940.000	T 21606853.000	T 2507230.500	250914.630	40609.414	563683.660	40380
3	13:02:32	142476.390	2427.677	60584.916	T 10676685.000	T 4061155.000	T 150992440.000	T 22155436.000	T 2558528.400	256275.280	40038.034	573013.880	41591
x		140281.300	2391.838	61138.605	T 10557569.000	T 4000439.800	T 149350340.000	T 21692912.000	T 2497411.600	251233.180	40231.835	562527.930	40474
σ		1999.599	51.627	544.725	T 174268.980	T 79835.204	T 1580058.200	T 426064.610	T 66571.517	4890.612	327.031	11108.993	1072
%RSD		1.425	2.158	0.891	T 1.651	T 1.996	T 1.058	T 1.964	T 2.666	1.947	0.813	1.975	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:01:49	54273.224	T 20725642.000	T 520812590.000	273561.810	124175.870	T 3654790.200	1070531.300	29971.925	3239.315	3555.879	512.508	812
2	13:02:10	55146.082	T 20801596.000	T 528506740.000	277277.460	124936.530	T 3680623.700	1080974.000	30157.259	3284.324	3473.862	561.509	831
3	13:02:32	56269.829	T 21488680.000	T 542679750.000	278797.500	125082.620	T 3752286.200	1106201.300	30560.994	3401.347	3671.904	558.509	822
x		55229.712	T 21005306.000	T 530666360.000	276545.590	124731.670	T 3695900.000	1085902.200	30230.059	3308.329	3567.215	544.176	821
σ		1000.926	T 420333.350	T 11092396.000	2693.482	486.847	T 50511.319	18338.549	301.206	83.641	99.507	27.466	9

%RSD		1.812	┬2.001	┬2.090	0.974	0.390	┬1.367	1.689	0.996	2.528	2.789	5.047	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	13:01:49	943860.230	782717.740	197690.530	49016.974	1070.034	14070.937	1082253.200	108768.760	26060.358	20909.108	701691.600	2443
2	13:02:10	959570.310	790754.060	200524.080	49337.919	1065.034	14916.672	1096266.000	109860.890	27437.566	21074.816	717425.660	2490
3	13:02:32	963730.340	796372.310	203499.830	49618.751	1245.046	14871.632	1106639.000	114310.670	26986.831	21824.780	732385.710	2530
x		955720.290	789948.040	200571.480	49324.548	1126.705	14619.747	1095052.700	110980.110	26828.252	21269.568	717167.650	2488
σ		10479.614	6862.880	2904.936	301.111	102.517	475.817	12238.081	2935.584	702.165	487.914	15348.680	43
%RSD		1.097	0.869	1.448	0.610	9.099	3.255	1.118	2.645	2.617	2.294	2.140	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:01:49	52482.502	233849.130	2326676.600	158389.050	0.000	717070.870	364226.820
2	13:02:10	52457.424	235578.230	2398660.100	161387.610	0.000	732014.940	371995.600
3	13:02:32	53460.604	240305.000	2423457.600	164507.900	0.000	738303.410	379190.030
x		52800.177	236577.450	2382931.400	161428.190	0.000	729129.740	371804.150
σ		572.084	3341.912	50271.134	3059.624	0.000	10906.351	7483.445
%RSD		1.083	1.413	2.110	1.895	0.000	1.496	2.013

200-35680-A-6-C MSD 10/14/2016 01:07:12 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:07:33	140368.620	2405.173	62381.526	┬10502352.000	┬3213910.700	┬118712200.000	┬19061992.000	┬1948456.700	245220.820	40148.298	495173.220	3478
2	13:07:55	140116.510	2297.658	61693.973	┬10518098.000	┬3188116.100	┬118962530.000	┬19200370.000	┬1963306.100	247676.740	38429.253	495281.360	3483
3	13:08:17	133300.950	2030.124	62286.170	┬10539286.000	┬3221959.300	┬121213730.000	┬19230311.000	┬1979124.700	246266.070	41892.584	501590.910	3553
x		137928.700	2244.318	62120.556	┬10519912.000	┬3207995.400	┬119629490.000	┬19164224.000	┬1963629.100	246387.880	40156.712	497348.500	3505
σ		4009.726	193.131	372.495	┬18533.401	┬17680.046	┬1377695.400	┬89792.233	┬15336.554	1232.481	1731.680	3674.434	42
%RSD		2.907	8.605	0.600	┬0.176	┬0.551	┬1.152	┬0.469	┬0.781	0.500	4.312	0.739	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:07:33	49809.318	┬15867692.000	┬420737380.000	223437.760	105296.570	┬3082202.300	927773.650	27149.094	3311.329	3398.346	536.509	719
2	13:07:55	49337.919	┬15954869.000	┬421094230.000	225870.220	105482.750	┬3058138.500	924203.250	27282.311	3261.319	3380.343	528.008	724
3	13:08:17	49834.393	┬16115604.000	┬428379180.000	227213.290	105432.430	┬3087120.700	945245.520	27372.459	3333.333	3412.349	557.509	731
x		49660.543	┬15979388.000	┬423403600.000	225507.090	105403.920	┬3075820.500	932407.470	27267.955	3301.994	3397.013	540.675	724
σ		279.682	┬125761.930	┬4312675.400	1913.780	96.305	┬15509.254	11260.488	112.372	36.904	16.045	15.185	6
%RSD		0.563	┬0.787	┬1.019	0.849	0.091	┬0.504	1.208	0.412	1.118	0.472	2.809	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	13:07:33	801866.570	695661.550	204512.100	49092.195	1120.038	14761.534	1120308.400	84257.443	28970.156	22259.354	568668.790	2422
2	13:07:55	810908.680	699236.580	207184.810	48721.108	1155.040	15006.753	1116847.300	86534.063	29821.656	22476.145	585429.360	2458
3	13:08:17	820574.970	699924.580	208116.310	48931.724	1125.038	15282.003	1131251.800	86840.651	28734.749	22706.457	584973.780	2470
x		811116.740	698274.240	206604.410	48915.009	1133.372	15016.763	1122802.500	85877.385	29175.521	22480.652	579690.650	2450
σ		9355.937	2288.655	1870.889	186.107	18.931	260.379	7519.140	1411.262	571.815	223.585	9547.922	24
%RSD		1.153	0.328	0.906	0.380	1.670	1.734	0.670	1.643	1.960	0.995	1.647	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:07:33	56906.987	238960.880	1965082.200	160509.190	0.000	645585.870	336661.230
2	13:07:55	57709.740	242019.540	1986092.600	158772.680	0.000	656390.860	343605.810
3	13:08:17	58723.271	245053.390	1995441.600	160973.640	0.000	675304.420	340171.430
x		57779.999	242011.270	1982205.500	160085.170	0.000	659093.720	340146.150
σ		910.178	3046.264	15548.498	1160.131	0.000	15042.509	3472.362
%RSD		1.575	1.259	0.784	0.725	0.000	2.282	1.021

200-35700-A-1-B 10/14/2016 01:12:55 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	13:13:17	156249.000	1612.578	7291.595	T 1577312.700	T 3929370.100	T 228265040.000	T 14351782.000	T 2164136.500	301767.400	41341.209	644209.110
2	13:13:38	154967.110	1575.074	6966.456	T 1563737.800	T 3943172.400	T 229582630.000	T 14229726.000	T 2151987.000	304292.690	42443.976	642629.860
3	13:14:01	149083.810	1585.075	6891.425	T 1551202.500	T 3960724.400	T 231659470.000	T 14396505.000	T 2183693.400	302622.700	44203.541	644167.550
x		153433.310	1590.909	7049.825	T 1564084.300	T 3944422.300	T 229835710.000	T 14326004.000	T 2166605.600	302894.260	42662.909	643668.840
σ		3820.914	19.420	212.713	T 13058.546	T 15714.463	T 1711307.600	T 86325.730	T 15996.774	1284.364	1443.670	900.021
%RSD		2.490	1.221	3.017	T 0.835	T 0.398	T 0.745	T 0.603	T 0.738	0.424	3.384	0.140

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	13:13:17	57172.894	TM 102334590.000	TM 1143316100.000	379936.750	132620.560	TM 11091400.000	1282280.000	39092.794	2266.154	1999.620	645.513
2	13:13:38	58708.218	TM 104738290.000	TM 1164085400.000	386761.050	134359.400	TM 11292046.000	1282404.000	39401.519	2265.154	1992.619	625.012
3	13:14:01	58286.742	TM 104164200.000	TM 1163412200.000	396260.330	136123.630	TM 11322408.000	1299899.500	39299.278	2229.149	2005.121	674.514
x		58055.952	TM 103745690.000	TM 1156937900.000	387652.710	134367.860	TM 11235285.000	1288194.500	39264.531	2253.486	1999.120	648.346
σ		793.255	TM 1255313.500	TM 11801634.000	8198.234	1751.552	TM 125528.820	10137.016	157.269	21.082	6.266	24.872
%RSD		1.366	TM 1.210	TM 1.020	2.115	1.304	TM 1.117	0.787	0.401	0.936	0.313	3.836

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	13:13:17	990047.630	1079172.700	20527.634	22610.326	820.020	8342.087	1200159.800	193936.820	5725.983	4452.095	1184067.700
2	13:13:38	1008904.500	1107076.600	20232.273	23671.799	765.018	9057.460	1207202.100	195747.810	6101.117	4563.625	1209559.100
3	13:14:01	1012083.900	1109254.500	20617.745	23311.291	815.020	9067.466	1213259.100	200387.460	5760.996	4571.627	1212867.000
x		1003678.700	1098501.300	20459.217	23197.805	800.019	8822.338	1206873.600	196690.690	5862.699	4529.115	1202164.600
σ		11911.398	16774.409	201.638	539.759	30.415	415.939	6555.823	3327.080	207.217	66.822	15759.428
%RSD		1.187	1.527	0.986	2.327	3.802	4.715	0.543	1.692	3.534	1.475	1.311

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:13:17	2795.234	16643.306	3057757.800	172902.230	0.000	498196.340	173053.790
2	13:13:38	2680.215	16388.053	3093633.000	174377.480	0.000	501894.860	172023.200
3	13:14:01	2940.259	17083.751	3091310.300	175822.540	0.000	503486.810	175797.280
x		2805.236	16705.037	3080900.400	174367.420	0.000	501192.670	173624.760
σ		130.310	351.933	20075.673	1460.183	0.000	2714.234	1950.747
%RSD		4.645	2.107	0.652	0.837	0.000	0.542	1.124

200-35700-A-2-B 10/14/2016 01:18:38 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	13:19:00	141074.540	790.019	6446.246	T 1365343.100	T 2920020.900	T 148415980.000	T 11415501.000	1526756.900	257798.500	45797.837	423318.540
2	13:19:21	142325.110	782.518	6811.392	T 1361123.900	T 2952377.200	T 150877040.000	T 11348468.000	T 1614916.200	259169.520	35888.598	420959.920
3	13:19:43	138442.610	762.517	6991.466	T 1349169.500	T 2919536.000	T 153099590.000	T 11400616.000	T 1656799.100	260682.850	41155.751	434639.400
x		140614.090	778.352	6749.701	T 1358545.500	T 2930644.700	T 150797540.000	T 11388195.000	T 1599490.700	259216.960	40947.395	426305.950
σ		1981.782	14.216	277.796	T 8389.448	T 18822.461	T 2342813.400	T 35200.444	T 66379.223	1442.758	4957.904	7312.694
%RSD		1.409	1.826	4.116	T 0.618	T 0.642	T 1.554	T 0.309	T 4.150	0.557	12.108	1.715

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	13:19:00	41797.345	TM 54837633.000	T 507143250.000	239351.420	96805.324	TM 9352193.000	912620.420	25126.927	2314.161	1980.118	568.510
2	13:19:21	41586.819	TM 55166329.000	T 509469360.000	240883.250	94994.952	TM 9258650.200	910319.570	24816.462	2214.147	1993.119	560.509
3	13:19:43	41316.147	TM 55515652.000	T 510971510.000	245418.700	97926.847	TM 9452240.200	927562.360	25353.269	2312.160	1948.114	616.511
x		41566.770	TM 55173205.000	T 509194710.000	241884.460	96575.708	TM 9354361.100	916834.120	25098.886	2280.156	1973.784	581.844

σ		241.224	TM 339061.460	T 1928850.900	3155.122	1479.373	TM 96813.220	9361.883	269.500	57.174	23.162	30.289	27
%RSD		0.580	TM 0.615	T 0.379	1.304	1.532	TM 1.035	1.021	1.074	2.507	1.173	5.206	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	13:19:00	582794.390	727571.580	11919.261	28113.691	675.014	8557.196	1144020.700	117477.580	6406.231	5082.275	703250.280	24439
2	13:19:21	591741.510	741140.250	12164.438	28083.641	670.013	8742.292	1158319.400	121596.960	6406.231	5158.798	708500.780	24894
3	13:19:43	597512.010	729325.810	12334.563	29506.095	750.017	8667.253	1157045.300	123853.490	6811.392	5195.310	722184.720	24839
x		590682.640	732679.210	12139.420	28567.809	698.348	8655.581	1153128.400	120976.010	6541.284	5145.461	711311.930	24724
σ		7415.725	7379.777	208.778	812.718	44.816	93.098	7913.250	3232.994	233.920	57.686	9775.235	248
%RSD		1.255	1.007	1.720	2.845	6.417	1.076	0.686	2.672	3.576	1.121	1.374	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:19:00	3245.316	11604.038	2706787.900	159620.720	0.000	322219.950	110661.160
2	13:19:21	3250.317	11999.318	2764048.700	164952.260	0.000	324641.260	111738.310
3	13:19:43	3150.298	12289.529	2770364.900	163275.870	0.000	328495.690	113288.730
x		3215.310	11964.295	2747067.200	162616.280	0.000	325118.970	111896.070
σ		56.358	344.085	35025.557	2726.282	0.000	3165.025	1320.867
%RSD		1.753	2.876	1.275	1.677	0.000	0.973	1.180

200-35700-A-3-B 10/14/2016 01:24:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:24:42	158560.670	1810.098	8106.971	T 2234653.700	T 7736587.800	T 376401980.000	T 25203507.000	1509124.400	354500.440	47467.499	819084.260	687
2	13:25:04	160327.460	1837.601	8151.993	T 2252172.600	T 7857253.300	T 385738350.000	T 25720268.000	T 1668602.500	359975.950	52271.842	833839.610	699
3	13:25:26	157914.580	1892.608	8482.158	T 2259021.100	T 7734486.700	T 380779930.000	T 25601497.000	T 1640322.800	368478.760	54519.024	832809.990	699
x		158934.240	1846.769	8247.041	T 2248615.800	T 7776109.300	T 380973420.000	T 25508424.000	T 1606016.600	360985.050	51419.455	828577.950	695
σ		1249.060	42.012	204.858	T 12567.079	T 70280.630	T 4671189.000	T 270660.710	T 85094.092	7043.583	3602.211	8237.880	7
%RSD		0.786	2.275	2.484	T 0.559	T 0.904	T 1.226	T 1.061	T 5.298	1.951	7.006	0.994	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:24:42	90595.559	T 37806510.000	T 1040648700.000	389109.780	216274.190	TM 41829878.000	1512391.600	17631.321	1912.110	1122.538	781.518	83
2	13:25:04	91420.043	T 38611395.000	T 1066861500.000	400807.130	218523.240	TM 42560638.000	1531356.500	17728.424	1819.099	1049.033	740.516	81
3	13:25:26	91430.098	T 38520753.000	T 1073293600.000	403393.420	218791.730	TM 42808952.000	1554296.200	18141.868	1836.101	1116.537	808.520	86
x		91148.567	T 38312886.000	T 1060267900.000	397770.110	217863.050	TM 42399823.000	1532681.400	17833.871	1855.770	1096.036	776.851	83
σ		478.945	T 440870.020	T 17292436.000	7610.727	1382.530	TM 508962.440	20983.720	271.116	49.527	40.816	34.241	2
%RSD		0.525	T 1.151	T 1.631	1.913	0.635	TM 1.200	1.369	1.520	2.669	3.724	4.408	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	13:24:42	902944.160	1540017.600	8452.143	4540.618	315.003	1490.067	1196983.100	66176.118	3790.431	2975.266	1380044.200	3233
2	13:25:04	913375.130	1562667.300	8051.944	4420.586	435.006	1505.068	1204968.800	66532.533	4105.506	3047.779	1412327.700	3266
3	13:25:26	910609.800	1574694.100	8337.085	4545.620	390.005	1495.067	1227292.800	66954.216	4150.517	3123.293	1418239.500	3303
x		908976.360	1559126.400	8280.391	4502.275	380.004	1496.734	1209748.200	66554.289	4015.484	3048.779	1403537.100	3267
σ		5403.920	17607.347	206.035	70.789	60.623	7.638	15709.915	389.505	196.197	74.019	20559.078	34
%RSD		0.595	1.129	2.488	1.572	15.953	0.510	1.299	0.585	4.886	2.428	1.465	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:24:42	1115.037	23746.905	1882484.400	180431.410	0.000	890606.150	252285.090
2	13:25:04	1145.039	24678.257	1926990.800	185132.540	0.000	917476.440	260383.220
3	13:25:26	1175.041	24803.443	1959392.100	180734.670	0.000	924752.490	259159.360
x		1145.039	24409.535	1922955.800	182099.540	0.000	910945.030	257275.890
σ		30.002	577.258	38612.295	2631.032	0.000	17985.761	4365.263
%RSD		2.620	2.365	2.008	1.445	0.000	1.974	1.697

200-35700-A-4-B 10/14/2016 01:30:03 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:30:25	149850.640	1507.568	5495.906	T 1534723.100	T 4973920.100	T 256488520.000	T 20140475.000	T 1348699.900	323162.950	51078.150	711619.520	4932
2	13:30:47	145572.980	1665.083	6116.122	T 1577557.300	T 5196826.500	T 267631430.000	T 21276513.000	1297179.400	320247.470	49869.498	756434.910	5288
3	13:31:08	142678.110	1545.072	5530.918	T 1547227.800	T 5039473.200	T 263880040.000	T 20246209.000	1274851.300	324549.500	49909.617	734260.550	5094
x		146033.910	1572.574	5714.315	T 1553169.400	T 5070073.300	T 262666670.000	T 20554399.000	T 1306910.200	322653.310	50285.755	734105.000	5105
σ		3608.414	82.280	348.415	T 22026.532	T 114560.370	T 5669687.800	T 627599.570	T 37873.738	2195.827	686.527	22408.101	178
%RSD		2.471	5.232	6.097	T 1.418	T 2.260	T 2.159	T 3.053	T 2.898	0.681	1.365	3.052	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:30:25	66893.975	T 26391723.000	T 753302320.000	293715.460	163296.070	1906067.500	442507.420	15996.673	2016.122	1120.538	655.013	67
2	13:30:47	73310.881	T 28105673.000	T 780279210.000	306955.860	168073.210	T 2190396.500	462720.360	16622.285	2074.129	1136.539	656.513	66
3	13:31:08	70041.867	T 27663414.000	T 776716840.000	299832.950	164952.260	T 2148704.400	455027.860	16110.783	1949.114	1115.537	682.514	64
x		70082.241	T 27386937.000	T 770099460.000	300168.090	165440.510	T 2081722.800	453418.550	16243.247	2013.122	1124.205	664.680	66
σ		3208.643	T 889795.350	T 14655390.000	6626.563	2425.707	T 153543.650	10202.113	333.178	62.562	10.970	15.463	1

%RSD		4.578	T 3.249	T 1.903	2.208	1.466	T 7.376	2.250	2.051	3.108	0.976	2.326	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	13:30:25	655507.080	1361324.700	11213.771	8086.962	365.004	2210.146	1137709.900	62868.350	2345.165	1779.095	1010841.800	30943
2	13:30:47	681519.900	1409503.000	11924.264	8457.145	460.006	2410.174	1118641.900	66798.594	2370.169	1807.098	1065562.600	30977
3	13:31:08	657716.620	1380369.600	11128.714	8522.178	375.004	2220.148	1158083.800	65910.067	2465.182	1840.602	1037274.000	31090
x		664914.530	1383732.400	11422.250	8355.428	400.005	2280.156	1138145.200	65192.337	2393.505	1808.931	1037892.800	31003
σ		14423.043	24264.540	436.832	234.762	52.203	112.710	19724.587	2061.082	63.321	30.794	27365.625	76
%RSD		2.169	1.754	3.824	2.810	13.051	4.943	1.733	3.162	2.646	1.702	2.637	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:30:25	1210.044	17339.015	1386796.600	168103.510	0.000	674029.330	651686.550
2	13:30:47	1360.055	18079.801	1460833.100	165285.540	0.000	720045.060	695708.450
3	13:31:08	1055.033	16878.542	1435056.600	170366.310	0.000	702901.000	679218.760
x		1208.378	17432.453	1427562.100	167918.450	0.000	698991.800	675537.920
σ		152.518	606.056	37582.897	2545.439	0.000	23255.609	22240.580
%RSD		12.622	3.477	2.633	1.516	0.000	3.327	3.292

200-35700-A-5-B 10/14/2016 01:35:46 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	13:36:07	155269.910	1450.063	5650.958	T 1569760.900	T 4858394.200	T 239221660.000	T 15824867.000	T 1629904.000	315477.790	44138.369	640500.190	4493
2	13:36:29	152504.550	1455.064	5390.872	T 1576426.000	T 4801859.500	T 240173090.000	T 15786782.000	T 1660710.500	315406.460	46474.707	652663.690	4538
3	13:36:50	148841.660	1475.065	5765.997	T 1553495.500	T 4870871.200	T 238315880.000	T 15796021.000	T 1622981.200	315865.020	42158.252	649940.300	4514
x		152205.370	1460.064	5602.609	T 1566560.800	T 4843708.300	T 239236880.000	T 15802557.000	T 1637865.300	315583.090	44257.109	647701.390	4515
σ		3224.550	13.230	192.180	T 11795.437	T 36775.143	T 928696.920	T 19865.693	T 20085.070	246.751	2160.676	6383.354	22
%RSD		2.119	0.906	3.430	T 0.753	T 0.759	T 0.388	T 0.126	T 1.226	0.078	4.882	0.986	
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	13:36:07	61688.955	T 44655897.000	TM 947993700.000	316170.740	144655.040	TM 8490357.700	862767.630	34240.136	1877.106	1396.559	690.014	71
2	13:36:29	62431.713	T 45445222.000	TM 953816040.000	318473.970	146798.660	TM 8565858.500	867893.760	34484.639	1948.114	1382.057	640.012	71
3	13:36:50	61001.431	T 46403063.000	TM 970759940.000	321200.550	147590.610	TM 8638026.700	874132.450	34404.473	1932.112	1382.057	709.015	68
x		61707.366	T 45501394.000	TM 957523230.000	318615.090	146348.100	TM 8564747.600	868264.610	34376.416	1919.111	1386.891	679.681	70
σ		715.319	T 874936.440	TM 11827207.000	2517.874	1518.764	TM 73840.761	5691.480	124.643	37.247	8.372	35.643	1
%RSD		1.159	T 1.923	TM 1.235	0.790	1.038	TM 0.862	0.656	0.363	1.941	0.604	5.244	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	13:36:07	713925.040	1177270.600	13615.559	11403.900	460.006	3050.279	1186834.400	102479.090	4545.620	3512.370	1033452.200	2936
2	13:36:29	727775.190	1185064.900	13660.596	11293.825	435.006	3265.320	1183992.600	104692.790	4875.713	3589.887	1044133.000	2994
3	13:36:50	733471.940	1202617.800	13810.720	11523.983	360.004	3635.396	1197863.000	103339.380	4395.580	3565.881	1049244.500	2996
x		725057.390	1188317.800	13695.625	11407.236	418.339	3316.999	1189563.400	103503.750	4605.637	3556.046	1042276.600	2975
σ		10052.867	12982.912	102.187	115.115	52.043	295.962	7326.830	1115.964	245.629	39.683	8058.179	34
%RSD		1.386	1.093	0.746	1.009	12.440	8.923	0.616	1.078	5.333	1.116	0.773	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:36:07	1900.108	15156.889	2657010.500	170750.210	0.000	570411.870	194159.390
2	13:36:29	1800.097	15071.812	2694021.100	174620.000	0.000	580071.840	197483.100
3	13:36:50	1855.103	15942.621	2699044.900	173114.410	0.000	581759.150	196557.250
x		1851.770	15390.441	2683358.800	172828.210	0.000	577414.280	196066.580
σ		50.089	480.091	22956.157	1950.704	0.000	6122.675	1715.322
%RSD		2.705	3.119	0.856	1.129	0.000	1.060	0.875

200-35700-A-6-B 10/14/2016 01:41:28 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:41:50	149416.770	902.524	5560.928	T 1367238.700	T 3190540.400	T 145827730.000	T 10900349.000	T 1696986.000	273160.300	38319.000	431027.390	28385
2	13:42:12	147661.230	1042.533	5290.840	T 1378887.400	T 3134329.000	T 145474500.000	T 11012037.000	T 1728415.500	273658.370	42443.976	433069.310	28755
3	13:42:33	145381.320	895.024	5455.893	T 1335778.100	T 3145804.000	T 143989280.000	T 10930632.000	T 1733226.800	277033.450	39351.401	432309.970	28235
x		147486.440	946.694	5435.887	T 1360634.700	T 3156891.100	T 145097170.000	T 10947673.000	T 1719542.800	274617.370	40038.126	432135.560	28458
σ		2023.397	83.084	136.151	T 22300.521	T 29700.585	T 975580.870	T 57760.825	T 19682.323	2107.150	2146.521	1032.074	267
%RSD		1.372	8.776	2.505	T 1.639	T 0.941	T 0.672	T 0.528	T 1.145	0.767	5.361	0.239	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:41:50	41376.296	TM 46509481.000	T 719081160.000	251320.680	100381.390	T 3402638.200	568177.460	25711.818	1838.101	1334.553	630.512	640
2	13:42:12	41125.677	TM 46754642.000	T 727189910.000	256625.610	101950.870	T 3463981.200	574514.220	25736.856	1819.099	1346.054	604.511	643
3	13:42:33	40985.332	TM 46596836.000	T 716194190.000	253107.420	101804.980	T 3412842.900	578586.530	25343.254	1768.094	1381.557	600.511	614
x		41162.435	TM 46620320.000	T 720821750.000	253684.570	101379.080	T 3426487.400	573759.400	25597.309	1808.431	1354.055	611.845	632
σ		198.057	TM 124256.160	T 5700765.500	2699.145	867.101	T 32868.979	5245.427	220.374	36.202	24.502	16.290	15
%RSD		0.481	TM 0.267	T 0.791	1.064	0.855	T 0.959	0.914	0.861	2.002	1.810	2.662	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	13:41:50	590571.070	865819.960	11438.924	11323.846	345.004	3640.398	1168590.500	77384.233	4360.570	3330.833	737363.120	25993
2	13:42:12	599309.860	866451.550	11794.172	11974.300	365.004	3720.415	1179060.700	78665.209	4300.555	3479.363	742885.420	26423
3	13:42:33	596330.810	861431.090	11904.250	11388.890	410.005	3780.429	1175587.800	79408.723	4450.594	3452.358	746256.110	25964
x		595403.920	864567.530	11712.449	11562.345	373.338	3713.747	1174413.000	78486.055	4370.573	3420.851	742168.220	26127
σ		4442.516	2734.539	243.189	358.243	33.292	70.253	5333.052	1024.066	75.518	79.119	4489.663	257
%RSD		0.746	0.316	2.076	3.098	8.918	1.892	0.454	1.305	1.728	2.313	0.605	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:41:50	1940.113	9947.968	1802977.600	164023.160	0.000	359112.620	124014.680
2	13:42:12	2080.130	10098.058	1809606.600	165477.430	0.000	364942.210	125666.990
3	13:42:33	2005.121	10088.052	1815798.900	164073.650	0.000	365054.640	126301.760
x		2008.454	10044.693	1809461.100	164524.740	0.000	363036.490	125327.810
σ		70.068	83.915	6411.872	825.433	0.000	3398.637	1180.662
%RSD		3.489	0.835	0.354	0.502	0.000	0.936	0.942

200-35700-A-7-B 10/14/2016 01:47:11 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	13:47:33	161327.030	2417.675	6941.445	T 2564883.400	T 9031228.600	T 443320940.000	T 26633580.000	T 2519587.700	418663.140	121299.810	1148616.200
2	13:47:55	156097.590	2595.202	7601.733	T 2566626.200	T 9230247.500	T 448091080.000	T 26632417.000	T 2557178.500	420795.850	126160.700	1159470.400
3	13:48:16	154593.670	2617.706	7581.724	T 2513977.700	T 9099496.900	T 441737750.000	T 26579003.000	T 2552159.400	420529.250	125682.100	1192079.600
x		157339.430	2543.528	7374.967	T 2548495.800	T 9120324.300	T 444383260.000	T 26615000.000	T 2542975.200	419996.080	124380.870	1166722.100
σ		3534.286	109.571	375.575	T 29906.202	T 101130.920	T 3307205.000	T 31180.034	T 20409.065	1162.031	2678.984	22620.980
%RSD		2.246	4.308	5.093	T 1.173	T 1.109	T 0.744	T 0.117	T 0.803	0.277	2.154	1.939

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	13:47:33	112981.650	T 20133712.000	TM 1647996100.000	492382.340	275315.330	151051.410	683024.660	34882.465	2272.155	1218.545	880.023
2	13:47:55	113887.790	T 20396333.000	TM 1647978900.000	489241.860	273866.750	154109.210	696359.820	35562.901	2222.148	1224.545	861.522
3	13:48:16	114864.460	T 20478996.000	TM 1651952300.000	496264.980	277028.360	150516.600	695338.480	35159.046	2212.147	1274.549	894.524
x		113911.300	T 20336347.000	TM 1649309100.000	492629.730	275403.480	151892.410	691574.320	35201.471	2235.483	1239.213	878.690

σ		941.622	T 180288.610	TM 2289085.200	3518.092	1582.648	1938.342	7421.813	342.196	32.150	30.749	16.541
%RSD		0.827	T 0.887	TM 0.139	0.714	0.575	1.276	1.073	0.972	1.438	2.481	1.882
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**
1	13:47:33	1566257.000	T 2300628.800	36519.967	6886.422	795.019	3205.308	1168686.900	70328.069	1690.086	1353.555	T 2114064.100
2	13:47:55	1576695.800	2104123.800	37662.506	6956.452	840.021	3430.353	1167230.000	72437.073	1720.089	1433.562	T 2154481.900
3	13:48:16	T 1766315.300	T 2332050.700	37211.495	7006.472	705.015	3160.300	1180325.700	72351.703	1760.093	1457.564	T 2166086.000
x		T 1636422.700	T 2245601.100	37131.323	6949.782	780.018	3265.320	1172080.900	71705.615	1723.422	1414.893	T 2144877.300
σ		T 112611.350	T 123526.110	575.473	60.302	68.742	144.683	7177.318	1193.753	35.122	54.459	T 27308.494
%RSD		T 6.882	T 5.501	1.550	0.868	8.813	4.431	0.612	1.665	2.038	3.849	T 1.273

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:47:33	1165.041	26255.665	1713948.800	182665.550	5.000	1243097.000	719001.430
2	13:47:55	1245.046	25910.124	1744951.800	186507.750	5.000	1278915.700	734046.420
3	13:48:16	1190.043	26250.657	1744669.400	181058.150	0.000	1297675.900	738601.170
x		1200.043	26138.815	1734523.300	183410.480	3.333	1273229.500	730549.680
σ		40.930	198.068	17818.614	2800.130	2.887	27730.165	10257.093
%RSD		3.411	0.758	1.027	1.527	86.603	2.178	1.404

200-35700-A-8-B 10/14/2016 01:52:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:53:02	146924.760	1140.039	4750.677	T 1367972.500	T 3772986.600	T 169412640.000	T 11740093.000	T 1675352.200	282900.780	35197.126	485113.790	34828
2	13:53:24	141820.840	1127.538	5135.791	T 1380477.200	T 3870087.900	T 174385820.000	T 12088740.000	T 1700135.800	282524.480	39972.878	488948.430	35210
3	13:53:46	142466.310	1035.032	5135.791	T 1349291.800	T 3852148.100	T 171377500.000	T 11896059.000	T 1754549.000	286979.630	38073.438	487553.450	35071
x		143737.300	1100.870	5007.420	T 1365913.800	T 3831740.800	T 171725320.000	T 11908297.000	T 1710012.400	284134.960	37747.814	487205.220	35036
σ		2779.224	57.359	222.346	T 15694.332	T 51667.266	T 2504765.600	T 174645.520	T 40511.651	2470.729	2404.470	1940.895	193
%RSD		1.934	5.210	4.440	T 1.149	T 1.348	T 1.459	T 1.467	T 2.369	0.870	6.370	0.398	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:53:02	49327.889	TM 52682631.000	T 825054610.000	277002.950	122619.410	T 4356430.500	676761.780	25193.026	1964.116	1506.068	624.012	622
2	13:53:24	48901.636	TM 53328621.000	T 836876860.000	282214.290	123924.010	T 4411131.200	688044.950	25571.602	2017.122	1573.574	639.012	651
3	13:53:46	48164.494	TM 53544446.000	T 846639900.000	284629.850	124916.380	T 4452501.500	703093.880	25589.630	1937.113	1556.573	653.013	679
x		48798.007	TM 53185232.000	T 836190450.000	281282.360	123819.930	T 4406687.700	689300.200	25451.419	1972.783	1545.405	638.679	650
σ		588.580	TM 448443.320	T 10809002.000	3897.918	1152.013	T 48189.408	13210.852	223.956	40.703	35.111	14.503	28
%RSD		1.206	TM 0.843	T 1.293	1.386	0.930	T 1.094	1.917	0.880	2.063	2.272	2.271	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	13:53:02	616064.440	964778.450	14166.018	18985.808	515.008	4270.547	1155246.700	96458.321	4740.674	3376.842	874411.530	26663
2	13:53:24	619622.770	977106.430	14666.450	19971.959	540.009	4250.542	1167529.900	96936.081	4360.570	3380.343	880289.140	27145
3	13:53:46	628672.390	979893.100	14831.596	19776.727	415.005	4455.596	1164841.200	98741.633	4270.547	3495.867	889288.520	26902
x		621453.200	973925.990	14554.688	19578.164	490.007	4325.561	1162539.300	97378.678	4457.264	3417.684	881329.730	26903
σ		6500.223	8043.605	346.579	522.201	66.146	113.056	6457.039	1204.283	249.534	67.731	7492.883	240
%RSD		1.046	0.826	2.381	2.667	13.499	2.614	0.555	1.237	5.598	1.982	0.850	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:53:02	2090.131	11268.808	2338313.900	164417.010	0.000	415910.490	138422.450
2	13:53:24	2185.143	11158.734	2369886.900	167154.030	0.000	429360.170	140585.440
3	13:53:46	1985.118	11443.928	2399068.100	167921.690	0.000	433833.810	142854.610
x		2086.798	11290.490	2369089.600	166497.580	0.000	426368.160	140620.830
σ		100.054	143.828	30384.915	1842.254	0.000	9328.742	2216.294
%RSD		4.795	1.274	1.283	1.106	0.000	2.188	1.576

CCV 10/14/2016 01:58:24 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:58:46	114230.120	92412.997	33934.511	T 16402584.000	T 4906233.700	T 46121247.000	T 16698281.000	T 1767494.700	176257.090	32100.884	T 3388060.800	967
2	13:59:07	113716.630	90894.681	35628.040	T 15963480.000	T 4800307.900	T 45063398.000	T 16047866.000	T 1729453.900	168901.520	31434.616	T 3322857.400	931
3	13:59:29	111531.940	89341.316	35086.894	T 15796852.000	T 4673921.100	T 43430046.000	T 15521045.000	T 1721008.100	169931.910	30948.708	T 3252313.900	916
x		113159.560	90882.998	34883.148	T 16054305.000	T 4793487.600	T 44871563.000	T 16089064.000	T 1739318.900	171696.840	31494.736	T 3321077.400	938
σ		1432.755	1535.874	864.953	T 312913.320	T 116306.370	T 1355817.500	T 589698.380	T 24763.674	3982.758	578.436	T 67890.953	26
%RSD		1.266	1.690	2.480	T 1.949	T 2.426	T 3.022	T 3.665	T 1.424	2.320	1.837	T 2.044	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:58:46	122150.990	T 4989785.000	T 101160450.000	1439136.900	782901.050	967282.510	715552.660	93847.479	7431.657	9497.205	457.006	8
2	13:59:07	118973.130	T 4896016.100	T 101074450.000	1437265.300	776816.010	948656.360	698960.350	91087.228	7177.545	9357.626	432.506	8
3	13:59:29	116898.530	T 4796447.300	T 100049800.000	1419342.700	752523.690	933067.230	692853.120	89645.443	7059.495	9129.500	442.506	7
x		119340.880	T 4894082.800	T 100761560.000	1431915.000	770746.920	949668.700	702455.380	91526.716	7222.899	9328.110	444.006	8
σ		2645.474	T 96683.381	T 617904.070	10928.031	16072.382	17130.089	11746.434	2135.214	190.181	185.621	12.319	

%RSD		2.217	T 1.976	T 0.613	0.763	2.085	1.804	1.672	2.333	2.633	1.990	2.775	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	13:58:46	990302.100	215929.770	T 2323087.500	336232.700	10623.385	157424.980	1003592.800	1067729.900	680410.940	522439.950	712412.330	173
2	13:59:07	987540.240	211928.900	T 2307993.500	329041.300	10378.230	155385.980	984036.860	1064417.800	677646.670	519652.300	705038.500	168
3	13:59:29	959930.170	210663.010	T 2300565.000	325920.880	10393.240	154210.140	984916.610	1052575.000	670886.250	513578.830	700179.980	164
x		979257.500	212840.560	T 2310548.700	330398.290	10464.951	155673.700	990848.760	1061574.200	676314.620	518557.030	705876.940	168
σ		16794.826	2749.187	T 11476.583	5288.150	137.412	1626.621	11045.431	7967.553	4900.071	4530.958	6159.130	4
%RSD		1.715	1.292	T 0.497	1.601	1.313	1.045	1.115	0.751	0.725	0.874	0.873	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:58:46	47487.556	1975609.500	T 10168025.000	135468.320	5.000	292606.200	153362.370
2	13:59:07	47286.987	1984083.000	T 10170660.000	129803.510	0.000	301019.050	151505.500
3	13:59:29	48209.624	1958142.200	T 10023465.000	131587.410	0.000	307317.440	150844.550
x		47661.389	1972611.600	T 10120717.000	132286.410	1.667	300314.230	151904.140
σ		485.261	13227.685	T 84232.356	2896.374	2.887	7380.901	1305.389
%RSD		1.018	0.671	T 0.832	2.189	173.205	2.458	0.859

CCB 10/14/2016 02:04:07 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:04:29	127405.110	35.000	830.021	294651.770	2190.144	36540.011	71171.638	1040.032	184626.980	40.000	30507.896	2865.246
2	14:04:51	130015.150	30.000	675.014	290611.760	2270.155	40108.202	71181.681	1280.049	184566.310	40.000	30502.887	3240.315
3	14:05:13	126185.880	30.000	650.013	293786.700	2370.169	41692.082	68349.864	1330.053	186983.030	35.000	30698.245	3150.298
x		127868.710	31.667	718.349	293016.740	2276.822	39446.765	70234.395	1216.712	185392.110	38.333	30569.676	3085.286
σ		1956.275	2.887	97.515	2127.216	90.197	2638.955	1632.059	155.038	1378.112	2.887	111.372	195.803
%RSD		1.530	9.116	13.575	0.726	3.962	6.690	2.324	12.742	0.743	7.531	0.364	6.346

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:04:29	10148.089	6306.193	394709.160	400.005	230.002	885.024	740.016	2520.191	814.020	471.507	452.506	2440.179
2	14:04:51	10208.125	6901.429	412384.480	430.006	200.001	910.025	790.019	2594.202	729.016	437.506	452.506	2250.152
3	14:05:13	10368.224	7541.706	423221.110	450.006	240.002	860.022	855.022	2567.198	813.020	426.005	454.006	2545.194
x		10241.479	6916.442	410104.920	426.672	223.335	885.024	795.019	2560.530	785.352	445.006	453.006	2411.842
σ		113.795	617.893	14392.016	25.167	20.817	25.001	57.666	37.453	48.791	23.660	0.866	149.548
%RSD		1.111	8.934	3.509	5.898	9.321	2.825	7.253	1.463	6.213	5.317	0.191	6.201

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:04:29	310.003	220053.170	2705.220	125.000	0.000	50.000	1006012.300	2280.156	690.014	600.011	305.003	170305.700
2	14:04:51	380.004	222231.800	2685.216	105.000	0.000	35.000	1020377.400	2170.141	695.014	601.011	265.002	172417.240
3	14:05:13	365.004	225991.850	2230.149	85.000	0.000	55.000	1042091.000	2270.155	850.022	613.011	355.004	174771.570
x		351.670	222758.940	2540.195	105.000	0.000	46.667	1022826.900	2240.151	745.017	604.678	308.336	172498.170
σ		36.856	3004.227	268.694	20.000	0.000	10.408	18163.629	60.836	90.971	7.234	45.093	2234.037
%RSD		10.480	1.349	10.578	19.048	0.000	22.304	1.776	2.716	12.211	1.196	14.625	1.295

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:04:29	155.001	1800.097	2580.200	135377.590	0.000	7496.686	120.000
2	14:04:51	240.002	1665.083	2565.197	139884.580	0.000	6936.443	140.001
3	14:05:13	185.001	1540.071	2570.198	138059.450	0.000	6456.250	70.000
x		193.334	1668.417	2571.865	137773.870	0.000	6963.126	110.000
σ		43.109	130.045	7.639	2267.025	0.000	520.731	36.056
%RSD		22.298	7.795	0.297	1.645	0.000	7.478	32.778

CCVL 10/14/2016 02:09:50 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:10:12	133825.130	172.501	7451.665	1084971.700	32581.816	93838.428	887559.930	30467.823	193527.100	20.000	45080.886	13900.795
2	14:10:34	132605.440	157.501	7221.564	1081912.100	33223.080	95251.409	865156.820	29976.934	189319.180	15.000	45502.028	13840.745
3	14:10:56	126175.810	182.501	7166.540	T 1176242.900	33734.105	94064.698	864967.360	31449.644	188864.060	10.000	45326.551	13395.381
x		130868.790	170.834	7279.923	T 1114375.600	33179.667	94384.845	872561.370	30631.467	190570.110	15.000	45303.155	13712.307
σ		4109.741	12.583	151.256	T 53600.551	577.370	758.946	12989.479	749.869	2570.914	5.000	211.544	276.103
%RSD		3.140	7.366	2.078	T 4.810	1.740	0.804	1.489	2.448	1.349	33.333	0.467	2.014

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:10:12	11624.052	9537.728	996686.290	3195.306	1470.065	4785.687	13365.357	3685.407	1013.031	638.012	499.007	2485.185
2	14:10:34	11649.070	9062.463	985997.820	3385.344	1385.057	4570.627	13735.658	3878.451	1076.035	688.514	490.507	2700.219
3	14:10:56	12044.350	9687.815	991770.680	3420.351	1435.062	4690.660	13385.373	3655.401	1086.035	650.013	431.006	2810.237
x		11772.491	9429.335	991484.930	3333.667	1430.061	4682.324	13495.462	3739.753	1058.367	658.846	473.507	2665.214
σ		235.769	326.463	5349.966	121.096	42.724	107.772	208.256	121.049	39.579	26.384	37.052	165.329
%RSD		2.003	3.462	0.540	3.633	2.988	2.302	1.543	3.237	3.740	4.005	7.825	6.203

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:10:12	25955.194	234528.580	18775.570	3330.333	35.000	820.020	1052825.100	1290.050	5896.043	4566.626	5996.078	176883.680
2	14:10:34	26385.870	227279.180	18104.828	3860.447	70.000	755.017	1041325.300	1070.034	6026.089	4632.144	6256.174	177247.520
3	14:10:56	25990.249	228505.780	18920.734	3485.364	45.000	805.019	1039900.300	1015.031	6346.208	4653.150	5961.066	175236.420
x		26110.438	230104.510	18600.377	3558.715	50.000	793.352	1044683.600	1125.038	6089.447	4617.306	6071.106	176455.870
σ		239.174	3880.130	435.253	272.563	18.028	34.036	7086.673	145.526	231.674	45.130	161.227	1071.632
%RSD		0.916	1.686	2.340	7.659	36.056	4.290	0.678	12.935	3.805	0.977	2.656	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:10:12	3945.467	21028.257	9292.590	140207.270	0.000	19201.054	15937.617
2	14:10:34	4085.501	20913.113	9422.663	142315.020	0.000	19301.170	15632.328
3	14:10:56	4030.487	21719.142	9517.717	141346.840	0.000	20077.085	16438.102
x		4020.485	21220.171	9410.990	141289.710	0.000	19526.436	16002.682
σ		70.551	435.941	113.017	1055.036	0.000	479.496	406.809
%RSD		1.755	2.054	1.201	0.747	0.000	2.456	2.542

LCS 200-110153/2-A 10/14/2016 02:15:36 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:15:59	127253.960	1572.574	57418.737	T 8773973.700	307928.560	803985.050	T 8512309.200	282483.800	183262.040	135.001	144488.610	100788.830
2	14:16:20	122256.760	1432.562	56631.049	T 8685125.600	304781.500	783204.840	T 8486885.200	279870.260	180623.470	80.000	140913.190	102076.630
3	14:16:44	124392.480	1482.566	56049.087	T 8530268.300	307470.220	745838.000	T 8209719.400	274888.370	174539.160	80.000	138906.450	100849.200
x		124634.400	1495.901	56699.624	T 8663122.500	306726.760	777675.960	T 8402971.300	279080.810	179474.890	98.334	141436.080	101238.220
σ		2507.367	70.952	687.395	T 123333.600	1700.159	29465.171	T 167843.100	3858.764	4473.433	31.754	2827.576	726.714
%RSD		2.012	4.743	1.212	T 1.424	0.554	3.789	T 1.997	1.383	2.493	32.293	1.999	0.718

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:15:59	19010.836	95351.982	T 7831257.200	30412.723	13330.329	42744.743	106227.450	10271.164	1756.093	1956.615	415.005	3865.448
2	14:16:20	17774.473	92038.432	T 7756127.800	30653.163	13280.289	42363.772	106438.790	9903.942	1674.084	1954.115	408.505	3915.460
3	14:16:44	17409.088	86986.408	T 7520890.400	30117.187	13375.365	41757.245	104909.140	9882.929	1676.084	1906.609	422.005	3560.380
x		18064.799	91458.941	T 7702758.500	30394.357	13328.661	42288.587	105858.460	10019.345	1702.087	1939.113	415.172	3780.429

σ		839.414	4212.786	T 161920.060	268.459	47.560	498.024	828.899	218.335	46.781	28.177	6.752	192.202
%RSD		4.647	4.606	T 2.102	0.883	0.357	1.178	0.783	2.179	2.748	1.453	1.626	5.084
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:15:59	244728.670	219495.900	171846.390	34550.776	475.007	7061.496	998404.710	44755.010	51700.063	39034.156	56786.577	172316.210
2	14:16:20	245398.410	216284.320	173175.040	34370.403	510.008	7151.534	994363.530	42619.423	51007.935	39631.564	56821.696	173265.980
3	14:16:44	248671.390	214450.860	171108.860	34330.321	500.007	6951.449	995816.550	44714.902	52437.361	39502.257	55843.398	174387.580
x		246266.150	216743.690	172043.430	34417.167	495.007	7054.826	996194.930	44029.778	51715.119	39389.326	56483.890	173323.250
σ		2109.738	2553.699	1047.086	117.432	18.028	100.209	2046.988	1221.568	714.832	314.307	554.961	1036.876
%RSD		0.857	1.178	0.609	0.341	3.642	1.420	0.205	2.774	1.382	0.798	0.983	0.598

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:15:59	79162.556	198965.570	74164.646	132706.230	0.000	298779.280	161730.920
2	14:16:20	79604.654	196698.900	74822.576	133069.110	0.000	304516.730	162599.310
3	14:16:44	78795.824	197118.820	73757.846	133976.330	0.000	308473.500	165229.990
x		79187.678	197594.430	74248.356	133250.560	0.000	303923.170	163186.740
σ		405.000	1205.861	537.278	654.203	0.000	4874.291	1821.999
%RSD		0.511	0.610	0.724	0.491	0.000	1.604	1.117

200-35700-A-1-B @2 10/14/2016 02:21:24 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:21:45	140197.190	790.019	3845.444	853719.070	T 1920110.200	T 112375620.000	T 6820468.600	957009.170	240685.430	20442.529	315431.940	206668.460
2	14:22:07	136133.710	820.020	3700.411	857937.630	T 1933847.900	T 113287600.000	T 6956793.100	953390.350	244104.620	21133.390	315309.660	209549.100
3	14:22:28	139481.220	887.524	3925.462	835730.890	T 1912158.500	T 111127130.000	T 6710355.100	943490.130	237997.230	19596.514	315375.890	210895.920
x		138604.040	832.521	3823.772	849129.200	T 1922038.900	T 112263450.000	T 6829205.600	951296.550	240929.090	20390.811	315372.500	209037.830
σ		2169.112	49.940	114.080	11793.431	T 10972.574	T 1084595.200	T 123451.110	6998.507	3060.974	769.742	61.211	2159.609
%RSD		1.565	5.999	2.983	1.389	T 0.571	T 0.966	T 1.808	0.736	1.270	3.775	0.019	1.033

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:21:45	28930.087	TM 49194969.000	T 559546740.000	187311.690	66507.433	TM 5556100.200	655553.860	20848.031	1395.058	1242.046	537.509	5205.813
2	14:22:07	30557.988	TM 50594575.000	T 573997480.000	191559.560	67847.819	TM 5660284.400	666224.740	21035.266	1349.055	1283.549	540.509	5490.904
3	14:22:28	30377.659	TM 50271422.000	T 566047010.000	188864.060	66085.761	TM 5552376.900	655507.080	20992.212	1438.062	1270.548	565.510	5515.913
x		29955.245	TM 50020322.000	T 566530410.000	189245.100	66813.671	TM 5589587.200	659095.230	20958.503	1394.058	1265.381	547.842	5404.210
σ		892.379	TM 732811.110	T 7237485.000	2149.419	920.081	TM 61253.908	6174.384	98.064	44.512	21.229	15.374	172.271
%RSD		2.979	TM 1.465	T 1.278	1.136	1.377	TM 1.096	0.937	0.468	3.193	1.678	2.806	3.188

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:21:45	469717.050	622854.970	9202.540	10853.533	340.003	4000.480	1076604.400	91445.180	2940.259	2173.642	552472.480	221958.190
2	14:22:07	472463.050	627649.910	9927.956	11083.684	385.004	4105.506	1069295.600	93818.315	3095.287	2257.653	556555.000	224096.520
3	14:22:28	472838.470	634502.180	9857.915	11208.768	380.004	4235.538	1086656.300	94507.191	3100.288	2203.146	553629.960	223579.640
x		471672.860	628335.690	9662.804	11048.662	368.337	4113.841	1077518.800	93256.895	3045.278	2211.480	554219.150	223211.450
σ		1704.150	5853.814	400.135	180.189	24.665	117.751	8716.371	1606.353	90.984	42.621	2104.064	1115.701
%RSD		0.361	0.932	4.141	1.631	6.696	2.862	0.809	1.723	2.988	1.927	0.380	0.500

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:21:45	1380.057	8141.988	1403143.500	150203.800	0.000	235111.710	79775.468
2	14:22:07	1440.062	7821.835	1411980.000	150123.080	0.000	239305.770	79388.627
3	14:22:28	1410.060	7866.856	1422745.300	150900.050	0.000	236070.120	80976.238
x		1410.060	7943.560	1412622.900	150408.970	0.000	236829.200	80046.778
σ		30.003	173.312	9816.693	427.192	0.000	2197.656	827.849
%RSD		2.128	2.182	0.695	0.284	0.000	0.928	1.034

200-35700-A-2-B @2 10/14/2016 02:27:08 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:27:30	134893.690	417.505	3745.421	776789.830	1311789.100	T 74554237.000	T 5505231.400	723374.700	228221.930	17629.319	213463.300	135806.050
2	14:27:52	133159.830	352.504	3500.367	751708.100	T 1410813.300	T 73720704.000	T 5530450.000	728949.890	223782.340	18815.615	214633.180	137671.260
3	14:28:14	131688.210	280.002	3450.357	756780.060	1301767.200	T 72041740.000	T 5471731.900	725379.050	222971.580	20407.486	212303.630	137157.050
x		133247.240	350.004	3565.382	761759.330	T 1341456.500	T 73438894.000	T 5502471.100	725901.210	224991.950	18950.807	213466.700	136878.120
σ		1604.528	68.786	157.911	13261.533	T 60273.401	T 1279735.400	T 29456.200	2824.039	2826.468	1394.009	1164.780	963.380
%RSD		1.204	19.653	4.429	1.741	T 4.493	T 1.743	T 0.535	0.389	1.256	7.356	0.546	0.704

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:27:30	22640.367	T 26216458.000	T 248349390.000	117860.260	47246.873	T 4647677.400	467768.380	13900.795	1493.067	1279.049	517.008	4045.491
2	14:27:52	22294.902	T 26280396.000	T 248702040.000	118187.570	47081.406	T 4562960.200	464868.920	13876.775	1507.068	1299.551	534.509	4060.495
3	14:28:14	22269.868	T 26243677.000	T 246598650.000	116838.100	47031.265	T 4606077.300	463933.390	13739.661	1589.076	1297.051	536.009	4150.517
x		22401.713	T 26246844.000	T 247883360.000	117628.650	47119.848	T 4605571.600	465523.560	13839.077	1529.737	1291.883	529.175	4085.501
σ		207.060	T 32086.376	T 1126474.300	703.917	112.828	T 42360.854	1999.549	86.930	51.864	11.185	10.564	56.803

%RSD		0.924	T 0.122	T 0.454	0.598	0.239	T 0.920	0.430	0.628	3.390	0.866	1.996	1.390
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:27:30	276006.620	468277.370	6031.091	13130.170	325.003	4000.480	1080974.000	55702.929	2970.265	2404.673	323779.740	203788.320
2	14:27:52	281110.870	456147.860	5786.004	13145.182	360.004	3895.455	1083020.700	57007.329	3130.294	2416.175	323764.450	202431.940
3	14:28:14	278014.580	457977.010	5891.041	13710.637	370.004	3810.436	1064726.600	56475.523	3170.302	2425.677	327955.200	206855.760
x		278377.360	460800.750	5902.712	13328.663	351.670	3902.124	1076240.400	56395.260	3090.287	2415.508	325166.470	204358.670
σ		2571.391	6539.221	122.960	330.884	23.630	95.198	10023.669	655.893	105.850	10.517	2415.128	2266.391
%RSD		0.924	1.419	2.083	2.483	6.719	2.440	0.931	1.163	3.425	0.435	0.743	1.109

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:27:30	1570.074	5680.968	1235276.400	147812.560	0.000	143777.500	50335.896
2	14:27:52	1445.063	5620.948	1246793.400	146319.470	0.000	147040.780	50441.214
3	14:28:14	1495.067	5610.944	1245797.900	143827.930	0.000	152368.310	50857.476
x		1503.401	5637.620	1242622.600	145986.660	0.000	147728.860	50544.862
σ		62.921	37.872	6381.392	2013.059	0.000	4336.546	275.805
%RSD		4.185	0.672	0.514	1.379	0.000	2.935	0.546

200-35700-A-3-B @8 10/14/2016 02:32:53 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:33:15	136254.690	242.502	1625.079	546619.150	918458.370	T 49885034.000	T 3254131.800	187448.210	228992.390	6081.109	120025.630	90706.158
2	14:33:36	132675.990	257.502	1525.070	533937.850	918120.500	T 50197121.000	T 3270967.100	190371.060	227187.950	6231.165	122271.870	91782.024
3	14:33:58	133956.170	275.002	1335.054	528013.530	923928.630	T 50136191.000	T 3280205.900	190006.940	225403.970	6156.137	119300.460	91917.769
x		134295.620	258.335	1495.068	536190.180	920169.170	T 50072782.000	T 3268434.900	189275.400	227194.770	6156.137	120532.650	91468.651
σ		1813.337	16.266	147.322	9505.108	3260.174	T 165424.250	T 13220.199	1592.835	1794.220	75.028	1549.236	663.817
%RSD		1.350	6.297	9.854	1.773	0.354	T 0.330	T 0.404	0.842	0.790	1.219	1.285	0.726

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:33:15	17579.266	T 4748721.500	T 136764270.000	51795.358	28789.844	TM 5725281.800	226681.120	4645.647	962.028	621.512	547.509	3485.364
2	14:33:36	16888.552	T 4795813.800	T 137946040.000	51875.607	29200.558	TM 5718340.800	227775.890	4625.642	925.026	607.511	585.010	3480.363
3	14:33:58	17018.685	T 4838571.000	T 140441590.000	52818.562	29986.952	TM 5806390.600	233169.710	4703.664	987.029	598.511	558.509	3230.313
x		17162.168	T 4794368.800	T 138383970.000	52163.175	29325.785	TM 5750004.400	229208.910	4658.318	958.028	609.178	563.676	3398.680
σ		367.031	T 44942.179	T 1877365.500	568.998	608.299	TM 48955.040	3473.560	40.525	31.195	11.591	19.277	145.832
%RSD		2.139	T 0.937	T 1.357	1.091	2.074	TM 0.851	1.515	0.870	3.256	1.903	3.420	4.291
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:33:15	113636.080	411538.960	1090.036	570.010	40.000	260.002	1107471.600	8202.018	630.012	458.006	167083.330	198090.240
2	14:33:36	113646.150	413650.280	1110.037	630.012	45.000	210.001	1110952.200	8682.261	540.009	473.507	172058.560	201612.090
3	14:33:58	116022.440	411651.700	1125.038	645.012	20.000	240.002	1115020.900	8842.345	765.018	497.507	172220.220	203656.730
x		114434.890	412280.310	1108.370	615.011	35.000	236.668	1111148.200	8575.541	645.013	476.340	170454.040	201119.690
σ		1374.867	1187.762	17.561	39.688	13.229	25.166	3778.440	333.237	113.252	19.902	2920.239	2815.723
%RSD		1.201	0.288	1.584	6.453	37.796	10.634	0.340	3.886	17.558	4.178	1.713	1.400

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:33:15	235.002	2900.252	233134.220	146894.500	0.000	75771.851	30482.851
2	14:33:36	210.001	3020.274	237540.790	151051.410	0.000	80996.335	30392.686
3	14:33:58	215.001	3360.339	234731.410	149699.290	0.000	84759.981	30117.187
x		220.001	3093.622	235135.470	149215.070	0.000	80509.389	30330.908
σ		13.229	238.652	2230.900	2120.336	0.000	4513.808	190.499
%RSD		6.013	7.714	0.949	1.421	0.000	5.607	0.628

200-35700-A-5-B @2 10/14/2016 02:38:36 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	14:38:58	136385.760	760.017	3145.297	┬1006251.500	┬2565135.700	┬125481650.000	┬8308198.800	775617.070	255737.110	21719.142	342595.330	233539.84
2	14:39:20	138230.870	695.014	3100.288	┬984452.230	┬2516294.100	┬125857420.000	┬8226349.400	777606.630	251594.770	22835.633	344805.200	234244.63
3	14:39:42	135730.440	800.019	3155.299	887222.670	┬2474984.000	┬125538940.000	┬8236957.000	776643.230	251330.830	21303.607	341115.430	235776.00
x		136782.360	751.684	3133.628	┬959308.790	┬2518804.600	┬125626000.000	┬8257168.400	776622.310	252887.570	21952.794	342838.650	234520.16
σ		1296.533	52.996	29.303	┬63372.780	┬45128.221	┬202449.800	┬44510.784	994.948	2471.296	792.289	1856.881	1143.25
%RSD		0.948	7.050	0.935	┬6.606	┬1.792	┬0.161	┬0.539	0.128	0.977	3.609	0.542	0.48

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	14:38:58	34200.053	┬23108683.000	┬497672720.000	164861.370	79036.962	┬4570131.100	472036.210	19618.540	1411.060	952.527	559.509	4600.63
2	14:39:20	33603.842	┬23414179.000	┬497536280.000	163477.840	76329.386	┬4516671.500	472493.910	19742.686	1354.055	961.528	573.010	4965.74
3	14:39:42	34360.383	┬23414278.000	┬503234320.000	163386.950	76987.402	┬4504766.000	474391.690	19697.633	1402.059	997.030	581.510	4485.60
x		34054.759	┬23312380.000	┬499481110.000	163908.720	77451.250	┬4530522.800	472973.930	19686.286	1389.058	970.362	571.343	4683.99
σ		398.649	┬176406.910	┬3251095.600	826.267	1412.129	┬34814.422	1248.957	62.846	30.646	23.530	11.095	250.68
%RSD		1.171	┬0.757	┬0.651	0.504	1.823	┬0.768	0.264	0.319	2.206	2.425	1.942	5.35

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159T
1	14:38:58	367487.230	709987.060	7071.500	6116.122	210.001	1660.083	1076924.100	51078.150	2330.163	1843.602	520930.800	231861.65
2	14:39:20	374720.640	718145.690	6971.458	5660.961	275.002	2000.120	1091007.200	52713.229	2330.163	1803.598	524778.730	234315.62
3	14:39:42	375293.310	715484.840	6706.349	6076.107	195.001	1705.087	1086794.900	53174.691	2420.176	1855.103	522823.710	234396.75
x		372500.390	714539.200	6916.435	5951.064	226.668	1788.430	1084908.700	52322.023	2360.167	1834.101	522844.410	233524.67
σ		4350.959	4160.707	188.691	252.031	42.525	184.705	7228.543	1101.659	51.969	27.035	1924.050	1440.78
%RSD		1.168	0.582	2.728	4.235	18.761	10.328	0.666	2.106	2.202	1.474	0.368	0.61

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:38:58	875.023	7451.665	1330947.200	151969.700	0.000	294056.390	98334.235
2	14:39:20	860.022	7916.880	1332688.400	153120.160	0.000	293277.850	100049.400
3	14:39:42	900.024	7921.882	1360382.200	152888.040	0.000	295806.960	99430.712
x		878.356	7763.476	1341339.300	152659.300	0.000	294380.400	99271.448
σ		20.208	270.047	16514.642	608.383	0.000	1295.314	868.602
%RSD		2.301	3.478	1.231	0.399	0.000	0.440	0.875

200-35700-A-1-B @4 10/14/2016 02:44:19 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:44:40	135639.710	355.004	1830.101	602610.740	925544.700	┬59148775.000	┬3624096.800	493149.530	232023.890	9797.879	171831.240	108849.290
2	14:45:02	133885.610	432.506	2080.130	602403.440	932655.100	┬59063244.000	┬3590426.300	489813.280	227461.640	10178.107	172093.930	107581.090
3	14:45:24	134994.500	395.005	1945.113	588230.450	924794.740	┬58118656.000	┬3553778.800	487589.480	227228.500	10573.353	171780.720	109176.420
x		134839.940	394.171	1951.781	597748.210	927664.850	┬58776891.000	┬3589434.000	490184.100	228904.680	10183.113	171901.960	108535.600
σ		887.204	38.758	125.148	8243.277	4337.923	┬571650.910	┬35169.496	2798.511	2703.831	387.761	168.155	842.653
%RSD		0.658	9.833	6.412	1.379	0.468	┬0.973	┬0.980	0.571	1.181	3.808	0.098	0.776

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:44:40	18169.899	┬25793182.000	┬297600090.000	101030.290	35567.912	┬2946277.800	357912.210	12556.728	1179.042	946.027	561.509	4305.556
2	14:45:02	18535.301	┬25811215.000	┬296111050.000	98998.148	35623.029	┬2955701.100	366270.890	12861.961	1177.042	916.525	548.009	4300.555
3	14:45:24	18034.752	┬25770913.000	┬297698580.000	98872.405	34405.475	┬2949794.300	365218.160	12831.938	1127.038	932.026	530.008	4190.527
x		18246.651	┬25791770.000	┬297136570.000	99633.614	35198.806	┬2950591.100	363133.750	12750.209	1161.041	931.526	546.509	4265.546

σ		258.951	T 20188.380	T 889491.550	1211.188	687.596	T 4761.876	4552.521	168.230	29.464	14.757	15.804	65.017
%RSD		1.419	T 0.078	T 0.299	1.216	1.953	T 0.161	1.254	1.319	2.538	1.584	2.892	1.524
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:44:40	244185.790	446224.580	5040.762	5891.041	225.002	2295.158	1117488.200	47527.670	1525.070	1212.544	282916.040	204395.690
2	14:45:02	248356.750	456291.720	5050.765	6216.159	185.001	2275.155	1106009.200	47507.613	1480.066	1160.040	286720.220	205357.400
3	14:45:24	249508.760	450867.050	4945.734	6151.135	190.001	2270.155	1113675.200	48430.263	1550.072	1162.541	284695.960	206612.780
x		247350.430	451127.780	5012.420	6086.112	200.001	2280.156	1112390.900	47821.848	1518.402	1178.375	284777.410	205455.290
σ		2800.536	5038.630	57.969	172.036	21.795	13.231	5846.305	526.998	35.476	29.618	1903.400	1111.780
%RSD		1.132	1.117	1.156	2.827	10.897	0.580	0.526	1.102	2.336	2.513	0.668	0.541

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:44:40	750.017	3775.428	704668.330	149648.840	0.000	101910.620	38895.333
2	14:45:02	640.012	3910.459	712506.220	147772.210	0.000	106081.530	39832.542
3	14:45:24	680.014	3755.423	709006.620	149214.980	0.000	109609.240	39271.212
x		690.014	3813.770	708727.060	148878.670	0.000	105867.130	39333.029
σ		55.680	84.330	3926.421	982.478	0.000	3853.786	471.653
%RSD		8.069	2.211	0.554	0.660	0.000	3.640	1.199

200-35700-A-3-B @10 10/14/2016 02:50:01 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:50:23	139874.490	152.501	1220.045	496064.140	723218.120	T 38725192.000	T 2549104.100	147701.590	224704.620	5190.808	95150.837	71493.009
2	14:50:45	135801.010	205.001	1205.044	494756.100	716152.620	T 38878851.000	T 2554100.000	146248.860	224177.600	5155.797	96765.091	71754.128
3	14:51:06	132303.050	205.001	1240.046	482689.920	723332.940	T 39459705.000	T 2565905.200	148266.570	224765.430	4655.650	96433.176	71272.066
x		135992.850	187.501	1221.711	491170.050	720901.230	T 39021250.000	T 2556369.700	147405.670	224549.220	5000.752	96116.368	71506.401
σ		3789.367	30.311	17.561	7373.077	4112.812	T 387408.210	T 8627.438	1040.895	323.267	299.379	852.484	241.310
%RSD		2.786	16.166	1.437	1.501	0.571	T 0.993	T 0.337	0.706	0.144	5.987	0.887	0.337

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:50:23	13620.563	T 3744006.500	T 106644700.000	39892.686	22465.130	T 4463786.400	177272.780	4105.506	910.025	600.011	533.009	3435.354
2	14:50:45	14291.124	T 3720470.200	T 108005070.000	40403.915	22490.164	T 4502145.900	178040.900	4185.525	933.026	569.010	508.008	3455.358
3	14:51:06	13885.782	T 3803708.200	T 110290220.000	41235.949	23466.509	T 4584771.600	180011.910	4047.491	920.025	582.510	561.509	3205.308
x		13932.490	T 3756061.700	T 108313330.000	40510.850	22807.268	T 4516901.300	178441.860	4112.841	921.025	583.844	534.175	3365.340
σ		337.712	T 42908.451	T 1842210.000	677.986	571.057	T 61827.525	1412.897	69.309	11.533	15.543	26.770	138.952
%RSD		2.424	T 1.142	T 1.701	1.674	2.504	T 1.369	0.792	1.685	1.252	2.662	5.011	4.129

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:50:23	87494.055	375155.250	850.022	430.006	30.000	190.001	1116398.700	6661.331	455.006	340.003	128196.140	196258.760
2	14:50:45	89278.481	375400.690	805.019	505.008	40.000	135.001	1116655.000	6711.351	415.005	339.003	130730.710	198333.100
3	14:51:06	89092.489	376904.050	725.016	535.009	35.000	170.001	1109211.800	6851.408	405.005	365.504	132751.590	198444.410
x		88621.675	375820.000	793.352	490.007	35.000	165.001	1114088.500	6741.363	425.005	348.170	130559.480	197678.760
σ		980.966	946.805	63.314	54.085	5.000	27.839	4225.276	98.529	26.458	15.020	2282.549	1231.013
%RSD		1.107	0.252	7.981	11.038	14.286	16.872	0.379	1.462	6.225	4.314	1.748	0.623

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:50:23	140.001	2230.149	174801.890	148074.880	0.000	55447.078	23121.026
2	14:50:45	210.001	2295.158	176398.580	148387.640	0.000	58547.655	22655.388
3	14:51:06	190.001	2370.169	178753.470	148387.640	0.000	62968.728	22750.517
x		180.001	2298.492	176651.310	148283.380	0.000	58987.820	22842.310
σ		36.056	70.069	1987.877	180.574	0.000	3780.094	246.017
%RSD		20.031	3.048	1.125	0.122	0.000	6.408	1.077

CCV 10/14/2016 02:55:44 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:56:06	114804.040	89567.525	33127.891	T 15734665.000	T 4622978.500	T 43043078.000	T 15463935.000	T 1656453.000	168002.500	29751.531	T 3182947.100	8957
2	14:56:28	111330.600	87830.819	34104.859	T 15378080.000	T 4535574.400	T 42798571.000	T 15155529.000	T 1612562.400	158076.100	30297.513	T 3095894.500	8758
3	14:56:51	110152.810	86614.479	32797.238	T 15203533.000	T 4477746.700	T 42479987.000	T 15156008.000	T 1653060.800	162922.440	29816.647	T 3123988.900	8760
x		112095.820	88004.274	33343.329	T 15438759.000	T 4545433.200	T 42773879.000	T 15258491.000	T 1640692.100	163000.350	29955.230	T 3134276.800	8825
σ		2418.193	1484.145	679.910	T 270715.070	T 73116.081	T 282356.400	T 177920.640	T 24419.958	4963.656	298.208	T 44428.785	114
%RSD		2.157	1.686	2.039	T 1.753	T 1.609	T 0.660	T 1.166	T 1.488	3.045	0.996	T 1.418	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:56:06	114255.290	T 4633079.100	T 96510690.000	1376866.900	740774.510	913554.570	665850.210	88180.659	7108.516	8841.845	419.005	80
2	14:56:28	110958.130	T 4590757.400	T 94504236.000	1336582.500	731252.540	897591.330	653812.420	86437.564	6813.392	8660.249	412.005	77
3	14:56:51	108632.880	T 4547050.100	T 93487716.000	1327427.400	710910.190	886922.300	646874.420	84975.072	6741.363	8653.246	395.005	72
x		111282.100	T 4590295.500	T 94834214.000	1346958.900	727645.750	899356.060	655512.350	86531.098	6887.757	8718.447	408.672	76
σ		2825.170	T 43016.395	T 1538264.200	26302.432	15255.364	13403.553	9601.431	1604.839	194.545	106.923	12.343	3

%RSD		2.539	T 0.937	T 1.622	1.953	2.097	1.490	1.465	1.855	2.825	1.226	3.020	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	14:56:06	918790.970	200842.890	1939342.900	307088.270	9557.740	144982.870	931503.290	977667.960	623591.760	475004.270	650106.600	1553
2	14:56:28	912477.930	198140.830	1959050.200	305896.660	9757.856	140595.520	913887.080	959014.660	616520.860	472578.250	645835.260	1556
3	14:56:51	901150.910	193941.880	1958439.300	298743.650	9412.657	140247.610	901804.890	970877.780	618932.840	472386.420	645809.280	1591
x		910806.600	197641.870	1952277.500	303909.530	9576.084	141942.000	915731.750	969186.800	619681.820	473322.980	647250.380	1567
σ		8938.007	3477.459	11205.834	4513.279	173.329	2639.209	14934.885	9440.922	3594.459	1459.195	2473.594	21
%RSD		0.981	1.759	0.574	1.485	1.810	1.859	1.631	0.974	0.580	0.308	0.382	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:56:06	43576.894	1809728.900	T 9542764.800	125631.720	0.000	287890.130	141397.260
2	14:56:28	43095.645	1812858.100	T 9582827.900	122246.690	0.000	293181.170	141472.900
3	14:56:51	44875.333	1815326.300	T 9470141.400	122266.840	5.000	296641.600	140323.240
x		43849.291	1812637.800	T 9531911.400	123381.750	1.667	292570.970	141064.470
σ		920.582	2805.224	T 57121.929	1948.560	2.887	4407.530	643.034
%RSD		2.099	0.155	T 0.599	1.579	173.205	1.506	0.456

CCB 10/14/2016 03:01:33 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	15:01:55	120997.620	52.500	725.016	279849.920	2810.237	31584.900	69484.542	1380.057	172568.800	90.000	27592.822	2650.211
2	15:02:17	123022.370	40.000	610.011	284161.960	2820.239	35728.254	70077.015	1410.060	174650.310	35.000	27813.188	3100.288
3	15:02:39	119275.280	72.500	710.015	285067.230	3180.303	37492.122	68139.004	1820.099	175084.840	40.000	28359.107	2940.259
x		121098.420	55.000	681.681	283026.370	2936.926	34935.092	69233.520	1536.739	174101.320	55.000	27921.706	2896.919
σ		1875.577	16.394	62.519	2787.877	210.830	3032.433	993.091	245.856	1344.864	30.414	394.500	228.147
%RSD		1.549	29.807	9.171	0.985	7.179	8.680	1.434	15.999	0.772	55.298	1.413	7.876

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	15:01:55	9047.455	4285.551	333340.470	650.013	360.004	950.027	915.025	2331.163	785.018	412.505	423.505	1950.114
2	15:02:17	9152.512	4425.587	350109.070	745.017	410.005	1075.035	1110.037	2461.182	754.017	434.506	432.006	2295.158
3	15:02:39	9982.989	4605.636	345356.440	805.019	570.010	1205.044	1045.033	2377.170	749.017	439.006	430.506	2425.176
x		9394.319	4438.925	342935.330	733.350	446.673	1076.702	1023.365	2389.838	762.684	428.672	428.672	2223.483
σ		512.502	160.459	8642.500	78.159	109.700	127.516	99.295	65.929	19.503	14.181	4.537	245.508
%RSD		5.455	3.615	2.520	10.658	24.559	11.843	9.703	2.759	2.557	3.308	1.058	11.042

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:01:55	425.005	206035.700	2940.259	195.001	5.000	95.000	945467.600	2090.131	850.022	592.011	320.003	160812.090
2	15:02:17	565.010	205802.850	2970.265	170.001	0.000	85.000	945827.170	2335.164	840.021	710.515	390.005	160034.660
3	15:02:39	595.011	208668.150	2850.244	190.001	5.000	95.000	964460.830	2585.200	910.025	733.516	445.006	161882.380
x		528.342	206835.560	2920.256	185.001	3.333	91.667	951918.530	2336.832	866.689	678.681	385.005	160909.710
σ		90.740	1591.327	62.461	13.229	2.887	5.774	10863.435	247.539	37.861	75.934	62.651	927.718
%RSD		17.175	0.769	2.139	7.151	86.603	6.298	1.141	10.593	4.369	11.189	16.273	0.577

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:01:55	130.001	2255.153	3970.473	127374.880	0.000	7621.742	115.000
2	15:02:17	180.001	2310.160	4935.731	129047.670	0.000	7401.643	125.000
3	15:02:39	170.001	2330.163	5510.911	134107.380	0.000	6936.443	130.001
x		160.001	2298.492	4805.705	130176.640	0.000	7319.943	123.334
σ		26.458	38.843	778.407	3505.365	0.000	349.878	7.638
%RSD		16.536	1.690	16.198	2.693	0.000	4.780	6.193

CCVL 10/14/2016 03:07:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:07:38	119627.790	205.001	6881.420	T 1123135.900	30317.550	91213.918	806061.850	28344.081	179258.860	30.000	41656.994	12104.394
2	15:08:00	126004.520	210.001	6496.266	1024605.300	32181.039	96408.031	820228.530	29285.707	179683.390	10.000	41812.383	12744.871
3	15:08:22	123798.080	200.001	6836.402	T 1120292.500	32611.875	95110.609	817467.720	29435.971	179188.100	20.000	41396.346	13090.139
x		123143.460	205.001	6738.029	T 1089344.600	31703.488	94244.186	814586.030	29021.920	179376.780	20.000	41621.908	12646.468
σ		3238.374	5.000	210.580	T 56083.891	1219.436	2703.279	7510.115	591.814	267.877	10.000	210.226	500.185
%RSD		2.630	2.439	3.125	T 5.148	3.846	2.868	0.922	2.039	0.149	50.000	0.505	3.955

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:07:38	11293.825	9152.512	935091.060	3145.297	1595.076	4360.570	12985.056	3446.356	913.025	617.511	437.006	2580.200
2	15:08:00	11053.664	9582.754	941507.600	3240.315	1790.096	4600.635	13230.249	3373.341	996.030	624.012	430.506	2355.166
3	15:08:22	11508.972	9772.864	936924.870	3610.391	1575.074	4575.628	12649.799	3300.327	948.027	616.011	426.505	2455.181
x		11285.487	9502.710	937841.180	3332.001	1653.416	4512.278	12955.035	3373.342	952.361	619.178	431.339	2463.516
σ		227.769	317.828	3304.952	245.729	118.791	131.976	291.387	73.015	41.672	4.253	5.300	112.748
%RSD		2.018	3.345	0.352	7.375	7.185	2.925	2.249	2.164	4.376	0.687	1.229	4.577

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:07:38	23992.256	205438.390	16718.381	3305.328	85.000	820.020	946609.780	1170.041	5395.873	4181.525	5495.906	163215.280
2	15:08:00	25769.907	214734.470	17749.446	3220.311	50.000	830.021	972752.490	1265.048	5605.943	4283.550	5705.977	167032.830
3	15:08:22	25113.907	211665.590	17449.129	3380.343	55.000	770.018	972275.850	1330.053	5630.951	4194.528	5545.923	162054.030
x		24958.690	210612.820	17305.652	3301.994	63.333	806.686	963879.370	1255.047	5544.256	4219.868	5582.602	164100.710
σ		898.933	4736.615	530.295	80.068	18.930	32.147	14957.809	80.473	129.110	55.533	109.733	2604.819
%RSD		3.602	2.249	3.064	2.425	29.889	3.985	1.552	6.412	2.329	1.316	1.966	1.587

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:07:38	3760.424	19701.638	9132.501	130922.210	0.000	18189.921	15817.502
2	15:08:00	3920.461	20057.061	9712.829	130226.790	0.000	18535.301	15932.612
3	15:08:22	3570.382	20247.291	10083.049	132756.630	0.000	19070.905	15532.234
x		3750.423	20001.997	9642.793	131301.880	0.000	18598.709	15760.783
σ		175.254	276.963	479.128	1306.957	0.000	443.902	206.127
%RSD		4.673	1.385	4.969	0.995	0.000	2.387	1.308

Analyte ICPS

STD0 10/14/2016 10:32:42 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:33:04	100.756%	16.164	-112.095	-7509.036	693.869	9748.883	143.338	19.999	100.721%	9.938	1098.597	117.409
2	10:33:26	99.141%	11.848	-148.335	8709.289	1501.624	15329.449	2486.325	203.870	98.303%	20.329	431.464	418.940
3	10:33:48	100.102%	43.928	-254.235	4218.252	1283.571	17448.864	1321.379	125.744	100.976%	9.902	1686.029	421.475
x		100.000%	23.980	-171.555	1806.168	1159.688	14175.732	1317.014	116.537	100.000%	13.390	1072.030	319.275
σ		0.812%	17.410	73.860	8373.896	417.884	3977.527	1171.500	92.281	1.475%	6.010	627.704	174.825
%RSD		0.812	72.600	43.053	463.628	36.034	28.059	88.951	79.185	1.475	44.885	58.553	54.757

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:33:04	10092.954	1083.687	48194.709	-4.290	-15.859	18.065	-103.420	94.110	771.400	8.832	424.222	2270.919
2	10:33:26	10728.023	1607.571	67028.963	32.423	21.255	-30.177	-115.657	-62.661	804.317	-32.892	443.489	2293.753
3	10:33:48	10467.993	1582.603	65338.466	-10.917	226.104	22.318	20.365	-68.058	806.474	-38.941	410.817	2350.909
x		10429.657	1424.620	60187.379	5.739	77.166	3.402	-66.237	-12.203	794.063	-21.001	426.176	2305.194
σ		319.265	295.520	10420.295	23.346	130.312	29.157	75.249	92.109	19.657	26.012	16.424	41.204
%RSD		3.061	20.744	17.313	406.811	168.871	857.114	113.605	754.815	2.475	123.863	3.854	1.787

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:33:04	-4.844	98.568%	444.984	-18.691	-61.603	-24.376	98.535%	2232.865	883.945	486.953	2.157	99.967%
2	10:33:26	116.835	100.038%	639.883	23.491	-73.533	46.181	100.568%	2515.914	1055.328	628.319	86.419	99.337%
3	10:33:48	80.518	101.394%	407.335	-11.751	-43.014	1.019	100.898%	2626.628	1229.356	682.204	105.118	100.696%
x		64.170	100.000%	497.401	-2.317	-59.383	7.608	100.000%	2458.469	1056.209	599.159	64.565	100.000%
σ		62.465	1.414%	124.820	22.618	15.380	35.737	1.280%	203.069	172.707	100.839	54.850	0.680%
%RSD		97.344	1.414	25.095	976.217	25.900	469.731	1.280	8.260	16.352	16.830	84.953	0.680

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:33:04	7.348	6.909	7361.874	99.354%	0.000	6124.173	-14.691
2	10:33:26	13.651	57.607	9232.470	99.942%	0.000	6059.831	19.973
3	10:33:48	30.728	8.998	9432.572	100.704%	0.000	5304.519	29.184
x		17.242	24.505	8675.639	100.000%	0.000	5829.508	11.489
σ		12.097	28.686	1142.144	0.677%	0.000	455.791	23.136
%RSD		70.158	117.064	13.165	0.677	0.000	7.819	201.377

STD1 10/14/2016 10:38:26 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:38:47	102.742%	153.998	6344.203	T 795526.680	28796.544	75384.634	752952.960	27005.114	104.176%	24.038	12922.362	9520.487
2	10:39:09	102.460%	156.941	6516.580	T 825281.620	30075.423	75637.594	744615.720	28048.937	102.892%	14.597	13640.372	9998.183
3	10:39:31	100.602%	133.030	6437.086	T 811339.970	28790.159	76848.749	761674.600	27560.021	102.691%	19.485	13726.951	9726.477
x		101.935%	147.990	6432.623	T 810716.090	29220.709	75956.992	753081.090	27538.024	103.253%	19.373	13429.895	9748.382
σ		1.163%	13.038	86.275	T 14887.281	740.211	782.572	8530.160	522.259	0.806%	4.721	441.664	239.600
%RSD		1.141	8.810	1.341	T 1.836	2.533	1.030	1.133	1.897	0.780	24.370	3.289	2.458

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:38:47	10696.398	6690.889	665612.070	2138.490	959.209	3707.156	11820.828	832.621	802.171	141.565	450.547	2401.351
2	10:39:09	11201.773	6893.859	667359.590	2630.400	1159.394	3892.984	12190.069	899.921	851.345	135.120	438.482	2375.397
3	10:39:31	11004.216	7275.455	673838.240	2451.806	1074.572	3563.325	11813.656	1005.902	760.533	203.077	423.450	2230.154

x		10967.463	6953.401	668936.640	2406.899	1064.392	3721.155	11941.518	912.815	804.683	159.921	437.493	2335.634
σ		254.684	296.796	4333.909	249.011	100.480	165.275	215.282	87.357	45.458	37.513	13.575	92.265
%RSD		2.322	4.268	0.648	10.346	9.440	4.441	1.803	9.570	5.649	23.457	3.103	3.950
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:38:47	24777.005	100.510%	16016.359	3437.575	-115.728	876.526	101.878%	1374.257	6147.142	4522.425	5280.358	100.638%
2	10:39:09	25141.575	100.080%	16510.711	3562.753	-79.683	848.674	100.461%	1383.672	6150.556	4632.863	5856.283	100.673%
3	10:39:31	25705.908	101.626%	16501.475	3060.556	-47.538	700.215	100.131%	1378.251	6183.600	4680.177	5646.672	101.181%
x		25208.163	100.739%	16342.849	3353.628	-80.983	808.472	100.823%	1378.727	6160.433	4611.822	5594.438	100.831%
σ		468.018	0.798%	282.786	261.411	34.114	94.782	0.928%	4.726	20.136	80.953	291.494	0.304%
%RSD		1.857	0.792	1.730	7.795	42.125	11.724	0.920	0.343	0.327	1.755	5.210	0.302

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:38:47	4006.034	20759.640	17181.905	98.197%	0.000	18875.885	17271.388
2	10:39:09	4411.956	19996.823	17381.383	101.113%	0.000	18716.662	17746.319
3	10:39:31	4008.194	20022.486	17653.622	100.864%	0.000	20223.482	17696.093
x		4142.061	20259.649	17405.637	100.058%	0.000	19272.010	17571.267
σ		233.738	433.194	236.792	1.616%	0.000	827.836	260.914
%RSD		5.643	2.138	1.360	1.615	0.000	4.296	1.485

STD2 10/14/2016 10:44:08 AM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	10:44:30	96.217%	875.729	30159.010	T 4035711.200	144558.140	331563.360	T 4043592.900	138644.430	98.652%	15.227	56292.327	47754.998
2	10:44:52	95.655%	786.953	30092.574	T 4180122.200	155885.030	349967.130	T 4193722.700	143564.260	93.379%	21.391	59476.337	47938.246
3	10:45:13	92.853%	816.942	30521.690	T 4050256.200	151203.120	342576.180	T 4162608.800	145165.190	92.640%	10.784	61024.126	49438.139
x		94.908%	826.541	30257.758	T 4088696.500	150548.770	341368.890	T 4133308.100	142457.960	94.890%	15.801	58930.930	48377.128
σ		1.802%	45.160	230.973	T 79510.223	5691.724	9261.094	T 79237.848	3398.237	3.279%	5.327	2412.588	923.420
%RSD		1.899	5.464	0.763	T 1.945	3.781	2.713	T 1.917	2.385	3.455	33.714	4.094	1.909
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	10:44:30	10877.205	34563.915	T 3393654.700	13887.966	6169.300	18547.289	60313.155	4663.245	715.691	1007.656	440.917	2138.689
2	10:44:52	10881.032	36766.130	T 3597558.000	15090.523	6217.674	19184.302	61470.599	4894.711	552.832	1058.637	424.941	2037.995
3	10:45:13	9816.745	36540.362	T 3538776.400	13757.710	6339.708	19049.202	61348.432	4819.410	560.572	1119.975	438.816	1854.682
x		10524.994	35956.802	T 3509996.400	14245.400	6242.227	18926.931	61044.062	4792.455	609.698	1062.090	434.891	2010.455
σ		613.365	1211.546	T 104954.050	734.790	87.817	335.647	635.925	118.064	91.874	56.239	8.681	143.993
%RSD		5.828	3.369	T 2.990	5.158	1.407	1.773	1.042	2.464	15.069	5.295	1.996	7.162
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:44:30	123821.470	95.615%	84302.606	17186.190	-34.688	3711.751	97.299%	745.146	28945.851	22136.531	28318.484	97.320%
2	10:44:52	126217.770	96.021%	85646.574	17619.107	-31.016	4175.931	94.956%	816.190	29214.564	22854.571	29740.886	95.990%
3	10:45:13	126566.420	94.737%	86135.646	17367.373	-22.076	4210.014	93.548%	844.503	28994.863	22533.017	29281.983	95.615%
x		125535.220	95.458%	85361.609	17390.890	-29.260	4032.566	95.267%	801.946	29051.759	22508.040	29113.784	96.308%
σ		1494.355	0.657%	949.164	217.415	6.487	278.355	1.894%	51.187	143.107	359.671	725.965	0.896%
%RSD		1.190	0.688	1.112	1.250	22.171	6.903	1.989	6.383	0.493	1.598	2.494	0.930

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:44:30	20637.919	101910.640	74409.359	98.183%	0.000	75984.302	84062.866
2	10:44:52	20457.015	107064.680	76078.301	95.399%	0.000	80881.707	88271.994
3	10:45:13	20742.325	109245.800	76518.473	94.541%	0.000	87270.225	88829.751
x		20612.420	106073.710	75668.711	96.041%	0.000	81378.745	87054.870

σ		144.354	3766.653	1112.616	1.904%	0.000	5659.355	2606.116
%RSD		0.700	3.551	1.470	1.982	0.000	6.954	2.994

STD3 10/14/2016 10:49:52 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:50:14	96.461%	101512.330	37418.724	┬15843079.000	┬4806567.600	┬44942377.000	┬16104077.000	┬1789495.600	96.015%	30902.016	┬3261557.200	9227
2	10:50:36	94.993%	101130.590	37362.836	┬16123398.000	┬4984008.500	┬47156569.000	┬16786240.000	┬1813554.000	93.426%	33500.102	┬3343047.200	9597
3	10:50:57	94.104%	102339.980	38366.993	┬15820193.000	┬4842145.400	┬45336296.000	┬16251137.000	┬1816471.900	93.497%	32081.193	┬3300897.800	9478
x		95.186%	101660.970	37716.184	┬15928890.000	┬4877573.800	┬45811747.000	┬16380484.000	┬1806507.200	94.312%	32161.103	┬3301834.100	9434
σ		1.190%	618.245	564.309	┬168837.060	┬93876.001	┬1181186.700	┬359005.130	┬14804.516	1.475%	1300.885	┬40753.061	189
%RSD		1.250	0.608	1.496	┬1.060	┬1.925	┬2.578	┬2.192	┬0.820	1.564	4.045	┬1.234	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:50:14	12219.547	┬4927153.300	┬99985166.000	1420905.200	758970.960	942761.510	716982.060	92869.008	-567.109	9578.714	470.305	9
2	10:50:36	11428.580	┬5041394.300	┬101865230.000	1438320.700	767859.470	939224.860	714855.140	93938.640	-442.789	9339.826	405.950	13
3	10:50:57	11477.798	┬4981188.600	┬101711920.000	1435811.300	759510.390	942027.200	722959.200	95281.439	-738.050	9497.599	418.973	8
x		11708.642	┬4983245.400	┬101187440.000	1431679.100	762113.610	941337.860	718265.470	94029.696	-582.649	9472.046	431.743	10
σ		443.141	┬57148.245	┬1044017.800	9414.425	4983.370	1866.381	4201.701	1208.790	148.243	121.476	34.025	2
%RSD		3.785	┬1.147	┬1.032	0.658	0.654	0.198	0.585	1.286	25.443	1.282	7.881	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	10:50:14	1015294.000	96.078%	2127346.200	343557.650	-58.456	163760.210	94.089%	1111791.200	715806.550	556438.690	732098.000	97
2	10:50:36	995705.400	94.869%	┬2371784.800	333474.830	307.546	164911.170	94.594%	1094441.000	709167.870	557078.760	736368.230	97
3	10:50:57	1027755.700	93.296%	2182916.600	343919.890	747.524	167996.890	92.728%	1126161.300	720949.850	566972.520	746123.600	98
x		1012918.400	94.748%	┬2227349.200	340317.460	332.205	165556.090	93.804%	1110797.800	715308.090	560163.320	738196.610	97
σ		16156.667	1.395%	┬128133.710	5928.657	403.555	2190.732	0.965%	15883.468	5906.784	5905.616	7189.339	0
%RSD		1.595	1.472	┬5.753	1.742	121.478	1.323	1.029	1.430	0.826	1.054	0.974	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:50:14	51523.429	2238844.500	┬20899095.000	94.846%	0.000	339519.680	173820.420
2	10:50:36	53217.837	2262148.800	┬21121644.000	94.229%	10.612	360361.400	177663.950
3	10:50:57	52241.511	2213521.100	┬20846802.000	96.216%	0.000	364721.970	173064.190
x		52327.592	2238171.400	┬20955847.000	95.097%	3.537	354867.690	174849.520
σ		850.478	24320.812	┬145946.000	1.017%	6.127	13469.391	2466.520
%RSD		1.625	1.087	┬0.696	1.070	173.205	3.796	1.411

STD4 10/14/2016 10:55:36 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51
1	10:55:57	95.999%	298260.500	112417.870	┬49523888.000	┬15042300.000	┬140968670.000	┬51231567.000	┬5655051.100	93.012%	98771.770	┬10308276.00
2	10:56:19	93.455%	306367.620	119902.050	┬49053502.000	┬14859723.000	┬137982810.000	┬50369382.000	┬5664093.200	95.057%	99168.987	┬10289900.00
3	10:56:41	95.473%	302516.170	116591.980	┬49725475.000	┬15343442.000	┬139032940.000	┬50937553.000	┬5710648.400	93.727%	99429.812	┬10423775.00
x		94.976%	302381.430	116303.970	┬49434288.000	┬15081822.000	┬139328140.000	┬50846167.000	┬5676597.600	93.932%	99123.523	┬10340650.00
σ		1.343%	4055.237	3750.395	┬344830.000	┬244269.190	┬1514664.800	┬438296.920	┬29833.430	1.038%	331.368	┬72572.09
%RSD		1.414	1.341	3.225	┬0.698	┬1.620	┬1.087	┬0.862	┬0.526	1.105	0.334	┬0.70

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83K
1	10:55:57	-6530.507	┬15482033.000	┬311483340.000	┬4863712.500	2283760.600	┬3049495.700	2119471.300	284207.000	-3068.824	28448.027	498.84
2	10:56:19	-8942.469	┬15279445.000	┬305711580.000	┬4780411.400	2238439.500	┬3102130.800	2130938.700	281552.560	-2869.286	28263.322	465.22

3	10:56:41	-8634.691	┬ 15573536.000	┬ 313579920.000	┬ 4880961.000	┬ 2511963.400	┬ 3101091.800	2112381.000	279807.280	-2893.464	28055.180	511.0
x		-8035.889	┬ 15445005.000	┬ 310258280.000	┬ 4841695.000	┬ 2344721.200	┬ 3084239.400	2120930.300	281855.610	-2943.858	28255.509	491.6
σ		1312.750	┬ 150501.840	┬ 4074712.200	┬ 53769.265	┬ 146598.000	┬ 30093.430	9364.501	2215.461	108.897	196.540	23.7
%RSD		16.336	┬ 0.974	┬ 1.313	┬ 1.111	┬ 6.252	┬ 0.976	0.442	0.786	3.699	0.696	4.8

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135B
1	10:55:57	┬ 3417462.800	92.961%	┬ 7345937.600	1014422.500	1710.520	502430.590	92.516%	┬ 3817622.300	2182565.600	1726830.600	┬ 2537168.9
2	10:56:19	┬ 3492990.600	94.141%	┬ 7411019.500	1017940.900	1471.328	505153.330	93.075%	┬ 3864933.900	2219332.000	1751294.100	┬ 2570360.3
3	10:56:41	┬ 3440106.900	94.670%	┬ 7479434.800	1027752.100	680.809	501853.700	93.539%	┬ 3850001.200	2209104.400	1750398.300	┬ 2581391.5
x		┬ 3450186.800	93.924%	┬ 7412130.600	1020038.500	1287.552	503145.870	93.043%	┬ 3844185.800	2203667.300	1742841.000	┬ 2562973.6
σ		┬ 38759.700	0.875%	┬ 66755.528	6907.895	538.894	1762.273	0.512%	┬ 24185.946	18976.652	13872.666	┬ 23018.1
%RSD		┬ 1.123	0.932	┬ 0.901	0.677	41.854	0.350	0.550	┬ 0.629	0.861	0.796	┬ 0.8

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:55:57	158150.500	┬ 7715085.100	┬ 64535893.000	95.102%	0.000	1093168.600	538133.890
2	10:56:19	164865.010	┬ 7845271.800	┬ 65094008.000	95.856%	10.432	1130615.800	557126.670
3	10:56:41	163602.660	┬ 7652298.500	┬ 64200129.000	98.557%	0.000	1112041.900	540831.640
x		162206.050	┬ 7737551.800	┬ 64610010.000	96.505%	3.477	1111942.100	545364.070
σ		3568.474	┬ 98428.849	┬ 451525.410	1.817%	6.023	18723.815	10275.633
%RSD		2.200	┬ 1.272	┬ 0.699	1.883	173.205	1.684	1.884

STD5 10/14/2016 11:01:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti
1	11:01:40	96.029%	M 512855.540	M 197144.400	TM 82908985.000	TM 25309794.000	TM 234892620.000	TM 87057618.000	TM 9696075.500	97.168%	169456.120
2	11:02:02	95.457%	504334.390	191125.890	T 80623564.000	TM 24766239.000	TM 229059730.000	TM 85673091.000	TM 9736478.400	98.445%	170057.370
3	11:02:23	92.909%	M 515571.530	M 199922.440	T 80962449.000	TM 25053685.000	TM 235626400.000	TM 87345322.000	TM 9916989.200	95.938%	171128.790
x		94.798%	M 510920.490	M 196064.240	TM 81498333.000	TM 25043239.000	TM 233192920.000	TM 86692010.000	TM 9783181.000	97.183%	170214.090
σ		1.661%	M 5863.158	M 4496.648	TM 1233355.100	TM 271927.830	TM 3598198.800	TM 894058.450	TM 117628.960	1.253%	847.276
%RSD		1.752	M 1.148	M 2.293	TM 1.513	TM 1.086	TM 1.543	TM 1.031	TM 1.202	1.290	0.498

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se
1	11:01:40	-15943.058	TM 26006669.000	TM 518384200.000	TM 8036761.800	TM 4098859.200	TM 5235654.900	TM 3928405.100	M 472717.830	-5123.449	46522.381
2	11:02:02	-16448.720	TM 25884120.000	TM 515696040.000	TM 8026599.700	TM 4053859.700	TM 5139839.100	TM 3880664.100	470277.160	-4662.828	46117.338
3	11:02:23	-20594.482	TM 26455627.000	TM 523154090.000	TM 8255004.100	TM 4221324.000	TM 5179687.100	TM 3907276.400	M 480788.180	-5060.054	46035.038
x		-17662.087	TM 26115472.000	TM 519078110.000	TM 8106121.900	TM 4124681.000	TM 5185060.400	TM 3905448.500	M 474594.390	-4948.777	46224.919
σ		2552.084	TM 300888.120	TM 3777136.300	TM 129035.890	TM 86666.908	TM 48133.364	TM 23922.916	M 5501.045	249.659	260.876
%RSD		14.450	TM 1.152	TM 0.728	TM 1.592	TM 2.101	TM 0.928	TM 0.613	M 1.159	5.045	0.564

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb
1	11:01:40	TM 5943428.900	94.959%	TM 12506519.000	M 1720301.800	2960.919	839132.740	93.872%	T 6586896.600	TM 4157020.800	TM 3271077.100
2	11:02:02	TM 5967690.500	95.511%	TM 12821542.000	M 1714131.000	2752.525	M 840411.360	95.273%	T 6615597.600	TM 4153137.900	TM 3271355.700
3	11:02:23	TM 5880909.000	94.179%	TM 12943585.000	1707483.100	3265.326	838649.770	95.271%	T 6624493.700	TM 4185603.100	TM 3300787.500
x		TM 5930676.100	94.883%	TM 12757215.000	M 1713971.900	2992.923	M 839397.960	94.806%	T 6608996.000	TM 4165253.900	TM 3281073.500
σ		TM 44774.193	0.669%	TM 225522.050	M 6410.817	257.894	M 910.249	0.808%	T 19648.706	TM 17729.538	TM 17073.437
%RSD		TM 0.755	0.705	TM 1.768	M 0.374	8.617	M 0.108	0.853	T 0.297	TM 0.426	TM 0.520

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:01:40	M 326388.350	TM 13603592.000	TM 112547610.000	95.337%	0.000	M 2317293.200	M 1138421.000
2	11:02:02	M 331228.840	TM 13468284.000	TM 111575770.000	97.117%	0.000	M 2318254.900	M 1138068.100
3	11:02:23	M 328834.770	TM 13547705.000	TM 112529880.000	96.791%	5.166	M 2340611.100	M 1143758.900
x		M 328817.320	TM 13539860.000	TM 112217750.000	96.415%	1.722	M 2325386.400	M 1140082.600
σ		M 2420.290	TM 67994.339	TM 556041.180	0.948%	2.982	M 13193.767	M 3188.628
%RSD		M 0.736	TM 0.502	TM 0.496	0.983	173.205	M 0.567	M 0.280

ICV 10/14/2016 11:07:02 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:07:24	86.986%	54431.025	22230.724	T 8492779.800	T 2507497.900	T 23692038.000	T 8275773.100	841503.490	89.910%	16419.028	T 1650436.900	471474.410
2	11:07:46	89.490%	53487.212	20794.979	T 8644809.400	T 2534601.700	T 23964028.000	T 8415656.300	863524.430	88.020%	16416.869	1563310.200	481880.690
3	11:08:08	85.941%	54766.650	22243.052	T 8399900.100	T 2499925.600	T 23571593.000	T 8174459.300	849331.470	89.213%	16428.924	1534486.800	472279.200
x		87.472%	106.733%	113.550%	T 104.446%	T 102.662%	T 103.830%	T 100.598%	91.679%	89.048%	16421.607	T 92.813%	93.415%
σ		1.824%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.956%	6.428	T n/a	n/a
%RSD		2.085	1.223	3.827	T 1.452	T 0.725	T 0.847	T 1.461	1.311	1.074	0.039	T 3.814	1.218

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:07:24	7686.392	T 2499408.900	T 51290306.000	730955.640	394430.920	470945.150	370085.680	48775.221	56.855	5025.571	427.016	1869.035
2	11:07:46	9411.411	T 2559773.000	T 52631589.000	755536.410	402043.320	477198.060	371303.870	48029.846	96.773	4925.271	411.764	1919.164
3	11:08:08	8336.066	T 2524008.800	T 51456836.000	738146.970	395963.870	474027.880	372124.850	48457.686	-86.000	5080.992	467.082	1859.855
x		8477.956	T 99.700%	T 101.623%	99.977%	103.423%	100.070%	101.804%	102.718%	22.542	107.362%	435.288	1882.685
σ		871.219	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	96.096	n/a	28.571	31.924

%RSD		10.276	T 1.201	T 1.412	1.704	1.013	0.660	0.276	0.772	426.289	1.575	6.564	1.696
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:07:24	487176.430	91.851%	512525.700	163195.890	137.590	84012.127	92.386%	555991.900	356843.200	281864.510	367484.960	94.817%
2	11:07:46	496591.640	91.672%	520539.170	167472.620	357.880	83255.190	92.287%	562932.280	365511.270	286473.800	371231.970	93.581%
3	11:08:08	489162.170	91.228%	513983.730	166222.030	337.024	85429.263	91.634%	565593.170	364265.120	287790.840	373717.740	94.661%
x		490976.750	91.584%	89.962%	96.744%	277.498	100.367%	92.102%	561505.780	362206.530	93.346%	89.284%	94.353%
σ		4962.971	0.321%	n/a	n/a	121.612	n/a	0.409%	4957.041	4686.382	n/a	n/a	0.673%
%RSD		1.011	0.350	0.828	1.328	43.824	1.310	0.444	0.883	1.294	1.090	0.846	0.714

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:07:24	55094.913	1119967.200	T 10189218.000	92.526%	0.000	272331.990	169001.850
2	11:07:46	56002.289	1104490.000	T 10175681.000	93.461%	5.350	290694.250	168942.180
3	11:08:08	55615.225	1123628.800	T 10187757.000	92.409%	0.000	309745.730	170129.270
x		119.480%	87.534%	T 94.247%	92.799%	1.783	79.153%	89.829%
σ		n/a	n/a	T n/a	0.577%	3.089	n/a	n/a
%RSD		0.819	0.910	T 0.073	0.621	173.205	6.431	0.395

ICVL 10/14/2016 11:12:46 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:13:08	93.812%	235.329	7108.539	719958.890	32541.290	105993.590	735912.790	28109.413	97.528%	35.880	14690.089	9160.708
2	11:13:30	95.022%	213.554	7496.468	T 833062.410	34139.028	119906.340	743931.570	28699.963	94.502%	58.146	16773.545	9853.274
3	11:13:51	94.061%	229.316	7102.294	734496.240	32529.442	113597.410	726514.400	28699.834	96.074%	62.413	15606.885	9090.208
x		94.298%	139.045%	118.015%	T 93.558%	101.283%	148.467%	89.261%	92.071%	96.035%	52.146	115.010%	92.076%
σ		0.639%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.514%	14.248	n/a	n/a
%RSD		0.677	4.974	3.121	T 8.070	2.800	6.156	1.185	1.196	1.576	27.323	6.655	4.501

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:13:08	8162.856	9601.598	724302.140	3170.841	1561.791	4050.407	11844.879	1344.916	512.006	252.429	435.994	1943.667
2	11:13:30	8458.710	10710.855	754117.370	3447.311	1890.774	4290.008	12365.353	933.105	681.151	194.068	387.905	2159.621
3	11:13:51	8320.723	10434.636	751015.990	3223.770	1626.166	4370.316	12023.913	945.086	644.600	176.548	428.361	2183.637
x		8314.097	126.327%	109.359%	110.575%	137.653%	111.798%	103.523%	113.956%	612.586	111.249%	417.420	2095.642
σ		148.038	n/a	n/a	n/a	n/a	n/a	n/a	n/a	89.001	n/a	25.844	132.161
%RSD		1.781	5.634	2.206	4.473	10.299	3.928	2.189	21.815	14.529	19.130	6.191	6.306

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:13:08	24559.430	97.963%	18749.571	3220.486	-92.273	866.145	96.562%	3490.334	7391.300	5514.631	6160.113	96.522%
2	11:13:30	24692.500	96.484%	19528.392	3451.632	-57.878	880.626	97.448%	4033.411	7598.534	5855.123	6250.659	96.794%
3	11:13:51	25966.400	97.415%	19694.642	3467.160	-37.558	884.981	97.582%	4412.222	7433.207	5753.510	5713.715	97.528%
x		90.893%	97.287%	105.348%	98.706%	-62.570	104.529%	97.197%	3978.656	7474.347	116.687%	90.917%	96.948%
σ		n/a	0.748%	n/a	n/a	27.657	n/a	0.554%	463.377	109.572	n/a	n/a	0.520%
%RSD		3.098	0.768	2.611	4.088	44.203	1.124	0.570	11.647	1.466	3.062	4.758	0.537

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:13:08	3920.816	22628.550	29309.536	95.649%	0.000	28077.895	17027.119
2	11:13:30	4327.792	23323.285	31576.540	96.549%	0.000	28568.343	17614.157
3	11:13:51	4150.184	23085.691	30825.591	97.428%	0.000	29369.649	17213.036
x		88.860%	90.248%	176.818%	96.542%	0.000	78.009%	91.680%
σ		n/a	n/a	n/a	0.890%	0.000	n/a	n/a
%RSD		4.937	1.534	3.778	0.922	0.000	2.274	1.736

ICBIS 10/14/2016 11:18:29 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:18:51	98.885%	1.840	67.021	6875.051	-425.476	-365.124	-1984.559	-684.678	98.906%	5.053	1784.578	-148.229
2	11:19:13	96.769%	5.087	76.092	4353.780	-587.444	-1706.524	-5299.423	-614.129	98.941%	0.000	1422.318	-179.592
3	11:19:34	94.948%	-4.801	39.157	7767.880	-595.132	-1866.510	-2321.281	-381.242	96.594%	10.344	132.925	-306.812
x		96.867%	0.709	60.757	6332.237	-536.017	-1312.719	-3201.754	-560.016	98.147%	5.133	1113.273	-211.545
σ		1.970%	5.040	19.248	1770.594	95.809	824.531	1824.419	158.791	1.345%	5.173	868.113	83.981
%RSD		2.034	711.085	31.680	27.962	17.874	62.811	56.982	28.355	1.370	100.783	77.978	39.699

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:18:51	10112.773	-347.146	33580.009	-401.571	-192.932	-310.098	-303.041	-18.031	767.328	-36.465	468.170	2181.344
2	11:19:13	10168.227	-413.221	28966.777	-502.738	-182.857	-419.691	-299.987	36.054	786.108	-4.963	443.910	2047.420
3	11:19:34	10966.066	-513.634	28540.450	-452.098	-247.694	-387.962	-443.383	111.750	717.331	30.319	458.609	2114.628
x		10415.689	-424.667	30362.412	-452.136	-207.828	-372.584	-348.804	43.258	756.922	-3.703	456.897	2114.464
σ		477.447	83.832	2794.662	50.584	34.890	56.392	81.922	65.190	35.550	33.410	12.220	66.962
%RSD		4.584	19.741	9.204	11.188	16.788	15.135	23.487	150.701	4.697	902.232	2.675	3.167

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:18:51	-155.957	99.896%	-208.382	-89.452	-52.120	-33.484	98.043%	2024.752	878.159	375.496	-185.240	98.984%
2	11:19:13	-274.419	98.525%	-168.385	-69.885	-47.871	-53.233	99.120%	2416.426	831.808	397.318	-180.972	97.747%
3	11:19:34	-238.305	98.294%	-33.549	-99.893	-44.440	-66.606	98.560%	2409.867	961.527	436.051	-205.907	98.418%
x		-222.894	98.905%	-136.772	-86.410	-48.144	-51.108	98.574%	2283.681	890.498	402.955	-190.706	98.383%
σ		60.716	0.866%	91.603	15.234	3.847	16.663	0.539%	224.264	65.734	30.668	13.336	0.619%
%RSD		27.240	0.875	66.975	17.630	7.992	32.603	0.547	9.820	7.382	7.611	6.993	0.629

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:18:51	14.386	-554.188	2847.657	93.080%	0.000	10115.733	5.494
2	11:19:13	52.814	-930.090	1988.541	97.407%	0.000	10381.519	-23.751
3	11:19:34	0.337	-572.345	2166.917	95.337%	0.000	9579.865	-22.636
x		22.512	-685.541	2334.372	95.275%	0.000	10025.706	-13.631
σ		27.166	211.980	453.377	2.164%	0.000	408.339	16.572
%RSD		120.673	30.922	19.422	2.272	0.000	4.073	121.577

ICSA 10/14/2016 11:24:11 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:24:33	88.370%	-17.182	-31.416	TM 153443080.000	T 15468276.000	T 141358450.000	TM 156700850.000	T 5912387.900	96.624%	321318.990	1397.391	1757.514
2	11:24:55	87.790%	-14.260	56.656	TM 157314830.000	T 15818220.000	T 146388260.000	TM 159762900.000	T 6042298.900	96.157%	327054.910	1982.488	2144.910
3	11:25:17	87.988%	-14.292	-77.091	TM 152918730.000	T 15661705.000	T 142729990.000	TM 158041310.000	T 5959150.600	98.409%	325924.070	1552.713	2036.390
x		88.049%	-1.#IO%	-1.#IO%	TM 94.820%	T 95.859%	T 94.127%	TM 95.983%	T 96.442%	97.063%	324765.990	1.#IO%	1.#IO%
σ		0.295%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.189%	3038.266	n/a	n/a
%RSD		0.335	11.008	393.345	TM 1.554	T 1.120	T 1.812	TM 0.970	T 1.102	1.225	0.936	18.434	10.095

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:24:33	3655.451	24.303	T 321211420.000	-395.242	-20.015	500.775	-889.146	37.719	568.285	3.870	474.102	2180.830
2	11:24:55	3584.888	119.595	T 329445510.000	-388.710	59.266	436.357	-1103.368	-123.328	618.371	-17.084	496.646	2290.527
3	11:25:17	3593.149	176.420	T 329854230.000	-410.380	76.815	437.887	-795.310	38.927	565.621	22.684	496.962	2157.811
x		3611.163	1.#IO%	T 96.193%	-1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	584.092	1.#IO%	489.237	2209.723

σ		38.576	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	29.716	n/a	13.108	70.919
%RSD		1.068	71.989	T 1.492	2.792	133.349	8.020	16.992	599.783	5.088	630.244	2.679	3.209
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:24:33	3380.487	96.102%	T 3568375.600	156.956	495.749	107.474	95.867%	1679.497	857.210	426.455	-178.404	98.678%
2	11:24:55	3338.395	96.669%	T 3669682.000	153.570	454.512	160.543	96.952%	2109.425	881.363	473.941	-132.864	103.234%
3	11:25:17	3556.026	99.050%	T 3645594.800	185.416	607.560	77.334	98.198%	2235.424	1063.156	488.692	-149.711	104.813%
x		1.#IO%	97.273%	T 98.889%	1.#IO%	519.274	1.#IO%	97.006%	2008.115	933.909	1.#IO%	-1.#IO%	102.242%
σ		n/a	1.564%	T n/a	n/a	79.190	n/a	1.167%	291.482	112.580	n/a	n/a	3.186%
%RSD		3.370	1.608	T 1.459	10.581	15.250	36.595	1.203	14.515	12.055	7.024	14.985	3.116

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:24:33	612.951	-602.720	5001.786	93.911%	0.000	16692.503	-27.164
2	11:24:55	495.052	-780.396	5009.767	97.359%	0.000	14061.680	-13.454
3	11:25:17	508.544	-808.627	4999.680	96.895%	0.000	12282.809	-49.281
x		1.#IO%	-1.#IO%	1.#IO%	96.055%	0.000	1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	1.871%	0.000	n/a	n/a
%RSD		11.975	15.279	0.106	1.948	0.000	15.465	60.324

ICSAB 10/14/2016 11:29:54 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:30:16	86.598%	4261.914	61900.694	TM 153623950.000	T 15652398.000	T 143179920.000	TM 158113020.000	T 6010746.400	96.080%	325587.940	58730.500	1150
2	11:30:38	84.718%	4112.127	65452.388	TM 154429510.000	T 15618709.000	T 143922220.000	TM 158942940.000	T 5976772.400	97.375%	326954.250	58179.510	1175
3	11:30:59	84.009%	4215.546	65448.599	TM 154194200.000	T 15583771.000	T 145334040.000	TM 158922790.000	T 6060427.800	97.369%	327238.050	61708.378	1153
x		85.108%	103.246%	104.820%	TM 94.528%	T 95.668%	T 94.555%	TM 96.282%	T 97.164%	96.941%	326593.420	87.286%	91
σ		1.338%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.746%	882.252	n/a	
%RSD		1.572	1.827	3.189	TM 0.269	T 0.220	T 0.759	TM 0.298	T 0.699	0.769	0.270	3.189	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:30:16	4950.159	89314.585	T 323224350.000	67088.649	13501.759	33471.878	24622.715	20257.175	132.704	5556.963	476.883	21
2	11:30:38	4902.473	88093.027	T 328833530.000	67352.769	14007.088	33743.894	25644.511	21468.554	1.161	5578.027	510.010	20
3	11:30:59	4256.651	90297.617	T 332131410.000	67722.948	14182.697	33919.851	25313.670	21062.652	102.892	5516.152	479.613	21
x		4703.095	87.991%	T 96.554%	90.854%	90.400%	88.955%	86.376%	98.664%	78.919	95.142%	488.835	21
σ		387.365	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	68.970	n/a	18.388	
%RSD		8.236	1.238	T 1.373	0.473	2.544	0.669	2.069	2.946	87.394	0.567	3.762	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	11:30:16	3131.133	97.613%	T 3560471.100	78851.860	610.173	19373.435	97.405%	1637.576	137358.160	107773.830	147636.460	104
2	11:30:38	2975.001	97.080%	T 3693198.000	79323.781	626.894	19115.828	100.000%	1515.075	136721.840	108346.890	145256.410	106
3	11:30:59	3363.097	99.324%	T 3694236.200	79205.763	486.220	19776.596	100.186%	1891.584	141121.700	110572.060	148519.720	107
x		3156.410	98.006%	T 99.473%	92.436%	574.429	92.569%	99.197%	1681.411	138400.570	89.051%	88.570%	105
σ		195.279	1.173%	T n/a	n/a	76.847	n/a	1.555%	192.044	2377.948	n/a	n/a	1
%RSD		6.187	1.196	T 2.108	0.310	13.378	1.715	1.567	11.422	1.718	1.357	1.147	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:30:16	43097.474	276546.080	385840.680	97.304%	0.000	318429.120	192385.710
2	11:30:38	43390.843	281451.850	393782.910	97.262%	0.000	339840.410	195935.800
3	11:30:59	44092.943	274898.880	380582.120	101.113%	0.000	344003.730	192857.810
x		93.585%	87.103%	89.474%	98.560%	0.000	90.898%	102.754%
σ		n/a	n/a	n/a	2.211%	0.000	n/a	n/a
%RSD		1.175	1.228	1.718	2.244	0.000	4.107	0.995

CCV 10/14/2016 11:35:38 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:35:59	83.493%	103089.910	38726.198	T 15643515.000	T 4681566.800	T 44103105.000	T 15641120.000	T 1719311.500	89.420%	31529.926	T 3156689.200	89771
2	11:36:21	82.595%	103629.950	39379.674	T 16001489.000	T 4805308.800	T 45142722.000	T 15966480.000	1671321.800	86.567%	31299.365	T 3219892.600	91901
3	11:36:43	80.083%	105694.950	41168.307	T 16181666.000	T 4899328.700	T 45628881.000	T 16136384.000	T 1804588.800	85.061%	32316.315	T 3312105.100	94309
x		82.057%	102.483%	103.753%	T 97.804%	T 97.913%	T 98.304%	T 96.577%	T 93.231%	87.016%	31715.202	T 94.692%	90.
σ		1.767%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.214%	533.191	T n/a	
%RSD		2.154	1.320	3.180	T 1.718	T 2.278	T 1.734	T 1.581	T 3.898	2.544	1.681	T 2.420	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:35:59	11305.162	T 4795662.600	T 98883709.000	1385637.600	735725.230	859787.010	670823.920	89291.225	-427.162	8995.157	417.725	98
2	11:36:21	13592.283	T 4903448.400	T 100555850.000	1424460.200	748110.570	871750.620	680897.200	89934.779	-449.982	9117.870	414.513	105
3	11:36:43	12191.857	T 4965775.300	T 103151110.000	1465258.700	767695.500	885818.450	681004.350	91204.179	-596.035	9231.033	425.416	73
x		12363.101	T 96.403%	T 98.952%	96.068%	97.640%	92.085%	92.922%	95.613%	-491.060	97.650%	419.218	92
σ		1153.137	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	91.624	n/a	5.603	16

%RSD		9.327	T 1.761	T 2.132	2.794	2.148	1.493	0.863	1.080	18.659	1.294	1.337	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	11:35:59	970460.390	93.041%	2093065.700	330187.970	790.962	161798.860	93.364%	1089473.300	691751.280	544654.830	718431.460	95.
2	11:36:21	987115.980	90.780%	2151727.800	338968.720	541.345	162521.030	91.675%	1092288.100	696029.080	553884.430	735833.640	96.
3	11:36:43	995665.810	90.038%	T 2359793.700	333799.490	693.775	161507.930	91.323%	1105556.600	710439.480	557594.940	738182.510	94.
x		984414.060	91.286%	T 96.015%	97.638%	675.360	96.481%	92.121%	1095772.700	699406.610	90.286%	87.983%	95.
σ		12818.093	1.564%	T n/a	n/a	125.823	n/a	1.091%	8589.186	9791.220	n/a	n/a	0.
%RSD		1.302	1.714	T 6.367	1.320	18.631	0.322	1.184	0.784	1.400	1.207	1.476	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:35:59	50303.949	2218537.700	T 20802061.000	92.990%	0.000	336813.290	174683.620
2	11:36:21	51814.271	2216409.600	T 20816203.000	93.018%	0.000	345686.360	175006.130
3	11:36:43	51978.373	2245256.000	T 21027565.000	92.042%	0.000	360209.580	177888.500
x		110.438%	87.325%	T 96.624%	92.683%	0.000	94.565%	93.277%
σ		n/a	n/a	T n/a	0.556%	0.000	n/a	n/a
%RSD		1.797	0.722	T 0.605	0.600	0.000	3.398	1.003

CCB 10/14/2016 11:41:21 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:41:43	84.958%	6.813	25.137	23868.056	1727.119	16384.142	18557.502	392.145	89.473%	94.858	1569.052	-458.149
2	11:42:05	84.637%	24.670	-52.571	30544.350	3789.010	36060.258	24426.182	950.566	90.400%	55.219	3038.750	-401.665
3	11:42:26	84.690%	36.445	-212.763	40865.840	4771.137	45441.055	32652.948	888.136	87.896%	96.375	1313.316	-263.896
x		84.762%	22.643	-80.066	31759.416	3429.089	32628.485	25212.211	743.616	89.256%	82.151	1973.706	-374.570
σ		0.172%	14.919	121.310	8563.788	1553.599	14829.324	7080.521	305.979	1.266%	23.336	931.176	99.921
%RSD		0.203	65.890	151.512	26.965	45.306	45.449	28.084	41.147	1.419	28.406	47.179	26.676

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:41:43	8062.011	394.709	70656.715	-211.259	1.077	-127.895	-273.336	306.096	524.360	-5.479	412.917	2115.542
2	11:42:05	7588.031	1222.695	105062.450	21.877	47.932	32.865	-22.083	-168.916	683.291	-45.207	394.457	2162.716
3	11:42:26	8269.486	1718.268	132322.550	303.264	188.228	70.166	-37.972	-71.606	613.766	8.641	414.180	2109.735
x		7973.176	1111.891	102680.570	37.960	79.079	-8.288	-111.130	21.858	607.139	-14.015	407.184	2129.331
σ		349.305	668.701	30901.841	257.639	97.386	105.248	140.699	250.919	79.673	27.920	11.040	29.058
%RSD		4.381	60.141	30.095	678.703	123.150	1269.885	126.607	1147.952	13.123	199.213	2.711	1.365

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:41:43	-73.311	92.536%	2328.647	-7.913	-65.695	2.573	94.451%	2541.179	1225.716	627.552	-97.825	94.679%
2	11:42:05	129.313	93.764%	2937.710	72.117	-42.631	11.959	94.181%	3143.159	1226.986	853.353	114.991	95.621%
3	11:42:26	171.891	95.044%	3128.502	45.608	-33.453	-39.515	94.163%	2952.568	1658.164	829.652	173.472	94.823%
x		75.964	93.781%	2798.286	36.604	-47.260	-8.327	94.265%	2878.968	1370.288	770.186	63.546	95.041%
σ		131.017	1.254%	417.757	40.767	16.612	27.414	0.161%	307.665	249.308	124.092	142.777	0.507%
%RSD		172.473	1.337	14.929	111.374	35.151	329.202	0.171	10.687	18.194	16.112	224.683	0.534

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:41:43	34.366	445.547	6022.646	94.631%	0.000	9221.955	-1.110
2	11:42:05	37.359	612.763	9077.836	94.361%	0.000	8672.036	67.987
3	11:42:26	39.294	543.192	10500.923	94.887%	0.000	8019.878	72.463
x		37.006	533.834	8533.802	94.626%	0.000	8637.956	46.446
σ		2.482	84.000	2288.170	0.263%	0.000	601.762	41.246
%RSD		6.708	15.735	26.813	0.278	0.000	6.966	88.803

MB 200-110153/1-A 10/14/2016 11:47:04 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:47:26	93.671%	16.874	-273.645	148226.550	5081.360	61279.317	58590.874	2480.002	94.626%	158.268	2011.949	759.476
2	11:47:48	94.405%	43.002	-276.280	161364.790	6505.824	68518.612	64974.094	2768.939	94.791%	189.587	2788.942	900.567
3	11:48:09	91.413%	15.260	-210.171	146846.350	5323.213	60613.226	58757.464	2371.643	96.352%	139.982	1820.540	914.600
x		93.163%	25.045	-253.365	152145.900	5636.799	63470.385	60774.144	2540.195	95.256%	162.612	2207.144	858.214
σ		1.559%	15.572	37.431	8013.562	762.251	4384.560	3638.218	205.374	0.952%	25.086	512.861	85.797
%RSD		1.674	62.177	14.773	5.267	13.523	6.908	5.986	8.085	1.000	15.427	23.236	9.997

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:47:26	7034.691	2955.624	166786.840	271.069	207.489	104.467	152.324	92.260	480.481	-23.529	384.261	2254.764
2	11:47:48	6699.505	2911.098	183844.010	411.853	291.030	272.666	50.483	171.506	452.426	-37.172	383.231	2148.490
3	11:48:09	6950.716	2706.421	163242.140	363.201	167.549	149.867	173.961	-106.686	522.193	-23.172	401.357	2262.317
x		6894.971	2857.714	171291.000	348.708	222.023	175.667	125.589	52.360	485.033	-27.957	389.616	2221.857
σ		174.408	132.901	11014.754	71.502	63.010	87.017	65.937	143.324	35.105	7.982	10.181	63.650
%RSD		2.529	4.651	6.430	20.505	28.380	49.535	52.503	273.726	7.238	28.550	2.613	2.865

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:47:26	197.066	98.053%	1800.339	23.074	-63.413	33.893	97.851%	47592.603	741.436	349.989	55.063	99.297%
2	11:47:48	409.879	98.266%	2205.946	14.559	-41.473	-38.255	96.810%	47721.480	810.797	434.599	110.066	97.516%
3	11:48:09	226.057	98.369%	1785.407	29.175	-75.029	45.854	97.296%	48364.069	887.655	435.691	190.457	99.684%
x		277.667	98.229%	1930.564	22.269	-59.972	13.831	97.319%	47892.717	813.296	406.760	118.529	98.832%
σ		115.413	0.161%	238.604	7.341	17.040	45.502	0.521%	413.257	73.142	49.168	68.093	1.156%
%RSD		41.565	0.164	12.359	32.966	28.414	328.993	0.536	0.863	8.993	12.088	57.448	1.170

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:47:26	79.196	-408.504	7632.418	96.763%	0.000	18475.653	100.605
2	11:47:48	89.288	-266.175	8869.302	94.326%	0.000	15428.090	121.047
3	11:48:09	22.964	-496.634	7285.049	96.777%	0.000	12908.531	110.913
x		63.816	-390.438	7928.923	95.956%	0.000	15604.091	110.855
σ		35.737	116.287	832.707	1.411%	0.000	2787.731	10.221
%RSD		55.999	29.784	10.502	1.471	0.000	17.865	9.220

LCS 200-110153/2-A 10/14/2016 11:52:47 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:53:09	87.837%	1571.121	59638.663	T 8201644.800	297964.130	670903.100	T 7978675.400	275091.700	89.656%	66.838	118081.090	94598.874
2	11:53:31	85.301%	1568.859	62097.381	T 8465707.300	308976.850	691463.210	T 8095546.600	278858.270	87.878%	73.850	121151.240	95058.768
3	11:53:53	84.781%	1552.104	60302.606	T 8360142.100	299054.160	691880.100	T 8130580.600	283618.130	87.087%	80.206	118130.200	94911.520
x		85.973%	1564.028	60679.550	T 8342498.100	301998.380	684748.800	T 8068267.600	279189.370	88.207%	73.632	119120.850	94856.387
σ		1.635%	10.388	1271.962	T 132912.510	6068.056	11992.539	T 79541.901	4272.846	1.316%	6.687	1758.547	234.852
%RSD		1.902	0.664	2.096	T 1.593	2.009	1.751	T 0.986	1.530	1.492	9.081	1.476	0.248

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:53:09	6338.529	72999.756	T 6833790.300	29307.997	12519.388	36950.917	98108.057	8673.490	178.849	1538.711	393.995	1826.764
2	11:53:31	5250.018	75196.186	T 6853440.300	29076.816	12436.824	35802.177	97523.351	8810.849	212.283	1481.748	421.426	1867.050
3	11:53:53	5398.912	75552.130	T 6950681.500	30169.481	12563.922	36534.862	97475.497	8163.845	276.761	1425.659	400.086	2082.696
x		5662.486	74582.691	T 6879304.000	29518.098	12506.712	36429.319	97702.302	8549.395	222.631	1482.039	405.169	1925.503

σ		590.184	1382.366	T 62590.653	575.835	64.490	581.597	352.208	340.886	49.769	56.527	14.405	137.615
%RSD		10.423	1.853	T 0.910	1.951	0.516	1.597	0.360	3.987	22.355	3.814	3.555	7.147
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:53:09	241481.540	92.215%	170386.590	33358.730	-20.726	7792.579	92.896%	45366.165	53949.122	41802.688	58728.794	96.204%
2	11:53:31	240696.290	91.020%	172949.710	33765.504	-130.371	7522.696	93.968%	44933.976	53562.224	41766.018	56886.794	93.650%
3	11:53:53	244100.930	91.431%	172398.990	33659.144	19.186	7478.417	91.981%	46176.863	55247.184	42581.208	57886.378	96.435%
x		242092.920	91.555%	171911.760	33594.459	-43.970	7597.897	92.948%	45492.334	54252.843	42049.971	57833.988	95.430%
σ		1782.761	0.607%	1349.234	210.961	77.441	170.047	0.994%	630.976	882.586	460.430	922.117	1.546%
%RSD		0.736	0.663	0.785	0.628	176.120	2.238	1.070	1.387	1.627	1.095	1.594	1.620

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:53:09	82369.922	211390.030	150970.380	93.115%	0.000	305453.760	183078.560
2	11:53:31	86091.480	218131.300	156494.420	92.132%	0.000	323899.750	187713.820
3	11:53:53	81645.854	225146.020	156987.720	90.907%	0.000	337591.620	191583.900
x		83369.085	218222.450	154817.510	92.051%	0.000	322315.040	187458.760
σ		2385.297	6878.448	3340.825	1.106%	0.000	16127.426	4258.403
%RSD		2.861	3.152	2.158	1.202	0.000	5.004	2.272

200-35680-A-1-O 10/14/2016 11:58:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:58:52	83.724%	983.782	5247.213	T 1070534.600	T 3844909.000	T 102360330.000	T 8304040.100	TM 9663032.400	126.299%	16755.705	292747.040	21127
2	11:59:14	83.122%	994.116	5053.860	T 1065043.500	T 3877445.900	T 103053430.000	T 8500561.900	TM 9902381.000	124.834%	16251.255	295193.740	21130
3	11:59:35	85.548%	962.203	5306.573	T 1086398.700	T 3883556.900	T 104643720.000	T 8652868.700	TM 9952479.600	124.739%	15644.037	300008.910	21730
x		84.131%	980.034	5202.549	T 1073992.300	T 3868637.300	T 103352490.000	T 8485823.600	TM 9839297.700	125.291%	16216.999	295983.230	21329
σ		1.263%	16.283	132.144	T 11089.505	T 20775.232	T 1170705.300	T 174880.720	TM 154691.750	0.874%	556.625	3694.748	347
%RSD		1.501	1.662	2.540	T 1.033	T 0.537	T 1.133	T 2.061	TM 1.572	0.698	3.432	1.248	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:58:52	2615.223	T 19704894.000	T 508203430.000	173065.420	73883.493	1790250.700	720432.930	6162.028	-32.278	1467.019	478.389	-133
2	11:59:14	2868.283	T 20213267.000	TM 513849770.000	169747.880	73895.711	1770816.100	714030.500	5810.799	73.810	1082.836	496.762	47
3	11:59:35	3072.557	T 20701333.000	TM 527071120.000	174331.690	76483.617	T 1989065.500	721982.070	6149.944	-34.016	1516.920	505.160	-144
x		2852.021	T 20206498.000	TM 516374770.000	172381.660	74754.274	T 1850044.100	718815.170	6040.924	2.505	1355.592	493.437	-76
σ		229.100	T 498253.760	TM 9683962.100	2367.167	1497.668	T 120787.550	4215.418	199.385	61.758	237.528	13.692	107
%RSD		8.033	T 2.466	TM 1.875	1.373	2.003	T 6.529	0.586	3.301	2464.944	17.522	2.775	14

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	11:58:52	T 2187487.700	369.506%	3094.345	6908.503	-269.867	4046.225	93.440%	63893.165	5003.613	3800.127	688885.220	135.
2	11:59:14	2016958.400	371.815%	3196.534	6835.698	-228.636	4176.821	94.916%	63602.739	4790.966	3811.114	693533.410	134.
3	11:59:35	T 2230719.000	378.618%	3082.102	6978.754	-332.169	4359.743	94.625%	65622.776	5013.753	3894.709	714057.310	138.
x		T 2145055.000	373.313%	3124.327	6907.651	-276.891	4194.263	94.327%	64372.893	4936.111	3835.317	698825.310	136.
σ		T 113021.210	4.737%	62.832	71.532	52.123	157.485	0.782%	1092.127	125.801	51.728	13394.463	1.
%RSD		T 5.269	1.269	2.011	1.036	18.824	3.755	0.829	1.697	2.549	1.349	1.917	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:58:52	1537.345	8353.689	3344456.900	102.374%	0.000	412717.420	191158.660
2	11:59:14	1576.552	8432.539	3314523.100	104.348%	0.000	413287.410	191535.180
3	11:59:35	1514.172	8636.685	3307171.500	105.679%	0.000	409766.810	194524.910
x		1542.689	8474.305	3322050.500	104.134%	0.000	411923.880	192406.250
σ		31.531	146.048	19749.571	1.663%	0.000	1889.693	1844.444
%RSD		2.044	1.723	0.594	1.597	0.000	0.459	0.959

200-35680-A-2-A 10/14/2016 12:04:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:04:34	89.567%	610.702	3921.525	T 686962.250	T 2185609.800	T 69022719.000	T 6223987.500	T 4564496.400	118.072%	19633.138	203562.110	142388.520
2	12:04:56	87.689%	627.239	3873.481	T 695620.680	T 2227649.600	T 69747487.000	T 6195449.600	T 4669429.500	117.402%	20852.916	206296.620	142847.770
3	12:05:18	82.521%	586.509	4633.458	T 697124.390	T 2211339.500	T 69442493.000	T 6174491.100	T 4615231.200	118.836%	20118.733	206539.900	143123.870
x		86.592%	608.150	4142.821	T 693235.770	T 2208199.700	T 69404233.000	T 6197976.000	T 4616385.700	118.103%	20201.596	205466.210	142786.720
σ		3.649%	20.485	425.582	T 5484.808	T 21195.073	T 363895.230	T 24844.738	T 52476.081	0.717%	614.096	1653.478	371.458
%RSD		4.214	3.368	10.273	T 0.791	T 0.960	T 0.524	T 0.401	T 1.137	0.607	3.040	0.805	0.260

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:04:34	2413.904	T 11791630.000	T 309708200.000	126882.170	56001.581	1605270.600	579685.560	5188.714	134.734	702.691	473.717	1772.390
2	12:04:56	2469.854	T 11941716.000	T 314559400.000	127673.980	56151.512	1634343.500	579452.450	5327.571	103.667	837.136	441.375	1243.184
3	12:05:18	1769.757	T 11756107.000	T 310965310.000	128813.190	56078.895	1650680.500	584559.800	5455.806	107.008	804.366	443.948	1484.301
x		2217.838	T 11829818.000	T 311744300.000	127789.780	56077.329	1630098.200	581232.600	5324.030	115.136	781.397	453.013	1499.959
σ		389.057	T 98521.085	T 2517669.300	970.705	74.978	23000.695	2883.793	133.581	17.054	70.104	17.976	264.950

%RSD		17.542	T 0.833	T 0.808	0.760	0.134	1.411	0.496	2.509	14.812	8.972	3.968	17.664
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:04:34	886265.880	271.632%	3045.622	6944.148	-457.357	4217.627	100.167%	89787.378	4321.292	3197.557	390285.230	126.007%
2	12:04:56	895821.880	271.202%	3032.152	7408.920	-190.152	4030.559	100.030%	90865.197	4289.315	3283.659	396832.980	126.848%
3	12:05:18	906590.150	270.555%	2883.377	7283.405	-228.466	3955.145	100.238%	91518.636	4454.144	3282.957	406480.360	128.651%
x		896225.970	271.129%	2987.050	7212.158	-291.991	4067.777	100.145%	90723.737	4354.917	3254.724	397866.190	127.168%
σ		10168.160	0.542%	90.036	240.438	144.486	135.141	0.106%	874.255	87.407	49.510	8146.852	1.351%
%RSD		1.135	0.200	3.014	3.334	49.483	3.322	0.106	0.964	2.007	1.521	2.048	1.062

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:04:34	1366.810	4961.287	2603326.900	105.298%	4.748	239321.540	125547.660
2	12:04:56	1368.302	4904.535	2637273.400	105.499%	0.000	242497.700	127357.870
3	12:05:18	1198.719	4674.569	2714077.200	104.196%	0.000	246262.530	131694.190
x		1311.277	4846.797	2651559.200	104.997%	1.583	242693.920	128199.910
σ		97.481	151.829	56740.365	0.701%	2.742	3474.652	3158.596
%RSD		7.434	3.133	2.140	0.668	173.205	1.432	2.464

200-35680-A-3-A 10/14/2016 12:09:56 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**5**
1	12:10:17	107.761%	1419.213	3611.930	T 757770.110	T 4132199.500	T 145272900.000	T 8548108.600	T 1206529.000	204.323%	32893.157	309993.160	304063
2	12:10:39	105.539%	1494.708	3189.183	T 716455.770	T 4030412.300	T 142769330.000	T 8361269.300	T 1188404.600	211.163%	30916.063	308222.460	294932
3	12:11:01	105.143%	1324.485	3077.655	T 738885.000	T 4084481.000	T 143214720.000	T 8481623.300	T 1208192.400	209.686%	30702.234	305558.810	296875
x		106.148%	1412.802	3292.923	T 737703.630	T 4082364.300	T 143752320.000	T 8463667.000	T 1201042.000	208.390%	31503.818	307924.810	298623
σ		1.411%	85.292	281.840	T 20682.491	T 50926.612	T 1335560.200	T 94705.082	T 10975.850	3.599%	1207.944	2232.112	4810
%RSD		1.330	6.037	8.559	T 2.804	T 1.247	T 0.929	T 1.119	T 0.914	1.727	3.834	0.725	1

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**8**
1	12:10:17	5261.014	TM 26185060.000	T 44606210.000	208230.970	103723.640	120578.640	444235.870	1705.789	169.631	359.514	601.603	1326
2	12:10:39	4659.682	TM 25900537.000	T 43782560.000	206255.390	101162.820	119736.620	448310.720	1696.837	159.827	351.365	606.675	1493
3	12:11:01	5541.814	TM 26128725.000	T 44574890.000	208782.770	101952.380	121561.850	452416.180	1824.899	146.426	486.146	555.616	814
x		5154.170	TM 26071440.000	T 44272692.000	207756.380	102279.610	120625.710	448320.920	1742.508	158.628	399.008	587.965	1211
σ		450.667	TM 150663.390	T 4282893.800	1328.849	1311.397	913.524	4090.166	71.493	11.649	75.573	28.130	353
%RSD		8.744	TM 0.578	T 0.967	0.640	1.282	0.757	0.912	4.103	7.344	18.940	4.784	29

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	12:10:17	886285.370	644.238%	-205.337	3180.513	-740.616	2322.524	121.179%	47892.712	1653.671	1099.670	1046265.300	186.0
2	12:10:39	906222.630	661.473%	-161.720	3256.601	-730.019	2278.054	122.144%	49042.558	1673.978	1190.766	1051700.600	190.9
3	12:11:01	T 1017498.200	660.317%	-124.193	3413.738	-610.156	2084.727	121.669%	49493.648	1746.714	1221.140	1074795.300	189.9
x		T 936668.720	655.343%	-163.750	3283.617	-693.597	2228.435	121.664%	48809.639	1691.454	1170.525	1057587.100	188.9
σ		T 70706.596	9.634%	40.610	118.937	72.456	126.426	0.482%	825.492	48.922	63.214	15148.571	2.5
%RSD		T 7.549	1.470	24.800	3.622	10.446	5.673	0.397	1.691	2.892	5.400	1.432	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:10:17	242.675	8754.104	2169222.400	128.508%	0.000	913413.620	140196.080
2	12:10:39	242.067	9234.501	2207004.400	127.591%	0.000	950158.630	145018.940
3	12:11:01	302.248	9126.502	2205560.900	129.563%	0.000	939050.420	143645.610
x		262.330	9038.369	2193929.200	128.554%	0.000	934207.560	142953.550
σ		34.571	252.033	21408.887	0.987%	0.000	18845.130	2484.797
%RSD		13.179	2.788	0.976	0.768	0.000	2.017	1.738

200-35680-A-4-A 10/14/2016 12:15:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:16:00	103.321%	762.747	5744.671	T 715807.830	T 3072530.100	T 95428649.000	T 9069440.900	T 2307473.400	159.794%	27161.383	265612.240	212505.070
2	12:16:22	103.290%	799.294	5863.029	T 709632.240	T 3037497.200	T 95356141.000	T 9052323.300	T 2297964.800	160.674%	27597.215	265602.160	207699.900
3	12:16:44	101.212%	828.634	5446.490	T 687860.760	T 3003358.100	T 95043721.000	T 9065384.500	T 2306415.400	162.186%	27992.322	269353.810	211019.030
x		102.608%	796.891	5684.730	T 704433.610	T 3037795.100	T 95276170.000	T 9062382.900	T 2303951.200	160.885%	27583.640	266856.070	210408.000
σ		1.208%	33.009	214.641	T 14680.907	T 34586.958	T 204545.370	T 8944.814	T 5211.311	1.210%	415.636	2163.112	2460.170
%RSD		1.178	4.142	3.776	T 2.084	T 1.139	T 0.215	T 0.099	T 0.226	0.752	1.507	0.811	1.169

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:16:00	5017.243	TM 35244051.000	T 424323290.000	154858.720	72358.396	T 2048180.500	690618.820	5409.458	208.065	745.620	516.163	1777.432
2	12:16:22	4463.562	TM 35362680.000	T 424260970.000	152982.990	71552.892	T 2036128.900	688309.600	5346.000	198.086	745.490	529.888	1796.743
3	12:16:44	4527.623	TM 35209504.000	T 423766070.000	153847.700	71408.016	T 2043459.700	693274.050	5383.432	195.237	806.600	511.066	1711.295
x		4669.476	TM 35272079.000	T 424116770.000	153896.470	71773.101	T 2042589.700	690734.160	5379.630	200.462	765.903	519.039	1761.823
σ		302.874	TM 80342.114	T 305317.320	938.813	512.030	T 6072.760	2484.232	31.899	6.736	35.245	9.735	44.811
%RSD		6.486	TM 0.228	T 0.072	0.610	0.713	T 0.297	0.360	0.593	3.360	4.602	1.876	2.543

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:16:00	784191.930	393.221%	2497.038	7561.302	-619.852	3841.138	119.732%	68957.447	4260.707	3300.679	716626.750	152.495%
2	12:16:22	790994.020	396.361%	2573.339	7526.961	-496.327	3646.072	120.594%	69918.846	4644.109	3339.746	719619.390	154.088%
3	12:16:44	781992.500	393.687%	2731.578	7478.657	-431.032	3442.808	120.045%	70614.959	4608.936	3391.185	735554.560	154.426%
x		785726.150	394.423%	2600.652	7522.307	-515.737	3643.339	120.124%	69830.418	4504.584	3343.870	723933.560	153.670%
σ		4692.781	1.694%	119.632	41.519	95.894	199.179	0.436%	832.286	211.935	45.394	10174.703	1.031%
%RSD		0.597	0.430	4.600	0.552	18.594	5.467	0.363	1.192	4.705	1.358	1.405	0.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:16:00	1240.205	7854.045	3200962.500	119.512%	0.000	348215.000	140337.620
2	12:16:22	1257.845	8280.363	3182629.300	120.782%	0.000	344573.920	140881.270
3	12:16:44	1316.204	8262.395	3264346.900	118.458%	0.000	355816.490	146346.540
x		1271.418	8132.268	3215979.600	119.584%	0.000	349535.140	142521.810
σ		39.776	241.115	42878.626	1.164%	0.000	5736.369	3323.444
%RSD		3.128	2.965	1.333	0.973	0.000	1.641	2.332

200-35680-A-5-A 10/14/2016 12:21:22 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	12:21:44	103.717%	1186.398	4811.129	T 759931.670	T 2749939.100	T 128688820.000	T 10365986.000	T 1024404.400	178.190%	29246.754	363808.140	249423.29
2	12:22:05	102.782%	1141.499	4759.583	T 744925.440	T 2745872.700	T 129570720.000	T 10304013.000	T 1026344.500	180.623%	27396.090	356847.550	246003.46
3	12:22:27	100.212%	1271.292	5089.464	T 707723.990	T 2667221.400	T 126984010.000	T 10215175.000	T 1027535.200	181.857%	29284.202	363491.580	250906.94
x		102.237%	1199.729	4886.725	T 737527.030	T 2721011.100	T 128414520.000	T 10295058.000	T 1026094.700	180.223%	28642.349	361382.420	248777.90
σ		1.814%	65.915	177.458	T 26878.664	T 46627.575	T 1314992.800	T 75803.476	T 1580.275	1.866%	1079.454	3930.502	2514.63
%RSD		1.775	5.494	3.631	T 3.644	T 1.714	T 1.024	T 0.736	T 0.154	1.035	3.769	1.088	1.01

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	12:21:44	5407.962	T 17393718.000	T 435770230.000	174383.080	85425.841	1556857.800	598647.170	4065.370	186.095	863.328	546.669	1934.14
2	12:22:05	5879.192	T 17304997.000	T 437260850.000	172617.930	83947.534	1537601.200	595032.980	4067.586	198.291	882.512	547.490	1629.12
3	12:22:27	5943.117	T 17401301.000	T 434294840.000	174282.700	82798.730	1517826.600	596886.300	4071.373	210.057	855.021	522.814	1858.77
x		5743.424	T 17366672.000	T 435775310.000	173761.230	84057.368	1537428.500	596855.480	4068.110	198.147	866.954	538.991	1807.34

σ		292.271	T 53546.110	T 1483008.500	991.406	1316.995	19516.163	1807.293	3.036	11.982	14.100	14.016	158.87
%RSD		5.089	T 0.308	T 0.340	0.571	1.567	1.269	0.303	0.075	6.047	1.626	2.600	8.79
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	12:21:44	603814.910	531.133%	2483.785	8506.787	-580.703	4240.295	121.740%	58557.020	3593.083	2690.094	840834.160	169.409%
2	12:22:05	613443.120	534.821%	2806.182	8488.462	-371.730	4095.779	122.288%	59592.189	3869.664	2786.061	860705.600	173.201%
3	12:22:27	606065.930	537.573%	2761.159	8549.182	-455.814	4237.703	124.138%	59423.953	3786.860	2745.231	858925.590	173.841%
x		607774.650	534.509%	2683.708	8514.810	-469.416	4191.259	122.722%	59191.054	3749.869	2740.462	853488.450	172.150%
σ		5036.409	3.231%	174.596	31.145	105.148	82.698	1.257%	555.496	141.953	48.161	10995.018	2.396%
%RSD		0.829	0.605	6.506	0.366	22.400	1.973	1.024	0.938	3.786	1.757	1.288	1.39

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:21:44	742.932	10940.376	3276974.800	122.017%	0.000	496240.750	332627.090
2	12:22:05	739.771	10944.744	3291603.400	124.148%	0.000	502854.000	335403.020
3	12:22:27	811.122	11094.957	3333453.600	122.399%	0.000	515610.880	340188.460
x		764.608	10993.359	3300677.300	122.855%	0.000	504901.870	336072.860
σ		40.313	88.014	29312.374	1.136%	0.000	9846.105	3824.929
%RSD		5.272	0.801	0.888	0.925	0.000	1.950	1.138

200-35680-A-6-A 10/14/2016 12:27:05 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:27:27	101.372%	706.433	4636.507	T 754391.280	T 2068339.100	T 88357131.000	T 8122891.900	T 1169632.000	156.337%	24700.758	252513.290	178754.510
2	12:27:48	101.170%	843.818	4678.020	T 745265.820	T 2064249.300	T 88368622.000	T 8116713.400	T 1165689.700	156.403%	25839.733	257249.910	180372.690
3	12:28:10	102.131%	779.311	5008.767	T 744531.620	T 2049676.800	T 87985229.000	T 8102908.000	T 1162503.300	157.979%	25834.089	254375.290	181047.790
x		101.558%	776.521	4774.431	T 748062.910	T 2060755.100	T 88236994.000	T 8114171.100	T 1165941.700	156.906%	25458.193	254712.830	180058.330
σ		0.506%	68.735	204.000	T 5492.813	T 9809.588	T 218110.580	T 10231.651	T 3571.029	0.930%	655.964	2386.285	1178.514
%RSD		0.499	8.852	4.273	T 0.734	T 0.476	T 0.247	T 0.126	T 0.306	0.592	2.577	0.937	0.655

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:27:27	6142.231	T 13402246.000	T 323409220.000	133370.260	61019.271	T 2615883.100	760559.120	4564.353	267.875	1072.097	512.410	1857.610
2	12:27:48	5135.702	T 13606748.000	T 329525110.000	133058.460	61916.453	T 2670370.000	770604.250	4548.803	254.794	1141.174	498.043	1867.784
3	12:28:10	5782.451	T 13389506.000	T 326303160.000	131916.390	62515.152	T 2712023.000	782370.890	4663.208	265.599	1086.975	476.273	1988.710
x		5686.795	T 13466166.000	T 326412500.000	132781.700	61816.959	T 2666092.000	771178.090	4592.121	262.756	1100.082	495.575	1904.701
σ		510.037	T 121913.630	T 3059411.300	765.427	752.888	T 48212.499	10917.200	62.052	6.989	36.356	18.194	72.931
%RSD		8.969	T 0.905	T 0.937	0.576	1.218	T 1.808	1.416	1.351	2.660	3.305	3.671	3.829

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:27:27	501316.610	370.323%	3072.579	8683.123	-243.137	6368.377	123.048%	65057.163	4699.194	3789.603	649169.800	150.258%
2	12:27:48	509388.010	372.074%	2894.814	8663.658	-186.629	6226.508	122.582%	66444.164	4898.659	3794.468	658049.240	151.077%
3	12:28:10	504949.750	369.888%	2880.134	8780.676	-303.800	6341.541	122.096%	67218.909	5242.266	3871.279	660067.950	154.367%
x		505218.120	370.762%	2949.176	8709.152	-244.522	6312.142	122.575%	66240.079	4946.707	3818.450	655762.330	151.901%
σ		4042.386	1.157%	107.122	62.701	58.598	75.365	0.476%	1095.228	274.706	45.816	5797.834	2.175%
%RSD		0.800	0.312	3.632	0.720	23.964	1.194	0.389	1.653	5.553	1.200	0.884	1.432

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:27:27	1334.762	6543.572	3396990.000	117.785%	0.000	294449.000	134595.210
2	12:27:48	1290.067	7232.632	3464530.300	117.618%	0.000	296949.990	132618.750
3	12:28:10	1332.970	6730.413	3433401.400	120.845%	0.000	297700.800	132622.380
x		1319.266	6835.539	3431640.600	118.749%	0.000	296366.600	133278.780
σ		25.303	356.356	33804.591	1.817%	0.000	1702.591	1140.061
%RSD		1.918	5.213	0.985	1.530	0.000	0.574	0.855

200-35680-A-6-A SD@5 10/14/2016 12:32:49 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:33:11	104.576%	112.548	581.140	141721.820	459864.210	T 21669485.000	T 2005880.600	264561.710	142.667%	6210.677	62402.369	45329.692
2	12:33:32	100.225%	143.616	767.297	149460.910	481510.350	T 22233304.000	T 1999763.500	271475.690	138.296%	6417.869	63060.583	46056.041
3	12:33:54	100.633%	152.855	644.644	144081.050	482636.130	T 22220062.000	T 2049809.500	276145.410	136.278%	6702.702	66226.232	48584.772
x		101.811%	136.340	664.361	145087.930	474670.230	T 22040950.000	T 2018484.500	270727.610	139.080%	6443.749	63896.394	46656.835
σ		2.403%	21.116	94.631	3966.577	12834.741	T 321766.640	T 27300.095	5827.970	3.266%	247.031	2044.362	1708.684
%RSD		2.360	15.487	14.244	2.734	2.704	T 1.460	T 1.353	2.153	2.348	3.834	3.199	3.662

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:33:11	17063.722	T 3225335.900	T 79687177.000	32791.912	15343.346	521502.750	182403.200	2160.600	1731.912	312.208	454.116	2171.198
2	12:33:32	17567.669	T 3312811.500	T 82019574.000	33175.023	15855.320	519969.980	181264.790	2171.136	1784.901	249.954	455.887	2189.014
3	12:33:54	18074.640	T 3355724.100	T 82657180.000	33731.476	15657.169	526602.020	183796.830	2326.966	1684.006	253.179	464.701	2308.886
x		17568.677	T 3297957.200	T 81454644.000	33232.804	15618.611	522691.580	182488.270	2219.567	1733.607	271.780	458.235	2223.033
σ		505.460	T 66451.181	T 1563518.200	472.439	258.156	3472.170	1268.160	93.159	50.469	35.048	5.669	74.883

%RSD		2.877	┬2.015	┬1.919	1.422	1.653	0.664	0.695	4.197	2.911	12.896	1.237	3.369
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:33:11	104976.960	184.302%	528.498	1875.022	-176.916	1421.135	128.934%	15994.819	1318.313	825.172	134816.530	129.509%
2	12:33:32	106049.690	181.364%	510.582	1842.970	-90.865	1292.016	127.994%	16722.404	1318.410	862.553	137454.230	129.329%
3	12:33:54	108115.170	183.657%	518.438	1977.244	-161.661	1510.148	126.966%	16932.828	1391.438	821.289	138713.390	131.029%
x		106380.600	183.107%	519.173	1898.412	-143.147	1407.766	127.965%	16550.017	1342.720	836.338	136994.720	129.956%
σ		1595.061	1.544%	8.981	70.126	45.916	109.679	0.985%	492.192	42.191	22.786	1988.654	0.934%
%RSD		1.499	0.843	1.730	3.694	32.076	7.791	0.769	2.974	3.142	2.724	1.452	0.718

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:33:11	123.865	-192.183	726626.720	116.245%	0.000	57004.062	27613.051
2	12:33:32	224.827	-206.769	728199.860	117.008%	0.000	58078.968	27304.051
3	12:33:54	230.860	-232.342	738302.040	116.321%	0.000	58921.461	28714.687
x		193.184	-210.431	731042.870	116.525%	0.000	58001.497	27877.263
σ		60.108	20.328	6335.636	0.420%	0.000	961.044	741.505
%RSD		31.114	9.660	0.867	0.361	0.000	1.657	2.660

200-35680-A-6-A PDS 10/14/2016 12:38:32 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52C**
1	12:38:54	97.007%	2373.546	66934.687	┬6568542.400	┬2212161.000	┬87553624.000	┬14164167.000	┬1359758.200	148.977%	25173.933	338912.510	245919.48
2	12:39:16	96.353%	2369.101	67976.398	┬6670379.300	┬2265403.700	┬86951803.000	┬14429672.000	┬1384738.300	149.725%	25231.421	343564.410	248365.55
3	12:39:37	93.400%	2463.639	72999.038	┬6884085.200	┬2317950.900	┬88333549.000	┬14431247.000	┬1400168.600	146.368%	25208.994	349678.050	253256.03
x		95.587%	2402.095	69303.374	┬6707669.000	┬2265171.900	┬87612992.000	┬14341695.000	┬1381555.000	148.357%	25204.783	344051.660	249180.35
σ		1.922%	53.345	3242.644	┬161042.560	┬52895.305	┬692783.760	┬153746.160	┬20392.413	1.763%	28.975	5399.280	3735.52
%RSD		2.010	2.221	4.679	┬2.401	┬2.335	┬0.791	┬1.072	┬1.476	1.188	0.115	1.569	1.49
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84K**
1	12:38:54	6342.298	┬13139374.000	┬320816790.000	150992.740	68062.450	┬2636283.800	856762.980	7471.563	189.234	2690.006	477.770	1757.34
2	12:39:16	6609.998	┬13385235.000	┬328387920.000	153138.740	69252.801	┬2648886.600	850536.700	7248.219	252.142	2575.432	469.487	1570.62
3	12:39:37	6107.707	┬13644549.000	┬334515290.000	156528.630	70249.907	┬2601030.900	855645.830	7336.916	213.248	2605.781	479.278	1562.10
x		6353.334	┬13389719.000	┬327906670.000	153553.370	69188.386	┬2628733.800	854315.170	7352.233	218.208	2623.740	475.512	1630.02
σ		251.327	┬252617.480	┬6861918.800	2791.141	1095.150	┬24805.113	3319.583	112.457	31.746	59.361	5.272	110.34
%RSD		3.956	┬1.887	┬2.093	1.818	1.583	┬0.944	0.389	1.530	14.548	2.262	1.109	6.76
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	12:38:54	737150.500	339.662%	58788.576	41178.455	-419.603	13875.568	113.969%	64162.389	55513.316	43883.261	707542.930	144.012%
2	12:39:16	744831.240	347.461%	59642.239	40577.612	-183.489	13471.626	116.512%	65490.385	55507.753	44146.242	709600.060	143.925%
3	12:39:37	736997.070	349.471%	59177.569	40916.743	-269.549	13834.959	116.844%	64844.251	56402.146	44245.624	711380.240	145.639%
x		739659.600	345.531%	59202.794	40890.937	-290.880	13727.384	115.775%	64832.342	55807.738	44091.709	709507.740	144.525%
σ		4479.424	5.181%	427.390	301.252	119.493	222.422	1.573%	664.078	514.779	187.235	1920.322	0.965%
%RSD		0.606	1.500	0.722	0.737	41.080	1.620	1.359	1.024	0.922	0.425	0.271	0.66

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:38:54	33133.639	207135.670	3482231.000	112.493%	0.000	601108.770	297461.210
2	12:39:16	32345.542	209336.130	3534068.500	114.220%	0.000	611402.650	306282.040
3	12:39:37	33391.576	207171.660	3498704.800	115.905%	0.000	612458.910	301673.190
x		32956.919	207881.150	3505001.400	114.206%	0.000	608323.440	301805.480
σ		544.949	1260.175	26486.191	1.706%	0.000	6270.370	4411.899
%RSD		1.654	0.606	0.756	1.494	0.000	1.031	1.462

CCV 10/14/2016 12:44:17 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:44:38	83.266%	111125.620	41452.806	┬15280889.000	┬4618524.800	┬43054527.000	┬15656556.000	┬1740051.900	101.987%	31495.210	┬3200956.200	900
2	12:45:00	81.108%	108154.850	42361.630	┬15641853.000	┬4825583.200	┬44613211.000	┬15565165.000	┬1765903.000	97.451%	32107.370	┬3287137.700	922
3	12:45:22	79.787%	110399.050	42424.805	┬15652410.000	┬4724954.600	┬44052692.000	┬15730829.000	┬1756291.800	96.127%	32741.842	┬3293051.000	931
x		81.387%	108.146%	109.811%	┬95.244%	┬96.435%	┬96.005%	┬94.976%	┬94.434%	98.522%	32114.807	┬95.596%	9(
σ		1.756%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	3.073%	623.349	┬n/a	
%RSD		2.158	1.409	1.292	┬1.362	┬2.192	┬1.798	┬0.530	┬0.745	3.119	1.941	┬1.581	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:44:38	14241.983	┬4784648.500	┬98694677.000	1414993.600	745668.510	930519.870	693320.000	91666.240	-95.464	9283.654	454.968	1(
2	12:45:00	12129.646	┬4846170.100	┬99702324.000	1425830.700	765156.370	912336.700	686045.270	90893.581	-136.043	9081.298	409.433	15
3	12:45:22	12003.203	┬4910830.600	┬100536410.000	1428207.900	764200.680	918031.380	692094.830	93583.869	-357.337	9113.022	431.989	9
x		12791.611	┬95.593%	┬97.756%	95.926%	98.659%	97.134%	94.693%	97.633%	-196.281	98.128%	432.130	12
σ		1257.649	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	140.946	n/a	22.768	3
%RSD		9.832	┬1.302	┬0.926	0.495	1.449	1.011	0.564	1.505	71.808	1.188	5.269	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	12:44:38	1003012.600	100.936%	┬2298519.800	332377.110	550.739	160352.880	100.668%	1085581.800	698489.240	543333.010	731234.520	101
2	12:45:00	976592.980	99.575%	┬2354026.400	329221.990	249.705	160464.950	100.384%	1091206.200	693577.900	539300.080	723179.600	100
3	12:45:22	973183.450	96.527%	┬2373919.000	335910.250	828.668	160263.360	98.731%	1080675.500	697113.580	543521.580	729093.580	97
x		984263.020	99.012%	┬102.149%	97.107%	543.037	95.539%	99.927%	1085821.200	696393.570	88.652%	87.624%	9(
σ		16326.890	2.258%	┬n/a	n/a	289.559	n/a	1.046%	5269.433	2533.597	n/a	n/a	2
%RSD		1.659	2.280	┬1.668	1.006	53.322	0.063	1.047	0.485	0.364	0.440	0.573	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:44:38	49650.349	2170607.200	┬20455702.000	96.535%	0.000	321185.260	167659.800
2	12:45:00	49727.248	2179917.500	┬20653112.000	95.753%	0.000	336612.490	169420.620
3	12:45:22	51336.531	2208730.500	┬20919383.000	93.835%	5.329	348284.370	173702.600
x		108.014%	85.744%	┬95.671%	95.374%	1.776	91.243%	90.308%
σ		n/a	n/a	┬n/a	1.389%	3.076	n/a	n/a
%RSD		1.895	0.909	┬1.125	1.457	173.205	4.053	1.825

CCB 10/14/2016 12:50:00 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:50:22	91.260%	-6.583	-159.044	-5505.012	182.303	11798.349	5827.166	-225.890	103.419%	38.652	1156.718	-516.196
2	12:50:44	86.199%	-8.196	-179.473	998.474	356.894	15689.526	6358.457	-136.077	104.058%	38.434	1083.145	-579.752
3	12:51:05	88.310%	-3.020	-194.767	-4286.624	366.797	17484.492	4651.672	-219.414	104.709%	38.188	1395.940	-370.575
x		88.590%	-5.933	-177.761	-2931.054	301.998	14990.789	5612.432	-193.793	104.062%	38.424	1211.934	-488.841
σ		2.542%	2.649	17.923	3457.168	103.777	2906.756	873.420	50.089	0.645%	0.232	163.545	107.238
%RSD		2.869	44.646	10.083	117.950	34.364	19.390	15.562	25.847	0.620	0.604	13.495	21.937

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:50:22	8929.872	728.952	85836.310	-505.123	-119.547	-209.219	-256.543	-55.565	743.945	-18.478	416.548	2385.441
2	12:50:44	8933.405	1456.007	90093.487	-462.887	-158.996	-94.217	-181.104	100.666	731.709	-10.512	402.783	2170.303
3	12:51:05	8814.066	1801.276	93823.685	-445.070	-178.874	-43.904	-291.085	-37.309	722.083	25.867	436.661	2200.417
x		8892.448	1328.745	89917.827	-471.027	-152.472	-115.780	-242.911	2.597	732.579	-1.041	418.664	2252.054

σ		67.903	547.373	3996.584	30.843	30.197	84.740	56.244	85.419	10.957	23.641	17.038	116.494
%RSD		0.764	41.195	4.445	6.548	19.805	73.191	23.154	3288.932	1.496	2271.418	4.070	5.173
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:50:22	-118.821	104.978%	1150.695	-74.224	-72.895	-6.331	105.151%	1949.690	921.254	382.897	-123.496	101.638%
2	12:50:44	-97.034	104.453%	1335.160	-13.337	-89.622	-4.403	105.890%	2058.883	877.939	426.269	-96.092	102.066%
3	12:51:05	-86.081	105.522%	986.623	-41.133	-50.690	-37.717	105.346%	2202.413	990.194	440.731	-43.055	102.731%
x		-100.645	104.985%	1157.492	-42.898	-71.069	-16.150	105.462%	2070.329	929.796	416.632	-87.548	102.145%
σ		16.666	0.534%	174.368	30.482	19.530	18.702	0.383%	126.749	56.613	30.097	40.895	0.551%
%RSD		16.559	0.509	15.064	71.058	27.480	115.802	0.363	6.122	6.089	7.224	46.712	0.539

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:50:22	4.059	-313.802	3065.634	98.578%	0.000	8115.131	6.073
2	12:50:44	-50.653	-616.382	3627.609	98.481%	0.000	7707.130	-14.156
3	12:51:05	-27.237	-723.294	3486.864	99.083%	0.000	7030.886	10.705
x		-24.611	-551.159	3393.369	98.714%	0.000	7617.716	0.874
σ		27.451	212.395	292.421	0.324%	0.000	547.625	13.221
%RSD		111.540	38.536	8.617	0.328	0.000	7.189	1513.245

CCVL 10/14/2016 12:55:43 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:56:05	88.634%	157.662	6696.435	711136.450	27960.830	83018.077	747048.680	27161.674	104.448%	28.697	13392.690	8841.010
2	12:56:27	88.817%	160.093	6753.173	T 774920.430	28208.736	81177.530	709971.540	26397.748	106.537%	23.473	12284.537	8941.538
3	12:56:48	86.075%	189.335	6916.455	693778.950	28446.733	80956.857	712386.930	27324.844	105.815%	28.376	14017.237	9278.645
x		87.842%	103.965%	110.723%	T 89.154%	86.385%	107.209%	87.766%	87.091%	105.600%	26.849	96.988%	88.659%
σ		1.533%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.061%	2.928	n/a	n/a
%RSD		1.745	10.428	1.683	T 5.880	0.861	1.385	2.869	1.836	1.005	10.905	6.632	2.541

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:56:05	9324.274	7287.679	704576.640	2710.520	1123.531	3580.922	11717.576	991.186	730.225	208.787	457.579	2259.535
2	12:56:27	9483.855	7544.792	690390.250	2564.450	1152.260	3599.353	11636.583	1017.263	740.930	187.353	441.516	2117.481
3	12:56:48	9079.705	7884.727	696203.070	2477.812	1180.961	3667.550	11830.024	1058.720	773.527	190.400	443.751	2112.499
x		9295.945	93.336%	102.577%	87.104%	93.691%	95.413%	100.523%	108.443%	748.227	104.731%	447.615	2163.171
σ		203.559	n/a	n/a	n/a	n/a	n/a	n/a	n/a	22.554	n/a	8.701	83.491
%RSD		2.190	3.955	1.023	4.551	2.492	1.262	0.828	3.331	3.014	5.931	1.944	3.860

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:56:05	24959.113	106.539%	16650.255	3508.760	-66.391	689.633	104.683%	1299.214	6002.359	4401.473	5437.764	99.539%
2	12:56:27	24395.767	105.844%	16176.752	3261.560	-47.167	646.511	106.113%	1319.402	5816.196	4457.701	5766.391	103.604%
3	12:56:48	24440.165	103.834%	16634.789	3316.224	-91.797	869.335	105.015%	1218.916	6166.774	4478.920	5562.623	103.188%
x		89.173%	105.406%	89.883%	98.192%	-68.452	87.598%	105.270%	1279.177	5995.110	90.893%	84.107%	102.111%
σ		n/a	1.405%	n/a	n/a	22.386	n/a	0.748%	53.155	175.402	n/a	n/a	2.236%
%RSD		1.273	1.333	1.632	3.862	32.703	16.076	0.711	4.155	2.926	0.900	2.968	2.190

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:56:05	3982.028	19545.973	17072.793	98.266%	0.000	19137.275	17024.867
2	12:56:27	3982.357	20536.616	18286.123	96.840%	0.000	19882.189	17602.381
3	12:56:48	3679.321	19725.105	18321.121	99.167%	0.000	20619.363	17616.603
x		83.448%	78.182%	103.494%	98.091%	0.000	54.087%	92.368%
σ		n/a	n/a	n/a	1.173%	0.000	n/a	n/a
%RSD		4.505	2.648	3.973	1.196	0.000	3.728	1.939

200-35680-A-6-B MS 10/14/2016 01:01:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	13:01:49	95.345%	2418.057	62849.770	T 6912659.700	T 2708512.200	T 102448000.000	T 14715382.000	T 1680296.900	144.300%	26990.924	363804.010	270362.0
2	13:02:10	94.289%	2532.949	64115.906	T 6977903.700	T 2742743.500	T 101587050.000	T 14653762.000	T 1705756.300	146.879%	26892.501	366545.110	271886.2
3	13:02:32	97.170%	2469.888	61056.334	T 6851873.000	T 2706012.100	T 100644850.000	T 14711732.000	T 1704244.800	150.017%	25966.341	365651.810	274202.6
x		95.601%	2473.631	62674.004	T 6914145.500	T 2719089.300	T 101559970.000	T 14693625.000	T 1696766.000	147.065%	26616.588	365333.640	272150.3
σ		1.457%	57.538	1537.341	T 63028.499	T 20523.247	T 901880.000	T 34570.864	T 14282.689	2.863%	565.277	1397.974	1933.8
%RSD		1.524	2.326	2.453	T 0.912	T 0.755	T 0.888	T 0.235	T 0.842	1.947	2.124	0.383	0.7

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	13:01:49	6443.494	T 14361475.000	T 360713870.000	188908.810	85769.946	T 3330386.900	974314.900	7784.691	171.535	2934.907	467.108	1570.0
2	13:02:10	6203.715	T 14161035.000	T 359616010.000	188110.360	84777.080	T 3311039.300	971233.080	7650.676	203.857	2808.472	505.225	1625.1
3	13:02:32	5903.364	T 14322798.000	T 361536990.000	185174.800	83095.196	T 3344016.900	984645.250	7759.853	185.206	2980.331	497.837	1504.5
x		6183.524	T 14281770.000	T 360622290.000	187397.990	84547.407	T 3328481.000	976731.080	7731.740	186.866	2907.903	490.057	1566.5
σ		270.630	T 106332.170	T 963755.350	1966.296	1352.085	T 16571.193	7024.957	71.293	16.225	89.055	20.215	60.3

%RSD		4.377	┬0.745	┬0.267	1.049	1.599	┬0.498	0.719	0.922	8.682	3.063	4.125	3.8
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	13:01:49	859868.780	365.228%	52868.441	44529.295	-205.784	12901.090	109.719%	99133.572	23164.814	18887.717	639276.180	139.773
2	13:02:10	863004.720	368.978%	53086.291	44246.843	-444.137	13732.135	111.140%	98848.677	24056.156	18793.148	645255.830	142.485
3	13:02:32	858656.930	371.600%	53503.685	44082.959	-204.696	13331.627	112.187%	101892.740	23426.174	19284.712	652567.700	144.779
x		860510.150	368.602%	53152.805	44286.366	-284.872	13321.617	111.016%	99958.330	23549.048	18988.526	645699.910	142.346
σ		2243.734	3.202%	322.803	225.777	137.928	415.613	1.239%	1681.294	458.199	260.826	6656.879	2.506
%RSD		0.261	0.869	0.607	0.510	48.418	3.120	1.116	1.682	1.946	1.374	1.031	1.7

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:01:49	37355.587	212592.540	4018401.200	108.756%	0.000	658788.010	334827.230
2	13:02:10	36623.440	210157.810	4059013.500	110.815%	0.000	660023.180	335615.380
3	13:02:32	36732.988	210310.140	4039109.400	112.958%	0.000	653060.940	335617.350
x		36904.005	211020.160	4038841.400	110.843%	0.000	657290.710	335353.320
σ		394.899	1363.844	20307.480	2.101%	0.000	3714.786	455.607
%RSD		1.070	0.646	0.503	1.895	0.000	0.565	0.136

200-35680-A-6-C MSD 10/14/2016 01:07:12 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52C**
1	13:07:33	96.855%	2454.776	63113.978	┬7051256.600	┬2237822.500	┬82694356.000	┬13222473.000	┬1356126.200	143.546%	27260.540	325068.630	239260.18
2	13:07:55	96.787%	2345.446	62449.107	┬6989569.000	┬2197830.100	┬82046985.000	┬13186241.000	┬1352908.800	144.983%	25837.161	323062.520	237248.42
3	13:08:17	91.756%	2184.026	66589.195	┬7045823.400	┬2233902.800	┬84078628.000	┬13282871.000	┬1371638.900	144.158%	28323.090	329917.630	243480.99
x		95.132%	2328.083	64050.760	┬7028883.000	┬2223185.200	┬82939990.000	┬13230528.000	┬1360224.600	144.229%	27140.264	326016.260	239996.53
σ		2.924%	136.208	2223.343	┬34155.116	┬22045.380	┬1037856.000	┬48815.793	┬10015.097	0.721%	1247.322	3524.432	3180.86
%RSD		3.074	5.851	3.471	┬0.486	┬0.992	┬1.251	┬0.369	┬0.736	0.500	4.596	1.081	1.32

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84K**
1	13:07:33	7077.036	┬11052709.000	┬292894160.000	154986.660	73070.103	┬2712136.000	815289.920	7677.297	256.386	2690.228	472.205	1544.56
2	13:07:55	6637.166	┬11003228.000	┬290233930.000	155120.950	72471.147	┬2699383.600	814686.010	7715.032	243.672	2684.738	466.179	1539.43
3	13:08:17	6465.982	┬11177765.000	┬296951130.000	156945.020	72853.002	┬2690239.200	822631.920	7690.575	257.723	2677.795	485.952	1523.73
x		6726.728	┬11077901.000	┬293359740.000	155684.210	72798.084	┬2700586.300	817535.950	7694.301	252.593	2684.254	474.779	1535.91
σ		315.219	┬89954.153	┬3382714.000	1093.960	303.231	┬10997.831	4423.555	19.142	7.755	6.231	10.135	10.85
%RSD		4.686	┬0.812	┬1.153	0.703	0.417	┬0.407	0.541	0.249	3.070	0.232	2.135	0.70

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	13:07:33	705377.910	324.606%	61743.588	43062.664	-122.584	12987.193	113.618%	74158.705	24980.087	19422.269	500253.940	138.624%
2	13:07:55	715570.870	326.275%	62240.626	42870.313	-179.084	13299.857	113.263%	76400.918	25740.084	19675.013	516618.910	140.638%
3	13:08:17	714873.040	326.596%	62463.423	42505.740	-167.952	13360.008	114.725%	75694.571	24513.298	19622.887	509635.200	141.318%
x		711940.610	325.826%	62149.212	42812.906	-156.540	13215.686	113.869%	75418.065	25077.823	19573.390	508836.020	140.193%
σ		5694.160	1.068%	368.521	282.865	29.929	200.153	0.763%	1146.395	619.205	133.444	8211.703	1.401%
%RSD		0.800	0.328	0.593	0.661	19.119	1.515	0.670	1.520	2.469	0.682	1.614	0.99

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:07:33	40858.636	214390.460	3359148.000	110.212%	0.000	585217.510	305392.120
2	13:07:55	40841.429	219567.440	3420471.300	109.020%	0.000	601535.170	315103.080
3	13:08:17	41361.378	219276.930	3406195.800	110.531%	0.000	610414.550	307686.540
x		41020.481	217744.940	3395271.700	109.921%	0.000	599055.740	309393.910
σ		295.351	2908.700	32087.959	0.797%	0.000	12780.192	5075.633
%RSD		0.720	1.336	0.945	0.725	0.000	2.133	1.641

200-35700-A-1-B 10/14/2016 01:12:55 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	13:13:17	104.996%	1507.354	5651.461	T 627795.340	T 2223301.600	T 129215760.000	T 8067660.100	T 1223871.400	176.647%	22713.379	351874.240	239167.8
2	13:13:38	104.087%	1484.728	5399.703	T 612764.100	T 2212590.000	T 128883060.000	T 7931712.500	T 1206883.400	178.125%	23119.257	345609.840	237601.2
3	13:14:01	100.120%	1554.673	5589.942	T 610532.430	T 2234714.300	T 130766700.000	T 8069943.900	T 1231448.700	177.147%	24207.657	350470.330	242873.8
x		103.068%	1515.585	5547.035	T 617030.630	T 2223535.300	T 129621840.000	T 8023105.500	T 1220734.500	177.306%	23346.764	349318.140	239880.9
σ		2.593%	35.691	131.249	T 9389.059	T 11063.991	T 1005337.200	T 79156.876	T 12579.496	0.752%	772.681	3287.302	2707.6
%RSD		2.515	2.355	2.366	T 1.522	T 0.498	T 0.776	T 0.987	T 1.030	0.424	3.310	0.941	1.1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	13:13:17	4753.985	TM 57930432.000	TM 647024420.000	214413.490	74792.848	TM 9122924.700	1053440.000	7272.710	193.628	1316.120	530.986	1681.9
2	13:13:38	5525.915	TM 58799112.000	TM 653313080.000	216459.730	75145.988	TM 9233858.400	1047395.300	7131.953	195.181	1274.175	511.127	1813.1
3	13:14:01	4868.803	TM 58799520.000	TM 656539440.000	223020.300	76558.152	TM 9212851.700	1056442.600	7185.336	166.940	1375.950	548.879	1322.5
x		5049.568	TM 58509688.000	TM 652292310.000	217964.510	75498.996	TM 9189878.300	1052426.000	7196.666	185.250	1322.082	530.331	1605.8
σ		416.504	TM 501650.470	TM 4838941.900	4496.391	934.096	TM 58927.115	4608.113	71.060	15.875	51.149	18.884	254.0
%RSD		8.248	TM 0.857	TM 0.742	2.063	1.237	TM 0.641	0.438	0.987	8.570	3.869	3.561	15.8

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	13:13:17	814013.670	503.559%	2817.003	18453.267	-427.416	7156.297	121.569%	159528.670	4644.251	3493.033	973734.520	167.092
2	13:13:38	824690.140	516.579%	2657.079	19212.973	-463.936	7737.207	122.281%	160080.290	4917.840	3562.905	988906.830	166.515
3	13:14:01	823193.000	517.595%	2723.862	18823.785	-269.457	7517.704	122.889%	163063.330	4617.930	3550.943	986702.010	170.748
x		820632.270	512.578%	2732.648	18830.008	-386.936	7470.403	122.246%	160890.770	4726.673	3535.627	983114.450	168.118
σ		5780.548	7.827%	80.324	379.892	103.366	293.329	0.661%	1901.604	166.077	37.369	8197.726	2.296
%RSD		0.704	1.527	2.939	2.017	26.714	3.927	0.541	1.182	3.514	1.057	0.834	1.3

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:13:17	1480.157	11589.772	4840310.500	118.721%	0.000	419084.350	145689.470
2	13:13:38	1416.873	11257.989	4862839.800	119.734%	0.000	418623.130	143595.560
3	13:14:01	1529.265	11721.756	4821874.400	120.727%	0.000	416496.640	145540.880
x		1475.432	11523.172	4841674.900	119.728%	0.000	418068.040	144941.970
σ		56.345	238.949	20516.737	1.003%	0.000	1380.273	1168.390
%RSD		3.819	2.074	0.424	0.837	0.000	0.330	0.806

200-35700-A-2-B 10/14/2016 01:18:38 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	13:19:00	96.504%	790.141	5386.576	T 639625.140	T 1933839.800	T 98342855.000	T 7507611.500	1010460.400	150.908%	29582.550	262609.130	183555.81
2	13:19:21	97.481%	774.238	5694.172	T 632057.890	T 1944931.400	T 99444787.000	T 7423410.100	T 1063218.400	151.711%	23052.917	260215.450	182910.58
3	13:19:43	94.614%	777.425	6096.243	T 619015.520	T 1912112.500	T 100323940.000	T 7414158.800	T 1084485.700	152.597%	26294.678	269734.230	186193.94
x		96.200%	780.601	5725.663	T 630232.850	T 1930294.600	T 99370527.000	T 7448393.500	T 1052721.500	151.739%	26310.049	264186.270	184220.11
σ		1.458%	8.414	355.880	T 10425.315	T 16694.193	T 992627.200	T 51492.495	T 38112.677	0.845%	3264.844	4951.501	1739.56
%RSD		1.515	1.078	6.216	T 1.654	T 0.865	T 0.999	T 0.691	T 3.620	0.557	12.409	1.874	0.94

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	13:19:00	6425.235	TM 36336973.000	T 335851180.000	157937.630	63864.490	TM 8063127.000	785639.770	6585.102	297.969	1391.044	490.188	1620.71
2	13:19:21	6213.504	TM 36361401.000	T 335606660.000	158108.290	62331.838	TM 7884177.800	773990.620	6434.145	274.149	1335.933	477.339	1843.01
3	13:19:43	5502.691	TM 36379225.000	T 334641560.000	160158.730	63889.673	TM 8058139.800	789568.190	6545.594	326.243	1270.313	525.625	1986.58
x		6047.143	TM 36359200.000	T 335366470.000	158734.880	63362.000	TM 8001814.900	783066.190	6521.614	299.454	1332.430	497.717	1816.77

σ		483.248	TM 21211.563	T 639584.820	1236.036	892.236	TM 101907.210	8101.398	78.284	26.079	60.442	25.008	184.34
%RSD		7.991	TM 0.058	T 0.191	0.779	1.408	TM 1.274	1.035	1.200	8.709	4.536	5.025	10.14
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tl**
1	13:19:00	502124.470	339.496%	2251.358	24095.015	-296.073	7543.580	115.978%	101293.100	5504.332	4212.933	606109.280	139.826%
2	13:19:21	503556.820	345.827%	2257.978	23770.957	-268.708	7583.492	117.424%	103554.050	5434.186	4224.146	603114.720	142.427%
3	13:19:43	509046.150	340.315%	2364.949	25010.742	-172.793	7433.740	117.291%	105594.950	5778.073	4260.240	615463.270	142.113%
x		504909.150	341.879%	2291.428	24292.238	-245.858	7520.270	116.898%	103480.700	5572.197	4232.440	608229.090	141.455%
σ		3653.631	3.444%	63.756	642.993	64.739	77.549	0.799%	2151.863	181.710	24.720	6441.420	1.420%
%RSD		0.724	1.007	2.782	2.647	26.332	1.031	0.684	2.079	3.261	0.584	1.059	1.00

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:19:00	2128.256	8158.434	4659415.700	109.602%	0.000	293441.050	100891.430
2	13:19:21	2089.379	8165.223	4573945.100	113.263%	0.000	286076.540	98579.039
3	13:19:43	2024.035	8532.855	4678128.800	112.112%	0.000	292457.420	100974.860
x		2080.557	8285.504	4637163.200	111.659%	0.000	290658.340	100148.440
σ		52.668	214.240	55542.262	1.872%	0.000	3998.318	1359.783
%RSD		2.531	2.586	1.198	1.677	0.000	1.376	1.358

200-35700-A-3-B 10/14/2016 01:24:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	13:24:42	99.595%	1788.964	6846.746	T 811738.500	T 3727081.700	T 181379790.000	T 12088471.000	725985.080	207.515%	22135.449	378412.210	328182.35
2	13:25:04	100.908%	1792.569	6785.440	T 803672.430	T 3727636.300	T 183051470.000	T 12148966.000	T 790605.630	210.720%	24005.313	380570.810	329130.36
3	13:25:26	98.906%	1885.051	7282.808	T 782184.530	T 3584677.400	T 176528560.000	T 11812246.000	T 759222.400	215.698%	24464.803	371306.520	321380.80
x		99.803%	1822.195	6971.665	T 799198.480	T 3679798.400	T 180319940.000	T 12016561.000	T 758604.370	211.311%	23535.189	376763.180	326231.17
σ		1.017%	54.465	271.196	T 15276.501	T 82377.718	T 3388146.800	T 179508.620	T 32314.706	4.123%	1233.789	4847.292	4227.20
%RSD		1.019	2.989	3.890	T 1.911	T 2.239	T 1.879	T 1.494	T 4.260	1.951	5.242	1.287	1.29

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	13:24:42	5897.974	T 18217286.000	T 501271730.000	186839.640	103937.020	TM 34447733.000	1243795.300	1977.394	189.009	572.683	643.608	1795.39
2	13:25:04	5517.109	T 18322134.000	T 506083450.000	189538.610	103419.050	TM 34817215.000	1251039.600	1995.275	176.148	549.694	605.799	1582.40
3	13:25:26	5404.103	T 17857288.000	T 497382500.000	186348.510	101150.530	TM 34383020.000	1246698.100	2017.527	181.099	511.090	649.394	1962.42
x		5606.395	T 18132236.000	T 501579230.000	187575.590	102835.530	TM 34549323.000	1247177.700	1996.732	182.085	544.489	632.934	1780.07
σ		258.759	T 243814.650	T 4358619.000	1717.675	1482.056	TM 234247.260	3645.883	20.106	6.487	31.125	23.677	190.47
%RSD		4.615	T 1.345	T 0.869	0.916	1.441	TM 0.678	0.292	1.007	3.563	5.716	3.741	10.70

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159T
1	13:24:42	743226.010	718.596%	-83.307	3593.809	-696.507	1785.628	121.428%	54498.367	3084.456	2281.062	1136258.400	184.976%
2	13:25:04	746830.460	729.165%	-155.240	3470.828	-635.527	1729.883	122.238%	54428.708	3309.329	2324.142	1155135.600	186.889%
3	13:25:26	731011.140	734.777%	-124.867	3505.440	-651.309	1714.942	124.504%	53776.869	3287.699	2339.419	1138857.300	188.978%
x		740355.870	727.512%	-121.138	3523.359	-661.114	1743.484	122.723%	54234.648	3227.162	2314.874	1143417.100	186.947%
σ		8291.017	8.216%	36.111	63.419	31.650	37.254	1.594%	397.975	124.058	30.262	10231.372	2.002%
%RSD		1.120	1.129	29.810	1.800	4.787	2.137	1.299	0.734	3.844	1.307	0.895	1.07

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:24:42	410.084	16738.522	2869362.100	123.891%	0.000	718310.750	203559.170
2	13:25:04	419.966	16984.453	2851530.600	127.119%	0.000	721194.310	204758.710
3	13:25:26	429.070	17557.723	2957074.500	124.100%	0.000	744619.840	208756.810
x		419.707	17093.566	2892655.700	125.037%	0.000	728041.630	205691.570
σ		9.496	420.359	56496.192	1.807%	0.000	14429.360	2721.494
%RSD		2.262	2.459	1.953	1.445	0.000	1.982	1.323

200-35700-A-4-B 10/14/2016 01:30:03 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:30:25	98.835%	1496.835	4267.463	T 546164.260	T 2628202.300	T 135580000.000	T 10589792.000	T 711702.040	189.171%	26140.044	360668.430	257685.140
2	13:30:47	95.233%	1719.927	5129.045	T 576399.310	T 2771045.100	T 142758370.000	T 11292719.000	690709.780	187.464%	25738.408	384022.440	279083.100
3	13:31:08	93.495%	1624.080	4622.556	T 549280.290	T 2651473.900	T 138891380.000	T 10599961.000	669784.900	189.983%	25429.509	368971.060	265112.730
x		95.854%	1613.614	4673.021	T 557281.290	T 2683573.800	T 139076580.000	T 10827491.000	T 690732.240	188.873%	25769.321	371220.640	267293.660
σ		2.724%	111.914	433.002	T 16629.842	T 76640.856	T 3592764.200	T 402931.960	T 20958.579	1.285%	356.275	11838.409	10864.415
%RSD		2.842	6.936	9.266	T 2.984	T 2.856	T 2.583	T 3.721	T 3.034	0.681	1.383	3.189	4.065

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:30:25	5638.972	T 13949861.000	T 398003220.000	154595.050	86038.026	1650846.500	381939.490	1900.877	234.280	574.245	567.529	2016.238
2	13:30:47	6944.531	T 14991152.000	T 416018880.000	163071.450	89372.176	T 1929671.200	406280.290	1935.285	226.151	647.437	578.561	1807.147
3	13:31:08	6298.090	T 14559630.000	T 408626520.000	157151.750	86540.996	T 1828366.300	385858.540	1955.307	211.377	626.729	580.967	1652.986
x		6293.864	T 14500214.000	T 407549540.000	158272.750	87317.066	T 1802961.300	391359.440	1930.490	223.936	616.137	575.686	1825.457
σ		652.790	T 523181.610	T 9055988.700	4347.963	1797.457	T 141137.740	13069.565	27.530	11.611	37.728	7.166	182.317

%RSD		10.372	T 3.608	T 2.222	2.747	2.059	T 7.828	3.340	1.426	5.185	6.123	1.245	9.987
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:30:25	567577.220	635.215%	505.841	6861.317	-714.773	2491.402	115.415%	54471.655	2044.616	1372.305	875577.170	177.035%
2	13:30:47	600218.680	657.696%	553.527	7307.428	-527.472	2516.512	113.473%	58867.204	2095.401	1423.357	938785.420	177.227%
3	13:31:08	559478.990	644.102%	468.279	7108.670	-606.700	2360.142	117.479%	56103.747	2110.362	1397.577	882688.270	177.874%
x		575758.300	645.671%	509.216	7092.472	-616.315	2456.019	115.456%	56480.869	2083.460	1397.746	899016.950	177.379%
σ		21566.830	11.322%	42.724	223.496	94.020	83.976	2.003%	2221.909	34.461	25.526	34623.547	0.440%
%RSD		3.746	1.754	8.390	3.151	15.255	3.419	1.735	3.934	1.654	1.826	3.851	0.248

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:30:25	490.788	12592.684	2255985.400	115.426%	0.000	583396.670	564515.150
2	13:30:47	574.690	13501.515	2428708.400	113.492%	0.000	633897.980	612929.630
3	13:31:08	400.417	11999.533	2304012.400	116.980%	0.000	600321.510	580552.070
x		488.632	12697.911	2329568.700	115.299%	0.000	605872.050	585998.950
σ		87.157	756.500	89152.437	1.748%	0.000	25704.124	24662.561
%RSD		17.837	5.958	3.827	1.516	0.000	4.243	4.209

200-35700-A-5-B 10/14/2016 01:35:46 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:36:07	103.278%	1375.546	4178.416	T 584900.510	T 2629696.300	T 129532920.000	T 8512248.200	T 881341.810	184.672%	23180.412	331231.290	240258.840
2	13:36:29	101.556%	1404.272	4015.071	T 588702.730	T 2599670.800	T 130077530.000	T 8493558.700	T 898226.880	184.631%	24410.307	337532.090	242800.960
3	13:36:50	98.713%	1465.794	4547.950	T 575061.540	T 2633219.100	T 128884230.000	T 8486142.100	T 876515.710	184.899%	22106.442	337476.330	241143.890
x		101.182%	1415.204	4247.146	T 582888.260	T 2620862.100	T 129498230.000	T 8497316.300	T 885361.470	184.734%	23232.387	335413.240	241401.230
σ		2.305%	46.106	273.007	T 7039.704	T 18436.494	T 597403.250	T 13452.587	T 11400.086	0.144%	1152.812	3621.779	1290.450
%RSD		2.278	3.258	6.428	T 1.208	T 0.703	T 0.461	T 0.158	T 1.288	0.078	4.962	1.080	0.535
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:36:07	5668.475	T 24179765.000	TM 513129160.000	170536.890	78046.746	TM 7054322.100	715474.040	5711.906	203.417	787.514	573.360	1899.619
2	13:36:29	5788.523	T 24612750.000	TM 516398770.000	171823.090	79225.494	TM 7134350.400	721482.970	5682.275	213.946	794.900	533.103	1817.683
3	13:36:50	5154.790	T 25095051.000	TM 524812640.000	173047.300	79538.379	TM 7110934.300	718234.070	5625.411	198.419	839.972	583.723	1530.047
x		5537.263	T 24629189.000	TM 518113530.000	171802.430	78936.873	TM 7099869.000	718397.030	5673.198	205.261	807.462	563.395	1749.116
σ		336.626	T 457864.170	TM 6027537.900	1255.335	786.587	TM 41145.629	3007.780	43.956	7.926	28.396	26.741	194.092
%RSD		6.079	T 1.859	TM 1.163	0.731	0.996	TM 0.580	0.419	0.775	3.861	3.517	4.746	11.097
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:36:07	592847.770	549.333%	1219.054	9330.394	-500.383	2900.507	120.346%	85153.869	3740.223	2749.391	858479.040	167.976%
2	13:36:29	605825.540	552.970%	1210.897	9261.727	-525.464	3110.414	120.054%	87204.655	4004.678	2821.049	869461.930	171.325%
3	13:36:50	603478.070	561.160%	1201.593	9342.003	-581.112	3438.164	121.464%	85078.040	3584.122	2766.572	863573.470	171.436%
x		600717.120	554.487%	1210.515	9311.375	-535.653	3149.695	120.621%	85812.188	3776.341	2779.004	863838.140	170.246%
σ		6915.399	6.058%	8.737	43.386	41.318	270.972	0.744%	1206.508	212.592	37.412	5496.227	1.966%
%RSD		1.151	1.093	0.722	0.466	7.713	8.603	0.617	1.406	5.630	1.346	0.636	1.155

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:36:07	938.456	10498.654	4264050.900	117.244%	0.000	485967.460	165528.040
2	13:36:29	857.973	10141.206	4228724.000	119.901%	0.000	483242.280	164630.130
3	13:36:50	889.380	10983.120	4267170.100	118.867%	0.000	488869.330	165283.690
x		895.270	10540.994	4253315.000	118.671%	0.000	486026.360	165147.290
σ		40.564	422.551	21353.462	1.339%	0.000	2813.991	464.237
%RSD		4.531	4.009	0.502	1.129	0.000	0.579	0.281

200-35700-A-6-B 10/14/2016 01:41:28 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:41:50	102.692%	850.364	4121.926	T 589929.920	T 1994202.400	T 91193344.000	T 6760033.100	T 1060023.700	159.901%	23306.701	254048.930	174477.350
2	13:42:12	101.385%	999.794	3925.368	T 595645.380	T 1955480.800	T 90806850.000	T 6817346.800	T 1077712.000	160.192%	25769.164	256143.410	176465.640
3	13:42:33	99.925%	867.199	4166.795	T 558575.550	T 1938719.700	T 88784640.000	T 6683400.600	T 1067534.000	162.168%	23608.450	251724.450	171070.440
x		101.334%	905.786	4071.363	T 581383.620	T 1962801.000	T 90261611.000	T 6753593.500	T 1068423.200	160.754%	24228.105	253972.270	174004.480
σ		1.385%	81.848	128.410	T 19958.020	T 28456.470	T 1293610.500	T 67204.921	T 8877.613	1.233%	1343.097	2210.477	2728.506
%RSD		1.366	9.036	3.154	T 3.433	T 1.450	T 1.433	T 0.995	T 0.831	0.767	5.544	0.870	1.568

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:41:50	5639.247	TM 29085075.000	T 449495460.000	156503.420	62493.380	T 2870068.900	478082.650	5591.056	284.199	727.181	531.946	2026.638
2	13:42:12	5209.036	TM 29185178.000	T 453738860.000	159528.960	63358.872	T 2895890.700	479132.680	5618.889	275.776	735.428	505.484	1984.207
3	13:42:33	5424.777	TM 28732290.000	T 441428000.000	155407.800	62493.557	T 2861593.300	483975.780	5649.792	246.377	813.334	503.629	1763.726
x		5424.353	TM 29000848.000	T 448220770.000	157146.730	62781.937	T 2875851.000	480397.040	5619.912	268.784	758.648	513.686	1924.857
σ		215.106	TM 237902.220	T 6253635.500	2134.564	499.641	T 17864.787	3143.437	29.382	19.857	47.539	15.841	141.147
%RSD		3.966	TM 0.820	T 1.395	1.358	0.796	T 0.621	0.654	0.523	7.388	6.266	3.084	7.333

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:41:50	497868.800	404.005%	1571.873	9408.078	-417.218	3355.550	118.529%	65287.025	3686.196	2640.961	621837.070	148.712%
2	13:42:12	500754.990	404.300%	1657.676	9867.208	-332.694	3312.205	119.590%	65778.855	3602.732	2740.225	620934.780	151.176%
3	13:42:33	499742.850	401.957%	1702.063	9405.940	-314.308	3353.708	119.237%	66597.506	3741.249	2726.206	625604.020	148.549%
x		499455.550	403.421%	1643.871	9560.409	-354.740	3340.488	119.119%	65887.795	3676.726	2702.464	622791.950	149.479%
σ		1464.390	1.276%	66.184	265.698	54.883	24.511	0.540%	661.998	69.742	53.722	2476.756	1.472%
%RSD		0.293	0.316	4.026	2.779	15.471	0.734	0.454	1.005	1.897	1.988	0.398	0.985

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:41:50	1111.893	6403.831	3014114.800	112.625%	0.000	318307.390	110038.100
2	13:42:12	1183.247	6458.300	3000139.900	113.623%	0.000	320635.800	110524.590
3	13:42:33	1157.084	6525.456	3043528.200	112.659%	0.000	323483.590	112034.300
x		1150.741	6462.529	3019261.000	112.969%	0.000	320808.930	110865.660
σ		36.097	60.923	22147.161	0.567%	0.000	2592.435	1040.888
%RSD		3.137	0.943	0.734	0.502	0.000	0.808	0.939

200-35700-A-7-B 10/14/2016 01:47:11 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:47:33	101.473%	2354.079	5547.468	T 781449.450	T 3683976.200	T 180886960.000	T 10810643.000	T 1026840.800	245.074%	47760.591	452316.640	34942
2	13:47:55	97.568%	2631.392	6498.011	T 776852.610	T 3746095.100	T 181906690.000	T 10755091.000	T 1036890.900	246.323%	49475.298	455495.490	35391
3	13:48:16	96.595%	2681.491	6555.804	T 756125.880	T 3695356.100	T 179441100.000	T 10740247.000	T 1035510.200	246.167%	49261.674	467941.880	35448
x		98.545%	2555.654	6200.427	T 771475.980	T 3708475.800	T 180744920.000	T 10768660.000	T 1033080.600	245.854%	48832.521	458584.670	35260
σ		2.582%	176.358	566.217	T 13490.809	T 33072.412	T 1238912.800	T 37107.933	T 5447.790	0.680%	934.443	8257.985	276
%RSD		2.620	6.901	9.132	T 1.749	T 0.892	T 0.685	T 0.345	T 0.527	0.277	1.914	1.801	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:47:33	5919.578	T 8213959.200	TM 672238510.000	200242.010	112055.640	126770.070	574287.090	2905.260	146.683	734.901	742.328	150
2	13:47:55	5542.780	T 8278937.900	TM 668823380.000	197948.790	110898.190	129515.130	586268.830	3285.151	144.399	846.619	727.648	98
3	13:48:16	5903.527	T 8317767.800	TM 670861630.000	200927.700	112253.020	125068.960	578902.150	2990.597	113.445	1014.919	747.131	30
x		5788.628	T 8270221.600	TM 670641180.000	199706.170	111735.620	127118.050	579819.350	3060.336	134.843	865.479	739.036	93

σ		213.063	T 52450.325	TM 1718203.900	1560.074	731.915	2243.418	6043.301	199.316	18.566	140.958	10.150	60
%RSD		3.681	T 0.634	TM 0.256	0.781	0.655	1.765	1.042	6.513	13.768	16.287	1.373	6
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	13:47:33	1320808.200	T 1073.509%	2142.416	5663.370	-856.620	3419.518	118.549%	59324.007	1449.558	972.593	T 1783025.000	211.
2	13:47:55	1331308.900	981.817%	2576.492	5729.922	-869.036	3625.231	118.398%	61180.904	1472.011	1041.623	T 1819435.200	216.
3	13:48:16	T 1474895.200	T 1088.171%	2160.128	5706.450	-914.214	3411.863	119.728%	60430.151	1489.134	1048.224	T 1808918.500	217.
x		T 1375670.800	T 1047.832%	2293.012	5699.914	-879.957	3485.537	118.892%	60311.687	1470.235	1020.813	T 1803792.900	215.
σ		T 86091.155	T 57.639%	245.661	33.754	30.310	121.039	0.728%	934.100	19.848	41.890	T 18738.437	3.
%RSD		T 6.258	T 5.501	10.713	0.592	3.444	3.473	0.612	1.549	1.350	4.104	T 1.039	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:47:33	359.369	18504.289	2554294.700	125.425%	3.986	990554.950	573175.500
2	13:47:55	381.661	17803.228	2562748.300	128.064%	3.904	998106.870	573114.170
3	13:48:16	354.719	18686.103	2635950.100	124.322%	0.000	1043255.100	594030.060
x		365.249	18331.207	2584331.000	125.937%	2.630	1010639.000	580106.580
σ		14.401	466.192	44902.803	1.923%	2.278	28497.666	12058.127
%RSD		3.943	2.543	1.738	1.527	86.617	2.820	2.079

200-35700-A-8-B 10/14/2016 01:52:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	13:53:02	100.000%	1111.544	3457.487	T 560932.870	T 2277215.100	T 102295170.000	T 7032404.500	T 1010419.600	165.603%	20643.842	276904.890	207274.55
2	13:53:24	96.442%	1140.638	4032.060	T 569594.250	T 2338963.000	T 105438510.000	T 7252659.900	T 1026752.700	165.382%	23470.521	281176.000	209860.78
3	13:53:46	96.914%	1039.488	4006.105	T 538071.970	T 2291955.700	T 102010800.000	T 7024486.000	T 1043184.400	167.990%	22013.004	277055.930	205728.92
x		97.785%	1097.224	3831.884	T 556199.700	T 2302711.300	T 103248160.000	T 7103183.500	T 1026785.600	166.325%	22042.455	278378.940	207621.41
σ		1.932%	52.073	324.497	T 16285.445	T 32248.410	T 1902219.500	T 129510.940	T 16382.433	1.446%	1413.570	2423.500	2087.65
%RSD		1.976	4.746	8.468	T 2.928	T 1.400	T 1.842	T 1.823	T 1.596	0.870	6.413	0.871	1.00

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	13:53:02	5811.040	TM 31811297.000	T 498004440.000	166600.220	73760.465	T 3718111.500	576357.820	4964.593	238.826	944.085	532.672	1745.01
2	13:53:24	5298.146	TM 32244273.000	T 505816460.000	169974.100	74647.923	T 3725165.900	579804.680	4957.093	245.212	944.801	539.735	1955.53
3	13:53:46	4871.343	TM 31872157.000	T 503772450.000	168762.890	74075.389	T 3768881.500	593905.240	4968.252	237.787	895.816	552.847	2141.06
x		5326.843	TM 31975909.000	T 502531120.000	168445.740	74161.259	T 3737386.300	583355.910	4963.313	240.609	928.234	541.751	1947.20
σ		470.506	TM 234393.880	T 4051246.400	1709.154	449.918	T 27502.743	9297.122	5.688	4.021	28.077	10.237	198.15
%RSD		8.833	TM 0.733	T 0.806	1.015	0.607	T 0.736	1.594	0.115	1.671	3.025	1.890	10.17

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tl
1	13:53:02	525507.690	450.181%	1887.232	16061.211	-523.182	4033.746	117.147%	82339.239	4027.830	2713.383	746162.950	152.548%
2	13:53:24	522977.080	455.933%	1957.291	16723.541	-373.230	3831.220	118.394%	81875.974	3672.869	2685.994	743269.710	155.304%
3	13:53:46	531859.390	457.233%	1984.261	16597.606	-473.749	4111.904	118.118%	83595.562	3609.946	2790.458	752623.080	153.914%
x		526781.390	454.449%	1942.928	16460.786	-456.720	3992.290	117.887%	82603.592	3770.215	2729.945	747351.920	153.922%
σ		4576.087	3.753%	50.083	351.725	76.413	144.862	0.655%	889.751	225.309	54.165	4788.695	1.378%
%RSD		0.869	0.826	2.578	2.137	16.731	3.629	0.555	1.077	5.976	1.984	0.641	0.89

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:53:02	1177.430	7552.643	3893046.200	112.895%	0.000	367853.870	122536.410
2	13:53:24	1214.295	7293.296	3878133.000	114.775%	0.000	373539.870	122413.290
3	13:53:46	1097.040	7496.196	3922639.000	115.302%	0.000	375709.650	123821.370
x		1162.921	7447.378	3897939.400	114.324%	0.000	372367.800	122923.690
σ		59.959	136.391	22652.897	1.265%	0.000	4056.926	779.844
%RSD		5.156	1.831	0.581	1.106	0.000	1.089	0.634

CCV 10/14/2016 01:58:24 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:58:46	82.386%	112141.580	39896.207	T 15632519.000	T 4754076.100	T 44695878.000	T 16127324.000	T 1711832.900	103.176%	31146.620	T 3250580.300	9351
2	13:59:07	82.031%	110777.310	42139.410	T 15880733.000	T 4854026.700	T 45572669.000	T 16174293.000	T 1747961.400	98.870%	31793.471	T 3323275.700	9395
3	13:59:29	80.477%	110985.620	42305.221	T 15615321.000	T 4697531.500	T 43654307.000	T 15546266.000	T 1728864.500	99.474%	31129.371	T 3233077.000	9180
x		81.632%	109.532%	108.160%	T 96.376%	T 97.364%	T 97.611%	T 96.787%	T 93.114%	100.507%	31356.487	T 95.848%	91
σ		1.015%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.331%	378.537	T n/a	
%RSD		1.244	0.660	3.246	T 0.945	T 1.662	T 2.151	T 2.193	T 1.045	2.320	1.207	T 1.463	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:58:46	11440.751	T 4834784.800	T 97837073.000	1394164.700	758516.140	963064.880	711372.980	93467.332	-67.515	9181.078	455.319	14
2	13:59:07	12872.953	T 4950557.800	T 102019960.000	1453016.100	785406.950	963534.320	708867.320	92853.193	-201.722	9212.680	439.584	15
3	13:59:29	12512.897	T 4820435.500	T 100370020.000	1426184.100	756221.980	946668.070	701917.430	91795.553	-155.440	8997.548	449.263	13
x		12275.533	T 96.015%	T 98.179%	96.024%	99.749%	101.088%	97.010%	98.331%	-141.559	97.819%	448.055	14
σ		745.021	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	68.172	n/a	7.937	

%RSD		6.069	T 1.465	T 2.105	2.068	2.117	1.003	0.693	0.912	48.158	1.272	1.771	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	13:58:46	986265.830	100.756%	T 2304393.400	334845.880	1114.593	155623.820	100.371%	1063788.100	678866.250	520342.070	709525.670	9
2	13:59:07	1003320.900	98.889%	T 2332656.800	334280.470	720.795	157095.570	98.390%	1081836.800	690949.080	527987.170	716319.730	9
3	13:59:29	974207.530	98.299%	T 2339124.400	330751.990	731.549	155721.010	98.496%	1068647.400	685325.440	521251.780	710614.780	9
x		987931.410	99.315%	T 101.417%	97.338%	855.646	93.028%	99.085%	1071424.100	685046.920	85.568%	85.736%	9
σ		14627.957	1.283%	T n/a	n/a	224.320	n/a	1.114%	9339.261	6046.230	n/a	n/a	
%RSD		1.481	1.292	T 0.794	0.666	26.216	0.527	1.124	0.872	0.883	0.798	0.512	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:58:46	47558.944	2121474.300	T 19931147.000	93.018%	5.375	314019.610	164799.020
2	13:59:07	48945.192	2223671.600	T 20845294.000	89.128%	0.000	337186.930	169911.000
3	13:59:29	50907.313	2164782.300	T 20354893.000	90.353%	0.000	339579.160	166875.010
x		105.647%	85.099%	T 94.288%	90.833%	1.792	89.856%	88.682%
σ		n/a	n/a	T n/a	1.989%	3.103	n/a	n/a
%RSD		3.424	2.364	T 2.245	2.189	173.205	4.274	1.538

CCB 10/14/2016 02:04:07 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:04:29	91.927%	9.575	-390.293	7509.920	903.368	28246.861	8939.569	-288.563	108.076%	37.099	2214.287	-388.967
2	14:04:51	93.858%	3.465	-574.020	3860.175	978.090	31560.625	8970.511	-66.092	108.040%	37.094	2161.116	-40.939
3	14:05:13	91.089%	4.437	-579.601	3284.289	1042.307	32527.875	5531.768	-35.721	109.455%	32.032	1859.115	-161.944
x		92.291%	5.826	-514.638	4884.794	974.588	30778.454	7813.949	-130.125	108.524%	35.408	2078.172	-197.283
σ		1.420%	3.284	107.722	2291.588	69.536	2245.131	1976.487	138.049	0.807%	2.924	191.563	176.685
%RSD		1.539	56.362	20.932	46.913	7.135	7.294	25.294	106.089	0.743	8.258	9.218	89.559

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:04:29	9087.566	4441.350	155986.090	-299.389	-71.112	219.872	-226.326	35.512	811.673	-10.331	443.066	2387.216
2	14:04:51	9106.546	4994.207	172466.080	-271.499	-98.810	231.806	-188.256	374.935	718.047	-5.464	436.828	2169.703
3	14:05:13	9144.490	5496.615	177433.300	-258.370	-64.658	166.237	-142.699	-75.885	840.992	-72.628	429.144	2403.477
x		9112.867	4977.391	168628.490	-276.419	-78.193	205.971	-185.760	111.521	790.237	-29.474	436.346	2320.132
σ		28.984	527.833	11226.801	20.947	18.144	34.925	41.869	234.825	64.214	37.451	6.974	130.529
%RSD		0.318	10.605	6.658	7.578	23.204	16.956	22.539	210.566	8.126	127.066	1.598	5.626

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:04:29	-76.815	102.680%	1375.097	-23.157	-53.608	-23.865	102.131%	2232.590	789.124	418.320	42.003	97.435%
2	14:04:51	-13.513	103.697%	1329.979	-44.188	-63.424	-29.395	103.589%	2094.952	784.586	411.013	-0.817	98.643%
3	14:05:13	-35.335	105.451%	855.353	-65.205	-58.652	-15.880	105.793%	2145.838	918.896	410.268	78.926	99.990%
x		-41.887	103.943%	1186.810	-44.183	-58.561	-23.047	103.838%	2157.793	830.869	413.200	40.037	98.690%
σ		32.156	1.402%	287.935	21.024	4.909	6.795	1.844%	69.593	76.268	4.449	39.908	1.278%
%RSD		76.767	1.349	24.261	47.583	8.382	29.482	1.776	3.225	9.179	1.077	99.677	1.295

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:04:29	-33.638	-492.500	4740.223	92.956%	0.000	7514.511	54.013
2	14:04:51	50.584	-695.460	4422.694	96.050%	0.000	6671.388	70.676
3	14:05:13	-7.700	-804.416	4850.797	94.797%	0.000	6260.309	-1.240
x		3.082	-664.125	4671.238	94.601%	0.000	6815.403	41.150
σ		43.134	158.301	222.233	1.557%	0.000	639.383	37.644
%RSD		1399.580	23.836	4.757	1.645	0.000	9.381	91.480

CCVL 10/14/2016 02:09:50 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:10:12	96.572%	150.125	6422.942	692606.680	27637.653	77270.721	726557.190	25643.820	113.286%	17.683	14467.130	9230.461
2	14:10:34	95.682%	136.110	6254.229	711132.950	28855.548	80386.822	723755.740	25798.646	110.822%	13.563	15044.077	9449.008
3	14:10:56	90.987%	172.082	6583.269	T 798809.580	29390.021	79520.538	725465.610	27195.924	110.556%	9.060	13688.643	9076.264
x		94.414%	93.965%	104.712%	T 90.083%	87.678%	103.721%	88.024%	84.673%	111.555%	13.435	105.553%	90.935%
σ		3.001%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.505%	4.313	n/a	n/a
%RSD		3.179	11.868	2.563	T 7.727	3.137	2.034	0.195	3.261	1.349	32.099	4.724	2.024

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:10:12	8861.993	7025.561	670570.320	2151.072	1013.735	3830.747	11549.992	985.426	799.928	170.982	466.866	2160.471
2	14:10:34	9087.716	6783.838	680480.560	2385.243	965.872	3676.751	12038.481	1027.674	879.158	179.734	463.980	2384.966
3	14:10:56	9513.078	7369.187	687846.220	2424.269	1014.113	3796.370	11724.451	637.887	930.749	121.806	408.255	2494.984
x		9154.263	87.014%	100.013%	78.203%	81.142%	99.424%	100.891%	93.728%	869.945	84.372%	446.367	2346.807
σ		330.605	n/a	n/a	n/a	n/a	n/a	n/a	n/a	65.895	n/a	33.038	170.490
%RSD		3.611	4.167	1.276	6.368	2.780	2.145	2.103	24.205	7.575	19.825	7.401	7.265

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:10:12	23903.047	109.435%	15897.367	2970.273	-97.021	737.012	106.885%	1206.957	5667.582	4103.311	5353.228	101.199%
2	14:10:34	24578.535	106.052%	15812.146	3506.118	-68.438	655.926	105.717%	1012.165	5842.280	4212.457	5661.194	101.407%
3	14:10:56	24237.980	106.624%	16485.722	3155.836	-71.468	707.242	105.573%	961.452	6163.731	4238.355	5389.768	100.256%
x		87.874%	107.370%	87.581%	93.770%	-78.976	83.416%	106.058%	1060.191	5891.198	85.551%	82.288%	100.954%
σ		n/a	1.811%	n/a	n/a	15.701	n/a	0.719%	129.607	251.666	n/a	n/a	0.613%
%RSD		1.393	1.686	2.283	8.475	19.881	5.859	0.678	12.225	4.272	1.713	3.077	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:10:12	3706.013	19413.576	17871.718	96.272%	0.000	19394.333	16479.729
2	14:10:34	3836.101	18972.245	17401.111	97.719%	0.000	19201.396	15922.130
3	14:10:56	3827.465	19949.331	17677.872	97.054%	0.000	20136.155	16861.937
x		81.484%	76.257%	102.087%	97.015%	0.000	53.265%	87.100%
σ		n/a	n/a	n/a	0.724%	0.000	n/a	n/a
%RSD		1.919	2.516	1.340	0.747	0.000	2.521	2.878

LCS 200-110153/2-A 10/14/2016 02:15:36 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:15:59	91.824%	1684.089	61237.769	T 7913700.000	285918.280	743887.020	T 7877995.300	262071.710	107.277%	126.114	114999.750	90912.093
2	14:16:20	88.227%	1595.228	62894.821	T 7949146.000	287134.970	735181.430	T 7969863.800	263446.500	105.732%	75.827	117258.490	93502.544
3	14:16:44	89.763%	1623.153	61148.215	T 8083922.300	299815.040	724430.260	T 7978394.100	267797.620	102.171%	78.375	119995.980	95666.591
x		89.938%	1634.157	61760.268	T 7982256.100	290956.100	734499.570	T 7942084.400	264438.610	105.060%	93.439	117418.070	93360.409
σ		1.805%	45.441	983.571	T 89811.578	7696.151	9746.283	T 55666.430	2989.101	2.619%	28.326	2501.934	2380.434
%RSD		2.007	2.781	1.593	T 1.125	2.645	1.327	T 0.701	1.130	2.493	30.315	2.131	2.550

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:15:59	7010.757	87490.517	T 7090824.400	27680.288	12142.189	41550.416	103879.190	8537.381	514.295	1502.066	409.688	2177.923
2	14:16:20	5804.986	85655.039	T 7126408.200	28321.830	12276.384	41343.134	104512.200	8522.552	450.151	1496.442	404.899	2231.783
3	14:16:44	5786.676	83744.798	T 7151883.500	28807.858	12807.284	40682.751	102847.720	8641.260	432.265	1523.162	417.682	1855.185
x		6200.806	85630.118	T 7123038.700	28269.992	12408.619	41192.101	103746.370	8567.064	465.570	1507.223	410.756	2088.297

σ		701.498	1872.984	T 30668.654	565.570	351.714	453.121	840.154	64.682	43.134	14.087	6.458	203.669
%RSD		11.313	2.187	T 0.431	2.001	2.834	1.100	0.810	0.755	9.265	0.935	1.572	9.753
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:15:59	241212.900	102.420%	166526.170	33962.567	-78.783	6922.926	101.298%	44181.617	51338.133	38364.884	55802.400	98.586%
2	14:16:20	242851.900	100.922%	170334.110	33921.462	20.714	6942.601	100.891%	42243.218	50789.206	39112.559	56063.489	99.129%
3	14:16:44	245743.390	100.066%	169736.350	33833.056	-115.661	6868.346	101.035%	44256.797	52098.855	38928.382	55014.644	99.771%
x		243269.400	101.136%	168865.540	33905.695	-57.910	6911.291	101.075%	43560.544	51408.731	38801.942	55626.844	99.162%
σ		2293.920	1.192%	2047.885	66.180	70.543	38.471	0.206%	1141.457	657.673	389.544	546.016	0.593%
%RSD		0.943	1.178	1.213	0.195	121.814	0.557	0.204	2.620	1.279	1.004	0.982	0.598

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:15:59	80105.591	215923.400	153101.760	91.121%	0.000	327341.500	177414.600
2	14:16:20	80111.412	212847.220	154077.640	91.370%	0.000	332726.670	177881.000
3	14:16:44	78784.232	211845.930	150920.900	91.993%	0.000	334771.020	179535.600
x		79667.078	213538.850	152700.100	91.495%	0.000	331613.060	178277.070
σ		764.573	2124.902	1616.245	0.449%	0.000	3837.910	1114.593
%RSD		0.960	0.995	1.058	0.491	0.000	1.157	0.625

200-35700-A-1-B @2 10/14/2016 02:21:24 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:21:45	97.379%	782.785	2655.744	340819.030	T 1361712.500	T 79755215.000	T 4784046.300	678004.980	140.891%	14169.997	213941.240	143646.840
2	14:22:07	94.472%	839.506	2623.737	335283.790	T 1352237.100	T 79276233.000	T 4811642.300	665958.050	142.892%	14445.790	208112.190	143608.140
3	14:22:28	97.039%	886.106	2752.032	334751.520	T 1371398.100	T 79759970.000	T 4759687.200	675973.430	139.317%	13727.919	214187.400	148338.100
x		96.297%	836.132	2677.171	336951.450	T 1361782.600	T 79597139.000	T 4785125.200	673312.150	141.033%	14114.569	212080.280	145197.690
σ		1.589%	51.743	66.777	3359.978	T 9580.687	T 277923.240	T 25994.332	6449.337	1.792%	362.132	3438.670	2719.739
%RSD		1.650	6.188	2.494	0.997	T 0.704	T 0.349	T 0.543	0.958	1.270	2.566	1.621	1.873

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:21:45	3811.378	TM 34915692.000	T 396939950.000	132278.610	46921.016	TM 5088730.200	599325.360	6516.640	246.854	774.577	492.357	1851.352
2	14:22:07	4667.424	TM 35406089.000	T 401490080.000	133389.170	47197.852	TM 5219806.300	613290.860	6569.694	232.776	768.161	498.509	2109.847
3	14:22:28	4547.552	TM 36082745.000	T 406091570.000	134894.540	47151.528	TM 5038416.400	593746.470	6376.547	265.160	740.147	513.229	2096.503
x		4342.118	TM 35468175.000	T 401507200.000	133520.770	47090.132	TM 5115650.900	602120.900	6487.627	248.263	760.962	501.365	2019.234
σ		463.526	TM 585998.500	T 4575836.400	1312.920	148.279	TM 93643.566	10067.625	99.789	16.238	18.309	10.725	145.543
%RSD		10.675	TM 1.652	T 1.140	0.983	0.315	TM 1.831	1.672	1.538	6.541	2.406	2.139	7.208

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:21:45	429879.540	290.634%	1906.861	9796.264	-253.605	3788.008	109.171%	83763.605	2750.837	1821.878	505807.070	126.987%
2	14:22:07	435370.030	292.871%	2130.362	10076.878	-129.681	3788.370	108.425%	86528.178	2903.792	1913.048	513051.340	128.210%
3	14:22:28	428744.490	296.069%	2070.096	10026.974	-254.716	3968.632	110.187%	85770.059	2869.587	1830.292	502190.570	127.914%
x		431331.360	293.191%	2035.773	9966.705	-212.668	3848.336	109.261%	85353.947	2841.405	1855.073	507016.330	127.704%
σ		3543.341	2.731%	115.637	149.700	71.871	104.179	0.884%	1428.488	80.277	50.384	5530.445	0.638%
%RSD		0.821	0.932	5.680	1.502	33.795	2.707	0.809	1.674	2.825	2.716	1.091	0.500

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:21:45	894.054	5465.419	2564023.700	103.136%	0.000	227412.900	77274.832
2	14:22:07	930.486	5159.078	2593234.500	103.080%	0.000	231604.210	76941.143
3	14:22:28	909.627	5163.458	2589862.400	103.614%	0.000	227286.060	78076.831
x		911.389	5262.652	2582373.600	103.277%	0.000	228767.720	77430.935
σ		18.280	175.615	15980.626	0.293%	0.000	2457.284	583.715
%RSD		2.006	3.337	0.619	0.284	0.000	1.074	0.754

200-35700-A-2-B @2 10/14/2016 02:27:08 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:27:30	94.830%	411.767	2656.394	316326.480	980791.470	T 55800585.000	T 4063921.700	540217.400	133.595%	12963.219	145129.110	98614.908
2	14:27:52	93.607%	348.082	2446.244	308714.910	T 1075864.800	T 56271414.000	T 4164925.900	555215.540	130.996%	14112.650	150166.030	102055.500
3	14:28:14	92.639%	273.752	2431.307	314687.400	996234.470	T 55189696.000	T 4135289.900	554503.110	130.522%	15358.969	148842.810	102043.670
x		93.692%	344.534	2511.315	313242.930	T 1017630.200	T 55753898.000	T 4121379.200	549978.680	131.704%	14144.946	148045.980	100904.690
σ		1.098%	69.076	125.864	4006.104	T 51020.275	T 542368.060	T 51919.147	8461.017	1.655%	1198.201	2611.294	1983.020
%RSD		1.172	20.049	5.012	1.279	T 5.014	T 0.973	T 1.260	1.538	1.256	8.471	1.764	1.965

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:27:30	5358.341	T 19622435.000	T 185687950.000	87552.540	35081.815	T 4237422.700	425436.410	5317.800	370.989	776.534	471.443	1982.553
2	14:27:52	5038.602	T 20060559.000	T 189645150.000	89552.627	35657.118	T 4152373.200	421999.440	5453.630	378.057	797.388	486.488	1960.995
3	14:28:14	5082.656	T 20105374.000	T 188723970.000	88846.787	35749.389	T 4263672.200	428405.430	5218.597	424.477	787.675	496.238	2097.478
x		5159.867	T 19929456.000	T 188019030.000	88650.651	35496.107	T 4217822.700	425280.420	5330.009	391.174	787.199	484.723	2013.675
σ		173.290	T 266830.590	T 2070643.400	1014.366	361.742	T 58180.643	3205.843	117.991	29.057	10.435	12.491	73.371

%RSD		3.358	T 1.339	T 1.101	1.144	1.019	T 1.379	0.754	2.214	7.428	1.326	2.577	3.644
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:27:30	251301.320	218.505%	1500.647	11827.435	-296.097	3813.213	109.665%	50793.732	2795.626	2023.571	294987.830	116.591%
2	14:27:52	255475.280	212.846%	1458.895	11818.657	-94.251	3512.574	109.871%	51885.741	2938.201	2029.930	294420.540	115.815%
3	14:28:14	257006.310	213.699%	1497.189	12547.795	-100.130	3500.575	108.014%	52285.193	3009.216	2076.524	303365.180	118.346%
x		254594.300	215.017%	1485.577	12064.629	-163.493	3608.787	109.183%	51654.889	2914.348	2043.342	297591.180	116.918%
σ		2952.763	3.051%	23.172	418.457	114.876	177.139	1.018%	772.064	108.775	28.912	5008.470	1.297%
%RSD		1.160	1.419	1.560	3.468	70.264	4.909	0.932	1.495	3.732	1.415	1.683	1.109

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:27:30	1153.928	3168.335	2294499.900	101.494%	0.000	141110.920	49519.913
2	14:27:52	1055.011	3165.712	2350245.400	100.469%	0.000	145804.530	50130.822
3	14:28:14	1070.579	3252.501	2389289.400	98.758%	0.000	153734.390	51422.042
x		1093.172	3195.516	2344678.300	100.240%	0.000	146883.280	50357.592
σ		53.188	49.368	47639.338	1.382%	0.000	6380.502	971.129
%RSD		4.865	1.545	2.032	1.379	0.000	4.344	1.928

200-35700-A-3-B @8 10/14/2016 02:32:53 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:33:15	96.560%	222.642	389.761	142659.970	684058.190	T 37209290.000	T 2370708.700	138587.800	134.046%	4474.376	74758.323	64627.803
2	14:33:36	93.916%	245.684	330.653	136363.260	689246.190	T 37739540.000	T 2402649.200	141896.280	132.990%	4619.276	78890.812	65974.240
3	14:33:58	94.861%	261.402	114.174	135050.890	699112.100	T 37992098.000	T 2429117.600	142753.260	131.945%	4599.333	76985.314	66623.340
x		95.113%	243.242	278.196	138024.710	690805.490	T 37646976.000	T 2400825.100	141079.110	132.994%	4564.328	76878.150	65741.794
σ		1.340%	19.495	145.089	4067.536	7647.130	T 399528.730	T 29247.153	2199.676	1.050%	78.537	2068.328	1017.873
%RSD		1.409	8.015	52.153	2.947	1.107	T 1.061	T 1.218	1.559	0.790	1.721	2.690	1.548

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:33:15	5400.208	T 3541211.400	T 101818610.000	37970.474	21193.653	TM 5091996.200	200583.960	1062.327	471.289	75.206	487.010	2414.916
2	14:33:36	4831.501	T 3604759.100	T 103517590.000	38337.715	21673.070	TM 5069915.400	200923.640	1089.844	455.190	63.510	518.740	2402.869
3	14:33:58	4956.638	T 3665705.500	T 106229890.000	39361.096	22442.850	TM 5129211.900	204952.940	1094.158	470.555	103.148	493.435	2158.955
x		5062.782	T 3603892.000	T 103855360.000	38556.428	21769.857	TM 5097041.200	202153.510	1082.109	465.678	80.621	499.728	2325.580
σ		298.842	T 62251.558	T 2224951.900	720.648	630.198	TM 29968.437	2430.316	17.268	9.090	20.366	16.775	144.427
%RSD		5.903	T 1.727	T 2.142	1.869	2.895	TM 0.588	1.202	1.596	1.952	25.261	3.357	6.210
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:33:15	100699.030	192.030%	-691.872	361.474	-130.002	233.469	112.423%	7295.702	668.850	238.223	148364.120	113.331%
2	14:33:36	100391.860	193.016%	-684.407	413.093	-92.796	151.873	112.775%	7698.727	586.448	250.693	152310.980	115.346%
3	14:33:58	102123.720	192.083%	-673.805	424.308	-124.219	208.556	113.188%	7812.079	782.317	270.366	151897.330	116.516%
x		101071.540	192.376%	-683.362	399.625	-115.672	197.966	112.795%	7602.169	679.205	253.094	150857.480	115.065%
σ		924.071	0.554%	9.079	33.513	20.021	41.816	0.383%	271.393	98.344	16.206	2169.194	1.611%
%RSD		0.914	0.288	1.329	8.386	17.309	21.123	0.340	3.570	14.479	6.403	1.438	1.400

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:33:15	14.639	446.408	432888.700	100.864%	0.000	74572.849	30146.795
2	14:33:36	-10.657	482.996	428773.510	103.718%	0.000	77542.683	29228.162
3	14:33:58	-8.194	840.135	430533.930	102.789%	0.000	81909.548	29224.812
x		-1.404	589.847	430732.050	102.457%	0.000	78008.360	29533.256
σ		13.948	217.527	2064.736	1.456%	0.000	3690.451	531.343
%RSD		993.514	36.879	0.479	1.421	0.000	4.731	1.799

200-35700-A-5-B @2 10/14/2016 02:38:36 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:38:58	94.041%	779.675	2051.382	┬407046.490	┬1712375.200	┬83815576.000	┬5492923.000	516857.600	149.702%	14147.151	215102.750	152963.380
2	14:39:20	95.479%	699.425	1953.882	┬403311.770	┬1707423.700	┬85450779.000	┬5528722.000	526738.800	147.277%	15110.584	221516.580	156010.420
3	14:39:42	93.576%	826.441	2078.702	337926.180	┬1681139.200	┬85324048.000	┬5541797.900	526638.440	147.122%	14112.400	218034.610	157218.320
x		94.366%	768.514	2027.989	┬382761.480	┬1700312.700	┬84863467.000	┬5521147.600	523411.610	148.034%	14456.712	218217.980	155397.370
σ		0.992%	64.239	65.616	┬38873.381	┬16788.283	┬909709.980	┬25302.490	5676.165	1.447%	566.537	3210.845	2192.716
%RSD		1.051	8.359	3.236	┬10.156	┬0.987	┬1.072	┬0.458	1.084	0.977	3.919	1.471	1.411

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:38:58	5061.073	┬15435096.000	┬332233760.000	109457.100	52512.384	┬4182142.600	430800.030	5108.706	297.008	492.618	512.088	1930.317
2	14:39:20	4685.023	┬15896677.000	┬337614560.000	110330.850	51543.213	┬4079903.200	425644.990	5100.185	290.050	436.553	517.681	2190.967
3	14:39:42	5085.508	┬15913440.000	┬341842330.000	110385.640	52044.897	┬4084956.400	429024.360	5162.309	272.836	559.581	527.401	1760.497
x		4943.868	┬15748404.000	┬337230220.000	110057.860	52033.498	┬4115667.400	428489.800	5123.733	286.631	496.251	519.057	1960.594
σ		224.499	┬271462.330	┬4815798.800	520.999	484.686	┬57624.614	2618.766	33.678	12.443	61.594	7.749	216.827
%RSD		4.541	┬1.724	┬1.428	0.473	0.931	┬1.400	0.611	0.657	4.341	12.412	1.493	11.059

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:38:58	335960.470	331.291%	875.019	5452.199	-395.766	1782.560	109.260%	46749.017	2190.478	1518.173	476522.630	132.653%
2	14:39:20	338157.950	335.098%	820.915	4968.799	-236.304	1913.578	110.688%	47623.336	2164.216	1460.271	473850.410	134.057%
3	14:39:42	339992.380	333.856%	749.244	5365.183	-289.916	1705.664	110.260%	48226.852	2250.856	1513.314	473918.960	134.103%
x		338036.930	333.415%	815.059	5262.060	-307.329	1800.600	110.069%	47533.068	2201.850	1497.253	474764.000	133.604%
σ		2018.677	1.941%	63.092	257.672	81.145	105.125	0.732%	743.041	44.425	32.119	1523.400	0.824%
%RSD		0.597	0.582	7.741	4.897	26.403	5.838	0.665	1.563	2.018	2.145	0.321	0.617

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:38:58	466.916	4712.129	2403120.200	104.348%	0.000	281252.310	94161.414
2	14:39:20	448.817	5100.953	2393925.800	105.138%	0.000	278394.520	95084.714
3	14:39:42	478.425	5117.150	2440487.100	104.979%	0.000	281227.180	94639.844
x		464.719	4976.744	2412511.000	104.822%	0.000	280291.340	94628.657
σ		14.925	229.306	24660.277	0.418%	0.000	1642.740	461.751
%RSD		3.212	4.608	1.022	0.399	0.000	0.586	0.488

200-35700-A-1-B @4 10/14/2016 02:44:19 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:44:40	96.034%	341.166	612.471	178556.750	680323.410	┬43543633.000	┬2611383.100	361838.050	135.821%	7099.938	115259.970	77101.850
2	14:45:02	94.840%	427.540	900.104	187300.080	699331.470	┬44352872.000	┬2639614.100	366614.970	133.150%	7514.047	116568.980	77756.818
3	14:45:24	95.603%	384.675	741.375	177108.980	694140.720	┬43688241.000	┬2614829.100	365320.560	133.013%	7816.331	118014.130	79039.089
x		95.492%	384.460	751.316	180988.600	691265.200	┬43861582.000	┬2621942.100	364591.190	133.995%	7476.772	116614.360	77965.919
σ		0.605%	43.187	144.074	5513.623	9824.867	┬431569.180	┬15401.038	2470.569	1.583%	359.648	1377.640	985.402
%RSD		0.633	11.233	19.176	3.046	1.421	┬0.984	┬0.587	0.678	1.181	4.810	1.181	1.264

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:44:40	4241.684	┬18989234.000	┬218903420.000	73715.601	25903.495	┬2597857.100	314615.300	4875.283	406.695	372.524	495.230	2337.177
2	14:45:02	4709.769	┬19383676.000	┬222179890.000	73681.354	26470.137	┬2633239.300	325340.140	4889.357	405.487	355.993	488.342	2331.792
3	14:45:24	4201.559	┬19373266.000	┬223601580.000	73663.108	25582.226	┬2609900.800	322166.380	5054.374	371.319	388.540	469.054	2211.471
x		4384.337	┬19248725.000	┬221561630.000	73686.688	25985.286	┬2613665.700	320707.270	4939.672	394.500	372.352	484.209	2293.480

σ		282.545	T 224786.720	T 2409329.200	26.650	449.570	T 17989.023	5509.293	99.585	20.085	16.274	13.569	71.073
%RSD		6.444	T 1.168	T 1.087	0.036	1.730	T 0.688	1.718	2.016	5.091	4.371	2.802	3.099
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:44:40	214982.130	208.215%	1161.428	5050.121	-88.066	1985.258	113.384%	41917.578	1448.546	900.243	249264.430	116.939%
2	14:45:02	220935.450	212.913%	1112.714	5393.797	-196.185	2094.627	112.218%	42335.010	1419.919	864.562	255245.640	117.489%
3	14:45:24	220433.170	210.382%	1091.331	5298.161	-151.647	2032.524	112.995%	42860.446	1472.626	859.666	251697.310	118.207%
x		218783.580	210.503%	1121.824	5247.360	-145.300	2037.469	112.866%	42371.011	1447.030	874.824	252069.130	117.545%
σ		3301.718	2.351%	35.926	177.380	54.338	54.852	0.593%	472.464	26.386	22.150	3007.891	0.636%
%RSD		1.509	1.117	3.202	3.380	37.397	2.692	0.526	1.115	1.823	2.532	1.193	0.541

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:44:40	448.656	1245.198	1296532.700	102.755%	0.000	98628.196	37777.501
2	14:45:02	352.023	1424.938	1323417.900	101.466%	0.000	103998.350	39181.877
3	14:45:24	382.553	1236.356	1312125.600	102.457%	0.000	106430.580	38254.430
x		394.411	1302.164	1310692.100	102.226%	0.000	103019.040	38404.603
σ		49.396	106.417	13499.811	0.675%	0.000	3992.317	714.130
%RSD		12.524	8.172	1.030	0.660	0.000	3.875	1.859

200-35700-A-3-B @10 10/14/2016 02:50:01 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:50:23	99.577%	124.650	-67.976	112006.910	548701.750	T 29435174.000	T 1881036.500	111038.900	131.536%	3901.749	61337.154	51312.278
2	14:50:45	96.579%	183.764	-45.482	111896.750	544610.190	T 29621480.000	T 1889399.500	110195.860	131.228%	3884.142	61220.170	51639.038
3	14:51:06	94.070%	189.427	25.018	101739.910	548640.260	T 29985469.000	T 1893281.600	111437.930	131.572%	3498.015	61623.325	51129.646
x		96.742%	165.947	-29.480	108547.860	547317.400	T 29680707.000	T 1887905.900	110890.900	131.445%	3761.302	61393.550	51360.320
σ		2.757%	35.876	48.518	5896.116	2344.710	T 279887.550	T 6257.729	634.126	0.189%	228.183	207.410	258.072
%RSD		2.850	21.619	164.581	5.432	0.428	T 0.943	T 0.331	0.572	0.144	6.067	0.338	0.502

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:50:23	4158.828	T 2844978.500	T 80867149.000	29658.816	16795.135	T 3938066.000	155393.940	869.692	509.334	32.928	470.311	2507.824
2	14:50:45	4656.913	T 2833734.700	T 82094409.000	30119.691	16854.363	T 3971003.700	156034.330	826.577	537.303	4.158	448.148	2514.224
3	14:51:06	4378.424	T 2889584.200	T 83615968.000	30671.547	17551.603	T 4071043.200	158838.840	860.909	498.088	60.976	498.671	2310.154
x		4398.055	T 2856099.100	T 82192509.000	30150.018	17067.034	T 3993371.000	156755.700	852.393	514.908	32.688	472.377	2444.067
σ		249.622	T 29538.852	T 1377032.900	507.046	420.693	T 69252.850	1832.241	22.784	20.193	28.410	25.325	116.016
%RSD		5.676	T 1.034	T 1.675	1.682	2.465	T 1.734	1.169	2.673	3.922	86.913	5.361	4.747

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:50:23	76821.808	175.053%	-773.930	233.874	-160.328	199.629	113.331%	5877.761	511.061	130.835	112859.830	112.284%
2	14:50:45	78378.295	175.168%	-799.939	299.951	-141.810	132.886	113.357%	5920.541	475.121	129.884	115069.850	113.470%
3	14:51:06	78741.801	175.869%	-847.262	329.585	-130.994	154.148	112.601%	6084.667	468.345	155.426	117638.730	113.534%
x		77980.635	175.363%	-807.044	287.804	-144.378	162.221	113.096%	5960.990	484.842	138.715	115189.470	113.096%
σ		1019.899	0.442%	37.179	48.999	14.835	34.096	0.429%	109.223	22.958	14.480	2391.693	0.704%
%RSD		1.308	0.252	4.607	17.025	10.275	21.018	0.379	1.832	4.735	10.439	2.076	0.623

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:50:23	-68.034	-235.583	324004.010	101.674%	0.000	53983.872	22665.267
2	14:50:45	-7.647	-176.403	323684.490	101.889%	0.000	56912.027	22160.329
3	14:51:06	-25.367	-102.783	330305.070	101.889%	0.000	61251.144	22253.695
x		-33.683	-171.590	325997.860	101.817%	0.000	57382.348	22359.764
σ		31.040	66.531	3733.574	0.124%	0.000	3656.393	268.661
%RSD		92.155	38.773	1.145	0.122	0.000	6.372	1.202

CCV 10/14/2016 02:55:44 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:56:06	82.830%	108105.900	38701.922	T 15734465.000	T 4699692.500	T 43762232.000	T 15667388.000	T 1683091.800	98.344%	30320.298	T 3200588.400	90774
2	14:56:28	80.339%	109296.960	41158.059	T 16353802.000	T 4900423.800	T 46246397.000	T 16321504.000	T 1741428.100	92.534%	32743.453	T 3310779.100	94344
3	14:56:51	79.486%	108940.020	39968.561	T 15676431.000	T 4693986.300	T 44536524.000	T 15834810.000	T 1732054.200	95.370%	31340.501	T 3249310.500	91552
x		80.885%	107.052%	104.235%	T 97.677%	T 97.286%	T 98.064%	T 96.738%	T 92.538%	95.416%	31468.084	T 95.396%	90.
σ		1.738%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.906%	1216.605	T n/a	
%RSD		2.148	0.562	3.075	T 2.358	T 2.468	T 2.834	T 2.132	T 1.823	3.045	3.866	T 1.697	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:56:06	12349.552	T 4709692.700	T 97926413.000	1399379.700	752963.020	979774.830	713045.530	93535.138	215.219	9107.906	449.674	193
2	14:56:28	12011.781	T 4959789.000	T 101920490.000	1443760.900	789972.900	981209.170	713641.050	93575.248	9.356	9146.190	450.684	167
3	14:56:51	9189.920	T 4766383.300	T 97816648.000	1391195.000	745135.880	982917.200	715811.780	94421.626	-131.132	9347.368	438.046	128
x		11183.751	T 94.898%	T 97.341%	95.147%	99.225%	103.573%	97.940%	99.538%	31.148	98.569%	446.134	163
σ		1734.948	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	174.201	n/a	7.023	32

%RSD		15.513	T 2.725	T 2.357	2.004	3.140	0.160	0.204	0.533	559.274	1.398	1.574	2
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	14:56:06	985660.840	93.716%	2068114.600	329419.820	590.103	154889.840	93.180%	1049227.600	673757.660	509602.680	697434.030	88.
2	14:56:28	997759.640	92.456%	2117650.200	334468.230	528.696	153149.780	91.418%	1049045.500	676980.040	516774.010	706208.670	89.
3	14:56:51	998962.540	90.496%	2162850.800	331150.060	821.539	154597.170	90.174%	1076667.400	685570.370	523689.820	715921.870	91.
x		994127.670	92.223%	92.294%	96.867%	646.779	91.876%	91.591%	1058313.500	678769.360	84.504%	85.058%	89.
σ		7357.117	1.623%	n/a	n/a	154.430	n/a	1.510%	15895.188	6106.247	n/a	n/a	1.
%RSD		0.740	1.759	2.239	0.773	23.877	0.604	1.649	1.502	0.900	1.363	1.309	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:56:06	48836.604	2095474.900	T 20188436.000	86.264%	0.000	333182.480	163837.800
2	14:56:28	48216.509	2157294.200	T 20814586.000	83.939%	0.000	348727.010	168466.680
3	14:56:51	49087.087	2159878.300	T 20667971.000	83.953%	5.956	352791.310	167069.510
x		104.736%	83.828%	T 95.120%	84.719%	1.985	93.839%	88.291%
σ		n/a	n/a	T n/a	1.338%	3.439	n/a	n/a
%RSD		0.920	1.706	T 1.593	1.579	173.205	3.001	1.426

CCB 10/14/2016 03:01:33 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	15:01:55	87.325%	31.622	-462.951	11907.358	1658.817	25704.081	11870.950	115.279	101.017%	89.299	2611.678	-416.589
2	15:02:17	88.779%	16.557	-606.095	12823.392	1635.444	29384.186	11630.677	128.344	102.236%	34.335	2655.826	-7.621
3	15:02:39	86.062%	55.744	-468.200	13016.854	1979.915	31018.470	9569.636	524.998	102.490%	39.121	663.633	-171.288
x		87.389%	34.641	-512.415	12582.535	1758.059	28702.246	11023.754	256.207	101.914%	54.252	1977.046	-198.500
σ		1.360%	19.767	81.171	592.668	192.488	2722.034	1265.021	232.872	0.787%	30.446	1137.663	205.837
%RSD		1.556	57.061	15.841	4.710	10.949	9.484	11.475	90.892	0.772	56.120	57.544	103.697

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	15:01:55	8657.272	2848.771	120754.630	-26.037	72.451	343.086	2.341	35.400	802.210	30.598	441.225	2028.703
2	15:02:17	8606.666	2935.184	133223.730	59.221	117.112	472.902	204.983	144.577	811.492	-19.300	449.911	2386.296
3	15:02:39	9413.407	3100.115	127736.680	115.957	272.234	584.056	116.288	16.768	813.522	-41.016	439.688	2472.783
x		8892.448	2961.357	127238.350	49.714	153.932	466.682	107.871	65.582	809.075	-9.906	443.608	2295.927
σ		451.872	127.700	6249.471	71.473	104.857	120.606	101.583	69.044	6.031	36.719	5.513	235.428
%RSD		5.082	4.312	4.912	143.768	68.119	25.843	94.171	105.279	0.745	370.695	1.243	10.254

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:01:55	62.437	96.139%	1798.819	57.610	-67.043	39.346	95.984%	2177.581	999.875	447.606	76.754	92.004%
2	15:02:17	208.077	96.031%	1833.524	31.497	-68.423	30.250	96.020%	2431.949	989.714	570.790	149.532	91.559%
3	15:02:39	227.351	97.368%	1667.787	48.503	-65.723	36.102	97.912%	2640.340	1045.745	579.987	197.860	92.616%
x		165.955	96.513%	1766.710	45.870	-67.063	35.233	96.639%	2416.623	1011.778	532.794	141.382	92.060%
σ		90.166	0.743%	87.409	13.254	1.350	4.610	1.103%	231.760	29.852	73.919	60.963	0.531%
%RSD		54.332	0.769	4.948	28.895	2.014	13.084	1.141	9.590	2.950	13.874	43.119	0.577

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:01:55	-51.420	149.465	8518.476	87.461%	0.000	8164.194	56.406
2	15:02:17	3.877	178.120	9802.221	88.609%	0.000	7802.838	65.988
3	15:02:39	-9.165	101.478	10507.861	92.083%	0.000	6982.490	66.095
x		-18.903	143.021	9609.519	89.384%	0.000	7649.841	62.830
σ		28.906	38.725	1008.595	2.407%	0.000	605.526	5.563
%RSD		152.920	27.076	10.496	2.693	0.000	7.916	8.854

CCVL 10/14/2016 03:07:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:07:38	86.318%	208.997	6678.970	T 805207.970	27769.074	81362.794	711251.630	25760.628	104.933%	28.712	12587.184	8495.202
2	15:08:00	90.958%	202.380	5848.875	709002.670	29472.494	86095.637	722905.450	26592.044	105.182%	9.529	13616.051	9076.872
3	15:08:22	89.336%	195.376	6359.234	T 802919.830	29967.805	85112.075	722428.880	26812.260	104.892%	19.121	12044.559	9439.529
x		88.871%	124.398%	102.683%	T 94.769%	89.032%	110.453%	87.247%	85.240%	105.002%	19.121	93.453%	88.497%
σ		2.355%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.157%	9.592	n/a	n/a
%RSD		2.649	3.368	6.650	T 7.107	3.968	2.966	0.917	2.102	0.149	50.165	6.261	5.291

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:07:38	9447.830	7328.588	681899.240	2327.919	1236.158	3890.781	12557.344	1072.249	845.014	144.478	454.734	2515.607
2	15:08:00	9127.761	7717.025	685894.210	2411.174	1417.978	4011.930	12442.459	838.143	846.808	196.300	435.932	2207.928
3	15:08:22	9549.540	7923.452	683999.390	2772.506	1217.689	3988.884	11861.125	851.126	834.598	166.784	432.093	2314.843
x		9375.044	94.371%	100.646%	84.394%	104.942%	104.593%	105.314%	97.636%	842.140	90.629%	440.920	2346.126
σ		220.108	n/a	n/a	n/a	n/a	n/a	n/a	n/a	6.593	n/a	12.117	156.207
%RSD		2.348	3.945	0.292	9.439	8.577	1.623	3.038	14.294	0.783	15.364	2.748	6.658

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:07:38	24585.223	95.861%	16180.772	3293.868	-21.696	749.128	96.101%	1217.507	5746.153	4181.986	5462.226	93.379%
2	15:08:00	25714.351	100.198%	16454.788	3115.348	-60.250	774.183	98.755%	1280.992	5811.512	4168.365	5521.255	95.563%
3	15:08:22	25062.574	98.766%	16407.555	3279.078	-18.236	672.549	98.707%	1347.478	5864.043	4080.306	5361.942	92.714%
x		91.067%	98.275%	89.122%	94.315%	-33.394	87.216%	97.855%	1281.993	5807.236	84.709%	81.993%	93.885%
σ		n/a	2.210%	n/a	n/a	23.322	n/a	1.518%	64.991	59.062	n/a	n/a	1.490%
%RSD		2.256	2.249	0.896	3.068	69.840	7.234	1.552	5.070	1.017	1.332	1.478	1.587

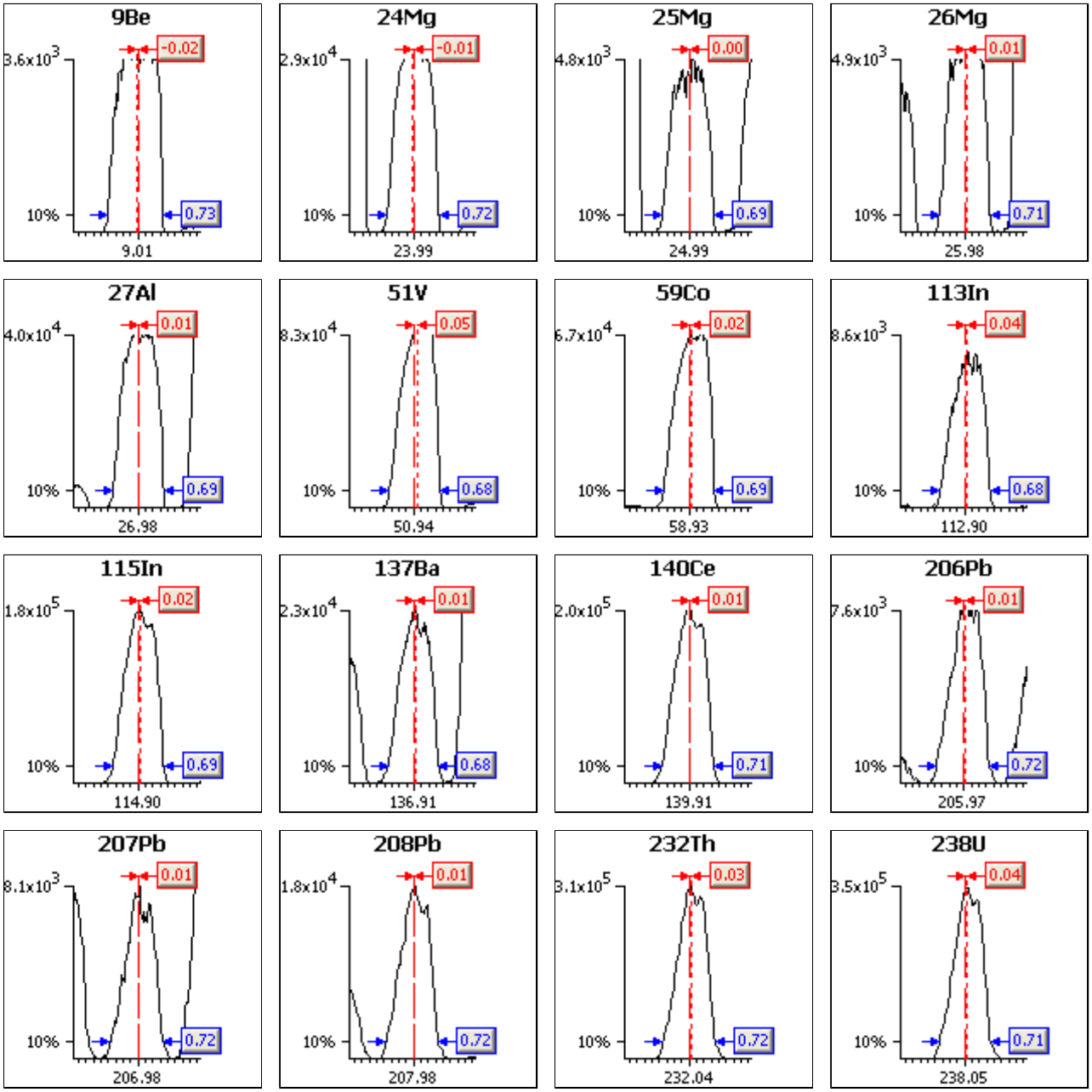
Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:07:38	3834.347	19486.941	18552.041	89.896%	0.000	19684.038	17520.190
2	15:08:00	3909.776	20001.455	19906.450	89.419%	0.000	20178.340	17742.880
3	15:08:22	3658.229	19782.701	20221.345	91.156%	0.000	20370.899	16964.114
x		81.719%	77.481%	113.133%	90.157%	0.000	54.626%	92.339%
σ		n/a	n/a	n/a	0.897%	0.000	n/a	n/a
%RSD		3.396	1.307	4.535	0.995	0.000	1.765	2.304

Performance Report

Sample details
Sample name : ITUNE
Acquired at : 10/18/2016 09:54:25 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Mass Calibration verification

Acquisition parameters
Sweeps : 20
Dwell : 1.0 mSecs
Point spacing : 0.01 amu
Peak width measured at 10% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
9Be	0.90	0.65	0.10	0.73	-0.02
24Mg	0.90	0.65	0.10	0.72	-0.01

25Mg	0.90	0.65	0.10	0.69	0.00
26Mg	0.90	0.65	0.10	0.71	0.01
27Al	0.90	0.65	0.10	0.69	0.01
51V	0.90	0.65	0.10	0.68	0.05
59Co	0.90	0.65	0.10	0.69	0.02
113In	0.90	0.65	0.10	0.68	0.04
115In	0.90	0.65	0.10	0.69	0.02
137Ba	0.90	0.65	0.10	0.68	0.01
140Ce	0.90	0.65	0.10	0.71	0.01
206Pb	0.90	0.65	0.10	0.72	0.01
207Pb	0.90	0.65	0.10	0.72	0.01
208Pb	0.90	0.65	0.10	0.72	0.01
232Th	0.90	0.65	0.10	0.72	0.03
238U	0.90	0.65	0.10	0.71	0.04

Sample details
Sample name : ITUNE
Acquired at : 10/18/2016 09:54:25 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Tune conditions

Major	
Extraction	-110
Lens 1	-4.1
Focus	18.0
D1	-43.9
Pole Bias	1.0
Hexapole Bias	-3.0
Nebuliser	0.74
Sampling Depth	133

Minor	
Lens 2	-39.2
Lens 3	-177.3
Forward power	1404
Horizontal	70
Vertical	522
D2	-158
DA	-40.8
Cool	13.0
Auxiliary	0.90

Global	
Standard resolution	135
High resolution	115
Analogue Detector	2353
PC Detector	1196

Add. Gases	
CCT1	0.00
CCT2	0.00

Sensitivity and stability results

Acquisition parameters
Sweeps : 50

Run	Time	8Bkg	9Be	24Mg	25Mg	26Mg	27Al	51V	59Co	113In
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Countrate	-	>100	>100	>100	>100	>100	>100	>100	>100
1	09:55:21 AM	0.100	4056.494	31894.489	4410.584	5446.890	40144.289	87613.681	66847.791	7925.884
2	09:55:55 AM	0.100	4004.481	30994.794	4300.555	5184.806	40102.188	86123.947	66476.309	7617.741
3	09:56:29 AM	0.000	4008.482	30732.308	4382.576	5110.783	40186.390	85963.119	66572.693	7937.890
4	09:57:03 AM	0.100	4004.481	30966.741	4382.576	5276.835	40092.164	85985.233	66325.711	7647.754
5	09:57:37 AM	0.000	4102.505	31403.558	4212.532	5024.757	39777.411	86208.381	67116.869	7731.793
x		0.060	4035.288	31198.378	4337.765	5208.814	40060.488	86378.872	66667.874	7772.212
σ		0.05	43.54	457.98	81.22	162.30	162.60	697.60	314.96	151.70
%RSD		91.287	1.079	1.468	1.872	3.116	0.406	0.808	0.472	1.952

Run	Time	115In	137Ba	140Ce	156Ce O	206Pb	207Pb	208Pb	220Bkg	232Th
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	5.0%	5.0%	5.0%	-	5.0%	5.0%	5.0%	-	5.0%
	Countrate	>100	>100	>100	-	>100	>100	>100	-	>100
1	09:55:21 AM	180866.08	22725.483	206667.45	1300.051	8186.010	7449.665	17619.308	0.000	305871.20
2	09:55:55 AM	180682.10	22689.434	208018.09	1314.052	8081.959	7483.680	17699.393	0.000	306032.11
3	09:56:29 AM	182125.69	22949.790	207540.19	1314.052	7985.913	7453.666	17288.963	0.000	307486.51
4	09:57:03 AM	180591.12	23272.237	209366.83	1316.052	7985.913	7417.650	17479.161	0.000	308994.01
5	09:57:37 AM	181717.26	23061.945	209459.99	1344.054	7965.903	7237.571	17889.596	0.000	307523.18
x		181196.45	22939.778	208210.51	1317.652	8041.140	7408.446	17595.284	0.000	307181.40
σ		684.63	241.94	1200.59	16.09	92.76	98.34	226.58	0.00	1277.98
%RSD		0.378	1.055	0.577	1.221	1.154	1.327	1.288	0.000	0.416

Run	Time	238U
Dwell (mSecs)		0.0
Limits	%RSD	5.0%
	Countrate	>100
1	09:55:21 AM	335393.04
2	09:55:55 AM	336135.78
3	09:56:29 AM	335172.67
4	09:57:03 AM	336515.32
5	09:57:37 AM	336094.97
x		335862.36
σ		559.28
%RSD		0.167

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0200
1	09:55:21 AM	0.006
2	09:55:55 AM	0.006

3	09:56:29 AM	0.006
4	09:57:03 AM	0.006
5	09:57:37 AM	0.006
x		0.0063
σ		0.00
%RSD		0.8358

Result : The performance report passed.

Experiment Details

Description	PlasmaLab Template BlankExperiment
Template Filename	C:\Program Files\Thermo Fisher\PlasmaLab\TEMPLATES\6020A.tet
Created By User	user
Analyte Database	Default.tea
Creation Timestamp	8/29/2003 01:55:15 PM
Last Edited By	INORG-User
Last Edit Timestamp	10/19/2016 09:26:35 AM
Instrument Detector	Simultaneous
Database Version	3.51
Acquisition Mode	Unknown

Numerical Results report key (text indicates meaning)

Blue text indicates that cell is a statistic.
Underlining indicates that a data warning flag is set.

Column headings	Result cells	Data warning flags
No flag	Internal Standard	I - Invalid calibration
Semi Quant	Excluded	T - Tripped
Standard Addition	QC Warning	F - Interference correction failed
Multi Element	QC Failure	M - Result over max
	Transient TRA only:	V - Valley integration failed
	Peak Not Found	D - Different method used
	Manually Edited	
	Merged Peak	

Setup

Survey Scan Setup

Sweeps	10
Dwell Time	600
Channels Per Mass	10
Acquisition Duration	13247

Main Run Setup

Main Run	Peak Jumping
Sweeps	20
Dwell Time	10000
Channels Per Mass	1
Acquisition Duration	18211
Channel Spacing	0.02

Survey Scan Regions

Start AMU	End AMU	Channels	Dwell ms	Resolution

4.59	11.41	68	600	Standard
22.59	27.41	48	600	Standard
28.59	29.41	8	600	Standard
30.59	31.41	8	600	Standard
32.59	33.41	8	600	Standard
38.59	39.41	8	600	Standard
42.59	79.41	368	600	Standard
80.59	245.50	1649	600	Standard

Peak Jump Regions

Analyte	Channels	Dwell ms	Resolution
6Li	1	5000	Standard
7Li	1	5000	Standard
9Be	1	20000	Standard
11B	1	10000	Standard
23Na	1	5000	Standard
25Mg	1	5000	Standard
26Mg	1	5000	Standard
27Al	1	10000	Standard
39K	1	5000	Standard
43Ca	1	10000	Standard
44Ca	1	5000	Standard
45Sc	1	5000	Standard
47Ti	1	10000	Standard
51V	1	10000	Standard
52Cr	1	10000	Standard
53Cl O	1	10000	Standard
55Mn	1	10000	Standard
56Fe	1	10000	Standard
59Co	1	10000	Standard
60Ni	1	10000	Standard
65Cu	1	10000	Standard
66Zn	1	10000	Standard
75As	1	50000	Standard
77Ar Cl	1	50000	Standard
82Se	1	100000	Standard
83Kr	1	100000	Standard
84Kr	1	10000	Standard
88Sr	1	10000	Standard
89Y	1	5000	Standard
98Mo	1	10000	Standard
106Cd	1	10000	Standard
107Ag	1	10000	Standard
108Mo O	1	10000	Standard
111Cd	1	10000	Standard
115In	1	5000	Standard
118Sn	1	10000	Standard
121Sb	1	10000	Standard
123Sb	1	100000	Standard
135Ba	1	10000	Standard

159Tb	1	5000	Standard
182W	1	10000	Standard
205Tl	1	10000	Standard
206Pb	1	10000	Standard
207Pb	1	10000	Standard
208Pb	1	10000	Standard
209Bi	1	5000	Standard
220Bkg	1	10000	Standard
232Th	1	10000	Standard
238U	1	10000	Standard

Calibration Technique

Use External Drift Correction - No
Calibrate by - Isotope

Symbol	Interference Correction	RSF	Calibration Method	Line Fit	Weighting	Forcing	Use for Semi-Quant	Max Error	Minimum Correlation
6Li	Yes	1.00	None				No		
7Li	Yes	1.00	None				No		
9Be	Yes	0.75	Fully-Quantified	Linear	Absolute SD	None	Yes		
11B	Yes	0.58	Fully-Quantified	Linear	Absolute SD	None	Yes		
23Na	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
25Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
26Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
27Al	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
39K	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
43Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
44Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
45Sc	Yes	1.00	None				No		
47Ti	Yes	0.99	None				No		
51V	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
52Cr	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
55Mn	Yes	0.95	Fully-Quantified	Linear	Absolute SD	None	Yes		
56Fe	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
59Co	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
60Ni	No	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
65Cu	Yes	0.90	Fully-Quantified	Linear	Absolute SD	None	Yes		
66Zn	Yes	0.38	Fully-Quantified	Linear	Absolute SD	None	Yes		
75As	Yes	0.07	Fully-Quantified	Linear	Absolute SD	None	Yes		
82Se	Yes	0.10	Fully-Quantified	Linear	Absolute SD	None	Yes		
83Kr	Yes	0.01	None				No		
84Kr	Yes	0.01	None				No		
88Sr	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
89Y	Yes	0.98	None				No		
98Mo	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
107Ag	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
106Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
111Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
115In	Yes	0.99	None				No		
118Sn	Yes	0.96	None				No		

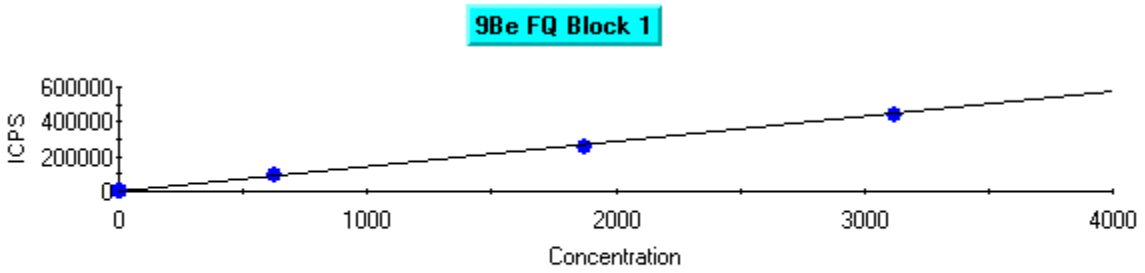
121Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
123Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
135Ba	Yes	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes
159Tb	Yes	0.99	None				No
182W	Yes	0.94	Fully-Quantified	Linear	Absolute SD	None	Yes
206Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
207Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
208Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	No
209Bi	Yes	0.92	None				No
232Th	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
238U	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
205Tl	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
220Bkg	Yes		Semi-Quantified				No
77Ar Cl	Yes		Semi-Quantified				No
53Cl O	Yes		Semi-Quantified				No
108Mo O	Yes		Semi-Quantified				No

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	STD0	Fully Quant Standard	1.000	0	1	2	144
2	STD1	Fully Quant Standard	1.000	0	1	3	144
3	STD2	Fully Quant Standard	1.000	0	1	4	144
4	STD3	Fully Quant Standard	1.000	0	1	5	144
5	STD4	Fully Quant Standard	1.000	1	1	1	144
6	STD5	Fully Quant Standard	1.000	1	1	2	144
7	ICV	QC Sample	1.000	0	1	6	144
8	ICVL	QC Sample	1.000	0	1	3	144
9	ICBIS	QC Sample	1.000	0	1	2	144
10	ICSA	QC Sample	1.000	1	1	3	144
11	ICSAB	QC Sample	1.000	1	1	4	144
12	CCV	QC Sample	1.000	0	1	5	144
13	CCB	QC Sample	1.000	0	1	2	144
14	MB 200-110229/1-A	Unknown	1.000	1	2	1	144
15	LCS 200-110229/2-A	Unknown	1.000	1	2	2	144
16	200-35680-A-7-B	Unknown	1.000	1	2	3	144
17	200-35680-A-14-D	Unknown	1.000	1	2	4	144
18	200-35736-A-1-A	Unknown	1.000	1	2	5	144
19	200-35736-A-2-A	Unknown	1.000	1	2	6	144
20	200-35736-A-3-A	Unknown	1.000	1	2	7	144
21	200-35736-A-4-A	Unknown	1.000	1	2	8	144
22	200-35736-A-5-A	Unknown	1.000	1	2	9	144
23	200-35736-A-5-A SD@5	Unknown	1.000	1	2	10	144
24	CCV	QC Sample	1.000	0	1	5	144
25	CCB	QC Sample	1.000	0	1	2	144
26	CCVL	QC Sample	1.000	0	1	3	144
27	200-35736-A-5-A PDS	Unknown	1.000	1	2	11	144
28	200-35736-A-5-I MS	Unknown	1.000	1	2	12	144
29	200-35736-A-5-J MSD	Unknown	1.000	1	3	1	144
30	200-35736-A-6-A	Unknown	1.000	1	3	2	144
31	200-35736-A-7-A	Unknown	1.000	1	3	3	144
32	200-35736-A-8-A	Unknown	1.000	1	3	4	144

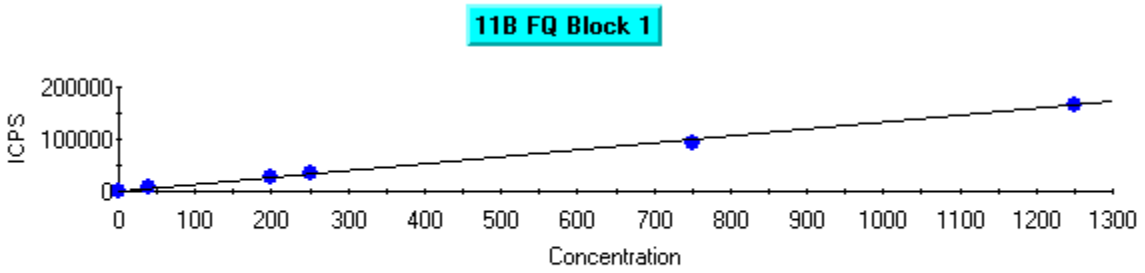
33	200-35736-A-9-A	Unknown	1.000	1	3	5	144
34	200-35736-A-10-A	Unknown	1.000	1	3	6	144
35	200-35736-A-11-A	Unknown	1.000	1	3	7	144
36	200-35736-A-11-A SD@5	Unknown	1.000	1	3	8	144
37	CCV	QC Sample	1.000	0	1	5	144
38	CCB	QC Sample	1.000	0	1	2	144
39	CCVL	QC Sample	1.000	0	1	3	144
40	200-35736-A-11-A PDS	Unknown	1.000	1	3	9	144
41	200-35736-A-11-I MS	Unknown	1.000	1	3	10	144
42	200-35736-A-11-J MSD	Unknown	1.000	1	3	11	144
43	200-35736-A-12-A	Unknown	1.000	1	3	12	144
44	MB 200-110239/1-A	Unknown	1.000	1	4	1	144
45	LCS 200-110239/2-A	Unknown	1.000	1	4	2	144
46	200-35680-A-13-A	Unknown	1.000	1	4	3	144
47	200-35700-A-19-A	Unknown	1.000	1	4	4	144
48	200-35736-A-14-A	Unknown	1.000	1	4	5	144
49	200-35736-A-14-A SD@5	Unknown	1.000	1	4	6	144
50	CCV	QC Sample	1.000	0	1	5	144
51	CCB	QC Sample	1.000	0	1	2	144
52	CCVL	QC Sample	1.000	0	1	3	144
53	CCVL	QC Sample	1.000	0	1	3	144
54	200-35736-A-14-A PDS	Unknown	1.000	1	4	7	144
55	200-35736-A-14-B MS	Unknown	1.000	1	4	8	144
56	200-35736-A-14-C MSD	Unknown	1.000	1	4	9	144
57	CCV	QC Sample	1.000	0	1	5	144
58	CCB	QC Sample	1.000	0	1	2	144
59	CCVL	QC Sample	1.000	0	1	3	144

Fully Quant Calibration



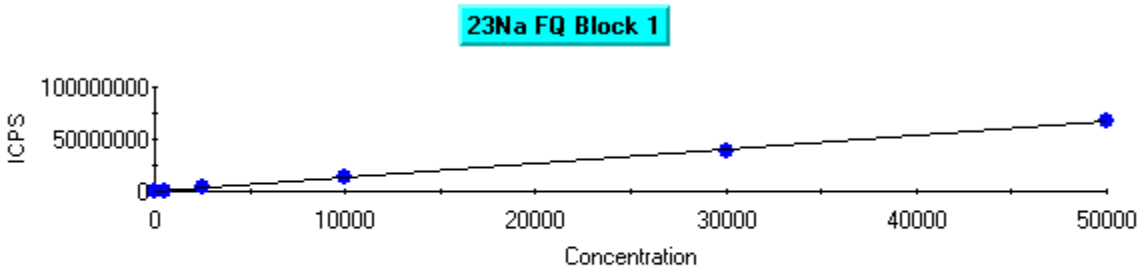
Intercept CPS=7.182359 Intercept Conc=0.050176
Sensitivity=143.142683 Correlation Coeff=0.999777

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.009	0.009	5.88	0.00
STD1	1.000	1.151	0.151	171.97	15.12
STD2	5.000	5.615	0.615	811.00	12.31
STD3	625.000	647.608	22.608	92707.57	3.62
STD4	1875.000	1781.392	93.608	255000.44	4.99
STD5	3125.000	3054.577	70.423	437247.57	2.25



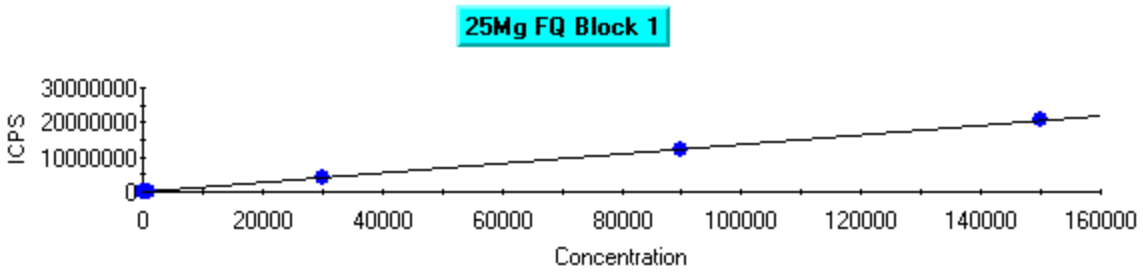
Intercept CPS=1241.290135 Intercept Conc=9.464432
Sensitivity=131.153159 Correlation Coeff=0.999587

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.076	0.076	1231.31	0.00
STD1	40.000	39.598	0.402	6434.64	1.01
STD2	200.000	200.199	0.199	27498.08	0.10
STD3	250.000	254.509	4.509	34620.97	1.80
STD4	750.000	708.624	41.376	94179.61	5.52
STD5	1250.000	1237.045	12.955	163483.66	1.04



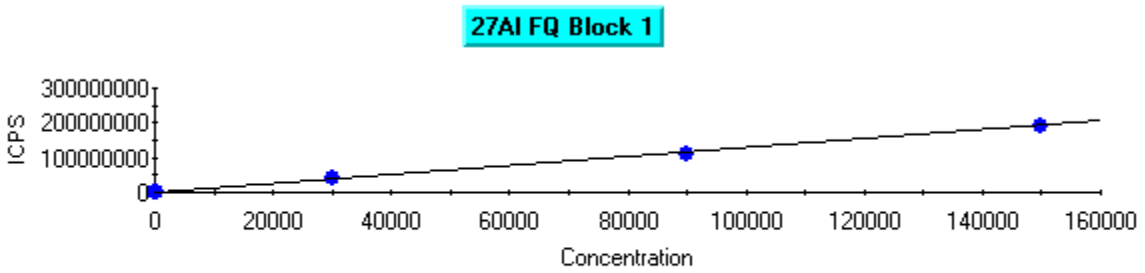
Intercept CPS=243715.829137 Intercept Conc=181.111879
Sensitivity=1345.664520 Correlation Coeff=0.999866

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-2.028	2.028	240987.09	0.00
STD1	500.000	506.126	6.126	924791.07	1.23
STD2	2500.000	2653.919	153.919	3815000.07	6.16
STD3	10000.000	10224.154	224.154	14001997.19	2.24
STD4	30000.000	28846.473	1153.527	39061391.63	3.85
STD5	50000.000	49184.844	815.156	66430015.08	1.63



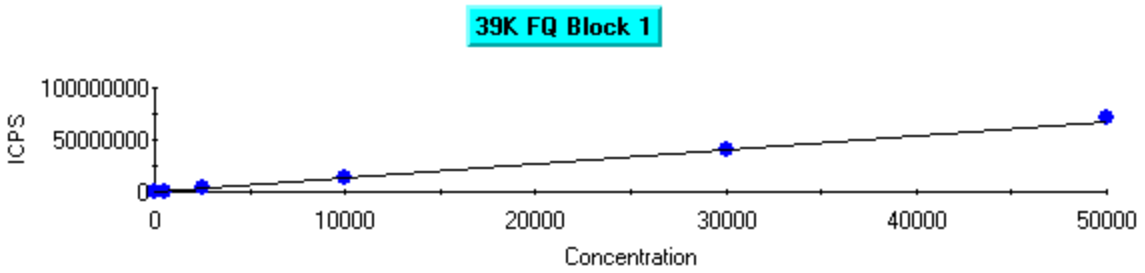
Intercept CPS=193.490143 Intercept Conc=1.401222
Sensitivity=138.086758 Correlation Coeff=0.999729

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	193.54	0.00
STD1	200.000	203.839	3.839	28340.96	1.92
STD2	1000.000	972.955	27.045	134545.71	2.70
STD3	30000.000	30651.629	651.629	4232777.56	2.17
STD4	90000.000	86604.797	3395.203	11959169.08	3.77
STD5	150000.000	150349.914	349.914	20761525.69	0.23



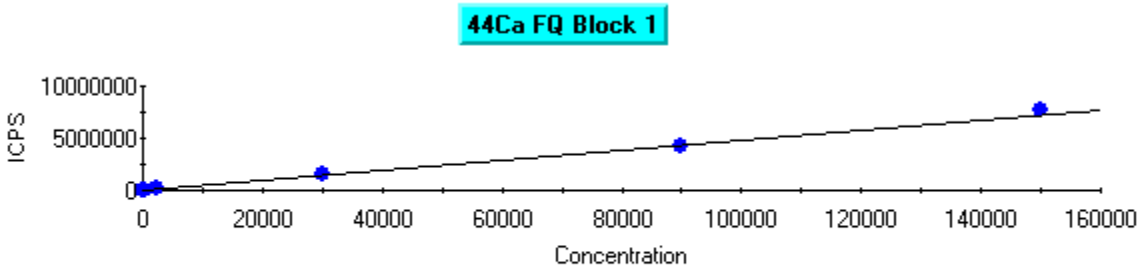
Intercept CPS=1307.442661 Intercept Conc=1.015458
Sensitivity=1287.540410 Correlation Coeff=0.999737

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.304	0.304	915.87	0.00
STD1	50.000	52.417	2.417	68796.59	4.83
STD2	250.000	237.631	12.369	307267.20	4.95
STD3	30000.000	30626.133	626.133	39433690.76	2.09
STD4	90000.000	86200.612	3799.388	110988078.84	4.22
STD5	150000.000	149468.935	531.065	192448600.70	0.35



Intercept CPS=47204.310921 Intercept Conc=34.784621
Sensitivity=1357.045434 Correlation Coeff=0.999293

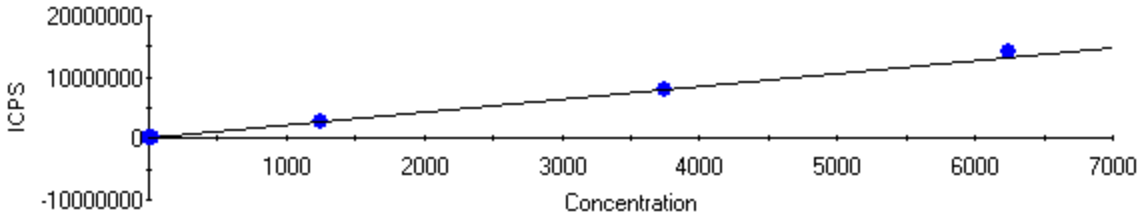
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.402	0.402	47749.41	0.00
STD1	500.000	485.015	14.985	705391.54	3.00
STD2	2500.000	2588.646	88.646	3560115.14	3.55
STD3	10000.000	10035.464	35.464	13665785.47	0.35
STD4	30000.000	29214.760	785.240	39692961.50	2.62
STD5	50000.000	52182.888	2182.888	70861753.92	4.37



Intercept CPS=339.385934 Intercept Conc=7.035441
Sensitivity=48.239465 Correlation Coeff=0.999237

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.050	0.050	337.00	0.00
STD1	500.000	514.410	14.410	25154.23	2.88
STD2	2500.000	2417.952	82.048	116980.08	3.28
STD3	30000.000	30320.497	320.497	1462983.96	1.07
STD4	90000.000	88907.253	1092.747	4289177.77	1.21
STD5	150000.000	159416.681	9416.681	7690514.89	6.28

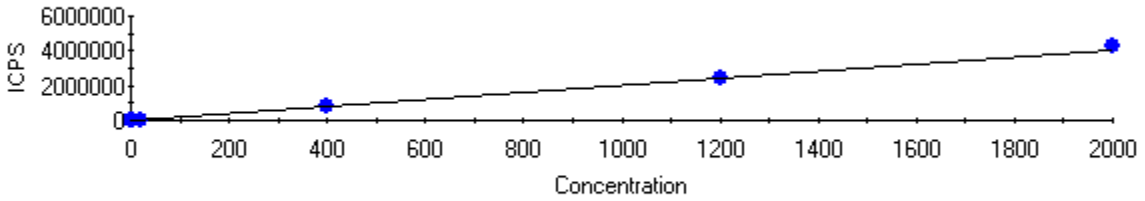
51V FQ Block 1



Intercept CPS=-1001.149747 Intercept Conc=-0.474535
Sensitivity=2109.749680 Correlation Coeff=0.999320

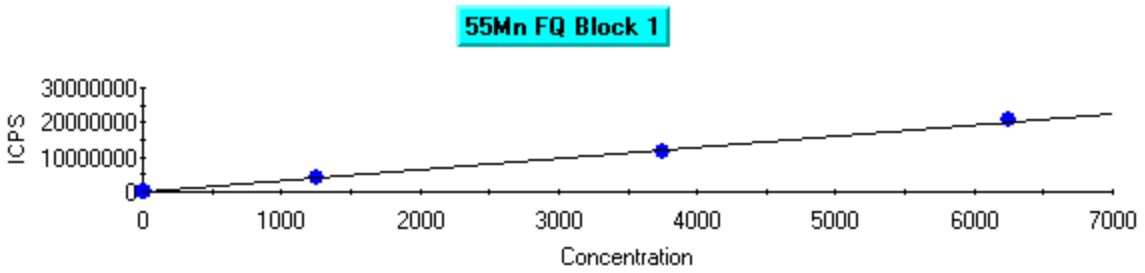
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.417	0.417	-122.33	0.00
STD1	5.000	5.492	0.492	10585.18	9.84
STD2	25.000	23.689	1.311	48977.46	5.24
STD3	1250.000	1280.213	30.213	2699928.32	2.42
STD4	3750.000	3712.885	37.115	7832257.60	0.99
STD5	6250.000	6631.329	381.329	13989442.85	6.10

52Cr FQ Block 1



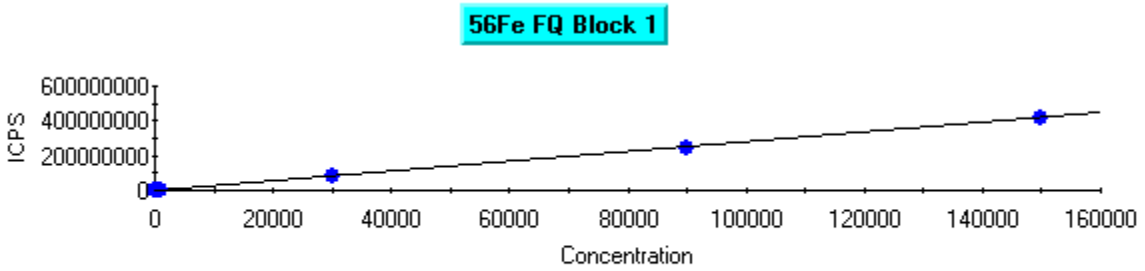
Intercept CPS=1757.571216 Intercept Conc=0.875087
Sensitivity=2008.453119 Correlation Coeff=0.999303

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.019	0.019	1719.96	0.00
STD1	4.000	4.071	0.071	9934.07	1.78
STD2	20.000	20.237	0.237	42401.97	1.18
STD3	400.000	386.689	13.311	778403.88	3.33
STD4	1200.000	1192.843	7.157	2397527.58	0.60
STD5	2000.000	2124.734	124.734	4269185.70	6.24



Intercept CPS=411.082180 Intercept Conc=0.126911
Sensitivity=3239.132564 Correlation Coeff=0.999472

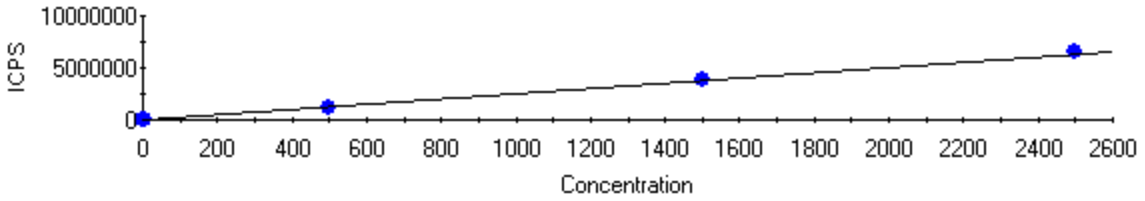
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.008	0.008	384.25	0.00
STD1	2.000	2.175	0.175	7454.64	8.73
STD2	10.000	9.659	0.341	31697.70	3.41
STD3	1250.000	1246.021	3.979	4036437.06	0.32
STD4	3750.000	3615.426	134.574	11711254.73	3.59
STD5	6250.000	6403.515	153.515	20742243.53	2.46



Intercept CPS=194744.856531 Intercept Conc=69.711525
Sensitivity=2793.581931 Correlation Coeff=0.999623

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.121	0.121	194407.84	0.00
STD1	200.000	195.562	4.438	741064.04	2.22
STD2	1000.000	1041.465	41.465	3104162.08	4.15
STD3	30000.000	29528.119	471.881	82683964.36	1.57
STD4	90000.000	85028.047	4971.953	237727559.60	5.52
STD5	150000.000	149092.866	907.134	416697880.32	0.60

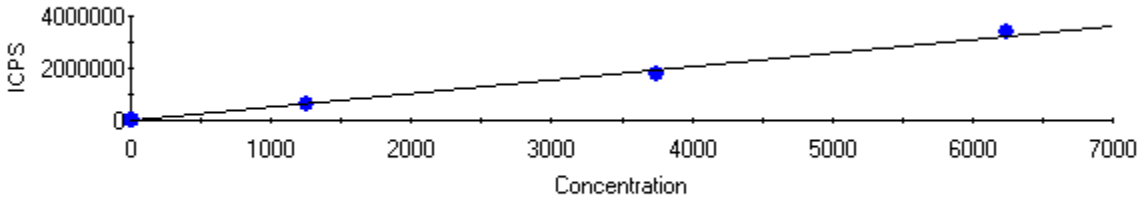
59Co FQ Block 1



Intercept CPS=42.660256 Intercept Conc=0.016787
Sensitivity=2541.298758 Correlation Coeff=0.999631

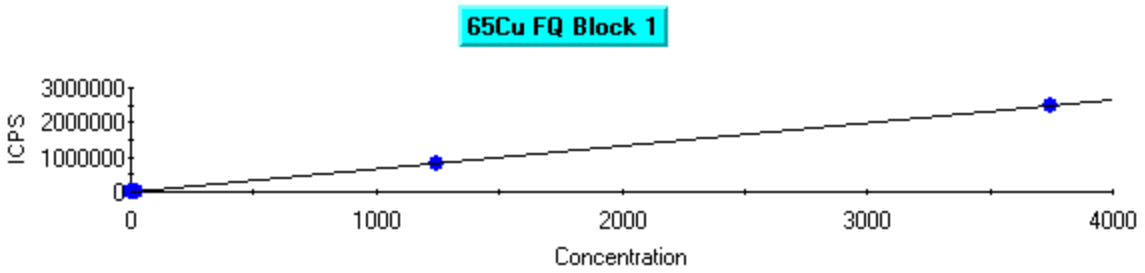
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	43.33	0.00
STD1	1.000	1.069	0.069	2758.63	6.87
STD2	5.000	4.963	0.037	12656.09	0.73
STD3	500.000	466.776	33.224	1186258.99	6.64
STD4	1500.000	1475.740	24.260	3750339.01	1.62
STD5	2500.000	2568.758	68.758	6528024.90	2.75

60Ni FQ Block 1



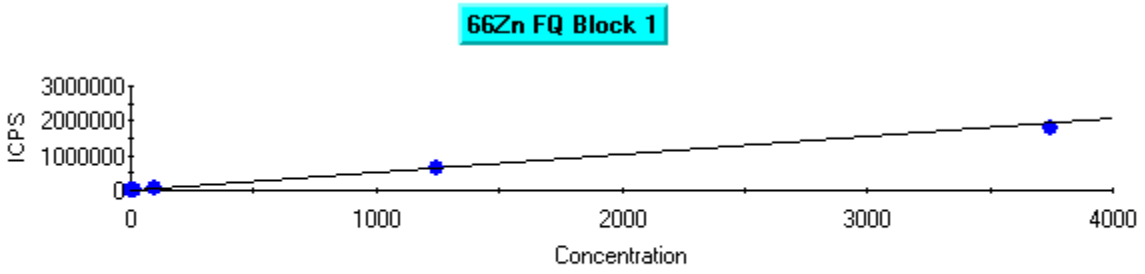
Intercept CPS=28.268916 Intercept Conc=0.055237
Sensitivity=511.777496 Correlation Coeff=0.997682

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.013	0.013	21.79	0.00
STD1	2.000	2.544	0.544	1330.22	27.20
STD2	10.000	10.811	0.811	5561.28	8.11
STD3	1250.000	1242.912	7.088	636122.77	0.57
STD4	3750.000	3463.085	286.915	1772357.40	7.65
STD5	6250.000	6574.968	324.968	3364948.71	5.20



Intercept CPS=230.560936 Intercept Conc=0.347200
Sensitivity=664.057459 Correlation Coeff=0.999960

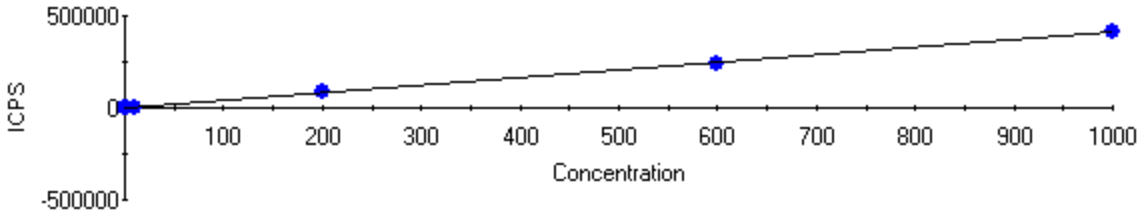
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.074	0.074	181.52	0.00
STD1	5.000	5.597	0.597	3947.19	11.94
STD2	25.000	24.595	0.405	16562.90	1.62
STD3	1250.000	1219.592	30.408	810109.52	2.43
STD4	3750.000	3756.770	6.770	2494941.49	0.18



Intercept CPS=757.552099 Intercept Conc=1.480050
Sensitivity=511.842399 Correlation Coeff=0.999463

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.344	0.344	581.52	0.00
STD1	20.000	21.976	1.976	12005.66	9.88
STD2	100.000	104.439	4.439	54213.94	4.44
STD3	1250.000	1270.030	20.030	650812.59	1.60
STD4	3750.000	3471.793	278.207	1777768.23	7.42

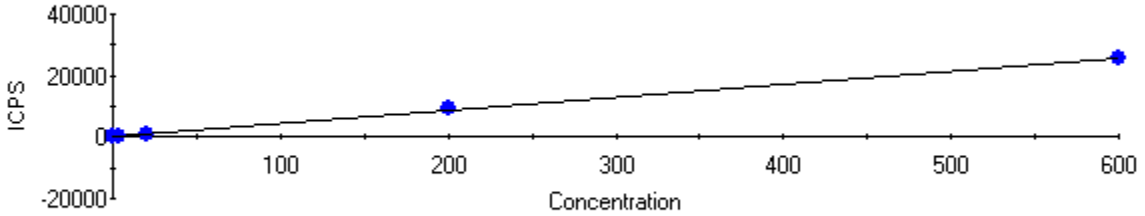
75As FQ Block 1



Intercept CPS=181.204690 Intercept Conc=0.436967
Sensitivity=414.687627 Correlation Coeff=0.999888

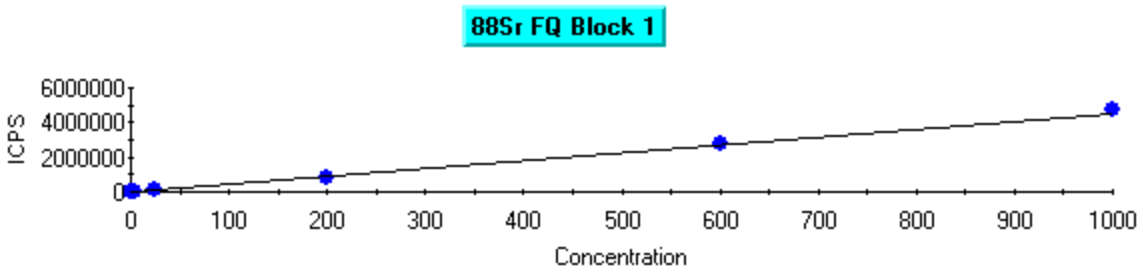
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.700	0.700	-109.22	0.00
STD1	2.000	1.624	0.376	854.70	18.80
STD2	10.000	10.135	0.135	4384.00	1.35
STD3	200.000	210.632	10.632	87527.80	5.32
STD4	600.000	589.155	10.845	244496.45	1.81
STD5	1000.000	995.854	4.146	413149.67	0.41

82Se FQ Block 1



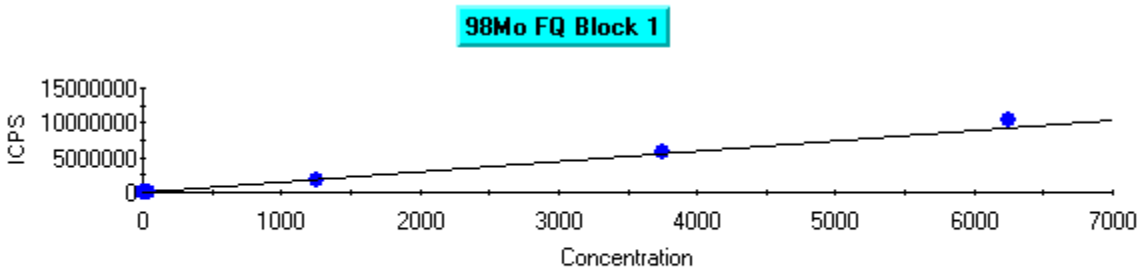
Intercept CPS=20.779464 Intercept Conc=0.482031
Sensitivity=43.108109 Correlation Coeff=0.999436

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.660	0.660	-7.68	0.00
STD1	4.000	3.611	0.389	176.44	9.72
STD2	20.000	21.261	1.261	937.31	6.31
STD3	200.000	217.775	17.775	9408.66	8.89
STD4	600.000	595.467	4.533	25690.25	0.76



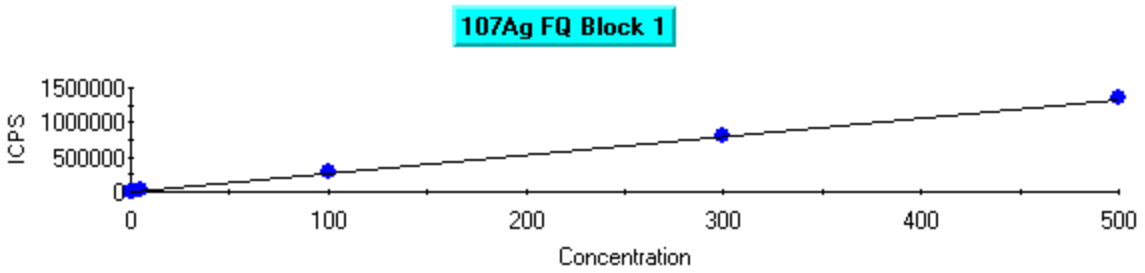
Intercept CPS=26.611526 Intercept Conc=0.005960
Sensitivity=4465.003728 Correlation Coeff=0.999640

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	26.68	0.00
STD1	5.000	4.974	0.026	22235.69	0.52
STD2	25.000	24.107	0.893	107665.87	3.57
STD3	200.000	192.233	7.767	858346.71	3.88
STD4	600.000	609.611	9.611	2721943.91	1.60
STD5	1000.000	1060.385	60.385	4734650.33	6.04



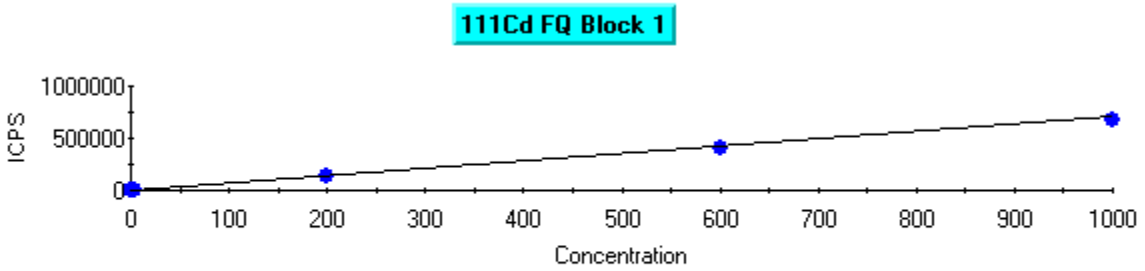
Intercept CPS=951.929259 Intercept Conc=0.642644
Sensitivity=1481.270309 Correlation Coeff=0.998762

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.369	0.369	1499.00	0.00
STD1	10.000	9.567	0.433	15123.19	4.33
STD2	50.000	48.574	1.426	72902.97	2.85
STD3	1250.000	1207.732	42.268	1789929.75	3.38
STD4	3750.000	3883.684	133.684	5753737.98	3.56
STD5	6250.000	7053.487	803.487	10449072.47	12.86



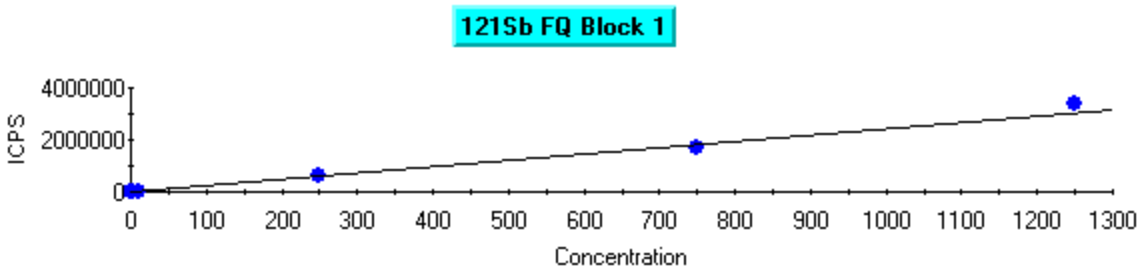
Intercept CPS=22.523318 Intercept Conc=0.008411
Sensitivity=2677.892722 Correlation Coeff=0.999838

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.002	0.002	16.69	0.00
STD1	1.000	1.079	0.079	2911.91	7.90
STD2	5.000	5.530	0.530	14831.36	10.60
STD3	100.000	107.408	7.408	287650.55	7.41
STD4	300.000	298.550	1.450	799507.41	0.48
STD5	500.000	509.205	9.205	1363618.15	1.84



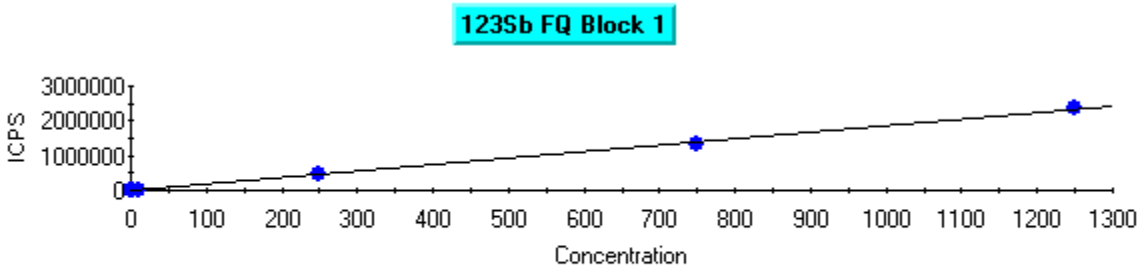
Intercept CPS=48.351116 Intercept Conc=0.068800
Sensitivity=702.780392 Correlation Coeff=0.999771

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.003	0.003	46.08	0.00
STD1	1.000	1.069	0.069	799.41	6.87
STD2	5.000	5.222	0.222	3718.43	4.44
STD3	200.000	202.124	2.124	142097.07	1.06
STD4	600.000	561.153	38.847	394415.99	6.47
STD5	1000.000	966.280	33.720	679131.26	3.37



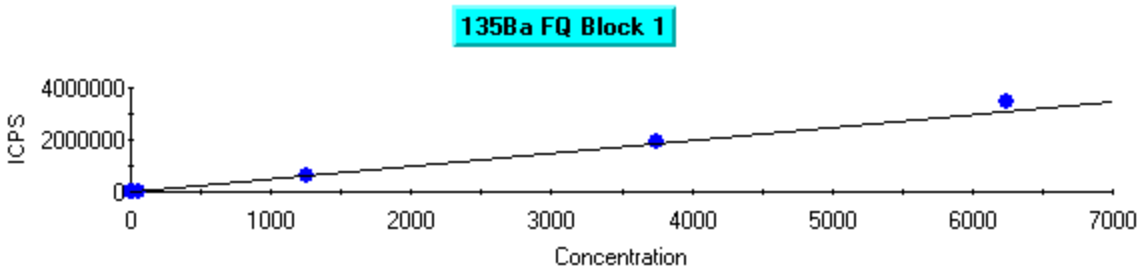
Intercept CPS=1169.196924 Intercept Conc=0.487907
Sensitivity=2396.353240 Correlation Coeff=0.996452

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.146	0.146	1518.22	0.00
STD1	2.000	1.764	0.236	5397.05	11.79
STD2	10.000	9.733	0.267	24493.00	2.67
STD3	250.000	249.475	0.525	598998.88	0.21
STD4	750.000	712.684	37.316	1709011.07	4.98
STD5	1250.000	1397.412	147.412	3349861.31	11.79



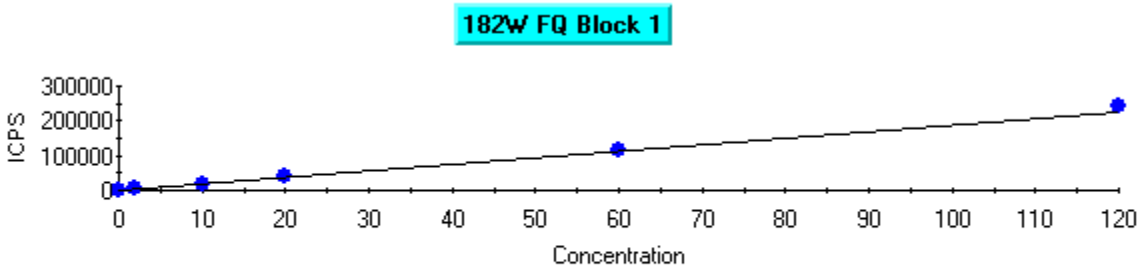
Intercept CPS=933.313984 Intercept Conc=0.497619
Sensitivity=1875.560320 Correlation Coeff=0.999567

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.116	0.116	1151.52	0.00
STD1	2.000	1.818	0.182	4343.49	9.09
STD2	10.000	9.759	0.241	19237.47	2.41
STD3	250.000	250.354	0.354	470486.45	0.14
STD4	750.000	716.846	33.154	1345420.47	4.42
STD5	1250.000	1261.607	11.607	2367153.96	0.93



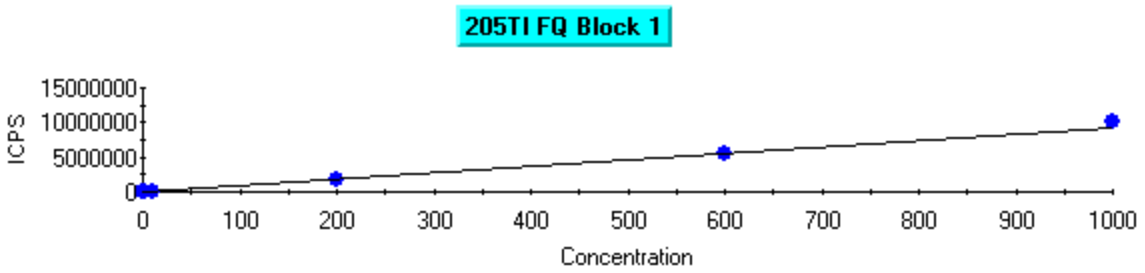
Intercept CPS=16.793678 Intercept Conc=0.033781
Sensitivity=497.139528 Correlation Coeff=0.999198

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	16.67	0.00
STD1	10.000	10.178	0.178	5076.77	1.78
STD2	50.000	47.743	2.257	23751.56	4.51
STD3	1250.000	1216.452	33.548	604763.08	2.68
STD4	3750.000	3944.259	194.259	1960863.92	5.18
STD5	6250.000	7016.928	766.928	3488408.83	12.27



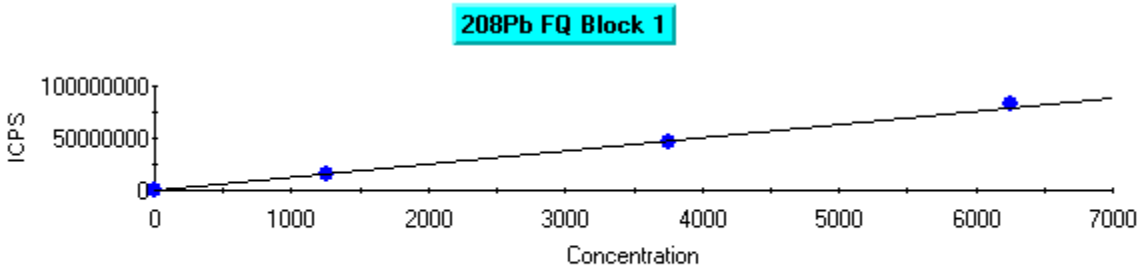
Intercept CPS=91.638542 Intercept Conc=0.049386
Sensitivity=1855.574049 Correlation Coeff=0.999426

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.089	0.089	257.22	0.00
STD1	2.000	1.681	0.319	3211.36	15.94
STD2	10.000	8.418	1.582	15712.39	15.82
STD3	20.000	20.840	0.840	38761.77	4.20
STD4	60.000	60.924	0.924	113141.12	1.54
STD5	120.000	130.515	10.515	242272.30	8.76



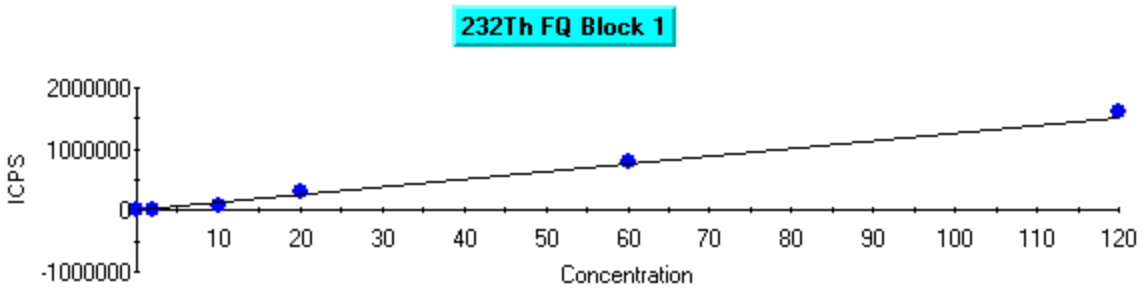
Intercept CPS=633.350024 Intercept Conc=0.067729
Sensitivity=9351.228370 Correlation Coeff=0.998836

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.189	0.189	2399.82	0.00
STD1	2.000	1.916	0.084	18550.13	4.20
STD2	10.000	8.960	1.040	84417.44	10.40
STD3	200.000	180.946	19.054	1692703.45	9.53
STD4	600.000	597.974	2.026	5592423.41	0.34
STD5	1000.000	1078.309	78.309	10084144.32	7.83



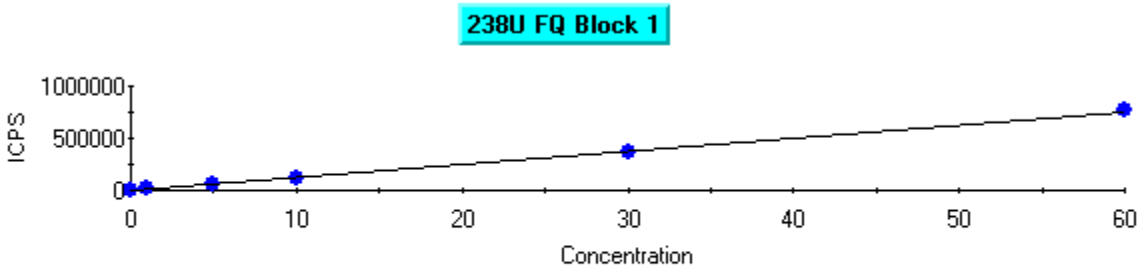
Intercept CPS=1814.161826 Intercept Conc=0.142091
Sensitivity=12767.604251 Correlation Coeff=0.999425

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.062	0.062	1020.47	0.00
STD1	1.000	1.078	0.078	15580.98	7.83
STD2	5.000	4.579	0.421	60276.50	8.42
STD3	1250.000	1260.723	10.723	16098227.34	0.86
STD4	3750.000	3671.551	78.449	46878721.52	2.09
STD5	6250.000	6520.749	270.749	83256158.66	4.33



Intercept CPS=-5155.352780 Intercept Conc=-0.409539
Sensitivity=12588.197027 Correlation Coeff=0.998465

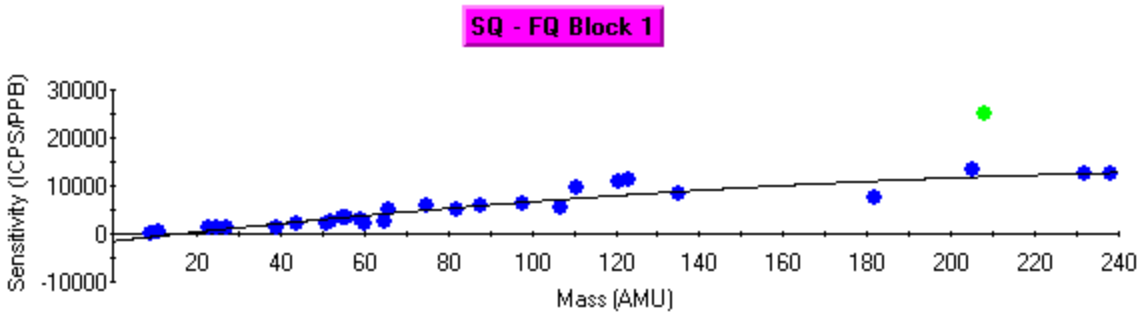
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.772	0.772	4566.81	0.00
STD1	2.000	1.470	0.530	13347.26	26.51
STD2	10.000	5.521	4.479	64348.77	44.79
STD3	20.000	24.639	4.639	305003.19	23.19
STD4	60.000	62.564	2.564	782406.54	4.27
STD5	120.000	129.173	9.173	1620904.57	7.64



Intercept CPS=59.650921 Intercept Conc=0.004782
Sensitivity=12473.673133 Correlation Coeff=0.999418

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.002	0.002	31.91	0.00
STD1	1.000	1.034	0.034	12953.09	3.37
STD2	5.000	5.128	0.128	64021.16	2.55
STD3	10.000	9.809	0.191	122419.49	1.91
STD4	30.000	28.877	1.123	360260.54	3.74
STD5	60.000	61.975	1.975	773119.53	3.29

Semi Quant Calibration



Coeff 0=-1506.109315 Coeff 1=98.445948 Coeff 2=-0.162720

Symbol	Mass	RSF	Available	Excluded	Sensitivity Measured	Corrected	Calculated	%Error
9Be	9.01	0.7500	1	1	143.14	190.86	-632.11	-431.2
11B	11.01	0.5800	1	1	131.15	279.10	-442.01	-258.4
23Na	22.99	1.0000	1	1	1345.66	1345.66	671.14	-50.1
25Mg	24.99	0.9800	1	1	138.09	1393.72	852.06	-38.9
27Al	26.98	0.9800	1	1	1287.54	1313.82	1031.65	-21.5
39K	38.96	1.0000	1	1	1357.05	1457.93	2082.67	42.9
44Ca	43.96	0.9900	1	1	48.24	2287.64	2506.75	9.6
51V	50.94	0.9900	1	1	2109.75	2136.19	3086.81	44.5
52Cr	51.94	0.9800	1	1	2008.45	2446.80	3168.23	29.5
55Mn	54.94	0.9500	1	1	3239.13	3409.61	3411.20	0.0
56Fe	55.93	0.9600	1	1	2793.58	3179.61	3491.35	9.8
59Co	58.93	0.9300	1	1	2541.30	2732.58	3730.48	36.5
60Ni	59.93	0.9100	1	1	511.78	2149.82	3809.39	77.2
65Cu	64.93	0.9000	1	1	664.06	2387.06	4199.80	75.9
66Zn	65.93	0.3750	1	1	511.84	4907.99	4276.82	-12.9
75As	74.92	0.0700	1	1	414.69	5924.11	4956.23	-16.3
82Se	81.92	0.1000	1	1	43.11	4876.48	5466.35	12.1
88Sr	87.91	0.9600	1	1	4465.00	5633.53	5890.44	4.6
98Mo	97.91	0.9800	1	1	1481.27	6297.92	6572.54	4.4
107Ag	106.91	0.9300	1	1	2677.89	5607.51	7158.59	27.7
111Cd	110.90	0.5660	1	1	702.78	9655.22	7410.55	-23.2
121Sb	120.90	0.3900	1	1	2396.35	10732.74	8017.79	-25.3
123Sb	122.90	0.3900	1	1	1875.56	11249.42	8135.36	-27.7
135Ba	134.91	0.9100	1	1	497.14	8289.94	8813.38	6.3
182W	181.95	0.9400	1	1	1855.57	7502.91	11019.09	46.9
205Tl	204.97	1.0000	1	1	9351.23	13264.15	11836.12	-10.8
208Pb	207.98	0.9700	0	1	12767.60	25128.83	11930.02	-52.5
232Th	232.04	1.0000	1	1	12588.20	12588.20	12576.00	-0.1
238U	238.05	1.0000	1	1	12473.67	12564.13	12707.99	1.1

Dilution Corrected Concentrations

STD0 10/18/2016 12:40:20 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:40:42	98.553%	0.003	0.710	-2.767	0.153	-0.499	1.392	-0.043	97.833%	0.000	-0.031	0.026
2	12:41:04	98.850%	0.003	-1.172	2.126	-0.093	-0.462	0.162	0.660	99.668%	0.000	0.505	-0.011
3	12:41:25	102.597%	-0.033	0.234	-5.442	-0.059	0.049	-0.349	-0.766	102.499%	0.000	0.775	-0.071
x		100.000%	-0.009	-0.076	-2.028	0.000	-0.304	0.402	-0.050	100.000%	0.000	0.417	-0.019
σ		2.254%	0.021	0.979	3.838	0.134	0.307	0.894	0.713	2.350%	0.000	0.410	0.049
%RSD		2.254	228.500	1285.000	189.300	36500.000	100.800	222.700	1440.000	2.350	0.000	98.490	261.200

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:40:42	12.300	-0.018	1.383	-0.003	0.005	-0.084	-0.436	-1.330	0.439	-1.141	0.000	0.000
2	12:41:04	11.880	-0.017	-0.985	0.005	-0.016	-0.120	-0.368	-0.417	0.350	-0.191	0.000	0.000
3	12:41:25	11.440	0.010	-0.761	-0.001	-0.027	-0.018	-0.228	-0.354	0.341	-0.648	0.000	0.000
x		11.870	-0.008	-0.121	0.000	-0.013	-0.074	-0.344	-0.700	0.376	-0.660	0.000	0.000
σ		0.429	0.016	1.307	0.004	0.016	0.052	0.106	0.546	0.054	0.475	0.000	0.000
%RSD		3.610	192.700	1084.000	1557.000	125.800	69.900	30.910	77.950	14.360	72.010	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:40:42	-0.000	98.845%	0.560	-0.007	-0.942	0.010	100.116%	0.000	0.158	0.120	-0.014	98.341%
2	12:41:04	0.001	99.783%	0.355	0.001	-0.543	-0.013	99.271%	0.000	0.105	0.133	0.007	101.683%
3	12:41:25	-0.000	101.372%	0.193	-0.001	-0.736	-0.006	100.613%	0.000	0.174	0.096	0.006	99.976%
x		0.000	100.000%	0.369	-0.002	-0.740	-0.003	100.000%	0.000	0.146	0.116	-0.000	100.000%
σ		0.001	1.278%	0.184	0.004	0.200	0.012	0.679%	0.000	0.036	0.019	0.012	1.671%
%RSD		4499.000	1.278	49.700	179.300	26.960	362.700	0.679	0.000	24.820	16.170	4725.000	1.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:40:42	0.121	0.227	-0.075	98.272%	0.000	0.786	0.000
2	12:41:04	0.067	0.176	-0.067	101.051%	0.000	0.787	-0.003
3	12:41:25	0.080	0.164	-0.044	100.677%	0.000	0.744	-0.004
x		0.089	0.189	-0.062	100.000%	0.000	0.772	-0.002
σ		0.028	0.033	0.016	1.508%	0.000	0.025	0.002
%RSD		31.180	17.610	25.390	1.508	0.000	3.205	94.820

STD1 10/18/2016 12:44:20 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:42	105.148%	1.295	40.440	498.500	210.800	52.500	485.100	510.100	103.950%	0.000	5.307	4.218
2	12:45:04	105.840%	1.022	37.770	T 529.300	200.800	51.620	479.600	525.200	105.981%	0.000	5.700	4.017
3	12:45:25	103.070%	1.136	40.590	490.600	199.900	53.130	490.300	507.900	104.061%	0.000	5.469	3.978
x		104.686%	1.151	39.600	T 506.100	203.800	52.420	485.000	514.400	104.664%	0.000	5.492	4.071
σ		1.442%	0.137	1.587	T 20.440	6.036	0.759	5.314	9.438	1.142%	0.000	0.197	0.129

%RSD		1.377	11.900	4.009	T 4.039	2.961	1.448	1.096	1.835	1.091	0.000	3.593	3.164
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:44:42	13.030	2.134	198.200	1.111	2.670	5.440	21.850	1.891	0.354	4.081	0.000	0.000
2	12:45:04	12.870	2.149	190.600	1.151	2.388	5.722	22.280	1.757	0.384	3.458	0.000	0.000
3	12:45:25	13.090	2.241	197.900	0.944	2.574	5.628	21.800	1.224	0.419	3.294	0.000	0.000
x		13.000	2.175	195.600	1.069	2.544	5.597	21.980	1.624	0.386	3.611	0.000	0.000
σ		0.119	0.058	4.330	0.110	0.144	0.143	0.268	0.353	0.032	0.415	0.000	0.000
%RSD		0.912	2.676	2.214	10.290	5.648	2.560	1.218	21.740	8.317	11.500	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:44:42	4.986	104.679%	9.387	1.031	-1.246	1.000	102.268%	0.000	1.708	1.795	9.969	101.335%
2	12:45:04	5.008	103.265%	9.485	1.129	-0.472	1.194	102.615%	0.000	1.796	1.817	10.280	102.050%
3	12:45:25	4.928	105.370%	9.828	1.077	-1.302	1.012	102.831%	0.000	1.789	1.843	10.290	102.249%
x		4.974	104.438%	9.567	1.079	-1.007	1.069	102.571%	0.000	1.764	1.818	10.180	101.878%
σ		0.041	1.073%	0.231	0.049	0.464	0.109	0.284%	0.000	0.048	0.024	0.181	0.481%
%RSD		0.824	1.027	2.419	4.561	46.100	10.190	0.277	0.000	2.747	1.324	1.777	0.472

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:44:42	1.647	1.889	1.097	98.630%	0.000	1.451	1.041
2	12:45:04	1.577	1.932	1.070	100.043%	0.000	1.491	1.036
3	12:45:25	1.819	1.927	1.067	100.848%	0.000	1.467	1.025
x		1.681	1.916	1.078	99.840%	0.000	1.470	1.034
σ		0.125	0.024	0.017	1.123%	0.000	0.021	0.008
%RSD		7.406	1.239	1.542	1.125	0.000	1.399	0.786

STD2 10/18/2016 12:47:26 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:47:47	98.735%	5.610	191.700	T 2687.000	983.500	238.200	T 2621.000	2394.000	97.801%	0.000	23.530	20.290
2	12:48:09	96.124%	5.837	207.000	T 2615.000	956.600	233.800	T 2513.000	2402.000	98.569%	0.000	24.030	19.970
3	12:48:31	98.394%	5.399	202.000	T 2660.000	978.700	240.900	T 2632.000	2458.000	97.111%	0.000	23.510	20.450
x		97.751%	5.615	200.200	T 2654.000	973.000	237.600	T 2589.000	2418.000	97.827%	0.000	23.690	20.240
σ		1.419%	0.219	7.806	T 36.170	14.330	3.581	T 65.540	35.310	0.729%	0.000	0.293	0.242
%RSD		1.452	3.897	3.899	T 1.363	1.473	1.507	T 2.532	1.460	0.745	0.000	1.239	1.196
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:47:47	12.720	9.750	T 1039.000	4.918	10.790	25.250	105.200	10.070	0.311	21.830	0.000	0.000
2	12:48:09	11.750	9.505	T 1031.000	5.001	11.010	24.250	103.000	10.350	0.238	20.680	0.000	0.000
3	12:48:31	12.210	9.721	T 1054.000	4.971	10.640	24.280	105.100	9.992	0.289	21.270	0.000	0.000
x		12.230	9.659	T 1041.000	4.963	10.810	24.590	104.400	10.130	0.279	21.260	0.000	0.000
σ		0.486	0.134	T 11.540	0.042	0.185	0.569	1.237	0.186	0.038	0.576	0.000	0.000
%RSD		3.974	1.386	T 1.108	0.851	1.712	2.314	1.184	1.835	13.460	2.711	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	12:47:47	24.050	98.764%	48.230	5.499	-0.567	5.071	97.995%	0.000	9.792	9.879	48.590	97.781%
2	12:48:09	23.910	97.936%	49.380	5.638	-1.000	5.370	98.183%	0.000	9.855	9.698	46.700	97.543%
3	12:48:31	24.370	99.405%	48.110	5.453	0.144	5.226	98.978%	0.000	9.553	9.701	47.940	98.592%
x		24.110	98.702%	48.570	5.530	-0.474	5.222	98.385%	0.000	9.733	9.759	47.740	97.972%
σ		0.236	0.736%	0.701	0.096	0.578	0.149	0.522%	0.000	0.159	0.104	0.960	0.550%
%RSD		0.981	0.746	1.442	1.745	121.900	2.858	0.530	0.000	1.638	1.065	2.010	0.562

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:47:47	8.550	8.704	4.467	97.102%	0.000	5.271	5.030
2	12:48:09	8.308	9.090	4.691	96.258%	0.000	5.504	5.166
3	12:48:31	8.397	9.085	4.578	97.671%	0.000	5.789	5.187
x		8.418	8.960	4.579	97.010%	0.000	5.521	5.128
σ		0.122	0.221	0.112	0.711%	0.000	0.260	0.085
%RSD		1.452	2.471	2.448	0.733	0.000	4.701	1.657

STD3 10/18/2016 12:50:40 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:51:01	100.176%	636.000	251.100	T 10280.000	T 30500.000	T 30380.000	T 10000.000	T 29870.000	99.915%	0.000	T 1265.000	382.100
2	12:51:23	96.617%	652.800	254.000	T 10100.000	T 30450.000	T 30400.000	T 9977.000	T 30240.000	99.714%	0.000	T 1274.000	386.100
3	12:51:45	95.925%	654.000	258.400	T 10290.000	T 31010.000	T 31090.000	T 10130.000	T 30850.000	97.586%	0.000	T 1302.000	391.900
x		97.573%	647.600	254.500	T 10220.000	T 30650.000	T 30630.000	T 10040.000	T 30320.000	99.072%	0.000	T 1280.000	386.700
σ		2.281%	10.070	3.668	T 111.200	T 307.200	T 405.300	T 78.860	T 493.600	1.290%	0.000	T 19.300	4.909
%RSD		2.338	1.555	1.441	T 1.088	T 1.002	T 1.324	T 0.786	T 1.628	1.302	0.000	T 1.508	1.269

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:51:01	14.720	T 1235.000	T 29140.000	463.500	1241.000	1238.000	1271.000	211.400	-0.580	218.800	0.000	0.000
2	12:51:23	17.410	T 1236.000	T 29380.000	463.700	1233.000	1205.000	1261.000	208.200	-0.356	214.600	0.000	0.000
3	12:51:45	19.010	T 1267.000	T 30060.000	473.100	1255.000	1216.000	1278.000	212.300	-0.627	219.900	0.000	0.000
x		17.050	T 1246.000	T 29530.000	466.800	1243.000	1220.000	1270.000	210.600	-0.521	217.800	0.000	0.000
σ		2.169	T 17.770	T 476.400	5.484	11.260	16.870	8.836	2.185	0.145	2.817	0.000	0.000
%RSD		12.720	T 1.426	T 1.613	1.175	0.906	1.383	0.696	1.037	27.820	1.294	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:51:01	192.300	97.745%	1156.000	107.700	6.732	202.100	95.491%	0.000	248.500	250.500	1219.000	97.549%
2	12:51:23	190.300	96.585%	1234.000	107.100	3.594	201.700	96.470%	0.000	250.500	250.100	1219.000	98.933%
3	12:51:45	194.100	97.861%	1233.000	107.500	-4.265	202.500	96.351%	0.000	249.400	250.400	1211.000	97.517%
x		192.200	97.397%	1208.000	107.400	2.021	202.100	96.104%	0.000	249.500	250.400	1216.000	98.000%
σ		1.923	0.706%	44.430	0.296	5.665	0.438	0.534%	0.000	1.008	0.198	4.402	0.809%
%RSD		1.000	0.725	3.679	0.276	280.400	0.217	0.556	0.000	0.404	0.079	0.362	0.825

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:51:01	20.280	175.200	T 1234.000	97.898%	0.000	24.130	9.640
2	12:51:23	20.680	182.700	T 1267.000	95.502%	0.000	24.930	9.735
3	12:51:45	21.560	185.000	T 1280.000	95.047%	0.000	24.860	10.050

x		20.840	180.900	ᵀ1261.000	96.149%	0.000	24.640	9.809
σ		0.657	5.127	ᵀ23.670	1.532%	0.000	0.443	0.217
%RSD		3.151	2.833	ᵀ1.878	1.593	0.000	1.797	2.208

STD4 10/18/2016 12:54:09 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:54:31	103.595%	1759.000	697.800	ᵀ28650.000	ᵀ85510.000	ᵀ84660.000	ᵀ28870.000	ᵀ88230.000	104.015%	0.000	ᵀ3647.000	ᵀ1170.000
2	12:54:53	101.499%	1769.000	695.000	ᵀ28600.000	ᵀ85780.000	ᵀ85190.000	ᵀ28790.000	ᵀ87980.000	104.588%	0.000	ᵀ3678.000	ᵀ1197.000
3	12:55:15	100.407%	1816.000	733.100	ᵀ29290.000	ᵀ88520.000	ᵀ88750.000	ᵀ29980.000	ᵀ90510.000	102.420%	0.000	ᵀ3814.000	ᵀ1212.000
x		101.834%	1781.000	708.600	ᵀ28850.000	ᵀ86600.000	ᵀ86200.000	ᵀ29210.000	ᵀ88910.000	103.674%	0.000	ᵀ3713.000	ᵀ1193.000
σ		1.620%	30.570	21.210	ᵀ385.400	ᵀ1666.000	ᵀ2227.000	ᵀ660.400	ᵀ1396.000	1.123%	0.000	ᵀ88.780	ᵀ21.200
%RSD		1.591	1.716	2.993	ᵀ1.336	ᵀ1.924	ᵀ2.584	ᵀ2.260	ᵀ1.570	1.083	0.000	ᵀ2.391	ᵀ1.778

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:54:31	-1.261	ᵀ3531.000	ᵀ83790.000	ᵀ1448.000	3424.000	ᵀᴹ3795.000	3504.000	593.400	-2.037	598.100	0.000	0.000
2	12:54:53	-7.695	ᵀ3618.000	ᵀ84250.000	ᵀ1471.000	3445.000	ᵀᴹ3752.000	3444.000	585.700	-2.267	594.000	0.000	0.000
3	12:55:15	-3.529	ᵀ3697.000	ᵀ87040.000	ᵀ1508.000	3520.000	ᵀ3723.000	3468.000	588.300	-2.193	594.300	0.000	0.000
x		-4.161	ᵀ3615.000	ᵀ85030.000	ᵀ1476.000	3463.000	ᵀᴹ3757.000	3472.000	589.200	-2.166	595.500	0.000	0.000
σ		3.263	ᵀ83.370	ᵀ1758.000	ᵀ30.120	50.190	ᵀᴹ36.060	29.960	3.938	0.117	2.298	0.000	0.000
%RSD		78.420	ᵀ2.306	ᵀ2.068	ᵀ2.041	1.449	ᵀᴹ0.960	0.863	0.668	5.425	0.386	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:54:31	ᵀ606.100	99.031%	ᵀ3805.000	298.700	18.800	557.100	97.588%	ᵀ0.000	711.400	719.700	ᵀ3965.000	100.942%
2	12:54:53	ᵀ609.100	100.848%	ᵀ3889.000	298.300	41.380	561.900	100.178%	ᵀ0.000	707.700	712.100	ᵀ3925.000	101.773%
3	12:55:15	ᵀ613.700	100.434%	ᵀ3957.000	298.600	30.080	564.500	100.133%	ᵀ0.000	718.900	718.800	ᵀ3942.000	101.915%
x		ᵀ609.600	100.104%	ᵀ3884.000	298.600	30.080	561.200	99.300%	ᵀ0.000	712.700	716.800	ᵀ3944.000	101.543%
σ		ᵀ3.819	0.952%	ᵀ75.930	0.206	11.290	3.774	1.482%	ᵀ0.000	5.722	4.146	ᵀ20.070	0.525%
%RSD		ᵀ0.626	0.951	ᵀ1.955	0.069	37.530	0.673	1.493	ᵀ0.000	0.803	0.578	ᵀ0.509	0.517

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:54:31	59.540	ᵀ596.300	ᵀ3692.000	97.257%	0.000	62.720	29.100
2	12:54:53	61.620	ᵀ600.000	ᵀ3674.000	99.117%	0.000	62.760	28.820
3	12:55:15	61.610	ᵀ597.600	ᵀ3649.000	99.889%	0.000	62.210	28.710
x		60.920	ᵀ598.000	ᵀ3672.000	98.754%	0.000	62.560	28.880
σ		1.195	ᵀ1.902	ᵀ21.690	1.353%	0.000	0.305	0.199
%RSD		1.961	ᵀ0.318	ᵀ0.591	1.370	0.000	0.488	0.691

STD5 10/18/2016 12:57:15 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:57:36	103.127%	2958.000	1194.000	T 49350.000	TM 150100.000	T 147100.000	TM 51480.000	TM 155000.000	105.219%	0.000	TM 6574.000	TM 2091.000
2	12:57:58	100.950%	3055.000	1238.000	T 49480.000	TM 152400.000	TM 151900.000	TM 52920.000	TM 161000.000	104.959%	0.000	TM 6748.000	TM 2172.000
3	12:58:20	97.483%	M 3151.000	M 1279.000	T 48730.000	T 148500.000	T 149400.000	TM 52140.000	TM 162300.000	106.593%	0.000	TM 6572.000	TM 2111.000
x		100.520%	M 3055.000	M 1237.000	T 49180.000	TM 150300.000	TM 149500.000	TM 52180.000	TM 159400.000	105.590%	0.000	TM 6631.000	TM 2125.000
σ		2.846%	M 96.180	M 42.220	T 404.100	TM 1971.000	TM 2375.000	TM 719.600	TM 3863.000	0.878%	0.000	TM 101.000	TM 41.890
%RSD		2.831	M 3.149	M 3.413	T 0.822	TM 1.311	TM 1.589	TM 1.379	TM 2.423	0.831	0.000	TM 1.523	TM 1.972

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:57:36	-35.060	TM 6319.000	T 147400.000	TM 2558.000	TM 6549.000	TM 6416.000	TM 6473.000	992.500	-3.491	M 966.500	0.000	0.000
2	12:57:58	-28.450	TM 6439.000	TM 150400.000	TM 2587.000	TM 6684.000	TM 6585.000	TM 6593.000	M 1005.000	-3.737	M 988.600	0.000	0.000
3	12:58:20	-6.098	TM 6453.000	T 149500.000	TM 2562.000	TM 6491.000	TM 6418.000	TM 6493.000	989.600	-3.519	M 970.600	0.000	0.000
x		-23.200	TM 6404.000	TM 149100.000	TM 2569.000	TM 6575.000	TM 6473.000	TM 6520.000	M 995.900	-3.583	M 975.200	0.000	0.000
σ		15.180	TM 73.910	TM 1545.000	TM 15.790	TM 98.950	TM 96.990	TM 64.340	M 8.411	0.135	M 11.740	0.000	0.000
%RSD		65.410	TM 1.154	TM 1.037	TM 0.615	TM 1.505	TM 1.498	TM 0.987	M 0.845	3.755	M 1.204	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:57:36	TM 1050.000	99.561%	TM 6877.000	M 507.400	39.980	961.700	100.917%	T 0.000	TM 1384.000	1240.000	TM 6915.000	101.760%
2	12:57:58	TM 1072.000	98.996%	TM 7059.000	M 510.900	48.180	974.700	100.689%	T 0.000	TM 1407.000	M 1276.000	TM 7128.000	102.881%
3	12:58:20	TM 1060.000	97.669%	TM 7224.000	M 509.200	48.090	962.500	102.501%	T 0.000	TM 1401.000	M 1269.000	TM 7008.000	103.769%
x		TM 1060.000	98.742%	TM 7053.000	M 509.200	45.420	966.300	101.369%	T 0.000	TM 1397.000	M 1262.000	TM 7017.000	102.803%
σ		TM 10.980	0.971%	TM 174.000	M 1.755	4.709	7.285	0.987%	T 0.000	TM 11.950	M 19.330	TM 106.300	1.007%
%RSD		TM 1.035	0.984	TM 2.466	M 0.345	10.370	0.754	0.974	T 0.000	TM 0.855	M 1.532	TM 1.516	0.979

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:57:36	M 129.400	TM 1071.000	TM 6462.000	97.606%	0.000	M 128.000	M 61.400
2	12:57:58	M 131.600	TM 1088.000	TM 6580.000	98.028%	0.000	M 129.600	M 61.860
3	12:58:20	M 130.600	TM 1076.000	TM 6520.000	99.328%	0.000	M 129.900	M 62.660
x		M 130.500	TM 1078.000	TM 6521.000	98.321%	0.000	M 129.200	M 61.980
σ		M 1.111	TM 8.886	TM 59.010	0.898%	0.000	M 1.025	M 0.640
%RSD		M 0.851	TM 0.824	TM 0.905	0.913	0.000	M 0.793	M 1.033

ICV 10/18/2016 01:02:59 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:03:20	95.778%	325.600	139.600	T 5321.000	T 15540.000	T 15780.000	T 5206.000	14510.000	97.755%	0.000	606.300	196.400
2	13:03:42	91.250%	335.000	139.700	T 5353.000	T 15620.000	T 16090.000	T 5225.000	14600.000	98.165%	0.000	595.700	194.800
3	13:04:04	90.396%	340.100	151.600	T 5427.000	T 15750.000	T 15800.000	T 5138.000	14590.000	98.282%	0.000	611.300	194.700
x		92.475%	106.741%	114.916%	T 107.343%	T 104.234%	T 105.916%	T 103.798%	97.100%	98.068%	0.000	96.710%	97.663%
σ		2.893%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.277%	0.000	n/a	n/a
%RSD		3.128	2.210	4.799	T 1.004	T 0.668	T 1.098	T 0.879	0.352	0.282	0.000	1.320	0.497

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:03:20	14.080	┬631.400	┬15190.000	240.300	638.700	609.100	633.400	105.000	-0.047	106.300	0.000	0.000
2	13:03:42	14.210	┬638.200	┬15330.000	243.600	648.500	636.100	652.300	107.700	-0.108	108.900	0.000	0.000
3	13:04:04	13.910	┬628.800	┬15100.000	239.300	642.900	614.300	634.300	104.200	-0.071	108.900	0.000	0.000
x		14.070	┬101.249%	┬101.355%	96.413%	102.936%	99.175%	102.404%	105.613%	-0.075	108.038%	0.000	0.000
σ		0.150	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.031	n/a	0.000	0.000
%RSD		1.069	┬0.772	┬0.768	0.938	0.768	2.309	1.661	1.731	40.770	1.388	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:03:20	92.790	98.668%	281.000	51.570	0.134	98.530	97.853%	0.000	124.700	124.600	596.000	96.925%
2	13:03:42	95.170	99.864%	284.700	52.910	1.253	101.300	96.232%	0.000	129.000	129.400	617.700	96.590%
3	13:04:04	92.750	99.112%	292.200	51.600	1.367	101.300	98.763%	0.000	124.600	126.300	600.600	99.764%
x		93.570	99.215%	91.505%	104.052%	0.918	100.374%	97.616%	0.000	126.100	101.397%	96.760%	97.760%
σ		1.386	0.604%	n/a	n/a	0.681	n/a	1.282%	0.000	2.513	n/a	n/a	1.744%
%RSD		1.481	0.609	1.983	1.475	74.210	1.591	1.313	0.000	1.993	1.920	1.890	1.784
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	13:03:20	22.090	90.230	┬613.300	95.210%	0.000	16.660	9.440					
2	13:03:42	22.060	90.010	┬611.500	96.916%	0.000	17.350	9.471					
3	13:04:04	22.280	90.130	┬608.900	97.517%	0.000	18.120	9.494					
x		110.708%	90.123%	┬97.797%	96.547%	0.000	86.877%	94.683%					
σ		n/a	n/a	┬n/a	1.197%	0.000	n/a	n/a					
%RSD		0.536	0.122	┬0.365	1.239	0.000	4.194	0.286					

ICVL 10/18/2016 01:08:43 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:09:05	95.546%	1.394	49.400	489.300	210.700	52.110	478.900	500.500	103.254%	0.000	5.635	3.915
2	13:09:27	94.354%	1.449	50.190	493.600	200.100	53.560	486.600	502.700	102.609%	0.000	5.380	3.998
3	13:09:50	97.374%	1.277	49.240	481.600	203.000	53.710	485.000	517.600	102.765%	0.000	5.366	3.966
x		95.758%	137.339%	124.021%	97.635%	102.299%	106.253%	96.697%	101.386%	102.876%	0.000	109.207%	98.994%
σ		1.521%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.336%	0.000	n/a	n/a
%RSD		1.588	6.396	1.022	1.245	2.698	1.659	0.841	1.843	0.327	0.000	2.775	1.064
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:09:05	9.803	2.164	197.100	1.119	2.424	4.995	22.330	1.494	0.317	2.905	0.000	0.000
2	13:09:27	10.360	2.258	198.200	1.111	2.449	5.341	21.750	1.269	0.336	2.164	0.000	0.000
3	13:09:50	10.620	2.294	192.800	1.107	2.607	5.160	22.190	1.993	0.272	3.912	0.000	0.000
x		10.260	111.926%	98.011%	111.231%	124.662%	103.311%	110.448%	79.272%	0.308	74.846%	0.000	0.000
σ		0.417	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.033	n/a	0.000	0.000
%RSD		4.066	2.992	1.433	0.545	3.977	3.350	1.352	23.360	10.580	29.310	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:09:05	4.604	104.179%	10.820	1.156	-0.884	1.022	102.186%	0.000	2.132	2.164	9.574	99.416%
2	13:09:27	4.960	104.891%	10.610	1.103	-1.432	1.042	103.651%	0.000	2.356	2.260	10.020	101.348%

3	13:09:50	4.862	103.406%	11.220	1.105	-0.976	1.104	102.281%	0.000	2.360	2.338	9.939	99.249%
x		96.168%	104.159%	108.835%	112.134%	-1.097	105.587%	102.706%	0.000	2.283	112.707%	98.443%	100.004%
σ		n/a	0.742%	n/a	n/a	0.293	n/a	0.820%	0.000	0.130	n/a	n/a	1.167%
%RSD		3.821	0.713	2.863	2.650	26.750	4.075	0.798	0.000	5.715	3.873	2.415	1.167

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:09:05	1.753	2.078	1.170	96.063%	0.000	1.572	1.071
2	13:09:27	1.769	2.031	1.123	99.613%	0.000	1.509	0.982
3	13:09:50	2.003	2.057	1.188	97.907%	0.000	1.534	1.067
x		92.100%	102.769%	116.035%	97.861%	0.000	76.930%	104.010%
σ		n/a	n/a	n/a	1.775%	0.000	n/a	n/a
%RSD		7.600	1.131	2.903	1.814	0.000	2.062	4.853

ICBIS 10/18/2016 01:19:56 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:20:18	101.127%	0.019	-0.266	2.366	-0.037	-0.302	3.578	-0.981	106.150%	0.000	0.514	0.058
2	13:20:40	101.459%	0.088	0.569	-1.124	-0.205	-0.313	1.260	1.335	108.976%	0.000	0.573	-0.002
3	13:21:01	100.799%	0.036	0.143	-1.448	0.519	-0.252	0.863	-0.400	109.341%	0.000	0.006	-0.094
x		101.128%	0.048	0.148	-0.068	0.093	-0.289	1.900	-0.016	108.156%	0.000	0.364	-0.013
σ		0.330%	0.036	0.417	2.115	0.379	0.033	1.466	1.205	1.746%	0.000	0.312	0.077
%RSD		0.327	74.850	280.900	3089.000	409.700	11.340	77.160	7759.000	1.615	0.000	85.640	604.300

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:20:18	12.060	-0.019	2.914	-0.008	-0.037	-0.018	-0.572	-0.597	0.371	-0.813	0.000	0.000
2	13:20:40	11.690	-0.004	-0.731	-0.004	-0.019	-0.086	-0.310	-0.277	0.347	-0.648	0.000	0.000
3	13:21:01	12.350	-0.008	1.231	-0.008	-0.020	0.053	-0.486	-0.259	0.338	-0.739	0.000	0.000
x		12.030	-0.010	1.138	-0.006	-0.025	-0.017	-0.456	-0.377	0.352	-0.734	0.000	0.000
σ		0.327	0.008	1.824	0.002	0.010	0.070	0.134	0.190	0.017	0.083	0.000	0.000
%RSD		2.720	76.900	160.300	31.280	39.800	409.300	29.300	50.450	4.805	11.260	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:20:18	0.001	107.415%	-0.181	0.002	-1.189	0.028	107.552%	0.000	-0.266	-0.287	-0.024	103.531%
2	13:20:40	0.001	109.860%	-0.256	0.007	-1.260	0.060	106.847%	0.000	-0.234	-0.251	0.032	101.754%
3	13:21:01	0.000	109.820%	-0.203	-0.005	-1.005	0.021	107.142%	0.000	-0.261	-0.234	0.004	102.076%
x		0.001	109.032%	-0.213	0.001	-1.152	0.036	107.180%	0.000	-0.253	-0.257	0.004	102.453%
σ		0.001	1.400%	0.038	0.006	0.132	0.021	0.354%	0.000	0.017	0.027	0.028	0.947%
%RSD		59.860	1.284	18.020	418.900	11.420	57.830	0.330	0.000	6.627	10.680	740.800	0.924

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:20:18	0.044	0.081	-0.060	100.726%	0.000	0.620	-0.003
2	13:20:40	0.049	0.060	-0.069	101.238%	0.000	0.628	-0.003
3	13:21:01	0.067	0.069	-0.066	100.198%	0.000	0.649	-0.004
x		0.053	0.070	-0.065	100.720%	0.000	0.632	-0.003
σ		0.012	0.010	0.005	0.520%	0.000	0.015	0.000

%RSD		22.400	14.940	7.270	0.516	0.000	2.409	12.370

ICSA 10/18/2016 01:25:39 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:26:00	96.815%	0.058	1.640	TM 98720.000	T 98220.000	T 97120.000	TM 99880.000	T 102900.000	111.275%	0.000	0.504	1.266
2	13:26:22	96.045%	0.150	0.856	TM 100700.000	T 101400.000	T 99920.000	TM 101900.000	T 104200.000	110.226%	0.000	0.480	1.393
3	13:26:44	93.865%	0.229	0.121	TM 97780.000	T 99910.000	T 99160.000	TM 102100.000	T 105800.000	112.630%	0.000	0.642	1.333
x		95.575%	1.#IO%	1.#IO%	TM 99.057%	T 99.832%	T 98.732%	TM 101.282%	T 104.293%	111.377%	0.000	1.#IO%	1.#IO%
σ		1.530%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.205%	0.000	n/a	n/a
%RSD		1.601	58.720	87.070	TM 1.492	T 1.581	T 1.463	TM 1.203	T 1.409	1.082	0.000	16.110	4.758

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:26:00	5.191	0.508	T 96380.000	0.114	0.498	1.235	-1.352	-0.080	0.285	-0.461	0.000	0.000
2	13:26:22	5.548	0.641	T 99400.000	0.139	0.610	0.844	-1.173	-0.043	0.303	-0.218	0.000	0.000
3	13:26:44	5.302	0.752	T 97460.000	0.168	0.743	1.348	-1.100	-0.101	0.300	-0.610	0.000	0.000
x		5.347	1.#IO%	T 97.746%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	0.296	-1.#IO%	0.000	0.000
σ		0.183	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.009	n/a	0.000	0.000
%RSD		3.423	19.220	T 1.565	19.390	19.880	23.130	10.740	39.390	3.126	46.060	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:26:00	0.776	106.284%	T 2030.000	0.160	6.734	0.294	105.160%	0.000	-0.167	-0.170	0.282	106.140%
2	13:26:22	0.740	107.521%	T 2086.000	0.169	8.057	0.290	109.327%	0.000	-0.102	-0.134	0.325	108.157%
3	13:26:44	0.820	110.441%	T 2089.000	0.203	7.983	0.314	108.845%	0.000	-0.111	-0.097	0.511	110.554%
x		1.#IO%	108.082%	T 103.432%	1.#IO%	7.591	1.#IO%	107.777%	0.000	-0.127	-1.#IO%	1.#IO%	108.284%
σ		n/a	2.134%	T n/a	n/a	0.744	n/a	2.279%	0.000	0.035	n/a	n/a	2.210%
%RSD		5.178	1.975	T 1.618	12.580	9.795	4.153	2.115	0.000	27.810	27.000	32.730	2.041

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:26:00	0.288	0.104	0.285	98.613%	0.000	5.755	-0.001
2	13:26:22	0.327	0.087	0.353	101.798%	0.000	4.774	0.002
3	13:26:44	0.275	0.132	0.543	104.058%	0.000	3.846	0.005
x		1.#IO%	1.#IO%	1.#IO%	101.490%	0.000	1.#IO%	1.#IO%
σ		n/a	n/a	n/a	2.735%	0.000	n/a	n/a
%RSD		9.104	21.380	34.050	2.695	0.000	19.930	149.400

ICSAB 10/18/2016 01:31:21 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:31:43	89.414%	29.490	465.700	TM 98950.000	T 97610.000	T 96000.000	TM 98800.000	T 102900.000	109.920%	0.000	25.530	48.910
2	13:32:05	90.154%	26.730	444.500	TM 94790.000	T 95460.000	T 94320.000	TM 96430.000	T 101500.000	111.874%	0.000	24.640	47.670
3	13:32:26	89.485%	26.690	450.700	TM 95950.000	T 94910.000	T 94980.000	TM 98080.000	T 102300.000	111.164%	0.000	23.470	47.710
x		89.684%	110.538%	113.402%	TM 96.561%	T 95.991%	T 95.098%	TM 97.770%	T 102.239%	110.986%	0.000	98.190%	96.192%
σ		0.408%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.989%	0.000	n/a	n/a
%RSD		0.455	5.805	2.399	TM 2.228	T 1.484	T 0.887	TM 1.247	T 0.656	0.891	0.000	4.213	1.463

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:31:43	6.952	24.620	T 95880.000	23.500	25.750	46.990	44.320	44.050	-0.043	109.800	0.000	0.000
2	13:32:05	6.396	24.050	T 95760.000	22.210	24.180	44.640	43.360	43.300	0.033	113.000	0.000	0.000
3	13:32:26	6.948	23.800	T 97530.000	22.750	23.630	44.600	42.980	43.370	-0.031	113.300	0.000	0.000
x		6.765	96.620%	T 96.389%	91.269%	98.081%	90.816%	87.105%	96.824%	-0.014	89.623%	0.000	0.000
σ		0.320	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.041	n/a	0.000	0.000
%RSD		4.726	1.738	T 1.031	2.844	4.484	3.020	1.580	0.946	293.000	1.737	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:31:43	0.976	106.279%	T 2052.000	24.810	7.134	23.570	108.109%	0.000	46.940	46.930	237.400	109.098%
2	13:32:05	0.802	107.840%	T 2078.000	24.580	10.720	23.080	108.886%	0.000	47.230	47.530	238.000	111.772%
3	13:32:26	0.725	108.567%	T 2090.000	24.560	7.253	23.540	109.524%	0.000	47.670	47.670	242.700	112.481%
x		0.835	107.562%	T 103.668%	98.616%	8.368	93.586%	108.840%	0.000	47.280	94.758%	95.736%	111.117%
σ		0.129	1.169%	T n/a	n/a	2.035	n/a	0.709%	0.000	0.369	n/a	n/a	1.785%
%RSD		15.400	1.087	T 0.923	0.567	24.320	1.174	0.651	0.000	0.781	0.828	1.210	1.606

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:31:43	18.350	22.670	24.200	102.830%	0.000	19.570	10.700
2	13:32:05	18.330	22.460	23.540	105.139%	0.000	19.820	10.860
3	13:32:26	18.450	23.090	23.680	103.578%	0.000	20.870	11.170
x		91.881%	90.954%	95.237%	103.849%	0.000	100.448%	109.064%
σ		n/a	n/a	n/a	1.178%	0.000	n/a	n/a
%RSD		0.360	1.429	1.468	1.134	0.000	3.430	2.199

CCV 10/18/2016 01:37:05 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:37:27	84.830%	707.300	269.100	T 10050.000	T 29600.000	T 29920.000	T 9988.000	28080.000	97.281%	0.000	T 1265.000	381.200
2	13:37:49	86.663%	672.000	268.400	T 9967.000	T 29720.000	T 29640.000	T 9825.000	T 29740.000	97.131%	0.000	T 1256.000	378.600
3	13:38:10	85.381%	687.300	275.800	T 10070.000	T 30420.000	T 30190.000	T 9855.000	28800.000	95.466%	0.000	T 1286.000	386.100
x		85.625%	110.221%	108.441%	T 100.268%	T 99.709%	T 99.720%	T 98.891%	T 96.249%	96.626%	0.000	T 101.496%	95.492%
σ		0.941%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.007%	0.000	T n/a	n/a
%RSD		1.099	2.571	1.512	T 0.527	T 1.492	T 0.929	T 0.875	T 2.885	1.042	0.000	T 1.212	1.005

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:37:27	19.770	T 1243.000	T 29490.000	453.400	1207.000	1119.000	1186.000	198.500	-0.635	209.700	0.000	0.000
2	13:37:49	15.850	T 1227.000	T 29460.000	456.700	1206.000	1117.000	1193.000	201.900	-0.577	210.100	0.000	0.000
3	13:38:10	17.580	T 1245.000	T 29740.000	467.400	1233.000	1142.000	1202.000	199.200	-0.506	207.400	0.000	0.000
x		17.740	T 99.044%	T 98.549%	91.836%	97.226%	90.068%	95.498%	99.921%	-0.573	104.537%	0.000	0.000
σ		1.965	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.065	n/a	0.000	0.000
%RSD		11.080	T 0.793	T 0.519	1.596	1.281	1.257	0.679	0.893	11.270	0.704	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:37:27	184.700	101.231%	1140.000	102.500	3.421	197.200	100.671%	0.000	237.000	239.300	1168.000	101.264%
2	13:37:49	189.200	101.423%	1173.000	104.300	8.606	197.000	98.769%	0.000	242.100	245.700	1191.000	101.824%
3	13:38:10	187.400	100.505%	1192.000	102.300	3.321	197.000	99.647%	0.000	244.000	244.400	1180.000	101.090%
x		187.100	101.053%	93.474%	103.049%	5.116	98.525%	99.696%	0.000	241.000	97.242%	94.388%	101.393%
σ		2.234	0.484%	n/a	n/a	3.023	n/a	0.952%	0.000	3.616	n/a	n/a	0.384%
%RSD		1.194	0.479	2.251	1.046	59.080	0.077	0.955	0.000	1.500	1.387	0.974	0.378

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:37:27	19.800	176.100	T 1230.000	98.816%	0.000	16.900	9.577
2	13:37:49	20.540	178.000	T 1232.000	99.661%	0.000	18.050	9.556
3	13:38:10	20.460	179.900	T 1242.000	98.743%	0.000	19.090	9.691
x		101.329%	88.995%	T 98.775%	99.074%	0.000	90.058%	96.081%
σ		n/a	n/a	T n/a	0.510%	0.000	n/a	n/a
%RSD		2.014	1.049	T 0.527	0.515	0.000	6.073	0.754

CCB 10/18/2016 01:42:49 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:43:10	89.310%	0.067	0.140	-2.455	0.900	0.654	4.914	1.817	100.696%	0.000	0.314	-0.222
2	13:43:32	88.323%	0.009	1.240	2.054	0.886	0.978	7.087	2.045	98.172%	0.000	0.671	-0.211
3	13:43:54	87.144%	0.050	-0.540	3.183	3.538	2.089	8.896	3.569	99.694%	0.000	0.104	-0.221
x		88.259%	0.042	0.280	0.927	1.775	1.241	6.966	2.477	99.521%	0.000	0.363	-0.218
σ		1.084%	0.030	0.898	2.983	1.527	0.753	1.993	0.953	1.271%	0.000	0.287	0.006
%RSD		1.229	70.780	320.400	321.700	86.070	60.660	28.620	38.470	1.277	0.000	78.970	2.917

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:43:10	9.021	-0.038	2.816	-0.007	-0.007	-0.083	-0.556	-0.909	0.321	-1.172	0.000	0.000
2	13:43:32	9.004	-0.017	3.162	0.007	-0.025	-0.009	-0.450	-0.355	0.254	-0.562	0.000	0.000
3	13:43:54	9.394	0.008	3.879	-0.001	-0.006	-0.104	-0.542	-0.715	0.301	-0.562	0.000	0.000
x		9.140	-0.016	3.286	-0.000	-0.013	-0.065	-0.516	-0.660	0.292	-0.765	0.000	0.000
σ		0.221	0.023	0.542	0.007	0.011	0.050	0.057	0.281	0.034	0.352	0.000	0.000
%RSD		2.414	146.200	16.510	2857.000	85.400	76.250	11.130	42.590	11.730	46.040	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:43:10	0.001	102.119%	1.738	0.006	-0.985	0.006	102.517%	0.000	-0.071	-0.122	0.025	100.021%
2	13:43:32	-0.002	104.053%	1.651	0.004	-1.027	0.037	102.437%	0.000	-0.076	-0.080	0.015	98.701%

3	13:43:54	0.002	102.094%	1.685	0.003	-1.229	0.038	102.052%	0.000	-0.050	-0.055	0.035	100.949%
x		0.000	102.755%	1.691	0.004	-1.080	0.027	102.335%	0.000	-0.066	-0.086	0.025	99.890%
σ		0.002	1.124%	0.044	0.002	0.130	0.018	0.249%	0.000	0.014	0.034	0.010	1.129%
%RSD		693.300	1.093	2.573	41.220	12.070	67.950	0.243	0.000	21.520	39.460	39.480	1.131

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:43:10	0.064	0.167	-0.068	98.321%	0.000	0.579	-0.001
2	13:43:32	0.046	0.148	-0.057	99.816%	0.000	0.593	-0.003
3	13:43:54	0.065	0.138	-0.038	99.986%	0.000	0.567	-0.002
x		0.058	0.151	-0.054	99.374%	0.000	0.580	-0.002
σ		0.011	0.015	0.015	0.916%	0.000	0.013	0.001
%RSD		18.240	9.748	27.330	0.922	0.000	2.326	46.810

MB 200-110229/1-A 10/18/2016 01:48:31 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:52	96.415%	0.131	-0.567	107.900	39.150	42.040	44.370	58.370	105.551%	0.000	0.777	0.569
2	13:49:14	97.367%	0.237	-0.145	113.400	49.740	53.970	48.120	65.570	106.508%	0.000	0.691	0.745
3	13:49:36	96.913%	0.166	0.567	110.000	44.840	44.650	44.700	61.000	106.046%	0.000	0.732	0.658
x		96.898%	0.178	-0.049	110.500	44.580	46.890	45.730	61.650	106.035%	0.000	0.733	0.657
σ		0.477%	0.054	0.573	2.772	5.298	6.274	2.075	3.643	0.479%	0.000	0.043	0.088
%RSD		0.492	30.300	1180.000	2.510	11.890	13.380	4.537	5.910	0.451	0.000	5.823	13.420

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:52	9.200	0.974	46.820	0.222	0.602	0.384	0.039	-0.279	0.270	-0.762	0.000	0.000
2	13:49:14	9.760	0.999	56.470	0.223	0.706	0.474	0.166	-0.703	0.312	-0.729	0.000	0.000
3	13:49:36	9.444	0.968	46.660	0.195	0.525	0.407	0.303	-0.385	0.277	-0.744	0.000	0.000
x		9.468	0.981	49.980	0.213	0.611	0.421	0.169	-0.456	0.286	-0.745	0.000	0.000
σ		0.281	0.017	5.617	0.016	0.091	0.046	0.132	0.221	0.022	0.017	0.000	0.000
%RSD		2.968	1.694	11.240	7.551	14.860	11.020	78.060	48.460	7.854	2.268	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:52	0.077	108.926%	1.490	0.023	-1.159	0.053	106.029%	0.000	-0.194	-0.218	0.365	102.874%
2	13:49:14	0.078	108.021%	1.808	0.023	-1.145	0.104	107.332%	0.000	-0.183	-0.155	0.482	104.188%
3	13:49:36	0.074	110.759%	1.338	0.026	-0.788	0.077	107.860%	0.000	-0.156	-0.164	0.377	105.728%
x		0.076	109.235%	1.545	0.024	-1.031	0.078	107.074%	0.000	-0.178	-0.179	0.408	104.263%
σ		0.002	1.395%	0.239	0.002	0.210	0.026	0.943%	0.000	0.019	0.034	0.064	1.428%
%RSD		2.654	1.277	15.490	7.498	20.400	33.160	0.880	0.000	10.850	18.860	15.800	1.370

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:52	0.076	0.102	0.192	100.060%	0.000	3.447	0.003
2	13:49:14	0.077	0.136	0.255	104.041%	0.000	2.860	0.005
3	13:49:36	0.091	0.094	0.198	102.457%	0.000	2.490	0.001
x		0.081	0.111	0.215	102.186%	0.000	2.932	0.003
σ		0.008	0.022	0.035	2.005%	0.000	0.482	0.002

%RSD	9.900	20.220	16.100	1.962	0.000	16.440	65.160	

LCS 200-110229/2-A 10/18/2016 01:54:13 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:54:35	92.558%	10.990	436.500	T 5472.000	1979.000	483.700	T 5150.000	4850.000	103.058%	0.000	47.500	39.570
2	13:54:57	93.233%	10.460	438.200	T 5399.000	1964.000	481.700	T 5175.000	4864.000	102.121%	0.000	46.820	41.010
3	13:55:18	87.744%	11.930	445.900	T 5493.000	1982.000	494.200	T 5283.000	5086.000	98.393%	0.000	48.100	41.730
x		91.179%	11.130	440.200	T 5455.000	1975.000	486.500	T 5202.000	4933.000	101.191%	0.000	47.470	40.770
σ		2.993%	0.747	5.020	T 49.700	9.743	6.725	T 70.840	132.400	2.468%	0.000	0.641	1.098
%RSD		3.283	6.708	1.140	T 0.911	0.493	1.382	T 1.362	2.684	2.439	0.000	1.351	2.694

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:54:35	9.693	19.320	T 2091.000	9.714	20.640	48.490	178.100	18.790	0.124	34.290	0.000	0.000
2	13:54:57	9.015	20.100	T 2094.000	10.020	20.420	48.910	185.400	18.790	0.172	34.970	0.000	0.000
3	13:55:18	8.670	20.570	T 2165.000	10.610	22.030	49.650	184.500	18.940	0.103	34.100	0.000	0.000
x		9.126	20.000	T 2117.000	10.110	21.030	49.020	182.700	18.840	0.133	34.450	0.000	0.000
σ		0.520	0.631	T 41.500	0.453	0.873	0.588	3.986	0.089	0.035	0.456	0.000	0.000
%RSD		5.704	3.154	T 1.961	4.478	4.151	1.200	2.182	0.471	26.410	1.324	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:54:35	48.400	101.484%	100.600	11.130	0.569	9.326	102.018%	0.000	19.280	18.760	97.220	99.854%
2	13:54:57	49.820	102.407%	101.600	11.260	0.950	9.425	100.950%	0.000	19.550	19.270	99.200	101.721%
3	13:55:18	49.300	101.559%	101.900	11.210	-0.080	9.916	101.335%	0.000	19.540	19.330	96.690	100.511%
x		49.170	101.817%	101.400	11.200	0.479	9.556	101.434%	0.000	19.460	19.120	97.700	100.695%
σ		0.722	0.513%	0.689	0.066	0.521	0.316	0.541%	0.000	0.156	0.313	1.322	0.947%
%RSD		1.468	0.504	0.679	0.585	108.600	3.309	0.534	0.000	0.803	1.635	1.353	0.941

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:54:35	36.690	18.300	9.465	98.711%	0.000	17.580	10.650
2	13:54:57	37.070	18.860	9.662	97.541%	0.000	18.730	11.090
3	13:55:18	37.440	18.770	9.505	97.882%	0.000	19.220	10.900
x		37.070	18.640	9.544	98.045%	0.000	18.510	10.880
σ		0.373	0.298	0.104	0.602%	0.000	0.841	0.222
%RSD		1.005	1.597	1.086	0.614	0.000	4.544	2.044

200-35680-A-7-B 10/18/2016 01:59:56 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:00:18	104.854%	3.115	20.240	┬505.000	┬11180.000	┬48020.000	┬3669.000	16790.000	144.739%	0.000	77.200	59.560
2	14:00:39	101.865%	4.219	21.450	┬492.200	┬11160.000	┬48540.000	┬3693.000	16990.000	147.843%	0.000	79.440	59.010
3	14:01:01	104.921%	3.978	22.480	┬495.300	┬11190.000	┬49100.000	┬3738.000	17250.000	148.176%	0.000	77.990	59.850
x		103.880%	3.771	21.390	┬497.500	┬11180.000	┬48550.000	┬3700.000	17010.000	146.920%	0.000	78.210	59.470
σ		1.746%	0.581	1.118	┬6.688	┬15.310	┬541.800	┬35.040	233.400	1.896%	0.000	1.135	0.429
%RSD		1.680	15.400	5.228	┬1.344	┬0.137	┬1.116	┬0.947	1.372	1.290	0.000	1.451	0.722

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:00:18	6.239	┬2715.000	┬76200.000	35.280	86.570	┬2813.000	1050.000	23.520	0.127	20.220	0.000	0.000
2	14:00:39	6.701	┬2783.000	┬78910.000	36.380	87.170	┬2777.000	1062.000	24.020	0.118	20.920	0.000	0.000
3	14:01:01	8.686	┬2746.000	┬78220.000	36.600	89.430	┬2826.000	1062.000	23.840	0.130	20.020	0.000	0.000
x		7.209	┬2748.000	┬77780.000	36.090	87.730	┬2805.000	1058.000	23.790	0.125	20.390	0.000	0.000
σ		1.300	┬33.750	┬1410.000	0.710	1.509	┬25.780	6.996	0.252	0.006	0.471	0.000	0.000
%RSD		18.040	┬1.228	┬1.813	1.967	1.720	┬0.919	0.661	1.060	5.118	2.311	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:00:18	77.250	284.425%	1.819	2.543	-3.813	5.917	117.399%	0.000	0.654	0.633	621.300	134.532%
2	14:00:39	78.310	298.321%	1.675	2.649	-3.219	5.878	120.025%	0.000	0.708	0.694	624.900	134.066%
3	14:01:01	78.620	296.782%	1.741	2.565	-3.216	6.090	121.135%	0.000	0.597	0.693	632.800	140.489%
x		78.060	293.176%	1.745	2.586	-3.416	5.962	119.520%	0.000	0.653	0.673	626.300	136.362%
σ		0.716	7.617%	0.072	0.056	0.344	0.113	1.919%	0.000	0.056	0.035	5.861	3.581%
%RSD		0.917	2.598	4.135	2.168	10.060	1.891	1.605	0.000	8.500	5.196	0.936	2.626

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:00:18	0.513	0.498	165.800	113.236%	0.000	16.580	6.694
2	14:00:39	0.483	0.502	169.300	115.026%	0.000	15.980	6.777
3	14:01:01	0.459	0.484	171.300	115.807%	0.000	15.530	6.738
x		0.485	0.495	168.800	114.690%	0.000	16.030	6.737
σ		0.027	0.010	2.799	1.318%	0.000	0.531	0.042
%RSD		5.633	1.938	1.658	1.149	0.000	3.312	0.616

200-35680-A-14-D 10/18/2016 02:05:39 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:06:00	105.592%	3.688	23.860	┬543.400	┬12410.000	┬49740.000	┬4037.000	┬22980.000	160.764%	0.000	74.880	61.340
2	14:06:22	106.325%	3.810	21.520	┬542.700	┬12350.000	┬49650.000	┬3990.000	┬23110.000	161.530%	0.000	75.630	61.940
3	14:06:44	104.441%	3.378	21.600	┬538.100	┬12380.000	┬50050.000	┬4050.000	┬23210.000	161.157%	0.000	78.680	63.120
x		105.453%	3.625	22.330	┬541.400	┬12380.000	┬49810.000	┬4026.000	┬23100.000	161.150%	0.000	76.400	62.130
σ		0.950%	0.223	1.331	┬2.883	┬31.880	┬207.500	┬31.430	┬113.600	0.383%	0.000	2.011	0.903
%RSD		0.900	6.144	5.959	┬0.532	┬0.258	┬0.416	┬0.781	┬0.492	0.238	0.000	2.633	1.453

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:06:00	6.534	T 4133.000	T 96140.000	40.900	91.120	2288.000	938.000	28.220	0.139	15.010	0.000	0.000
2	14:06:22	6.788	T 4165.000	T 96890.000	40.200	90.620	2297.000	936.900	28.900	0.112	16.340	0.000	0.000
3	14:06:44	5.564	T 4209.000	T 97090.000	39.970	91.490	2303.000	952.000	29.630	0.104	16.800	0.000	0.000
x		6.295	T 4169.000	T 96710.000	40.360	91.080	2296.000	942.300	28.920	0.118	16.050	0.000	0.000
σ		0.646	T 38.140	T 499.100	0.485	0.436	7.809	8.418	0.703	0.019	0.928	0.000	0.000
%RSD		10.260	T 0.915	T 0.516	1.201	0.478	0.340	0.893	2.431	15.710	5.782	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:06:00	102.300	317.960%	1.953	2.223	-3.660	3.908	128.279%	0.000	0.473	0.486	752.000	140.896%
2	14:06:22	102.500	323.761%	1.960	2.105	-2.769	3.743	128.598%	0.000	0.546	0.501	761.800	146.521%
3	14:06:44	104.000	321.896%	1.920	2.201	-2.871	3.895	128.585%	0.000	0.491	0.526	777.100	147.310%
x		103.000	321.206%	1.944	2.176	-3.100	3.849	128.488%	0.000	0.503	0.504	763.600	144.909%
σ		0.909	2.962%	0.021	0.063	0.488	0.092	0.180%	0.000	0.038	0.020	12.620	3.498%
%RSD		0.882	0.922	1.087	2.898	15.740	2.385	0.140	0.000	7.554	3.983	1.652	2.414

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:06:00	0.457	0.510	140.300	121.616%	0.000	14.520	7.857
2	14:06:22	0.433	0.533	142.000	120.924%	0.000	14.920	8.003
3	14:06:44	0.382	0.513	139.200	124.692%	0.000	14.530	7.838
x		0.424	0.518	140.500	122.411%	0.000	14.660	7.899
σ		0.038	0.012	1.413	2.006%	0.000	0.228	0.090
%RSD		9.021	2.409	1.006	1.639	0.000	1.554	1.138

200-35736-A-1-A 10/18/2016 02:11:21 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:11:43	108.532%	8.753	17.130	T 566.800	T 16260.000	T 96530.000	T 6290.000	T 16720.000	200.902%	0.000	140.200	102.500
2	14:12:05	106.964%	8.653	16.200	T 567.700	T 15980.000	T 95640.000	T 6263.000	T 16680.000	203.503%	0.000	140.500	101.100
3	14:12:26	107.438%	8.680	15.870	T 549.900	T 15940.000	T 93890.000	T 6164.000	15870.000	204.712%	0.000	141.300	102.800
x		107.645%	8.695	16.400	T 561.400	T 16060.000	T 95350.000	T 6239.000	T 16420.000	203.039%	0.000	140.700	102.100
σ		0.805%	0.052	0.651	T 10.040	T 175.000	T 1340.000	T 66.400	T 476.400	1.947%	0.000	0.552	0.935
%RSD		0.747	0.593	3.971	T 1.787	T 1.089	T 1.406	T 1.064	T 2.901	0.959	0.000	0.393	0.915

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:11:43	7.867	T 4228.000	TM 175400.000	67.560	127.300	108.400	587.500	93.270	0.122	7.704	0.000	0.000
2	14:12:05	6.379	T 4262.000	TM 177300.000	67.190	127.500	109.500	598.600	94.710	0.111	8.825	0.000	0.000
3	14:12:26	8.219	T 4284.000	TM 177800.000	67.250	128.300	111.700	595.300	94.880	0.125	7.962	0.000	0.000
x		7.488	T 4258.000	TM 176800.000	67.330	127.700	109.900	593.800	94.290	0.119	8.164	0.000	0.000
σ		0.977	T 28.220	TM 1281.000	0.199	0.493	1.698	5.709	0.884	0.008	0.587	0.000	0.000
%RSD		13.050	T 0.663	TM 0.724	0.296	0.386	1.546	0.962	0.937	6.339	7.191	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:11:43	115.300	516.062%	1.690	0.968	-6.549	2.170	133.070%	0.000	0.236	0.201	1489.000	171.208%
2	14:12:05	116.900	517.753%	1.814	0.912	-6.078	2.292	132.930%	0.000	0.239	0.240	1519.000	169.108%

3	14:12:26	118.200	529.630%	1.792	0.949	-8.550	2.448	134.362%	0.000	0.234	0.266	1546.000	175.130%
x		116.800	521.148%	1.765	0.943	-7.059	2.303	133.454%	0.000	0.236	0.236	1518.000	171.815%
σ		1.452	7.394%	0.066	0.029	1.312	0.139	0.790%	0.000	0.003	0.032	28.220	3.057%
%RSD		1.243	1.419	3.756	3.052	18.590	6.045	0.592	0.000	1.098	13.700	1.859	1.779

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:11:43	0.199	0.984	127.000	127.208%	0.000	28.780	8.972
2	14:12:05	0.220	0.933	127.500	128.828%	0.000	29.360	9.065
3	14:12:26	0.180	0.933	127.700	130.839%	0.000	29.420	8.916
x		0.200	0.950	127.400	128.958%	0.000	29.180	8.985
σ		0.020	0.029	0.352	1.819%	0.000	0.356	0.075
%RSD		10.030	3.058	0.277	1.411	0.000	1.219	0.836

200-35736-A-2-A 10/18/2016 02:17:04 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:26	107.418%	7.852	33.130	┬575.000	┬17000.000	┬99850.000	┬7777.000	13280.000	194.238%	0.000	139.200	105.200
2	14:17:47	107.938%	8.348	34.230	┬551.100	┬17130.000	┬98860.000	┬7731.000	13490.000	197.980%	0.000	140.800	103.300
3	14:18:09	105.159%	8.088	34.880	┬539.400	┬16780.000	┬99390.000	┬7573.000	┬14280.000	199.490%	0.000	138.800	104.300
x		106.838%	8.096	34.080	┬555.200	┬16970.000	┬99370.000	┬7694.000	┬13680.000	197.236%	0.000	139.600	104.300
σ		1.478%	0.248	0.885	┬18.130	┬179.900	┬495.500	┬106.700	┬524.000	2.704%	0.000	1.070	0.960
%RSD		1.383	3.064	2.595	┬3.265	┬1.060	┬0.499	┬1.387	┬3.829	1.371	0.000	0.766	0.921

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:26	10.190	┬3338.000	┬121500.000	53.450	122.400	104.700	538.200	31.560	0.178	5.863	0.000	0.000
2	14:17:47	9.580	┬3320.000	┬121200.000	53.080	122.700	105.300	542.900	31.670	0.169	7.158	0.000	0.000
3	14:18:09	10.710	┬3372.000	┬120700.000	52.350	122.000	104.800	534.900	31.580	0.169	6.668	0.000	0.000
x		10.160	┬3343.000	┬121100.000	52.960	122.300	104.900	538.600	31.600	0.172	6.563	0.000	0.000
σ		0.566	┬26.410	┬377.400	0.561	0.384	0.310	4.040	0.063	0.005	0.654	0.000	0.000
%RSD		5.570	┬0.790	┬0.312	1.059	0.313	0.295	0.750	0.199	3.187	9.964	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:26	97.930	476.050%	0.462	0.752	-6.174	1.903	131.943%	0.000	0.124	0.123	1314.000	164.858%
2	14:17:47	97.500	478.709%	0.426	0.742	-4.735	1.818	133.171%	0.000	0.144	0.147	1327.000	164.618%
3	14:18:09	98.060	475.834%	0.499	0.746	-5.021	1.817	135.189%	0.000	0.158	0.158	1299.000	164.566%
x		97.830	476.865%	0.462	0.746	-5.310	1.846	133.434%	0.000	0.142	0.142	1313.000	164.681%
σ		0.292	1.601%	0.037	0.005	0.762	0.050	1.639%	0.000	0.017	0.018	13.990	0.156%
%RSD		0.299	0.336	7.917	0.661	14.340	2.691	1.228	0.000	11.920	12.550	1.065	0.094

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:26	0.235	0.898	112.100	124.684%	0.000	29.010	7.544
2	14:17:47	0.212	0.958	115.100	124.082%	0.000	29.540	7.740
3	14:18:09	0.221	0.938	114.900	125.026%	0.000	29.460	7.694
x		0.223	0.931	114.100	124.597%	0.000	29.340	7.659
σ		0.011	0.030	1.674	0.478%	0.000	0.287	0.103

%RSD		5.109	3.247	1.467	0.384	0.000	0.977	1.341

200-35736-A-3-A 10/18/2016 02:22:47 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:23:09	105.752%	8.009	40.870	┬595.600	┬16590.000	┬104100.000	┬8089.000	15340.000	197.087%	0.000	141.400	105.800
2	14:23:31	105.914%	7.206	41.410	┬581.400	┬16180.000	┬101300.000	┬8147.000	┬16500.000	204.147%	0.000	138.100	102.300
3	14:23:52	104.448%	8.361	42.410	┬606.100	┬16750.000	┬105800.000	┬8330.000	┬16970.000	197.671%	0.000	143.100	108.100
x		105.371%	7.859	41.560	┬594.400	┬16510.000	┬103700.000	┬8189.000	┬16270.000	199.635%	0.000	140.900	105.400
σ		0.804%	0.592	0.783	┬12.400	┬297.200	┬2263.000	┬125.600	┬841.300	3.918%	0.000	2.563	2.935
%RSD		0.763	7.537	1.883	┬2.087	┬1.800	┬2.183	┬1.533	┬5.171	1.963	0.000	1.819	2.785

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:23:09	10.770	┬2816.000	┬99670.000	47.440	120.500	111.900	576.100	23.620	0.192	7.181	0.000	0.000
2	14:23:31	11.290	┬2814.000	┬97740.000	46.860	117.800	109.400	570.200	23.320	0.191	5.905	0.000	0.000
3	14:23:52	11.390	┬2905.000	┬101200.000	48.560	122.300	107.700	568.100	24.490	0.179	7.485	0.000	0.000
x		11.150	┬2845.000	┬99550.000	47.620	120.200	109.700	571.400	23.810	0.187	6.857	0.000	0.000
σ		0.334	┬52.210	┬1759.000	0.862	2.272	2.124	4.174	0.608	0.007	0.838	0.000	0.000
%RSD		2.997	┬1.835	┬1.767	1.809	1.890	1.936	0.731	2.555	3.758	12.230	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:23:09	111.700	501.335%	0.166	0.833	-6.459	2.681	129.669%	0.000	0.034	0.078	1340.000	165.745%
2	14:23:31	111.300	506.056%	0.141	0.814	-6.164	2.411	132.206%	0.000	0.091	0.093	1348.000	168.415%
3	14:23:52	109.500	507.951%	0.163	0.786	-6.027	2.413	134.206%	0.000	0.065	0.086	1344.000	169.160%
x		110.800	505.114%	0.156	0.811	-6.217	2.502	132.027%	0.000	0.063	0.086	1344.000	167.773%
σ		1.147	3.407%	0.014	0.023	0.221	0.156	2.274%	0.000	0.029	0.007	4.110	1.795%
%RSD		1.035	0.675	8.759	2.885	3.553	6.214	1.722	0.000	45.550	8.661	0.306	1.070

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:23:09	0.222	0.908	119.600	121.136%	0.000	29.330	10.200
2	14:23:31	0.295	0.882	116.700	127.745%	0.000	28.860	9.898
3	14:23:52	0.199	0.922	120.300	124.904%	0.000	29.550	10.150
x		0.239	0.904	118.900	124.595%	0.000	29.250	10.080
σ		0.050	0.020	1.926	3.315%	0.000	0.348	0.162
%RSD		20.890	2.253	1.620	2.661	0.000	1.191	1.605

200-35736-A-4-A 10/18/2016 02:28:30 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:28:52	111.379%	6.410	36.270	T 530.600	T 15190.000	T 86400.000	T 7498.000	T 20230.000	200.186%	0.000	128.300	92.800
2	14:29:14	110.220%	6.827	38.000	T 521.400	T 15100.000	T 86040.000	T 7362.000	T 20560.000	202.721%	0.000	127.000	92.660
3	14:29:36	106.887%	6.600	41.230	T 506.700	T 14950.000	T 85460.000	T 7538.000	T 20430.000	203.293%	0.000	127.800	92.180
x		109.495%	6.613	38.500	T 519.600	T 15080.000	T 85970.000	T 7466.000	T 20410.000	202.067%	0.000	127.700	92.550
σ		2.332%	0.209	2.515	T 12.080	T 121.800	T 475.900	T 92.150	T 167.900	1.654%	0.000	0.659	0.325
%RSD		2.130	3.154	6.533	T 2.325	T 0.808	T 0.554	T 1.234	T 0.823	0.818	0.000	0.516	0.351

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:28:52	8.296	TM 9238.000	TM 182700.000	41.680	109.400	94.580	471.600	84.540	0.130	8.051	0.000	0.000
2	14:29:14	9.118	TM 9275.000	TM 182200.000	41.900	109.100	97.000	483.000	86.160	0.132	8.299	0.000	0.000
3	14:29:36	8.623	TM 9263.000	TM 185000.000	42.550	109.600	97.270	479.900	84.140	0.145	6.689	0.000	0.000
x		8.679	TM 9259.000	TM 183300.000	42.040	109.400	96.280	478.200	84.950	0.136	7.680	0.000	0.000
σ		0.414	TM 19.010	TM 1475.000	0.452	0.261	1.478	5.892	1.071	0.008	0.867	0.000	0.000
%RSD		4.768	TM 0.205	TM 0.804	1.076	0.239	1.535	1.232	1.260	6.214	11.290	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:28:52	126.800	481.776%	0.444	0.866	-6.765	1.668	135.971%	0.000	0.008	-0.004	1410.000	164.877%
2	14:29:14	129.200	483.735%	0.445	0.905	-7.012	1.502	134.768%	0.000	0.002	0.035	1435.000	162.675%
3	14:29:36	128.100	483.597%	0.411	0.874	-7.760	1.606	137.397%	0.000	0.102	0.045	1439.000	166.173%
x		128.000	483.036%	0.433	0.882	-7.179	1.592	136.045%	0.000	0.037	0.025	1428.000	164.575%
σ		1.188	1.093%	0.019	0.020	0.518	0.084	1.316%	0.000	0.056	0.026	15.700	1.768%
%RSD		0.928	0.226	4.443	2.308	7.217	5.259	0.967	0.000	150.400	101.300	1.099	1.075

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:28:52	0.248	0.823	118.000	126.337%	0.000	24.350	4.782
2	14:29:14	0.260	0.801	119.600	127.305%	0.000	24.500	4.805
3	14:29:36	0.233	0.842	118.900	128.983%	0.000	24.350	4.743
x		0.247	0.822	118.800	127.542%	0.000	24.400	4.777
σ		0.014	0.021	0.798	1.339%	0.000	0.085	0.031
%RSD		5.597	2.495	0.671	1.050	0.000	0.349	0.653

200-35736-A-5-A 10/18/2016 02:34:14 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:36	107.308%	6.477	32.460	T 481.700	T 14420.000	T 92780.000	T 7408.000	11750.000	192.191%	0.000	127.700	94.850
2	14:34:57	107.225%	6.726	34.840	T 496.800	T 15000.000	T 94870.000	T 7528.000	11890.000	192.138%	0.000	132.700	97.290
3	14:35:19	104.076%	7.065	37.280	T 474.800	T 14480.000	T 91850.000	T 7374.000	11650.000	195.557%	0.000	130.200	95.810
x		106.203%	6.756	34.860	T 484.500	T 14630.000	T 93160.000	T 7437.000	11760.000	193.295%	0.000	130.200	95.980
σ		1.842%	0.295	2.410	T 11.260	T 320.500	T 1546.000	T 80.900	121.000	1.959%	0.000	2.480	1.227
%RSD		1.735	4.374	6.912	T 2.323	T 2.190	T 1.660	T 1.088	1.028	1.014	0.000	1.905	1.278

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:36	11.200	T 2616.000	T 100700.000	44.880	109.000	92.180	475.300	24.390	0.203	5.440	0.000	0.000
2	14:34:57	10.100	T 2629.000	T 102000.000	45.820	110.400	94.520	478.100	24.960	0.197	6.357	0.000	0.000
3	14:35:19	11.630	T 2633.000	T 101000.000	45.520	108.200	94.770	482.000	24.210	0.182	6.768	0.000	0.000
x		10.980	T 2626.000	T 101200.000	45.410	109.200	93.830	478.500	24.520	0.194	6.189	0.000	0.000
σ		0.791	T 9.032	T 708.100	0.483	1.105	1.428	3.379	0.388	0.011	0.680	0.000	0.000
%RSD		7.208	T 0.344	T 0.699	1.063	1.012	1.522	0.706	1.581	5.764	10.980	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:36	83.800	429.355%	0.470	0.783	-5.969	2.062	131.834%	0.000	0.094	0.068	1193.000	156.938%
2	14:34:57	86.000	440.774%	0.469	0.728	-5.748	1.984	132.831%	0.000	0.099	0.063	1204.000	157.870%
3	14:35:19	84.260	438.835%	0.458	0.707	-4.557	1.972	133.462%	0.000	0.077	0.106	1213.000	158.524%
x		84.690	436.321%	0.466	0.739	-5.425	2.006	132.709%	0.000	0.090	0.079	1203.000	157.777%
σ		1.161	6.110%	0.006	0.040	0.759	0.049	0.821%	0.000	0.012	0.024	9.847	0.797%
%RSD		1.371	1.400	1.383	5.357	14.000	2.434	0.619	0.000	13.210	30.350	0.818	0.505

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:36	0.219	0.833	115.000	121.982%	0.000	24.830	7.929
2	14:34:57	0.242	0.854	118.000	121.860%	0.000	25.310	8.039
3	14:35:19	0.241	0.864	118.700	120.851%	0.000	25.840	8.143
x		0.234	0.850	117.200	121.564%	0.000	25.330	8.037
σ		0.014	0.016	1.989	0.621%	0.000	0.508	0.107
%RSD		5.782	1.834	1.697	0.511	0.000	2.004	1.333

200-35736-A-5-A SD@5 10/18/2016 02:39:58 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:40:19	103.766%	1.397	2.477	114.200	3547.000	T 24330.000	T 1908.000	3016.000	151.516%	0.000	34.130	25.410
2	14:40:41	104.161%	1.509	5.103	105.200	3536.000	T 24200.000	T 1892.000	3004.000	154.217%	0.000	33.930	24.830
3	14:41:03	103.798%	1.178	4.934	109.300	3635.000	T 24670.000	T 1928.000	3124.000	149.470%	0.000	34.660	25.640
x		103.909%	1.362	4.171	109.600	3573.000	T 24400.000	T 1909.000	3048.000	151.735%	0.000	34.240	25.290
σ		0.219%	0.168	1.470	4.490	54.140	T 242.700	T 18.350	66.230	2.381%	0.000	0.381	0.415
%RSD		0.211	12.370	35.240	4.099	1.515	T 0.995	T 0.961	2.173	1.569	0.000	1.114	1.640

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:40:19	10.060	T 665.100	T 26480.000	11.630	28.970	19.990	112.900	5.532	0.342	1.118	0.000	0.000
2	14:40:41	9.134	T 665.300	T 25940.000	11.870	28.550	19.490	114.200	5.434	0.360	0.671	0.000	0.000
3	14:41:03	9.904	T 684.700	T 27280.000	12.330	29.540	19.770	112.700	5.367	0.341	0.987	0.000	0.000
x		9.700	T 671.700	T 26570.000	11.940	29.020	19.750	113.300	5.444	0.348	0.925	0.000	0.000
σ		0.496	T 11.280	T 677.400	0.357	0.495	0.250	0.817	0.083	0.010	0.230	0.000	0.000
%RSD		5.116	T 1.680	T 2.550	2.988	1.706	1.266	0.721	1.525	2.948	24.840	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:40:19	17.310	201.614%	-0.150	0.159	-2.375	0.503	132.631%	0.000	-0.349	-0.349	240.600	129.985%
2	14:40:41	17.410	202.074%	-0.046	0.158	-1.908	0.353	133.460%	0.000	-0.326	-0.336	244.200	128.481%

3	14:41:03	17.450	202.876%	-0.132	0.181	-1.595	0.367	133.252%	0.000	-0.309	-0.332	244.100	130.366%
x		17.390	202.188%	-0.110	0.166	-1.959	0.407	133.114%	0.000	-0.328	-0.339	243.000	129.610%
σ		0.070	0.638%	0.056	0.013	0.393	0.083	0.431%	0.000	0.020	0.009	2.076	0.997%
%RSD		0.402	0.316	50.720	7.714	20.040	20.290	0.324	0.000	6.154	2.571	0.855	0.769

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:40:19	0.034	0.157	24.150	115.522%	0.000	4.454	1.640
2	14:40:41	0.035	0.169	24.710	114.700%	0.000	4.707	1.618
3	14:41:03	0.044	0.153	24.460	116.181%	0.000	4.839	1.635
x		0.037	0.160	24.440	115.468%	0.000	4.667	1.631
σ		0.006	0.008	0.282	0.742%	0.000	0.196	0.011
%RSD		14.960	5.173	1.154	0.642	0.000	4.192	0.691

CCV 10/18/2016 02:45:42 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:46:03	91.582%	688.900	264.100	T 10160.000	T 29780.000	T 30280.000	T 10240.000	T 30120.000	109.738%	0.000	T 1299.000	386.800
2	14:46:25	86.634%	709.900	282.000	T 9941.000	T 29250.000	T 29820.000	T 9814.000	T 29720.000	110.773%	0.000	T 1266.000	376.600
3	14:46:46	87.685%	695.800	273.000	T 9960.000	T 29300.000	T 29980.000	T 9861.000	T 29100.000	108.722%	0.000	T 1262.000	376.900
x		88.634%	111.714%	109.216%	T 100.202%	T 98.141%	T 100.087%	T 99.721%	T 98.817%	109.744%	0.000	T 102.032%	95.021%
σ		2.607%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.026%	0.000	T n/a	n/a
%RSD		2.941	1.531	3.289	T 1.208	T 0.991	T 0.772	T 2.347	T 1.733	0.935	0.000	T 1.591	1.523

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:46:03	20.970	T 1256.000	T 30190.000	479.500	1282.000	1188.000	1219.000	207.200	-0.341	214.500	0.000	0.000
2	14:46:25	18.490	T 1205.000	T 29330.000	468.500	1259.000	1229.000	1232.000	210.500	-0.414	215.000	0.000	0.000
3	14:46:46	21.010	T 1230.000	T 29660.000	464.400	1242.000	1191.000	1225.000	206.300	-0.407	213.700	0.000	0.000
x		20.150	T 98.424%	T 99.093%	94.160%	100.865%	96.209%	98.054%	103.994%	-0.387	107.188%	0.000	0.000
σ		1.443	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.040	n/a	0.000	0.000
%RSD		7.162	T 2.090	T 1.465	1.664	1.589	1.879	0.532	1.076	10.340	0.318	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:46:03	189.100	115.581%	1101.000	104.200	3.263	191.500	110.815%	0.000	233.500	232.600	1134.000	107.107%
2	14:46:25	189.700	112.053%	1157.000	104.900	16.750	194.400	108.413%	0.000	239.900	237.700	1157.000	104.491%
3	14:46:46	189.700	110.456%	1174.000	103.700	4.169	193.900	107.077%	0.000	239.000	237.300	1162.000	103.112%
x		189.500	112.696%	91.533%	104.291%	8.061	96.632%	108.769%	0.000	237.500	94.342%	92.112%	104.903%
σ		0.388	2.622%	n/a	n/a	7.539	n/a	1.894%	0.000	3.460	n/a	n/a	2.029%
%RSD		0.205	2.327	3.313	0.584	93.530	0.793	1.741	0.000	1.457	1.208	1.295	1.934

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:46:03	19.030	174.000	T 1225.000	100.003%	0.000	16.030	9.181
2	14:46:25	19.860	180.600	T 1246.000	98.004%	0.000	17.660	9.729
3	14:46:46	20.260	175.500	T 1217.000	99.694%	0.000	18.090	9.315
x		98.577%	88.356%	T 98.362%	99.234%	0.000	86.297%	94.083%
σ		n/a	n/a	T n/a	1.076%	0.000	n/a	n/a

%RSD	3.171	1.937	T 1.235	1.084	0.000	6.303	3.037

CCB 10/18/2016 02:51:26 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:51:48	95.066%	0.042	-3.569	-4.566	3.325	3.637	5.192	5.425	116.461%	0.000	0.672	-0.108
2	14:52:09	93.329%	-0.031	-3.174	-4.902	1.255	3.248	3.949	1.629	117.236%	0.000	0.222	-0.051
3	14:52:31	94.697%	0.116	-2.701	-3.840	2.967	3.834	4.024	5.468	116.057%	0.000	0.812	-0.051
x		94.364%	0.042	-3.148	-4.436	2.516	3.573	4.389	4.174	116.584%	0.000	0.568	-0.070
σ		0.915%	0.074	0.435	0.543	1.106	0.298	0.697	2.204	0.599%	0.000	0.308	0.033
%RSD		0.970	175.300	13.810	12.230	43.980	8.340	15.870	52.810	0.514	0.000	54.220	46.500

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:51:48	10.460	0.088	12.640	0.022	0.037	-0.049	-0.261	-0.559	0.385	-1.220	0.000	0.000
2	14:52:09	11.340	0.106	11.990	0.039	0.028	-0.071	-0.431	-0.602	0.394	-1.007	0.000	0.000
3	14:52:31	10.580	0.058	12.490	0.010	0.079	0.021	-0.464	-0.637	0.409	-1.530	0.000	0.000
x		10.790	0.084	12.370	0.024	0.048	-0.033	-0.386	-0.600	0.396	-1.252	0.000	0.000
σ		0.477	0.024	0.339	0.014	0.027	0.048	0.109	0.039	0.012	0.263	0.000	0.000
%RSD		4.424	28.960	2.736	59.980	56.920	146.300	28.210	6.547	3.088	21.000	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:51:48	0.008	116.329%	1.412	0.006	-1.420	0.045	113.813%	0.000	-0.167	-0.195	0.090	104.272%
2	14:52:09	0.012	115.378%	1.318	0.010	-1.293	0.042	114.528%	0.000	-0.125	-0.156	0.036	104.858%
3	14:52:31	0.019	117.021%	1.302	0.010	-0.883	0.011	114.396%	0.000	-0.122	-0.153	0.089	108.176%
x		0.013	116.243%	1.344	0.008	-1.199	0.032	114.246%	0.000	-0.138	-0.168	0.072	105.769%
σ		0.006	0.825%	0.060	0.002	0.281	0.019	0.381%	0.000	0.025	0.023	0.031	2.105%
%RSD		45.850	0.710	4.434	21.660	23.420	58.710	0.333	0.000	18.250	13.890	42.680	1.991

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:51:48	0.075	0.105	-0.035	103.131%	0.000	0.570	-0.004
2	14:52:09	0.079	0.098	-0.027	100.458%	0.000	0.571	-0.002
3	14:52:31	0.053	0.098	-0.012	102.026%	0.000	0.570	-0.001
x		0.069	0.101	-0.025	101.872%	0.000	0.570	-0.002
σ		0.014	0.004	0.012	1.343%	0.000	0.000	0.001
%RSD		20.500	4.222	46.330	1.319	0.000	0.085	59.150

CCVL 10/18/2016 02:57:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:57:32	98.719%	1.489	42.100	T 535.200	199.700	55.000	478.900	498.700	118.637%	0.000	5.458	4.295
2	14:57:55	97.865%	1.431	39.980	T 519.300	199.600	53.240	467.700	487.600	119.706%	0.000	4.751	3.866
3	14:58:18	94.234%	1.358	43.380	T 522.100	200.500	55.780	467.400	502.100	119.035%	0.000	5.226	4.041
x		96.939%	142.616%	104.552%	T 105.106%	99.989%	109.344%	94.266%	99.231%	119.126%	0.000	102.900%	101.689%
σ		2.381%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.540%	0.000	n/a	n/a
%RSD		2.456	4.589	4.109	T 1.616	0.244	2.381	1.389	1.527	0.454	0.000	7.009	5.304

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:57:32	12.260	2.242	205.700	1.131	2.350	5.337	21.280	1.650	0.403	3.323	0.000	0.000
2	14:57:55	12.620	2.297	200.300	1.152	2.573	5.133	22.200	1.424	0.446	3.688	0.000	0.000
3	14:58:18	12.050	2.352	198.500	1.064	2.251	5.304	21.390	1.466	0.418	3.214	0.000	0.000
x		12.310	114.842%	100.753%	111.573%	119.560%	105.159%	108.123%	75.676%	0.422	85.202%	0.000	0.000
σ		0.289	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.022	n/a	0.000	0.000
%RSD		2.347	2.398	1.852	4.101	6.894	2.080	2.334	7.943	5.115	7.282	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:57:32	4.843	119.054%	9.340	1.105	-0.272	1.055	116.726%	0.000	1.526	1.548	9.523	107.951%
2	14:57:55	4.917	119.130%	9.322	1.223	-0.499	1.165	115.424%	0.000	1.713	1.585	9.527	106.675%
3	14:58:18	4.728	117.906%	9.620	1.096	-2.374	1.022	117.123%	0.000	1.681	1.581	9.122	106.501%
x		96.589%	118.697%	94.275%	114.141%	-1.048	108.071%	116.424%	0.000	1.640	78.565%	93.905%	107.042%
σ		n/a	0.686%	n/a	n/a	1.154	n/a	0.889%	0.000	0.100	n/a	n/a	0.792%
%RSD		1.965	0.578	1.775	6.183	110.000	6.911	0.763	0.000	6.112	1.296	2.480	0.740

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:57:32	1.493	1.774	1.027	103.074%	0.000	1.239	0.952
2	14:57:55	1.547	1.734	1.081	103.066%	0.000	1.240	0.999
3	14:58:18	1.666	1.847	1.066	104.903%	0.000	1.258	1.006
x		78.446%	89.249%	105.821%	103.681%	0.000	62.289%	98.547%
σ		n/a	n/a	n/a	1.058%	0.000	n/a	n/a
%RSD		5.637	3.194	2.637	1.021	0.000	0.876	2.941

200-35736-A-5-A PDS 10/18/2016 03:02:58 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:03:20	107.870%	16.660	456.400	T 4149.000	T 16130.000	T 94030.000	T 11100.000	T 15820.000	178.668%	0.000	156.500	120.000
2	15:03:41	106.954%	17.060	466.000	T 4237.000	T 16320.000	T 94370.000	T 11070.000	14790.000	182.109%	0.000	160.600	123.300
3	15:04:03	106.144%	16.950	473.600	T 4157.000	T 16400.000	T 95440.000	T 11190.000	15160.000	181.808%	0.000	162.100	121.700
x		106.989%	16.890	465.400	T 4181.000	T 16280.000	T 94610.000	T 11120.000	T 15260.000	180.862%	0.000	159.700	121.700
σ		0.864%	0.208	8.586	T 48.410	T 140.400	T 735.300	T 60.540	T 520.600	1.906%	0.000	2.863	1.681
%RSD		0.807	1.233	1.845	T 1.158	T 0.862	T 0.777	T 0.544	T 3.412	1.054	0.000	1.792	1.381

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:03:20	13.130	T 2573.000	T 101100.000	51.560	120.000	137.100	632.800	41.110	0.193	36.290	0.000	0.000
2	15:03:41	12.670	T 2600.000	T 99850.000	50.340	118.400	141.300	645.200	41.420	0.218	36.100	0.000	0.000
3	15:04:03	12.880	T 2623.000	T 102600.000	51.140	121.600	140.900	641.200	43.190	0.182	37.470	0.000	0.000
x		12.890	T 2598.000	T 101200.000	51.010	120.000	139.700	639.700	41.910	0.198	36.620	0.000	0.000
σ		0.231	T 25.030	T 1392.000	0.617	1.592	2.323	6.336	1.119	0.019	0.744	0.000	0.000
%RSD		1.791	T 0.963	T 1.376	1.209	1.326	1.662	0.991	2.671	9.456	2.032	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:03:20	128.200	389.857%	30.840	10.730	-5.457	10.220	122.565%	0.000	17.410	17.340	1224.000	145.247%
2	15:03:41	131.500	400.328%	30.840	10.930	-4.435	10.650	123.091%	0.000	17.410	17.810	1271.000	147.265%
3	15:04:03	130.800	406.077%	30.810	10.740	-9.379	10.850	125.253%	0.000	17.580	17.630	1263.000	150.201%
x		130.200	398.754%	30.830	10.800	-6.424	10.570	123.636%	0.000	17.470	17.600	1253.000	147.571%
σ		1.754	8.224%	0.018	0.115	2.610	0.320	1.425%	0.000	0.098	0.237	25.000	2.491%
%RSD		1.347	2.062	0.059	1.066	40.630	3.024	1.153	0.000	0.562	1.349	1.995	1.688

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:03:20	13.200	17.130	119.900	113.383%	0.000	46.260	17.590
2	15:03:41	13.260	17.450	120.900	116.018%	0.000	45.370	17.400
3	15:04:03	13.140	17.520	121.600	117.889%	0.000	44.320	17.620
x		13.200	17.360	120.800	115.763%	0.000	45.310	17.540
σ		0.059	0.208	0.826	2.264%	0.000	0.972	0.122
%RSD		0.448	1.198	0.684	1.956	0.000	2.145	0.698

200-35736-A-5-I MS 10/18/2016 03:08:42 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:09:04	104.824%	17.000	386.900	T 4301.000	T 15240.000	T 85790.000	T 9926.000	15240.000	178.235%	0.000	155.800	117.300
2	15:09:26	107.050%	16.380	376.400	T 4282.000	T 15200.000	T 85620.000	T 10040.000	T 16250.000	181.375%	0.000	153.200	116.500
3	15:09:48	105.509%	17.480	390.600	T 4321.000	T 15040.000	T 84690.000	T 9825.000	15070.000	182.752%	0.000	156.700	118.800
x		105.794%	16.950	384.600	T 4302.000	T 15160.000	T 85370.000	T 9930.000	T 15520.000	180.787%	0.000	155.200	117.500
σ		1.140%	0.552	7.368	T 19.320	T 108.500	T 591.000	T 106.400	T 638.000	2.315%	0.000	1.814	1.177
%RSD		1.078	3.255	1.916	T 0.449	T 0.716	T 0.692	T 1.072	T 4.110	1.280	0.000	1.169	1.001

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:09:04	12.330	T 2673.000	T 101900.000	51.150	116.300	135.800	625.300	44.550	0.222	37.330	0.000	0.000
2	15:09:26	12.690	T 2693.000	T 102700.000	51.470	118.000	137.100	621.800	43.950	0.214	36.560	0.000	0.000
3	15:09:48	11.820	T 2674.000	T 103200.000	52.480	118.000	138.100	624.500	44.840	0.179	36.360	0.000	0.000
x		12.280	T 2680.000	T 102600.000	51.700	117.400	137.000	623.900	44.450	0.205	36.750	0.000	0.000
σ		0.436	T 11.580	T 625.400	0.696	0.987	1.123	1.864	0.454	0.023	0.515	0.000	0.000
%RSD		3.551	T 0.432	T 0.610	1.346	0.840	0.820	0.299	1.022	11.150	1.400	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:09:04	129.600	385.920%	31.120	11.490	-4.860	10.880	123.750%	0.000	4.865	4.830	1165.000	145.726%
2	15:09:26	127.200	390.812%	31.930	11.250	-5.775	10.700	127.044%	0.000	4.790	4.903	1155.000	148.701%

3	15:09:48	128.000	393.717%	31.690	11.330	-4.686	10.560	127.847%	0.000	4.740	4.912	1173.000	150.544%
x		128.300	390.150%	31.580	11.360	-5.107	10.710	126.214%	0.000	4.798	4.882	1164.000	148.324%
σ		1.252	3.940%	0.416	0.119	0.585	0.160	2.171%	0.000	0.063	0.045	9.099	2.431%
%RSD		0.976	1.010	1.319	1.047	11.450	1.491	1.720	0.000	1.313	0.927	0.781	1.639

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:09:04	11.260	13.940	118.700	114.635%	0.000	41.990	17.360
2	15:09:26	11.490	13.850	117.400	118.418%	0.000	40.580	17.350
3	15:09:48	11.300	13.920	119.900	116.555%	0.000	42.220	18.090
x		11.350	13.910	118.600	116.536%	0.000	41.600	17.600
σ		0.121	0.045	1.260	1.891%	0.000	0.887	0.425
%RSD		1.068	0.327	1.062	1.623	0.000	2.132	2.416

200-35736-A-5-J MSD 10/18/2016 03:14:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:47	106.725%	17.720	383.100	┬4226.000	┬16360.000	┬94240.000	┬10750.000	┬16970.000	187.388%	0.000	165.000	123.600
2	15:15:09	104.444%	18.040	406.200	┬4190.000	┬16480.000	┬95110.000	┬10640.000	┬17090.000	190.445%	0.000	166.700	124.300
3	15:15:31	104.974%	17.890	407.600	┬4274.000	┬17110.000	┬97570.000	┬10920.000	┬17380.000	188.188%	0.000	168.500	127.500
x		105.381%	17.880	399.000	┬4230.000	┬16650.000	┬95640.000	┬10770.000	┬17150.000	188.674%	0.000	166.700	125.100
σ		1.194%	0.161	13.700	┬42.480	┬402.500	┬1727.000	┬140.500	┬209.600	1.585%	0.000	1.778	2.063
%RSD		1.133	0.898	3.435	┬1.004	┬2.417	┬1.806	┬1.304	┬1.222	0.840	0.000	1.066	1.648

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:47	12.340	┬2719.000	┬105200.000	53.730	123.900	147.100	658.100	47.120	0.180	37.680	0.000	0.000
2	15:15:09	13.020	┬2772.000	┬105700.000	54.250	124.800	149.800	668.600	46.660	0.198	36.980	0.000	0.000
3	15:15:31	12.640	┬2854.000	┬108900.000	54.450	126.400	146.400	661.300	45.550	0.200	36.760	0.000	0.000
x		12.670	┬2781.000	┬106600.000	54.140	125.000	147.700	662.700	46.440	0.193	37.140	0.000	0.000
σ		0.339	┬68.070	┬2012.000	0.369	1.284	1.776	5.353	0.809	0.011	0.483	0.000	0.000
%RSD		2.679	┬2.447	┬1.886	0.682	1.027	1.202	0.808	1.742	5.776	1.301	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:47	136.700	417.999%	28.430	11.070	-7.042	11.120	126.276%	0.000	4.651	4.696	1294.000	153.132%
2	15:15:09	138.700	425.064%	28.460	11.250	-5.789	11.410	126.530%	0.000	4.666	4.740	1317.000	152.880%
3	15:15:31	137.400	428.369%	28.630	10.890	-6.146	11.110	129.210%	0.000	4.611	4.650	1299.000	151.935%
x		137.600	423.811%	28.510	11.070	-6.325	11.210	127.339%	0.000	4.643	4.695	1303.000	152.649%
σ		1.039	5.297%	0.109	0.182	0.646	0.170	1.625%	0.000	0.028	0.045	12.170	0.631%
%RSD		0.755	1.250	0.382	1.644	10.210	1.519	1.276	0.000	0.607	0.961	0.934	0.413

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:47	9.862	13.380	126.500	118.329%	0.000	42.810	17.640
2	15:15:09	10.400	13.300	126.000	119.801%	0.000	43.110	17.760
3	15:15:31	10.420	13.250	127.700	120.216%	0.000	43.310	18.260
x		10.230	13.310	126.700	119.449%	0.000	43.070	17.890
σ		0.316	0.062	0.888	0.992%	0.000	0.250	0.328

%RSD	3.094	0.469	0.700	0.830	0.000	0.580	1.834	

200-35736-A-6-A 10/18/2016 03:20:08 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:20:29	105.405%	8.616	42.770	┬604.600	┬17680.000	┬114100.000	┬8738.000	┬17870.000	202.839%	0.000	137.200	110.000
2	15:20:52	105.069%	8.261	42.800	┬597.700	┬17780.000	┬111500.000	┬8610.000	┬17940.000	203.897%	0.000	136.900	110.400
3	15:21:13	102.327%	9.730	44.380	┬614.000	┬17920.000	┬114600.000	┬8779.000	17080.000	203.917%	0.000	139.300	112.500
x		104.267%	8.869	43.320	┬605.500	┬17800.000	┬113400.000	┬8709.000	┬17630.000	203.551%	0.000	137.800	111.000
σ		1.689%	0.766	0.923	┬8.176	┬121.700	┬1670.000	┬88.040	┬474.200	0.616%	0.000	1.315	1.358
%RSD		1.620	8.642	2.130	┬1.350	┬0.684	┬1.472	┬1.011	┬2.689	0.303	0.000	0.954	1.224

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:20:29	12.010	┬1663.000	┬101400.000	47.500	124.800	126.900	629.100	17.920	0.191	8.533	0.000	0.000
2	15:20:52	12.340	┬1708.000	┬103700.000	47.260	123.600	126.900	641.900	18.240	0.181	7.525	0.000	0.000
3	15:21:13	11.220	┬1737.000	┬105300.000	47.630	125.600	126.100	633.700	18.090	0.194	6.922	0.000	0.000
x		11.850	┬1703.000	┬103500.000	47.470	124.700	126.700	634.900	18.080	0.188	7.660	0.000	0.000
σ		0.574	┬37.310	┬1978.000	0.188	1.027	0.475	6.464	0.159	0.006	0.814	0.000	0.000
%RSD		4.840	┬2.191	┬1.911	0.397	0.824	0.375	1.018	0.881	3.446	10.620	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:20:29	122.000	549.224%	-0.037	0.860	-6.549	2.716	126.861%	0.000	-0.114	-0.068	1331.000	166.283%
2	15:20:52	125.000	552.295%	-0.094	0.886	-5.853	2.889	127.077%	0.000	-0.028	-0.078	1343.000	165.784%
3	15:21:13	123.200	554.493%	-0.071	0.858	-5.114	2.628	128.475%	0.000	-0.038	-0.059	1360.000	165.933%
x		123.400	552.004%	-0.067	0.868	-5.839	2.744	127.471%	0.000	-0.060	-0.068	1344.000	166.000%
σ		1.503	2.646%	0.029	0.016	0.718	0.133	0.877%	0.000	0.047	0.009	14.530	0.256%
%RSD		1.218	0.479	43.190	1.836	12.290	4.832	0.688	0.000	78.100	13.820	1.081	0.154

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:20:29	0.218	1.050	109.600	118.687%	0.000	29.490	12.380
2	15:20:52	0.199	1.054	110.800	120.713%	0.000	29.640	12.560
3	15:21:13	0.225	0.985	112.400	120.810%	0.000	29.820	12.600
x		0.214	1.030	110.900	120.070%	0.000	29.650	12.510
σ		0.013	0.039	1.389	1.199%	0.000	0.167	0.115
%RSD		6.217	3.784	1.252	0.999	0.000	0.564	0.916

200-35736-A-7-A 10/18/2016 03:25:50 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:26:12	106.217%	7.103	37.960	┬508.200	┬15130.000	┬90020.000	┬7120.000	┬15480.000	192.591%	0.000	129.900	95.020
2	15:26:33	104.425%	7.409	36.840	┬514.900	┬15260.000	┬89890.000	┬7034.000	┬15600.000	194.002%	0.000	130.800	96.940
3	15:26:55	107.766%	7.243	38.520	┬513.800	┬15180.000	┬90470.000	┬7104.000	14490.000	193.372%	0.000	133.000	97.580
x		106.136%	7.252	37.770	┬512.300	┬15190.000	┬90130.000	┬7086.000	┬15190.000	193.321%	0.000	131.200	96.510
σ		1.672%	0.154	0.855	┬3.631	┬62.390	┬305.900	┬45.680	┬606.900	0.707%	0.000	1.595	1.330
%RSD		1.575	2.117	2.264	┬0.709	┬0.411	┬0.339	┬0.645	┬3.995	0.366	0.000	1.216	1.378

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:26:12	9.880	┬3784.000	┬139800.000	48.060	109.700	96.770	543.700	47.640	0.170	7.685	0.000	0.000
2	15:26:33	8.963	┬3809.000	┬142800.000	49.310	111.600	100.000	556.800	47.510	0.180	7.289	0.000	0.000
3	15:26:55	7.969	┬3799.000	┬142700.000	49.160	108.300	96.080	541.500	46.630	0.189	5.719	0.000	0.000
x		8.937	┬3797.000	┬141800.000	48.840	109.800	97.620	547.300	47.260	0.180	6.898	0.000	0.000
σ		0.956	┬12.800	┬1746.000	0.684	1.674	2.100	8.229	0.550	0.010	1.040	0.000	0.000
%RSD		10.700	┬0.337	┬1.231	1.401	1.524	2.151	1.504	1.164	5.326	15.070	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:26:12	96.470	445.351%	0.629	0.754	-7.937	2.185	131.340%	0.000	0.088	0.053	1172.000	157.294%
2	15:26:33	98.830	455.965%	0.609	0.797	-6.349	2.108	129.641%	0.000	0.082	0.106	1180.000	153.521%
3	15:26:55	98.390	459.244%	0.615	0.696	-6.751	2.093	132.818%	0.000	0.103	0.086	1174.000	158.718%
x		97.900	453.520%	0.618	0.749	-7.012	2.128	131.266%	0.000	0.091	0.082	1175.000	156.511%
σ		1.254	7.262%	0.010	0.051	0.826	0.049	1.590%	0.000	0.011	0.027	4.228	2.686%
%RSD		1.281	1.601	1.649	6.755	11.780	2.319	1.211	0.000	11.920	32.670	0.360	1.716

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:26:12	0.247	0.861	133.100	118.979%	0.000	25.160	5.639
2	15:26:33	0.205	0.863	133.900	120.265%	0.000	25.350	5.806
3	15:26:55	0.237	0.850	135.300	120.241%	0.000	25.630	5.815
x		0.230	0.858	134.100	119.828%	0.000	25.380	5.753
σ		0.022	0.007	1.089	0.735%	0.000	0.237	0.099
%RSD		9.551	0.806	0.812	0.614	0.000	0.934	1.724

200-35736-A-8-A 10/18/2016 03:31:32 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:31:54	108.665%	8.774	28.780	┬439.200	┬12220.000	┬79180.000	┬5906.000	13280.000	190.209%	0.000	130.700	85.800
2	15:32:16	107.599%	8.683	32.880	┬453.800	┬12410.000	┬79660.000	┬5990.000	13610.000	187.651%	0.000	133.900	88.800
3	15:32:37	104.969%	9.251	33.290	┬443.800	┬12320.000	┬79070.000	┬5897.000	13550.000	189.763%	0.000	132.700	88.420
x		107.077%	8.903	31.650	┬445.600	┬12320.000	┬79300.000	┬5931.000	13480.000	189.207%	0.000	132.400	87.680
σ		1.902%	0.305	2.493	┬7.444	┬93.530	┬312.900	┬51.050	173.000	1.367%	0.000	1.617	1.633
%RSD		1.777	3.428	7.877	┬1.671	┬0.759	┬0.395	┬0.861	1.283	0.722	0.000	1.221	1.863

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:31:54	6.840	T 4787.000	TM 251100.000	54.080	102.500	91.780	578.500	148.300	0.144	5.867	0.000	0.000
2	15:32:16	7.439	T 4944.000	TM 258100.000	55.550	105.600	93.900	580.700	149.500	0.128	6.808	0.000	0.000
3	15:32:37	7.477	T 4877.000	TM 252500.000	54.560	104.100	92.750	582.800	147.200	0.140	6.179	0.000	0.000
x		7.252	T 4870.000	TM 253900.000	54.730	104.100	92.810	580.700	148.300	0.137	6.284	0.000	0.000
σ		0.357	T 78.730	TM 3727.000	0.751	1.541	1.058	2.172	1.162	0.009	0.479	0.000	0.000
%RSD		4.930	T 1.617	TM 1.468	1.372	1.480	1.140	0.374	0.783	6.299	7.626	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:31:54	87.510	447.459%	3.007	0.619	-6.778	2.296	130.274%	0.000	0.239	0.241	1090.000	157.851%
2	15:32:16	87.420	452.602%	2.991	0.651	-6.919	2.755	130.249%	0.000	0.311	0.308	1104.000	160.687%
3	15:32:37	87.690	447.059%	2.980	0.644	-6.655	2.574	131.062%	0.000	0.322	0.315	1105.000	159.146%
x		87.540	449.040%	2.993	0.638	-6.784	2.542	130.528%	0.000	0.291	0.288	1100.000	159.228%
σ		0.140	3.091%	0.014	0.017	0.132	0.231	0.462%	0.000	0.045	0.041	8.466	1.420%
%RSD		0.160	0.688	0.467	2.608	1.947	9.097	0.354	0.000	15.450	14.210	0.770	0.892

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:31:54	0.217	0.688	132.300	120.216%	0.000	22.380	6.745
2	15:32:16	0.217	0.716	137.500	116.596%	0.000	23.500	7.199
3	15:32:37	0.240	0.698	135.400	120.208%	0.000	23.030	7.055
x		0.225	0.701	135.100	119.007%	0.000	22.970	7.000
σ		0.013	0.014	2.655	2.088%	0.000	0.565	0.232
%RSD		5.925	1.997	1.966	1.754	0.000	2.460	3.316

200-35736-A-9-A 10/18/2016 03:37:15 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:37	103.699%	6.064	36.280	T 591.900	T 16570.000	T 90230.000	T 6848.000	T 21400.000	186.070%	0.000	129.100	96.790
2	15:37:58	103.575%	6.509	34.010	T 590.800	T 16550.000	T 90810.000	T 6869.000	T 21230.000	186.057%	0.000	129.100	96.180
3	15:38:20	102.144%	6.841	33.800	T 593.700	T 16330.000	T 90360.000	T 6754.000	T 21500.000	185.781%	0.000	131.100	97.480
x		103.139%	6.471	34.700	T 592.100	T 16480.000	T 90470.000	T 6824.000	T 21380.000	185.969%	0.000	129.800	96.820
σ		0.865%	0.390	1.373	T 1.475	T 136.400	T 306.500	T 61.070	T 138.400	0.163%	0.000	1.175	0.651
%RSD		0.838	6.026	3.957	T 0.249	T 0.828	T 0.339	T 0.895	T 0.647	0.088	0.000	0.905	0.672

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:37	9.497	T 3869.000	T 123400.000	52.300	117.800	106.300	637.000	24.780	0.181	8.639	0.000	0.000
2	15:37:58	11.160	T 3982.000	T 125700.000	53.400	122.200	108.600	642.400	25.370	0.178	7.337	0.000	0.000
3	15:38:20	8.912	T 3907.000	T 125900.000	53.210	121.200	104.800	637.600	24.050	0.196	5.705	0.000	0.000
x		9.858	T 3919.000	T 125000.000	52.970	120.400	106.600	639.000	24.740	0.185	7.227	0.000	0.000
σ		1.168	T 57.610	T 1365.000	0.588	2.309	1.931	2.954	0.663	0.010	1.470	0.000	0.000
%RSD		11.850	T 1.470	T 1.092	1.111	1.918	1.812	0.462	2.679	5.206	20.340	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:37	123.300	422.946%	0.532	0.740	-6.985	3.228	125.448%	0.000	0.148	0.153	1222.000	146.793%
2	15:37:58	124.200	425.195%	0.597	0.745	-5.694	3.042	126.643%	0.000	0.157	0.162	1221.000	149.703%

3	15:38:20	122.600	424.294%	0.559	0.810	-7.736	3.141	127.739%	0.000	0.237	0.160	1236.000	150.053%
x		123.400	424.145%	0.563	0.765	-6.805	3.137	126.610%	0.000	0.181	0.158	1227.000	148.850%
σ		0.798	1.132%	0.032	0.039	1.032	0.093	1.146%	0.000	0.049	0.005	8.335	1.790%
%RSD		0.646	0.267	5.758	5.105	15.170	2.961	0.905	0.000	27.100	2.927	0.679	1.202

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:37	0.246	0.845	149.100	115.571%	0.000	24.620	6.996
2	15:37:58	0.293	0.878	150.300	116.392%	0.000	25.130	7.157
3	15:38:20	0.229	0.885	150.200	117.580%	0.000	25.250	7.180
x		0.256	0.870	149.900	116.514%	0.000	25.000	7.111
σ		0.033	0.021	0.646	1.010%	0.000	0.335	0.100
%RSD		12.870	2.436	0.431	0.867	0.000	1.341	1.409

200-35736-A-10-A 10/18/2016 03:42:58 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:19	103.666%	7.616	29.010	┬530.500	┬15070.000	┬86000.000	┬5988.000	┬19360.000	188.110%	0.000	129.300	93.370
2	15:43:41	101.430%	7.354	29.330	┬519.200	┬15090.000	┬85500.000	┬5997.000	┬19300.000	189.186%	0.000	128.200	94.130
3	15:44:03	101.279%	7.175	30.590	┬520.500	┬15140.000	┬86030.000	┬6058.000	┬19510.000	189.107%	0.000	129.300	95.770
x		102.125%	7.382	29.640	┬523.400	┬15100.000	┬85850.000	┬6014.000	┬19390.000	188.801%	0.000	128.900	94.420
σ		1.336%	0.221	0.838	┬6.194	┬38.350	┬299.300	┬37.980	┬109.100	0.600%	0.000	0.640	1.228
%RSD		1.309	2.999	2.825	┬1.183	┬0.254	┬0.349	┬0.631	┬0.563	0.318	0.000	0.497	1.300

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:19	9.147	┬4531.000	┬134200.000	51.740	112.100	99.970	595.300	35.590	0.176	6.780	0.000	0.000
2	15:43:41	8.740	┬4588.000	┬135400.000	51.510	111.900	99.840	593.900	34.750	0.176	8.144	0.000	0.000
3	15:44:03	9.861	┬4579.000	┬136900.000	52.470	112.800	100.200	597.200	35.250	0.179	7.182	0.000	0.000
x		9.249	┬4566.000	┬135500.000	51.900	112.300	100.000	595.400	35.200	0.177	7.368	0.000	0.000
σ		0.568	┬30.800	┬1377.000	0.503	0.467	0.210	1.655	0.424	0.002	0.701	0.000	0.000
%RSD		6.138	┬0.675	┬1.016	0.970	0.416	0.210	0.278	1.204	1.100	9.514	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:19	110.900	429.376%	0.672	0.715	-6.491	2.814	127.070%	0.000	0.106	0.153	1197.000	152.725%
2	15:43:41	110.700	429.045%	0.715	0.671	-6.241	2.650	128.297%	0.000	0.174	0.161	1192.000	151.625%
3	15:44:03	112.500	439.030%	0.685	0.662	-5.281	2.547	128.758%	0.000	0.141	0.173	1216.000	154.019%
x		111.400	432.484%	0.691	0.683	-6.004	2.670	128.042%	0.000	0.140	0.162	1202.000	152.789%
σ		0.980	5.671%	0.022	0.028	0.638	0.135	0.872%	0.000	0.034	0.010	12.450	1.198%
%RSD		0.880	1.311	3.179	4.134	10.630	5.036	0.681	0.000	24.470	6.273	1.036	0.784

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:19	0.192	0.796	144.000	115.636%	0.000	24.440	6.758
2	15:43:41	0.221	0.810	146.400	115.319%	0.000	24.790	6.847
3	15:44:03	0.239	0.738	144.100	118.207%	0.000	24.440	6.740
x		0.218	0.781	144.800	116.387%	0.000	24.560	6.782
σ		0.024	0.038	1.341	1.584%	0.000	0.201	0.057

%RSD	10.880	4.895	0.926	1.361	0.000	0.819	0.843	

200-35736-A-11-A 10/18/2016 03:48:41 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:03	99.703%	4.066	26.220	T 462.000	T 11740.000	T 48440.000	T 4201.000	T 46560.000	150.608%	0.000	76.130	59.690
2	15:49:24	97.603%	3.851	26.630	T 468.700	T 11760.000	T 49710.000	T 4329.000	T 47530.000	150.392%	0.000	78.520	61.110
3	15:49:46	95.983%	4.262	28.190	T 467.500	T 11920.000	T 49840.000	T 4307.000	T 47870.000	149.863%	0.000	78.500	60.710
x		97.763%	4.060	27.010	T 466.100	T 11810.000	T 49330.000	T 4279.000	T 47320.000	150.287%	0.000	77.720	60.500
σ		1.865%	0.206	1.043	T 3.559	T 97.140	T 773.300	T 68.140	T 680.100	0.383%	0.000	1.374	0.732
%RSD		1.908	5.071	3.862	T 0.763	T 0.823	T 1.568	T 1.593	T 1.437	0.255	0.000	1.768	1.210

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:03	6.945	TM 6470.000	T 91690.000	43.410	82.940	2150.000	789.500	33.060	0.118	13.240	0.000	0.000
2	15:49:24	6.343	TM 6515.000	T 92580.000	43.130	85.870	2131.000	798.300	32.800	0.140	11.800	0.000	0.000
3	15:49:46	6.583	TM 6582.000	T 94490.000	43.820	85.930	2169.000	797.300	33.240	0.101	14.400	0.000	0.000
x		6.624	TM 6523.000	T 92920.000	43.460	84.910	2150.000	795.100	33.030	0.120	13.150	0.000	0.000
σ		0.303	TM 56.530	T 1433.000	0.349	1.708	18.940	4.807	0.221	0.020	1.303	0.000	0.000
%RSD		4.577	TM 0.867	T 1.542	0.803	2.011	0.881	0.605	0.670	16.490	9.908	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:03	145.400	308.758%	1.382	2.015	-4.680	3.572	118.221%	0.000	0.260	0.288	761.800	132.671%
2	15:49:24	145.100	308.499%	1.499	1.976	-3.824	3.843	118.466%	0.000	0.303	0.280	769.800	131.018%
3	15:49:46	146.300	311.474%	1.535	2.024	-5.339	3.663	119.096%	0.000	0.300	0.295	768.600	132.813%
x		145.600	309.577%	1.472	2.005	-4.614	3.693	118.594%	0.000	0.287	0.288	766.700	132.168%
σ		0.647	1.648%	0.080	0.025	0.759	0.138	0.451%	0.000	0.024	0.008	4.336	0.998%
%RSD		0.444	0.532	5.461	1.263	16.460	3.729	0.381	0.000	8.379	2.631	0.566	0.755

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:03	0.590	0.418	153.600	107.707%	0.000	13.280	5.413
2	15:49:24	0.574	0.422	154.600	108.187%	0.000	13.520	5.605
3	15:49:46	0.628	0.417	153.800	110.374%	0.000	13.100	5.486
x		0.598	0.419	154.000	108.756%	0.000	13.300	5.501
σ		0.028	0.002	0.528	1.422%	0.000	0.210	0.097
%RSD		4.673	0.591	0.343	1.307	0.000	1.580	1.764

200-35736-A-11-A SD@5 10/18/2016 03:54:24 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:46	92.687%	0.704	0.654	96.020	2465.000	T 11030.000	T 936.000	9626.000	125.952%	0.000	17.820	13.190
2	15:55:08	95.138%	0.831	0.874	93.430	2487.000	T 11220.000	T 956.900	9653.000	126.631%	0.000	17.360	13.260
3	15:55:30	92.208%	1.067	0.996	89.910	2472.000	T 11030.000	T 932.200	9535.000	128.607%	0.000	17.160	13.340
x		93.345%	0.867	0.842	93.120	2475.000	T 11090.000	T 941.700	9605.000	127.063%	0.000	17.450	13.260
σ		1.572%	0.185	0.173	3.071	10.860	T 111.400	T 13.330	61.600	1.379%	0.000	0.341	0.079
%RSD		1.684	21.280	20.600	3.298	0.439	T 1.004	T 1.415	0.641	1.086	0.000	1.957	0.596

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:46	6.567	T 1450.000	T 20720.000	9.754	19.450	430.100	174.800	6.798	0.274	2.420	0.000	0.000
2	15:55:08	7.146	T 1458.000	T 20840.000	9.800	20.160	428.400	169.700	6.064	0.271	1.866	0.000	0.000
3	15:55:30	7.347	T 1433.000	T 20710.000	9.825	19.230	433.600	175.000	6.374	0.277	1.431	0.000	0.000
x		7.020	T 1447.000	T 20760.000	9.793	19.610	430.700	173.100	6.412	0.274	1.906	0.000	0.000
σ		0.405	T 12.790	T 68.240	0.036	0.484	2.639	3.008	0.368	0.003	0.496	0.000	0.000
%RSD		5.770	T 0.884	T 0.329	0.368	2.468	0.613	1.737	5.748	1.204	26.020	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:46	28.130	151.986%	0.193	0.422	-3.230	0.977	113.725%	0.000	-0.298	-0.329	149.500	109.272%
2	15:55:08	28.020	156.404%	0.121	0.395	-2.113	0.815	116.984%	0.000	-0.286	-0.304	146.200	109.536%
3	15:55:30	28.200	154.606%	0.196	0.453	-1.748	0.794	115.844%	0.000	-0.316	-0.314	150.100	111.237%
x		28.120	154.332%	0.170	0.423	-2.364	0.862	115.518%	0.000	-0.300	-0.316	148.600	110.015%
σ		0.089	2.222%	0.042	0.029	0.772	0.100	1.654%	0.000	0.015	0.012	2.100	1.067%
%RSD		0.316	1.440	24.740	6.760	32.660	11.580	1.432	0.000	4.961	3.951	1.413	0.970

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:46	0.153	0.061	30.450	100.799%	0.000	2.424	1.075
2	15:55:08	0.083	0.056	30.840	101.327%	0.000	2.511	1.062
3	15:55:30	0.132	0.050	30.950	100.612%	0.000	2.666	1.130
x		0.123	0.056	30.750	100.913%	0.000	2.534	1.089
σ		0.036	0.006	0.265	0.371%	0.000	0.122	0.036
%RSD		29.000	10.310	0.862	0.367	0.000	4.826	3.295

CCV 10/18/2016 04:00:08 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:30	85.869%	722.300	277.400	T 10490.000	T 30310.000	T 30480.000	T 9865.000	27500.000	106.300%	0.000	T 1275.000	382.700
2	16:00:52	84.349%	722.500	287.800	T 10200.000	T 29710.000	T 30170.000	T 9728.000	27290.000	106.690%	0.000	T 1252.000	374.000
3	16:01:14	83.906%	716.800	282.200	T 10050.000	T 29500.000	T 29600.000	T 9698.000	27740.000	105.447%	0.000	T 1275.000	379.400
x		84.708%	115.289%	112.994%	T 102.450%	T 99.469%	T 100.274%	T 97.636%	91.695%	106.146%	0.000	T 101.396%	94.671%
σ		1.030%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.636%	0.000	T n/a	n/a
%RSD		1.216	0.453	1.831	T 2.214	T 1.402	T 1.471	T 0.910	0.834	0.599	0.000	T 1.037	1.165

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:30	21.710	┬1237.000	┬29170.000	459.500	1241.000	1236.000	1250.000	210.700	-0.497	217.200	0.000	0.000
2	16:00:52	16.480	┬1219.000	┬29230.000	460.400	1230.000	1204.000	1228.000	206.800	-0.397	211.200	0.000	0.000
3	16:01:14	15.240	┬1202.000	┬28840.000	453.200	1210.000	1198.000	1233.000	208.900	-0.325	209.400	0.000	0.000
x		17.810	┬97.535%	┬96.932%	91.537%	98.153%	97.012%	98.988%	104.393%	-0.406	106.306%	0.000	0.000
σ		3.434	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.086	n/a	0.000	0.000
%RSD		19.280	┬1.413	┬0.734	0.859	1.268	1.702	0.924	0.954	21.270	1.915	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:30	188.700	106.193%	1127.000	104.500	12.530	189.300	103.323%	0.000	234.000	228.500	1140.000	96.796%
2	16:00:52	185.600	103.346%	1165.000	102.500	9.007	190.600	102.990%	0.000	235.300	228.800	1120.000	96.545%
3	16:01:14	188.600	103.457%	┬1280.000	102.900	6.378	193.200	101.251%	0.000	238.600	230.900	1143.000	96.410%
x		187.600	104.332%	┬95.267%	103.310%	9.304	95.520%	102.521%	0.000	236.000	91.772%	90.771%	96.584%
σ		1.782	1.613%	┬n/a	n/a	3.085	n/a	1.112%	0.000	2.398	n/a	n/a	0.196%
%RSD		0.950	1.546	┬6.696	1.050	33.160	1.036	1.085	0.000	1.016	0.561	1.104	0.203

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:30	19.280	173.600	┬1228.000	92.692%	0.000	15.770	9.188
2	16:00:52	19.670	179.300	┬1253.000	90.638%	0.000	17.200	9.332
3	16:01:14	20.370	175.600	┬1221.000	92.619%	0.000	17.930	9.339
x		98.876%	88.077%	┬98.733%	91.983%	0.000	84.841%	92.860%
σ		n/a	n/a	┬n/a	1.166%	0.000	n/a	n/a
%RSD		2.792	1.643	┬1.373	1.267	0.000	6.486	0.919

CCB 10/18/2016 04:05:52 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:06:14	92.799%	0.082	-4.083	4.405	2.131	4.234	5.389	2.157	112.760%	0.000	0.455	-0.120
2	16:06:35	88.512%	-0.011	-3.779	4.715	2.563	4.510	4.521	2.849	113.255%	0.000	0.418	-0.044
3	16:06:57	90.627%	0.046	-4.543	0.104	2.118	4.776	4.827	2.319	115.236%	0.000	0.418	-0.048
x		90.646%	0.039	-4.135	3.075	2.271	4.507	4.912	2.442	113.750%	0.000	0.430	-0.071
σ		2.144%	0.047	0.385	2.577	0.253	0.271	0.440	0.362	1.310%	0.000	0.021	0.043
%RSD		2.365	119.300	9.299	83.810	11.160	6.006	8.960	14.820	1.152	0.000	4.981	60.660

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:06:14	10.850	0.120	14.940	0.020	0.092	0.059	-0.315	-0.628	0.379	-1.790	0.000	0.000
2	16:06:35	11.680	0.116	15.930	0.020	0.014	0.050	-0.378	-0.489	0.364	-0.373	0.000	0.000
3	16:06:57	11.090	0.124	15.400	0.004	-0.004	-0.032	-0.316	-0.859	0.405	-1.374	0.000	0.000
x		11.210	0.120	15.420	0.014	0.034	0.026	-0.337	-0.659	0.383	-1.179	0.000	0.000
σ		0.428	0.004	0.499	0.009	0.051	0.050	0.036	0.187	0.021	0.728	0.000	0.000
%RSD		3.822	3.298	3.234	64.370	151.500	195.000	10.690	28.350	5.486	61.770	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:06:14	0.013	109.264%	1.498	0.006	-1.187	0.028	105.656%	0.000	-0.161	-0.195	0.099	98.882%
2	16:06:35	0.016	107.698%	1.617	0.007	-1.681	0.072	108.137%	0.000	-0.173	-0.161	0.078	98.611%

3	16:06:57	0.015	110.057%	1.317	0.005	-0.877	0.011	107.436%	0.000	-0.114	-0.173	0.135	97.974%
x		0.015	109.006%	1.478	0.006	-1.249	0.037	107.076%	0.000	-0.149	-0.176	0.104	98.489%
σ		0.001	1.200%	0.151	0.001	0.405	0.031	1.279%	0.000	0.031	0.017	0.029	0.466%
%RSD		9.303	1.101	10.220	14.470	32.470	85.200	1.194	0.000	20.900	9.627	27.610	0.473

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:06:14	0.062	0.111	-0.027	94.341%	0.000	0.620	-0.001
2	16:06:35	0.063	0.104	-0.029	95.876%	0.000	0.625	-0.001
3	16:06:57	0.044	0.102	-0.028	97.379%	0.000	0.591	0.001
x		0.056	0.106	-0.028	95.865%	0.000	0.612	-0.000
σ		0.011	0.005	0.001	1.519%	0.000	0.019	0.001
%RSD		18.820	4.386	3.380	1.584	0.000	3.034	348.600

CCVL 10/18/2016 04:11:36 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:59	93.310%	1.391	40.680	486.300	199.300	51.980	470.000	478.400	116.897%	0.000	5.133	3.931
2	16:12:22	94.075%	1.639	42.460	T 522.100	188.400	51.030	456.100	483.100	118.650%	0.000	5.112	4.070
3	16:12:46	90.894%	1.564	44.150	T 562.700	206.900	57.430	495.200	491.400	113.040%	0.000	5.744	4.611
x		92.760%	153.140%	106.068%	T 104.734%	99.104%	106.963%	94.752%	96.861%	116.196%	0.000	106.587%	105.097%
σ		1.660%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	2.870%	0.000	n/a	n/a
%RSD		1.790	8.309	4.093	T 7.302	4.716	6.460	4.187	1.367	2.470	0.000	6.735	8.542

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:59	12.840	2.059	192.800	1.167	2.168	5.707	23.690	1.184	0.431	3.118	0.000	0.000
2	16:12:22	12.970	2.033	194.700	1.033	2.325	5.600	23.010	1.440	0.417	3.666	0.000	0.000
3	16:12:46	12.820	2.281	214.000	1.172	2.598	5.800	24.450	1.609	0.439	3.636	0.000	0.000
x		12.880	106.225%	100.247%	112.388%	118.180%	114.048%	118.583%	70.548%	0.429	86.838%	0.000	0.000
σ		0.084	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.011	n/a	0.000	0.000
%RSD		0.656	6.416	5.831	7.010	9.213	1.749	3.051	15.180	2.570	8.863	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:59	4.858	112.149%	9.262	1.111	-0.625	1.155	108.216%	0.000	1.506	1.530	10.080	99.506%
2	16:12:22	4.904	112.942%	9.333	1.082	-0.399	0.961	108.886%	0.000	1.623	1.553	9.611	100.356%
3	16:12:46	5.290	107.148%	10.150	1.179	-0.128	1.020	104.130%	0.000	1.706	1.741	10.200	95.927%
x		100.348%	110.746%	95.802%	112.416%	-0.384	104.564%	107.077%	0.000	1.612	80.403%	99.623%	98.596%
σ		n/a	3.142%	n/a	n/a	0.249	n/a	2.574%	0.000	0.100	n/a	n/a	2.351%
%RSD		4.728	2.837	5.132	4.399	64.870	9.520	2.404	0.000	6.215	7.181	3.110	2.384

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:59	1.768	1.681	1.061	97.768%	0.000	1.233	0.929
2	16:12:22	1.487	1.804	1.086	94.138%	0.000	1.311	0.976
3	16:12:46	1.793	1.973	1.162	90.906%	0.000	1.406	1.137
x		84.132%	90.952%	110.310%	94.271%	0.000	65.826%	101.404%
σ		n/a	n/a	n/a	3.433%	0.000	n/a	n/a

%RSD		10.120	8.048	4.774	3.642	0.000	6.558	10.770

200-35736-A-11-A PDS 10/18/2016 04:17:25 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:47	94.214%	15.240	474.000	T 4833.000	T 13610.000	T 49670.000	T 8454.000	T 50120.000	136.745%	0.000	113.900	91.450
2	16:18:09	94.351%	14.810	462.200	T 4819.000	T 13700.000	T 50190.000	T 8541.000	T 50640.000	137.509%	0.000	115.100	93.080
3	16:18:30	93.671%	15.560	477.700	T 4847.000	T 13600.000	T 50080.000	T 8502.000	T 50420.000	138.730%	0.000	114.900	92.700
x		94.078%	15.210	471.300	T 4833.000	T 13640.000	T 49980.000	T 8499.000	T 50390.000	137.662%	0.000	114.600	92.410
σ		0.360%	0.373	8.120	T 14.260	T 53.550	T 277.200	T 43.360	T 263.000	1.001%	0.000	0.629	0.855
%RSD		0.382	2.450	1.723	T 0.295	T 0.393	T 0.555	T 0.510	T 0.522	0.727	0.000	0.549	0.926

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:47	8.520	TM 6438.000	T 92850.000	49.460	98.030	2169.000	972.400	53.960	0.037	49.790	0.000	0.000
2	16:18:09	7.799	TM 6441.000	T 92800.000	51.400	99.720	2160.000	962.700	52.870	0.050	50.460	0.000	0.000
3	16:18:30	7.164	TM 6538.000	T 93680.000	50.380	100.800	2183.000	983.200	52.910	0.074	50.550	0.000	0.000
x		7.828	TM 6472.000	T 93110.000	50.410	99.510	2171.000	972.700	53.240	0.054	50.270	0.000	0.000
σ		0.678	TM 56.960	T 495.000	0.973	1.385	11.590	10.280	0.618	0.018	0.414	0.000	0.000
%RSD		8.662	TM 0.880	T 0.532	1.930	1.392	0.534	1.056	1.161	34.280	0.823	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:47	193.300	278.924%	39.290	12.450	-4.237	12.440	105.375%	0.000	18.730	18.350	848.700	118.343%
2	16:18:09	190.500	274.987%	40.050	12.110	-2.630	12.350	108.459%	0.000	18.370	18.410	845.500	121.291%
3	16:18:30	193.200	277.445%	40.690	12.730	-3.159	12.320	107.129%	0.000	18.700	18.820	859.000	120.330%
x		192.300	277.118%	40.010	12.430	-3.342	12.370	106.988%	0.000	18.600	18.530	851.100	119.988%
σ		1.599	1.989%	0.703	0.309	0.819	0.063	1.547%	0.000	0.202	0.258	7.056	1.503%
%RSD		0.832	0.718	1.757	2.486	24.490	0.507	1.446	0.000	1.085	1.390	0.829	1.253

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:47	15.050	17.660	162.400	97.898%	0.000	35.580	15.590
2	16:18:09	14.430	17.510	160.200	101.189%	0.000	34.510	15.400
3	16:18:30	15.050	18.200	165.800	98.370%	0.000	34.980	16.300
x		14.850	17.790	162.800	99.152%	0.000	35.020	15.760
σ		0.356	0.367	2.834	1.779%	0.000	0.538	0.476
%RSD		2.401	2.062	1.741	1.795	0.000	1.537	3.022

200-35736-A-11-I MS 10/18/2016 04:23:09 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:23:31	93.575%	16.000	415.500	T 4937.000	T 14570.000	T 56870.000	T 8917.000	T 58680.000	140.337%	0.000	124.800	98.260
2	16:23:53	91.436%	16.530	426.200	T 4987.000	T 14860.000	T 58360.000	T 9108.000	T 60460.000	138.606%	0.000	128.800	103.100
3	16:24:14	89.673%	16.020	427.200	T 4768.000	T 14270.000	T 55520.000	T 8711.000	T 58210.000	141.865%	0.000	125.300	99.340
x		91.561%	16.180	423.000	T 4898.000	T 14570.000	T 56920.000	T 8912.000	T 59120.000	140.269%	0.000	126.300	100.200
σ		1.954%	0.300	6.478	T 114.500	T 296.700	T 1421.000	T 198.600	T 1185.000	1.630%	0.000	2.199	2.551
%RSD		2.134	1.856	1.532	T 2.338	T 2.037	T 2.496	T 2.229	T 2.004	1.162	0.000	1.741	2.545

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:23:31	7.453	TM 6683.000	T 94240.000	48.970	106.200	2529.000	1012.000	55.570	0.093	48.200	0.000	0.000
2	16:23:53	6.713	TM 6854.000	T 96390.000	50.260	109.900	2547.000	1012.000	56.050	0.083	48.220	0.000	0.000
3	16:24:14	7.279	TM 6662.000	T 93950.000	48.600	103.300	2518.000	1002.000	54.960	0.095	47.930	0.000	0.000
x		7.148	TM 6733.000	T 94860.000	49.280	106.500	2531.000	1009.000	55.530	0.090	48.120	0.000	0.000
σ		0.387	TM 105.100	T 1335.000	0.870	3.286	14.660	5.940	0.547	0.007	0.163	0.000	0.000
%RSD		5.413	TM 1.560	T 1.408	1.765	3.086	0.579	0.589	0.985	7.285	0.338	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:23:31	216.600	295.661%	35.910	12.890	-4.358	12.250	105.973%	0.000	4.665	4.719	876.000	122.917%
2	16:23:53	215.700	301.525%	35.870	12.420	-5.063	12.220	107.618%	0.000	4.759	4.732	878.800	121.955%
3	16:24:14	216.100	299.716%	36.180	12.830	-3.963	12.090	107.354%	0.000	4.776	4.735	868.600	121.536%
x		216.100	298.967%	35.990	12.710	-4.461	12.190	106.982%	0.000	4.733	4.729	874.500	122.136%
σ		0.467	3.003%	0.169	0.253	0.557	0.086	0.883%	0.000	0.060	0.009	5.302	0.708%
%RSD		0.216	1.004	0.470	1.990	12.480	0.706	0.825	0.000	1.266	0.183	0.606	0.580

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:23:31	15.170	14.500	151.500	101.124%	0.000	32.910	15.700
2	16:23:53	15.660	14.930	155.400	100.190%	0.000	33.610	15.940
3	16:24:14	15.960	14.610	155.800	100.718%	0.000	33.450	16.200
x		15.600	14.680	154.200	100.677%	0.000	33.320	15.950
σ		0.398	0.224	2.402	0.469%	0.000	0.364	0.250
%RSD		2.552	1.528	1.557	0.465	0.000	1.093	1.570

200-35736-A-11-J MSD 10/18/2016 04:28:54 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:29:15	96.358%	13.650	390.000	T 4764.000	T 14490.000	T 51600.000	T 8441.000	T 41390.000	144.693%	0.000	118.600	95.330
2	16:29:37	93.348%	15.050	408.400	T 4848.000	T 15010.000	T 53880.000	T 8584.000	T 42160.000	142.623%	0.000	123.100	98.400
3	16:29:59	95.122%	15.410	407.800	T 4852.000	T 14860.000	T 51990.000	T 8526.000	T 42430.000	145.994%	0.000	118.400	95.960
x		94.943%	14.700	402.100	T 4822.000	T 14790.000	T 52490.000	T 8517.000	T 41990.000	144.437%	0.000	120.000	96.560
σ		1.513%	0.928	10.480	T 49.410	T 271.000	T 1223.000	T 71.490	T 540.800	1.700%	0.000	2.644	1.624
%RSD		1.594	6.311	2.607	T 1.025	T 1.832	T 2.330	T 0.839	T 1.288	1.177	0.000	2.203	1.682

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:29:15	8.139	T 5778.000	T 89130.000	48.000	105.000	2375.000	1049.000	54.370	0.064	51.740	0.000	0.000
2	16:29:37	7.048	T 6008.000	T 91830.000	48.530	106.700	2381.000	1043.000	55.490	0.074	49.960	0.000	0.000
3	16:29:59	8.399	T 5880.000	T 91530.000	48.480	104.000	2347.000	1044.000	52.480	0.111	47.760	0.000	0.000
x		7.862	T 5889.000	T 90830.000	48.340	105.200	2368.000	1046.000	54.110	0.083	49.820	0.000	0.000
σ		0.717	T 115.400	T 1476.000	0.296	1.348	18.010	3.422	1.521	0.025	1.994	0.000	0.000
%RSD		9.114	T 1.959	T 1.625	0.612	1.281	0.761	0.327	2.810	29.750	4.003	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:29:15	170.900	285.875%	37.770	12.830	-3.114	14.200	107.494%	0.000	4.521	4.693	808.800	122.078%
2	16:29:37	170.300	286.205%	38.540	12.600	-3.492	14.440	108.843%	0.000	4.669	4.701	813.900	122.388%
3	16:29:59	169.700	289.657%	38.050	12.490	-3.925	14.300	109.986%	0.000	4.586	4.786	808.000	122.420%
x		170.300	287.245%	38.120	12.640	-3.510	14.310	108.774%	0.000	4.592	4.726	810.200	122.295%
σ		0.631	2.095%	0.390	0.171	0.406	0.117	1.247%	0.000	0.074	0.051	3.202	0.189%
%RSD		0.371	0.729	1.024	1.354	11.560	0.821	1.147	0.000	1.616	1.089	0.395	0.154

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:29:15	16.060	15.230	161.500	99.190%	0.000	31.530	15.690
2	16:29:37	16.480	15.220	161.200	100.848%	0.000	31.630	15.730
3	16:29:59	16.400	15.450	162.600	100.775%	0.000	32.200	16.100
x		16.310	15.300	161.800	100.271%	0.000	31.790	15.840
σ		0.224	0.132	0.748	0.937%	0.000	0.363	0.225
%RSD		1.374	0.864	0.462	0.934	0.000	1.142	1.418

200-35736-A-12-A 10/18/2016 04:34:38 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:35:00	86.133%	3.924	24.000	T 491.500	T 15060.000	T 44970.000	T 3884.000	T 60800.000	131.615%	0.000	71.220	56.670
2	16:35:22	86.578%	4.327	24.090	T 484.700	T 14950.000	T 45170.000	T 3908.000	T 60740.000	131.413%	0.000	73.160	57.140
3	16:35:43	87.234%	3.293	23.840	T 486.000	T 15070.000	T 45740.000	T 3940.000	T 61890.000	131.184%	0.000	72.500	57.480
x		86.648%	3.848	23.980	T 487.400	T 15030.000	T 45290.000	T 3911.000	T 61140.000	131.404%	0.000	72.290	57.090
σ		0.554%	0.521	0.128	T 3.612	T 64.650	T 395.200	T 28.390	T 648.200	0.215%	0.000	0.988	0.406
%RSD		0.639	13.540	0.532	T 0.741	T 0.430	T 0.873	T 0.726	T 1.060	0.164	0.000	1.367	0.710

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:35:00	5.102	TM 7124.000	T 90490.000	38.520	84.870	2030.000	805.500	35.580	0.042	16.540	0.000	0.000
2	16:35:22	4.514	TM 7200.000	T 93850.000	39.150	84.250	2029.000	810.500	33.350	0.110	11.980	0.000	0.000
3	16:35:43	4.913	TM 7216.000	T 92220.000	39.210	85.390	2039.000	816.500	34.670	0.081	13.810	0.000	0.000
x		4.843	TM 7180.000	T 92190.000	38.960	84.830	2033.000	810.800	34.540	0.078	14.110	0.000	0.000
σ		0.300	TM 49.310	T 1681.000	0.381	0.571	5.351	5.520	1.119	0.034	2.295	0.000	0.000
%RSD		6.201	TM 0.687	T 1.823	0.977	0.673	0.263	0.681	3.239	44.140	16.260	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:35:00	170.700	256.208%	0.998	1.680	-4.201	3.609	104.396%	0.000	0.100	0.120	741.000	115.492%
2	16:35:22	170.800	256.913%	0.880	1.827	-2.404	3.607	105.487%	0.000	0.084	0.155	743.500	116.331%

3	16:35:43	172.900	259.833%	0.872	1.597	-4.336	3.687	104.824%	0.000	0.105	0.157	754.400	117.124%
x		171.500	257.651%	0.917	1.701	-3.647	3.635	104.902%	0.000	0.096	0.144	746.300	116.316%
σ		1.288	1.922%	0.070	0.117	1.079	0.046	0.550%	0.000	0.011	0.021	7.149	0.816%
%RSD		0.751	0.746	7.666	6.865	29.580	1.257	0.524	0.000	11.060	14.500	0.958	0.701

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:35:00	0.452	0.474	124.100	97.825%	0.000	11.650	4.530
2	16:35:22	0.456	0.483	125.800	97.785%	0.000	11.850	4.685
3	16:35:43	0.438	0.456	127.000	97.809%	0.000	11.930	4.716
x		0.449	0.471	125.700	97.806%	0.000	11.810	4.643
σ		0.009	0.014	1.481	0.020%	0.000	0.146	0.100
%RSD		2.036	3.025	1.178	0.021	0.000	1.236	2.146

MB 200-110239/1-A 10/18/2016 04:40:22 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:40:44	96.941%	-0.050	-0.026	154.000	17.270	65.190	12.280	74.140	126.435%	0.000	0.924	0.076
2	16:41:05	93.967%	-0.050	-0.823	144.600	15.620	56.170	10.380	73.260	128.072%	0.000	0.518	0.019
3	16:41:27	94.419%	0.024	-0.702	148.200	14.840	55.420	9.419	72.640	127.505%	0.000	0.021	0.035
x		95.109%	-0.026	-0.517	148.900	15.910	58.930	10.690	73.350	127.337%	0.000	0.488	0.043
σ		1.603%	0.043	0.430	4.766	1.241	5.436	1.454	0.751	0.831%	0.000	0.452	0.029
%RSD		1.685	167.400	83.100	3.200	7.796	9.226	13.600	1.024	0.653	0.000	92.650	67.810

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:40:44	6.828	7.040	122.800	0.052	0.177	2.986	1.379	-0.601	0.325	-1.293	0.000	0.000
2	16:41:05	7.350	6.139	108.100	0.034	0.128	2.305	1.085	-0.840	0.358	-2.242	0.000	0.000
3	16:41:27	8.009	6.013	101.700	0.054	0.198	2.695	0.858	-0.575	0.332	-0.994	0.000	0.000
x		7.396	6.398	110.900	0.047	0.167	2.662	1.107	-0.672	0.339	-1.509	0.000	0.000
σ		0.592	0.560	10.780	0.011	0.036	0.342	0.261	0.146	0.017	0.651	0.000	0.000
%RSD		7.999	8.751	9.728	23.730	21.390	12.830	23.580	21.760	5.118	43.160	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:40:44	0.294	117.684%	-0.496	0.007	-1.239	0.025	112.061%	0.000	-0.441	-0.454	0.828	103.647%
2	16:41:05	0.365	117.820%	-0.456	0.008	-1.374	0.042	112.720%	0.000	-0.451	-0.451	0.867	105.096%
3	16:41:27	0.289	119.550%	-0.510	0.028	-1.252	0.051	112.369%	0.000	-0.437	-0.451	0.682	104.697%
x		0.316	118.351%	-0.488	0.014	-1.288	0.039	112.383%	0.000	-0.443	-0.452	0.792	104.480%
σ		0.042	1.040%	0.028	0.012	0.074	0.013	0.330%	0.000	0.007	0.002	0.098	0.749%
%RSD		13.400	0.879	5.706	84.090	5.765	33.730	0.293	0.000	1.548	0.436	12.300	0.717

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:40:44	0.023	-0.019	0.069	98.175%	0.000	0.917	0.007
2	16:41:05	0.010	-0.019	0.064	99.588%	0.000	0.870	0.011
3	16:41:27	0.025	-0.021	0.055	98.963%	0.000	0.855	0.010
x		0.019	-0.020	0.063	98.909%	0.000	0.881	0.009
σ		0.009	0.001	0.007	0.708%	0.000	0.033	0.002

%RSD		44.110	5.208	10.920	0.716	0.000	3.704	18.730

LCS 200-110239/2-A 10/18/2016 04:46:04 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:46:26	89.583%	12.000	442.000	T 5288.000	1833.000	445.800	T 4895.000	4539.000	114.395%	0.000	46.000	38.030
2	16:46:47	84.598%	11.530	477.200	T 5559.000	1928.000	474.800	T 5132.000	4672.000	107.739%	0.000	46.470	39.200
3	16:47:11	83.758%	12.000	479.100	T 5492.000	1917.000	473.800	T 5104.000	4792.000	106.105%	0.000	47.600	40.080
x		85.980%	11.840	466.100	T 5446.000	1892.000	464.800	T 5044.000	4668.000	109.413%	0.000	46.690	39.100
σ		3.149%	0.271	20.920	T 140.800	51.950	16.480	T 129.600	126.400	4.391%	0.000	0.823	1.028
%RSD		3.662	2.285	4.488	T 2.584	2.745	3.546	T 2.570	2.708	4.014	0.000	1.762	2.629

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:46:26	8.292	18.190	T 1995.000	9.432	19.630	56.110	210.900	21.510	0.179	41.030	0.000	0.000
2	16:46:47	8.331	19.100	T 2092.000	10.050	21.490	56.550	209.900	21.430	0.163	41.980	0.000	0.000
3	16:47:11	6.976	19.420	T 2069.000	9.832	20.600	56.250	204.600	22.550	0.035	43.670	0.000	0.000
x		7.866	18.900	T 2052.000	9.770	20.570	56.300	208.500	21.830	0.125	42.230	0.000	0.000
σ		0.771	0.636	T 50.650	0.312	0.930	0.225	3.381	0.629	0.079	1.341	0.000	0.000
%RSD		9.806	3.365	T 2.468	3.194	4.523	0.399	1.622	2.880	62.930	3.176	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:46:26	48.820	102.715%	96.680	11.070	-0.470	9.162	100.372%	0.000	19.110	18.040	93.510	95.901%
2	16:46:47	49.980	103.073%	95.640	10.900	1.079	9.569	98.763%	0.000	18.940	18.350	94.700	95.464%
3	16:47:11	49.830	101.085%	96.870	10.950	-0.290	9.853	98.187%	0.000	18.910	18.380	93.590	93.649%
x		49.540	102.291%	96.400	10.970	0.106	9.528	99.108%	0.000	18.990	18.260	93.930	95.005%
σ		0.632	1.060%	0.662	0.089	0.848	0.347	1.132%	0.000	0.108	0.184	0.667	1.194%
%RSD		1.276	1.036	0.687	0.807	798.000	3.646	1.143	0.000	0.568	1.008	0.710	1.257

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:46:26	34.060	17.320	8.924	90.963%	0.000	13.060	10.270
2	16:46:47	34.750	17.610	8.953	90.687%	0.000	13.800	10.240
3	16:47:11	36.190	17.650	8.989	91.036%	0.000	14.420	10.150
x		35.000	17.520	8.955	90.895%	0.000	13.760	10.220
σ		1.088	0.181	0.033	0.184%	0.000	0.680	0.066
%RSD		3.108	1.031	0.364	0.203	0.000	4.940	0.644

200-35680-A-13-A 10/18/2016 04:51:48 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:52:10	92.086%	-0.031	0.720	155.200	7.981	24.660	8.829	44.730	117.334%	0.000	0.481	-0.001
2	16:52:32	92.948%	-0.013	1.733	155.000	6.669	21.440	8.366	45.870	117.562%	0.000	0.188	-0.064
3	16:52:53	90.059%	0.027	1.669	150.300	6.135	17.900	7.122	38.040	118.194%	0.000	0.237	-0.001
x		91.698%	-0.005	1.374	153.500	6.928	21.330	8.106	42.880	117.697%	0.000	0.302	-0.022
σ		1.483%	0.030	0.567	2.769	0.950	3.385	0.883	4.229	0.446%	0.000	0.157	0.036
%RSD		1.617	547.400	41.280	1.803	13.710	15.870	10.890	9.862	0.379	0.000	51.990	166.000

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:52:10	9.235	2.766	46.250	0.022	0.078	1.098	2.045	-0.813	0.393	-2.312	0.000	0.000
2	16:52:32	10.150	2.358	38.980	0.028	0.227	1.159	1.670	-0.500	0.358	-1.388	0.000	0.000
3	16:52:53	10.120	2.074	34.820	0.010	0.143	0.889	1.598	-0.820	0.376	-1.397	0.000	0.000
x		9.835	2.399	40.020	0.020	0.149	1.049	1.771	-0.711	0.376	-1.699	0.000	0.000
σ		0.520	0.348	5.785	0.009	0.075	0.142	0.240	0.183	0.017	0.530	0.000	0.000
%RSD		5.288	14.490	14.460	46.990	50.080	13.500	13.560	25.730	4.530	31.220	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:52:10	0.193	107.633%	-0.357	0.013	-1.028	0.016	104.756%	0.000	-0.423	-0.429	0.245	95.612%
2	16:52:32	0.180	107.420%	-0.429	0.004	-1.062	0.018	105.448%	0.000	-0.420	-0.428	0.147	97.858%
3	16:52:53	0.158	108.825%	-0.404	0.008	-1.005	0.021	104.741%	0.000	-0.421	-0.422	0.293	97.613%
x		0.177	107.959%	-0.397	0.008	-1.032	0.018	104.982%	0.000	-0.422	-0.427	0.228	97.028%
σ		0.018	0.757%	0.036	0.005	0.029	0.003	0.404%	0.000	0.002	0.004	0.074	1.232%
%RSD		10.080	0.701	9.172	55.180	2.782	13.610	0.384	0.000	0.406	0.902	32.420	1.270

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:52:10	0.106	-0.004	-0.017	92.213%	0.000	3.180	0.014
2	16:52:32	0.105	-0.000	-0.017	94.966%	0.000	2.833	0.010
3	16:52:53	0.100	-0.013	-0.047	94.714%	0.000	2.615	0.005
x		0.103	-0.006	-0.027	93.965%	0.000	2.876	0.010
σ		0.003	0.007	0.017	1.522%	0.000	0.285	0.005
%RSD		3.117	115.600	64.240	1.620	0.000	9.901	50.610

200-35700-A-19-A 10/18/2016 04:57:31 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:57:53	97.655%	-0.014	-0.915	160.700	1.126	6.924	3.753	32.680	123.207%	0.000	0.520	0.174
2	16:58:14	96.885%	-0.050	-2.342	157.100	1.118	6.426	4.597	23.320	123.611%	0.000	0.151	0.168
3	16:58:36	97.061%	-0.032	-0.823	152.400	1.579	6.640	4.499	31.280	123.918%	0.000	0.013	0.242
x		97.200%	-0.032	-1.360	156.700	1.275	6.664	4.283	29.090	123.579%	0.000	0.228	0.195
σ		0.403%	0.018	0.852	4.157	0.264	0.250	0.462	5.046	0.356%	0.000	0.262	0.041
%RSD		0.415	55.450	62.640	2.652	20.710	3.746	10.770	17.350	0.288	0.000	115.000	21.120

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:57:53	12.200	0.244	9.983	-0.004	0.127	0.324	0.317	-0.765	0.451	-2.181	0.000	0.000
2	16:58:14	12.800	0.232	11.590	-0.010	0.087	0.538	0.532	-0.931	0.477	-2.034	0.000	0.000
3	16:58:36	12.810	0.198	11.690	-0.004	0.087	0.377	0.614	-0.859	0.455	-1.820	0.000	0.000
x		12.600	0.225	11.090	-0.006	0.100	0.413	0.487	-0.852	0.461	-2.012	0.000	0.000
σ		0.346	0.024	0.959	0.004	0.023	0.111	0.154	0.083	0.014	0.182	0.000	0.000
%RSD		2.749	10.530	8.649	59.610	23.200	26.960	31.520	9.783	2.975	9.037	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:57:53	0.068	114.949%	-0.554	0.002	-1.313	0.031	107.658%	0.000	-0.464	-0.463	0.022	100.871%
2	16:58:14	0.057	114.069%	-0.563	0.005	-1.166	0.020	109.726%	0.000	-0.440	-0.457	0.003	100.781%
3	16:58:36	0.070	112.644%	-0.541	-0.002	-1.665	0.070	109.153%	0.000	-0.438	-0.458	0.012	101.322%
x		0.065	113.887%	-0.553	0.002	-1.381	0.040	108.846%	0.000	-0.447	-0.459	0.012	100.992%
σ		0.007	1.163%	0.011	0.003	0.257	0.027	1.067%	0.000	0.015	0.003	0.010	0.290%
%RSD		10.430	1.021	2.010	180.500	18.580	66.520	0.981	0.000	3.325	0.627	77.680	0.287
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	16:57:53	0.036	-0.031	-0.069	95.673%	0.000	1.412	-0.003					
2	16:58:14	0.020	-0.030	-0.074	96.412%	0.000	1.381	-0.004					
3	16:58:36	0.022	-0.031	-0.082	98.256%	0.000	1.327	-0.003					
x		0.026	-0.031	-0.075	96.780%	0.000	1.373	-0.003					
σ		0.009	0.001	0.006	1.330%	0.000	0.043	0.000					
%RSD		32.930	2.073	8.555	1.375	0.000	3.131	15.870					

200-35736-A-14-A 10/18/2016 05:03:14 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:03:35	96.181%	-0.032	-2.488	154.600	2.502	7.101	3.627	28.450	126.174%	0.000	0.183	0.116
2	17:03:57	98.696%	-0.032	-2.318	154.900	1.580	5.834	4.489	27.100	126.305%	0.000	0.339	0.223
3	17:04:19	94.952%	-0.032	-2.197	155.800	2.248	6.136	2.904	31.100	125.039%	0.000	0.221	0.188
x		96.610%	-0.032	-2.334	155.100	2.110	6.357	3.673	28.890	125.839%	0.000	0.248	0.175
σ		1.908%	0.000	0.146	0.631	0.476	0.662	0.793	2.031	0.696%	0.000	0.081	0.055
%RSD		1.975	1.106	6.262	0.407	22.560	10.410	21.600	7.032	0.553	0.000	32.880	31.230
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:03:35	13.330	0.812	18.160	-0.006	0.162	0.544	1.293	-0.781	0.467	-1.387	0.000	0.000
2	17:03:57	13.660	0.592	15.130	-0.004	0.161	0.485	1.377	-0.457	0.460	-0.543	0.000	0.000
3	17:04:19	13.690	0.711	16.920	-0.004	0.242	0.553	1.358	-1.050	0.480	-2.132	0.000	0.000
x		13.560	0.705	16.740	-0.005	0.188	0.528	1.342	-0.763	0.469	-1.354	0.000	0.000
σ		0.202	0.110	1.523	0.001	0.046	0.037	0.044	0.297	0.010	0.795	0.000	0.000
%RSD		1.489	15.610	9.101	19.410	24.610	6.979	3.271	38.890	2.182	58.730	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:03:35	0.062	114.822%	-0.607	-0.003	-1.432	0.046	108.147%	0.000	-0.457	-0.463	0.096	101.380%
2	17:03:57	0.073	114.721%	-0.587	0.012	-1.354	0.040	109.420%	0.000	-0.436	-0.452	0.067	103.840%

3	17:04:19	0.073	118.103%	-0.557	-0.000	-0.908	0.006	111.196%	0.000	-0.450	-0.457	0.039	100.511%
x		0.069	115.882%	-0.584	0.003	-1.231	0.031	109.588%	0.000	-0.448	-0.458	0.067	101.910%
σ		0.006	1.924%	0.025	0.008	0.282	0.021	1.531%	0.000	0.011	0.006	0.029	1.727%
%RSD		8.617	1.660	4.347	274.400	22.940	69.390	1.397	0.000	2.356	1.209	42.880	1.695

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:03:35	0.009	-0.037	-0.062	94.974%	0.000	0.996	-0.001
2	17:03:57	0.003	-0.033	-0.052	98.508%	0.000	0.925	-0.002
3	17:04:19	0.028	-0.043	-0.058	96.842%	0.000	0.929	-0.002
x		0.013	-0.038	-0.057	96.775%	0.000	0.950	-0.001
σ		0.013	0.005	0.005	1.768%	0.000	0.040	0.001
%RSD		100.800	13.840	8.615	1.827	0.000	4.167	51.680

200-35736-A-14-A SD@5 10/18/2016 05:08:56 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:09:18	97.989%	-0.032	-5.224	29.630	0.392	2.968	2.160	8.033	125.196%	0.000	0.354	0.058
2	17:09:40	96.048%	-0.032	-4.979	32.470	-0.023	2.823	1.691	7.925	126.096%	0.000	0.481	0.057
3	17:10:02	95.774%	-0.032	-4.051	28.370	0.093	2.767	2.072	9.582	125.998%	0.000	0.604	0.052
x		96.604%	-0.032	-4.751	30.160	0.154	2.853	1.974	8.513	125.763%	0.000	0.480	0.055
σ		1.207%	0.000	0.619	2.100	0.214	0.104	0.249	0.927	0.494%	0.000	0.125	0.003
%RSD		1.250	0.699	13.020	6.963	138.900	3.641	12.620	10.890	0.393	0.000	26.060	5.849

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:09:18	13.860	0.030	10.260	-0.009	0.023	0.018	0.077	-0.734	0.499	-0.995	0.000	0.000
2	17:09:40	13.600	0.015	8.698	-0.012	0.007	-0.007	0.251	-1.143	0.548	-2.938	0.000	0.000
3	17:10:02	13.720	0.047	8.421	-0.011	-0.001	0.047	0.133	-1.032	0.517	-1.137	0.000	0.000
x		13.730	0.031	9.125	-0.011	0.010	0.019	0.154	-0.970	0.522	-1.690	0.000	0.000
σ		0.128	0.016	0.990	0.002	0.012	0.027	0.089	0.212	0.024	1.083	0.000	0.000
%RSD		0.931	52.280	10.850	15.090	127.200	139.000	57.840	21.820	4.693	64.070	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:09:18	0.019	114.868%	-0.619	0.002	-1.192	0.028	107.302%	0.000	-0.466	-0.474	-0.006	99.468%
2	17:09:40	0.015	114.069%	-0.601	-0.002	-0.870	0.004	108.348%	0.000	-0.463	-0.468	0.013	101.451%
3	17:10:02	0.010	114.721%	-0.613	0.002	-1.033	0.009	110.793%	0.000	-0.452	-0.470	-0.025	101.245%
x		0.015	114.553%	-0.611	0.001	-1.032	0.014	108.814%	0.000	-0.460	-0.471	-0.006	100.721%
σ		0.004	0.425%	0.009	0.002	0.161	0.013	1.791%	0.000	0.008	0.003	0.019	1.090%
%RSD		30.250	0.371	1.494	265.800	15.620	92.980	1.646	0.000	1.654	0.651	315.900	1.083

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:09:18	0.010	-0.043	-0.096	94.869%	0.000	0.489	-0.005
2	17:09:40	0.006	-0.036	-0.108	95.681%	0.000	0.502	-0.005
3	17:10:02	-0.009	-0.039	-0.104	96.639%	0.000	0.499	-0.004
x		0.002	-0.039	-0.102	95.730%	0.000	0.497	-0.005
σ		0.010	0.004	0.006	0.886%	0.000	0.007	0.000

%RSD		438.300	9.009	5.878	0.926	0.000	1.361	5.157

CCV 10/18/2016 05:14:40 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:15:02	85.266%	730.400	279.800	┬10660.000	┬30450.000	┬31120.000	┬9931.000	27690.000	102.648%	0.000	┬1281.000	378.900
2	17:15:23	82.584%	749.200	290.300	┬10700.000	┬30780.000	┬30870.000	┬9966.000	┬30150.000	100.306%	0.000	┬1311.000	387.200
3	17:15:45	80.336%	754.200	296.100	┬10360.000	┬29530.000	┬30130.000	┬9680.000	┬29550.000	101.601%	0.000	┬1272.000	375.800
x		82.729%	119.138%	115.496%	┬105.748%	┬100.850%	┬102.361%	┬98.592%	┬97.099%	101.518%	0.000	┬103.058%	95.166%
σ		2.468%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.173%	0.000	┬n/a	n/a
%RSD		2.983	1.691	2.851	┬1.729	┬2.137	┬1.682	┬1.582	┬4.409	1.156	0.000	┬1.557	1.552

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:15:02	19.200	┬1227.000	┬29500.000	467.500	1253.000	1311.000	1319.000	215.100	-0.315	218.400	0.000	0.000
2	17:15:23	19.040	┬1245.000	┬29810.000	472.100	1261.000	1302.000	1328.000	218.200	-0.406	218.800	0.000	0.000
3	17:15:45	15.810	┬1215.000	┬29390.000	461.200	1230.000	1280.000	1309.000	219.500	-0.383	221.600	0.000	0.000
x		18.010	┬98.305%	┬98.557%	93.392%	99.830%	103.809%	105.484%	108.791%	-0.368	109.787%	0.000	0.000
σ		1.914	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.048	n/a	0.000	0.000
%RSD		10.620	┬1.204	┬0.740	1.171	1.270	1.237	0.726	1.049	12.970	0.793	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:15:02	191.000	96.292%	1138.000	105.400	12.880	189.200	93.409%	0.000	236.100	228.300	1143.000	88.193%
2	17:15:23	194.200	94.769%	1186.000	105.400	9.953	192.300	92.337%	0.000	238.600	230.000	1154.000	86.701%
3	17:15:45	194.100	94.295%	1201.000	106.200	8.636	191.400	91.602%	0.000	240.900	233.000	1158.000	88.708%
x		193.100	95.119%	93.998%	105.692%	10.490	95.479%	92.449%	0.000	238.500	92.175%	92.131%	87.867%
σ		1.810	1.043%	n/a	n/a	2.175	n/a	0.909%	0.000	2.391	n/a	n/a	1.042%
%RSD		0.937	1.097	2.812	0.429	20.730	0.841	0.983	0.000	1.002	1.027	0.687	1.186

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:15:02	19.650	173.100	┬1194.000	86.652%	0.000	16.040	9.663
2	17:15:23	20.200	175.800	┬1203.000	85.329%	0.000	17.580	9.720
3	17:15:45	19.660	176.900	┬1218.000	85.150%	0.000	18.560	9.655
x		99.185%	87.616%	┬96.426%	85.710%	0.000	86.971%	96.793%
σ		n/a	n/a	┬n/a	0.820%	0.000	n/a	n/a
%RSD		1.597	1.106	┬1.005	0.957	0.000	7.306	0.369

CCB 10/18/2016 05:20:23 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:45	92.628%	-0.012	-3.702	6.439	2.888	4.568	4.912	4.074	106.365%	0.000	0.079	-0.100
2	17:21:08	88.979%	0.009	-3.337	3.669	2.843	4.235	4.844	6.078	107.498%	0.000	0.463	-0.125
3	17:21:29	86.856%	0.010	-4.109	1.687	3.685	4.299	3.259	6.359	106.788%	0.000	1.022	-0.155
x		89.488%	0.002	-3.716	3.932	3.139	4.367	4.338	5.504	106.884%	0.000	0.521	-0.127
σ		2.920%	0.013	0.386	2.387	0.474	0.177	0.935	1.246	0.572%	0.000	0.474	0.027
%RSD		3.263	594.300	10.390	60.710	15.090	4.053	21.560	22.650	0.536	0.000	90.960	21.510

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:45	11.810	0.118	14.000	0.029	0.129	0.170	-0.158	-0.544	0.375	-1.293	0.000	0.000
2	17:21:08	11.590	0.120	12.890	0.022	0.045	0.056	-0.179	-1.419	0.428	-2.062	0.000	0.000
3	17:21:29	10.810	0.115	12.000	0.024	0.091	0.108	-0.381	-0.702	0.368	-0.534	0.000	0.000
x		11.400	0.118	12.960	0.025	0.088	0.111	-0.239	-0.888	0.390	-1.296	0.000	0.000
σ		0.525	0.003	1.005	0.004	0.042	0.057	0.123	0.466	0.033	0.764	0.000	0.000
%RSD		4.601	2.432	7.750	16.200	47.610	51.590	51.540	52.500	8.517	58.950	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:45	0.022	98.597%	1.692	0.009	-1.262	0.042	96.019%	0.000	-0.162	-0.182	0.060	88.251%
2	17:21:08	0.022	100.005%	1.589	0.015	-1.104	0.037	95.320%	0.000	-0.166	-0.150	0.082	90.618%
3	17:21:29	0.023	100.010%	1.237	0.013	-1.263	0.042	95.954%	0.000	-0.127	-0.132	0.061	91.834%
x		0.022	99.537%	1.506	0.012	-1.210	0.040	95.764%	0.000	-0.152	-0.154	0.068	90.235%
σ		0.001	0.814%	0.238	0.003	0.092	0.003	0.386%	0.000	0.022	0.025	0.013	1.822%
%RSD		2.818	0.818	15.830	24.590	7.568	6.385	0.403	0.000	14.250	16.480	18.540	2.019

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:45	0.042	0.117	-0.003	89.997%	0.000	0.630	-0.002
2	17:21:08	0.070	0.092	-0.009	88.957%	0.000	0.619	-0.000
3	17:21:29	0.039	0.090	-0.004	87.334%	0.000	0.628	-0.002
x		0.050	0.099	-0.005	88.763%	0.000	0.626	-0.001
σ		0.017	0.015	0.003	1.342%	0.000	0.006	0.001
%RSD		33.730	14.860	52.260	1.512	0.000	1.004	66.290

CCVL 10/18/2016 05:26:07 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:26:29	91.657%	1.550	40.830	T 558.900	190.800	52.310	472.500	493.100	110.207%	0.000	5.534	4.112
2	17:26:51	91.597%	1.323	39.740	T 555.600	198.000	53.410	468.000	478.500	110.623%	0.000	4.595	4.131
3	17:27:12	89.645%	1.528	42.390	491.200	192.200	52.650	466.400	490.600	110.428%	0.000	5.582	3.890
x		90.966%	146.701%	102.464%	T 107.044%	96.843%	105.579%	93.789%	97.486%	110.419%	0.000	104.740%	101.112%
σ		1.145%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.209%	0.000	n/a	n/a
%RSD		1.259	8.555	3.244	T 7.136	1.956	1.070	0.672	1.607	0.189	0.000	10.620	3.318

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:26:29	13.230	2.057	192.000	1.153	2.356	6.056	23.990	1.726	0.388	3.512	0.000	0.000
2	17:26:51	14.410	2.184	191.900	1.093	2.223	5.849	22.770	1.428	0.426	2.648	0.000	0.000
3	17:27:12	12.940	2.189	194.300	1.081	2.183	5.870	23.620	1.126	0.467	2.059	0.000	0.000
x		13.530	107.169%	96.345%	110.889%	112.713%	118.495%	117.295%	71.329%	0.427	68.491%	0.000	0.000
σ		0.782	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.039	n/a	0.000	0.000
%RSD		5.779	3.482	0.706	3.465	4.015	1.920	2.672	21.020	9.219	26.680	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:26:29	4.930	101.786%	9.204	1.151	-1.086	0.906	98.088%	0.000	1.704	1.448	9.534	91.339%
2	17:26:51	4.951	99.551%	9.877	1.110	-1.602	1.147	96.859%	0.000	1.765	1.581	9.541	90.708%
3	17:27:12	4.889	100.404%	9.979	1.000	-0.313	0.884	97.995%	0.000	1.677	1.540	9.307	91.551%
x		98.472%	100.580%	96.868%	108.676%	-1.000	97.896%	97.648%	0.000	1.715	76.161%	94.608%	91.199%
σ		n/a	1.128%	n/a	n/a	0.648	n/a	0.684%	0.000	0.045	n/a	n/a	0.438%
%RSD		0.641	1.122	4.346	7.200	64.810	14.910	0.701	0.000	2.619	4.473	1.408	0.481

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:26:29	1.535	1.741	1.059	89.193%	0.000	1.239	1.014
2	17:26:51	1.668	1.772	1.025	90.987%	0.000	1.283	0.960
3	17:27:12	1.708	1.771	1.068	90.354%	0.000	1.315	1.006
x		81.844%	88.080%	105.100%	90.178%	0.000	63.962%	99.319%
σ		n/a	n/a	n/a	0.910%	0.000	n/a	n/a
%RSD		5.530	1.008	2.154	1.009	0.000	2.980	2.932

CCVL 10/18/2016 05:30:57 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:31:19	95.561%	1.156	40.090	481.900	197.500	51.650	451.700	466.600	112.832%	0.000	5.151	3.892
2	17:31:40	92.885%	1.379	42.260	474.300	194.500	52.640	456.300	463.400	111.796%	0.000	5.022	3.885
3	17:32:03	90.713%	1.644	40.640	T 548.300	201.300	53.260	462.300	477.200	110.330%	0.000	4.804	4.014
x		93.053%	139.301%	102.495%	T 100.305%	98.873%	105.037%	91.358%	93.809%	111.653%	0.000	99.845%	98.260%
σ		2.428%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.257%	0.000	n/a	n/a
%RSD		2.609	17.540	2.749	T 8.115	1.726	1.541	1.165	1.536	1.126	0.000	3.511	1.841

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:31:19	13.660	2.019	185.800	1.026	2.413	6.036	23.510	0.931	0.487	2.705	0.000	0.000
2	17:31:40	13.980	2.092	189.000	1.011	2.575	5.975	23.030	1.424	0.449	1.434	0.000	0.000
3	17:32:03	13.360	2.136	191.600	1.010	2.371	5.905	22.810	1.760	0.405	3.283	0.000	0.000
x		13.660	104.120%	94.390%	101.587%	122.652%	119.439%	115.589%	68.596%	0.447	61.852%	0.000	0.000
σ		0.313	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.041	n/a	0.000	0.000
%RSD		2.289	2.846	1.543	0.870	4.399	1.092	1.550	30.410	9.166	38.220	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:31:19	4.883	102.130%	8.738	1.174	-1.301	1.009	96.626%	0.000	1.590	1.425	9.377	90.921%
2	17:31:40	4.877	100.727%	9.402	1.158	-1.238	1.047	98.147%	0.000	1.493	1.424	9.672	93.230%

3	17:32:03	5.063	102.765%	9.469	1.054	-1.309	0.975	97.917%	0.000	1.562	1.481	8.606	92.458%
x		98.819%	101.874%	92.029%	112.865%	-1.283	101.037%	97.563%	0.000	1.548	72.178%	92.182%	92.203%
σ		n/a	1.043%	n/a	n/a	0.039	n/a	0.820%	0.000	0.050	n/a	n/a	1.176%
%RSD		2.133	1.024	4.391	5.789	3.057	3.570	0.840	0.000	3.224	2.268	5.973	1.275

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:31:19	1.569	1.770	1.036	91.807%	0.000	1.373	0.933
2	17:31:40	1.549	1.748	1.051	89.493%	0.000	1.409	0.993
3	17:32:03	1.466	1.826	1.067	89.859%	0.000	1.437	0.993
x		76.403%	89.060%	105.129%	90.386%	0.000	70.324%	97.269%
σ		n/a	n/a	n/a	1.244%	0.000	n/a	n/a
%RSD		3.565	2.266	1.444	1.376	0.000	2.260	3.579

200-35736-A-14-A PDS 10/18/2016 05:36:47 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:08	89.860%	12.060	441.300	T 5590.000	1870.000	459.100	T 5035.000	4445.000	106.964%	0.000	45.400	38.220
2	17:37:30	87.304%	11.550	458.100	T 5489.000	1859.000	448.000	T 4991.000	4547.000	105.428%	0.000	46.070	38.050
3	17:37:52	88.177%	12.250	459.300	T 5502.000	1856.000	456.300	T 5032.000	4559.000	104.295%	0.000	47.620	39.020
x		88.447%	11.950	452.900	T 5527.000	1862.000	454.500	T 5019.000	4517.000	105.562%	0.000	46.360	38.430
σ		1.299%	0.360	10.060	T 54.970	7.357	5.729	T 24.810	62.500	1.340%	0.000	1.141	0.518
%RSD		1.469	3.014	2.222	T 0.994	0.395	1.261	T 0.494	1.384	1.269	0.000	2.460	1.347

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:08	12.630	18.640	T 1989.000	9.126	19.900	54.360	204.800	20.130	0.336	37.420	0.000	0.000
2	17:37:30	11.530	18.020	T 1982.000	9.233	20.780	54.960	211.800	19.640	0.379	39.250	0.000	0.000
3	17:37:52	9.902	18.600	T 2018.000	9.338	20.130	52.670	206.500	20.520	0.207	38.970	0.000	0.000
x		11.350	18.420	T 1996.000	9.232	20.270	54.000	207.700	20.100	0.307	38.550	0.000	0.000
σ		1.370	0.346	T 19.470	0.106	0.459	1.190	3.669	0.442	0.090	0.987	0.000	0.000
%RSD		12.070	1.877	T 0.975	1.144	2.264	2.204	1.767	2.199	29.150	2.560	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:08	46.920	98.295%	91.300	10.500	-0.032	9.093	94.162%	0.000	17.950	16.990	89.060	87.917%
2	17:37:30	48.370	96.776%	94.680	10.740	-0.538	8.958	92.725%	0.000	18.220	17.580	91.000	89.936%
3	17:37:52	47.680	94.457%	96.000	10.550	1.036	8.936	93.535%	0.000	18.390	17.650	90.260	89.885%
x		47.660	96.509%	93.990	10.600	0.155	8.996	93.474%	0.000	18.190	17.410	90.110	89.246%
σ		0.724	1.933%	2.422	0.129	0.804	0.085	0.720%	0.000	0.225	0.361	0.977	1.152%
%RSD		1.520	2.003	2.576	1.221	517.700	0.942	0.771	0.000	1.235	2.075	1.084	1.290

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:08	16.020	16.860	8.627	87.667%	0.000	15.120	9.889
2	17:37:30	16.190	17.290	8.785	86.303%	0.000	16.080	10.120
3	17:37:52	16.900	17.210	8.824	86.920%	0.000	16.580	10.220
x		16.370	17.120	8.746	86.963%	0.000	15.930	10.070
σ		0.469	0.231	0.104	0.683%	0.000	0.744	0.169

%RSD	2.866	1.348	1.192	0.785	0.000	4.673	1.676	

200-35736-A-14-B MS 10/18/2016 05:42:30 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:42:52	91.058%	11.920	465.200	T 5649.000	1902.000	452.100	T 5018.000	4696.000	107.986%	0.000	46.110	38.480
2	17:43:14	88.768%	11.320	464.300	T 5603.000	1905.000	464.400	T 5169.000	4802.000	105.564%	0.000	46.650	38.810
3	17:43:35	87.642%	12.620	475.300	T 5625.000	1911.000	463.800	T 5152.000	4783.000	105.349%	0.000	47.280	39.850
x		89.156%	11.960	468.300	T 5626.000	1906.000	460.100	T 5113.000	4760.000	106.300%	0.000	46.680	39.050
σ		1.740%	0.652	6.103	T 23.120	4.610	6.938	T 82.800	56.210	1.464%	0.000	0.589	0.718
%RSD		1.952	5.451	1.303	T 0.411	0.242	1.508	T 1.619	1.181	1.377	0.000	1.261	1.839

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:42:52	10.520	18.480	T 2025.000	9.418	19.600	55.710	214.300	21.600	0.159	42.000	0.000	0.000
2	17:43:14	9.714	18.640	T 2089.000	9.701	20.350	58.580	219.000	22.050	0.134	43.810	0.000	0.000
3	17:43:35	8.983	18.780	T 2101.000	9.758	20.680	56.700	217.900	21.020	0.203	42.600	0.000	0.000
x		9.740	18.630	T 2072.000	9.626	20.210	57.000	217.100	21.560	0.165	42.800	0.000	0.000
σ		0.770	0.152	T 40.940	0.183	0.552	1.456	2.504	0.518	0.035	0.924	0.000	0.000
%RSD		7.909	0.816	T 1.976	1.896	2.730	2.555	1.153	2.403	21.180	2.160	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:42:52	49.560	96.403%	96.630	10.760	-1.103	9.558	93.132%	0.000	18.220	17.910	91.890	88.804%
2	17:43:14	51.010	93.347%	101.700	11.390	-0.286	9.827	90.946%	0.000	18.930	18.600	97.560	90.033%
3	17:43:35	50.380	94.129%	101.300	11.290	0.502	9.647	92.216%	0.000	19.080	18.560	95.200	88.373%
x		50.320	94.626%	99.890	11.150	-0.296	9.677	92.098%	0.000	18.740	18.360	94.880	89.070%
σ		0.726	1.588%	2.827	0.342	0.803	0.137	1.098%	0.000	0.458	0.390	2.848	0.861%
%RSD		1.442	1.678	2.830	3.070	271.400	1.417	1.192	0.000	2.442	2.125	3.001	0.967

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:42:52	34.990	18.020	9.123	85.288%	0.000	18.250	10.240
2	17:43:14	35.170	18.150	9.215	86.051%	0.000	18.470	10.470
3	17:43:35	35.240	18.270	9.242	85.938%	0.000	19.250	10.610
x		35.140	18.150	9.193	85.759%	0.000	18.660	10.440
σ		0.129	0.123	0.062	0.412%	0.000	0.521	0.186
%RSD		0.366	0.677	0.675	0.480	0.000	2.793	1.782

200-35736-A-14-C MSD 10/18/2016 05:48:15 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:38	90.832%	11.640	449.400	T 5574.000	1873.000	452.100	T 5086.000	4647.000	106.463%	0.000	47.170	38.310
2	17:49:00	88.862%	12.760	459.600	T 5613.000	1930.000	455.700	T 5109.000	4574.000	106.918%	0.000	46.460	38.870
3	17:49:23	87.818%	13.040	467.500	T 5409.000	1843.000	441.100	T 4928.000	4617.000	107.648%	0.000	45.000	38.610
x		89.171%	12.480	458.900	T 5532.000	1882.000	449.600	T 5041.000	4613.000	107.010%	0.000	46.210	38.600
σ		1.531%	0.740	9.054	T 108.100	44.300	7.580	T 98.330	37.080	0.598%	0.000	1.105	0.283
%RSD		1.717	5.929	1.973	T 1.954	2.354	1.686	T 1.951	0.804	0.559	0.000	2.390	0.733

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:38	8.653	17.840	T 2020.000	9.227	21.250	55.450	211.600	20.510	0.216	39.960	0.000	0.000
2	17:49:00	9.703	18.310	T 2041.000	9.381	20.400	56.450	212.100	21.010	0.149	41.100	0.000	0.000
3	17:49:23	9.384	18.170	T 2011.000	9.493	20.590	56.710	214.900	20.350	0.231	39.630	0.000	0.000
x		9.247	18.110	T 2024.000	9.367	20.750	56.200	212.900	20.620	0.199	40.230	0.000	0.000
σ		0.538	0.242	T 15.290	0.134	0.446	0.666	1.764	0.348	0.044	0.768	0.000	0.000
%RSD		5.824	1.339	T 0.755	1.427	2.151	1.184	0.829	1.688	22.170	1.909	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:38	48.700	95.067%	95.980	11.000	-1.328	9.350	92.252%	0.000	18.400	17.790	93.470	89.711%
2	17:49:00	49.030	94.381%	98.050	11.080	-0.437	9.139	93.147%	0.000	18.460	17.770	93.230	89.248%
3	17:49:23	49.260	95.284%	99.770	10.840	1.346	9.326	92.914%	0.000	18.610	18.040	94.060	88.914%
x		49.000	94.910%	97.940	10.970	-0.140	9.272	92.771%	0.000	18.490	17.860	93.590	89.291%
σ		0.283	0.471%	1.898	0.125	1.361	0.115	0.464%	0.000	0.105	0.151	0.427	0.401%
%RSD		0.578	0.496	1.938	1.138	976.000	1.244	0.500	0.000	0.569	0.845	0.456	0.449

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:38	34.090	17.400	8.897	86.425%	0.000	18.370	10.170
2	17:49:00	35.130	17.790	9.222	85.329%	0.000	18.940	10.300
3	17:49:23	35.340	17.670	8.986	87.374%	0.000	19.080	10.260
x		34.850	17.620	9.035	86.376%	0.000	18.800	10.250
σ		0.667	0.201	0.168	1.024%	0.000	0.379	0.069
%RSD		1.913	1.138	1.862	1.185	0.000	2.018	0.678

CCV 10/18/2016 05:54:01 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:54:23	87.797%	739.100	277.800	T 10630.000	T 30860.000	T 31290.000	T 10270.000	T 30370.000	101.880%	0.000	T 1290.000	386.000
2	17:54:44	86.778%	739.400	283.500	T 10900.000	T 31540.000	T 31740.000	T 10220.000	28370.000	99.291%	0.000	T 1319.000	391.400
3	17:55:06	85.544%	739.600	286.800	T 10430.000	T 29640.000	T 29940.000	T 9750.000	T 29650.000	103.859%	0.000	T 1251.000	366.300
x		86.706%	118.297%	113.085%	T 106.518%	T 102.265%	T 103.309%	T 100.820%	T 98.210%	101.677%	0.000	T 102.934%	95.310%
σ		1.128%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.291%	0.000	T n/a	n/a
%RSD		1.301	0.031	1.617	T 2.218	T 3.129	T 3.014	T 2.862	T 3.434	2.253	0.000	T 2.637	3.461

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:54:23	14.880	T 1250.000	T 29720.000	462.800	1249.000	1343.000	1349.000	220.000	-0.316	221.100	0.000	0.000
2	17:54:44	23.390	T 1275.000	T 30190.000	467.100	1263.000	1317.000	1349.000	220.600	-0.347	220.000	0.000	0.000
3	17:55:06	17.770	T 1212.000	T 29000.000	450.000	1213.000	1309.000	1326.000	217.100	-0.413	220.600	0.000	0.000
x		18.680	T 99.649%	T 98.786%	91.997%	99.336%	105.835%	107.318%	109.602%	-0.359	110.290%	0.000	0.000
σ		4.326	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.050	n/a	0.000	0.000
%RSD		23.160	T 2.538	T 2.022	1.937	2.066	1.374	0.979	0.854	13.880	0.260	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:54:23	194.400	93.504%	1142.000	105.500	15.860	187.300	90.320%	0.000	235.900	228.900	1154.000	86.438%
2	17:54:44	192.600	92.410%	1185.000	105.300	12.890	188.700	90.426%	0.000	237.300	230.000	1160.000	86.425%
3	17:55:06	192.200	91.563%	1208.000	105.800	14.400	189.500	90.703%	0.000	236.000	229.700	1151.000	88.238%
x		193.100	92.492%	94.276%	105.520%	14.380	94.247%	90.483%	0.000	236.400	91.806%	92.381%	87.033%
σ		1.212	0.973%	n/a	n/a	1.487	n/a	0.198%	0.000	0.768	n/a	n/a	1.043%
%RSD		0.628	1.052	2.837	0.204	10.330	0.608	0.219	0.000	0.325	0.235	0.407	1.199

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:54:23	19.910	171.300	T 1219.000	85.995%	0.000	21.820	9.340
2	17:54:44	20.420	176.100	T 1234.000	85.370%	0.000	22.850	9.462
3	17:55:06	20.260	177.900	T 1211.000	84.745%	0.000	23.420	9.560
x		100.977%	87.534%	T 97.717%	85.370%	0.000	113.496%	94.540%
σ		n/a	n/a	T n/a	0.625%	0.000	n/a	n/a
%RSD		1.295	1.955	T 0.967	0.732	0.000	3.561	1.164

CCB 10/18/2016 05:59:45 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:00:06	95.040%	-0.013	0.003	6.656	4.403	4.699	6.003	7.859	108.559%	0.000	0.308	-0.079
2	18:00:28	90.501%	0.066	1.488	0.256	3.719	4.320	4.713	7.051	108.904%	0.000	0.465	-0.228
3	18:00:50	90.698%	0.142	1.633	7.425	4.721	4.917	5.902	4.188	105.284%	0.000	0.122	-0.133
x		92.079%	0.065	1.041	4.779	4.281	4.645	5.539	6.366	107.583%	0.000	0.299	-0.147
σ		2.565%	0.078	0.902	3.935	0.512	0.302	0.718	1.929	1.998%	0.000	0.172	0.075
%RSD		2.786	120.100	86.660	82.350	11.950	6.500	12.960	30.310	1.857	0.000	57.460	51.410

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:00:06	11.180	0.166	11.520	0.041	0.089	0.089	0.039	-0.055	0.292	0.741	0.000	0.000
2	18:00:28	10.760	0.134	10.090	0.027	0.061	0.090	0.022	-0.687	0.361	-0.858	0.000	0.000
3	18:00:50	11.490	0.118	13.180	0.028	0.056	0.079	-0.333	-0.814	0.369	-1.814	0.000	0.000
x		11.140	0.139	11.600	0.032	0.069	0.086	-0.091	-0.519	0.341	-0.643	0.000	0.000
σ		0.367	0.024	1.544	0.008	0.018	0.006	0.210	0.407	0.043	1.291	0.000	0.000
%RSD		3.299	17.580	13.310	25.210	25.490	7.070	231.700	78.420	12.480	200.600	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:00:06	0.022	96.963%	1.693	0.018	-1.083	0.044	93.243%	0.000	-0.150	-0.196	0.139	88.470%
2	18:00:28	0.037	97.316%	1.626	0.004	-0.869	0.020	92.990%	0.000	-0.161	-0.139	0.074	88.991%

3	18:00:50	0.010	95.843%	1.583	0.010	-1.079	0.081	93.638%	0.000	-0.158	-0.138	0.106	89.647%
x		0.023	96.707%	1.634	0.010	-1.010	0.048	93.290%	0.000	-0.156	-0.157	0.106	89.036%
σ		0.014	0.769%	0.056	0.007	0.122	0.031	0.327%	0.000	0.006	0.033	0.032	0.590%
%RSD		60.940	0.795	3.396	68.400	12.120	63.950	0.350	0.000	3.647	21.160	30.290	0.662

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:00:06	0.097	0.150	0.016	87.196%	0.000	0.749	0.002
2	18:00:28	0.066	0.110	0.011	85.986%	0.000	0.740	0.001
3	18:00:50	0.089	0.101	-0.000	88.170%	0.000	0.725	-0.002
x		0.084	0.120	0.009	87.117%	0.000	0.738	0.000
σ		0.016	0.026	0.008	1.094%	0.000	0.012	0.002
%RSD		19.310	21.690	93.530	1.256	0.000	1.656	400.900

CCVL 10/18/2016 06:05:29 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:50	95.342%	1.397	40.170	T 532.600	185.700	50.920	441.600	458.800	111.926%	0.000	5.324	3.860
2	18:06:12	90.004%	1.366	42.480	468.700	188.400	51.900	447.200	465.100	110.246%	0.000	4.696	3.688
3	18:06:34	89.415%	1.415	42.600	472.100	191.700	51.410	448.000	459.000	109.516%	0.000	5.181	3.729
x		91.587%	139.271%	104.372%	T 98.218%	94.291%	102.825%	89.117%	92.187%	110.563%	0.000	101.340%	93.972%
σ		3.266%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.236%	0.000	n/a	n/a
%RSD		3.566	1.758	3.285	T 7.320	1.585	0.952	0.787	0.783	1.118	0.000	6.501	2.385

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:50	11.680	2.000	176.900	1.020	2.206	5.948	22.940	1.357	0.428	2.383	0.000	0.000
2	18:06:12	11.920	1.978	181.200	0.981	2.364	6.369	24.700	1.415	0.381	4.150	0.000	0.000
3	18:06:34	11.750	2.030	182.500	0.957	2.050	5.561	22.860	1.224	0.416	2.654	0.000	0.000
x		11.780	100.139%	90.100%	98.612%	110.333%	119.186%	117.502%	66.608%	0.408	76.562%	0.000	0.000
σ		0.123	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.024	n/a	0.000	0.000
%RSD		1.048	1.305	1.631	3.248	7.115	6.779	4.428	7.337	5.961	31.060	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:50	4.790	97.588%	9.126	1.083	-1.694	0.995	95.103%	0.000	1.443	1.403	9.073	88.348%
2	18:06:12	4.825	98.411%	9.226	1.037	-0.900	0.984	93.960%	0.000	1.524	1.454	9.644	91.017%
3	18:06:34	4.719	97.452%	9.296	1.046	-1.571	1.017	94.950%	0.000	1.460	1.459	9.448	91.763%
x		95.564%	97.817%	92.159%	105.529%	-1.388	99.841%	94.671%	0.000	1.476	71.939%	93.882%	90.376%
σ		n/a	0.519%	n/a	n/a	0.427	n/a	0.620%	0.000	0.043	n/a	n/a	1.796%
%RSD		1.130	0.530	0.925	2.333	30.780	1.686	0.655	0.000	2.901	2.172	3.091	1.987

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:50	1.506	1.674	1.006	89.233%	0.000	1.357	0.956
2	18:06:12	1.736	1.749	1.065	90.126%	0.000	1.356	0.939
3	18:06:34	1.666	1.737	1.012	88.275%	0.000	1.411	0.976
x		81.797%	86.015%	102.778%	89.212%	0.000	68.728%	95.719%
σ		n/a	n/a	n/a	0.926%	0.000	n/a	n/a

%RSD	7.196	2.339	3.166	1.038	0.000	2.269	1.914

Mass Uncorrected ICPS

STD0 10/18/2016 12:40:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:40:42	142819.310	7.500	1315.052	234792.250	210.001	650.013	48029.104	330.003	151767.870	0.000	16027.703	1770.094
2	12:41:04	143242.920	7.500	1075.035	245758.660	180.001	710.015	47266.930	370.004	154613.850	0.000	16858.522	1730.090
3	12:41:25	148649.960	2.500	1305.051	242298.550	190.001	1405.059	47898.730	310.003	159004.880	15.000	17288.963	1655.082
x		144904.060	5.833	1231.713	240949.820	193.334	921.696	47731.588	336.670	155128.870	5.000	16725.062	1718.422
σ		3250.949	2.887	135.779	5606.229	15.275	419.679	407.651	30.551	3645.886	8.660	641.134	58.387
%RSD		2.244	49.487	11.024	2.327	7.901	45.533	0.854	9.075	2.350	173.205	3.833	3.398

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:40:42	5806.011	345.004	194306.080	35.000	30.000	175.001	535.009	1321.052	519.008	355.504	378.504	1890.107
2	12:41:04	5710.978	355.004	191357.260	55.000	20.000	150.001	565.010	1371.056	447.006	402.505	340.503	1920.111
3	12:41:25	5650.958	455.006	197432.500	40.000	15.000	220.001	645.012	1382.057	426.005	360.504	388.005	1810.098
x		5722.649	385.005	194365.280	43.333	21.667	181.668	581.677	1358.055	464.007	372.838	369.004	1873.439
σ		78.183	60.829	3038.055	10.408	7.638	35.473	56.864	32.514	48.776	25.814	25.135	56.869
%RSD		1.366	15.800	1.563	24.019	35.251	19.527	9.776	2.394	10.512	6.924	6.812	3.036

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:40:42	25.000	198262.270	1760.093	5.000	0.000	5.000	895529.740	4405.582	1545.072	1160.040	10.000	154169.770
2	12:41:04	30.000	200144.560	1475.065	25.000	0.000	10.000	887970.980	4650.649	1415.060	1174.041	20.000	159408.710
3	12:41:25	25.000	203332.810	1255.047	20.000	0.000	5.000	899969.570	4315.559	1595.076	1120.038	20.000	156733.510
x		26.667	200579.880	1496.735	16.667	0.000	6.667	894490.100	4457.263	1518.403	1151.373	16.667	156770.660
σ		2.887	2563.147	253.219	10.408	0.000	2.887	6066.480	173.420	92.924	28.026	5.774	2619.667
%RSD		10.825	1.278	16.918	62.450	0.000	43.301	0.678	3.891	6.120	2.434	34.641	1.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:40:42	310.003	2705.220	455.006	121853.830	0.000	4660.652	60.000
2	12:41:04	220.001	2305.159	515.008	125299.230	0.000	4800.691	25.000
3	12:41:25	240.002	2180.143	720.016	124835.770	0.000	4235.538	10.000
x		256.669	2396.840	563.343	123996.280	0.000	4565.627	31.667
σ		47.259	274.282	138.959	1869.831	0.000	294.316	25.658
%RSD		18.412	11.443	24.667	1.508	0.000	6.446	81.025

STD1 10/18/2016 12:44:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:44:42	152413.730	202.501	6881.420	950660.880	30457.805	71623.568	733419.720	25930.156	161256.350	15.000	29816.647	10633.391
2	12:45:04	153382.550	162.501	6556.289	T 1013130.600	29596.255	71824.430	739854.990	27212.197	164406.910	30.000	31023.848	10413.252
3	12:45:25	149396.590	175.001	6766.373	940582.500	28925.078	72547.552	741453.740	25850.031	161428.000	10.000	30292.504	10143.086
x		151730.960	180.001	6734.694	T 968124.670	29659.713	71998.516	738242.820	26330.795	162363.750	18.333	30377.666	10396.576
σ		2078.846	20.464	164.864	T 39300.715	768.331	485.969	4252.727	764.367	1771.504	10.408	608.089	245.578
%RSD		1.370	11.369	2.448	T 4.059	2.590	0.675	0.576	2.903	1.091	56.773	2.002	2.362

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:44:42	7521.697	7611.738	777978.390	2980.266	1450.063	3930.463	12214.474	2435.178	628.012	570.010	382.504	1970.116
2	12:45:04	7536.704	7811.830	770591.830	3145.297	1325.053	4135.513	12484.674	2481.185	638.012	581.510	382.004	2160.140
3	12:45:25	7501.688	7981.911	778030.750	2540.194	1400.059	4080.499	12254.504	2429.177	688.014	605.511	381.504	2310.160

x		7520.029	7801.826	775533.660	2888.586	1391.725	4048.825	12317.884	2448.513	651.346	585.677	382.004	2146.805
σ		17.567	185.289	4279.829	312.796	62.921	106.131	145.825	28.453	32.147	18.114	0.500	170.414
%RSD		0.234	2.375	0.552	10.829	4.521	2.621	1.184	1.162	4.935	3.093	0.131	7.938
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:44:42	22795.578	209964.270	15552.253	2845.243	55.000	700.015	914742.120	2160.140	5375.867	4396.580	5085.776	158863.540
2	12:45:04	22970.819	207129.130	15492.197	3125.293	65.000	885.024	917856.540	2615.205	5610.944	4455.596	5260.830	159984.180
3	12:45:25	22655.388	211351.640	16343.009	2990.268	15.000	710.015	919788.810	2690.217	5605.943	4513.611	5275.835	160297.170
x		22807.262	209481.680	15795.820	2986.935	45.000	765.018	917462.490	2488.521	5530.918	4455.262	5207.480	159714.960
σ		158.040	2152.227	474.830	140.055	26.458	104.048	2546.316	286.849	134.301	58.516	105.666	753.779
%RSD		0.693	1.027	3.006	4.689	58.795	13.601	0.278	11.527	2.428	1.313	2.029	0.472

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:44:42	3190.305	18044.763	8417.125	122297.060	0.000	12925.010	12859.959
2	12:45:04	3080.285	18710.497	8202.018	124049.940	0.000	13625.567	12985.056
3	12:45:25	3545.377	18810.609	8522.178	125047.350	0.000	13430.409	12950.029
x		3271.989	18521.956	8380.440	123798.120	0.000	13326.995	12931.682
σ		243.068	416.282	163.202	1392.333	0.000	361.547	64.535
%RSD		7.429	2.248	1.947	1.125	0.000	2.713	0.499

STD2 10/18/2016 12:47:26 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:47:47	143071.460	800.019	26045.335	T 3774024.000	133008.630	301202.310	T 3524454.000	113263.560	151717.420	25.000	65222.370	41576.794
2	12:48:09	139319.880	810.020	27287.320	T 3708779.100	130398.120	298015.790	T 3408283.900	114532.180	152908.220	30.000	65408.095	41271.036
3	12:48:31	142577.250	767.518	27282.311	T 3713028.900	131436.230	302485.230	T 3514325.500	115498.820	150647.780	10.000	64012.693	41586.819
x		141656.200	792.519	26871.655	T 3731944.000	131614.330	300567.780	T 3482354.500	114431.520	151757.810	21.667	64881.053	41478.216
σ		2038.344	22.222	715.619	T 36504.259	1314.335	2301.294	T 64346.586	1121.026	1130.764	10.408	757.733	179.494
%RSD		1.439	2.804	2.663	T 0.978	0.999	0.766	T 1.848	0.980	0.745	48.038	1.168	0.433
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:47:47	10533.327	31289.343	T 3029820.000	12264.511	5425.883	16658.321	53520.797	5465.896	1152.040	1328.053	363.504	2610.204
2	12:48:09	10098.058	30753.347	T 3031461.500	12569.738	5580.934	16037.713	52527.644	5297.842	1021.031	1307.051	405.505	2735.224
3	12:48:31	10263.159	30978.764	T 3048377.100	12309.544	5315.848	16187.858	54017.395	5402.876	1116.037	1319.052	373.004	2655.211
x		10298.182	31007.151	T 3036552.900	12381.264	5440.888	16294.630	53355.279	5388.871	1096.370	1318.052	380.671	2666.880
σ		219.738	269.123	T 10272.950	164.769	133.179	323.788	758.542	84.898	67.683	10.536	22.025	63.322
%RSD		2.134	0.868	T 0.338	1.331	2.448	1.987	1.422	1.575	6.173	0.799	5.786	2.374
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:47:47	105246.260	198100.360	71503.052	14451.262	240.002	3510.370	876517.970	1610.078	24132.459	19072.406	23686.820	153291.720
2	12:48:09	104828.640	196440.890	72567.639	14846.610	195.001	3700.411	878203.300	2110.134	24312.720	18775.069	22810.599	152918.320
3	12:48:31	107716.970	199385.550	71784.257	14476.284	245.002	3690.409	885315.140	2050.126	23801.984	18931.746	23606.706	154563.390
x		105930.620	197975.600	71951.649	14591.385	226.668	3633.730	880012.140	1923.446	24082.388	18926.407	23368.042	153591.140
σ		1561.050	1476.288	551.680	221.384	27.538	106.950	4669.204	273.038	259.024	148.741	484.419	862.440
%RSD		1.474	0.746	0.767	1.517	12.149	2.943	0.531	14.195	1.076	0.786	2.073	0.562

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:47:47	15602.300	79649.869	30763.365	120403.340	0.000	59420.736	60986.376
2	12:48:09	15126.862	82428.330	31655.033	119355.850	0.000	61734.122	62085.423
3	12:48:31	15452.160	83599.140	31224.221	121108.420	0.000	66140.979	63249.789
x		15393.774	81892.446	31214.206	120289.210	0.000	62431.946	62107.196

σ	243.037	2028.439	445.918	881.845	0.000	3414.035	1131.863
%RSD	1.579	2.477	1.429	0.733	0.000	5.468	1.822

STD3 10/18/2016 12:50:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:51:01	145169.480	91206.377	34235.125	┬14071898.000	┬4208099.900	┬39086311.000	┬13612536.000	┬1440080.900	154997.390	26280.704	┬2685648.900	7684
2	12:51:23	140035.840	90286.388	33388.410	┬13789669.000	┬4193004.600	┬39033331.000	┬13546975.000	┬1454999.500	154684.500	25880.078	┬2704185.400	7750
3	12:51:45	139057.700	89813.846	33699.034	┬13752705.000	┬4178264.900	┬39069762.000	┬13454586.000	┬1452541.900	151384.410	26946.766	┬2705524.900	7697
x		141421.010	90435.537	33774.190	┬13871424.000	┬4193123.200	┬39063135.000	┬13538032.000	┬1449207.400	153688.770	26369.183	┬2698453.100	7710
σ		3282.909	708.145	428.332	┬174596.300	┬14917.879	┬27104.921	┬79353.935	┬7998.780	2001.756	538.820	┬11108.927	34
%RSD		2.321	0.783	1.268	┬1.259	┬0.356	┬0.069	┬0.586	┬0.552	1.302	2.043	┬0.412	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:51:01	94456.907	┬3997857.600	┬81531887.000	1177008.000	634554.110	785132.430	622507.330	81671.619	6648.326	9366.131	360.004	72
2	12:51:23	96443.234	┬3993740.200	┬82045502.000	1175046.600	629139.530	771853.240	623731.860	82110.768	6859.411	9162.018	384.004	66
3	12:51:45	96387.915	┬4003815.900	┬82137987.000	1173326.500	626824.710	778533.430	631625.970	82618.267	6693.344	9335.114	360.004	65
x		95762.685	┬3998471.200	┬81905126.000	1175127.000	630172.780	778506.360	625955.060	82133.551	6733.694	9287.754	368.004	68
σ		1131.176	┬5065.780	┬326524.870	1842.054	3966.938	6639.638	4949.173	473.735	111.177	109.990	13.857	3
%RSD		1.181	┬0.127	┬0.399	0.157	0.629	0.853	0.791	0.577	1.651	1.184	3.765	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	12:51:01	819766.610	196056.400	1675283.100	275345.830	8852.350	136048.010	865956.810	847230.210	571368.820	449534.770	578560.650	15292
2	12:51:23	819698.380	193729.430	1766238.500	276662.360	9042.452	136960.440	874895.990	860341.930	582199.120	453469.750	584766.700	15509
3	12:51:45	835231.780	196289.120	1788072.900	277313.040	8887.369	136980.610	873769.120	855875.560	577996.580	453456.900	580263.330	15287
x		824898.920	195358.310	1743198.200	276440.410	8927.390	136663.020	871540.640	854482.570	577188.170	452153.810	581196.890	15363
σ		8948.583	1415.449	59820.830	1002.213	101.173	532.707	4868.455	6665.932	5460.217	2268.159	3206.620	126
%RSD		1.085	0.725	3.432	0.363	1.133	0.390	0.559	0.780	0.946	0.502	0.552	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:51:01	36795.573	1604275.600	┬8485229.000	121390.470	0.000	292316.180	117779.700
2	12:51:23	38053.392	1632229.200	┬8467359.500	118419.200	0.000	294794.250	116022.440
3	12:51:45	39105.824	1644601.300	┬8489324.100	117855.230	0.000	292499.350	119250.100
x		37984.930	1627035.400	┬8480637.500	119221.630	0.000	293203.260	117684.080
σ		1156.646	20658.452	┬11679.976	1899.314	0.000	1380.882	1615.954
%RSD		3.045	1.270	┬0.138	1.593	0.000	0.471	1.373

STD4 10/18/2016 12:54:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	12:54:31	150193.710	260837.740	96101.267	┬40353094.000	┬12282409.000	┬113377630.000	┬40805684.000	┬4427649.800	161357.320	78228.160	┬8000577.100
2	12:54:53	147156.800	257026.720	93773.062	┬40506545.000	┬12388626.000	┬114719370.000	┬40917337.000	┬4438934.000	162245.890	78820.943	┬8102419.000
3	12:55:15	145502.370	261043.420	97780.995	┬40618965.000	┬12519893.000	┬117041920.000	┬41711605.000	┬4472267.300	158883.730	79273.079	┬8234925.600
x		147617.630	259635.960	95885.108	┬40492868.000	┬12396976.000	┬115046310.000	┬41144875.000	┬4446283.700	160828.980	78774.060	┬8112640.600
σ		2379.378	2262.011	2012.691	┬133462.370	┬118962.220	┬1853892.100	┬493967.330	┬23198.982	1742.236	524.035	┬117508.150
%RSD		1.612	0.871	2.099	┬0.330	┬0.960	┬1.611	┬1.201	┬0.522	1.083	0.665	┬1.448

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	12:54:31	278202.680	┬11896300.000	┬243672850.000	┬3827789.400	1822772.000	™2459602.200	1752251.300	232461.930	18000.716	24793.428	396.505
2	12:54:53	283124.530	┬12257361.000	┬246372800.000	┬3910660.400	1844214.600	™2496031.100	1768206.700	234569.150	18062.783	25185.014	458.506

3	12:55:15	282651.610	T 12266882.000	T 249240430.000	T 3924614.500	1844944.100	T 2476127.400	1779537.900	235891.620	18170.900	25137.442	436.00
x		281326.270	T 12140181.000	T 246428700.000	T 3887688.100	1837310.200	TM 2477253.600	1766665.300	234307.560	18078.133	25038.628	430.33
σ		2715.423	T 211260.790	T 2784213.400	T 52340.871	12595.772	TM 18240.517	13708.445	1729.742	86.124	213.678	31.38
%RSD		0.965	T 1.740	T 1.130	T 1.346	0.686	TM 0.736	0.776	0.738	0.476	0.853	7.29

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	12:54:31	T 2640946.100	198636.680	T 5582860.000	780696.150	25229.081	383072.310	912388.210	T 2823546.200	1672437.500	1318111.900	T 1923825.40
2	12:54:53	T 2724399.700	202280.110	T 5810582.500	800325.060	26741.436	397857.710	936660.620	T 2903050.800	1703709.500	1338865.800	T 1954974.60
3	12:55:15	T 2743701.400	201450.150	T 5887430.200	800692.070	26320.767	398892.000	936502.070	T 2920431.700	1730389.500	1350880.600	T 1962325.50
x		T 2703015.700	200788.980	T 5760290.900	793904.430	26097.095	393274.010	928516.970	T 2882342.900	1702178.800	1335952.700	T 1947041.90
σ		T 54613.363	1909.582	T 158390.890	11440.175	780.594	8850.048	13968.138	T 51655.742	29006.309	16577.441	T 20439.20
%RSD		T 2.020	0.951	T 2.750	1.441	2.991	2.250	1.504	T 1.792	1.704	1.241	T 1.05

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:54:31	111622.540	T 5423635.000	T 25126419.000	120594.720	0.000	762805.640	353050.140
2	12:54:53	116455.440	T 5562131.600	T 25427508.000	122901.480	0.000	777983.630	356436.080
3	12:55:15	116606.490	T 5582765.400	T 25448156.000	123858.520	5.000	777119.690	357764.080
x		114894.820	T 5522844.000	T 25334028.000	122451.570	1.667	772636.320	355750.100
σ		2834.887	T 86534.711	T 180090.560	1677.771	2.887	8524.570	2430.684
%RSD		2.467	T 1.567	T 0.711	1.370	173.205	1.103	0.683

STD5 10/18/2016 12:57:15 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	12:57:36	149537.850	436694.580	162836.610	T 70124190.000	TM 21813302.000	T 199318310.000	TM 73561206.000	TM 7868592.900	163225.380	140777.040	TM
2	12:57:58	146309.390	441455.060	165134.040	T 70146845.000	TM 22091288.000	TM 205242630.000	TM 75426806.000	TM 8151008.600	162821.460	145941.180	TM
3	12:58:20	141316.580	M 439640.530	M 164719.980	T 70150361.000	T 21857618.000	T 205051010.000	TM 75478064.000	TM 8343393.200	165356.230	145567.940	TM
x		145721.270	M 439263.390	M 164230.210	T 70140466.000	TM 21920736.000	TM 203203980.000	TM 74822025.000	TM 8120998.200	163801.020	144095.390	TM
σ		4142.068	M 2402.543	M 1224.525	T 14204.258	TM 149355.350	TM 3366452.500	TM 1092202.200	TM 238818.510	1361.907	2879.822	
%RSD		2.842	M 0.547	M 0.746	T 0.020	TM 0.681	TM 1.657	TM 1.460	TM 2.941	0.831	1.999	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	
1	12:57:36	486812.250	TM 21535238.000	T 433385010.000	TM 6838647.000	TM 3526782.200	TM 4300189.900	TM 3346652.500	401981.920	29936.862	M 41079.564	
2	12:57:58	508196.560	TM 21891686.000	TM 441075480.000	TM 6899882.700	TM 3590488.700	TM 4403247.900	TM 3401164.900	M 405554.930	30360.628	M 41899.100	
3	12:58:20	512495.230	TM 22280361.000	T 445525290.000	TM 6939995.300	TM 3541173.200	TM 4368611.700	TM 3410045.900	407420.620	30671.196	M 41885.065	
x		502501.350	TM 21902428.000	TM 439995260.000	TM 6892841.700	TM 3552814.700	TM 4357349.800	TM 3385954.400	M 404985.820	30322.895	M 41621.243	
σ		13756.107	TM 372677.820	TM 6141803.400	TM 51039.744	TM 33410.671	TM 52443.890	TM 34324.903	M 2763.651	368.618	M 469.160	
%RSD		2.738	TM 1.702	TM 1.396	TM 0.740	TM 0.940	TM 1.204	TM 1.014	M 0.682	1.216	M 1.127	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	
1	12:57:36	TM 4730506.200	199699.270	TM 10142347.000	M 1371326.900	44469.246	684253.550	975252.430	T 5187494.400	TM 3352241.400	2347472.900	TI
2	12:57:58	TM 4818326.000	198565.850	TM 10352887.000	M 1377696.400	45677.507	692337.330	973546.930	T 5211218.000	TM 3406700.400	M 2411439.200	TI
3	12:58:20	TM 4849407.600	195904.630	TM 10452796.000	M 1397828.500	45331.565	695995.050	991574.510	T 5340923.200	TM 3447721.700	M 2439919.500	TI
x		TM 4799413.300	198056.580	TM 10316010.000	M 1382283.900	45159.440	690861.980	980124.620	T 5246545.200	TM 3402221.200	M 2399610.600	TI
σ		TM 61665.638	1947.904	TM 158475.520	M 13833.608	622.249	6008.175	9952.492	T 82589.973	TM 47897.466	M 47344.841	
%RSD		TM 1.285	0.984	TM 1.536	M 1.001	1.378	0.870	1.015	T 1.574	TM 1.408	M 1.973	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:57:36	M 244353.220	TM 9773706.600	TM 43993305.000	121027.840	0.000	M 1567693.000	M 747615.020
2	12:57:58	M 251275.000	TM 9975051.700	TM 44866075.000	121551.630	0.000	M 1594468.100	M 756471.520
3	12:58:20	M 251589.700	TM 9995743.000	TM 45369857.000	123163.400	0.000	M 1619085.200	M 776470.460
x		M 249072.640	TM 9914833.800	TM 44743079.000	121914.290	0.000	M 1593748.800	M 760185.670
σ		M 4090.165	TM 122656.820	TM 696469.540	1113.011	0.000	M 25703.613	M 14781.922
%RSD		M 1.642	TM 1.237	TM 1.557	0.913	0.000	M 1.613	M 1.945

ICV 10/18/2016 01:02:59 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:03:20	138795.530	44642.208	18725.513	T 7238363.900	T 2098021.500	T 19859261.000	T 6952550.100	684399.360	151646.780	13365.357	1269036.700	387416.000
2	13:03:42	132313.130	43767.392	17854.558	T 7311038.300	T 2117125.000	T 20335743.000	T 7007059.400	691764.260	152282.540	13460.433	1252487.500	385829.840
3	13:04:04	131083.470	44013.038	19095.933	T 7416488.100	T 2137359.900	T 19990199.000	T 6899649.100	691930.970	152464.180	12714.848	1285957.800	386085.660
x		134064.040	44140.879	18558.668	T 7321963.400	T 2117502.100	T 20061734.000	T 6953086.200	689364.860	152131.170	13180.213	1269160.700	386443.830
σ		4143.459	451.202	637.284	T 89563.215	T 19671.865	T 246164.380	T 53707.158	4301.058	429.212	405.812	16735.518	851.584
%RSD		3.091	1.022	3.434	T 1.223	T 0.929	T 1.227	T 0.772	0.624	0.282	3.079	1.319	0.220

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:03:20	50576.624	T 1999809.700	T 41661661.000	596942.120	319549.260	396035.070	318254.850	42596.364	3613.392	4841.203	401.005	4405.582
2	13:03:42	50481.335	T 2029799.100	T 42224401.000	607685.080	325834.210	406712.640	322276.020	42723.689	3564.381	4875.213	366.504	4430.589
3	13:04:04	50381.033	T 2002026.700	T 41638920.000	597605.260	323382.140	403121.960	321664.370	42575.310	3707.412	4999.250	365.504	4460.597
x		50479.664	T 2010545.200	T 41841661.000	600744.160	322921.870	401956.560	320731.750	42631.788	3628.395	4905.222	377.671	4432.256
σ		97.806	T 16711.205	T 331657.860	6020.158	3167.650	5433.347	2166.748	80.282	72.686	83.187	20.214	27.545

%RSD		0.194	T 0.831	T 0.793	1.002	0.981	1.352	0.676	0.188	2.003	1.696	5.352	0.621
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:03:20	405421.750	197908.090	411687.570	135145.720	4610.638	67812.677	881448.040	444822.850	293104.850	229516.020	289945.300	151949.520
2	13:03:42	408951.430	200306.490	422041.770	136375.680	4420.586	68641.057	867030.520	450266.120	298743.650	234394.210	295516.880	151424.770
3	13:04:04	409053.900	198798.600	429868.020	136491.620	4395.580	70403.386	889667.990	450117.180	296478.740	234893.670	294896.030	156400.410
x		407809.030	199004.390	421199.120	136004.340	4475.601	68952.373	879382.180	448402.050	296109.080	232934.630	293452.740	153258.230
σ		2068.076	1212.370	9119.469	745.843	117.612	1323.114	11459.254	3100.574	2837.518	2971.119	3053.352	2733.822
%RSD		0.507	0.609	2.165	0.548	2.628	1.919	1.303	0.691	0.958	1.276	1.040	1.784

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:03:20	39817.506	803937.860	T 4212015.900	118056.650	0.000	194766.410	112166.170
2	13:03:42	39622.041	816344.640	T 4294175.400	120171.680	0.000	206663.400	114557.350
3	13:04:04	41331.185	822522.540	T 4282777.900	120917.040	0.000	217368.290	115539.100
x		40256.911	814268.340	T 4262989.700	119715.120	0.000	206266.030	114087.540
σ		935.468	9464.714	T 44510.973	1483.847	0.000	11306.177	1734.848
%RSD		2.324	1.162	T 1.044	1.239	0.000	5.481	1.521

ICVL 10/18/2016 01:08:43 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:09:05	138533.360	197.501	7376.632	931524.420	30247.422	70629.339	719742.400	25279.157	160176.010	15.000	25599.645	9932.959
2	13:09:27	136829.370	202.501	7381.634	931630.090	28544.423	72100.618	725974.140	25229.081	159176.500	25.000	25699.799	10043.025
3	13:09:50	141135.050	185.001	7496.686	916462.900	29005.217	72406.942	724867.500	26010.280	159418.800	35.000	26085.397	9992.995
x		138832.600	195.001	7418.317	926539.140	29265.687	71712.300	723528.010	25506.173	159590.440	25.000	25794.947	9989.660
σ		2168.382	9.014	67.915	8726.439	880.872	950.296	3324.800	437.287	521.390	10.000	256.474	55.109
%RSD		1.562	4.623	0.916	0.942	3.010	1.325	0.460	1.714	0.327	40.000	0.994	0.552
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:09:05	5846.025	7661.761	769482.290	2980.266	1310.052	3625.394	12454.652	2105.133	534.009	587.510	376.504	2300.159
2	13:09:27	6096.115	7926.885	767865.210	2940.259	1315.052	3915.460	12329.559	2108.133	537.009	561.009	413.505	2335.164
3	13:09:50	6221.161	8056.947	753752.390	2935.258	1400.059	3740.420	12394.607	2129.136	510.008	603.011	402.505	2165.141
x		6054.434	7881.864	763699.960	2951.928	1341.721	3760.425	12392.939	2114.134	527.008	583.844	397.505	2266.821
σ		191.010	201.403	8652.713	24.669	50.584	146.064	62.563	13.078	14.799	21.239	19.000	89.780
%RSD		3.155	2.555	1.133	0.836	3.770	3.884	0.505	0.619	2.808	3.638	4.780	3.961
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:09:05	21033.264	208961.790	17684.377	3185.304	35.000	735.016	914045.420	4605.636	6391.225	5101.281	4880.715	155855.340
2	13:09:27	22980.833	210389.580	17484.166	3085.286	40.000	730.016	927160.920	5635.953	7041.487	5360.862	5180.805	158883.730
3	13:09:50	22229.815	207412.620	18174.904	3050.279	70.000	790.019	914911.020	5660.961	6951.449	5440.388	5070.771	155592.900
x		22081.304	208921.330	17781.149	3106.956	48.333	751.684	918705.790	5300.850	6794.721	5300.843	5044.097	156777.320
σ		982.241	1488.895	355.392	70.073	18.930	33.293	7335.141	602.203	352.325	177.342	151.813	1828.915
%RSD		4.448	0.713	1.999	2.255	39.165	4.429	0.798	11.360	5.185	3.346	3.010	1.167

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:09:05	3325.332	19271.135	8622.230	119114.130	0.000	14060.929	12894.986
2	13:09:27	3420.351	19551.461	8562.199	123516.000	0.000	13790.703	12259.507
3	13:09:50	3780.429	19456.350	8882.366	121400.540	0.000	13860.761	13090.139
x		3508.704	19426.315	8688.932	121343.550	0.000	13904.131	12748.211
σ		240.069	142.556	170.187	2201.487	0.000	140.236	434.332
%RSD		6.842	0.734	1.959	1.814	0.000	1.009	3.407

ICBIS 10/18/2016 01:19:56 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:20:18	146632.210	10.000	1220.045	262084.570	200.001	975.029	55261.463	310.003	164669.480	10.000	18239.975	1990.119
2	13:20:40	147096.270	20.000	1335.054	263943.570	180.001	985.029	53305.107	440.006	169053.040	15.000	18300.041	1910.109
3	13:21:01	146147.980	12.500	1270.048	264349.930	290.003	1075.035	52893.800	350.004	169618.750	15.000	18064.785	1715.088
x		146625.480	14.167	1275.049	263459.360	223.335	1011.697	53820.123	366.671	167780.420	13.333	18201.600	1871.772
σ		474.180	5.204	57.667	1207.810	58.595	55.079	1265.065	66.585	2708.961	2.887	122.233	141.466
%RSD		0.323	36.735	4.523	0.458	26.237	5.444	2.351	18.159	1.615	21.651	0.672	7.558

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:20:18	6186.148	370.004	215362.500	25.000	10.000	235.002	500.007	1484.066	486.007	395.005	413.005	2020.122
2	13:20:40	6151.135	435.006	209999.710	35.000	20.000	185.001	640.012	1560.073	471.007	422.005	430.006	2115.134
3	13:21:01	6481.260	420.005	216694.600	25.000	20.000	285.002	545.009	1529.070	455.006	398.505	412.005	2020.122
x		6272.848	408.338	214018.940	28.333	16.667	235.002	561.676	1524.403	470.673	405.172	418.339	2051.793
σ		181.337	34.035	3543.901	5.774	5.774	50.001	71.475	38.218	15.503	14.683	10.116	54.855
%RSD		2.891	8.335	1.656	20.377	34.641	21.277	12.725	2.507	3.294	3.624	2.418	2.674

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:20:18	35.000	215453.660	735.016	30.000	0.000	5.000	962004.810	2130.136	570.010	424.005	5.000	162306.470
2	13:20:40	35.000	220357.150	630.012	45.000	0.000	25.000	955697.000	2080.130	645.012	494.507	35.000	159519.760
3	13:21:01	30.000	220276.090	715.015	10.000	0.000	10.000	958342.610	2310.160	580.010	530.508	20.000	160024.570
x		33.333	218695.640	693.348	28.333	0.000	13.333	958681.470	2173.475	598.344	483.007	20.000	160616.930
σ		2.887	2807.921	55.755	17.559	0.000	10.408	3167.532	120.984	40.724	54.175	15.000	1484.795
%RSD		8.660	1.284	8.041	61.974	0.000	78.063	0.330	5.566	6.806	11.216	75.000	0.924

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:20:18	180.001	1400.059	580.010	124896.230	0.000	2665.213	25.000
2	13:20:40	185.001	1210.044	495.007	125530.970	0.000	2790.233	20.000
3	13:21:01	220.001	1280.049	495.007	124241.360	0.000	3025.275	15.000
x		195.001	1296.717	523.342	124889.520	0.000	2826.907	20.000
σ		21.795	96.098	49.076	644.831	0.000	182.811	5.000
%RSD		11.177	7.411	9.377	0.516	0.000	6.467	25.000

ICSA 10/18/2016 01:25:39 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:26:00	140398.880	15.000	1410.060	TM 148091860.000	T 15091946.000	T 139150940.000	TM 150875480.000	T 5523702.100	172619.320	295954.550	8262.047	4
2	13:26:22	139259.370	27.500	1300.051	TM 149596810.000	T 15429700.000	T 141805300.000	TM 152462340.000	T 5538551.500	170992.680	308748.520	8687.263	5
3	13:26:44	136073.220	37.500	1180.042	TM 148466700.000	T 15538276.000	T 143792970.000	TM 156068910.000	T 5750146.900	174721.050	311305.430	8867.358	4
x		138577.160	26.667	1296.717	TM 148718460.000	T 15353307.000	T 141583070.000	TM 153135580.000	T 5604133.500	172777.680	305336.170	8605.556	4
σ		2242.073	11.273	115.045	TM 783422.060	T 232764.730	T 2328978.400	TM 2661369.000	T 126669.090	1869.223	8224.691	310.817	
%RSD		1.618	42.274	8.872	TM 0.527	T 1.516	T 1.645	TM 1.738	T 2.260	1.082	2.694	3.612	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:26:00	3235.314	2290.157	T 299810530.000	370.004	315.003	1105.037	1885.107	1339.054	380.004	419.505	441.006	2
2	13:26:22	3420.351	2740.225	T 306286670.000	435.006	375.004	865.022	1985.118	1448.063	417.005	429.006	503.508	2
3	13:26:44	3350.337	3205.308	T 306875360.000	530.008	460.006	1225.045	2065.128	1443.063	409.005	440.506	495.507	2
x		3335.334	2745.230	T 304324190.000	445.006	383.338	1065.035	1978.451	1410.060	402.005	429.672	480.007	2

σ		93.426	457.596	T 3920008.700	80.470	72.860	183.314	90.196	61.544	19.468	10.516	34.012	
%RSD		2.801	16.669	T 1.288	18.083	19.007	17.212	4.559	4.365	4.843	2.447	7.086	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	13:26:00	3670.404	213184.770	T 3197006.800	475.007	435.006	645.012	940635.360	3715.414	810.020	647.013	165.001	1663
2	13:26:22	3640.398	215666.390	T 3324045.600	520.008	525.008	745.017	977911.660	4425.587	1010.031	745.517	195.001	1695
3	13:26:44	4015.484	221522.450	T 3419217.000	615.011	555.009	755.017	973610.480	5245.825	985.029	817.020	295.003	1733
x		3775.428	216791.200	T 3313423.100	536.675	505.008	715.015	964052.500	4462.276	935.026	736.516	218.335	169
σ		208.435	4281.136	T 111485.310	71.475	62.452	60.830	20393.548	765.865	108.978	85.360	68.070	3
%RSD		5.521	1.975	T 3.365	13.318	12.367	8.508	2.115	17.163	11.655	11.590	31.177	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:26:00	665.013	1580.075	2770.230	122276.910	0.000	66361.854	50.000
2	13:26:22	755.017	1470.065	3365.340	126226.190	0.000	55928.683	80.000
3	13:26:44	665.013	1945.113	4640.646	129027.520	0.000	45010.697	130.001
x		695.015	1665.084	3592.072	125843.540	0.000	55767.078	86.667
σ		51.964	248.672	955.599	3391.532	0.000	10676.496	40.415
%RSD		7.477	14.934	26.603	2.695	0.000	19.145	46.632

ICSAB 10/18/2016 01:31:21 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:31:43	129652.340	3780.429	55717.979	TM 146635410.000	T 14815285.000	T 135861020.000	TM 147434890.000	T 5455270.200	170517.850	297751.120	68947.318	1(
2	13:32:05	130710.560	3455.358	53676.295	TM 142966900.000	T 14746985.000	T 135866290.000	TM 146445680.000	T 5480157.700	173548.900	301696.120	67190.163	1(
3	13:32:26	129753.120	3425.352	54002.346	TM 143795850.000	T 14569041.000	T 135938450.000	TM 148010850.000	T 5486492.100	172447.550	301202.310	64886.061	1(
x		130038.670	3553.713	54465.540	TM 144466050.000	T 14710437.000	T 135888590.000	TM 147297140.000	T 5473973.300	172171.430	300216.520	67007.847	1(
σ		584.047	196.914	1096.827	TM 1923895.900	T 127125.350	T 43263.097	TM 791623.110	T 16504.104	1534.272	2149.324	2036.758	
%RSD		0.449	5.541	2.014	TM 1.332	T 0.864	T 0.032	TM 0.537	T 0.302	0.891	0.716	3.040	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:31:43	16087.761	88097.220	T 294625340.000	65689.198	14516.319	33984.613	27107.026	19761.709	4130.512	5544.922	472.507	
2	13:32:05	15767.455	87624.739	T 299480700.000	63184.542	13875.774	32526.709	26786.508	19886.858	4385.577	5679.968	465.006	
3	13:32:26	15962.641	86137.014	T 303106390.000	64303.811	13475.445	32687.022	26666.316	19762.710	4335.564	5722.482	463.006	
x		15939.285	87286.324	T 299070810.000	64392.517	13955.846	33066.115	26853.283	19803.759	4283.884	5649.124	466.840	
σ		161.425	1022.984	T 4255360.600	1254.682	525.036	799.472	227.817	71.967	135.158	92.711	5.008	
%RSD		1.013	1.172	T 1.423	1.948	3.762	2.418	0.848	0.363	3.155	1.641	1.073	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	13:31:43	4740.674	213174.640	T 3231953.200	71864.602	1535.071	18370.118	967023.090	4785.687	123027.400	96172.677	127596.560	17
2	13:32:05	3930.463	216304.580	T 3320385.100	71708.934	1775.094	18335.080	973970.640	4670.654	124941.560	98088.293	128841.080	17
3	13:32:26	3575.383	217763.390	T 3361705.000	72065.467	1595.076	18595.368	979670.570	4065.496	126860.980	98947.851	132146.810	17
x		4082.174	215747.540	T 3304681.100	71879.668	1635.081	18433.522	973554.770	4507.279	124943.320	97736.274	129528.150	17
σ		597.275	2344.544	T 66286.094	178.743	124.912	141.253	6333.991	386.895	1916.790	1420.681	2351.647	
%RSD		14.631	1.087	T 2.006	0.249	7.640	0.766	0.651	8.584	1.534	1.454	1.816	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:31:43	37246.573	218599.230	170341.060	127505.870	0.000	248052.260	137257.870
2	13:32:05	38113.529	221451.510	168714.640	130367.890	0.000	256960.710	142425.970
3	13:32:26	38614.681	224339.760	169290.430	128432.950	0.000	266798.490	144347.390
x		37991.594	221463.500	169448.710	128768.900	0.000	257270.490	141343.740
σ		692.157	2870.282	824.680	1460.284	0.000	9376.950	3666.567
%RSD		1.822	1.296	0.487	1.134	0.000	3.645	2.594

CCV 10/18/2016 01:37:05 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:37:27	122992.140	85895.774	30993.792	T 13388079.000	T 3975852.000	T 37479544.000	T 13230835.000	1318066.500	150910.140	24788.420	T 2621730.800	7465
2	13:37:49	125651.870	83370.499	31579.890	T 13264194.000	T 3986292.700	T 37062897.000	T 12996475.000	T 1393871.200	150678.050	25539.553	T 2594270.000	7402
3	13:38:10	123788.000	84006.179	31945.586	T 13165684.000	T 4010729.600	T 37111022.000	T 12811869.000	1326735.400	148095.050	25679.768	T 2612408.200	7420
x		124144.010	84424.151	31506.423	T 13272652.000	T 3990958.100	T 37217821.000	T 13013060.000	T 1346224.400	149894.410	25335.914	T 2609469.700	7429
σ		1365.135	1313.498	480.132	T 111438.670	T 17900.736	T 227932.170	T 209974.370	T 41490.373	1562.606	479.298	T 13964.216	32
%RSD		1.100	1.556	1.524	T 0.840	T 0.449	T 0.612	T 1.614	T 3.082	1.042	1.892	T 0.535	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:37:27	94064.698	T 3915668.700	T 80343549.000	1120901.300	600879.900	748048.850	612470.560	80528.074	6629.318	9328.110	385.004	665
2	13:37:49	91555.785	T 3860124.000	T 80123986.000	1127451.800	599434.220	732704.260	604139.620	80574.297	6577.298	9262.573	368.504	710
3	13:38:10	92405.455	T 3849751.400	T 79501131.000	1134031.400	602579.650	756011.330	614456.700	80510.992	6641.323	9171.022	410.505	684
x		92675.313	T 3875181.400	T 79989555.000	1127461.500	600964.590	745588.150	610355.630	80537.788	6615.980	9253.902	388.005	686
σ		1276.040	T 35444.579	T 437002.280	6565.060	1574.424	11846.778	5474.050	32.751	34.033	78.902	21.161	22

%RSD		1.377	T 0.915	T 0.546	0.582	0.262	1.589	0.897	0.041	0.514	0.853	5.454	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	13:37:27	830330.770	203049.380	1710428.200	276459.030	9132.501	139768.610	912451.540	858653.100	573432.930	452747.500	584673.510	15875
2	13:37:49	834217.850	203434.030	1763721.800	275854.130	8862.356	137217.540	895445.390	859252.850	576526.970	456010.170	584911.660	15963
3	13:38:10	833713.530	201591.850	1775449.400	273053.570	9132.501	138155.240	903387.230	865656.810	584994.490	457634.800	584652.810	15847
x		832754.050	202691.750	1749866.400	275122.240	9042.453	138380.470	903761.390	861187.590	578318.130	455464.160	584745.990	15895
σ		2113.712	971.767	34654.251	1816.871	155.969	1290.360	8509.248	3882.059	5985.283	2488.977	143.842	60
%RSD		0.254	0.479	1.980	0.660	1.725	0.932	0.942	0.451	1.035	0.546	0.025	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:37:27	37291.673	1628251.900	T 8474547.400	122528.750	0.000	205124.560	118107.000
2	13:37:49	38905.356	1659119.900	T 8601552.500	123576.440	0.000	221294.450	118857.310
3	13:38:10	38469.346	1661528.000	T 8576237.400	122438.090	0.000	232155.700	119421.320
x		38222.125	1649633.300	T 8550779.100	122847.760	0.000	219524.910	118795.210
σ		834.764	18555.912	T 67221.031	632.684	0.000	13602.174	659.355
%RSD		2.184	1.125	T 0.786	0.515	0.000	6.196	0.555

CCB 10/18/2016 01:42:49 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:43:10	129521.330	15.000	1125.038	242085.480	320.003	2165.141	54248.142	430.006	156208.620	35.000	12544.719	1320.052
2	13:43:32	128009.710	7.500	1240.046	241973.880	310.003	2520.191	55783.197	430.006	152292.630	35.000	12945.025	1310.052
3	13:43:54	126377.330	12.500	1020.031	247240.330	680.014	3985.477	59094.580	510.008	154654.220	45.000	12504.689	1310.052
x		127969.460	11.667	1128.372	243766.570	436.673	2890.269	56375.306	456.673	154385.160	38.333	12664.811	1313.385
σ		1572.386	3.819	110.045	3008.887	210.798	964.948	2476.880	46.189	1971.813	5.774	243.496	5.774
%RSD		1.229	32.733	9.753	1.234	48.274	33.386	4.394	10.114	1.277	15.061	1.923	0.440

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:43:10	4380.576	290.003	204021.140	25.000	25.000	180.001	485.007	1078.035	385.004	387.004	409.505	2055.127
2	13:43:32	4265.546	350.004	199856.130	60.000	15.000	230.002	540.009	1067.034	328.003	383.504	361.004	1905.109
3	13:43:54	4510.610	435.006	204952.460	40.000	25.000	165.001	490.007	1083.035	382.004	384.504	364.504	1910.109
x		4385.577	358.337	202943.250	41.667	21.667	191.668	505.008	1076.035	365.004	385.004	378.338	1956.782
σ		122.609	72.860	2713.769	17.559	5.774	34.035	30.415	8.186	32.079	1.803	27.048	85.206
%RSD		2.796	20.333	1.337	42.143	26.647	17.757	6.023	0.761	8.789	0.468	7.149	4.354

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:43:10	30.000	204830.980	3600.389	40.000	0.000	0.000	916990.780	3345.336	1020.031	722.516	30.000	156804.170
2	13:43:32	20.000	208708.650	3535.375	35.000	5.000	20.000	916272.860	3705.412	1005.030	801.519	25.000	154734.970
3	13:43:54	35.000	204780.370	3520.372	30.000	5.000	10.000	912831.520	3855.446	1070.034	847.522	35.000	158257.820
x		28.333	206106.670	3552.045	35.000	3.333	10.000	915365.060	3635.398	1031.699	790.519	30.000	156598.990
σ		7.638	2253.524	42.534	5.000	2.887	10.000	2223.271	262.163	34.036	63.225	5.000	1770.364
%RSD		26.956	1.093	1.197	14.286	86.603	100.000	0.243	7.211	3.299	7.998	16.667	1.131

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:43:10	210.001	2155.139	520.008	121914.270	0.000	2095.132	45.000
2	13:43:32	175.001	2015.122	585.010	123767.850	0.000	2310.160	20.000
3	13:43:54	215.001	1920.111	675.014	123979.420	0.000	1975.117	30.000
x		200.001	2030.124	593.344	123220.510	0.000	2126.803	31.667
σ		21.795	118.230	77.838	1136.177	0.000	169.752	12.583
%RSD		10.897	5.824	13.119	0.922	0.000	7.982	39.736

MB 200-110229/1-A 10/18/2016 01:48:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:48:52	139783.740	25.000	1125.038	410565.390	5911.048	58507.514	113384.370	3330.333	163740.400	215.001	14446.258	3060.281
2	13:49:14	141124.970	40.000	1190.043	422149.440	7521.697	75405.193	119829.230	3730.417	165224.940	190.001	15231.957	3465.360
3	13:49:36	140529.970	30.000	1275.049	415403.070	6771.375	62351.413	114391.220	3480.363	164507.900	155.001	14781.552	3265.320
x		140479.560	31.667	1196.710	416039.300	6734.707	65421.373	115868.270	3513.704	164491.080	186.668	14819.922	3263.654
σ		672.036	7.638	75.227	5818.175	805.950	8857.279	3467.032	202.115	742.415	30.139	394.252	202.545
%RSD		0.478	24.119	6.286	1.398	11.967	13.539	2.992	5.752	0.451	16.146	2.660	6.206

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:48:52	4870.712	3765.425	343621.120	640.012	355.004	515.008	825.020	1216.044	357.004	394.005	396.505	2005.121
2	13:49:14	5235.822	3885.453	375431.370	650.013	415.005	585.010	905.025	1196.043	412.005	370.004	415.505	1880.106
3	13:49:36	5035.761	3760.424	344738.850	570.010	315.003	540.009	985.029	1221.045	374.004	385.504	403.505	1960.115
x		5047.431	3803.767	354597.110	620.012	361.671	546.676	905.025	1211.044	381.004	383.171	405.172	1948.447
σ		182.835	70.786	18051.646	43.591	50.333	35.474	80.004	13.230	28.161	12.169	9.609	63.319
%RSD		3.622	1.861	5.091	7.031	13.917	6.489	8.840	1.092	7.391	3.176	2.372	3.250

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:48:52	395.005	218482.720	3440.355	90.000	10.000	25.000	949042.440	49493.379	745.017	556.509	210.001	161276.550
2	13:49:14	400.005	216669.270	3920.461	90.000	10.000	65.000	960713.430	50371.002	780.018	689.014	275.002	163336.460
3	13:49:36	385.004	222160.860	3250.317	100.000	5.000	65.000	965456.040	52046.137	855.022	674.514	220.001	165750.110
x		393.338	219104.280	3537.044	93.334	8.333	51.667	958403.970	50636.839	793.352	640.012	235.002	163454.370
σ		7.638	2798.061	345.376	5.774	2.887	23.094	8447.000	1296.976	56.202	72.678	35.001	2239.114
%RSD		1.942	1.277	9.765	6.186	34.641	44.698	0.881	2.561	7.084	11.356	14.894	1.370

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:48:52	240.002	1590.076	2175.142	124070.090	0.000	38253.850	100.000
2	13:49:14	245.002	1985.118	2815.238	129007.360	0.000	32095.875	130.001
3	13:49:36	275.002	1550.072	2295.158	127042.350	0.000	26836.589	75.000
x		253.335	1708.422	2428.513	126706.600	0.000	32395.438	101.667
σ		18.930	240.459	340.247	2485.702	0.000	5714.523	27.538
%RSD		7.472	14.075	14.011	1.962	0.000	17.640	27.086

LCS 200-110229/2-A 10/18/2016 01:54:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:54:35	134157.780	1462.564	54142.801	T 7839968.500	281771.900	643138.940	T 7250965.300	241476.750	159873.120	110.000	116410.120	83719.743
2	13:54:57	135175.960	1402.559	54734.729	T 7667745.200	277094.450	634652.760	T 7219211.000	239955.010	158419.340	95.000	112911.180	85910.851
3	13:55:18	127274.110	1505.068	52407.266	T 7513224.200	269460.810	627343.700	T 7100508.700	241740.530	152635.740	50.000	110968.190	84192.114
x		132202.620	1456.730	53761.599	T 7673646.000	276109.050	635045.130	T 7190228.300	241057.430	156976.070	85.000	113429.830	84607.569
σ		4298.466	51.503	1209.652	T 163452.070	6214.418	7904.929	T 79305.034	963.793	3828.470	31.225	2757.791	1153.122
%RSD		3.251	3.536	2.250	T 2.130	2.251	1.245	T 1.103	0.400	2.439	36.735	2.431	1.363

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:54:35	14196.043	64931.236	T 6221249.300	25484.469	10913.572	33082.802	93793.174	8627.232	1404.059	1912.110	380.004	3380.343
2	13:54:57	14080.946	66893.975	T 6173905.600	26055.351	10698.433	33022.683	96573.988	8734.288	1477.065	1885.607	360.504	3210.309
3	13:55:18	13570.523	65975.324	T 6141495.600	26561.148	11118.708	33643.923	96508.611	8552.194	1362.056	1879.106	358.504	3325.332
x		13949.170	65933.512	T 6178883.500	26033.656	10910.237	33249.802	95625.258	8637.905	1414.393	1892.274	366.337	3305.328

σ		332.930	982.037	T 40109.203	538.667	210.157	342.640	1586.967	91.515	58.197	17.483	11.878	86.764
%RSD		2.387	1.489	T 0.649	2.069	1.926	1.031	1.660	1.059	4.115	0.924	3.242	2.625
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:54:35	220473.680	203555.500	152211.890	30422.741	495.007	6766.373	913084.850	43125.723	48179.538	36847.688	49322.875	156541.720
2	13:54:57	224593.130	205408.020	155088.230	30452.796	490.007	6786.381	903534.920	43807.497	48535.568	37431.486	49799.288	159469.280
3	13:55:18	223103.320	203707.340	154321.160	30447.787	565.010	7106.515	906984.940	44128.342	48585.714	37677.540	48726.123	157571.360
x		222723.380	204223.620	153873.760	30441.108	516.675	6886.423	907868.240	43687.187	48433.607	37318.905	49282.762	157860.790
σ		2085.845	1028.527	1489.446	16.102	41.934	190.867	4835.851	512.023	221.454	426.227	537.706	1485.085
%RSD		0.937	0.504	0.968	0.053	8.116	2.772	0.533	1.172	0.457	1.142	1.091	0.941

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:54:35	68073.738	169588.440	65106.919	122397.790	5.000	213382.270	131138.900
2	13:54:57	70071.994	172629.420	65187.232	120947.260	0.000	224937.740	134974.340
3	13:55:18	69911.321	172432.400	64655.166	121370.320	0.000	231790.680	133144.710
x		69352.351	171550.090	64983.106	121571.790	1.667	223370.230	133085.980
σ		1110.222	1701.690	286.829	745.958	2.887	9303.771	1918.393
%RSD		1.601	0.992	0.441	0.614	173.205	4.165	1.441

200-35680-A-7-B 10/18/2016 01:59:56 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	14:00:18	157046.440	475.007	4085.501	┬1336420.100	┬2233879.300	┬89489474.000	┬7274028.200	1172662.100	224532.320	11899.246	247108.400	175681.06
2	14:00:39	152655.930	622.512	4130.512	┬1339630.400	┬2279423.800	┬92390938.000	┬7479781.100	1211895.000	229347.220	11538.993	260352.750	177808.44
3	14:01:01	157218.040	605.011	4395.580	┬1348649.700	┬2290769.600	┬93681173.000	┬7585856.900	1233754.700	229864.270	11594.031	260576.200	180724.56
x		155640.140	567.510	4203.864	┬1341566.700	┬2268024.200	┬91853862.000	┬7446555.400	1206103.900	227914.610	11677.424	256012.450	178071.35
σ		2585.825	80.586	167.549	┬6340.574	┬30109.599	┬2146840.800	┬158547.260	30955.258	2940.529	194.065	7711.943	2532.00
%RSD		1.661	14.200	3.986	┬0.473	┬1.328	┬2.337	┬2.129	2.567	1.290	1.662	3.012	1.42

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	14:00:18	24232.604	┬12730857.000	┬308389420.000	129813.590	64168.290	┬2193154.500	632025.700	13077.128	1307.051	1474.565	471.007	4845.70
2	14:00:39	24883.562	┬13326746.000	┬326212070.000	136758.800	66000.423	┬2213242.100	653329.010	13544.501	1342.054	1508.568	514.008	4820.69
3	14:01:01	26596.204	┬13180996.000	┬324074170.000	137877.960	67862.880	┬2273803.600	659905.650	13698.627	1355.055	1551.572	528.508	5250.82
x		25237.456	┬13079533.000	┬319558550.000	134816.780	66010.531	┬2226733.400	648420.120	13440.086	1334.720	1511.569	504.508	4972.40
σ		1220.894	┬310631.420	┬9731641.000	4368.879	1847.316	┬41983.105	14573.803	323.639	24.828	38.591	29.905	241.44
%RSD		4.838	┬2.375	┬3.045	3.241	2.799	┬1.885	2.248	2.408	1.860	2.553	5.928	4.85

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159T
1	14:00:18	404976.110	570499.800	10373.227	8021.930	345.004	4700.663	1050931.000	63114.277	3270.321	2489.686	362637.730	210906.05
2	14:00:39	419683.320	598372.050	10243.147	8542.189	495.007	4810.694	1074451.900	65498.449	3490.365	2682.716	372905.600	210176.93
3	14:01:01	425256.960	595284.380	10478.293	8347.090	475.007	5035.761	1084406.600	67245.385	3210.309	2705.720	381082.470	220245.69
x		416638.800	588052.080	10364.889	8303.736	438.339	4849.039	1069929.800	65286.037	3323.665	2626.041	372208.600	213776.22
σ		10477.599	15278.916	117.795	262.825	81.447	170.808	17189.870	2073.729	147.452	118.645	9242.106	5614.57
%RSD		2.515	2.598	1.136	3.165	18.581	3.523	1.607	3.176	4.436	4.518	2.483	2.62

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:00:18	1405.059	5991.077	1273212.900	140408.960	0.000	230553.700	94622.844
2	14:00:39	1325.053	6126.126	1317158.800	142627.680	0.000	225459.720	97308.240
3	14:01:01	1325.053	5971.069	1344059.300	143595.940	0.000	220357.150	97408.825
x		1351.722	6029.424	1311477.000	142210.860	0.000	225456.860	96446.636
σ		46.192	84.342	35763.331	1633.865	0.000	5098.273	1580.251
%RSD		3.417	1.399	2.727	1.149	0.000	2.261	1.638

200-35680-A-14-D 10/18/2016 02:05:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	14:06:00	158924.110	565.010	4615.639	┬1567437.300	┬2755944.200	┬102949920.000	┬8882890.100	┬1782690.200	249392.040	12884.979	267250.640	200893.
2	14:06:22	159873.120	587.510	4320.560	┬1573399.200	┬2754845.200	┬103266660.000	┬8822837.600	┬1801347.200	250579.650	13025.088	271681.420	203798.
3	14:06:44	157147.380	512.508	4255.543	┬1559763.200	┬2755718.000	┬103845190.000	┬8933224.800	┬1804635.500	250001.060	14256.094	278604.310	207129.
x		158648.210	555.009	4397.247	┬1566866.500	┬2755502.500	┬103353920.000	┬8879650.800	┬1796224.300	249990.910	13388.720	272512.130	203940.
σ		1383.657	38.488	191.906	┬6835.893	┬580.334	┬453967.640	┬55264.881	┬11835.609	593.872	754.428	5722.235	3120.
%RSD		0.872	6.935	4.364	┬0.436	┬0.021	┬0.439	┬0.622	┬0.659	0.238	5.635	2.100	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:06:00	27793.154	┬21521322.000	┬432101300.000	167184.330	75018.454	1948958.500	617174.400	16974.640	1252.047	1305.051	548.509	6181.
2	14:06:22	28339.073	┬21790098.000	┬437534250.000	165103.750	74958.184	1961948.200	617999.130	17060.728	1214.044	1328.553	559.009	5941.
3	14:06:44	27788.146	┬21970332.000	┬437416880.000	163780.790	75500.624	1966820.400	627867.900	17335.010	1198.043	1323.053	546.009	5846.
x		27973.458	┬21760584.000	┬435684140.000	165356.290	75159.087	1959242.400	621013.810	17123.459	1221.378	1318.886	551.176	5989.
σ		316.642	┬225955.340	┬3103383.400	1715.768	297.311	9233.263	5950.121	188.197	27.739	12.293	6.898	172.

%RSD		1.132	T 1.038	T 0.712	1.038	0.396	0.471	0.958	1.099	2.271	0.932	1.252	2.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	14:06:00	586247.380	637763.170	12224.481	7666.763	355.004	3335.334	1148236.300	62070.367	2990.268	2366.168	479623.260	220884.
2	14:06:22	588743.080	649399.840	12479.671	7276.588	380.004	3255.318	1151093.600	62562.201	3240.315	2408.174	487054.160	229702.
3	14:06:44	597154.530	645658.610	12219.478	7606.735	435.006	3385.344	1150975.900	62446.769	3070.283	2467.683	496769.690	230938.
x		590715.000	644273.870	12307.877	7516.695	390.005	3325.332	1150101.900	62359.779	3100.289	2414.008	487815.710	227175.
σ		5714.705	5940.631	148.799	210.094	40.928	65.587	1616.780	257.198	127.695	51.008	8598.543	5483.
%RSD		0.967	0.922	1.209	2.795	10.494	1.972	0.141	0.412	4.119	2.113	1.763	2.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:06:00	1325.053	6571.295	1156740.200	150799.140	0.000	216066.520	119265.200
2	14:06:22	1310.052	6791.383	1166844.300	149941.450	0.000	220863.790	120781.060
3	14:06:44	1180.042	6766.373	1178455.100	154613.850	0.000	221578.180	121989.820
x		1271.715	6709.684	1167346.500	151784.810	0.000	219502.830	120678.690
σ		79.745	120.499	10866.157	2487.267	0.000	2997.291	1365.188
%RSD		6.271	1.796	0.931	1.639	0.000	1.365	1.131

200-35736-A-1-A 10/18/2016 02:11:21 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	14:11:43	170719.900	1367.556	3785.430	T 2022011.500	T 4511880.900	T 249686140.000	T 17244743.000	T 1620869.800	311656.910	14561.358	614570.790	417
2	14:12:05	168477.260	1332.553	3600.389	T 2050475.900	T 4491969.300	T 250589950.000	T 17390854.000	T 1637692.200	315691.790	14371.193	619757.650	416
3	14:12:26	168790.400	1342.554	3570.382	T 2013664.800	T 4506256.500	T 247476640.000	T 17220585.000	1568104.100	317566.910	14746.521	631927.070	426
x		169329.190	1347.555	3652.067	T 2028717.400	T 4503368.900	T 249250910.000	T 17285394.000	T 1608888.700	314971.870	14559.691	622085.170	420
σ		1214.531	18.029	116.466	T 19300.026	T 10265.063	T 1601641.900	T 92126.219	T 36308.178	3020.057	187.669	8909.157	5
%RSD		0.717	1.338	3.189	T 0.951	T 0.228	T 0.643	T 0.533	T 2.257	0.959	1.289	1.432	
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	14:11:43	54910.305	T 27514773.000	TM 984701370.000	345014.470	130957.480	96056.007	401672.600	54157.849	1167.041	947.027	641.512	6
2	14:12:05	53540.861	T 28097458.000	TM 1008235600.000	347556.470	132887.670	96981.343	408813.100	54689.582	1152.040	987.529	651.013	6
3	14:12:26	56435.387	T 28407567.000	TM 1017319600.000	349945.690	134429.960	99973.947	410954.810	55698.916	1229.045	939.526	675.514	7
x		54962.184	T 28006599.000	TM 1003418900.000	347505.540	132758.370	97670.432	407146.840	54848.782	1182.709	958.028	656.013	6
σ		1447.960	T 453278.990	TM 16834127.000	2466.007	1739.848	2047.852	4860.269	782.771	40.824	25.823	17.543	
%RSD		2.634	T 1.618	TM 1.678	0.710	1.311	2.097	1.194	1.427	3.452	2.695	2.674	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	14:11:43	685305.480	1035115.800	17829.532	3480.363	305.003	1630.080	1190888.900	48445.306	2380.170	1744.591	985149.810	268
2	14:12:05	694067.090	1038507.400	18840.643	3275.322	365.004	1775.094	1189644.600	48756.211	2385.171	1840.102	1004070.300	265
3	14:12:26	709350.810	1062330.700	19100.939	3445.356	235.002	1765.093	1202467.500	49608.721	2400.173	1923.111	1032383.900	274
x		696241.130	1045318.000	18590.371	3400.347	301.669	1723.423	1194333.600	48936.746	2388.505	1835.935	1007201.400	269
σ		12169.197	14830.744	671.637	109.681	65.065	80.992	7071.555	602.352	10.410	89.333	23772.222	4
%RSD		1.748	1.419	3.613	3.226	21.568	4.699	0.592	1.231	0.436	4.866	2.360	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:11:43	790.019	12504.689	1095065.800	157732.870	0.000	454226.440	142446.140
2	14:12:05	845.021	12054.358	1109633.600	159741.870	0.000	469444.530	145749.510
3	14:12:26	745.017	12249.500	1137234.000	162235.790	0.000	477827.780	145598.200
x		793.352	12269.516	1113977.800	159903.510	0.000	467166.250	144597.950
σ		50.086	225.832	21417.124	2255.805	0.000	11964.479	1865.060
%RSD		6.313	1.841	1.923	1.411	0.000	2.561	1.290

200-35736-A-2-A 10/18/2016 02:17:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:17:26	169477.320	1215.044	6001.080	T 1976333.900	T 4561401.300	T 249722250.000	T 20590100.000	1245254.500	301319.400	38890.321	596745.260	41374
2	14:17:47	169972.320	1297.551	6186.148	T 1950774.100	T 4684394.100	T 252008800.000	T 20864768.000	1289377.400	307123.920	39050.695	613170.610	41409
3	14:18:09	165841.010	1225.045	6116.122	T 1934294.700	T 4622267.400	T 255294290.000	T 20596464.000	T 1374625.800	309466.660	38659.785	612486.120	42154
x		168430.220	1245.880	6101.117	T 1953800.900	T 4622687.600	T 252341780.000	T 20683777.000	T 1303085.900	305969.990	38866.934	607467.330	41646
σ		2255.935	45.027	93.442	T 21182.443	T 61497.487	T 2800908.000	T 156774.590	T 65766.062	4194.415	196.501	9291.891	440
%RSD		1.339	3.614	1.532	T 1.084	T 1.330	T 1.110	T 0.758	T 5.047	1.371	0.506	1.530	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:17:26	56385.218	T 21002990.000	T 659429230.000	263913.090	121687.620	92048.488	364988.210	20817.994	1356.055	825.020	645.012	619
2	14:17:47	56039.053	T 21291502.000	T 670937440.000	267164.280	124402.550	93411.037	371627.530	20892.086	1370.056	847.022	619.011	594
3	14:18:09	58005.765	T 21790118.000	T 673166500.000	265467.490	124568.790	94386.510	371693.990	21078.320	1343.054	820.520	643.512	600
x		56810.012	T 21361537.000	T 667844390.000	265514.950	123552.990	93282.012	369436.570	20929.467	1356.389	830.854	635.845	604
σ		1049.917	T 398210.270	T 7372476.500	1626.113	1617.592	1174.339	3852.543	134.129	13.504	14.181	14.598	13
%RSD		1.848	T 1.864	T 1.104	0.612	1.309	1.259	1.043	0.641	0.996	1.707	2.296	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	14:17:26	576940.930	954861.070	7786.819	2685.216	230.002	1395.058	1180808.200	47793.428	1990.119	1535.571	861609.990	25844
2	14:17:47	579766.480	960194.780	7576.722	2675.215	275.002	1430.061	1191811.500	49709.019	2070.129	1609.578	878403.450	25807
3	14:18:09	591927.960	954427.250	8046.942	2730.224	300.003	1430.061	1209886.600	51208.549	2145.138	1662.083	872926.650	25799
x		582878.460	956494.360	7803.494	2696.885	268.336	1418.394	1194168.800	49570.332	2068.462	1602.410	870980.030	25817
σ		7963.420	3211.988	235.553	29.302	35.474	20.209	14681.865	1711.779	77.523	63.560	8564.291	24
%RSD		1.366	0.336	3.019	1.087	13.220	1.425	1.229	3.453	3.748	3.967	0.983	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:17:26	870.023	11263.805	949148.210	154603.760	0.000	448935.950	117402.050
2	14:17:47	800.019	11899.246	970793.060	153856.900	5.000	455058.680	119874.550
3	14:18:09	825.020	11754.143	975903.950	155027.670	0.000	457288.490	120065.920
x		831.687	11639.065	965281.740	154496.110	1.667	453761.040	119114.170
σ		35.475	332.985	14203.815	592.764	2.887	4324.824	1485.830
%RSD		4.265	2.861	1.471	0.384	173.205	0.953	1.247

200-35736-A-3-A 10/18/2016 02:22:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:23:09	167780.280	1220.045	6981.462	T 2059984.400	T 4515210.300	T 264046200.000	T 21728430.000	1458784.800	305738.800	40930.197	616007.390	42213
2	14:23:31	167972.200	1100.036	7066.498	T 2094685.900	T 4560528.500	T 266191400.000	T 22665661.000	T 1625265.800	316690.470	41792.332	625423.520	42299
3	14:23:52	165992.510	1257.547	7106.515	T 2093982.700	T 4573264.200	T 269157530.000	T 22437735.000	T 1619069.800	306645.220	42945.258	626928.510	43274
x		167248.330	1192.543	7051.492	T 2082884.300	T 4549667.600	T 266465040.000	T 22277275.000	T 1567706.800	309691.500	41889.262	622786.470	42595
σ		1091.795	82.278	63.863	T 19835.034	T 30512.829	T 2566627.500	T 488785.190	T 94380.076	6078.207	1011.021	5918.885	589
%RSD		0.653	6.899	0.906	T 0.952	T 0.671	T 0.963	T 2.194	T 6.020	1.963	2.414	0.950	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:23:09	58005.765	T 17978947.000	T 549142810.000	237708.150	121566.740	96679.597	383890.830	16682.345	1550.072	914.525	657.013	677
2	14:23:31	58954.083	T 18607854.000	T 557793280.000	243191.410	123118.070	96377.857	387375.070	16798.461	1507.068	870.523	668.513	694
3	14:23:52	59817.150	T 18603856.000	T 559493630.000	243998.070	123782.970	96297.394	391771.050	17423.102	1514.069	891.024	655.013	656
x		58925.666	T 18396886.000	T 555476570.000	241632.550	122822.590	96451.616	387678.980	16967.969	1523.736	892.024	660.180	676

σ		906.027	T 361950.820	T 5550698.000	3422.473	1137.273	201.495	3948.891	398.409	23.074	22.018	7.286	19(
%RSD		1.538	T 1.967	T 0.999	1.416	0.926	0.209	1.019	2.348	1.514	2.468	1.104	2
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	14:23:09	646515.900	1005577.200	6001.080	2920.256	265.002	2060.127	1160460.900	47407.328	1670.084	1399.559	863578.020	259839
2	14:23:31	656822.370	1015046.100	5871.034	2910.254	270.002	1870.105	1183177.700	49428.186	1890.107	1463.564	885873.670	264024
3	14:23:52	656219.300	1018847.900	6061.102	2855.245	255.002	1910.109	1201072.100	49578.632	1830.101	1470.065	896489.320	265193
x		653185.860	1013157.100	5977.739	2895.251	263.335	1946.781	1181570.200	48804.715	1796.764	1444.396	881980.340	263019
σ		5784.215	6834.043	97.160	35.006	7.638	100.178	20353.245	1212.508	113.737	38.966	16797.529	2814
%RSD		0.886	0.675	1.625	1.209	2.900	5.146	1.723	2.484	6.330	2.698	1.905	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:23:09	835.021	11058.668	984508.530	150203.800	0.000	440982.800	154149.580
2	14:23:31	1075.035	11343.859	1015837.200	158399.150	0.000	457586.500	157793.440
3	14:23:52	780.018	11559.007	1020026.800	154876.270	0.000	458131.160	158283.050
x		896.691	11320.511	1006790.900	154493.070	0.000	452233.490	156742.030
σ		156.879	250.985	19410.435	4111.091	0.000	9747.184	2258.430
%RSD		17.495	2.217	1.928	2.661	0.000	2.155	1.441

200-35736-A-4-A 10/18/2016 02:28:30 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:28:52	174741.260	1030.032	6681.339	T 1917356.700	T 4199534.100	T 222706930.000	T 20463185.000	T 1954133.400	310546.470	44278.740	563580.250	376
2	14:29:14	173195.250	1085.035	6861.412	T 1916439.500	T 4226169.100	T 224569000.000	T 20349376.000	T 2011454.200	314479.190	44178.475	567463.750	380
3	14:29:36	168406.550	1017.531	7106.515	T 1881585.100	T 4196818.900	T 223691930.000	T 20892005.000	T 2004462.100	315365.700	45241.320	570898.100	379
x		172114.350	1044.199	6883.089	T 1905127.100	T 4207507.300	T 223655950.000	T 20568189.000	T 1990016.500	313463.790	44566.178	567314.030	379
σ		3302.786	35.913	213.415	T 20393.110	T 16218.447	T 931560.760	T 286148.380	T 31271.778	2565.060	586.835	3661.217	2
%RSD		1.919	3.439	3.101	T 1.070	T 0.385	T 0.417	T 1.391	T 1.571	0.818	1.317	0.645	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:28:52	50671.912	TM 59904025.000	TM 1022281500.000	212141.580	112135.970	85714.846	329760.300	50366.990	1193.043	886.524	611.511	7
2	14:29:14	52021.059	TM 60907453.000	TM 1032502800.000	215924.700	113248.450	87117.088	334717.660	50878.540	1211.044	843.521	620.512	6
3	14:29:36	51479.381	TM 60998649.000	TM 1051092100.000	219916.390	114109.300	89062.329	339043.800	50933.709	1226.045	894.024	614.011	7
x		51390.784	TM 60603376.000	TM 1035292100.000	215994.220	113164.570	87298.088	334507.250	50726.413	1210.044	874.690	615.345	7
σ		678.923	TM 607369.540	TM 14606429.000	3887.868	989.333	1681.066	4645.325	312.489	16.524	27.252	4.646	
%RSD		1.321	TM 1.002	TM 1.411	1.800	0.874	1.926	1.389	0.616	1.366	3.116	0.755	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	14:28:52	769880.040	966345.430	7751.802	3185.304	235.002	1170.041	1216868.500	50727.080	1655.082	1259.548	953295.130	258
2	14:29:14	777355.310	970274.110	7791.821	3295.326	225.002	985.029	1206128.400	52041.122	1620.079	1346.054	961359.110	255
3	14:29:36	785651.030	969998.750	7546.708	3245.316	225.002	1050.033	1229657.900	53154.627	1990.119	1399.059	983231.350	260
x		777628.790	968872.760	7696.777	3241.982	228.335	1068.368	1217551.600	51974.276	1755.093	1334.887	965961.860	258
σ		7889.050	2193.060	131.495	55.086	5.774	93.859	11779.637	1215.154	204.289	70.423	15489.780	2
%RSD		1.015	0.226	1.708	1.699	2.529	8.785	0.967	2.338	11.640	5.276	1.604	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:28:52	910.025	10518.318	1014026.800	156652.760	0.000	380806.260	75440.352
2	14:29:14	935.026	10338.205	1030279.500	157854.010	0.000	386085.660	76374.592
3	14:29:36	870.023	10968.608	1041139.200	159933.700	0.000	388766.920	76389.661
x		905.025	10608.377	1028481.800	158146.820	0.000	385219.610	76068.202
σ		32.789	324.707	13645.290	1659.954	0.000	4050.375	543.786
%RSD		3.623	3.061	1.327	1.050	0.000	1.051	0.715

200-35736-A-5-A 10/18/2016 02:34:14 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	14:34:36	167689.370	1002.530	5901.045	T 1714284.200	T 3827323.200	T 229583670.000	T 19411906.000	1090473.900	298143.040	39411.543	546541.670	369501.
2	14:34:57	167568.160	1040.032	6231.165	T 1752868.600	T 3980991.500	T 234687200.000	T 19719457.000	1102753.700	298061.600	40378.854	563487.190	378801.
3	14:35:19	162861.850	1060.034	6381.221	T 1726146.900	T 3910848.400	T 231260160.000	T 19661697.000	1099616.200	303366.030	39501.756	567329.280	379747.
x		166039.790	1034.199	6171.144	T 1731099.900	T 3906387.700	T 231843680.000	T 19597687.000	1097614.600	299856.890	39764.051	559119.380	376016.
σ		2752.846	29.192	245.651	T 19763.295	T 76931.201	T 2601323.200	T 163462.440	6379.899	3039.276	534.342	11060.718	5662.
%RSD		1.658	2.823	3.981	T 1.142	T 1.969	T 1.122	T 0.834	0.581	1.014	1.344	1.978	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:34:36	52146.450	T 16284812.000	T 540939250.000	219262.860	107254.000	81006.384	322179.170	16983.649	1367.056	798.019	597.511	5615.
2	14:34:57	52216.669	T 16361874.000	T 548059250.000	223812.740	108617.790	83679.542	326558.170	17373.050	1404.059	837.021	643.512	5650.
3	14:35:19	53881.957	T 16679821.000	T 552151110.000	226326.340	108371.190	84302.670	330754.710	16754.417	1337.054	842.021	611.011	5495.
x		52748.359	T 16442169.000	T 547049870.000	223133.980	108080.990	82996.199	326497.350	17037.039	1369.390	825.687	617.345	5587.
σ		982.353	T 209388.520	T 5673675.500	3580.326	726.734	1751.170	4288.094	312.753	33.564	24.091	23.646	81.

%RSD		1.862	T 1.273	T 1.037	1.605	0.672	2.110	1.313	1.836	2.451	2.918	3.830	1.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	14:34:36	493309.150	861199.570	7076.502	2795.234	245.002	1555.073	1179821.900	47497.584	1880.106	1397.559	782005.440	246032.
2	14:34:57	510098.360	884103.280	7256.579	2620.206	265.002	1510.068	1188765.000	48816.387	1910.109	1396.059	795213.920	247494.
3	14:35:19	502147.290	880215.390	7156.536	2555.196	320.003	1590.076	1194407.800	49006.945	1845.102	1512.069	804698.270	248519.
x		501851.600	875172.750	7163.206	2656.879	276.669	1551.739	1187664.900	48440.305	1878.439	1435.228	793972.540	247348.
σ		8398.508	12256.272	90.224	124.150	38.838	40.108	7354.935	821.961	32.536	66.550	11397.230	1249.
%RSD		1.674	1.400	1.260	4.673	14.038	2.585	0.619	1.697	1.732	4.637	1.435	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:34:36	780.018	10278.168	956427.140	151253.230	0.000	374986.520	120710.550
2	14:34:57	855.022	10503.309	979548.720	151101.860	0.000	381916.230	122271.870
3	14:35:19	855.022	10528.324	971841.590	149850.640	0.000	386945.250	122820.890
x		830.021	10436.600	969272.480	150735.240	0.000	381282.670	121934.440
σ		43.303	137.775	11772.935	769.817	0.000	6004.489	1094.885
%RSD		5.217	1.320	1.215	0.511	0.000	1.575	0.898

200-35736-A-5-A SD@5 10/18/2016 02:39:58 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:40:19	152877.950	215.001	1625.079	602040.680	742509.200	T 47474532.000	T 3995088.400	220954.990	235045.790	8337.085	129213.950	79991.500
2	14:40:41	153422.920	232.502	1990.119	594155.140	753213.840	T 48055163.000	T 4031359.500	224005.300	239234.760	7991.916	128815.890	79629.774
3	14:41:03	152827.490	182.501	1960.115	584119.590	750495.230	T 47482670.000	T 3981640.700	225779.000	231871.790	7686.772	128815.890	79594.606
x		153042.790	210.001	1858.438	593438.470	748739.420	T 47670788.000	T 4002696.200	223579.760	235384.120	8005.257	128948.580	79738.627
σ		330.172	25.373	202.650	8982.015	5564.123	T 332903.440	T 25717.652	2439.995	3693.126	325.361	229.822	219.699
%RSD		0.216	12.082	10.904	1.514	0.743	T 0.698	T 0.643	1.091	1.569	4.064	0.178	0.276

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:40:19	16217.887	T 3264908.100	T 112362780.000	44830.211	22510.191	17914.623	77771.028	5977.072	938.026	639.012	525.508	3390.345
2	14:40:41	15637.332	T 3323798.200	T 112042600.000	46595.042	22575.279	17584.271	79132.413	6085.111	963.028	602.011	558.509	3340.335
3	14:41:03	15967.645	T 3315761.500	T 114214210.000	46895.884	22635.360	17799.500	77971.963	5910.048	935.026	593.511	575.510	3210.309
x		15940.955	T 3301489.300	T 112873200.000	46107.046	22573.610	17766.131	78291.801	5990.743	945.360	611.511	553.176	3313.663
σ		291.196	T 31934.047	T 1172332.800	1115.955	62.601	167.685	734.891	88.329	15.374	24.193	25.424	92.934
%RSD		1.827	T 0.967	T 1.039	2.420	0.277	0.944	0.939	1.474	1.626	3.956	4.596	2.805

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:40:19	102564.620	404397.310	1470.065	595.011	30.000	365.004	1186437.600	10733.455	440.006	370.004	158641.440	203778.200
2	14:40:41	103782.120	405319.300	1785.096	595.011	70.000	260.002	1193849.900	10453.277	515.008	404.005	162028.790	201419.790
3	14:41:03	103852.560	406927.790	1535.071	675.014	60.000	295.003	1191983.100	10128.076	570.010	413.505	161756.160	204375.440
x		103399.760	405548.140	1596.744	621.678	53.333	306.670	1190756.900	10438.270	508.341	395.838	160808.800	203191.140
σ		724.115	1280.668	166.324	46.190	20.817	53.464	3855.266	302.968	65.258	22.872	1881.931	1562.834
%RSD		0.700	0.316	10.416	7.430	39.031	17.434	0.324	2.902	12.837	5.778	1.170	0.769

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:40:19	200.001	2430.177	189946.250	143242.920	0.000	58818.606	23696.834
2	14:40:41	200.001	2540.194	192631.810	142224.250	0.000	62045.274	23221.165
3	14:41:03	225.002	2400.173	193056.690	144059.920	0.000	64785.671	23761.927
x		208.335	2456.848	191878.250	143175.700	0.000	61883.184	23559.975
σ		14.434	73.722	1686.592	919.677	0.000	2986.833	295.218
%RSD		6.928	3.001	0.879	0.642	0.000	4.827	1.253

CCV 10/18/2016 02:45:42 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:46:03	132796.950	90321.578	32857.356	┬15270093.000	┬4512559.700	┬42780056.000	┬15302563.000	┬1594597.800	170234.980	29551.175	┬3038257.800	8543
2	14:46:25	125601.500	88041.929	33122.881	┬15088575.000	┬4474029.500	┬42532027.000	┬14804965.000	┬1588644.100	171841.340	29335.795	┬2986685.200	8397
3	14:46:46	127082.660	87338.241	32481.621	┬14836737.000	┬4399231.800	┬41971039.000	┬14600992.000	┬1526408.200	168659.080	28148.751	┬2924885.000	8249
x		128493.700	88567.249	32820.619	┬15065135.000	┬4461940.300	┬42427707.000	┬14902840.000	┬1569883.400	170245.130	29011.907	┬2983276.000	8396
σ		3799.596	1559.502	322.205	┬217626.760	┬57623.058	┬414474.430	┬360881.310	┬37768.109	1591.154	755.233	┬56763.249	147
%RSD		2.957	1.761	0.982	┬1.445	┬1.291	┬0.977	┬2.422	┬2.406	0.935	2.603	┬1.903	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:46:03	108114.530	┬4465118.600	┬92779041.000	1337350.600	719940.700	874316.750	692972.950	93877.648	7874.860	10598.869	440.506	79
2	14:46:25	105271.420	┬4322772.700	┬90985864.000	1318833.800	713549.460	884767.160	685196.120	93027.903	7627.745	10383.734	454.006	77
3	14:46:46	104677.690	┬4332828.600	┬90285177.000	1283126.600	691081.800	847419.480	672936.470	90023.472	7493.684	10160.096	419.005	75
x		106021.210	┬4373573.300	┬91350027.000	1313103.600	708190.660	868834.460	683701.850	92309.674	7665.430	10380.900	437.839	77
σ		1837.010	┬79439.810	┬1286196.500	27562.391	15157.393	19267.951	10101.473	2024.983	193.362	219.400	17.652	2
%RSD		1.733	┬1.816	┬1.408	2.099	2.140	2.218	1.477	2.194	2.523	2.113	4.032	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	14:46:03	935455.700	231831.240	1886787.700	309278.210	9667.803	149401.640	1004197.700	931223.270	618512.660	484420.040	624997.990	1679
2	14:46:25	918537.560	224755.300	1922152.000	304669.480	10153.092	149139.300	982627.240	924921.490	621391.840	484346.960	623731.860	1638
3	14:46:46	907011.320	221552.850	1921346.600	297445.740	9472.691	146173.200	970507.100	912662.640	611360.920	477546.390	618844.650	1616
x		920334.860	226046.460	1910095.400	303797.810	9764.529	148238.050	985777.330	922935.800	617088.470	482104.460	622524.840	1644
σ		14307.107	5259.433	20189.106	5964.199	350.361	1793.015	17064.752	9438.299	5164.892	3947.579	3249.399	31
%RSD		1.555	2.327	1.057	1.963	3.588	1.210	1.731	1.023	0.837	0.819	0.522	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:46:03	37923.096	1628141.900	┬8578184.700	123999.570	0.000	196617.960	114582.530
2	14:46:25	38594.635	1655478.100	┬8540813.400	121521.410	0.000	212804.960	118993.270
3	14:46:46	38855.239	1637027.300	┬8474891.100	123616.740	0.000	221897.390	115896.560
x		38457.657	1640215.800	┬8531296.400	123045.910	0.000	210440.100	116490.790
σ		480.931	13944.241	┬52300.338	1334.053	0.000	12804.561	2264.618
%RSD		1.251	0.850	┬0.613	1.084	0.000	6.085	1.944

CCB 10/18/2016 02:51:26 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:51:48	137857.790	12.500	735.016	276677.610	760.017	6976.460	63179.523	700.015	180663.900	40.000	17759.457	1795.097
2	14:52:09	135317.100	2.500	770.018	277989.160	430.006	6436.243	61623.714	490.007	181866.880	25.000	18229.964	1940.113
3	14:52:31	137303.250	22.500	840.021	276850.440	700.015	7246.575	61121.871	700.015	180037.180	15.000	18239.975	1920.111
x		136826.050	12.500	781.685	277172.410	630.013	6886.426	61975.036	630.012	180855.990	26.667	18076.466	1885.107
σ		1335.878	10.000	53.466	712.593	175.790	412.601	1072.871	121.248	929.853	12.583	274.583	78.590
%RSD		0.976	80.000	6.840	0.257	27.903	5.992	1.731	19.245	0.514	47.187	1.519	4.169

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:51:48	5876.036	810.020	267916.200	115.000	55.000	225.002	710.015	1691.086	531.008	430.006	440.506	2295.158
2	14:52:09	6411.233	885.024	267585.960	165.001	50.000	210.001	615.011	1694.086	547.009	456.506	437.506	2375.169
3	14:52:31	5936.057	695.014	266513.990	80.000	80.000	280.002	595.011	1774.094	557.009	418.505	446.006	2315.161
x		6074.442	796.686	267338.720	120.000	61.667	238.335	640.012	1719.755	545.009	435.006	441.339	2328.496

σ		293.209	95.704	733.074	42.720	16.073	36.856	61.443	47.083	13.115	19.488	4.311	41.639
%RSD		4.827	12.013	0.274	35.600	26.064	15.464	9.600	2.738	2.406	4.480	0.977	1.788
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:51:48	70.000	233331.960	3540.376	45.000	0.000	5.000	1018019.500	3405.348	865.022	646.513	70.000	163467.740
2	14:52:09	90.000	231425.660	3350.337	55.000	0.000	10.000	1024424.700	3830.440	985.029	734.516	40.000	164386.710
3	14:52:31	130.001	234721.260	3370.341	55.000	0.000	10.000	1023245.400	4060.495	995.030	739.016	70.000	169588.440
x		96.667	233159.630	3420.351	51.667	0.000	8.333	1021896.500	3765.427	948.360	706.682	60.000	165814.300
σ		30.551	1654.549	104.425	5.774	0.000	2.887	3408.970	332.377	72.346	52.157	17.321	3300.643
%RSD		31.604	0.710	3.053	11.175	0.000	34.641	0.334	8.827	7.629	7.380	28.868	1.991

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:51:48	240.002	1670.084	700.015	127878.710	0.000	2085.130	10.000
2	14:52:09	250.002	1555.073	775.018	124563.750	0.000	2040.125	35.000
3	14:52:31	205.001	1585.075	985.029	126508.320	0.000	2060.127	45.000
x		231.668	1603.411	820.021	126316.930	0.000	2061.794	30.000
σ		23.629	59.658	147.740	1665.748	0.000	22.549	18.028
%RSD		10.200	3.721	18.017	1.319	0.000	1.094	60.093

CCVL 10/18/2016 02:57:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:57:32	143131.980	217.501	6676.337	T 1143559.300	32952.544	85559.048	826990.700	28945.113	184040.550	15.000	33102.841	12319.551
2	14:57:55	141881.350	207.501	6346.208	T 1128241.700	33233.100	83619.240	816344.640	28564.457	185698.790	15.000	32236.145	11398.897
3	14:58:18	136597.480	190.001	6531.279	T 1126407.300	33193.020	87046.722	811129.020	29235.619	184657.310	25.000	32286.242	11754.143
x		140536.940	205.001	6517.941	T 1132736.100	33126.222	85408.337	818154.790	28915.063	184798.880	18.333	32541.743	11824.197
σ		3468.499	13.920	165.468	T 9417.933	151.738	1718.704	8084.288	336.589	838.137	5.774	486.571	464.308
%RSD		2.468	6.790	2.539	T 0.831	0.458	2.012	0.988	1.164	0.454	31.492	1.495	3.927

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:57:32	8177.005	9102.485	912757.640	3460.359	1460.064	4405.582	13600.547	2882.249	756.017	693.014	480.007	2640.209
2	14:57:55	8337.085	9397.649	902923.060	3555.379	1610.078	4200.529	13995.874	2962.263	833.021	683.514	475.007	2515.190
3	14:58:18	8021.930	9557.740	891997.690	3270.321	1405.059	4395.580	13715.641	2849.244	769.018	633.012	461.006	2365.168
x		8178.673	9352.624	902559.460	3428.686	1491.734	4333.897	13770.687	2897.919	786.019	669.847	472.007	2506.856
σ		157.584	230.943	10384.749	145.145	106.115	115.608	203.331	58.116	41.221	32.252	9.849	137.710
%RSD		1.927	2.469	1.151	4.233	7.114	2.668	1.477	2.005	5.244	4.815	2.087	5.493

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:57:32	25274.149	238798.570	17604.292	3480.363	85.000	905.025	1044047.900	1590.076	5570.931	4478.101	5545.923	169234.870
2	14:57:55	25369.293	238950.730	17584.271	3805.434	60.000	970.028	1032415.800	1955.115	6021.087	4508.110	5485.903	167234.840
3	14:58:18	24758.376	236496.090	17924.634	3465.360	50.000	750.017	1047611.500	1950.114	6006.082	4566.626	5330.852	166962.120
x		25133.939	238081.800	17704.399	3583.719	65.000	875.023	1041358.400	1831.768	5866.033	4517.612	5454.226	167810.610
σ		328.708	1375.369	190.991	192.157	18.028	113.032	7946.816	209.327	255.676	45.021	110.979	1240.962
%RSD		1.308	0.578	1.079	5.362	27.735	12.918	0.763	11.428	4.359	0.997	2.035	0.740

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:57:32	3090.287	17749.446	8106.971	127808.180	0.000	10758.471	12304.540
2	14:57:55	3160.300	17369.046	8812.329	127798.100	0.000	10778.484	12899.990
3	14:58:18	3390.345	18780.575	8802.324	130075.620	0.000	11208.768	13220.241
x		3213.644	17966.356	8573.875	128560.630	0.000	10915.241	12808.257
σ		156.981	730.336	404.381	1312.026	0.000	254.399	464.692
%RSD		4.885	4.065	4.716	1.021	0.000	2.331	3.628

200-35736-A-5-A PDS 10/18/2016 03:02:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:03:20	168174.220	2580.200	65915.087	T 10411731.000	T 3979569.300	T 216308370.000	T 26994751.000	T 1364207.000	277165.620	35402.560	621588.990	43363
2	15:03:41	166699.510	2620.206	66698.193	T 10826009.000	T 4104533.800	T 221269480.000	T 27446087.000	1300288.100	282504.140	36154.171	648069.530	45427
3	15:04:03	165376.430	2582.700	67245.385	T 10612358.000	T 4118142.200	T 223407230.000	T 27686708.000	1330055.000	282036.310	36519.967	653022.330	44756
x		166750.050	2594.369	66619.555	T 10616699.000	T 4067415.100	T 220328360.000	T 27375849.000	T 1331516.700	280568.690	36025.566	640893.620	44516
σ		1399.578	22.411	668.627	T 207172.970	T 76380.417	T 3641802.000	T 351284.730	T 31984.470	2956.414	569.696	16900.709	1053
%RSD		0.839	0.864	1.004	T 1.951	T 1.878	T 1.653	T 1.283	T 2.402	1.054	1.581	2.637	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:03:20	60359.099	T 14890155.000	T 504964680.000	234163.500	109815.600	111838.980	398364.610	24050.340	2523.191	2316.661	544.009	659
2	15:03:41	62532.088	T 15335642.000	T 508308370.000	233058.170	110409.500	115765.660	407896.030	24773.398	2674.215	2371.669	621.512	702
3	15:04:03	61924.827	T 15446316.000	T 521586840.000	236364.240	113188.050	117452.400	412533.090	25538.552	2593.202	2452.180	599.511	694
x		61605.338	T 15224038.000	T 511619960.000	234528.640	111137.710	115019.010	406264.580	24787.430	2596.869	2380.170	588.344	685
σ		1121.171	T 294398.030	T 8791987.900	1683.009	1800.299	2880.229	7223.762	744.205	75.579	68.158	39.940	22

%RSD		1.820	┬1.934	┬1.718	0.718	1.620	2.504	1.778	3.002	2.910	2.864	6.789	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	15:03:20	701540.430	781974.020	181821.390	35242.221	685.014	8507.171	1096863.400	43742.327	53696.360	41011.897	746088.860	2277(
2	15:03:41	722967.590	802978.220	186669.540	36068.987	810.020	8982.420	1101590.400	44760.023	54007.362	42275.549	777842.250	2308(
3	15:04:03	731330.870	814507.970	189182.640	36053.954	575.010	8982.420	1120949.400	46254.094	55482.195	42584.835	786672.560	2354(
x		718612.960	799820.070	185891.190	35788.388	690.015	8824.003	1106467.800	44918.815	54395.306	41957.427	770201.230	2313(
σ		15365.208	16495.301	3741.842	473.054	117.585	274.385	12762.245	1263.390	954.032	833.327	21343.574	39(
%RSD		2.138	2.062	2.013	1.322	17.041	3.110	1.153	2.813	1.754	1.986	2.771	
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	15:03:20	35703.201	182291.480	926807.030	140590.480	0.000	654384.220	248859.160					
2	15:03:41	36364.628	190001.880	957453.640	143858.190	0.000	656598.810	251807.960					
3	15:04:03	36760.495	193835.650	977991.120	146178.240	0.000	651572.200	259179.670					
x		36276.108	188709.670	954083.930	143542.300	0.000	654185.080	253282.260					
σ		534.177	5879.567	25757.892	2807.243	0.000	2519.216	5315.868					
%RSD		1.473	3.116	2.700	1.956	0.000	0.385	2.099					

200-35736-A-5-I MS 10/18/2016 03:08:42 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	15:09:04	162579.110	2557.696	54493.942	┬10750644.000	┬3751135.600	┬196882560.000	┬24092825.000	1311140.900	276494.610	31124.034	615094.590	4229(
2	15:09:26	165719.820	2517.690	54172.898	┬10894311.000	┬3808510.700	┬199950580.000	┬24791591.000	┬1422600.800	281365.110	30337.586	616935.800	4276(
3	15:09:48	163356.660	2647.710	55356.779	┬11072038.000	┬3794999.200	┬199286700.000	┬24452251.000	1329352.100	283500.850	31640.004	632851.160	4393(
x		163885.190	2574.366	54674.540	┬10905664.000	┬3784881.800	┬198706610.000	┬24445556.000	┬1354364.600	280453.520	31033.875	621627.180	4299(
σ		1635.702	66.594	612.254	┬160997.450	┬29995.784	┬1614173.400	┬349431.000	┬59791.673	3590.972	655.873	9763.743	84(
%RSD		0.998	2.587	1.120	┬1.476	┬0.793	┬0.812	┬1.429	┬4.415	1.280	2.113	1.571	
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	15:09:04	58447.303	┬15431370.000	┬507856450.000	231760.260	106126.810	111909.450	397468.590	26426.935	2714.221	2437.678	578.510	69(
2	15:09:26	59470.915	┬15824222.000	┬520904570.000	237337.930	109538.780	115941.880	405734.220	26644.281	2698.218	2427.677	583.510	685
3	15:09:48	60148.339	┬15829092.000	┬527007870.000	243830.650	110454.800	117517.860	410119.610	26750.450	2535.193	2403.673	579.010	679
x		59355.519	┬15694895.000	┬518589630.000	237642.950	108706.800	115123.060	404440.810	26607.222	2649.211	2423.010	580.343	685
σ		856.369	┬228231.670	┬9783323.400	6040.974	2280.792	2892.471	6423.922	164.911	99.066	17.476	2.754	(
%RSD		1.443	┬1.454	┬1.887	2.542	2.098	2.513	1.588	0.620	3.739	0.721	0.475	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	15:09:04	716345.660	774077.930	181558.550	38088.472	685.014	9197.537	1107546.400	49413.141	16207.877	12365.085	716491.740	2284(
2	15:09:26	721495.830	783890.990	188545.480	38303.965	690.014	9222.551	1137025.500	50676.928	16393.058	12869.467	729524.220	2331(
3	15:09:48	730605.050	789716.570	188580.880	38835.193	825.020	9227.554	1144202.500	50300.791	16353.019	12972.046	745696.890	2360(
x		722815.510	782561.830	186228.300	38409.210	733.350	9215.881	1129591.500	50130.287	16317.985	12735.533	730570.950	2325(
σ		7220.718	7903.591	4044.166	384.324	79.429	16.082	19425.939	648.917	97.435	324.891	14630.685	381
%RSD		0.999	1.010	2.172	1.001	10.831	0.174	1.720	1.294	0.597	2.551	2.003	
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	15:09:04	30583.034	150148.300	924435.620	142143.570	5.000	599993.820	248316.150					
2	15:09:26	31835.376	154164.720	946313.650	146833.970	0.000	598833.180	256371.740					
3	15:09:48	31710.137	152509.600	950364.680	144523.910	0.000	613466.190	263115.630					
x		31376.182	152274.210	940371.320	144500.480	1.667	604097.730	255934.510					
σ		689.735	2018.529	13948.568	2345.288	2.887	8134.054	7409.422					
%RSD		2.198	1.326	1.483	1.623	173.205	1.346	2.895					

200-35736-A-5-J MSD 10/18/2016 03:14:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:14:47	166992.420	2715.221	54955.454	┬11113466.000	┬4234864.200	┬227376100.000	┬27425624.000	┬1534819.400	290693.160	38564.565	683123.590	4685
2	15:15:09	163326.360	2705.220	56932.072	┬11201305.000	┬4335036.300	┬233220400.000	┬27599589.000	┬1570333.300	295435.460	39366.437	703078.240	4788
3	15:15:31	164073.650	2695.218	57413.720	┬11283029.000	┬4447491.500	┬236415990.000	┬27983446.000	┬1578259.900	291934.580	38083.461	700946.200	4851
x		164797.480	2705.220	56433.749	┬11199266.000	┬4339130.700	┬232337500.000	┬27669553.000	┬1561137.600	292687.730	38671.488	695716.010	4775
σ		1937.253	10.002	1302.694	┬84800.076	┬106372.750	┬4584160.500	┬285416.470	┬23134.231	2459.225	648.137	10957.334	83
%RSD		1.176	0.370	2.308	┬0.757	┬2.451	┬1.973	┬1.032	┬1.482	0.840	1.676	1.575	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:14:47	64188.367	┬16501745.000	┬551273120.000	255965.570	118867.380	123601.630	426841.710	27835.225	2633.208	2519.691	606.011	74
2	15:15:09	66135.959	┬17098505.000	┬562828400.000	262622.950	121682.580	126120.390	434480.330	27992.488	2716.221	2478.684	613.011	74
3	15:15:31	66386.954	┬17395806.000	┬573078470.000	260484.790	121813.540	125918.880	438878.330	27985.476	2763.229	2499.187	598.011	74
x		65570.427	┬16998686.000	┬562393330.000	259691.100	120787.830	125213.630	433400.120	27937.729	2704.220	2499.187	605.678	74
σ		1203.460	┬455312.220	┬10909184.000	3398.914	1664.451	1399.668	6090.584	88.841	65.836	20.503	7.506	
%RSD		1.835	┬2.679	┬1.940	1.309	1.378	1.118	1.405	0.318	2.435	0.820	1.239	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	15:14:47	770654.640	838421.080	180032.120	37447.021	675.014	9457.683	1130150.700	49944.722	15932.612	12301.038	812167.820	24006
2	15:15:09	783781.000	852593.600	183216.540	38158.632	760.017	9817.891	1132438.400	51168.426	16002.679	12429.133	828366.560	23967
3	15:15:31	792724.430	859221.290	185759.460	37707.608	785.018	9727.838	1156424.300	52723.261	16117.790	12473.666	834280.890	23818
x		782386.690	850078.660	183002.710	37771.087	740.016	9667.804	1139671.100	51278.803	16017.693	12401.279	824938.420	23930
σ		11100.768	10625.716	2869.650	360.028	57.665	187.458	14553.704	1392.554	93.498	89.621	11448.191	98
%RSD		1.419	1.250	1.568	0.953	7.792	1.939	1.277	2.716	0.584	0.723	1.388	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:14:47	28163.776	148781.120	1016591.200	146723.000	0.000	631579.250	260474.630
2	15:15:09	29631.317	149800.190	1031496.400	148549.070	0.000	643887.010	265482.730
3	15:15:31	29526.131	149759.830	1039554.700	149063.630	0.000	649171.180	273897.250
x		29107.075	149447.050	1029214.100	148111.900	0.000	641545.810	266618.200
σ		818.612	577.061	11650.665	1230.031	0.000	9026.624	6782.968
%RSD		2.812	0.386	1.132	0.830	0.000	1.407	2.544

200-35736-A-6-A 10/18/2016 03:20:08 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:20:29	169426.810	1307.551	7221.564	┬2144766.100	┬4952489.300	┬298015510.000	┬24147608.000	┬1749426.200	314662.600	30778.393	619783.590	45153
2	15:20:52	168992.430	1250.047	7201.556	┬2136939.200	┬5007213.900	┬292713660.000	┬23919956.000	┬1764794.800	316303.220	30658.172	622330.930	45586
3	15:21:13	165194.640	1432.562	7226.566	┬2181852.400	┬5047069.400	┬300901550.000	┬24389427.000	1681235.000	316333.790	30442.778	629674.160	46440
x		167871.290	1330.053	7216.562	┬2154519.200	┬5002257.500	┬297210240.000	┬24152330.000	┬1731818.700	315766.540	30626.447	623929.560	45726
σ		2328.202	93.315	13.234	┬23992.526	┬47484.411	┬4152917.800	┬234771.100	┬44475.589	956.160	170.042	5135.421	654
%RSD		1.387	7.016	0.183	┬1.114	┬0.949	┬1.397	┬0.972	┬2.568	0.303	0.555	0.823	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:20:29	62818.161	┬10926800.000	┬574807810.000	244946.840	129647.300	107223.800	410068.380	13737.659	1710.088	922.526	669.513	680
2	15:20:52	63681.428	┬11284516.000	┬591350130.000	244982.350	129012.400	107399.930	419057.880	13741.663	1608.078	889.024	705.015	702
3	15:21:13	63596.103	┬11473301.000	┬600227800.000	246930.790	131148.980	107883.040	418268.410	14056.925	1676.084	871.523	688.014	706
x		63365.231	┬11228206.000	┬588795250.000	245620.000	129936.230	107502.260	415798.220	13845.416	1664.750	894.357	687.514	696

σ		475.693	T 277567.630	T 12901147.000	1135.323	1097.202	341.321	4977.867	183.184	51.941	25.916	17.756	141
%RSD		0.751	T 2.472	T 2.191	0.462	0.844	0.318	1.197	1.323	3.120	2.898	2.583	2
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	15:20:29	691321.440	1101633.100	4930.729	2950.261	265.002	2040.125	1135314.500	45632.384	1175.041	1022.531	839188.280	260682
2	15:20:52	709382.100	1107791.900	4485.604	3045.278	210.001	2245.151	1137250.000	45898.112	1445.063	1000.030	848145.020	259900
3	15:21:13	706508.840	1112201.500	4695.661	2980.266	330.003	2085.130	1149777.300	47016.222	1430.061	1056.534	868341.180	260134
x		702404.130	1107208.900	4703.998	2991.935	268.336	2123.469	1140780.600	46182.240	1350.055	1026.365	851891.500	260239
σ		9704.811	5308.283	222.680	48.571	60.070	107.756	7851.193	734.369	151.752	28.446	14933.184	401
%RSD		1.382	0.479	4.734	1.623	22.386	5.075	0.688	1.590	11.240	2.772	1.753	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:20:29	825.020	12409.618	881769.390	147166.890	0.000	434490.590	183383.360
2	15:20:52	765.018	12659.806	906357.130	149679.110	0.000	444140.000	189212.980
3	15:21:13	845.021	11889.239	927514.820	149800.190	5.000	447338.860	189880.510
x		811.686	12319.555	905213.780	148882.060	1.667	441989.820	187492.290
σ		41.635	393.099	22894.139	1486.619	2.887	6688.571	3574.050
%RSD		5.129	3.191	2.529	0.999	173.205	1.513	1.906

200-35736-A-7-A 10/18/2016 03:25:50 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:26:12	166295.510	1087.536	6606.309	T 1786347.100	T 4024855.200	T 223230350.000	T 18699521.000	T 1438557.800	298764.010	30798.430	552705.010	370942
2	15:26:33	163760.590	1115.037	6341.206	T 1817135.100	T 4087596.100	T 224535600.000	T 18610109.000	T 1460676.200	300952.870	30357.622	557935.010	381113
3	15:26:55	168517.660	1125.038	6781.379	T 1808268.700	T 4054819.500	T 225259080.000	T 18732541.000	1352616.800	299975.480	31209.193	562360.060	382381
x		166191.250	1109.204	6576.298	T 1803917.000	T 4055756.900	T 224341680.000	T 18680724.000	T 1417283.600	299897.450	30788.415	557666.690	378145
σ		2380.247	19.420	221.616	T 15848.611	T 31380.944	T 1028173.700	T 63343.483	T 57084.619	1096.512	425.874	4833.116	6270
%RSD		1.432	1.751	3.370	T 0.879	T 0.774	T 0.458	T 0.339	T 4.028	0.366	1.383	0.867	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:26:12	51148.364	T 23603538.000	T 752310020.000	235279.050	108149.760	84704.701	366996.590	29140.453	1324.053	886.024	606.011	5921
2	15:26:33	51544.582	T 23936015.000	T 774488480.000	243181.260	110862.490	86398.361	370911.850	28985.182	1382.057	873.523	645.513	6041
3	15:26:55	50767.202	T 23796856.000	T 771401770.000	241649.220	107203.670	85046.435	369639.030	29313.756	1376.057	835.521	626.012	6321
x		51153.383	T 23778803.000	T 766066760.000	240036.510	108738.640	85383.166	369182.490	29146.464	1360.722	865.022	625.845	6094
σ		388.715	T 166971.980	T 12013231.000	4190.690	1899.165	895.635	1997.155	164.369	31.898	26.302	19.751	205
%RSD		0.760	T 0.702	T 1.568	1.746	1.747	1.049	0.541	0.564	2.344	3.041	3.156	3

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	15:26:12	565783.030	893283.910	8387.110	2680.215	205.001	1525.070	1175416.300	47913.773	1855.103	1356.055	765217.510	246590
2	15:26:33	572118.910	914573.220	8452.143	2795.234	240.002	1545.072	1160203.900	47116.505	1810.098	1466.565	760592.880	240675
3	15:26:55	583524.270	921151.040	8557.196	2505.188	295.003	1540.071	1188625.600	47472.513	1925.111	1454.564	775323.890	248823
x		573808.740	909669.390	8465.483	2660.213	246.669	1536.738	1174748.600	47500.930	1863.438	1425.728	767044.760	245363
σ		8990.526	14566.399	85.824	146.054	45.370	10.409	14222.582	399.393	57.958	60.636	7533.578	4210
%RSD		1.567	1.601	1.014	5.490	18.393	0.677	1.211	0.841	3.110	4.253	0.982	1

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:26:12	865.022	10333.202	1078032.400	147530.080	0.000	370676.700	83759.944
2	15:26:33	725.016	10463.283	1093412.400	149124.170	0.000	377635.330	87172.376
3	15:26:55	845.021	10318.193	1099899.000	149093.900	0.000	381747.430	87287.979
x		811.687	10371.560	1090447.900	148582.720	0.000	376686.490	86073.433
σ		75.722	79.789	11230.691	911.738	0.000	5596.024	2004.374
%RSD		9.329	0.769	1.030	0.614	0.000	1.486	2.329

200-35736-A-8-A 10/18/2016 03:31:32 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:31:54	167133.830	1372.556	5450.891	T 1587860.700	T 3210225.700	T 193905990.000	T 15335755.000	1219576.000	295069.050	26556.140	541000.210	33113
2	15:32:16	165972.310	1345.054	5976.071	T 1603239.400	T 3215462.200	T 192460390.000	T 15341298.000	1232722.300	291100.170	27092.001	547982.860	33798
3	15:32:37	161599.650	1397.559	5886.039	T 1595718.200	T 3229167.600	T 193192240.000	T 15274881.000	1240735.400	294376.980	27472.624	549517.150	34034
x		164901.930	1371.723	5771.001	T 1595606.100	T 3218285.200	T 193186210.000	T 15317311.000	1231011.300	293515.400	27040.255	546166.740	33648
σ		2918.229	26.262	280.854	T 7689.974	T 9781.380	T 722820.640	T 36850.117	10682.956	2120.081	460.428	4539.637	478
%RSD		1.770	1.915	4.867	T 0.482	T 0.304	T 0.374	T 0.241	0.868	0.722	1.703	0.831	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:31:54	43807.497	T 29496826.000	TM 1334529200.000	261500.510	99853.227	79700.109	387103.880	82851.420	1097.036	873.523	611.511	599
2	15:32:16	45030.751	T 30054056.000	TM 1353518100.000	265005.220	101467.930	81513.849	388521.290	83252.411	1055.033	855.022	642.512	564
3	15:32:37	45406.769	T 29977607.000	TM 1338913900.000	263212.140	101196.290	81026.481	392359.650	82683.590	1088.036	851.022	638.012	581
x		44748.339	T 29842830.000	TM 1342320400.000	263239.290	100839.150	80746.813	389328.270	82929.140	1080.035	859.856	630.679	581
σ		836.203	T 302075.900	TM 9942200.400	1752.512	864.571	938.656	2719.231	292.266	22.115	12.004	16.751	17

%RSD		1.869	T 1.012	TM 0.741	0.666	0.857	1.162	0.698	0.352	2.048	1.396	2.656	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	15:31:54	509052.090	897512.230	24192.546	2190.144	255.002	1695.086	1165890.900	49142.342	2325.162	1804.098	705945.710	24746
2	15:32:16	508407.860	907829.090	24357.786	2300.159	340.003	2105.133	1165676.700	49683.945	2560.197	1967.616	715093.570	25190
3	15:32:37	513191.160	896710.770	23987.249	2290.157	290.003	1970.116	1172951.400	49964.782	2605.204	1997.120	719972.010	24949
x		510217.040	900684.030	24179.194	2260.153	295.003	1923.445	1168173.000	49597.023	2496.854	1922.945	713670.430	24962
σ		2595.730	6200.765	185.629	60.836	42.721	208.969	4139.612	418.053	150.383	103.976	7120.620	222
%RSD		0.509	0.688	0.768	2.692	14.481	10.864	0.354	0.843	6.023	5.407	0.998	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:31:54	780.018	8497.165	1078352.100	149063.630	0.000	332447.910	101216.410
2	15:32:16	795.019	8542.189	1089034.200	144574.340	0.000	338957.060	104773.290
3	15:32:37	855.022	8607.222	1102663.000	149053.540	0.000	342268.720	105860.130
x		810.020	8548.859	1090016.400	147563.840	0.000	337891.230	103949.940
σ		39.688	55.331	12185.168	2588.983	0.000	4996.406	2428.878
%RSD		4.900	0.647	1.118	1.754	0.000	1.479	2.337

200-35736-A-9-A 10/18/2016 03:37:15 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**5**
1	15:37:37	161720.820	907.525	6221.161	T 1935578.800	T 4258945.600	T 216167550.000	T 17379870.000	T 1921873.100	288648.070	22445.103	529994.950	365003
2	15:37:58	161528.970	972.528	5906.046	T 1932521.400	T 4251834.300	T 217553080.000	T 17430923.000	T 1906193.000	288627.720	22720.476	534299.160	362683
3	15:38:20	159327.940	1007.531	5796.008	T 1936985.200	T 4188608.600	T 216150850.000	T 17116186.000	T 1927896.000	288200.430	22309.922	535579.280	367001
x		160859.240	962.528	5974.405	T 1935028.500	T 4233129.500	T 216623830.000	T 17308993.000	T 1918654.000	288492.070	22491.834	533291.130	364896
σ		1329.614	50.747	220.666	T 2282.222	T 38719.853	T 804800.110	T 168915.720	T 11203.873	252.780	209.228	2925.451	2160
%RSD		0.827	5.272	3.694	T 0.118	T 0.915	T 0.372	T 0.976	T 0.584	0.088	0.930	0.549	0

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**8**
1	15:37:37	49839.408	T 23317936.000	T 642016560.000	247367.190	112241.680	88861.260	410452.660	16103.776	1358.055	853.522	623.012	6456
2	15:37:58	51017.966	T 23998290.000	T 653527890.000	252559.190	116415.160	91636.225	417863.440	16504.168	1293.050	870.523	644.512	6946
3	15:38:20	49548.542	T 23509215.000	T 653908110.000	251275.000	115332.670	89172.918	418350.430	16211.881	1316.052	827.021	588.510	7136
x		50135.305	T 23608480.000	T 649817520.000	250400.460	114663.170	89890.134	415555.510	16273.275	1322.386	850.355	618.678	6846
σ		778.118	T 350871.270	T 6758506.000	2704.225	2165.794	1520.167	4425.900	207.136	32.962	21.923	28.251	350
%RSD		1.552	T 1.486	T 1.040	1.080	1.889	1.691	1.065	1.273	2.493	2.578	4.566	5

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	15:37:37	690691.100	848344.820	7361.625	2515.190	255.002	2440.179	1122712.300	47653.027	1950.114	1531.070	762381.900	230127
2	15:37:58	702478.740	852856.550	7806.828	2555.196	350.004	2385.171	1133411.300	48630.845	2000.120	1566.574	768969.410	234690
3	15:38:20	699497.190	851047.510	7551.711	2800.235	260.002	2355.166	1143218.300	49037.033	2265.154	1575.574	785111.470	235238
x		697555.670	850749.630	7573.388	2623.540	288.336	2393.505	1133114.000	48440.302	2071.796	1557.739	772154.260	233352
σ		6128.966	2270.572	223.391	154.324	53.464	43.115	10256.219	711.406	169.309	23.531	11694.694	2805
%RSD		0.879	0.267	2.950	5.882	18.542	1.801	0.905	1.469	8.172	1.511	1.515	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:37:37	805.019	9867.920	1171188.700	143303.440	0.000	352182.060	100929.680
2	15:37:58	950.027	10298.181	1185000.600	144322.170	0.000	362147.230	103983.370
3	15:38:20	775.018	10473.290	1207883.900	145794.910	5.000	367661.000	105382.110
x		843.355	10213.130	1188024.400	144473.510	1.667	360663.430	103431.720
σ		93.591	311.518	18533.537	1252.609	2.887	7845.419	2276.899
%RSD		11.097	3.050	1.560	0.867	173.205	2.175	2.201

200-35736-A-10-A 10/18/2016 03:42:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:43:19	161438.100	1137.539	5230.821	T 1801297.800	T 3914404.100	T 208304280.000	T 15374969.000	T 1757525.800	291812.470	22700.449	535517.330	356078
2	15:43:41	157742.970	1075.035	5160.799	T 1782769.900	T 3942429.000	T 208268890.000	T 15485151.000	T 1761783.400	293481.390	23616.721	533122.360	360982
3	15:44:03	157389.650	1047.533	5320.849	T 1785368.700	T 3954615.100	T 209477780.000	T 15635299.000	T 1780440.300	293359.270	22950.791	540390.910	367083
x		158856.910	1086.702	5237.490	T 1789812.200	T 3937149.400	T 208683650.000	T 15498473.000	T 1766583.200	292884.370	23089.320	536343.530	361381
σ		2242.348	46.123	80.233	T 10031.363	T 20618.870	T 687966.070	T 130675.590	T 12187.979	930.306	473.583	3704.041	5513
%RSD		1.412	4.244	1.532	T 0.560	T 0.524	T 0.330	T 0.843	T 0.690	0.318	2.051	0.691	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:43:19	48605.772	T 27607928.000	T 705556360.000	247407.790	108008.850	84649.421	388592.930	21939.431	1271.049	824.020	589.510	6366
2	15:43:41	48851.489	T 28118243.000	T 716113290.000	247707.190	108421.510	85352.996	391417.890	21660.066	1331.053	890.524	650.013	6336
3	15:44:03	50531.487	T 28047516.000	T 723817690.000	252239.410	109241.840	86011.367	395000.950	22126.678	1331.053	823.520	609.511	6346
x		49329.583	T 27924562.000	T 715162450.000	249118.130	108557.400	85337.928	391670.590	21908.725	1311.052	846.021	616.345	6349
σ		1048.105	T 276484.210	T 9167724.900	2707.249	627.630	681.098	3211.477	234.817	34.644	38.541	30.825	15
%RSD		2.125	T 0.990	T 1.282	1.087	0.578	0.798	0.820	1.072	2.642	4.556	5.001	0

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	15:43:19	629518.440	861241.660	8362.097	2460.182	250.002	2135.137	1137207.300	46705.350	1850.103	1550.072	755974.720	239427
2	15:43:41	634377.570	860578.700	8627.232	2335.164	285.002	2025.123	1148161.400	45687.535	2080.130	1585.075	760420.260	237703
3	15:44:03	646973.140	880605.190	8632.235	2310.160	365.004	2005.121	1152313.800	47562.770	1985.118	1619.579	778166.890	241456
x		636956.380	867475.190	8540.522	2368.502	300.003	2055.127	1145894.100	46651.885	1971.784	1584.909	764853.960	239529
σ		9008.572	11375.750	154.540	80.375	58.950	70.009	7804.281	938.760	115.592	34.754	11741.651	1878
%RSD		1.414	1.311	1.809	3.394	19.650	3.407	0.681	2.012	5.862	2.193	1.535	0

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:43:19	685.014	9342.618	1131855.800	143384.130	0.000	349853.790	97549.645
2	15:43:41	760.017	9467.688	1141795.600	142990.770	0.000	353938.690	98560.566
3	15:44:03	825.020	8907.380	1160498.400	146571.680	0.000	357600.630	99455.861
x		756.684	9239.229	1144716.600	144315.530	0.000	353797.700	98522.024
σ		70.063	294.115	14543.017	1963.758	0.000	3875.342	953.692
%RSD		9.259	3.183	1.270	1.361	0.000	1.095	0.968

200-35736-A-11-A 10/18/2016 03:48:41 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:49:03	149416.770	587.510	4665.653	T 1303430.800	T 2442239.800	T 93929664.000	T 8657564.600	T 3383207.000	233636.180	16007.684	255234.490	183191.
2	15:49:24	146319.470	545.009	4620.640	T 1315110.000	T 2442692.400	T 96255934.000	T 8905474.000	T 3448558.200	233301.540	16878.542	261160.230	187215.
3	15:49:46	143959.050	592.511	4740.674	T 1307955.700	T 2466773.700	T 96164111.000	T 8828996.800	T 3461296.200	232480.180	17404.082	260698.080	185354.
x		146565.100	575.010	4675.656	T 1308832.200	T 2450568.600	T 95449903.000	T 8797345.100	T 3431020.400	233139.300	16763.436	259030.930	185253.
σ		2737.138	26.102	60.639	T 5888.757	T 14035.851	T 1317365.900	T 126949.360	T 41894.629	594.831	705.280	3295.929	2014.
%RSD		1.868	4.539	1.297	T 0.450	T 0.573	T 1.380	T 1.443	T 1.221	0.255	4.207	1.272	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:49:03	25754.884	TM 31564553.000	T 386048710.000	166214.710	63972.539	1688392.100	478944.150	17848.552	1027.032	1076.535	512.008	7061.
2	15:49:24	25784.930	TM 31738531.000	T 389263460.000	164906.810	66130.939	1676750.200	485252.750	18018.735	1053.033	1108.537	528.508	7571.
3	15:49:46	25724.838	TM 31953643.000	T 395884310.000	166967.170	65950.225	1715623.700	487244.610	17859.564	1016.031	1104.537	519.508	6951.
x		25754.884	TM 31752242.000	T 390398830.000	166029.560	65351.235	1693588.700	483813.840	17908.950	1032.032	1096.536	520.008	7194.

σ		30.046	TM 194907.310	T 5015137.200	1042.584	1197.399	19950.934	4333.275	95.236	19.001	17.437	8.262	330.
%RSD		0.117	TM 0.614	T 1.285	0.628	1.832	1.178	0.896	0.532	1.841	1.590	1.589	4.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	15:49:03	767682.060	619306.330	9257.570	6406.231	295.003	2730.224	1058125.500	51940.810	2150.139	1741.091	447729.130	207989.
2	15:49:24	767373.320	618787.590	9787.873	6296.189	280.002	3015.273	1060329.100	52552.723	2275.155	1728.590	453394.230	205397.
3	15:49:46	778130.240	624754.100	10048.028	6481.260	305.003	2785.233	1065972.600	53264.979	2280.156	1771.594	455089.510	208212.
x		771061.870	620949.340	9697.824	6394.560	293.336	2843.576	1061475.700	52586.171	2235.150	1747.092	452070.960	207200.
σ		6123.333	3305.211	402.849	93.086	12.583	151.216	4047.265	662.718	73.664	22.121	3854.487	1564.
%RSD		0.794	0.532	4.154	1.456	4.290	5.318	0.381	1.260	3.296	1.266	0.853	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:49:03	1575.074	4895.719	1121542.400	133552.960	0.000	174448.210	72783.577
2	15:49:24	1515.069	4950.735	1131091.400	134147.700	0.000	178531.110	75701.532
3	15:49:46	1670.084	5000.750	1149680.900	136859.620	0.000	176327.840	75591.032
x		1586.742	4949.068	1134104.900	134853.430	0.000	176435.720	74692.047
σ		78.163	52.535	14309.280	1762.679	0.000	2043.584	1653.707
%RSD		4.926	1.062	1.262	1.307	0.000	1.158	2.214

200-35736-A-11-A SD@5 10/18/2016 03:54:24 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:54:46	135397.750	100.000	1230.045	469717.050	429011.360	T 17889101.000	T 1659230.800	585299.940	195388.630	3120.292	57830.156	35572.923
2	15:55:08	138805.610	120.000	1290.050	467824.930	435055.030	T 18300721.000	T 1704227.500	590094.640	196440.890	2990.268	57935.521	35948.728
3	15:55:30	134611.420	147.501	1265.048	469028.050	439335.140	T 18267469.000	T 1687666.000	592010.830	199506.990	3090.287	58668.077	36730.429
x		136271.600	122.500	1261.714	468856.670	434467.180	T 18152430.000	T 1683708.100	589135.130	197112.170	3066.949	58144.585	36084.026
σ		2229.465	23.849	30.141	957.628	5186.931	T 228655.450	T 22757.937	3456.805	2139.669	68.081	456.408	590.495
%RSD		1.636	19.468	2.389	0.204	1.194	T 1.260	T 1.352	0.587	1.086	2.220	0.785	1.636

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:54:46	7906.875	T 5916369.200	T 73167557.000	31274.315	12574.742	325059.290	102640.080	5037.761	637.012	650.513	465.507	3470.361
2	15:55:08	8312.072	T 5982068.800	T 73953284.000	31589.909	13100.146	333090.550	102529.400	4805.693	626.012	572.010	472.507	3225.312
3	15:55:30	8587.212	T 5970904.400	T 74660337.000	32166.010	12694.833	333819.920	104682.720	4944.733	614.011	594.511	498.007	3445.356
x		8268.720	T 5956447.500	T 73927059.000	31676.745	12789.907	330656.590	103284.070	4929.396	625.678	605.678	478.674	3380.343
σ		342.234	T 35154.830	T 746735.210	452.145	275.303	4861.099	1212.536	116.792	11.504	40.425	17.106	134.842
%RSD		4.139	T 0.590	T 1.010	1.427	2.153	1.470	1.174	2.369	1.839	6.674	3.574	3.989

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:54:46	142869.740	304852.790	1880.106	1310.052	60.000	640.012	1017329.200	10113.067	515.008	360.004	84569.015	171305.870
2	15:55:08	146410.270	313714.980	1770.094	1265.048	85.000	595.011	1046483.800	10503.309	560.009	424.505	85041.409	171720.100
3	15:55:30	145895.780	310108.420	1920.111	1430.061	80.000	595.011	1036285.200	10338.205	475.007	400.005	86438.569	174387.580
x		145058.600	309558.730	1856.770	1335.054	75.000	610.011	1033366.100	10318.194	516.675	394.838	85349.664	172471.180
σ		1912.981	4456.596	77.683	85.301	13.229	25.982	14794.886	195.889	42.526	32.560	972.149	1672.523
%RSD		1.319	1.440	4.184	6.389	17.638	4.259	1.432	1.898	8.231	8.246	1.139	0.970

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:54:46	410.005	1215.044	208055.560	124986.900	0.000	25564.591	13570.523
2	15:55:08	270.002	1170.041	212531.500	125641.800	0.000	26806.540	13485.454
3	15:55:30	375.004	1105.037	211098.460	124755.170	0.000	28574.474	14236.077
x		351.670	1163.374	210561.840	125127.960	0.000	26981.869	13764.018
σ		72.860	55.306	2285.715	459.835	0.000	1512.582	411.022
%RSD		20.718	4.754	1.086	0.367	0.000	5.606	2.986

CCV 10/18/2016 04:00:08 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	16:00:30	124463.000	88793.400	32311.290	T 15266882.000	T 4448978.400	T 41712616.000	T 14280198.000	1410328.600	164901.760	27808.180	T 2891486.800	81892
2	16:00:52	122347.420	87245.256	32882.406	T 14900820.000	T 4377865.600	T 41440943.000	T 14135387.000	1404647.600	165507.720	27888.313	T 2842593.300	80321
3	16:01:14	121632.220	86096.807	32100.884	T 14511307.000	T 4295698.000	T 40193158.000	T 13926966.000	1411599.800	163578.820	27758.096	T 2857943.800	80534
x		122814.220	87378.487	32431.527	T 14893003.000	T 4374180.700	T 41115572.000	T 14114184.000	1408858.700	164662.770	27818.196	T 2864007.900	80916
σ		1471.990	1353.224	404.396	T 377848.280	T 76706.616	T 810301.250	T 177568.250	3701.841	986.410	65.684	T 25004.485	851
%RSD		1.199	1.549	1.247	T 2.537	T 1.754	T 1.971	T 1.258	0.263	0.599	0.236	T 0.873	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	16:00:30	104104.120	T 4258181.600	T 86831265.000	1241235.700	674924.480	848428.940	662516.220	88424.949	7242.573	9930.458	413.505	705
2	16:00:52	99752.627	T 4212771.900	T 87334470.000	1248370.100	671729.200	823672.280	648885.370	86891.917	7146.532	9664.801	414.505	710
3	16:01:14	99294.906	T 4106314.400	T 85148650.000	1214440.600	652996.350	805558.360	640463.830	86566.229	7047.490	9426.665	405.005	708
x		101050.550	T 4192422.600	T 86438128.000	1234682.100	666550.010	825886.530	650621.810	87294.365	7145.532	9673.975	411.005	707
σ		2654.352	T 77951.805	T 1144713.800	17888.935	11846.048	21520.894	11128.266	992.564	97.546	252.021	5.220	2

%RSD		2.627	T 1.859	T 1.324	1.449	1.777	2.606	1.710	1.137	1.365	2.605	1.270	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	16:00:30	870510.050	213002.460	1774007.300	289278.870	9497.705	138205.660	936248.400	864446.350	575254.100	443843.250	585646.810	15174
2	16:00:52	853398.250	207291.120	1784598.500	282717.710	9072.469	138503.110	933278.590	865035.780	576589.060	443012.070	573614.000	15135
3	16:01:14	852840.780	207513.870	T 1962964.800	278990.690	8912.382	137867.880	917613.700	856759.270	576226.850	439438.820	575600.770	15114
x		858916.360	209269.150	T 1840523.500	283662.420	9160.852	138192.220	929046.900	862080.470	576023.340	442098.040	578287.190	15141
σ		10044.297	3235.059	T 106169.400	5208.743	302.505	317.830	10012.166	4617.702	690.358	2340.157	6450.564	30
%RSD		1.169	1.546	T 5.768	1.836	3.302	0.230	1.078	0.536	0.120	0.529	1.115	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:00:30	34726.139	1505164.200	T 7935828.200	114934.940	0.000	179228.530	106282.800
2	16:00:52	35322.391	1520163.100	T 7943417.000	112387.660	0.000	191589.910	105558.220
3	16:01:14	36535.000	1521398.600	T 7900146.500	114844.320	5.000	204314.710	107943.430
x		35527.843	1515575.300	T 7926463.900	114055.640	1.667	191711.050	106594.820
σ		921.766	9037.427	T 23105.232	1445.225	2.887	12543.525	1222.830
%RSD		2.594	0.596	T 0.291	1.267	173.205	6.543	1.147

CCB 10/18/2016 04:05:52 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	16:06:14	134530.770	17.500	655.013	281497.310	550.009	7621.742	61473.160	500.007	174923.150	25.000	17303.978	1710.088
2	16:06:35	128382.570	5.000	660.013	283205.900	620.012	8056.947	60409.280	540.009	175691.170	35.000	18630.407	1890.107
3	16:06:57	131375.750	12.500	585.010	281009.180	560.009	8592.214	61944.902	520.008	178763.580	25.000	17994.709	1915.110
x		131429.700	11.667	633.345	281904.130	576.677	8090.301	61275.781	520.008	176459.300	28.333	17976.365	1838.435
σ		3074.459	6.292	41.934	1153.479	37.861	486.095	786.608	20.001	2032.176	5.774	663.405	111.853
%RSD		2.339	53.927	6.621	0.409	6.565	6.008	1.284	3.846	1.152	20.377	3.690	6.084

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:06:14	5891.041	900.024	266646.080	105.000	85.000	285.002	630.012	1531.070	469.007	401.505	449.006	2270.155
2	16:06:35	6376.220	890.024	270969.980	105.000	40.000	285.002	610.011	1505.068	494.007	458.006	440.506	2230.149
3	16:06:57	6171.142	935.026	273978.570	60.000	30.000	225.002	640.012	1552.072	524.008	435.006	446.506	2345.165
x		6146.134	908.358	270531.540	90.000	51.667	265.002	626.678	1529.403	495.674	431.506	445.339	2281.823
σ		243.554	23.630	3685.856	25.981	29.297	34.642	15.276	23.546	27.539	28.413	4.369	58.389
%RSD		3.963	2.601	1.362	28.868	56.705	13.072	2.438	1.540	5.556	6.585	0.981	2.559

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:06:14	90.000	219161.540	3465.360	40.000	5.000	5.000	945065.750	3295.326	820.020	600.511	70.000	155017.580
2	16:06:35	105.000	216020.940	3605.390	45.000	0.000	10.000	967256.040	3785.430	805.019	682.514	60.000	154593.670
3	16:06:57	100.000	220752.330	3195.306	40.000	0.000	10.000	960988.630	3765.425	950.027	654.013	90.000	153594.490
x		98.334	218644.940	3422.019	41.667	1.667	8.333	957770.140	3615.394	858.356	645.679	73.333	154401.910
σ		7.638	2407.629	208.449	2.887	2.887	2.887	11439.900	277.367	79.743	41.632	15.275	730.664
%RSD		7.767	1.101	6.091	6.928	173.205	34.641	1.194	7.672	9.290	6.448	20.830	0.473

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:06:14	205.001	1575.074	715.015	116979.090	0.000	2500.188	50.000
2	16:06:35	205.001	1540.071	780.018	118882.480	0.000	2600.203	50.000
3	16:06:57	170.001	1545.072	730.016	120745.810	0.000	2220.148	65.000
x		193.334	1553.406	741.683	118869.130	0.000	2440.179	55.000
σ		20.207	18.931	34.036	1883.396	0.000	197.006	8.660
%RSD		10.452	1.219	4.589	1.584	0.000	8.073	15.746

CCVL 10/18/2016 04:11:36 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:11:59	135357.430	192.501	6136.129	1049813.800	32401.465	79770.444	800692.070	27372.459	181341.200	15.000	32782.209	11283.818
2	16:12:22	136446.250	227.502	6406.231	T 1122707.900	31088.969	79504.176	790397.750	28053.590	184060.770	15.000	33443.520	11784.165
3	16:12:46	131758.760	210.001	6391.225	T 1131421.400	32521.699	85066.537	813038.780	27182.148	175357.680	15.000	33117.871	12454.652
x		134520.810	210.001	6311.195	T 1101314.400	32004.044	81447.052	801376.200	27536.066	180253.220	15.000	33114.533	11840.878
σ		2453.178	17.500	151.797	T 44813.115	794.756	3137.392	11336.009	458.179	4452.383	0.000	330.669	587.473
%RSD		1.824	8.333	2.405	T 4.069	2.483	3.852	1.415	1.664	2.470	0.000	0.999	4.961

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:11:59	8277.055	8277.055	857390.520	3515.371	1330.053	4350.568	13945.832	2612.205	741.016	642.512	486.507	2495.187
2	16:12:22	8512.173	8302.067	876386.310	3165.300	1445.063	4300.555	13650.588	2686.217	748.017	653.513	461.006	2420.176
3	16:12:46	8167.001	8817.332	895772.270	3415.350	1535.071	4250.542	13825.732	2719.222	739.016	668.013	424.505	2545.194
x		8318.743	8465.485	876516.370	3365.340	1436.729	4300.555	13807.384	2672.548	742.683	654.680	457.340	2486.852
σ		176.322	304.965	19191.203	180.314	102.763	50.013	148.475	54.802	4.726	12.790	31.163	62.925
%RSD		2.120	3.602	2.189	5.358	7.153	1.163	1.075	2.051	0.636	1.954	6.814	2.530

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:11:59	23501.558	224947.870	16453.117	3245.316	40.000	895.024	967933.730	1490.067	5110.783	4116.008	5440.888	155996.650
2	16:12:22	23872.084	226539.210	16688.351	3180.303	75.000	765.018	973928.270	1670.084	5445.890	4188.026	5220.818	157329.080
3	16:12:46	24623.176	214916.800	17123.792	3310.329	95.000	790.019	931397.620	1910.109	5410.878	4371.573	5295.841	150385.430
x		23998.939	222134.630	16755.087	3245.316	70.000	816.687	957753.210	1690.087	5322.517	4225.203	5319.182	154570.390
σ		571.468	6301.258	340.282	65.013	27.839	68.984	23020.561	210.735	184.200	131.776	111.876	3685.006
%RSD		2.381	2.837	2.031	2.003	39.770	8.447	2.404	12.469	3.461	3.119	2.103	2.384

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:11:59	3355.338	15987.664	8021.930	121229.300	0.000	10138.082	11388.890
2	16:12:22	2860.245	16473.137	7821.835	116727.330	0.000	10678.420	11513.976
3	16:12:46	3280.323	17344.020	8126.981	112719.890	0.000	11398.897	12950.029
x		3165.302	16601.607	7990.249	116892.170	0.000	10738.466	11950.965
σ		266.836	687.243	155.020	4257.099	0.000	632.548	867.473
%RSD		8.430	4.140	1.940	3.642	0.000	5.890	7.259

200-35736-A-11-A PDS 10/18/2016 04:17:25 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	16:17:47	141175.390	2062.628	59736.863	T 9226285.400	T 2571051.000	T 87444741.000	T 15753112.000	T 3306640.800	212131.460	14676.459	343850.790	253554
2	16:18:09	141467.860	2007.621	58362.005	T 9252181.600	T 2602049.700	T 88860580.000	T 16002629.000	T 3359877.100	213316.440	15091.830	347837.240	259489
3	16:18:30	140519.890	2092.631	59852.276	T 9387563.300	T 2606542.700	T 89462753.000	T 16071784.000	T 3374726.500	215210.550	15947.626	348909.300	260718
x		141054.380	2054.293	59317.048	T 9288676.700	T 2593214.400	T 88589358.000	T 15942508.000	T 3347081.500	213552.820	15238.638	346865.770	257920
σ		485.432	43.114	829.102	T 86611.541	T 19325.166	T 1035984.600	T 167627.270	T 35801.023	1553.100	648.175	2665.510	3831
%RSD		0.344	2.099	1.398	T 0.932	T 0.745	T 1.169	T 1.051	T 1.070	0.727	4.253	0.768	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	16:17:47	34330.321	TM 28515074.000	T 354980510.000	171927.220	68646.078	1518282.800	525562.870	24174.520	1991.119	2634.208	483.007	7891
2	16:18:09	34575.827	TM 28689250.000	T 356753430.000	179683.390	70212.583	1556169.500	535543.140	24516.018	2114.134	2672.714	527.508	7686
3	16:18:30	34350.362	TM 29379600.000	T 363344920.000	177682.110	71593.439	1553469.200	540251.500	24493.985	2176.142	2638.709	509.008	7651
x		34418.837	TM 28861308.000	T 358359620.000	176430.910	70150.700	1542640.500	533785.840	24394.841	2093.798	2648.544	506.508	7743

σ		136.327	TM 457224.960	T 4407462.500	4026.621	1474.655	21137.571	7500.338	191.122	94.173	21.053	22.356	129
%RSD		0.396	TM 1.584	T 1.230	2.282	2.102	1.370	1.405	0.783	4.498	0.795	4.414	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	16:17:47	909580.830	559465.030	164967.410	35162.052	780.018	9027.444	943172.910	47552.741	49267.712	37243.566	444638.010	185526
2	16:18:09	922413.050	551568.260	165755.160	35197.126	725.016	9317.604	970761.280	48269.798	49724.064	38458.320	455890.970	190148
3	16:18:30	923960.320	556498.140	169861.200	36535.000	740.016	9147.510	958882.360	49057.092	50009.917	38815.146	457504.290	188641
x		918651.400	555843.810	166861.260	35631.393	748.350	9164.186	957605.520	48293.210	49667.231	38172.344	452677.760	188105
σ		7893.346	3988.842	2627.712	782.744	28.432	145.797	13838.436	752.449	374.352	823.895	7009.194	2356
%RSD		0.859	0.718	1.575	2.197	3.799	1.591	1.445	1.558	0.754	2.158	1.548	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:17:47	33157.951	162271.130	1076071.600	121390.470	0.000	433443.860	190441.860
2	16:18:09	32596.845	166305.610	1100902.100	125470.510	0.000	434331.520	194407.250
3	16:18:30	33719.075	168083.310	1100790.100	121974.710	0.000	428041.910	200088.900
x		33157.957	165553.350	1092587.900	122945.230	0.000	431939.100	194979.340
σ		561.115	2978.216	14303.689	2206.385	0.000	3404.122	4848.897
%RSD		1.692	1.799	1.309	1.795	0.000	0.788	2.487

200-35736-A-11-I MS 10/18/2016 04:23:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	16:23:31	141074.540	2150.139	52156.481	T 9665817.200	T 2824018.600	T 102760450.000	T 17047955.000	T 3973133.400	217702.610	21053.289	382821.650	2794
2	16:23:53	137726.720	2170.141	52241.748	T 9639156.700	T 2845093.800	T 104147090.000	T 17197625.000	T 4042846.000	215018.090	20407.486	388444.530	2895
3	16:24:14	135317.100	2062.628	51359.011	T 9448833.600	T 2795735.100	T 101407690.000	T 16837309.000	T 3984106.000	220073.440	21283.581	388142.620	2855
x		138039.450	2127.636	51919.080	T 9584602.500	T 2821615.800	T 102771740.000	T 17027630.000	T 4000028.500	217598.050	20914.785	386469.600	2848
σ		2891.434	57.180	486.904	T 118332.580	T 24766.942	T 1369732.300	T 181015.650	T 37484.725	2529.294	454.173	3162.820	50
%RSD		2.095	2.688	0.938	T 1.235	T 0.878	T 1.333	T 1.063	T 0.937	1.162	2.172	0.818	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	16:23:31	36725.418	TM 30377862.000	T 369730540.000	174716.000	76334.409	1780076.000	550219.770	25692.788	2158.140	2598.703	481.507	87
2	16:23:53	37336.774	TM 30770674.000	T 373508980.000	177085.810	77976.987	1820230.400	558374.360	26185.554	2154.139	2570.698	509.508	85
3	16:24:14	37361.830	TM 30615086.000	T 372599880.000	175271.790	75048.589	1795012.800	551547.600	25773.913	2182.143	2510.189	494.007	83
x		37141.341	TM 30587874.000	T 371946470.000	175691.200	76453.328	1798439.800	553380.570	25884.085	2164.807	2559.863	495.007	85
σ		360.417	TM 197814.720	T 1972142.400	1239.328	1467.816	20295.365	4375.406	264.212	15.146	45.241	14.027	2
%RSD		0.970	TM 0.647	T 0.530	0.705	1.920	1.128	0.791	1.021	0.700	1.767	2.834	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	16:23:31	1024839.000	593036.330	160064.950	36595.132	695.014	8932.393	948608.760	53806.715	13335.333	10368.224	461538.250	1926
2	16:23:53	1036258.700	604797.860	163084.010	35823.458	650.013	9002.431	963317.470	53922.087	13750.670	10556.342	470210.680	1911
3	16:24:14	1036104.500	601170.090	163477.840	36900.805	795.019	8947.401	960967.460	54799.943	13760.678	10535.829	463578.720	1905
x		1032400.700	599668.090	162208.930	36439.798	713.349	8960.742	957631.230	54176.248	13615.560	10486.798	465109.220	1914
σ		6549.100	6022.903	1867.155	555.216	74.221	36.875	7901.539	543.207	242.736	103.199	4534.264	11
%RSD		0.634	1.004	1.151	1.524	10.405	0.412	0.825	1.003	1.783	0.984	0.975	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:23:31	34711.108	137746.880	1037359.100	125389.910	0.000	413768.150	198135.770
2	16:23:53	35547.869	140529.970	1053463.600	124231.280	0.000	418693.900	199253.990
3	16:24:14	36099.052	138271.200	1065322.900	124886.150	0.000	418950.220	203626.360
x		35452.676	138849.350	1052048.500	124835.780	0.000	417137.420	200338.710
σ		698.851	1478.882	14035.549	580.954	0.000	2920.689	2901.567
%RSD		1.971	1.065	1.334	0.465	0.000	0.700	1.448

200-35736-A-11-J MSD 10/18/2016 04:28:54 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	16:29:15	144937.480	1890.107	50481.335	T 9629525.900	T 2894775.800	T 96127679.000	T 16643396.000	T 2889403.600	224461.380	16888.552	377302.930	279585.
2	16:29:37	140429.130	2017.622	51163.410	T 9652915.000	T 2956967.200	T 98949750.000	T 16680317.000	T 2900999.300	221248.850	17929.639	383123.470	284385.
3	16:29:59	143000.860	2105.133	52061.184	T 9887142.400	T 2996499.400	T 97722822.000	T 16960152.000	T 2988815.100	226478.390	17068.736	380535.180	283933.
x		142789.150	2004.287	51235.310	T 9723194.400	T 2949414.200	T 97600084.000	T 16761288.000	T 2926406.000	224062.870	17295.642	380320.520	282634.
σ		2261.618	108.131	792.375	T 142463.920	T 51280.702	T 1415033.400	T 173207.520	T 54357.901	2637.448	556.399	2916.204	2650.
%RSD		1.584	5.395	1.547	T 1.465	T 1.739	T 1.450	T 1.033	T 1.857	1.177	3.217	0.767	0.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	16:29:15	37356.819	T 27081876.000	T 360571520.000	176550.170	77760.981	1695386.500	578529.600	25144.954	2201.145	2706.220	519.508	6971.
2	16:29:37	37101.249	T 27757776.000	T 366144230.000	175964.020	77916.706	1721423.400	582137.000	26071.376	2194.144	2750.727	540.009	7501.
3	16:29:59	38078.449	T 27805027.000	T 373565530.000	179936.090	77776.051	1714700.500	589146.980	25390.325	2266.154	2702.219	528.008	7691.
x		37512.173	T 27548226.000	T 366760430.000	177483.430	77817.913	1710503.500	583271.190	25535.552	2220.481	2719.722	529.175	7388.
σ		506.785	T 404561.720	T 6518883.100	2144.194	85.889	13516.328	5398.795	479.982	39.708	26.926	10.300	373.

%RSD		1.351	T 1.469	T 1.777	1.208	0.110	0.790	0.926	1.880	1.788	0.990	1.946	5.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	16:29:15	820459.490	573407.060	162649.790	36950.916	815.020	10603.372	962205.940	53515.780	13115.158	10464.284	432233.010	191382.
2	16:29:37	827505.320	574069.280	166108.660	36750.473	805.019	10893.559	974299.020	55778.180	13655.592	10611.877	440418.160	191868.
3	16:29:59	833282.770	580993.110	166022.810	36820.628	715.015	10878.549	984524.430	55512.295	13560.514	10898.562	441819.530	191918.
x		827082.530	576156.480	164927.090	36840.672	778.352	10791.827	973676.460	54935.418	13443.755	10658.241	438156.900	191723.
σ		6422.086	4201.708	1972.660	101.713	55.078	163.379	11172.263	1236.609	288.516	220.820	5177.865	296.
%RSD		0.776	0.729	1.196	0.276	7.076	1.514	1.147	2.251	2.146	2.072	1.182	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:29:15	36489.902	141866.220	1084252.000	122992.140	0.000	388613.400	194159.390
2	16:29:37	37542.235	144216.260	1100966.100	125047.350	0.000	396337.120	197943.510
3	16:29:59	37366.842	146279.120	1108683.400	124956.680	10.000	403342.200	202396.510
x		37132.993	144120.540	1097967.200	124332.060	3.333	396097.570	198166.470
σ		563.795	2208.007	12488.703	1161.284	5.774	7367.320	4123.087
%RSD		1.518	1.532	1.137	0.934	173.205	1.860	2.081

200-35736-A-12-A 10/18/2016 04:34:38 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52**
1	16:35:00	129198.840	490.007	3780.429	T 1191254.800	T 2736646.800	T 76215045.000	T 6998641.800	T 3860464.800	204172.980	6926.439	205959.770	152110.9
2	16:35:22	129622.100	542.509	3810.436	T 1177404.700	T 2713696.800	T 76431498.000	T 7031046.200	T 3850946.000	203859.180	7066.498	209933.890	153115.1
3	16:35:43	130650.080	417.505	3810.436	T 1177618.800	T 2730537.600	T 77251798.000	T 7076487.700	T 3917024.100	203504.890	7116.519	208480.820	153740.8
x		129823.670	483.340	3800.433	T 1182092.800	T 2726960.400	T 76632780.000	T 7035391.900	T 3876144.900	203845.680	7036.485	208124.830	152988.9
σ		746.326	62.768	17.324	T 7935.254	T 11885.844	T 546900.420	T 39104.497	T 35720.860	334.253	98.530	2010.837	822.2
%RSD		0.575	12.986	0.456	T 0.671	T 0.436	T 0.714	T 0.556	T 0.922	0.164	1.400	0.966	0.5

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84**
1	16:35:00	20467.560	TM 30369806.000	T 332974560.000	128901.550	57202.997	1407417.300	431540.410	16008.685	758.017	1049.033	510.008	6786.3
2	16:35:22	20217.255	TM 30649826.000	T 344802350.000	130791.180	56696.270	1421560.300	438714.090	15883.565	815.020	995.030	522.508	7561.7
3	16:35:43	20527.634	TM 30661406.000	T 338215800.000	130776.070	57363.548	1419342.700	439227.350	16084.758	790.019	1024.532	500.508	7351.6
x		20404.149	TM 30560346.000	T 338664230.000	130156.270	57087.605	1416106.800	436493.950	15992.336	787.685	1022.865	511.008	7233.2
σ		164.619	TM 165114.090	T 5926632.900	1086.644	348.283	7606.560	4297.561	101.588	28.573	27.040	11.034	400.9
%RSD		0.807	TM 0.540	T 1.750	0.835	0.610	0.537	0.985	0.635	3.627	2.644	2.159	5.5

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	16:35:00	795544.130	513902.580	6226.163	4720.668	255.002	2465.182	934060.620	22690.435	1490.067	1209.044	384581.480	181058.1
2	16:35:22	804346.900	515315.210	5796.008	5185.807	275.002	2590.201	943817.930	22324.942	1465.064	1291.050	389908.120	182372.3
3	16:35:43	809487.010	521173.200	5831.020	4505.609	250.002	2525.191	937886.770	22234.822	1510.068	1287.050	393163.260	183615.9
x		803126.010	516797.000	5951.063	4804.028	260.002	2526.858	938588.440	22416.733	1488.400	1262.381	389217.620	182348.8
σ		7051.159	3855.158	238.885	347.676	13.229	62.526	4916.352	241.278	22.548	46.235	4332.360	1279.0
%RSD		0.878	0.746	4.014	7.237	5.088	2.474	0.524	1.076	1.515	3.663	1.113	0.7

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:35:00	1075.035	4955.737	822533.030	121299.810	0.000	138422.450	55331.696
2	16:35:22	1090.036	5040.762	832300.460	121249.440	0.000	140877.890	57202.997
3	16:35:43	1060.034	4785.687	843855.290	121279.660	0.000	141881.350	57589.324
x		1075.035	4927.395	832896.260	121276.310	0.000	140393.900	56708.006
σ		15.001	129.878	10673.608	25.350	0.000	1779.520	1207.470
%RSD		1.395	2.636	1.282	0.021	0.000	1.268	2.129

MB 200-110239/1-A 10/18/2016 04:40:22 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:40:44	140620.730	0.000	1200.043	570220.480	3260.319	107772.320	80745.121	4950.735	196137.340	30.000	13445.421	2415.175
2	16:41:05	136254.690	0.000	1065.034	561326.060	3010.272	94290.971	78494.407	4960.738	198677.160	15.000	13470.441	2300.159
3	16:41:27	136950.360	10.000	1085.035	565028.060	2860.245	92651.817	76485.097	4900.720	197796.780	35.000	13265.277	2330.163
x		137941.930	3.333	1116.704	565524.870	3043.612	98238.370	78574.875	4937.398	197537.100	26.667	13393.713	2348.499
σ		2345.844	5.774	72.863	4467.972	202.110	8297.222	2131.151	32.155	1289.669	10.408	111.930	59.660
%RSD		1.701	173.205	6.525	0.790	6.640	8.446	2.712	0.651	0.653	39.031	0.836	2.540

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:40:44	4295.554	29350.821	679838.270	220.001	150.001	2480.184	1640.081	1418.060	447.006	517.508	531.008	2750.227
2	16:41:05	4645.647	25995.257	636023.560	165.001	120.000	1985.118	1480.066	1458.064	458.006	492.007	529.008	2855.245
3	16:41:27	5020.756	25359.278	610728.350	230.002	165.001	2270.155	1345.054	1484.066	476.007	506.508	518.008	2625.207
x		4653.986	26901.785	642196.720	205.001	145.001	2245.152	1488.400	1453.397	460.340	505.341	526.008	2743.559
σ		362.673	2144.633	34966.073	35.000	22.913	248.478	147.690	33.249	14.641	12.790	7.000	115.164
%RSD		7.793	7.972	5.445	17.073	15.802	11.067	9.923	2.288	3.180	2.531	1.331	4.198

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:40:44	1500.068	236049.830	255.002	45.000	5.000	0.000	1002319.500	905.025	125.000	91.000	480.007	162488.230
2	16:41:05	1865.104	236323.670	325.003	50.000	0.000	5.000	1008209.300	815.020	100.000	98.000	505.008	164760.370
3	16:41:27	1480.066	239792.700	235.002	110.000	15.000	20.000	1005067.800	880.023	135.001	99.000	400.005	164134.240
x		1615.079	237388.730	271.669	68.334	6.667	8.333	1005198.900	866.689	120.000	96.000	461.673	163794.280
σ		216.759	2086.390	47.259	36.171	7.638	10.408	2947.087	46.460	18.028	4.359	54.850	1173.601
%RSD		13.421	0.879	17.396	52.933	114.564	124.900	0.293	5.361	15.023	4.541	11.881	0.717

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:40:44	140.001	450.006	1275.049	121732.950	0.000	6276.181	150.001
2	16:41:05	115.000	450.006	1390.058	123485.770	0.000	5776.001	195.001
3	16:41:27	145.001	435.006	1370.056	122710.080	0.000	5545.923	180.001
x		133.334	445.006	1345.054	122642.930	0.000	5866.035	175.001
σ		16.073	8.660	61.446	878.339	0.000	373.362	22.913
%RSD		12.055	1.946	4.568	0.716	0.000	6.365	13.093

LCS 200-110239/2-A 10/18/2016 04:46:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:46:26	129874.050	1545.072	53039.261	T 8419743.300	289736.720	658059.770	T 7652513.500	250884.180	177459.760	0.000	123324.590	89379.017
2	16:46:47	122689.930	1402.559	53997.330	T 8321509.000	286979.630	660103.250	T 7553623.500	243201.560	167133.830	20.000	117291.270	86720.025
3	16:47:11	121420.680	1445.063	53671.279	T 8100214.400	281080.370	648599.560	T 7399847.800	245636.880	164598.790	10.000	115992.230	87267.874
x		124661.560	1464.231	53569.290	T 8280488.900	285932.240	655587.530	T 7535328.300	246574.210	169730.790	10.000	118869.360	87788.972
σ		4558.547	73.164	487.109	T 163666.320	4422.204	6137.403	T 127322.530	3926.144	6812.435	10.000	3912.628	1404.000
%RSD		3.657	4.997	0.909	T 1.977	1.547	0.936	T 1.690	1.592	4.014	100.000	3.292	1.599

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:46:26	14606.398	67877.942	T 6598077.600	27467.615	11523.983	37632.438	109166.350	9848.909	1693.086	2233.150	432.506	3635.396
2	16:46:47	14065.933	67084.740	T 6505592.100	27552.756	11879.232	37316.729	106866.520	9608.769	1683.085	2168.641	428.005	3270.321
3	16:47:11	13395.381	67175.103	T 6339738.800	26556.140	11213.771	36900.805	103611.060	9497.705	1567.074	2248.652	414.505	3350.337
x		14022.571	67379.261	T 6481136.200	27192.170	11538.995	37283.324	106547.980	9651.795	1647.748	2216.814	425.005	3418.685

σ		606.672	434.227	T 130894.220	552.461	332.984	366.959	2791.311	179.512	70.045	42.433	9.368	191.895
%RSD		4.326	0.644	T 2.020	2.032	2.886	0.984	2.620	1.860	4.251	1.914	2.204	5.613
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:46:26	218801.860	206025.570	148069.830	29776.576	500.007	6486.262	897765.330	605.011	46845.743	34905.514	46675.266	150345.060
2	16:46:47	220412.880	206744.390	147005.470	28844.939	525.008	6746.365	883376.210	730.016	45762.741	34905.013	46514.818	149658.930
3	16:47:11	218487.780	202755.840	146016.840	28804.870	470.007	6831.400	878224.370	815.020	45351.619	34759.208	45702.576	146813.790
x		219234.170	205175.270	147030.710	29142.128	498.341	6688.009	886455.310	716.682	45986.701	34856.578	46297.553	148939.260
σ		1032.799	2125.888	1026.729	549.813	27.539	179.817	10127.828	105.637	771.829	84.325	521.473	1872.408
%RSD		0.471	1.036	0.698	1.887	5.526	2.689	1.143	14.740	1.678	0.242	1.126	1.257

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:46:26	60695.317	147873.100	56605.964	112790.360	0.000	144882.000	116636.700
2	16:46:47	61638.770	149885.960	56821.696	112448.060	0.000	152872.900	115841.180
3	16:47:11	62973.746	150814.280	56129.356	112880.970	0.000	160559.670	115272.260
x		61769.278	149524.440	56519.006	112706.470	0.000	152771.530	115916.710
σ		1144.808	1503.547	354.267	228.325	0.000	7839.330	685.350
%RSD		1.853	1.006	0.627	0.203	0.000	5.131	0.591

200-35680-A-13-A 10/18/2016 04:51:48 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:52:10	133512.640	2.500	1230.045	531006.390	1520.069	38795.099	69444.375	2930.258	182018.520	35.000	15387.100	2060.127
2	16:52:32	134772.720	5.000	1365.056	531759.850	1310.052	33994.634	68841.883	3000.270	182372.360	40.000	16217.887	1915.110
3	16:52:53	130619.850	10.000	1315.052	527136.410	1230.045	28779.827	67215.264	2570.198	183353.030	10.000	16373.038	2075.129
x		132968.400	5.833	1303.384	529967.550	1353.389	33856.520	68500.507	2833.575	182581.310	28.333	15992.675	2016.789
σ		2129.254	3.819	68.257	2480.616	149.790	5009.065	1153.099	230.762	691.355	16.073	530.150	88.375
%RSD		1.601	65.465	5.237	0.468	11.068	14.795	1.683	8.144	0.379	56.727	3.315	4.382

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:52:10	5280.837	10993.625	380115.770	115.000	80.000	1005.030	1890.107	1485.066	461.006	422.005	458.506	2490.186
2	16:52:32	5776.001	9462.685	356967.260	135.001	170.001	1055.033	1700.087	1475.065	448.006	432.006	447.506	2335.164
3	16:52:53	5806.011	8427.130	345162.480	80.000	120.000	860.022	1650.082	1430.061	478.007	462.506	463.506	2485.185
x		5620.949	9627.813	360748.510	110.000	123.334	973.362	1746.758	1463.398	462.340	438.839	456.506	2436.845
σ		294.928	1291.191	17780.786	27.839	45.093	101.289	126.636	29.300	15.045	21.098	8.186	88.094
%RSD		5.247	13.411	4.929	25.308	36.562	10.406	7.250	2.002	3.254	4.808	1.793	3.615

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:52:10	930.026	215889.250	455.006	60.000	0.000	5.000	936977.720	630.012	160.001	134.001	145.001	149891.000
2	16:52:32	875.023	215463.790	340.003	35.000	5.000	5.000	943162.340	755.017	170.001	137.001	95.000	153412.830
3	16:52:53	765.018	218280.090	385.004	45.000	5.000	10.000	936840.310	675.014	165.001	148.001	170.001	153029.330
x		856.689	216544.380	393.338	46.667	3.333	6.667	938993.460	686.681	165.001	139.667	136.667	152111.050
σ		84.018	1518.147	57.953	12.583	2.887	2.887	3611.011	63.314	5.000	7.371	38.188	1932.160
%RSD		9.807	0.701	14.734	26.964	86.603	43.301	0.385	9.220	3.030	5.278	27.943	1.270

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:52:10	275.002	550.009	780.018	114340.870	0.000	32155.990	220.001
2	16:52:32	280.002	600.011	775.018	117754.520	0.000	28975.165	180.001
3	16:52:53	270.002	485.007	665.013	117442.330	0.000	26295.728	110.000
x		275.002	545.009	740.017	116512.570	0.000	29142.294	170.001
σ		5.000	57.665	65.003	1887.214	0.000	2933.704	55.678
%RSD		1.818	10.581	8.784	1.620	0.000	10.067	32.752

200-35700-A-19-A 10/18/2016 04:57:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:57:53	141568.710	5.000	1095.036	566693.180	430.006	12594.757	64434.313	2360.167	191129.670	25.000	21443.786	2595.202
2	16:58:14	140509.800	0.000	905.025	562649.590	430.006	11844.207	66060.661	1810.098	191756.810	20.000	21593.980	2590.201
3	16:58:36	140731.660	2.500	1100.036	556146.700	510.008	12214.474	66060.661	2290.157	192232.240	30.000	21303.607	2780.232
x		140936.730	2.500	1033.366	561829.820	456.673	12217.813	65518.545	2153.474	191706.240	25.000	21447.124	2655.212
σ		558.442	2.500	111.175	5320.816	46.189	375.286	938.973	299.425	553.023	5.000	145.215	108.299
%RSD		0.396	100.000	10.759	0.947	10.114	3.072	1.433	13.904	0.288	20.000	0.677	4.079

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:57:53	7296.597	1480.066	274298.770	40.000	115.000	480.007	990.029	1876.106	584.010	455.006	444.006	2630.208
2	16:58:14	7661.761	1435.062	280760.030	20.000	90.000	645.012	1130.038	1896.108	620.012	459.506	488.507	2625.207
3	16:58:36	7706.781	1305.051	281792.240	40.000	90.000	525.008	1170.041	1810.098	590.010	509.508	483.007	2820.239
x		7555.046	1406.726	278950.350	33.333	98.334	550.009	1096.703	1860.771	598.011	474.673	471.840	2691.884
σ		224.953	90.883	4061.309	11.547	14.434	85.297	94.522	45.009	19.288	30.251	24.261	111.186

%RSD		2.978	6.461	1.456	34.641	14.678	15.508	8.619	2.419	3.225	6.373	5.142	4.130
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:57:53	355.004	230563.840	150.001	30.000	0.000	0.000	962936.360	665.013	60.000	70.500	30.000	158136.670
2	16:58:14	310.003	228799.770	135.001	40.000	0.000	0.000	981429.670	715.015	125.000	83.000	20.000	157995.340
3	16:58:36	370.004	225941.170	170.001	20.000	0.000	10.000	976301.240	655.013	130.001	80.500	25.000	158843.350
x		345.004	228434.930	151.667	30.000	0.000	3.333	973555.760	678.347	105.000	78.000	25.000	158325.120
σ		31.226	2332.829	17.560	10.000	0.000	5.774	9547.453	32.147	39.051	6.614	5.000	454.325
%RSD		9.051	1.021	11.578	33.333	0.000	173.205	0.981	4.739	37.192	8.480	20.000	0.287

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:57:53	160.001	330.003	445.006	118630.700	0.000	12074.372	25.000
2	16:58:14	130.001	340.003	405.005	119547.210	0.000	11789.168	15.000
3	16:58:36	135.001	335.003	420.005	121833.680	0.000	11348.863	25.000
x		141.667	335.003	423.339	120003.870	0.000	11737.468	21.667
σ		16.073	5.000	20.208	1649.597	0.000	365.507	5.774
%RSD		11.346	1.493	4.773	1.375	0.000	3.114	26.647

200-35736-A-14-A 10/18/2016 05:03:14 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	17:03:35	139481.220	2.500	880.023	570023.930	680.014	13185.213	65769.513	2160.140	195732.630	25.000	23075.964	2510.189
2	17:03:57	143101.720	2.500	925.026	571110.180	520.008	11138.721	67315.668	2080.130	195934.990	20.000	24112.430	2785.233
3	17:04:19	137716.640	2.500	905.025	566931.070	630.012	11513.976	63952.463	2300.159	193972.230	35.000	23616.721	2670.214
x		140099.860	2.500	903.358	569355.060	610.011	11945.970	65679.215	2180.143	195213.280	26.667	23601.705	2655.212
σ		2745.325	0.000	22.547	2168.357	81.856	1089.494	1683.420	111.370	1079.536	7.638	518.396	138.134
%RSD		1.960	0.000	2.496	0.381	13.419	9.120	2.563	5.108	0.553	28.641	2.196	5.202
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:03:35	8116.976	3835.441	309716.230	35.000	140.001	640.012	1535.071	1937.113	636.012	478.507	502.008	2565.197
2	17:03:57	8352.092	2940.259	299349.370	40.000	140.001	605.011	1600.077	2051.126	658.013	535.009	534.009	2650.211
3	17:04:19	8277.055	3395.346	302627.790	40.000	190.001	665.013	1615.078	1931.112	645.012	474.007	511.008	2725.223
x		8248.708	3390.349	303897.800	38.333	156.667	636.679	1583.409	1973.117	646.346	495.841	515.675	2646.877
σ		120.094	447.612	5298.833	2.887	28.868	30.140	42.529	67.625	11.061	33.995	16.503	80.065
%RSD		1.456	13.203	1.744	7.531	18.426	4.734	2.686	3.427	1.711	6.856	3.200	3.025
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:03:35	330.003	230310.370	60.000	15.000	0.000	5.000	967308.980	580.010	80.000	69.500	70.000	158934.210
2	17:03:57	385.004	230107.590	95.000	60.000	0.000	5.000	978695.730	650.013	135.001	93.000	55.000	162791.170
3	17:04:19	390.005	236891.650	150.001	25.000	0.000	5.000	994575.640	720.016	100.000	84.000	40.000	157571.360
x		368.337	232436.540	101.667	33.333	0.000	5.000	980193.450	650.013	105.000	82.167	55.000	159765.580
σ		33.292	3859.573	45.369	23.629	0.000	0.000	13694.891	70.003	27.839	11.857	15.000	2707.394
%RSD		9.039	1.660	44.625	70.887	0.000	0.000	1.397	10.769	26.513	14.430	27.273	1.695

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:03:35	110.000	270.002	595.011	117764.590	0.000	7006.472	50.000
2	17:03:57	100.000	320.003	595.011	122145.950	0.000	6391.225	40.000
3	17:04:19	145.001	220.001	535.009	120081.030	0.000	6336.204	35.000
x		118.334	270.002	575.010	119997.190	0.000	6577.967	41.667
σ		23.629	50.001	34.642	2191.885	0.000	372.115	7.638
%RSD		19.968	18.519	6.025	1.827	0.000	5.657	18.330

200-35736-A-14-A SD@5 10/18/2016 05:08:56 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:09:18	142052.800	2.500	545.009	355041.790	310.003	6421.237	62767.972	910.025	194215.030	15.000	24292.691	2345.165
2	17:09:40	139229.120	2.500	565.010	362407.800	240.002	6231.165	62416.657	910.025	195611.220	5.000	24347.771	2360.167
3	17:10:02	138896.360	2.500	680.014	355174.570	260.002	6136.129	63018.917	1010.031	195459.450	10.000	24863.532	2345.165
x		140059.430	2.500	596.677	357541.390	270.002	6262.844	62734.515	943.360	195095.230	10.000	24501.332	2350.166
σ		1734.310	0.000	72.861	4214.965	36.056	145.170	302.521	57.738	766.045	5.000	314.882	8.661
%RSD		1.238	0.000	12.211	1.179	13.354	2.318	0.482	6.120	0.393	50.000	1.285	0.369

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:09:18	8347.090	635.012	279687.220	25.000	50.000	260.002	855.022	2106.133	698.015	514.508	488.507	2650.211
2	17:09:40	8257.045	580.010	276204.870	15.000	40.000	245.002	960.028	2121.135	688.014	482.507	483.507	2940.259
3	17:10:02	8317.075	710.015	275015.440	20.000	35.000	290.003	915.025	2043.125	717.015	506.008	501.008	2645.210
x		8307.070	641.679	276969.170	20.000	41.667	265.002	910.025	2090.131	701.015	501.008	491.007	2745.227
σ		45.849	65.258	2427.863	5.000	7.638	22.913	52.681	41.394	14.732	16.576	9.014	168.922
%RSD		0.552	10.170	0.877	25.000	18.330	8.646	5.789	1.980	2.101	3.309	1.836	6.153

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:09:18	120.000	230401.610	40.000	30.000	0.000	5.000	959750.240	520.008	55.000	47.500	15.000	155936.090
2	17:09:40	100.000	228799.770	70.000	20.000	0.000	5.000	969098.590	475.007	65.000	60.000	25.000	159045.260
3	17:10:02	80.000	230107.590	50.000	30.000	0.000	0.000	990970.100	460.006	95.000	58.000	5.000	158722.200
x		100.000	229769.660	53.333	26.667	0.000	3.333	973272.980	485.007	71.667	55.167	15.000	157901.180
σ		20.000	852.715	15.275	5.774	0.000	2.887	16023.078	31.226	20.817	6.714	10.000	1709.472
%RSD		20.000	0.371	28.641	21.651	0.000	86.603	1.646	6.438	29.047	12.171	66.667	1.083

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:09:18	110.000	220.001	340.003	117633.670	0.000	950.027	0.000
2	17:09:40	105.000	285.002	235.002	118640.770	0.000	1115.037	0.000
3	17:10:02	75.000	260.002	240.002	119829.230	0.000	1085.035	5.000
x		96.667	255.002	271.669	118701.220	0.000	1050.033	1.667
σ		18.930	32.788	59.232	1099.026	0.000	87.897	2.887
%RSD		19.582	12.858	21.803	0.926	0.000	8.371	173.205

CCV 10/18/2016 05:14:40 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	17:15:02	123616.740	89147.784	32351.368	┬14977622.000	┬4316126.700	┬41136276.000	┬13882619.000	1371413.600	159237.080	26210.594	┬2801918.100	7830
2	17:15:23	119758.720	88574.741	32471.601	┬14684081.000	┬4263858.800	┬39869650.000	┬13613118.000	┬1459395.500	155602.990	26746.444	┬2800017.400	7818
3	17:15:45	116485.650	86740.130	32191.058	┬14418179.000	┬4143678.200	┬39415717.000	┬13394773.000	┬1448457.400	157611.740	26275.696	┬2749331.800	7686
x		119953.700	88154.218	32338.009	┬14693294.000	┬4241221.300	┬40140548.000	┬13630170.000	┬1426422.200	157483.940	26410.911	┬2783755.700	7778
σ		3569.541	1257.708	140.748	┬279835.290	┬88424.938	┬891694.740	┬244369.620	┬47951.716	1820.409	292.397	┬29827.176	79
%RSD		2.976	1.427	0.435	┬1.905	┬2.085	┬2.221	┬1.793	┬3.362	1.156	1.107	┬1.071	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	17:15:02	98444.886	┬4078878.500	┬84801909.000	1219576.000	658148.160	813306.370	631963.410	82294.672	6803.388	9137.504	396.505	70
2	17:15:23	98027.436	┬4044078.900	┬83728057.000	1203551.700	647201.770	798726.030	628734.670	82197.193	6631.319	9062.463	413.505	70
3	17:15:45	95105.580	┬3999678.700	┬83607586.000	1190964.000	639674.360	778669.570	614762.680	82144.936	6694.344	9027.944	407.505	66
x		97192.634	┬4040878.700	┬84045851.000	1204697.200	648341.430	796900.660	625153.580	82212.267	6709.684	9075.971	405.838	69

σ		1819.454	₸39696.761	₸657530.920	14340.387	9289.480	17390.398	9142.451	75.998	87.054	56.015	8.622	2
%RSD		1.872	₸0.982	₸0.782	1.190	1.433	2.182	1.462	0.092	1.297	0.617	2.124	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	17:15:02	796760.210	193142.680	1623725.700	263694.670	8652.245	124871.040	846515.220	788364.770	525299.760	400850.150	530696.760	1382
2	17:15:23	800671.100	190087.860	1666356.200	260764.100	8392.112	125314.350	836886.780	785865.810	524319.610	399224.830	529798.860	1359
3	17:15:45	794024.160	189137.130	1678101.600	260566.040	8392.112	123687.260	830372.790	790140.990	527435.650	401130.780	527368.580	1390
x		797151.820	190789.220	1656061.200	261674.940	8478.823	124624.210	837924.930	788123.860	525685.010	400401.920	529288.070	1377
σ		3340.729	2092.853	28612.511	1751.942	150.188	841.156	8121.133	2147.750	1593.342	1029.002	1721.882	16
%RSD		0.419	1.097	1.728	0.670	1.771	0.675	0.969	0.273	0.303	0.257	0.325	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:15:02	32241.155	1403056.600	₸7500946.700	107445.220	0.000	170492.590	104491.530
2	17:15:23	32581.816	1403013.200	₸7467069.100	105804.780	0.000	184465.200	103510.440
3	17:15:45	32436.533	1408731.700	₸7549858.700	105583.380	0.000	194553.950	102599.830
x		32419.835	1404933.800	₸7505958.200	106277.790	0.000	183170.580	103533.930
σ		170.944	3289.099	₸41621.680	1017.065	0.000	12082.807	946.068
%RSD		0.527	0.234	₸0.555	0.957	0.000	6.596	0.914

CCB 10/18/2016 05:20:23 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:20:45	134268.670	5.000	700.015	268444.600	630.012	7646.754	57298.324	570.010	165002.750	30.000	16923.588	1655.082
2	17:21:08	129037.590	7.500	715.015	267296.370	630.012	7266.584	57810.087	680.014	166760.120	40.000	17644.335	1620.079
3	17:21:29	125984.370	7.500	610.011	262683.900	750.017	7306.601	55131.032	690.014	165659.220	10.000	17604.292	1545.072
x		129763.550	6.667	675.014	266141.620	670.014	7406.646	56746.481	646.679	165807.360	26.667	17390.738	1606.744
σ		4189.591	1.443	56.791	3049.017	69.285	208.900	1422.227	66.586	887.998	15.275	405.059	56.204
%RSD		3.229	21.651	8.413	1.146	10.341	2.820	2.506	10.297	0.536	57.282	2.329	3.498

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:20:45	6036.093	845.021	248742.440	125.000	100.000	330.003	650.013	1400.059	435.006	398.005	432.506	2125.135
2	17:21:08	5986.075	860.022	248057.340	105.000	55.000	255.002	635.012	1284.050	483.007	421.505	424.505	2395.172
3	17:21:29	5550.924	835.021	243749.470	110.000	80.000	290.003	540.009	1329.053	458.006	434.506	455.506	2150.139
x		5857.697	846.688	246849.750	113.334	78.334	291.669	608.345	1337.720	458.673	418.005	437.506	2223.482
σ		266.848	12.584	2706.680	10.408	22.546	37.528	59.654	58.488	24.008	18.500	16.094	149.213
%RSD		4.556	1.486	1.096	9.184	28.783	12.867	9.806	4.372	5.234	4.426	3.679	6.711

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:20:45	120.000	197766.430	3410.349	45.000	0.000	10.000	858863.540	3125.293	740.016	568.510	45.000	138351.860
2	17:21:08	120.000	200589.870	3305.328	60.000	5.000	15.000	852614.640	3450.357	730.016	622.012	55.000	142062.890
3	17:21:29	125.000	200599.990	2785.233	55.000	0.000	10.000	858284.840	3505.369	825.020	658.513	45.000	143969.140
x		121.667	199652.090	3166.970	53.333	1.667	11.667	856587.670	3360.340	765.018	616.345	48.333	141461.300
σ		2.887	1633.045	334.738	7.638	2.887	2.887	3452.894	205.406	52.204	45.268	5.774	2856.550
%RSD		2.373	0.818	10.570	14.321	173.205	24.744	0.403	6.113	6.824	7.345	11.945	2.019

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:20:45	150.001	1550.072	745.017	111592.340	0.000	2500.188	35.000
2	17:21:08	200.001	1325.053	810.020	110303.800	0.000	2340.164	50.000
3	17:21:29	150.001	1290.050	820.020	108290.670	0.000	2405.173	35.000
x		166.668	1388.392	791.686	110062.270	0.000	2415.175	40.000
σ		28.868	141.109	40.725	1664.035	0.000	80.479	8.660
%RSD		17.321	10.163	5.144	1.512	0.000	3.332	21.651

CCVL 10/18/2016 05:26:07 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:26:29	132907.830	210.001	6046.096	T 1097423.200	29255.654	75661.350	758610.530	26591.196	170962.370	15.000	32441.543	11038.654
2	17:26:51	132807.030	180.001	5911.048	T 1096720.000	30457.805	77519.862	754813.840	25910.124	171608.960	20.000	32231.135	11123.711
3	17:27:12	129914.370	202.501	6096.115	998988.160	29526.131	76304.271	750997.090	26511.068	171305.870	20.000	32161.000	10568.350
x		131876.410	197.501	6017.753	T 1064377.100	29746.530	76495.161	754807.150	26337.463	171292.400	18.333	32277.893	10910.238
σ		1699.926	15.613	95.734	T 56629.567	630.653	943.846	3806.720	372.248	323.507	2.887	145.999	299.123
%RSD		1.289	7.905	1.591	T 5.320	2.120	1.234	0.504	1.413	0.189	15.746	0.452	2.742

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:26:29	8046.942	7796.823	805589.830	3275.322	1360.055	4170.522	12789.906	2422.176	632.012	613.511	440.506	2335.164
2	17:26:51	8692.266	8282.057	808343.460	3120.292	1290.050	3985.477	12024.336	2404.173	637.012	603.011	412.005	2470.183
3	17:27:12	7856.851	8282.057	814329.560	3080.285	1265.048	4045.491	12594.757	2465.182	674.014	601.011	439.506	2575.199
x		8198.687	8120.313	809420.950	3158.633	1305.051	4067.163	12469.666	2430.511	647.679	605.844	430.672	2460.182
σ		437.892	280.150	4468.387	103.016	49.248	94.407	397.819	31.347	22.943	6.715	16.174	120.330

%RSD		5.341	3.450	0.552	3.261	3.774	2.321	3.190	1.290	3.542	1.108	3.756	4.891
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:26:29	21619.012	204162.860	14846.610	3045.278	70.000	615.011	877350.080	1450.063	5100.780	3579.884	4665.653	143192.490
2	17:26:51	21438.780	199679.030	15512.216	2900.252	40.000	745.017	866356.810	1510.068	5180.805	3776.928	4610.638	142204.080
3	17:27:12	21418.754	201389.420	15797.483	2645.210	60.000	640.012	876517.970	1450.063	5035.761	3744.921	4550.621	143525.340
x		21492.182	201743.770	15385.436	2863.580	56.667	666.680	873408.290	1470.065	5105.782	3700.578	4608.971	142973.970
σ		110.294	2262.822	487.950	202.540	15.275	68.984	6120.914	34.644	72.651	105.741	57.534	687.198
%RSD		0.513	1.122	3.172	7.073	26.956	10.347	0.701	2.357	1.423	2.857	1.248	0.481

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:26:29	2685.216	15086.825	7231.569	110595.730	0.000	9317.604	11333.852
2	17:26:51	2890.251	15657.351	7106.515	112820.570	0.000	10003.001	10948.595
3	17:27:12	2985.267	15537.239	7621.742	112035.300	0.000	10303.184	11388.890
x		2853.578	15427.138	7319.942	111817.200	0.000	9874.596	11223.779
σ		153.350	300.777	268.742	1128.340	0.000	505.181	239.900
%RSD		5.374	1.950	3.671	1.009	0.000	5.116	2.137

CCVL 10/18/2016 05:30:57 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	17:31:19	138523.280	165.001	6211.157	1006712.800	30988.782	76515.235	744912.980	25779.923	175034.310	50.000	32987.613	10803.500
2	17:31:40	134661.830	190.001	6301.191	986050.820	30237.404	77238.560	745069.760	25369.293	173427.640	15.000	32897.435	10688.426
3	17:32:03	131516.860	220.001	5961.066	T 1082961.700	30878.578	77097.911	744296.320	25769.907	171154.320	15.000	30978.764	10833.520
x		134900.660	191.668	6157.805	T 1025241.800	30701.588	76950.569	744759.690	25639.708	173205.430	26.667	32287.937	10775.149
σ		3509.309	27.538	176.228	T 51043.309	405.754	383.513	408.868	234.239	1949.514	20.207	1134.674	76.589
%RSD		2.601	14.368	2.862	T 4.979	1.322	0.498	0.055	0.914	1.126	75.777	3.514	0.711
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:31:19	8407.120	7841.844	805301.370	2990.268	1425.061	4095.503	12364.585	2488.186	730.016	603.511	442.006	2460.182
2	17:31:40	8497.165	8036.937	807908.090	2920.256	1505.068	4120.509	12314.548	2520.191	631.012	589.010	424.505	2645.210
3	17:32:03	8096.966	8086.962	805380.040	2880.249	1370.056	4065.496	12179.449	2516.190	650.013	584.510	448.506	2245.151
x		8333.751	7988.581	806196.500	2930.258	1433.395	4093.836	12286.194	2508.189	670.347	592.344	438.339	2450.181
σ		209.946	129.516	1482.803	55.687	67.891	27.545	95.770	17.438	52.541	9.929	12.413	200.217
%RSD		2.519	1.621	0.184	1.900	4.736	0.673	0.779	0.695	7.838	1.676	2.832	8.172
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:31:19	21093.339	204851.230	14191.039	3060.281	45.000	665.013	864262.150	970.028	4770.683	3484.864	4520.613	142536.910
2	17:31:40	21398.728	202037.190	14986.735	3065.282	40.000	705.015	877866.220	1165.041	4625.642	3537.375	4735.673	146158.070
3	17:32:03	22159.722	206126.810	15392.104	2785.233	40.000	650.013	875812.280	1160.040	4770.683	3634.396	4205.530	144947.560
x		21550.597	204338.410	14856.626	2970.265	41.667	673.347	872646.890	1098.370	4722.336	3552.212	4487.272	144547.510
σ		549.173	2092.483	611.012	160.262	2.887	28.432	7333.655	111.175	83.739	75.862	266.639	1843.429
%RSD		2.548	1.024	4.113	5.396	6.928	4.223	0.840	10.122	1.773	2.136	5.942	1.275

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:31:19	2730.224	15777.464	7471.674	113837.450	0.000	11138.721	10733.455
2	17:31:40	2765.229	15191.921	7336.614	110968.190	0.000	11263.805	11138.721
3	17:32:03	2600.203	15912.593	7561.715	111421.200	0.000	11619.049	11178.748
x		2698.552	15627.326	7456.668	112075.610	0.000	11340.525	11016.975
σ		86.953	383.077	113.298	1542.513	0.000	249.185	246.349
%RSD		3.222	2.451	1.519	1.376	0.000	2.197	2.236

200-35736-A-14-A PDS 10/18/2016 05:36:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:37:08	130277.180	1557.573	53124.532	T 8307292.100	276392.950	633619.540	T 7359641.700	229742.610	165931.910	45.000	120539.320	83981.053
2	17:37:30	126568.770	1450.063	53540.861	T 8044508.600	270792.120	609566.970	T 7189886.200	231618.310	163548.530	10.000	118650.840	82428.330
3	17:37:52	127878.710	1552.572	54208.012	T 7976634.300	267499.590	614088.490	T 7170587.200	229732.470	161791.500	15.000	118394.030	83568.989
x		128241.560	1520.069	53624.468	T 8109478.300	271561.550	619091.670	T 7240038.300	230364.460	163757.310	23.333	119194.730	83326.124
σ		1880.643	60.679	546.557	T 174640.910	4496.327	12783.010	T 104028.010	1085.871	2078.086	18.930	1171.509	804.347
%RSD		1.466	3.992	1.019	T 2.154	1.656	2.065	T 1.437	0.471	1.269	81.127	0.983	0.965

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:37:08	15862.545	65021.587	T 6152625.900	24853.517	10923.579	34210.074	99450.831	9321.606	1667.083	1997.120	432.506	3595.388
2	17:37:30	15056.798	61985.050	T 6041283.000	24783.413	11243.791	34054.756	101266.720	9152.512	1753.092	1977.617	417.005	3275.322
3	17:37:52	14336.163	63279.903	T 6084022.500	24793.428	10773.481	32927.494	99586.639	8893.372	1541.071	1989.119	392.505	3310.329
x		15085.169	63428.847	T 6092643.800	24810.119	10980.284	33730.775	100101.400	9122.497	1653.749	1987.952	414.005	3393.679
σ		763.586	1523.738	T 56169.879	37.916	240.228	699.982	1011.480	215.689	106.638	9.803	20.169	175.559
%RSD		5.062	2.402	T 0.922	0.153	2.188	2.075	1.010	2.364	6.448	0.493	4.872	5.173

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:37:08	197285.780	197159.300	133870.490	26486.029	440.006	6061.102	842225.900	1025.032	41200.862	30885.591	41707.119	137827.550
2	17:37:30	200271.070	194113.860	136647.890	26696.364	400.005	5856.029	829374.900	1020.031	41396.346	31443.633	41962.760	140993.870
3	17:37:52	199157.850	189460.780	135211.250	26455.981	465.006	5971.069	836613.560	1050.033	42088.075	31827.861	41987.823	140913.190
x		198904.900	193577.980	135243.210	26546.124	435.006	5962.733	836071.450	1031.699	41561.761	31385.695	41885.901	139911.530
σ		1508.633	3877.136	1388.978	130.976	32.788	102.790	6442.628	16.074	466.163	473.799	155.335	1805.237
%RSD		0.758	2.003	1.027	0.493	7.537	1.724	0.771	1.558	1.122	1.510	0.371	1.290

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:37:08	26210.594	138745.110	51088.180	108703.340	0.000	162296.370	108190.020
2	17:37:30	27102.018	140076.180	52311.968	107012.450	0.000	170240.030	108965.040
3	17:37:52	28273.962	140459.380	53134.564	107777.360	0.000	176934.210	110842.360
x		27195.525	139760.220	52178.237	107831.050	0.000	169823.540	109332.470
σ		1034.858	899.750	1029.725	846.723	0.000	7327.801	1363.813
%RSD		3.805	0.644	1.973	0.785	0.000	4.315	1.247

200-35736-A-14-B MS 10/18/2016 05:42:30 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:42:52	131980.500	1560.073	56686.236	T 8472514.000	283765.290	629990.790	T 7404364.600	244997.580	167517.660	15.000	120075.990	85352.996
2	17:43:14	128725.190	1445.063	55161.132	T 8216854.200	277887.490	632550.040	T 7454630.800	244875.810	163760.590	25.000	117391.980	84131.810
3	17:43:35	127122.970	1590.076	55722.996	T 8231071.100	278162.010	630530.640	T 7415656.500	243404.490	163427.350	25.000	117457.430	86177.221
x		129276.220	1531.737	55856.788	T 8306813.100	279938.260	631023.830	T 7424884.000	244425.960	164901.860	21.667	118308.470	85220.676
σ		2475.206	76.547	771.305	T 143677.130	3317.143	1349.022	T 26372.963	886.711	2271.461	5.774	1531.073	1029.105
%RSD		1.915	4.997	1.381	T 1.730	1.185	0.214	T 0.355	0.363	1.377	26.647	1.294	1.208

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:42:52	15021.767	65081.822	T 6319480.100	25890.093	10863.539	34671.025	102876.530	9107.488	1581.075	2036.124	386.004	3025.275
2	17:43:14	14366.189	64173.309	T 6366023.100	26070.374	11023.644	35587.955	102690.390	8971.414	1572.074	2086.131	399.005	3125.293
3	17:43:35	14231.073	64529.681	T 6389765.100	26170.531	11178.748	34931.568	103595.970	8952.404	1635.080	2092.131	410.505	3275.322
x		14539.676	64594.937	T 6358422.800	26043.666	11021.977	35063.516	103054.290	9010.435	1596.076	2071.462	398.505	3141.963

σ		422.933	457.758	T 35753.570	142.114	157.611	472.491	478.245	84.586	34.077	30.750	12.258	125.854
%RSD		2.909	0.709	T 0.562	0.546	1.430	1.348	0.464	0.939	2.135	1.484	3.076	4.006
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:42:52	206116.690	193365.230	138906.450	26846.605	375.004	6246.170	833009.610	710.015	41476.545	32151.983	42559.269	139219.040
2	17:43:14	207154.440	187235.840	141518.280	27768.113	475.007	6311.195	813458.530	805.019	42253.493	32581.816	44123.329	141145.140
3	17:43:35	207473.370	188803.380	142178.870	27903.338	485.007	6321.199	824816.850	895.024	42980.348	32968.576	43657.103	138543.450
x		206914.830	189801.490	140867.870	27506.019	445.006	6292.855	823761.660	803.353	42236.795	32567.458	43446.567	139635.870
σ		709.367	3184.261	1730.453	575.058	60.829	40.738	9818.155	92.516	752.041	408.486	803.003	1350.006
%RSD		0.343	1.678	1.228	2.091	13.669	0.647	1.192	11.516	1.781	1.254	1.848	0.967

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:42:52	57744.861	144281.830	53671.279	105754.460	0.000	191574.730	109020.400
2	17:43:14	58838.677	146556.540	55416.978	106700.460	0.000	195676.980	112483.300
3	17:43:35	57875.312	147353.520	54047.492	106559.560	0.000	203768.070	113797.170
x		58152.950	146063.960	54378.583	106338.160	0.000	197006.600	111766.960
σ		597.428	1593.992	918.740	510.386	0.000	6204.458	2467.639
%RSD		1.027	1.091	1.690	0.480	0.000	3.149	2.208

200-35736-A-14-C MSD 10/18/2016 05:48:15 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:48:38	131708.360	1520.069	54669.516	T 8245165.700	275559.310	621101.310	T 7398581.700	239031.880	165154.240	30.000	117945.870	83780.045
2	17:49:00	128876.350	1630.080	54669.516	T 8336123.400	285199.460	628708.720	T 7463322.200	236252.680	165861.210	40.000	118434.310	85352.996
3	17:49:23	127344.650	1645.081	54935.388	T 8098074.200	274186.950	612828.360	T 7250452.000	240137.610	166992.420	5.000	115453.510	85368.073
x		129309.790	1598.410	54758.140	T 8226454.500	278315.240	620879.460	T 7370785.300	238474.060	166002.630	25.000	117277.890	84833.705
σ		2213.912	68.258	153.501	T 120122.580	6001.266	7942.503	T 109123.370	2001.638	927.214	18.028	1598.731	912.527
%RSD		1.712	4.270	0.280	T 1.460	2.156	1.279	T 1.480	0.839	0.559	72.111	1.363	1.076

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:48:38	13840.745	61954.939	T 6213642.300	25008.749	11609.042	34180.012	100653.020	8817.332	1568.074	2012.622	388.005	3350.337
2	17:49:00	14561.358	63857.098	T 6304306.100	25534.545	11193.758	35131.989	101870.380	8833.340	1536.071	2031.624	418.005	3165.300
3	17:49:23	14436.249	63796.868	T 6258323.600	26015.288	11373.880	35202.136	102931.870	8867.358	1585.075	1993.619	418.505	3290.325
x		14279.451	63202.968	T 6258757.300	25519.527	11392.226	34838.046	101818.420	8839.343	1563.073	2012.622	408.172	3268.654
σ		385.046	1081.245	T 45333.449	503.438	208.249	570.952	1140.315	25.548	24.882	19.002	17.467	94.402
%RSD		2.697	1.711	T 0.724	1.973	1.828	1.639	1.120	0.289	1.592	0.944	4.279	2.888

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:48:38	200615.170	190684.610	136068.180	27192.164	430.006	6041.095	825142.390	805.019	41601.857	31633.993	42885.103	140640.900
2	17:49:00	203955.340	189309.070	137978.790	27667.946	405.005	6006.082	833146.190	730.016	42032.936	31907.013	43185.878	139914.830
3	17:49:23	204390.630	191119.550	141730.070	26986.831	535.009	6201.153	831055.590	725.016	42253.493	32298.265	43461.594	139390.460
x		202987.050	190371.080	138592.350	27282.314	456.673	6082.777	829781.390	753.350	41962.762	31946.423	43177.525	139982.070
σ		2065.604	945.090	2880.381	349.392	68.983	104.001	4151.253	44.816	331.437	333.885	288.336	627.925
%RSD		1.018	0.496	2.078	1.281	15.105	1.710	0.500	5.949	0.790	1.045	0.668	0.449

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:48:38	56836.748	141175.390	51825.451	107163.420	0.000	195353.220	109669.640
2	17:49:00	58266.672	142521.780	54087.622	105804.780	0.000	199071.830	109714.940
3	17:49:23	58382.075	144897.130	54724.697	108340.990	0.000	205367.530	111924.560
x		57828.498	142864.770	53545.923	107103.060	0.000	199930.860	110436.380
σ		860.818	1884.426	1523.642	1269.184	0.000	5062.119	1288.999
%RSD		1.489	1.319	2.845	1.185	0.000	2.532	1.167

CCV 10/18/2016 05:54:01 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	17:54:23	127294.270	92895.669	33077.792	T 14816344.000	T 4341598.100	T 41051531.000	T 14250018.000	T 1492901.800	158045.820	26400.894	T 2793609.300	7915
2	17:54:44	125803.010	91847.383	33343.320	T 14805459.000	T 4324110.800	T 40576364.000	T 13822669.000	1359255.600	154028.470	26050.343	T 2794387.600	7823
3	17:55:06	124090.240	90567.910	33243.120	T 14829277.000	T 4251381.800	T 40044491.000	T 13790812.000	T 1485736.700	161115.000	26536.108	T 2766583.000	7659
x		125729.170	91770.320	33221.411	T 14817027.000	T 4305696.900	T 40557462.000	T 13954500.000	T 1445964.700	157729.760	26329.115	T 2784860.000	7799
σ		1603.289	1165.791	134.089	T 11923.246	T 47844.001	T 503785.970	T 256421.350	T 75177.685	3553.819	250.711	T 15833.118	129
%RSD		1.275	1.270	0.404	T 0.080	T 1.111	T 1.242	T 1.838	T 5.199	2.253	0.952	T 0.569	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	17:54:23	97298.181	T 4126525.100	T 84779649.000	1198270.800	651031.680	805962.200	624852.700	81396.276	6663.332	8929.892	431.006	67
2	17:54:44	99999.097	T 4099762.200	T 83931825.000	1178776.600	641933.790	790795.990	625620.720	81625.393	6603.308	8878.864	416.505	66
3	17:55:06	95915.200	T 4077473.100	T 84340343.000	1187767.500	644936.440	788516.710	616940.990	80335.147	6571.295	8896.874	394.505	65
x		97737.493	T 4101253.500	T 84350606.000	1188271.700	645967.310	795091.630	622471.470	81118.939	6612.645	8901.877	414.005	66
σ		2077.089	T 24559.982	T 424004.920	9756.869	4635.721	9482.913	4804.904	688.383	46.723	25.879	18.378	1

%RSD		2.125	T 0.599	T 0.503	0.821	0.718	1.193	0.772	0.849	0.707	0.291	4.439	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	17:54:23	784152.890	187549.340	1582696.500	255087.260	8287.060	119673.110	818611.880	769105.480	508474.860	388630.290	517975.810	1355
2	17:54:44	777611.870	185354.990	1623544.200	255107.570	8197.015	120569.540	819609.140	772627.920	511984.900	390869.750	521462.030	1354
3	17:55:06	778240.200	183656.340	1639047.100	256904.860	8412.122	121556.670	822191.800	779931.580	512129.230	391542.780	518924.650	1383
x		780001.650	185520.230	1615095.900	255699.900	8298.733	120599.770	820137.610	773888.330	510863.000	390347.610	519454.160	1364
σ		3608.779	1951.749	29109.734	1043.579	108.028	942.143	1847.542	5522.005	2069.446	1524.837	1802.421	16
%RSD		0.463	1.052	1.802	0.408	1.302	0.781	0.225	0.714	0.405	0.391	0.347	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:54:23	32010.711	1377669.300	T 7489749.600	106630.010	0.000	231821.100	100240.540
2	17:54:44	32827.297	1406265.900	T 7524114.000	105855.090	0.000	241202.830	100808.950
3	17:55:06	33248.130	1410067.900	T 7452693.300	105080.210	0.000	245459.300	101105.740
x		32695.379	1398001.000	T 7488852.300	105855.110	0.000	239494.410	100718.410
σ		629.169	17710.133	T 35718.793	774.898	0.000	6977.761	439.650
%RSD		1.924	1.267	T 0.477	0.732	0.000	2.914	0.437

CCB 10/18/2016 05:59:45 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	18:00:06	137817.460	5.000	1180.042	274298.770	870.023	7986.913	60088.123	780.018	168406.550	20.000	16838.502	1735.090
2	18:00:28	131194.330	15.000	1300.051	265792.610	770.018	7481.679	58372.040	740.016	168941.920	25.000	16593.256	1415.060
3	18:00:50	131516.860	25.000	1320.052	267113.470	890.024	8041.940	58131.201	570.010	163326.360	5.000	16373.038	1570.074
x		133509.550	15.000	1266.715	269068.280	843.355	7836.844	58863.788	696.681	166891.610	16.667	16601.599	1573.408
σ		3734.244	10.000	75.724	4577.628	64.294	308.810	1067.121	111.509	3099.177	10.408	232.844	160.041
%RSD		2.797	66.667	5.978	1.701	7.624	3.940	1.813	16.006	1.857	62.450	1.403	10.172

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	18:00:06	5851.027	1030.032	246357.400	160.001	80.000	270.002	725.016	1252.047	394.005	433.006	412.505	1890.107
2	18:00:28	5615.946	920.025	242785.560	120.000	65.000	270.002	715.015	1274.049	427.005	420.505	399.005	2145.138
3	18:00:50	5811.013	835.021	243790.060	120.000	60.000	265.002	550.009	1235.046	399.005	385.004	381.004	2160.140
x		5759.329	928.359	244311.010	133.334	68.333	268.335	663.347	1253.714	406.672	412.838	397.505	2065.128
σ		125.774	97.772	1842.024	23.094	10.408	2.887	98.281	19.555	17.786	24.902	15.804	151.758
%RSD		2.184	10.532	0.754	17.321	15.232	1.076	14.816	1.560	4.374	6.032	3.976	7.349

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	18:00:06	115.000	194488.190	3355.338	65.000	0.000	20.000	834028.720	2920.256	750.017	528.008	80.000	138694.700
2	18:00:28	180.001	195196.390	3270.321	30.000	0.000	15.000	831769.940	3270.321	725.016	626.012	50.000	139511.470
3	18:00:50	65.000	192242.360	3160.300	45.000	0.000	45.000	837569.840	3175.302	735.016	632.512	65.000	140540.060
x		120.001	193975.650	3261.986	46.667	0.000	26.667	834456.170	3121.960	736.683	595.511	65.000	139582.070
σ		57.663	1542.274	97.786	17.559	0.000	16.073	2923.483	181.026	12.584	58.549	15.000	924.705
%RSD		48.053	0.795	2.998	37.627	0.000	60.273	0.350	5.798	1.708	9.832	23.077	0.662

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	18:00:06	240.002	1775.094	765.018	108119.560	0.000	3720.415	70.000
2	18:00:28	190.001	1430.061	890.024	106619.950	0.000	3580.385	65.000
3	18:00:50	230.002	1390.058	820.020	109327.400	0.000	3495.367	35.000
x		220.001	1531.738	825.020	108022.300	0.000	3598.722	56.667
σ		26.458	211.700	62.653	1356.345	0.000	113.639	18.930
%RSD		12.026	13.821	7.594	1.256	0.000	3.158	33.405

CCVL 10/18/2016 06:05:29 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:05:50	138220.780	197.501	6206.155	T 1074890.100	28915.061	74847.689	723520.840	25148.960	173629.730	15.000	29996.970	10643.397
2	18:06:12	130488.830	182.501	6131.127	963963.250	28895.026	75113.882	721047.020	25108.899	171022.990	15.000	28459.277	10103.061
3	18:06:34	129652.340	187.501	6106.118	962587.030	29195.549	73928.600	717530.010	24618.168	169891.500	20.000	29125.426	10128.076
x		132787.320	189.168	6147.800	T 1000480.100	29001.879	74630.057	720699.290	24958.676	171514.740	16.667	29193.891	10291.512
σ		4724.071	7.638	52.061	T 64444.613	168.022	621.889	3010.515	295.568	1917.017	2.887	771.129	304.999
%RSD		3.558	4.038	0.847	T 6.441	0.579	0.833	0.418	1.184	1.118	17.321	2.641	2.964

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:05:50	7301.599	7711.784	771031.480	2950.261	1295.050	3975.474	11889.239	2337.164	618.011	575.010	418.005	2390.171
2	18:06:12	7271.586	7516.695	772910.580	2795.234	1365.056	4190.527	12594.757	2185.143	622.012	596.511	418.005	2150.139
3	18:06:34	7146.532	7651.756	771539.180	2710.220	1180.042	3725.416	11834.200	2237.150	612.011	595.511	424.005	2435.178
x		7239.906	7626.745	771827.080	2818.572	1280.049	3963.806	12106.065	2253.152	617.345	589.010	420.005	2325.163
σ		82.245	99.921	972.071	121.710	93.415	232.775	424.113	77.263	5.033	12.135	3.464	153.237
%RSD		1.136	1.310	0.126	4.318	7.298	5.873	3.503	3.429	0.815	2.060	0.825	6.590

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:05:50	20367.437	195742.750	14120.980	2780.232	55.000	625.012	850647.860	1300.051	4355.569	3389.845	4305.556	138503.110
2	18:06:12	20267.315	197392.030	14386.206	2630.208	60.000	650.013	840428.490	1500.068	4510.610	3439.855	4520.613	142688.190
3	18:06:34	20032.031	195469.570	14346.172	2680.215	25.000	645.012	849280.720	1390.058	4410.583	3484.864	4475.601	143858.190
x		20222.261	196201.450	14284.452	2696.885	46.667	640.012	846785.690	1396.725	4425.588	3438.188	4433.923	141683.160
σ		172.182	1040.080	142.980	76.389	18.930	13.229	5547.771	100.175	78.602	47.532	113.425	2815.452
%RSD		0.851	0.530	1.001	2.832	40.564	2.067	0.655	7.172	1.776	1.382	2.558	1.987

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:05:50	2550.195	14536.336	6976.460	110646.060	0.000	10643.397	10698.433
2	18:06:12	3015.273	15312.031	7416.650	111753.410	0.000	10738.458	10613.378
3	18:06:34	2920.256	14901.659	6851.408	109458.260	0.000	11123.711	10798.497
x		2828.575	14916.675	7081.506	110619.240	0.000	10835.189	10703.436
σ		245.720	388.065	296.902	1147.813	0.000	254.348	92.661
%RSD		8.687	2.602	4.193	1.038	0.000	2.347	0.866

Analyte ICPS

STD0 10/18/2016 12:40:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:40:42	98.553%	0.428	93.066	-3723.954	21.162	-643.035	1888.428	-2.075	97.833%	0.000	-64.695	51.723
2	12:41:04	98.850%	0.405	-153.743	2861.445	-12.890	-595.063	220.064	31.851	99.668%	0.000	1065.007	-21.719
3	12:41:25	102.597%	-4.746	30.724	-7323.712	-8.121	63.366	-473.192	-36.940	102.499%	14.642	1636.146	-142.834
x		100.000%	-1.304	-9.984	-2728.740	0.051	-391.577	545.100	-2.388	100.000%	4.881	878.819	-37.610
σ		2.254%	2.980	128.342	5164.997	18.438	394.722	1213.898	34.396	2.350%	8.453	865.572	98.247
%RSD		2.254	228.493	1285.425	189.281	36499.710	100.803	222.693	1440.427	2.350	173.205	98.493	261.226

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:40:42	5728.329	-58.438	3864.254	-6.885	2.395	-55.763	-223.182	-551.385	548.538	-49.202	378.065	1887.742
2	12:41:04	5532.114	-54.896	-2750.193	12.523	-8.202	-79.458	-188.418	-173.073	437.804	-8.231	343.005	1934.009
3	12:41:25	5329.126	32.832	-2125.101	-3.635	-13.635	-11.900	-116.490	-146.806	426.027	-27.937	385.641	1798.904
x		5529.857	-26.834	-337.013	0.668	-6.480	-49.040	-176.030	-290.421	470.790	-28.457	368.903	1873.552
σ		199.611	51.703	3651.804	10.395	8.153	34.278	54.414	226.382	67.589	20.490	22.747	68.661
%RSD		3.610	192.678	1083.579	1557.187	125.802	69.896	30.912	77.949	14.356	72.005	6.166	3.665

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:40:42	-1.641	98.845%	828.739	-17.529	-51.041	6.765	100.116%	4400.464	377.877	225.379	-6.805	98.341%
2	12:41:04	3.609	99.783%	526.344	2.660	-29.415	-9.393	99.271%	4684.809	251.649	249.351	3.353	101.683%
3	12:41:25	-1.764	101.372%	286.126	-2.645	-39.906	-4.194	100.613%	4289.272	417.539	179.901	3.085	99.976%
x		0.068	100.000%	547.070	-5.838	-40.120	-2.274	100.000%	4458.181	349.022	218.210	-0.123	100.000%
σ		3.067	1.278%	271.899	10.467	10.815	8.248	0.679%	203.987	86.628	35.275	5.789	1.671%
%RSD		4498.789	1.278	49.701	179.284	26.956	362.726	0.679	4.576	24.820	16.166	4725.152	1.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:40:42	223.594	2119.433	-954.296	98.272%	0.000	9897.949	1.404
2	12:41:04	124.722	1647.839	-859.186	101.051%	0.000	9906.123	-34.911
3	12:41:25	148.420	1532.132	-567.582	100.677%	0.000	9362.408	-49.718
x		165.579	1766.468	-793.688	100.000%	0.000	9722.160	-27.742
σ		51.621	311.104	201.506	1.508%	0.000	311.581	26.304
%RSD		31.176	17.612	25.389	1.508	0.000	3.205	94.819

STD1 10/18/2016 12:44:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:44:42	105.148%	185.405	5303.233	670821.440	29106.966	67594.543	658346.620	24605.465	103.950%	14.425	11196.384	8471.768
2	12:45:04	105.840%	146.352	4953.252	T 712240.390	27732.547	66463.690	650898.140	25337.134	105.981%	28.341	12024.826	8068.025
3	12:45:25	103.070%	162.606	5323.557	660163.890	27602.893	68409.207	665316.910	24501.943	104.061%	9.604	11537.789	7989.718
x		104.686%	164.788	5193.347	T 681075.240	28147.469	67489.147	658187.230	24814.847	104.664%	17.457	11586.333	8176.504
σ		1.442%	19.617	208.177	T 27510.832	833.474	977.032	7210.709	455.266	1.142%	9.729	416.349	258.687
%RSD		1.377	11.905	4.009	T 4.039	2.961	1.448	1.096	1.835	1.091	55.732	3.593	3.164

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:44:42	6069.740	6911.422	553671.590	2824.361	1366.694	3612.742	11182.623	784.193	443.325	175.920	374.022	1775.301
2	12:45:04	5991.264	6959.900	532359.850	2925.137	1222.007	3799.551	11405.554	728.784	480.279	149.075	372.268	1953.312
3	12:45:25	6097.771	7259.364	552926.100	2398.412	1317.158	3737.590	11156.149	507.496	523.483	141.997	371.000	2097.180

x		6052.925	7043.562	546319.180	2715.970	1301.953	3716.628	11248.109	673.491	482.362	155.664	372.430	1941.931
σ		55.209	188.455	12094.880	279.591	73.532	95.152	136.993	146.401	40.120	17.896	1.517	161.241
%RSD		0.912	2.676	2.214	10.294	5.648	2.560	1.218	21.738	8.317	11.496	0.407	8.303
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:44:42	22263.464	104.679%	13905.213	2759.625	-67.568	702.492	102.268%	2112.238	4094.053	3365.769	4956.203	101.335%
2	12:45:04	22358.756	103.265%	14050.417	3023.116	-25.581	839.237	102.615%	2548.552	4302.873	3408.723	5109.955	102.050%
3	12:45:25	22005.007	105.370%	14558.141	2885.414	-70.601	711.446	102.831%	2616.148	4286.625	3456.024	5113.782	102.249%
x		22209.076	104.438%	14171.257	2889.385	-54.584	751.058	102.571%	2425.646	4227.850	3410.172	5059.980	101.878%
σ		183.039	1.073%	342.827	131.791	25.163	76.496	0.284%	273.515	116.156	45.145	89.894	0.481%
%RSD		0.824	1.027	2.419	4.561	46.099	10.185	0.277	11.276	2.747	1.324	1.777	0.472

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:44:42	3056.637	17662.131	14010.599	98.630%	0.000	18259.945	12978.988
2	12:45:04	2926.774	18069.053	13666.957	100.043%	0.000	18775.026	12919.788
3	12:45:25	3375.741	18019.148	13622.907	100.848%	0.000	18472.874	12781.528
x		3119.718	17916.777	13766.821	99.840%	0.000	18502.615	12893.435
σ		231.035	221.937	212.264	1.123%	0.000	258.825	101.333
%RSD		7.406	1.239	1.542	1.125	0.000	1.399	0.786

STD2 10/18/2016 12:47:26 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:47:47	98.735%	803.087	25137.736	T 3615169.200	135805.910	306667.570	T 3556499.000	115470.960	97.801%	25.551	49646.050	40754.100
2	12:48:09	96.124%	835.497	27146.247	T 3518924.800	132098.370	301036.350	T 3410577.100	115856.110	98.569%	30.445	50693.009	40112.832
3	12:48:31	98.394%	772.865	26486.399	T 3579758.800	135152.370	310175.350	T 3571656.400	118595.000	97.111%	10.287	49596.778	41066.267
x		97.751%	803.816	26256.794	T 3571284.200	134352.220	305959.760	T 3512910.800	116640.690	97.827%	22.094	49978.612	40644.400
σ		1.419%	31.322	1023.752	T 48678.641	1979.055	4610.435	T 88947.064	1703.399	0.729%	10.514	619.176	486.092
%RSD		1.452	3.897	3.899	T 1.363	1.473	1.507	T 2.532	1.460	0.745	47.588	1.239	1.196
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:47:47	5923.845	31581.819	T 2903202.300	12497.625	5519.618	16768.573	53841.851	4174.842	388.515	941.241	370.941	1935.438
2	12:48:09	5471.483	30788.887	T 2880741.700	12709.625	5633.716	16103.990	52725.910	4290.002	297.121	891.557	413.010	2061.957
3	12:48:31	5686.524	31489.159	T 2944307.700	12633.037	5445.701	16124.449	53801.405	4143.531	361.879	916.794	376.856	1944.766
x		5693.951	31286.622	T 2909417.200	12613.429	5533.012	16332.337	53456.389	4202.792	349.172	916.530	386.936	1980.720
σ		226.272	433.534	T 32235.492	107.351	94.720	377.930	632.936	77.132	47.004	24.843	22.774	70.507
%RSD		3.974	1.386	T 1.108	0.851	1.712	2.314	1.184	1.835	13.462	2.711	5.886	3.560
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:47:47	107372.890	98.764%	71446.090	14724.398	-30.717	3564.002	97.995%	1643.018	23464.343	18529.296	24154.636	97.781%
2	12:48:09	106742.280	97.936%	73144.702	15098.879	-54.186	3773.760	98.183%	2149.190	23615.669	18189.259	23216.002	97.543%
3	12:48:31	108802.620	99.405%	71262.320	14603.240	7.830	3672.475	98.978%	2071.295	22891.391	18193.917	23833.670	98.592%
x		107639.260	98.702%	71951.038	14808.839	-25.691	3670.079	98.385%	1954.501	23323.801	18304.157	23734.769	97.972%
σ		1055.682	0.736%	1037.820	258.384	31.312	104.900	0.522%	272.549	382.046	194.990	477.069	0.550%
%RSD		0.981	0.746	1.442	1.745	121.877	2.858	0.530	13.945	1.638	1.065	2.010	0.562

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:47:47	15864.753	81393.337	57034.881	97.102%	0.000	66349.253	62746.609
2	12:48:09	15416.302	84999.706	59896.939	96.258%	0.000	69289.632	64439.588
3	12:48:31	15581.189	84959.228	58455.191	97.671%	0.000	72873.476	64698.341
x		15620.748	83784.090	58462.337	97.010%	0.000	69504.120	63961.513

σ		226.828	2070.552	1431.043	0.711%	0.000	3267.396	1060.062
%RSD		1.452	2.471	2.448	0.733	0.000	4.701	1.657

STD3 10/18/2016 12:50:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:51:01	100.176%	91038.669	32933.580	┬13840118.000	┬4211476.000	┬39118159.000	┬13576879.000	┬1440963.000	99.915%	26329.520	┬2668051.200	767392
2	12:51:23	96.617%	93440.350	33316.129	┬13585567.000	┬4204856.400	┬39144155.000	┬13538687.000	┬1458839.900	99.714%	25992.606	┬2688253.700	775531
3	12:51:45	95.925%	93622.131	33889.345	┬13849159.000	┬4281419.800	┬40034836.000	┬13740178.000	┬1488130.800	97.586%	27609.770	┬2746483.500	787015
x		97.573%	92700.383	33379.685	┬13758281.000	┬4232584.100	┬39432383.000	┬13618581.000	┬1462644.600	99.072%	26643.965	┬2700929.500	776646
σ		2.281%	1441.954	481.042	┬149643.480	┬42422.296	┬521901.490	┬107023.160	┬23812.945	1.290%	853.207	┬40723.620	9858
%RSD		2.338	1.555	1.441	┬1.088	┬1.002	┬1.324	┬0.786	┬1.628	1.302	3.202	┬1.508	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:51:01	6853.896	┬4000837.700	┬81406302.000	1177963.700	635064.100	821977.400	650621.550	87662.999	-725.154	9432.649	377.004	1747
2	12:51:23	8109.381	┬4004802.000	┬82086450.000	1178379.500	630918.590	799869.050	645275.610	86324.643	-445.044	9250.398	398.057	1113
3	12:51:45	8851.962	┬4102438.200	┬83974906.000	1202305.800	642300.800	807790.410	654267.950	88052.153	-784.455	9480.582	373.639	922
x		7938.413	┬4036026.000	┬82489220.000	1186216.300	636094.500	809878.960	650055.040	87346.598	-651.551	9387.876	382.900	1260
σ		1009.946	┬57548.856	┬1330826.700	13935.440	5760.641	11201.175	4522.862	906.176	181.282	121.448	13.234	432
%RSD		12.722	┬1.426	┬1.613	1.175	0.906	1.383	0.696	1.037	27.823	1.294	3.456	34

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	12:51:01	858451.030	97.745%	1712983.800	288325.690	364.988	142065.710	95.491%	887238.130	595459.970	469829.400	605864.660	97.5
2	12:51:23	849669.060	96.585%	1827742.400	286764.440	194.861	141732.880	96.470%	891826.600	600287.500	469131.400	606149.750	98.9
3	12:51:45	866840.210	97.861%	1826207.200	287793.960	-231.229	142347.570	96.351%	888292.500	597741.570	469698.620	602224.460	97.5
x		858320.100	97.397%	1788977.800	287628.030	109.540	142048.720	96.104%	889119.080	597829.680	469553.140	604746.290	98.0
σ		8586.324	0.706%	65817.209	793.739	307.129	307.697	0.534%	2403.319	2414.974	371.045	2188.617	0.8
%RSD		1.000	0.725	3.679	0.276	280.381	0.217	0.556	0.270	0.404	0.079	0.362	0

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:51:01	37628.405	1638080.200	┬15760673.000	97.898%	0.000	303746.500	120248.350
2	12:51:23	38372.062	1708467.300	┬16181675.000	95.502%	0.000	313833.250	121426.980
3	12:51:45	40009.933	1729662.700	┬16346891.000	95.047%	0.000	312895.890	125404.180
x		38670.133	1692070.100	┬16096413.000	96.149%	0.000	310158.550	122359.840
σ		1218.422	47942.569	┬302266.760	1.532%	0.000	5572.738	2701.539
%RSD		3.151	2.833	┬1.878	1.593	0.000	1.797	2.208

STD4 10/18/2016 12:54:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	12:54:31	103.595%	251779.300	91525.195	┬38551733.000	┬11808110.000	┬108999900.000	┬39183364.000	┬4256401.400	104.015%	75380.402	┬7694541.600
2	12:54:53	101.499%	253223.200	91146.724	┬38485983.000	┬11844997.000	┬109685830.000	┬39075267.000	┬4243877.900	104.588%	75490.338	┬7758916.900
3	12:55:15	100.407%	259977.280	96143.041	┬39415311.000	┬12223820.000	┬114274590.000	┬40678640.000	┬4366235.800	102.420%	77469.162	┬8046317.800
x		101.834%	254993.260	92938.320	┬38817676.000	┬11958976.000	┬110986770.000	┬39645757.000	┬4288838.400	103.674%	76113.301	┬7833258.800
σ		1.620%	4376.247	2781.814	┬518610.400	┬230102.460	┬2867911.500	┬896134.390	┬67320.010	1.123%	1175.496	┬187300.980
%RSD		1.591	1.716	2.993	┬1.336	┬1.924	┬2.584	┬2.260	┬1.570	1.083	1.544	┬2.391

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	12:54:31	-587.231	┬11436687.000	┬234072240.000	┬3679992.600	1752384.000	™2520150.700	1793284.700	246090.280	-2547.343	25783.554	406.303
2	12:54:53	-3583.240	┬11719273.000	┬235370760.000	┬3739074.100	1763288.700	™2491370.700	1762834.700	242876.940	-2835.305	25604.974	457.693

3	12:55:15	-1643.153	T 11976571.000	T 243155450.000	T 3831822.300	1801314.700	T 2472611.400	1774912.600	243978.520	-2742.109	25619.886	435.42
x		-1937.875	T 11710844.000	T 237532810.000	T 3750296.300	1772329.100	TM 2494710.900	1777010.700	244315.250	-2708.252	25669.471	433.14
σ		1519.593	T 270040.540	T 4912438.500	T 76534.436	25687.559	TM 23945.017	15333.021	1632.918	146.936	99.079	25.77
%RSD		78.415	T 2.306	T 2.068	T 2.041	1.449	TM 0.960	0.863	0.668	5.425	0.386	5.95

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	12:54:31	T 2706179.600	99.031%	T 5636523.300	799965.340	1019.094	391489.280	97.588%	T 2893318.600	1704835.300	1349750.300	T 1971348.10
2	12:54:53	T 2719537.900	100.848%	T 5760790.600	798882.160	2243.216	394900.420	100.178%	T 2897898.600	1695883.600	1335556.300	T 1951488.20
3	12:55:15	T 2740034.400	100.434%	T 5861044.300	799607.170	1630.528	396713.210	100.133%	T 2916556.800	1722806.600	1348154.900	T 1959705.10
x		T 2721917.300	100.104%	T 5752786.000	799484.890	1630.946	394367.640	99.300%	T 2902591.300	1707841.900	1344487.200	T 1960847.10
σ		T 17052.319	0.952%	T 112474.330	551.849	612.061	2652.404	1.482%	T 12309.339	13711.000	7775.392	T 9979.07
%RSD		T 0.626	0.951	T 1.955	0.069	37.528	0.673	1.493	T 0.424	0.803	0.578	T 0.50

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:54:31	110489.030	T 5575983.600	T 47140217.000	97.257%	0.000	789477.090	362948.810
2	12:54:53	114335.130	T 5611045.400	T 46902337.000	99.117%	0.000	790069.220	359551.540
3	12:55:15	114324.270	T 5588341.200	T 46588168.000	99.889%	5.006	783139.350	358102.330
x		113049.480	T 5591790.100	T 46876907.000	98.754%	1.669	787561.890	360200.890
σ		2217.415	T 17783.517	T 276902.010	1.353%	2.890	3841.456	2487.637
%RSD		1.961	T 0.318	T 0.591	1.370	173.205	0.488	0.691

STD5 10/18/2016 12:57:15 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	12:57:36	103.127%	423447.070	156658.200	T 66402084.000	TM 20731097.000	T 189430170.000	TM 69865125.000	TM 7477945.500	105.219%	134139.340	TM
2	12:57:58	100.950%	437291.460	162337.970	T 66589002.000	TM 21047379.000	TM 195544510.000	TM 71816019.000	TM 7765570.200	104.959%	139426.450	TM
3	12:58:20	97.483%	M 450982.640	M 167730.920	T 65567811.000	T 20505520.000	T 192367200.000	TM 70762505.000	TM 7827010.800	106.593%	137131.110	TM
x		100.520%	M 437240.390	M 162242.370	T 66186299.000	TM 20761332.000	TM 192447290.000	TM 70814550.000	TM 7690175.500	105.590%	136898.970	TM
σ		2.846%	M 13767.855	M 5536.979	T 543718.910	TM 272192.000	TM 3057961.300	TM 976488.010	TM 186346.200	0.878%	2651.184	
%RSD		2.831	M 3.149	M 3.413	T 0.821	TM 1.311	TM 1.589	TM 1.379	TM 2.423	0.831	1.937	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	
1	12:57:36	-16326.573	TM 20466608.000	T 411692950.000	TM 6499385.000	TM 3351814.000	TM 4260894.800	TM 3312901.600	411588.250	-4366.123	M 41663.110	
2	12:57:58	-13246.675	TM 20856990.000	TM 420041870.000	TM 6573851.200	TM 3420825.700	TM 4372888.600	TM 3374495.800	M 416935.220	-4673.603	M 42614.689	
3	12:58:20	-2839.824	TM 20901899.000	T 417774590.000	TM 6510710.500	TM 3322121.600	TM 4261768.400	TM 3323507.200	410381.930	-4401.521	M 41840.205	
x		-10804.357	TM 20741832.000	TM 416503140.000	TM 6527982.200	TM 3364920.400	TM 4298517.200	TM 3336968.200	M 412968.470	-4480.416	M 42039.335	
σ		7067.304	TM 239406.400	TM 4317241.400	TM 40125.274	TM 50640.514	TM 64408.989	TM 32929.607	M 3487.859	168.239	M 506.078	
%RSD		65.412	TM 1.154	TM 1.037	TM 0.615	TM 1.505	TM 1.498	TM 0.987	M 0.845	3.755	M 1.204	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	
1	12:57:36	TM 4687505.900	99.561%	TM 10186120.000	M 1358846.700	2167.434	675860.770	100.917%	T 5140369.300	TM 3316867.400	2325214.200	TI
2	12:57:58	TM 4785330.500	98.996%	TM 10456943.000	M 1368247.100	2612.042	684986.720	100.689%	T 5175560.900	TM 3372397.500	M 2394005.900	TI
3	12:58:20	TM 4731034.700	97.669%	TM 10701299.000	M 1363693.000	2607.142	676401.220	102.501%	T 5210581.800	TM 3356811.400	M 2379441.700	TI
x		TM 4734623.700	98.742%	TM 10448121.000	M 1363595.600	2462.206	679082.900	101.369%	T 5175504.000	TM 3348692.100	M 2366220.600	TI
σ		TM 49010.962	0.971%	TM 257702.770	M 4700.975	255.292	5119.993	0.987%	T 35106.289	TM 28641.553	M 36251.514	
%RSD		TM 1.035	0.984	TM 2.466	M 0.345	10.368	0.754	0.974	T 0.678	TM 0.855	M 1.532	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:57:36	M 240035.300	TM 10012792.000	TM 82502667.000	97.606%	0.000	M 1611299.000	M 765892.040
2	12:57:58	M 244147.730	TM 10175037.000	TM 84009494.000	98.028%	0.000	M 1631691.400	M 771626.020
3	12:58:20	M 242358.950	TM 10062705.000	TM 83250872.000	99.328%	0.000	M 1635189.400	M 781661.590
x		M 242180.660	TM 10083511.000	TM 83254345.000	98.321%	0.000	M 1626059.900	M 773059.880
σ		M 2062.006	TM 83099.424	TM 753419.750	0.898%	0.000	M 12902.416	M 7981.960
%RSD		M 0.851	TM 0.824	TM 0.905	0.913	0.000	M 0.793	M 1.033

ICV 10/18/2016 01:02:59 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:03:20	95.778%	46602.698	18309.579	T 7160854.200	T 2146002.500	T 20313958.000	T 7064989.100	699775.040	97.755%	13666.507	1279200.400	394554.220
2	13:03:42	91.250%	47957.298	18325.437	T 7203974.000	T 2156503.000	T 20714534.000	T 7090824.900	704354.720	98.165%	13701.433	1256740.100	391283.860
3	13:04:04	90.396%	48681.816	19883.402	T 7302393.400	T 2174521.900	T 20338269.000	T 6973032.900	703684.760	98.282%	12932.153	1289700.500	391075.880
x		92.475%	106.741%	114.916%	T 107.343%	T 104.234%	T 105.916%	T 103.798%	97.100%	98.068%	13433.364	96.710%	97.663%
σ		2.893%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.277%	434.413	n/a	n/a
%RSD		3.128	2.210	4.799	T 1.004	T 0.668	T 1.098	T 0.879	0.352	0.282	3.234	1.320	0.497

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:03:20	6558.412	T 2045317.900	T 42423545.000	610606.350	326858.430	404495.700	324226.280	43534.443	-58.641	4582.679	409.805	1693.183
2	13:03:42	6618.165	T 2067327.200	T 42818878.000	619000.740	331896.140	422406.500	333871.260	44651.068	-134.594	4695.311	380.854	1722.812
3	13:04:04	6478.551	T 2036605.900	T 42171917.000	608007.210	329005.760	407939.220	324679.960	43204.009	-88.401	4694.004	370.081	1708.338
x		6551.709	T 101.249%	T 101.355%	96.413%	102.936%	99.175%	102.404%	105.613%	-93.878	108.038%	386.913	1708.111
σ		70.048	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	38.272	n/a	20.544	14.816

%RSD		1.069	T 0.772	T 0.768	0.938	0.768	2.309	1.661	1.731	40.767	1.388	5.310	0.867
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:03:20	414292.330	98.668%	416293.470	138089.040	7.273	69245.368	97.853%	454584.720	298758.820	233619.560	296291.510	96.925%
2	13:03:42	424936.900	99.864%	421665.860	141692.810	67.916	71213.585	96.232%	467895.850	309114.700	242638.370	307070.760	96.590%
3	13:04:04	414149.390	99.112%	432767.800	138178.220	74.129	71163.818	98.763%	455753.470	298611.670	236901.650	298571.870	99.764%
x		417792.870	99.215%	91.505%	104.052%	49.773	100.374%	97.616%	459411.340	302161.730	101.397%	96.760%	97.760%
σ		6187.324	0.604%	n/a	n/a	36.936	n/a	1.282%	7370.994	6021.898	n/a	n/a	1.744%
%RSD		1.481	0.609	1.983	1.475	74.211	1.591	1.313	1.604	1.993	1.920	1.890	1.784

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:03:20	40989.221	843752.010	T 7830816.600	95.210%	0.000	209720.790	117749.790
2	13:03:42	40929.216	841692.370	T 7806852.900	96.916%	0.000	218396.040	118143.620
3	13:04:04	41337.392	842835.290	T 7774116.500	97.517%	0.000	228059.070	118421.730
x		110.708%	90.123%	T 97.797%	96.547%	0.000	86.877%	94.683%
σ		n/a	n/a	T n/a	1.197%	0.000	n/a	n/a
%RSD		0.536	0.122	T 0.365	1.239	0.000	4.194	0.286

ICVL 10/18/2016 01:08:43 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:09:05	95.546%	199.526	6479.224	658456.280	29100.836	67096.367	649859.020	24143.225	103.254%	14.521	11888.734	7862.400
2	13:09:27	94.354%	207.437	6582.064	664224.210	27625.088	68959.758	660309.320	24248.155	102.609%	24.340	11349.552	8030.074
3	13:09:50	97.374%	182.808	6457.582	648085.200	28031.201	69151.040	658157.120	24970.962	102.765%	34.049	11321.500	7966.514
x		95.758%	137.339%	124.021%	97.635%	102.299%	106.253%	96.697%	101.386%	102.876%	24.303	109.207%	98.994%
σ		1.521%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.336%	9.764	n/a	n/a
%RSD		1.588	6.396	1.022	1.245	2.698	1.659	0.841	1.843	0.327	40.174	2.775	1.064
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:09:05	4565.140	7009.257	550491.060	2843.698	1240.503	3317.273	11427.230	619.653	395.882	125.211	368.450	2111.396
2	13:09:27	4825.307	7314.233	553594.620	2822.832	1253.343	3546.986	11134.469	526.322	420.088	93.307	398.940	2102.591
3	13:09:50	4945.205	7429.054	538724.170	2813.611	1334.114	3426.434	11357.385	826.416	340.494	168.660	393.528	1969.494
x		4778.551	111.926%	98.011%	111.231%	124.662%	103.311%	110.448%	79.272%	385.488	74.846%	386.972	2061.160
σ		194.298	n/a	n/a	n/a	n/a	n/a	n/a	n/a	40.802	n/a	16.268	79.507
%RSD		4.066	2.992	1.433	0.545	3.977	3.350	1.352	23.359	10.585	29.307	4.204	3.857
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:09:05	20556.677	104.179%	16023.089	3094.636	-47.903	717.981	102.186%	4507.106	5109.049	4058.832	4759.505	99.416%
2	13:09:27	22144.774	104.891%	15717.013	2954.090	-77.617	732.172	103.651%	5437.439	5645.310	4238.724	4981.529	101.348%
3	13:09:50	21707.398	103.406%	16624.244	2959.724	-52.894	775.989	102.281%	5534.701	5655.513	4385.733	4940.881	99.249%
x		96.168%	104.159%	108.835%	112.134%	-59.471	105.587%	102.706%	5159.749	5469.958	112.707%	98.443%	100.004%
σ		n/a	0.742%	n/a	n/a	15.911	n/a	0.820%	567.294	312.597	n/a	n/a	1.167%
%RSD		3.821	0.713	2.863	2.650	26.755	4.075	0.798	10.995	5.715	3.873	2.415	1.167

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:09:05	3253.223	19427.654	14938.520	96.063%	0.000	19792.599	13363.864
2	13:09:27	3283.224	18994.135	14336.447	99.613%	0.000	18999.680	12247.526
3	13:09:50	3717.406	19239.008	15169.645	97.907%	0.000	19312.480	13310.376
x		92.100%	102.769%	116.035%	97.861%	0.000	76.930%	104.010%
σ		n/a	n/a	n/a	1.775%	0.000	n/a	n/a
%RSD		7.600	1.131	2.903	1.814	0.000	2.062	4.853

ICBIS 10/18/2016 01:19:56 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:20:18	101.127%	2.706	-34.838	3184.097	-5.077	-388.905	4855.415	-47.344	106.150%	9.416	1084.076	117.244
2	13:20:40	101.459%	12.530	74.560	-1512.163	-28.315	-403.546	1710.283	64.378	108.976%	13.759	1209.415	-4.789
3	13:21:01	100.799%	5.219	18.697	-1948.298	71.739	-324.244	1170.974	-19.282	109.341%	13.716	11.966	-188.996
x		101.128%	6.818	19.473	-92.121	12.782	-372.232	2578.891	-0.749	108.156%	12.297	768.485	-25.514
σ		0.330%	5.103	54.703	2845.656	52.363	42.198	1989.883	58.121	1.746%	2.495	658.156	154.169
%RSD		0.327	74.850	280.922	3089.028	409.653	11.337	77.160	7759.009	1.615	20.293	85.643	604.255

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:20:18	5614.006	-62.515	8139.976	-19.109	-18.848	-12.060	-292.684	-247.518	464.106	-35.056	384.005	1878.054
2	13:20:40	5444.675	-11.906	-2041.920	-10.543	-9.916	-57.415	-158.573	-114.697	434.414	-27.946	402.450	1979.372
3	13:21:01	5748.773	-26.956	3438.353	-19.796	-9.977	35.443	-248.896	-107.202	423.124	-31.851	384.540	1885.268
x		5602.485	-33.793	3178.803	-16.483	-12.914	-11.344	-233.384	-156.472	440.548	-31.618	390.332	1914.231
σ		152.376	25.988	5095.907	5.155	5.139	46.433	68.388	78.937	21.168	3.561	10.498	56.529
%RSD		2.720	76.904	160.309	31.277	39.797	409.310	29.303	50.448	4.805	11.263	2.690	2.953

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:20:18	5.931	107.415%	-267.655	5.370	-64.481	19.618	107.552%	1980.564	-636.406	-539.081	-12.145	103.531%
2	13:20:40	6.146	109.860%	-378.462	19.593	-68.322	42.139	106.847%	1946.833	-561.399	-470.495	15.964	101.754%
3	13:21:01	1.389	109.820%	-300.848	-13.190	-54.507	14.508	107.142%	2156.161	-624.189	-438.170	1.873	102.076%
x		4.488	109.032%	-315.655	3.924	-62.437	25.422	107.180%	2027.853	-607.331	-482.582	1.897	102.453%
σ		2.687	1.400%	56.868	16.439	7.131	14.702	0.354%	112.391	40.245	51.530	14.054	0.947%
%RSD		59.857	1.284	18.016	418.893	11.421	57.830	0.330	5.542	6.627	10.678	740.751	0.924

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:20:18	82.223	756.621	-766.750	100.726%	0.000	7801.362	-34.831
2	13:20:40	90.174	561.900	-885.644	101.238%	0.000	7911.474	-39.895
3	13:21:01	123.889	644.174	-846.064	100.198%	0.000	8174.660	-44.681
x		98.762	654.232	-832.819	100.720%	0.000	7962.498	-39.802
σ		22.121	97.749	60.543	0.520%	0.000	191.808	4.925
%RSD		22.398	14.941	7.270	0.516	0.000	2.409	12.375

ICSA 10/18/2016 01:25:39 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:26:00	96.815%	8.311	215.155	TM 132842910.000	T 13562579.000	T 125050330.000	TM 135540990.000	T 4963680.100	111.275%	266534.420	1063.232	2543.212
2	13:26:22	96.045%	21.450	112.300	TM 135474280.000	T 13998019.000	T 128648040.000	TM 138270470.000	T 5024374.100	110.226%	280424.420	1012.310	2797.385
3	13:26:44	93.865%	32.769	15.885	TM 131574810.000	T 13795713.000	T 127667570.000	TM 138521070.000	T 5105020.200	112.630%	276646.230	1353.612	2677.984
x		95.575%	1.#IO%	1.#IO%	TM 99.057%	T 99.832%	T 98.732%	TM 101.282%	T 104.293%	111.377%	274535.020	1.#IO%	1.#IO%
σ		1.530%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.205%	7181.636	n/a	n/a
%RSD		1.601	58.725	87.073	TM 1.492	T 1.581	T 1.463	TM 1.203	T 1.409	1.082	2.616	16.108	4.758

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:26:00	2417.210	1647.028	T 269237830.000	289.854	254.817	820.250	-692.025	-33.007	356.811	-19.880	419.365	1959.146
2	13:26:22	2583.764	2074.919	T 277676240.000	351.988	311.944	560.665	-600.251	-17.813	378.408	-9.404	460.553	1875.520
3	13:26:44	2468.997	2434.802	T 272269430.000	427.916	380.155	894.937	-562.953	-41.879	374.784	-26.314	455.243	2019.321
x		2489.990	1.#IO%	T 97.746%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	370.001	-1.#IO%	445.053	1951.329

σ		85.238	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	11.566	n/a	22.405	72.218
%RSD		3.423	19.217	T 1.565	19.391	19.881	23.128	10.741	39.387	3.126	46.056	5.034	3.701
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:26:00	3463.681	106.284%	T 3007026.700	429.174	365.067	206.514	105.160%	3533.094	-399.895	-318.051	140.110	106.140%
2	13:26:22	3303.218	107.521%	T 3090566.700	453.122	436.817	204.153	109.327%	4048.033	-243.972	-251.399	161.572	108.157%
3	13:26:44	3662.575	110.441%	T 3095014.800	542.512	432.781	220.323	108.845%	4819.551	-266.118	-182.685	254.237	110.554%
x		1.#IO%	108.082%	T 103.432%	1.#IO%	411.555	1.#IO%	107.777%	4133.559	-303.328	-1.#IO%	1.#IO%	108.284%
σ		n/a	2.134%	T n/a	n/a	40.310	n/a	2.279%	647.479	84.359	n/a	n/a	2.210%
%RSD		5.178	1.975	T 1.618	12.577	9.795	4.153	2.115	15.664	27.811	26.997	32.731	2.041

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:26:00	534.904	968.943	3636.755	98.613%	0.000	72450.339	-8.948
2	13:26:22	606.438	810.745	4502.718	101.798%	0.000	60096.001	18.936
3	13:26:44	509.889	1235.917	6936.713	104.058%	0.000	48410.924	65.280
x		1.#IO%	1.#IO%	1.#IO%	101.490%	0.000	1.#IO%	1.#IO%
σ		n/a	n/a	n/a	2.735%	0.000	n/a	n/a
%RSD		9.104	21.378	34.046	2.695	0.000	19.929	149.444

ICSAB 10/18/2016 01:31:21 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:31:43	89.414%	4220.805	61073.043	TM 133158070.000	T 13478034.000	T 123598460.000	TM 134081910.000	T 4962600.800	109.920%	271300.940	53865.228	9822
2	13:32:05	90.154%	3825.555	58297.294	TM 127549050.000	T 13181584.000	T 121444490.000	TM 130855110.000	T 4898168.600	111.874%	270133.030	51987.203	9574
3	13:32:26	89.485%	3820.673	59106.718	TM 129110900.000	T 13105697.000	T 122285020.000	TM 133099100.000	T 4935151.300	111.164%	271247.300	49515.077	9582
x		89.684%	110.538%	113.402%	TM 96.561%	T 95.991%	T 95.098%	TM 97.770%	T 102.239%	110.986%	270893.760	98.190%	96.
σ		0.408%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.989%	659.354	n/a	
%RSD		0.455	5.805	2.399	TM 2.228	T 1.484	T 0.887	TM 1.247	T 0.656	0.891	0.243	4.213	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:31:43	3237.310	79735.494	T 267841090.000	59718.184	13177.974	31204.971	22682.455	18265.000	-54.369	4732.771	437.065	184
2	13:32:05	2978.568	77913.394	T 267499850.000	56435.638	12374.766	29641.738	22195.235	17955.960	41.030	4871.302	427.059	159
3	13:32:26	3235.624	77075.302	T 272471060.000	57803.201	12093.855	29614.039	21998.385	17984.037	-39.147	4883.949	422.744	157
x		3150.501	96.620%	T 96.389%	91.269%	98.081%	90.816%	87.105%	96.824%	-17.495	89.623%	428.956	167
σ		148.900	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	51.253	n/a	7.347	15
%RSD		4.726	1.738	T 1.031	2.844	4.484	3.020	1.580	0.946	292.952	1.737	1.713	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	13:31:43	4358.479	106.279%	T 3040051.400	66451.737	386.758	16564.085	108.109%	4426.727	112489.730	88025.748	118009.150	109.
2	13:32:05	3583.098	107.840%	T 3078051.000	65834.455	580.967	16219.947	108.886%	4289.496	113172.360	89150.281	118309.950	111.
3	13:32:26	3237.861	108.567%	T 3095484.000	65776.222	393.220	16543.845	109.524%	3711.965	114245.040	89410.157	120638.700	112.
x		3726.480	107.562%	T 103.668%	98.616%	453.648	93.586%	108.840%	4142.730	113302.380	94.758%	95.736%	111.
σ		573.903	1.169%	T n/a	n/a	110.309	n/a	0.709%	379.310	884.844	n/a	n/a	1.
%RSD		15.401	1.087	T 0.923	0.567	24.316	1.174	0.651	9.156	0.781	0.828	1.210	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:31:43	34048.947	211948.940	309033.400	102.830%	0.000	246379.980	133420.200
2	13:32:05	34007.597	209994.930	300561.740	105.139%	0.000	249557.350	135405.380
3	13:32:26	34238.177	215956.670	302366.510	103.578%	0.000	262737.380	139301.310
x		91.881%	90.954%	95.237%	103.849%	0.000	100.448%	109.064%
σ		n/a	n/a	n/a	1.178%	0.000	n/a	n/a
%RSD		0.361	1.429	1.468	1.134	0.000	3.430	2.199

CCV 10/18/2016 01:37:05 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:37:27	84.830%	101249.580	35295.209	T 13518631.000	T 4086804.400	T 38525986.000	T 13553501.000	1354574.000	97.281%	25436.227	T 2667973.800	765661
2	13:37:49	86.663%	96193.602	35198.581	T 13412283.000	T 4103848.600	T 38156375.000	T 13333169.000	T 1434704.800	97.131%	26243.425	T 2649413.500	760322
3	13:38:10	85.381%	98382.794	36174.118	T 13547276.000	T 4201026.700	T 38872312.000	T 13373168.000	1389409.700	95.466%	26838.194	T 2712553.800	775513
x		85.625%	110.221%	108.441%	T 100.268%	T 99.709%	T 99.720%	T 98.891%	T 96.249%	96.626%	26172.615	T 101.496%	95.4
σ		0.941%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.007%	703.661	T n/a	
%RSD		1.099	2.571	1.512	T 0.527	T 1.492	T 0.930	T 0.875	T 2.885	1.042	2.689	T 1.212	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:37:27	9208.563	T 4024721.100	T 82394828.000	1152193.800	617649.380	742831.440	607158.080	82301.557	-794.148	9038.963	382.438	1014
2	13:37:49	7383.048	T 3973735.500	T 82295990.000	1160712.400	617112.380	741606.920	610432.830	83708.279	-721.266	9058.892	373.098	1468
3	13:38:10	8185.345	T 4032185.200	T 83082312.000	1187849.900	631171.050	758460.930	615398.210	82607.253	-633.026	8940.377	411.960	1193
x		8258.986	T 99.044%	T 98.549%	91.836%	97.226%	90.068%	95.498%	99.921%	-716.147	104.537%	389.165	1225
σ		914.983	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	80.683	n/a	20.286	228

%RSD		11.079	T 0.793	T 0.519	1.596	1.281	1.257	0.679	0.893	11.266	0.704	5.213	18
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	13:37:27	824768.780	101.231%	1688673.900	274593.500	185.469	138606.360	100.671%	852928.900	567986.290	448795.960	580759.010	101.2
2	13:37:49	844589.830	101.423%	1738025.100	279270.150	466.550	138421.470	98.769%	869963.510	580156.830	460761.060	592185.830	101.8
3	13:38:10	836642.540	100.505%	1765584.900	273999.060	180.044	138419.870	99.647%	868725.680	584756.580	458323.860	586708.690	101.0
x		835333.720	101.053%	93.474%	103.049%	277.354	98.525%	99.696%	863872.700	577633.230	97.242%	94.388%	101.3
σ		9975.131	0.484%	n/a	n/a	163.870	n/a	0.952%	9497.789	8665.276	n/a	n/a	0.3
%RSD		1.194	0.479	2.251	1.046	59.083	0.077	0.955	1.099	1.500	1.387	0.974	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:37:27	36734.495	1647120.200	T 15700554.000	98.816%	0.000	212736.700	119461.920
2	13:37:49	38116.638	1664123.300	T 15733503.000	99.661%	0.000	227201.620	119201.460
3	13:38:10	37962.805	1682039.900	T 15858054.000	98.743%	0.000	240265.560	120881.460
x		101.329%	88.995%	T 98.775%	99.074%	0.000	90.058%	96.081%
σ		n/a	n/a	T n/a	0.510%	0.000	n/a	n/a
%RSD		2.014	1.049	T 0.527	0.515	0.000	6.073	0.754

CCB 10/18/2016 01:42:49 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:43:10	89.310%	9.613	18.410	-3303.699	124.301	842.732	6668.855	87.647	100.696%	34.736	663.367	-446.643
2	13:43:32	88.323%	1.309	162.693	2764.482	122.286	1259.683	9617.771	98.628	98.172%	35.560	1415.811	-423.122
3	13:43:54	87.144%	7.162	-70.777	4283.297	488.611	2690.266	12071.633	172.187	99.694%	45.090	219.035	-443.499
x		88.259%	6.028	36.775	1248.027	245.066	1597.560	9452.753	119.487	99.521%	38.462	766.071	-437.755
σ		1.084%	4.266	117.814	4014.394	210.918	969.002	2705.167	45.968	1.271%	5.755	604.963	12.770
%RSD		1.229	70.778	320.360	321.659	86.066	60.655	28.618	38.471	1.277	14.962	78.970	2.917

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:43:10	4200.850	-123.084	7866.041	-17.833	-3.442	-54.980	-284.503	-376.945	401.335	-50.505	399.449	2004.463
2	13:43:32	4192.858	-54.560	8833.321	18.457	-12.990	-6.030	-230.436	-147.292	317.977	-24.206	352.417	1859.661
3	13:43:54	4374.649	25.259	10836.619	-2.537	-3.192	-68.877	-277.463	-296.569	376.967	-24.214	357.176	1871.477
x		4256.119	-50.795	9178.660	-0.638	-6.541	-43.296	-264.134	-273.602	365.426	-32.975	369.681	1911.867
σ		102.728	74.243	1515.100	18.220	5.586	33.013	29.395	116.536	42.860	15.181	25.890	80.408
%RSD		2.414	146.161	16.507	2856.900	85.396	76.249	11.129	42.593	11.729	46.039	7.003	4.206

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:43:10	2.652	102.119%	2573.736	16.494	-53.406	4.093	102.517%	3263.189	-170.829	-228.540	12.470	100.021%
2	13:43:32	-7.087	104.053%	2445.750	11.644	-55.693	25.864	102.437%	3617.275	-183.012	-150.860	7.612	98.701%
3	13:43:54	7.685	102.094%	2496.232	6.874	-66.633	26.882	102.052%	3777.939	-119.112	-102.830	17.503	100.949%
x		1.083	102.755%	2505.240	11.671	-58.577	18.946	102.335%	3552.801	-157.651	-160.743	12.528	99.890%
σ		7.510	1.124%	64.467	4.810	7.070	12.873	0.249%	263.362	33.927	63.435	4.946	1.129%
%RSD		693.337	1.093	2.573	41.218	12.069	67.945	0.243	7.413	21.520	39.464	39.478	1.131

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:43:10	118.318	1558.594	-863.183	98.321%	0.000	7286.264	-13.882
2	13:43:32	85.665	1385.491	-732.155	99.816%	0.000	7469.776	-39.614
3	13:43:54	121.342	1287.022	-488.962	99.986%	0.000	7130.738	-29.647
x		108.442	1410.369	-694.767	99.374%	0.000	7295.593	-27.714
σ		19.783	137.485	189.892	0.916%	0.000	169.711	12.974
%RSD		18.243	9.748	27.332	0.922	0.000	2.326	46.814

MB 200-110229/1-A 10/18/2016 01:48:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:48:52	96.415%	18.747	-74.416	145256.870	5406.681	54123.010	60216.886	2815.796	105.551%	203.407	1638.504	1141.762
2	13:49:14	97.367%	33.899	-19.071	152638.170	6868.593	69490.115	65302.751	3163.084	106.508%	178.278	1458.362	1496.038
3	13:49:36	96.913%	23.773	74.367	148004.010	6191.831	57489.151	60665.160	2942.553	106.046%	145.881	1544.770	1321.584
x		96.898%	25.473	-6.373	148633.020	6155.702	60367.426	62061.599	2973.811	106.035%	175.855	1547.212	1319.795
σ		0.477%	7.718	75.200	3730.633	731.626	8077.767	2815.854	175.742	0.479%	28.839	90.096	177.145
%RSD		0.492	30.297	1179.926	2.510	11.885	13.381	4.537	5.910	0.451	16.400	5.823	13.422

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:48:52	4284.024	3156.310	130804.340	563.692	308.064	255.164	19.880	-115.548	337.336	-32.863	373.960	1888.586
2	13:49:14	4544.976	3236.950	157745.770	567.633	361.377	314.486	84.812	-291.535	390.017	-31.407	387.121	1749.145
3	13:49:36	4397.635	3134.950	130339.520	494.852	268.775	270.097	154.961	-159.719	346.637	-32.074	374.101	1814.862
x		4408.878	3176.070	139629.880	542.059	312.739	279.916	86.551	-188.934	357.997	-32.115	378.394	1817.531
σ		130.839	53.794	15690.545	40.930	46.478	30.855	67.557	91.559	28.118	0.728	7.558	69.759
%RSD		2.968	1.694	11.237	7.551	14.862	11.023	78.055	48.461	7.854	2.268	1.997	3.838

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:48:52	345.934	108.926%	2206.517	62.360	-62.861	36.957	106.029%	46679.254	-463.604	-408.447	181.267	102.874%
2	13:49:14	346.068	108.021%	2677.407	61.329	-62.097	73.188	107.332%	46930.035	-439.475	-291.368	239.423	104.188%
3	13:49:36	330.338	110.759%	1982.648	70.190	-42.741	53.884	107.860%	48253.535	-374.302	-307.952	187.176	105.728%
x		340.780	109.235%	2288.857	64.626	-55.900	54.676	107.074%	47287.608	-425.794	-335.922	202.622	104.263%
σ		9.043	1.395%	354.623	4.846	11.402	18.129	0.943%	845.863	46.196	63.353	32.007	1.428%
%RSD		2.654	1.277	15.493	7.498	20.398	33.157	0.880	1.789	10.850	18.859	15.796	1.370

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:48:52	141.658	955.780	2453.506	100.060%	0.000	43386.446	40.290
2	13:49:14	143.515	1274.660	3251.449	104.041%	0.000	36004.515	65.300
3	13:49:36	168.466	879.556	2524.483	102.457%	0.000	31348.485	13.551
x		151.213	1036.665	2743.146	102.186%	0.000	36913.148	39.714
σ		14.970	209.603	441.632	2.005%	0.000	6070.201	25.879
%RSD		9.900	20.219	16.099	1.962	0.000	16.445	65.165

LCS 200-110229/2-A 10/18/2016 01:54:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:54:35	92.558%	1572.980	57254.908	T 7363600.600	273216.790	622746.270	T 6988587.600	233971.510	103.058%	106.811	100207.320	79477.778
2	13:54:57	93.233%	1497.170	57465.895	T 7264765.300	271145.530	620163.160	T 7022059.000	234631.600	102.121%	93.015	98779.789	82368.856
3	13:55:18	87.744%	1708.106	58485.947	T 7392227.900	273668.640	636283.170	T 7169282.800	245349.690	98.393%	50.745	101483.620	83809.720
x		91.179%	1592.752	57735.583	T 7340197.900	272676.980	626397.530	T 7059976.500	237984.270	101.191%	83.524	100156.910	81885.451
σ		2.993%	106.849	658.341	T 66876.318	1345.385	8658.084	T 96130.031	6387.176	2.468%	29.213	1352.620	2206.058
%RSD		3.283	6.708	1.140	T 0.911	0.493	1.382	T 1.362	2.684	2.439	34.976	1.351	2.694

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:54:35	4513.944	62593.311	T 5841888.100	24685.554	10561.441	32197.699	91147.240	7792.476	155.579	1478.014	372.486	1848.226
2	13:54:57	4198.063	65093.462	T 5850924.700	25471.504	10447.950	32481.472	94875.295	7791.854	214.551	1507.468	357.113	1671.693
3	13:55:18	4037.510	66641.870	T 6047064.800	26952.332	11272.049	32970.175	94447.652	7855.854	128.714	1470.158	353.781	1788.813
x		4249.839	64776.214	T 5913292.500	25703.130	10760.480	32549.782	93490.063	7813.395	166.282	1485.213	361.127	1769.577

σ		242.401	2042.839	T 115938.240	1151.004	446.651	390.742	2040.179	36.772	43.908	19.669	9.977	89.825
%RSD		5.704	3.154	T 1.961	4.478	4.151	1.200	2.182	0.471	26.406	1.324	2.763	5.076
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:54:35	216085.010	101.484%	149034.900	29798.305	30.826	6553.878	102.018%	42272.482	46196.636	35185.344	48330.230	99.854%
2	13:54:57	222453.740	102.407%	150490.930	30143.799	51.510	6623.607	100.950%	43395.394	46860.075	36146.049	49314.025	101.721%
3	13:55:18	220137.800	101.559%	150999.980	30024.179	-4.346	6968.818	101.335%	43547.046	46830.086	36247.905	48067.467	100.511%
x		219558.850	101.817%	150175.270	29988.761	25.997	6715.434	101.434%	43071.641	46628.932	35859.766	48570.574	100.695%
σ		3223.599	0.513%	1019.863	175.449	28.239	222.189	0.541%	696.233	374.680	586.283	657.115	0.947%
%RSD		1.468	0.504	0.679	0.585	108.626	3.309	0.534	1.616	0.804	1.635	1.353	0.941

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:54:35	68081.655	171169.870	120851.130	98.711%	5.065	221324.350	132791.890
2	13:54:57	68794.561	176347.970	123354.560	97.541%	0.000	235763.650	138317.320
3	13:55:18	69464.429	175529.780	121356.450	97.882%	0.000	241961.040	135965.770
x		68780.215	174349.210	121854.050	98.045%	1.688	233016.340	135691.660
σ		691.499	2783.610	1323.815	0.602%	2.924	10589.099	2772.894
%RSD		1.005	1.597	1.086	0.614	173.205	4.544	2.044

200-35680-A-7-B 10/18/2016 01:59:56 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:00:18	104.854%	445.834	2655.076	T 679613.760	T 1543188.600	T 61826764.000	T 4978405.100	809850.170	144.739%	8037.809	162878.540	119620.070
2	14:00:39	101.865%	603.932	2813.601	T 662400.850	T 1541593.000	T 62491281.000	T 5012067.600	819377.950	147.843%	7626.112	167596.980	118510.820
3	14:01:01	104.921%	569.451	2948.117	T 666449.550	T 1545781.800	T 63221455.000	T 5072275.000	832286.600	148.176%	7646.563	164535.820	120208.300
x		103.880%	539.739	2805.598	T 669488.050	T 1543521.100	T 62513167.000	T 5020915.900	820504.910	146.920%	7770.162	165003.780	119446.400
σ		1.746%	83.131	146.685	T 8999.745	T 2114.132	T 697602.910	T 47556.368	11260.589	1.896%	232.015	2393.778	861.961
%RSD		1.680	15.402	5.228	T 1.344	T 0.137	T 1.116	T 0.947	1.372	1.290	2.986	1.451	0.722

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:00:18	2905.199	T 8795309.000	T 212870800.000	89645.248	44305.455	T 1867892.900	537371.220	9754.008	159.263	871.850	401.202	1788.746
2	14:00:39	3120.471	T 9013707.500	T 220452830.000	92460.039	44613.959	T 1843757.000	543343.010	9960.766	147.366	901.761	428.251	1645.697
3	14:01:01	4044.913	T 8895068.400	T 218513710.000	93007.259	45770.461	T 1876851.400	543781.210	9884.514	162.590	863.006	436.297	1954.501
x		3356.861	T 8901361.600	T 217279110.000	91704.182	44896.625	T 1862833.800	541498.480	9866.429	156.406	878.872	421.917	1796.315
σ		605.514	T 109335.130	T 3938906.700	1803.959	772.325	T 17117.430	3581.022	104.559	8.004	20.310	18.385	154.541
%RSD		18.038	T 1.228	T 1.813	1.967	1.720	T 0.919	0.661	1.060	5.118	2.311	4.357	8.603

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:00:18	344931.020	284.425%	2695.155	6810.537	-206.698	4158.639	117.399%	53760.581	1568.102	1187.394	308877.100	134.532%
2	14:00:39	349637.270	298.321%	2481.669	7094.497	-174.516	4131.108	120.025%	54570.769	1697.328	1301.821	310673.700	134.066%
3	14:01:01	351033.680	296.782%	2578.711	6868.209	-174.361	4280.019	121.135%	55512.753	1431.233	1300.325	314576.350	140.489%
x		348533.990	293.176%	2585.178	6924.414	-185.192	4189.922	119.520%	54614.701	1565.554	1263.180	311375.720	136.362%
σ		3197.429	7.617%	106.890	150.092	18.625	79.231	1.919%	876.912	133.066	65.637	2913.755	3.581%
%RSD		0.917	2.598	4.135	2.168	10.057	1.891	1.605	1.606	8.500	5.196	0.936	2.626

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:00:18	952.770	4657.418	2116815.500	113.236%	0.000	208759.170	83502.542
2	14:00:39	896.716	4692.522	2161342.300	115.026%	0.000	201163.350	84537.250
3	14:01:01	851.533	4522.718	2187504.300	115.807%	0.000	195435.570	84053.673
x		900.340	4624.219	2155220.700	114.690%	0.000	201786.030	84031.155
σ		50.716	89.638	35739.796	1.318%	0.000	6683.591	517.721
%RSD		5.633	1.938	1.658	1.149	0.000	3.312	0.616

200-35680-A-14-D 10/18/2016 02:05:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:06:00	105.592%	527.903	3129.895	T 731274.270	T 1714081.400	T 64036443.000	T 5478203.400	T 1108544.100	160.764%	7834.878	157971.050	123203.840
2	14:06:22	106.325%	545.379	2822.252	T 730344.250	T 1705276.300	T 63929024.000	T 5414838.600	T 1114838.700	161.530%	7880.085	159565.130	124409.980
3	14:06:44	104.441%	483.531	2833.287	T 724137.260	T 1709764.900	T 64435966.000	T 5495976.400	T 1119460.100	161.157%	8645.492	165986.800	126768.710
x		105.453%	518.938	2928.478	T 728585.260	T 1709707.500	T 64133811.000	T 5463006.100	T 1114281.000	161.150%	8120.152	161174.330	124794.180
σ		0.950%	31.884	174.519	T 3880.049	T 4402.847	T 267129.150	T 42650.390	T 5479.330	0.383%	455.519	4243.256	1813.225
%RSD		0.900	6.144	5.959	T 0.533	T 0.258	T 0.417	T 0.781	T 0.492	0.238	5.610	2.633	1.453

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:06:00	3042.524	T 13386457.000	T 268584430.000	103950.700	46635.321	1519075.900	480105.590	11704.504	174.159	647.138	427.589	1719.986
2	14:06:22	3161.054	T 13489405.000	T 270673990.000	102169.780	46376.849	1525411.700	479553.480	11983.908	140.240	704.360	434.695	1515.870
3	14:06:44	2590.905	T 13632462.000	T 271228040.000	101585.420	46820.838	1529354.800	487277.400	12287.484	129.653	724.181	424.628	1397.764
x		2931.494	T 13502775.000	T 270162150.000	102568.630	46611.003	1524614.100	482312.150	11991.965	148.017	691.893	428.971	1544.540
σ		300.854	T 123546.260	T 1394149.000	1232.051	222.991	5185.696	4308.880	291.573	23.250	40.006	5.173	163.013

%RSD		10.263	T 0.915	T 0.516	1.201	0.478	0.340	0.893	2.431	15.708	5.782	1.206	10.554
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:06:00	456981.270	317.960%	2892.735	5954.085	-198.443	2746.572	128.279%	48386.821	1133.410	911.227	373872.490	140.896%
2	14:06:22	457789.410	323.761%	2902.662	5635.868	-150.126	2630.460	128.598%	48649.367	1308.515	939.321	378724.310	146.521%
3	14:06:44	464377.170	321.896%	2844.166	5893.193	-155.625	2737.236	128.585%	48564.508	1177.178	985.789	386318.250	147.310%
x		459715.950	321.206%	2879.854	5827.715	-168.065	2704.756	128.488%	48533.565	1206.368	945.446	379638.350	144.909%
σ		4056.909	2.962%	31.303	168.911	26.452	64.511	0.180%	133.980	91.129	37.657	6273.027	3.498%
%RSD		0.882	0.922	1.087	2.898	15.739	2.385	0.140	0.276	7.554	3.983	1.652	2.414

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:06:00	848.807	4769.971	1791015.700	121.616%	0.000	182818.470	98007.497
2	14:06:22	802.466	4982.884	1812686.400	120.924%	0.000	187801.900	99822.016
3	14:06:44	709.421	4793.105	1776870.000	124.692%	0.000	182855.280	97773.003
x		786.898	4848.653	1793524.000	122.411%	0.000	184491.880	98534.172
σ		70.985	116.821	18039.487	2.006%	0.000	2866.618	1121.451
%RSD		9.021	2.409	1.006	1.639	0.000	1.554	1.138

200-35736-A-1-A 10/18/2016 02:11:21 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:11:43	108.532%	1252.863	2246.546	T 762751.030	T 2245619.000	T 124281280.000	T 8536457.200	T 806457.080	200.902%	7046.983	295748.380	205861.080
2	14:12:05	106.964%	1238.619	2124.706	T 763874.520	T 2207130.700	T 123136950.000	T 8498546.700	T 804411.770	203.503%	6867.264	296498.410	202973.250
3	14:12:26	107.438%	1242.424	2081.907	T 739943.130	T 2201076.400	T 120889030.000	T 8364912.100	765666.800	204.712%	7002.870	298034.250	206495.600
x		107.645%	1244.635	2151.053	T 755522.890	T 2217942.000	T 122769090.000	T 8466638.700	T 792178.550	203.039%	6972.373	296760.340	205109.980
σ		0.805%	7.375	85.423	T 13504.161	T 24159.362	T 1725787.100	T 90113.933	T 22982.613	1.947%	93.660	1165.227	1877.463
%RSD		0.747	0.593	3.971	T 1.787	T 1.089	T 1.406	T 1.064	T 2.901	0.959	1.343	0.393	0.915

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:11:43	3663.367	T 13695212.000	TM 489945540.000	171690.110	65156.507	71954.269	300688.200	38678.733	151.984	332.105	482.088	1766.067
2	14:12:05	2970.313	T 13806495.000	TM 495245610.000	170744.300	65271.858	72726.187	306376.470	39276.708	138.556	380.432	489.741	1681.841
3	14:12:26	3827.368	T 13876456.000	TM 496757640.000	170902.980	65639.681	74175.727	304694.520	39344.776	156.794	343.240	502.756	1650.079
x		3487.016	T 13792721.000	TM 493982930.000	171112.460	65356.015	72952.061	303919.730	39100.072	149.111	351.926	491.528	1699.329
σ		454.929	T 91403.559	TM 3577278.500	506.507	252.341	1127.822	2922.211	366.474	9.452	25.308	10.449	59.939
%RSD		13.046	T 0.663	TM 0.724	0.296	0.386	1.546	0.962	0.937	6.339	7.191	2.126	3.527

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:11:43	514971.470	516.062%	2502.994	2592.924	-355.057	1525.298	133.070%	36406.013	565.163	377.724	740310.370	171.208%
2	14:12:05	522103.490	517.753%	2686.999	2441.423	-329.514	1610.593	132.930%	36678.133	572.791	450.950	755321.330	169.108%
3	14:12:26	527912.540	529.630%	2654.541	2541.706	-463.507	1720.496	134.362%	36921.627	560.471	497.974	768341.960	175.130%
x		521662.500	521.148%	2614.845	2525.351	-382.693	1618.795	133.454%	36668.591	566.142	442.216	754657.890	171.815%
σ		6481.795	7.394%	98.216	77.063	71.143	97.857	0.790%	257.940	6.218	60.599	14027.565	3.057%
%RSD		1.243	1.419	3.756	3.052	18.590	6.045	0.592	0.703	1.098	13.704	1.859	1.779

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:11:43	369.799	9196.782	1621252.700	127.208%	0.000	362229.860	111919.480
2	14:12:05	408.055	8723.592	1627640.100	128.828%	0.000	369551.820	113075.350
3	14:12:26	333.769	8728.902	1629928.300	130.839%	0.000	370357.550	111220.570
x		370.541	8883.092	1626273.700	128.958%	0.000	367379.740	112071.800
σ		37.149	271.676	4496.303	1.819%	0.000	4478.091	936.724
%RSD		10.025	3.058	0.276	1.411	0.000	1.219	0.836

200-35736-A-2-A 10/18/2016 02:17:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:17:26	107.418%	1123.951	4345.354	┬773764.110	┬2348161.800	┬128563690.000	┬10553238.000	640757.460	194.238%	19483.732	293768.340	211250.320
2	14:17:47	107.938%	1194.944	4489.915	┬741623.810	┬2365902.700	┬127288810.000	┬10491629.000	650927.580	197.980%	19199.296	297126.240	207403.170
3	14:18:09	105.159%	1157.768	4574.805	┬725903.780	┬2316848.000	┬127972140.000	┬10277353.000	┬688730.450	199.490%	18868.209	292834.910	209553.420
x		106.838%	1158.887	4470.025	┬747097.230	┬2343637.500	┬127941550.000	┬10440740.000	┬660138.490	197.236%	19183.746	294576.500	209402.300
σ		1.478%	35.510	116.012	┬24395.111	┬24838.343	┬637991.860	┬144811.680	┬25278.107	2.704%	308.056	2256.928	1928.021
%RSD		1.383	3.064	2.595	┬3.265	┬1.060	┬0.499	┬1.387	┬3.829	1.371	1.606	0.766	0.921

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:17:26	4746.015	┬10812600.000	┬339300520.000	135828.240	62620.411	69533.012	275451.020	13085.692	223.069	252.749	488.855	1731.417
2	14:17:47	4461.106	┬10753966.000	┬338697020.000	134902.520	62807.694	69913.281	277883.310	13134.665	211.523	308.588	464.826	1509.523
3	14:18:09	4987.568	┬10922499.000	┬337248900.000	133030.380	62415.340	69587.519	273770.270	13094.646	210.885	287.438	476.009	1470.390
x		4731.563	┬10829688.000	┬338415480.000	134587.050	62614.482	69677.937	275701.530	13105.001	215.159	282.925	476.563	1570.443
σ		263.528	┬85555.656	┬1054388.400	1425.358	196.244	205.628	2067.933	26.077	6.858	28.192	12.024	140.774
%RSD		5.570	┬0.790	┬0.312	1.059	0.313	0.295	0.750	0.199	3.187	9.964	2.523	8.964

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:17:26	437237.070	476.050%	683.784	2012.603	-334.702	1337.641	131.943%	36222.652	298.071	230.495	652997.640	164.858%
2	14:17:47	435329.310	478.709%	630.810	1986.338	-256.711	1277.595	133.171%	37327.298	344.822	275.344	659590.400	164.618%
3	14:18:09	437824.880	475.834%	739.195	1997.034	-272.186	1276.757	135.189%	37879.169	378.964	296.135	645690.550	164.566%
x		436797.090	476.865%	684.596	1998.658	-287.866	1297.331	133.434%	37143.039	340.619	267.325	652759.530	164.681%
σ		1304.663	1.601%	54.197	13.207	41.292	34.912	1.639%	843.490	40.610	33.547	6952.983	0.156%
%RSD		0.299	0.336	7.917	0.661	14.344	2.691	1.228	2.271	11.922	12.549	1.065	0.094

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:17:26	436.103	8400.518	1431603.000	124.684%	0.000	365213.790	94099.876
2	14:17:47	394.347	8956.485	1470117.600	124.082%	4.030	371896.040	96549.593
3	14:18:09	409.692	8768.004	1466905.600	125.026%	0.000	370909.870	95973.061
x		413.381	8708.336	1456208.700	124.597%	1.343	369339.900	95540.844
σ		21.121	282.746	21369.645	0.478%	2.326	3607.177	1280.776
%RSD		5.109	3.247	1.467	0.384	173.205	0.977	1.341

200-35736-A-3-A 10/18/2016 02:22:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:23:09	105.752%	1146.497	5360.412	┬801500.040	┬2290779.900	┬133973140.000	┬10977588.000	739833.710	197.087%	20195.239	298283.780	212429.110
2	14:23:31	105.914%	1031.430	5430.627	┬782353.090	┬2233753.200	┬130390910.000	┬11055430.000	┬795786.990	204.147%	19917.088	291347.270	205444.150
3	14:23:52	104.448%	1196.816	5562.615	┬815609.850	┬2313376.800	┬136162890.000	┬11303830.000	┬818732.460	197.671%	21122.932	302001.960	217161.910
x		105.371%	1124.915	5451.218	┬799821.000	┬2279303.300	┬133508980.000	┬11112282.000	┬784784.390	199.635%	20411.753	297211.000	211678.390
σ		0.804%	84.779	102.662	┬16691.836	┬41033.707	┬2913854.600	┬170389.640	┬40583.817	3.918%	631.406	5407.749	5894.838
%RSD		0.763	7.537	1.883	┬2.087	┬1.800	┬2.183	┬1.533	┬5.171	1.963	3.093	1.819	2.785

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:23:09	5014.274	┬9121930.400	┬278434930.000	120568.120	61653.504	74328.084	294875.590	9794.458	239.552	309.571	506.684	1845.465
2	14:23:31	5257.296	┬9114531.200	┬273036840.000	119083.150	60280.355	72669.286	291836.210	9668.589	239.184	254.553	505.661	1885.841
3	14:23:52	5304.100	┬9411100.400	┬282847700.000	123393.620	62592.342	71522.718	290754.540	10154.532	224.122	322.653	488.064	1577.517
x		5191.890	┬9215854.000	┬278106490.000	121014.960	61508.734	72840.030	292488.780	9872.526	234.286	295.593	500.136	1769.608

σ		155.590	T 169128.810	T 4913666.700	2189.699	1162.772	1410.456	2136.620	252.202	8.804	36.138	10.467	167.576
%RSD		2.997	T 1.835	T 1.767	1.809	1.890	1.936	0.730	2.555	3.758	12.226	2.093	9.470
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:23:09	498562.040	501.335%	245.091	2229.558	-350.175	1884.277	129.669%	36560.208	80.552	146.016	665968.680	165.745%
2	14:23:31	496791.350	506.056%	208.226	2178.782	-334.152	1694.327	132.206%	37387.293	218.579	173.720	670054.700	168.415%
3	14:23:52	488936.630	507.951%	241.316	2104.981	-326.749	1695.781	134.206%	36942.115	156.046	162.063	667976.860	169.160%
x		494763.340	505.114%	231.544	2171.107	-337.025	1758.128	132.027%	36963.205	151.726	160.600	668000.080	167.773%
σ		5123.154	3.407%	20.282	62.642	11.974	109.251	2.274%	413.946	69.115	13.910	2043.111	1.795%
%RSD		1.035	0.675	8.759	2.885	3.553	6.214	1.722	1.120	45.553	8.661	0.306	1.070

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:23:09	412.159	8495.804	1527155.200	121.136%	0.000	369195.590	127193.950
2	14:23:31	546.687	8246.725	1489978.300	127.745%	0.000	363358.180	123462.480
3	14:23:52	369.474	8620.965	1536454.700	124.904%	0.000	371942.070	126664.150
x		442.774	8454.498	1517862.700	124.595%	0.000	368165.280	125773.530
σ		92.488	190.509	24592.193	3.315%	0.000	4383.712	2018.882
%RSD		20.888	2.253	1.620	2.661	0.000	1.191	1.605

200-35736-A-4-A 10/18/2016 02:28:30 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	14:28:52	111.379%	917.615	4757.442	T 714071.170	T 2097621.300	T 111248620.000	T 10174875.000	T 975818.860	200.186%	21531.699	270762.240	186394.0
2	14:29:14	110.220%	977.245	4983.908	T 701641.120	T 2084525.800	T 110775930.000	T 9990902.500	T 991887.180	202.721%	21217.809	267991.220	186097.2
3	14:29:36	106.887%	944.785	5407.321	T 681838.740	T 2064228.100	T 110033090.000	T 10229605.000	T 985658.570	203.293%	21668.501	269594.890	185146.4
x		109.495%	946.548	5049.557	T 699183.680	T 2082125.000	T 110685880.000	T 10131794.000	T 984454.870	202.067%	21472.670	269449.450	185879.2
σ		2.332%	29.854	329.876	T 16256.129	T 16825.547	T 612748.600	T 125046.680	T 8101.509	1.654%	231.072	1391.223	651.7
%RSD		2.130	3.154	6.533	T 2.325	T 0.808	T 0.554	T 1.234	T 0.823	0.818	1.076	0.516	0.3

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	14:28:52	3863.113	TM 29923753.000	TM 510470750.000	105929.510	55987.586	62808.710	241399.840	35059.162	163.023	347.070	449.738	1398.6
2	14:29:14	4245.927	TM 30044516.000	TM 509126670.000	106470.440	55835.855	64411.840	247234.480	35730.419	164.404	357.756	460.430	1217.6
3	14:29:36	4015.724	TM 30004917.000	TM 516839030.000	108134.540	56102.266	64590.761	245641.010	34891.278	181.949	288.338	446.890	1681.2
x		4041.588	TM 29991062.000	TM 512145490.000	106844.830	55975.236	63937.104	244758.440	35226.953	169.792	331.055	452.353	1432.5
σ		192.713	TM 61562.057	TM 4119913.100	1149.203	133.634	981.304	3015.784	444.021	10.551	37.377	7.139	233.6
%RSD		4.768	TM 0.205	TM 0.804	1.076	0.239	1.535	1.232	1.260	6.214	11.290	1.578	16.3

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	14:28:52	566184.250	481.776%	657.077	2320.119	-366.749	1172.307	135.971%	37307.401	18.952	-6.975	701087.310	164.877
2	14:29:14	576784.600	483.735%	658.835	2422.666	-380.151	1055.866	134.768%	38615.421	4.822	65.482	713328.460	162.675
3	14:29:36	571785.730	483.597%	608.607	2339.482	-420.698	1129.009	137.397%	38686.988	245.064	84.949	715598.400	166.173
x		571584.860	483.036%	641.506	2360.756	-389.199	1119.061	136.045%	38203.270	89.613	47.818	710004.720	164.575
σ		5303.031	1.093%	28.505	54.483	28.090	58.854	1.316%	776.670	134.810	48.441	7805.662	1.768
%RSD		0.928	0.226	4.443	2.308	7.217	5.259	0.967	2.033	150.436	101.302	1.099	1.0

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:28:52	460.303	7692.276	1506928.500	126.337%	0.000	306577.170	59654.094
2	14:29:14	483.144	7487.438	1527282.400	127.305%	0.000	308430.410	59933.535
3	14:29:36	431.927	7870.590	1517731.500	128.983%	0.000	306565.570	59165.101
x		458.458	7683.435	1517314.200	127.542%	0.000	307191.050	59584.244
σ		25.659	191.729	10183.356	1.339%	0.000	1073.333	388.950
%RSD		5.597	2.495	0.671	1.050	0.000	0.349	0.653

200-35736-A-5-A 10/18/2016 02:34:14 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:34:36	107.308%	927.070	4257.862	T 648255.230	T 1991227.500	T 119454960.000	T 10053139.000	567052.650	192.191%	19992.101	269490.200	190500.060
2	14:34:57	107.225%	962.774	4570.023	T 668580.540	T 2071749.700	T 122143780.000	T 10215966.000	573598.790	192.138%	20477.200	279952.490	195393.030
3	14:35:19	104.076%	1011.334	4890.004	T 638964.450	T 1999653.000	T 118255590.000	T 10006976.000	561958.980	195.557%	19691.043	274613.810	192429.640
x		106.203%	967.059	4572.630	T 651933.410	T 2020876.700	T 119951440.000	T 10092027.000	567536.810	193.295%	20053.448	274685.500	192774.240
σ		1.842%	42.295	316.079	T 15146.775	T 44258.221	T 1991072.500	T 109788.150	5834.990	1.959%	396.653	5231.516	2464.618
%RSD		1.735	4.374	6.912	T 2.323	T 2.190	T 1.660	T 1.088	1.028	1.014	1.978	1.905	1.278

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:34:36	5215.310	T 8472852.100	T 281265100.000	114043.520	55777.800	61215.336	243272.420	10115.322	254.508	234.527	453.231	1722.860
2	14:34:57	4701.471	T 8515274.800	T 285047670.000	116442.710	56502.844	62766.208	244730.240	10349.531	246.138	274.026	484.458	1650.581
3	14:35:19	5415.668	T 8528961.100	T 282152540.000	115691.290	55388.284	62935.455	246717.440	10041.566	227.211	291.776	457.816	1566.998
x		5110.816	T 8505696.000	T 282821770.000	115392.510	55889.642	62305.666	244906.700	10168.806	242.619	266.776	465.168	1646.813
σ		368.386	T 29255.254	T 1978093.800	1227.189	565.635	948.038	1729.275	160.798	13.985	29.305	16.862	78.000

%RSD		7.208	T 0.344	T 0.699	1.063	1.012	1.522	0.706	1.581	5.764	10.985	3.625	4.736
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:34:36	374163.940	429.355%	696.241	2097.750	-323.602	1448.998	131.834%	36028.416	225.830	126.778	593159.000	156.938%
2	14:34:57	383992.560	440.774%	694.399	1950.056	-311.610	1394.481	132.831%	36750.615	237.713	117.686	598646.940	157.870%
3	14:35:19	376220.590	438.835%	678.873	1892.025	-247.047	1385.656	133.462%	36719.755	183.505	199.644	602924.760	158.524%
x		378125.700	436.321%	689.838	1979.944	-294.087	1409.711	132.709%	36499.595	215.683	148.036	598243.570	157.777%
σ		5183.869	6.110%	9.540	106.069	41.176	34.308	0.821%	408.345	28.493	44.924	4895.362	0.797%
%RSD		1.371	1.400	1.383	5.357	14.001	2.434	0.619	1.119	13.211	30.347	0.818	0.505

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:34:36	405.385	7792.617	1467782.700	121.982%	0.000	312566.530	98897.971
2	14:34:57	449.960	7985.810	1506714.900	121.860%	0.000	318561.100	100278.340
3	14:35:19	447.726	8078.478	1515499.700	120.851%	0.000	325339.310	101570.430
x		434.357	7952.302	1496665.800	121.564%	0.000	318822.310	100248.910
σ		25.115	145.847	25396.194	0.621%	0.000	6390.394	1336.473
%RSD		5.782	1.834	1.697	0.511	0.000	2.004	1.333

200-35736-A-5-A SD@5 10/18/2016 02:39:58 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:40:19	103.766%	200.015	324.805	153627.550	489858.300	T 31331610.000	T 2589531.000	145489.630	151.516%	5440.338	72010.483	51036.357
2	14:40:41	104.161%	216.032	669.331	141556.830	488218.850	T 31159478.000	T 2566881.600	144914.120	154.217%	5126.526	71574.227	49877.385
3	14:41:03	103.798%	168.640	647.097	147076.900	501909.300	T 31765958.000	T 2616627.300	150713.220	149.470%	5081.194	73133.937	51493.499
x		103.909%	194.896	547.077	147420.430	493328.820	T 31419015.000	T 2591013.300	147038.990	151.735%	5216.019	72239.549	50802.414
σ		0.219%	24.107	192.815	6042.688	7475.993	T 312544.780	T 24905.946	3194.963	2.381%	195.584	804.691	833.068
%RSD		0.211	12.369	35.244	4.099	1.515	T 0.995	T 0.961	2.173	1.569	3.750	1.114	1.640

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:40:19	4685.204	T 2154409.500	T 73964042.000	29545.021	14828.327	13276.567	57811.912	2294.167	428.269	48.213	396.219	2031.922
2	14:40:41	4253.453	T 2154865.400	T 72457916.000	30171.327	14610.396	12945.122	58467.348	2253.348	449.816	28.929	418.484	1975.642
3	14:41:03	4612.190	T 2217928.300	T 76217831.000	31332.028	15115.435	13127.229	57689.318	2225.711	427.000	42.524	431.896	1880.791
x		4516.949	T 2175734.400	T 74213263.000	30349.459	14851.386	13116.306	57989.526	2257.742	435.028	39.889	415.533	1962.785
σ		231.096	T 36541.690	T 1892306.400	906.723	253.308	165.992	418.321	34.439	12.822	9.908	18.021	76.381
%RSD		5.116	T 1.680	T 2.550	2.988	1.706	1.266	0.721	1.525	2.948	24.840	4.337	3.891

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:40:19	77304.259	201.614%	-222.781	426.098	-128.742	353.276	132.631%	8092.727	-836.524	-654.341	119594.440	129.985%
2	14:40:41	77736.083	202.074%	-68.541	423.311	-103.440	248.044	133.460%	7832.515	-781.269	-630.598	121389.430	128.481%
3	14:41:03	77910.444	202.876%	-195.273	484.047	-86.454	257.934	133.252%	7600.703	-740.137	-622.995	121374.530	130.366%
x		77650.262	202.188%	-162.199	444.485	-106.212	286.418	133.114%	7841.982	-785.977	-635.978	120786.130	129.610%
σ		312.072	0.638%	82.268	34.289	21.280	58.112	0.431%	246.148	48.366	16.351	1032.063	0.997%
%RSD		0.402	0.316	50.720	7.714	20.035	20.289	0.324	3.139	6.154	2.571	0.854	0.769

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:40:19	62.226	1470.300	308290.320	115.522%	0.000	56070.876	20453.190
2	14:40:41	64.028	1581.283	315481.880	114.700%	0.000	59248.680	20185.406
3	14:41:03	80.954	1432.544	312232.940	116.181%	0.000	60918.137	20392.884
x		69.069	1494.709	312001.710	115.468%	0.000	58745.897	20343.827
σ		10.332	77.316	3601.351	0.742%	0.000	2462.433	140.471
%RSD		14.958	5.173	1.154	0.642	0.000	4.192	0.690

CCV 10/18/2016 02:45:42 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	14:46:03	91.582%	98616.577	34636.250	┬13671357.000	┬4111935.900	┬38982582.000	┬13897458.000	┬1452758.800	109.738%	26867.079	┬2739908.500	776799
2	14:46:25	86.634%	101617.680	36991.723	┬13377416.000	┬4038713.100	┬38394257.000	┬13317900.000	┬1433800.800	110.773%	26469.002	┬2670991.400	756346
3	14:46:46	87.685%	99597.184	35802.177	┬13402784.000	┬4046121.900	┬38602720.000	┬13382463.000	┬1403616.900	108.722%	25872.134	┬2661450.300	757001
x		88.634%	111.714%	109.216%	┬100.202%	┬98.141%	┬100.087%	┬99.721%	┬98.817%	109.744%	26402.738	┬102.032%	95.0
σ		2.607%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.026%	500.771	┬n/a	
%RSD		2.941	1.531	3.289	┬1.208	┬0.991	┬0.772	┬2.347	┬1.733	0.935	1.897	┬1.591	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:46:03	9765.284	┬4068487.000	┬84351378.000	1218635.600	656027.170	788756.780	624093.620	85923.602	-426.898	9244.944	397.514	1470
2	14:46:25	8609.346	┬3901949.300	┬81942266.000	1190527.600	644124.760	815875.380	630764.230	87297.007	-517.753	9268.715	418.774	1419
3	14:46:46	9781.657	┬3984828.200	┬82847550.000	1180148.600	635613.390	791177.860	627204.780	85529.860	-508.874	9210.279	391.311	1267
x		9385.429	┬98.424%	┬99.093%	94.160%	100.865%	96.209%	98.054%	103.994%	-484.508	107.188%	402.533	1385
σ		672.158	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	50.089	n/a	14.403	105
%RSD		7.162	┬2.090	┬1.465	1.664	1.589	1.879	0.532	1.076	10.338	0.318	3.578	7

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	14:46:03	844132.790	115.581%	1631492.600	279071.520	176.887	134598.650	110.815%	840340.050	559613.420	436209.500	563984.190	107.1
2	14:46:25	847229.020	112.053%	1714447.000	281003.480	908.088	136625.450	108.413%	853144.150	574932.820	445826.530	575311.160	104.4
3	14:46:46	847034.870	110.456%	1738513.200	277763.240	225.996	136241.450	107.077%	852339.280	572775.480	445049.160	577924.690	103.1
x		846132.230	112.696%	91.533%	104.291%	436.991	96.632%	108.769%	848607.820	569107.240	94.342%	92.112%	104.9
σ		1734.284	2.622%	n/a	n/a	408.721	n/a	1.894%	7171.407	8292.345	n/a	n/a	2.0
%RSD		0.205	2.327	3.313	0.584	93.531	0.793	1.741	0.845	1.457	1.208	1.295	1

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:46:03	35315.261	1627465.400	┬15645781.000	100.003%	0.000	201768.100	114519.840
2	14:46:25	36844.240	1688559.700	┬15912806.000	98.004%	0.000	222294.230	121357.000
3	14:46:46	37590.739	1641420.100	┬15535634.000	99.694%	0.000	227734.030	116192.750
x		98.577%	88.356%	┬98.362%	99.234%	0.000	86.297%	94.083%
σ		n/a	n/a	┬n/a	1.076%	0.000	n/a	n/a
%RSD		3.171	1.937	┬1.235	1.084	0.000	6.303	3.037

CCB 10/18/2016 02:51:26 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:51:48	95.066%	5.966	-468.124	-6143.835	459.106	4682.964	7045.418	261.689	116.461%	34.348	1417.075	-216.194
2	14:52:09	93.329%	-4.504	-416.234	-6596.550	173.296	4182.545	5359.503	78.581	117.236%	21.340	468.073	-102.693
3	14:52:31	94.697%	16.578	-354.226	-5167.901	409.677	4936.562	5461.293	263.781	116.057%	12.920	1712.435	-103.110
x		94.364%	6.013	-412.861	-5969.429	347.360	4600.690	5955.404	201.350	116.584%	22.869	1199.194	-140.665
σ		0.915%	10.541	57.024	730.118	152.756	383.682	945.350	106.327	0.599%	10.796	650.164	65.410
%RSD		0.970	175.285	13.812	12.231	43.976	8.340	15.874	52.807	0.514	47.206	54.217	46.500

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:51:48	4869.800	284.449	35304.068	56.086	18.957	-32.866	-133.778	-231.871	481.822	-52.571	387.045	2016.194
2	14:52:09	5279.999	343.825	33500.695	98.082	14.380	-47.199	-220.639	-249.715	492.402	-43.402	382.007	2073.342
3	14:52:31	4926.189	187.776	34896.674	26.272	40.663	14.205	-237.496	-264.377	511.971	-65.942	389.879	2023.044
x		5025.329	272.017	34567.146	60.147	24.667	-21.953	-197.304	-248.654	495.398	-53.971	386.310	2037.527

σ		222.345	78.764	945.770	36.077	14.041	32.124	55.658	16.279	15.296	11.335	3.987	31.206
%RSD		4.424	28.955	2.736	59.982	56.922	146.327	28.209	6.547	3.088	21.002	1.032	1.532
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:51:48	34.893	116.329%	2091.495	17.015	-76.969	31.626	113.813%	2992.065	-399.678	-365.264	44.711	104.272%
2	14:52:09	51.972	115.378%	1951.855	25.500	-70.114	29.232	114.528%	3344.542	-298.310	-291.973	18.132	104.858%
3	14:52:31	87.029	117.021%	1928.179	25.555	-47.860	7.389	114.396%	3549.511	-292.568	-287.297	44.397	108.176%
x		57.965	116.243%	1990.509	22.690	-64.981	22.749	114.246%	3295.372	-330.185	-314.845	35.747	105.769%
σ		26.580	0.825%	88.254	4.915	15.218	13.356	0.381%	281.957	60.251	43.727	15.256	2.105%
%RSD		45.855	0.710	4.434	21.660	23.419	58.709	0.333	8.556	18.248	13.888	42.676	1.991

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:51:48	138.531	986.029	-446.948	103.131%	0.000	7177.178	-49.955
2	14:52:09	146.781	914.638	-345.856	100.458%	0.000	7186.184	-24.810
3	14:52:31	97.868	920.251	-157.684	102.026%	0.000	7174.573	-15.544
x		127.727	940.306	-316.829	101.872%	0.000	7179.311	-30.103
σ		26.185	39.697	146.800	1.343%	0.000	6.092	17.805
%RSD		20.501	4.222	46.334	1.319	0.000	0.085	59.147

CCVL 10/18/2016 02:57:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:57:32	98.719%	213.142	5521.714	T 720197.090	27582.404	70810.785	649871.040	24058.621	118.637%	12.642	11515.198	8626.652
2	14:57:55	97.865%	204.846	5243.385	T 698793.620	27568.743	68546.314	634752.840	23522.761	119.706%	12.533	10022.895	7764.828
3	14:58:18	94.234%	194.445	5689.628	T 702568.320	27691.653	71819.687	634217.520	24221.182	119.035%	21.011	11025.949	8116.974
x		96.939%	142.616%	104.552%	T 105.106%	99.989%	109.344%	94.266%	99.231%	119.126%	15.395	102.900%	101.689%
σ		2.381%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.540%	4.864	n/a	n/a
%RSD		2.456	4.589	4.109	T 1.616	0.244	2.381	1.389	1.527	0.454	31.593	7.009	5.304

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:57:32	5708.645	7261.456	574623.960	2874.097	1202.428	3543.747	10890.817	684.310	503.965	143.232	411.227	2115.090
2	14:57:55	5879.072	7439.516	559538.090	2927.429	1316.756	3408.641	11364.683	590.554	557.316	158.968	411.530	2030.060
3	14:58:18	5613.450	7618.285	554613.980	2704.705	1152.108	3522.386	10949.564	608.060	523.240	138.546	393.607	1876.061
x		5733.722	114.842%	100.753%	111.573%	119.560%	105.159%	108.123%	75.676%	528.174	85.202%	405.455	2007.070
σ		134.575	n/a	n/a	n/a	n/a	n/a	n/a	n/a	27.016	n/a	10.261	121.162
%RSD		2.347	2.398	1.852	4.101	6.894	2.080	2.334	7.943	5.115	7.282	2.531	6.037

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:57:32	21626.016	119.054%	13834.871	2959.140	-14.736	741.463	116.726%	1362.235	3656.354	2903.122	4734.456	107.951%
2	14:57:55	21952.517	119.130%	13808.649	3274.381	-27.074	818.637	115.424%	1693.848	4105.593	2972.365	4736.014	106.675%
3	14:58:18	21112.098	117.906%	14250.524	2936.202	-128.712	718.408	117.123%	1665.008	4028.510	2965.672	4534.690	106.501%
x		96.589%	118.697%	94.275%	114.141%	-56.841	108.071%	116.424%	1573.697	3930.152	78.565%	93.905%	107.042%
σ		n/a	0.686%	n/a	n/a	62.547	n/a	0.889%	183.698	240.228	n/a	n/a	0.792%
%RSD		1.965	0.578	1.775	6.183	110.040	6.911	0.763	11.673	6.112	1.296	2.480	0.740

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:57:32	2771.047	16586.716	13114.664	103.074%	0.000	15592.951	11877.905
2	14:57:55	2870.916	16218.990	13805.069	103.066%	0.000	15613.192	12456.582
3	14:58:18	3091.758	17269.478	13612.630	104.903%	0.000	15840.257	12542.716
x		78.446%	89.249%	105.821%	103.681%	0.000	62.289%	98.547%
σ		n/a	n/a	n/a	1.058%	0.000	n/a	n/a
%RSD		5.637	3.194	2.637	1.021	0.000	0.876	2.941

200-35736-A-5-A PDS 10/18/2016 03:02:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:03:20	107.870%	2384.770	59864.742	T 5583702.700	T 2227160.900	T 121065920.000	T 15061687.000	T 763203.660	178.668%	19327.278	330277.760	240946.070
2	15:03:41	106.954%	2442.664	61120.349	T 5701069.600	T 2253691.000	T 121502340.000	T 15024010.000	713675.740	182.109%	19361.562	338898.190	247695.770
3	15:04:03	106.144%	2426.020	62111.637	T 5593415.600	T 2264914.600	T 122879710.000	T 15181358.000	731232.820	181.808%	19583.345	341919.110	244420.010
x		106.989%	2417.818	61032.243	T 5626062.600	T 2248588.800	T 121815990.000	T 15089018.000	T 736037.410	180.862%	19424.062	337031.690	244353.950
σ		0.864%	29.806	1126.036	T 65139.253	T 19387.078	T 946702.830	T 82157.612	T 25111.089	1.906%	139.005	6040.953	3375.337
%RSD		0.807	1.233	1.845	T 1.158	T 0.862	T 0.777	T 0.544	T 3.412	1.054	0.716	1.792	1.381

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:03:20	6114.614	T 8333569.600	T 282432660.000	131018.030	61435.231	91018.506	323875.690	17049.170	241.050	1564.406	443.855	1501.137
2	15:03:41	5899.982	T 8420707.100	T 278927900.000	127934.400	60599.872	93817.956	330222.730	17176.195	272.847	1556.112	504.919	1722.101
3	15:04:03	5996.363	T 8495549.700	T 286694470.000	129965.130	62228.726	93541.200	328207.350	17909.108	227.301	1615.350	478.638	1583.207
x		6003.653	T 8416608.800	T 282685010.000	129639.190	61421.276	92792.554	327435.260	17378.158	247.066	1578.623	475.804	1602.148
σ		107.501	T 81067.743	T 3889429.000	1567.442	814.516	1542.590	3243.198	464.182	23.362	32.076	30.630	111.693

%RSD		1.791	┬0.963	┬1.376	1.209	1.326	1.662	0.990	2.671	9.456	2.032	6.438	6.971
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:03:20	572357.970	389.857%	45686.081	28731.491	-295.829	7183.126	122.565%	35689.223	41708.991	32528.161	608714.710	145.247%
2	15:03:41	587315.360	400.328%	45677.174	29280.076	-240.456	7485.133	123.091%	36363.235	41724.989	33411.523	631905.580	147.265%
3	15:04:03	583854.050	406.077%	45635.990	28762.268	-508.449	7622.339	125.253%	36928.389	42123.949	33065.608	628047.620	150.201%
x		581175.790	398.754%	45666.415	28924.612	-348.245	7430.199	123.636%	36326.949	41852.643	33001.764	622889.300	147.571%
σ		7830.112	8.224%	26.723	308.225	141.477	224.701	1.425%	620.379	235.094	445.128	12426.197	2.491%
%RSD		1.347	2.062	0.059	1.066	40.626	3.024	1.153	1.708	0.562	1.349	1.995	1.688

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:03:20	24489.359	160141.870	1531044.700	113.383%	0.000	582301.170	219426.120
2	15:03:41	24601.722	163135.750	1543420.900	116.018%	0.000	571100.270	216982.210
3	15:04:03	24382.497	163788.520	1552033.700	117.889%	0.000	557854.080	219790.540
x		24491.193	162355.380	1542166.400	115.763%	0.000	570418.510	218732.960
σ		109.624	1944.541	10550.539	2.264%	0.000	12237.800	1527.098
%RSD		0.448	1.198	0.684	1.956	0.000	2.145	0.698

200-35736-A-5-I MS 10/18/2016 03:08:42 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	15:09:04	104.824%	2432.812	50744.913	┬5787993.800	┬2104402.400	┬110460770.000	┬13470212.000	735283.650	178.235%	17035.561	328609.800	235514.660
2	15:09:26	107.050%	2344.691	49363.751	┬5762793.400	┬2099604.700	┬110240170.000	┬13621482.000	┬784002.520	181.375%	16319.375	323148.020	234037.000
3	15:09:48	105.509%	2502.279	51225.056	┬5814794.000	┬2076392.600	┬109046410.000	┬13332826.000	727068.980	182.752%	16891.818	330524.550	238664.750
x		105.794%	2426.594	50444.573	┬5788527.100	┬2093466.600	┬109915780.000	┬13474840.000	┬748785.050	180.787%	16748.918	327427.460	236072.140
σ		1.140%	78.978	966.316	┬26004.393	┬14979.764	┬760935.660	┬144383.500	┬30774.552	2.315%	378.874	3827.765	2363.702
%RSD		1.078	3.255	1.916	┬0.449	┬0.716	┬0.692	┬1.072	┬4.110	1.280	2.262	1.169	1.001
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	15:09:04	5743.156	┬8657446.700	┬284740990.000	129987.740	59514.781	90201.297	320063.070	18475.712	277.309	1609.293	467.483	1672.416
2	15:09:26	5908.329	┬8724173.200	┬287002680.000	130812.100	60365.244	91030.697	318250.070	18225.027	267.382	1575.940	459.298	1546.448
3	15:09:48	5504.433	┬8661111.600	┬288178760.000	133379.070	60411.507	91690.192	319670.440	18593.802	223.640	1567.283	452.893	1437.564
x		5718.640	┬8680910.500	┬286640810.000	131392.970	60097.177	90974.062	319327.860	18431.513	256.110	1584.172	459.891	1552.143
σ		203.061	┬37511.392	┬1747219.700	1768.706	504.900	746.062	953.819	188.319	28.555	22.182	7.313	117.530
%RSD		3.551	┬0.432	┬0.610	1.346	0.840	0.820	0.299	1.022	11.149	1.400	1.590	7.572
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:09:04	578838.410	385.920%	46093.710	30756.032	-263.497	7642.754	123.750%	39929.800	11658.878	9058.671	578966.270	145.726%
2	15:09:26	567883.950	390.812%	47292.572	30127.653	-313.068	7518.423	127.044%	39889.298	11478.126	9196.621	574213.150	148.701%
3	15:09:48	571442.000	393.717%	46945.673	30353.797	-254.041	7418.775	127.847%	39344.544	11359.050	9213.231	583256.430	150.544%
x		572721.450	390.150%	46777.319	30412.494	-276.869	7526.651	126.214%	39721.214	11498.684	9156.175	578811.950	148.324%
σ		5588.183	3.940%	616.907	318.275	31.704	112.216	2.171%	326.834	150.968	84.848	4523.614	2.431%
%RSD		0.976	1.010	1.319	1.047	11.451	1.491	1.720	0.823	1.313	0.927	0.782	1.639

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:09:04	20895.079	130345.710	1515872.900	114.635%	4.362	528548.710	216554.290
2	15:09:26	21317.396	129553.500	1498316.300	118.418%	0.000	510849.540	216437.540
3	15:09:48	20972.023	130214.360	1530434.600	116.555%	0.000	531487.120	225684.030
x		21061.499	130037.850	1514874.600	116.536%	1.454	523628.460	219558.620
σ		224.928	424.576	16082.419	1.891%	2.518	11163.963	5305.080
%RSD		1.068	0.327	1.062	1.623	173.205	2.132	2.416

200-35736-A-5-J MSD 10/18/2016 03:14:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:14:47	106.725%	2536.939	50251.146	┬5687002.800	┬2259748.500	┬121338310.000	┬14588524.000	┬818719.420	187.388%	20064.434	348041.350	248293.050
2	15:15:09	104.444%	2582.932	53268.373	┬5637926.500	┬2276071.100	┬122459340.000	┬14444939.000	┬824219.830	190.445%	20152.619	351707.240	249675.010
3	15:15:31	104.974%	2560.329	53452.024	┬5751886.100	┬2363124.800	┬125625960.000	┬14822704.000	┬838320.020	188.188%	19721.610	355543.470	256058.860
x		105.381%	2560.067	52323.847	┬5692271.800	┬2299648.100	┬123141200.000	┬14618722.000	┬827086.420	188.674%	19979.554	351764.020	251342.310
σ		1.194%	22.998	1797.360	┬57162.214	┬55574.900	┬2223667.900	┬190684.470	┬10109.840	1.585%	227.696	3751.382	4142.689
%RSD		1.133	0.898	3.435	┬1.004	┬2.417	┬1.806	┬1.304	┬1.222	0.840	1.140	1.066	1.648

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:14:47	5748.454	┬8805771.600	┬293993030.000	136553.780	63405.496	97651.218	336861.380	19539.228	224.894	1624.414	479.908	1723.682
2	15:15:09	6063.717	┬8977765.600	┬295338270.000	137856.830	63865.488	99445.478	342208.250	19350.719	247.224	1594.160	484.478	1693.375
3	15:15:31	5885.779	┬9243412.600	┬304329010.000	138374.340	64701.288	97222.650	338496.630	18887.365	250.433	1584.501	462.822	1619.075
x		5899.316	┬9008983.300	┬297886770.000	137594.980	63990.757	98106.449	339188.750	19259.104	240.850	1601.025	475.736	1678.711
σ		158.067	┬220484.240	┬5619543.000	938.106	656.916	1179.266	2739.806	335.450	13.911	20.823	11.415	53.823
%RSD		2.679	┬2.447	┬1.886	0.682	1.027	1.202	0.808	1.742	5.776	1.301	2.399	3.206

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:14:47	610265.090	417.999%	42118.101	29632.273	-381.775	7816.217	126.276%	39551.892	11146.459	8808.042	643149.750	153.132%
2	15:15:09	619414.730	425.064%	42151.317	30135.180	-313.828	8019.148	126.530%	40439.662	11181.011	8889.735	654661.620	152.880%
3	15:15:31	613491.740	428.369%	42412.464	29160.769	-333.174	7807.554	129.210%	40804.454	11050.645	8720.511	645663.610	151.935%
x		614390.520	423.811%	42227.294	29642.741	-342.925	7880.973	127.339%	40265.336	11126.038	8806.096	647824.990	152.649%
σ		4640.567	5.297%	161.220	487.290	35.007	119.742	1.625%	644.220	67.539	84.629	6052.642	0.631%
%RSD		0.755	1.250	0.382	1.644	10.208	1.519	1.276	1.600	0.607	0.961	0.934	0.413

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:14:47	18300.149	125102.260	1615572.600	118.329%	0.000	538905.870	220068.650
2	15:15:09	19290.439	124407.260	1608413.400	119.801%	0.000	542618.120	221543.020
3	15:15:31	19341.721	123942.050	1630617.000	120.216%	0.000	545158.370	227777.540
x		18977.436	124483.860	1618201.000	119.449%	0.000	542227.450	223129.740
σ		587.108	583.884	11332.707	0.992%	0.000	3144.505	4092.067
%RSD		3.094	0.469	0.700	0.830	0.000	0.580	1.834

200-35736-A-6-A 10/18/2016 03:20:08 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:20:29	105.405%	1233.321	5609.969	┬813655.260	┬2441387.000	┬146920530.000	┬11857582.000	┬862128.860	202.839%	14739.186	289521.890	220851.890
2	15:20:52	105.069%	1182.553	5612.810	┬804332.150	┬2455562.200	┬143558210.000	┬11684183.000	┬865192.800	203.897%	14605.368	288720.830	221816.090
3	15:21:13	102.327%	1392.805	5820.953	┬826256.130	┬2474869.800	┬147559650.000	┬11913276.000	824131.750	203.917%	14500.386	293875.990	225982.960
x		104.267%	1269.560	5681.244	┬814747.850	┬2457273.000	┬146012800.000	┬11818347.000	┬850484.470	203.551%	14614.980	290706.240	222883.650
σ		1.689%	109.710	121.000	┬11002.748	┬16806.836	┬2149617.800	┬119479.870	┬22873.483	0.616%	119.690	2774.154	2727.033
%RSD		1.620	8.642	2.130	┬1.350	┬0.684	┬1.472	┬1.011	┬2.689	0.303	0.819	0.954	1.224

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:20:29	5591.915	┬5386508.700	┬283185880.000	120716.290	63887.934	84290.453	322015.120	7430.133	238.208	367.835	527.756	1666.577
2	15:20:52	5744.747	┬5534006.700	┬289829100.000	120107.350	63245.028	84285.401	328541.270	7562.041	226.434	324.402	554.796	1744.516
3	15:21:13	5224.863	┬5626051.200	┬294154640.000	121051.250	64286.683	83741.224	324332.580	7501.417	242.000	298.404	535.522	1767.939
x		5520.508	┬5515522.200	┬289056540.000	120624.960	63806.549	84105.692	324962.990	7497.864	235.547	330.214	539.358	1726.344

σ		267.197	T 120836.320	T 5525042.000	478.529	525.575	315.649	3308.430	66.025	8.117	35.079	13.922	53.068
%RSD		4.840	T 2.191	T 1.911	0.397	0.824	0.375	1.018	0.881	3.446	10.623	2.581	3.074
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:20:29	544919.450	549.224%	-54.167	2303.071	-355.051	1908.472	126.861%	35970.515	-272.880	-127.286	661487.860	166.283%
2	15:20:52	558205.690	552.295%	-139.753	2373.890	-317.300	2030.009	127.077%	36118.488	-68.225	-146.363	667411.870	165.784%
3	15:21:13	549891.250	554.493%	-105.091	2297.195	-277.264	1846.903	128.475%	36595.523	-90.342	-110.951	675864.810	165.933%
x		551005.460	552.004%	-99.670	2324.719	-316.538	1928.461	127.471%	36228.175	-143.816	-128.200	668254.840	166.000%
σ		6712.835	2.646%	43.050	42.685	38.899	93.175	0.877%	326.623	112.319	17.724	7225.449	0.256%
%RSD		1.218	0.479	43.193	1.836	12.289	4.832	0.688	0.902	78.099	13.825	1.081	0.154

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:20:29	404.516	9822.443	1399824.700	118.687%	0.000	371237.820	154451.020
2	15:20:52	369.816	9854.211	1414513.500	120.713%	0.000	373087.170	156687.040
3	15:21:13	417.616	9207.902	1435127.800	120.810%	4.139	375437.620	157112.890
x		397.316	9628.185	1416488.600	120.070%	1.380	373254.200	156083.650
σ		24.700	364.323	17734.226	1.199%	2.389	2104.878	1429.842
%RSD		6.217	3.784	1.252	0.999	173.205	0.564	0.916

200-35736-A-7-A 10/18/2016 03:25:50 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:26:12	106.217%	1016.701	4978.362	T 683818.920	T 2089654.000	T 115907810.000	T 9662250.000	T 746610.850	192.591%	15579.475	273970.840	190848.940
2	15:26:33	104.425%	1060.609	4831.227	T 692942.840	T 2106794.700	T 115737590.000	T 9545544.300	T 752579.320	194.002%	15239.847	275879.700	194690.640
3	15:26:55	107.766%	1036.786	5051.424	T 691409.490	T 2096709.800	T 116488830.000	T 9640113.800	699150.810	193.372%	15715.160	280516.010	195986.740
x		106.136%	1038.032	4953.671	T 689390.420	T 2097719.500	T 116044740.000	T 9615969.400	T 732780.330	193.321%	15511.494	276788.850	193842.100
σ		1.672%	21.980	112.156	T 4885.589	T 8614.855	T 393898.400	T 61986.064	T 29276.507	0.707%	244.840	3365.970	2671.939
%RSD		1.575	2.117	2.264	T 0.709	T 0.411	T 0.339	T 0.645	T 3.995	0.366	1.578	1.216	1.378

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:26:12	4600.902	T 12255383.000	T 390431290.000	122122.560	56126.919	64261.900	278300.590	19755.732	212.681	331.303	461.405	1587.510
2	15:26:33	4174.023	T 12337624.000	T 399022320.000	125307.310	57116.802	66413.799	284973.320	19702.496	225.485	314.196	497.923	1667.782
3	15:26:55	3710.823	T 12305859.000	T 398726800.000	124923.450	55410.877	63801.751	277183.560	19336.725	236.623	246.554	471.331	1780.560
x		4161.916	T 12299622.000	T 396060140.000	124117.780	56218.199	64825.817	280152.490	19598.318	224.930	297.351	476.886	1678.617
σ		445.163	T 41473.642	T 4876961.700	1738.533	856.618	1394.346	4212.154	228.104	11.981	44.815	18.883	96.980
%RSD		10.696	T 0.337	T 1.231	1.401	1.524	2.151	1.504	1.164	5.326	15.071	3.960	5.777

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:26:12	430749.250	445.351%	931.330	2018.139	-430.311	1535.372	131.340%	36480.586	211.477	99.159	582604.480	157.294%
2	15:26:33	441283.820	455.965%	901.755	2133.613	-344.195	1481.457	129.641%	36343.853	197.442	197.937	586675.180	153.521%
3	15:26:55	439314.660	459.244%	911.393	1863.658	-366.006	1470.602	132.818%	35742.530	248.001	161.841	583732.330	158.718%
x		437115.910	453.520%	914.826	2005.137	-380.171	1495.811	131.266%	36188.990	218.974	152.979	584337.330	156.511%
σ		5600.911	7.262%	15.084	135.446	44.771	34.689	1.590%	392.643	26.100	49.982	2101.709	2.686%
%RSD		1.281	1.601	1.649	6.755	11.777	2.319	1.211	1.085	11.919	32.672	0.360	1.716

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:26:12	458.301	8051.514	1699402.200	118.979%	0.000	316702.210	70339.021
2	15:26:33	380.621	8066.837	1709824.400	120.265%	0.000	319157.940	72423.906
3	15:26:55	440.765	7947.937	1726947.600	120.241%	0.000	322641.590	72534.765
x		426.562	8022.096	1712058.100	119.828%	0.000	319500.580	71765.897
σ		40.741	64.679	13907.878	0.735%	0.000	2984.476	1236.954
%RSD		9.551	0.806	0.812	0.614	0.000	0.934	1.724

200-35736-A-8-A 10/18/2016 03:31:32 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:31:54	108.665%	1255.930	3774.961	T 591082.080	T 1687542.600	T 101942350.000	T 8015377.100	640837.470	190.209%	13597.052	275723.280	172330.990
2	15:32:16	107.599%	1242.885	4312.754	T 610659.190	T 1713343.800	T 102561880.000	T 8128257.000	656585.060	187.651%	14053.670	282472.010	178355.180
3	15:32:37	104.969%	1324.223	4366.136	T 597185.390	T 1701492.300	T 101805880.000	T 8002253.300	653495.300	189.763%	14098.966	279976.110	177595.180
x		107.077%	1274.346	4151.284	T 599642.220	T 1700792.900	T 102103370.000	T 8048629.100	650305.940	189.207%	13916.563	279390.470	176093.780
σ		1.902%	43.685	326.996	T 10017.125	T 12914.852	T 402903.370	T 69271.291	8344.198	1.367%	277.630	3412.263	3280.757
%RSD		1.777	3.428	7.877	T 1.671	T 0.759	T 0.395	T 0.861	1.283	0.722	1.995	1.221	1.863

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:31:54	3185.148	T 15507177.000	TM 701417310.000	137437.960	52468.317	60948.468	296092.740	61485.391	180.230	252.907	469.405	1953.355
2	15:32:16	3464.279	T 16015559.000	TM 721102410.000	141180.060	54044.546	62352.637	297236.880	62008.610	159.401	293.465	493.296	1684.430
3	15:32:37	3481.950	T 15796994.000	TM 705377390.000	138663.160	53299.495	61592.608	298316.150	61046.329	174.772	266.354	486.803	1782.808
x		3377.126	T 15773243.000	TM 709299040.000	139093.730	53270.786	61631.238	297215.260	61513.443	171.468	270.909	483.168	1806.864
σ		166.492	T 255021.930	TM 10412023.000	1907.844	788.507	702.881	1111.860	481.754	10.800	20.659	12.353	136.067

%RSD		4.930	T 1.617	TM 1.468	1.372	1.480	1.140	0.374	0.783	6.299	7.626	2.557	7.531
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:31:54	390729.600	447.459%	4454.725	1658.665	-367.435	1613.644	130.274%	37722.418	573.134	451.539	541877.990	157.851%
2	15:32:16	390309.390	452.602%	4429.791	1743.450	-375.109	1936.246	130.249%	38145.422	745.676	577.346	549004.550	160.687%
3	15:32:37	391538.010	447.059%	4413.635	1724.866	-360.801	1809.153	131.062%	38123.107	770.763	590.487	549321.530	159.146%
x		390859.000	449.040%	4432.717	1708.994	-367.781	1786.348	130.528%	37996.982	696.524	539.791	546734.690	159.228%
σ		624.450	3.091%	20.700	44.565	7.160	162.506	0.462%	238.041	107.593	76.710	4209.007	1.420%
%RSD		0.160	0.688	0.467	2.608	1.947	9.097	0.354	0.626	15.447	14.211	0.770	0.892

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:31:54	402.511	6434.886	1688519.800	120.216%	0.000	281697.010	84135.658
2	15:32:16	403.125	6692.982	1755963.000	116.596%	0.000	295866.780	89800.679
3	15:32:37	445.619	6526.919	1728326.700	120.208%	0.000	289885.570	88004.421
x		417.085	6551.596	1724269.800	119.007%	0.000	289149.790	87313.586
σ		24.713	130.805	33904.125	2.088%	0.000	7113.484	2895.005
%RSD		5.925	1.997	1.966	1.754	0.000	2.460	3.316

200-35736-A-9-A 10/18/2016 03:37:15 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	15:37:37	103.699%	867.969	4757.949	T 796527.200	T 2288702.500	T 116174170.000	T 9293303.200	T 1032537.800	186.070%	11755.932	272366.640	194407.210
2	15:37:58	103.575%	931.777	4460.896	T 794957.270	T 2285041.700	T 116927040.000	T 9321401.300	T 1024183.000	186.057%	11899.693	272336.740	193174.200
3	15:38:20	102.144%	979.204	4433.084	T 798899.980	T 2254397.600	T 116345630.000	T 9165878.900	T 1037384.000	185.781%	11702.146	276644.370	195787.450
x		103.139%	926.317	4550.643	T 796794.820	T 2276047.200	T 116482280.000	T 9260194.500	T 1031368.200	185.969%	11785.924	273782.580	194456.280
σ		0.865%	55.818	180.070	T 1984.930	T 18838.307	T 394599.360	T 82879.094	T 6677.762	0.163%	102.132	2478.424	1307.316
%RSD		0.838	6.026	3.957	T 0.249	T 0.828	T 0.339	T 0.895	T 0.647	0.088	0.867	0.905	0.672
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	15:37:37	4422.535	T 12531406.000	T 344845840.000	132900.520	60294.061	70604.350	326026.180	10277.970	226.048	372.406	496.628	1413.621
2	15:37:58	5198.426	T 12897960.000	T 351057170.000	135700.440	62541.437	72127.320	328791.990	10522.389	222.282	316.305	508.921	1724.249
3	15:38:20	4150.228	T 12653831.000	T 351782610.000	135210.460	62051.538	69578.198	326350.360	9973.927	244.738	245.912	460.714	1874.086
x		4590.396	T 12694399.000	T 349228540.000	134603.810	61629.012	70769.956	327056.180	10258.096	231.022	311.541	488.754	1670.652
σ		543.887	T 186613.910	T 3812820.400	1495.295	1181.766	1282.604	1511.969	274.771	12.026	63.382	25.049	234.865
%RSD		11.848	T 1.470	T 1.092	1.111	1.918	1.812	0.462	2.679	5.206	20.345	5.125	14.058
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:37:37	550551.250	422.946%	788.629	1982.436	-378.658	2268.656	125.448%	37986.159	354.511	287.164	607708.710	146.793%
2	15:37:58	554665.300	425.195%	884.127	1995.113	-308.717	2138.190	126.643%	38399.933	376.982	303.685	607177.550	149.703%
3	15:38:20	547572.730	424.294%	827.902	2169.633	-419.390	2207.225	127.739%	38388.499	568.132	300.120	614605.440	150.053%
x		550929.760	424.145%	833.553	2049.061	-368.922	2204.690	126.610%	38258.197	433.208	296.990	609830.560	148.850%
σ		3561.405	1.132%	47.999	104.611	55.975	65.270	1.146%	235.661	117.386	8.694	4143.684	1.790%
%RSD		0.646	0.267	5.758	5.105	15.173	2.961	0.905	0.616	27.097	2.927	0.679	1.202

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:37:37	456.767	7905.073	1904171.400	115.571%	0.000	309888.200	87271.853
2	15:37:58	542.968	8214.466	1918917.600	116.392%	0.000	316298.870	89279.017
3	15:38:20	424.859	8274.018	1917949.900	117.580%	4.252	317845.260	89566.180
x		474.865	8131.186	1913679.600	116.514%	1.417	314677.440	88705.683
σ		61.099	198.070	8248.575	1.010%	2.455	4219.058	1250.007
%RSD		12.867	2.436	0.431	0.867	173.205	1.341	1.409

200-35736-A-10-A 10/18/2016 03:42:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:43:19	103.666%	1090.132	3804.562	T 713862.470	T 2080722.000	T 110734220.000	T 8126200.700	T 933969.550	188.110%	11759.735	272709.760	187535.450
2	15:43:41	101.430%	1052.692	3846.730	T 698623.590	T 2083702.000	T 110085800.000	T 8137961.600	T 930906.920	189.186%	12166.440	270403.180	189051.070
3	15:44:03	101.279%	1027.119	4012.348	T 700390.120	T 2091013.600	T 110770890.000	T 8220767.800	T 941160.410	189.107%	11822.675	272773.230	192356.780
x		102.125%	1056.647	3887.880	T 704292.060	T 2085145.800	T 110530300.000	T 8161643.400	T 935345.630	188.801%	11916.283	271962.060	189647.770
σ		1.336%	31.692	109.835	T 8335.150	T 5295.538	T 385387.960	T 51539.847	T 5263.431	0.600%	218.916	1350.403	2465.430
%RSD		1.309	2.999	2.825	T 1.183	T 0.254	T 0.349	T 0.631	T 0.563	0.318	1.837	0.497	1.300

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:43:19	4259.651	T 14676092.000	T 374882300.000	131480.470	57389.738	66385.568	304680.000	14759.498	220.521	292.255	463.924	1651.116
2	15:43:41	4069.814	T 14862375.000	T 378329580.000	130890.810	57281.350	66297.228	303963.050	14410.176	219.614	351.068	506.648	1586.263
3	15:44:03	4592.098	T 14831162.000	T 382561250.000	133341.960	57738.999	66570.195	305650.880	14618.219	224.214	309.593	473.377	1522.025
x		4307.188	T 14789876.000	T 378591040.000	131904.410	57470.029	66417.664	304764.650	14595.964	221.450	317.639	481.316	1586.468
σ		264.367	T 99768.305	T 3846145.900	1279.386	239.156	139.286	847.095	175.721	2.437	30.221	22.441	64.546
%RSD		6.138	T 0.675	T 1.016	0.970	0.416	0.210	0.278	1.204	1.100	9.514	4.662	4.069

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:43:19	495382.340	429.376%	995.571	1913.553	-351.906	1977.498	127.070%	36755.474	253.435	286.538	594908.830	152.725%
2	15:43:41	494434.500	429.045%	1058.868	1797.603	-338.332	1862.359	128.297%	35610.826	418.147	302.162	592687.400	151.625%
3	15:44:03	502445.290	439.030%	1014.278	1771.663	-286.326	1790.099	128.758%	36939.641	338.082	324.532	604346.780	154.019%
x		497420.710	432.484%	1022.906	1827.607	-325.521	1876.652	128.042%	36435.313	336.555	304.411	597314.330	152.789%
σ		4377.144	5.671%	32.518	75.554	34.616	94.514	0.872%	719.941	82.366	19.097	6190.728	1.198%
%RSD		0.880	1.311	3.179	4.134	10.634	5.036	0.681	1.976	24.473	6.273	1.036	0.784

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:43:19	356.890	7445.995	1838802.600	115.636%	0.000	307703.260	84299.707
2	15:43:41	409.610	7576.677	1868738.100	115.319%	0.000	312077.820	85408.407
3	15:44:03	444.023	6902.089	1839362.100	118.207%	0.000	307677.290	84077.728
x		403.508	7308.254	1848967.600	116.387%	0.000	309152.790	84595.281
σ		43.886	357.766	17124.016	1.584%	0.000	2533.186	712.881
%RSD		10.876	4.895	0.926	1.361	0.000	0.819	0.843

200-35736-A-11-A 10/18/2016 03:48:41 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:49:03	99.703%	582.079	3438.265	T 621731.210	T 1621395.700	T 62365756.000	T 5701212.700	T 2246029.600	150.608%	10381.491	160619.160	119877.080
2	15:49:24	97.603%	551.210	3492.816	T 630738.450	T 1624022.500	T 64002016.000	T 5874300.100	T 2292705.600	150.392%	10961.823	165656.650	122727.450
3	15:49:46	95.983%	610.124	3697.772	T 629054.000	T 1645829.900	T 64166870.000	T 5844189.400	T 2309306.700	149.863%	11339.719	165621.010	121925.700
x		97.763%	581.137	3542.951	T 627174.550	T 1630416.000	T 63511547.000	T 5806567.400	T 2282680.700	150.287%	10894.345	163965.610	121510.080
σ		1.865%	29.468	136.825	T 4788.722	T 13413.254	T 995702.230	T 92473.609	T 32808.141	0.383%	482.665	2898.161	1469.938
%RSD		1.908	5.071	3.862	T 0.764	T 0.823	T 1.568	T 1.593	T 1.437	0.255	4.430	1.768	1.210

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:49:03	3234.281	TM 20957701.000	T 256132420.000	110319.950	42447.976	1427939.600	404120.920	13710.200	148.033	570.780	433.095	1570.463
2	15:49:24	2953.846	TM 21103446.000	T 258637660.000	109608.600	43944.084	1415153.700	408607.090	13601.882	175.628	508.710	446.126	1999.668
3	15:49:46	3065.720	TM 21321546.000	T 263970070.000	111370.830	43978.853	1440308.900	408114.640	13784.422	126.268	620.801	436.210	1407.039
x		3084.615	TM 21127565.000	T 259580050.000	110433.130	43456.971	1427800.700	406947.550	13698.834	149.977	566.764	438.477	1659.057

σ		141.169	TM 183117.500	T 4002911.100	886.551	873.988	12578.152	2460.283	91.799	24.737	56.153	6.805	306.087
%RSD		4.577	TM 0.867	T 1.542	0.803	2.011	0.881	0.605	0.670	16.494	9.908	1.552	18.449
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:49:03	649337.120	308.758%	2046.397	5396.353	-253.731	2510.243	118.221%	43935.478	622.553	539.433	378706.480	132.671%
2	15:49:24	647731.270	308.499%	2220.808	5292.238	-207.324	2700.504	118.466%	44360.991	726.238	525.829	382703.950	131.018%
3	15:49:46	653337.720	311.474%	2274.032	5419.527	-289.443	2574.528	119.096%	44724.438	718.406	554.222	382103.370	132.813%
x		650135.370	309.577%	2180.412	5369.373	-250.166	2595.092	118.594%	44340.302	689.066	539.828	381171.270	132.168%
σ		2887.210	1.648%	119.072	67.798	41.175	96.783	0.451%	394.887	57.734	14.200	2155.587	0.998%
%RSD		0.444	0.532	5.461	1.263	16.459	3.729	0.381	0.891	8.379	2.631	0.566	0.755

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:49:03	1095.562	3912.045	1960642.400	107.707%	0.000	167120.540	67515.736
2	15:49:24	1064.743	3942.746	1973364.300	108.187%	0.000	170176.390	69913.282
3	15:49:46	1165.827	3897.383	1963113.900	110.374%	0.000	164910.260	68426.633
x		1108.711	3917.391	1965706.800	108.756%	0.000	167402.390	68618.550
σ		51.809	23.149	6745.680	1.422%	0.000	2644.354	1210.240
%RSD		4.673	0.591	0.343	1.307	0.000	1.580	1.764

200-35736-A-11-A SD@5 10/18/2016 03:54:24 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:54:46	92.687%	100.707	85.800	129216.180	340420.230	T 14201750.000	T 1270142.600	464359.700	125.952%	2458.087	37600.909	26485.563
2	15:55:08	95.138%	118.950	114.682	125724.320	343368.360	T 14450725.000	T 1298619.800	465656.840	126.631%	2340.994	36616.448	26631.047
3	15:55:30	92.208%	152.783	130.658	120982.120	341416.410	T 14202766.000	T 1265059.100	459985.190	128.607%	2384.537	36198.114	26802.581
x		93.345%	124.147	110.380	125307.540	341735.000	T 14285080.000	T 1277940.500	463333.910	127.063%	2394.539	36805.157	26639.730
σ		1.572%	26.424	22.736	4132.821	1499.663	T 143453.560	T 18088.282	2971.715	1.379%	59.184	720.185	158.687
%RSD		1.684	21.284	20.598	3.298	0.439	T 1.004	T 1.415	0.641	1.086	2.472	1.957	0.596

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:54:46	3057.949	T 4696892.200	T 57896662.000	24787.593	9955.452	285598.740	89449.643	2819.050	342.838	104.317	409.327	2199.785
2	15:55:08	3327.720	T 4723613.300	T 58205974.000	24903.810	10316.883	284501.300	86841.142	2514.606	338.544	80.452	403.907	1908.510
3	15:55:30	3421.224	T 4642331.800	T 57858227.000	24968.377	9842.739	287932.850	89562.198	2643.187	346.797	61.670	429.895	2120.251
x		3268.964	T 4687612.400	T 57986954.000	24886.593	10038.358	286010.960	88617.661	2658.948	342.726	82.146	414.376	2076.182
σ		188.630	T 41427.762	T 190647.600	91.614	247.706	1752.524	1539.539	152.832	4.128	21.374	13.710	150.555
%RSD		5.770	T 0.884	T 0.329	0.368	2.468	0.613	1.737	5.748	1.204	26.020	3.309	7.252

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:54:46	125600.800	151.986%	285.099	1129.424	-175.118	686.387	113.725%	8892.565	-713.828	-616.757	74345.955	109.272%
2	15:55:08	125127.550	156.404%	179.815	1058.863	-114.547	572.760	116.984%	8978.419	-686.054	-570.439	72678.149	109.536%
3	15:55:30	125915.020	154.606%	290.009	1211.949	-94.784	558.358	115.844%	8924.250	-756.842	-588.018	74599.583	111.237%
x		125547.790	154.332%	251.641	1133.412	-128.150	605.835	115.518%	8931.745	-718.908	-591.738	73874.562	110.015%
σ		396.406	2.222%	62.251	76.621	41.859	70.131	1.654%	43.415	35.667	23.382	1043.856	1.067%
%RSD		0.316	1.440	24.738	6.760	32.664	11.576	1.432	0.486	4.961	3.951	1.413	0.970

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:54:46	283.578	572.064	388721.700	100.799%	0.000	30517.324	13403.314
2	15:55:08	154.858	521.367	393752.450	101.327%	0.000	31610.810	13249.185
3	15:55:30	245.482	464.965	395154.770	100.612%	0.000	33556.006	14089.827
x		227.973	519.465	392542.970	100.913%	0.000	31894.714	13580.775
σ		66.122	53.575	3382.782	0.371%	0.000	1539.106	447.537
%RSD		29.004	10.314	0.862	0.367	0.000	4.826	3.295

CCV 10/18/2016 04:00:08 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	16:00:30	85.869%	103397.880	36387.080	T 14118375.000	T 4185116.400	T 39239212.000	T 13386678.000	1326406.200	106.300%	26161.321	T 2690328.600	768630.
2	16:00:52	84.349%	103426.370	37742.424	T 13722685.000	T 4103139.600	T 38840907.000	T 13201764.000	1316223.900	106.690%	26177.875	T 2641966.100	751087.
3	16:01:14	83.906%	102603.600	37016.771	T 13517984.000	T 4073602.600	T 38115601.000	T 13160339.000	1338341.700	105.447%	26347.198	T 2689690.700	761989.
x		84.708%	115.289%	112.994%	T 102.450%	T 99.469%	T 100.274%	T 97.636%	91.695%	106.146%	26228.798	T 101.396%	94.67
σ		1.030%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.636%	102.871	T n/a	
%RSD		1.216	0.453	1.831	T 2.214	T 1.402	T 1.471	T 0.910	0.834	0.599	0.392	T 1.037	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	16:00:30	10110.137	T 4005409.600	T 81490469.000	1167631.200	634896.850	820914.820	639931.990	87391.981	-621.135	9363.344	400.208	1117.
2	16:00:52	7672.859	T 3948181.300	T 81663050.000	1170043.100	629577.330	799531.510	628777.060	85740.842	-495.880	9103.971	402.473	1277.
3	16:01:14	7098.509	T 3893784.400	T 80555400.000	1151663.900	619236.390	795372.950	631283.220	86609.840	-406.081	9028.701	400.000	1283.
x		8293.835	T 97.535%	T 96.932%	91.537%	98.153%	97.012%	98.988%	104.393%	-507.699	106.306%	400.893	1225.
σ		1598.964	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	108.013	n/a	1.372	94.

%RSD		19.279	T 1.413	T 0.734	0.859	1.268	1.702	0.924	0.954	21.275	1.915	0.342	7.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	16:00:30	842489.800	106.193%	1669592.900	279953.790	679.113	133046.040	103.323%	836647.700	560702.610	428636.940	566796.930	96.79
2	16:00:52	828598.530	103.346%	1725868.500	274488.240	488.303	133954.670	102.990%	839924.840	563775.850	429218.650	556945.890	96.54
3	16:01:14	842275.010	103.457%	T 1896421.200	275520.490	345.794	135776.230	101.251%	846171.700	571832.030	433075.050	568470.870	96.41
x		837787.780	104.332%	T 95.267%	103.310%	504.403	95.520%	102.521%	840914.750	565436.830	91.772%	90.771%	96.58
σ		7958.851	1.613%	T n/a	n/a	167.242	n/a	1.112%	4838.550	5747.623	n/a	n/a	0.19
%RSD		0.950	1.546	T 6.696	1.050	33.156	1.036	1.085	0.575	1.016	0.561	1.104	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:00:30	35783.964	1623196.300	T 15678337.000	92.692%	0.000	198514.060	114602.370
2	16:00:52	36494.838	1676548.800	T 16001929.000	90.638%	0.000	216534.750	116401.770
3	16:01:14	37803.901	1642005.700	T 15591507.000	92.619%	5.398	225751.930	116485.800
x		98.876%	88.077%	T 98.733%	91.983%	1.799	84.841%	92.860%
σ		n/a	n/a	T n/a	1.166%	3.117	n/a	n/a
%RSD		2.792	1.643	T 1.373	1.267	173.205	6.486	0.919

CCB 10/18/2016 04:05:52 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	16:06:14	92.799%	11.676	-535.451	5927.281	294.280	5451.824	7312.553	104.041	112.760%	22.203	960.076	-240.997
2	16:06:35	88.512%	-1.533	-495.613	6344.608	353.957	5806.547	6134.872	137.422	113.255%	30.976	881.747	-88.676
3	16:06:57	90.627%	6.610	-595.773	140.532	292.479	6148.777	6550.724	111.871	115.236%	21.741	881.760	-95.662
x		90.646%	5.584	-542.279	4137.473	313.572	5802.382	6666.050	117.778	113.750%	24.973	907.861	-141.778
σ		2.144%	6.664	50.428	3467.737	34.986	348.495	597.251	17.457	1.310%	5.204	45.219	85.997
%RSD		2.365	119.337	9.299	83.813	11.157	6.006	8.960	14.822	1.152	20.836	4.981	60.656

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:06:14	5051.522	387.095	41727.579	50.458	47.113	39.184	-161.343	-260.442	473.679	-77.166	424.968	2148.044
2	16:06:35	5439.714	374.776	44511.714	50.051	7.050	32.997	-193.517	-202.782	454.856	-16.087	407.361	2061.688
3	16:06:57	5165.785	400.322	43010.425	9.407	-2.235	-21.132	-161.913	-356.055	506.708	-59.221	415.602	2182.220
x		5219.007	387.398	43083.240	36.639	17.309	17.016	-172.257	-273.093	478.415	-50.825	415.977	2130.651
σ		199.494	12.776	1393.495	23.584	26.225	33.182	18.413	77.416	26.248	31.393	8.810	62.120
%RSD		3.822	3.298	3.234	64.370	151.510	195.002	10.689	28.348	5.486	61.767	2.118	2.916

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:06:14	58.571	109.264%	2219.620	15.335	-64.360	19.583	105.656%	3118.910	-385.829	-364.952	49.459	98.882%
2	16:06:35	70.488	107.698%	2395.749	19.091	-91.135	50.391	108.137%	3500.602	-414.949	-302.154	38.692	98.611%
3	16:06:57	66.468	110.057%	1951.388	14.708	-47.563	7.664	107.436%	3504.813	-273.284	-324.567	66.977	97.974%
x		65.175	109.006%	2188.919	16.378	-67.686	25.879	107.076%	3374.775	-358.021	-330.558	51.709	98.489%
σ		6.063	1.200%	223.766	2.370	21.976	22.049	1.279%	221.596	74.815	31.824	14.276	0.466%
%RSD		9.303	1.101	10.223	14.471	32.467	85.198	1.194	6.566	20.897	9.627	27.609	0.473

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:06:14	115.681	1036.208	-340.757	94.341%	0.000	7805.518	-6.652
2	16:06:35	116.250	972.968	-364.345	95.876%	0.000	7867.405	-7.500
3	16:06:57	81.878	953.315	-355.912	97.379%	0.000	7435.267	7.099
x		104.603	987.497	-353.671	95.865%	0.000	7702.730	-2.351
σ		19.683	43.314	11.953	1.519%	0.000	233.688	8.195
%RSD		18.816	4.386	3.380	1.584	0.000	3.034	348.588

CCVL 10/18/2016 04:11:36 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:11:59	93.310%	199.119	5334.748	654350.450	27524.439	66932.420	637750.090	23076.465	116.897%	12.856	10829.053	7895.205
2	16:12:22	94.075%	234.648	5568.414	T 702517.300	26008.707	65699.735	618953.430	23304.553	118.650%	12.671	10784.039	8174.279
3	16:12:46	90.894%	223.857	5790.214	T 757187.720	28576.589	73946.035	672044.390	23707.099	113.040%	13.303	12117.560	9260.344
x		92.760%	153.140%	106.068%	T 104.734%	99.104%	106.963%	94.752%	96.861%	116.196%	12.943	106.587%	105.097%
σ		1.660%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	2.870%	0.325	n/a	n/a
%RSD		1.790	8.309	4.093	T 7.302	4.716	6.460	4.187	1.367	2.470	2.508	6.735	8.542

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:11:59	5980.215	6669.549	538712.400	2964.574	1109.529	3789.706	12125.980	490.902	538.684	134.431	449.571	2158.506
2	16:12:22	6041.942	6586.011	543885.190	2625.097	1189.649	3719.040	11775.594	597.150	521.795	158.043	423.385	2074.029
3	16:12:46	5968.834	7389.105	597693.410	2978.704	1329.720	3851.382	12516.062	667.273	549.116	156.737	407.667	2283.915
x		5996.997	106.225%	100.247%	112.388%	118.180%	114.048%	118.583%	70.548%	536.532	86.838%	426.874	2172.150
σ		39.337	n/a	n/a	n/a	n/a	n/a	n/a	n/a	13.787	n/a	21.169	105.606
%RSD		0.656	6.416	5.831	7.010	9.213	1.749	3.051	15.177	2.570	8.863	4.959	4.862

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:11:59	21690.678	112.149%	13718.866	2976.404	-33.868	811.980	108.216%	1376.939	3609.911	2870.202	5011.015	99.506%
2	16:12:22	21897.350	112.942%	13824.089	2898.246	-21.628	675.475	108.886%	1533.794	3890.210	2912.941	4777.970	100.356%
3	16:12:46	23619.876	107.148%	15029.549	3156.500	-6.915	717.121	104.130%	1834.344	4087.622	3264.859	5068.986	95.927%
x		100.348%	110.746%	95.802%	112.416%	-20.804	104.564%	107.077%	1581.692	3862.581	80.403%	99.623%	98.596%
σ		n/a	3.142%	n/a	n/a	13.495	n/a	2.574%	232.434	240.051	n/a	n/a	2.351%
%RSD		4.728	2.837	5.132	4.399	64.871	9.520	2.404	14.695	6.215	7.181	3.110	2.384

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:11:59	3280.347	15719.223	13546.271	97.768%	0.000	15524.830	11589.183
2	16:12:22	2758.455	16865.617	13867.703	94.138%	0.000	16498.748	12171.333
3	16:12:46	3327.964	18445.749	14837.919	90.906%	0.000	17694.584	14185.887
x		84.132%	90.952%	110.310%	94.271%	0.000	65.826%	101.404%
σ		n/a	n/a	n/a	3.433%	0.000	n/a	n/a
%RSD		10.120	8.048	4.774	3.642	0.000	6.558	10.773

200-35736-A-11-A PDS 10/18/2016 04:17:25 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	16:17:47	94.214%	2182.129	62164.520	T 6503342.000	T 1879981.300	T 63945850.000	T 11472833.000	T 2417762.400	136.745%	10484.253	240370.070	183663.1
2	16:18:09	94.351%	2120.638	60614.952	T 6484694.200	T 1892079.900	T 64620253.000	T 11590294.000	T 2443044.500	137.509%	10725.971	242894.390	186949.4
3	16:18:30	93.671%	2226.849	62655.242	T 6523062.200	T 1878664.300	T 64485564.000	T 11537718.000	T 2432243.500	138.730%	11234.427	242340.850	186174.4
x		94.078%	2176.539	61811.572	T 6503699.500	T 1883575.200	T 64350556.000	T 11533615.000	T 2431016.800	137.662%	10814.884	241868.440	185595.6
σ		0.360%	53.326	1064.953	T 19186.513	T 7394.702	T 356897.170	T 58837.903	T 12685.613	1.001%	382.909	1326.812	1717.8
%RSD		0.382	2.450	1.723	T 0.295	T 0.393	T 0.555	T 0.510	T 0.522	0.727	3.541	0.549	0.9

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	16:17:47	3967.339	TM 20852277.000	T 259397710.000	125685.390	50171.680	1440601.100	497703.910	22375.675	46.551	2146.495	458.368	1636.9
2	16:18:09	3631.780	TM 20863105.000	T 259244970.000	130627.440	51032.018	1434571.900	492733.100	21924.807	62.952	2175.100	486.368	1321.0
3	16:18:30	3336.307	TM 21177101.000	T 261712890.000	128034.810	51577.978	1449855.300	503246.870	21939.187	92.018	2179.235	475.133	1294.9
x		3645.142	TM 20964161.000	T 260118520.000	128115.880	50927.226	1441676.100	497894.630	22079.889	67.174	2166.943	473.290	1417.6

σ		315.728	TM 184491.090	T 1382870.200	2472.023	708.981	7698.198	5259.482	256.259	23.025	17.829	14.091	190.3
%RSD		8.662	TM 0.880	T 0.532	1.930	1.392	0.534	1.056	1.161	34.277	0.823	2.977	13.4
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	16:17:47	863154.390	278.924%	58192.325	33345.831	-229.678	8744.126	105.375%	45126.966	44886.995	34410.371	421939.210	118.343
2	16:18:09	850446.640	274.987%	59325.561	32429.548	-142.603	8682.601	108.459%	44505.195	44015.764	34525.608	420318.850	121.291
3	16:18:30	862444.190	277.445%	60271.524	34081.075	-171.259	8658.568	107.129%	45792.345	44814.593	35298.686	427040.610	120.330
x		858681.740	277.118%	59263.137	33285.485	-181.180	8695.099	106.988%	45141.502	44572.451	34744.889	423099.550	119.988
σ		7140.640	1.989%	1041.004	827.415	44.377	44.127	1.547%	643.698	483.462	483.051	3507.893	1.503
%RSD		0.832	0.718	1.757	2.486	24.493	0.507	1.446	1.426	1.085	1.390	0.829	1.2

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:17:47	27926.908	165121.150	2073176.300	97.898%	0.000	447903.680	194470.310
2	16:18:09	26783.293	163718.220	2044955.100	101.189%	0.000	434383.630	192063.380
3	16:18:30	27930.615	170235.720	2116770.200	98.370%	0.000	440291.490	203345.460
x		27546.939	166358.370	2078300.500	99.152%	0.000	440859.600	196626.380
σ		661.339	3430.372	36180.735	1.779%	0.000	6777.905	5942.039
%RSD		2.401	2.062	1.741	1.795	0.000	1.537	3.022

200-35736-A-11-I MS 10/18/2016 04:23:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	16:23:31	93.575%	2290.586	54496.282	T 6643878.700	T 2012124.200	T 73222951.000	T 12100698.000	T 2830805.800	140.337%	14644.091	263217.600	197355.0
2	16:23:53	91.436%	2366.218	55893.518	T 6710635.900	T 2052453.200	T 75137577.000	T 12360347.000	T 2916448.200	138.606%	14362.103	271729.870	207113.3
3	16:24:14	89.673%	2292.986	56032.447	T 6416728.300	T 1970508.700	T 71480561.000	T 11821346.000	T 2808040.600	141.865%	14643.889	264276.890	199529.3
x		91.561%	2316.597	55474.082	T 6590414.300	T 2011695.400	T 73280363.000	T 12094130.000	T 2851764.900	140.269%	14550.028	266408.120	201332.5
σ		1.954%	42.990	849.644	T 154075.490	T 40973.927	T 1829184.200	T 269560.510	T 57162.184	1.630%	162.747	4639.106	5122.9
%RSD		2.134	1.856	1.532	T 2.338	T 2.037	T 2.496	T 2.229	T 2.004	1.162	1.119	1.741	2.5

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	16:23:31	3470.680	TM 21646015.000	T 263265030.000	124455.130	54365.523	1679507.900	518130.090	23046.150	116.858	2077.949	454.366	1739.9
2	16:23:53	3126.042	TM 22199673.000	T 269280360.000	127719.240	56229.701	1691155.100	517771.830	23244.603	103.665	2078.863	473.442	1422.9
3	16:24:14	3389.496	TM 21580037.000	T 262449380.000	123505.700	52873.174	1671826.000	512694.350	22792.277	118.815	2066.281	460.168	1236.3
x		3328.739	TM 21808575.000	T 264998260.000	125226.690	54489.466	1680829.700	516198.760	23027.677	113.113	2074.364	462.659	1466.4
σ		180.173	TM 340303.630	T 3730768.400	2210.194	1681.693	9732.089	3040.189	226.728	8.240	7.015	9.779	254.5
%RSD		5.413	TM 1.560	T 1.408	1.765	3.086	0.579	0.589	0.985	7.285	0.338	2.114	17.3

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	16:23:31	967045.290	295.661%	53186.083	34509.851	-236.260	8612.557	105.973%	50773.792	11178.045	8850.484	435505.930	122.917
2	16:23:53	962880.620	301.525%	53134.522	33265.176	-274.466	8586.369	107.618%	50105.219	11403.394	8875.799	436910.080	121.955
3	16:24:14	965105.980	299.716%	53592.309	34350.621	-214.873	8497.169	107.354%	51046.213	11445.022	8880.823	431807.340	121.536
x		965010.630	298.967%	53304.305	34041.883	-241.866	8565.365	106.982%	50641.741	11342.154	8869.036	434741.120	122.136
σ		2083.968	3.003%	250.748	677.343	30.189	60.493	0.883%	484.195	143.638	16.261	2635.942	0.708
%RSD		0.216	1.004	0.470	1.990	12.482	0.706	0.825	0.956	1.266	0.183	0.606	0.5

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:23:31	28147.864	135582.560	1934042.900	101.124%	0.000	414324.720	195873.960
2	16:23:53	29056.604	139630.790	1984616.800	100.190%	0.000	423057.220	198817.410
3	16:24:14	29610.699	136652.600	1989369.000	100.718%	0.000	421120.360	202115.780
x		28938.389	137288.650	1969342.900	100.677%	0.000	419500.770	198935.720
σ		738.548	2097.725	30662.922	0.469%	0.000	4586.005	3122.587
%RSD		2.552	1.528	1.557	0.465	0.000	1.093	1.570

200-35736-A-11-J MSD 10/18/2016 04:28:54 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	16:29:15	96.358%	1954.365	51148.081	T 6411404.300	T 2000432.600	T 66434077.000	T 11455314.000	T 1996573.900	144.693%	11410.184	250216.540	191468.49
2	16:29:37	93.348%	2154.217	53568.054	T 6524435.900	T 2073087.200	T 69377416.000	T 11648218.000	T 2033699.400	142.623%	12284.983	259630.750	197639.79
3	16:29:59	95.122%	2205.894	53489.407	T 6528591.200	T 2052291.800	T 66935015.000	T 11569838.000	T 2046882.400	145.994%	11428.090	249739.460	192725.54
x		94.943%	2104.825	52735.181	T 6488143.800	T 2041937.200	T 67582170.000	T 11557790.000	T 2025718.600	144.437%	11707.752	253195.580	193944.61
σ		1.513%	132.840	1375.031	T 66490.801	T 37417.721	T 1574775.100	T 97014.583	T 26086.503	1.700%	499.977	5578.122	3261.26
%RSD		1.594	6.311	2.607	T 1.025	T 1.832	T 2.330	T 0.839	T 1.288	1.177	4.270	2.203	1.68

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	16:29:15	3790.128	T 18716309.000	T 249002030.000	121974.000	53713.595	1576960.200	537114.660	22546.567	80.045	2230.526	483.290	1310.53
2	16:29:37	3282.281	T 19461983.000	T 256527670.000	123334.700	54603.113	1581341.200	533755.110	23011.198	92.744	2153.471	496.137	1737.55
3	16:29:59	3911.178	T 19044948.000	T 255683080.000	123206.550	53245.294	1558783.300	534574.100	21763.524	138.775	2058.883	480.068	1856.70
x		3661.196	T 19074414.000	T 253737590.000	122838.420	53854.001	1572361.600	535147.960	22440.430	103.855	2147.627	486.498	1634.93
σ		333.685	T 373709.510	T 4122803.400	751.343	689.712	11961.402	1751.746	630.572	30.901	85.970	8.502	287.18

%RSD		9.114	T 1.959	T 1.625	0.612	1.281	0.761	0.327	2.810	29.754	4.003	1.748	17.56
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	16:29:15	763233.630	285.875%	55943.562	34352.318	-168.819	9981.576	107.494%	49784.869	10832.964	8801.441	402082.620	122.078%
2	16:29:37	760250.640	286.205%	57086.457	33742.273	-189.331	10146.118	108.843%	51246.657	11187.737	8816.435	404620.980	122.388%
3	16:29:59	757598.050	289.657%	56365.162	33454.967	-212.774	10051.421	109.986%	50472.043	10989.412	8975.711	401687.630	122.420%
x		760360.770	287.245%	56465.060	33849.853	-190.308	10059.705	108.774%	50501.189	11003.371	8864.529	402797.070	122.295%
σ		2819.405	2.095%	577.959	458.247	21.993	82.583	1.247%	731.330	177.798	96.578	1591.844	0.189%
%RSD		0.371	0.729	1.024	1.354	11.557	0.821	1.147	1.448	1.616	1.089	0.395	0.15

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:29:15	29798.998	142391.100	2061905.100	99.190%	0.000	396941.480	195684.900
2	16:29:37	30583.193	142370.720	2058765.800	100.848%	0.000	398161.100	196220.060
3	16:29:59	30431.837	144521.490	2076647.000	100.775%	9.923	405397.530	200781.280
x		30271.343	143094.440	2065772.600	100.271%	3.308	400166.700	197562.080
σ		416.004	1235.911	9547.399	0.937%	5.729	4570.888	2800.718
%RSD		1.374	0.864	0.462	0.934	173.205	1.142	1.418

200-35736-A-12-A 10/18/2016 04:34:38 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	16:35:00	86.133%	561.712	3147.758	T 661389.230	T 2079087.100	T 57906224.000	T 5270303.100	T 2932808.400	131.615%	5146.430	150250.920	113815.030
2	16:35:22	86.578%	619.429	3159.862	T 652243.160	T 2064823.700	T 58160075.000	T 5303147.000	T 2930080.000	131.413%	5258.041	154350.330	114757.040
3	16:35:43	87.234%	471.422	3126.774	T 653966.110	T 2081256.300	T 58886634.000	T 5347101.100	T 2985552.100	131.184%	5302.847	152954.600	115436.870
x		86.648%	550.854	3144.798	T 655866.170	T 2075055.700	T 58317644.000	T 5306850.400	T 2949480.100	131.404%	5235.773	152518.610	114669.650
σ		0.554%	74.599	16.741	T 4860.073	T 8927.293	T 508843.530	T 38532.694	T 31268.987	0.215%	80.551	2084.190	814.441
%RSD		0.639	13.542	0.532	T 0.741	T 0.430	T 0.873	T 0.726	T 1.060	0.164	1.538	1.367	0.710

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:35:00	2375.798	TM 23074304.000	T 252796440.000	97895.620	43434.073	1347927.400	412304.150	14754.050	52.158	713.077	488.534	1333.957
2	16:35:22	2101.874	TM 23322908.000	T 262186360.000	99484.319	43115.377	1347385.400	414826.000	13831.659	137.457	516.461	495.329	1998.580
3	16:35:43	2287.756	TM 23372340.000	T 257622320.000	99646.066	43699.143	1353793.200	417944.360	14378.912	101.427	595.476	477.474	1777.549
x		2255.143	TM 23256518.000	T 257535040.000	99008.668	43416.198	1349702.000	415024.840	14321.540	97.014	608.338	487.112	1703.362
σ		139.844	TM 159725.150	T 4695569.900	967.314	292.294	3553.414	2825.356	463.864	42.820	98.937	9.012	338.465
%RSD		6.201	TM 0.687	T 1.823	0.977	0.673	0.263	0.681	3.239	44.138	16.264	1.850	19.870

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:35:00	762021.120	256.208%	1478.187	4499.381	-227.747	2536.682	104.396%	21735.054	239.439	224.823	368371.880	115.492%
2	16:35:22	762481.120	256.913%	1304.093	4893.537	-130.305	2535.077	105.487%	21163.681	202.015	290.580	369609.740	116.331%
3	16:35:43	772207.320	259.833%	1292.210	4275.735	-235.068	2591.467	104.824%	21211.562	250.758	294.505	375052.860	117.124%
x		765569.850	257.651%	1358.163	4556.218	-197.707	2554.409	104.902%	21370.099	230.737	269.969	371011.490	116.316%
σ		5752.811	1.922%	104.113	312.798	58.486	32.103	0.550%	316.966	25.510	39.147	3554.232	0.816%
%RSD		0.751	0.746	7.666	6.865	29.582	1.257	0.524	1.483	11.056	14.501	0.958	0.701

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:35:00	839.189	4432.552	1584482.800	97.825%	0.000	146654.900	56502.057
2	16:35:22	845.376	4521.608	1606650.800	97.785%	0.000	149224.750	58439.246
3	16:35:43	813.415	4259.534	1622090.000	97.809%	0.000	150214.790	58819.651
x		832.660	4404.565	1604407.900	97.806%	0.000	148698.150	57920.318
σ		16.952	133.259	18903.665	0.020%	0.000	1837.439	1242.890
%RSD		2.036	3.025	1.178	0.021	0.000	1.236	2.146

MB 200-110239/1-A 10/18/2016 04:40:22 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:40:44	96.941%	-7.182	-3.379	207282.720	2385.160	83931.798	16658.586	3576.247	126.435%	23.808	1950.111	152.638
2	16:41:05	93.967%	-7.182	-107.875	194572.470	2156.956	72315.773	14084.809	3534.002	128.072%	11.758	1093.688	38.413
3	16:41:27	94.419%	3.409	-92.122	199426.680	2049.755	71357.902	12781.733	3504.171	127.505%	27.533	45.256	69.938
x		95.109%	-3.652	-67.792	200427.290	2197.290	75868.491	14508.376	3538.140	127.337%	21.033	1029.685	86.996
σ		1.603%	6.115	56.337	6413.929	171.302	6999.434	1972.829	36.216	0.831%	8.245	954.039	58.992
%RSD		1.685	167.436	83.102	3.200	7.796	9.226	13.598	1.024	0.653	39.201	92.654	67.810

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:40:44	3179.673	22803.057	342952.540	131.343	90.370	1982.679	705.659	-249.185	406.958	-55.726	473.856	2445.142
2	16:41:05	3422.620	19886.242	301867.900	86.174	65.428	1530.546	555.196	-348.267	447.873	-96.627	469.312	2521.826
3	16:41:27	3729.363	19477.796	284239.660	137.726	101.139	1789.715	439.146	-238.260	415.067	-42.841	460.990	2327.316
x		3443.885	20722.365	309686.700	118.414	85.646	1767.647	566.667	-278.571	423.299	-65.065	468.053	2431.428
σ		275.461	1813.468	30127.245	28.103	18.318	226.873	133.626	60.606	21.664	28.083	6.525	97.977
%RSD		7.999	8.751	9.728	23.733	21.388	12.835	23.581	21.756	5.118	43.161	1.394	4.030

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:40:44	1312.002	117.684%	-735.245	17.633	-67.196	17.635	112.061%	807.616	-1056.416	-852.108	411.550	103.647%
2	16:41:05	1628.025	117.820%	-676.083	21.834	-74.477	29.221	112.720%	723.049	-1079.604	-846.373	431.226	105.096%
3	16:41:27	1290.541	119.550%	-755.357	75.369	-67.857	36.083	112.369%	783.158	-1047.856	-845.211	339.182	104.697%
x		1410.190	118.351%	-722.228	38.279	-69.843	27.646	112.383%	771.274	-1061.292	-847.897	393.986	104.480%
σ		188.956	1.040%	41.209	32.190	4.026	9.324	0.330%	43.518	16.426	3.693	48.471	0.749%
%RSD		13.399	0.879	5.706	84.092	5.765	33.727	0.293	5.642	1.548	0.436	12.303	0.717

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:40:44	43.436	-174.977	880.094	98.175%	0.000	11548.225	93.139
2	16:41:05	17.785	-181.484	816.751	99.588%	0.000	10955.232	136.156
3	16:41:27	46.857	-193.785	707.066	98.963%	0.000	10759.406	122.237
x		36.026	-183.415	801.304	98.909%	0.000	11087.621	117.177
σ		15.889	9.551	87.542	0.708%	0.000	410.736	21.951
%RSD		44.105	5.208	10.925	0.716	0.000	3.704	18.733

LCS 200-110239/2-A 10/18/2016 04:46:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:46:26	89.583%	1717.558	57965.633	T 7116517.600	253083.820	573944.490	T 6642344.800	218974.440	114.395%	0.000	97045.358	76374.316
2	16:46:47	84.598%	1650.728	62586.840	T 7480072.100	266172.840	611381.610	T 6963854.100	225393.380	107.739%	18.602	98050.254	78733.489
3	16:47:11	83.758%	1718.107	62837.916	T 7390466.000	264715.380	609976.000	T 6926905.400	231165.180	106.105%	9.446	100424.920	80489.488
x		85.980%	1695.464	61130.130	T 7329018.600	261324.010	598434.030	T 6844368.100	225177.670	109.413%	9.349	98506.843	78532.431
σ		3.149%	38.744	2743.408	T 189406.440	7173.329	21220.211	T 175929.990	6098.231	4.391%	9.301	1735.427	2064.940
%RSD		3.662	2.285	4.488	T 2.584	2.745	3.546	T 2.570	2.708	4.014	99.487	1.762	2.629

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:46:26	3861.347	58925.347	T 5573054.700	23968.531	10045.578	37262.324	107969.110	8918.188	223.311	1768.526	430.902	2143.940
2	16:46:47	3879.618	61855.065	T 5843560.700	25531.024	10997.696	37553.457	107411.980	8885.458	203.439	1809.704	433.365	1798.160
3	16:47:11	3248.535	62899.211	T 5780247.500	24985.616	10540.336	37351.556	104732.190	9352.423	43.410	1882.675	422.158	1903.497
x		3663.166	61226.541	T 5732287.600	24828.390	10527.870	37389.112	106704.430	9052.023	156.720	1820.302	428.808	1948.532

σ		359.198	2060.141	T 141486.690	793.023	476.182	149.156	1730.576	260.668	98.631	57.808	5.889	177.234
%RSD		9.806	3.365	T 2.468	3.194	4.523	0.399	1.622	2.880	62.934	3.176	1.373	9.096
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:46:26	217963.860	102.715%	143204.100	29643.631	-25.509	6438.907	100.372%	602.767	45799.388	33842.759	46485.386	95.901%
2	16:46:47	223146.330	103.073%	141670.270	29183.619	58.523	6725.024	98.763%	739.157	45384.883	34408.787	47080.494	95.464%
3	16:47:11	222495.180	101.085%	143497.860	29314.181	-15.738	6924.634	98.187%	830.068	45324.848	34467.665	46529.604	93.649%
x		221201.790	102.291%	142790.740	29380.477	5.759	6696.189	99.108%	723.998	45503.040	34239.737	46698.494	95.005%
σ		2822.965	1.060%	981.415	237.064	45.956	244.144	1.132%	114.406	258.395	345.051	331.559	1.194%
%RSD		1.276	1.036	0.687	0.807	798.037	3.646	1.143	15.802	0.568	1.008	0.710	1.257

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:46:26	63197.735	161931.190	113938.280	90.963%	0.000	164431.630	128165.110
2	16:46:47	64476.180	164645.630	114313.200	90.687%	0.000	173728.030	127678.210
3	16:47:11	67152.969	165031.490	114768.580	91.036%	0.000	181525.220	126563.380
x		64942.295	163869.440	114340.020	90.895%	0.000	173228.290	127468.900
σ		2018.394	1689.622	415.799	0.184%	0.000	8557.747	821.122
%RSD		3.108	1.031	0.364	0.203	0.000	4.940	0.644

200-35680-A-13-A 10/18/2016 04:51:48 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:52:10	92.086%	-4.468	94.460	208844.810	1102.019	31756.444	11981.023	2157.984	117.334%	29.952	1015.671	-1.787
2	16:52:32	92.948%	-1.803	227.333	208607.660	920.861	27608.940	11353.703	2212.692	117.562%	34.171	396.531	-128.548
3	16:52:53	90.059%	3.921	218.916	202276.650	847.210	23042.206	9664.275	1835.173	118.194%	8.494	500.705	-1.874
x		91.698%	-0.783	180.236	206576.370	956.697	27469.197	10999.667	2068.616	117.697%	24.205	637.636	-44.070
σ		1.483%	4.286	74.404	3725.559	131.130	4358.799	1198.264	204.010	0.446%	13.769	331.506	73.160
%RSD		1.617	547.421	41.281	1.803	13.707	15.868	10.894	9.862	0.379	56.885	51.990	166.011

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:52:10	4300.537	8958.451	129216.280	55.351	39.913	728.838	1046.554	-337.147	490.875	-99.648	437.689	2371.105
2	16:52:32	4727.450	7638.030	108897.250	72.173	116.337	769.968	854.553	-207.264	448.318	-59.852	424.387	2208.901
3	16:52:53	4712.122	6718.831	97285.574	25.025	73.259	590.535	817.703	-340.087	470.198	-60.239	442.527	2367.748
x		4580.037	7771.770	111799.700	50.850	76.503	696.447	906.270	-294.833	469.797	-73.246	434.868	2315.918
σ		242.175	1125.784	16162.014	23.894	38.315	94.000	122.879	75.851	21.282	22.865	9.393	92.695
%RSD		5.288	14.486	14.456	46.990	50.083	13.497	13.559	25.727	4.530	31.217	2.160	4.003

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:52:10	861.188	107.633%	-529.189	34.753	-55.749	11.167	104.756%	601.407	-1014.470	-805.397	121.623	95.612%
2	16:52:32	803.207	107.420%	-635.413	10.669	-57.564	12.919	105.448%	716.012	-1006.274	-803.391	73.299	97.858%
3	16:52:53	703.780	108.825%	-598.145	20.440	-54.468	14.684	104.741%	644.461	-1010.097	-792.012	145.513	97.613%
x		789.392	107.959%	-587.582	21.954	-55.927	12.923	104.982%	653.960	-1010.280	-800.267	113.478	97.028%
σ		79.609	0.757%	53.894	12.113	1.556	1.758	0.404%	57.890	4.101	7.219	36.789	1.232%
%RSD		10.085	0.701	9.172	55.176	2.782	13.607	0.384	8.852	0.406	0.902	32.420	1.270

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:52:10	195.986	-36.896	-214.579	92.213%	0.000	40026.725	178.928
2	16:52:32	194.492	-1.535	-218.829	94.966%	0.000	35666.391	129.891
3	16:52:53	184.965	-121.277	-599.967	94.714%	0.000	32918.532	56.488
x		191.814	-53.236	-344.459	93.965%	0.000	36203.882	121.769
σ		5.979	61.521	221.287	1.522%	0.000	3584.449	61.623
%RSD		3.117	115.562	64.242	1.620	0.000	9.901	50.606

200-35700-A-19-A 10/18/2016 04:57:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:57:53	97.655%	-2.062	-119.960	216236.160	155.520	8914.991	5093.284	1576.225	123.207%	20.357	1098.158	348.804
2	16:58:14	96.885%	-7.182	-307.171	211460.670	154.379	8274.373	6237.940	1124.961	123.611%	16.241	318.113	337.869
3	16:58:36	97.061%	-4.607	-107.941	205087.180	218.079	8549.476	6105.766	1508.741	123.918%	24.320	28.060	486.039
x		97.200%	-4.617	-178.357	210928.000	175.993	8579.613	5812.330	1403.309	123.579%	20.306	481.443	390.904
σ		0.403%	2.560	111.718	5593.546	36.452	321.371	626.209	243.406	0.356%	4.039	553.430	82.571
%RSD		0.415	55.447	62.637	2.652	20.712	3.746	10.774	17.345	0.288	19.893	114.952	21.123

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:57:53	5682.098	790.201	27887.548	-10.195	65.070	215.300	162.012	-317.307	563.973	-94.028	412.421	2440.868
2	16:58:14	5959.389	749.865	32386.507	-26.480	44.540	357.278	272.279	-386.242	595.985	-87.677	445.206	2390.596
3	16:58:36	5963.499	642.077	32657.738	-10.381	44.360	250.424	314.336	-355.991	569.323	-78.444	442.506	2581.457
x		5868.328	727.381	30977.265	-15.685	51.323	274.334	249.542	-353.180	576.427	-86.716	433.378	2470.973
σ		161.294	76.579	2679.208	9.349	11.905	73.948	78.666	34.553	17.148	7.836	18.199	98.928

%RSD		2.749	10.528	8.649	59.606	23.197	26.955	31.524	9.783	2.975	9.037	4.199	4.004
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:57:53	303.138	114.949%	-821.436	5.343	-71.198	21.565	107.658%	617.706	-1112.954	-867.829	11.072	100.871%
2	16:58:14	255.913	114.069%	-833.580	13.931	-63.203	13.714	109.726%	651.637	-1053.898	-857.671	1.434	100.781%
3	16:58:36	312.367	112.644%	-801.011	-4.200	-90.287	49.472	109.153%	600.089	-1048.843	-859.564	6.110	101.322%
x		290.473	113.887%	-818.675	5.024	-74.896	28.250	108.846%	623.144	-1071.898	-861.688	6.205	100.992%
σ		30.283	1.163%	16.459	9.070	13.915	18.793	1.067%	26.201	35.645	5.402	4.820	0.290%
%RSD		10.425	1.021	2.010	180.515	18.580	66.523	0.981	4.205	3.325	0.627	77.677	0.287

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:57:53	66.980	-288.421	-883.898	95.673%	0.000	17775.840	-33.520
2	16:58:14	37.354	-280.693	-942.892	96.412%	0.000	17383.266	-44.093
3	16:58:36	41.600	-292.400	-1045.753	98.256%	0.000	16705.662	-34.207
x		48.645	-287.171	-957.515	96.780%	0.000	17288.256	-37.273
σ		16.020	5.953	81.912	1.330%	0.000	541.378	5.916
%RSD		32.933	2.073	8.555	1.375	0.000	3.131	15.871

200-35736-A-14-A 10/18/2016 05:03:14 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	17:03:35	96.181%	-4.583	-326.320	208059.470	345.458	9142.564	4921.644	1372.644	126.174%	19.903	385.575	231.892
2	17:03:57	98.696%	-4.649	-304.041	208452.910	218.219	7511.489	6091.956	1307.529	126.305%	15.907	715.422	447.599
3	17:04:19	94.952%	-4.549	-288.152	209686.060	310.361	7900.834	3941.532	1500.161	125.039%	28.066	466.940	377.927
x		96.610%	-4.594	-306.171	208732.810	291.346	8184.962	4985.044	1393.445	125.839%	21.292	522.646	352.472
σ		1.908%	0.051	19.173	848.656	65.716	851.850	1076.613	97.986	0.696%	6.197	171.834	110.083
%RSD		1.975	1.106	6.262	0.407	22.556	10.407	21.597	7.032	0.553	29.106	32.878	31.232

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:03:35	6206.351	2628.716	50722.282	-14.921	82.689	361.235	661.800	-324.075	583.852	-59.786	464.188	2369.875
2	17:03:57	6361.266	1916.828	42260.950	-10.991	82.575	322.362	704.708	-189.606	575.620	-23.410	488.034	2419.658
3	17:04:19	6376.110	2304.338	47281.060	-10.670	123.684	367.495	694.841	-435.256	600.735	-91.926	459.557	2448.456
x		6314.576	2283.294	46754.764	-12.194	96.316	350.364	687.116	-316.312	586.736	-58.374	470.593	2412.663
σ		94.019	356.410	4255.147	2.367	23.702	24.452	22.472	123.009	12.804	34.280	15.281	39.754
%RSD		1.489	15.609	9.101	19.411	24.608	6.979	3.271	38.888	2.182	58.725	3.247	1.648
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:03:35	278.530	114.822%	-899.674	-8.653	-77.626	32.501	108.147%	536.314	-1094.551	-869.050	47.933	101.380%
2	17:03:57	325.246	114.721%	-869.120	32.311	-73.387	28.284	109.420%	594.051	-1044.916	-848.320	33.471	103.840%
3	17:04:19	324.125	118.103%	-824.921	-0.040	-49.238	4.497	111.196%	647.521	-1077.962	-857.771	19.179	100.511%
x		309.301	115.882%	-864.572	7.872	-66.750	21.761	109.588%	592.628	-1072.476	-858.381	33.528	101.910%
σ		26.654	1.924%	37.584	21.598	15.314	15.099	1.531%	55.617	25.268	10.378	14.377	1.727%
%RSD		8.617	1.660	4.347	274.352	22.942	69.386	1.397	9.385	2.356	1.209	42.881	1.695

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:03:35	16.864	-349.060	-792.819	94.974%	0.000	12532.583	-7.005
2	17:03:57	4.663	-308.499	-667.029	98.508%	0.000	11643.395	-19.045
3	17:04:19	52.625	-406.175	-740.240	96.842%	0.000	11698.149	-23.510
x		24.718	-354.578	-733.363	96.775%	0.000	11958.043	-16.520
σ		24.927	49.071	63.177	1.768%	0.000	498.319	8.537
%RSD		100.845	13.839	8.615	1.827	0.000	4.167	51.678

200-35736-A-14-A SD@5 10/18/2016 05:08:56 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:09:18	97.989%	-4.631	-685.095	39873.088	54.124	3821.507	2931.482	387.495	125.196%	12.030	746.988	115.625
2	17:09:40	96.048%	-4.580	-653.035	43690.555	-3.158	3634.163	2295.025	382.306	126.096%	3.984	1014.129	114.152
3	17:10:02	95.774%	-4.572	-531.272	38172.964	12.864	3562.574	2811.450	462.238	125.998%	7.972	1274.223	103.699
x		96.604%	-4.594	-623.134	40578.869	21.277	3672.748	2679.319	410.680	125.763%	7.995	1011.780	111.158
σ		1.207%	0.032	81.154	2825.694	29.553	133.709	338.176	44.726	0.494%	4.023	263.625	6.502
%RSD		1.250	0.699	13.023	6.963	138.898	3.641	12.622	10.891	0.393	50.316	26.056	5.849

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:09:18	6453.677	96.132	28654.753	-22.692	11.669	11.747	39.257	-304.266	624.514	-42.907	455.262	2469.093
2	17:09:40	6334.847	48.893	24298.554	-30.765	3.453	-4.435	128.475	-473.896	685.105	-126.641	446.255	2713.100
3	17:10:02	6388.767	152.430	23524.626	-26.787	-0.491	31.191	68.304	-428.070	647.231	-49.015	452.201	2387.034
x		6392.430	99.152	25492.645	-26.748	4.877	12.834	78.679	-402.077	652.283	-72.854	451.239	2523.075
σ		59.499	51.835	2765.671	4.037	6.203	17.838	45.505	87.751	30.610	46.680	4.580	169.603
%RSD		0.931	52.278	10.849	15.092	127.199	138.990	57.836	21.825	4.693	64.074	1.015	6.722

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:09:18	85.222	114.868%	-917.107	5.435	-64.631	19.776	107.302%	484.619	-1117.390	-889.047	-2.814	99.468%
2	17:09:40	65.684	114.069%	-890.563	-4.064	-47.163	2.578	108.348%	438.410	-1108.649	-877.937	6.280	101.451%
3	17:10:02	45.595	114.721%	-908.345	4.554	-56.005	6.646	110.793%	415.194	-1082.349	-880.964	-12.281	101.245%
x		65.501	114.553%	-905.338	1.975	-55.933	9.667	108.814%	446.074	-1102.796	-882.649	-2.938	100.721%
σ		19.814	0.425%	13.525	5.249	8.734	8.988	1.791%	35.341	18.239	5.743	9.281	1.090%
%RSD		30.250	0.371	1.494	265.752	15.615	92.980	1.646	7.923	1.654	0.651	315.861	1.083

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:09:18	18.951	-401.449	-1223.868	94.869%	0.000	6156.765	-59.651
2	17:09:40	11.860	-335.482	-1375.200	95.681%	0.000	6320.724	-59.651
3	17:10:02	-17.561	-364.306	-1322.641	96.639%	0.000	6278.120	-54.477
x		4.417	-367.079	-1307.237	95.730%	0.000	6251.870	-57.926
σ		19.360	33.071	76.833	0.886%	0.000	85.073	2.987
%RSD		438.340	9.009	5.878	0.926	0.000	1.361	5.157

CCV 10/18/2016 05:14:40 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	17:15:02	85.266%	104545.470	36700.443	┬14347493.000	┬4204580.100	┬40073680.000	┬13477252.000	1335692.700	102.648%	25610.919	┬2703396.500	761082
2	17:15:23	82.584%	107247.470	38078.387	┬14395622.000	┬4250673.200	┬39746859.000	┬13524434.000	┬1454609.300	100.306%	26735.689	┬2765486.200	777755
3	17:15:45	80.336%	107963.930	38829.024	┬13947332.000	┬4078209.000	┬38793491.000	┬13136560.000	┬1425300.400	101.601%	25952.760	┬2684602.500	754794
x		82.729%	119.138%	115.496%	┬105.748%	┬100.850%	┬102.361%	┬98.592%	┬97.099%	101.518%	26099.789	┬103.058%	95.1
σ		2.468%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.173%	576.619	┬n/a	
%RSD		2.983	1.691	2.851	┬1.729	┬2.137	┬1.682	┬1.582	┬4.409	1.156	2.209	┬1.557	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	17:15:02	8941.257	┬3973235.100	┬82419332.000	1188069.100	641140.110	870461.000	675239.040	89185.420	-393.438	9413.579	424.481	1712
2	17:15:23	8864.262	┬4031345.400	┬83278190.000	1199841.800	645201.450	864784.520	679604.380	90465.549	-508.318	9431.225	447.823	1784
3	17:15:45	7360.460	┬3936260.400	┬82095764.000	1172160.000	629569.260	849829.780	669821.880	91034.052	-479.187	9551.465	444.866	1395
x		8388.660	┬98.305%	┬98.557%	93.392%	99.830%	103.809%	105.484%	108.791%	-460.314	109.787%	439.057	1630

σ		891.278	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	59.720	n/a	12.709	207
%RSD		10.625	T 1.204	T 0.740	1.171	1.270	1.237	0.726	1.049	12.974	0.793	2.895	12
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	17:15:02	852951.330	96.292%	1685297.400	282277.890	698.503	132947.400	93.409%	843990.140	565727.800	428199.980	568124.820	88.1
2	17:15:23	867094.970	94.769%	1757379.900	282383.300	539.604	135136.380	92.337%	851087.540	571696.030	431424.570	573751.920	86.7
3	17:15:45	866796.070	94.295%	1778674.400	284433.000	468.176	134519.180	91.602%	862583.490	577183.520	436974.340	575702.520	88.7
x		862280.790	95.119%	93.998%	105.692%	568.761	95.479%	92.449%	852553.730	571535.780	92.175%	92.131%	87.8
σ		8080.934	1.043%	n/a	n/a	117.899	n/a	0.909%	9382.988	5729.543	n/a	n/a	1.0
%RSD		0.937	1.097	2.812	0.429	20.729	0.841	0.983	1.101	1.002	1.027	0.687	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:15:02	36465.763	1618552.700	T 15248023.000	86.652%	0.000	201910.940	120527.950
2	17:15:23	37487.805	1643606.400	T 15364872.000	85.329%	0.000	221336.510	121247.810
3	17:15:45	36473.960	1653769.900	T 15554478.000	85.150%	0.000	233637.960	120432.770
x		99.185%	87.616%	T 96.426%	85.710%	0.000	86.971%	96.793%
σ		n/a	n/a	T n/a	0.820%	0.000	n/a	n/a
%RSD		1.597	1.106	T 1.005	0.957	0.000	7.306	0.369

CCB 10/18/2016 05:20:23 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:20:45	92.628%	-1.784	-485.563	8664.851	398.821	5881.724	6665.239	196.514	106.365%	28.306	166.633	-201.530
2	17:21:08	88.979%	1.247	-437.716	4937.051	392.579	5452.309	6573.616	293.198	107.498%	37.337	976.325	-250.490
3	17:21:29	86.856%	1.453	-538.961	2270.214	508.851	5534.705	4422.243	306.767	106.788%	9.393	2155.486	-310.714
x		89.488%	0.305	-487.413	5290.705	433.417	5622.912	5887.033	265.493	106.884%	25.012	1099.481	-254.245
σ		2.920%	1.812	50.648	3211.954	65.402	227.892	1269.372	60.121	0.572%	14.260	1000.130	54.689
%RSD		3.263	594.339	10.391	60.709	15.090	4.053	21.562	22.645	0.536	57.013	90.964	21.510

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:20:45	5497.500	383.373	39112.647	74.860	65.747	113.125	-80.674	-225.495	468.945	-55.744	450.438	2212.399
2	17:21:08	5396.748	388.955	36010.883	55.016	22.895	36.962	-91.444	-588.301	535.900	-88.900	445.349	2511.923
3	17:21:29	5033.131	370.860	33510.355	60.348	46.646	71.671	-194.856	-291.028	459.708	-23.014	474.715	2239.927
x		5309.126	381.062	36211.295	63.408	45.096	73.919	-122.324	-368.274	488.184	-55.886	456.834	2321.416
σ		244.270	9.266	2806.518	10.270	21.468	38.131	63.044	193.345	41.581	32.943	15.693	165.556
%RSD		4.601	2.432	7.750	16.196	47.605	51.585	51.538	52.500	8.517	58.947	3.435	7.132

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:20:45	98.364	98.597%	2506.936	24.343	-68.424	29.256	96.019%	3254.872	-389.253	-341.233	30.072	88.251%
2	17:21:08	99.281	100.005%	2353.234	40.423	-59.851	26.159	95.320%	3619.771	-397.921	-280.761	40.907	90.618%
3	17:21:29	103.660	100.010%	1833.024	34.796	-68.471	29.309	95.954%	3653.191	-304.129	-247.031	30.104	91.834%
x		100.435	99.537%	2231.065	33.187	-65.582	28.241	95.764%	3509.278	-363.767	-289.675	33.694	90.235%
σ		2.830	0.814%	353.176	8.160	4.963	1.803	0.386%	220.955	51.830	47.729	6.246	1.822%
%RSD		2.818	0.818	15.830	24.588	7.568	6.385	0.403	6.296	14.248	16.477	18.538	2.019

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:20:45	78.332	1089.019	-41.840	89.997%	0.000	7933.446	-20.760
2	17:21:08	129.069	856.187	-111.068	88.957%	0.000	7786.011	-3.444
3	17:21:29	71.700	843.798	-56.506	87.334%	0.000	7909.353	-19.575
x		93.034	929.668	-69.805	88.763%	0.000	7876.270	-14.593
σ		31.383	138.141	36.480	1.342%	0.000	79.089	9.674
%RSD		33.733	14.859	52.260	1.512	0.000	1.004	66.288

CCVL 10/18/2016 05:26:07 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:26:29	91.657%	221.934	5355.131	T 752070.620	26352.682	67346.610	641148.290	23789.094	110.207%	13.662	11675.334	8258.750
2	17:26:51	91.597%	189.331	5212.002	T 747682.990	27339.365	68767.966	635122.610	23082.515	110.623%	18.171	9694.724	8297.898
3	17:27:12	89.645%	218.711	5559.025	660934.440	26544.386	67791.154	632873.540	23668.151	110.428%	18.193	11776.329	7812.773
x		90.966%	146.701%	102.464%	T 107.044%	96.843%	105.579%	93.789%	97.486%	110.419%	16.675	104.740%	101.112%
σ		1.145%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.209%	2.610	n/a	n/a
%RSD		1.259	8.555	3.244	T 7.136	1.956	1.070	0.672	1.607	0.189	15.650	10.623	3.318

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:26:29	6159.822	6663.646	536236.100	2929.321	1205.826	4021.238	12277.937	715.661	485.700	151.390	449.091	2231.239
2	17:26:51	6711.199	7075.626	535971.080	2777.981	1137.894	3884.150	11652.848	592.120	532.886	114.157	425.365	2400.214
3	17:27:12	6023.883	7088.872	542684.760	2746.742	1117.316	3897.686	12091.239	466.983	584.177	88.752	448.497	2479.689
x		6298.301	107.169%	96.345%	110.889%	112.713%	118.495%	117.295%	71.329%	534.254	68.491%	440.984	2370.380
σ		363.983	n/a	n/a	n/a	n/a	n/a	n/a	n/a	49.253	n/a	13.530	126.883

%RSD		5.779	3.482	0.706	3.465	4.015	1.920	2.672	21.018	9.219	26.676	3.068	5.353
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:26:29	22013.725	101.786%	13634.128	3082.103	-58.876	636.462	98.088%	1478.323	4083.365	2716.337	4739.786	91.339%
2	17:26:51	22107.348	99.551%	14630.269	2971.773	-86.828	806.088	96.859%	1559.034	4229.037	2966.086	4743.350	90.708%
3	17:27:12	21830.294	100.404%	14782.051	2676.798	-16.991	621.438	97.995%	1479.726	4018.878	2888.215	4626.917	91.551%
x		98.472%	100.580%	96.868%	108.676%	-54.231	97.896%	97.648%	1505.694	4110.426	76.161%	94.608%	91.199%
σ		n/a	1.128%	n/a	n/a	35.149	n/a	0.684%	46.199	107.661	n/a	n/a	0.438%
%RSD		0.641	1.122	4.346	7.200	64.814	14.905	0.701	3.068	2.619	4.473	1.408	0.481

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:26:29	2848.202	16281.500	13525.861	89.193%	0.000	15601.942	12647.490
2	17:26:51	3094.673	16574.978	13091.409	90.987%	0.000	16149.225	11973.483
3	17:27:12	3169.126	16562.658	13638.816	90.354%	0.000	16558.513	12545.126
x		81.844%	88.080%	105.100%	90.178%	0.000	63.962%	99.319%
σ		n/a	n/a	n/a	0.910%	0.000	n/a	n/a
%RSD		5.530	1.008	2.154	1.009	0.000	2.980	2.932

CCVL 10/18/2016 05:30:57 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	17:31:19	95.561%	165.483	5258.401	648510.470	27271.152	66506.244	612994.860	22508.764	112.832%	44.525	10866.277	7817.322
2	17:31:40	92.885%	197.374	5542.607	638294.340	26853.491	67781.487	619251.300	22353.131	111.796%	13.484	10595.925	7803.093
3	17:32:03	90.713%	235.341	5330.033	T 737846.360	27793.876	68571.666	627402.340	23017.643	110.330%	13.641	10134.877	8061.588
x		93.053%	139.301%	102.495%	T 100.305%	98.873%	105.037%	91.358%	93.809%	111.653%	23.883	99.845%	98.260%
σ		2.428%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.257%	17.876	n/a	n/a
%RSD		2.609	17.539	2.749	T 8.115	1.726	1.541	1.165	1.536	1.126	74.848	3.511	1.841

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:31:19	6359.498	6538.963	518975.160	2607.545	1234.730	4007.955	12034.989	386.040	608.855	116.611	457.440	2398.083
2	17:31:40	6510.693	6777.858	527918.870	2569.472	1317.996	3967.762	11785.852	590.718	560.853	61.836	432.522	2547.340
3	17:32:03	6219.450	6918.684	535226.140	2567.906	1213.507	3921.424	11677.320	730.000	506.495	141.510	458.048	2139.475
x		6363.214	104.120%	94.390%	101.587%	122.652%	119.439%	115.589%	68.596%	558.734	61.852%	449.337	2361.633
σ		145.657	n/a	n/a	n/a	n/a	n/a	n/a	n/a	51.213	n/a	14.565	206.361
%RSD		2.289	2.846	1.543	0.869	4.399	1.092	1.550	30.411	9.166	38.217	3.241	8.738
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:31:19	21803.297	102.130%	12943.212	3144.621	-70.530	709.145	96.626%	1003.901	3810.302	2673.240	4661.677	90.921%
2	17:31:40	21776.222	100.727%	13926.705	3100.645	-67.094	735.864	98.147%	1187.042	3577.670	2670.863	4808.310	93.230%
3	17:32:03	22604.535	102.765%	14025.969	2821.962	-70.979	685.191	97.917%	1184.719	3742.182	2778.400	4278.205	92.458%
x		98.819%	101.874%	92.029%	112.865%	-69.534	101.037%	97.563%	1125.221	3710.051	72.178%	92.182%	92.203%
σ		n/a	1.043%	n/a	n/a	2.125	n/a	0.820%	105.072	119.598	n/a	n/a	1.176%
%RSD		2.133	1.024	4.391	5.789	3.057	3.570	0.840	9.338	3.224	2.268	5.973	1.275

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:31:19	2911.226	16552.092	13230.722	91.807%	0.000	17288.091	11631.656
2	17:31:40	2874.375	16342.160	13418.524	89.493%	0.000	17741.571	12386.798
3	17:32:03	2720.658	17075.150	13618.229	89.859%	0.000	18085.736	12380.738
x		76.403%	89.060%	105.129%	90.386%	0.000	70.324%	97.269%
σ		n/a	n/a	n/a	1.244%	0.000	n/a	n/a
%RSD		3.565	2.266	1.444	1.376	0.000	2.260	3.579

200-35736-A-14-A PDS 10/18/2016 05:36:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:37:08	89.860%	1726.154	57878.057	T 7522727.700	258204.810	591060.120	T 6833285.800	214445.770	106.964%	42.239	95784.447	76755.872
2	17:37:30	87.304%	1653.746	60085.387	T 7386652.600	256657.960	576878.350	T 6772538.600	219354.950	105.428%	9.524	97191.000	76427.257
3	17:37:52	88.177%	1753.555	60234.797	T 7404437.700	256290.370	587492.660	T 6828095.400	219932.620	104.295%	14.450	100473.800	78370.016
x		88.447%	1711.152	59399.413	T 7437939.300	257051.050	585143.710	T 6811306.600	217911.110	105.562%	22.071	97816.415	77184.382
σ		1.299%	51.568	1319.650	T 73965.396	1015.956	7376.913	T 33674.255	3014.944	1.340%	17.639	2406.422	1039.853
%RSD		1.469	3.014	2.222	T 0.994	0.395	1.261	T 0.494	1.384	1.269	79.918	2.460	1.347

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:37:08	5879.277	60377.256	T 5557312.600	23192.762	10184.127	36100.498	104823.890	8349.002	420.435	1613.028	459.320	2397.771
2	17:37:30	5368.587	58382.909	T 5535526.200	23464.875	10636.680	36495.944	108418.940	8145.529	474.106	1691.872	449.721	2067.919
3	17:37:52	4611.250	60262.930	T 5638735.300	23729.765	10301.556	34973.005	105678.700	8511.428	258.821	1680.108	419.636	2095.524
x		5286.371	59674.365	T 5577191.400	23462.467	10374.121	35856.482	106307.180	8335.319	384.454	1661.670	442.893	2187.071
σ		637.999	1119.894	T 54400.402	268.510	234.841	790.249	1878.123	183.333	112.062	42.533	20.705	182.992
%RSD		12.069	1.877	T 0.975	1.144	2.264	2.204	1.767	2.199	29.148	2.560	4.675	8.367

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:37:08	209490.660	98.295%	135241.120	28105.609	-1.755	6390.255	94.162%	1088.582	43009.716	31867.148	44276.119	87.917%
2	17:37:30	215956.630	96.776%	140247.760	28768.290	-29.175	6295.759	92.725%	1100.057	43663.567	32977.214	45238.134	89.936%
3	17:37:52	212897.770	94.457%	142194.620	28262.194	56.182	6280.290	93.535%	1122.615	44077.181	33094.608	44873.384	89.885%
x		212781.690	96.509%	139227.830	28378.698	8.417	6322.102	93.474%	1103.752	43583.488	32646.323	44795.879	89.246%
σ		3234.545	1.933%	3587.194	346.362	43.578	59.527	0.720%	17.315	538.219	677.334	485.668	1.152%
%RSD		1.520	2.003	2.576	1.221	517.716	0.942	0.771	1.569	1.235	2.075	1.084	1.290

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:37:08	29721.358	157631.130	110151.430	87.667%	0.000	190284.410	123351.090
2	17:37:30	30043.015	161674.160	112160.910	86.303%	0.000	202413.990	126199.110
3	17:37:52	31364.095	160963.120	112667.010	86.920%	0.000	208715.590	127462.870
x		30376.156	160089.470	111659.780	86.963%	0.000	200471.330	125671.020
σ		870.565	2158.467	1330.558	0.683%	0.000	9367.901	2106.145
%RSD		2.866	1.348	1.192	0.785	0.000	4.673	1.676

200-35736-A-14-B MS 10/18/2016 05:42:30 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:42:52	91.058%	1706.100	61011.890	T 7602212.400	262585.900	582092.310	T 6809569.600	226539.360	107.986%	13.966	97270.932	77283.133
2	17:43:14	88.768%	1620.734	60899.760	T 7540032.800	263046.710	597901.250	T 7014497.200	231629.160	105.564%	23.823	98426.983	77939.700
3	17:43:35	87.642%	1807.098	62338.765	T 7569399.700	263844.070	597206.250	T 6991901.600	230705.560	105.349%	23.859	99752.636	80043.761
x		89.156%	1711.310	61416.805	T 7570548.300	263158.900	592399.940	T 6938656.100	229624.690	106.300%	20.550	98483.517	78422.198
σ		1.740%	93.291	800.407	T 31105.715	636.542	8933.432	T 112361.660	2711.587	1.464%	5.701	1241.818	1442.175
%RSD		1.952	5.451	1.303	T 0.411	0.242	1.508	T 1.619	1.181	1.377	27.743	1.261	1.839

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:42:52	4900.190	59857.606	T 5657377.300	23932.728	10031.856	36997.215	109669.400	8957.504	198.290	1810.403	414.470	1747.843
2	17:43:14	4523.467	60379.689	T 5835728.900	24653.559	10414.326	38900.251	112119.060	9145.423	167.972	1888.632	438.727	1892.094
3	17:43:35	4183.099	60841.924	T 5870562.100	24798.989	10582.847	37649.650	111546.970	8716.925	254.328	1836.272	445.157	2026.389
x		4535.585	60359.740	T 5787889.400	24461.759	10343.009	37849.039	111111.810	8939.951	206.864	1845.102	432.784	1888.775

σ		358.699	492.463	T 114360.800	463.889	282.333	967.059	1281.494	214.788	43.812	39.855	16.183	139.303
%RSD		7.909	0.816	T 1.976	1.896	2.730	2.555	1.153	2.403	21.179	2.160	3.739	7.375
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:42:52	221289.780	96.403%	143137.250	28803.835	-59.811	6717.166	93.132%	762.374	43661.779	33589.658	45680.931	88.804%
2	17:43:14	227750.500	93.347%	150652.160	30509.965	-15.507	6906.365	90.946%	885.161	45354.954	34892.092	48499.108	90.033%
3	17:43:35	224960.000	94.129%	150095.260	30236.191	27.217	6779.705	92.216%	970.575	45715.421	34818.205	47325.493	88.373%
x		224666.760	94.626%	147961.560	29849.997	-16.034	6801.079	92.098%	872.703	44910.718	34433.318	47168.511	89.070%
σ		3240.328	1.588%	4187.241	916.286	43.516	96.393	1.098%	104.658	1096.527	731.565	1415.632	0.861%
%RSD		1.442	1.678	2.830	3.070	271.405	1.417	1.192	11.992	2.442	2.125	3.001	0.967

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:42:52	64933.232	168535.970	116484.180	85.288%	0.000	229775.240	127765.920
2	17:43:14	65260.795	169679.560	117650.180	86.051%	0.000	232550.970	130656.850
3	17:43:35	65397.934	170832.150	117997.510	85.938%	0.000	242266.710	132358.550
x		65197.320	169682.560	117377.290	85.759%	0.000	234864.310	130260.440
σ		238.765	1148.095	792.708	0.412%	0.000	6559.184	2321.836
%RSD		0.366	0.677	0.675	0.480	0.000	2.793	1.782

200-35736-A-14-C MSD 10/18/2016 05:48:15 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:48:38	90.832%	1666.310	58946.106	T 7500942.700	258638.510	582091.080	T 6902260.500	224182.520	106.463%	28.332	99513.739	76936.764
2	17:49:00	88.862%	1827.216	60280.641	T 7553003.900	266551.630	586719.560	T 6933190.300	220626.140	106.918%	37.637	98008.574	78072.507
3	17:49:23	87.818%	1866.102	61314.643	T 7279051.100	254514.540	567984.070	T 6688157.600	222738.250	107.648%	4.672	94941.273	77545.741
x		89.171%	1786.543	60180.464	T 7444332.500	259901.560	578931.570	T 6841202.800	222515.640	107.010%	23.547	97487.862	77518.338
σ		1.531%	105.924	1187.442	T 145485.610	6117.136	9759.178	T 133440.230	1788.610	0.598%	16.996	2330.283	568.367
%RSD		1.717	5.929	1.973	T 1.954	2.354	1.686	T 1.951	0.804	0.559	72.176	2.390	0.733

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:48:38	4029.414	57782.999	T 5641710.000	23447.980	10876.068	36819.975	108312.850	8506.401	270.662	1722.589	420.590	2157.305
2	17:49:00	4518.511	59314.029	T 5701629.900	23839.627	10441.177	37486.000	108570.530	8714.365	185.877	1771.536	448.757	1913.616
3	17:49:23	4370.085	58853.498	T 5618971.900	24124.437	10537.582	37656.375	109989.550	8436.919	289.267	1708.449	450.424	2049.813
x		4306.003	58650.175	T 5654103.900	23804.015	10618.276	37320.783	108957.640	8552.561	248.602	1734.191	439.924	2040.245
σ		250.766	785.505	T 42700.037	339.632	228.399	442.000	902.896	144.368	55.112	33.105	16.764	122.126
%RSD		5.824	1.339	T 0.755	1.427	2.151	1.184	0.829	1.688	22.169	1.909	3.811	5.986

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:48:38	217436.720	95.067%	142177.280	29453.307	-71.981	6570.775	92.252%	872.627	44100.591	33357.381	46469.908	89.711%
2	17:49:00	218933.220	94.381%	145241.640	29680.885	-23.675	6422.832	93.147%	783.721	44224.710	33321.018	46346.162	89.248%
3	17:49:23	219952.500	95.284%	147793.710	29022.542	72.971	6554.095	92.914%	780.311	44585.734	33828.278	46759.533	88.914%
x		218774.150	94.910%	145070.880	29385.578	-7.562	6515.901	92.771%	812.220	44303.678	33502.226	46525.201	89.291%
σ		1265.409	0.471%	2812.105	334.356	73.807	81.030	0.464%	52.342	252.028	282.955	212.160	0.401%
%RSD		0.578	0.496	1.938	1.138	976.036	1.244	0.500	6.444	0.569	0.845	0.456	0.449

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:48:38	63263.576	162717.390	113592.620	86.425%	0.000	231193.980	126836.520
2	17:49:00	65194.542	166392.850	117749.030	85.329%	0.000	238454.520	128519.080
3	17:49:23	65569.931	165201.430	114733.710	87.374%	0.000	240198.510	128038.020
x		64676.016	164770.560	115358.450	86.376%	0.000	236615.670	127797.870
σ		1237.526	1875.232	2147.480	1.024%	0.000	4775.605	866.604
%RSD		1.913	1.138	1.862	1.185	0.000	2.018	0.678

CCV 10/18/2016 05:54:01 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	17:54:23	87.797%	105800.000	36433.965	T 14299172.000	T 4261274.400	T 40292561.000	T 13939810.000	T 1465008.900	101.880%	26019.055	T 2721940.200	775189
2	17:54:44	86.778%	105834.580	37182.404	T 14667516.000	T 4354809.200	T 40864939.000	T 13874216.000	1368626.900	99.291%	26325.168	T 2782175.500	786151
3	17:55:06	85.544%	105865.850	37619.606	T 14034588.000	T 4093230.800	T 38555355.000	T 13231219.000	T 1430195.700	103.859%	25705.992	T 2639589.000	735759
x		86.706%	118.297%	113.085%	T 106.518%	T 102.265%	T 103.309%	T 100.820%	T 98.210%	101.677%	26016.738	T 102.934%	95.3
σ		1.128%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.291%	309.595	T n/a	
%RSD		1.301	0.031	1.617	T 2.218	T 3.129	T 3.014	T 2.862	T 3.434	2.253	1.190	T 2.637	3

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	17:54:23	6930.502	T 4049953.300	T 83020180.000	1176112.500	638987.740	892113.200	690483.610	91215.399	-395.179	9533.337	477.200	1638
2	17:54:44	10891.914	T 4128640.300	T 84336699.000	1187155.300	646491.570	874295.300	690527.120	91471.370	-434.269	9483.841	460.605	1547
3	17:55:06	8274.612	T 3925566.000	T 81011984.000	1143594.100	620945.960	869108.610	678859.710	90017.151	-517.184	9509.202	434.941	1372
x		8699.009	T 99.649%	T 98.786%	91.997%	99.336%	105.835%	107.318%	109.602%	-448.877	110.290%	457.582	1519
σ		2014.518	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	62.301	n/a	21.291	135

%RSD		23.158	T 2.538	T 2.022	1.937	2.066	1.374	0.979	0.854	13.879	0.260	4.653	8
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	17:54:23	868170.360	93.504%	1691707.000	282404.530	859.937	131606.650	90.320%	851536.810	565249.310	429349.660	573474.720	86.4
2	17:54:44	859919.190	92.410%	1755948.700	282095.960	698.766	132600.960	90.426%	854434.160	568597.510	431321.930	576657.900	86.4
3	17:55:06	857982.710	91.563%	1789129.800	283214.920	780.773	133201.080	90.703%	859874.060	565602.540	430742.350	572097.300	88.2
x		862024.090	92.492%	94.276%	105.520%	779.825	94.247%	90.483%	855281.680	566483.120	91.806%	92.381%	87.0
σ		5410.174	0.973%	n/a	n/a	80.590	n/a	0.198%	4232.750	1839.615	n/a	n/a	1.0
%RSD		0.628	1.052	2.837	0.205	10.334	0.608	0.219	0.495	0.325	0.235	0.407	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:54:23	36941.720	1601409.700	T 15560611.000	85.995%	0.000	274731.930	116506.540
2	17:54:44	37892.085	1646634.900	T 15760327.000	85.370%	0.000	287694.920	118025.690
3	17:55:06	37588.311	1663268.600	T 15464736.000	84.745%	0.000	294801.120	119246.690
x		100.977%	87.534%	T 97.717%	85.370%	0.000	113.496%	94.540%
σ		n/a	n/a	T n/a	0.625%	0.000	n/a	n/a
%RSD		1.295	1.955	T 0.967	0.732	0.000	3.561	1.164

CCB 10/18/2016 05:59:45 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	18:00:06	95.040%	-1.921	0.343	8956.401	607.937	6049.758	8146.283	379.133	108.559%	18.523	649.980	-159.281
2	18:00:28	90.501%	9.392	195.218	344.999	513.569	5562.518	6395.105	340.125	108.904%	23.080	981.367	-458.210
3	18:00:50	90.698%	20.382	214.145	9990.979	651.863	6330.865	8009.233	202.015	105.284%	4.770	258.296	-266.301
x		92.079%	9.284	136.568	6430.793	591.123	5981.047	7516.874	307.091	107.583%	15.458	629.881	-294.597
σ		2.565%	11.152	118.354	5295.777	70.663	388.755	973.894	93.066	1.998%	9.532	361.954	151.460
%RSD		2.786	120.118	86.663	82.350	11.954	6.500	12.956	30.306	1.857	61.665	57.464	51.413

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	18:00:06	5207.509	537.739	32188.985	104.726	45.424	59.009	19.921	-22.713	365.017	31.954	442.400	2026.249
2	18:00:28	5008.647	433.720	28190.030	67.529	31.417	59.797	11.290	-284.964	451.389	-36.967	429.086	2305.547
3	18:00:50	5349.348	382.028	36809.164	71.317	28.720	52.446	-170.276	-337.712	462.024	-78.192	406.890	2306.431
x		5188.501	451.162	32396.060	81.190	35.187	57.084	-46.355	-215.130	426.143	-27.735	426.125	2212.742
σ		171.144	79.307	4313.297	20.470	8.968	4.036	107.406	168.712	53.203	55.650	17.939	161.509
%RSD		3.299	17.578	13.314	25.212	25.486	7.070	231.702	78.423	12.485	200.648	4.210	7.299

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	18:00:06	96.723	96.963%	2508.503	47.187	-58.718	30.759	93.243%	3131.889	-358.911	-367.040	69.004	88.470%
2	18:00:28	166.960	97.316%	2408.586	9.738	-47.102	14.034	92.990%	3516.870	-384.747	-260.107	36.976	88.991%
3	18:00:50	42.805	95.843%	2345.432	25.534	-58.470	57.124	93.638%	3391.036	-379.480	-257.828	52.623	89.647%
x		102.163	96.707%	2420.841	27.487	-54.763	33.972	93.290%	3346.598	-374.379	-294.992	52.868	89.036%
σ		62.256	0.769%	82.223	18.801	6.636	21.724	0.327%	196.299	13.652	62.406	16.016	0.590%
%RSD		60.938	0.795	3.396	68.399	12.117	63.945	0.350	5.866	3.647	21.155	30.294	0.662

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	18:00:06	179.642	1402.407	198.587	87.196%	0.000	9422.089	20.628
2	18:00:28	121.868	1029.775	145.489	85.986%	0.000	9319.249	15.943
3	18:00:50	164.925	943.217	-5.121	88.170%	0.000	9119.706	-19.955
x		155.479	1125.133	112.985	87.117%	0.000	9287.014	5.539
σ		30.023	243.995	105.672	1.094%	0.000	153.747	22.202
%RSD		19.310	21.686	93.528	1.256	0.000	1.656	400.852

CCVL 10/18/2016 06:05:29 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:05:50	95.342%	199.967	5268.040	T 716640.930	25640.568	65564.959	599222.810	22129.863	111.926%	13.491	11233.037	7751.734
2	18:06:12	90.004%	195.588	5570.781	630660.940	26016.160	66825.688	606831.790	22436.003	110.246%	13.680	9906.939	7406.556
3	18:06:34	89.415%	202.515	5587.678	635227.690	26465.126	66197.169	607976.290	22139.599	109.516%	18.365	10930.263	7490.431
x		91.587%	139.271%	104.372%	T 98.218%	94.291%	102.825%	89.117%	92.187%	110.563%	15.179	101.340%	93.972%
σ		3.266%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.236%	2.761	n/a	n/a
%RSD		3.566	1.758	3.285	T 7.320	1.585	0.952	0.787	0.783	1.118	18.189	6.501	2.385

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:05:50	5439.527	6478.984	494130.480	2593.240	1128.789	3949.606	11740.127	562.923	535.174	102.747	439.528	2368.037
2	18:06:12	5551.086	6407.044	506334.840	2492.797	1209.925	4229.327	12643.163	586.682	476.689	178.885	444.874	2142.102
3	18:06:34	5471.265	6575.778	509751.820	2432.057	1049.234	3692.985	11702.310	507.683	520.653	114.420	446.555	2421.648
x		5487.293	100.139%	90.100%	98.612%	110.333%	119.186%	117.502%	66.608%	510.839	76.562%	443.652	2310.596
σ		57.481	n/a	n/a	n/a	n/a	n/a	n/a	n/a	30.452	n/a	3.670	148.362
%RSD		1.048	1.305	1.631	3.248	7.115	6.779	4.428	7.337	5.961	31.061	0.827	6.421

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:05:50	21389.524	97.588%	13518.003	2900.860	-91.848	699.037	95.103%	1366.989	3458.367	2631.070	4510.451	88.348%
2	18:06:12	21543.458	98.411%	13666.612	2776.750	-48.798	691.363	93.960%	1596.490	3652.507	2727.650	4794.398	91.017%
3	18:06:34	21070.787	97.452%	13769.305	2800.235	-85.150	714.583	94.950%	1463.986	3497.943	2736.887	4696.834	91.763%
x		95.564%	97.817%	92.159%	105.529%	-75.265	99.841%	94.671%	1475.822	3536.272	71.939%	93.882%	90.376%
σ		n/a	0.519%	n/a	n/a	23.165	n/a	0.620%	115.207	102.589	n/a	n/a	1.796%
%RSD		1.130	0.530	0.926	2.333	30.778	1.686	0.655	7.806	2.901	2.172	3.091	1.987

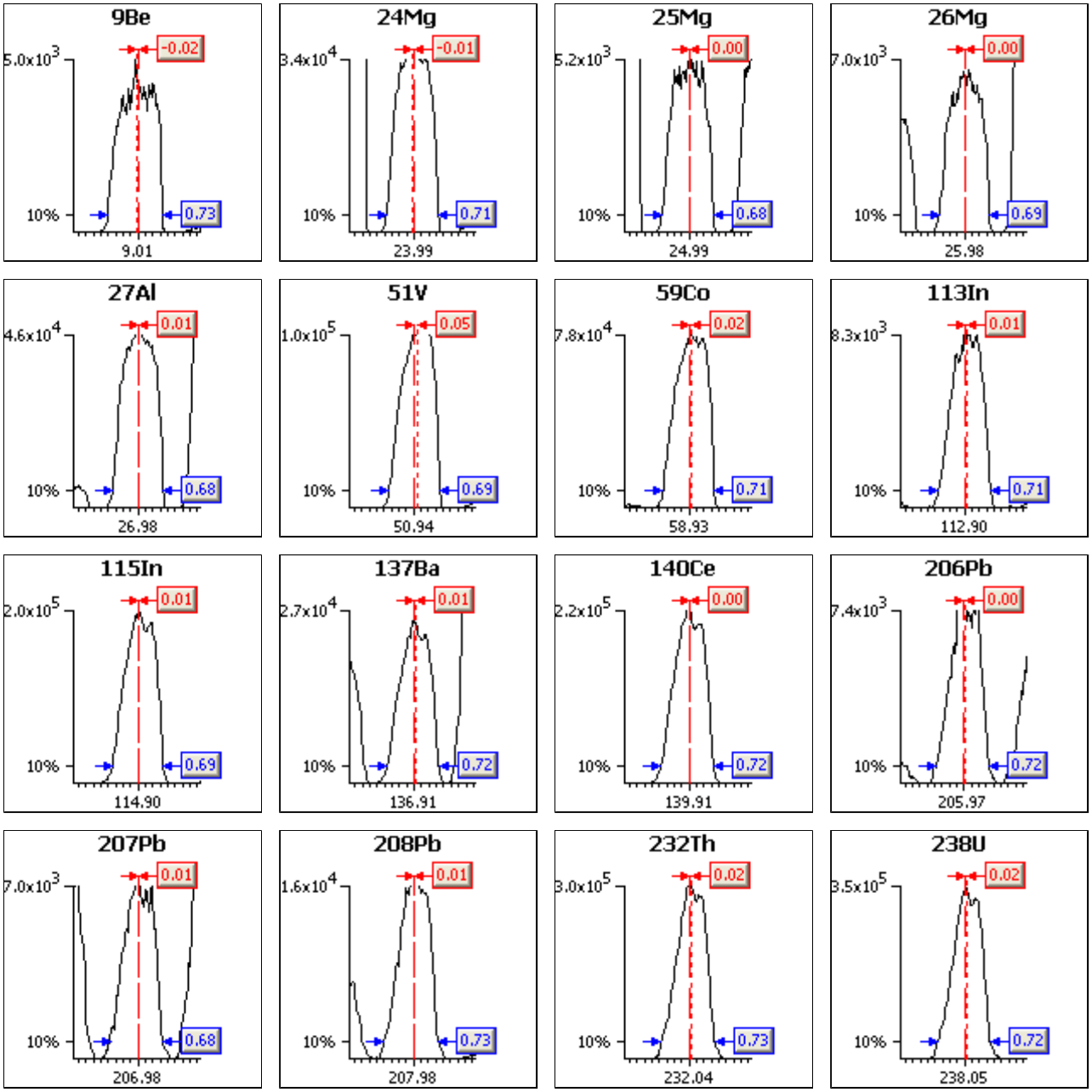
Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:05:50	2794.909	15656.897	12846.295	89.233%	0.000	17082.950	11929.622
2	18:06:12	3221.224	16356.152	13600.051	90.126%	0.000	17070.236	11716.449
3	18:06:34	3090.735	16247.517	12920.376	88.275%	0.000	17756.492	12173.080
x		81.797%	86.015%	102.778%	89.212%	0.000	68.728%	95.719%
σ		n/a	n/a	n/a	0.926%	0.000	n/a	n/a
%RSD		7.196	2.339	3.166	1.038	0.000	2.269	1.914

Performance Report

Sample details
Sample name : ITUNE
Acquired at : 10/19/2016 09:50:28 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Mass Calibration verification

Acquisition parameters
Sweeps : 20
Dwell : 1.0 mSecs
Point spacing : 0.01 amu
Peak width measured at 10% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
9Be	0.90	0.65	0.10	0.73	-0.02
24Mg	0.90	0.65	0.10	0.71	-0.01

25Mg	0.90	0.65	0.10	0.68	0.00
26Mg	0.90	0.65	0.10	0.69	0.00
27Al	0.90	0.65	0.10	0.68	0.01
51V	0.90	0.65	0.10	0.69	0.05
59Co	0.90	0.65	0.10	0.71	0.02
113In	0.90	0.65	0.10	0.71	0.01
115In	0.90	0.65	0.10	0.69	0.01
137Ba	0.90	0.65	0.10	0.72	0.01
140Ce	0.90	0.65	0.10	0.72	0.00
206Pb	0.90	0.65	0.10	0.72	0.00
207Pb	0.90	0.65	0.10	0.68	0.01
208Pb	0.90	0.65	0.10	0.73	0.01
232Th	0.90	0.65	0.10	0.73	0.02
238U	0.90	0.65	0.10	0.72	0.02

Sample details
Sample name : ITUNE
Acquired at : 10/19/2016 09:50:28 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Tune conditions

Major	
Extraction	-110
Lens 1	-4.1
Focus	18.0
D1	-43.9
Pole Bias	1.0
Hexapole Bias	-3.0
Nebuliser	0.74
Sampling Depth	133

Minor	
Lens 2	-39.2
Lens 3	-177.3
Forward power	1404
Horizontal	70
Vertical	522
D2	-158
DA	-40.8
Cool	13.0
Auxiliary	0.90

Global	
Standard resolution	135
High resolution	115
Analogue Detector	2353
PC Detector	1196

Add. Gases	
CCT1	0.00
CCT2	0.00

Sensitivity and stability results

Acquisition parameters
Sweeps : 50

Run	Time	8Bkg	9Be	24Mg	25Mg	26Mg	27Al	51V	59Co	113In
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Countrate	-	>100	>100	>100	>100	>100	>100	>100	>100
1	09:51:24 AM	0.000	4174.523	35080.881	4916.725	5823.017	44689.835	103109.97	77318.931	8458.146
2	09:51:58 AM	0.200	4190.527	34555.786	4660.652	5939.058	43991.982	102586.75	77256.644	8089.963
3	09:52:32 AM	0.100	3996.479	34026.699	4718.668	5819.016	44158.422	101667.14	76358.519	8308.070
4	09:53:06 AM	0.000	4248.541	34136.924	4594.633	5598.940	43560.852	100606.74	75896.415	8155.995
5	09:53:39 AM	0.200	4254.543	34078.805	4638.645	5692.972	43562.857	99137.976	75134.977	8023.931
x		0.100	4172.923	34375.819	4705.865	5774.601	43992.790	101421.72	76393.097	8207.221
σ		0.10	104.67	446.28	126.06	131.23	470.30	1592.75	926.50	175.43
%RSD		100.000	2.508	1.298	2.679	2.272	1.069	1.570	1.213	2.138

Run	Time	115In	137Ba	140Ce	156Ce O	206Pb	207Pb	208Pb	220Bkg	232Th
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	5.0%	5.0%	5.0%	-	5.0%	5.0%	5.0%	-	5.0%
	Countrate	>100	>100	>100	-	>100	>100	>100	-	>100
1	09:51:24 AM	196189.96	24664.236	223547.21	1476.065	7879.862	7387.637	17381.058	0.000	304141.98
2	09:51:58 AM	194109.81	24912.605	223295.88	1434.062	8153.994	7485.681	17449.129	0.000	308044.68
3	09:52:32 AM	193106.26	24666.239	222973.61	1374.057	8137.986	7219.563	17210.882	0.200	306380.42
4	09:53:06 AM	192454.79	24568.094	220478.74	1384.057	8003.921	7367.628	17086.754	0.000	303960.72
5	09:53:39 AM	190925.35	24373.809	219171.67	1374.057	7595.730	7261.582	17296.971	0.000	305347.73
x		193357.23	24636.997	221893.42	1408.460	7954.299	7344.418	17284.959	0.040	305575.10
σ		1961.01	194.66	1954.35	45.25	229.23	105.84	142.39	0.09	1692.57
%RSD		1.014	0.790	0.881	3.212	2.882	1.441	0.824	223.607	0.554

Run	Time	238U
Dwell (mSecs)		0.0
Limits	%RSD	5.0%
	Countrate	>100
1	09:51:24 AM	334542.19
2	09:51:58 AM	335411.40
3	09:52:32 AM	333324.15
4	09:53:06 AM	329807.21
5	09:53:39 AM	330737.38
x		332764.47
σ		2415.28
%RSD		0.726

Ratio results

Run	Time	156Ce O/140Ce
	Ratio limits	<0.0200
1	09:51:24 AM	0.007
2	09:51:58 AM	0.006

3	09:52:32 AM	0.006
4	09:53:06 AM	0.006
5	09:53:39 AM	0.006
x		0.0063
σ		0.00
%RSD		2.6842

Result : The performance report passed.

Experiment Details

Description	PlasmaLab Template BlankExperiment
Template Filename	C:\Program Files\Thermo Fisher\PlasmaLab\TEMPLATES\6020A.tet
Created By User	user
Analyte Database	Default.tea
Creation Timestamp	8/29/2003 01:55:15 PM
Last Edited By	INORG-User
Last Edit Timestamp	10/19/2016 10:00:04 AM
Instrument Detector	Simultaneous
Database Version	3.51
Acquisition Mode	Unknown

Numerical Results report key (text indicates meaning)

Blue text indicates that cell is a statistic.
Underlining indicates that a data warning flag is set.

Column headings	Result cells	Data warning flags
No flag	Internal Standard	I - Invalid calibration
Semi Quant	Excluded	T - Tripped
Standard Addition	QC Warning	F - Interference correction failed
Multi Element	QC Failure	M - Result over max
	Transient TRA only:	V - Valley integration failed
	Peak Not Found	D - Different method used
	Manually Edited	
	Merged Peak	

Setup

Survey Scan Setup

Sweeps	10
Dwell Time	600
Channels Per Mass	10
Acquisition Duration	13247

Main Run Setup

Main Run	Peak Jumping
Sweeps	20
Dwell Time	10000
Channels Per Mass	1
Acquisition Duration	18211
Channel Spacing	0.02

Survey Scan Regions

Start AMU	End AMU	Channels	Dwell ms	Resolution

4.59	11.41	68	600	Standard
22.59	27.41	48	600	Standard
28.59	29.41	8	600	Standard
30.59	31.41	8	600	Standard
32.59	33.41	8	600	Standard
38.59	39.41	8	600	Standard
42.59	79.41	368	600	Standard
80.59	245.50	1649	600	Standard

Peak Jump Regions

Analyte	Channels	Dwell ms	Resolution
6Li	1	5000	Standard
7Li	1	5000	Standard
9Be	1	20000	Standard
11B	1	10000	Standard
23Na	1	5000	Standard
25Mg	1	5000	Standard
26Mg	1	5000	Standard
27Al	1	10000	Standard
39K	1	5000	Standard
43Ca	1	10000	Standard
44Ca	1	5000	Standard
45Sc	1	5000	Standard
47Ti	1	10000	Standard
51V	1	10000	Standard
52Cr	1	10000	Standard
53Cl O	1	10000	Standard
55Mn	1	10000	Standard
56Fe	1	10000	Standard
59Co	1	10000	Standard
60Ni	1	10000	Standard
65Cu	1	10000	Standard
66Zn	1	10000	Standard
75As	1	50000	Standard
77Ar Cl	1	50000	Standard
82Se	1	100000	Standard
83Kr	1	100000	Standard
84Kr	1	10000	Standard
88Sr	1	10000	Standard
89Y	1	5000	Standard
98Mo	1	10000	Standard
106Cd	1	10000	Standard
107Ag	1	10000	Standard
108Mo O	1	10000	Standard
111Cd	1	10000	Standard
115In	1	5000	Standard
118Sn	1	10000	Standard
121Sb	1	10000	Standard
123Sb	1	100000	Standard
135Ba	1	10000	Standard

159Tb	1	5000	Standard
182W	1	10000	Standard
205Tl	1	10000	Standard
206Pb	1	10000	Standard
207Pb	1	10000	Standard
208Pb	1	10000	Standard
209Bi	1	5000	Standard
220Bkg	1	10000	Standard
232Th	1	10000	Standard
238U	1	10000	Standard

Calibration Technique

Use External Drift Correction - No
Calibrate by - Isotope

Symbol	Interference Correction	RSF	Calibration Method	Line Fit	Weighting	Forcing	Use for Semi-Quant	Max Error	Minimum Correlation
6Li	Yes	1.00	None				No		
7Li	Yes	1.00	None				No		
9Be	Yes	0.75	Fully-Quantified	Linear	Absolute SD	None	Yes		
11B	Yes	0.58	Fully-Quantified	Linear	Absolute SD	None	Yes		
23Na	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
25Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
26Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
27Al	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
39K	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
43Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
44Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
45Sc	Yes	1.00	None				No		
47Ti	Yes	0.99	None				No		
51V	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
52Cr	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
55Mn	Yes	0.95	Fully-Quantified	Linear	Absolute SD	None	Yes		
56Fe	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
59Co	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
60Ni	No	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
65Cu	Yes	0.90	Fully-Quantified	Linear	Absolute SD	None	Yes		
66Zn	Yes	0.38	Fully-Quantified	Linear	Absolute SD	None	Yes		
75As	Yes	0.07	Fully-Quantified	Linear	Absolute SD	None	Yes		
82Se	Yes	0.10	Fully-Quantified	Linear	Absolute SD	None	Yes		
83Kr	Yes	0.01	None				No		
84Kr	Yes	0.01	None				No		
88Sr	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
89Y	Yes	0.98	None				No		
98Mo	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
107Ag	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
106Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
111Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
115In	Yes	0.99	None				No		
118Sn	Yes	0.96	None				No		

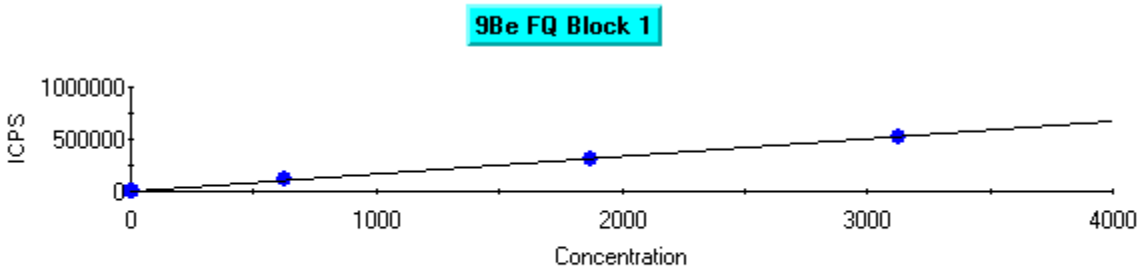
121Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
123Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
135Ba	Yes	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes
159Tb	Yes	0.99	None				No
182W	Yes	0.94	Fully-Quantified	Linear	Absolute SD	None	Yes
206Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
207Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
208Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	No
209Bi	Yes	0.92	None				No
232Th	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
238U	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
205Tl	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
220Bkg	Yes		Semi-Quantified				No
77Ar Cl	Yes		Semi-Quantified				No
53Cl O	Yes		Semi-Quantified				No
108Mo O	Yes		Semi-Quantified				No

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	STD0	Fully Quant Standard	1.000	0	1	2	144
2	STD1	Fully Quant Standard	1.000	0	1	3	144
3	STD2	Fully Quant Standard	1.000	0	1	4	144
4	STD3	Fully Quant Standard	1.000	0	1	5	144
5	STD4	Fully Quant Standard	1.000	1	1	1	144
6	STD5	Fully Quant Standard	1.000	1	1	2	144
7	ICV	QC Sample	1.000	0	1	6	144
8	ICVL	QC Sample	1.000	0	1	3	144
9	ICBIS	QC Sample	1.000	0	1	2	144
10	ICSA	QC Sample	1.000	1	1	3	144
11	ICSAB	QC Sample	1.000	1	1	4	144
12	CCV	QC Sample	1.000	0	1	5	144
13	CCB	QC Sample	1.000	0	1	2	144
14	200-35736-A-11-A	Unknown	1.000	1	2	1	144
15	200-35736-A-11-A SD@5	Unknown	1.000	1	2	2	144
16	200-35736-A-11-A PDS	Unknown	1.000	1	2	3	144
17	200-35736-A-11-I MS	Unknown	1.000	1	2	4	144
18	200-35736-A-11-J MSD	Unknown	1.000	1	2	5	144
19	200-35736-A-12-A	Unknown	1.000	1	2	6	144
20	MB 200-110239/1-A	Unknown	1.000	1	2	7	144
21	LCS 200-110239/2-A	Unknown	1.000	1	2	8	144
22	200-35680-A-13-A	Unknown	1.000	1	2	9	144
23	200-35700-A-19-A	Unknown	1.000	1	2	10	144
24	CCV	QC Sample	1.000	0	1	5	144
25	CCB	QC Sample	1.000	0	1	2	144
26	CCVL	QC Sample	1.000	0	1	3	144
27	200-35736-A-14-A	Unknown	1.000	1	2	11	144
28	200-35736-A-14-A SD@5	Unknown	1.000	1	2	12	144
29	200-35736-A-14-A PDS	Unknown	1.000	1	3	1	144
30	200-35736-A-14-B MS	Unknown	1.000	1	3	2	144
31	200-35736-A-14-C MSD	Unknown	1.000	1	3	3	144
32	CCV	QC Sample	1.000	0	1	5	144

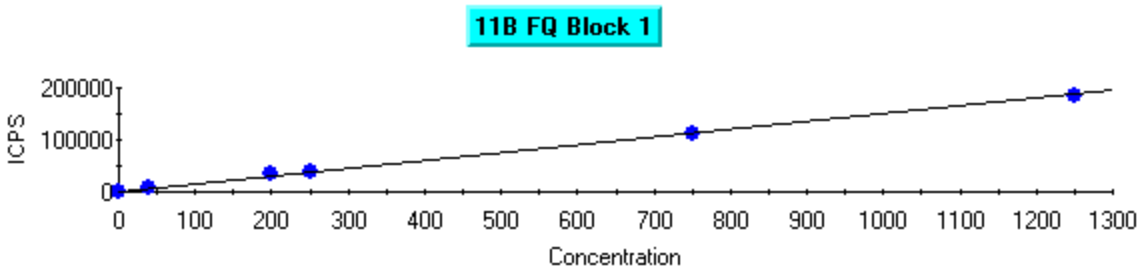
33	CCB	QC Sample	1.000	0	1	2	144
34	CCVL	QC Sample	1.000	0	1	3	144
35	MB 200-110288/1-B	Unknown	1.000	1	3	4	144
36	LCS 200-110288/2-B	Unknown	1.000	1	3	5	144
37	200-35715-A-2-B	Unknown	1.000	1	3	6	144
38	200-35730-A-2-B	Unknown	1.000	1	3	7	144
39	200-35745-A-5-B	Unknown	1.000	1	3	8	144
40	200-35754-A-2-B	Unknown	1.000	1	3	9	144
41	200-35754-A-2-B SD@5	Unknown	1.000	1	3	10	144
42	200-35754-A-2-B PDS	Unknown	1.000	1	3	11	144
43	200-35676-A-2-B	Unknown	1.000	1	3	12	144
44	CCV	QC Sample	1.000	0	1	5	144
45	CCB	QC Sample	1.000	0	1	2	144
46	CCVL	QC Sample	1.000	0	1	3	144

Fully Quant Calibration



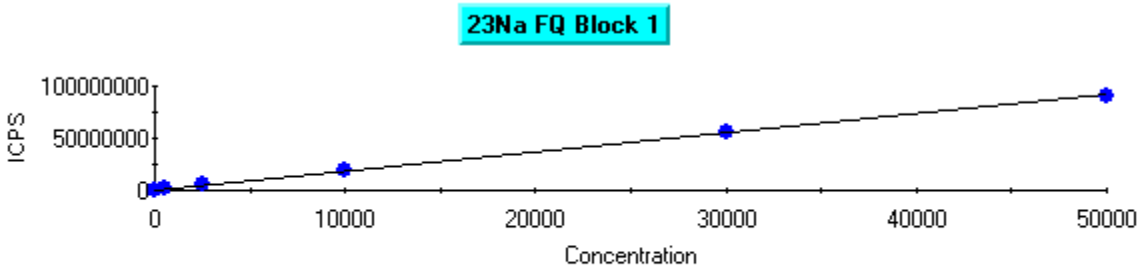
Intercept CPS=9.338365 Intercept Conc=0.055811
Sensitivity=167.321046 Correlation Coeff=0.999828

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.016	0.016	6.64	0.00
STD1	1.000	1.159	0.159	203.18	15.85
STD2	5.000	5.415	0.415	915.34	8.30
STD3	625.000	664.031	39.031	111115.64	6.24
STD4	1875.000	1869.642	5.358	312839.73	0.29
STD5	3125.000	3054.662	70.338	511118.62	2.25



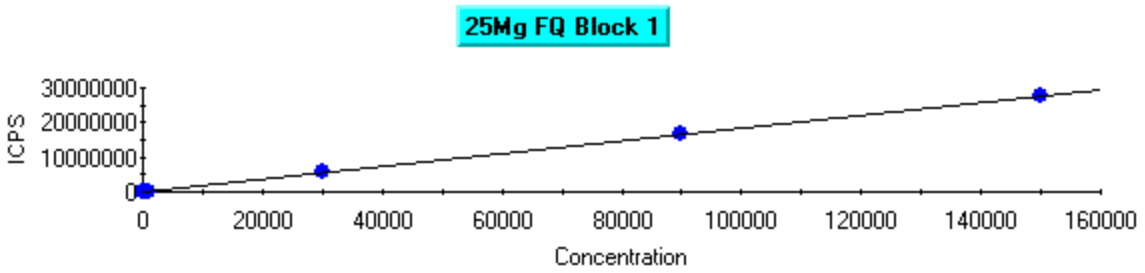
Intercept CPS=501.883406 Intercept Conc=3.315906
Sensitivity=151.356355 Correlation Coeff=0.999787

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.002	0.002	501.61	0.00
STD1	40.000	40.135	0.135	6576.51	0.34
STD2	200.000	216.129	16.129	33214.40	8.06
STD3	250.000	259.353	9.353	39756.63	3.74
STD4	750.000	740.635	9.365	112601.75	1.25
STD5	1250.000	1211.415	38.585	183857.28	3.09



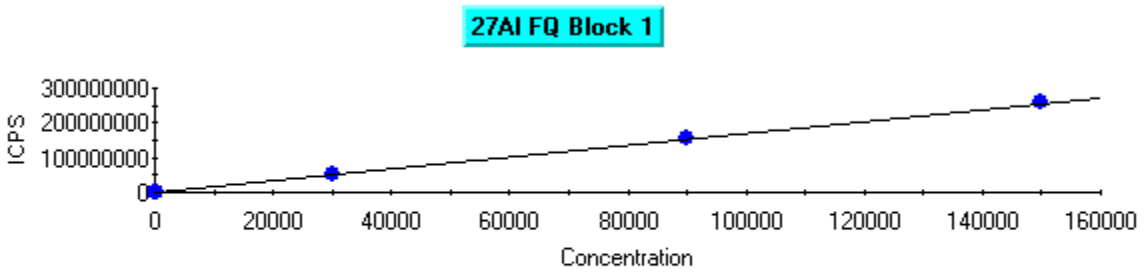
Intercept CPS=309699.266481 Intercept Conc=168.357582
Sensitivity=1839.532639 Correlation Coeff=0.999936

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.677	0.677	308453.35	0.00
STD1	500.000	505.653	5.653	1239865.08	1.13
STD2	2500.000	2593.034	93.034	5079670.34	3.72
STD3	10000.000	10204.001	204.001	19080292.33	2.04
STD4	30000.000	29632.522	367.478	54819691.39	1.22
STD5	50000.000	48635.094	1364.906	89775541.91	2.73



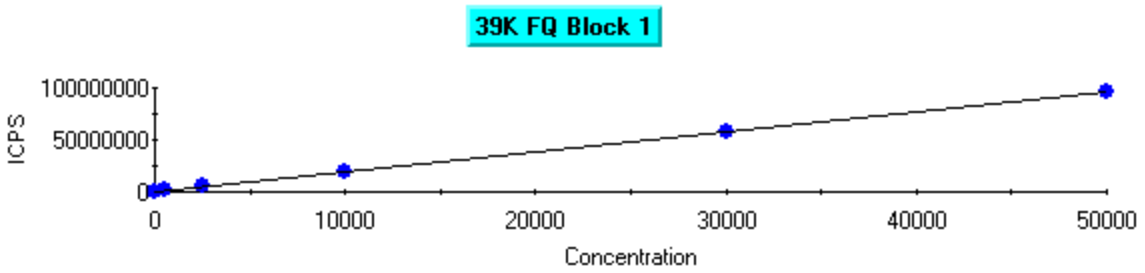
Intercept CPS=111.008221 Intercept Conc=0.607148
Sensitivity=182.835581 Correlation Coeff=0.999988

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.300	0.300	165.90	0.00
STD1	200.000	184.334	15.666	33813.90	7.83
STD2	1000.000	954.401	45.599	174609.44	4.56
STD3	30000.000	31015.455	1015.455	5670839.76	3.38
STD4	90000.000	91244.105	1244.105	16682780.00	1.38
STD5	150000.000	151455.456	1455.456	27691557.18	0.97



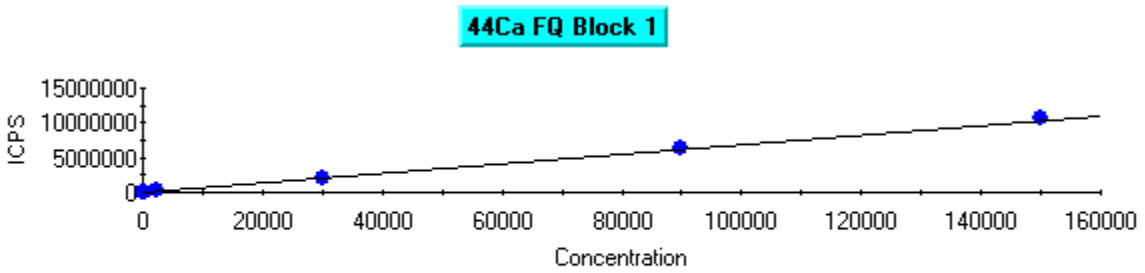
Intercept CPS=522.265924 Intercept Conc=0.307278
Sensitivity=1699.652305 Correlation Coeff=0.999975

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.006	0.006	532.50	0.00
STD1	50.000	49.536	0.464	84716.67	0.93
STD2	250.000	234.497	15.503	399085.50	6.20
STD3	30000.000	31389.132	1389.132	53351132.75	4.63
STD4	90000.000	91200.139	1200.139	155009048.09	1.33
STD5	150000.000	151461.231	1461.231	257431953.37	0.97



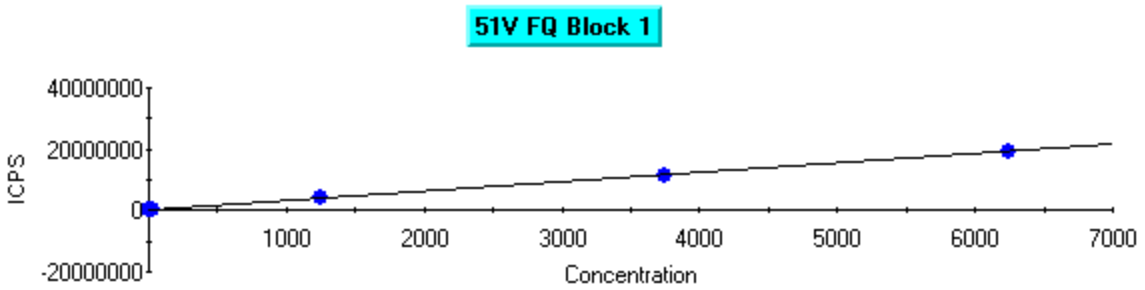
Intercept CPS=73232.604428 Intercept Conc=37.783712
Sensitivity=1938.205640 Correlation Coeff=0.999980

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.009	0.009	73215.41	0.00
STD1	500.000	494.260	5.740	1031209.21	1.15
STD2	2500.000	2582.011	82.011	5077699.92	3.28
STD3	10000.000	10175.088	175.088	19794646.16	1.75
STD4	30000.000	29661.443	338.557	57563208.53	1.13
STD5	50000.000	49760.178	239.822	96518690.79	0.48



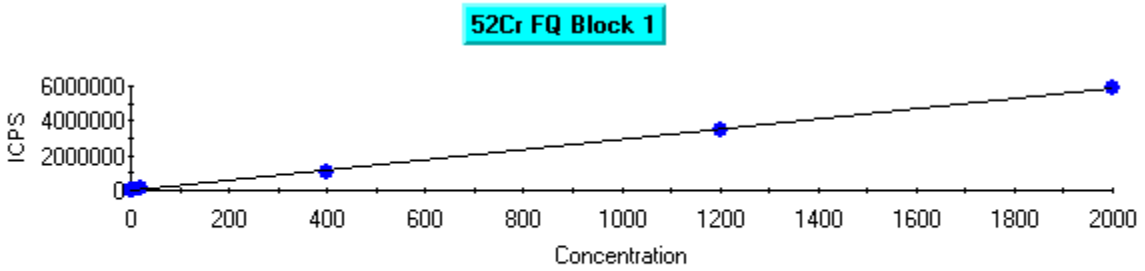
Intercept CPS=1247.544985 Intercept Conc=18.406629
Sensitivity=67.776941 Correlation Coeff=0.999989

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	1.278	1.278	1334.16	0.00
STD1	500.000	491.502	8.498	34560.04	1.70
STD2	2500.000	2401.396	98.604	164006.84	3.94
STD3	30000.000	31195.496	1195.496	2115582.86	3.98
STD4	90000.000	93050.090	3050.090	6307897.98	3.39
STD5	150000.000	156414.699	6414.699	10602557.34	4.28



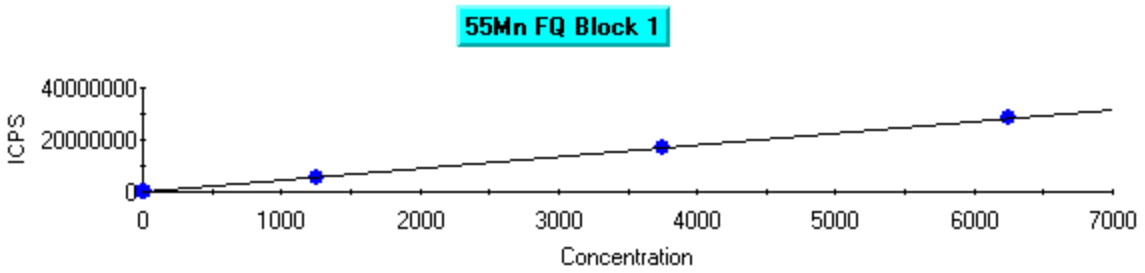
Intercept CPS=-789.698275 Intercept Conc=-0.256930
Sensitivity=3073.595192 Correlation Coeff=0.999999

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.295	0.295	117.61	0.00
STD1	5.000	4.826	0.174	14043.26	3.48
STD2	25.000	23.281	1.719	70766.43	6.88
STD3	1250.000	1262.464	12.464	3879514.59	1.00
STD4	3750.000	3779.939	29.939	11617212.10	0.80
STD5	6250.000	6289.414	39.414	19330323.94	0.63



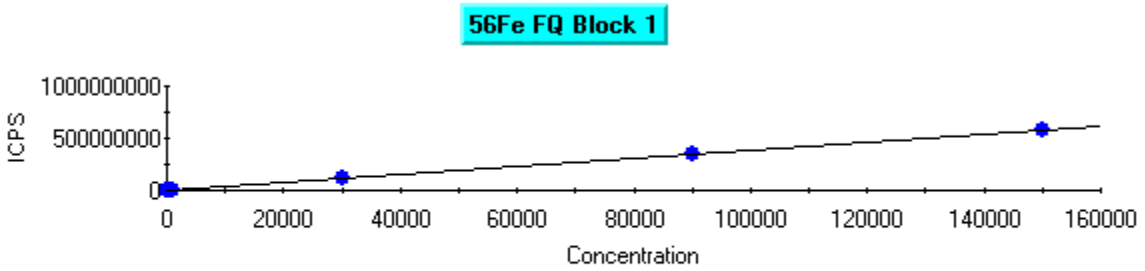
Intercept CPS=2582.828034 Intercept Conc=0.885982
Sensitivity=2915.214309 Correlation Coeff=0.999878

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.017	0.017	2631.61	0.00
STD1	4.000	3.998	0.002	14236.66	0.06
STD2	20.000	19.492	0.508	59406.73	2.54
STD3	400.000	370.107	29.893	1081523.63	7.47
STD4	1200.000	1205.787	5.787	3517711.55	0.48
STD5	2000.000	2013.437	13.437	5872183.95	0.67



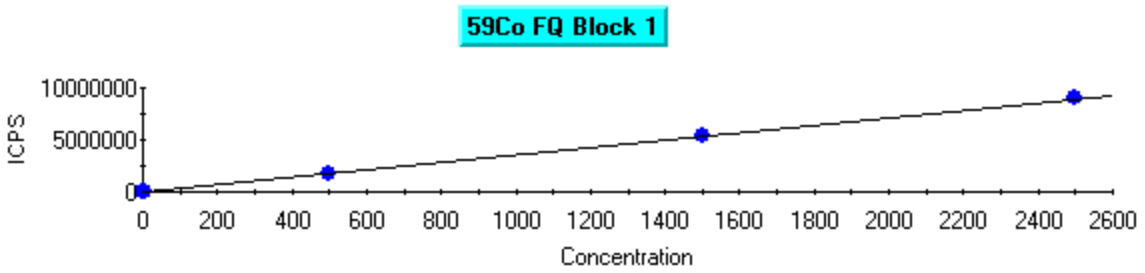
Intercept CPS=476.964906 Intercept Conc=0.106443
Sensitivity=4480.934539 Correlation Coeff=0.999948

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	476.60	0.00
STD1	2.000	2.037	0.037	9603.71	1.84
STD2	10.000	9.488	0.512	42992.71	5.12
STD3	1250.000	1268.208	18.208	5683235.86	1.46
STD4	3750.000	3729.559	20.441	16712385.94	0.55
STD5	6250.000	6331.686	81.686	28372349.01	1.31



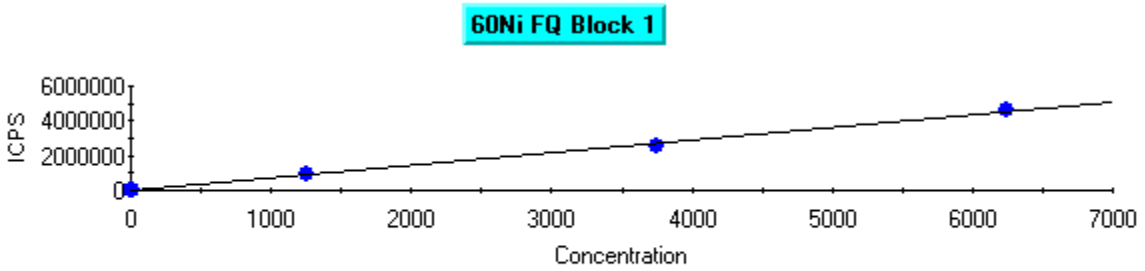
Intercept CPS=275754.767241 Intercept Conc=72.399872
Sensitivity=3808.774258 Correlation Coeff=0.999980

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.400	0.400	277277.74	0.00
STD1	200.000	188.923	11.077	995320.98	5.54
STD2	1000.000	1062.273	62.273	4321711.63	6.23
STD3	30000.000	30552.875	552.875	116644760.49	1.84
STD4	90000.000	89072.605	927.395	339533199.85	1.03
STD5	150000.000	149573.746	426.254	569968387.34	0.28



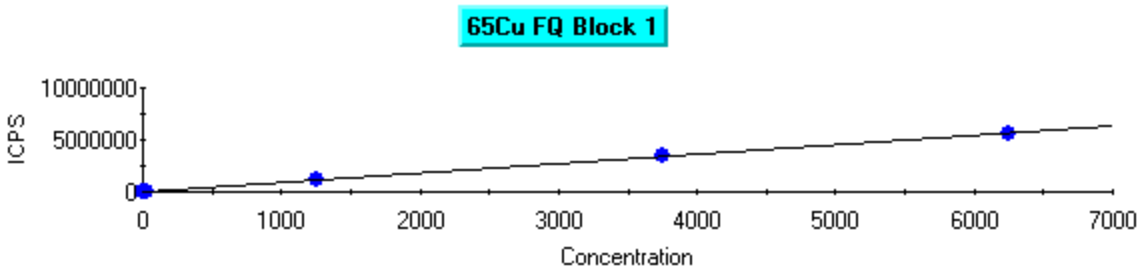
Intercept CPS=21.554480 Intercept Conc=0.006112
Sensitivity=3526.519991 Correlation Coeff=0.999838

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	19.96	0.00
STD1	1.000	1.004	0.004	3560.62	0.36
STD2	5.000	4.837	0.163	17079.65	3.26
STD3	500.000	463.872	36.128	1635876.16	7.23
STD4	1500.000	1506.491	6.491	5312691.64	0.43
STD5	2500.000	2547.754	47.754	8984726.27	1.91



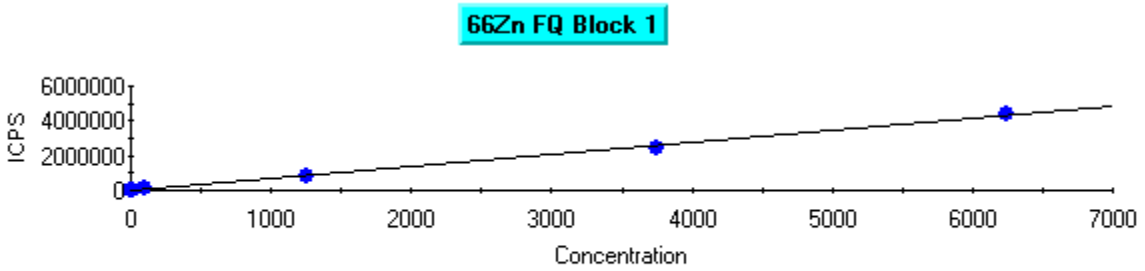
Intercept CPS=16.961394 Intercept Conc=0.023570
Sensitivity=719.621831 Correlation Coeff=0.998206

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	16.66	0.00
STD1	2.000	2.111	0.111	1536.16	5.56
STD2	10.000	10.152	0.152	7322.24	1.52
STD3	1250.000	1211.546	38.454	871872.07	3.08
STD4	3750.000	3461.067	288.933	2490676.66	7.70
STD5	6250.000	6464.880	214.880	4652285.95	3.44



Intercept CPS=258.795270 Intercept Conc=0.284972
Sensitivity=908.141241 Correlation Coeff=0.999880

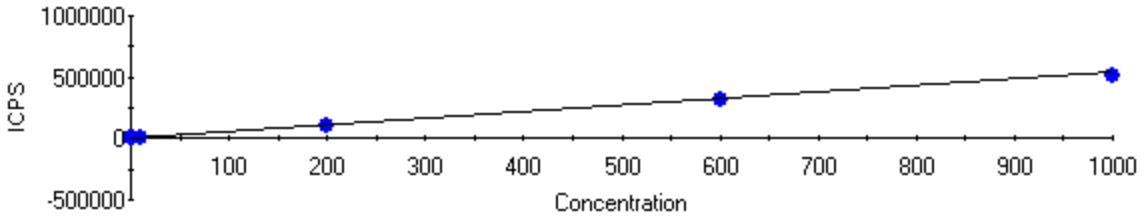
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.026	0.026	235.05	0.00
STD1	5.000	5.081	0.081	4872.63	1.61
STD2	25.000	24.525	0.475	22531.03	1.90
STD3	1250.000	1179.768	70.232	1071654.53	5.62
STD4	3750.000	3798.321	48.321	3449670.36	1.29
STD5	6250.000	6212.987	37.013	5642528.21	0.59



Intercept CPS=676.527633 Intercept Conc=0.984266
Sensitivity=687.342341 Correlation Coeff=0.998834

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.028	0.028	657.04	0.00
STD1	20.000	21.265	1.265	15292.62	6.32
STD2	100.000	105.183	5.183	72973.46	5.18
STD3	1250.000	1241.390	8.610	853936.49	0.69
STD4	3750.000	3484.137	265.863	2395471.19	7.09
STD5	6250.000	6354.757	104.757	4368569.96	1.68

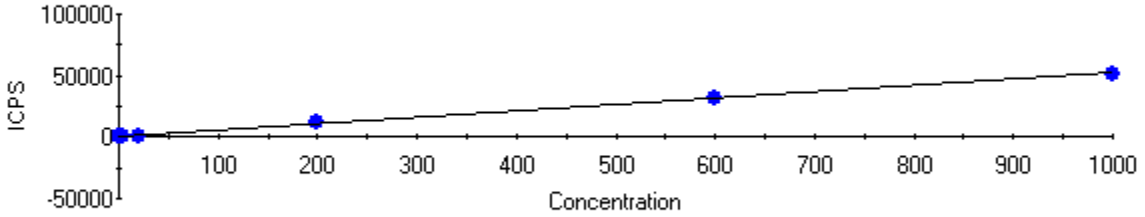
75As FQ Block 1



Intercept CPS=-17.760100 Intercept Conc=-0.033124
Sensitivity=536.171684 Correlation Coeff=0.999842

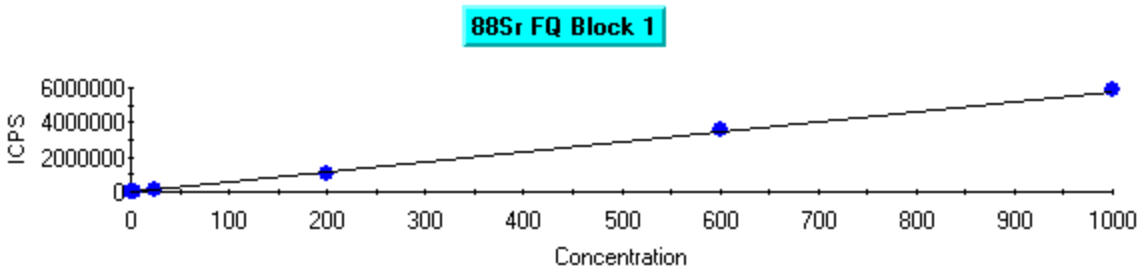
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.197	0.197	-123.59	0.00
STD1	2.000	1.986	0.014	1046.90	0.72
STD2	10.000	10.379	0.379	5547.34	3.79
STD3	200.000	203.196	3.196	108930.33	1.60
STD4	600.000	587.604	12.396	315038.84	2.07
STD5	1000.000	953.565	46.435	511256.59	4.64

82Se FQ Block 1



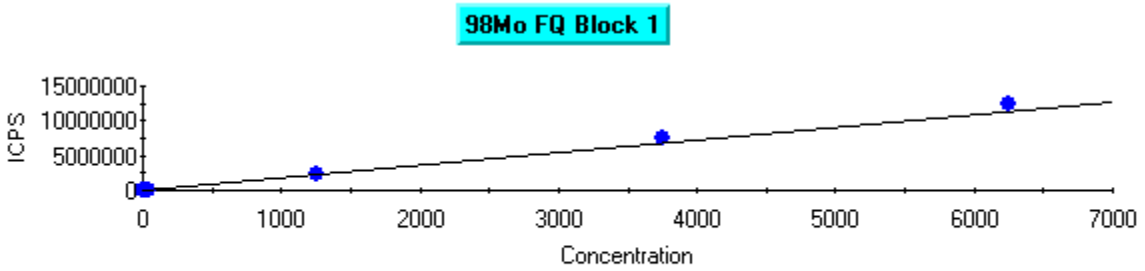
Intercept CPS=29.795038 Intercept Conc=0.565603
Sensitivity=52.678326 Correlation Coeff=0.999241

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-1.450	1.450	-46.57	0.00
STD1	4.000	3.186	0.814	197.65	20.34
STD2	20.000	21.864	1.864	1181.57	9.32
STD3	200.000	216.360	16.360	11427.27	8.18
STD4	600.000	608.120	8.120	32064.54	1.35
STD5	1000.000	955.010	44.990	50338.12	4.50



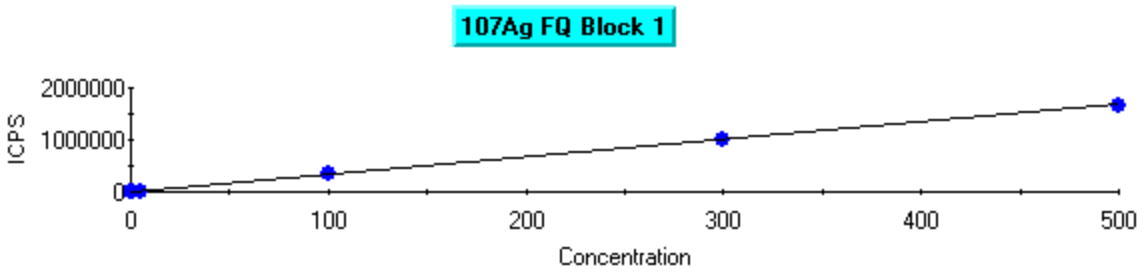
Intercept CPS=18.758929 Intercept Conc=0.003250
Sensitivity=5771.442451 Correlation Coeff=0.999808

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	20.11	0.00
STD1	5.000	4.647	0.353	26839.25	7.06
STD2	25.000	23.983	1.017	138437.30	4.07
STD3	200.000	184.202	15.798	1063131.30	7.90
STD4	600.000	614.487	14.487	3546496.92	2.41
STD5	1000.000	1011.806	11.806	5839596.28	1.18



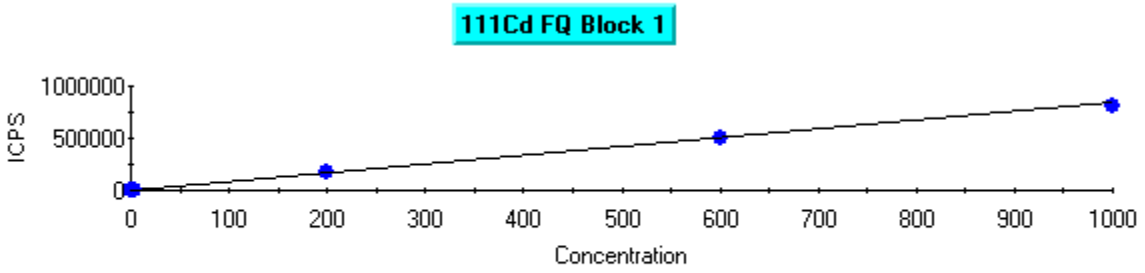
Intercept CPS=86.242709 Intercept Conc=0.047814
Sensitivity=1803.729423 Correlation Coeff=0.999947

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.004	0.004	93.34	0.00
STD1	10.000	9.686	0.314	17557.67	3.14
STD2	50.000	49.780	0.220	89876.06	0.44
STD3	1250.000	1314.951	64.951	2371902.02	5.20
STD4	3750.000	4162.275	412.275	7507704.71	10.99
STD5	6250.000	6952.003	702.003	12539618.50	11.23



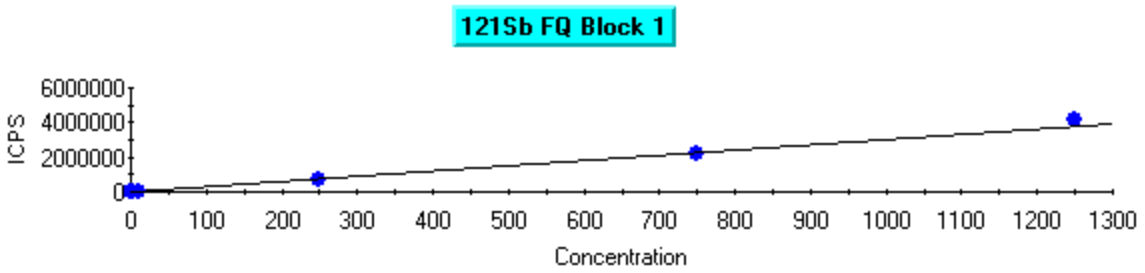
Intercept CPS=46.625155 Intercept Conc=0.013773
Sensitivity=3385.301045 Correlation Coeff=0.999790

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.004	0.004	31.73	0.00
STD1	1.000	1.100	0.100	3769.18	9.96
STD2	5.000	5.514	0.514	18713.99	10.28
STD3	100.000	103.195	3.195	349391.58	3.19
STD4	300.000	300.358	0.358	1016849.72	0.12
STD5	500.000	484.173	15.827	1639118.51	3.17



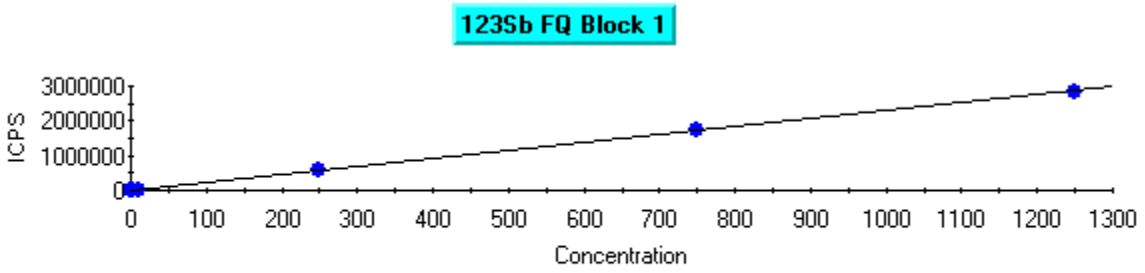
Intercept CPS=111.864190 Intercept Conc=0.133126
Sensitivity=840.288678 Correlation Coeff=0.999908

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.020	0.020	95.44	0.00
STD1	1.000	1.080	0.080	1019.75	8.04
STD2	5.000	5.365	0.365	4620.16	7.30
STD3	200.000	202.914	2.914	170618.33	1.46
STD4	600.000	594.692	5.308	499825.07	0.88
STD5	1000.000	970.071	29.929	815251.58	2.99



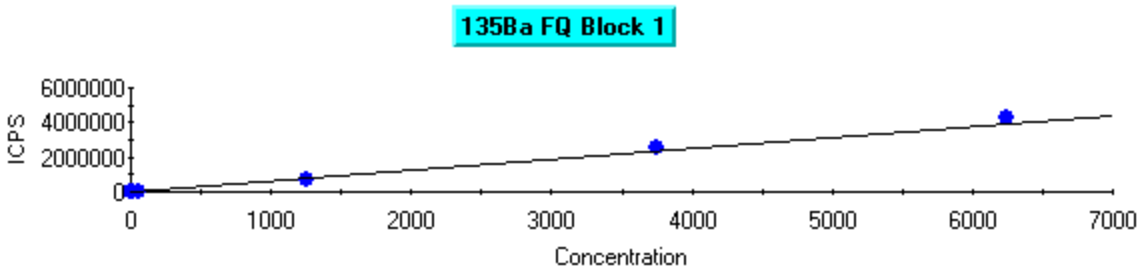
Intercept CPS=125.635052 Intercept Conc=0.042080
Sensitivity=2985.653339 Correlation Coeff=0.998004

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	125.11	0.00
STD1	2.000	1.964	0.036	5988.66	1.81
STD2	10.000	10.050	0.050	30131.21	0.50
STD3	250.000	244.960	5.040	731490.18	2.02
STD4	750.000	736.754	13.246	2199816.63	1.77
STD5	1250.000	1382.266	132.266	4127091.99	10.58



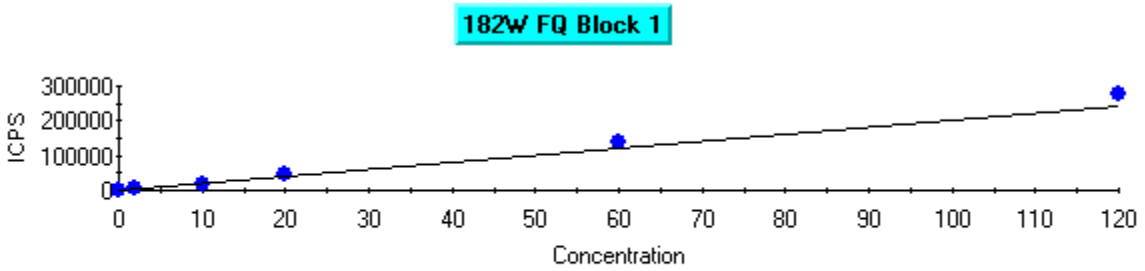
Intercept CPS=103.936491 Intercept Conc=0.045334
Sensitivity=2292.702233 Correlation Coeff=0.999992

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.001	0.001	102.57	0.00
STD1	2.000	2.022	0.022	4740.51	1.12
STD2	10.000	10.149	0.149	23373.25	1.49
STD3	250.000	248.262	1.738	569293.68	0.70
STD4	750.000	751.943	1.943	1724084.61	0.26
STD5	1250.000	1244.195	5.805	2852673.41	0.46



Intercept CPS=8.973608 Intercept Conc=0.014452
Sensitivity=620.930490 Correlation Coeff=0.999685

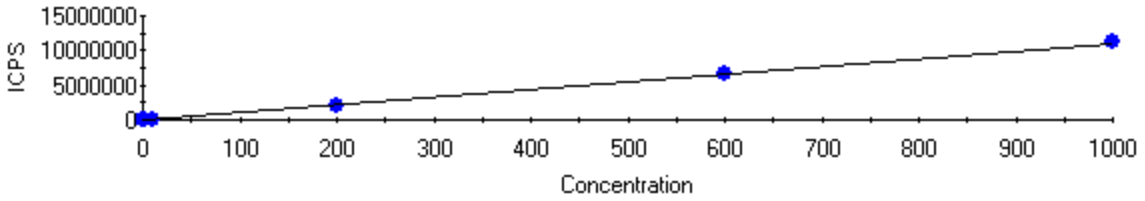
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.002	0.002	10.05	0.00
STD1	10.000	9.666	0.334	6010.73	3.34
STD2	50.000	49.346	0.654	30649.65	1.31
STD3	1250.000	1196.186	53.814	742757.26	4.31
STD4	3750.000	4122.924	372.924	2560058.29	9.94
STD5	6250.000	6785.628	535.628	4213412.41	8.57



Intercept CPS=94.241526 Intercept Conc=0.047000
Sensitivity=2005.133392 Correlation Coeff=0.999873

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.005	0.005	105.03	0.00
STD1	2.000	1.806	0.194	3716.19	9.68
STD2	10.000	9.097	0.903	18334.97	9.03
STD3	20.000	22.252	2.252	44712.00	11.26
STD4	60.000	68.165	8.165	136774.28	13.61
STD5	120.000	138.436	18.436	277676.62	15.36

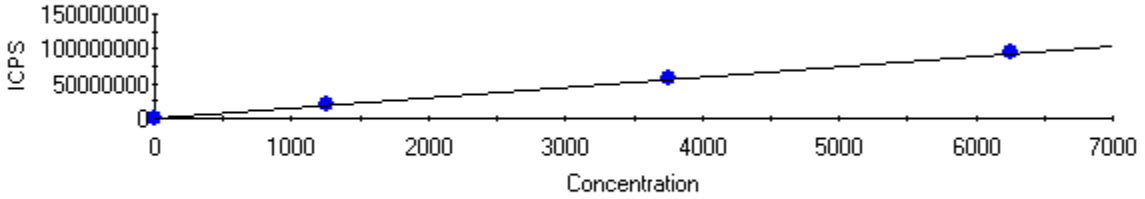
205Tl FQ Block 1



Intercept CPS=401.726763 Intercept Conc=0.037052
Sensitivity=10842.176161 Correlation Coeff=0.999600

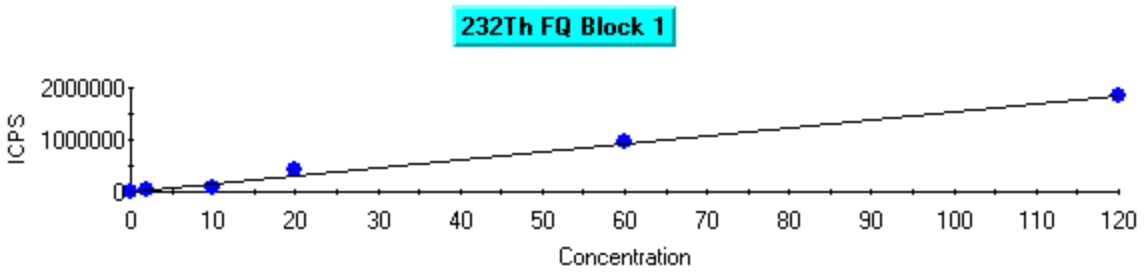
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.002	0.002	424.78	0.00
STD1	2.000	1.685	0.315	18668.88	15.76
STD2	10.000	8.822	1.178	96047.66	11.78
STD3	200.000	178.304	21.696	1933608.87	10.85
STD4	600.000	622.198	22.198	6746386.01	3.70
STD5	1000.000	1047.681	47.681	11359544.81	4.77

208Pb FQ Block 1



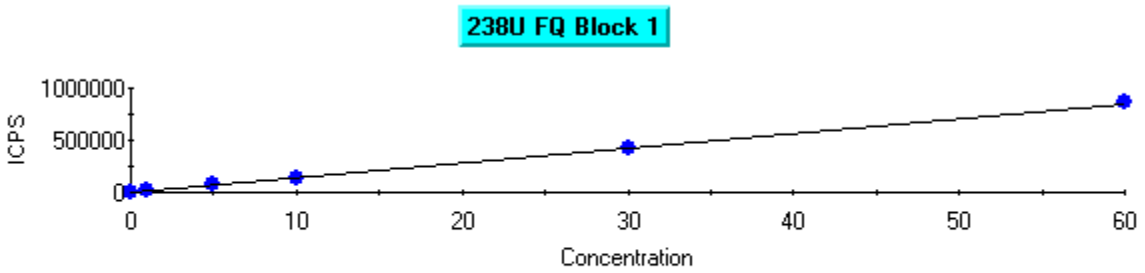
Intercept CPS=806.599560 Intercept Conc=0.054124
Sensitivity=14902.903562 Correlation Coeff=0.999999

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.002	0.002	836.08	0.00
STD1	1.000	1.016	0.016	15943.54	1.57
STD2	5.000	4.553	0.447	68657.59	8.94
STD3	1250.000	1269.286	19.286	18916847.77	1.54
STD4	3750.000	3810.796	60.796	56792734.86	1.62
STD5	6250.000	6334.224	84.224	94399140.69	1.35



Intercept CPS=3111.131963 Intercept Conc=0.202789
Sensitivity=15341.751480 Correlation Coeff=0.996731

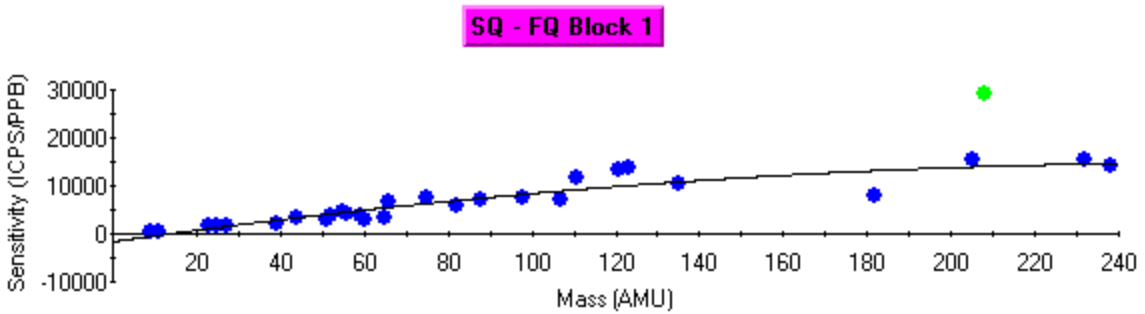
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.519	0.519	11077.33	0.00
STD1	2.000	1.558	0.442	27008.49	22.12
STD2	10.000	5.610	4.390	89176.33	43.90
STD3	20.000	27.095	7.095	418788.24	35.47
STD4	60.000	62.820	2.820	966882.01	4.70
STD5	120.000	119.781	0.219	1840768.23	0.18



Intercept CPS=207.712482 Intercept Conc=0.014567
Sensitivity=14259.094456 Correlation Coeff=0.999947

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	206.50	0.00
STD1	1.000	1.011	0.011	14629.64	1.14
STD2	5.000	5.196	0.196	74305.02	3.93
STD3	10.000	9.836	0.164	140458.14	1.64
STD4	30.000	29.928	0.072	426951.32	0.24
STD5	60.000	60.931	0.931	869032.53	1.55

Semi Quant Calibration



Coeff 0=-1613.323016 Coeff 1=123.301831 Coeff 2=-0.231175

Symbol	Mass	RSF	Available	Excluded	Sensitivity Measured	Corrected	Calculated	%Error
9Be	9.01	0.7500	1	1	167.32	223.09	-520.88	-333.5
11B	11.01	0.5800	1	1	151.36	322.09	-283.87	-188.1
23Na	22.99	1.0000	1	1	1839.53	1839.53	1099.17	-40.2
25Mg	24.99	0.9800	1	1	182.84	1845.37	1323.16	-28.3
27Al	26.98	0.9800	1	1	1699.65	1734.34	1545.25	-10.9
39K	38.96	1.0000	1	1	1938.21	2082.30	2840.01	36.4
44Ca	43.96	0.9900	1	1	67.78	3214.16	3359.83	4.5
51V	50.94	0.9900	1	1	3073.60	3112.11	4068.20	30.7
52Cr	51.94	0.9800	1	1	2915.21	3551.47	4167.37	17.3
55Mn	54.94	0.9500	1	1	4480.93	4716.77	4462.91	-5.4
56Fe	55.93	0.9600	1	1	3808.77	4335.09	4560.28	5.2
59Co	58.93	0.9300	1	1	3526.52	3791.96	4850.35	27.9
60Ni	59.93	0.9100	1	1	719.62	3022.91	4945.94	63.6
65Cu	64.93	0.9000	1	1	908.14	3264.46	5417.85	66.0
66Zn	65.93	0.3750	1	1	687.34	6590.84	5510.74	-16.4
75As	74.92	0.0700	1	1	536.17	7659.60	6327.01	-17.4
82Se	81.92	0.1000	1	1	52.68	5959.09	6935.89	16.4
88Sr	87.91	0.9600	1	1	5771.44	7281.88	7439.22	2.2
98Mo	97.91	0.9800	1	1	1803.73	7668.92	8242.67	7.5
107Ag	106.91	0.9300	1	1	3385.30	7088.82	8926.24	25.9
111Cd	110.90	0.5660	1	1	840.29	11544.39	9217.98	-20.2
121Sb	120.90	0.3900	1	1	2985.65	13372.09	9915.09	-25.9
123Sb	122.90	0.3900	1	1	2292.70	13751.40	10048.99	-26.9
135Ba	134.91	0.9100	1	1	620.93	10354.19	10813.52	4.4
182W	181.95	0.9400	1	1	2005.13	8107.64	13168.15	62.4
205Tl	204.97	1.0000	1	1	10842.18	15378.97	13947.63	-9.3
208Pb	207.98	0.9700	0	1	14902.90	29331.46	14031.28	-52.2
232Th	232.04	1.0000	1	1	15341.75	15341.75	14550.56	-5.2
238U	238.05	1.0000	1	1	14259.09	14362.50	14638.52	1.9

Dilution Corrected Concentrations

STD0 10/19/2016 10:04:01 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:04:23	98.484%	-0.056	0.005	1.827	0.115	0.022	0.522	0.786	98.403%	0.000	0.190	0.031
2	10:04:45	99.508%	0.019	-0.062	0.525	0.108	0.036	-0.452	3.125	99.362%	0.000	0.291	0.048
3	10:05:07	102.008%	-0.012	0.052	-4.384	0.677	-0.040	-0.097	-0.078	102.235%	0.000	0.405	-0.029
x		100.000%	-0.016	-0.002	-0.677	0.300	0.006	-0.009	1.278	100.000%	0.000	0.295	0.017
σ		1.813%	0.038	0.058	3.275	0.326	0.040	0.493	1.657	1.994%	0.000	0.108	0.040
%RSD		1.813	233.700	3184.000	483.500	108.600	668.000	5560.000	129.700	1.994	0.000	36.490	240.300

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:04:23	12.370	-0.003	-0.445	-0.000	-0.009	0.006	0.006	-0.394	0.479	-1.894	0.000	0.000
2	10:04:45	12.430	0.002	1.556	-0.002	0.011	-0.063	-0.018	-0.170	0.456	-1.751	0.000	0.000
3	10:05:07	11.780	0.001	0.088	0.001	-0.003	-0.021	-0.073	-0.028	0.428	-0.703	0.000	0.000
x		12.200	-0.000	0.400	-0.000	-0.000	-0.026	-0.028	-0.197	0.455	-1.450	0.000	0.000
σ		0.358	0.003	1.036	0.001	0.011	0.035	0.041	0.184	0.025	0.650	0.000	0.000
%RSD		2.938	3606.000	259.200	293.800	2596.000	133.600	144.300	93.420	5.588	44.850	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:04:23	0.002	99.582%	0.011	-0.000	-0.930	-0.042	98.721%	0.000	0.000	-0.006	0.010	101.230%
2	10:04:45	0.001	100.077%	-0.009	-0.008	-1.514	-0.008	99.921%	0.000	0.008	0.001	0.002	99.643%
3	10:05:07	-0.002	100.341%	0.010	-0.005	-1.492	-0.009	101.358%	0.000	-0.009	0.004	-0.007	99.128%
x		0.000	100.000%	0.004	-0.004	-1.312	-0.020	100.000%	0.000	-0.000	-0.001	0.002	100.000%
σ		0.002	0.385%	0.011	0.004	0.331	0.019	1.320%	0.000	0.009	0.005	0.008	1.096%
%RSD		990.300	0.385	285.400	86.730	25.220	97.740	1.320	0.000	4885.000	865.200	478.800	1.096

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:04:23	0.005	0.005	-0.002	99.485%	0.000	0.540	-0.002
2	10:04:45	-0.002	0.004	0.008	101.435%	0.000	0.513	0.002
3	10:05:07	0.013	-0.003	0.000	99.080%	0.000	0.504	-0.000
x		0.005	0.002	0.002	100.000%	0.000	0.519	-0.000
σ		0.008	0.004	0.005	1.259%	0.000	0.019	0.002
%RSD		142.800	193.000	256.300	1.259	0.000	3.633	1911.000

STD1 10/19/2016 10:09:44 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:10:06	99.600%	1.189	40.470	T 499.000	182.400	49.030	T 508.300	487.400	99.487%	0.000	4.892	3.966
2	10:10:27	98.145%	1.010	39.340	T 522.800	187.000	49.220	T 506.400	496.200	98.305%	0.000	4.441	3.923
3	10:10:49	94.214%	1.276	40.590	T 495.200	183.600	50.360	468.000	491.000	98.818%	0.000	5.145	4.104
x		97.319%	1.159	40.130	T 505.700	184.300	49.540	T 494.300	491.500	98.870%	0.000	4.826	3.998
σ		2.786%	0.136	0.692	T 14.930	2.396	0.722	T 22.760	4.419	0.593%	0.000	0.356	0.095

%RSD		2.863	11.730	1.725	T 2.953	1.300	1.457	T 4.605	0.899	0.599	0.000	7.383	2.376
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:10:06	14.310	1.984	183.900	1.004	2.037	5.029	20.180	1.836	0.506	3.517	0.000	0.000
2	10:10:27	14.510	2.074	191.400	1.006	2.337	5.143	21.610	1.988	0.490	3.679	0.000	0.000
3	10:10:49	13.670	2.053	191.500	1.000	1.959	5.070	22.000	2.132	0.479	2.362	0.000	0.000
x		14.160	2.037	188.900	1.004	2.111	5.081	21.260	1.986	0.492	3.186	0.000	0.000
σ		0.440	0.047	4.355	0.003	0.200	0.058	0.960	0.148	0.013	0.718	0.000	0.000
%RSD		3.103	2.313	2.305	0.342	9.456	1.139	4.514	7.454	2.739	22.540	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:10:06	4.529	100.042%	9.572	1.107	-1.412	1.142	99.241%	0.000	1.860	1.952	9.740	98.476%
2	10:10:27	4.664	100.537%	9.762	1.114	-1.162	0.969	97.807%	0.000	1.899	2.028	9.727	96.900%
3	10:10:49	4.748	99.389%	9.725	1.077	-1.166	1.131	97.462%	0.000	2.132	2.087	9.530	97.493%
x		4.647	99.990%	9.686	1.100	-1.247	1.080	98.170%	0.000	1.964	2.022	9.666	97.623%
σ		0.110	0.576%	0.101	0.020	0.143	0.097	0.943%	0.000	0.147	0.067	0.118	0.796%
%RSD		2.377	0.576	1.039	1.777	11.460	8.981	0.961	0.000	7.480	3.323	1.218	0.815
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	10:10:06	1.733	1.620	0.992	99.547%	0.000	1.538	0.986					
2	10:10:27	1.886	1.716	1.050	97.899%	0.000	1.566	1.012					
3	10:10:49	1.800	1.719	1.005	99.080%	0.000	1.569	1.036					
x		1.806	1.685	1.016	98.842%	0.000	1.558	1.011					
σ		0.076	0.057	0.031	0.849%	0.000	0.017	0.025					
%RSD		4.233	3.357	3.025	0.859	0.000	1.079	2.475					

STD2 10/19/2016 10:13:18 AM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:13:40	93.834%	5.279	206.100	T 2654.000	969.900	237.100	T 2626.000	2461.000	89.775%	0.000	23.370	19.730
2	10:14:01	88.714%	5.081	222.200	T 2560.000	930.700	233.700	T 2538.000	2384.000	91.325%	0.000	22.980	19.270
3	10:14:23	88.538%	5.885	220.100	T 2565.000	962.600	232.700	T 2581.000	2359.000	91.610%	0.000	23.490	19.480
x		90.362%	5.415	216.100	T 2593.000	954.400	234.500	T 2582.000	2401.000	90.903%	0.000	23.280	19.490
σ		3.008%	0.419	8.749	T 53.070	20.860	2.333	T 43.830	53.310	0.988%	0.000	0.267	0.228
%RSD		3.329	7.731	4.048	T 2.046	2.185	0.995	T 1.697	2.220	1.087	0.000	1.145	1.170
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:13:40	16.800	9.772	T 1080.000	4.846	10.470	24.980	105.800	10.220	0.551	22.070	0.000	0.000
2	10:14:01	16.460	9.456	T 1062.000	4.891	10.300	24.120	104.900	10.710	0.475	22.520	0.000	0.000
3	10:14:23	16.730	9.237	T 1045.000	4.774	9.694	24.480	104.800	10.210	0.550	21.000	0.000	0.000
x		16.670	9.488	T 1062.000	4.837	10.150	24.530	105.200	10.380	0.525	21.860	0.000	0.000
σ		0.182	0.269	T 17.140	0.059	0.405	0.434	0.569	0.285	0.044	0.779	0.000	0.000
%RSD		1.094	2.834	T 1.613	1.225	3.993	1.768	0.541	2.749	8.365	3.561	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	10:13:40	23.710	94.392%	48.810	5.393	-1.937	5.463	91.288%	0.000	10.160	10.040	50.270	91.522%
2	10:14:01	23.900	92.813%	49.980	5.611	-0.676	5.353	91.035%	0.000	9.983	10.200	49.000	92.283%
3	10:14:23	24.340	92.923%	50.550	5.539	-1.478	5.280	91.467%	0.000	10.000	10.210	48.760	93.003%
x		23.980	93.376%	49.780	5.514	-1.364	5.365	91.263%	0.000	10.050	10.150	49.350	92.269%
σ		0.322	0.881%	0.885	0.111	0.638	0.092	0.217%	0.000	0.100	0.091	0.811	0.740%
%RSD		1.343	0.944	1.777	2.015	46.780	1.722	0.238	0.000	0.993	0.892	1.644	0.802

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:13:40	9.009	8.647	4.540	93.162%	0.000	5.360	5.159
2	10:14:01	9.061	8.762	4.491	94.068%	0.000	5.550	5.132
3	10:14:23	9.221	9.055	4.628	92.070%	0.000	5.920	5.298
x		9.097	8.822	4.553	93.100%	0.000	5.610	5.196
σ		0.111	0.210	0.069	1.000%	0.000	0.285	0.089
%RSD		1.219	2.382	1.517	1.074	0.000	5.077	1.718

STD3 10/19/2016 10:17:18 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:17:40	90.768%	654.300	250.300	T 10070.000	T 30590.000	T 31090.000	T 10050.000	T 30560.000	87.254%	0.000	T 1238.000	363.500
2	10:18:02	86.150%	670.900	267.000	T 10190.000	T 31180.000	T 31410.000	T 10180.000	T 31140.000	84.845%	0.000	T 1266.000	368.600
3	10:18:23	87.341%	666.900	260.800	T 10350.000	T 31280.000	T 31670.000	T 10290.000	T 31880.000	83.568%	0.000	T 1284.000	378.200
x		88.086%	664.000	259.400	T 10200.000	T 31020.000	T 31390.000	T 10180.000	T 31200.000	85.222%	0.000	T 1262.000	370.100
σ		2.397%	8.623	8.406	T 142.300	T 372.400	T 292.600	T 120.500	T 661.000	1.872%	0.000	T 23.050	7.501
%RSD		2.722	1.299	3.241	T 1.395	T 1.201	T 0.932	T 1.184	T 2.119	2.196	0.000	T 1.826	2.027

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:17:40	19.430	T 1240.000	T 29810.000	454.100	1178.000	1154.000	1220.000	203.800	-0.441	216.900	0.000	0.000
2	10:18:02	16.360	T 1266.000	T 30680.000	468.600	1229.000	1188.000	1242.000	201.900	-0.417	218.700	0.000	0.000
3	10:18:23	20.480	T 1299.000	T 31170.000	468.900	1228.000	1197.000	1262.000	203.900	-0.439	213.500	0.000	0.000
x		18.760	T 1268.000	T 30550.000	463.900	1212.000	1180.000	1241.000	203.200	-0.432	216.400	0.000	0.000
σ		2.142	T 29.440	T 687.300	8.442	29.380	22.700	21.410	1.083	0.013	2.628	0.000	0.000
%RSD		11.420	T 2.322	T 2.249	1.820	2.425	1.924	1.725	0.533	3.029	1.215	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:17:40	182.600	89.465%	1200.000	103.000	16.930	204.000	88.376%	0.000	242.800	247.200	1184.000	91.060%
2	10:18:02	185.700	89.814%	T 1362.000	105.400	15.460	202.600	87.284%	0.000	247.200	249.900	1209.000	88.283%
3	10:18:23	184.400	88.935%	T 1383.000	101.300	13.780	202.200	88.407%	0.000	244.900	247.700	1195.000	89.847%
x		184.200	89.405%	T 1315.000	103.200	15.390	202.900	88.022%	0.000	245.000	248.300	1196.000	89.730%
σ		1.563	0.443%	T 100.200	2.068	1.574	0.946	0.639%	0.000	2.177	1.432	12.300	1.392%
%RSD		0.848	0.495	T 7.617	2.004	10.230	0.466	0.726	0.000	0.889	0.577	1.028	1.551

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:17:40	21.680	178.100	T 1257.000	90.115%	0.000	27.340	9.959
2	10:18:02	22.950	175.400	T 1253.000	91.542%	0.000	26.920	9.657
3	10:18:23	22.130	181.400	T 1298.000	88.989%	0.000	27.020	9.891

x		22.250	178.300	┬1269.000	90.215%	0.000	27.090	9.836
σ		0.642	2.992	┬24.730	1.279%	0.000	0.217	0.159
%RSD		2.887	1.678	┬1.948	1.418	0.000	0.800	1.611

STD4 10/19/2016 10:21:49 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:22:10	85.410%	1858.000	719.300	┬29470.000	┬90530.000	┬90510.000	┬29460.000	┬91340.000	80.244%	0.000	┬3720.000	┬1188.000
2	10:22:32	85.511%	1877.000	743.700	┬29420.000	┬91230.000	┬91080.000	┬29630.000	┬92340.000	81.049%	0.000	┬3736.000	┬1205.000
3	10:22:53	84.824%	1874.000	758.800	┬30010.000	┬91970.000	┬92010.000	┬29900.000	┬95470.000	80.146%	0.000	┬3884.000	┬1225.000
x		85.248%	1870.000	740.600	┬29630.000	┬91240.000	┬91200.000	┬29660.000	┬93050.000	80.480%	0.000	┬3780.000	┬1206.000
σ		0.371%	10.220	19.930	┬323.800	┬720.900	┬756.200	┬221.300	┬2158.000	0.496%	0.000	┬90.370	┬18.470
%RSD		0.435	0.547	2.691	┬1.093	┬0.790	┬0.829	┬0.746	┬2.319	0.616	0.000	┬2.391	┬1.532

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:22:10	-21.250	┬3715.000	┬88960.000	┬1506.000	3423.000	┬3764.000	3461.000	583.600	-1.802	601.500	0.000	0.000
2	10:22:32	-18.390	┬3713.000	┬88290.000	┬1491.000	3457.000	┬3813.000	3482.000	587.900	-1.688	610.000	0.000	0.000
3	10:22:53	-25.310	┬3760.000	┬89970.000	┬1522.000	3503.000	┬3817.000	3509.000	591.300	-2.048	612.900	0.000	0.000
x		-21.650	┬3730.000	┬89070.000	┬1506.000	3461.000	┬3798.000	3484.000	587.600	-1.846	608.100	0.000	0.000
σ		3.475	┬26.550	┬845.600	┬15.530	40.510	┬29.410	24.080	3.846	0.184	5.943	0.000	0.000
%RSD		16.050	┬0.712	┬0.949	┬1.031	1.171	┬0.774	0.691	0.654	9.969	0.977	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:22:10	┬606.000	83.640%	┬4076.000	301.400	18.420	590.700	82.244%	┬0.000	727.600	745.000	┬4065.000	85.502%
2	10:22:32	┬615.400	83.910%	┬4173.000	301.200	18.940	598.200	82.705%	┬0.000	736.400	754.200	┬4151.000	86.084%
3	10:22:53	┬622.000	83.134%	┬4238.000	298.500	17.640	595.200	82.885%	┬0.000	746.300	756.700	┬4153.000	86.530%
x		┬614.500	83.561%	┬4162.000	300.400	18.330	594.700	82.611%	┬0.000	736.800	751.900	┬4123.000	86.039%
σ		┬8.030	0.394%	┬81.830	1.615	0.653	3.759	0.331%	┬0.000	9.371	6.145	┬50.500	0.516%
%RSD		┬1.307	0.472	┬1.966	0.538	3.561	0.632	0.401	┬0.000	1.272	0.817	┬1.225	0.599

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:22:10	67.130	┬620.900	┬3811.000	85.443%	0.000	63.370	29.810
2	10:22:32	68.270	┬618.500	┬3780.000	87.165%	0.000	62.380	29.940
3	10:22:53	69.090	┬627.200	┬3841.000	86.780%	0.000	62.710	30.030
x		68.170	┬622.200	┬3811.000	86.463%	0.000	62.820	29.930
σ		0.983	┬4.492	┬30.530	0.904%	0.000	0.504	0.111
%RSD		1.443	┬0.722	┬0.801	1.045	0.000	0.802	0.371

STD5 10/19/2016 10:27:30 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:27:52	80.776%	3074.000	1206.000	T 49330.000	TM 152500.000	TM 151300.000	T 49840.000	TM 156100.000	75.552%	0.000	TM 6273.000	TM 2006.000
2	10:28:14	81.785%	3021.000	1188.000	T 48910.000	TM 151400.000	TM 153200.000	TM 50630.000	TM 159000.000	75.450%	0.000	TM 6313.000	TM 2022.000
3	10:28:35	78.973%	3070.000	1240.000	T 47670.000	TM 150500.000	T 149900.000	T 48810.000	TM 154200.000	77.553%	0.000	TM 6283.000	TM 2013.000
x		80.511%	3055.000	1211.000	T 48640.000	TM 151500.000	TM 151500.000	TM 49760.000	TM 156400.000	76.185%	0.000	TM 6289.000	TM 2013.000
σ		1.424%	29.510	26.480	T 866.800	TM 1007.000	TM 1646.000	TM 915.000	TM 2428.000	1.186%	0.000	TM 20.820	TM 8.318
%RSD		1.769	0.966	2.186	T 1.782	TM 0.665	TM 1.087	TM 1.839	TM 1.552	1.556	0.000	TM 0.331	TM 0.413
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:27:52	-45.940	TM 6297.000	T 148300.000	TM 2550.000	TM 6446.000	T 6201.000	TM 6328.000	927.100	-3.306	947.400	0.000	0.000
2	10:28:14	-21.900	TM 6407.000	TM 152100.000	TM 2576.000	TM 6515.000	TM 6267.000	TM 6441.000	969.600	-3.284	954.000	0.000	0.000
3	10:28:35	-36.010	TM 6291.000	T 148300.000	TM 2518.000	TM 6433.000	T 6171.000	TM 6296.000	963.900	-3.434	963.700	0.000	0.000
x		-34.620	TM 6332.000	TM 149600.000	TM 2548.000	TM 6465.000	TM 6213.000	TM 6355.000	953.600	-3.341	955.000	0.000	0.000
σ		12.080	TM 65.190	TM 2166.000	TM 28.980	TM 43.770	TM 49.020	TM 76.120	23.060	0.081	8.213	0.000	0.000
%RSD		34.890	TM 1.030	TM 1.448	TM 1.138	TM 0.677	TM 0.789	TM 1.198	2.419	2.423	0.860	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:27:52	TM 1010.000	81.758%	TM 6693.000	479.900	38.000	964.800	80.460%	T 0.000	TM 1357.000	1222.000	TM 6633.000	82.355%
2	10:28:14	TM 1010.000	78.713%	TM 7045.000	486.400	22.620	967.700	80.282%	T 0.000	TM 1389.000	M 1251.000	TM 6843.000	83.697%
3	10:28:35	TM 1015.000	79.610%	TM 7118.000	486.200	33.990	977.700	80.289%	T 0.000	TM 1400.000	M 1260.000	TM 6881.000	82.092%
x		TM 1012.000	80.027%	TM 6952.000	484.200	31.540	970.100	80.344%	T 0.000	TM 1382.000	M 1244.000	TM 6786.000	82.715%
σ		TM 2.761	1.565%	TM 227.300	3.678	7.977	6.796	0.100%	T 0.000	TM 22.310	M 19.800	TM 133.700	0.861%
%RSD		TM 0.273	1.955	TM 3.270	0.760	25.290	0.701	0.125	T 0.000	TM 1.614	M 1.591	TM 1.971	1.041
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	10:27:52	M 134.900	TM 1033.000	TM 6283.000	83.536%	0.000	117.900	M 60.090					
2	10:28:14	M 138.500	TM 1058.000	TM 6326.000	83.509%	0.000	M 120.200	M 61.200					
3	10:28:35	M 141.900	TM 1052.000	TM 6394.000	83.694%	0.000	M 121.200	M 61.510					
x		M 138.400	TM 1048.000	TM 6334.000	83.580%	0.000	M 119.800	M 60.930					
σ		M 3.456	TM 12.860	TM 56.010	0.100%	0.000	M 1.732	M 0.749					
%RSD		M 2.496	TM 1.228	TM 0.884	0.120	0.000	M 1.446	M 1.229					

ICV 10/19/2016 10:33:14 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:36	75.893%	330.600	149.500	T 5524.000	T 15970.000	T 16470.000	T 5088.000	14400.000	71.699%	0.000	586.400	188.600
2	10:33:57	75.053%	346.700	152.100	T 5558.000	T 16310.000	T 16410.000	T 5097.000	14390.000	70.890%	0.000	582.800	190.900
3	10:34:20	73.406%	349.100	150.800	T 5440.000	T 15970.000	T 16350.000	T 5060.000	14590.000	71.872%	0.000	593.200	192.000
x		74.784%	109.477%	120.653%	T 110.147%	T 107.218%	T 109.389%	T 101.636%	96.393%	71.487%	0.000	93.997%	95.269%
σ		1.265%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.524%	0.000	n/a	n/a
%RSD		1.692	2.928	0.860	T 1.105	T 1.208	T 0.364	T 0.376	0.769	0.733	0.000	0.901	0.910
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:36	12.300	┬633.400	┬15440.000	240.100	630.100	614.100	647.500	102.200	-0.147	109.800	0.000	0.000
2	10:33:57	17.060	┬655.500	┬15900.000	245.500	647.100	631.300	671.600	101.400	0.022	104.600	0.000	0.000
3	10:34:20	14.780	┬645.300	┬15780.000	241.700	636.100	629.500	658.600	102.600	-0.013	106.600	0.000	0.000
x		14.710	┬103.159%	┬104.718%	96.969%	102.045%	99.993%	105.475%	102.063%	-0.046	106.980%	0.000	0.000
σ		2.383	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.089	n/a	0.000	0.000
%RSD		16.190	┬1.716	┬1.519	1.137	1.354	1.515	1.826	0.597	194.300	2.480	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:33:36	91.300	79.164%	285.800	51.030	-5.144	103.900	77.373%	0.000	127.400	128.700	595.800	77.300%
2	10:33:57	91.490	78.325%	298.700	51.220	0.802	104.000	77.715%	0.000	129.600	130.600	607.400	80.231%
3	10:34:20	90.420	77.922%	303.400	51.260	6.783	104.300	78.181%	0.000	127.800	129.900	611.800	80.126%
x		91.070	78.470%	94.715%	102.341%	0.814	104.064%	77.756%	0.000	128.300	103.774%	96.799%	79.219%
σ		0.570	0.634%	n/a	n/a	5.964	n/a	0.405%	0.000	1.178	n/a	n/a	1.663%
%RSD		0.626	0.807	3.077	0.235	733.000	0.201	0.521	0.000	0.919	0.725	1.365	2.099
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	10:33:36	24.110	89.430	┬609.000	81.239%	0.000	16.060	9.561					
2	10:33:57	24.020	90.760	┬614.100	80.903%	0.000	17.190	9.814					
3	10:34:20	24.290	89.920	┬606.400	81.932%	0.000	17.750	9.794					
x		120.708%	90.039%	┬97.577%	81.358%	0.000	84.996%	97.230%					
σ		n/a	n/a	┬n/a	0.524%	0.000	n/a	n/a					
%RSD		0.566	0.747	┬0.645	0.645	0.000	5.071	1.442					

ICVL 10/19/2016 10:38:58 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:39:20	77.342%	1.200	48.420	502.400	206.600	55.260	468.600	486.200	73.303%	0.000	4.675	3.615
2	10:39:41	76.979%	1.128	52.780	505.700	203.700	56.660	471.200	500.000	72.863%	0.000	4.331	3.682
3	10:40:03	75.761%	1.325	51.850	503.400	205.700	56.110	467.600	495.400	72.161%	0.000	4.886	3.817
x		76.694%	121.759%	127.545%	100.767%	102.679%	112.020%	93.830%	98.768%	72.776%	0.000	92.615%	92.612%
σ		0.828%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.576%	0.000	n/a	n/a
%RSD		1.080	8.168	4.507	0.345	0.719	1.261	0.392	1.423	0.792	0.000	6.054	2.777
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:39:20	10.640	2.107	195.900	1.066	2.394	5.169	21.350	2.051	0.321	3.504	0.000	0.000
2	10:39:41	11.720	2.228	200.200	1.187	2.504	5.345	23.090	2.220	0.300	4.193	0.000	0.000
3	10:40:03	10.650	2.237	202.000	1.138	2.143	5.385	22.230	2.326	0.296	3.707	0.000	0.000
x		11.000	109.535%	99.678%	112.995%	117.333%	105.988%	111.110%	109.944%	0.305	95.035%	0.000	0.000
σ		0.619	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.013	n/a	0.000	0.000
%RSD		5.626	3.301	1.557	5.399	7.875	2.171	3.922	6.306	4.387	9.323	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:39:20	4.799	78.341%	11.940	1.037	-1.870	1.195	78.121%	0.000	2.525	2.554	9.820	79.056%
2	10:39:41	4.752	79.869%	11.780	1.138	-1.675	1.108	78.361%	0.000	2.621	2.666	10.230	79.297%

3	10:40:03	4.887	78.607%	11.880	1.079	-0.600	0.994	77.150%	0.000	2.697	2.769	9.976	77.248%
x		96.253%	78.939%	118.655%	108.497%	-1.382	109.900%	77.877%	0.000	2.614	133.157%	100.094%	78.534%
σ		n/a	0.816%	n/a	n/a	0.684	n/a	0.642%	0.000	0.087	n/a	n/a	1.120%
%RSD		1.427	1.034	0.650	4.651	49.530	9.177	0.824	0.000	3.314	4.035	2.078	1.427

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:39:20	1.956	2.040	1.146	79.045%	0.000	0.956	1.077
2	10:39:41	1.959	2.062	1.175	80.238%	0.000	0.975	1.093
3	10:40:03	1.993	2.014	1.130	81.362%	0.000	0.965	1.056
x		98.482%	101.942%	115.045%	80.215%	0.000	48.275%	107.529%
σ		n/a	n/a	n/a	1.159%	0.000	n/a	n/a
%RSD		1.045	1.185	1.968	1.445	0.000	0.983	1.698

ICBIS 10/19/2016 10:44:40 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:45:02	76.397%	0.120	6.716	17.680	3.296	2.274	1.483	-3.335	71.463%	0.000	0.125	-0.144
2	10:45:24	76.740%	0.042	5.380	21.230	3.208	1.950	1.123	-4.614	71.672%	0.000	0.042	-0.156
3	10:45:45	73.821%	0.005	6.082	17.150	2.400	1.714	0.833	-5.023	72.761%	0.000	-0.242	-0.162
x		75.653%	0.056	6.059	18.690	2.968	1.980	1.146	-4.324	71.966%	0.000	-0.025	-0.154
σ		1.596%	0.059	0.668	2.219	0.494	0.281	0.326	0.881	0.697%	0.000	0.193	0.009
%RSD		2.110	106.000	11.030	11.880	16.650	14.190	28.430	20.370	0.968	0.000	774.100	5.907

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:45:02	11.290	0.101	3.421	0.057	0.103	0.100	0.176	0.006	0.324	-0.255	0.000	0.000
2	10:45:24	11.320	0.069	2.160	0.045	0.035	0.076	0.081	0.031	0.340	-1.274	0.000	0.000
3	10:45:45	11.490	0.062	-0.439	0.039	0.043	0.033	0.215	0.140	0.313	-0.223	0.000	0.000
x		11.370	0.078	1.714	0.047	0.060	0.070	0.158	0.059	0.326	-0.584	0.000	0.000
σ		0.105	0.021	1.968	0.009	0.037	0.034	0.069	0.071	0.013	0.598	0.000	0.000
%RSD		0.923	26.700	114.800	20.080	61.660	48.980	43.710	121.100	4.105	102.300	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:45:02	0.019	78.717%	0.618	0.001	-1.152	-0.012	77.961%	0.000	0.214	0.217	0.089	76.750%
2	10:45:24	0.015	79.203%	0.782	-0.006	-1.157	-0.012	79.360%	0.000	0.266	0.247	0.097	79.051%
3	10:45:45	0.014	78.552%	0.669	-0.001	-0.928	-0.052	79.378%	0.000	0.287	0.269	0.117	78.511%
x		0.016	78.824%	0.689	-0.002	-1.079	-0.025	78.899%	0.000	0.256	0.244	0.101	78.104%
σ		0.002	0.338%	0.084	0.004	0.131	0.024	0.813%	0.000	0.038	0.026	0.015	1.203%
%RSD		15.430	0.429	12.170	209.900	12.160	93.070	1.030	0.000	14.760	10.710	14.540	1.541

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:45:02	0.067	0.111	0.087	79.964%	0.000	-0.075	-0.011
2	10:45:24	0.041	0.095	0.084	80.588%	0.000	-0.078	-0.012
3	10:45:45	0.045	0.104	0.066	82.288%	0.000	-0.064	-0.013
x		0.051	0.103	0.079	80.947%	0.000	-0.072	-0.012
σ		0.014	0.008	0.011	1.203%	0.000	0.008	0.001

%RSD	26.830	8.060	14.450	1.486	0.000	10.460	9.548	

ICSA 10/19/2016 10:50:23 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:45	75.451%	0.063	6.229	TM 101500.000	T 103900.000	T 102500.000	TM 97930.000	T 103600.000	78.336%	0.000	0.832	1.271
2	10:51:06	75.945%	0.102	4.644	TM 102800.000	T 103300.000	T 103200.000	TM 99900.000	T 106200.000	78.812%	0.000	0.309	1.323
3	10:51:28	73.567%	0.168	6.249	TM 100900.000	T 103600.000	T 101900.000	TM 97870.000	T 107100.000	79.065%	0.000	0.519	1.219
x		74.988%	1.#IO%	1.#IO%	TM 101.728%	T 103.615%	T 102.542%	TM 98.566%	T 105.623%	78.738%	0.000	1.#IO%	1.#IO%
σ		1.255%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.370%	0.000	n/a	n/a
%RSD		1.674	47.770	16.130	TM 0.923	T 0.275	T 0.617	TM 1.173	T 1.736	0.470	0.000	47.590	4.120

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:45	4.340	0.502	T 101100.000	0.122	0.819	1.191	-0.872	-0.334	0.351	-0.711	0.000	0.000
2	10:51:06	4.777	0.539	T 100500.000	0.120	0.594	1.070	-0.698	-0.361	0.360	-1.487	0.000	0.000
3	10:51:28	4.618	0.578	T 102600.000	0.180	0.838	1.296	-0.863	-0.049	0.317	-1.053	0.000	0.000
x		4.578	1.#IO%	T 101.417%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	0.343	-1.#IO%	0.000	0.000
σ		0.221	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.022	n/a	0.000	0.000
%RSD		4.825	7.065	T 1.090	24.310	18.110	9.515	12.110	69.570	6.560	35.910	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:45	0.737	81.930%	T 2150.000	0.154	7.816	0.125	82.939%	0.000	0.313	0.284	0.354	84.138%
2	10:51:06	0.740	83.565%	T 2190.000	0.184	8.173	0.103	83.668%	0.000	0.413	0.336	0.255	88.530%
3	10:51:28	0.731	85.404%	T 2197.000	0.165	7.663	0.037	84.486%	0.000	0.427	0.370	0.462	88.220%
x		1.#IO%	83.633%	T 108.961%	1.#IO%	7.884	1.#IO%	83.698%	0.000	0.384	1.#IO%	1.#IO%	86.963%
σ		n/a	1.738%	T n/a	n/a	0.262	n/a	0.774%	0.000	0.062	n/a	n/a	2.451%
%RSD		0.643	2.078	T 1.154	9.174	3.321	52.210	0.925	0.000	16.230	13.060	28.990	2.819

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:45	0.264	0.112	0.381	85.223%	0.000	6.087	-0.010
2	10:51:06	0.378	0.119	0.393	85.827%	0.000	5.089	-0.007
3	10:51:28	0.343	0.139	0.470	86.554%	0.000	3.951	-0.007
x		1.#IO%	1.#IO%	1.#IO%	85.868%	0.000	1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	0.666%	0.000	n/a	n/a
%RSD		17.790	11.340	11.630	0.776	0.000	21.200	22.290

ICSAB 10/19/2016 10:56:06 AM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:56:28	68.503%	27.320	448.600	TM 103200.000	T 104500.000	T 105200.000	TM 100400.000	T 105800.000	72.828%	0.000	22.690	48.140
2	10:56:49	67.487%	27.310	466.400	TM 102300.000	T 104800.000	T 105100.000	TM 101400.000	T 106100.000	73.872%	0.000	23.280	47.990
3	10:57:11	66.708%	28.460	462.300	TM 99110.000	T 102200.000	T 102900.000	TM 99200.000	T 105800.000	75.112%	0.000	22.390	47.310
x		67.566%	110.788%	114.778%	TM 101.551%	T 103.835%	T 104.378%	TM 100.336%	T 105.904%	73.937%	0.000	91.147%	95.624%
σ		0.900%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.144%	0.000	n/a	n/a
%RSD		1.332	2.385	2.032	TM 2.134	T 1.390	T 1.217	TM 1.105	T 0.183	1.547	0.000	1.984	0.924

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:56:28	6.313	23.960	T 103000.000	23.330	23.010	45.490	44.750	43.770	-0.049	114.700	0.000	0.000
2	10:56:49	6.040	23.670	T 102800.000	23.680	23.770	46.850	46.420	45.120	0.049	113.400	0.000	0.000
3	10:57:11	6.372	23.950	T 103000.000	23.420	23.260	47.000	45.770	45.660	-0.030	116.400	0.000	0.000
x		6.242	95.439%	T 102.951%	93.892%	93.383%	92.892%	91.292%	99.666%	-0.010	91.861%	0.000	0.000
σ		0.177	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.052	n/a	0.000	0.000
%RSD		2.836	0.688	T 0.133	0.779	1.672	1.781	1.838	2.172	517.900	1.319	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:56:28	0.593	80.841%	T 2158.000	25.070	8.918	24.120	81.674%	0.000	48.580	50.190	240.000	85.864%
2	10:56:49	0.611	79.818%	T 2242.000	24.940	6.669	23.940	82.130%	0.000	50.640	50.950	243.400	85.250%
3	10:57:11	0.623	79.806%	T 2241.000	25.070	7.504	24.020	82.362%	0.000	50.470	51.720	245.200	87.480%
x		0.609	80.155%	T 110.693%	100.117%	7.697	96.098%	82.055%	0.000	49.890	101.911%	97.157%	86.198%
σ		0.015	0.594%	T n/a	n/a	1.137	n/a	0.350%	0.000	1.145	n/a	n/a	1.152%
%RSD		2.458	0.741	T 2.199	0.298	14.770	0.388	0.427	0.000	2.294	1.495	1.088	1.336

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:56:28	20.330	22.340	22.820	83.989%	0.000	18.760	11.390
2	10:56:49	21.090	22.920	23.340	84.208%	0.000	19.870	11.630
3	10:57:11	21.150	22.930	23.410	84.860%	0.000	20.380	11.690
x		104.276%	90.924%	92.755%	84.352%	0.000	98.352%	115.699%
σ		n/a	n/a	n/a	0.453%	0.000	n/a	n/a
%RSD		2.187	1.495	1.397	0.537	0.000	4.227	1.343

CCV 10/19/2016 11:01:49 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:02:11	63.208%	693.200	276.100	T 10570.000	T 31880.000	T 32390.000	T 10000.000	28950.000	62.307%	0.000	T 1263.000	379.700
2	11:02:33	60.115%	724.800	287.900	T 10740.000	T 32820.000	T 32650.000	T 10170.000	29270.000	60.337%	0.000	T 1280.000	384.000
3	11:02:55	60.848%	708.000	294.300	T 10560.000	T 31740.000	T 32260.000	T 9834.000	28970.000	61.366%	0.000	T 1280.000	387.400
x		61.391%	113.391%	114.442%	T 106.248%	T 107.154%	T 108.112%	T 100.008%	96.872%	61.337%	0.000	T 101.933%	95.924%
σ		1.616%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.985%	0.000	T n/a	n/a
%RSD		2.632	2.227	3.231	T 0.953	T 1.841	T 0.617	T 1.670	0.622	1.606	0.000	T 0.761	0.996

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:02:11	22.960	T 1294.000	T 31020.000	475.200	1261.000	1216.000	1308.000	199.600	-0.490	207.600	0.000	0.000
2	11:02:33	18.690	T 1326.000	T 32060.000	485.700	1257.000	1262.000	1346.000	198.900	-0.536	210.000	0.000	0.000
3	11:02:55	18.440	T 1303.000	T 31430.000	474.600	1269.000	1228.000	1331.000	201.700	-0.643	215.300	0.000	0.000
x		20.030	T 104.626%	T 105.016%	95.705%	100.964%	98.814%	106.301%	100.033%	-0.556	105.480%	0.000	0.000
σ		2.540	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.078	n/a	0.000	0.000
%RSD		12.680	T 1.290	T 1.669	1.308	0.489	1.942	1.443	0.719	14.100	1.881	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:02:11	178.300	71.747%	1221.000	101.900	10.580	203.800	74.308%	0.000	246.300	248.400	1190.000	75.120%
2	11:02:33	181.500	71.500%	1248.000	104.000	12.810	208.300	72.338%	0.000	250.800	254.100	1203.000	74.522%
3	11:02:55	183.100	70.886%	1261.000	103.300	16.360	208.500	71.721%	0.000	251.800	258.000	1215.000	75.508%
x		181.000	71.378%	99.483%	103.040%	13.250	103.429%	72.789%	0.000	249.600	101.406%	96.217%	75.050%
σ		2.415	0.443%	n/a	n/a	2.916	n/a	1.351%	0.000	2.906	n/a	n/a	0.496%
%RSD		1.334	0.621	1.668	1.016	22.000	1.280	1.856	0.000	1.164	1.897	1.056	0.661

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:02:11	22.560	179.000	T 1278.000	77.057%	0.000	16.510	10.250
2	11:02:33	23.020	179.300	T 1268.000	77.229%	0.000	17.630	10.230
3	11:02:55	23.050	178.300	T 1259.000	78.435%	0.000	18.250	10.070
x		114.386%	89.433%	T 101.493%	77.574%	0.000	87.317%	101.852%
σ		n/a	n/a	T n/a	0.751%	0.000	n/a	n/a
%RSD		1.207	0.296	T 0.742	0.968	0.000	5.070	0.964

CCB 10/19/2016 11:07:32 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:54	66.511%	0.124	4.730	26.210	9.515	8.364	11.510	4.502	63.763%	0.000	-0.172	-0.240
2	11:08:16	64.028%	0.038	5.662	31.870	15.020	13.630	12.940	5.715	63.004%	0.000	0.112	-0.276
3	11:08:37	66.913%	0.011	5.522	32.240	17.650	17.620	12.950	9.674	64.105%	0.000	0.451	-0.198
x		65.817%	0.058	5.305	30.110	14.060	13.200	12.470	6.630	63.624%	0.000	0.130	-0.238
σ		1.562%	0.059	0.502	3.375	4.152	4.644	0.830	2.705	0.563%	0.000	0.312	0.039
%RSD		2.374	102.500	9.465	11.210	29.530	35.170	6.654	40.790	0.886	0.000	239.300	16.350

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:54	9.924	0.081	8.775	0.036	0.085	0.112	0.213	-0.010	0.269	-0.039	0.000	0.000
2	11:08:16	9.938	0.104	14.960	0.057	0.109	0.073	0.147	-0.098	0.303	-1.115	0.000	0.000
3	11:08:37	9.183	0.073	14.750	0.038	0.074	0.084	0.184	-0.107	0.286	-1.176	0.000	0.000
x		9.682	0.086	12.830	0.044	0.089	0.090	0.181	-0.072	0.286	-0.777	0.000	0.000
σ		0.432	0.016	3.510	0.011	0.018	0.020	0.033	0.053	0.017	0.640	0.000	0.000
%RSD		4.461	19.030	27.360	26.210	19.840	22.290	18.400	74.450	6.029	82.360	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:54	0.006	73.966%	2.407	-0.012	-1.515	0.018	74.910%	0.000	0.284	0.301	0.029	75.597%
2	11:08:16	0.014	72.306%	2.839	0.012	-0.865	-0.049	74.925%	0.000	0.367	0.351	0.050	75.062%

3	11:08:37	0.024	73.947%	2.704	0.002	-1.581	0.008	75.177%	0.000	0.390	0.367	0.136	74.968%
x		0.015	73.406%	2.650	0.001	-1.320	-0.008	75.004%	0.000	0.347	0.340	0.071	75.209%
σ		0.009	0.953%	0.221	0.012	0.396	0.036	0.150%	0.000	0.056	0.034	0.057	0.339%
%RSD		62.190	1.298	8.341	1784.000	29.950	467.300	0.200	0.000	16.100	10.100	79.290	0.451

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:54	0.098	0.169	0.081	78.236%	0.000	-0.107	-0.014
2	11:08:16	0.079	0.162	0.078	79.073%	0.000	-0.113	-0.010
3	11:08:37	0.106	0.152	0.107	78.195%	0.000	-0.099	-0.011
x		0.094	0.161	0.089	78.501%	0.000	-0.106	-0.012
σ		0.014	0.008	0.016	0.495%	0.000	0.007	0.002
%RSD		14.560	5.139	18.150	0.631	0.000	6.958	15.930

200-35736-A-11-A 10/19/2016 11:13:14 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:36	75.350%	3.970	30.230	T 600.400	T 13300.000	T 55030.000	T 4401.000	T 48570.000	84.004%	0.000	76.430	60.320
2	11:13:58	74.184%	4.174	31.470	T 570.800	T 12650.000	T 52230.000	T 4296.000	T 48460.000	88.100%	0.000	76.430	58.980
3	11:14:20	71.806%	4.064	34.230	T 552.600	T 13190.000	T 54300.000	T 4386.000	T 49300.000	87.570%	0.000	76.380	61.350
x		73.780%	4.069	31.970	T 574.600	T 13050.000	T 53850.000	T 4361.000	T 48770.000	86.558%	0.000	76.410	60.220
σ		1.806%	0.102	2.049	T 24.120	T 346.000	T 1451.000	T 56.790	T 456.500	2.228%	0.000	0.029	1.184
%RSD		2.448	2.512	6.408	T 4.199	T 2.652	T 2.693	T 1.302	T 0.936	2.574	0.000	0.038	1.966

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:36	7.197	TM 6915.000	T 98310.000	44.290	86.590	1758.000	694.300	12.690	0.075	14.510	0.000	0.000
2	11:13:58	6.199	TM 6869.000	T 97730.000	44.090	83.520	1735.000	676.800	12.720	0.077	13.830	0.000	0.000
3	11:14:20	6.431	TM 7031.000	T 100400.000	44.940	87.140	1779.000	694.800	12.530	0.100	12.070	0.000	0.000
x		6.609	TM 6938.000	T 98830.000	44.440	85.750	1757.000	688.600	12.640	0.084	13.470	0.000	0.000
σ		0.522	TM 83.160	T 1430.000	0.449	1.953	21.800	10.260	0.104	0.014	1.260	0.000	0.000
%RSD		7.901	TM 1.199	T 1.447	1.010	2.277	1.241	1.490	0.822	16.570	9.352	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:36	138.600	204.758%	3.721	2.059	-7.006	3.935	80.757%	0.000	0.964	1.075	789.300	97.714%
2	11:13:58	137.000	206.041%	3.600	1.926	-4.332	3.727	82.542%	0.000	1.042	1.031	795.300	97.704%
3	11:14:20	139.600	211.064%	3.426	2.057	-5.230	3.865	83.660%	0.000	0.996	1.054	800.300	100.962%
x		138.400	207.288%	3.582	2.014	-5.523	3.842	82.320%	0.000	1.001	1.053	795.000	98.793%
σ		1.311	3.333%	0.148	0.076	1.361	0.106	1.464%	0.000	0.039	0.022	5.494	1.878%
%RSD		0.947	1.608	4.143	3.781	24.650	2.753	1.779	0.000	3.923	2.067	0.691	1.901

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:36	0.887	0.600	158.000	84.942%	0.000	17.470	6.214
2	11:13:58	0.816	0.581	155.500	89.408%	0.000	15.620	5.918
3	11:14:20	0.748	0.580	157.900	88.441%	0.000	15.380	6.094
x		0.817	0.587	157.100	87.597%	0.000	16.160	6.075
σ		0.069	0.011	1.439	2.349%	0.000	1.140	0.149

%RSD		8.491	1.913	0.916	2.682	0.000	7.058	2.449

200-35736-A-11-A SD@5 10/19/2016 11:18:56 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:19:18	71.901%	1.066	8.125	120.900	2605.000	T 11830.000	T 932.900	9653.000	79.439%	0.000	16.620	12.950
2	11:19:40	73.215%	0.699	7.288	118.800	2661.000	T 11720.000	T 925.300	9773.000	78.834%	0.000	16.680	13.340
3	11:20:02	71.042%	0.638	8.217	120.600	2633.000	T 11830.000	T 930.200	9982.000	78.251%	0.000	17.660	13.340
x		72.053%	0.801	7.876	120.100	2633.000	T 11790.000	T 929.500	9803.000	78.842%	0.000	16.990	13.210
σ		1.095%	0.232	0.512	1.121	27.740	T 61.860	T 3.886	166.200	0.594%	0.000	0.582	0.225
%RSD		1.519	28.900	6.499	0.933	1.054	T 0.525	T 0.418	1.696	0.753	0.000	3.427	1.704

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:19:18	6.545	T 1478.000	T 21290.000	9.359	18.830	388.700	161.500	5.084	0.200	2.649	0.000	0.000
2	11:19:40	6.327	T 1508.000	T 21700.000	9.977	18.540	395.500	163.900	5.194	0.199	3.016	0.000	0.000
3	11:20:02	5.888	T 1507.000	T 21990.000	10.170	18.590	399.900	168.100	5.019	0.208	1.429	0.000	0.000
x		6.253	T 1498.000	T 21660.000	9.834	18.660	394.700	164.500	5.099	0.202	2.364	0.000	0.000
σ		0.335	T 16.840	T 353.500	0.422	0.154	5.624	3.339	0.089	0.005	0.831	0.000	0.000
%RSD		5.354	T 1.124	T 1.632	4.289	0.824	1.425	2.030	1.737	2.563	35.140	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:19:18	26.580	109.195%	0.955	0.387	-1.445	0.778	84.367%	0.000	0.192	0.195	149.700	86.058%
2	11:19:40	26.810	108.503%	1.038	0.368	-0.657	0.822	84.998%	0.000	0.224	0.239	150.000	85.780%
3	11:20:02	26.540	109.916%	1.143	0.389	-1.686	0.759	85.453%	0.000	0.224	0.247	152.800	85.775%
x		26.640	109.205%	1.045	0.382	-1.263	0.786	84.939%	0.000	0.213	0.227	150.800	85.871%
σ		0.144	0.707%	0.094	0.011	0.538	0.032	0.546%	0.000	0.019	0.028	1.747	0.162%
%RSD		0.542	0.647	8.996	2.964	42.610	4.100	0.642	0.000	8.784	12.450	1.158	0.189

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:19:18	0.133	0.118	30.490	84.894%	0.000	1.894	1.074
2	11:19:40	0.168	0.127	30.470	86.822%	0.000	1.981	1.133
3	11:20:02	0.183	0.122	31.120	85.086%	0.000	2.086	1.222
x		0.161	0.122	30.690	85.601%	0.000	1.987	1.143
σ		0.026	0.004	0.368	1.062%	0.000	0.096	0.074
%RSD		15.960	3.366	1.198	1.240	0.000	4.832	6.504

200-35736-A-11-A PDS 10/19/2016 11:24:39 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:25:01	74.536%	14.360	460.500	T 4995.000	T 14330.000	T 51510.000	T 8411.000	T 50620.000	90.937%	0.000	107.900	89.380
2	11:25:22	74.846%	13.920	445.500	T 4778.000	T 14000.000	T 51370.000	T 8248.000	T 50920.000	92.394%	0.000	110.300	87.960
3	11:25:44	73.646%	13.860	461.400	T 4800.000	T 14230.000	T 51850.000	T 8479.000	T 53030.000	91.708%	0.000	113.000	90.580
x		74.343%	14.050	455.800	T 4858.000	T 14190.000	T 51580.000	T 8379.000	T 51520.000	91.680%	0.000	110.400	89.310
σ		0.623%	0.271	8.929	T 119.500	T 171.400	T 246.900	T 118.600	T 1319.000	0.729%	0.000	2.548	1.312
%RSD		0.838	1.931	1.959	T 2.460	T 1.208	T 0.479	T 1.416	T 2.559	0.795	0.000	2.307	1.469

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:25:01	8.814	TM 6612.000	T 96630.000	50.030	97.690	1711.000	809.700	19.580	0.070	46.420	0.000	0.000
2	11:25:22	6.246	TM 6544.000	T 96110.000	50.240	98.100	1718.000	800.900	20.570	0.021	48.420	0.000	0.000
3	11:25:44	7.785	TM 6728.000	T 97170.000	50.500	99.090	1730.000	822.200	20.430	0.022	48.010	0.000	0.000
x		7.615	TM 6628.000	T 96640.000	50.260	98.300	1720.000	810.900	20.190	0.038	47.620	0.000	0.000
σ		1.292	TM 92.880	T 528.200	0.235	0.720	9.883	10.700	0.534	0.028	1.053	0.000	0.000
%RSD		16.970	TM 1.401	T 0.547	0.467	0.732	0.575	1.319	2.645	74.320	2.212	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:25:01	177.100	212.112%	41.680	11.750	-0.405	12.630	86.179%	0.000	18.720	19.260	831.500	101.046%
2	11:25:22	179.100	209.262%	42.890	12.300	-2.961	13.510	85.775%	0.000	19.060	19.830	852.100	101.782%
3	11:25:44	176.800	211.172%	43.490	12.070	-4.069	13.530	87.207%	0.000	18.870	19.660	851.700	102.239%
x		177.700	210.849%	42.690	12.040	-2.478	13.230	86.387%	0.000	18.880	19.580	845.100	101.689%
σ		1.217	1.453%	0.923	0.277	1.879	0.513	0.738%	0.000	0.170	0.293	11.800	0.602%
%RSD		0.685	0.689	2.163	2.296	75.830	3.878	0.854	0.000	0.901	1.496	1.397	0.592

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:25:01	16.260	17.250	158.500	88.166%	0.000	30.350	15.850
2	11:25:22	16.490	17.380	158.800	89.902%	0.000	30.270	16.180
3	11:25:44	17.360	17.410	157.500	91.473%	0.000	30.620	15.860
x		16.700	17.350	158.300	89.847%	0.000	30.410	15.970
σ		0.582	0.086	0.644	1.654%	0.000	0.182	0.187
%RSD		3.482	0.494	0.407	1.841	0.000	0.599	1.174

200-35736-A-11-I MS 10/19/2016 11:30:21 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:43	73.782%	14.750	395.100	T 4858.000	T 15070.000	T 58510.000	T 8660.000	T 59440.000	93.254%	0.000	121.500	97.430
2	11:31:05	71.677%	15.350	410.400	T 4801.000	T 14900.000	T 57760.000	T 8475.000	T 59270.000	94.030%	0.000	122.800	96.880
3	11:31:26	71.988%	16.050	413.800	T 4835.000	T 14850.000	T 57130.000	T 8669.000	T 59870.000	94.074%	0.000	122.600	97.250
x		72.482%	15.380	406.400	T 4831.000	T 14940.000	T 57800.000	T 8601.000	T 59530.000	93.786%	0.000	122.300	97.190
σ		1.136%	0.652	9.942	T 28.670	T 111.800	T 691.400	T 109.400	T 305.200	0.461%	0.000	0.700	0.279
%RSD		1.567	4.239	2.446	T 0.594	T 0.748	T 1.196	T 1.272	T 0.513	0.492	0.000	0.572	0.287

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:43	6.739	TM 6830.000	T 97110.000	49.460	106.500	1947.000	822.800	19.900	0.032	50.490	0.000	0.000
2	11:31:05	7.655	TM 6846.000	T 97670.000	49.910	106.700	1954.000	815.900	20.030	0.041	47.840	0.000	0.000
3	11:31:26	6.327	TM 6876.000	T 97970.000	49.740	105.800	1985.000	828.400	19.760	0.072	46.850	0.000	0.000
x		6.907	TM 6851.000	T 97580.000	49.710	106.400	1962.000	822.400	19.900	0.049	48.390	0.000	0.000
σ		0.680	TM 23.390	T 434.200	0.226	0.496	20.530	6.242	0.135	0.021	1.883	0.000	0.000
%RSD		9.841	TM 0.341	T 0.445	0.454	0.467	1.046	0.759	0.678	42.780	3.891	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:43	202.000	226.235%	37.750	12.270	-5.363	13.120	84.441%	0.000	5.448	5.429	877.000	100.384%
2	11:31:05	205.400	227.506%	38.370	12.400	-6.437	12.930	84.180%	0.000	5.283	5.574	889.000	102.623%
3	11:31:26	204.800	230.392%	38.560	12.290	-5.471	12.680	85.986%	0.000	5.275	5.471	883.000	104.379%
x		204.100	228.045%	38.230	12.320	-5.757	12.910	84.869%	0.000	5.335	5.491	883.000	102.462%
σ		1.787	2.130%	0.420	0.069	0.591	0.219	0.976%	0.000	0.097	0.075	5.986	2.002%
%RSD		0.876	0.934	1.100	0.562	10.270	1.695	1.150	0.000	1.824	1.364	0.678	1.954

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:43	17.350	14.570	151.600	88.989%	0.000	31.500	16.180
2	11:31:05	17.510	15.240	156.700	87.144%	0.000	32.280	16.870
3	11:31:26	17.540	14.680	150.800	91.563%	0.000	31.120	16.310
x		17.470	14.830	153.000	89.232%	0.000	31.640	16.460
σ		0.099	0.362	3.231	2.219%	0.000	0.594	0.369
%RSD		0.564	2.443	2.111	2.487	0.000	1.878	2.240

200-35736-A-11-J MSD 10/19/2016 11:36:04 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:36:26	74.948%	14.020	385.800	T 5023.000	T 15760.000	T 56540.000	T 8587.000	T 43130.000	92.216%	0.000	120.300	98.140
2	11:36:48	73.198%	15.070	401.300	T 4830.000	T 15420.000	T 54990.000	T 8518.000	T 42560.000	95.224%	0.000	121.300	96.850
3	11:37:09	71.458%	15.420	410.000	T 4770.000	T 15260.000	T 54900.000	T 8411.000	T 42900.000	95.697%	0.000	119.300	95.090
x		73.202%	14.840	399.000	T 4874.000	T 15480.000	T 55480.000	T 8506.000	T 42860.000	94.379%	0.000	120.300	96.690
σ		1.745%	0.728	12.250	T 132.500	T 256.000	T 922.400	T 88.390	T 286.100	1.888%	0.000	1.000	1.532
%RSD		2.384	4.908	3.071	T 2.718	T 1.654	T 1.663	T 1.039	T 0.668	2.001	0.000	0.831	1.585

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:36:26	7.943	T 6220.000	T 96700.000	50.220	105.300	1863.000	858.600	19.950	0.086	47.030	0.000	0.000
2	11:36:48	5.942	T 6179.000	T 94470.000	48.990	104.800	1850.000	841.600	19.800	0.101	47.500	0.000	0.000
3	11:37:09	7.406	T 6143.000	T 95240.000	48.500	103.800	1839.000	848.500	20.790	0.065	46.800	0.000	0.000
x		7.097	T 6181.000	T 95470.000	49.240	104.700	1851.000	849.600	20.180	0.084	47.110	0.000	0.000
σ		1.036	T 38.440	T 1134.000	0.889	0.790	12.070	8.526	0.533	0.018	0.353	0.000	0.000
%RSD		14.590	T 0.622	T 1.188	1.806	0.754	0.652	1.004	2.643	21.890	0.749	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:36:26	156.700	218.842%	40.170	12.130	-3.428	14.530	87.792%	0.000	5.175	5.256	802.400	103.285%
2	11:36:48	163.400	220.747%	41.070	12.450	-3.154	14.270	85.902%	0.000	5.153	5.521	830.300	104.184%

3	11:37:09	160.900	216.632%	41.250	12.150	-2.714	14.820	87.015%	0.000	5.311	5.439	820.600	104.153%
x		160.300	218.740%	40.830	12.240	-3.099	14.540	86.903%	0.000	5.213	5.405	817.800	103.874%
σ		3.383	2.059%	0.581	0.181	0.360	0.275	0.950%	0.000	0.086	0.136	14.120	0.510%
%RSD		2.110	0.941	1.423	1.480	11.620	1.894	1.093	0.000	1.640	2.507	1.726	0.491

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:36:26	17.470	14.820	158.700	87.974%	0.000	30.050	16.110
2	11:36:48	18.470	15.180	158.100	90.327%	0.000	29.830	16.000
3	11:37:09	18.010	14.710	153.400	93.004%	0.000	29.120	15.990
x		17.980	14.910	156.700	90.435%	0.000	29.660	16.040
σ		0.497	0.246	2.887	2.517%	0.000	0.485	0.063
%RSD		2.764	1.647	1.842	2.783	0.000	1.635	0.395

200-35736-A-12-A 10/19/2016 11:41:47 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:42:09	67.604%	4.453	30.700	446.600	T 15110.000	T 45520.000	T 3786.000	T 61700.000	88.750%	0.000	69.460	54.470
2	11:42:30	67.495%	3.641	31.980	T 505.000	T 15360.000	T 45940.000	T 3837.000	T 61890.000	87.828%	0.000	70.820	56.270
3	11:42:52	68.974%	3.280	26.520	T 502.700	T 15350.000	T 46020.000	T 3815.000	T 62640.000	88.055%	0.000	70.730	55.190
x		68.024%	3.791	29.730	T 484.700	T 15270.000	T 45830.000	T 3812.000	T 62080.000	88.211%	0.000	70.340	55.310
σ		0.824%	0.601	2.851	T 33.040	T 143.200	T 269.500	T 25.690	T 497.200	0.480%	0.000	0.763	0.902
%RSD		1.212	15.840	9.588	T 6.816	T 0.937	T 0.588	T 0.674	T 0.801	0.544	0.000	1.085	1.631

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:42:09	5.387	TM 7231.000	T 94510.000	39.390	84.260	1636.000	674.100	13.870	0.064	14.040	0.000	0.000
2	11:42:30	4.506	TM 7427.000	T 96780.000	39.070	82.240	1667.000	686.400	14.270	0.047	14.740	0.000	0.000
3	11:42:52	4.691	TM 7328.000	T 95870.000	39.410	83.190	1639.000	689.300	13.870	0.051	14.820	0.000	0.000
x		4.862	TM 7329.000	T 95720.000	39.290	83.230	1648.000	683.300	14.000	0.054	14.530	0.000	0.000
σ		0.465	TM 98.260	T 1146.000	0.192	1.011	17.200	8.042	0.229	0.009	0.429	0.000	0.000
%RSD		9.561	TM 1.341	T 1.197	0.488	1.214	1.044	1.177	1.633	16.280	2.954	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:42:09	161.300	198.438%	1.711	1.722	-4.720	4.056	83.254%	0.000	0.558	0.632	749.700	97.231%
2	11:42:30	161.400	196.300%	1.663	1.588	-1.607	3.497	83.920%	0.000	0.643	0.623	749.700	97.163%
3	11:42:52	159.700	197.868%	1.709	1.642	-3.698	3.795	84.770%	0.000	0.566	0.612	746.200	96.180%
x		160.800	197.535%	1.694	1.650	-3.342	3.783	83.981%	0.000	0.589	0.622	748.600	96.858%
σ		0.985	1.107%	0.028	0.067	1.587	0.280	0.760%	0.000	0.047	0.010	2.021	0.588%
%RSD		0.613	0.561	1.626	4.070	47.480	7.403	0.905	0.000	8.027	1.614	0.270	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:42:09	0.563	0.464	122.300	86.719%	0.000	10.550	4.865
2	11:42:30	0.507	0.472	123.900	86.094%	0.000	10.670	4.858
3	11:42:52	0.498	0.501	123.700	87.377%	0.000	10.830	4.755
x		0.523	0.479	123.300	86.730%	0.000	10.680	4.826
σ		0.036	0.020	0.848	0.641%	0.000	0.141	0.062

%RSD		6.802	4.114	0.688	0.740	0.000	1.320	1.279

MB 200-110239/1-A 10/19/2016 11:47:30 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:52	71.966%	-0.056	6.370	173.400	6.099	21.630	4.587	32.180	79.928%	0.000	0.227	-0.124
2	11:48:13	71.729%	-0.056	6.770	169.400	9.251	27.070	4.938	37.880	81.005%	0.000	0.233	-0.107
3	11:48:35	69.738%	-0.013	6.300	164.800	11.230	29.600	3.459	37.830	81.334%	0.000	0.394	-0.106
x		71.144%	-0.042	6.480	169.200	8.860	26.100	4.328	35.960	80.756%	0.000	0.285	-0.112
σ		1.224%	0.025	0.254	4.320	2.587	4.076	0.772	3.280	0.735%	0.000	0.095	0.010
%RSD		1.720	59.570	3.914	2.553	29.200	15.620	17.850	9.120	0.910	0.000	33.380	9.241

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:52	6.575	2.353	44.350	0.026	0.211	0.927	0.872	-0.084	0.275	-0.422	0.000	0.000
2	11:48:13	6.857	3.132	54.040	0.031	0.122	1.224	0.812	-0.117	0.313	-0.508	0.000	0.000
3	11:48:35	6.615	3.485	57.000	0.027	0.250	1.143	0.724	-0.123	0.289	-0.679	0.000	0.000
x		6.682	2.990	51.790	0.028	0.194	1.098	0.802	-0.108	0.292	-0.536	0.000	0.000
σ		0.152	0.580	6.616	0.003	0.065	0.153	0.075	0.021	0.019	0.131	0.000	0.000
%RSD		2.278	19.380	12.770	9.037	33.640	13.960	9.302	19.670	6.626	24.450	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:52	0.165	88.794%	0.052	-0.004	-1.249	-0.034	86.492%	0.000	-0.009	-0.000	0.283	82.475%
2	11:48:13	0.192	89.210%	0.120	0.013	-1.097	-0.040	86.798%	0.000	0.010	0.012	0.310	84.558%
3	11:48:35	0.201	90.477%	0.075	0.010	-1.738	0.018	87.021%	0.000	0.020	0.018	0.235	81.767%
x		0.186	89.494%	0.082	0.007	-1.362	-0.019	86.771%	0.000	0.007	0.010	0.276	82.933%
σ		0.019	0.877%	0.035	0.009	0.335	0.032	0.265%	0.000	0.015	0.009	0.038	1.451%
%RSD		10.060	0.980	42.020	135.200	24.600	169.300	0.306	0.000	207.600	95.690	13.730	1.749

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:52	0.023	0.007	0.058	83.241%	0.000	0.264	-0.009
2	11:48:13	0.033	0.003	0.065	84.400%	0.000	0.244	-0.009
3	11:48:35	0.014	0.007	0.080	84.002%	0.000	0.198	-0.011
x		0.023	0.006	0.068	83.881%	0.000	0.235	-0.009
σ		0.009	0.003	0.011	0.589%	0.000	0.034	0.001
%RSD		40.460	44.580	16.980	0.702	0.000	14.270	12.890

LCS 200-110239/2-A 10/19/2016 11:53:13 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:35	69.147%	11.420	438.000	T 5500.000	1982.000	486.400	T 5042.000	4651.000	72.583%	0.000	45.290	38.290
2	11:53:57	65.950%	11.700	458.200	T 5438.000	1967.000	472.300	T 4863.000	4615.000	71.983%	0.000	46.210	39.000
3	11:54:18	64.390%	10.710	470.900	T 5455.000	1944.000	483.400	T 4942.000	4605.000	70.726%	0.000	46.340	38.740
x		66.496%	11.280	455.700	T 5464.000	1964.000	480.700	T 4949.000	4624.000	71.764%	0.000	45.950	38.680
σ		2.425%	0.510	16.580	T 31.970	18.860	7.398	T 89.750	24.290	0.948%	0.000	0.570	0.358
%RSD		3.647	4.527	3.638	T 0.585	0.960	1.539	T 1.814	0.525	1.321	0.000	1.240	0.925

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:35	9.194	19.960	T 2121.000	9.631	21.260	51.040	194.600	19.930	0.169	39.130	0.000	0.000
2	11:53:57	6.210	19.470	T 2101.000	9.666	20.180	50.660	196.200	19.160	0.207	38.570	0.000	0.000
3	11:54:18	7.078	20.350	T 2144.000	9.995	21.620	51.180	202.600	20.200	0.132	38.810	0.000	0.000
x		7.494	19.920	T 2122.000	9.764	21.020	50.960	197.800	19.770	0.169	38.840	0.000	0.000
σ		1.535	0.443	T 21.540	0.201	0.751	0.267	4.239	0.539	0.037	0.284	0.000	0.000
%RSD		20.480	2.225	T 1.015	2.054	3.572	0.524	2.143	2.728	22.080	0.730	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:35	45.760	79.019%	97.810	10.490	-0.962	9.775	79.117%	0.000	18.790	18.890	91.380	77.342%
2	11:53:57	45.980	79.124%	100.700	10.560	-1.979	10.030	78.402%	0.000	19.200	19.300	94.250	77.138%
3	11:54:18	46.160	77.671%	101.800	10.440	0.453	9.720	78.121%	0.000	19.800	19.190	94.880	77.200%
x		45.960	78.605%	100.100	10.500	-0.829	9.841	78.547%	0.000	19.260	19.130	93.500	77.227%
σ		0.203	0.810%	2.053	0.056	1.221	0.165	0.513%	0.000	0.509	0.215	1.864	0.105%
%RSD		0.441	1.031	2.051	0.537	147.300	1.671	0.653	0.000	2.642	1.123	1.994	0.136

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:35	38.200	17.430	8.857	77.318%	0.000	12.150	10.460
2	11:53:57	38.520	17.090	8.703	79.971%	0.000	12.350	10.240
3	11:54:18	38.840	17.720	8.964	77.263%	0.000	13.530	10.630
x		38.520	17.410	8.841	78.184%	0.000	12.680	10.440
σ		0.319	0.315	0.131	1.548%	0.000	0.748	0.192
%RSD		0.827	1.811	1.486	1.980	0.000	5.904	1.836

200-35680-A-13-A 10/19/2016 11:58:57 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:59:19	70.024%	0.051	8.667	175.700	4.560	9.415	5.041	24.590	75.161%	0.000	0.453	-0.195
2	11:59:40	71.482%	0.007	8.007	179.000	5.746	11.650	5.378	26.310	74.899%	0.000	0.119	-0.117
3	12:00:02	70.395%	0.008	6.633	186.400	8.646	18.030	7.479	29.910	73.299%	0.000	0.120	-0.041
x		70.634%	0.022	7.769	180.400	6.317	13.030	5.966	26.940	74.453%	0.000	0.231	-0.117
σ		0.757%	0.025	1.038	5.451	2.102	4.469	1.321	2.714	1.008%	0.000	0.193	0.077
%RSD		1.072	114.800	13.360	3.022	33.280	34.300	22.140	10.080	1.354	0.000	83.530	65.280

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:59:19	8.406	1.193	18.590	0.024	0.198	0.667	1.910	0.224	0.279	0.127	0.000	0.000
2	11:59:40	8.799	1.404	22.630	0.022	0.190	0.693	1.764	-0.045	0.324	-0.821	0.000	0.000
3	12:00:02	9.138	2.037	35.620	0.036	0.213	0.977	2.142	-0.235	0.333	-0.633	0.000	0.000
x		8.781	1.545	25.610	0.028	0.201	0.779	1.938	-0.019	0.312	-0.442	0.000	0.000
σ		0.366	0.440	8.897	0.008	0.012	0.172	0.190	0.230	0.029	0.502	0.000	0.000
%RSD		4.168	28.450	34.730	27.940	5.966	22.070	9.823	1244.000	9.280	113.600	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:59:19	0.140	80.939%	0.168	-0.005	-1.325	-0.021	81.541%	0.000	0.024	0.015	0.213	77.809%
2	11:59:40	0.145	80.994%	0.250	-0.005	-1.137	-0.029	80.796%	0.000	0.048	0.037	0.225	76.802%
3	12:00:02	0.180	79.947%	0.264	0.003	-0.884	-0.056	79.489%	0.000	0.066	0.049	0.381	76.168%
x		0.155	80.627%	0.227	-0.002	-1.115	-0.035	80.609%	0.000	0.046	0.034	0.273	76.926%
σ		0.022	0.589%	0.052	0.004	0.222	0.018	1.039%	0.000	0.021	0.017	0.094	0.827%
%RSD		14.010	0.730	22.850	206.400	19.870	51.800	1.288	0.000	45.780	50.520	34.350	1.075

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:59:19	0.123	0.042	0.031	79.073%	0.000	2.368	-0.007
2	11:59:40	0.138	0.032	0.044	78.620%	0.000	2.178	-0.002
3	12:00:02	0.166	0.037	0.060	80.855%	0.000	1.934	-0.003
x		0.142	0.037	0.045	79.516%	0.000	2.160	-0.004
σ		0.022	0.005	0.015	1.182%	0.000	0.218	0.002
%RSD		15.310	13.810	32.480	1.486	0.000	10.080	62.710

200-35700-A-19-A 10/19/2016 12:04:41 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:02	73.422%	0.046	4.918	183.700	11.380	32.490	7.862	44.150	76.655%	0.000	0.243	0.208
2	12:05:24	74.478%	-0.036	4.979	179.800	7.495	24.460	4.742	33.980	78.309%	0.000	0.232	0.043
3	12:05:46	72.183%	0.006	5.746	180.000	7.174	20.010	3.755	34.070	77.326%	0.000	0.224	0.066
x		73.361%	0.005	5.214	181.200	8.683	25.650	5.453	37.400	77.430%	0.000	0.233	0.106
σ		1.148%	0.041	0.461	2.217	2.342	6.326	2.144	5.850	0.832%	0.000	0.009	0.090
%RSD		1.565	743.800	8.849	1.224	26.970	24.660	39.320	15.640	1.074	0.000	4.058	84.980

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:02	11.540	2.911	52.910	0.023	0.149	1.137	1.179	-0.115	0.400	-0.733	0.000	0.000
2	12:05:24	11.380	2.237	38.890	0.039	0.154	1.065	0.920	0.028	0.376	-1.288	0.000	0.000
3	12:05:46	11.310	1.696	31.490	0.027	0.174	0.961	1.010	-0.597	0.441	-1.213	0.000	0.000
x		11.410	2.281	41.100	0.030	0.159	1.054	1.036	-0.228	0.405	-1.078	0.000	0.000
σ		0.117	0.608	10.880	0.008	0.013	0.089	0.132	0.328	0.033	0.301	0.000	0.000
%RSD		1.025	26.670	26.470	27.620	8.463	8.396	12.700	143.500	8.121	27.950	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:02	0.142	85.714%	0.146	0.015	-1.031	-0.052	81.881%	0.000	0.018	0.007	0.418	78.579%
2	12:05:24	0.149	84.796%	0.129	0.006	-1.509	0.015	82.347%	0.000	0.033	0.006	0.269	81.001%

3	12:05:46	0.114	84.620%	0.109	-0.008	-1.033	-0.044	83.651%	0.000	0.012	0.011	0.226	80.220%
x		0.135	85.044%	0.128	0.004	-1.191	-0.027	82.626%	0.000	0.021	0.008	0.304	79.934%
σ		0.019	0.587%	0.018	0.012	0.275	0.037	0.917%	0.000	0.011	0.003	0.101	1.236%
%RSD		13.860	0.691	14.370	283.600	23.100	135.000	1.110	0.000	51.980	37.570	33.100	1.547

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:02	0.058	0.017	0.078	80.889%	0.000	0.774	-0.006
2	12:05:24	0.061	0.008	0.071	79.367%	0.000	0.738	-0.010
3	12:05:46	0.059	0.001	0.066	81.472%	0.000	0.672	-0.009
x		0.059	0.009	0.072	80.576%	0.000	0.728	-0.008
σ		0.002	0.008	0.006	1.087%	0.000	0.051	0.002
%RSD		2.617	87.890	8.423	1.349	0.000	7.062	26.330

CCV 10/19/2016 12:10:25 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:47	63.364%	743.700	294.000	┬10710.000	┬32180.000	┬32230.000	┬9795.000	28690.000	66.085%	0.000	┬1250.000	374.200
2	12:11:08	63.997%	709.500	283.100	┬10880.000	┬32570.000	┬33130.000	┬10080.000	28700.000	64.029%	0.000	┬1304.000	388.900
3	12:11:31	64.377%	701.200	282.700	┬10750.000	┬32080.000	┬32810.000	┬10100.000	┬30800.000	64.131%	0.000	┬1281.000	383.500
x		63.913%	114.903%	114.639%	┬107.830%	┬107.579%	┬109.086%	┬99.900%	┬97.993%	64.748%	0.000	┬102.271%	95.548%
σ		0.512%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.158%	0.000	┬n/a	n/a
%RSD		0.801	3.133	2.223	┬0.823	┬0.801	┬1.392	┬1.689	┬4.126	1.789	0.000	┬2.120	1.942

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:47	22.250	┬1282.000	┬31060.000	477.600	1271.000	1243.000	1288.000	206.100	-0.527	221.200	0.000	0.000
2	12:11:08	19.450	┬1321.000	┬31680.000	489.600	1289.000	1278.000	1318.000	206.600	-0.497	217.400	0.000	0.000
3	12:11:31	15.060	┬1300.000	┬31700.000	487.600	1296.000	1267.000	1325.000	201.000	-0.432	216.800	0.000	0.000
x		18.920	┬104.105%	┬104.927%	96.984%	102.842%	101.006%	104.821%	102.271%	-0.485	109.221%	0.000	0.000
σ		3.624	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.048	n/a	0.000	0.000
%RSD		19.150	┬1.511	┬1.164	1.319	1.004	1.434	1.496	1.524	9.991	1.104	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:47	187.700	72.318%	1216.000	106.000	-1.755	206.000	71.242%	0.000	250.400	246.600	1193.000	70.054%
2	12:11:08	185.200	71.465%	1258.000	104.500	7.793	207.600	71.533%	0.000	248.600	247.600	1180.000	70.714%
3	12:11:31	186.600	72.518%	1254.000	105.400	-0.091	203.900	70.865%	0.000	251.500	248.500	1193.000	71.468%
x		186.500	72.100%	99.441%	105.267%	1.982	102.920%	71.213%	0.000	250.200	99.014%	95.096%	70.745%
σ		1.276	0.559%	n/a	n/a	5.101	n/a	0.335%	0.000	1.450	n/a	n/a	0.708%
%RSD		0.684	0.776	1.866	0.708	257.400	0.913	0.470	0.000	0.580	0.377	0.601	1.000

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:47	22.970	175.100	┬1211.000	73.446%	0.000	15.600	9.831
2	12:11:08	23.720	179.000	┬1267.000	73.323%	0.000	16.990	10.060
3	12:11:31	23.160	174.500	┬1203.000	74.316%	0.000	17.820	9.898
x		116.430%	88.092%	┬98.151%	73.695%	0.000	84.009%	99.305%
σ		n/a	n/a	┬n/a	0.542%	0.000	n/a	n/a

%RSD		1.665	1.389	T 2.885	0.735	0.000	6.670	1.195

CCB 10/19/2016 12:16:12 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:34	68.759%	0.053	3.843	22.470	2.623	3.315	3.529	-5.119	67.737%	0.000	0.314	-0.235
2	12:16:56	67.913%	0.032	4.127	18.250	4.397	4.611	1.061	-6.407	68.856%	0.000	0.094	-0.228
3	12:17:17	67.290%	0.055	3.017	19.430	4.480	5.283	1.761	-5.556	67.741%	0.000	0.343	-0.218
x		67.987%	0.047	3.662	20.050	3.833	4.403	2.117	-5.694	68.111%	0.000	0.250	-0.227
σ		0.738%	0.013	0.576	2.175	1.049	1.000	1.272	0.655	0.645%	0.000	0.137	0.009
%RSD		1.085	27.080	15.740	10.850	27.370	22.720	60.080	11.500	0.947	0.000	54.500	3.927

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:34	10.410	0.154	9.938	0.040	0.069	0.113	0.208	-0.340	0.316	-1.328	0.000	0.000
2	12:16:56	10.330	0.198	9.642	0.025	0.118	0.091	0.231	-0.008	0.296	-1.369	0.000	0.000
3	12:17:17	10.260	0.312	12.550	0.061	0.089	0.219	0.358	-0.262	0.322	-0.733	0.000	0.000
x		10.330	0.221	10.710	0.042	0.092	0.141	0.265	-0.203	0.311	-1.143	0.000	0.000
σ		0.072	0.082	1.600	0.018	0.025	0.068	0.081	0.174	0.014	0.356	0.000	0.000
%RSD		0.693	36.850	14.940	43.290	26.750	48.500	30.520	85.480	4.425	31.150	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:34	0.008	75.266%	2.173	0.002	-1.744	0.021	74.362%	0.000	0.240	0.265	0.126	72.400%
2	12:16:56	0.022	75.258%	2.173	0.004	-1.162	-0.009	74.378%	0.000	0.330	0.261	0.094	73.495%
3	12:17:17	0.023	75.528%	1.890	0.004	-1.578	0.015	75.310%	0.000	0.342	0.271	0.082	72.683%
x		0.018	75.351%	2.079	0.003	-1.495	0.009	74.683%	0.000	0.304	0.265	0.101	72.860%
σ		0.008	0.154%	0.164	0.001	0.300	0.016	0.543%	0.000	0.056	0.005	0.023	0.568%
%RSD		46.230	0.204	7.863	32.290	20.040	181.500	0.727	0.000	18.270	1.910	22.900	0.780

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:34	0.070	0.133	0.050	76.413%	0.000	-0.115	-0.013
2	12:16:56	0.082	0.129	0.085	76.694%	0.000	-0.118	-0.011
3	12:17:17	0.056	0.116	0.106	75.913%	0.000	-0.105	-0.009
x		0.069	0.126	0.080	76.340%	0.000	-0.113	-0.011
σ		0.013	0.009	0.028	0.396%	0.000	0.007	0.002
%RSD		18.780	7.068	35.210	0.518	0.000	5.855	19.530

CCVL 10/19/2016 12:21:55 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:22:17	69.102%	1.415	47.940	497.900	201.100	52.790	436.500	464.000	70.819%	0.000	4.852	3.494
2	12:22:39	68.691%	1.206	49.110	502.600	203.200	54.660	443.000	492.300	71.957%	0.000	4.495	3.432
3	12:23:01	67.342%	1.409	51.340	499.900	196.500	57.250	445.700	472.400	70.935%	0.000	4.365	3.719
x		68.378%	134.295%	123.661%	100.023%	100.142%	109.803%	88.346%	95.250%	71.237%	0.000	91.411%	88.707%
σ		0.921%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.626%	0.000	n/a	n/a
%RSD		1.347	8.848	3.492	0.479	1.697	4.076	1.076	3.053	0.879	0.000	5.528	4.259

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:22:17	12.100	2.128	194.500	1.031	2.488	5.686	22.670	2.423	0.339	3.723	0.000	0.000
2	12:22:39	12.180	2.183	194.200	1.105	2.448	5.271	22.440	2.012	0.354	4.260	0.000	0.000
3	12:23:01	12.890	2.450	201.100	1.017	2.543	5.219	22.110	2.475	0.303	3.744	0.000	0.000
x		12.390	112.692%	98.296%	105.122%	124.657%	107.838%	112.043%	115.175%	0.332	97.722%	0.000	0.000
σ		0.434	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.026	n/a	0.000	0.000
%RSD		3.506	7.648	1.991	4.501	1.901	4.755	1.261	11.010	7.879	7.776	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:22:17	4.399	76.300%	9.933	1.121	-0.704	1.186	75.336%	0.000	1.936	1.931	9.938	74.811%
2	12:22:39	4.647	77.044%	10.200	1.047	-1.525	1.124	75.877%	0.000	2.080	2.002	9.602	74.056%
3	12:23:01	4.601	76.649%	10.240	1.065	-1.767	1.071	76.555%	0.000	2.163	2.034	9.275	73.904%
x		90.976%	76.664%	101.261%	107.781%	-1.332	112.730%	75.923%	0.000	2.060	99.453%	96.048%	74.257%
σ		n/a	0.372%	n/a	n/a	0.557	n/a	0.611%	0.000	0.115	n/a	n/a	0.485%
%RSD		2.896	0.486	1.665	3.601	41.810	5.105	0.804	0.000	5.570	2.645	3.454	0.654

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:22:17	1.760	1.705	1.048	77.051%	0.000	0.621	0.993
2	12:22:39	1.751	1.775	1.077	78.072%	0.000	0.654	1.020
3	12:23:01	1.907	1.802	1.106	77.839%	0.000	0.732	1.007
x		90.296%	88.050%	107.721%	77.654%	0.000	33.438%	100.670%
σ		n/a	n/a	n/a	0.535%	0.000	n/a	n/a
%RSD		4.843	2.838	2.704	0.689	0.000	8.519	1.355

200-35736-A-14-A 10/19/2016 12:27:39 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:01	70.524%	-0.013	3.429	188.700	1.730	3.549	0.801	18.610	72.552%	0.000	-0.396	0.034
2	12:28:23	70.593%	-0.035	2.206	188.100	1.644	3.718	0.999	12.980	72.877%	0.000	-0.254	0.023
3	12:28:44	71.496%	-0.035	3.384	192.100	1.897	4.105	1.587	16.600	72.077%	0.000	0.120	0.190
x		70.871%	-0.028	3.007	189.600	1.757	3.791	1.129	16.060	72.502%	0.000	-0.177	0.082
σ		0.542%	0.012	0.694	2.163	0.129	0.285	0.409	2.854	0.402%	0.000	0.267	0.093
%RSD		0.765	44.540	23.070	1.140	7.314	7.523	36.220	17.770	0.555	0.000	151.000	114.000

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:01	14.340	0.438	6.976	0.008	0.264	0.330	1.723	-0.140	0.438	-1.170	0.000	0.000
2	12:28:23	14.130	0.408	6.787	0.002	0.167	0.289	1.581	-0.290	0.447	-1.533	0.000	0.000
3	12:28:44	14.190	0.449	9.227	0.014	0.160	0.296	1.660	-0.089	0.429	-1.094	0.000	0.000
x		14.220	0.432	7.664	0.008	0.197	0.305	1.655	-0.173	0.438	-1.265	0.000	0.000
σ		0.106	0.021	1.358	0.006	0.058	0.022	0.071	0.104	0.009	0.235	0.000	0.000
%RSD		0.745	4.944	17.710	78.230	29.510	7.146	4.294	60.290	1.943	18.570	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:01	0.054	77.072%	0.258	-0.002	-1.495	-0.007	75.909%	0.000	0.031	0.035	0.017	74.161%
2	12:28:23	0.067	77.103%	0.355	0.011	-1.066	-0.049	75.993%	0.000	0.031	0.045	0.060	75.654%
3	12:28:44	0.057	78.423%	0.362	-0.006	-1.246	-0.035	78.074%	0.000	0.068	0.052	0.006	76.430%
x		0.059	77.532%	0.325	0.001	-1.269	-0.030	76.659%	0.000	0.043	0.044	0.028	75.415%
σ		0.007	0.771%	0.058	0.009	0.215	0.021	1.226%	0.000	0.021	0.009	0.028	1.153%
%RSD		12.110	0.995	17.910	871.400	16.950	69.820	1.600	0.000	49.320	20.440	101.800	1.529

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:01	0.057	0.017	0.019	77.434%	0.000	1.409	-0.011
2	12:28:23	0.052	0.024	0.014	76.022%	0.000	1.309	-0.013
3	12:28:44	0.002	0.016	0.028	76.927%	0.000	1.165	-0.014
x		0.037	0.019	0.020	76.795%	0.000	1.294	-0.012
σ		0.030	0.004	0.007	0.715%	0.000	0.123	0.001
%RSD		82.380	23.660	34.960	0.931	0.000	9.504	11.070

200-35736-A-14-A SD@5 10/19/2016 12:33:24 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:46	70.957%	-0.056	1.153	60.780	1.360	4.064	0.390	-1.466	72.290%	0.000	0.216	-0.013
2	12:34:07	71.634%	-0.014	1.157	57.610	2.011	4.207	-0.558	-2.266	73.130%	0.000	-0.305	-0.023
3	12:34:29	71.608%	-0.056	1.667	59.040	1.295	4.191	-0.954	1.505	71.877%	0.000	-0.475	0.007
x		71.400%	-0.042	1.326	59.140	1.555	4.154	-0.374	-0.742	72.432%	0.000	-0.188	-0.010
σ		0.383%	0.024	0.295	1.591	0.396	0.078	0.690	1.987	0.639%	0.000	0.360	0.015
%RSD		0.537	57.470	22.260	2.690	25.440	1.888	184.500	267.700	0.882	0.000	191.500	153.600

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:46	14.390	0.087	8.236	0.012	0.063	0.103	0.505	0.098	0.422	-0.299	0.000	0.000
2	12:34:07	15.030	0.130	8.441	0.002	0.071	0.152	0.587	-0.377	0.472	-0.770	0.000	0.000
3	12:34:29	15.700	0.067	9.493	-0.000	0.015	2.557	0.554	-0.333	0.478	-0.724	0.000	0.000
x		15.040	0.095	8.723	0.004	0.050	0.937	0.549	-0.204	0.458	-0.598	0.000	0.000
σ		0.652	0.032	0.675	0.006	0.030	1.403	0.041	0.262	0.031	0.260	0.000	0.000
%RSD		4.336	33.910	7.734	145.800	60.960	149.700	7.548	128.500	6.695	43.490	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:46	0.025	79.246%	0.078	-0.000	-0.846	-0.051	76.629%	0.000	-0.014	0.002	0.017	75.151%
2	12:34:07	0.017	78.325%	0.090	-0.010	-1.673	-0.001	77.484%	0.000	0.016	0.009	0.027	75.780%

3	12:34:29	0.017	78.725%	0.104	-0.006	-0.838	-0.036	77.374%	0.000	0.027	0.017	0.027	76.257%
x		0.020	78.765%	0.091	-0.005	-1.119	-0.029	77.162%	0.000	0.010	0.010	0.024	75.729%
σ		0.005	0.462%	0.013	0.005	0.480	0.026	0.465%	0.000	0.021	0.007	0.006	0.555%
%RSD		23.930	0.586	14.060	89.300	42.900	87.260	0.603	0.000	210.600	76.460	24.450	0.732

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:46	-0.001	-0.004	-0.004	75.981%	0.000	-0.034	-0.014
2	12:34:07	0.009	0.007	-0.006	76.208%	0.000	-0.012	-0.014
3	12:34:29	-0.001	0.004	-0.009	76.735%	0.000	-0.018	-0.013
x		0.002	0.002	-0.006	76.308%	0.000	-0.021	-0.014
σ		0.006	0.005	0.003	0.387%	0.000	0.011	0.001
%RSD		237.600	237.600	43.400	0.507	0.000	53.420	3.807

200-35736-A-14-A PDS 10/19/2016 12:39:07 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:39:29	71.097%	11.080	453.900	T 5583.000	1960.000	472.100	T 4950.000	4723.000	71.472%	0.000	45.760	38.180
2	12:39:51	69.046%	11.390	457.500	T 5565.000	1966.000	481.900	T 4964.000	4721.000	70.619%	0.000	45.520	37.930
3	12:40:13	68.449%	11.470	466.200	T 5611.000	1969.000	480.700	T 5031.000	4728.000	69.544%	0.000	46.510	39.230
x		69.531%	11.310	459.200	T 5586.000	1965.000	478.200	T 4982.000	4724.000	70.545%	0.000	45.930	38.450
σ		1.389%	0.205	6.332	T 23.100	4.674	5.349	T 43.750	3.241	0.966%	0.000	0.518	0.693
%RSD		1.998	1.810	1.379	T 0.414	0.238	1.119	T 0.878	0.069	1.370	0.000	1.127	1.803

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:39:29	12.940	18.560	T 2085.000	9.415	21.160	51.310	194.900	20.010	0.324	40.890	0.000	0.000
2	12:39:51	12.520	19.060	T 2106.000	9.775	20.020	50.020	195.400	20.630	0.229	40.650	0.000	0.000
3	12:40:13	11.890	19.410	T 2153.000	9.907	21.500	51.990	202.100	21.230	0.180	40.300	0.000	0.000
x		12.450	19.010	T 2114.000	9.699	20.890	51.110	197.400	20.620	0.244	40.610	0.000	0.000
σ		0.529	0.427	T 34.950	0.255	0.774	1.000	4.045	0.609	0.073	0.294	0.000	0.000
%RSD		4.252	2.245	T 1.653	2.624	3.703	1.956	2.049	2.954	29.780	0.723	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:39:29	46.920	75.219%	99.640	10.920	-1.902	9.871	73.743%	0.000	19.690	19.020	93.040	72.872%
2	12:39:51	47.330	75.297%	101.400	10.610	1.839	9.551	74.475%	0.000	19.400	18.720	94.280	72.799%
3	12:40:13	47.550	75.203%	102.500	10.610	2.345	9.476	74.190%	0.000	19.610	19.220	92.880	73.286%
x		47.270	75.240%	101.200	10.710	0.761	9.633	74.136%	0.000	19.560	18.980	93.400	72.985%
σ		0.321	0.050%	1.453	0.176	2.320	0.210	0.369%	0.000	0.148	0.252	0.767	0.263%
%RSD		0.679	0.067	1.436	1.642	304.900	2.177	0.498	0.000	0.756	1.329	0.821	0.360

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:39:29	18.440	17.430	8.784	74.392%	0.000	12.820	10.620
2	12:39:51	18.730	18.010	9.150	73.357%	0.000	13.610	10.880
3	12:40:13	19.170	18.070	9.176	73.556%	0.000	14.610	10.950
x		18.780	17.840	9.037	73.768%	0.000	13.680	10.810
σ		0.366	0.355	0.219	0.549%	0.000	0.898	0.174

%RSD	1.951	1.992	2.425	0.744	0.000	6.562	1.612	

200-35736-A-14-B MS 10/19/2016 12:44:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:48	68.499%	11.440	467.900	T 5756.000	2032.000	488.900	T 5180.000	4847.000	68.762%	0.000	46.770	39.120
2	12:45:10	68.504%	11.000	457.300	T 5624.000	1981.000	477.400	T 5005.000	4824.000	70.442%	0.000	47.280	39.120
3	12:45:32	68.448%	11.620	455.000	T 5607.000	2025.000	486.900	T 5101.000	4844.000	69.811%	0.000	47.790	38.630
x		68.484%	11.360	460.100	T 5662.000	2013.000	484.400	T 5096.000	4838.000	69.672%	0.000	47.280	38.960
σ		0.031%	0.319	6.897	T 81.810	27.520	6.152	T 87.710	12.610	0.848%	0.000	0.510	0.281
%RSD		0.045	2.806	1.499	T 1.445	1.367	1.270	T 1.721	0.261	1.217	0.000	1.079	0.721

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:48	10.770	19.240	T 2178.000	9.766	21.840	52.310	202.500	19.940	0.245	39.910	0.000	0.000
2	12:45:10	9.670	19.260	T 2146.000	10.070	21.530	51.580	201.800	20.330	0.222	41.740	0.000	0.000
3	12:45:32	7.828	19.490	T 2158.000	9.922	20.890	51.240	205.000	20.230	0.177	42.720	0.000	0.000
x		9.424	19.330	T 2161.000	9.919	21.420	51.710	203.100	20.170	0.215	41.460	0.000	0.000
σ		1.488	0.138	T 16.210	0.152	0.482	0.545	1.670	0.201	0.034	1.426	0.000	0.000
%RSD		15.790	0.712	T 0.750	1.529	2.249	1.054	0.822	0.995	16.050	3.439	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:48	48.400	73.911%	103.300	10.930	-0.855	9.515	71.435%	0.000	19.810	19.800	94.050	71.285%
2	12:45:10	48.630	72.565%	105.200	11.370	0.214	9.940	72.080%	0.000	19.800	19.970	96.570	72.013%
3	12:45:32	48.950	74.589%	105.000	11.030	-2.629	10.230	72.230%	0.000	20.200	20.140	96.850	71.332%
x		48.660	73.688%	104.500	11.110	-1.090	9.893	71.915%	0.000	19.930	19.970	95.820	71.543%
σ		0.274	1.030%	1.032	0.232	1.436	0.357	0.422%	0.000	0.227	0.166	1.541	0.407%
%RSD		0.564	1.398	0.988	2.088	131.700	3.613	0.587	0.000	1.140	0.831	1.609	0.570

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:48	39.880	17.870	9.112	73.926%	0.000	17.030	10.550
2	12:45:10	40.450	18.300	9.359	73.398%	0.000	17.710	10.970
3	12:45:32	41.180	18.210	9.416	73.987%	0.000	17.950	11.170
x		40.500	18.130	9.295	73.770%	0.000	17.560	10.900
σ		0.650	0.228	0.162	0.324%	0.000	0.478	0.317
%RSD		1.604	1.258	1.740	0.439	0.000	2.720	2.910

200-35736-A-14-C MSD 10/19/2016 12:49:46 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:08	69.084%	10.870	447.700	T 5520.000	1941.000	473.300	T 4975.000	4612.000	69.820%	0.000	46.100	37.940
2	12:50:30	68.521%	12.050	441.200	T 5468.000	1938.000	473.400	T 4971.000	4714.000	70.495%	0.000	45.310	37.750
3	12:50:52	67.230%	12.170	464.800	T 5672.000	1993.000	486.900	T 5074.000	4740.000	68.345%	0.000	46.620	39.050
x		68.278%	11.690	451.300	T 5553.000	1957.000	477.900	T 5007.000	4689.000	69.553%	0.000	46.010	38.250
σ		0.950%	0.719	12.200	T 106.000	30.740	7.804	T 58.390	67.710	1.099%	0.000	0.663	0.704
%RSD		1.392	6.148	2.703	T 1.909	1.571	1.633	T 1.166	1.444	1.581	0.000	1.440	1.840

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:08	9.024	18.630	T 2093.000	9.555	19.970	49.630	193.600	20.590	0.101	41.560	0.000	0.000
2	12:50:30	9.499	19.140	T 2115.000	9.766	21.480	49.430	196.700	20.820	0.107	41.610	0.000	0.000
3	12:50:52	8.350	19.060	T 2155.000	10.030	20.820	51.590	201.800	19.660	0.204	39.350	0.000	0.000
x		8.958	18.940	T 2121.000	9.782	20.760	50.220	197.400	20.350	0.137	40.840	0.000	0.000
σ		0.577	0.275	T 31.470	0.235	0.760	1.193	4.108	0.613	0.058	1.292	0.000	0.000
%RSD		6.446	1.449	T 1.484	2.407	3.660	2.376	2.081	3.011	42.010	3.163	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:08	46.300	73.148%	100.500	10.600	-0.902	9.612	72.775%	0.000	18.940	18.820	93.300	71.898%
2	12:50:30	46.770	73.528%	101.300	10.960	-2.324	10.070	72.433%	0.000	19.320	19.150	95.240	71.520%
3	12:50:52	47.180	73.238%	102.200	10.790	-1.937	10.180	72.833%	0.000	19.240	19.180	94.460	71.740%
x		46.750	73.305%	101.400	10.780	-1.721	9.955	72.680%	0.000	19.170	19.050	94.330	71.719%
σ		0.441	0.198%	0.833	0.178	0.735	0.301	0.216%	0.000	0.201	0.200	0.974	0.189%
%RSD		0.944	0.271	0.822	1.654	42.710	3.021	0.298	0.000	1.050	1.051	1.032	0.264

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:08	38.850	17.400	8.779	74.344%	0.000	16.860	10.300
2	12:50:30	40.850	17.510	9.027	74.741%	0.000	17.420	10.480
3	12:50:52	40.620	17.570	8.898	75.056%	0.000	17.830	10.630
x		40.100	17.490	8.901	74.714%	0.000	17.370	10.470
σ		1.090	0.089	0.124	0.357%	0.000	0.487	0.165
%RSD		2.719	0.510	1.392	0.478	0.000	2.803	1.577

CCV 10/19/2016 12:55:04 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	64.735%	720.100	287.900	T 11030.000	T 32500.000	T 32760.000	T 10060.000	28700.000	64.154%	0.000	T 1286.000	379.100
2	12:55:48	64.969%	711.300	282.000	T 10880.000	T 32670.000	T 32760.000	T 9886.000	28420.000	63.315%	0.000	T 1283.000	381.900
3	12:56:10	62.746%	728.500	295.500	T 10900.000	T 33250.000	T 33140.000	T 9972.000	28850.000	62.556%	0.000	T 1313.000	386.900
x		64.150%	115.190%	115.385%	T 109.351%	T 109.350%	T 109.632%	T 99.723%	95.526%	63.341%	0.000	T 103.528%	95.661%
σ		1.222%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.799%	0.000	T n/a	n/a
%RSD		1.904	1.196	2.344	T 0.771	T 1.199	T 0.672	T 0.871	0.766	1.262	0.000	T 1.288	1.029

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	17.970	ᵀ1285.000	ᵀ31320.000	478.700	1259.000	1231.000	1285.000	207.200	-0.313	217.800	0.000	0.000
2	12:55:48	20.510	ᵀ1301.000	ᵀ31720.000	485.200	1287.000	1249.000	1299.000	206.600	-0.496	220.700	0.000	0.000
3	12:56:10	16.610	ᵀ1324.000	ᵀ31970.000	483.500	1272.000	1265.000	1320.000	212.200	-0.517	218.700	0.000	0.000
x		18.360	ᵀ104.270%	ᵀ105.562%	96.500%	101.808%	99.848%	104.134%	104.348%	-0.442	109.547%	0.000	0.000
σ		1.983	ᵀn/a	ᵀn/a	n/a	n/a	n/a	n/a	n/a	0.112	n/a	0.000	0.000
%RSD		10.800	ᵀ1.477	ᵀ1.037	0.696	1.092	1.352	1.355	1.476	25.420	0.677	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	187.100	69.055%	1218.000	105.500	14.240	199.600	68.814%	0.000	242.800	240.700	1167.000	68.682%
2	12:55:48	186.400	69.426%	1248.000	105.500	3.673	203.900	68.403%	0.000	247.100	242.300	1178.000	68.163%
3	12:56:10	188.200	67.169%	1292.000	104.700	5.830	202.100	68.076%	0.000	246.300	244.100	1192.000	69.342%
x		187.200	68.550%	100.210%	105.244%	7.913	100.942%	68.431%	0.000	245.400	96.947%	94.327%	68.729%
σ		0.913	1.210%	n/a	n/a	5.582	n/a	0.370%	0.000	2.284	n/a	n/a	0.591%
%RSD		0.488	1.765	2.987	0.413	70.540	1.071	0.541	0.000	0.931	0.691	1.083	0.859

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	22.220	177.600	ᵀ1227.000	70.555%	0.000	21.330	10.120
2	12:55:48	23.310	175.100	ᵀ1240.000	71.576%	0.000	21.840	9.846
3	12:56:10	23.220	181.700	ᵀ1238.000	69.767%	0.000	22.400	10.180
x		114.591%	89.070%	ᵀ98.799%	70.633%	0.000	109.277%	100.503%
σ		n/a	n/a	ᵀn/a	0.907%	0.000	n/a	n/a
%RSD		2.636	1.861	ᵀ0.565	1.284	0.000	2.456	1.788

CCB 10/19/2016 01:00:48 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:10	67.537%	0.121	6.565	19.510	4.471	2.776	2.650	-6.447	67.852%	0.000	-0.030	-0.231
2	13:01:32	67.425%	0.166	5.993	21.230	3.374	2.721	3.624	-7.667	67.319%	0.000	0.075	-0.262
3	13:01:54	67.165%	0.011	6.816	24.880	4.570	2.557	1.887	-6.215	66.560%	0.000	0.003	-0.304
x		67.376%	0.099	6.458	21.870	4.138	2.685	2.720	-6.776	67.244%	0.000	0.016	-0.266
σ		0.191%	0.080	0.422	2.743	0.664	0.114	0.870	0.780	0.649%	0.000	0.054	0.036
%RSD		0.283	80.280	6.531	12.540	16.040	4.241	31.990	11.520	0.966	0.000	342.700	13.680

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:10	10.480	0.066	6.340	0.021	0.110	0.088	0.152	-0.222	0.327	-0.815	0.000	0.000
2	13:01:32	10.510	0.048	6.679	0.028	0.018	0.018	0.388	-0.233	0.331	-0.852	0.000	0.000
3	13:01:54	10.670	0.061	8.142	0.024	0.102	0.120	0.174	-0.254	0.352	-1.246	0.000	0.000
x		10.550	0.058	7.054	0.024	0.076	0.075	0.238	-0.236	0.337	-0.971	0.000	0.000
σ		0.101	0.010	0.958	0.003	0.051	0.053	0.130	0.017	0.013	0.239	0.000	0.000
%RSD		0.960	16.410	13.580	13.620	66.700	69.670	54.740	7.045	3.977	24.620	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:10	0.021	71.422%	2.192	0.001	-1.519	-0.005	71.123%	0.000	0.256	0.248	0.065	69.488%
2	13:01:32	0.030	71.892%	2.247	-0.003	-1.767	0.006	70.340%	0.000	0.325	0.291	0.066	69.404%

3	13:01:54	0.023	73.813%	2.007	-0.001	-1.052	-0.034	71.931%	0.000	0.272	0.296	0.097	71.782%
x		0.025	72.376%	2.148	-0.001	-1.446	-0.011	71.132%	0.000	0.284	0.279	0.076	70.225%
σ		0.005	1.267%	0.126	0.002	0.363	0.021	0.795%	0.000	0.036	0.026	0.019	1.349%
%RSD		18.730	1.751	5.855	153.100	25.120	192.900	1.118	0.000	12.790	9.457	24.510	1.921

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:10	0.118	0.137	0.061	72.610%	0.000	-0.067	-0.011
2	13:01:32	0.086	0.145	0.051	72.637%	0.000	-0.050	-0.008
3	13:01:54	0.092	0.149	0.048	72.850%	0.000	-0.058	-0.008
x		0.099	0.144	0.053	72.699%	0.000	-0.058	-0.009
σ		0.017	0.006	0.007	0.131%	0.000	0.008	0.002
%RSD		17.320	4.292	13.350	0.181	0.000	14.160	20.030

CCVL 10/19/2016 01:06:06 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:27	68.163%	1.237	51.990	528.100	205.000	55.610	464.200	500.500	68.825%	0.000	4.850	3.678
2	13:06:49	69.120%	1.198	49.030	T 578.200	201.400	55.400	458.400	486.200	68.092%	0.000	4.688	3.632
3	13:07:11	69.581%	1.662	48.960	535.100	206.400	56.650	463.100	509.200	66.626%	0.000	4.507	3.865
x		68.955%	136.583%	124.985%	T 109.428%	102.132%	111.771%	92.386%	99.730%	67.848%	0.000	93.632%	93.122%
σ		0.724%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.119%	0.000	n/a	n/a
%RSD		1.049	18.840	3.461	T 4.960	1.265	1.200	0.667	2.337	1.650	0.000	3.668	3.314

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:27	12.490	2.253	194.200	1.059	2.329	5.763	21.590	2.142	0.350	3.126	0.000	0.000
2	13:06:49	12.770	2.070	198.600	1.085	2.252	5.505	23.190	2.270	0.338	4.334	0.000	0.000
3	13:07:11	13.230	2.195	207.700	1.211	2.751	5.756	23.360	1.895	0.379	3.888	0.000	0.000
x		12.830	108.640%	100.093%	111.844%	122.187%	113.500%	113.585%	105.115%	0.356	94.562%	0.000	0.000
σ		0.373	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.021	n/a	0.000	0.000
%RSD		2.904	4.300	3.431	7.279	10.980	2.594	4.303	9.077	5.953	16.150	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:27	4.590	71.739%	10.560	1.194	-1.617	1.089	70.668%	0.000	1.962	2.034	8.533	68.530%
2	13:06:49	4.795	71.586%	11.100	1.117	-0.458	0.846	70.021%	0.000	2.078	2.079	10.220	69.237%
3	13:07:11	4.847	71.230%	11.160	1.126	-0.913	1.047	70.359%	0.000	2.079	2.122	9.497	69.274%
x		94.885%	71.518%	109.381%	114.582%	-0.996	99.411%	70.349%	0.000	2.040	103.923%	94.173%	69.013%
σ		n/a	0.261%	n/a	n/a	0.584	n/a	0.324%	0.000	0.067	n/a	n/a	0.419%
%RSD		2.862	0.365	3.042	3.691	58.650	13.050	0.460	0.000	3.295	2.136	9.000	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:27	1.867	1.852	1.085	72.302%	0.000	0.808	1.071
2	13:06:49	2.082	1.819	1.034	72.542%	0.000	0.858	1.087
3	13:07:11	2.023	1.796	1.091	73.754%	0.000	0.857	1.036
x		99.530%	91.116%	106.988%	72.866%	0.000	42.039%	106.488%
σ		n/a	n/a	n/a	0.779%	0.000	n/a	n/a

%RSD		5.571	1.528	2.893	1.069	0.000	3.408	2.468

MB 200-110288/1-B 10/19/2016 01:11:51 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:13	71.184%	-0.035	5.363	309.000	98.610	14.800	22.770	460.300	69.704%	0.000	0.566	2.614
2	13:12:35	70.655%	-0.014	7.158	310.600	97.580	14.680	24.870	444.200	69.380%	0.000	0.242	2.581
3	13:12:57	71.198%	-0.056	6.753	317.400	101.500	15.750	25.120	454.500	68.740%	0.000	0.480	2.793
x		71.012%	-0.035	6.424	312.300	99.230	15.080	24.250	453.000	69.275%	0.000	0.429	2.662
σ		0.310%	0.021	0.942	4.476	2.042	0.588	1.291	8.145	0.490%	0.000	0.168	0.114
%RSD		0.436	60.910	14.660	1.433	2.058	3.900	5.321	1.798	0.708	0.000	39.110	4.283

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:13	7.779	0.590	22.600	0.037	0.285	0.616	1.256	-0.079	0.236	-0.178	0.000	0.000
2	13:12:35	8.302	0.571	22.010	0.016	0.327	0.501	1.204	-0.118	0.246	-0.402	0.000	0.000
3	13:12:57	7.853	0.684	20.400	0.023	0.300	0.668	1.447	-0.029	0.242	-1.139	0.000	0.000
x		7.978	0.615	21.670	0.025	0.304	0.595	1.302	-0.075	0.241	-0.573	0.000	0.000
σ		0.283	0.061	1.139	0.010	0.021	0.086	0.128	0.044	0.005	0.503	0.000	0.000
%RSD		3.548	9.872	5.254	40.970	6.929	14.400	9.804	58.850	2.115	87.680	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:13	1.423	72.968%	0.522	0.005	-1.645	0.013	72.248%	0.000	0.067	0.050	0.799	71.054%
2	13:12:35	1.381	73.583%	0.532	-0.003	-1.055	-0.008	71.670%	0.000	0.068	0.063	0.851	70.515%
3	13:12:57	1.331	73.692%	0.520	-0.004	-0.597	-0.070	72.395%	0.000	0.064	0.083	0.875	71.882%
x		1.378	73.414%	0.525	-0.001	-1.099	-0.022	72.104%	0.000	0.067	0.066	0.842	71.150%
σ		0.046	0.390%	0.007	0.005	0.525	0.043	0.383%	0.000	0.002	0.016	0.039	0.689%
%RSD		3.323	0.532	1.248	584.300	47.800	199.500	0.531	0.000	2.784	25.080	4.619	0.968

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:13	0.062	0.033	0.014	72.747%	0.000	6.795	-0.005
2	13:12:35	0.087	0.036	0.023	73.939%	0.000	5.088	-0.010
3	13:12:57	0.085	0.022	0.033	73.727%	0.000	3.915	-0.003
x		0.078	0.030	0.023	73.471%	0.000	5.266	-0.006
σ		0.014	0.007	0.010	0.636%	0.000	1.448	0.004
%RSD		18.070	23.330	41.590	0.866	0.000	27.500	63.020

LCS 200-110288/2-B 10/19/2016 01:17:34 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:56	69.293%	11.290	477.200	T 5839.000	2044.000	487.800	T 5003.000	5075.000	69.309%	0.000	46.350	41.110
2	13:18:17	67.512%	11.410	484.200	T 5862.000	2115.000	496.500	T 5121.000	5148.000	67.110%	0.000	47.480	43.230
3	13:18:39	69.119%	11.830	462.600	T 5797.000	2038.000	489.600	T 5073.000	5156.000	68.452%	0.000	45.080	41.820
x		68.641%	11.510	474.700	T 5833.000	2066.000	491.300	T 5066.000	5126.000	68.290%	0.000	46.300	42.060
σ		0.982%	0.287	11.040	T 32.910	42.790	4.617	T 59.540	44.540	1.108%	0.000	1.201	1.078
%RSD		1.431	2.496	2.325	T 0.564	2.071	0.940	T 1.175	0.869	1.623	0.000	2.594	2.564

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:56	5.806	18.900	T 2112.000	9.753	20.710	50.130	190.300	20.540	0.026	40.570	0.000	0.000
2	13:18:17	6.849	19.330	T 2157.000	10.010	21.570	51.880	197.100	20.620	0.009	40.280	0.000	0.000
3	13:18:39	7.011	19.360	T 2137.000	9.738	20.510	50.250	196.400	20.150	0.024	39.320	0.000	0.000
x		6.555	19.190	T 2136.000	9.834	20.930	50.750	194.600	20.440	0.020	40.060	0.000	0.000
σ		0.654	0.258	T 22.770	0.155	0.563	0.981	3.757	0.249	0.009	0.658	0.000	0.000
%RSD		9.972	1.344	T 1.066	1.574	2.692	1.934	1.931	1.217	45.630	1.642	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:56	49.770	72.721%	102.900	10.960	-0.159	10.100	69.507%	0.000	19.000	19.020	91.430	68.844%
2	13:18:17	48.780	70.960%	102.900	10.750	-1.527	9.710	69.473%	0.000	19.600	19.070	94.300	68.582%
3	13:18:39	49.300	71.892%	105.000	10.480	0.444	9.946	70.198%	0.000	19.280	19.000	92.860	70.090%
x		49.280	71.858%	103.600	10.730	-0.414	9.920	69.726%	0.000	19.290	19.030	92.860	69.172%
σ		0.494	0.881%	1.218	0.236	1.010	0.198	0.409%	0.000	0.300	0.038	1.434	0.806%
%RSD		1.003	1.226	1.176	2.197	244.000	1.992	0.587	0.000	1.553	0.201	1.544	1.165

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:56	40.410	17.700	8.896	72.562%	0.000	18.220	10.580
2	13:18:17	40.360	18.570	9.142	70.507%	0.000	19.370	11.140
3	13:18:39	41.540	18.160	9.219	71.754%	0.000	19.380	11.020
x		40.770	18.150	9.085	71.608%	0.000	18.990	10.920
σ		0.666	0.432	0.169	1.035%	0.000	0.664	0.293
%RSD		1.634	2.382	1.859	1.446	0.000	3.497	2.689

200-35715-A-2-B 10/19/2016 01:23:27 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:23:49	68.955%	0.031	5.212	234.800	126.300	9.866	35.490	534.400	67.657%	0.000	0.595	2.053
2	13:24:10	67.038%	-0.011	5.899	221.600	125.500	9.291	30.780	547.300	69.535%	0.000	0.441	2.119
3	13:24:32	68.382%	-0.056	4.220	236.500	129.300	9.626	30.430	524.900	67.812%	0.000	0.361	2.142
x		68.125%	-0.012	5.110	231.000	127.000	9.595	32.230	535.500	68.335%	0.000	0.466	2.105
σ		0.984%	0.043	0.844	8.143	2.026	0.289	2.825	11.270	1.043%	0.000	0.118	0.046
%RSD		1.445	359.300	16.510	3.525	1.595	3.012	8.764	2.104	1.526	0.000	25.450	2.204

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:23:49	6.901	0.776	16.760	0.025	0.387	1.855	1.571	-0.208	0.202	-0.647	0.000	0.000
2	13:24:10	6.942	0.744	14.030	0.037	0.436	1.505	1.491	-0.226	0.217	-0.832	0.000	0.000
3	13:24:32	7.111	0.685	15.490	0.040	0.386	1.875	1.522	0.179	0.183	-0.841	0.000	0.000
x		6.985	0.735	15.430	0.034	0.403	1.745	1.528	-0.085	0.201	-0.773	0.000	0.000
σ		0.111	0.046	1.364	0.008	0.028	0.208	0.040	0.229	0.017	0.110	0.000	0.000
%RSD		1.591	6.274	8.844	22.540	7.064	11.940	2.622	269.200	8.521	14.200	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:23:49	1.782	72.013%	0.302	0.020	-1.946	0.029	69.394%	0.000	0.117	0.097	1.517	70.101%
2	13:24:10	1.806	71.997%	0.203	0.009	-0.923	-0.060	70.252%	0.000	0.087	0.076	1.510	68.975%
3	13:24:32	1.812	73.199%	0.198	0.011	-0.553	-0.073	70.941%	0.000	0.104	0.076	1.734	71.138%
x		1.800	72.403%	0.234	0.014	-1.141	-0.035	70.196%	0.000	0.103	0.083	1.587	70.071%
σ		0.016	0.689%	0.059	0.006	0.722	0.056	0.775%	0.000	0.015	0.012	0.127	1.082%
%RSD		0.870	0.952	25.160	42.950	63.280	160.500	1.104	0.000	14.660	14.240	8.006	1.544
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	13:23:49	0.056	0.039	0.124	71.432%	0.000	1.494	0.010					
2	13:24:10	0.069	0.021	0.129	73.720%	0.000	1.267	-0.004					
3	13:24:32	0.023	0.011	0.119	72.178%	0.000	1.073	-0.003					
x		0.049	0.024	0.124	72.443%	0.000	1.278	0.001					
σ		0.024	0.014	0.005	1.167%	0.000	0.211	0.008					
%RSD		47.750	61.140	4.034	1.611	0.000	16.480	790.000					

200-35730-A-2-B 10/19/2016 01:29:10 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:29:31	69.015%	0.009	4.343	252.300	121.600	14.550	30.340	519.800	70.508%	0.000	0.312	3.881
2	13:29:53	70.546%	-0.056	4.364	248.500	125.500	14.220	31.080	537.300	69.904%	0.000	0.268	4.153
3	13:30:15	69.407%	0.030	3.919	250.300	123.500	14.670	28.720	524.100	69.953%	0.000	0.552	4.353
x		69.656%	-0.005	4.208	250.400	123.500	14.480	30.050	527.100	70.122%	0.000	0.378	4.129
σ		0.795%	0.045	0.251	1.870	1.939	0.230	1.204	9.150	0.336%	0.000	0.153	0.237
%RSD		1.142	822.000	5.967	0.747	1.570	1.590	4.008	1.736	0.479	0.000	40.540	5.739
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:29:31	8.232	0.653	21.810	0.026	0.420	3.253	1.529	-0.323	0.260	-0.945	0.000	0.000
2	13:29:53	8.600	0.711	23.140	0.026	0.513	3.031	1.790	0.162	0.205	-0.154	0.000	0.000
3	13:30:15	7.875	0.733	23.030	0.024	0.533	2.871	1.653	0.083	0.212	-1.005	0.000	0.000
x		8.236	0.699	22.660	0.026	0.489	3.052	1.658	-0.026	0.226	-0.702	0.000	0.000
σ		0.362	0.041	0.740	0.001	0.060	0.192	0.131	0.260	0.030	0.475	0.000	0.000
%RSD		4.401	5.872	3.265	4.349	12.340	6.274	7.873	995.000	13.160	67.710	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:29:31	1.782	72.623%	0.189	0.005	-0.304	-0.109	71.075%	0.000	0.078	0.070	3.521	69.499%
2	13:29:53	1.840	71.801%	0.277	0.005	-1.294	-0.023	70.981%	0.000	0.071	0.080	3.389	70.567%

3	13:30:15	1.861	72.447%	0.239	0.001	-1.144	-0.034	70.809%	0.000	0.052	0.066	3.522	71.133%
x		1.827	72.291%	0.235	0.004	-0.914	-0.055	70.955%	0.000	0.067	0.072	3.477	70.400%
σ		0.041	0.433%	0.044	0.002	0.534	0.047	0.135%	0.000	0.013	0.007	0.076	0.830%
%RSD		2.242	0.599	18.730	66.520	58.370	84.790	0.190	0.000	19.910	9.700	2.199	1.179

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:31	0.050	-0.003	0.286	73.042%	0.000	0.381	-0.009
2	13:29:53	0.045	-0.004	0.322	71.603%	0.000	0.404	-0.009
3	13:30:15	0.034	0.001	0.335	72.542%	0.000	0.349	-0.008
x		0.043	-0.002	0.314	72.395%	0.000	0.378	-0.008
σ		0.008	0.003	0.025	0.730%	0.000	0.027	0.001
%RSD		19.450	139.800	7.998	1.009	0.000	7.193	6.531

200-35745-A-5-B 10/19/2016 01:34:53 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:15	71.259%	-0.035	2.479	268.100	113.000	9.159	31.920	478.600	71.126%	0.000	0.593	2.066
2	13:35:36	70.945%	0.007	3.389	280.100	123.000	9.488	31.020	478.300	70.148%	0.000	-0.180	1.826
3	13:35:58	68.754%	-0.034	2.642	265.200	113.000	8.833	30.070	475.200	71.406%	0.000	0.314	1.764
x		70.319%	-0.021	2.837	271.200	116.300	9.160	31.010	477.300	70.893%	0.000	0.242	1.885
σ		1.365%	0.024	0.485	7.909	5.798	0.327	0.925	1.896	0.660%	0.000	0.392	0.160
%RSD		1.941	117.700	17.110	2.917	4.984	3.574	2.984	0.397	0.931	0.000	161.800	8.468

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:15	9.389	0.951	23.150	0.034	0.270	1.372	1.661	-0.021	0.252	-0.588	0.000	0.000
2	13:35:36	10.510	0.963	23.460	0.036	0.234	1.819	1.812	0.214	0.249	-0.585	0.000	0.000
3	13:35:58	9.178	1.044	20.680	0.036	0.346	1.859	2.048	0.130	0.228	0.138	0.000	0.000
x		9.694	0.986	22.430	0.035	0.283	1.683	1.840	0.108	0.243	-0.345	0.000	0.000
σ		0.717	0.051	1.524	0.001	0.057	0.270	0.195	0.119	0.013	0.418	0.000	0.000
%RSD		7.400	5.128	6.795	3.763	20.250	16.060	10.600	110.500	5.431	121.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:15	1.651	73.183%	0.161	0.030	-1.672	0.016	71.082%	0.000	0.048	0.059	1.028	69.598%
2	13:35:36	1.685	72.882%	0.112	0.019	-1.049	-0.042	72.120%	0.000	0.060	0.066	1.091	73.019%
3	13:35:58	1.691	74.287%	0.098	0.038	-1.026	-0.044	71.739%	0.000	0.077	0.050	1.276	72.484%
x		1.676	73.451%	0.123	0.029	-1.249	-0.023	71.647%	0.000	0.061	0.058	1.132	71.700%
σ		0.022	0.740%	0.033	0.009	0.366	0.034	0.525%	0.000	0.015	0.008	0.129	1.840%
%RSD		1.295	1.007	26.690	32.550	29.340	144.500	0.733	0.000	23.770	14.110	11.420	2.566

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:15	0.035	0.004	0.107	72.644%	0.000	0.203	-0.007
2	13:35:36	0.038	0.000	0.103	73.802%	0.000	0.159	-0.008
3	13:35:58	0.046	0.004	0.090	73.754%	0.000	0.190	-0.006
x		0.040	0.003	0.100	73.400%	0.000	0.184	-0.007
σ		0.005	0.002	0.009	0.655%	0.000	0.023	0.001

%RSD		13.540	71.580	8.656	0.893	0.000	12.520	17.910

200-35754-A-2-B 10/19/2016 01:40:37 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:40:59	75.217%	-0.036	2.613	223.700	134.100	14.860	31.790	555.800	72.885%	0.000	-0.183	2.689
2	13:41:20	74.953%	-0.036	2.458	231.800	133.500	15.370	29.990	575.500	73.152%	0.000	0.372	2.679
3	13:41:42	72.385%	-0.056	2.708	227.700	138.600	15.060	31.930	581.700	72.943%	0.000	0.267	2.651
x		74.185%	-0.043	2.593	227.700	135.400	15.100	31.240	571.000	72.994%	0.000	0.152	2.673
σ		1.564%	0.011	0.126	4.064	2.760	0.257	1.079	13.520	0.140%	0.000	0.295	0.020
%RSD		2.109	27.000	4.876	1.785	2.038	1.700	3.455	2.368	0.192	0.000	193.900	0.736

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:40:59	15.370	0.964	23.840	0.103	0.377	2.465	2.505	-0.068	0.404	-0.296	0.000	0.000
2	13:41:20	14.530	0.913	24.290	0.091	0.356	2.500	1.428	0.033	0.394	-0.875	0.000	0.000
3	13:41:42	14.420	0.851	24.070	0.079	0.396	2.712	1.405	-0.097	0.394	-0.353	0.000	0.000
x		14.780	0.909	24.070	0.091	0.376	2.559	1.779	-0.044	0.398	-0.508	0.000	0.000
σ		0.522	0.056	0.229	0.012	0.020	0.134	0.629	0.068	0.006	0.319	0.000	0.000
%RSD		3.535	6.197	0.950	12.860	5.210	5.220	35.330	154.600	1.473	62.840	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:40:59	1.849	74.287%	0.187	0.011	-1.040	-0.043	72.758%	0.000	0.071	0.107	1.391	70.400%
2	13:41:20	1.814	75.536%	0.194	0.000	-1.398	-0.023	73.424%	0.000	0.106	0.102	1.433	72.510%
3	13:41:42	1.978	76.688%	0.198	0.008	-1.476	-0.008	73.218%	0.000	0.120	0.110	1.151	73.495%
x		1.880	75.504%	0.193	0.006	-1.304	-0.025	73.133%	0.000	0.099	0.106	1.325	72.135%
σ		0.086	1.201%	0.005	0.005	0.233	0.017	0.341%	0.000	0.025	0.004	0.152	1.582%
%RSD		4.591	1.590	2.822	84.160	17.840	69.950	0.467	0.000	25.450	3.464	11.470	2.193

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:40:59	0.059	0.013	0.142	74.063%	0.000	0.461	-0.005
2	13:41:20	0.084	0.003	0.152	73.042%	0.000	0.439	-0.006
3	13:41:42	0.058	-0.004	0.143	74.563%	0.000	0.367	-0.009
x		0.067	0.004	0.146	73.889%	0.000	0.423	-0.007
σ		0.014	0.009	0.005	0.775%	0.000	0.049	0.002
%RSD		21.510	225.400	3.641	1.049	0.000	11.650	31.610

200-35754-A-2-B SD@5 10/19/2016 01:46:21 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:43	69.385%	-0.013	0.683	66.390	27.120	3.102	5.222	100.600	71.028%	0.000	-0.374	0.573
2	13:47:05	69.938%	-0.034	0.557	57.430	28.440	3.136	4.790	112.300	71.943%	0.000	-0.343	0.456
3	13:47:26	69.080%	-0.013	2.136	67.410	28.190	3.108	5.416	109.000	70.291%	0.000	-0.534	0.537
x		69.468%	-0.020	1.125	63.740	27.910	3.115	5.143	107.300	71.087%	0.000	-0.417	0.522
σ		0.435%	0.013	0.877	5.490	0.701	0.018	0.320	5.996	0.828%	0.000	0.102	0.060
%RSD		0.626	63.200	77.940	8.613	2.512	0.586	6.226	5.587	1.165	0.000	24.540	11.410

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:43	17.220	0.148	10.510	0.006	0.153	0.444	0.213	-0.110	0.440	-1.108	0.000	0.000
2	13:47:05	16.720	0.137	7.404	0.012	0.150	0.457	0.299	0.037	0.431	-1.267	0.000	0.000
3	13:47:26	17.660	0.160	10.510	-0.002	0.095	0.475	0.412	0.083	0.425	-0.664	0.000	0.000
x		17.200	0.148	9.473	0.005	0.133	0.459	0.308	0.003	0.432	-1.013	0.000	0.000
σ		0.469	0.012	1.792	0.007	0.033	0.016	0.100	0.100	0.008	0.312	0.000	0.000
%RSD		2.725	7.813	18.920	133.900	24.540	3.404	32.370	3051.000	1.745	30.830	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:43	0.411	74.765%	0.008	0.003	-0.919	-0.061	70.534%	0.000	0.096	0.098	0.248	70.080%
2	13:47:05	0.398	74.397%	0.049	-0.006	-1.269	-0.033	72.355%	0.000	0.104	0.071	0.175	70.557%
3	13:47:26	0.382	75.113%	0.044	0.003	-1.592	-0.007	71.278%	0.000	0.085	0.072	0.189	70.509%
x		0.397	74.758%	0.034	0.000	-1.260	-0.034	71.389%	0.000	0.095	0.080	0.204	70.382%
σ		0.014	0.358%	0.023	0.005	0.336	0.027	0.916%	0.000	0.010	0.015	0.039	0.263%
%RSD		3.614	0.479	66.950	8370.000	26.700	78.960	1.283	0.000	10.160	18.690	19.090	0.373

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:43	0.006	-0.016	0.016	72.473%	0.000	-0.169	-0.013
2	13:47:05	0.024	-0.007	0.017	74.206%	0.000	-0.174	-0.012
3	13:47:26	0.013	-0.012	0.007	73.144%	0.000	-0.159	-0.014
x		0.014	-0.012	0.013	73.275%	0.000	-0.167	-0.013
σ		0.009	0.004	0.005	0.874%	0.000	0.008	0.001
%RSD		60.620	37.740	41.560	1.193	0.000	4.714	7.610

200-35754-A-2-B PDS 10/19/2016 01:52:06 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:27	68.841%	10.510	476.600	T 5593.000	2107.000	483.000	T 4977.000	5032.000	69.011%	0.000	44.890	39.310
2	13:52:49	70.463%	10.360	452.900	T 5654.000	2119.000	490.500	T 4980.000	5197.000	67.701%	0.000	45.670	40.230
3	13:53:11	69.285%	10.920	458.800	T 5561.000	2063.000	486.000	T 4953.000	5071.000	69.042%	0.000	45.410	39.650
x		69.530%	10.600	462.800	T 5603.000	2096.000	486.500	T 4970.000	5100.000	68.585%	0.000	45.320	39.730
σ		0.838%	0.292	12.280	T 47.390	29.820	3.776	T 14.910	86.420	0.766%	0.000	0.398	0.466
%RSD		1.206	2.751	2.655	T 0.846	1.423	0.776	T 0.300	1.694	1.116	0.000	0.878	1.172

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:27	12.210	18.930	T 2092.000	9.692	21.000	51.340	175.600	18.130	0.249	33.370	0.000	0.000
2	13:52:49	10.970	19.400	T 2145.000	9.737	21.220	51.250	179.800	18.540	0.207	34.010	0.000	0.000
3	13:53:11	8.588	19.320	T 2080.000	9.628	20.720	50.390	176.100	18.190	0.168	34.040	0.000	0.000
x		10.590	19.220	T 2106.000	9.685	20.980	50.990	177.200	18.290	0.208	33.800	0.000	0.000
σ		1.842	0.254	T 34.880	0.055	0.247	0.521	2.327	0.222	0.040	0.380	0.000	0.000
%RSD		17.400	1.322	T 1.657	0.566	1.177	1.022	1.313	1.216	19.460	1.123	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:27	48.310	72.459%	98.130	10.060	-0.700	8.002	70.337%	0.000	17.530	17.530	89.670	70.049%
2	13:52:49	48.400	72.447%	98.910	10.680	-0.854	9.204	69.595%	0.000	18.410	17.980	92.600	69.745%
3	13:53:11	49.030	73.281%	99.930	10.310	-0.464	9.291	69.927%	0.000	18.390	18.220	91.630	70.300%
x		48.580	72.729%	98.990	10.350	-0.672	8.832	69.953%	0.000	18.110	17.910	91.300	70.031%
σ		0.392	0.478%	0.902	0.312	0.197	0.720	0.371%	0.000	0.505	0.348	1.491	0.278%
%RSD		0.808	0.657	0.912	3.015	29.240	8.153	0.531	0.000	2.790	1.942	1.633	0.397

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:27	18.100	16.380	8.598	73.213%	0.000	15.340	10.080
2	13:52:49	18.650	17.000	8.781	72.309%	0.000	16.320	10.240
3	13:53:11	18.900	17.570	8.911	70.856%	0.000	17.410	10.850
x		18.550	16.980	8.763	72.126%	0.000	16.360	10.390
σ		0.412	0.597	0.157	1.189%	0.000	1.034	0.403
%RSD		2.222	3.517	1.792	1.648	0.000	6.323	3.880

200-35676-A-2-B 10/19/2016 01:57:50 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:12	71.604%	-0.056	3.789	251.800	140.200	11.810	36.460	580.700	68.789%	0.000	0.428	2.122
2	13:58:33	68.677%	-0.034	2.889	250.300	132.400	11.380	34.470	546.900	69.589%	0.000	0.610	2.430
3	13:58:55	70.889%	-0.035	3.441	241.800	133.600	10.990	31.750	557.200	69.909%	0.000	-0.179	2.348
x		70.390%	-0.042	3.373	248.000	135.400	11.390	34.230	561.600	69.429%	0.000	0.286	2.300
σ		1.526%	0.012	0.454	5.413	4.193	0.413	2.367	17.350	0.577%	0.000	0.413	0.160
%RSD		2.168	29.780	13.450	2.183	3.096	3.625	6.915	3.090	0.830	0.000	144.300	6.944

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:12	9.495	1.501	22.860	0.078	0.512	0.972	1.285	-0.089	0.272	-0.996	0.000	0.000
2	13:58:33	8.800	1.290	19.340	0.053	0.486	1.021	1.228	0.098	0.251	-1.004	0.000	0.000
3	13:58:55	10.070	1.418	20.380	0.089	0.394	1.456	1.551	-0.177	0.271	-0.669	0.000	0.000
x		9.455	1.403	20.860	0.074	0.464	1.149	1.355	-0.056	0.265	-0.890	0.000	0.000
σ		0.637	0.106	1.806	0.019	0.062	0.266	0.172	0.141	0.012	0.191	0.000	0.000
%RSD		6.732	7.572	8.657	25.300	13.350	23.180	12.720	251.700	4.521	21.450	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:12	1.820	72.608%	0.155	0.014	-0.821	-0.051	69.976%	0.000	0.087	0.058	1.274	69.556%
2	13:58:33	1.856	72.878%	0.089	0.020	-1.465	-0.009	70.064%	0.000	0.061	0.068	1.123	69.300%

3	13:58:55	1.849	72.839%	0.120	0.014	-2.073	0.031	70.352%	0.000	0.072	0.071	1.313	70.572%
x		1.841	72.775%	0.121	0.016	-1.453	-0.010	70.131%	0.000	0.073	0.066	1.237	69.809%
σ		0.019	0.146%	0.033	0.004	0.626	0.041	0.196%	0.000	0.013	0.007	0.100	0.673%
%RSD		1.045	0.201	27.030	23.380	43.110	413.700	0.280	0.000	18.050	10.920	8.111	0.964

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:12	0.082	0.018	0.163	70.589%	0.000	2.147	-0.004
2	13:58:33	0.050	0.010	0.155	72.295%	0.000	1.650	-0.001
3	13:58:55	0.063	0.010	0.146	72.973%	0.000	1.313	-0.002
x		0.065	0.013	0.154	71.952%	0.000	1.703	-0.002
σ		0.016	0.005	0.008	1.228%	0.000	0.419	0.001
%RSD		24.780	36.310	5.422	1.707	0.000	24.630	67.060

CCV 10/19/2016 02:03:34 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:56	63.072%	724.800	279.500	↑10790.000	↑32060.000	↑31890.000	↑9772.000	↑29960.000	63.261%	0.000	↑1240.000	364.700
2	14:04:18	62.431%	733.800	274.600	↑11040.000	↑33060.000	↑32810.000	↑9997.000	28000.000	61.748%	0.000	↑1292.000	377.700
3	14:04:40	60.379%	742.200	293.100	↑10770.000	↑32020.000	↑32240.000	↑9696.000	↑30050.000	62.844%	0.000	↑1249.000	367.900
x		61.961%	117.378%	112.975%	↑108.676%	↑107.939%	↑107.705%	↑98.216%	↑97.790%	62.618%	0.000	↑100.842%	92.523%
σ		1.407%	n/a	n/a	↑n/a	↑n/a	↑n/a	↑n/a	↑n/a	0.782%	0.000	↑n/a	n/a
%RSD		2.271	1.181	3.392	↑1.378	↑1.820	↑1.434	↑1.593	↑3.961	1.248	0.000	↑2.201	1.840

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:56	21.150	↑1250.000	↑30240.000	466.200	1242.000	1221.000	1251.000	201.000	-0.255	219.200	0.000	0.000
2	14:04:18	15.120	↑1286.000	↑31380.000	478.900	1269.000	1241.000	1269.000	206.200	-0.401	219.200	0.000	0.000
3	14:04:40	22.240	↑1255.000	↑30390.000	460.500	1225.000	1194.000	1254.000	205.900	-0.333	218.800	0.000	0.000
x		19.500	↑101.085%	↑102.240%	93.702%	99.634%	97.498%	100.655%	102.180%	-0.330	109.531%	0.000	0.000
σ		3.837	↑n/a	↑n/a	n/a	n/a	n/a	n/a	n/a	0.073	n/a	0.000	0.000
%RSD		19.680	↑1.533	↑2.012	2.013	1.750	1.960	0.782	1.431	22.140	0.086	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:56	188.100	67.885%	1178.000	105.000	8.214	197.200	65.321%	0.000	237.700	235.600	1144.000	65.368%
2	14:04:18	189.000	66.520%	1223.000	106.100	20.910	201.400	64.918%	0.000	240.500	238.000	1176.000	64.902%
3	14:04:40	186.700	65.347%	1269.000	104.100	13.060	196.000	65.670%	0.000	239.900	237.800	1155.000	65.017%
x		187.900	66.584%	97.884%	105.064%	14.060	99.098%	65.303%	0.000	239.300	94.867%	92.650%	65.096%
σ		1.142	1.270%	n/a	n/a	6.407	n/a	0.376%	0.000	1.476	n/a	n/a	0.243%
%RSD		0.608	1.908	3.725	0.977	45.560	1.413	0.576	0.000	0.617	0.562	1.397	0.373

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:56	21.650	175.200	↑1209.000	67.281%	0.000	13.610	9.848
2	14:04:18	23.340	179.700	↑1230.000	66.850%	0.000	15.400	10.240
3	14:04:40	23.350	174.400	↑1204.000	68.438%	0.000	16.110	9.843
x		113.899%	88.216%	↑97.136%	67.523%	0.000	75.193%	99.776%
σ		n/a	n/a	↑n/a	0.822%	0.000	n/a	n/a

%RSD		4.278	1.625	T 1.124	1.217	0.000	8.588	2.289

CCB 10/19/2016 02:09:18 PM QC Status: PASS (Initial: UNKNOWN)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:09:39	68.263%	-0.012	2.927	25.490	2.594	2.659	1.224	-3.573	66.644%	0.000	-0.017	-0.230
2	14:10:01	68.447%	-0.012	2.234	18.330	2.609	2.621	-0.139	-6.911	68.025%	0.000	0.325	-0.258
3	14:10:23	68.666%	-0.012	1.880	25.680	3.190	2.818	2.633	-4.379	66.267%	0.000	0.241	-0.221
x		68.459%	-0.012	2.347	23.170	2.797	2.699	1.239	-4.955	66.979%	0.000	0.183	-0.236
σ		0.202%	0.000	0.532	4.188	0.340	0.105	1.386	1.742	0.926%	0.000	0.178	0.020
%RSD		0.294	1.057	22.690	18.080	12.140	3.880	111.800	35.150	1.382	0.000	97.290	8.263

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:09:39	10.930	0.051	6.352	0.024	0.091	0.062	0.107	0.327	0.291	-0.609	0.000	0.000
2	14:10:01	10.300	0.061	4.468	0.019	0.109	0.103	0.032	0.146	0.320	-0.945	0.000	0.000
3	14:10:23	10.750	0.062	7.756	0.039	0.050	0.114	0.124	-0.173	0.355	-0.767	0.000	0.000
x		10.660	0.058	6.192	0.027	0.083	0.093	0.088	0.100	0.322	-0.774	0.000	0.000
σ		0.326	0.006	1.650	0.010	0.030	0.027	0.049	0.253	0.033	0.168	0.000	0.000
%RSD		3.059	10.470	26.650	38.340	36.500	29.460	56.340	253.400	10.090	21.760	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:09:39	0.024	69.156%	2.478	0.024	-1.206	-0.029	67.177%	0.000	0.255	0.264	0.045	66.132%
2	14:10:01	0.017	69.563%	2.307	0.006	-1.642	0.014	67.890%	0.000	0.300	0.315	0.033	66.090%
3	14:10:23	0.021	68.980%	2.263	0.002	-1.333	-0.010	67.427%	0.000	0.306	0.306	0.033	66.383%
x		0.021	69.233%	2.349	0.010	-1.394	-0.008	67.498%	0.000	0.287	0.295	0.037	66.202%
σ		0.003	0.299%	0.113	0.012	0.224	0.022	0.362%	0.000	0.028	0.027	0.007	0.159%
%RSD		16.190	0.432	4.822	113.300	16.070	256.200	0.536	0.000	9.680	9.271	19.110	0.240

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:09:39	0.077	0.111	0.060	69.260%	0.000	-0.096	-0.014
2	14:10:01	0.059	0.101	0.069	70.781%	0.000	-0.114	-0.009
3	14:10:23	0.039	0.094	0.055	71.445%	0.000	-0.109	-0.011
x		0.058	0.102	0.061	70.496%	0.000	-0.107	-0.011
σ		0.019	0.009	0.007	1.120%	0.000	0.009	0.002
%RSD		32.510	8.591	11.000	1.589	0.000	8.663	22.210

CCVL 10/19/2016 02:15:00 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:22	66.907%	1.239	45.130	535.000	206.000	55.500	457.100	473.200	66.431%	0.000	4.196	3.806
2	14:15:44	68.071%	1.042	46.430	T 609.100	208.300	55.190	463.100	486.800	66.014%	0.000	4.950	3.691
3	14:16:05	66.299%	1.229	48.310	T 610.200	217.300	57.180	467.100	499.300	65.676%	0.000	4.884	3.921
x		67.093%	116.995%	116.561%	T 116.956%	105.258%	111.918%	92.487%	97.290%	66.040%	0.000	93.536%	95.147%
σ		0.900%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.378%	0.000	n/a	n/a
%RSD		1.342	9.506	3.434	T 7.370	2.859	1.913	1.098	2.686	0.573	0.000	8.923	3.021

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:22	13.300	2.150	195.000	1.087	2.790	5.235	23.000	2.059	0.361	3.668	0.000	0.000
2	14:15:44	12.990	2.220	198.300	1.079	2.345	5.462	22.640	1.861	0.376	3.749	0.000	0.000
3	14:16:05	13.130	2.103	202.200	1.069	2.209	5.886	24.300	1.458	0.424	3.552	0.000	0.000
x		13.140	107.874%	99.246%	107.813%	122.391%	110.554%	116.575%	89.629%	0.387	91.414%	0.000	0.000
σ		0.154	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.033	n/a	0.000	0.000
%RSD		1.172	2.734	1.819	0.820	12.420	5.972	3.754	17.090	8.474	2.714	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:22	4.808	68.460%	10.670	1.091	-1.729	1.100	67.261%	0.000	1.890	2.016	9.385	67.378%
2	14:15:44	4.843	69.508%	10.580	1.180	-0.868	0.959	68.045%	0.000	2.097	2.003	9.785	66.881%
3	14:16:05	4.990	71.261%	10.840	1.044	-1.073	1.032	68.821%	0.000	2.004	2.015	8.540	67.116%
x		97.600%	69.743%	106.946%	110.511%	-1.223	103.043%	68.042%	0.000	1.997	100.580%	92.365%	67.125%
σ		n/a	1.415%	n/a	n/a	0.450	n/a	0.780%	0.000	0.104	n/a	n/a	0.249%
%RSD		1.980	2.029	1.256	6.245	36.750	6.883	1.146	0.000	5.199	0.351	6.885	0.371

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:22	1.611	1.741	1.127	69.808%	0.000	0.675	1.025
2	14:15:44	1.862	1.831	1.099	68.404%	0.000	0.733	1.040
3	14:16:05	1.985	1.776	1.074	71.336%	0.000	0.703	1.054
x		90.978%	89.149%	109.997%	69.849%	0.000	35.197%	103.989%
σ		n/a	n/a	n/a	1.466%	0.000	n/a	n/a
%RSD		10.480	2.539	2.412	2.099	0.000	4.125	1.413

Mass Uncorrected ICPS

STD0 10/19/2016 10:04:01 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:04:23	162609.400	0.000	495.007	308060.980	130.001	550.009	73059.782	1280.049	223630.320	10.000	22465.130	2630.208
2	10:04:45	164235.230	12.500	490.007	308682.310	130.001	580.010	71894.732	1450.063	225809.400	5.000	23111.012	2705.220
3	10:05:07	168446.950	7.500	520.008	308376.740	240.002	465.006	74676.925	1270.048	232338.220	5.000	22900.722	2555.196
x		165097.190	6.667	501.674	308373.340	166.668	531.675	73210.480	1333.387	227259.310	6.667	22825.622	2630.208
σ		3012.720	6.292	16.073	310.683	63.509	59.654	1397.205	101.168	4531.400	2.887	329.425	75.012
%RSD		1.825	94.373	3.204	0.101	38.105	11.220	1.908	7.587	1.994	43.301	1.443	2.852

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:04:23	7741.798	455.006	269684.380	20.000	10.000	260.002	670.013	2144.138	704.015	579.010	634.512	3190.305
2	10:04:45	7861.854	485.007	279885.510	15.000	25.000	200.001	660.013	2162.140	677.014	573.510	584.010	3130.294
3	10:05:07	7656.758	490.007	282260.050	25.000	15.000	245.002	640.012	2104.133	679.014	592.011	599.511	2950.261
x		7753.470	476.673	277276.650	20.000	16.667	235.002	656.680	2136.804	686.681	581.510	606.011	3090.287
σ		103.045	18.930	6681.431	5.000	7.638	31.225	15.276	29.691	15.045	9.500	25.871	124.923
%RSD		1.329	3.971	2.410	25.000	45.826	13.287	2.326	1.390	2.191	1.634	4.269	4.042

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:04:23	30.000	257280.590	105.000	45.000	0.000	15.000	1129701.700	565.010	125.000	88.500	15.000	194852.400
2	10:04:45	25.000	258560.160	70.000	20.000	0.000	5.000	1143443.000	635.012	150.001	105.000	10.000	191797.270
3	10:05:07	5.000	259240.610	105.000	30.000	0.000	5.000	1159882.700	685.014	100.000	114.500	5.000	190805.990
x		20.000	258360.450	93.334	31.667	0.000	8.333	1144342.500	628.345	125.000	102.667	10.000	192485.220
σ		13.229	995.156	20.207	12.583	0.000	5.774	15110.564	60.279	25.000	13.156	5.000	2109.104
%RSD		66.144	0.385	21.651	39.736	0.000	69.282	1.320	9.593	20.000	12.814	50.000	1.096

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:04:23	105.000	450.006	430.006	146137.890	0.000	11343.859	185.001
2	10:04:45	90.000	455.006	560.009	149003.090	0.000	11138.721	235.002
3	10:05:07	120.000	370.004	450.006	145542.720	0.000	10748.465	200.001
x		105.000	425.005	480.007	146894.570	0.000	11077.015	206.668
σ		15.000	47.698	70.002	1850.127	0.000	302.456	25.658
%RSD		14.286	11.223	14.584	1.259	0.000	2.730	12.415

STD1 10/19/2016 10:09:44 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:10:06	164467.500	207.501	6601.307	T 1221339.600	33293.220	83418.237	T 1053058.900	34104.859	226093.210	35.000	40684.597	14070.937
2	10:10:27	162074.230	175.001	6336.204	T 1249773.400	33724.085	82754.943	T 1036942.300	34285.228	223407.360	0.000	39211.071	13780.695
3	10:10:49	155592.900	210.001	6261.176	T 1206205.400	33273.180	85101.716	968727.940	34114.879	224572.860	10.000	40002.950	14376.198
x		160711.540	197.501	6399.562	T 1225772.800	33430.162	83758.298	T 1019576.400	34168.322	224691.140	15.000	39966.206	14075.943
σ		4591.549	19.526	178.698	T 22119.713	254.742	1209.780	T 44767.289	101.368	1346.829	18.028	737.450	297.783
%RSD		2.857	9.886	2.792	T 1.805	0.762	1.444	T 4.391	0.297	0.599	120.185	1.845	2.116

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:10:06	10308.187	9317.604	971163.740	3545.377	1475.065	4800.691	14476.284	3485.364	981.029	806.520	603.511	3095.287
2	10:10:27	10293.178	9602.766	987561.440	3510.370	1670.084	4845.704	15271.994	3502.368	963.028	827.521	592.011	3175.302
3	10:10:49	9897.938	9562.743	993318.920	3505.369	1410.060	4805.693	15617.314	3488.365	882.023	752.517	586.010	3145.297

x		10166.434	9494.371	984014.700	3520.372	1518.403	4817.363	15121.864	3492.032	942.027	795.519	593.844	3138.629
σ		232.645	154.387	11495.541	21.799	135.321	24.672	585.142	9.076	52.738	38.693	8.893	40.422
%RSD		2.288	1.626	1.168	0.619	8.912	0.512	3.870	0.260	5.598	4.864	1.498	1.288

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:10:06	25960.202	258468.760	17359.035	3765.425	55.000	970.028	1135656.700	715.015	5630.951	4545.620	6011.084	189551.800
2	10:10:27	26345.807	259748.430	17789.489	3735.419	40.000	830.021	1119250.800	830.021	5660.961	4649.148	5916.050	186517.860
3	10:10:49	26726.412	256783.000	17519.203	3600.389	40.000	960.028	1115298.600	785.018	6326.200	4763.681	5776.001	187660.580
x		26344.140	258333.400	17555.909	3700.411	45.000	920.026	1123402.000	776.685	5872.704	4652.816	5901.045	187910.080
σ		383.108	1487.339	217.562	87.911	8.660	78.107	10795.281	57.954	393.026	109.077	118.258	1532.282
%RSD		1.454	0.576	1.239	2.376	19.245	8.490	0.961	7.462	6.692	2.344	2.004	0.815

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:10:06	3515.371	17879.585	8337.085	146228.680	0.000	26591.196	14206.052
2	10:10:27	3755.423	18605.379	8487.160	143807.750	0.000	26561.148	14326.155
3	10:10:49	3610.391	18865.671	8447.140	145542.720	0.000	26931.742	14846.610
x		3627.062	18450.212	8423.795	145193.050	0.000	26694.695	14459.605
σ		120.891	511.027	77.714	1247.767	0.000	205.838	340.493
%RSD		3.333	2.770	0.923	0.859	0.000	0.771	2.355

STD2 10/19/2016 10:13:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:13:40	154967.110	837.521	29741.513	T 4661342.600	159297.650	362295.400	T 4635204.500	150879.860	204021.140	20.000	91862.466	53947.168
2	10:14:01	146480.880	762.517	30277.477	T 4583592.900	155502.060	363184.440	T 4560096.000	148690.320	207544.240	25.000	91776.997	53666.263
3	10:14:23	146178.240	880.023	29941.871	T 4605912.000	161337.130	362785.900	T 4650739.500	147620.880	208192.250	25.000	93974.190	54383.583
x		149208.750	826.687	29986.954	T 4616949.200	158712.280	362755.250	T 4615346.700	149063.690	206585.880	23.333	92537.884	53999.005
σ		4989.185	59.497	270.811	T 40032.716	2961.251	445.311	T 48474.846	1661.266	2244.634	2.887	1244.611	361.458
%RSD		3.344	7.197	0.903	T 0.867	1.866	0.123	T 1.050	1.114	1.087	12.372	1.345	0.669

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:13:40	15372.086	39737.315	T 3938940.200	15362.077	6776.377	20597.720	65935.166	7739.797	1716.088	1646.081	543.009	3590.387
2	10:14:01	15307.026	39130.883	T 3945666.400	15772.460	6781.379	20237.279	66482.333	7502.688	1604.077	1648.082	541.509	3515.371
3	10:14:23	15572.271	38354.080	T 3899904.100	15442.150	6406.231	20602.726	66637.953	7614.739	1662.083	1620.079	565.510	3730.417
x		15417.128	39074.093	T 3928170.200	15525.562	6654.663	20479.242	66351.817	7619.075	1660.749	1638.081	550.009	3612.058
σ		138.240	693.364	T 24709.123	217.536	215.163	209.561	369.125	118.614	56.017	15.622	13.445	109.149
%RSD		0.897	1.774	T 0.629	1.401	3.233	1.023	0.556	1.557	3.373	0.954	2.444	3.022

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:13:40	124936.530	243871.240	83187.086	16708.371	220.001	4175.523	1044643.600	625.012	27828.213	21118.371	28504.354	176166.140
2	10:14:01	125596.460	239792.700	83754.919	17334.009	265.002	4155.518	1041750.700	640.012	27297.336	21376.700	27708.013	177631.570
3	10:14:23	128498.450	240076.740	84800.185	17193.864	270.002	4070.497	1046696.600	685.014	27492.657	21498.356	27703.005	179016.270
x		126343.810	241246.890	83914.063	17078.748	251.669	4133.846	1044363.600	650.013	27539.402	21331.143	27971.791	177604.660
σ		1894.924	2277.183	818.240	328.321	27.538	55.766	2484.809	31.226	268.508	194.046	461.220	1425.255
%RSD		1.500	0.944	0.975	1.922	10.942	1.349	0.238	4.804	0.975	0.910	1.649	0.802

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:13:40	16618.281	87720.239	34195.043	136849.540	0.000	79504.176	68726.408
2	10:14:01	16853.517	89745.981	33959.562	138180.450	0.000	83021.262	69032.670
3	10:14:23	17283.957	90761.458	34650.983	135246.530	0.000	86483.803	69750.650
x		16918.585	89409.226	34268.530	136758.840	0.000	83003.080	69169.909

σ		337.575	1548.324	351.519	1469.061	0.000	3489.849	525.732
%RSD		1.995	1.732	1.026	1.074	0.000	4.204	0.760

STD3 10/19/2016 10:17:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:17:40	149880.910	99385.443	34846.390	┬16432883.000	┬4879986.600	┬46104065.000	┬17064482.000	┬1808616.100	198292.620	31740.194	┬3350698.300	9268(
2	10:18:02	142254.510	96709.772	35242.221	┬16165238.000	┬4837125.000	┬45292484.000	┬16801449.000	┬1791724.500	192818.960	31905.510	┬3326387.300	91388
3	10:18:23	144170.870	97469.176	34911.526	┬16174471.000	┬4778877.100	┬44986312.000	┬16733834.000	┬1806885.400	189915.910	32236.145	┬3328215.600	9236-
x		145435.430	97854.797	35000.046	┬16257531.000	┬4831996.200	┬45460954.000	┬16866588.000	┬1802408.700	193675.830	31960.616	┬3335100.400	9214-
σ		3967.346	1378.888	212.244	┬151929.520	┬50749.476	┬577606.950	┬174683.990	┬9293.155	4253.586	252.526	┬13539.066	673
%RSD		2.728	1.409	0.606	┬0.935	┬1.050	┬1.271	┬1.036	┬0.516	2.196	0.790	┬0.406	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:17:40	116022.440	┬4848330.000	┬99306293.000	1397372.600	739442.270	914641.840	732610.260	95763.330	7623.743	10479.794	536.509	805
2	10:18:02	112669.550	┬4813490.800	┬99392113.000	1402171.600	750338.400	915977.260	725561.750	95370.085	7617.740	10396.742	512.008	790
3	10:18:23	115760.620	┬4863552.300	┬99425984.000	1381801.200	738569.830	908488.610	726266.470	95263.478	7502.688	10327.199	537.509	814
x		114817.540	┬4841791.000	┬99374797.000	1393781.800	742783.500	913035.900	728146.160	95465.631	7581.391	10401.245	528.675	803
σ		1864.811	┬25663.363	┬61695.572	10649.341	6557.262	3994.276	3882.048	263.268	68.224	76.397	14.443	12
%RSD		1.624	┬0.530	┬0.062	0.764	0.883	0.437	0.533	0.276	0.900	0.735	2.732	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	10:17:40	931154.590	231141.760	1936342.200	308096.630	10453.277	152575.190	1024700.900	956146.720	643388.300	500988.180	649945.500	17527
2	10:18:02	935313.010	232044.170	┬2207180.700	311381.840	10343.208	149552.990	1012094.500	948106.350	645227.380	500165.520	655215.960	16993
3	10:18:23	940815.090	229773.030	┬2217903.700	303065.640	10313.190	151117.000	1024987.700	951480.730	647929.230	502119.470	656125.720	17294
x		935760.900	230986.320	┬2120475.500	307514.700	10369.892	151081.730	1020594.400	951911.270	645514.970	501091.060	653762.390	17271
σ		4845.799	1143.522	┬159554.230	4188.530	73.757	1511.413	7362.504	4037.439	2284.085	981.031	3336.678	267
%RSD		0.518	0.495	┬7.524	1.362	0.711	1.000	0.721	0.424	0.354	0.196	0.510	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:17:40	39672.160	1740434.000	┬9223548.100	132373.600	0.000	380755.120	128160.870
2	10:18:02	40704.645	1741452.600	┬9373720.600	134470.290	0.000	380944.370	126246.340
3	10:18:23	39947.818	1750528.600	┬9402300.300	130720.630	0.000	371709.320	125692.180
x		40108.208	1744138.400	┬9333189.700	132521.510	0.000	377802.930	126699.790
σ		534.603	5557.458	┬96021.605	1879.198	0.000	5278.072	1295.310
%RSD		1.333	0.319	┬1.029	1.418	0.000	1.397	1.022

STD4 10/19/2016 10:21:49 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	10:22:10	141024.120	265538.600	93421.093	┬43746013.000	┬13282223.000	┬123442180.000	┬45878228.000	┬4968458.900	182362.250	87705.160	┬9143392.60(
2	10:22:32	141215.730	268609.730	96684.626	┬44120758.000	┬13519222.000	┬125474570.000	┬46598278.000	┬5073616.300	184192.210	89409.178	┬9277329.30(
3	10:22:53	140066.090	265919.610	97851.406	┬44485995.000	┬13477266.000	┬125333770.000	┬46502946.000	┬5187150.200	182139.840	89906.845	┬9529146.20(
x		140768.650	266689.310	95985.709	┬44117589.000	┬13426237.000	┬124750170.000	┬46326484.000	┬5076408.500	182898.100	89007.061	┬9316622.70(
σ		615.928	1674.005	2296.363	┬370001.440	┬126471.950	┬1134940.100	┬391116.300	┬109372.360	1126.236	1154.611	┬195855.67(
%RSD		0.438	0.628	2.392	┬0.839	┬0.942	┬0.910	┬0.844	┬2.155	0.616	1.297	┬2.10

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	10:22:10	306594.300	┬13359744.000	┬272119380.000	┬4262243.200	1976389.300	┬2743471.400	1911265.200	254218.130	18854.659	25779.923	499.00
2	10:22:32	315615.360	┬13485522.000	┬272765470.000	┬4261965.900	2016482.500	┬2806928.900	1941756.100	257433.930	19424.313	26196.572	505.50

3	10:22:53	314061.420	┬13504347.000	┬274855810.000	┬4302249.200	2020559.800	┬2778567.200	1935373.800	255088.280	19115.956	26331.284	519.508
x		312090.360	┬13449871.000	┬273246890.000	┬4275486.100	2004477.200	┬2776322.500	1929465.100	255580.110	19131.643	26102.593	508.008
σ		4822.726	┬78617.449	┬1430324.600	┬23177.925	24410.111	┬31788.219	16081.306	1663.360	285.151	287.443	10.476
%RSD		1.545	┬0.585	┬0.523	┬0.542	1.218	┬1.145	0.833	0.651	1.490	1.101	2.062

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	10:22:10	┬2876587.300	216091.850	┬6148699.500	839256.600	27492.657	409335.690	984015.670	┬3062330.500	1795979.100	1404858.300	┬2075711.500
2	10:22:32	┬2937691.500	216790.840	┬6315895.400	843208.770	27282.311	416853.620	990132.450	┬3122389.300	1828256.800	1430087.500	┬2131937.400
3	10:22:53	┬2975452.100	214785.120	┬6355363.600	837606.620	26831.581	415577.340	992836.400	┬3167845.100	1857612.100	1438016.100	┬2137247.800
x		┬2929910.300	215889.270	┬6273319.500	840024.000	27202.183	413922.220	988994.840	┬3117521.600	1827282.700	1424320.600	┬2114965.600
σ		┬49889.567	1018.089	┬109713.490	2878.837	337.744	4022.982	4519.068	┬52925.412	30828.070	17314.795	┬34098.538
%RSD		┬1.703	0.472	┬1.749	0.343	1.242	0.972	0.457	┬1.698	1.687	1.216	┬1.612

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:22:10	115176.600	┬5752542.800	┬26501167.000	125510.820	0.000	833351.060	363368.380
2	10:22:32	117920.690	┬5845294.700	┬26747388.000	128039.940	5.000	836923.560	372327.900
3	10:22:53	119960.170	┬5901485.400	┬27134159.000	127475.640	0.000	837559.330	371786.000
x		117685.820	┬5833107.600	┬26794238.000	127008.800	1.667	835944.650	369160.760
σ		2400.416	┬75215.489	┬319086.190	1327.622	2.887	2268.500	5023.660
%RSD		2.040	┬1.289	┬1.191	1.045	173.205	0.271	1.361

STD5 10/19/2016 10:27:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	10:27:52	133371.510	415418.450	147883.190	T 68798654.000	TM 21065131.000	TM 194346880.000	T 73045233.000	TM 7994587.900	171699.890	139188.790	TM
2	10:28:14	135034.830	413363.290	147454.410	T 68112268.000	TM 20883987.000	TM 196414300.000	TM 74095897.000	TM 8130967.100	171467.520	139007.280	TM
3	10:28:35	130438.440	405636.890	148624.740	T 68240098.000	TM 21338010.000	T 197557680.000	T 73419236.000	TM 8103968.100	176246.990	142930.260	TM
x		132948.260	411472.880	147987.440	T 68383673.000	TM 21095709.000	TM 196106290.000	TM 73520122.000	TM 8076507.700	173138.130	140375.440	TM
σ		2327.242	5157.514	592.088	T 365023.260	TM 228550.830	TM 1627409.800	TM 532547.690	TM 72217.558	2694.853	2214.393	
%RSD		1.750	1.253	0.400	T 0.534	TM 1.083	TM 0.830	TM 0.724	TM 0.894	1.556	1.577	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	
1	10:27:52	482576.710	TM 21318582.000	T 427061450.000	TM 6793434.900	TM 3504888.600	T 4254958.300	TM 3288982.900	392967.730	28437.240	39108.330	
2	10:28:14	497166.260	TM 21661213.000	TM 437229380.000	TM 6853347.800	TM 3537290.200	TM 4294191.200	TM 3343200.100	396349.410	28781.830	39405.028	
3	10:28:35	501869.100	TM 21862885.000	T 438299150.000	TM 6886120.700	TM 3590400.900	T 4346363.700	TM 3359167.700	397849.520	28882.003	39758.867	
x		493870.690	TM 21614226.000	TM 434196660.000	TM 6844301.100	TM 3544193.200	TM 4298504.400	TM 3330450.200	395722.220	28700.358	39424.075	
σ		10059.556	TM 275176.820	TM 6202383.400	TM 47000.469	TM 43172.099	TM 45855.085	TM 36788.483	2500.598	233.307	325.686	
%RSD		2.037	TM 1.273	TM 1.428	TM 0.687	TM 1.218	TM 1.067	TM 1.105	0.632	0.813	0.826	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	
1	10:27:52	TM 4690994.900	211230.120	TM 9869988.900	1307268.800	42413.900	654394.620	990376.320	T 4974916.600	TM 3270907.300	2254022.100	TI
2	10:28:14	TM 4680901.000	203363.170	TM 10002992.000	1322022.100	42223.417	654113.910	990121.850	T 5101770.000	TM 3348747.600	M 2303125.700	TI
3	10:28:35	TM 4703336.800	205681.360	TM 10220724.000	1321470.900	43316.216	661538.510	990090.040	T 5093829.400	TM 3366754.000	M 2318596.100	TI
x		TM 4691744.200	206758.220	TM 10031235.000	1316920.600	42651.177	656682.340	990196.070	T 5056838.700	TM 3328803.000	M 2291914.700	TI
σ		TM 11236.678	4042.513	TM 177064.840	8363.250	583.762	4207.900	156.910	T 71057.611	TM 50941.056	M 33715.225	
%RSD		TM 0.239	1.955	TM 1.765	0.635	1.369	0.641	0.016	T 1.405	TM 1.530	M 1.471	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:27:52	M 222915.840	TM 9358790.900	TM 42729440.000	122710.080	0.000	1513216.700	M 715886.550
2	10:28:14	M 232525.810	TM 9579535.900	TM 42866525.000	122669.780	0.000	M 1542907.500	M 728887.240
3	10:28:35	M 233580.400	TM 9544495.600	TM 43429328.000	122941.770	5.000	M 1559429.100	M 734239.660
x		M 229674.020	TM 9494274.100	TM 43008431.000	122773.880	1.667	M 1538517.700	M 726337.820
σ		M 5876.459	TM 118632.790	TM 370896.020	146.792	2.887	M 23416.858	M 9438.424
%RSD		M 2.559	TM 1.250	TM 0.862	0.120	173.205	M 1.522	M 1.299

ICV 10/19/2016 10:33:14 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:33:36	125299.230	41992.835	17559.245	T 7508424.100	T 2093916.400	T 20068208.000	T 7122716.200	700570.900	162942.630	13770.687	1308041.000	396152.810
2	10:33:57	123898.820	43539.296	17659.351	T 7467240.900	T 2113666.400	T 19772054.000	T 7055512.100	692358.170	161104.900	13450.425	1291891.400	396393.440
3	10:34:20	121199.080	42880.090	17118.787	T 7414592.500	T 2098506.400	T 19970846.000	T 7101980.100	711489.130	163336.460	13730.654	1329719.800	404243.650
x		123465.710	42804.074	17445.794	T 7463419.100	T 2102029.700	T 19937036.000	T 7093402.800	701472.730	162461.330	13650.588	1309884.000	398929.970
σ		2084.107	776.028	287.586	T 47032.403	T 10335.646	T 150944.180	T 34413.329	9597.308	1191.095	174.498	18981.433	4603.356
%RSD		1.688	1.813	1.648	T 0.630	T 0.492	T 0.757	T 0.485	1.368	0.733	1.278	1.449	1.154

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:33:36	50551.548	T 2035361.500	T 42367694.000	607073.390	325125.570	400023.640	319839.760	42806.902	3481.364	4863.209	454.506	4555.623
2	10:33:57	52582.818	T 2082612.200	T 43136765.000	613663.250	330142.760	406584.570	327950.100	42648.497	3535.375	4750.677	452.006	4980.744
3	10:34:20	52577.802	T 2078574.000	T 43386956.000	612672.790	329005.600	411082.910	326084.020	42783.843	3579.384	4816.696	415.005	4760.680
x		51904.056	T 2065515.900	T 42963805.000	611136.480	328091.310	405897.040	324624.630	42746.414	3532.041	4810.194	440.506	4765.682
σ		1171.309	T 26192.401	T 531187.400	3553.418	2630.590	5561.601	4247.564	85.579	49.095	56.547	22.120	212.605

%RSD		2.257	T 1.268	T 1.236	0.581	0.802	1.370	1.308	0.200	1.390	1.176	5.021	4.461
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:33:36	407726.970	204527.290	408188.050	133709.200	4345.566	67370.890	891544.370	438103.340	294351.530	228406.430	286252.280	148791.210
2	10:33:57	410375.810	202361.090	422098.170	134787.840	4415.585	68043.615	895561.380	445978.120	302088.130	232734.190	293099.760	154432.180
3	10:34:20	408013.870	201318.580	426503.210	135700.200	4680.657	68957.359	900918.850	447595.620	299323.920	232860.940	297002.950	154230.320
x		408705.550	202735.650	418929.810	134732.410	4480.603	68123.955	896008.200	443892.360	298587.860	231333.850	292118.330	152484.570
σ		1453.581	1636.821	9559.815	996.654	176.754	796.280	4703.184	5078.251	3920.468	2536.013	5442.117	3200.134
%RSD		0.356	0.807	2.282	0.740	3.945	1.169	0.525	1.144	1.313	1.096	1.863	2.099

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:33:36	37447.021	788045.180	T 4217428.300	119335.710	0.000	202654.620	110927.930
2	10:33:57	38719.925	796450.940	T 4216340.100	118842.200	0.000	215904.440	113379.340
3	10:34:20	39100.812	799140.190	T 4210927.700	120352.980	0.000	225642.160	114587.560
x		38422.586	794545.440	T 4214898.700	119510.300	0.000	214733.740	112964.940
σ		866.062	5787.747	T 3481.762	770.375	0.000	11538.399	1864.678
%RSD		2.254	0.728	T 0.083	0.645	0.000	5.373	1.651

ICVL 10/19/2016 10:38:58 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	10:39:20	127657.020	162.501	6056.100	904421.100	27773.121	69228.479	719471.060	25068.839	166588.410	20.000	24482.969	9617.774
2	10:39:41	127112.890	152.501	6536.281	903534.920	27222.213	70548.999	718803.140	25599.645	165588.520	25.000	25023.772	9702.824
3	10:40:03	125087.650	175.001	6326.200	891702.510	27222.213	69198.355	706899.910	25128.930	163992.860	10.000	24578.109	9892.935
x		126619.190	163.334	6306.194	899886.170	27405.849	69658.611	715058.040	25265.805	165389.930	18.333	24694.950	9737.844
σ		1353.966	11.273	240.715	7101.102	318.067	771.246	7073.035	290.671	1309.122	7.638	288.714	140.884
%RSD		1.069	6.902	3.817	0.789	1.161	1.107	0.989	1.150	0.792	41.660	1.169	1.447

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	10:39:20	5866.032	7271.586	749136.090	2770.230	1275.049	3630.395	11253.798	2097.132	537.009	641.512	453.506	2480.184
2	10:39:41	6326.200	7621.742	756508.130	3065.282	1325.053	3725.416	12059.361	2128.136	542.009	658.513	463.006	2420.176
3	10:40:03	5826.018	7576.722	754050.420	2910.254	1125.038	3715.414	11518.979	2122.135	512.008	646.513	470.507	2475.184
x		6006.083	7490.017	753231.550	2915.255	1241.713	3690.409	11610.713	2115.801	530.342	648.846	462.340	2458.515
σ		277.950	190.501	3753.620	147.589	104.091	52.213	410.541	16.444	16.073	8.737	8.520	33.297
%RSD		4.628	2.543	0.498	5.063	8.383	1.415	3.536	0.777	3.031	1.347	1.843	1.354

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:39:20	21654.058	202401.570	16933.598	2780.232	40.000	775.018	894021.940	3730.417	5996.078	4656.150	4770.683	152171.530
2	10:39:41	21503.864	206349.540	17043.710	3055.280	50.000	730.016	896774.050	4230.537	6241.168	4871.212	4985.746	152635.740
3	10:40:03	21774.214	203089.870	16908.573	2855.245	60.000	700.015	882912.590	4560.624	6311.195	4978.243	4785.687	148690.320
x		21644.045	203947.000	16961.960	2896.919	50.000	735.016	891236.190	4173.859	6182.814	4835.202	4847.372	151165.860
σ		135.453	2108.937	71.895	142.181	10.000	37.751	7338.617	417.995	165.465	164.038	120.070	2156.413
%RSD		0.626	1.034	0.424	4.908	20.000	5.136	0.823	10.015	2.676	3.393	2.477	1.427

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:39:20	3175.302	17799.500	7471.674	116113.060	0.000	14055.925	12299.537
2	10:39:41	3190.305	18265.003	7741.798	117865.300	0.000	14501.306	12669.814
3	10:40:03	3160.300	18094.817	7531.701	119517.000	0.000	14576.371	12424.629
x		3175.302	18053.107	7581.725	117831.790	0.000	14377.867	12464.660
σ		15.003	235.538	141.839	1702.215	0.000	281.325	188.356
%RSD		0.472	1.305	1.871	1.445	0.000	1.957	1.511

ICBIS 10/19/2016 10:44:40 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:45:02	126145.580	22.500	1160.040	244561.240	510.008	3135.295	54388.599	730.016	162407.450	5.000	14741.516	1545.072
2	10:45:24	126709.840	12.500	1010.031	249960.460	500.007	2750.227	54047.492	670.013	162882.050	10.000	14641.428	1525.070
3	10:45:45	121884.050	7.500	1050.033	248295.850	400.005	2500.188	54458.828	660.013	165356.230	10.000	14451.262	1535.071
x		124913.160	14.167	1073.368	247605.850	470.007	2795.236	54298.306	686.681	163548.580	8.333	14611.402	1535.071
σ		2638.412	7.638	77.680	2764.953	60.829	319.937	220.031	37.861	1583.359	2.887	147.438	10.001
%RSD		2.112	53.913	7.237	1.117	12.942	11.446	0.405	5.514	0.968	34.641	1.009	0.651

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:45:02	5110.783	665.013	206374.860	160.001	65.000	250.002	570.010	1257.047	417.005	486.007	477.507	2330.163
2	10:45:24	5135.791	565.010	203535.260	130.001	30.000	235.002	525.008	1338.054	405.005	433.506	461.506	2280.156
3	10:45:45	5285.838	550.009	199426.030	115.000	35.000	210.001	600.011	1269.048	404.005	481.507	447.006	2300.159
x		5177.471	593.344	203112.050	135.001	43.333	231.668	565.010	1288.050	408.672	467.007	462.006	2303.492
σ		94.678	62.519	3493.692	22.913	18.930	20.208	37.750	43.718	7.234	29.100	15.257	25.170
%RSD		1.829	10.537	1.720	16.973	43.684	8.723	6.681	3.394	1.770	6.231	3.302	1.093

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:45:02	100.000	203373.300	945.027	40.000	5.000	20.000	892155.830	1835.101	595.011	469.007	50.000	147731.850
2	10:45:24	85.000	204628.520	1185.042	20.000	0.000	20.000	908166.760	1955.115	730.016	531.508	55.000	152161.440
3	10:45:45	80.000	202948.160	1015.031	35.000	5.000	5.000	908377.810	2255.153	780.018	572.510	65.000	151122.040
x		88.334	203649.990	1048.367	31.667	3.333	15.000	902900.130	2015.123	701.682	524.342	56.667	150338.440
σ		10.408	873.683	123.431	10.408	2.887	8.660	9305.441	216.360	95.703	52.122	7.638	2316.425
%RSD		11.783	0.429	11.774	32.868	86.603	57.735	1.031	10.737	13.639	9.941	13.478	1.541

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:45:02	175.001	1285.050	890.024	117462.470	0.000	1570.074	45.000
2	10:45:24	140.001	1150.040	900.024	118378.920	0.000	1540.071	30.000
3	10:45:45	145.001	1255.047	730.016	120876.750	0.000	1755.092	20.000
x		153.334	1230.045	840.021	118906.050	0.000	1621.746	31.667
σ		18.930	70.892	95.399	1767.124	0.000	116.452	12.583
%RSD		12.346	5.763	11.357	1.486	0.000	7.181	39.736

ICSA 10/19/2016 10:50:23 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:50:45	124654.420	15.000	1090.036	TM 146482050.000	T 14882067.000	T 136448540.000	TM 148738800.000	T 5500510.700	178025.740	302902.710	7716.786	4
2	10:51:06	125420.140	20.000	915.025	TM 149230040.000	T 14890277.000	T 138243150.000	TM 152659160.000	T 5671503.900	179107.240	304893.520	7136.528	5
3	10:51:28	121481.120	27.500	1065.034	TM 147049990.000	T 14976938.000	T 136992880.000	TM 150039670.000	T 5741908.800	179683.390	310714.560	7436.659	4
x		123851.890	20.833	1023.365	TM 147587360.000	T 14916427.000	T 137228190.000	TM 150479210.000	T 5637974.500	178938.790	306170.270	7429.991	4
σ		2088.540	6.292	94.654	TM 1450668.000	T 52564.201	T 920150.170	TM 1996796.400	T 124142.740	841.563	4059.406	290.187	
%RSD		1.686	30.199	9.249	TM 0.983	T 0.352	T 0.671	TM 1.327	T 2.202	0.470	1.326	3.906	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:50:45	2640.209	2135.137	T 301912510.000	355.004	475.007	1050.033	1840.102	1268.048	453.006	483.507	562.509	2
2	10:51:06	2880.249	2280.156	T 301869970.000	350.004	350.004	970.028	1940.113	1318.052	446.006	503.008	544.509	2
3	10:51:28	2785.233	2425.176	T 309314530.000	520.008	490.007	1135.039	1855.103	1309.051	414.005	462.006	553.009	2
x		2768.564	2280.156	T 304365670.000	408.339	438.339	1051.700	1878.439	1298.384	437.672	482.840	553.343	2

σ		120.885	145.020	T 4285891.400	96.741	76.868	82.518	53.935	26.654	20.793	20.509	9.005	
%RSD		4.366	6.360	T 1.408	23.691	17.536	7.846	2.871	2.053	4.751	4.248	1.627	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	10:50:45	3545.377	211675.720	T 3178037.100	470.007	500.007	610.011	949148.210	3350.337	880.023	627.012	190.001	1619
2	10:51:06	3590.387	215899.380	T 3301006.300	560.009	535.009	620.012	957506.550	4480.602	1145.039	731.516	140.001	1704
3	10:51:28	3580.385	220651.000	T 3384765.800	510.008	525.008	550.009	966864.260	4260.545	1190.043	804.519	250.002	1698
x		3572.049	216075.360	T 3287936.400	513.341	520.008	593.344	957839.670	4030.494	1071.702	721.016	193.335	167
σ		23.634	4490.230	T 103982.250	45.094	18.028	37.861	8862.720	599.222	167.517	89.218	55.076	47
%RSD		0.662	2.078	T 3.163	8.784	3.467	6.381	0.925	14.867	15.631	12.374	28.488	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:50:45	525.008	1380.057	2905.253	125188.400	0.000	82242.415	50.000
2	10:51:06	755.017	1455.064	3010.272	126075.050	0.000	69685.378	90.000
3	10:51:28	690.014	1655.082	3635.396	127143.120	0.000	55156.115	90.000
x		656.680	1496.734	3183.641	126135.520	0.000	69027.969	76.667
σ		118.572	142.169	394.740	978.759	0.000	13555.112	23.094
%RSD		18.056	9.499	12.399	0.776	0.000	19.637	30.123

ICSAB 10/19/2016 10:56:06 AM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:56:28	113162.880	3137.795	46855.771	TM 138530090.000	T 13918423.000	T 130170480.000	TM 141756590.000	T 5225087.100	165507.720	287188.180	58768.429	10
2	10:56:49	111441.330	3090.287	47978.960	TM 139258390.000	T 14155035.000	T 131911760.000	TM 145262390.000	T 5314287.400	167881.290	292392.500	60584.916	10
3	10:57:11	110162.880	3182.804	47016.222	TM 137170070.000	T 14031978.000	T 131382420.000	TM 144476510.000	T 5384623.100	170699.700	293888.470	60017.870	10
x		111589.030	3136.962	47283.651	TM 138319520.000	T 14035145.000	T 131154890.000	TM 143831830.000	T 5307999.200	168029.570	291156.380	59790.405	10
σ		1505.443	46.264	607.476	TM 1059968.300	T 118337.640	T 892659.340	TM 1839667.200	T 79953.637	2599.161	3517.026	929.361	
%RSD		1.349	1.475	1.285	TM 0.766	T 0.843	T 0.681	TM 1.279	T 1.506	1.547	1.208	1.554	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:56:28	14676.459	78549.666	T 285974540.000	59922.528	12069.369	30277.477	24578.109	18760.553	3979.475	5431.885	563.510	
2	10:56:49	14726.503	78705.398	T 289422310.000	61698.992	12649.799	31619.966	25764.900	19487.386	4079.499	5450.391	512.508	
3	10:57:11	14956.708	80951.116	T 294975160.000	62040.255	12584.749	32251.174	25845.023	19406.292	4097.504	5562.928	531.008	
x		14786.557	79402.060	T 290124000.000	61220.592	12434.639	31382.872	25396.011	19218.077	4052.159	5481.735	535.675	
σ		149.465	1343.780	T 4541152.100	1137.032	318.001	1007.983	709.456	398.297	63.587	70.922	25.819	
%RSD		1.011	1.692	T 1.565	1.857	2.557	3.212	2.794	2.073	1.569	1.294	4.820	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	10:56:28	2810.237	208860.530	T 3146234.300	69359.021	1525.070	17128.797	934652.460	2340.164	119350.810	94076.263	121737.990	16
2	10:56:49	2910.254	206217.930	T 3228572.700	69389.146	1465.064	16973.639	939884.740	2860.245	124901.260	96030.360	124130.540	16
3	10:57:11	2975.266	206187.560	T 3226634.800	69946.468	1560.073	17123.792	942538.490	3045.278	125203.520	97746.795	125430.210	16
x		2898.586	207088.670	T 3200480.600	69564.878	1516.736	17075.409	939025.230	2748.563	123151.860	95951.139	123766.250	16
σ		83.131	1534.550	T 46988.652	330.810	48.049	88.172	4012.660	365.583	3295.274	1836.548	1872.876	
%RSD		2.868	0.741	T 1.468	0.476	3.168	0.516	0.427	13.301	2.676	1.914	1.513	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:56:28	35081.883	203757.950	151954.560	123374.960	0.000	244302.480	136632.770
2	10:56:49	36129.117	209640.230	156006.740	123697.330	0.000	259337.100	139773.650
3	10:57:11	37176.416	211311.130	158020.580	124654.420	0.000	268007.660	141619.130
x		36129.139	208236.440	155327.290	123908.910	0.000	257215.750	139341.850
σ		1047.267	3967.444	3089.560	665.456	0.000	11994.119	2521.071
%RSD		2.899	1.905	1.989	0.537	0.000	4.663	1.809

CCV 10/19/2016 11:01:49 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:02:11	104375.810	73323.436	26731.420	T 12306708.000	T 3631278.200	T 34301466.000	T 12122034.000	1223305.000	141598.960	24177.524	T 2444801.800	691352
2	11:02:33	99244.608	72909.124	26496.044	T 12109230.000	T 3621225.400	T 33485354.000	T 11935512.000	1197745.000	137121.760	23691.827	T 2393899.000	676990
3	11:02:55	100492.050	72093.086	27412.525	T 12115100.000	T 3561102.800	T 33646809.000	T 11741736.000	1205516.400	139461.050	24067.365	T 2434393.200	694556
x		101370.820	72775.215	26879.996	T 12177013.000	T 3604535.400	T 33811209.000	T 11933094.000	1208855.500	139393.920	23978.905	T 2424364.700	687633
σ		2676.096	626.010	475.963	T 112357.430	T 37948.160	T 432180.890	T 190160.960	13103.078	2239.356	254.645	T 26892.426	9355
%RSD		2.640	0.860	1.771	T 0.923	T 1.053	T 1.278	T 1.594	1.084	1.606	1.062	T 1.109	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:02:11	87559.397	T 3611934.300	T 73781205.000	1044149.000	565317.630	687982.450	561196.820	75033.522	6079.109	8372.603	406.005	6296
2	11:02:33	84071.507	T 3586596.700	T 73849227.000	1033579.800	545632.600	691628.810	559242.760	74331.386	5929.054	8310.071	403.005	6546
3	11:02:55	86096.807	T 3584399.400	T 73640314.000	1027171.200	560302.470	684529.550	562442.780	74369.556	5921.052	8417.125	432.506	6421
x		85909.237	T 3594310.100	T 73756915.000	1034966.700	557084.240	688046.940	560960.790	74578.154	5976.405	8366.600	413.838	6421
σ		1751.494	T 15302.448	T 106553.450	8573.442	10229.510	3550.069	1613.017	394.821	89.034	53.779	16.236	125

%RSD		2.039	T 0.426	T 0.144	0.828	1.836	0.516	0.288	0.529	1.490	0.643	3.923	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	11:02:11	764846.030	185365.110	1579909.800	256361.590	8812.329	127858.560	861652.080	809009.650	547414.630	423308.290	549088.360	144594
2	11:02:33	757606.360	184728.090	1610093.500	254599.890	8527.181	127294.270	839009.620	801709.260	543938.560	421556.210	540199.860	143444
3	11:02:55	757894.010	183140.720	1612885.000	250767.440	8577.207	126513.350	832022.070	806549.610	542972.820	424289.780	541289.370	145340
x		760115.470	184411.310	1600962.800	253909.640	8638.906	127222.060	844227.920	805756.170	544775.340	423051.420	543525.870	144460
σ		4099.313	1145.531	18285.778	2860.237	152.258	675.504	15488.947	3714.303	2336.144	1384.768	4847.966	955
%RSD		0.539	0.621	1.142	1.126	1.762	0.531	1.835	0.461	0.429	0.327	0.892	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:02:11	34049.746	1495821.700	T 8039408.200	113193.080	0.000	197528.630	112775.260
2	11:02:33	34475.620	1501750.900	T 7997311.800	113444.780	0.000	211306.070	112860.840
3	11:02:55	34966.642	1516424.500	T 8058079.500	115216.880	0.000	222079.790	112810.500
x		34497.336	1504665.700	T 8031599.800	113951.580	0.000	210304.830	112815.530
σ		458.833	10606.178	T 31127.264	1102.983	0.000	12306.166	43.010
%RSD		1.330	0.705	T 0.388	0.968	0.000	5.852	0.038

CCB 10/19/2016 11:07:32 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:07:54	109810.560	20.000	810.020	228221.930	1180.042	9397.649	60921.138	990.029	144907.220	30.000	10943.592	1200.043
2	11:08:16	105694.080	10.000	870.023	232054.310	1800.097	14921.677	61944.902	1030.032	143182.410	45.000	11378.883	1120.038
3	11:08:37	110444.730	7.500	895.024	236546.800	2140.137	19536.443	63038.992	1220.045	145683.940	45.000	11343.859	1285.050
x		108649.790	12.500	858.355	232274.350	1706.759	14618.590	61968.344	1080.035	144591.190	40.000	11222.111	1201.710
σ		2579.287	6.614	43.687	4166.796	486.806	5076.188	1059.122	122.890	1280.363	8.660	241.840	82.519
%RSD		2.374	52.915	5.090	1.794	28.522	34.724	1.709	11.378	0.886	21.651	2.155	6.867

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:07:54	4005.481	535.009	197139.060	95.000	50.000	230.002	525.008	972.028	334.003	454.506	438.006	2135.137
2	11:08:16	3955.469	595.011	209625.040	140.001	60.000	205.001	490.007	1040.032	332.003	414.005	409.005	2145.138
3	11:08:37	3745.421	515.008	212774.580	100.000	45.000	215.001	515.008	995.030	317.003	381.004	399.005	1995.119
x		3902.124	548.342	206512.890	111.667	51.667	216.668	510.008	1002.364	327.670	416.505	415.339	2091.798
σ		137.993	41.635	8269.308	24.665	7.638	12.583	18.028	34.590	9.292	36.815	20.257	83.875
%RSD		3.536	7.593	4.004	22.088	14.783	5.808	3.535	3.451	2.836	8.839	4.877	4.010

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:07:54	40.000	191099.320	3275.322	5.000	0.000	20.000	857264.270	2775.231	730.016	595.511	20.000	145512.460
2	11:08:16	75.000	186811.120	3765.425	65.000	0.000	10.000	857432.610	3130.294	915.025	681.514	30.000	144483.560
3	11:08:37	120.000	191048.750	3670.404	40.000	0.000	10.000	860315.630	3135.295	970.028	711.015	70.000	144302.000
x		78.334	189653.060	3570.384	36.667	0.000	13.333	858337.500	3013.607	871.690	662.680	40.000	144766.010
σ		40.104	2461.327	259.910	30.139	0.000	5.774	1715.172	206.454	125.738	60.011	26.458	652.788
%RSD		51.197	1.298	7.280	82.196	0.000	43.301	0.200	6.851	14.425	9.056	66.144	0.451

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:07:54	220.001	1745.091	830.021	114924.870	0.000	1155.040	10.000
2	11:08:16	190.001	1710.088	800.019	116153.340	0.000	1085.035	50.000
3	11:08:37	230.002	1605.077	995.030	114864.460	0.000	1250.047	40.000
x		213.335	1686.752	875.023	115314.220	0.000	1163.374	33.333
σ		20.817	72.866	105.006	727.326	0.000	82.821	20.817
%RSD		9.758	4.320	12.000	0.631	0.000	7.119	62.450

200-35736-A-11-A 10/19/2016 11:13:14 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	11:13:36	128553.880	507.508	3825.439	T 1187922.200	T 2042133.300	T 78571729.000	T 7227354.900	T 2766143.200	190907.140	14146.001	207934.060	149885.
2	11:13:58	126669.530	525.008	3905.458	T 1197858.700	T 2037866.600	T 78214542.000	T 7400292.600	T 2894457.300	200215.410	14506.310	216426.140	153766.
3	11:14:20	122770.520	495.007	4080.499	T 1161353.400	T 2112082.500	T 80818434.000	T 7508250.400	T 2926890.600	199011.110	14065.933	215372.630	158868.
x		125997.980	509.174	3937.132	T 1182378.100	T 2064027.500	T 79201568.000	T 7378632.600	T 2862497.000	196711.220	14239.415	213244.280	154173.
σ		2949.585	15.070	130.447	T 18873.604	T 41671.508	T 1411590.000	T 141694.900	T 85006.039	5062.419	234.580	4628.855	4505.
%RSD		2.341	2.960	3.313	T 1.596	T 2.019	T 1.782	T 1.920	T 2.970	2.574	1.647	2.171	2.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	11:13:36	20782.950	TM 26028089.000	T 314763490.000	131209.450	52357.109	1341678.500	401687.960	14653.439	767.018	657.513	165.501	4460.
2	11:13:58	20868.056	TM 27118992.000	T 328194300.000	136985.650	52964.022	1388516.400	410647.370	14805.573	763.017	663.513	179.001	4610.
3	11:14:20	21553.928	TM 27588390.000	T 335268500.000	138810.650	54930.371	1414816.100	419032.240	15186.916	790.019	670.513	176.001	5130.
x		21068.311	TM 26911824.000	T 326075430.000	135668.590	53417.168	1381670.300	410455.860	14881.976	773.351	663.847	173.501	4734.
σ		422.704	TM 800514.780	T 10415424.000	3968.068	1345.149	37046.289	8673.728	274.823	14.572	6.507	7.089	351.
%RSD		2.006	TM 2.975	T 3.194	2.925	2.518	2.681	2.113	1.847	1.884	0.980	4.086	7.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	11:13:36	646183.370	529014.530	13920.811	5665.963	220.001	2385.171	924815.870	49177.446	2485.185	2073.629	395804.690	188085.
2	11:13:58	652850.810	532327.550	13555.510	5420.881	295.003	2440.179	945256.100	49894.572	2730.224	2037.124	407645.000	188065.
3	11:14:20	674242.700	545307.210	13225.245	5866.032	230.002	2520.191	958067.450	51559.629	2655.211	2108.633	415731.100	194336.
x		657758.960	535549.760	13567.189	5650.959	248.335	2448.513	942713.140	50210.549	2623.540	2073.129	406393.600	190162.
σ		14659.434	8611.031	347.930	222.954	40.723	67.895	16771.013	1222.121	125.552	35.757	10021.975	3614.
%RSD		2.229	1.608	2.564	3.945	16.399	2.773	1.779	2.434	4.786	1.725	2.466	1.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:13:36	1830.101	5866.032	1059855.300	124775.320	0.000	230264.740	75435.329
2	11:13:58	1690.086	5986.075	1105694.300	131335.440	0.000	217099.820	75631.214
3	11:14:20	1610.078	5921.052	1099077.400	129914.370	0.000	211447.850	77032.610
x		1710.088	5924.386	1088209.000	128675.040	0.000	219604.140	76033.051
σ		111.367	60.091	24776.862	3451.191	0.000	9655.183	871.167
%RSD		6.512	1.014	2.277	2.682	0.000	4.397	1.146

200-35736-A-11-A SD@5 10/19/2016 11:18:56 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:19:18	119466.640	135.001	1245.046	422651.940	378489.380	T 15970434.000	T 1494608.000	520729.660	180532.490	2730.224	49638.810	32040.769
2	11:19:40	121642.290	92.500	1175.041	416469.190	383604.340	T 15706317.000	T 1471510.900	523174.460	179157.780	2805.236	49092.195	32692.032
3	11:20:02	118046.570	82.500	1240.046	416007.880	376852.910	T 15733774.000	T 1468123.300	530366.490	177833.710	2615.205	50436.199	32451.562
x		119718.500	103.334	1220.045	418376.340	379648.880	T 15803508.000	T 1478080.700	524756.870	179174.660	2716.888	49722.401	32394.788
σ		1811.041	27.876	39.054	3709.959	3521.900	T 145211.960	T 14412.929	5009.509	1349.470	95.715	675.890	329.323
%RSD		1.513	26.977	3.201	0.887	0.928	T 0.919	T 0.975	0.955	0.753	3.523	1.359	1.017

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:19:18	6831.400	T 5262342.400	T 64638255.000	26235.633	10778.484	280622.750	88765.753	4044.491	465.006	247.002	114.500	1390.058
2	11:19:40	6776.377	T 5326359.400	T 65376457.000	27753.088	10533.327	283373.710	89394.098	4073.498	474.007	255.502	157.501	1360.055
3	11:20:02	6516.274	T 5284869.100	T 65769561.000	28068.616	10483.296	284355.220	90987.687	4076.499	438.006	233.502	128.500	1595.076
x		6708.017	T 5291190.300	T 65261424.000	27352.445	10598.369	282783.890	89715.846	4064.829	459.006	245.335	133.501	1448.397

σ		168.318	T 32473.270	T 574358.310	979.970	157.977	1934.876	1145.377	17.677	18.736	11.094	21.932	127.911
%RSD		2.509	T 0.614	T 0.880	3.583	1.491	0.684	1.277	0.435	4.082	4.522	16.428	8.831
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:19:18	129415.510	282117.670	1975.117	1145.039	60.000	565.010	965572.510	9742.847	590.010	464.006	78419.053	165649.120
2	11:19:40	131521.900	280327.850	2125.135	1100.036	90.000	645.012	972805.460	10103.061	675.014	553.509	79162.556	165113.850
3	11:20:02	130917.170	283978.880	2360.167	1165.041	45.000	545.009	978017.610	10613.378	680.014	573.010	81106.871	165103.750
x		130618.190	282141.470	2153.473	1136.706	65.000	585.010	972131.860	10153.095	648.346	530.175	79562.827	165288.900
σ		1084.556	1825.633	194.083	33.294	22.913	52.917	6249.835	437.417	50.582	58.127	1387.895	311.996
%RSD		0.830	0.647	9.013	2.929	35.251	9.045	0.643	4.308	7.802	10.964	1.744	0.189

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:19:18	310.003	1430.061	205175.180	124704.800	0.000	27312.361	13175.206
2	11:19:40	370.004	1540.071	209351.640	127536.100	0.000	29085.357	14206.052
3	11:20:02	395.005	1470.065	210713.640	124986.900	0.000	29876.755	14996.744
x		358.337	1480.066	208413.490	125742.600	0.000	28758.157	14126.000
σ		43.685	55.683	2885.954	1559.610	0.000	1313.135	913.404
%RSD		12.191	3.762	1.385	1.240	0.000	4.566	6.466

200-35736-A-11-A PDS 10/19/2016 11:24:39 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:25:01	127173.350	1797.597	52327.015	T 8637338.400	T 2382989.900	T 79614841.000	T 14890784.000	T 3120798.200	206663.400	14125.984	315905.790	239305
2	11:25:22	127667.100	1750.092	50842.430	T 8406290.700	T 2364694.500	T 80670605.000	T 14838259.000	T 3189576.300	209974.400	13865.765	323275.090	239300
3	11:25:44	125742.550	1715.088	51795.358	T 8382106.700	T 2386157.700	T 80819716.000	T 15138625.000	T 3297606.600	208415.010	13820.728	331178.000	244530
x		126861.000	1754.259	51654.934	T 8475245.300	T 2377947.400	T 80368387.000	T 14955889.000	T 3202660.300	208350.930	13937.492	323452.960	241045
σ		999.571	41.412	752.188	T 140896.630	T 11586.069	T 656835.090	T 160417.930	T 89127.380	1656.430	164.784	7637.658	3018
%RSD		0.788	2.361	1.456	T 1.662	T 0.487	T 0.817	T 1.073	T 2.783	0.795	1.182	2.361	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:25:01	32181.039	TM 26944241.000	T 334935850.000	160458.710	63947.443	1413245.900	507000.960	22972.822	1976.117	2125.635	164.001	5936
2	11:25:22	30808.449	TM 27094624.000	T 338474280.000	163730.300	65242.448	1441634.500	509536.560	23256.214	1873.105	2224.648	173.001	6066
3	11:25:44	32241.155	TM 27648290.000	T 339650410.000	163336.460	65413.115	1441449.500	519177.340	23328.315	1894.108	2248.152	169.501	6116
x		31743.547	TM 27229052.000	T 337686840.000	162508.490	64867.669	1432110.000	511904.950	23185.784	1914.443	2199.479	168.834	6039
σ		810.377	TM 370775.270	T 2453935.900	1786.050	801.494	16337.055	6424.406	187.921	54.434	65.021	4.537	92
%RSD		2.553	TM 1.362	T 0.727	1.099	1.236	1.141	1.255	0.811	2.843	2.956	2.687	1

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	11:25:01	881000.270	548013.850	159640.910	34330.321	805.019	9222.551	986845.860	47848.586	49252.667	38138.086	444930.670	194498
2	11:25:22	886448.040	540649.080	162079.280	35768.340	730.016	9667.803	982224.510	47973.946	49979.827	39076.756	453825.740	195914
3	11:25:44	889931.510	545586.120	165835.960	35683.158	775.018	9777.867	998616.870	48776.269	50245.625	39408.536	461209.330	196795
x		885793.270	544749.680	162518.720	35260.606	770.018	9556.074	989229.080	48199.600	49826.040	38874.459	453321.910	195736
σ		4501.477	3752.954	3120.816	806.776	37.751	294.035	8452.051	503.328	514.032	658.942	8151.017	1158
%RSD		0.508	0.689	1.920	2.288	4.903	3.077	0.854	1.044	1.032	1.695	1.798	0

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:25:01	33032.702	165240.090	1107834.600	129511.250	0.000	413224.920	199491.810
2	11:25:22	33759.156	169810.690	1125276.900	132061.140	0.000	420334.420	207625.240
3	11:25:44	35688.168	173013.370	1142806.500	134369.480	0.000	432540.850	207068.380
x		34160.009	169354.720	1125306.000	131980.620	0.000	422033.400	204728.480
σ		1372.366	3906.650	17485.946	2430.117	0.000	9769.399	4543.627
%RSD		4.017	2.307	1.554	1.841	0.000	2.315	2.219

200-35736-A-11-I MS 10/19/2016 11:30:21 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:30:43	126447.860	1827.600	44494.313	T 8622479.500	T 2569014.500	T 92744056.000	T 15720673.000	T 3758284.300	211928.900	19886.858	359250.540	26726
2	11:31:05	122901.480	1847.602	44880.346	T 8595635.500	T 2562323.500	T 92314280.000	T 15514578.000	T 3778637.300	213691.190	20012.007	367630.330	26799
3	11:31:26	123395.110	1940.113	45446.878	T 8658801.400	T 2554792.000	T 91351467.000	T 15875407.000	T 3818235.700	213792.480	20167.194	364814.460	26913
x		124248.150	1871.772	44940.512	T 8625638.800	T 2562043.300	T 92136601.000	T 15703553.000	T 3785052.400	213137.520	20022.020	363898.450	26813
σ		1920.928	60.024	479.124	T 31701.233	T 7115.417	T 713094.130	T 181022.620	T 30486.217	1047.921	140.436	4264.332	94
%RSD		1.546	3.207	1.066	T 0.368	T 0.278	T 0.774	T 1.153	T 0.805	0.492	0.701	1.172	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:30:43	34310.280	TM 28539105.000	T 345189590.000	162685.140	71518.117	1648868.600	528348.910	24469.950	1968.116	2236.650	168.501	650
2	11:31:05	34951.610	TM 28846105.000	T 350061010.000	165517.820	72231.182	1668958.300	528286.990	24858.525	1899.108	2153.639	170.501	680
3	11:31:26	34320.300	TM 28984670.000	T 351289020.000	165048.200	71633.611	1696430.100	536591.050	25194.028	2015.122	2146.138	163.501	688
x		34527.397	TM 28789960.000	T 348846540.000	164417.050	71794.303	1671419.000	531075.650	24840.834	1960.782	2178.809	167.501	672
σ		367.414	TM 228027.200	T 3225985.700	1518.153	382.730	23876.067	4776.578	362.363	58.354	50.232	3.606	19

%RSD		1.064	TM 0.792	T 0.925	0.923	0.533	1.428	0.899	1.459	2.976	2.305	2.153	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	11:30:43	984667.520	584502.680	154255.560	35121.968	665.013	9102.485	967033.680	53741.505	14146.001	10597.368	459837.190	19322
2	11:31:05	998033.430	587785.140	157662.210	35382.518	645.012	8877.364	964069.120	54564.171	13720.645	10845.528	464678.730	19753
3	11:31:26	1016118.600	595242.940	160423.370	35828.469	675.014	8947.401	984757.620	56400.269	13985.866	10874.046	471465.390	20091
x		999606.520	589176.920	157447.050	35444.318	661.680	8975.750	971953.470	54901.982	13950.837	10772.314	465327.100	19722
σ		15784.448	5503.736	3089.533	357.282	15.276	115.207	11187.352	1361.192	214.830	152.177	5841.150	385
%RSD		1.579	0.934	1.962	1.008	2.309	1.284	1.151	2.479	1.540	1.413	1.255	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:30:43	35026.768	140898.060	1066462.500	130720.630	0.000	432874.340	205499.130
2	11:31:05	36124.106	144377.650	1082674.300	128009.710	0.000	434326.390	209868.070
3	11:31:26	36805.595	146127.800	1094025.700	134500.530	0.000	439971.600	213184.770
x		35985.489	143801.170	1081054.200	131076.960	0.000	435724.110	209517.320
σ		897.478	2662.104	13852.866	3260.046	0.000	3749.397	3854.803
%RSD		2.494	1.851	1.281	2.487	0.000	0.860	1.840

200-35736-A-11-J MSD 10/19/2016 11:36:04 AM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**5**
1	11:36:26	128201.180	1765.093	44143.382	T 8806749.000	T 2657420.700	T 88622108.000	T 15415072.000	T 2696569.100	209569.350	15492.197	353795.700	266214.
2	11:36:48	125127.950	1852.603	44825.198	T 8754712.000	T 2685510.200	T 89000083.000	T 15791778.000	T 2747832.400	216405.880	16388.053	364686.710	271325.
3	11:37:09	122286.980	1850.103	44704.875	T 8692983.100	T 2669800.800	T 89301452.000	T 15671673.000	T 2783484.800	217479.730	16498.162	363225.310	267748.
x		125205.370	1822.600	44557.818	T 8751481.400	T 2670910.600	T 88974548.000	T 15626174.000	T 2742628.800	214484.990	16126.137	360569.240	268429.
σ		2957.857	49.818	363.920	T 56951.692	T 14077.625	T 340391.010	T 192430.330	T 43690.908	4290.793	551.762	5911.392	2622.
%RSD		2.362	2.733	0.817	T 0.651	T 0.527	T 0.383	T 1.231	T 1.593	2.001	3.422	1.639	0.
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**8**
1	11:36:26	34826.348	T 25702145.000	T 339906720.000	163346.560	69911.321	1560804.300	545152.260	24306.712	2094.132	2256.653	153.501	5655.
2	11:36:48	34390.445	T 26364248.000	T 342901370.000	164533.150	71864.602	1599794.000	551836.940	24510.009	2129.136	2199.145	166.001	5610.
3	11:37:09	34856.411	T 26342968.000	T 347396830.000	163684.850	71487.988	1598805.600	559087.680	24807.449	1993.119	2180.643	160.001	5525.
x		34691.068	T 26136454.000	T 343401640.000	163854.850	71087.970	1586468.000	552025.630	24541.390	2072.129	2212.147	159.834	5597.
σ		260.781	T 376273.000	T 3770027.700	611.287	1036.261	22230.870	6969.626	251.839	70.627	39.638	6.252	66.
%RSD		0.752	T 1.440	T 1.098	0.373	1.458	1.401	1.263	1.026	3.408	1.792	3.911	1.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	11:36:26	793924.580	565400.370	158737.340	36079.009	680.014	10618.381	1005386.200	53746.521	13960.845	10670.915	437441.290	198808.
2	11:36:48	809959.130	570323.930	163730.300	36244.367	755.017	10218.131	983761.290	54373.550	13650.588	10962.104	442856.510	200539.
3	11:37:09	808275.270	559692.480	161367.420	35823.458	815.020	10778.484	996505.980	54925.355	14226.069	10942.091	443359.630	200478.
x		804053.000	565138.930	161278.350	36048.945	750.017	10538.332	995217.820	54348.475	13945.834	10858.370	441219.140	199942.
σ		8811.776	5320.545	2497.668	212.059	67.642	288.626	10869.853	589.817	288.034	162.649	3281.376	982.
%RSD		1.096	0.941	1.549	0.588	9.019	2.739	1.092	1.085	2.065	1.498	0.744	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:36:26	36284.454	141750.240	1111379.300	129229.070	0.000	408270.030	202254.810
2	11:36:48	38674.820	149058.590	1125341.100	132686.070	0.000	416161.650	206319.170
3	11:37:09	37707.608	148740.770	1124737.300	136617.650	0.000	418376.060	212303.630
x		37555.627	146516.530	1120485.900	132844.260	0.000	414269.250	206959.200
σ		1202.409	4130.786	7892.288	3696.827	0.000	5312.145	5054.890
%RSD		3.202	2.819	0.704	2.783	0.000	1.282	2.442

200-35736-A-12-A 10/19/2016 11:41:47 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	11:42:09	115287.360	510.008	3480.363	1003996.000	T 2451516.800	T 68660647.000	T 6576836.500	T 3712663.000	201693.060	7096.511	197670.300	143227.7
2	11:42:30	115106.110	417.505	3605.390	T 1087822.900	T 2467161.600	T 68580108.000	T 6595759.000	T 3685041.100	199598.070	6826.398	197857.500	146329.5
3	11:42:52	117472.540	385.004	3115.291	T 1086905.700	T 2470814.200	T 68872159.000	T 6574749.200	T 3739592.700	200114.200	6981.462	198434.290	143948.9
x		115955.340	437.506	3400.348	T 1059574.900	T 2463164.200	T 68704305.000	T 6582448.200	T 3712432.300	200468.440	6968.123	197987.360	144502.1
σ		1317.056	64.857	254.659	T 48134.877	T 10250.956	T 150840.720	T 11574.640	T 27276.564	1091.498	135.549	398.211	1623.1
%RSD		1.136	14.824	7.489	T 4.543	T 0.416	T 0.220	T 0.176	T 0.735	0.544	1.945	0.201	1.1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	11:42:09	19251.112	TM 28756830.000	T 319704770.000	123304.440	53831.796	1318974.200	412128.260	15348.064	724.016	672.014	155.501	5410.8
2	11:42:30	19100.939	TM 29231514.000	T 323999100.000	121032.880	51995.981	1330157.700	415285.190	15441.150	699.015	709.015	155.001	5460.8
3	11:42:52	18935.751	TM 28915329.000	T 321769940.000	122412.900	52728.276	1311070.700	418053.110	15183.913	720.016	659.513	145.501	5160.7
x		19095.934	TM 28967891.000	T 321824610.000	122250.070	52852.018	1320067.600	415155.520	15324.376	714.349	680.181	152.001	5344.1
σ		157.740	TM 241667.840	T 2147686.100	1144.500	924.142	9590.375	2964.552	130.244	13.429	25.742	5.635	160.7
%RSD		0.826	TM 0.834	T 0.667	0.936	1.749	0.727	0.714	0.850	1.880	3.785	3.707	3.0

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	11:42:09	775172.060	512685.960	6296.189	4890.717	220.001	2670.214	953009.470	21578.961	1520.069	1293.550	387589.980	187154.9
2	11:42:30	781811.660	507160.720	6056.100	4550.621	325.003	2470.183	960639.330	22465.130	1750.092	1285.050	390670.670	187023.4
3	11:42:52	781167.490	511211.700	6271.180	4750.677	270.002	2590.201	970380.010	23356.354	1565.074	1278.049	392794.720	185132.5
x		779383.740	510352.790	6207.823	4730.672	271.669	2576.866	961342.940	22466.815	1611.745	1285.550	390351.790	186436.9
σ		3661.609	2861.010	131.989	170.928	52.521	100.680	8706.620	888.698	121.907	7.763	2616.983	1131.5
%RSD		0.470	0.561	2.126	3.613	19.333	3.907	0.906	3.956	7.564	0.604	0.670	0.6

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:42:09	1190.043	4710.666	844733.130	127384.950	0.000	143026.070	60334.008
2	11:42:30	1080.035	4750.677	843660.810	126468.010	0.000	143631.240	59817.150
3	11:42:52	1050.033	5100.780	857863.980	128352.330	0.000	147883.190	59420.736
x		1106.704	4854.041	848752.640	127401.770	0.000	144846.830	59857.298
σ		73.716	214.617	7908.847	942.274	0.000	2646.910	457.958
%RSD		6.661	4.421	0.932	0.740	0.000	1.827	0.765

MB 200-110239/1-A 10/19/2016 11:47:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:47:52	118882.480	0.000	1055.033	502543.980	980.029	29796.611	65639.000	2740.225	181644.480	30.000	9712.829	1775.094
2	11:48:13	118429.280	0.000	1095.036	503244.660	1460.064	37697.585	67074.699	3090.287	184091.100	15.000	10283.171	1840.102
3	11:48:35	115196.740	5.000	1015.031	498464.170	1760.093	41346.222	65016.568	3100.288	184839.310	25.000	10363.221	1850.103
x		117502.830	1.667	1055.033	501417.600	1400.062	36280.139	65910.089	2976.933	183524.960	23.333	10119.741	1821.766
σ		2009.951	2.887	40.003	2581.629	393.478	5903.833	1055.506	205.056	1670.967	7.638	354.661	40.727
%RSD		1.711	173.205	3.792	0.515	28.104	16.273	1.601	6.888	0.910	32.733	3.505	2.236

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:47:52	3415.350	8807.326	355414.610	90.000	135.001	880.023	1020.031	1157.040	394.005	140.501	136.001	665.013
2	11:48:13	3605.390	11754.143	390102.590	105.000	85.000	1110.037	1000.030	1316.052	447.006	144.501	145.001	705.015
3	11:48:35	3500.367	13090.139	400848.100	95.000	160.001	1055.033	955.027	1223.045	412.005	130.501	144.501	675.014
x		3507.036	11217.203	382121.760	96.667	126.667	1015.031	991.696	1232.046	417.672	138.501	141.834	681.681

σ		95.195	2191.312	23744.909	7.638	38.188	120.111	33.294	79.887	26.951	7.211	5.058	20.818
%RSD		2.714	19.535	6.214	7.901	30.149	11.833	3.357	6.484	6.453	5.207	3.566	3.054
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:47:52	840.021	229408.050	160.001	30.000	0.000	0.000	989771.950	760.017	85.000	89.000	160.001	158752.490
2	11:48:13	980.029	230482.720	270.002	80.000	5.000	5.000	993271.200	940.027	135.001	113.500	175.001	162760.870
3	11:48:35	1025.032	233757.870	200.001	70.000	0.000	10.000	995827.150	1025.032	160.001	125.500	135.001	157389.650
x		948.361	231216.210	210.001	60.000	1.667	5.000	992956.770	908.358	126.667	109.334	156.667	159634.340
σ		96.485	2265.774	55.678	26.458	2.887	5.000	3039.820	135.315	38.188	18.603	20.207	2792.086
%RSD		10.174	0.980	26.513	44.096	173.205	100.000	0.306	14.897	30.149	17.015	12.898	1.749

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:47:52	115.000	400.005	685.014	122276.910	0.000	5961.066	70.000
2	11:48:13	135.001	365.004	755.017	123979.420	0.000	5786.004	70.000
3	11:48:35	100.000	405.005	870.023	123395.110	0.000	5170.802	45.000
x		116.667	390.005	770.018	123217.140	0.000	5639.291	61.667
σ		17.560	21.795	93.412	865.093	0.000	415.058	14.434
%RSD		15.051	5.588	12.131	0.702	0.000	7.360	23.406

LCS 200-110239/2-A 10/19/2016 11:53:13 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:53:35	114179.780	1327.553	46188.914	T 7568104.500	263049.600	600372.080	T 7146497.700	229732.470	164952.260	45.000	112901.110	82900.664
2	11:53:57	108904.650	1297.551	46073.595	T 7423611.800	258895.310	578234.620	T 6837577.600	226062.800	163588.920	5.000	109991.750	83699.642
3	11:54:18	106348.220	1160.040	46213.983	T 7316021.900	251472.950	581438.240	T 6826285.700	221644.050	160731.320	10.000	109498.520	81704.780
x		109810.880	1261.715	46158.831	T 7435912.700	257805.950	586681.650	T 6936787.000	225813.110	163090.830	20.000	110797.130	82768.362
σ		3993.653	89.321	74.873	T 126490.700	5864.699	11963.980	T 181702.550	4049.990	2154.102	21.795	1838.716	1003.990
%RSD		3.637	7.079	0.162	T 1.701	2.275	2.039	T 2.619	1.794	1.321	108.973	1.660	1.213

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:53:35	13530.490	65257.507	T 6064144.100	24668.242	11118.708	33829.298	97594.909	9094.481	1561.073	1739.591	127.000	1835.101
2	11:53:57	12274.518	63129.333	T 5958026.100	24553.072	10463.283	33303.240	97584.850	8929.391	1578.075	1737.091	115.000	2005.121
3	11:54:18	12374.592	64830.846	T 5969957.100	24943.652	11013.638	33052.742	98993.119	8909.381	1484.066	1715.588	106.500	1880.106
x		12726.533	64405.895	T 5997375.800	24721.655	10865.210	33395.093	98057.626	8977.751	1541.071	1730.757	116.167	1906.776
σ		698.042	1125.930	T 58130.016	200.693	352.020	396.343	810.176	101.585	50.095	13.195	10.300	88.092
%RSD		5.485	1.748	T 0.969	0.812	3.240	1.187	0.826	1.132	3.251	0.762	8.866	4.620

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:53:35	208946.600	204152.740	139481.220	28123.708	445.006	6536.281	905370.620	860.022	44333.886	34340.341	44900.400	148871.930
2	11:53:57	208050.500	204426.060	143812.800	28053.590	450.006	6591.303	897195.860	855.022	44940.508	34774.741	45888.085	148478.440
3	11:54:18	208141.620	200670.830	142657.940	27657.930	440.006	6491.264	893979.770	805.019	46198.942	34457.082	46033.485	148599.510
x		208379.570	203083.210	141983.980	27945.076	445.006	6539.616	898848.750	840.021	45157.779	34524.055	45607.323	148649.960
σ		493.170	2093.644	2243.057	251.135	5.000	50.103	5872.558	30.415	951.322	224.810	616.515	201.536
%RSD		0.237	1.031	1.580	0.899	1.124	0.766	0.653	3.621	2.107	0.651	1.352	0.136

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:53:35	59320.380	146445.570	54388.599	113575.670	0.000	146541.410	115433.370
2	11:53:57	59646.541	148473.400	55231.364	117472.540	0.000	153957.820	116979.090
3	11:54:18	60198.520	148720.590	55095.917	113495.120	0.000	162826.510	117235.880
x		59721.813	147879.850	54905.293	114847.780	0.000	154441.910	116549.450
σ		443.883	1248.255	452.566	2273.468	0.000	8153.333	975.044
%RSD		0.743	0.844	0.824	1.980	0.000	5.279	0.837

200-35680-A-13-A 10/19/2016 11:58:57 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:59:19	115599.510	12.500	1270.048	475765.010	710.015	12419.626	62386.544	2190.144	170810.830	5.000	12219.478	1515.069
2	11:59:40	118086.860	7.500	1225.045	478614.890	870.023	15216.943	62657.558	2270.155	170214.780	10.000	11954.286	1680.085
3	12:00:02	116243.970	7.500	1060.034	478326.790	1240.046	22840.640	64303.811	2400.173	166578.310	50.000	12164.438	1805.098
x		116643.450	9.167	1185.042	477568.900	940.028	16825.736	63115.971	2286.824	169201.300	21.667	12112.734	1666.750
σ		1290.895	2.887	110.574	1568.838	271.862	5393.565	1037.586	106.002	2291.046	24.664	139.952	145.474
%RSD		1.107	31.492	9.331	0.329	28.921	32.055	1.644	4.635	1.354	113.836	1.155	8.728

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:59:19	4035.488	4375.574	260479.710	80.000	120.000	650.013	1495.067	1205.044	384.004	135.501	113.000	525.008
2	11:59:40	4220.534	5070.771	271102.100	75.000	115.000	665.013	1415.060	1270.048	409.005	106.000	121.000	580.010
3	12:00:02	4300.555	7041.487	301563.760	110.000	125.000	840.021	1575.074	1209.044	422.005	122.000	118.500	620.012
x		4185.526	5495.944	277715.190	88.334	120.000	718.349	1495.067	1228.045	405.005	121.167	117.500	575.010
σ		135.957	1382.878	21325.444	18.930	5.000	105.638	80.007	36.431	19.314	14.768	4.093	47.699

%RSD		3.248	25.162	7.679	21.430	4.167	14.706	5.351	2.967	4.769	12.188	3.483	8.295
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:59:19	675.014	209113.680	315.003	25.000	0.000	5.000	933109.500	580.010	160.001	113.500	115.000	149769.920
2	11:59:40	690.014	209255.440	435.006	25.000	0.000	10.000	924583.490	590.010	215.001	152.001	120.000	147832.740
3	12:00:02	840.021	206552.030	450.006	45.000	0.000	5.000	909633.600	780.018	255.002	172.001	195.001	146612.030
x		735.016	208307.050	400.005	31.667	0.000	6.667	922442.200	650.013	210.001	145.834	143.334	148071.560
σ		91.246	1521.543	73.995	11.547	0.000	2.887	11883.535	112.699	47.698	29.734	44.815	1592.435
%RSD		12.414	0.730	18.499	36.464	0.000	43.301	1.288	17.338	22.713	20.389	31.266	1.075

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:59:19	265.002	675.014	525.008	116153.340	0.000	31189.156	90.000
2	11:59:40	285.002	585.010	650.013	115488.750	0.000	28714.715	140.001
3	12:00:02	325.003	645.012	840.021	118771.700	0.000	26506.060	135.001
x		291.669	635.012	671.681	116804.600	0.000	28803.310	121.667
σ		30.551	45.827	158.620	1735.667	0.000	2342.804	27.538
%RSD		10.475	7.217	23.615	1.486	0.000	8.134	22.634

200-35700-A-19-A 10/19/2016 12:04:41 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:05:02	121279.660	12.500	915.025	496476.130	1680.085	42734.718	67817.697	3250.317	174205.700	40.000	16438.102	2445.179
2	12:05:24	122992.140	2.500	935.026	501462.120	1160.040	32962.564	64544.739	2780.232	177965.100	30.000	16538.201	2120.135
3	12:05:46	119144.340	7.500	990.029	495580.050	1100.036	26706.380	62256.058	2750.227	175731.590	30.000	16207.877	2145.138
x		121138.720	7.500	946.694	497839.430	1313.387	34134.554	64872.831	2926.925	175967.460	33.333	16394.727	2236.817
σ		1927.768	5.000	38.839	3169.168	318.983	8078.185	2795.298	280.467	1890.770	5.774	169.380	180.879
%RSD		1.591	66.667	4.103	0.637	24.287	23.666	4.309	9.582	1.074	17.321	1.033	8.086
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:05:02	5685.970	10363.221	365862.050	80.000	95.000	990.029	1140.039	1635.080	540.009	130.001	121.500	680.014
2	12:05:24	5690.971	8222.028	331922.590	125.000	100.000	960.028	1025.032	1581.075	482.007	117.000	115.000	735.016
3	12:05:46	5590.938	6246.170	305978.130	90.000	110.000	875.023	1060.034	1568.074	571.010	119.000	129.500	730.016
x		5655.960	8277.140	334587.590	98.334	101.667	941.693	1075.035	1594.743	531.009	122.000	122.000	715.015
σ		56.366	2059.079	30030.780	23.629	7.638	59.655	58.953	35.533	45.179	7.000	7.263	30.415
%RSD		0.997	24.877	8.975	24.030	7.512	6.335	5.484	2.228	8.508	5.738	5.953	4.254
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:05:02	685.014	221451.510	300.003	80.000	5.000	0.000	936998.860	685.014	145.001	97.500	220.001	151253.230
2	12:05:24	725.016	219080.490	270.002	55.000	0.000	20.000	942337.590	805.019	185.001	96.000	145.001	155915.900
3	12:05:46	565.010	218624.560	240.002	15.000	0.000	5.000	957252.570	660.013	135.001	108.000	125.000	154411.990
x		658.346	219718.850	270.002	50.000	1.667	8.333	945529.670	716.682	155.001	100.500	163.334	153860.370
σ		83.270	1517.746	30.000	32.787	2.887	10.408	10497.390	77.517	26.458	6.538	50.084	2379.778
%RSD		12.648	0.691	11.111	65.574	173.205	124.900	1.110	10.816	17.069	6.506	30.663	1.547

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:05:02	165.001	475.007	880.023	118822.060	0.000	12119.405	100.000
2	12:05:24	175.001	390.005	760.017	116586.350	0.000	11448.931	50.000
3	12:05:46	170.001	340.003	805.019	119678.150	0.000	10938.588	65.000
x		170.001	401.672	815.020	118362.180	0.000	11502.308	71.667
σ		5.000	68.254	60.625	1596.376	0.000	592.215	25.658
%RSD		2.941	16.992	7.438	1.349	0.000	5.149	35.802

CCV 10/19/2016 12:10:25 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:10:47	104657.570	78851.085	28509.363	┬13226496.000	┬3887801.400	┬36206302.000	┬12594996.000	1286011.700	150183.620	24312.720	┬2566030.900	7225
2	12:11:08	105684.010	75982.808	27743.071	┬13016024.000	┬3812615.800	┬36059259.000	┬12552942.000	1246373.700	145512.460	24973.697	┬2589165.300	7274
3	12:11:31	106287.840	75538.294	27873.288	┬12886177.000	┬3761349.900	┬35762251.000	┬12597733.000	┬1339492.600	145744.470	24082.386	┬2542444.000	7186
x		105543.140	76790.729	28041.907	┬13042899.000	┬3820589.100	┬36009271.000	┬12581890.000	┬1290626.000	147146.850	24456.268	┬2565880.100	7229
σ		824.213	1798.110	410.030	┬171743.910	┬63601.685	┬226206.960	┬25107.409	┬46730.622	2632.478	462.669	┬23360.996	44
%RSD		0.781	2.342	1.462	┬1.317	┬1.665	┬0.628	┬0.200	┬3.621	1.789	1.892	┬0.910	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:10:47	91364.741	┬3797156.100	┬78348305.000	1113114.600	604533.530	746005.240	585941.910	78002.104	6176.144	8244.038	114.500	48
2	12:11:08	90545.287	┬3791732.200	┬77440406.000	1105454.100	594030.830	743454.990	580987.930	77382.224	6127.126	8210.022	120.500	51
3	12:11:31	87835.846	┬3736939.700	┬77600654.000	1102705.700	598206.260	737880.270	584839.180	76564.460	6113.121	8101.969	115.500	51
x		89915.291	┬3775276.000	┬77796455.000	1107091.400	598923.540	742446.840	583923.010	77316.263	6138.797	8185.343	116.834	50
σ		1846.875	┬33310.800	┬484586.080	5394.164	5287.962	4155.245	2600.962	721.088	33.093	74.180	3.215	1
%RSD		2.054	┬0.882	┬0.623	0.487	0.883	0.560	0.445	0.933	0.539	0.906	2.751	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	12:10:47	771968.390	186841.450	1586657.900	255594.950	7856.851	123299.400	826203.040	782775.350	531553.420	402842.840	527611.080	1348
2	12:11:08	764615.820	184637.090	1621955.100	253046.500	8212.023	125263.970	829532.460	782942.950	530289.090	406090.230	524329.930	1361
3	12:11:31	763381.110	187357.200	1640968.000	252777.470	7801.826	121491.200	821908.320	783749.570	532859.140	403742.210	524933.490	1375
x		766655.110	186278.580	1616527.000	253806.310	7956.900	123351.520	825881.270	783155.960	531567.220	404225.090	525624.830	1361
σ		4642.666	1444.770	27558.932	1554.841	222.649	1886.927	3822.241	520.868	1285.081	1676.686	1746.410	13
%RSD		0.606	0.776	1.705	0.613	2.798	1.530	0.463	0.067	0.242	0.415	0.332	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:10:47	32336.339	1394729.400	┬7536256.100	107888.070	0.000	178045.960	103112.980
2	12:11:08	33699.034	1423174.700	┬7559394.800	107706.900	0.000	193420.870	105351.920
3	12:11:31	33263.160	1405967.200	┬7640351.600	109166.350	0.000	205433.330	105044.990
x		33099.511	1407957.100	┬7578667.500	108253.770	0.000	192300.050	104503.300
σ		695.931	14326.711	┬54658.446	795.490	0.000	13728.045	1213.789
%RSD		2.103	1.018	┬0.721	0.735	0.000	7.139	1.161

CCB 10/19/2016 12:16:12 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:16:34	113535.400	12.500	745.017	237774.080	400.005	4170.522	54238.110	610.011	153937.640	40.000	13245.261	1285.050
2	12:16:56	112156.100	10.000	765.018	236364.240	630.012	5755.994	51840.498	560.009	156481.160	15.000	12904.994	1320.052
3	12:17:17	111129.260	12.500	645.012	234001.250	630.012	6436.243	51920.747	590.010	153947.730	10.000	13125.166	1320.052
x		112273.590	11.667	718.349	236046.520	553.343	5454.253	52666.452	586.677	154788.840	21.667	13091.807	1308.385
σ		1207.362	1.443	64.294	1906.379	132.795	1162.609	1361.687	25.167	1465.599	16.073	172.569	20.209
%RSD		1.075	12.372	8.950	0.808	23.999	21.316	2.585	4.290	0.947	74.182	1.318	1.545

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:16:34	4455.596	790.019	212425.160	110.000	45.000	245.002	555.009	1033.032	355.004	95.000	106.000	615.011
2	12:16:56	4500.608	940.027	215159.910	75.000	70.000	235.002	575.010	1090.036	329.003	104.500	106.500	670.013
3	12:17:17	4400.581	1270.048	219176.740	160.001	55.000	310.003	625.012	1089.036	382.004	108.000	118.500	565.010
x		4452.261	1000.031	215587.270	115.000	56.667	263.335	585.010	1070.701	355.337	102.500	110.334	616.678

σ		50.097	245.576	3396.017	42.720	12.583	40.723	36.057	32.626	26.502	6.727	7.077	52.522
%RSD		1.125	24.557	1.575	37.148	22.205	15.464	6.163	3.047	7.458	6.563	6.414	8.517
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:16:34	50.000	194457.840	3015.273	40.000	0.000	10.000	850984.410	2740.225	625.012	529.008	65.000	139360.210
2	12:16:56	110.000	194437.600	3015.273	45.000	0.000	20.000	851173.710	3060.281	825.020	521.508	50.000	141467.860
3	12:17:17	115.000	195135.690	2640.209	45.000	0.000	15.000	861841.510	2980.266	860.022	545.509	45.000	139904.750
x		91.667	194677.040	2890.251	43.333	0.000	15.000	854666.540	2926.924	770.018	532.008	53.333	140244.270
σ		36.171	397.329	216.543	2.887	0.000	5.000	6214.423	166.562	126.793	12.278	10.408	1094.075
%RSD		39.459	0.204	7.492	6.662	0.000	33.333	0.727	5.691	16.466	2.308	19.516	0.780

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:16:34	170.001	1410.060	640.012	112246.710	0.000	1025.032	20.000
2	12:16:56	190.001	1380.057	830.021	112659.480	0.000	1000.030	35.000
3	12:17:17	150.001	1260.048	1010.031	111511.800	0.000	1135.039	65.000
x		170.001	1350.055	826.688	112139.330	0.000	1053.367	40.000
σ		20.000	79.379	185.032	581.326	0.000	71.826	22.913
%RSD		11.765	5.880	22.382	0.518	0.000	6.819	57.282

CCVL 10/19/2016 12:21:55 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:22:17	114109.300	170.001	5360.862	867904.290	26120.452	63917.328	650979.710	23156.075	160943.350	0.000	25965.210	9042.452
2	12:22:39	113434.710	145.001	5450.891	888160.700	26811.548	67225.304	670511.620	24908.599	163528.330	30.000	25694.791	9057.460
3	12:23:01	111199.730	165.001	5570.931	871936.800	25569.599	69394.166	664768.280	23596.692	161205.870	10.000	25985.241	9522.720
x		112914.580	160.001	5460.895	876000.600	26167.200	66845.600	662086.540	23887.122	161892.520	13.333	25881.748	9207.544
σ		1522.925	13.229	105.391	10722.239	622.293	2758.092	10038.309	911.645	1422.724	15.275	162.218	273.053
%RSD		1.349	8.268	1.930	1.224	2.378	4.126	1.516	3.816	0.879	114.564	0.627	2.966

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:22:17	6271.180	7091.508	719956.350	2590.201	1280.049	3840.442	11518.979	2264.154	551.009	283.002	110.000	685.014
2	12:22:39	6391.225	7381.634	730537.170	2820.239	1280.049	3630.395	11589.028	2174.142	592.011	305.003	118.000	690.014
3	12:23:01	6676.337	8126.981	738945.960	2560.197	1310.052	3545.377	11263.805	2159.140	512.008	289.003	105.500	705.015
x		6446.247	7533.374	729813.160	2656.879	1290.050	3672.072	11457.271	2199.145	551.676	292.336	111.167	693.348
σ		208.107	534.153	9515.486	142.267	17.322	151.883	171.168	56.797	40.005	11.373	6.331	10.409
%RSD		3.228	7.090	1.304	5.355	1.343	4.136	1.494	2.583	7.252	3.890	5.695	1.501

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:22:17	19140.985	197128.940	13735.658	2895.251	70.000	800.019	862115.130	1375.057	4445.593	3413.850	4655.650	143999.400
2	12:22:39	20362.431	199051.590	14246.086	2725.223	35.000	725.016	868304.340	1525.070	4790.688	3561.881	4530.616	142546.990
3	12:23:01	20342.407	198029.520	14226.069	2795.234	40.000	685.014	876065.060	1440.062	5015.755	3649.400	4415.585	142254.510
x		19948.608	198070.020	14069.271	2805.236	48.333	736.683	868828.180	1446.730	4750.679	3541.710	4533.950	142933.630
σ		699.493	961.964	289.091	85.454	18.930	58.384	6989.704	75.228	287.179	119.063	120.067	934.493
%RSD		3.506	0.486	2.055	3.046	39.165	7.925	0.804	5.200	6.045	3.362	2.648	0.654

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:22:17	2710.220	14556.354	6746.365	113183.010	0.000	9732.841	11068.674
2	12:22:39	2670.214	15342.058	7071.500	114683.210	0.000	10263.159	11518.979
3	12:23:01	2895.251	15522.225	6951.449	114340.870	0.000	11158.734	11338.856
x		2758.562	15140.212	6923.105	114069.030	0.000	10384.911	11308.836
σ		120.055	513.598	164.410	786.178	0.000	720.701	226.648
%RSD		4.352	3.392	2.375	0.689	0.000	6.940	2.004

200-35736-A-14-A 10/19/2016 12:27:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:28:01	116445.370	5.000	720.016	476516.020	310.003	4755.678	54258.175	1820.099	164881.560	30.000	17914.623	1945.113
2	12:28:23	116546.070	2.500	590.010	477894.660	300.003	4985.746	54779.877	1550.072	165618.820	15.000	18034.752	1930.112
3	12:28:44	118056.650	2.500	725.016	477946.100	330.003	5405.877	55000.602	1710.088	163800.990	15.000	18745.536	2260.153
x		117016.030	3.333	678.347	477452.260	313.336	5049.100	54679.552	1693.420	164767.120	20.000	18231.637	2045.126
σ		902.606	1.443	76.543	811.218	15.276	329.696	381.246	135.783	914.304	8.660	449.084	186.370
%RSD		0.771	43.301	11.284	0.170	4.875	6.530	0.697	8.018	0.555	43.301	2.463	9.113

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:28:01	6581.299	1770.094	219343.920	35.000	150.001	405.005	1350.055	1606.077	518.008	103.500	114.500	630.012
2	12:28:23	6516.274	1680.085	219799.860	20.000	100.000	380.004	1285.050	1578.075	517.008	100.000	130.001	685.014
3	12:28:44	6511.272	1795.097	224086.380	50.000	95.000	380.004	1310.052	1623.079	519.008	112.000	100.500	660.013
x		6536.282	1748.425	221076.720	35.000	115.000	388.338	1315.052	1602.410	518.008	105.167	115.000	658.346
σ		39.067	60.490	2616.393	15.000	30.414	14.434	32.790	22.725	1.000	6.171	14.756	27.539

%RSD		0.598	3.460	1.183	42.857	26.447	3.717	2.493	1.418	0.193	5.868	12.832	4.183
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:28:01	250.002	199122.430	425.005	30.000	0.000	5.000	868672.810	1120.038	165.001	139.001	15.000	142748.710
2	12:28:23	310.003	199203.390	560.009	65.000	0.000	0.000	869630.890	1300.051	165.001	157.501	35.000	145623.420
3	12:28:44	270.002	202614.130	580.010	20.000	0.000	0.000	893442.050	1270.048	255.002	175.001	10.000	147116.440
x		276.669	200313.320	521.675	38.333	0.000	1.667	877248.580	1230.046	195.001	157.167	20.000	145162.860
σ		30.551	1992.977	84.313	23.629	0.000	2.887	14032.135	96.443	51.962	18.002	13.229	2219.992
%RSD		11.042	0.995	16.162	61.641	0.000	173.205	1.600	7.841	26.647	11.454	66.144	1.529

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:28:01	155.001	450.006	395.005	113746.830	0.000	19150.997	40.000
2	12:28:23	150.001	505.008	445.006	111672.880	0.000	17634.324	20.000
3	12:28:44	75.000	445.006	500.007	113001.790	0.000	16137.809	10.000
x		126.667	466.673	446.673	112807.160	0.000	17641.043	23.333
σ		44.815	33.293	52.521	1050.586	0.000	1506.605	15.275
%RSD		35.380	7.134	11.758	0.931	0.000	8.540	65.465

200-35736-A-14-A SD@5 10/19/2016 12:33:24 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:33:46	117200.640	0.000	480.007	304710.220	260.002	5370.865	53485.684	830.021	164285.720	15.000	19286.152	1840.102
2	12:34:07	118278.210	5.000	485.007	303977.010	350.004	5610.944	52763.387	800.019	166194.510	15.000	19211.066	1840.102
3	12:34:29	118207.710	0.000	540.009	300667.790	250.002	5495.906	51308.857	970.028	163346.560	15.000	19396.280	1870.105
x		117895.520	1.667	501.674	303118.340	286.669	5492.572	52519.309	866.689	164608.930	15.000	19297.833	1850.103
σ		602.817	2.887	33.293	2153.670	55.077	120.074	1108.749	90.743	1451.223	0.000	93.158	17.322
%RSD		0.511	173.205	6.636	0.711	19.213	2.186	2.111	10.470	0.882	0.000	0.483	0.936
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:33:46	6571.295	625.012	222018.990	45.000	45.000	255.002	740.016	1691.086	542.009	132.501	108.000	600.011
2	12:34:07	6931.441	775.018	225170.850	20.000	50.000	290.003	790.019	1668.084	583.010	118.500	129.000	625.012
3	12:34:29	7111.517	560.009	224192.800	15.000	20.000	1855.103	760.017	1715.088	594.011	126.500	125.500	655.013
x		6871.418	653.346	223794.210	26.667	38.333	800.036	763.351	1691.419	573.010	125.834	120.834	626.678
σ		275.067	110.269	1613.293	16.073	16.073	913.883	25.167	23.504	27.405	7.024	11.251	27.539
%RSD		4.003	16.878	0.721	60.273	41.929	114.230	3.297	1.390	4.783	5.582	9.311	4.394
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:33:46	125.000	204739.880	180.001	35.000	0.000	10.000	876897.150	815.020	65.000	84.000	15.000	144655.040
2	12:34:07	90.000	202361.090	195.001	10.000	0.000	0.000	886685.170	790.019	135.001	97.000	20.000	145865.520
3	12:34:29	90.000	203393.540	215.001	20.000	0.000	20.000	885431.060	885.024	160.001	111.000	20.000	146783.530
x		101.667	203498.170	196.668	21.667	0.000	10.000	883004.460	830.021	120.000	97.334	18.333	145768.030
σ		20.207	1192.841	17.560	12.583	0.000	10.000	5326.123	49.247	49.245	13.503	2.887	1067.588
%RSD		19.876	0.586	8.929	58.076	0.000	100.000	0.603	5.933	41.037	13.873	15.746	0.732

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:33:46	70.000	275.002	260.002	111612.470	0.000	1970.116	5.000
2	12:34:07	85.000	360.004	225.002	111944.690	0.000	2230.149	5.000
3	12:34:29	70.000	340.003	275.002	112719.890	0.000	2180.143	15.000
x		75.000	325.003	253.335	112092.350	0.000	2126.803	8.333
σ		8.660	44.442	25.658	568.282	0.000	137.979	5.774
%RSD		11.547	13.674	10.128	0.507	0.000	6.488	69.282

200-35736-A-14-A PDS 10/19/2016 12:39:07 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:39:29	117412.120	1325.053	49197.505	T 7561684.000	256234.660	573846.810	T 6908922.200	229671.640	162427.640	20.000	117170.420	81393.262
2	12:39:51	114008.610	1322.553	48154.465	T 7447673.500	253970.400	578788.350	T 6845618.900	226863.580	160489.000	30.000	114713.420	79906.091
3	12:40:13	113031.990	1320.052	48640.875	T 7393007.200	250488.290	568508.460	T 6832787.100	223701.260	158045.820	20.000	114260.320	81337.993
x		114817.570	1322.553	48664.282	T 7467454.900	253564.450	573714.540	T 6862442.700	226745.490	160320.820	23.333	115381.390	80879.115
σ		2299.389	2.500	521.914	T 86060.673	2894.613	5141.223	T 40760.494	2986.943	2195.749	5.774	1565.825	843.116
%RSD		2.003	0.189	1.072	T 1.152	1.142	0.896	T 0.594	1.317	1.370	24.744	1.357	1.042

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:39:29	14931.686	59777.007	T 5872006.600	23746.905	10893.559	33488.611	96252.134	9267.576	1700.087	1681.585	98.000	1705.087
2	12:39:51	14516.319	60645.135	T 5858474.100	24357.786	10188.113	32261.193	95331.867	9171.523	1592.076	1686.085	110.000	1720.089
3	12:40:13	14326.155	60810.736	T 5894367.300	24312.720	10773.481	33012.663	97112.101	9222.551	1518.069	1692.586	121.500	1850.103
x		14591.386	60410.959	T 5874949.300	24139.137	10618.384	32920.822	96232.034	9220.550	1603.411	1686.752	109.834	1758.426
σ		309.666	555.228	T 18126.627	340.429	377.432	618.841	890.287	48.058	91.537	5.531	11.751	79.748
%RSD		2.122	0.919	T 0.309	1.410	3.555	1.880	0.925	0.521	5.709	0.328	10.699	4.535

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:39:29	199699.270	194336.430	135251.570	27287.320	325.003	6106.118	843876.320	820.020	43366.346	32235.143	42609.397	140267.780
2	12:39:51	203434.030	194538.770	137847.710	26791.516	505.008	6151.135	852257.020	915.025	43095.645	32035.759	43606.973	140126.600
3	12:40:13	203621.300	194295.960	139123.240	26686.348	530.008	6106.118	848996.790	985.029	43451.567	32764.674	42794.872	141064.460
x		202251.530	194390.390	137407.510	26921.728	453.340	6121.124	848376.710	906.691	43304.519	32345.192	43003.747	140486.280
σ		2212.307	130.086	1973.017	320.949	111.844	25.990	4224.621	82.820	185.841	376.713	530.576	505.671
%RSD		1.094	0.067	1.436	1.192	24.671	0.425	0.498	9.134	0.429	1.165	1.234	0.360

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:39:29	27016.880	140862.760	52432.345	109277.070	0.000	148614.650	112780.300
2	12:39:51	27407.517	143500.120	53254.947	107757.230	0.000	155451.590	113912.960
3	12:40:13	28238.903	144438.170	53927.103	108049.110	0.000	167159.080	114995.350
x		27554.433	142933.690	53204.798	108361.140	0.000	157075.110	113896.200
σ		624.118	1853.785	748.640	806.539	0.000	9378.212	1107.624
%RSD		2.265	1.297	1.407	0.744	0.000	5.971	0.972

200-35736-A-14-B MS 10/19/2016 12:44:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:44:48	113112.540	1317.552	48856.504	T 7494146.000	255544.180	571720.580	T 6954500.500	226741.940	156269.180	20.000	112090.670	80192.462
2	12:45:10	113172.940	1267.548	47763.342	T 7505703.000	255249.720	571886.120	T 6885174.900	231172.180	160085.140	40.000	114486.870	82156.995
3	12:45:32	112961.520	1337.554	47477.527	T 7416396.300	258560.160	578032.800	T 6953166.000	230056.900	158651.530	20.000	112161.140	80428.596
x		113082.330	1307.551	48032.458	T 7472081.800	256451.350	573879.830	T 6930947.100	229323.670	158335.290	26.667	112912.890	80926.018
σ		108.902	36.058	727.813	T 48569.975	1832.207	3597.527	T 39645.571	2304.338	1927.536	11.547	1363.562	1072.576
%RSD		0.096	2.758	1.515	T 0.650	0.714	0.627	T 0.572	1.005	1.217	43.301	1.208	1.325

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:44:48	13670.604	59621.451	T 5894827.700	23696.834	10818.510	32842.327	96211.903	8790.317	1530.070	1642.581	110.000	1940.113
2	12:45:10	13530.490	61121.871	T 5952821.300	25028.779	10923.579	33177.991	98213.527	8697.269	1566.074	1692.586	102.000	1795.097
3	12:45:32	12509.693	61297.515	T 5930780.900	24442.911	10508.312	32666.983	98862.346	8735.289	1553.072	1719.589	90.000	1740.091
x		13236.929	60680.279	T 5926143.300	24389.508	10750.133	32895.767	97762.592	8740.958	1549.739	1684.919	100.667	1825.100

σ		633.689	921.168	T 29273.621	667.576	215.912	259.662	1381.564	46.783	18.232	39.072	10.067	103.331
%RSD		4.787	1.518	T 0.494	2.737	2.008	0.789	1.413	0.535	1.176	2.319	10.000	5.662
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:44:48	199557.590	190957.710	137797.300	26460.989	415.005	5750.992	817467.720	700.015	42323.671	32510.176	41722.157	137212.500
2	12:45:10	202300.360	187478.550	137711.590	27783.138	390.005	6111.120	824848.360	775.018	42694.615	33073.283	43225.982	138614.030
3	12:45:32	204051.510	192707.680	141367.010	27011.872	390.005	6161.139	826560.110	845.021	43571.881	33421.476	43441.541	137303.250
x		201969.820	190381.320	138958.630	27085.333	398.338	6007.750	822958.730	773.351	42863.389	33001.645	42796.560	137709.930
σ		2265.122	2661.793	2086.153	664.129	14.434	223.761	4831.757	72.518	640.992	459.854	936.682	784.290
%RSD		1.122	1.398	1.501	2.452	3.624	3.725	0.587	9.377	1.495	1.393	2.189	0.570

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:44:48	57072.551	143515.250	53345.235	108592.620	0.000	195449.330	111370.860
2	12:45:10	58477.409	145915.960	54764.828	107817.610	0.000	201682.940	115015.490
3	12:45:32	58964.119	146410.270	55592.562	108683.210	0.000	206081.260	118011.330
x		58171.360	145280.490	54567.542	108364.480	0.000	201071.180	114799.230
σ		982.220	1548.595	1136.579	475.762	0.000	5342.297	3325.509
%RSD		1.688	1.066	2.083	0.439	0.000	2.657	2.897

200-35736-A-14-C MSD 10/19/2016 12:49:46 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:50:08	114079.090	1262.548	47161.632	T 7305687.900	247839.130	562044.680	T 6783547.400	219121.010	158671.720	20.000	110102.480	79016.867
2	12:50:30	113142.740	1387.558	46103.678	T 7308898.100	249838.650	567598.210	T 6844010.600	226093.210	160206.300	15.000	110082.350	79398.675
3	12:50:52	110998.390	1375.057	47637.984	T 7342468.400	249057.080	565933.000	T 6771673.800	220438.210	155320.380	15.000	108028.980	79569.487
x		112740.070	1341.721	46967.765	T 7319018.100	248911.620	565191.960	T 6799743.900	221884.150	158066.130	16.667	109404.600	79328.343
σ		1579.328	68.850	785.310	T 20371.853	1007.667	2849.958	T 38793.047	3704.178	2498.623	2.887	1191.368	282.944
%RSD		1.401	5.131	1.672	T 0.278	0.405	0.504	T 0.571	1.669	1.581	17.321	1.089	0.357

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:50:08	12859.959	58622.918	T 5758761.900	23541.614	10043.025	31650.023	93426.121	8430.131	1434.062	1670.084	101.000	1590.076
2	12:50:30	13145.182	60810.736	T 5873287.800	24292.691	10908.569	31825.357	95824.681	8584.210	1437.062	1660.083	104.500	1575.074
3	12:50:52	12559.731	58688.147	T 5798658.800	24177.524	10253.153	32196.068	95276.552	8449.141	1486.066	1663.583	114.000	1995.119
x		12854.957	59373.934	T 5810236.200	24003.943	10401.582	31890.482	94842.452	8487.828	1452.397	1664.583	106.500	1720.090
σ		292.758	1244.735	T 58134.056	404.508	451.459	278.787	1256.824	84.009	29.197	5.075	6.727	238.301
%RSD		2.277	2.096	T 1.001	1.685	4.340	0.874	1.325	0.990	2.010	0.305	6.316	13.854

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:50:08	194473.010	188985.420	132726.390	26155.507	390.005	5916.050	832799.490	640.012	41170.788	31476.695	42168.278	138392.200
2	12:50:30	195545.450	189966.480	134465.250	26906.702	390.005	6101.117	828881.230	750.017	41792.332	31870.443	42839.987	137666.220
3	12:50:52	198333.100	189218.040	135090.270	26641.276	350.004	6216.159	833461.370	845.021	41852.483	32109.902	42724.692	138089.700
x		196117.190	189389.980	134093.970	26567.828	376.671	6077.775	831714.030	745.017	41605.201	31819.013	42577.652	138049.370
σ		1992.545	512.632	1224.894	380.945	23.095	151.410	2475.499	102.596	377.413	319.721	359.185	364.664
%RSD		1.016	0.271	0.913	1.434	6.131	2.491	0.298	13.771	0.907	1.005	0.844	0.264

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:50:08	56079.188	140529.970	51880.622	109206.610	0.000	194629.830	109352.570
2	12:50:30	58642.989	142153.660	53766.586	109790.430	0.000	202087.800	111803.750
3	12:50:52	58492.461	143318.570	53972.249	110253.470	0.000	207665.740	113933.100
x		57738.213	142000.730	53206.486	109750.170	0.000	201461.120	111696.470
σ		1438.728	1400.573	1152.827	524.589	0.000	6540.514	2292.148
%RSD		2.492	0.986	2.167	0.478	0.000	3.247	2.052

CCV 10/19/2016 12:55:04 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:55:26	106851.420	78004.615	28529.397	T 13217477.000	T 3811743.100	T 35721767.000	T 12554995.000	1248924.400	145794.910	24923.622	T 2557142.800	710738
2	12:55:48	107254.000	77323.955	28058.599	T 12863277.000	T 3782101.900	T 35258431.000	T 12177673.000	1220317.500	143888.450	24152.488	T 2520160.400	706482
3	12:56:10	103621.120	76485.097	28379.141	T 12734010.000	T 3802757.000	T 35240959.000	T 12136269.000	1223971.400	142163.740	24202.560	T 2543837.900	707197
x		105908.850	77271.222	28322.379	T 12938254.000	T 3798867.300	T 35407053.000	T 12289646.000	1231071.100	143949.030	24426.223	T 2540380.400	708139
σ		1991.427	761.130	240.477	T 250302.290	T 15198.549	T 272690.780	T 230729.730	15569.002	1816.341	431.487	T 18732.054	2278
%RSD		1.880	0.985	0.849	T 1.935	T 0.400	T 0.770	T 1.877	1.265	1.262	1.766	T 0.737	0

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:55:26	88072.088	T 3695568.100	T 76700182.000	1083127.300	581293.310	717321.310	567665.440	75639.250	6108.119	7879.862	112.500	4855
2	12:55:48	88479.236	T 3691153.900	T 76665650.000	1083436.500	586345.750	718135.260	566320.840	75191.230	5950.062	7913.378	114.000	4690
3	12:56:10	86971.330	T 3710810.300	T 76341471.000	1066670.100	572532.760	718620.520	568601.560	74695.006	5855.028	7816.332	113.000	4780
x		87840.884	T 3699177.400	T 76569101.000	1077744.600	580057.270	718025.690	567529.280	75175.162	5971.070	7869.858	113.167	4775
σ		780.087	T 10313.296	T 197888.350	9592.042	6988.956	656.498	1146.438	472.327	127.847	49.290	0.764	82

%RSD		0.888	T 0.279	T 0.258	0.890	1.205	0.091	0.202	0.628	2.141	0.626	0.675	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	12:55:26	743261.650	178409.820	1517096.700	245809.400	7861.854	116163.410	797787.650	737159.400	498850.480	379872.310	498531.130	132202
2	12:55:48	735843.110	179370.040	1562398.800	244302.480	7756.805	117467.500	793112.250	739745.280	504553.340	380057.970	500488.500	131204
3	12:56:10	739473.610	173538.790	1565736.300	241420.950	7701.779	115931.810	789433.630	743893.940	501930.920	381023.650	503960.820	133472
x		739526.120	177106.220	1548410.600	243844.280	7773.479	116520.910	793444.510	740266.210	501778.250	380317.980	500993.480	132292
σ		3709.551	3126.564	27169.918	2229.818	81.330	827.915	4186.911	3397.358	2854.498	618.140	2749.841	1136
%RSD		0.502	1.765	1.755	0.914	1.046	0.711	0.528	0.459	0.569	0.163	0.549	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:55:26	30668.190	1359239.400	T 7368300.100	103641.250	0.000	233068.310	101965.960
2	12:55:48	31920.538	1359120.200	T 7400488.100	105140.590	0.000	241999.250	100637.930
3	12:56:10	32356.378	1374508.600	T 7353437.500	102484.120	0.000	241948.520	101457.870
x		31648.369	1364289.400	T 7374075.200	103755.320	0.000	239005.360	101353.920
σ		876.385	8850.301	T 24051.063	1331.904	0.000	5141.697	670.093
%RSD		2.769	0.649	T 0.326	1.284	0.000	2.151	0.661

CCB 10/19/2016 01:00:48 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:01:10	111501.740	20.000	1010.031	234488.020	630.012	3555.379	53174.691	550.009	154200.040	20.000	12644.795	1295.050
2	13:01:32	111350.730	25.000	950.027	234771.970	490.007	3465.360	54027.427	490.007	152988.960	5.000	12799.913	1225.045
3	13:01:54	110927.930	7.500	1030.032	236597.520	630.012	3240.315	51178.457	550.009	151263.320	20.000	12704.841	1130.038
x		111260.130	17.500	996.697	235285.830	583.344	3420.352	52793.525	530.008	152817.440	15.000	12716.516	1216.711
σ		297.440	9.014	41.636	1144.787	80.832	162.283	1462.233	34.642	1475.858	8.660	78.216	82.821
%RSD		0.267	51.508	4.177	0.487	13.857	4.745	2.770	6.536	0.966	57.735	0.615	6.807

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:01:10	4495.606	525.008	203489.700	65.000	65.000	230.002	530.008	1065.034	365.004	117.500	102.500	625.012
2	13:01:32	4465.598	465.006	202760.900	80.000	20.000	185.001	635.012	1079.035	370.004	105.000	107.500	570.010
3	13:01:54	4470.600	500.007	204183.110	70.000	60.000	245.002	530.008	1178.042	393.005	99.000	100.500	615.011
x		4477.268	496.674	203477.900	71.667	48.333	220.001	565.010	1107.370	376.004	107.167	103.500	603.344
σ		16.077	30.139	711.176	7.638	24.664	31.225	60.624	61.602	14.934	9.438	3.606	29.298
%RSD		0.359	6.068	0.350	10.657	51.030	14.193	10.730	5.563	3.972	8.807	3.484	4.856

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:01:10	100.000	184525.870	2885.250	35.000	0.000	5.000	813920.280	2215.147	630.012	479.007	35.000	133754.560
2	13:01:32	135.001	185739.240	2975.266	25.000	0.000	0.000	804970.970	2985.267	770.018	543.009	35.000	133593.280
3	13:01:54	110.000	190704.840	2735.224	30.000	0.000	10.000	823168.270	2585.200	675.014	563.510	50.000	138170.370
x		115.000	186989.980	2865.247	30.000	0.000	5.000	814019.840	2595.205	691.681	528.508	40.000	135172.740
σ		18.028	3273.867	121.264	5.000	0.000	5.000	9099.058	385.158	71.476	44.078	8.660	2597.277
%RSD		15.676	1.751	4.232	16.667	0.000	100.000	1.118	14.841	10.334	8.340	21.651	1.921

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:01:10	230.002	1370.056	645.012	106660.200	0.000	1515.069	35.000
2	13:01:32	185.001	1435.062	625.012	106700.460	0.000	1700.087	70.000
3	13:01:54	200.001	1470.065	580.010	107012.450	0.000	1615.078	65.000
x		205.001	1425.061	616.678	106791.040	0.000	1610.078	56.667
σ		22.913	50.749	33.293	192.803	0.000	92.610	18.930
%RSD		11.177	3.561	5.399	0.181	0.000	5.752	33.405

CCVL 10/19/2016 01:06:06 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:06:27	112568.870	147.501	5705.977	881795.730	25870.062	65408.095	669679.130	24207.567	156410.500	5.000	25729.845	9157.515
2	13:06:49	114099.230	145.001	5475.899	T 935136.360	25148.960	64469.449	654888.460	23286.256	154745.060	15.000	25459.431	8967.412
3	13:07:11	114864.460	200.001	5505.909	862125.650	25219.066	64499.565	646843.240	23827.020	151414.680	0.000	25118.915	9227.554
x		113844.190	164.167	5562.595	T 893019.250	25412.696	64792.370	657136.940	23773.614	154190.080	6.667	25436.064	9117.494
σ		1168.850	31.058	125.075	T 37777.196	397.639	533.447	11582.797	462.972	2543.728	7.638	306.135	134.610
%RSD		1.027	18.919	2.249	T 4.230	1.565	0.823	1.763	1.947	1.650	114.564	1.204	1.476

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:06:27	6301.191	7276.588	698960.350	2585.200	1165.041	3780.429	10683.423	2059.127	512.008	265.002	101.000	755.017
2	13:06:49	6336.204	6641.323	702869.720	2620.206	1115.037	3580.385	11318.842	2062.128	533.009	282.002	110.500	630.012
3	13:07:11	6441.244	6871.416	710805.880	2860.245	1330.053	3655.401	11153.731	2054.127	565.010	271.002	107.500	655.013
x		6359.547	6929.776	704211.980	2688.551	1203.377	3672.071	11051.999	2058.460	536.675	272.669	106.334	680.014
σ		72.886	321.628	6035.760	149.719	112.518	101.059	329.699	4.042	26.690	8.622	4.856	66.147
%RSD		1.146	4.641	0.857	5.569	9.350	2.752	2.983	0.196	4.973	3.162	4.567	9.727

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:06:27	18735.525	185344.880	13720.645	2890.251	25.000	650.013	808694.910	1270.048	4210.532	3368.340	3750.422	131909.950
2	13:06:49	19391.274	184950.540	14391.211	2680.215	55.000	555.009	801289.800	1465.064	4425.587	3410.849	4450.594	133270.710
3	13:07:11	19696.632	184030.440	14401.219	2715.221	15.000	655.013	805170.260	1645.081	4445.593	3496.867	4155.518	133341.270
x		19274.477	184775.290	14171.025	2761.896	31.667	620.012	805051.660	1460.065	4360.571	3425.352	4118.845	132840.640
σ		491.083	674.520	390.072	112.528	20.817	56.349	3703.981	187.566	130.322	65.479	351.524	806.777
%RSD		2.548	0.365	2.753	4.074	65.737	9.088	0.460	12.846	2.989	1.912	8.535	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:06:27	2630.208	14806.574	6416.235	106207.330	0.000	11208.768	11193.758
2	13:06:49	2955.262	14596.389	6236.167	106559.560	0.000	11804.179	11398.897
3	13:07:11	2875.248	14661.446	6636.321	108340.990	0.000	11989.311	11048.661
x		2820.239	14688.136	6429.574	107035.960	0.000	11667.419	11213.772
σ		169.365	107.605	200.410	1143.831	0.000	407.847	175.974
%RSD		6.005	0.733	3.117	1.069	0.000	3.496	1.569

MB 200-110288/1-B 10/19/2016 01:11:51 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:12:13	117532.960	2.500	935.026	612076.470	12644.795	17899.607	81810.296	22615.333	158409.240	85.000	10758.471	7111.517
2	13:12:35	116676.980	5.000	1120.038	611257.210	12454.652	17674.367	84252.417	21754.188	157672.310	70.000	10693.429	7011.475
3	13:12:57	117583.320	0.000	1085.035	614264.810	12834.940	18765.558	83810.196	22034.556	156218.710	55.000	10523.321	7371.630
x		117264.420	2.500	1046.700	612532.830	12644.796	18113.177	83290.970	22134.692	157433.420	70.000	10658.407	7164.874
σ		509.360	2.500	98.283	1554.868	190.144	576.094	1301.225	439.219	1114.632	15.000	121.424	185.912
%RSD		0.434	100.000	9.390	0.254	1.504	3.181	1.562	1.984	0.708	21.429	1.139	2.595

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:12:13	4125.511	2175.142	252214.030	105.000	155.001	570.010	1075.035	811.020	286.002	100.000	109.000	460.006
2	13:12:35	4320.560	2105.133	249488.460	55.000	175.001	495.007	1045.033	839.021	293.003	109.000	115.000	545.009
3	13:12:57	4140.514	2435.178	242968.190	70.000	160.001	595.011	1150.040	864.022	267.002	102.500	97.500	650.013
x		4195.528	2238.484	248223.560	76.667	163.334	553.343	1090.036	838.021	282.002	103.834	107.167	551.676

σ		108.540	173.901	4750.932	25.658	10.408	52.043	54.087	26.515	13.454	4.646	8.893	95.178
%RSD		2.587	7.769	1.914	33.467	6.372	9.405	4.962	3.164	4.771	4.474	8.298	17.253
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:12:13	5946.060	188520.200	750.017	45.000	0.000	10.000	827106.230	24993.727	235.002	158.501	365.004	136768.880
2	13:12:35	5725.983	190108.080	770.018	25.000	0.000	25.000	820511.980	25885.086	235.002	178.501	385.004	135730.440
3	13:12:57	5575.933	190391.290	755.017	25.000	0.000	10.000	828797.200	25835.008	230.002	213.001	400.005	138361.950
x		5749.325	189673.190	758.351	31.667	0.000	15.000	825471.800	25571.273	233.335	183.334	383.338	136953.760
σ		186.165	1008.510	10.409	11.547	0.000	8.660	4377.754	500.797	2.887	27.570	17.560	1325.458
%RSD		3.238	0.532	1.373	36.464	0.000	57.735	0.530	1.958	1.237	15.038	4.581	0.968

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:12:13	155.001	550.009	445.006	106861.490	0.000	78102.573	95.000
2	13:12:35	190.001	585.010	465.006	108612.750	0.000	60017.870	45.000
3	13:12:57	190.001	475.007	540.009	108300.730	0.000	46580.000	125.000
x		178.334	536.675	483.340	107924.990	0.000	61566.814	88.334
σ		20.207	56.201	50.085	934.141	0.000	15818.267	40.415
%RSD		11.331	10.472	10.362	0.866	0.000	25.693	45.752

LCS 200-110288/2-B 10/19/2016 01:17:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:17:56	114441.560	1315.052	50391.063	T 7658725.900	259149.210	574985.050	T 6770955.200	239265.200	157510.790	55.000	105678.980	84860.490
2	13:18:17	111491.670	1295.050	49819.348	T 7444524.400	259636.710	566724.210	T 6710081.400	234974.800	152514.640	35.000	105965.800	86312.920
3	13:18:39	114159.640	1375.057	48741.167	T 7511512.000	255198.950	569982.550	T 6781117.900	240066.600	155562.620	65.000	103238.760	85227.355
x		113364.290	1328.386	49650.526	T 7538254.100	257994.950	570563.940	T 6754051.500	238102.200	155196.020	51.667	104961.180	85466.922
σ		1627.852	41.637	837.803	T 109576.080	2433.648	4160.994	T 38416.788	2737.886	2518.167	15.275	1498.536	755.270
%RSD		1.436	3.134	1.687	T 1.454	0.943	0.729	T 0.569	1.150	1.623	29.565	1.428	0.884

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:17:56	12134.416	59019.314	T 5766449.000	23852.055	10343.208	31730.175	91143.535	8088.962	1258.047	1571.574	103.000	1675.084
2	13:18:17	12649.799	58452.321	T 5699707.400	23711.856	10428.261	31795.299	91409.988	7865.856	1229.045	1585.075	100.500	1770.094
3	13:18:39	12649.799	59696.720	T 5760943.900	23521.586	10113.067	31414.578	92888.127	7839.843	1229.045	1547.072	116.500	1710.088
x		12478.004	59056.118	T 5742366.800	23695.166	10294.846	31646.684	91813.883	7931.554	1238.713	1567.907	106.667	1718.422
σ		297.557	623.015	T 37046.542	165.866	163.068	203.630	939.813	136.939	16.744	19.265	8.607	48.050
%RSD		2.385	1.055	T 0.645	0.700	1.584	0.643	1.024	1.727	1.352	1.229	8.069	2.796

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:17:56	199653.730	187883.070	135060.030	25809.969	405.005	5971.069	795890.080	35908.641	39461.661	30383.169	39466.673	132514.720
2	13:18:17	195596.040	183332.810	131768.840	25304.194	370.004	5675.966	795512.680	36314.519	40664.548	30447.787	40684.597	132010.740
3	13:18:39	199744.810	185739.240	136244.610	24948.659	470.007	5966.068	803817.240	37191.450	40489.121	30644.647	40484.109	134913.850
x		198331.530	185651.700	134357.830	25354.274	415.005	5871.034	798406.670	36471.537	40205.110	30491.867	40211.793	133146.440
σ		2369.439	2276.389	2319.040	432.833	50.746	168.952	4689.493	655.660	649.793	136.199	653.032	1551.229
%RSD		1.195	1.226	1.726	1.707	12.228	2.878	0.587	1.798	1.616	0.447	1.624	1.165

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:17:56	55843.398	139582.060	51830.467	106589.750	0.000	205139.750	109664.610
2	13:18:17	55567.478	142234.340	51308.857	103570.810	0.000	211736.480	112171.210
3	13:18:39	58442.286	141583.840	52698.181	105402.240	0.000	215554.960	112906.140
x		56617.721	141133.410	51945.835	105187.600	0.000	210810.400	111580.650
σ		1586.131	1382.321	701.811	1520.874	0.000	5269.003	1699.545
%RSD		2.801	0.979	1.351	1.446	0.000	2.499	1.523

200-35715-A-2-B 10/19/2016 01:23:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:23:49	113837.450	10.000	890.024	501719.700	15697.389	11699.105	96086.181	25349.263	153755.970	75.000	9397.649	5796.008
2	13:24:10	110726.590	5.000	935.026	498855.630	16027.703	11343.859	92405.455	26661.308	158025.630	35.000	9382.640	6091.113
3	13:24:32	112921.240	0.000	780.018	505089.210	16107.780	11448.931	89660.523	24968.689	154109.210	35.000	9197.537	5986.075
x		112495.090	5.000	868.356	501888.180	15944.291	11497.298	92717.386	25659.753	155296.940	48.333	9325.942	5957.732
σ		1598.610	5.000	79.743	3120.207	217.540	182.495	3224.166	887.999	2369.708	23.094	111.455	149.580
%RSD		1.421	100.000	9.183	0.622	1.364	1.587	3.477	3.461	1.526	47.781	1.195	2.511

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:23:49	3515.371	2675.215	229752.750	75.000	200.001	1315.052	1190.043	629.012	229.002	104.000	95.500	575.010
2	13:24:10	3645.399	2650.211	228911.290	105.000	230.002	1130.038	1185.042	677.014	241.002	107.000	92.500	625.012
3	13:24:32	3630.395	2405.173	226995.350	110.000	200.001	1330.053	1170.041	723.016	205.001	110.500	94.500	645.012
x		3597.055	2576.866	228553.130	96.667	210.001	1258.381	1181.709	676.347	225.002	107.167	94.167	615.011
σ		71.137	149.215	1413.160	18.930	17.321	111.401	10.409	47.005	18.331	3.253	1.528	36.057

%RSD		1.978	5.791	0.618	19.582	8.248	8.853	0.881	6.950	8.147	3.036	1.622	5.863
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:23:49	7151.534	186052.700	455.006	80.000	0.000	5.000	794611.170	36259.399	330.003	226.002	660.013	134934.010
2	13:24:10	7336.614	186012.260	325.003	55.000	0.000	0.000	804436.050	37196.461	270.002	196.001	665.013	132766.710
3	13:24:32	7431.657	189116.900	325.003	60.000	10.000	10.000	812314.720	36991.005	310.003	197.501	770.018	136930.200
x		7306.602	187060.620	368.338	65.000	3.333	5.000	803787.320	36815.622	303.336	206.501	698.348	134876.970
σ		142.453	1780.907	75.057	13.229	5.774	5.000	8869.588	492.535	30.551	16.904	62.118	2082.327
%RSD		1.950	0.952	20.377	20.352	173.205	100.000	1.103	1.338	10.072	8.186	8.895	1.544

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:23:49	145.001	590.010	1010.031	104929.270	0.000	18590.362	250.002
2	13:24:10	160.001	460.006	1105.037	108290.670	0.000	16628.291	115.000
3	13:24:32	100.000	375.004	975.029	106026.180	0.000	14125.984	115.000
x		135.001	475.007	1030.032	106415.370	0.000	16448.212	160.001
σ		31.225	108.285	67.272	1714.163	0.000	2237.631	77.943
%RSD		23.130	22.797	6.531	1.611	0.000	13.604	48.714

200-35730-A-2-B 10/19/2016 01:29:10 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:29:31	113968.340	7.500	800.019	545555.130	15757.445	17804.505	93099.300	25719.830	160236.590	90.000	10928.582	9797.879
2	13:29:53	116455.440	0.000	820.020	536074.830	16117.790	17263.937	93300.420	26330.783	158863.540	60.000	11218.775	10268.162
3	13:30:15	114602.660	10.000	760.017	538687.060	15867.550	17804.505	90173.278	25719.830	158974.590	65.000	10893.559	10683.423
x		115008.810	5.833	793.352	540105.670	15914.262	17624.316	92191.000	25923.481	159358.240	71.667	11013.638	10249.821
σ		1292.339	5.204	30.552	4896.770	184.658	312.097	1750.289	352.734	762.697	16.073	178.514	443.057
%RSD		1.124	89.214	3.851	0.907	1.160	1.771	1.899	1.361	0.479	22.427	1.621	4.323
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:29:31	4665.653	2400.173	252990.660	80.000	225.002	2265.154	1220.045	799.019	289.003	91.500	97.000	570.010
2	13:29:53	4845.704	2560.197	254361.290	80.000	270.002	2105.133	1335.054	781.018	247.002	102.500	106.500	480.007
3	13:30:15	4585.631	2630.208	254269.910	75.000	280.002	2005.121	1270.048	785.018	232.002	95.000	101.500	600.011
x		4698.996	2530.192	253873.960	78.334	258.335	2125.136	1275.049	788.352	256.002	96.334	101.667	550.009
σ		133.204	117.916	766.316	2.887	29.298	131.166	57.667	9.452	29.547	5.620	4.752	62.452
%RSD		2.835	4.660	0.302	3.685	11.341	6.172	4.523	1.199	11.542	5.834	4.674	11.355
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:29:31	7321.608	187630.240	310.003	45.000	0.000	0.000	813825.830	35337.422	255.002	188.001	1560.073	133774.720
2	13:29:53	7551.711	185506.670	420.005	45.000	0.000	5.000	812765.940	35788.383	240.002	203.501	1500.068	135831.260
3	13:30:15	7616.740	187175.170	375.004	35.000	0.000	5.000	810803.750	36915.838	200.001	181.001	1555.073	136920.110
x		7496.686	186770.690	368.337	41.667	0.000	3.333	812465.170	36013.881	231.668	190.834	1538.404	135508.700
σ		155.069	1118.075	55.303	5.774	0.000	2.887	1533.325	813.011	28.432	11.515	33.295	1597.310
%RSD		2.069	0.599	15.014	13.856	0.000	86.603	0.189	2.257	12.273	6.034	2.164	1.179

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:29:31	135.001	270.002	2045.126	107294.250	0.000	6541.283	60.000
2	13:29:53	130.001	260.002	2060.127	105180.850	0.000	6661.331	60.000
3	13:30:15	115.000	300.003	2185.143	106559.560	0.000	6146.133	70.000
x		126.667	276.669	2096.799	106344.890	0.000	6449.583	63.333
σ		10.408	20.817	76.875	1072.934	0.000	269.563	5.774
%RSD		8.217	7.524	3.666	1.009	0.000	4.180	9.116

200-35745-A-5-B 10/19/2016 01:34:53 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:35:15	117684.020	2.500	625.012	571099.830	14776.547	11443.928	96096.238	23957.206	161640.040	70.000	13170.202	6121.124
2	13:35:36	117160.350	7.500	720.016	578736.600	15857.540	11679.091	93551.823	23616.721	159418.800	65.000	12789.906	5545.923
3	13:35:58	113555.530	2.500	620.012	569506.690	14826.592	11093.691	93913.851	23887.106	162276.180	100.000	12329.559	5515.913
x		116133.300	4.167	655.013	573114.370	15153.560	11405.570	94520.638	23820.344	161111.670	78.334	12763.222	5727.653
σ		2247.718	2.887	56.349	4933.722	610.178	294.579	1376.464	179.793	1500.177	18.930	420.956	341.086
%RSD		1.935	69.282	8.603	0.861	4.027	2.583	1.456	0.755	0.931	24.166	3.298	5.955

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:35:15	4780.686	3370.341	258854.680	100.000	150.001	1070.034	1295.050	895.024	293.003	97.500	102.000	530.008
2	13:35:36	5140.793	3360.339	256117.890	105.000	130.001	1340.054	1350.055	971.028	288.002	112.500	97.500	605.011
3	13:35:58	4635.645	3680.406	253148.030	105.000	190.001	1390.058	1490.067	879.023	291.003	118.500	115.500	500.007
x		4852.374	3470.362	256040.200	103.334	156.667	1266.715	1378.391	915.025	290.669	109.500	105.000	545.009
σ		260.093	181.973	2854.121	2.887	30.551	172.156	100.549	49.156	2.517	10.817	9.368	54.085
%RSD		5.360	5.244	1.115	2.794	19.500	13.591	7.295	5.372	0.866	9.878	8.921	9.924

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:35:15	6786.381	189076.450	275.002	105.000	0.000	10.000	813909.780	35177.084	190.001	170.001	460.006	133966.250
2	13:35:36	7026.481	188297.710	210.001	80.000	0.000	5.000	825793.470	35953.738	220.001	184.501	495.007	140550.140
3	13:35:58	7016.477	191928.770	195.001	125.000	5.000	5.000	821446.360	36319.530	255.002	156.501	575.010	139521.550
x		6943.113	189767.640	226.668	103.334	1.667	6.667	820383.210	35816.784	221.668	170.334	510.008	138012.650
σ		135.826	1911.668	42.525	22.546	2.887	2.887	6012.757	583.407	32.532	14.003	58.951	3541.820
%RSD		1.956	1.007	18.761	21.819	173.205	43.301	0.733	1.629	14.676	8.221	11.559	2.566

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:35:15	115.000	320.003	1015.031	106710.520	0.000	4525.614	75.000
2	13:35:36	125.000	300.003	950.027	108411.450	0.000	4090.502	70.000
3	13:35:58	135.001	325.003	820.020	108340.990	0.000	4445.593	95.000
x		125.000	315.003	928.359	107820.990	0.000	4353.903	80.000
σ		10.000	13.229	99.295	962.335	0.000	231.594	13.229
%RSD		8.000	4.200	10.696	0.893	0.000	5.319	16.536

200-35754-A-2-B 10/19/2016 01:40:37 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:40:59	124180.910	2.500	675.014	525609.300	17949.661	18790.587	98278.911	28364.115	165639.020	105.000	19881.852	7596.731
2	13:41:20	123767.850	2.500	655.013	538470.220	17939.650	19491.391	96096.238	29445.989	166245.010	110.000	20057.061	7601.733
3	13:41:42	119577.430	0.000	660.013	531377.960	18560.329	19045.876	98560.566	29666.379	165770.310	130.001	19606.526	7521.697
x		122508.730	1.667	663.347	531819.160	18149.880	19109.285	97645.238	29158.828	165884.780	115.000	19848.480	7573.387
σ		2546.969	1.443	10.409	6441.805	355.495	354.679	1348.845	697.007	318.798	13.229	227.114	44.835
%RSD		2.079	86.603	1.569	1.211	1.959	1.856	1.381	2.390	0.192	11.503	1.144	0.592

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:40:59	7716.786	3495.367	267154.120	280.002	210.001	1820.099	1750.092	1453.063	487.007	119.500	109.500	590.010
2	13:41:20	7366.628	3340.335	269404.910	250.002	200.001	1850.103	1215.044	1481.066	465.006	110.500	93.500	655.013
3	13:41:42	7286.592	3130.294	268022.900	220.001	220.001	1985.118	1200.043	1448.063	488.007	114.500	114.500	580.010
x		7456.669	3321.998	268193.980	250.002	210.001	1885.107	1388.393	1460.731	480.007	114.834	105.834	608.344

σ		228.795	183.226	1135.109	30.000	10.000	87.902	313.330	17.787	13.000	4.509	10.970	40.724
%RSD		3.068	5.516	0.423	12.000	4.762	4.663	22.568	1.218	2.708	3.927	10.365	6.694
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:40:59	7776.814	191928.770	315.003	60.000	0.000	5.000	833125.170	38113.529	245.002	254.002	635.012	135508.650
2	13:41:20	7701.779	195155.920	330.003	35.000	0.000	0.000	840775.340	39652.113	325.003	248.502	660.013	139571.970
3	13:41:42	8372.102	198130.710	340.003	55.000	0.000	5.000	838421.080	40464.061	355.004	260.002	530.008	141467.860
x		7950.232	195071.800	328.337	50.000	0.000	3.333	837440.530	39409.901	308.336	254.169	608.345	138849.490
σ		367.272	3101.827	12.583	13.229	0.000	2.887	3918.211	1193.838	56.863	5.752	68.983	3044.590
%RSD		4.620	1.590	3.832	26.458	0.000	86.603	0.468	3.029	18.442	2.263	11.339	2.193

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:40:59	150.001	405.005	1055.033	108793.930	0.000	7546.708	100.000
2	13:41:20	190.001	315.003	1265.048	107294.250	0.000	7196.553	85.000
3	13:41:42	155.001	265.002	1140.039	109528.720	0.000	6521.276	55.000
x		165.001	328.337	1153.373	108538.970	0.000	7088.179	80.000
σ		21.795	70.947	105.640	1138.842	0.000	521.236	22.913
%RSD		13.209	21.608	9.159	1.049	0.000	7.354	28.641

200-35754-A-2-B SD@5 10/19/2016 01:46:21 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:46:43	114632.870	5.000	420.005	306716.520	3600.389	4115.508	59204.970	5730.985	161417.910	25.000	21398.728	3020.274
2	13:47:05	115488.750	2.500	410.005	298814.910	3820.438	4210.532	59365.540	6371.217	163498.030	20.000	21078.320	2815.238
3	13:47:26	114099.230	5.000	570.010	304852.790	3700.411	4080.499	58853.730	6071.105	159741.870	25.000	21408.741	2915.255
x		114740.280	4.167	466.673	303461.410	3707.079	4135.513	59141.413	6057.769	161552.600	23.333	21295.263	2916.922
σ		700.960	1.443	89.632	4130.474	110.176	67.285	261.758	320.324	1881.700	2.887	187.945	102.528
%RSD		0.611	34.641	19.206	1.361	2.972	1.627	0.443	5.288	1.165	12.372	0.883	3.515

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:46:43	7821.835	810.020	224284.010	30.000	90.000	470.007	585.010	1579.075	508.008	104.500	108.000	625.012
2	13:47:05	7676.768	785.018	218675.220	45.000	90.000	485.007	635.012	1595.076	489.007	101.000	97.000	640.012
3	13:47:26	7921.882	840.021	221968.320	10.000	60.000	485.007	675.014	1608.078	506.008	115.000	114.000	595.011
x		7806.828	811.686	221642.520	28.333	80.000	480.007	631.679	1594.076	501.008	106.834	106.334	620.012
σ		123.244	27.539	2818.557	17.559	17.321	8.661	45.094	14.527	10.441	7.286	8.622	22.914
%RSD		1.579	3.393	1.272	61.974	21.651	1.804	7.139	0.911	2.084	6.820	8.108	3.696

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:46:43	1685.085	193162.910	75.000	40.000	0.000	0.000	807247.200	7701.779	290.003	231.002	115.000	134893.690
2	13:47:05	1675.084	192212.010	130.001	20.000	0.000	0.000	828093.480	8096.966	315.003	192.501	85.000	135811.090
3	13:47:26	1585.075	194063.280	125.000	40.000	0.000	0.000	815767.380	8192.013	270.002	192.501	90.000	135720.360
x		1648.415	193146.060	110.000	33.333	0.000	0.000	817036.020	7996.919	291.669	205.335	96.667	135475.050
σ		55.081	925.749	30.414	11.547	0.000	0.000	10480.887	259.979	22.547	22.228	16.073	505.511
%RSD		3.341	0.479	27.649	34.641	0.000	0.000	1.283	3.251	7.730	10.825	16.627	0.373

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:46:43	75.000	165.001	420.005	106458.920	0.000	380.004	20.000
2	13:47:05	100.000	240.002	345.004	109005.300	0.000	325.003	25.000
3	13:47:26	85.000	200.001	330.003	107445.220	0.000	495.007	5.000
x		86.667	201.668	365.004	107636.480	0.000	400.005	16.667
σ		12.583	37.528	48.219	1283.919	0.000	86.749	10.408
%RSD		14.519	18.609	13.211	1.193	0.000	21.687	62.450

200-35754-A-2-B PDS 10/19/2016 01:52:06 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:52:27	113696.490	1217.545	49999.887	T 7313667.700	265884.050	566936.240	T 6708233.600	236232.390	156834.460	115.000	110359.170	80860.679
2	13:52:49	116334.600	1227.545	48660.933	T 7251113.300	262429.950	564795.370	T 6583988.000	239326.060	153856.900	95.000	108320.860	81142.041
3	13:53:11	114371.080	1272.549	48465.364	T 7276336.800	260449.240	570634.290	T 6678395.500	238139.240	156905.120	145.001	106856.450	81579.167
x		114800.720	1239.213	49042.062	T 7280372.600	262921.080	567455.300	T 6656872.400	237899.230	155865.490	118.334	108512.160	81193.962
σ		1370.530	29.300	835.245	T 31471.875	2750.490	2953.865	T 64858.872	1560.737	1739.852	25.166	1759.176	362.047
%RSD		1.194	2.364	1.703	T 0.432	1.046	0.521	T 0.974	0.656	1.116	21.267	1.621	0.446

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:52:27	14371.193	58858.747	T 5687976.500	23601.699	10438.268	32351.368	83780.045	7927.885	1312.052	1366.056	92.000	1865.104
2	13:52:49	13790.703	59189.917	T 5718424.700	23261.221	10348.212	31685.090	84177.038	7935.889	1272.049	1342.054	93.500	1685.085
3	13:53:11	12925.010	60088.123	T 5659690.400	23456.495	10308.187	31775.261	84071.507	7746.800	1235.046	1347.555	102.500	1700.087
x		13695.635	59378.929	T 5688697.200	23439.805	10364.889	31937.240	84009.530	7870.191	1273.049	1351.888	96.000	1750.092
σ		727.764	636.109	T 29373.771	170.852	66.625	361.468	205.625	106.935	38.513	12.574	5.679	99.886

%RSD		5.314	1.071	T 0.516	0.729	0.643	1.132	0.245	1.359	3.025	0.930	5.916	5.707
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:52:27	196112.050	187205.510	128312.030	23987.249	350.004	4775.684	805390.530	36038.922	36870.738	28346.085	39170.977	134833.200
2	13:52:49	194432.540	187175.170	129314.730	25194.028	365.004	5420.881	796917.460	36710.385	38349.069	28764.801	40022.998	134248.510
3	13:53:11	197887.850	189329.290	132146.810	24427.889	365.004	5515.913	800734.020	37983.233	38514.450	29278.695	39792.447	135317.100
x		196144.150	187903.320	129924.520	24536.389	360.004	5237.493	801014.010	36910.847	37911.419	28796.527	39662.140	134799.600
σ		1727.879	1235.021	1988.791	610.662	8.660	402.751	4243.467	987.535	905.041	467.114	440.703	535.086
%RSD		0.881	0.657	1.531	2.489	2.406	7.690	0.530	2.675	2.387	1.622	1.111	0.397

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:52:27	25484.469	130287.260	49653.855	107545.870	0.000	174630.100	105422.370
2	13:52:49	26150.499	133532.800	50376.017	106217.390	0.000	183347.980	105759.490
3	13:53:11	26711.388	135266.690	50516.441	104083.990	0.000	191488.760	109750.170
x		26115.452	133028.920	50182.105	105949.080	0.000	183155.610	106977.340
σ		614.210	2527.669	462.834	1746.464	0.000	8430.972	2407.247
%RSD		2.352	1.900	0.922	1.648	0.000	4.603	2.250

200-35676-A-2-B 10/19/2016 01:57:50 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:58:12	118268.140	0.000	770.018	531718.570	17709.404	14171.022	98993.119	27933.389	156329.750	70.000	12524.704	6031.091
2	13:58:33	113424.650	2.500	645.012	535868.350	16928.593	13825.732	97454.088	26661.308	158146.770	70.000	12159.434	6726.357
3	13:58:55	117059.650	2.500	725.016	527425.340	17148.818	13420.401	94215.547	27272.295	158873.630	70.000	12174.445	6591.303
x		116250.810	1.667	713.349	531670.750	17262.272	13805.718	96887.585	27288.997	157783.380	70.000	12286.194	6449.584
σ		2521.015	1.443	63.314	4221.710	402.579	375.710	2438.646	636.205	1310.296	0.000	206.692	368.662
%RSD		2.169	86.603	8.876	0.794	2.332	2.721	2.517	2.331	0.830	0.000	1.682	5.716
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:58:12	4680.657	4955.737	249574.740	205.001	265.002	785.018	1075.035	935.026	302.003	102.000	98.500	630.012
2	13:58:33	4510.610	4355.569	243160.970	145.001	255.002	825.020	1060.034	934.026	278.002	104.500	100.000	645.012
3	13:58:55	5055.767	4775.684	247037.360	235.002	210.001	1105.037	1220.045	898.024	311.003	95.500	99.500	540.009
x		4749.011	4695.663	246591.020	195.001	243.335	905.025	1118.371	922.359	297.003	100.667	99.334	605.011
σ		278.932	307.982	3230.095	45.826	29.298	174.366	88.371	21.080	17.059	4.646	0.764	56.791
%RSD		5.873	6.559	1.310	23.501	12.040	19.266	7.902	2.285	5.744	4.615	0.769	9.387
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:58:12	7361.625	187589.790	265.002	65.000	5.000	10.000	801279.310	37246.573	270.002	165.001	560.009	133885.610
2	13:58:33	7516.695	188287.590	180.001	80.000	0.000	5.000	802296.540	37777.766	215.001	182.001	495.007	133391.670
3	13:58:55	7521.697	188186.460	220.001	65.000	0.000	0.000	805579.340	37301.696	240.002	188.001	580.010	135841.340
x		7466.672	188021.280	221.668	70.000	1.667	5.000	803051.730	37442.012	241.668	178.334	545.009	134372.870
σ		91.008	377.088	42.525	8.660	2.887	5.000	2247.285	292.075	27.538	11.930	44.442	1295.487
%RSD		1.219	0.201	19.184	12.372	173.205	100.000	0.280	0.780	11.395	6.690	8.154	0.964

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:58:12	180.001	420.005	1185.042	103691.560	0.000	25444.408	110.000
2	13:58:33	135.001	370.004	1215.044	106197.260	0.000	20552.665	140.001
3	13:58:55	155.001	370.004	1265.048	107193.610	0.000	16968.634	135.001
x		156.667	386.671	1221.711	105694.140	0.000	20988.569	128.334
σ		22.546	28.868	40.417	1804.421	0.000	4254.667	16.073
%RSD		14.391	7.466	3.308	1.707	0.000	20.271	12.524

CCV 10/19/2016 02:03:34 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:03:56	104184.620	76500.166	27001.855	┬12755626.000	┬3708080.000	┬34286370.000	┬12028517.000	┬1285564.000	143767.410	23501.558	┬2436293.900	6741
2	14:04:18	103077.770	76663.414	26265.680	┬12731350.000	┬3732678.500	┬34430028.000	┬12009389.000	1172426.400	140328.280	23246.200	┬2469293.800	6815
3	14:04:40	99777.777	74983.296	27092.001	┬12645162.000	┬3679764.200	┬34438097.000	┬11856024.000	┬1280752.600	142819.310	23461.502	┬2437995.500	6755
x		102346.720	76048.959	26786.512	┬12710712.000	┬3706840.900	┬34384831.000	┬11964643.000	┬1246247.600	142305.000	23403.087	┬2447861.100	6770
σ		2292.572	926.493	453.300	┬58051.653	┬26478.947	┬85365.613	┬94552.045	┬63976.359	1776.311	137.336	┬18580.810	39
%RSD		2.240	1.218	1.692	┬0.457	┬0.714	┬0.248	┬0.790	┬5.134	1.248	0.587	┬0.759	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:03:56	85036.384	┬3543027.900	┬73044804.000	1040022.600	565467.590	701884.470	544764.900	72283.408	5887.039	7556.212	83.000	47
2	14:04:18	83403.162	┬3557715.800	┬73969358.000	1042819.500	563756.050	696140.960	539606.090	72201.052	5698.974	7494.685	101.500	47
3	14:04:40	85559.048	┬3534951.500	┬72923312.000	1020504.800	554224.230	681368.910	542683.630	71050.121	5839.023	7576.722	120.500	47
x		84666.198	┬3545231.700	┬73312491.000	1034449.000	561149.290	693131.450	542351.540	71844.860	5808.346	7542.540	101.667	47
σ		1124.607	┬11541.034	┬572097.740	12156.701	6058.030	10583.711	2595.391	689.495	97.714	42.693	18.751	
%RSD		1.328	┬0.326	┬0.780	1.175	1.080	1.527	0.479	0.960	1.682	0.566	18.443	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	14:03:56	709131.780	175388.000	1442820.900	232155.700	7496.686	108658.050	757177.520	691602.760	463655.820	352958.740	463846.010	1258
2	14:04:18	707984.520	171861.550	1467371.700	233276.190	7616.740	110817.190	752628.260	696323.340	466138.660	354362.050	473867.080	1249
3	14:04:40	707609.070	168830.810	1496318.400	231430.730	7421.652	108824.120	761361.820	705507.740	469814.740	358144.110	471069.420	1251
x		708241.790	172026.780	1468837.000	232287.540	7511.693	109433.120	757055.860	697811.280	466536.410	355154.960	469594.170	1252
σ		793.287	3281.718	26778.835	929.767	98.406	1201.514	4368.051	7070.898	3098.665	2682.083	5170.854	4
%RSD		0.112	1.908	1.823	0.400	1.310	1.098	0.577	1.013	0.664	0.755	1.101	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:03:56	28444.252	1277966.900	┬6968584.900	98832.168	5.000	142531.870	94622.844
2	14:04:18	30432.759	1302836.000	┬7036196.800	98198.438	0.000	159989.230	97760.877
3	14:04:40	30497.878	1294562.100	┬7054553.100	100532.290	0.000	171310.920	96196.816
x		29791.630	1291788.400	┬7019778.300	99187.632	1.667	157944.000	96193.512
σ		1167.318	12664.488	┬45274.855	1206.848	2.887	14498.128	1569.019
%RSD		3.918	0.980	┬0.645	1.217	173.205	9.179	1.631

CCB 10/19/2016 02:09:18 PM QC Status: PASS (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:09:39	112689.690	5.000	645.012	237642.220	390.005	3360.339	50386.048	670.013	151455.050	15.000	13010.076	1275.049
2	14:10:01	113031.990	5.000	575.010	233615.900	400.005	3385.344	49633.796	530.008	154593.670	10.000	13190.217	1245.046
3	14:10:23	113384.370	5.000	540.009	236536.660	460.006	3520.372	51910.716	630.012	150597.330	10.000	13230.249	1285.050
x		113035.350	5.000	586.677	235931.590	416.672	3422.018	50643.520	610.011	152215.350	11.667	13143.514	1268.382
σ		347.356	0.000	53.465	2080.241	37.860	86.089	1160.091	72.114	2103.860	2.887	117.282	20.818
%RSD		0.307	0.000	9.113	0.882	9.086	2.516	2.291	11.822	1.382	24.744	0.892	1.641

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:09:39	4600.635	470.007	199896.610	70.000	55.000	210.001	500.007	1108.037	319.003	106.000	90.000	530.008
2	14:10:01	4425.587	510.008	199157.850	60.000	65.000	240.002	475.007	1150.040	344.004	95.000	93.000	535.009
3	14:10:23	4500.608	500.007	202310.480	105.000	35.000	240.002	505.008	1143.039	385.004	106.500	103.500	560.009
x		4508.943	493.341	200454.980	78.334	51.667	230.002	493.341	1133.705	349.337	102.500	95.500	541.675

σ		87.821	20.817	1648.818	23.629	15.275	17.321	16.073	22.503	33.322	6.500	7.089	16.073
%RSD		1.948	4.220	0.823	30.165	29.565	7.531	3.258	1.985	9.539	6.341	7.423	2.967
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:09:39	105.000	178672.610	3150.298	85.000	0.000	5.000	768760.080	2565.197	595.011	476.007	25.000	127294.270
2	14:10:01	80.000	179723.820	2955.262	45.000	5.000	10.000	776925.970	2790.233	690.014	560.509	20.000	127213.650
3	14:10:23	95.000	178217.780	2875.248	35.000	5.000	10.000	771628.160	2790.233	700.015	543.509	20.000	127777.950
x		93.334	178871.400	2993.603	55.000	3.333	8.333	772438.070	2715.222	661.680	526.675	21.667	127428.620
σ		12.583	772.451	141.476	26.458	2.887	2.887	4142.749	129.925	57.953	44.696	2.887	305.197
%RSD		13.482	0.432	4.726	48.105	86.603	34.641	0.536	4.785	8.759	8.486	13.323	0.240

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:09:39	165.001	1115.037	595.011	101739.580	0.000	1130.038	10.000
2	14:10:01	140.001	1060.034	650.013	103973.300	0.000	960.028	60.000
3	14:10:23	115.000	1015.031	640.012	104949.390	0.000	1025.032	35.000
x		140.001	1063.367	628.345	103554.090	0.000	1038.366	35.000
σ		25.000	50.086	29.298	1645.456	0.000	85.786	25.000
%RSD		17.857	4.710	4.663	1.589	0.000	8.262	71.429

CCVL 10/19/2016 02:15:00 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:15:22	110555.460	145.001	4905.722	859536.950	25088.869	63013.898	637140.010	22134.689	150970.680	20.000	24492.984	9087.477
2	14:15:44	112427.930	125.000	5125.788	T 944094.550	25209.050	62271.114	640879.360	22605.320	150022.170	15.000	25489.477	8807.326
3	14:16:05	109468.320	142.501	5180.805	T 940639.680	26170.531	64173.309	642738.950	23045.922	149255.340	0.000	25399.339	9202.540
x		110817.240	137.501	5070.772	T 914757.060	25489.484	63152.774	640252.770	22595.310	150082.730	11.667	25127.267	9032.448
σ		1497.066	10.897	145.560	T 47853.205	592.857	958.672	2851.578	455.699	859.275	10.408	551.151	203.272
%RSD		1.351	7.925	2.871	T 5.231	2.326	1.518	0.445	2.017	0.573	89.214	2.193	2.250

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:15:22	6436.243	6716.353	676475.500	2560.197	1345.054	3330.333	10953.598	1972.117	516.008	266.502	102.000	700.015
2	14:15:44	6246.170	6881.420	680718.110	2525.191	1125.038	3445.356	10723.449	1982.118	543.009	259.502	83.000	645.012
3	14:16:05	6321.199	6501.268	686841.820	2490.186	1055.033	3680.406	11418.910	2046.126	603.011	253.002	98.500	645.012
x		6334.537	6699.680	681345.140	2525.191	1175.042	3485.365	11031.986	2000.120	554.009	259.669	94.500	663.347
σ		95.736	190.624	5211.527	35.005	151.338	178.433	354.295	40.155	44.532	6.752	10.112	31.756
%RSD		1.511	2.845	0.765	1.386	12.879	5.119	3.212	2.008	8.038	2.600	10.700	4.787

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:15:22	18675.457	176873.570	13230.249	2515.190	20.000	620.012	769702.100	1075.035	3880.452	3179.303	3925.462	129692.650
2	14:15:44	19030.859	179582.310	13320.321	2750.227	55.000	585.010	778685.280	1410.060	4335.564	3196.307	4140.514	128735.270
3	14:16:05	19831.792	184111.320	13995.874	2465.182	45.000	625.012	787557.940	1330.053	4190.527	3250.817	3655.401	129188.760
x		19179.369	180189.070	13515.481	2576.866	40.000	610.011	778648.440	1271.716	4135.514	3208.809	3907.126	129205.560
σ		592.300	3656.825	418.463	152.203	18.028	21.795	8927.977	174.965	232.490	37.360	243.076	478.911
%RSD		3.088	2.029	3.096	5.906	45.069	3.573	1.147	13.758	5.622	1.164	6.221	0.371

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:15:22	2240.151	13460.433	6476.258	102544.490	0.000	9402.651	10348.212
2	14:15:44	2560.197	13855.757	6186.148	100481.990	0.000	9822.894	10288.174
3	14:16:05	2735.224	14025.899	6251.172	104788.390	0.000	9917.950	10873.546
x		2511.857	13780.697	6304.526	102604.960	0.000	9714.498	10503.311
σ		251.052	290.109	152.237	2153.835	0.000	274.218	322.035
%RSD		9.995	2.105	2.415	2.099	0.000	2.823	3.066

Analyte ICPS

STD0 10/19/2016 10:04:01 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:04:23	98.484%	-9.338	0.745	3360.819	21.102	36.669	1012.767	53.276	98.403%	10.157	583.341	90.062
2	10:04:45	99.508%	3.223	-9.454	965.081	19.827	61.468	-876.240	211.829	99.362%	5.030	893.538	139.762
3	10:05:07	102.008%	-1.986	7.887	-8063.639	123.747	-67.424	-188.115	-5.260	102.235%	4.895	1245.035	-83.489
x		100.000%	-2.700	-0.274	-1245.913	54.892	10.237	-17.196	86.615	100.000%	6.694	907.305	48.778
σ		1.813%	6.311	8.715	6024.610	59.634	68.391	956.032	112.319	1.994%	3.000	331.062	117.211
%RSD		1.813	233.724	3183.968	483.550	108.638	668.043	5559.587	129.676	1.994	44.810	36.488	240.294

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:04:23	7562.720	-14.575	-1694.041	-1.230	-6.799	5.426	4.338	-211.270	763.515	-99.781	642.735	3231.443
2	10:04:45	7601.959	11.156	5927.872	-6.458	8.199	-57.510	-12.292	-90.985	727.313	-92.250	584.470	3132.587
3	10:05:07	7204.457	2.331	335.088	2.899	-2.289	-19.149	-50.520	-15.227	682.685	-37.054	591.479	2910.702
x		7456.379	-0.363	1522.973	-1.596	-0.296	-23.744	-19.491	-105.827	724.504	-76.362	606.228	3091.577
σ		219.051	13.075	3947.365	4.689	7.695	31.719	28.129	98.861	40.488	34.249	31.810	164.256
%RSD		2.938	3605.681	259.188	293.755	2596.058	133.584	144.316	93.417	5.588	44.851	5.247	5.313

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:04:23	11.630	99.582%	19.198	-1.042	-62.854	-34.947	98.721%	572.332	0.558	-14.289	6.221	101.230%
2	10:04:45	6.261	100.077%	-16.297	-26.609	-102.281	-6.420	99.921%	635.512	24.541	1.146	1.034	99.643%
3	10:05:07	-13.826	100.341%	18.401	-17.027	-100.831	-7.915	101.358%	675.837	-26.672	9.030	-4.041	99.128%
x		1.355	100.000%	7.101	-14.893	-88.655	-16.427	100.000%	627.893	-0.525	-1.371	1.071	100.000%
σ		13.418	0.385%	20.267	12.917	22.356	16.056	1.320%	52.171	25.624	11.862	5.131	1.096%
%RSD		990.347	0.385	285.410	86.731	25.217	97.737	1.320	8.309	4885.265	865.177	478.849	1.096

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:04:23	9.483	50.609	-27.579	99.485%	0.000	8291.464	-21.754
2	10:04:45	-3.918	46.841	115.181	101.435%	0.000	7869.966	23.964
3	10:05:07	26.815	-28.286	0.839	99.080%	0.000	7737.168	-5.854
x		10.793	23.055	29.480	100.000%	0.000	7966.199	-1.214
σ		15.409	44.502	75.567	1.259%	0.000	289.407	23.209
%RSD		142.761	193.029	256.331	1.259	0.000	3.633	1911.011

STD1 10/19/2016 10:09:44 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:10:06	99.600%	198.997	6125.957	T 917939.510	33353.925	83326.210	T 985257.620	33033.213	99.487%	35.172	15034.700	11560.682
2	10:10:27	98.145%	168.971	5954.094	T 961622.540	34194.543	83659.525	T 981588.480	33628.824	98.305%	0.000	13651.008	11435.472
3	10:10:49	94.214%	213.561	6143.841	T 910935.400	33560.202	85597.478	907083.730	33275.433	98.818%	10.117	15813.170	11965.345
x		97.319%	193.843	6074.631	T 930165.820	33702.890	84194.405	T 957976.610	33312.490	98.870%	15.096	14832.959	11653.833
σ		2.786%	22.738	104.770	T 27466.500	438.097	1226.473	T 44112.688	299.530	0.593%	18.107	1095.107	276.946
%RSD		2.863	11.730	1.725	T 2.953	1.300	1.457	T 4.605	0.899	0.599	119.943	7.383	2.376

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:10:06	8748.992	8888.695	700417.860	3542.108	1465.712	4566.656	13870.301	984.642	806.738	185.277	608.127	2941.608
2	10:10:27	8872.565	9291.370	728834.060	3549.340	1681.918	4670.458	14854.527	1066.000	780.581	193.824	605.284	3063.867
3	10:10:49	8357.851	9200.172	729446.720	3525.747	1409.966	4604.386	15123.436	1143.349	764.168	124.452	601.272	3041.287

x		8659.802	9126.746	719566.210	3539.065	1519.199	4613.833	14616.088	1064.664	783.829	167.851	604.895	3015.587
σ		268.698	211.140	16585.787	12.087	143.649	52.542	659.717	79.362	21.470	37.827	3.444	65.055
%RSD		3.103	2.313	2.305	0.342	9.456	1.139	4.514	7.454	2.739	22.536	0.569	2.157

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:10:06	26140.022	100.042%	17265.519	3747.603	-95.375	959.242	99.241%	720.485	5554.396	4476.454	6048.091	98.476%
2	10:10:27	26917.748	100.537%	17608.188	3772.545	-78.522	813.875	97.807%	848.631	5669.637	4649.451	6039.720	96.900%
3	10:10:49	27403.704	99.389%	17540.583	3647.531	-78.801	950.548	97.462%	805.463	6365.034	4783.807	5917.455	97.493%
x		26820.492	99.990%	17471.430	3722.560	-84.233	907.889	98.170%	791.526	5863.022	4636.571	6001.755	97.623%
σ		637.430	0.576%	181.500	66.163	9.650	81.534	0.943%	65.200	438.557	154.081	73.126	0.796%
%RSD		2.377	0.576	1.039	1.777	11.457	8.981	0.961	8.237	7.480	3.323	1.218	0.815

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:10:06	3475.532	17559.277	14776.901	99.547%	0.000	23601.153	14063.030
2	10:10:27	3781.331	18603.014	15652.298	97.899%	0.000	24020.147	14425.951
3	10:10:49	3608.970	18639.175	14981.619	99.080%	0.000	24070.761	14776.798
x		3621.944	18267.156	15136.939	98.842%	0.000	23897.354	14421.926
σ		153.312	613.307	457.901	0.849%	0.000	257.763	356.901
%RSD		4.233	3.357	3.025	0.859	0.000	1.079	2.475

STD2 10/19/2016 10:13:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:13:40	93.834%	883.220	31194.081	T 4882574.000	177330.770	403038.870	T 5089925.400	166817.660	89.775%	22.229	71825.294	57508.966
2	10:14:01	88.714%	850.185	33627.434	T 4709299.000	170162.520	397161.840	T 4920036.700	161567.190	91.325%	27.355	70636.054	56181.308
3	10:14:23	88.538%	984.606	33316.044	T 4718040.200	176002.010	395488.990	T 5003439.900	159893.030	91.610%	27.272	72207.039	56781.417
x		90.362%	906.004	32712.519	T 4769971.100	174498.440	398563.230	T 5004467.300	162759.290	90.903%	25.619	71556.129	56823.897
σ		3.008%	70.047	1324.191	T 97614.908	3813.332	3965.237	T 84949.032	3612.956	0.988%	2.936	819.351	664.847
%RSD		3.329	7.731	4.048	T 2.046	2.185	0.995	T 1.697	2.220	1.087	11.461	1.145	1.170

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:13:40	10272.514	43786.462	T 4111833.800	17090.275	7531.251	22685.022	72747.211	5478.053	877.997	1162.863	594.833	3005.136
2	10:14:01	10061.962	42371.044	T 4044718.900	17249.165	7408.596	21900.866	72100.260	5741.716	756.309	1186.112	594.837	2926.164
3	10:14:23	10230.917	41389.733	T 3981317.900	16834.849	6975.977	22230.810	72043.323	5475.525	877.210	1106.358	618.267	3125.936
x		10188.464	42515.747	T 4045956.900	17058.096	7305.275	22272.233	72296.931	5565.098	837.172	1151.778	602.646	3019.079
σ		111.511	1204.899	T 65266.791	209.024	291.699	393.715	390.991	152.961	70.031	41.017	13.528	100.613
%RSD		1.094	2.834	T 1.613	1.225	3.993	1.768	0.541	2.749	8.365	3.561	2.245	3.333

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:13:40	136841.570	94.392%	88043.270	18256.375	-130.854	4590.665	91.288%	684.662	30347.836	23029.949	31215.806	91.522%
2	10:14:01	137946.590	92.813%	90154.033	18994.458	-45.699	4497.770	91.035%	703.041	29804.686	23377.966	30427.757	92.283%
3	10:14:23	140467.470	92.923%	91172.137	18751.275	-99.876	4436.452	91.467%	748.920	29864.199	23400.027	30278.477	93.003%
x		138418.540	93.376%	89789.813	18667.369	-92.143	4508.296	91.263%	712.208	30005.574	23269.314	30640.680	92.269%
σ		1858.450	0.881%	1595.915	376.127	43.101	77.643	0.217%	33.095	297.898	207.589	503.635	0.740%
%RSD		1.343	0.944	1.777	2.015	46.776	1.722	0.238	4.647	0.993	0.892	1.644	0.802

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:13:40	18063.467	93757.354	67653.040	93.162%	0.000	82228.811	73563.352
2	10:14:01	18168.576	95003.934	66934.835	94.068%	0.000	85145.726	73178.386
3	10:14:23	18490.139	98176.514	68965.094	92.070%	0.000	90821.043	75550.175
x		18240.727	95645.934	67850.990	93.100%	0.000	86065.193	74097.305

σ		222.298	2278.457	1029.503	1.000%	0.000	4369.288	1272.861
%RSD		1.219	2.382	1.517	1.074	0.000	5.077	1.718

STD3 10/19/2016 10:17:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:17:40	90.768%	109484.540	37888.714	┬18523708.000	┬5592746.600	┬52838449.000	┬19484038.000	┬2071572.200	87.254%	36335.995	┬3804771.000	1059
2	10:18:02	86.150%	112247.470	40405.869	┬18742893.000	┬5700997.000	┬53381878.000	┬19729206.000	┬2110505.800	84.845%	37509.838	┬3890850.700	1074
3	10:18:23	87.341%	111586.870	39469.667	┬19045179.000	┬5718442.700	┬53831504.000	┬19950996.000	┬2160928.000	83.568%	38469.062	┬3945291.200	1102
x		88.086%	111106.300	39254.750	┬18770593.000	┬5670728.800	┬53350610.000	┬19721414.000	┬2114335.300	85.222%	37438.298	┬3880304.300	1078
σ		2.397%	1442.796	1272.265	┬261836.690	┬68095.515	┬497265.250	┬233576.270	┬44800.842	1.872%	1068.332	┬70851.303	21
%RSD		2.722	1.299	3.241	┬1.395	┬1.201	┬0.932	┬1.184	┬2.119	2.196	2.854	┬1.826	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:17:40	11880.768	┬5556099.600	┬113537250.000	1601480.000	847443.420	1047994.400	838282.200	109250.030	-702.591	11427.563	607.076	1
2	10:18:02	10002.935	┬5672775.400	┬116869280.000	1652598.900	884343.120	1079325.700	853799.690	108278.520	-664.964	11518.384	586.599	1
3	10:18:23	12523.069	┬5819401.700	┬118700480.000	1653485.000	883778.780	1086867.100	867697.990	109315.710	-699.416	11246.477	607.996	1
x		11468.924	┬5682758.900	┬116369010.000	1635854.600	871855.100	1071395.700	853259.960	108948.090	-688.990	11397.475	600.557	1
σ		1309.573	┬131934.660	┬2617716.700	29772.614	21143.022	20613.941	14715.321	580.792	20.868	138.428	12.096	
%RSD		11.418	┬2.322	┬2.249	1.820	2.425	1.924	1.725	0.533	3.029	1.215	2.014	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	10:17:40	1053611.100	89.465%	2164275.000	348574.130	1143.654	171408.570	88.376%	1081909.300	724963.200	566779.520	735424.240	9
2	10:18:02	1071554.800	89.814%	┬2457412.300	356698.690	1044.411	170203.050	87.284%	1086230.700	737961.180	572927.900	750661.740	8
3	10:18:23	1064171.700	88.935%	┬2493760.000	342762.030	931.084	169907.790	88.407%	1076254.800	731169.260	567861.820	742158.900	8
x		1063112.500	89.405%	┬2371815.800	349344.950	1039.716	170506.470	88.022%	1081464.900	731364.550	569189.750	742748.290	8
σ		9018.585	0.443%	┬180652.080	7000.232	106.363	795.065	0.639%	5002.779	6501.188	3282.257	7635.827	
%RSD		0.848	0.495	┬7.617	2.004	10.230	0.466	0.726	0.463	0.889	0.577	1.028	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:17:40	43472.865	1930952.300	┬18728460.000	90.115%	0.000	419411.610	142012.000
2	10:18:02	46012.712	1901951.100	┬18679074.000	91.542%	0.000	413030.300	137703.060
3	10:18:23	44367.693	1966718.000	┬19340590.000	88.989%	0.000	414589.410	141036.230
x		44617.757	1933207.100	┬18916041.000	90.215%	0.000	415677.110	140250.430
σ		1288.257	32442.301	┬368498.260	1.279%	0.000	3326.799	2259.390
%RSD		2.887	1.678	┬1.948	1.418	0.000	0.800	1.611

STD4 10/19/2016 10:21:49 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51
1	10:22:10	85.410%	310889.000	108877.550	┬54206457.000	┬16552157.000	┬153832770.000	┬57100084.000	┬6190431.700	80.244%	109096.420	┬11434840.0(
2	10:22:32	85.511%	314115.260	112565.570	┬54127203.000	┬16680123.000	┬154812020.000	┬57420473.000	┬6258661.900	81.049%	110143.690	┬11481555.0(
3	10:22:53	84.824%	313486.900	114856.470	┬55196317.000	┬16815728.000	┬156380790.000	┬57949371.000	┬6470857.600	80.146%	111995.390	┬11937610.0(
x		85.248%	312830.390	112099.870	┬54509992.000	┬16682669.000	┬155008530.000	┬57489976.000	┬6306650.400	80.480%	110411.830	┬11618002.0(
σ		0.371%	1710.395	3016.543	┬595694.110	┬131803.920	┬1285323.300	┬428888.350	┬146242.420	0.496%	1467.972	┬277773.0(
%RSD		0.435	0.547	2.691	┬1.093	┬0.790	┬0.829	┬0.746	┬2.319	0.616	1.330	┬2.3(

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83K
1	10:22:10	-12994.357	┬16648398.000	┬338838630.000	┬5311573.800	2462953.800	┬3418647.400	2379145.700	312923.980	-2872.372	31683.654	606.7(
2	10:22:32	-11243.212	┬16638177.000	┬336266680.000	┬5258460.600	2487951.600	┬3462975.300	2393113.000	315205.610	-2689.422	32135.769	611.2(

3	10:22:53	-15471.172	┬16849152.000	┬342667020.000	┬5367975.900	2521073.700	┬3466612.000	2412125.300	317040.210	-3263.521	32284.798	626.7
x		-13236.247	┬16711909.000	┬339257450.000	┬5312670.100	2490659.700	┬3449411.600	2394794.700	315056.600	-2941.772	32034.740	614.9
σ		2124.334	┬118965.390	┬3220659.400	┬54765.921	29154.442	┬26704.491	16554.020	2062.156	293.274	313.048	10.5
%RSD		16.049	┬0.712	┬0.949	┬1.031	1.171	┬0.774	0.691	0.655	9.969	0.977	1.7

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135B
1	10:22:10	┬3497617.200	83.640%	┬7351328.500	1020403.500	1244.222	496376.640	82.244%	┬3723480.700	2172259.500	1708060.100	┬2523843.9
2	10:22:32	┬3552001.400	83.910%	┬7526881.400	1019493.500	1279.284	502657.720	82.705%	┬3775341.700	2198627.000	1729042.800	┬2577758.2
3	10:22:53	┬3589815.900	83.134%	┬7644645.600	1010512.200	1191.658	500105.240	82.885%	┬3821953.700	2228186.500	1734839.200	┬2578545.8
x		┬3546478.200	83.561%	┬7507618.500	1016803.100	1238.388	499713.200	82.611%	┬3773592.000	2199691.000	1723980.700	┬2560049.3
σ		┬46346.833	0.394%	┬147604.280	5467.056	44.104	3158.838	0.331%	┬49259.811	27978.679	14088.945	┬31357.2
%RSD		┬1.307	0.472	┬1.966	0.538	3.561	0.632	0.401	┬1.305	1.272	0.817	┬1.2

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:22:10	134612.180	┬6732223.500	┬56795212.000	85.443%	0.000	972221.090	425069.110
2	10:22:32	136888.510	┬6705646.500	┬56335347.000	87.165%	5.736	957054.270	426947.630
3	10:22:53	138539.410	┬6800082.800	┬57245225.000	86.780%	0.000	962037.290	428214.080
x		136680.030	┬6745984.300	┬56791928.000	86.463%	1.912	963770.880	426743.610
σ		1971.897	┬48698.824	┬454948.010	0.904%	3.312	7730.599	1582.380
%RSD		1.443	┬0.722	┬0.801	1.045	173.205	0.802	0.371

STD5 10/19/2016 10:27:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	10:27:52	80.776%	514277.790	182577.180	T 90751132.000	TM 27881369.000	TM 257234000.000	T 96608304.000	TM 10580265.000	75.552%	183593.120	TI
2	10:28:14	81.785%	505419.340	179793.970	T 89964817.000	TM 27679070.000	TM 260322720.000	TM 98131855.000	TM 10775359.000	75.450%	183890.410	TI
3	10:28:35	78.973%	513630.710	187695.050	T 87681579.000	TM 27513899.000	T 254737580.000	T 94596216.000	TM 10448305.000	77.553%	184083.250	TI
x		80.511%	511109.280	183355.400	T 89465843.000	TM 27691446.000	TM 257431430.000	TM 96445458.000	TM 10601310.000	76.185%	183855.600	TI
σ		1.424%	4938.246	4007.613	T 1594449.700	TM 184047.130	TM 2797796.600	TM 1773435.900	TM 164539.310	1.186%	246.912	
%RSD		1.769	0.966	2.186	T 1.782	TM 0.665	TM 1.087	TM 1.839	TM 1.552	1.556	0.134	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se
1	10:27:52	-28087.394	TM 28216467.000	T 564976150.000	TM 8991663.500	TM 4638999.200	T 5631538.000	TM 4349264.800	497104.170	-5268.738	49905.424
2	10:28:14	-13391.383	TM 28708823.000	TM 579218540.000	TM 9083256.300	TM 4688230.500	TM 5691168.600	TM 4426977.400	519881.640	-5232.769	50253.977
3	10:28:35	-22015.396	TM 28190326.000	T 564883200.000	TM 8879194.300	TM 4629577.300	T 5604101.600	TM 4327438.100	516837.240	-5472.044	50765.579
x		-21164.724	TM 28371872.000	TM 569692630.000	TM 8984704.700	TM 4652269.000	TM 5642269.400	TM 4367893.400	511274.350	-5324.517	50308.327
σ		7384.843	TM 292100.730	TM 8249812.100	TM 102208.810	TM 31497.836	TM 44514.490	TM 52319.133	12365.785	129.022	432.645
%RSD		34.892	TM 1.030	TM 1.448	TM 1.138	TM 0.677	TM 0.789	TM 1.198	2.419	2.423	0.860

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb
1	10:27:52	TM 5830222.600	81.758%	TM 12072126.000	1624703.000	2567.381	810686.650	80.460%	T 6183115.600	TM 4052399.800	2801325.900
2	10:28:14	TM 5830534.900	78.713%	TM 12708102.000	1646670.700	1528.373	813154.840	80.282%	T 6354790.300	TM 4147894.500	M 2868681.000
3	10:28:35	TM 5857975.100	79.610%	TM 12838368.000	1645841.900	2296.327	821577.640	80.289%	T 6344351.300	TM 4180604.700	M 2887701.600
x		TM 5839577.500	80.027%	TM 12539532.000	1639071.900	2130.694	815139.710	80.344%	T 6294085.700	TM 4126966.400	M 2852569.500
σ		TM 15933.528	1.565%	TM 409992.290	12450.693	538.943	5710.360	0.100%	T 96244.567	TM 66615.410	M 45385.863
%RSD		TM 0.273	1.955	TM 3.270	0.760	25.294	0.701	0.125	T 1.529	TM 1.614	M 1.591

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:27:52	M 270584.070	TM 11202880.000	TM 93635617.000	83.536%	0.000	1808340.000	M 856770.370
2	10:28:14	M 277723.400	TM 11470898.000	TM 94269272.000	83.509%	0.000	M 1844489.200	M 872619.930
3	10:28:35	M 284439.660	TM 11403652.000	TM 95290114.000	83.694%	5.974	M 1860142.100	M 877084.150
x		M 277582.380	TM 11359143.000	TM 94398334.000	83.580%	1.991	M 1837657.100	M 868824.820
σ		M 6928.871	TM 139442.250	TM 834765.020	0.100%	3.449	M 26568.263	M 10675.421
%RSD		M 2.496	TM 1.228	TM 0.884	0.120	173.205	M 1.446	M 1.229

ICV 10/19/2016 10:33:14 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:33:36	75.893%	55322.121	22634.888	T 10162448.000	T 2920315.600	T 27989004.000	T 9860960.600	975852.540	71.699%	19124.008	1802241.300	549939.340
2	10:33:57	75.053%	58002.272	23027.375	T 10223811.000	T 2981489.000	T 27890519.000	T 9879480.500	975413.280	70.890%	18891.779	1791399.500	556581.430
3	10:34:20	73.406%	58405.516	22818.764	T 10006645.000	T 2919660.400	T 27786053.000	T 9808156.500	988687.770	71.872%	19036.888	1823382.300	559864.360
x		74.784%	109.477%	120.653%	T 110.147%	T 107.218%	T 109.389%	T 101.636%	96.393%	71.487%	19017.558	93.997%	95.269%
σ		1.265%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.524%	117.315	n/a	n/a
%RSD		1.692	2.928	0.860	T 1.105	T 1.208	T 0.364	T 0.376	0.769	0.733	0.617	0.901	0.910

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:33:36	7517.716	T 2838282.000	T 58815306.000	846675.700	453442.100	557662.090	445058.770	54823.132	-234.411	5785.249	587.418	2315.048
2	10:33:57	10430.147	T 2937317.100	T 60574236.000	865629.900	465692.140	573281.370	461587.000	54358.536	35.204	5508.462	581.621	2828.796
3	10:34:20	9035.508	T 2891561.300	T 60090986.000	852424.970	457747.260	571704.260	452677.970	54988.133	-20.544	5612.905	530.826	2550.931
x		8994.457	T 103.159%	T 104.718%	96.969%	102.045%	99.993%	105.475%	102.063%	-73.250	106.980%	566.622	2564.925
σ		1456.649	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	142.325	n/a	31.136	257.160

%RSD		16.195	T 1.716	T 1.519	1.137	1.354	1.515	1.826	0.597	194.300	2.480	5.495	10.026
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:33:36	526940.740	79.164%	515540.070	172763.460	-347.546	87301.740	77.373%	566218.900	380353.040	295095.910	369952.710	77.300%
2	10:33:57	528034.220	78.325%	538819.120	173392.250	54.171	87390.378	77.715%	573864.410	386926.390	299367.860	377138.510	80.231%
3	10:34:20	521864.320	77.922%	547262.960	173525.010	458.282	87640.200	78.181%	572511.370	381467.620	297744.230	379882.070	80.126%
x		525613.090	78.470%	94.715%	102.341%	54.969	104.064%	77.756%	570864.890	382915.680	103.774%	96.799%	79.219%
σ		3292.251	0.634%	n/a	n/a	402.914	n/a	0.405%	4080.029	3517.796	n/a	n/a	1.663%
%RSD		0.626	0.807	3.077	0.235	732.987	0.201	0.521	0.715	0.919	0.725	1.365	2.099

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:33:36	48349.467	969631.130	T 9075839.000	81.239%	0.000	246343.650	136337.420
2	10:33:57	48166.512	984049.230	T 9152544.100	80.903%	0.000	263756.950	139934.500
3	10:34:20	48705.038	974973.800	T 9037424.100	81.932%	0.000	272292.160	139649.980
x		120.708%	90.039%	T 97.577%	81.358%	0.000	84.996%	97.230%
σ		n/a	n/a	T n/a	0.524%	0.000	n/a	n/a
%RSD		0.566	0.747	T 0.645	0.645	0.000	5.071	1.442

ICVL 10/19/2016 10:38:58 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	10:39:20	77.342%	200.768	7328.371	924108.760	37776.984	93918.978	908267.240	32951.276	73.303%	27.204	14369.932	10537.705
2	10:39:41	76.979%	188.768	7989.094	930342.770	37249.683	96301.579	913277.260	33886.278	72.863%	34.174	13310.980	10733.657
3	10:40:03	75.761%	221.651	7848.286	926011.240	37613.205	95371.974	906380.710	33575.821	72.161%	13.806	15018.026	11126.682
x		76.694%	121.759%	127.545%	100.767%	102.679%	112.020%	93.830%	98.768%	72.776%	25.062	92.615%	92.612%
σ		0.828%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.576%	10.352	n/a	n/a
%RSD		1.080	8.168	4.507	0.345	0.719	1.261	0.392	1.423	0.792	41.305	6.054	2.777

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	10:39:20	6506.679	9442.907	746214.000	3757.584	1722.456	4693.777	14671.333	1099.565	511.260	184.570	580.514	2986.851
2	10:39:41	7164.213	9983.373	762502.700	4185.342	1801.586	4854.093	15869.388	1190.434	478.161	220.903	590.861	2902.427
3	10:40:03	6510.741	10022.764	769199.160	4011.440	1542.103	4889.980	15281.645	1246.934	471.313	195.283	609.863	3016.937
x		6727.211	109.535%	99.678%	112.995%	117.333%	105.988%	111.110%	109.944%	486.911	95.035%	593.746	2968.738
σ		378.460	n/a	n/a	n/a	n/a	n/a	n/a	n/a	21.362	n/a	14.885	59.365
%RSD		5.626	3.301	1.557	5.399	7.875	2.171	3.922	6.306	4.387	9.323	2.507	2.000

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:39:20	27699.705	78.341%	21529.064	3512.235	-126.343	1004.273	78.121%	4775.153	7537.327	5856.209	6097.780	79.056%
2	10:39:41	27423.182	79.869%	21253.377	3852.340	-113.195	930.895	78.361%	5398.757	7826.155	6112.412	6353.536	79.297%
3	10:40:03	28204.611	78.607%	21423.971	3654.295	-40.506	835.260	77.150%	5911.404	8053.414	6348.779	6194.153	77.248%
x		96.253%	78.939%	118.655%	108.497%	-93.348	109.900%	77.877%	5361.771	7805.632	133.157%	100.094%	78.534%
σ		n/a	0.816%	n/a	n/a	46.232	n/a	0.642%	569.028	258.655	n/a	n/a	1.120%
%RSD		1.427	1.034	0.650	4.651	49.527	9.177	0.824	10.613	3.314	4.035	2.078	1.427

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:39:20	3922.271	22116.410	17078.544	79.045%	0.000	14671.010	15352.424
2	10:39:41	3928.975	22361.798	17510.810	80.238%	0.000	14961.728	15582.574
3	10:40:03	3996.885	21838.042	16845.777	81.362%	0.000	14804.226	15063.007
x		98.482%	101.942%	115.045%	80.215%	0.000	48.275%	107.529%
σ		n/a	n/a	n/a	1.159%	0.000	n/a	n/a
%RSD		1.045	1.185	1.968	1.445	0.000	0.982	1.698

ICBIS 10/19/2016 10:44:40 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:45:02	76.397%	20.113	1016.551	32519.145	602.654	3865.002	2874.223	-226.022	71.463%	6.967	384.718	-420.785
2	10:45:24	76.740%	6.950	814.281	39055.203	586.622	3314.957	2176.541	-312.716	71.672%	13.892	130.280	-454.992
3	10:45:45	73.821%	0.821	920.529	31549.104	438.743	2913.897	1613.537	-340.448	72.761%	13.698	-744.579	-473.085
x		75.653%	9.295	917.121	34374.484	542.673	3364.618	2221.434	-293.062	71.966%	11.519	-76.527	-449.621
σ		1.596%	9.857	101.178	4082.535	90.362	477.493	631.541	59.691	0.697%	3.943	592.372	26.561
%RSD		2.110	106.049	11.032	11.877	16.651	14.192	28.429	20.368	0.968	34.231	774.069	5.907

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:45:02	6905.127	453.599	13028.835	202.337	73.994	91.036	121.022	3.035	516.554	-13.442	612.497	2988.026
2	10:45:24	6923.081	311.358	8225.472	159.827	24.896	69.088	55.920	16.670	541.825	-67.111	581.538	2872.466
3	10:45:45	7024.144	278.947	-1671.223	136.498	31.141	29.823	148.025	74.993	499.459	-11.759	563.138	2897.054
x		6950.784	347.968	6527.695	166.221	43.344	63.316	108.322	31.566	519.279	-30.771	585.724	2919.182
σ		64.163	92.903	7495.650	33.382	26.727	31.012	47.347	38.222	21.314	31.483	24.945	60.875
%RSD		0.923	26.699	114.828	20.083	61.663	48.981	43.710	121.085	4.105	102.315	4.259	2.085

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:45:02	109.511	78.717%	1114.296	4.683	-77.860	-9.752	77.961%	2353.881	639.225	497.657	55.161	76.750%
2	10:45:24	88.349	79.203%	1409.971	-21.423	-78.189	-9.881	79.360%	2463.613	794.737	565.810	60.331	79.051%
3	10:45:45	82.025	78.552%	1205.929	-2.532	-62.675	-44.018	79.378%	2841.039	858.510	617.311	72.913	78.511%
x		93.295	78.824%	1243.399	-6.424	-72.908	-21.217	78.899%	2552.844	764.157	560.259	62.802	78.104%
σ		14.395	0.338%	151.357	13.481	8.863	19.746	0.813%	255.544	112.795	60.020	9.130	1.203%
%RSD		15.430	0.429	12.173	209.850	12.157	93.069	1.030	10.010	14.761	10.713	14.538	1.541

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:45:02	133.774	1205.313	1294.393	79.964%	0.000	-1147.651	-151.437
2	10:45:24	82.860	1025.340	1247.105	80.588%	0.000	-1200.082	-170.486
3	10:45:45	90.447	1123.460	979.836	82.288%	0.000	-978.269	-183.408
x		102.360	1118.037	1173.778	80.947%	0.000	-1108.667	-168.443
σ		27.468	90.109	169.614	1.203%	0.000	115.931	16.083
%RSD		26.835	8.060	14.450	1.486	0.000	10.457	9.548

ICSA 10/19/2016 10:50:23 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:50:45	75.451%	10.542	942.811	TM 186682420.000	T 18997637.000	T 174183290.000	TM 189799750.000	T 7020446.500	78.336%	385901.030	2557.901	3705.125
2	10:51:06	75.945%	16.996	702.966	TM 189040090.000	T 18893342.000	T 175408590.000	TM 193627570.000	T 7195011.500	78.812%	385863.300	949.346	3857.541
3	10:51:28	73.567%	28.043	945.830	TM 185675670.000	T 18942366.000	T 173264840.000	TM 189693400.000	T 7260983.200	79.065%	391659.850	1595.637	3552.230
x		74.988%	1.#IO%	1.#IO%	TM 101.728%	T 103.615%	T 102.542%	TM 98.566%	T 105.623%	78.738%	387808.060	1.#IO%	1.#IO%
σ		1.255%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.370%	3335.801	n/a	n/a
%RSD		1.674	47.769	16.131	TM 0.923	T 0.275	T 0.617	TM 1.173	T 1.736	0.470	0.860	47.587	4.120

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:50:45	2653.541	2248.651	T 385131600.000	431.627	589.410	1081.628	-599.601	-179.301	559.223	-37.439	678.219	2907.117
2	10:51:06	2920.387	2416.200	T 382750430.000	422.546	427.139	972.020	-479.581	-193.792	573.342	-78.348	650.795	3198.198
3	10:51:28	2823.300	2590.341	T 390937970.000	636.140	602.788	1176.775	-593.179	-26.518	505.464	-55.476	654.555	2818.090
x		2799.076	1.#IO%	T 101.417%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	546.010	-1.#IO%	661.190	2974.468

σ		135.063	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	35.816	n/a	14.867	198.803
%RSD		4.825	7.065	T 1.090	24.313	18.114	9.515	12.112	69.575	6.560	35.913	2.249	6.684
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:50:45	4255.911	81.930%	T 3878861.800	520.063	528.046	105.086	82.939%	4039.509	933.351	652.053	220.111	84.138%
2	10:51:06	4272.459	83.565%	T 3950131.200	622.696	552.191	86.920	83.668%	5355.201	1232.669	770.369	158.355	88.530%
3	10:51:28	4219.072	85.404%	T 3963139.100	557.033	517.727	30.732	84.486%	5042.885	1274.803	848.312	286.935	88.220%
x		1.#IO%	83.633%	T 108.961%	1.#IO%	532.655	1.#IO%	83.698%	4812.532	1146.941	1.#IO%	1.#IO%	86.963%
σ		n/a	1.738%	T n/a	n/a	17.688	n/a	0.774%	687.429	186.170	n/a	n/a	2.451%
%RSD		0.643	2.078	T 1.154	9.174	3.321	52.209	0.925	14.284	16.232	13.056	28.993	2.819

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:50:45	529.744	1217.616	5682.655	85.223%	0.000	93391.128	-149.043
2	10:51:06	758.598	1293.620	5852.597	85.827%	0.000	78081.803	-102.850
3	10:51:28	687.909	1510.469	7004.182	86.554%	0.000	60613.384	-103.731
x		1.#IO%	1.#IO%	1.#IO%	85.868%	0.000	1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	0.666%	0.000	n/a	n/a
%RSD		17.788	11.336	11.634	0.776	0.000	21.200	22.287

ICSAB 10/19/2016 10:56:06 AM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:56:28	68.503%	4571.197	67897.899	TM 189906520.000	T 19111332.000	T 178737090.000	TM 194573300.000	T 7173340.400	72.828%	392564.190	69728.412	1403
2	10:56:49	67.487%	4569.721	70591.374	TM 188203080.000	T 19161427.000	T 178567190.000	TM 196567100.000	T 7192653.200	73.872%	394470.020	71555.045	1398
3	10:57:11	66.708%	4761.922	69978.936	TM 182310280.000	T 18681220.000	T 174914130.000	TM 192274100.000	T 7167515.900	75.112%	390220.390	68828.435	1379
x		67.566%	110.788%	114.778%	TM 101.551%	T 103.835%	T 104.378%	TM 100.336%	T 105.904%	73.937%	392418.200	91.147%	95
σ		0.900%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.144%	2128.572	n/a	
%RSD		1.332	2.385	2.032	TM 2.134	T 1.390	T 1.217	TM 1.105	T 0.183	1.547	0.542	1.984	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:56:28	3859.636	107379.890	T 392397030.000	82258.307	16555.537	41315.329	30759.590	23468.449	-78.169	6043.553	689.952	28
2	10:56:49	3692.673	106065.790	T 391512490.000	83499.789	17106.952	42544.855	31903.182	24189.393	77.939	5971.876	624.018	31
3	10:57:11	3895.419	107296.480	T 392436440.000	82575.111	16737.617	42678.479	31460.163	24483.391	-47.707	6131.212	644.725	29
x		3815.910	95.439%	T 102.951%	93.892%	93.383%	92.892%	91.292%	99.666%	-15.979	91.861%	652.898	29
σ		108.215	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	82.749	n/a	33.718	1
%RSD		2.836	0.688	T 0.133	0.779	1.672	1.781	1.838	2.172	517.855	1.319	5.164	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	10:56:28	3422.051	80.841%	T 3891805.200	84875.469	602.490	20268.721	81.674%	2865.260	145033.650	115081.560	149045.100	85
2	10:56:49	3524.701	79.818%	T 4044836.000	84440.030	450.522	20112.442	82.130%	3482.570	151192.780	116820.460	151129.560	85
3	10:57:11	3593.667	79.806%	T 4043003.600	84879.051	506.993	20181.163	82.362%	3697.432	150678.320	118575.580	152282.430	87
x		3513.473	80.155%	T 110.693%	100.117%	520.002	96.098%	82.055%	3348.421	148968.250	101.911%	97.157%	86
σ		86.357	0.594%	T n/a	n/a	76.815	n/a	0.350%	432.001	3417.159	n/a	n/a	1
%RSD		2.458	0.741	T 2.199	0.298	14.772	0.388	0.427	12.902	2.294	1.495	1.088	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:56:28	40763.277	242199.660	340030.600	83.989%	0.000	287764.010	162472.070
2	10:56:49	42285.904	248552.800	347883.750	84.208%	0.000	304860.020	165778.000
3	10:57:11	42402.737	248610.350	348821.980	84.860%	0.000	312712.950	166678.310
x		104.276%	90.924%	92.755%	84.352%	0.000	98.352%	115.699%
σ		n/a	n/a	n/a	0.453%	0.000	n/a	n/a
%RSD		2.187	1.495	1.397	0.537	0.000	4.227	1.343

CCV 10/19/2016 11:01:49 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:02:11	63.208%	115993.880	41789.243	T 19441956.000	T 5827910.400	T 55051629.000	T 19382032.000	1962096.300	62.307%	38571.886	T 3881822.900	11070
2	11:02:33	60.115%	121272.510	43573.385	T 19759583.000	T 6001541.800	T 55496567.000	T 19708138.000	1983840.000	60.337%	38987.355	T 3933522.300	11194
3	11:02:55	60.848%	118470.450	44548.625	T 19432511.000	T 5802898.300	T 54828770.000	T 19060560.000	1963206.500	61.366%	38979.898	T 3933429.900	11292
x		61.391%	113.391%	114.442%	T 106.248%	T 107.154%	T 108.112%	T 100.008%	96.872%	61.337%	38846.380	T 101.933%	95
σ		1.616%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.985%	237.747	T n/a	
%RSD		2.632	2.227	3.231	T 0.953	T 1.841	T 0.617	T 1.670	0.622	1.606	0.612	T 0.761	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:02:11	14035.595	T 5796498.400	T 118139420.000	1675785.800	907289.800	1103918.900	899314.790	107037.120	-781.479	10934.084	546.385	14
2	11:02:33	11426.719	T 5943783.800	T 122118570.000	1712986.100	904289.480	1146015.100	925474.830	106640.390	-853.480	11062.158	557.115	19
3	11:02:55	11272.151	T 5840495.500	T 119725110.000	1673809.400	913026.180	1115219.100	915151.130	108130.190	-1024.916	11342.746	603.037	17
x		12244.822	T 104.626%	T 105.016%	95.705%	100.964%	98.814%	106.301%	100.033%	-886.625	105.480%	568.846	17
σ		1552.780	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	125.057	n/a	30.093	2

%RSD		12.681	T 1.290	T 1.669	1.308	0.489	1.942	1.443	0.719	14.105	1.881	5.290	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	11:02:11	1029279.600	71.747%	2201979.800	344954.250	715.018	171252.780	74.308%	1088731.900	735476.730	569566.930	738931.550	75
2	11:02:33	1047298.800	71.500%	2251788.300	351913.110	865.407	175010.320	72.338%	1108285.500	748812.420	582656.760	746765.100	74
3	11:02:55	1056703.000	70.886%	2275244.600	349595.150	1105.554	175198.400	71.721%	1124561.600	751760.100	591477.770	754703.740	75
x		1044427.100	71.378%	99.483%	103.040%	895.326	103.429%	72.789%	1107193.000	745349.750	101.406%	96.217%	75
σ		13935.421	0.443%	n/a	n/a	196.980	n/a	1.351%	17939.833	8676.384	n/a	n/a	(
%RSD		1.334	0.621	1.668	1.016	22.001	1.280	1.856	1.620	1.164	1.897	1.056	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:02:11	45233.016	1940777.700	T 19050658.000	77.057%	0.000	253228.590	146144.640
2	11:02:33	46167.837	1944148.300	T 18899691.000	77.229%	0.000	270499.630	145930.730
3	11:02:55	46214.530	1932948.000	T 18770184.000	78.435%	0.000	280027.210	143618.870
x		114.386%	89.433%	T 101.493%	77.574%	0.000	87.317%	101.852%
σ		n/a	n/a	T n/a	0.751%	0.000	n/a	n/a
%RSD		1.207	0.296	T 0.742	0.968	0.000	5.070	0.964

CCB 10/19/2016 11:07:32 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:07:54	66.511%	20.732	715.982	48223.279	1739.662	14216.153	22310.575	305.127	63.763%	46.755	-528.303	-700.789
2	11:08:16	64.028%	6.280	856.929	58617.655	2746.109	23161.440	25086.430	387.323	63.004%	71.007	344.409	-805.103
3	11:08:37	66.913%	1.870	835.717	59301.345	3227.494	29953.562	25104.919	655.661	64.105%	69.773	1384.870	-578.218
x		65.817%	9.627	802.876	55380.760	2571.088	22443.718	24167.308	449.370	63.624%	62.512	400.325	-694.703
σ		1.562%	9.866	75.996	6207.979	759.200	7893.216	1608.005	183.319	0.563%	13.660	957.812	113.565
%RSD		2.374	102.482	9.465	11.210	29.528	35.169	6.654	40.795	0.886	21.852	239.258	16.347

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:07:54	6067.280	362.094	33420.225	127.435	61.454	101.918	146.650	-5.501	428.658	-2.046	584.706	2849.890
2	11:08:16	6075.466	467.437	56962.391	200.655	78.271	66.583	100.882	-52.761	483.618	-58.754	545.888	2862.379
3	11:08:37	5614.135	326.421	56162.416	134.441	53.236	76.596	126.483	-57.227	455.318	-61.931	530.756	2652.826
x		5918.960	385.317	48848.344	154.177	64.320	81.699	124.672	-38.496	455.865	-40.911	553.783	2788.365
σ		264.019	73.320	13367.129	40.403	12.761	18.212	22.938	28.662	27.484	33.695	27.828	117.546
%RSD		4.461	19.029	27.365	26.206	19.840	22.292	18.398	74.454	6.029	82.363	5.025	4.216

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:07:54	34.638	73.966%	4341.892	-39.951	-102.323	15.315	74.910%	3704.732	847.678	691.027	17.725	75.597%
2	11:08:16	81.342	72.306%	5121.354	40.129	-58.459	-41.111	74.925%	4177.919	1095.320	805.662	31.067	75.062%
3	11:08:37	140.866	73.947%	4877.345	6.583	-106.815	6.331	75.177%	4170.570	1165.187	841.856	84.141	74.968%
x		85.615	73.406%	4780.197	2.254	-89.199	-6.488	75.004%	4017.740	1036.061	779.515	44.311	75.209%
σ		53.243	0.953%	398.708	40.215	26.716	30.319	0.150%	271.098	166.843	78.741	35.133	0.339%
%RSD		62.188	1.298	8.341	1784.373	29.951	467.272	0.200	6.748	16.104	10.101	79.287	0.451

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:07:54	196.778	1828.813	1200.179	78.236%	0.000	-1634.784	-194.931
2	11:08:16	158.883	1760.954	1166.306	79.073%	0.000	-1738.930	-144.479
3	11:08:37	212.559	1650.929	1597.694	78.195%	0.000	-1512.508	-156.558
x		189.407	1746.898	1321.393	78.501%	0.000	-1628.741	-165.323
σ		27.587	89.771	239.882	0.495%	0.000	113.332	26.343
%RSD		14.565	5.139	18.154	0.631	0.000	6.958	15.934

200-35736-A-11-A 10/19/2016 11:13:14 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:13:36	75.350%	664.195	4575.010	T 1104424.800	T 2430881.500	T 93532686.000	T 8530341.400	T 3291619.400	84.004%	16388.669	234916.590	175844.130
2	11:13:58	74.184%	698.373	4762.677	T 1049959.100	T 2313018.500	T 88778776.000	T 8326647.600	T 3284175.900	88.100%	16037.719	234905.970	171953.040
3	11:14:20	71.806%	680.034	5180.824	T 1016499.900	T 2411766.500	T 92289510.000	T 8500760.300	T 3341094.200	87.570%	15635.701	234757.260	178836.020
x		73.780%	680.867	4839.503	T 1056961.300	T 2385222.100	T 91533657.000	T 8452583.100	T 3305629.800	86.558%	16020.697	234859.940	175544.400
σ		1.806%	17.104	310.128	T 44378.702	T 63256.402	T 2465441.200	T 110061.670	T 30937.766	2.228%	376.772	89.085	3451.263
%RSD		2.448	2.512	6.408	T 4.199	T 2.652	T 2.693	T 1.302	T 0.936	2.574	2.352	0.038	1.966

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:13:36	4399.727	TM 30983831.000	T 374424400.000	156172.550	62309.889	1596899.600	477207.190	6801.959	119.313	764.401	204.937	98.411
2	11:13:58	3789.700	TM 30781587.000	T 372249080.000	155467.300	60101.126	1575810.100	465160.890	6820.751	122.680	728.689	216.860	223.291
3	11:14:20	3931.606	TM 31503888.000	T 382581710.000	158492.280	62710.383	1615380.300	477543.840	6716.207	159.277	635.832	210.377	668.690
x		4040.344	TM 31089769.000	T 376418390.000	156710.710	61707.133	1596030.000	473303.980	6779.639	133.757	709.640	210.725	330.131
σ		319.220	TM 372621.490	T 5447274.900	1582.667	1405.184	19799.426	7054.130	55.732	22.165	66.367	5.969	299.776
%RSD		7.901	TM 1.199	T 1.447	1.010	2.277	1.241	1.490	0.822	16.571	9.352	2.833	90.805

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:13:36	800140.830	204.758%	6712.412	6969.455	-473.351	3306.489	80.757%	60895.725	2878.946	2463.809	490110.290	97.714%
2	11:13:58	790911.490	206.041%	6492.804	6520.785	-292.650	3131.800	82.542%	60447.389	3112.079	2364.045	493853.880	97.704%
3	11:14:20	805916.540	211.064%	6179.730	6965.156	-353.348	3247.556	83.660%	61630.218	2974.058	2416.554	496922.430	100.962%
x		798989.620	207.288%	6461.649	6818.466	-373.116	3228.615	82.320%	60991.111	2988.361	2414.802	493628.870	98.793%
σ		7568.479	3.333%	267.704	257.808	91.959	88.872	1.464%	597.156	117.223	49.905	3411.639	1.878%
%RSD		0.947	1.608	4.143	3.781	24.646	2.753	1.779	0.979	3.923	2.067	0.691	1.901

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:13:36	1778.671	6504.192	2355376.300	84.942%	0.000	267973.230	88600.232
2	11:13:58	1635.566	6293.510	2316880.400	89.408%	0.000	239708.210	84383.427
3	11:14:20	1500.499	6293.224	2352482.800	88.441%	0.000	235973.590	86893.293
x		1638.245	6363.642	2341579.800	87.597%	0.000	247885.010	86625.651
σ		139.105	121.720	21439.179	2.349%	0.000	17496.839	2121.104
%RSD		8.491	1.913	0.916	2.682	0.000	7.058	2.449

200-35736-A-11-A SD@5 10/19/2016 11:18:56 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:19:18	71.901%	178.421	1229.730	222346.730	476341.930	T 20103503.000	T 1808221.500	654261.400	79.439%	3394.350	51087.838	37750.981
2	11:19:40	73.215%	117.002	1103.028	218586.490	486486.120	T 19922737.000	T 1793359.800	662392.460	78.834%	3514.220	51279.872	38886.590
3	11:20:02	71.042%	106.791	1243.639	221930.340	481481.230	T 20106164.000	T 1802928.500	676524.550	78.251%	3298.332	54279.109	38888.048
x		72.053%	134.071	1192.132	220954.520	481436.430	T 20044135.000	T 1801503.300	664392.800	78.842%	3402.301	52215.606	38508.540
σ		1.095%	38.746	77.479	2061.315	5072.245	T 105141.580	T 7532.636	11265.563	0.594%	108.163	1789.623	656.065
%RSD		1.519	28.899	6.499	0.933	1.054	T 0.525	T 0.418	1.696	0.753	3.179	3.427	1.704

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:19:18	4001.501	T 6623905.800	T 81092676.000	33004.589	13551.294	352996.920	111006.790	2725.685	319.224	139.535	135.718	607.611
2	11:19:40	3868.233	T 6755940.800	T 82653432.000	35182.877	13344.428	359197.080	112660.600	2784.833	316.414	158.861	185.299	550.996
3	11:20:02	3599.672	T 6753224.200	T 83773244.000	35848.216	13379.974	363127.720	115541.910	2690.897	331.926	75.262	150.375	827.890
x		3823.135	T 6711023.600	T 82506451.000	34678.561	13425.232	358440.570	113069.760	2733.805	322.521	124.553	157.131	662.165

σ		204.676	T 75458.467	T 1346315.000	1487.382	110.610	5107.595	2295.080	47.491	8.265	43.767	25.471	146.287
%RSD		5.354	T 1.124	T 1.632	4.289	0.824	1.425	2.030	1.737	2.563	35.139	16.210	22.092
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:19:18	153377.740	109.195%	1722.549	1310.593	-97.611	653.696	84.367%	11548.219	571.832	446.051	92941.313	86.058%
2	11:19:40	154716.010	108.503%	1872.360	1247.561	-44.413	690.603	84.998%	11886.194	667.528	547.264	93125.322	85.780%
3	11:20:02	153184.710	109.916%	2061.008	1316.743	-113.923	637.795	85.453%	12420.115	669.732	566.618	94904.886	85.775%
x		153759.490	109.205%	1885.306	1291.632	-85.316	660.698	84.939%	11951.509	636.364	519.978	93657.174	85.871%
σ		833.976	0.707%	169.600	38.290	36.349	27.091	0.546%	439.603	55.897	64.749	1084.460	0.162%
%RSD		0.542	0.647	8.996	2.964	42.606	4.100	0.642	3.678	8.784	12.452	1.158	0.189

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:19:18	265.984	1282.797	454403.300	84.894%	0.000	29061.145	15311.868
2	11:19:40	337.099	1372.109	454063.900	86.822%	0.000	30389.036	16154.649
3	11:20:02	366.272	1326.011	463718.530	85.086%	0.000	32002.411	17417.656
x		323.118	1326.972	457395.240	85.601%	0.000	30484.198	16294.724
σ		51.585	44.664	5478.758	1.062%	0.000	1472.940	1059.860
%RSD		15.965	3.366	1.198	1.240	0.000	4.832	6.504

200-35736-A-11-A PDS 10/19/2016 11:24:39 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	11:25:01	74.536%	2402.394	69702.256	T 9188429.700	T 2620365.900	T 87548673.000	T 16301555.000	T 3430567.100	90.937%	15130.779	331764.960	260571.
2	11:25:22	74.846%	2328.910	67427.242	T 8788590.300	T 2559243.200	T 87310819.000	T 15986500.000	T 3450892.000	92.394%	14626.580	339045.050	256416.
3	11:25:44	73.646%	2319.495	69828.464	T 8830294.300	T 2601796.400	T 88126688.000	T 16434185.000	T 3594519.400	91.708%	14683.196	347415.110	264057.
x		74.343%	2350.266	68985.987	T 8935771.400	T 2593801.800	T 87662060.000	T 16240747.000	T 3491992.800	91.680%	14813.519	339408.370	260348.
σ		0.623%	45.389	1351.388	T 219799.850	T 31335.765	T 419586.810	T 229953.790	T 89370.333	0.729%	276.210	7831.403	3825.
%RSD		0.838	1.931	1.959	T 2.460	T 1.208	T 0.479	T 1.416	T 2.559	0.795	1.865	2.307	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	11:25:01	5388.529	TM 29629007.000	T 368039550.000	176428.350	70303.435	1553830.100	556537.990	10498.811	112.005	2445.491	190.302	-43.
2	11:25:22	3818.605	TM 29324554.000	T 366061440.000	177186.880	70596.190	1560049.900	550499.500	11027.924	33.110	2550.529	201.691	65.
3	11:25:44	4759.283	TM 30147695.000	T 370084900.000	178083.340	71310.626	1571522.600	565130.260	10953.248	35.755	2528.974	194.367	94.
x		4655.472	TM 29700419.000	T 368061960.000	177232.860	70736.750	1561800.900	557389.250	10826.661	60.290	2508.331	195.454	38.
σ		790.094	TM 416191.090	T 2011821.300	828.452	518.099	8975.277	7352.434	286.371	44.806	55.478	5.772	72.
%RSD		16.971	TM 1.401	T 0.547	0.467	0.732	0.575	1.319	2.645	74.317	2.212	2.953	186.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	11:25:01	1022271.700	212.112%	75176.269	39789.411	-27.337	10616.596	86.179%	55522.289	55879.850	44150.533	516277.320	101.04
2	11:25:22	1033437.900	209.262%	77366.725	41653.539	-200.020	11355.668	85.775%	55929.948	56893.894	45453.312	529079.260	101.78
3	11:25:44	1020468.200	211.172%	78444.815	40871.350	-274.893	11370.388	87.207%	55931.882	56336.524	45085.940	528861.040	102.23
x		1025392.600	210.849%	76995.936	40771.433	-167.417	11114.217	86.387%	55794.707	56370.089	44896.595	524739.210	101.68
σ		7025.557	1.453%	1665.521	936.072	126.957	431.016	0.738%	235.922	507.855	671.712	7329.019	0.60
%RSD		0.685	0.689	2.163	2.296	75.833	3.878	0.854	0.423	0.901	1.496	1.397	0.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:25:01	32596.568	187017.300	2361565.900	88.166%	0.000	465577.860	226060.380
2	11:25:22	33073.954	188482.510	2366040.600	89.902%	0.000	464436.280	230738.500
3	11:25:44	34812.357	188738.880	2347636.200	91.473%	0.000	469748.490	226162.290
x		33494.293	188079.560	2358414.200	89.847%	0.000	466587.540	227653.720
σ		1166.166	928.836	9598.432	1.654%	0.000	2796.334	2671.981
%RSD		3.482	0.494	0.407	1.841	0.000	0.599	1.174

200-35736-A-11-I MS 10/19/2016 11:30:21 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	11:30:43	73.782%	2467.696	59803.391	T 8936509.000	T 2754739.700	T 99452409.000	T 16784635.000	T 4028901.700	93.254%	20756.182	373478.360	284016.
2	11:31:05	71.677%	2568.330	62112.588	T 8831708.100	T 2724904.800	T 98175167.000	T 16426429.000	T 4017310.800	94.030%	20715.621	377507.460	282425.
3	11:31:26	71.988%	2685.713	62629.322	T 8894522.000	T 2715607.900	T 97105195.000	T 16802170.000	T 4057499.700	94.074%	20861.521	376801.820	283505.
x		72.482%	2573.913	61515.100	T 8887579.700	T 2731750.800	T 98244257.000	T 16671078.000	T 4034570.700	93.786%	20777.774	375929.220	283315.
σ		1.136%	109.116	1504.731	T 52744.224	T 20444.428	T 1175131.400	T 212053.410	T 20685.510	0.461%	75.309	2151.627	812.
%RSD		1.567	4.239	2.446	T 0.593	T 0.748	T 1.196	T 1.272	T 0.513	0.492	0.362	0.572	0.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	11:30:43	4119.887	TM 30603076.000	T 369883990.000	174431.820	76674.598	1767884.900	565561.160	10672.367	51.776	2659.840	199.550	-201.
2	11:31:05	4679.879	TM 30677185.000	T 372012050.000	176005.670	76800.472	1774668.400	560827.050	10739.086	65.775	2520.186	202.542	41.
3	11:31:26	3868.051	TM 30809944.000	T 373141040.000	175423.070	76128.867	1803029.900	569392.650	10594.544	114.898	2467.976	190.148	-9.
x		4222.606	TM 30696735.000	T 371679030.000	175286.850	76534.646	1781861.000	565260.290	10668.666	77.483	2549.334	197.413	-56.
σ		415.547	TM 104810.780	T 1653867.200	795.716	357.006	18643.851	4290.724	72.342	33.150	99.198	6.467	127.

%RSD		9.841	TM 0.341	T 0.445	0.454	0.466	1.046	0.759	0.678	42.784	3.891	3.276	227.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	11:30:43	1166089.100	226.235%	68097.423	41547.112	-362.297	11023.671	84.441%	63644.214	16264.347	12446.162	544560.370	100.38
2	11:31:05	1185569.400	227.506%	69214.047	41985.127	-434.875	10860.819	84.180%	64818.105	15774.228	12779.729	551994.170	102.62
3	11:31:26	1181705.400	230.392%	69544.243	41621.115	-369.626	10656.744	85.986%	65592.301	15748.987	12542.346	548295.140	104.37
x		1177787.900	228.045%	68951.904	41717.785	-388.933	10847.078	84.869%	64684.873	15929.187	12589.412	548283.230	102.46
σ		10314.081	2.130%	758.196	234.464	39.956	183.849	0.976%	980.854	290.531	171.692	3716.914	2.00
%RSD		0.876	0.934	1.100	0.562	10.273	1.695	1.150	1.516	1.824	1.364	0.678	1.9

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:30:43	34798.675	157929.510	2258851.400	88.989%	0.000	483322.320	230717.620
2	11:31:05	35106.623	165275.490	2335938.500	87.144%	0.000	495290.010	240621.510
3	11:31:26	35167.325	159191.550	2247408.000	91.563%	0.000	477403.240	232621.740
x		35024.208	160798.850	2280732.600	89.232%	0.000	485338.520	234653.620
σ		197.661	3927.899	48150.884	2.219%	0.000	9112.243	5255.297
%RSD		0.564	2.443	2.111	2.487	0.000	1.878	2.240

200-35736-A-11-J MSD 10/19/2016 11:36:04 AM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52C**
1	11:36:26	74.948%	2345.743	58396.559	T 9240436.600	T 2881625.300	T 96102270.000	T 16643042.000	T 2922941.700	92.216%	16358.473	369658.570	286102.85
2	11:36:48	73.198%	2521.593	60735.995	T 8884088.900	T 2820086.000	T 93463194.000	T 16510553.000	T 2884397.200	95.224%	16765.561	372701.050	282350.70
3	11:37:09	71.458%	2579.724	62058.815	T 8774188.400	T 2789744.900	T 93316621.000	T 16303161.000	T 2907404.500	95.697%	16802.990	366556.400	277205.78
x		73.202%	2482.353	60397.123	T 8966238.000	T 2830485.400	T 94294028.000	T 16485585.000	T 2904914.500	94.379%	16642.342	369638.670	281886.44
σ		1.745%	121.826	1854.496	T 243737.960	T 46814.686	T 1567697.400	T 171310.320	T 19392.512	1.888%	246.549	3072.373	4466.66
%RSD		2.384	4.908	3.071	T 2.718	T 1.654	T 1.663	T 1.039	T 0.668	2.001	1.481	0.831	1.58

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84K**
1	11:36:26	4855.909	T 27871213.000	T 368322850.000	177113.260	75795.647	1692294.600	590146.630	10696.772	137.171	2477.448	174.846	311.13
2	11:36:48	3632.811	T 27686020.000	T 359823190.000	172763.440	75451.875	1679769.900	578496.530	10616.934	161.545	2502.038	193.245	139.02
3	11:37:09	4527.926	T 27527077.000	T 362742750.000	171023.850	74685.685	1670441.600	583213.630	11147.300	103.161	2465.575	183.878	52.64
x		4338.882	T 27694770.000	T 363629600.000	173633.520	75311.069	1680835.400	583952.260	10820.335	133.959	2481.687	183.990	167.60
σ		633.085	T 172234.490	T 4318671.000	3136.558	568.220	10965.420	5860.066	285.960	29.324	18.597	9.200	131.59
%RSD		14.591	T 0.622	T 1.188	1.806	0.754	0.652	1.004	2.643	21.890	0.749	5.000	78.51
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	11:36:26	904305.460	218.842%	72448.999	41049.371	-231.591	12210.484	87.792%	61220.274	15451.425	12050.829	498260.960	103.285%
2	11:36:48	942873.870	220.747%	74084.648	42146.301	-213.115	11992.584	85.902%	63297.538	15385.261	12657.308	515530.790	104.184%
3	11:37:09	928877.710	216.632%	74402.805	41122.869	-183.382	12455.205	87.015%	63122.021	15856.766	12471.073	509514.460	104.153%
x		925352.340	218.740%	73645.484	41439.514	-209.363	12219.424	86.903%	62546.611	15564.484	12393.070	507768.740	103.874%
σ		19524.386	2.059%	1048.327	613.198	24.322	231.440	0.950%	1151.989	255.277	310.673	8766.266	0.510%
%RSD		2.110	0.941	1.423	1.480	11.617	1.894	1.093	1.842	1.640	2.507	1.726	0.49

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:36:26	35036.115	160725.650	2364566.600	87.974%	0.000	460969.040	229695.150
2	11:36:48	37027.324	164618.580	2356572.800	90.327%	0.000	457614.580	228204.850
3	11:37:09	36109.919	159527.910	2286375.700	93.004%	0.000	446736.840	228066.240
x		36057.786	161624.050	2335838.300	90.435%	0.000	455106.820	228655.410
σ		996.627	2661.592	43021.985	2.517%	0.000	7440.129	903.102
%RSD		2.764	1.647	1.842	2.783	0.000	1.635	0.395

200-35736-A-12-A 10/19/2016 11:41:47 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:42:09	67.604%	745.069	4646.299	821561.520	T 2762155.700	T 77363426.000	T 7337271.900	T 4182026.000	88.750%	7795.337	213483.790	158800.260
2	11:42:30	67.495%	609.231	4839.809	T 928879.310	T 2808961.600	T 78083743.000	T 7436598.000	T 4194484.000	87.828%	7577.393	217676.540	164025.780
3	11:42:52	68.974%	548.846	4014.707	T 924643.140	T 2805864.500	T 78214015.000	T 7393368.900	T 4245613.800	88.055%	7728.666	217404.820	160892.540
x		68.024%	634.382	4500.272	T 891694.650	T 2792327.300	T 77887061.000	T 7389079.600	T 4207374.600	88.211%	7700.465	216188.390	161239.530
σ		0.824%	100.500	431.499	T 60774.001	T 26175.193	T 458135.470	T 49801.777	T 33696.884	0.480%	111.675	2346.184	2629.982
%RSD		1.212	15.842	9.588	T 6.816	T 0.937	T 0.588	T 0.674	T 0.801	0.544	1.450	1.085	1.631

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:42:09	3293.676	TM 32401517.000	T 359954220.000	138912.730	60638.456	1485906.300	463360.730	7434.551	101.807	739.511	186.778	186.431
2	11:42:30	2754.657	TM 33282079.000	T 368624680.000	137784.630	59184.869	1514238.500	471822.240	7649.124	75.239	776.290	184.701	190.910
3	11:42:52	2868.157	TM 32837161.000	T 365141670.000	138996.430	59863.806	1488656.200	473752.560	7439.127	80.900	780.685	171.641	-159.864
x		2972.163	TM 32840252.000	T 364573520.000	138564.600	59895.711	1496267.000	469645.170	7507.601	85.982	765.495	181.040	72.492
σ		284.163	TM 440288.970	T 4363060.200	676.763	727.318	15624.418	5527.410	122.585	13.994	22.610	8.205	201.239
%RSD		9.561	TM 1.341	T 1.197	0.488	1.214	1.044	1.177	1.633	16.276	2.954	4.532	277.600

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:42:09	931070.390	198.438%	3086.628	5827.805	-318.852	3408.546	83.254%	25919.324	1664.408	1449.797	465540.340	97.231%
2	11:42:30	931596.650	196.300%	2998.887	5375.945	-108.560	2938.240	83.920%	26769.697	1921.055	1427.343	465518.510	97.163%
3	11:42:52	921494.010	197.868%	3083.139	5557.563	-249.861	3189.058	84.770%	27552.579	1690.769	1403.728	463355.620	96.180%
x		928053.690	197.535%	3056.218	5587.104	-225.758	3178.615	83.981%	26747.200	1758.744	1426.956	464804.820	96.858%
σ		5686.933	1.107%	49.680	227.374	107.198	235.327	0.760%	816.860	141.182	23.037	1255.094	0.588%
%RSD		0.613	0.561	1.626	4.070	47.484	7.403	0.905	3.054	8.027	1.614	0.270	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:42:09	1129.694	5030.400	1823308.000	86.719%	0.000	161820.060	69366.737
2	11:42:30	1017.334	5116.259	1846170.500	86.094%	0.000	163718.800	69270.841
3	11:42:52	997.494	5435.931	1844092.900	87.377%	0.000	166135.780	67797.154
x		1048.174	5194.196	1837857.100	86.730%	0.000	163891.550	68811.577
σ		71.292	213.704	12642.666	0.641%	0.000	2163.039	879.824
%RSD		6.802	4.114	0.688	0.740	0.000	1.320	1.279

MB 200-110239/1-A 10/19/2016 11:47:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:47:52	71.966%	-9.338	964.126	319044.330	1115.127	36756.916	8889.762	2180.810	79.928%	37.363	697.196	-361.969
2	11:48:13	71.729%	-9.338	1024.742	311553.120	1691.432	46015.167	9570.693	2567.394	81.005%	18.440	715.774	-311.234
3	11:48:35	69.738%	-2.169	953.615	303160.750	2053.020	50312.774	6705.046	2564.249	81.334%	30.596	1212.078	-308.133
x		71.144%	-6.948	980.827	311252.730	1619.860	44361.619	8388.500	2437.484	80.756%	28.800	875.016	-327.112
σ		1.224%	4.139	38.392	7946.048	473.025	6927.553	1497.140	222.292	0.735%	9.589	292.052	30.227
%RSD		1.720	59.574	3.914	2.553	29.202	15.616	17.848	9.120	0.910	33.294	33.377	9.241

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:47:52	4019.840	10542.071	168912.100	91.047	151.941	842.221	599.483	-44.846	437.715	-22.218	157.240	762.284
2	11:48:13	4191.870	14033.452	205824.440	108.068	87.971	1111.538	557.775	-62.887	498.680	-26.777	167.055	804.593
3	11:48:35	4044.375	15617.316	217086.620	95.248	179.759	1038.365	497.431	-65.899	460.073	-35.797	166.052	767.703
x		4085.361	13397.613	197274.380	98.121	139.890	997.375	551.563	-57.877	465.489	-28.264	163.449	778.193

σ		93.051	2596.680	25199.677	8.867	47.066	139.259	51.309	11.386	30.841	6.911	5.401	23.023
%RSD		2.278	19.382	12.774	9.037	33.645	13.963	9.302	19.673	6.626	24.451	3.304	2.958
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:47:52	952.449	88.794%	93.951	-11.940	-84.401	-28.983	86.492%	878.710	-26.708	-1.037	176.015	82.475%
2	11:48:13	1110.333	89.210%	216.417	45.543	-74.138	-33.300	86.798%	1083.006	30.461	26.827	192.645	84.558%
3	11:48:35	1159.151	90.477%	134.808	33.815	-117.443	14.956	87.021%	1177.910	59.839	40.282	146.162	81.767%
x		1073.978	89.494%	148.392	22.473	-91.994	-15.775	86.771%	1046.542	21.197	22.024	171.607	82.933%
σ		108.040	0.877%	62.353	30.374	22.629	26.702	0.265%	152.897	44.011	21.074	23.553	1.451%
%RSD		10.060	0.980	42.019	135.158	24.599	169.263	0.306	14.610	207.623	95.686	13.725	1.749

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:47:52	45.195	78.810	857.264	83.241%	0.000	4050.058	-123.619
2	11:48:13	65.414	30.741	970.676	84.400%	0.000	3744.301	-124.774
3	11:48:35	28.057	80.408	1193.380	84.002%	0.000	3044.402	-154.143
x		46.222	63.319	1007.107	83.881%	0.000	3612.920	-134.179
σ		18.699	28.225	170.994	0.589%	0.000	515.540	17.299
%RSD		40.455	44.576	16.979	0.702	0.000	14.269	12.892

LCS 200-110239/2-A 10/19/2016 11:53:13 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:53:35	69.147%	1910.557	66296.113	T 10117089.000	362299.740	826627.050	T 9772696.100	315261.270	72.583%	61.769	139215.520	111631.720
2	11:53:57	65.950%	1958.123	69358.991	T 10003254.000	359548.860	802766.880	T 9425596.600	312801.100	71.983%	6.918	142027.550	113693.530
3	11:54:18	64.390%	1792.239	71269.822	T 10034483.000	355448.640	821577.970	T 9578508.100	312136.770	70.726%	14.082	142430.780	112940.220
x		66.496%	1886.973	68974.975	T 10051609.000	359099.080	816990.640	T 9592267.000	313399.710	71.764%	27.589	141224.620	112755.160
σ		2.425%	85.420	2508.993	T 58817.827	3447.625	12574.166	T 173958.320	1646.020	0.948%	29.816	1751.574	1043.286
%RSD		3.647	4.527	3.638	T 0.585	0.960	1.539	T 1.814	0.525	1.321	108.071	1.240	0.925

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:53:35	5620.874	89430.117	T 8078985.300	33964.569	15301.591	46348.769	133738.940	10687.655	269.039	2061.522	160.523	528.894
2	11:53:57	3796.375	87222.918	T 8001192.900	34087.812	14518.733	46006.389	134846.720	10274.698	329.591	2031.757	146.680	758.317
3	11:54:18	4326.908	91187.895	T 8165216.000	35246.477	15555.310	46474.745	139247.790	10831.669	210.505	2044.319	136.327	600.228
x		4581.386	89280.310	T 8081798.100	34432.953	15125.212	46276.634	135944.480	10598.007	269.711	2045.866	147.843	629.146
σ		938.492	1986.729	T 82047.743	707.222	540.329	242.367	2913.878	289.105	59.546	14.942	12.140	117.414
%RSD		20.485	2.225	T 1.015	2.054	3.572	0.524	2.143	2.728	22.078	0.730	8.211	18.662

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:53:35	264080.610	79.019%	176430.770	35500.512	-64.973	8213.513	79.117%	1087.030	56085.706	43300.754	56743.169	77.342%
2	11:53:57	265343.990	79.124%	181669.160	35734.967	-133.678	8426.435	78.402%	1090.557	57322.852	44250.300	58520.031	77.138%
3	11:54:18	266415.090	77.671%	183583.540	35357.195	30.592	8167.304	78.121%	1030.474	59107.941	44003.209	58916.667	77.200%
x		265279.900	78.605%	180561.160	35530.891	-56.020	8269.084	78.547%	1069.354	57505.500	43851.421	58059.956	77.227%
σ		1168.559	0.810%	3702.878	190.709	82.500	138.215	0.513%	33.717	1519.374	492.635	1157.487	0.105%
%RSD		0.441	1.031	2.051	0.537	147.270	1.671	0.653	3.153	2.642	1.123	1.994	0.136

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:53:35	76604.546	189005.560	132000.610	77.318%	0.000	186420.110	149089.530
2	11:53:57	77230.638	185258.140	129694.650	79.971%	0.000	189406.780	146069.810
3	11:54:18	77882.632	192084.490	133587.200	77.263%	0.000	207632.100	151528.450
x		77239.272	188782.730	131760.820	78.184%	0.000	194486.330	148895.930
σ		639.087	3418.626	1957.324	1.548%	0.000	11482.099	2734.463
%RSD		0.827	1.811	1.486	1.980	0.000	5.904	1.836

200-35680-A-13-A 10/19/2016 11:58:57 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:59:19	70.024%	8.513	1311.846	323293.570	833.648	16001.719	9771.052	1666.384	75.161%	6.631	1393.039	-567.069
2	11:59:40	71.482%	1.154	1211.909	329315.120	1050.588	19794.373	10423.551	1783.413	74.899%	13.306	365.042	-339.692
3	12:00:02	70.395%	1.316	1003.951	342872.000	1580.761	30638.743	14495.743	2026.961	73.299%	67.956	369.169	-120.171
x		70.634%	3.661	1175.902	331826.900	1154.999	22144.945	11563.449	1825.586	74.453%	29.298	709.084	-342.311
σ		0.757%	4.203	157.074	10027.984	384.344	7596.348	2560.313	183.951	1.008%	33.645	592.327	223.460
%RSD		1.072	114.802	13.358	3.022	33.277	34.303	22.141	10.076	1.354	114.840	83.534	65.280

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:59:19	5139.315	5344.622	70806.633	84.884	142.696	606.029	1312.520	119.872	444.462	6.714	138.581	638.245
2	11:59:40	5379.256	6293.188	86202.516	78.581	136.579	629.086	1212.611	-23.877	515.936	-43.266	149.761	712.080
3	12:00:02	5586.414	9129.589	135662.380	128.517	153.574	887.228	1472.103	-125.763	530.713	-33.323	149.077	772.829
x		5368.328	6922.466	97557.177	97.327	144.283	707.448	1332.411	-9.923	497.037	-23.292	145.806	707.718
σ		223.750	1969.388	33886.033	27.194	8.608	156.121	130.885	123.411	46.127	26.457	6.267	67.398

%RSD		4.168	28.449	34.735	27.941	5.966	22.068	9.823	1243.719	9.280	113.589	4.298	9.523
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:59:19	809.062	80.939%	302.944	-15.966	-89.526	-17.818	81.541%	711.311	71.869	35.258	132.060	77.809%
2	11:59:40	835.262	80.994%	450.844	-15.683	-76.799	-24.071	80.796%	730.248	142.355	84.193	139.549	76.802%
3	12:00:02	1038.014	79.947%	476.636	9.986	-59.694	-46.955	79.489%	981.287	197.072	112.446	236.344	76.168%
x		894.113	80.627%	410.141	-7.221	-75.339	-29.615	80.609%	807.615	137.099	77.299	169.318	76.926%
σ		125.309	0.589%	93.727	14.902	14.969	15.339	1.039%	150.702	62.767	39.053	58.167	0.827%
%RSD		14.015	0.730	22.852	206.383	19.869	51.796	1.288	18.660	45.782	50.522	34.354	1.075

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:59:19	246.341	451.937	458.076	79.073%	0.000	36332.568	-93.893
2	11:59:40	276.845	342.370	662.511	78.620%	0.000	33412.215	-29.640
3	12:00:02	332.451	396.012	894.006	80.855%	0.000	29671.057	-40.746
x		285.212	396.773	671.531	79.516%	0.000	33138.613	-54.760
σ		43.661	54.787	218.105	1.182%	0.000	3339.173	34.342
%RSD		15.308	13.808	32.479	1.486	0.000	10.076	62.714

200-35700-A-19-A 10/19/2016 12:04:41 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:05:02	73.422%	7.687	744.377	337976.610	2080.739	55227.132	15238.690	2992.642	76.655%	51.931	747.578	607.021
2	12:05:24	74.478%	-5.982	753.564	330661.890	1370.350	41570.535	9190.258	2302.778	78.309%	38.177	712.704	124.559
3	12:05:46	72.183%	1.052	869.667	331193.940	1311.579	34014.914	7278.071	2309.099	77.326%	38.645	689.820	191.304
x		73.361%	0.919	789.203	333277.480	1587.556	43604.194	10569.007	2534.840	77.430%	42.918	716.700	307.628
σ		1.148%	6.835	69.836	4078.250	428.119	10751.343	4155.547	396.481	0.832%	7.810	29.086	261.421
%RSD		1.565	743.804	8.849	1.224	26.967	24.657	39.318	15.641	1.074	18.197	4.058	84.980
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:05:02	7053.965	13042.332	201529.050	82.809	106.971	1032.744	810.465	-61.660	636.864	-38.598	148.387	824.821
2	12:05:24	6958.661	10022.466	148106.430	138.070	110.738	967.149	632.227	14.877	598.537	-67.837	139.653	886.613
3	12:05:46	6914.052	7600.697	119941.760	94.835	125.293	872.800	694.158	-320.253	702.273	-63.903	154.811	868.116
x		6975.559	10221.832	156525.750	105.238	114.334	957.564	712.284	-122.345	645.891	-56.779	147.617	859.850
σ		71.471	2726.290	41440.139	29.062	9.676	80.401	90.491	175.613	52.453	15.868	7.608	31.715
%RSD		1.025	26.671	26.475	27.615	8.463	8.396	12.704	143.539	8.121	27.947	5.154	3.688
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:05:02	817.840	85.714%	263.761	51.078	-69.675	-43.444	81.881%	836.599	52.467	15.139	259.712	78.579%
2	12:05:24	861.679	84.796%	232.169	20.165	-101.947	12.535	82.347%	977.592	99.534	12.643	167.111	81.001%
3	12:05:46	656.680	84.620%	197.380	-28.693	-69.814	-37.329	83.651%	789.011	36.692	25.172	140.458	80.220%
x		778.733	85.044%	231.104	14.183	-80.479	-22.746	82.626%	867.734	62.897	17.652	189.093	79.934%
σ		107.950	0.587%	33.203	40.221	18.592	30.707	0.917%	98.070	32.694	6.631	62.592	1.236%
%RSD		13.862	0.691	14.367	283.578	23.102	134.999	1.110	11.302	51.979	37.568	33.101	1.547

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:05:02	115.739	185.504	1159.087	80.889%	0.000	11871.564	-84.086
2	12:05:24	121.805	89.665	1064.478	79.367%	0.000	11314.105	-144.714
3	12:05:46	117.676	15.598	979.319	81.472%	0.000	10315.038	-127.930
x		118.407	96.922	1067.628	80.576%	0.000	11166.903	-118.910
σ		3.098	85.185	89.925	1.087%	0.000	788.635	31.304
%RSD		2.617	87.890	8.423	1.349	0.000	7.062	26.326

CCV 10/19/2016 12:10:25 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:10:47	63.364%	124433.100	44491.468	↓19704763.000	↓5882948.000	↓54787207.000	↓18985637.000	1944757.900	66.085%	36646.239	↓3842299.000	1090
2	12:11:08	63.997%	118718.680	42848.448	↓20018545.000	↓5954378.900	↓56316324.000	↓19531776.000	1945321.400	64.029%	38819.280	↓4008298.800	1133
3	12:11:31	64.377%	117328.660	42795.306	↓19783713.000	↓5864961.000	↓55763546.000	↓19570409.000	↓2087422.900	64.131%	37354.448	↓3937176.500	1118
x		63.913%	114.903%	114.639%	↓107.830%	↓107.579%	↓109.086%	↓99.900%	↓97.993%	64.748%	37606.656	↓102.271%	
σ		0.512%	n/a	n/a	↓n/a	↓n/a	↓n/a	↓n/a	↓n/a	1.158%	1108.257	↓n/a	
%RSD		0.801	3.133	2.223	↓0.823	↓0.802	↓1.392	↓1.689	↓4.126	1.789	2.947	↓2.120	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:10:47	13602.658	↓5745416.600	↓118281660.000	1684354.300	914769.060	1128603.600	885270.650	110496.330	-839.389	11652.828	160.721	
2	12:11:08	11888.696	↓5921397.300	↓120669590.000	1726461.100	927732.060	1160858.800	905980.180	110766.250	-791.178	11449.880	168.455	
3	12:11:31	9207.321	↓5826532.100	↓120726930.000	1719427.100	932765.900	1150317.700	910553.940	107745.300	-688.218	11418.864	162.986	
x		11566.225	↓104.105%	↓104.927%	96.984%	102.842%	101.006%	104.821%	102.271%	-772.928	109.221%	164.054	
σ		2215.342	↓n/a	↓n/a	n/a	n/a	n/a	n/a	n/a	77.220	n/a	3.976	
%RSD		19.154	↓1.511	↓1.164	1.319	1.004	1.434	1.496	1.524	9.991	1.104	2.424	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	12:10:47	1083570.000	72.318%	2193911.100	358724.290	-118.595	173076.250	71.242%	1098758.100	747724.410	565354.400	740582.770	
2	12:11:08	1068887.100	71.465%	2269496.000	353703.440	526.474	174485.740	71.533%	1094526.600	742369.710	567595.850	732985.720	
3	12:11:31	1077209.200	72.518%	2262763.800	356654.550	-6.178	171333.740	70.865%	1105970.400	750942.160	569627.710	740738.990	
x		1076555.400	72.100%	99.441%	105.267%	133.900	102.920%	71.213%	1099751.700	747012.090	99.014%	95.096%	
σ		7363.226	0.559%	n/a	n/a	344.594	n/a	0.335%	5786.255	4330.392	n/a	n/a	
%RSD		0.684	0.776	1.866	0.708	257.351	0.913	0.470	0.526	0.580	0.377	0.600	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:10:47	46065.027	1898586.400	↓18042169.000	73.446%	0.000	239306.630	140185.360
2	12:11:08	47561.310	1940575.400	↓18889218.000	73.323%	0.000	260683.250	143475.050
3	12:11:31	46448.472	1891472.000	↓17921039.000	74.316%	0.000	273320.570	141141.140
x		116.430%	88.092%	↓98.151%	73.695%	0.000	84.009%	99.305%
σ		n/a	n/a	↓n/a	0.542%	0.000	n/a	n/a
%RSD		1.665	1.389	↓2.885	0.735	0.000	6.670	1.195

CCB 10/19/2016 12:16:12 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:16:34	68.759%	8.841	581.628	41328.438	479.522	5634.707	6839.534	-346.981	67.737%	58.784	966.476	-685.700
2	12:16:56	67.913%	5.386	624.591	33575.131	803.965	7837.227	2055.923	-434.237	68.856%	21.701	287.959	-665.702
3	12:17:17	67.290%	9.238	456.676	35735.923	819.022	8978.985	3413.368	-376.565	67.741%	14.693	1054.497	-634.152
x		67.987%	7.822	554.299	36879.830	700.836	7483.640	4102.942	-385.928	68.111%	31.726	769.644	-661.851
σ		0.738%	2.118	87.230	4001.229	191.812	1699.946	2465.231	44.375	0.645%	23.694	419.466	25.988
%RSD		1.085	27.083	15.737	10.849	27.369	22.715	60.084	11.498	0.947	74.682	54.501	3.927

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:16:34	6361.557	689.346	37850.130	140.840	49.473	102.903	142.725	-182.263	504.016	-69.972	142.547	826.598
2	12:16:56	6317.730	888.246	36724.341	87.369	84.701	82.500	158.431	-4.127	471.244	-72.103	143.188	899.821
3	12:17:17	6274.036	1397.894	47796.323	214.640	64.230	198.834	246.020	-140.688	512.928	-38.597	157.350	749.208
x		6317.774	991.829	40790.265	147.616	66.134	128.079	182.392	-109.026	496.063	-60.224	147.695	825.209

σ		43.760	365.455	6093.480	63.906	17.691	62.119	55.660	93.194	21.951	18.760	8.367	75.316
%RSD		0.693	36.847	14.939	43.292	26.750	48.501	30.517	85.478	4.425	31.151	5.665	9.127
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:16:34	48.480	75.266%	3919.907	7.166	-117.803	17.266	74.362%	3684.995	717.970	607.462	78.437	72.400%
2	12:16:56	129.135	75.258%	3920.324	13.877	-78.518	-7.870	74.378%	4114.505	985.409	597.224	58.251	73.495%
3	12:17:17	133.943	75.528%	3409.405	13.128	-106.626	12.760	75.310%	3957.322	1021.963	620.413	50.779	72.683%
x		103.853	75.351%	3749.879	11.390	-100.982	7.386	74.683%	3918.941	908.447	608.366	62.489	72.860%
σ		48.014	0.154%	294.859	3.677	20.241	13.402	0.543%	217.312	165.968	11.621	14.308	0.568%
%RSD		46.233	0.204	7.863	32.285	20.044	181.463	0.727	5.545	18.269	1.910	22.896	0.780

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:16:34	140.565	1443.584	744.204	76.413%	0.000	-1769.698	-181.539
2	12:16:56	164.279	1397.704	1266.610	76.694%	0.000	-1807.212	-162.077
3	12:17:17	112.134	1258.135	1577.768	75.913%	0.000	-1615.945	-122.088
x		138.993	1366.474	1196.194	76.340%	0.000	-1730.951	-155.234
σ		26.108	96.589	421.220	0.396%	0.000	101.350	30.310
%RSD		18.784	7.068	35.213	0.518	0.000	5.855	19.526

CCVL 10/19/2016 12:21:55 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:22:17	69.102%	236.677	7256.043	915820.980	36772.256	89731.903	845980.300	31449.884	70.819%	0.000	14914.578	10185.525
2	12:22:39	68.691%	201.754	7433.533	924599.360	37149.656	92902.382	858593.770	33368.544	71.957%	41.567	13814.568	10004.546
3	12:23:01	67.342%	235.682	7770.759	919510.080	35935.630	97305.877	863921.770	32017.796	70.935%	14.050	13415.138	10841.787
x		68.378%	134.295%	123.661%	100.023%	100.142%	109.803%	88.346%	95.250%	71.237%	18.539	91.411%	88.707%
σ		0.921%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.626%	21.144	n/a	n/a
%RSD		1.347	8.848	3.492	0.479	1.697	4.076	1.076	3.053	0.879	114.052	5.528	4.259

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:22:17	7399.598	9536.567	740856.280	3635.927	1790.526	5164.084	15584.475	1299.268	540.362	196.126	146.013	737.015
2	12:22:39	7447.081	9781.473	739490.590	3897.800	1761.954	4786.454	15424.619	1078.829	564.383	224.390	155.516	727.439
3	12:23:01	7881.533	10980.013	765971.290	3587.672	1829.878	4739.286	15198.075	1327.104	483.202	197.221	137.810	740.766
x		7576.071	112.692%	98.296%	105.122%	124.657%	107.838%	112.043%	115.175%	529.316	97.722%	146.446	735.073
σ		265.601	n/a	n/a	n/a	n/a	n/a	n/a	n/a	41.702	n/a	8.861	6.872
%RSD		3.506	7.648	1.991	4.501	1.901	4.755	1.261	11.013	7.879	7.776	6.051	0.935

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:22:17	25388.709	76.300%	17915.938	3796.490	-47.587	996.800	75.336%	1825.230	5781.030	4427.558	6170.869	74.811%
2	12:22:39	26817.441	77.044%	18404.568	3545.020	-102.997	944.796	75.877%	2009.931	6209.299	4590.362	5962.048	74.056%
3	12:23:01	26553.510	76.649%	18473.887	3604.650	-119.392	900.179	76.555%	1881.081	6458.225	4663.092	5758.884	73.904%
x		90.976%	76.664%	101.261%	107.781%	-89.992	112.730%	75.923%	1905.414	6149.518	99.453%	96.048%	74.257%
σ		n/a	0.372%	n/a	n/a	37.627	n/a	0.611%	94.724	342.533	n/a	n/a	0.485%
%RSD		2.896	0.486	1.665	3.601	41.812	5.105	0.804	4.971	5.570	2.645	3.454	0.654

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:22:17	3528.533	18490.237	15620.144	77.051%	0.000	9520.636	14157.766
2	12:22:39	3511.423	19249.493	16052.316	78.072%	0.000	10034.665	14546.630
3	12:23:01	3823.336	19539.790	16488.241	77.839%	0.000	11224.577	14359.399
x		90.296%	88.050%	107.721%	77.654%	0.000	33.438%	100.670%
σ		n/a	n/a	n/a	0.535%	0.000	n/a	n/a
%RSD		4.843	2.838	2.704	0.689	0.000	8.519	1.355

200-35736-A-14-A 10/19/2016 12:27:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:28:01	70.524%	-2.249	519.064	347091.590	316.274	6032.574	1552.444	1261.132	72.552%	41.239	-1217.940	98.158
2	12:28:23	70.593%	-5.797	333.914	346059.620	300.650	6319.089	1935.407	879.437	72.877%	20.532	-779.527	65.638
3	12:28:44	71.496%	-5.842	512.185	353408.480	346.842	6977.908	3075.844	1125.050	72.077%	20.735	369.350	552.934
x		70.871%	-4.629	455.054	348853.230	321.256	6443.190	2187.898	1088.540	72.502%	27.502	-542.706	238.910
σ		0.542%	2.062	104.967	3978.565	23.495	484.732	792.465	193.449	0.402%	11.898	819.717	272.438
%RSD		0.765	44.537	23.067	1.140	7.314	7.523	36.220	17.771	0.555	43.261	151.043	114.034

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:28:01	8765.494	1962.788	26571.018	26.687	189.787	299.431	1184.217	-75.027	697.649	-61.607	150.838	827.719
2	12:28:23	8639.594	1828.419	25850.852	5.889	120.257	262.640	1086.745	-155.384	711.492	-80.774	171.069	898.652
3	12:28:44	8676.334	2013.572	35145.176	47.816	114.843	268.427	1140.983	-47.840	684.374	-57.610	128.725	843.027
x		8693.807	1934.926	29189.015	26.797	141.629	276.833	1137.315	-92.750	697.838	-66.664	150.211	856.466
σ		64.743	95.670	5170.739	20.964	41.794	19.783	48.840	55.919	13.560	12.382	21.179	37.328

%RSD		0.745	4.944	17.715	78.231	29.509	7.146	4.294	60.290	1.943	18.574	14.100	4.358
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:28:01	310.583	77.072%	465.200	-7.104	-100.976	-6.119	75.909%	1475.492	92.429	79.177	10.787	74.161%
2	12:28:23	389.178	77.103%	640.072	38.909	-72.046	-41.115	75.993%	1710.752	91.624	103.321	37.083	75.654%
3	12:28:44	327.071	78.423%	653.349	-21.008	-84.151	-29.227	78.074%	1626.729	201.939	120.212	3.835	76.430%
x		342.277	77.532%	586.207	3.599	-85.725	-25.487	76.659%	1604.324	128.664	100.903	17.235	75.415%
σ		41.445	0.771%	105.005	31.360	14.529	17.795	1.226%	119.220	63.459	20.624	17.537	1.153%
%RSD		12.109	0.995	17.913	871.384	16.948	69.820	1.600	7.431	49.322	20.439	101.753	1.529

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:28:01	114.765	179.419	284.658	77.434%	0.000	21620.787	-156.056
2	12:28:23	104.030	262.561	206.269	76.022%	0.000	20085.069	-181.404
3	12:28:44	3.888	176.750	415.349	76.927%	0.000	17866.912	-194.713
x		74.227	206.243	302.092	76.795%	0.000	19857.589	-177.391
σ		61.152	48.791	105.625	0.715%	0.000	1887.248	19.639
%RSD		82.385	23.657	34.965	0.931	0.000	9.504	11.071

200-35736-A-14-A SD@5 10/19/2016 12:33:24 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:33:46	70.957%	-9.338	174.589	111811.710	248.657	6907.346	755.078	-99.363	72.290%	20.667	663.749	-37.383
2	12:34:07	71.634%	-2.358	175.182	105967.940	367.597	7150.306	-1082.379	-153.575	73.130%	20.450	-937.556	-66.618
3	12:34:29	71.608%	-9.338	252.239	108611.080	236.812	7124.028	-1848.085	102.027	71.877%	20.787	-1458.620	18.995
x		71.400%	-7.012	200.670	108796.910	284.355	7060.560	-725.129	-50.304	72.432%	20.634	-577.476	-28.336
σ		0.383%	4.030	44.661	2926.312	72.332	133.336	1337.847	134.678	0.639%	0.171	1106.054	43.518
%RSD		0.537	57.474	22.256	2.690	25.437	1.888	184.498	267.731	0.882	0.828	191.533	153.579

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:33:46	8800.007	387.625	31367.983	40.695	45.288	93.953	347.114	52.356	672.878	-15.734	140.940	781.907
2	12:34:07	9191.411	582.818	32150.554	5.794	51.410	137.763	403.714	-202.027	753.038	-40.575	166.487	805.847
3	12:34:29	9597.439	302.160	36158.148	-0.685	10.864	2322.156	380.822	-178.647	761.217	-38.129	162.199	845.764
x		9196.286	424.201	33225.562	15.268	35.854	851.291	377.217	-109.439	729.044	-31.479	156.542	811.172
σ		398.738	143.860	2569.660	22.257	21.857	1273.995	28.472	140.605	48.813	13.690	13.681	32.260
%RSD		4.336	33.913	7.734	145.780	60.962	149.655	7.548	128.478	6.695	43.490	8.739	3.977
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:33:46	144.366	79.246%	140.900	-0.950	-57.159	-42.684	76.629%	1063.599	-40.583	5.684	10.601	75.151%
2	12:34:07	97.395	78.325%	162.721	-33.719	-113.056	-0.843	77.484%	1019.591	49.129	21.251	16.838	75.780%
3	12:34:29	97.559	78.725%	186.863	-20.777	-56.608	-30.427	77.374%	1143.823	81.566	39.523	16.875	76.257%
x		113.107	78.765%	163.494	-18.482	-75.608	-24.651	77.162%	1075.671	30.038	22.152	14.771	75.729%
σ		27.072	0.462%	22.991	16.505	32.432	21.510	0.465%	62.990	63.273	16.938	3.611	0.555%
%RSD		23.935	0.586	14.062	89.301	42.896	87.258	0.603	5.856	210.646	76.459	24.449	0.732

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:33:46	-1.096	-39.793	-56.411	75.981%	0.000	-518.237	-201.132
2	12:34:07	17.925	70.673	-84.882	76.208%	0.000	-184.715	-201.151
3	12:34:29	-2.447	41.360	-135.457	76.735%	0.000	-270.009	-188.165
x		4.794	24.080	-92.250	76.308%	0.000	-324.320	-196.816
σ		11.392	57.224	40.035	0.387%	0.000	173.267	7.492
%RSD		237.610	237.643	43.398	0.507	0.000	53.425	3.807

200-35736-A-14-A PDS 10/19/2016 12:39:07 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:39:29	71.097%	1854.386	68695.792	T 10270169.000	358397.630	802370.820	T 9593329.500	320095.660	71.472%	27.920	140636.490	111297.890
2	12:39:51	69.046%	1906.132	69240.887	T 10236526.000	359521.980	819066.900	T 9620457.700	320001.020	70.619%	42.361	139906.890	110567.630
3	12:40:13	68.449%	1919.189	70559.877	T 10320951.000	360074.400	816954.870	T 9751858.200	320419.900	69.544%	28.660	142953.810	114375.760
x		69.531%	1893.236	69498.852	T 10275882.000	359331.340	812797.530	T 9655215.100	320172.190	70.545%	32.980	141165.730	112080.430
σ		1.389%	34.273	958.443	T 42501.090	854.488	9091.333	T 84787.355	219.679	0.966%	8.133	1590.915	2021.076
%RSD		1.998	1.810	1.379	T 0.414	0.238	1.119	T 0.878	0.069	1.370	24.659	1.127	1.803

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:39:29	7909.144	83159.547	T 7940015.400	33203.735	15224.673	46596.522	133950.990	10730.263	515.471	2153.805	132.895	476.149
2	12:39:51	7656.579	85399.150	T 8020096.100	34470.117	14409.844	45424.440	134274.350	11061.384	364.349	2141.194	147.701	457.610
3	12:40:13	7266.772	86964.806	T 8199951.000	34938.511	15474.583	47211.205	138920.440	11383.616	287.696	2123.040	163.769	632.901
x		7610.832	85174.501	T 8053354.200	34204.121	15036.367	46410.722	135715.260	11058.421	389.172	2139.346	148.121	522.220
σ		323.620	1912.551	T 133121.040	897.456	556.787	907.758	2780.475	326.687	115.899	15.465	15.441	96.300
%RSD		4.252	2.245	T 1.653	2.624	3.703	1.956	2.049	2.954	29.781	0.723	10.425	18.440

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:39:29	270785.980	75.219%	179723.880	36956.692	-128.492	8294.595	73.743%	1111.999	58777.645	43608.940	57772.042	72.872%
2	12:39:51	273138.170	75.297%	182984.710	35927.141	124.271	8025.414	74.475%	1228.632	57921.802	42911.431	58543.406	72.799%
3	12:40:13	274439.860	75.203%	184909.600	35923.572	158.446	7962.903	74.190%	1327.709	58540.694	44059.162	57673.704	73.286%
x		272788.000	75.240%	182539.390	36269.135	51.408	8094.304	74.136%	1222.780	58413.380	43526.511	57996.384	72.985%
σ		1851.940	0.050%	2621.381	595.445	156.733	176.251	0.369%	107.974	441.897	578.289	476.280	0.263%
%RSD		0.679	0.067	1.436	1.642	304.880	2.177	0.498	8.830	0.757	1.329	0.821	0.360

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:39:29	36980.204	188951.580	130906.700	74.392%	0.000	196662.560	151396.020
2	12:39:51	37554.157	195217.530	136363.570	73.357%	0.000	208800.360	155078.350
3	12:40:13	38438.295	195964.380	136743.370	73.556%	0.000	224144.440	156130.390
x		37657.552	193377.830	134671.220	73.768%	0.000	209869.120	154201.590
σ		734.524	3851.393	3265.691	0.549%	0.000	13772.075	2485.979
%RSD		1.951	1.992	2.425	0.744	0.000	6.562	1.612

200-35736-A-14-B MS 10/19/2016 12:44:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:44:48	68.499%	1914.115	70822.215	T 10588895.000	371522.050	830920.150	T 10040566.000	328498.960	68.762%	28.994	143740.230	114039.550
2	12:45:10	68.504%	1841.002	69222.051	T 10345511.000	362245.390	811336.000	T 9701066.800	326928.010	70.442%	56.709	145308.690	114048.500
3	12:45:32	68.448%	1944.771	68860.770	T 10313867.000	370261.750	827476.910	T 9886783.100	328295.910	69.811%	28.566	146877.360	112626.570
x		68.484%	1899.963	69635.012	T 10416091.000	368009.730	823244.350	T 9876138.600	327907.620	69.672%	38.089	145308.760	113571.540
σ		0.031%	53.312	1043.896	T 150486.690	5031.680	10455.649	T 169999.640	854.428	0.848%	16.127	1568.568	818.380
%RSD		0.045	2.806	1.499	T 1.445	1.367	1.270	T 1.721	0.261	1.217	42.339	1.079	0.721

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:44:48	6585.950	86229.383	T 8296981.500	34440.303	15716.193	47503.179	139197.770	10692.647	390.438	2102.629	153.986	821.880
2	12:45:10	5912.119	86292.577	T 8174961.200	35509.683	15490.318	46841.187	138704.890	10899.423	353.805	2199.040	141.510	587.541
3	12:45:32	4785.554	87328.245	T 8219752.200	34991.527	15035.599	46534.803	140892.960	10847.879	282.423	2250.622	124.603	493.733
x		5761.208	86616.735	T 8230565.000	34980.504	15414.036	46959.723	139598.540	10813.316	342.222	2184.097	140.033	634.385

σ		909.636	616.996	T 61724.576	534.775	346.650	494.950	1147.769	107.634	54.931	75.119	14.747	169.015
%RSD		15.789	0.712	T 0.750	1.529	2.249	1.054	0.822	0.995	16.051	3.439	10.531	26.642
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:44:48	279335.640	73.911%	186349.650	36995.282	-57.749	7995.479	71.435%	979.929	59139.000	45406.038	58396.563	71.285%
2	12:45:10	280641.500	72.565%	189691.360	38498.155	14.426	8352.197	72.080%	1075.217	59114.048	45780.096	59960.349	72.013%
3	12:45:32	282485.020	74.589%	189442.500	37350.578	-177.637	8592.504	72.230%	1169.909	60301.937	46167.191	60134.662	71.332%
x		280820.720	73.688%	188494.500	37614.671	-73.653	8313.393	71.915%	1075.018	59518.328	45784.442	59497.191	71.543%
σ		1582.322	1.030%	1861.658	785.472	97.014	300.398	0.422%	94.990	678.740	380.595	957.148	0.407%
%RSD		0.563	1.398	0.988	2.088	131.718	3.613	0.587	8.836	1.140	0.831	1.609	0.570

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:44:48	79968.599	193733.110	135789.390	73.926%	0.000	261275.570	150445.020
2	12:45:10	81109.928	198399.390	139476.270	73.398%	0.000	271668.910	156493.500
3	12:45:32	82567.472	197484.160	140323.640	73.987%	0.000	275425.150	159294.600
x		81215.333	196538.880	138529.770	73.770%	0.000	269456.540	155411.040
σ		1302.639	2472.589	2410.760	0.324%	0.000	7329.636	4523.002
%RSD		1.604	1.258	1.740	0.439	0.000	2.720	2.910

200-35736-A-14-C MSD 10/19/2016 12:49:46 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:50:08	69.084%	1818.208	67764.885	T 10153952.000	354859.300	804472.390	T 9642577.500	312590.930	69.820%	28.586	141680.030	110589.950
2	12:50:30	68.521%	2015.683	66782.461	T 10058277.000	354295.530	804639.460	T 9635281.800	319475.100	70.495%	21.238	139257.580	110047.500
3	12:50:52	67.230%	2035.955	70356.039	T 10433542.000	364300.560	827531.000	T 9834842.400	321289.900	68.345%	21.881	143304.970	113840.450
x		68.278%	1956.615	68301.128	T 10215257.000	357818.460	812214.290	T 9704233.900	317785.310	69.553%	23.902	141414.190	111492.630
σ		0.950%	120.292	1846.153	T 194999.170	5620.733	13264.928	T 113169.090	4589.072	1.099%	4.069	2036.752	2051.278
%RSD		1.392	6.148	2.703	T 1.909	1.571	1.633	T 1.166	1.444	1.581	17.026	1.440	1.840

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:50:08	5517.122	83486.352	T 7972295.100	33696.181	14367.271	45072.297	133091.880	11039.620	161.187	2189.253	138.784	373.134
2	12:50:30	5807.131	85785.600	T 8055748.800	34438.641	15457.298	44886.800	135212.140	11160.582	170.505	2192.187	144.272	344.149
3	12:50:52	5104.703	85393.469	T 8208639.000	35354.149	14985.091	46849.359	138685.010	10540.670	324.886	2072.891	156.524	893.034
x		5476.318	84888.474	T 8078894.300	34496.323	14936.554	45602.819	135663.010	10913.624	218.859	2151.444	146.527	536.772
σ		352.987	1230.000	T 119859.870	830.488	546.632	1083.513	2823.691	328.602	91.940	68.045	9.082	308.872
%RSD		6.446	1.449	T 1.484	2.407	3.660	2.376	2.081	3.011	42.008	3.163	6.198	57.542

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:50:08	267205.720	73.148%	181362.940	35893.538	-60.946	8077.201	72.775%	879.438	56541.073	43148.047	57934.264	71.898%
2	12:50:30	269950.050	73.528%	182790.770	37100.596	-156.982	8465.454	72.433%	1035.468	57672.895	43896.194	59135.641	71.520%
3	12:50:52	272294.360	73.238%	184367.540	36532.084	-130.854	8551.476	72.833%	1160.222	57457.449	43983.245	58652.410	71.740%
x		269816.710	73.305%	182840.420	36508.740	-116.260	8364.711	72.680%	1025.043	57223.806	43675.829	58574.105	71.719%
σ		2546.939	0.198%	1502.916	603.868	49.653	252.678	0.216%	140.682	600.997	459.140	604.504	0.189%
%RSD		0.944	0.271	0.822	1.654	42.709	3.021	0.298	13.725	1.050	1.051	1.032	0.264

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:50:08	77904.484	188626.110	130835.490	74.344%	0.000	258686.790	146883.180
2	12:50:30	81900.518	189793.350	134527.910	74.741%	0.000	267273.090	149380.580
3	12:50:52	81439.241	190546.630	132605.810	75.056%	0.000	273569.220	151589.350
x		80414.748	189655.360	132656.400	74.714%	0.000	266509.700	149284.370
σ		2186.153	967.668	1846.728	0.357%	0.000	7470.527	2354.560
%RSD		2.719	0.510	1.392	0.478	0.000	2.803	1.577

CCV 10/19/2016 12:55:04 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:55:26	64.735%	120488.280	43568.898	T 20293178.000	T 5941482.700	T 55681150.000	T 19496995.000	1945526.200	64.154%	38724.737	T 3953298.900	11052
2	12:55:48	64.969%	119007.610	42685.881	T 20006730.000	T 5973390.800	T 55687110.000	T 19160345.000	1926138.000	63.315%	37994.262	T 3942964.900	11132
3	12:56:10	62.746%	121887.490	44726.893	T 20046563.000	T 6078878.900	T 56334772.000	T 19327496.000	1955361.700	62.556%	38568.915	T 4036379.800	11279
x		64.150%	115.190%	115.385%	T 109.351%	T 109.350%	T 109.632%	T 99.723%	95.526%	63.341%	38429.305	T 103.528%	9
σ		1.222%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.799%	384.730	T n/a	
%RSD		1.904	1.196	2.344	T 0.771	T 1.199	T 0.672	T 0.871	0.766	1.262	1.001	T 1.288	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:55:26	10986.059	T 5760027.900	T 119281440.000	1688314.300	906079.970	1117873.200	883461.780	111109.080	-498.691	11475.287	163.484	-2
2	12:55:48	12540.857	T 5829380.200	T 120810990.000	1711172.300	926065.260	1133973.500	893065.710	110787.500	-790.395	11627.618	166.661	-4
3	12:56:10	10152.318	T 5931529.300	T 121761760.000	1705130.000	915219.240	1148509.600	907549.890	113794.560	-824.563	11521.460	165.991	-3
x		11226.411	T 104.270%	T 105.562%	96.500%	101.808%	99.848%	104.134%	104.348%	-704.550	109.547%	165.378	-3
σ		1212.273	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	179.095	n/a	1.675	

%RSD		10.798	T 1.477	T 1.037	0.696	1.092	1.352	1.355	1.476	25.420	0.677	1.013	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	12:55:26	1080075.900	69.055%	2196865.700	357159.230	961.896	167750.160	68.814%	1071227.000	724985.950	551919.760	724447.610	68
2	12:55:48	1075731.800	69.426%	2250356.800	357106.340	248.147	171373.640	68.403%	1081455.300	737848.770	555513.950	731669.840	68
3	12:56:10	1086224.900	67.169%	2330945.000	354586.680	393.836	169798.460	68.076%	1092736.800	735347.820	559597.590	740280.090	69
x		1080677.500	68.550%	100.210%	105.244%	534.627	100.942%	68.431%	1081806.400	732727.510	96.947%	94.327%	68
σ		5272.322	1.210%	n/a	n/a	377.128	n/a	0.370%	10759.242	6820.007	n/a	n/a	0
%RSD		0.488	1.765	2.987	0.413	70.541	1.071	0.541	0.995	0.931	0.691	1.083	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:55:26	44558.352	1926098.500	T 18286416.000	70.555%	0.000	327225.190	144312.410
2	12:55:48	46735.219	1898459.300	T 18480427.000	71.576%	0.000	334992.100	140396.060
3	12:56:10	46568.054	1969736.100	T 18447968.000	69.767%	0.000	343683.290	145215.890
x		114.591%	89.070%	T 98.799%	70.633%	0.000	109.277%	100.503%
σ		n/a	n/a	T n/a	0.907%	0.000	n/a	n/a
%RSD		2.636	1.861	T 0.565	1.284	0.000	2.456	1.788

CCB 10/19/2016 01:00:48 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:01:10	67.537%	20.275	993.649	35888.089	817.500	4717.636	5136.010	-436.944	67.852%	29.409	-93.287	-674.189
2	13:01:32	67.425%	27.740	907.125	39045.617	616.879	4625.396	7023.095	-519.658	67.319%	7.406	229.814	-763.070
3	13:01:54	67.165%	1.828	1031.698	45766.885	835.527	4346.011	3658.351	-421.207	66.560%	29.914	8.135	-885.049
x		67.376%	16.614	977.491	40233.530	756.635	4563.014	5272.485	-459.270	67.244%	22.243	48.221	-774.103
σ		0.191%	13.338	63.839	5045.395	121.368	193.506	1686.519	52.886	0.649%	12.852	165.238	105.862
%RSD		0.283	80.280	6.531	12.540	16.040	4.241	31.987	11.515	0.966	57.779	342.669	13.675

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:01:10	6408.019	296.790	24147.419	74.242	78.835	80.180	104.520	-118.789	521.711	-42.926	144.116	877.817
2	13:01:32	6426.025	213.785	25438.884	97.283	12.748	16.017	266.667	-124.641	526.706	-44.889	152.829	809.057
3	13:01:54	6523.121	274.251	31011.698	83.614	73.183	109.298	119.661	-136.306	560.909	-65.654	139.717	853.963
x		6452.388	261.608	26866.000	85.047	54.922	68.498	163.616	-126.579	536.442	-51.156	145.554	846.946
σ		61.914	42.922	3647.886	11.587	36.633	47.725	89.565	8.918	21.336	12.594	6.673	34.913
%RSD		0.960	16.407	13.578	13.624	66.700	69.673	54.741	7.045	3.977	24.618	4.584	4.122

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:01:10	121.842	71.422%	3953.486	2.585	-102.639	-4.043	71.123%	3114.512	763.007	569.550	40.237	69.488%
2	13:01:32	173.166	71.892%	4052.306	-11.084	-119.349	5.336	70.340%	4244.028	971.079	668.036	40.784	69.404%
3	13:01:54	134.166	73.813%	3619.347	-4.919	-71.040	-28.200	71.931%	3593.994	813.047	679.465	60.537	71.782%
x		143.058	72.376%	3875.046	-4.472	-97.676	-8.969	71.132%	3650.845	849.044	639.017	47.186	70.225%
σ		26.792	1.267%	226.888	6.845	24.534	17.302	0.795%	566.900	108.606	60.431	11.566	1.349%
%RSD		18.728	1.751	5.855	153.058	25.117	192.913	1.118	15.528	12.792	9.457	24.511	1.921

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:01:10	236.752	1485.142	914.951	72.610%	0.000	-1024.549	-159.510
2	13:01:32	172.314	1573.923	762.861	72.637%	0.000	-770.622	-111.343
3	13:01:54	184.380	1616.212	710.239	72.850%	0.000	-894.136	-118.488
x		197.815	1558.426	796.017	72.699%	0.000	-896.435	-129.780
σ		34.256	66.895	106.307	0.131%	0.000	126.979	25.993
%RSD		17.317	4.292	13.355	0.181	0.000	14.165	20.029

CCVL 10/19/2016 01:06:06 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:06:27	68.163%	207.057	7869.244	971520.940	37477.342	94513.546	899789.160	33925.255	68.825%	7.251	14907.177	10722.740
2	13:06:49	69.120%	200.442	7420.391	T 1063646.300	36822.871	94157.865	888539.620	32950.759	68.092%	21.980	14408.411	10586.754
3	13:07:11	69.581%	278.097	7411.048	984270.920	37740.457	96285.565	897618.770	34514.589	66.626%	0.000	13852.235	11266.869
x		68.955%	136.583%	124.985%	T 109.428%	102.132%	111.771%	92.386%	99.730%	67.848%	9.744	93.632%	93.122%
σ		0.724%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.119%	11.200	n/a	n/a
%RSD		1.049	18.839	3.461	T 4.960	1.265	1.200	0.667	2.337	1.650	114.945	3.668	3.314

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:06:27	7638.588	10095.678	739811.650	3734.657	1675.805	5234.043	14841.568	1148.379	557.593	164.663	142.922	888.649
2	13:06:49	7804.046	9276.513	756482.960	3826.492	1620.588	4999.374	15941.833	1217.256	538.822	228.299	157.811	711.989
3	13:07:11	8088.842	9836.390	791098.560	4271.407	1979.324	5227.620	16059.582	1015.951	604.359	204.801	152.787	741.151
x		7843.825	108.640%	100.093%	111.844%	122.187%	113.500%	113.585%	105.115%	566.925	94.562%	151.174	780.596
σ		227.747	n/a	n/a	n/a	n/a	n/a	n/a	n/a	33.750	n/a	7.574	94.706
%RSD		2.904	4.300	3.431	7.279	10.984	2.594	4.303	9.077	5.953	16.149	5.010	12.132

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:06:27	26493.295	71.739%	19039.574	4043.278	-109.244	915.226	70.668%	1797.206	5857.892	4662.496	5298.131	68.530%
2	13:06:49	27674.912	71.586%	20017.076	3781.128	-30.920	711.136	70.021%	2092.333	6204.524	4767.271	6347.148	69.237%
3	13:07:11	27975.523	71.230%	20131.639	3812.444	-61.683	879.661	70.359%	2338.109	6206.264	4866.064	5897.150	69.274%
x		94.885%	71.518%	109.381%	114.582%	-67.282	99.411%	70.349%	2075.883	6089.560	103.923%	94.173%	69.013%
σ		n/a	0.261%	n/a	n/a	39.461	n/a	0.324%	270.827	200.632	n/a	n/a	0.419%
%RSD		2.862	0.365	3.042	3.691	58.650	13.052	0.460	13.046	3.295	2.136	9.000	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:06:27	3743.802	20077.137	16166.366	72.302%	0.000	12391.632	15274.291
2	13:06:49	4174.095	19719.698	15413.941	72.542%	0.000	13161.173	15505.903
3	13:07:11	4056.332	19477.053	16252.554	73.754%	0.000	13144.623	14772.659
x		99.530%	91.116%	106.988%	72.866%	0.000	42.039%	106.488%
σ		n/a	n/a	n/a	0.779%	0.000	n/a	n/a
%RSD		5.571	1.528	2.893	1.069	0.000	3.408	2.468

MB 200-110288/1-B 10/19/2016 01:11:51 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:12:13	71.184%	-5.826	811.650	568406.560	18029.647	25157.121	44135.242	31197.185	69.704%	121.697	1738.849	7619.597
2	13:12:35	70.655%	-2.262	1083.348	571329.870	17840.373	24952.496	48203.728	30107.625	69.380%	100.632	743.138	7523.087
3	13:12:57	71.198%	-9.338	1022.077	583903.030	18560.633	26776.947	48690.354	30807.245	68.740%	79.767	1474.986	8141.057
x		71.012%	-5.809	972.358	574546.480	18143.551	25628.855	47009.775	30704.018	69.275%	100.699	1318.991	7761.247
σ		0.310%	3.538	142.509	8233.778	373.395	999.527	2501.281	552.066	0.490%	20.965	515.860	332.446
%RSD		0.436	60.914	14.656	1.433	2.058	3.900	5.321	1.798	0.708	20.819	39.110	4.283

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:12:13	4755.522	2643.568	86080.093	129.083	205.408	558.960	863.614	-42.318	375.498	-9.399	150.870	580.906
2	13:12:35	5075.319	2557.246	83842.796	57.719	235.274	454.678	827.646	-63.067	391.369	-21.195	160.457	706.269
3	13:12:57	4800.894	3065.612	77703.427	80.278	215.800	606.797	994.428	-15.690	386.515	-60.013	134.679	845.654
x		4877.245	2755.476	82542.106	89.027	218.827	540.145	895.229	-40.358	384.461	-30.202	148.669	710.943

σ		173.031	272.032	4337.163	36.477	15.162	77.785	87.771	23.749	8.133	26.482	13.029	132.436
%RSD		3.548	9.872	5.254	40.973	6.929	14.401	9.804	58.845	2.115	87.681	8.764	18.628
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:12:13	8211.329	72.968%	941.630	15.661	-111.146	11.122	72.248%	34594.429	200.381	115.448	496.237	71.054%
2	13:12:35	7970.559	73.583%	960.226	-11.743	-71.299	-6.967	71.670%	36116.795	202.989	145.121	528.213	70.515%
3	13:12:57	7683.382	73.692%	938.313	-12.092	-40.335	-58.442	72.395%	35686.386	192.379	190.286	543.561	71.882%
x		7955.090	73.414%	946.723	-2.725	-74.260	-18.096	72.104%	35465.870	198.583	150.285	522.670	71.150%
σ		264.313	0.390%	11.811	15.923	35.498	36.093	0.383%	784.774	5.529	37.685	24.144	0.689%
%RSD		3.323	0.532	1.248	584.348	47.803	199.454	0.531	2.213	2.784	25.076	4.619	0.968

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:12:13	123.903	354.330	203.760	72.747%	0.000	104250.690	-77.123
2	13:12:35	175.207	389.477	336.242	73.939%	0.000	78060.728	-146.852
3	13:12:57	170.083	242.552	488.738	73.727%	0.000	60068.025	-38.167
x		156.398	328.787	342.913	73.471%	0.000	80793.147	-87.380
σ		28.258	76.721	142.606	0.636%	0.000	22217.707	55.064
%RSD		18.068	23.334	41.587	0.866	0.000	27.499	63.016

LCS 200-110288/2-B 10/19/2016 01:17:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:17:56	69.293%	1888.479	72219.998	T 10740444.000	373793.990	829076.200	T 9696019.700	343968.450	69.309%	79.186	142452.510	119855.370
2	13:18:17	67.512%	1908.925	73291.867	T 10783252.000	386768.960	843943.240	T 9925338.400	348884.160	67.110%	52.024	145932.850	126030.500
3	13:18:39	69.119%	1980.064	70015.789	T 10663766.000	372705.670	832157.480	T 9833210.300	349462.480	68.452%	94.751	138554.440	121924.660
x		68.641%	1925.823	71842.551	T 10729154.000	377756.200	835058.970	T 9818189.500	347438.360	68.290%	75.321	142313.270	122603.510
σ		0.982%	48.074	1670.336	T 60537.556	7824.219	7846.736	T 115394.930	3018.911	1.108%	21.624	3691.172	3143.036
%RSD		1.431	2.496	2.325	T 0.564	2.071	0.940	T 1.175	0.869	1.623	28.710	2.594	2.564

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:17:56	3549.792	84677.131	T 8044178.500	34392.607	14906.400	45522.055	130781.430	11010.418	41.853	2137.297	148.188	462.448
2	13:18:17	4187.318	86621.782	T 8217276.200	35311.053	15522.003	47118.806	135486.230	11055.542	15.102	2121.946	144.661	639.028
3	13:18:39	4286.066	86733.161	T 8140329.900	34340.811	14757.081	45634.335	134977.510	10805.268	37.691	2071.104	165.960	506.879
x		4007.725	86010.691	T 8133928.200	34681.490	15061.828	46091.732	133748.390	10957.076	31.549	2110.116	152.936	536.119
σ		399.643	1156.239	T 86726.225	545.832	405.456	891.242	2582.021	133.392	14.394	34.646	11.416	91.850
%RSD		9.972	1.344	T 1.066	1.574	2.692	1.934	1.931	1.217	45.625	1.642	7.465	17.132

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:17:56	287225.540	72.721%	185636.560	37086.498	-10.721	8489.316	69.507%	51662.208	56722.811	43608.706	56772.219	68.844%
2	13:18:17	281523.290	70.960%	185608.050	36376.376	-103.139	8159.436	69.473%	52271.325	58510.772	43722.780	58552.665	68.582%
3	13:18:39	284527.100	71.892%	189427.940	35493.911	29.984	8357.635	70.198%	52980.966	57565.049	43550.802	57662.541	70.090%
x		284425.310	71.858%	186890.850	36318.928	-27.959	8335.462	69.726%	52304.833	57599.544	43627.429	57662.475	69.172%
σ		2852.488	0.881%	2197.229	797.846	68.215	166.054	0.409%	660.017	894.479	87.505	890.223	0.806%
%RSD		1.003	1.226	1.176	2.197	243.985	1.992	0.587	1.262	1.553	0.201	1.544	1.165

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:17:56	81021.494	191960.530	132570.070	72.562%	0.000	279598.160	150924.400
2	13:18:17	80928.849	201329.360	136236.330	70.507%	0.000	297194.900	158884.800
3	13:18:39	83286.940	196917.580	137389.240	71.754%	0.000	297298.550	157144.720
x		81745.761	196735.820	135398.550	71.608%	0.000	291363.870	155651.310
σ		1335.504	4687.056	2516.449	1.035%	0.000	10189.533	4185.058
%RSD		1.634	2.382	1.859	1.446	0.000	3.497	2.689

200-35715-A-2-B 10/19/2016 01:23:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:23:49	68.955%	5.164	788.841	431868.520	23090.548	16769.619	68787.763	36219.983	67.657%	110.550	1827.968	5983.972
2	13:24:10	67.038%	-1.880	892.887	407713.400	22938.701	15791.529	59657.235	37094.530	69.535%	50.256	1356.113	6176.904
3	13:24:32	68.382%	-9.338	638.790	435137.650	23642.556	16361.061	58986.547	35572.883	67.812%	51.441	1111.148	6244.621
x		68.125%	-2.018	773.506	424906.520	23223.935	16307.403	62477.182	36295.799	68.335%	70.749	1431.743	6135.166
σ		0.984%	7.252	127.741	14979.131	370.401	491.248	5475.403	763.651	1.043%	34.474	364.346	135.244
%RSD		1.445	359.339	16.514	3.525	1.595	3.012	8.764	2.104	1.526	48.727	25.448	2.204

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:23:49	4219.285	3477.141	63831.735	89.300	278.651	1684.920	1079.643	-111.411	321.360	-34.072	137.620	758.739
2	13:24:10	4243.900	3334.348	53446.409	129.448	313.808	1366.332	1025.054	-121.152	345.912	-43.846	131.670	818.868
3	13:24:32	4347.284	3069.858	58987.119	140.659	277.973	1702.586	1046.053	95.919	291.533	-44.320	133.210	838.203
x		4270.156	3293.782	58755.088	119.802	290.144	1584.613	1050.250	-45.548	319.602	-40.746	134.167	805.270
σ		67.919	206.650	5196.550	27.004	20.496	189.243	27.535	122.611	27.232	5.785	3.088	41.440

%RSD		1.591	6.274	8.844	22.541	7.064	11.943	2.622	269.189	8.521	14.197	2.302	5.146
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:23:49	10286.876	72.013%	545.598	68.658	-131.495	24.469	69.394%	52251.186	349.259	221.740	942.131	70.101%
2	13:24:10	10424.549	71.997%	365.168	31.665	-62.347	-50.639	70.252%	52947.322	259.669	175.061	937.640	68.975%
3	13:24:32	10457.131	73.199%	357.758	37.953	-37.355	-61.085	70.941%	52143.651	311.189	174.467	1076.467	71.138%
x		10389.519	72.403%	422.841	46.092	-77.066	-29.085	70.196%	52447.386	306.706	190.423	985.412	70.071%
σ		90.372	0.689%	106.375	19.794	48.765	46.673	0.775%	436.283	44.963	27.123	78.888	1.082%
%RSD		0.870	0.952	25.157	42.945	63.277	160.470	1.104	0.832	14.660	14.244	8.006	1.544

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:23:49	112.604	424.252	1853.344	71.432%	0.000	22914.240	142.275
2	13:24:10	137.728	222.265	1926.783	73.720%	0.000	19444.880	-51.716
3	13:24:32	46.331	117.825	1777.332	72.178%	0.000	16459.792	-48.385
x		98.887	254.780	1852.486	72.443%	0.000	19606.304	14.058
σ		47.217	155.780	74.729	1.167%	0.000	3230.250	111.052
%RSD		47.748	61.143	4.034	1.611	0.000	16.476	789.951

200-35730-A-2-B 10/19/2016 01:29:10 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:29:31	69.015%	1.529	657.307	464047.140	22237.360	24729.392	58807.671	35230.210	70.508%	127.476	958.838	11313.245
2	13:29:53	70.546%	-9.338	660.504	457172.730	22946.000	24174.341	60236.597	36419.473	69.904%	85.729	824.484	12106.103
3	13:30:15	69.407%	5.069	593.127	460371.310	22572.167	24929.849	55673.012	35519.784	69.953%	92.775	1698.141	12689.470
x		69.656%	-0.913	636.979	460530.390	22585.176	24611.194	58239.093	35723.155	70.122%	101.993	1160.488	12036.273
σ		0.795%	7.508	38.011	3439.965	354.499	391.377	2334.317	620.167	0.336%	22.348	470.442	690.765
%RSD		1.142	821.964	5.967	0.747	1.570	1.590	4.008	1.736	0.479	21.911	40.538	5.739

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:29:31	5033.020	2927.137	83055.201	91.908	302.152	2953.813	1051.208	-173.393	413.902	-49.799	136.477	732.145
2	13:29:53	5257.395	3185.477	88117.103	92.888	369.285	2752.664	1230.536	86.688	326.545	-8.122	150.040	604.110
3	13:30:15	4814.265	3283.002	87732.293	85.661	383.311	2607.590	1136.288	44.614	338.692	-52.965	143.345	774.439
x		5034.894	3131.872	86301.532	90.152	351.583	2771.355	1139.344	-14.030	359.713	-36.962	143.287	703.564
σ		221.571	183.889	2817.982	3.921	43.379	173.867	89.703	139.606	47.321	25.027	6.782	88.688
%RSD		4.401	5.872	3.265	4.349	12.338	6.274	7.873	995.029	13.155	67.709	4.733	12.606
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:29:31	10282.534	72.623%	340.621	16.689	-20.542	-91.692	71.075%	49718.745	234.254	160.576	2186.005	69.499%
2	13:29:53	10620.229	71.801%	498.711	16.772	-87.417	-18.976	70.981%	50419.329	212.754	182.760	2104.349	70.567%
3	13:30:15	10738.038	72.447%	431.381	2.804	-77.321	-28.873	70.809%	52134.663	156.643	151.683	2187.189	71.133%
x		10546.934	72.291%	423.571	12.088	-61.760	-46.514	70.955%	50757.579	201.217	165.006	2159.181	70.400%
σ		236.432	0.433%	79.334	8.040	36.051	39.437	0.135%	1242.970	40.071	16.005	47.490	0.830%
%RSD		2.242	0.599	18.730	66.515	58.373	84.786	0.190	2.449	19.915	9.700	2.199	1.179

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:29:31	100.007	-32.072	4266.076	73.042%	0.000	5844.417	-125.567
2	13:29:53	89.981	-38.610	4793.987	71.603%	0.000	6192.019	-123.917
3	13:30:15	67.428	11.833	4990.364	72.542%	0.000	5361.440	-111.216
x		85.806	-19.616	4683.475	72.395%	0.000	5799.292	-120.233
σ		16.686	27.432	374.577	0.730%	0.000	417.124	7.853
%RSD		19.446	139.841	7.998	1.009	0.000	7.193	6.531

200-35745-A-5-B 10/19/2016 01:34:53 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:35:15	71.259%	-5.830	375.218	493243.830	20664.216	15567.430	61874.791	32435.311	71.126%	98.292	1821.331	6023.223
2	13:35:36	70.945%	1.233	513.015	515318.120	22494.693	16126.850	60130.105	32419.248	70.148%	92.503	-554.824	5323.156
3	13:35:58	68.754%	-5.702	399.900	487865.110	20652.859	15013.869	58288.839	32205.099	71.406%	139.799	964.408	5141.920
x		70.319%	-3.433	429.377	498809.020	21270.589	15569.383	60097.912	32353.219	70.893%	110.198	743.638	5496.100
σ		1.365%	4.042	73.476	14548.042	1060.120	556.493	1793.193	128.527	0.660%	25.798	1203.363	465.409
%RSD		1.941	117.728	17.112	2.917	4.984	3.574	2.984	0.397	0.931	23.411	161.821	8.468

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:35:15	5740.359	4261.597	88184.370	119.042	193.933	1245.629	1141.724	-11.278	401.291	-30.961	143.496	680.897
2	13:35:36	6427.170	4313.363	89353.831	128.129	168.361	1651.517	1245.324	114.617	395.986	-30.814	135.192	772.842
3	13:35:58	5611.357	4677.252	78765.824	125.493	249.125	1687.908	1407.732	69.844	362.562	7.261	161.000	630.666
x		5926.295	4417.404	85434.675	124.221	203.806	1528.352	1264.927	57.728	386.613	-18.171	146.563	694.802
σ		438.539	226.519	5804.919	4.675	41.278	245.520	134.083	63.816	20.997	22.025	13.174	72.101
%RSD		7.400	5.128	6.795	3.763	20.253	16.064	10.600	110.546	5.431	121.207	8.989	10.377

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:35:15	9528.474	73.183%	289.530	101.092	-112.968	13.139	71.082%	49487.908	142.440	135.225	638.174	69.598%
2	13:35:36	9724.043	72.882%	201.897	64.302	-70.855	-35.352	72.120%	49852.860	178.903	151.890	677.395	73.019%
3	13:35:58	9761.750	74.287%	176.254	127.617	-69.348	-36.794	71.739%	50627.047	229.323	114.215	792.553	72.484%
x		9671.423	73.451%	222.560	97.670	-84.390	-19.669	71.647%	49989.272	183.555	133.776	702.707	71.700%
σ		125.224	0.740%	59.398	31.796	24.761	28.422	0.525%	581.692	43.628	18.879	80.242	1.840%
%RSD		1.295	1.007	26.688	32.555	29.341	144.499	0.733	1.164	23.768	14.112	11.419	2.566

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:35:15	70.993	38.780	1588.687	72.644%	0.000	3118.696	-104.469
2	13:35:36	76.948	4.769	1530.778	73.802%	0.000	2431.387	-112.864
3	13:35:58	92.006	38.930	1342.468	73.754%	0.000	2916.443	-78.906
x		79.983	27.493	1487.311	73.400%	0.000	2822.175	-98.747
σ		10.830	19.680	128.736	0.655%	0.000	353.218	17.688
%RSD		13.541	71.582	8.656	0.893	0.000	12.516	17.912

200-35754-A-2-B 10/19/2016 01:40:37 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:40:59	75.217%	-6.015	395.536	411444.880	24516.206	25258.712	61607.592	37668.463	72.885%	143.939	-562.505	7840.005
2	13:41:20	74.953%	-6.003	372.019	426397.270	24412.751	26122.745	58132.334	39005.545	73.152%	150.157	1142.347	7808.850
3	13:41:42	72.385%	-9.338	409.927	418782.130	25333.883	25588.276	61886.924	39422.952	72.943%	177.826	821.818	7728.884
x		74.185%	-7.119	392.494	418874.760	24754.280	25656.578	60542.283	38698.987	72.994%	157.307	467.220	7792.580
σ		1.564%	1.922	19.137	7476.625	504.609	436.047	2091.745	916.538	0.140%	18.040	906.054	57.320
%RSD		2.109	27.004	4.876	1.785	2.038	1.700	3.455	2.368	0.192	11.468	193.925	0.736

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:40:59	9399.348	4318.732	90784.842	362.613	271.164	2238.409	1721.756	-36.208	644.223	-15.575	150.500	738.455
2	13:41:20	8885.635	4089.321	92525.621	320.202	256.443	2270.322	981.339	17.528	628.515	-46.089	127.342	820.973
3	13:41:42	8813.865	3814.445	91685.569	280.052	284.645	2462.661	965.632	-52.231	627.645	-18.599	156.384	714.646
x		9032.949	4074.166	91665.344	320.956	270.751	2323.797	1222.909	-23.637	633.461	-26.754	144.742	758.025

σ		319.333	252.485	870.566	41.286	14.105	121.313	432.086	36.539	9.331	16.812	15.353	55.800
%RSD		3.535	6.197	0.950	12.863	5.210	5.220	35.333	154.586	1.473	62.839	10.607	7.361
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:40:59	10669.879	74.287%	337.791	35.840	-70.233	-36.023	72.758%	52384.141	212.639	245.170	863.802	70.400%
2	13:41:20	10470.640	75.536%	350.638	1.043	-94.451	-19.113	73.424%	54003.994	317.762	234.509	889.928	72.510%
3	13:41:42	11415.777	76.688%	357.118	28.493	-99.703	-7.127	73.218%	55265.422	358.976	251.172	714.907	73.495%
x		10852.099	75.504%	348.516	21.792	-88.129	-20.754	73.133%	53884.519	296.459	243.617	822.879	72.135%
σ		498.221	1.201%	9.837	18.341	15.719	14.518	0.341%	1444.351	75.459	8.439	94.415	1.582%
%RSD		4.591	1.590	2.822	84.163	17.837	69.951	0.467	2.680	25.453	3.464	11.474	2.193

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:40:59	118.829	145.115	2123.425	74.063%	0.000	7078.503	-72.691
2	13:41:20	167.791	29.538	2267.074	73.042%	0.000	6741.536	-91.340
3	13:41:42	116.657	-46.319	2137.302	74.563%	0.000	5634.884	-133.949
x		134.426	42.778	2175.934	73.889%	0.000	6484.974	-99.327
σ		28.916	96.401	79.234	0.775%	0.000	755.233	31.400
%RSD		21.511	225.353	3.641	1.049	0.000	11.646	31.613

200-35754-A-2-B SD@5 10/19/2016 01:46:21 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:46:43	69.385%	-2.132	103.440	122125.110	4957.958	5271.934	10121.723	6821.075	71.028%	35.117	-1150.111	1669.397
2	13:47:05	69.938%	-5.764	84.354	105648.060	5199.331	5330.297	9284.424	7608.332	71.943%	27.758	-1055.557	1330.302
3	13:47:26	69.080%	-2.100	323.257	124004.400	5153.440	5282.922	10496.590	7389.610	70.291%	35.463	-1641.648	1564.606
x		69.468%	-3.332	170.351	117259.190	5103.576	5295.051	9967.579	7273.006	71.087%	32.779	-1282.439	1521.435
σ		0.435%	2.106	132.765	10099.338	128.180	31.015	620.610	406.375	0.828%	4.352	314.656	173.621
%RSD		0.626	63.201	77.936	8.613	2.512	0.586	6.226	5.587	1.165	13.277	24.536	11.412

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:46:43	10527.562	663.457	40013.369	20.682	109.749	402.924	146.502	-58.696	701.445	-58.371	153.119	869.922
2	13:47:05	10224.472	614.197	28199.833	40.995	108.137	415.356	205.515	19.692	686.564	-66.720	134.062	868.851
3	13:47:26	10797.384	718.105	40031.992	-7.328	68.399	431.208	283.152	44.292	677.672	-34.984	159.939	819.703
x		10516.472	665.253	36081.731	18.116	95.428	416.496	211.723	1.763	688.560	-53.359	149.040	852.825
σ		286.617	51.977	6825.930	24.263	23.422	14.176	68.536	53.784	12.012	16.451	13.412	28.690
%RSD		2.725	7.813	18.918	133.930	24.544	3.404	32.371	3051.264	1.745	30.832	8.999	3.364

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:46:43	2370.295	74.765%	14.072	10.085	-62.098	-50.884	70.534%	10919.310	285.883	223.569	154.070	70.080%
2	13:47:05	2296.339	74.397%	88.497	-18.984	-85.758	-27.650	72.355%	11190.644	311.236	162.115	108.503	70.557%
3	13:47:26	2205.049	75.113%	80.173	9.494	-107.538	-6.262	71.278%	11493.122	253.731	166.136	117.294	70.509%
x		2290.561	74.758%	60.914	0.199	-85.131	-28.265	71.389%	11201.026	283.617	183.940	126.622	70.382%
σ		82.774	0.358%	40.779	16.615	22.726	22.317	0.916%	287.047	28.819	34.379	24.173	0.263%
%RSD		3.614	0.479	66.946	8369.890	26.696	78.956	1.283	2.563	10.161	18.690	19.091	0.373

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:46:43	12.779	-174.055	235.177	72.473%	0.000	-2586.793	-180.116
2	13:47:05	47.489	-78.303	251.268	74.206%	0.000	-2673.161	-174.023
3	13:47:26	26.310	-128.294	102.567	73.144%	0.000	-2434.379	-200.877
x		28.859	-126.884	196.338	73.275%	0.000	-2564.777	-185.005
σ		17.495	47.892	81.605	0.874%	0.000	120.904	14.079
%RSD		60.621	37.745	41.564	1.193	0.000	4.714	7.610

200-35754-A-2-B PDS 10/19/2016 01:52:06 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:52:27	68.841%	1759.299	72129.291	T 10288094.000	385165.470	820990.720	T 9647262.500	341062.510	69.011%	166.280	137959.970	114587.490
2	13:52:49	70.463%	1732.771	68556.790	T 10400793.000	387519.650	833727.040	T 9651860.300	352256.770	67.701%	139.906	140359.910	117270.650
3	13:53:11	69.285%	1827.350	69448.887	T 10229252.000	377120.250	825976.960	T 9599667.900	343670.210	69.042%	209.465	139566.530	115575.370
x		69.530%	1773.140	70044.989	T 10306046.000	383268.460	826898.240	T 9632930.300	345663.160	68.585%	171.884	139295.470	115811.170
σ		0.838%	48.785	1859.353	T 87168.163	5453.058	6417.944	T 28897.617	5857.196	0.766%	35.117	1222.711	1357.037
%RSD		1.206	2.751	2.655	T 0.846	1.423	0.776	T 0.300	1.694	1.116	20.431	0.878	1.172

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:52:27	7467.010	84811.682	T 7966347.600	34178.239	15108.500	46619.613	120678.570	9721.549	396.604	1757.710	130.800	761.288
2	13:52:49	6706.708	86951.421	T 8170829.700	34337.186	15268.200	46542.694	123614.110	9942.448	329.913	1791.487	134.348	527.093
3	13:53:11	5250.380	86553.884	T 7921666.600	33952.525	14913.281	45764.077	121046.130	9754.064	267.644	1793.155	146.581	512.542
x		6474.700	86105.662	T 8019614.600	34155.983	15096.661	46308.794	121779.600	9806.021	331.387	1780.784	137.243	600.308
σ		1126.381	1138.111	T 132848.010	193.294	177.755	473.305	1599.327	119.263	64.493	20.000	8.279	139.603

%RSD		17.397	1.322	T 1.657	0.566	1.177	1.022	1.313	1.216	19.462	1.123	6.033	23.255
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:52:27	278800.380	72.459%	176995.910	34056.859	-47.276	6724.313	70.337%	51237.756	52324.123	40196.652	55681.731	70.049%
2	13:52:49	279356.830	72.447%	178408.660	36154.086	-57.695	7733.930	69.595%	52748.297	54961.156	41227.536	57499.139	69.745%
3	13:53:11	282971.860	73.281%	180242.490	34886.612	-31.321	7806.955	69.927%	54318.132	54912.375	41766.223	56896.435	70.300%
x		280376.360	72.729%	178549.020	35032.519	-45.431	7421.733	69.953%	52768.062	54065.885	41063.470	56692.435	70.031%
σ		2264.926	0.478%	1627.835	1056.199	13.283	605.086	0.371%	1540.283	1508.607	797.544	925.719	0.278%
%RSD		0.808	0.657	0.912	3.015	29.238	8.153	0.531	2.919	2.790	1.942	1.633	0.397

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:52:27	36286.884	177554.820	128137.680	73.213%	0.000	235412.340	143786.410
2	13:52:49	37400.287	184269.000	130859.860	72.309%	0.000	250452.080	146053.600
3	13:53:11	37902.046	190501.240	132795.980	70.856%	0.000	267138.470	154683.570
x		37196.406	184108.350	130597.840	72.126%	0.000	251000.960	148174.530
σ		826.658	6474.704	2340.181	1.189%	0.000	15870.189	5749.851
%RSD		2.222	3.517	1.792	1.648	0.000	6.323	3.880

200-35676-A-2-B 10/19/2016 01:57:50 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:58:12	71.604%	-9.338	573.495	463269.400	25633.465	20078.399	70675.440	39359.715	68.789%	101.517	1315.483	6184.676
2	13:58:33	68.677%	-5.698	437.319	460351.710	24215.638	19345.522	66810.404	37065.160	69.589%	100.385	1875.797	7083.049
3	13:58:55	70.889%	-5.812	520.862	444751.410	24419.359	18674.822	61537.150	37763.857	69.909%	99.948	-550.095	6845.640
x		70.390%	-6.949	510.559	456124.170	24756.154	19366.248	66340.998	38062.911	69.429%	100.617	880.395	6704.455
σ		1.526%	2.070	68.670	9956.557	766.571	702.018	4587.194	1176.147	0.577%	0.810	1270.124	465.531
%RSD		2.168	29.782	13.450	2.183	3.096	3.625	6.915	3.090	0.830	0.805	144.268	6.944

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:58:12	5804.859	6727.277	87056.439	276.459	368.277	882.400	883.351	-47.705	433.731	-52.450	140.763	829.000
2	13:58:33	5379.906	5782.054	73671.250	186.814	349.480	926.772	844.041	52.749	399.565	-52.898	142.727	847.865
3	13:58:55	6157.129	6354.368	77617.525	314.601	283.433	1321.894	1065.935	-94.938	431.279	-35.264	141.433	695.097
x		5780.631	6287.900	79448.405	259.292	333.730	1043.689	931.109	-29.965	421.525	-46.870	141.641	790.654
σ		389.178	476.104	6877.856	65.601	44.561	241.952	118.405	75.425	19.058	10.054	0.998	83.291
%RSD		6.732	7.572	8.657	25.300	13.352	23.182	12.717	251.713	4.521	21.451	0.705	10.534

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:58:12	10501.470	72.608%	278.735	46.264	-55.448	-43.124	69.976%	53227.710	260.532	131.860	791.315	69.556%
2	13:58:33	10709.545	72.878%	160.747	67.556	-98.981	-7.529	70.064%	53918.825	181.690	155.827	697.532	69.300%
3	13:58:55	10672.819	72.839%	215.796	45.768	-140.083	25.697	70.352%	53021.811	215.366	163.294	815.471	70.572%
x		10627.945	72.775%	218.426	53.196	-98.170	-8.318	70.131%	53389.449	219.196	150.327	768.106	69.809%
σ		111.059	0.146%	59.038	12.439	42.323	34.417	0.196%	469.870	39.561	16.423	62.301	0.673%
%RSD		1.045	0.201	27.029	23.383	43.112	413.745	0.280	0.880	18.048	10.925	8.111	0.964

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:58:12	164.543	193.273	2423.446	70.589%	0.000	32934.669	-51.881
2	13:58:33	100.565	110.072	2305.737	72.295%	0.000	25317.801	-14.060
3	13:58:55	125.392	105.315	2174.032	72.973%	0.000	20142.121	-22.712
x		130.167	136.220	2301.072	71.952%	0.000	26131.530	-29.551
σ		32.255	49.467	124.773	1.228%	0.000	6434.978	19.816
%RSD		24.780	36.314	5.422	1.707	0.000	24.625	67.056

CCV 10/19/2016 02:03:34 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:03:56	63.072%	121280.220	42309.044	┬19853666.000	┬5861410.200	┬54197414.000	┬18940760.000	┬2030898.600	63.261%	37035.018	┬3812550.000	1063
2	14:04:18	62.431%	122787.770	41569.677	┬20308509.000	┬6044899.600	┬55758333.000	┬19375772.000	1897477.400	61.748%	37524.190	┬3971620.800	1101
3	14:04:40	60.379%	124178.150	44367.946	┬19811745.000	┬5855264.400	┬54798638.000	┬18792506.000	┬2036732.900	62.844%	37267.868	┬3838807.800	1072
x		61.961%	117.378%	112.975%	┬108.676%	┬107.939%	┬107.705%	┬98.216%	┬97.790%	62.618%	37275.692	┬100.842%	9
σ		1.407%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	0.782%	244.680	┬n/a	
%RSD		2.271	1.181	3.392	┬1.378	┬1.820	┬1.434	┬1.593	┬3.961	1.248	0.656	┬2.201	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:03:56	12933.029	┬5600139.300	┬115189300.000	1643986.800	893841.930	1109240.100	859757.080	107764.460	-406.249	11546.413	127.064	
2	14:04:18	9241.309	┬5761184.300	┬119516390.000	1688807.200	912976.560	1127129.900	872487.200	110550.630	-638.658	11544.599	156.351	
3	14:04:40	13594.716	┬5624467.300	┬115762490.000	1623843.100	881884.920	1083960.400	862161.200	110402.370	-531.142	11528.464	183.494	
x		11923.018	┬101.085%	┬102.240%	93.702%	99.634%	97.498%	100.655%	102.180%	-525.350	109.531%	155.636	
σ		2345.875	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	116.313	n/a	28.221	
%RSD		19.675	┬1.533	┬2.012	2.013	1.750	1.960	0.782	1.431	22.140	0.086	18.133	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	14:03:56	1085584.900	67.885%	2125303.600	355358.510	554.940	165686.840	65.321%	1058768.600	709612.520	540237.500	710088.810	6
2	14:04:18	1090562.200	66.520%	2205822.100	359292.560	1412.774	169203.850	64.918%	1072618.100	717939.960	545756.180	729936.970	6
3	14:04:40	1077502.700	65.347%	2289718.100	352367.690	882.638	164734.820	65.670%	1074321.600	716270.660	545264.930	717318.460	6
x		1084549.900	66.584%	97.884%	105.064%	950.117	99.098%	65.303%	1068569.400	714607.720	94.867%	92.650%	6
σ		6591.011	1.270%	n/a	n/a	432.880	n/a	0.376%	8530.399	4405.748	n/a	n/a	
%RSD		0.608	1.908	3.725	0.976	45.561	1.413	0.576	0.798	0.617	0.562	1.397	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:03:56	43419.991	1899044.500	┬18022646.000	67.281%	7.432	208734.440	140430.520
2	14:04:18	46796.200	1948504.400	┬18324872.000	66.850%	0.000	236215.980	146032.310
3	14:04:40	46813.308	1891171.100	┬17938068.000	68.438%	0.000	247202.910	140352.000
x		113.899%	88.216%	┬97.136%	67.523%	2.477	75.193%	99.776%
σ		n/a	n/a	┬n/a	0.822%	4.291	n/a	n/a
%RSD		4.278	1.625	┬1.124	1.217	173.205	8.588	2.289

CCB 10/19/2016 02:09:18 PM QC Status: PASS (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:09:39	68.263%	-2.014	443.005	46884.483	474.196	4519.945	2371.999	-242.185	66.644%	22.470	-51.643	-669.609
2	14:10:01	68.447%	-2.033	338.200	33726.113	477.016	4454.334	-268.798	-468.410	68.025%	14.686	998.757	-752.556
3	14:10:23	68.666%	-2.057	284.546	47247.039	583.166	4790.161	5103.406	-296.824	66.267%	15.064	740.841	-643.620
x		68.459%	-2.035	355.250	42619.212	511.459	4588.147	2402.202	-335.806	66.979%	17.407	562.652	-688.595
σ		0.202%	0.021	80.594	7703.783	62.116	177.998	2686.229	118.043	0.926%	4.390	547.402	56.896
%RSD		0.294	1.057	22.687	18.076	12.145	3.880	111.824	35.152	1.382	25.218	97.290	8.263

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:09:39	6685.177	228.283	24191.444	83.481	65.567	56.313	73.659	175.161	463.083	-32.075	133.976	787.918
2	14:10:01	6297.152	272.768	17015.804	66.648	78.592	94.018	21.656	78.442	510.432	-49.801	136.987	787.254
3	14:10:23	6570.585	277.573	29542.423	136.897	35.856	103.380	85.473	-92.896	566.573	-40.385	153.500	829.587
x		6517.638	259.541	23583.224	95.675	60.005	84.570	60.262	53.569	513.363	-40.753	141.488	801.587

σ		199.357	27.177	6285.419	36.677	21.904	24.915	33.952	135.749	51.807	8.869	10.511	24.252
%RSD		3.059	10.471	26.652	38.335	36.504	29.461	56.341	253.408	10.092	21.762	7.429	3.025
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:09:39	137.546	69.156%	4469.085	79.907	-81.502	-24.386	67.177%	3818.589	762.013	604.654	28.242	66.132%
2	14:10:01	99.079	69.563%	4162.069	19.659	-110.915	11.784	67.890%	4109.940	894.510	721.679	20.486	66.090%
3	14:10:23	122.135	68.980%	4081.974	5.283	-90.024	-8.630	67.427%	4138.159	914.772	702.134	20.688	66.383%
x		119.587	69.233%	4237.709	34.950	-94.147	-7.077	67.498%	4022.229	857.098	676.156	23.139	66.202%
σ		19.360	0.299%	204.340	39.592	15.134	18.135	0.362%	176.921	82.967	62.689	4.421	0.159%
%RSD		16.189	0.432	4.822	113.284	16.075	256.243	0.536	4.399	9.680	9.271	19.105	0.240

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:09:39	155.261	1208.197	897.142	69.260%	0.000	-1479.550	-193.274
2	14:10:01	117.591	1095.900	1023.017	70.781%	0.000	-1754.795	-122.944
3	14:10:23	78.996	1018.982	824.040	71.445%	0.000	-1676.426	-158.724
x		117.283	1107.693	914.733	70.496%	0.000	-1636.923	-158.314
σ		38.134	95.157	100.648	1.120%	0.000	141.811	35.167
%RSD		32.514	8.591	11.003	1.589	0.000	8.663	22.213

CCVL 10/19/2016 02:15:00 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:15:22	66.907%	207.381	6830.261	984179.630	37655.790	94333.868	885867.530	32072.263	66.431%	30.066	12898.139	11096.740
2	14:15:44	68.071%	174.293	7028.149	T 1120451.200	38076.623	93808.393	897595.900	32995.856	66.014%	22.671	15213.886	10758.846
3	14:16:05	66.299%	205.597	7312.372	T 1122538.500	39736.793	97189.365	905415.240	33842.661	65.676%	0.000	15011.733	11429.153
x		67.093%	116.995%	116.561%	T 116.956%	105.258%	111.918%	92.487%	97.290%	66.040%	17.579	93.536%	95.147%
σ		0.900%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.378%	15.666	n/a	n/a
%RSD		1.342	9.506	3.434	T 7.370	2.859	1.913	1.098	2.686	0.573	89.120	8.923	3.021

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:15:22	8129.139	9633.301	742557.910	3832.363	2007.777	4754.424	15807.596	1103.971	575.152	193.234	151.649	852.496
2	14:15:44	7940.986	9947.273	755423.000	3803.702	1687.289	4960.362	15563.049	997.839	599.854	197.516	121.978	758.293
3	14:16:05	8027.424	9422.002	770045.040	3770.055	1589.455	5345.069	16705.497	781.589	675.470	187.113	143.126	741.859
x		8032.516	107.874%	99.246%	107.813%	122.391%	110.554%	116.575%	89.629%	616.825	91.414%	138.918	784.216
σ		94.180	n/a	n/a	n/a	n/a	n/a	n/a	n/a	52.268	n/a	15.277	59.701
%RSD		1.172	2.734	1.819	0.820	12.422	5.972	3.754	17.094	8.474	2.714	10.997	7.613

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:15:22	27747.012	68.460%	19239.274	3692.838	-116.785	924.622	67.261%	1598.310	5642.265	4622.899	5827.215	67.378%
2	14:15:44	27949.157	69.508%	19077.361	3995.132	-58.638	805.454	68.045%	2072.236	6261.071	4593.383	6075.962	66.881%
3	14:16:05	28797.818	71.261%	19553.942	3535.407	-72.508	867.511	68.821%	1932.633	5984.486	4619.662	5302.505	67.116%
x		97.600%	69.743%	106.946%	110.511%	-82.643	103.043%	68.042%	1867.726	5962.607	100.580%	92.365%	67.125%
σ		n/a	1.415%	n/a	n/a	30.370	n/a	0.780%	243.539	309.982	n/a	n/a	0.249%
%RSD		1.980	2.029	1.256	6.245	36.748	6.883	1.146	13.039	5.199	0.351	6.885	0.371

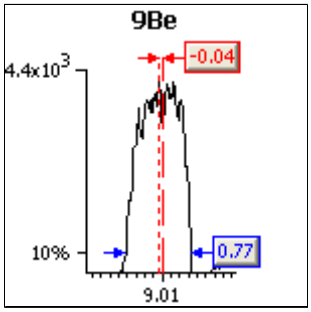
Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:15:22	3230.510	18880.289	16794.141	69.808%	0.000	10358.128	14616.058
2	14:15:44	3733.769	19853.997	16380.387	68.404%	0.000	11248.952	14832.564
3	14:16:05	3981.115	19260.074	16003.573	71.336%	0.000	10792.060	15035.053
x		90.978%	89.149%	109.997%	69.849%	0.000	35.197%	103.989%
σ		n/a	n/a	n/a	1.466%	0.000	n/a	n/a
%RSD		10.484	2.539	2.412	2.099	0.000	4.125	1.413

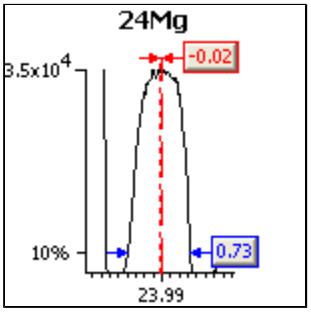
Performance Report

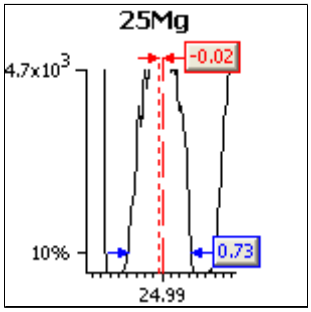
Sample details
Sample name : ITUNE
Acquired at : 10/25/2016 11:41:36 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

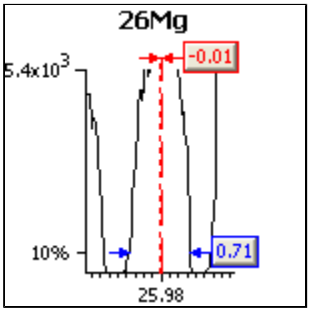
Mass Calibration verification

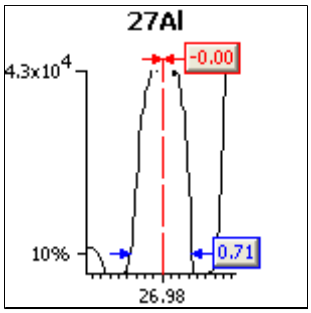
Acquisition parameters
Sweeps : 20
Dwell : 1.0 mSecs
Point spacing : 0.01 amu
Peak width measured at 10% of the peak maximum

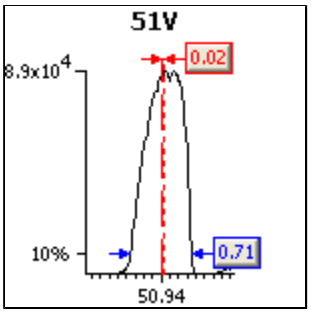


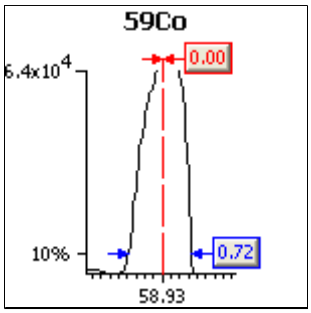


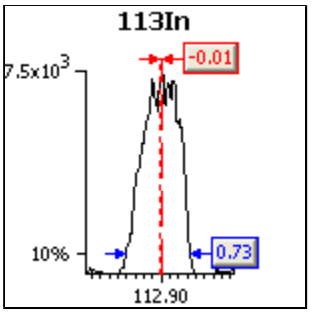


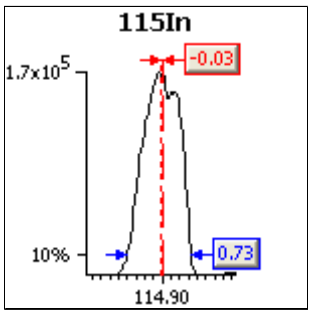


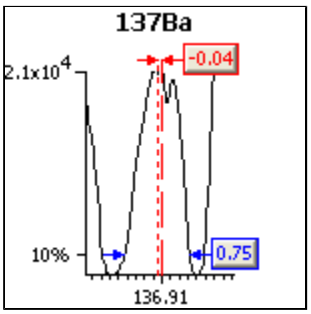


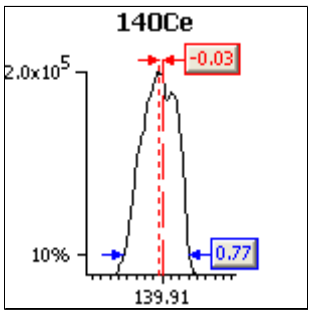


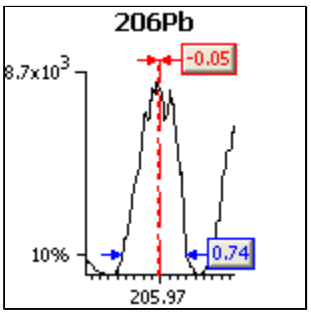


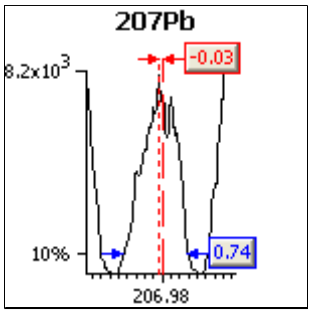


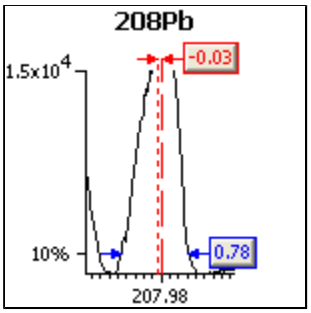


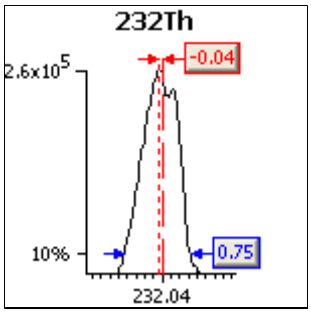


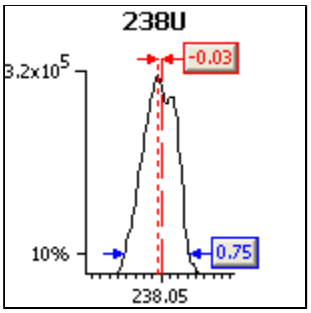












Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
9Be	0.90	0.65	0.10	0.77	-0.04
24Mg	0.90	0.65	0.10	0.73	-0.02

25Mg	0.90	0.65	0.10	0.73	-0.02
26Mg	0.90	0.65	0.10	0.71	-0.01
27Al	0.90	0.65	0.10	0.71	-0.00
51V	0.90	0.65	0.10	0.71	0.02
59Co	0.90	0.65	0.10	0.72	0.00
113In	0.90	0.65	0.10	0.73	-0.01
115In	0.90	0.65	0.10	0.73	-0.03
137Ba	0.90	0.65	0.10	0.75	-0.04
140Ce	0.90	0.65	0.10	0.77	-0.03
206Pb	0.90	0.65	0.10	0.74	-0.05
207Pb	0.90	0.65	0.10	0.74	-0.03
208Pb	0.90	0.65	0.10	0.78	-0.03
232Th	0.90	0.65	0.10	0.75	-0.04
238U	0.90	0.65	0.10	0.75	-0.03

Sample details
Sample name : ITUNE
Acquired at : 10/25/2016 11:41:36 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Tune conditions

Major	
Extraction	-102
Lens 1	-4.1
Focus	18.0
D1	-43.9
Pole Bias	1.0
Hexapole Bias	-3.0
Nebuliser	0.74
Sampling Depth	123

Minor	
Lens 2	-39.2
Lens 3	-177.3
Forward power	1404
Horizontal	80
Vertical	472
D2	-158
DA	-40.8
Cool	13.0
Auxiliary	0.90

Global	
Standard resolution	135
High resolution	115
Analogue Detector	2353
PC Detector	1196

Add. Gases	
CCT1	0.00
CCT2	0.00

Sensitivity and stability results

Acquisition parameters
Sweeps : 50

Run	Time	8Bkg	9Be	24Mg	25Mg	26Mg	27Al	51V	59Co	113In
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Countrate	-	>100	>100	>100	>100	>100	>100	>100	>100
1	11:42:32 AM	0.000	3824.439	37520.185	5142.793	6399.228	45748.702	88373.678	69141.118	7509.691
2	11:43:06 AM	0.000	3852.445	38464.334	5022.757	6473.257	45020.724	87782.566	67869.909	7245.575
3	11:43:40 AM	0.200	3758.424	37566.289	5102.781	6157.137	45510.050	88550.613	68327.774	7313.604
4	11:44:14 AM	0.000	3876.451	37179.423	4988.747	6321.198	45467.936	88789.881	68494.456	7427.655
5	11:44:47 AM	0.200	3966.472	37093.231	5052.766	6131.128	45977.330	88643.103	68821.800	7561.715
x		0.080	3855.646	37564.693	5061.969	6296.390	45544.948	88427.968	68531.011	7411.648
σ		0.11	76.08	543.61	61.61	149.31	357.22	391.09	483.86	131.89
%RSD		136.931	1.973	1.447	1.217	2.371	0.784	0.442	0.706	1.780

Run	Time	115In	137Ba	140Ce	156Ce O	206Pb	207Pb	208Pb	220Bkg	232Th
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	5.0%	5.0%	5.0%	-	5.0%	5.0%	5.0%	-	5.0%
	Countrate	>100	>100	>100	-	>100	>100	>100	-	>100
1	11:42:32 AM	172724.40	21495.853	193850.83	1172.041	7775.813	7289.594	17196.867	0.000	260406.58
2	11:43:06 AM	171633.21	21475.827	193998.53	1300.051	7959.900	7251.577	17353.029	0.000	259719.99
3	11:43:40 AM	172520.30	20889.082	194241.33	1252.047	7807.828	7105.514	17066.734	0.000	261562.47
4	11:44:14 AM	172621.34	21662.068	196582.54	1216.044	8039.939	7221.564	16806.469	0.000	265784.48
5	11:44:47 AM	172035.33	21646.047	195941.06	1330.053	7671.765	7133.526	16804.467	0.000	263982.17
x		172306.91	21433.776	194922.86	1254.047	7851.049	7200.355	17045.513	0.000	262291.14
σ		459.98	316.03	1250.94	63.38	147.65	78.26	241.44	0.00	2537.54
%RSD		0.267	1.474	0.642	5.054	1.881	1.087	1.416	0.000	0.967

Run	Time	238U
Dwell (mSecs)		0.0
Limits	%RSD	5.0%
	Countrate	>100
1	11:42:32 AM	300248.33
2	11:43:06 AM	300339.96
3	11:43:40 AM	302981.12
4	11:44:14 AM	300368.46
5	11:44:47 AM	302594.19
x		301306.41
σ		1359.81
%RSD		0.451

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0200
1	11:42:32 AM	0.006
2	11:43:06 AM	0.007

3	11:43:40 AM	0.006
4	11:44:14 AM	0.006
5	11:44:47 AM	0.007
x		0.0064
σ		0.00
%RSD		4.9701

Result : The performance report passed.

Experiment Details

Description	PlasmaLab Template BlankExperiment
Template Filename	C:\Program Files\Thermo Fisher\PlasmaLab\TEMPLATES\6020A.tet
Created By User	user
Analyte Database	Default.tea
Creation Timestamp	8/29/2003 01:55:15 PM
Last Edited By	INORG-User
Last Edit Timestamp	10/25/2016 12:55:44 PM
Instrument Detector	Simultaneous
Database Version	3.51
Acquisition Mode	Unknown

Numerical Results report key (text indicates meaning)

Blue text indicates that cell is a statistic.
Underlining indicates that a data warning flag is set.

Column headings	Result cells	Data warning flags
No flag	Internal Standard	I - Invalid calibration
Semi Quant	Excluded	T - Tripped
Standard Addition	QC Warning	F - Interference correction failed
Multi Element	QC Failure	M - Result over max
	Transient TRA only:	V - Valley integration failed
	Peak Not Found	D - Different method used
	Manually Edited	
	Merged Peak	

Setup

Survey Scan Setup

Sweeps	10
Dwell Time	600
Channels Per Mass	10
Acquisition Duration	13247

Main Run Setup

Main Run	Peak Jumping
Sweeps	20
Dwell Time	10000
Channels Per Mass	1
Acquisition Duration	18211
Channel Spacing	0.02

Survey Scan Regions

Start AMU	End AMU	Channels	Dwell ms	Resolution

4.59	11.41	68	600	Standard
22.59	27.41	48	600	Standard
28.59	29.41	8	600	Standard
30.59	31.41	8	600	Standard
32.59	33.41	8	600	Standard
38.59	39.41	8	600	Standard
42.59	79.41	368	600	Standard
80.59	245.50	1649	600	Standard

Peak Jump Regions

Analyte	Channels	Dwell ms	Resolution
6Li	1	5000	Standard
7Li	1	5000	Standard
9Be	1	20000	Standard
11B	1	10000	Standard
23Na	1	5000	Standard
25Mg	1	5000	Standard
26Mg	1	5000	Standard
27Al	1	10000	Standard
39K	1	5000	Standard
43Ca	1	10000	Standard
44Ca	1	5000	Standard
45Sc	1	5000	Standard
47Ti	1	10000	Standard
51V	1	10000	Standard
52Cr	1	10000	Standard
53Cl O	1	10000	Standard
55Mn	1	10000	Standard
56Fe	1	10000	Standard
59Co	1	10000	Standard
60Ni	1	10000	Standard
65Cu	1	10000	Standard
66Zn	1	10000	Standard
75As	1	50000	Standard
77Ar Cl	1	50000	Standard
82Se	1	100000	Standard
83Kr	1	100000	Standard
84Kr	1	10000	Standard
88Sr	1	10000	Standard
89Y	1	5000	Standard
98Mo	1	10000	Standard
106Cd	1	10000	Standard
107Ag	1	10000	Standard
108Mo O	1	10000	Standard
111Cd	1	10000	Standard
115In	1	5000	Standard
118Sn	1	10000	Standard
121Sb	1	10000	Standard
123Sb	1	100000	Standard
135Ba	1	10000	Standard

159Tb	1	5000	Standard
182W	1	10000	Standard
205Tl	1	10000	Standard
206Pb	1	10000	Standard
207Pb	1	10000	Standard
208Pb	1	10000	Standard
209Bi	1	5000	Standard
220Bkg	1	10000	Standard
232Th	1	10000	Standard
238U	1	10000	Standard

Calibration Technique

Use External Drift Correction - No
Calibrate by - Isotope

Symbol	Interference Correction	RSF	Calibration Method	Line Fit	Weighting	Forcing	Use for Semi-Quant	Max Error	Minimum Correlation
6Li	Yes	1.00	None				No		
7Li	Yes	1.00	None				No		
9Be	Yes	0.75	Fully-Quantified	Linear	Absolute SD	None	Yes		
11B	Yes	0.58	Fully-Quantified	Linear	Absolute SD	None	Yes		
23Na	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
25Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
26Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
27Al	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
39K	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
43Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
44Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
45Sc	Yes	1.00	None				No		
47Ti	Yes	0.99	None				No		
51V	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
52Cr	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
55Mn	Yes	0.95	Fully-Quantified	Linear	Absolute SD	None	Yes		
56Fe	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
59Co	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
60Ni	No	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
65Cu	Yes	0.90	Fully-Quantified	Linear	Absolute SD	None	Yes		
66Zn	Yes	0.38	Fully-Quantified	Linear	Absolute SD	None	Yes		
75As	Yes	0.07	Fully-Quantified	Linear	Absolute SD	None	Yes		
82Se	Yes	0.10	Fully-Quantified	Linear	Absolute SD	None	Yes		
83Kr	Yes	0.01	None				No		
84Kr	Yes	0.01	None				No		
88Sr	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
89Y	Yes	0.98	None				No		
98Mo	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
107Ag	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
106Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
111Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
115In	Yes	0.99	None				No		
118Sn	Yes	0.96	None				No		

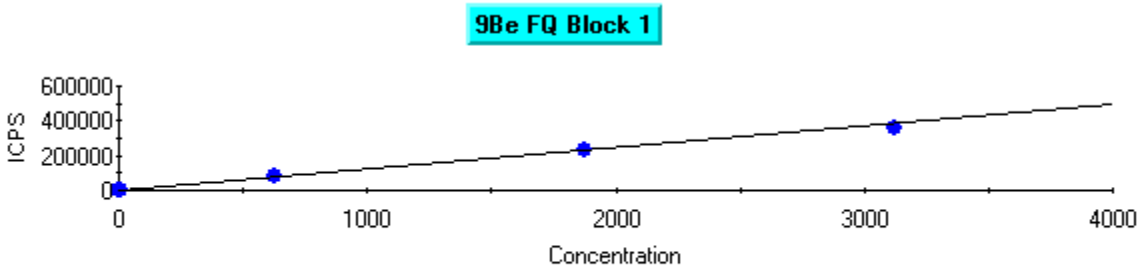
121Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
123Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
135Ba	Yes	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes
159Tb	Yes	0.99	None				No
182W	Yes	0.94	Fully-Quantified	Linear	Absolute SD	None	Yes
206Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
207Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
208Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	No
209Bi	Yes	0.92	None				No
232Th	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
238U	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
205Tl	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
220Bkg	Yes		Semi-Quantified				No
77Ar Cl	Yes		Semi-Quantified				No
53Cl O	Yes		Semi-Quantified				No
108Mo O	Yes		Semi-Quantified				No

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	STD0	Fully Quant Standard	1.000	0	1	2	144
2	STD1	Fully Quant Standard	1.000	0	1	3	144
3	STD2	Fully Quant Standard	1.000	0	1	4	144
4	STD3	Fully Quant Standard	1.000	0	1	5	144
5	STD4	Fully Quant Standard	1.000	1	1	1	144
6	STD5	Fully Quant Standard	1.000	1	1	2	144
7	ICV	QC Sample	1.000	0	1	6	144
8	ICVL	QC Sample	1.000	0	1	3	144
9	ICBIS	QC Sample	1.000	0	1	2	144
10	ICSA	QC Sample	1.000	1	1	3	144
11	ICSAB	QC Sample	1.000	1	1	4	144
12	CCV	QC Sample	1.000	0	1	5	144
13	CCB	QC Sample	1.000	0	1	2	144
14	MB 200-110491/1-A	Unknown	1.000	1	2	1	144
15	LCS 200-110491/2-A	Unknown	1.000	1	2	2	144
16	200-35680-A-8-A	Unknown	1.000	1	2	3	144
17	200-35680-A-8-A SD@5	Unknown	1.000	1	2	4	144
18	200-35680-A-8-A PDS	Unknown	1.000	1	2	5	144
19	200-35680-A-8-B MS	Unknown	1.000	1	2	6	144
20	200-35680-A-8-C MSD	Unknown	1.000	1	2	7	144
21	200-35680-A-9-A	Unknown	1.000	1	2	8	144
22	200-35680-A-10-A	Unknown	1.000	1	2	9	144
23	200-35680-A-11-A	Unknown	1.000	1	2	10	144
24	CCV	QC Sample	1.000	0	1	5	144
25	CCB	QC Sample	1.000	0	1	2	144
26	CCVL	QC Sample	1.000	0	1	3	144
27	200-35680-A-12-A	Unknown	1.000	1	2	11	144
28	200-35700-A-9-A	Unknown	1.000	1	2	12	144
29	200-35700-A-10-A	Unknown	1.000	1	3	1	144
30	200-35700-A-10-A @2	Unknown	1.000	1	3	2	144
31	CCV	QC Sample	1.000	0	1	5	144
32	CCB	QC Sample	1.000	0	1	2	144

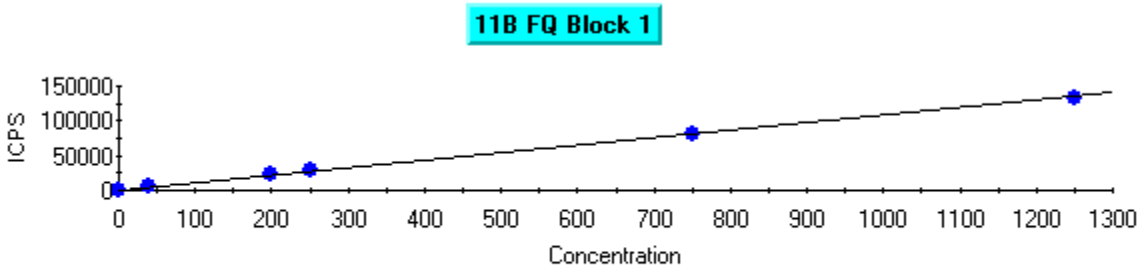
33	CCVL	QC Sample	1.000	0	1	3	144

Fully Quant Calibration



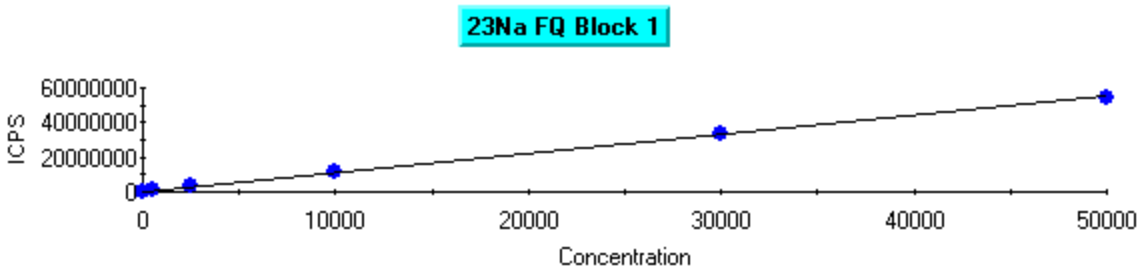
Intercept CPS=20.857217 Intercept Conc=0.169739
Sensitivity=122.878311 Correlation Coeff=0.999548

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.034	0.034	16.72	0.00
STD1	1.000	0.997	0.003	143.35	0.31
STD2	5.000	5.086	0.086	645.80	1.72
STD3	625.000	629.934	4.934	77426.08	0.79
STD4	1875.000	1836.607	38.393	225700.03	2.05
STD5	3125.000	2910.165	214.835	357616.97	6.87



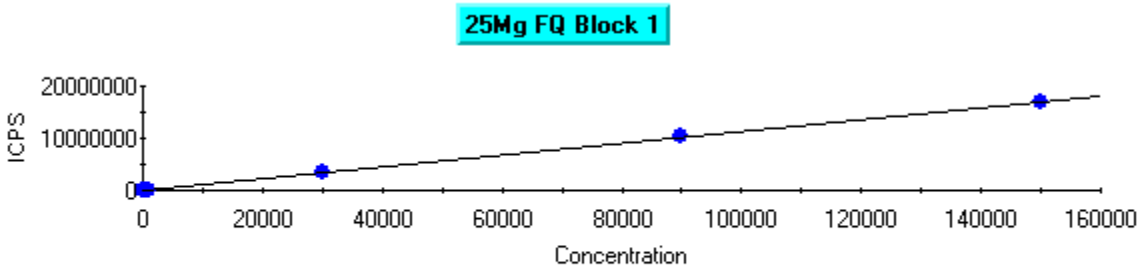
Intercept CPS=1411.043425 Intercept Conc=12.987645
Sensitivity=108.645059 Correlation Coeff=0.999838

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-4.192	4.192	955.63	0.00
STD1	40.000	42.798	2.798	6060.88	7.00
STD2	200.000	206.695	6.695	23867.48	3.35
STD3	250.000	248.193	1.807	28375.93	0.72
STD4	750.000	743.436	6.564	82181.73	0.88
STD5	1250.000	1207.282	42.718	132576.26	3.42



Intercept CPS=179871.308464 Intercept Conc=162.048507
Sensitivity=1109.984358 Correlation Coeff=0.999851

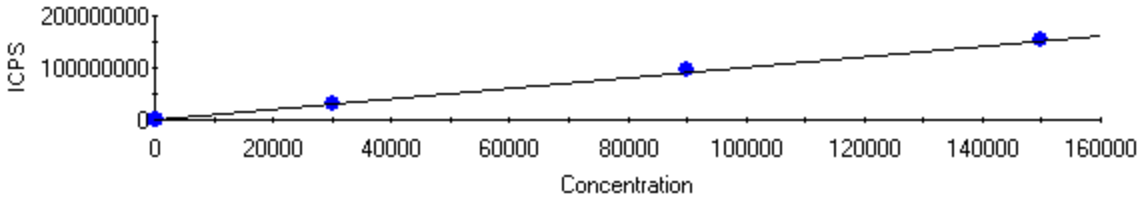
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	1.102	1.102	181094.94	0.00
STD1	500.000	497.646	2.354	732250.67	0.47
STD2	2500.000	2488.071	11.929	2941590.66	0.48
STD3	10000.000	9993.515	6.485	11272516.46	0.06
STD4	30000.000	30270.984	270.984	33780190.30	0.90
STD5	50000.000	48920.265	1079.735	54480599.79	2.16



Intercept CPS=1220.394981 Intercept Conc=10.741166
Sensitivity=113.618483 Correlation Coeff=0.999990

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.468	0.468	1273.52	0.00
STD1	200.000	182.704	17.296	21978.98	8.65
STD2	1000.000	919.119	80.881	105649.25	8.09
STD3	30000.000	30041.676	41.676	3414510.04	0.14
STD4	90000.000	90704.837	704.837	10306966.36	0.78
STD5	150000.000	149951.619	48.381	17038495.90	0.03

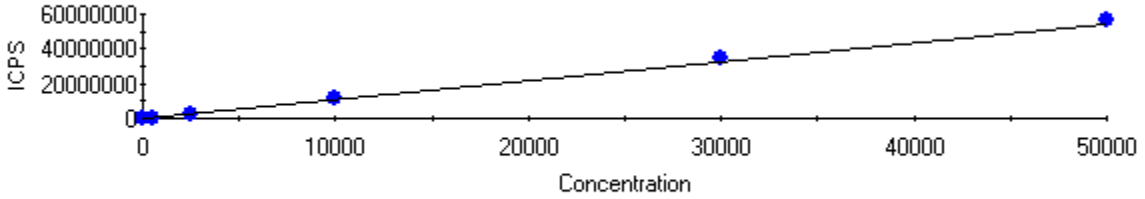
27Al FQ Block 1



Intercept CPS=7044.566125 Intercept Conc=6.922904
Sensitivity=1017.573883 Correlation Coeff=0.999968

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	3.565	3.565	10672.09	0.00
STD1	50.000	44.636	5.364	52464.74	10.73
STD2	250.000	227.256	22.744	238294.75	9.10
STD3	30000.000	30746.310	746.310	31293686.33	2.49
STD4	90000.000	93098.934	3098.934	94742088.05	3.44
STD5	150000.000	152920.333	2920.333	155614781.42	1.95

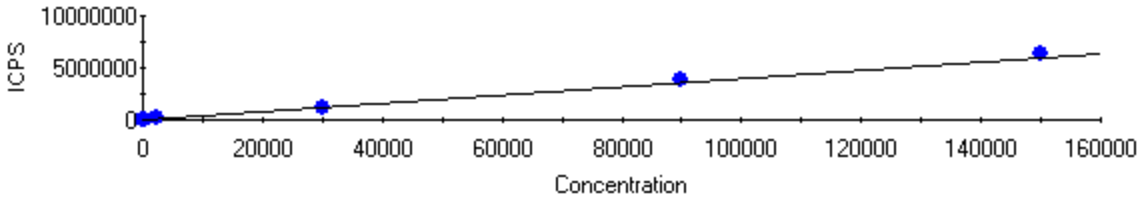
39K FQ Block 1



Intercept CPS=44460.309758 Intercept Conc=40.895743
Sensitivity=1087.162281 Correlation Coeff=0.999972

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	1.703	1.703	46311.34	0.00
STD1	500.000	475.728	24.272	561654.01	4.85
STD2	2500.000	2472.073	27.927	2732004.65	1.12
STD3	10000.000	10053.604	53.604	10974359.85	0.54
STD4	30000.000	31337.732	1337.732	34113660.46	4.46
STD5	50000.000	51909.478	1909.478	56478486.38	3.82

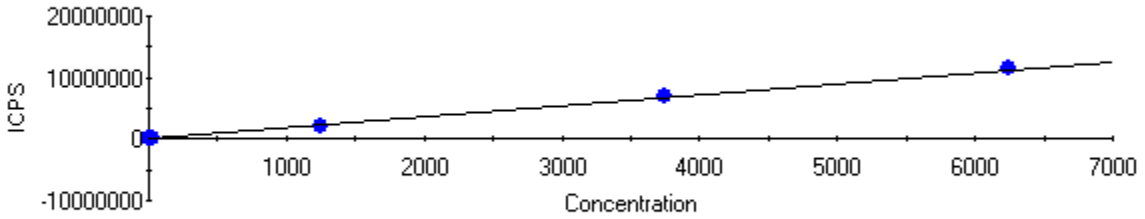
44Ca FQ Block 1



Intercept CPS=664.315529 Intercept Conc=16.790870
Sensitivity=39.564093 Correlation Coeff=0.999864

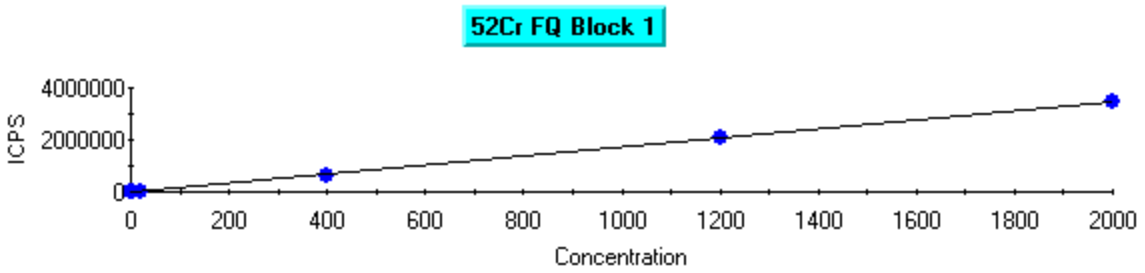
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	8.655	8.655	1006.73	0.00
STD1	500.000	496.351	3.649	20302.00	0.73
STD2	2500.000	2422.924	77.076	96525.10	3.08
STD3	30000.000	29499.224	500.776	1167774.35	1.67
STD4	90000.000	96315.232	6315.232	3811289.11	7.02
STD5	150000.000	161607.433	11607.433	6394515.79	7.74

51V FQ Block 1



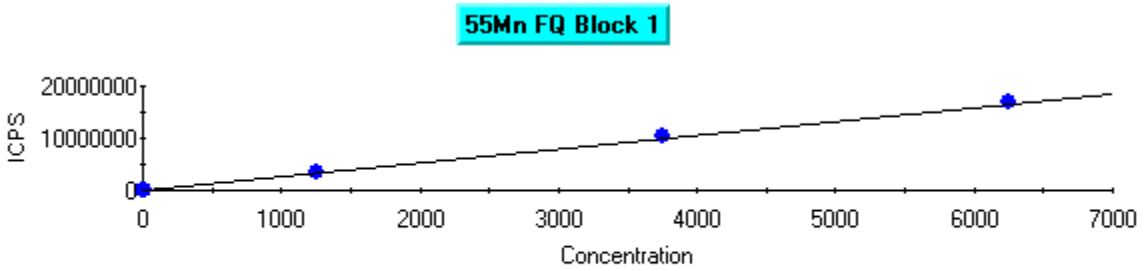
Intercept CPS=-1183.879819 Intercept Conc=-0.654403
Sensitivity=1809.098280 Correlation Coeff=0.999962

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	1.221	1.221	1024.47	0.00
STD1	5.000	5.349	0.349	8493.88	6.99
STD2	25.000	23.046	1.954	40509.42	7.81
STD3	1250.000	1219.315	30.685	2204677.69	2.45
STD4	3750.000	3829.566	79.566	6926877.46	2.12
STD5	6250.000	6354.154	104.154	11494104.63	1.67



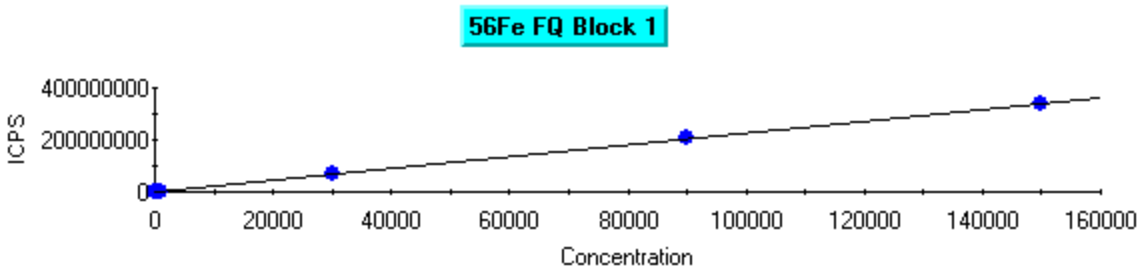
Intercept CPS=1522.192786 Intercept Conc=0.887805
Sensitivity=1714.557767 Correlation Coeff=0.999897

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.016	0.016	1549.02	0.00
STD1	4.000	3.882	0.118	8178.35	2.95
STD2	20.000	18.583	1.417	33383.62	7.09
STD3	400.000	376.935	23.065	647799.23	5.77
STD4	1200.000	1222.376	22.376	2097356.85	1.86
STD5	2000.000	2033.799	33.799	3488588.31	1.69



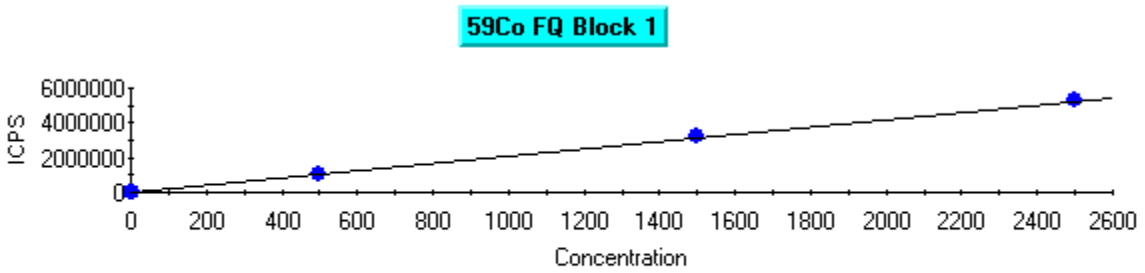
Intercept CPS=861.172057 Intercept Conc=0.328759
Sensitivity=2619.464266 Correlation Coeff=0.999980

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.111	0.111	1152.68	0.00
STD1	2.000	1.691	0.309	5289.76	15.47
STD2	10.000	9.085	0.915	24658.41	9.15
STD3	1250.000	1259.870	9.870	3301046.08	0.79
STD4	3750.000	3904.217	154.217	10227819.04	4.11
STD5	6250.000	6474.937	224.937	16961726.09	3.60



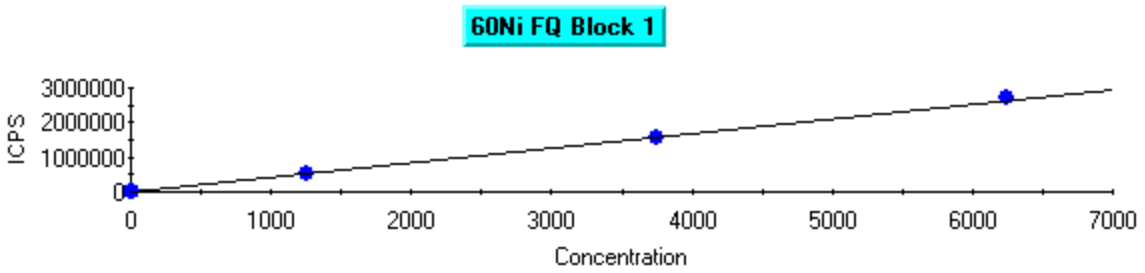
Intercept CPS=175012.320911 Intercept Conc=77.964357
Sensitivity=2244.773477 Correlation Coeff=0.999989

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	7.815	7.815	192555.01	0.00
STD1	200.000	189.624	10.376	600675.13	5.19
STD2	1000.000	995.895	4.105	2410571.71	0.41
STD3	30000.000	30100.209	100.209	67743162.39	0.33
STD4	90000.000	91707.823	1707.823	206038301.44	1.90
STD5	150000.000	151688.605	1688.605	340681569.53	1.13



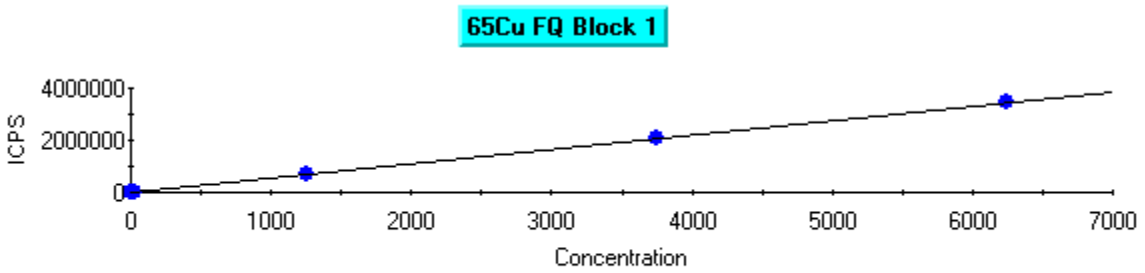
Intercept CPS=183.890667 Intercept Conc=0.088994
Sensitivity=2066.337194 Correlation Coeff=0.999876

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.060	0.060	307.33	0.00
STD1	1.000	0.888	0.112	2019.83	11.15
STD2	5.000	4.689	0.311	9872.32	6.23
STD3	500.000	475.457	24.543	982638.44	4.91
STD4	1500.000	1551.812	51.812	3206750.31	3.45
STD5	2500.000	2561.823	61.823	5293773.45	2.47



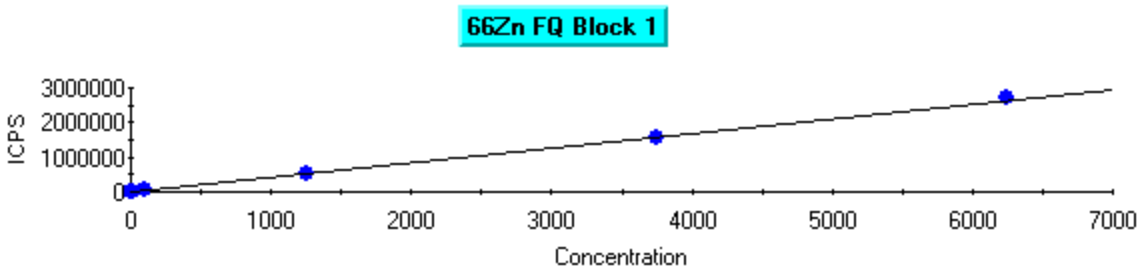
Intercept CPS=135.715184 Intercept Conc=0.320410
Sensitivity=423.567591 Correlation Coeff=0.999546

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.049	0.049	156.44	0.00
STD1	2.000	1.721	0.279	864.86	13.93
STD2	10.000	10.558	0.558	4607.88	5.58
STD3	1250.000	1242.326	7.674	526344.94	0.61
STD4	3750.000	3668.313	81.687	1553914.36	2.18
STD5	6250.000	6466.785	216.785	2739256.12	3.47



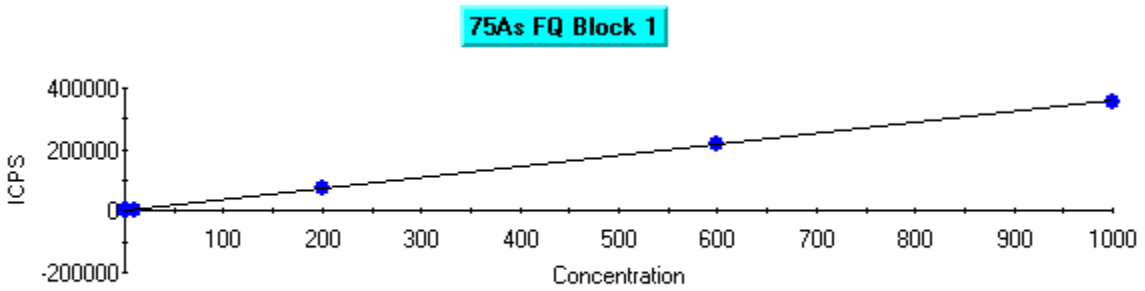
Intercept CPS=288.514838 Intercept Conc=0.520554
Sensitivity=554.245385 Correlation Coeff=0.999945

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.093	0.093	339.87	0.00
STD1	5.000	4.823	0.177	2961.47	3.55
STD2	25.000	23.651	1.349	13397.22	5.39
STD3	1250.000	1192.911	57.089	661454.06	4.57
STD4	3750.000	3783.054	33.054	2097028.97	0.88
STD5	6250.000	6269.616	19.616	3475194.22	0.31



Intercept CPS=696.227740 Intercept Conc=1.652032
Sensitivity=421.437095 Correlation Coeff=0.999863

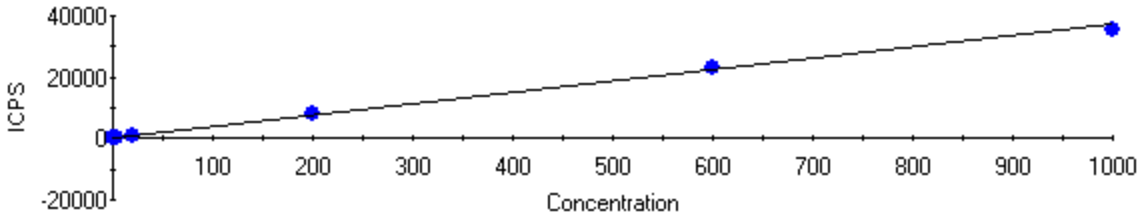
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.276	0.276	579.77	0.00
STD1	20.000	20.876	0.876	9494.13	4.38
STD2	100.000	101.244	1.244	43364.22	1.24
STD3	1250.000	1257.646	7.646	530715.09	0.61
STD4	3750.000	3716.180	33.820	1566832.40	0.90
STD5	6250.000	6385.788	135.788	2691904.08	2.17



Intercept CPS=-17.933052 Intercept Conc=-0.049457
Sensitivity=362.598689 Correlation Coeff=0.999959

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.222	0.222	-98.33	0.00
STD1	2.000	1.929	0.071	681.55	3.55
STD2	10.000	10.212	0.212	3684.87	2.12
STD3	200.000	200.396	0.396	72645.28	0.20
STD4	600.000	600.539	0.539	217736.59	0.09
STD5	1000.000	984.912	15.088	357109.90	1.51

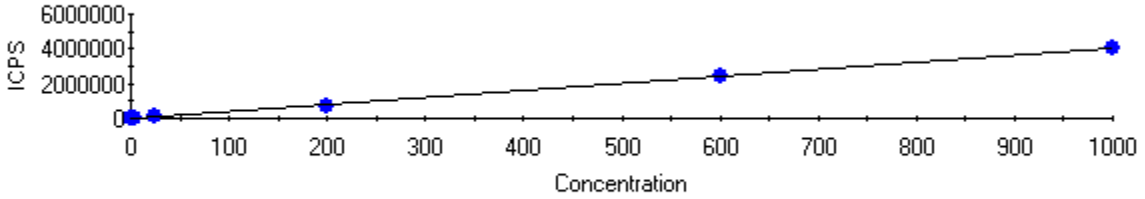
82Se FQ Block 1



Intercept CPS=-12.961658 Intercept Conc=-0.344828
Sensitivity=37.588799 Correlation Coeff=0.999187

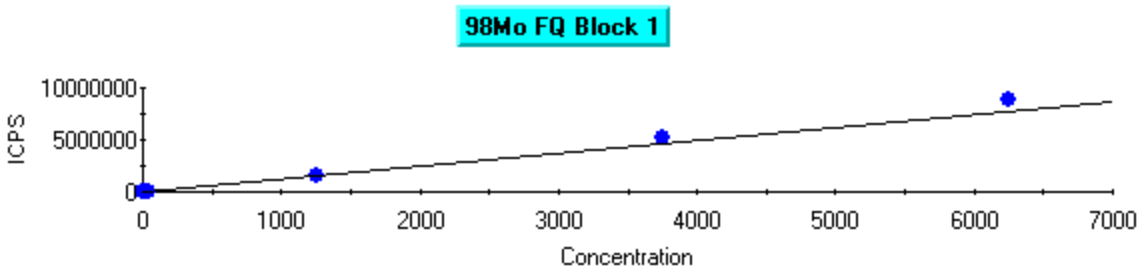
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.496	0.496	-31.61	0.00
STD1	4.000	3.409	0.591	115.18	14.78
STD2	20.000	21.413	1.413	791.91	7.06
STD3	200.000	207.029	7.029	7769.02	3.51
STD4	600.000	608.781	8.781	22870.38	1.46
STD5	1000.000	946.733	53.267	35573.60	5.33

88Sr FQ Block 1



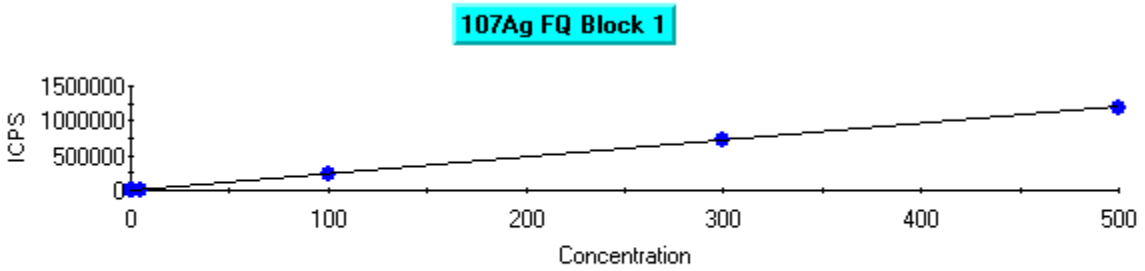
Intercept CPS=124.651350 Intercept Conc=0.031266
Sensitivity=3986.762366 Correlation Coeff=0.999788

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.014	0.014	181.77	0.00
STD1	5.000	4.583	0.417	18396.23	8.34
STD2	25.000	22.369	2.631	89305.71	10.52
STD3	200.000	182.754	17.246	728720.18	8.62
STD4	600.000	614.743	14.743	2450959.25	2.46
STD5	1000.000	1014.422	14.422	4044384.96	1.44



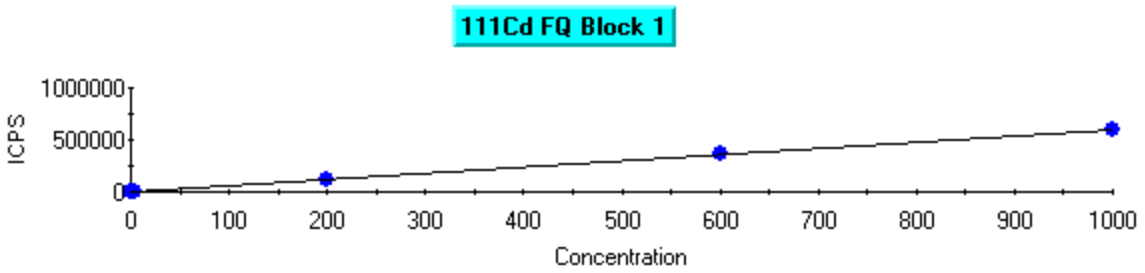
Intercept CPS=1441.939128 Intercept Conc=1.165007
Sensitivity=1237.708115 Correlation Coeff=0.999613

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	2.439	2.439	4461.26	0.00
STD1	10.000	9.347	0.653	13010.27	6.53
STD2	50.000	47.650	2.350	60418.98	4.70
STD3	1250.000	1219.140	30.860	1510381.92	2.47
STD4	3750.000	4152.582	402.582	5141126.89	10.74
STD5	6250.000	7082.293	832.293	8767253.40	13.32



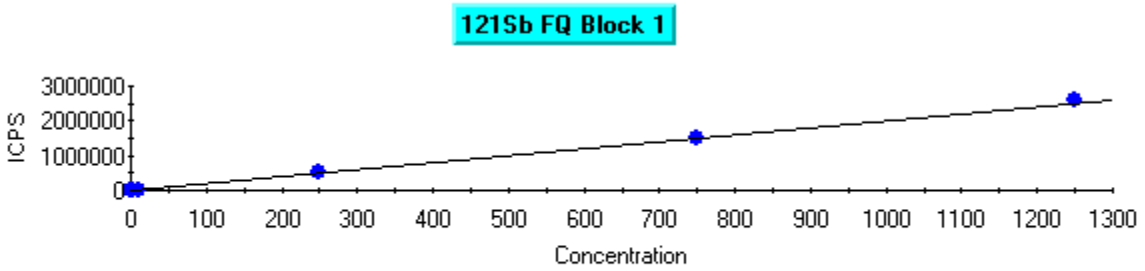
Intercept CPS=57.455254 Intercept Conc=0.023852
Sensitivity=2408.786894 Correlation Coeff=0.999871

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.001	0.001	59.92	0.00
STD1	1.000	0.980	0.020	2417.69	2.02
STD2	5.000	5.098	0.098	12337.18	1.96
STD3	100.000	99.841	0.159	240552.97	0.16
STD4	300.000	300.603	0.603	724147.21	0.20
STD5	500.000	486.726	13.274	1172477.06	2.65



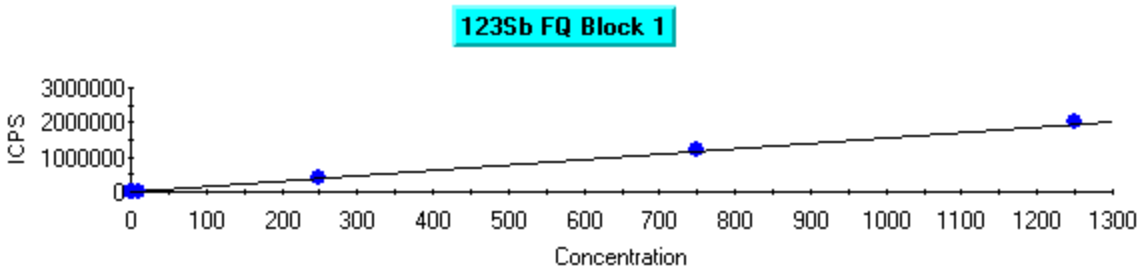
Intercept CPS=94.332771 Intercept Conc=0.156258
Sensitivity=603.697029 Correlation Coeff=0.999826

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.001	0.001	93.67	0.00
STD1	1.000	1.015	0.015	706.86	1.46
STD2	5.000	5.000	0.000	3112.88	0.00
STD3	200.000	201.129	1.129	121515.38	0.56
STD4	600.000	603.486	3.486	364417.33	0.58
STD5	1000.000	972.805	27.195	587373.62	2.72



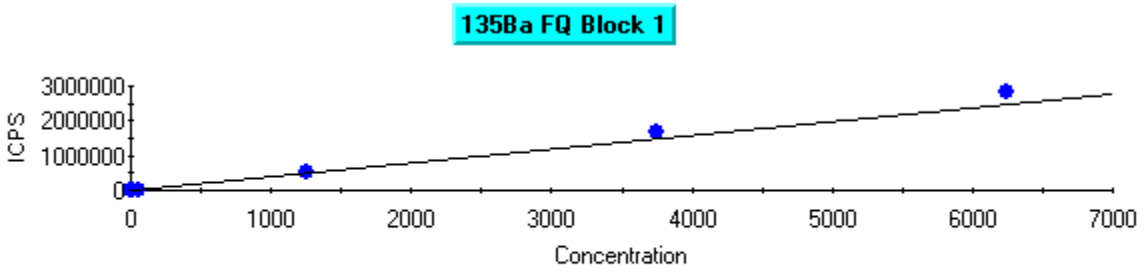
Intercept CPS=943.931198 Intercept Conc=0.472652
Sensitivity=1997.097427 Correlation Coeff=0.999910

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.151	0.151	1244.84	0.00
STD1	2.000	1.748	0.252	4434.09	12.62
STD2	10.000	9.453	0.547	19821.53	5.47
STD3	250.000	248.274	1.726	496772.22	0.69
STD4	750.000	761.016	11.016	1520766.27	1.47
STD5	1250.000	1296.795	46.795	2590769.38	3.74



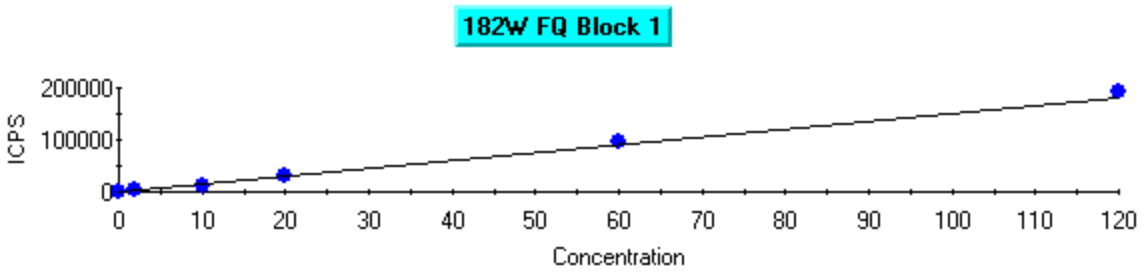
Intercept CPS=758.110078 Intercept Conc=0.483764
Sensitivity=1567.105926 Correlation Coeff=0.999978

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.106	0.106	924.05	0.00
STD1	2.000	1.679	0.321	3389.41	16.05
STD2	10.000	9.640	0.360	15865.73	3.60
STD3	250.000	249.245	0.755	391350.71	0.30
STD4	750.000	769.655	19.655	1206889.18	2.62
STD5	1250.000	1271.988	21.988	1994098.36	1.76



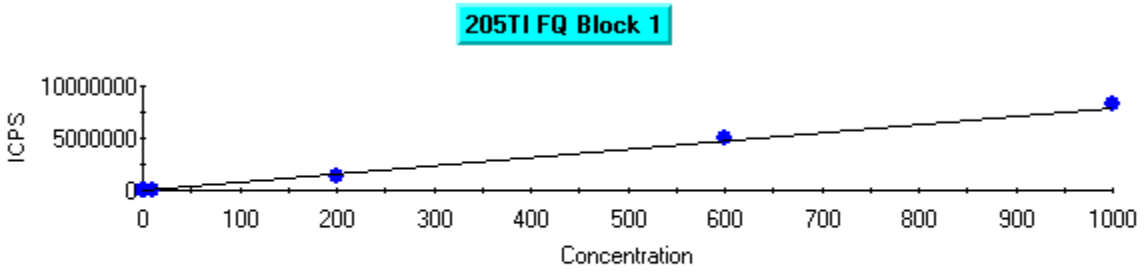
Intercept CPS=91.847451 Intercept Conc=0.230416
Sensitivity=398.615151 Correlation Coeff=0.999712

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.037	0.037	106.68	0.00
STD1	10.000	9.658	0.342	3941.67	3.42
STD2	50.000	49.202	0.798	19704.54	1.60
STD3	1250.000	1240.515	9.485	494579.79	0.76
STD4	3750.000	4173.323	423.323	1663641.55	11.29
STD5	6250.000	7073.618	823.618	2819743.11	13.18



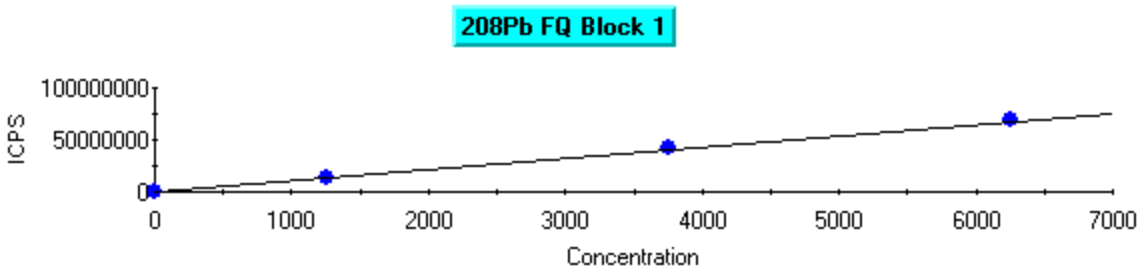
Intercept CPS=175.710247 Intercept Conc=0.117619
Sensitivity=1493.887839 Correlation Coeff=0.999881

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.056	0.056	258.67	0.00
STD1	2.000	1.719	0.281	2743.29	14.06
STD2	10.000	8.520	1.480	12903.35	14.80
STD3	20.000	20.452	0.452	30728.19	2.26
STD4	60.000	63.941	3.941	95696.43	6.57
STD5	120.000	128.212	8.212	191710.47	6.84



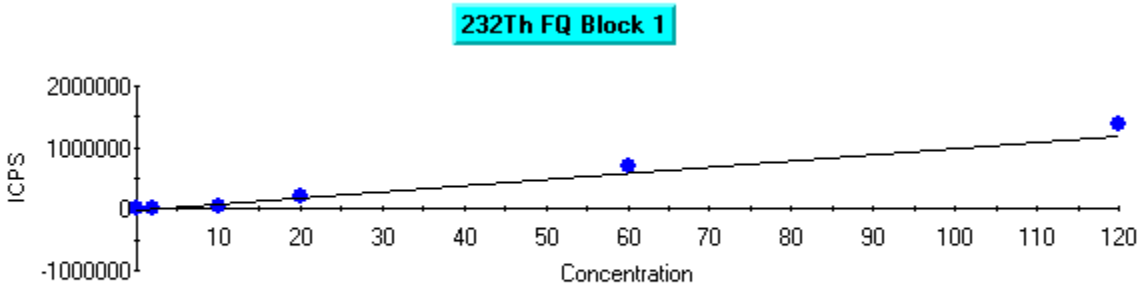
Intercept CPS=1562.715659 Intercept Conc=0.197016
Sensitivity=7931.907878 Correlation Coeff=0.999583

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.036	0.036	1851.18	0.00
STD1	2.000	1.656	0.344	14696.01	17.21
STD2	10.000	8.611	1.389	69860.71	13.89
STD3	200.000	178.704	21.296	1419029.24	10.65
STD4	600.000	631.805	31.805	5012978.28	5.30
STD5	1000.000	1048.386	48.386	8317266.82	4.84



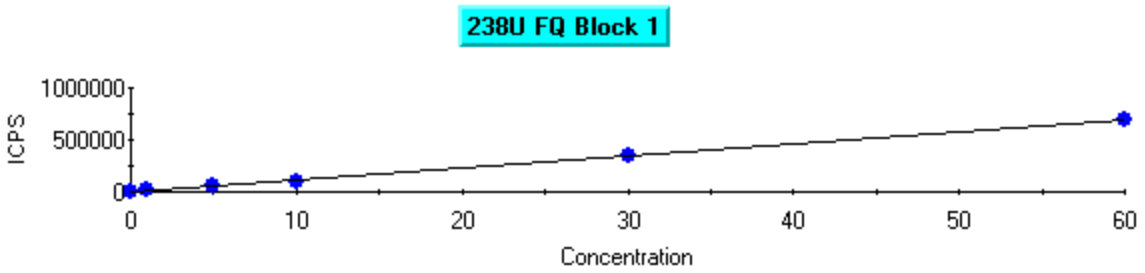
Intercept CPS=936.534687 Intercept Conc=0.087343
Sensitivity=10722.526522 Correlation Coeff=0.999881

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.214	0.214	3226.90	0.00
STD1	1.000	0.915	0.085	10751.84	8.46
STD2	5.000	4.454	0.546	48690.00	10.93
STD3	1250.000	1209.509	40.491	12969928.17	3.24
STD4	3750.000	3909.301	159.301	41918523.40	4.25
STD5	6250.000	6409.012	159.012	68721741.41	2.54



Intercept CPS=-11784.725017 Intercept Conc=-1.181290
Sensitivity=9976.151154 Correlation Coeff=0.998479

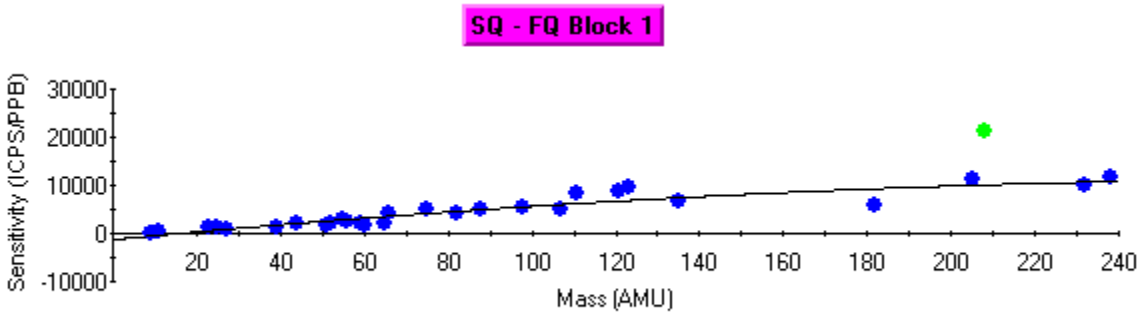
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	2.985	2.985	17991.26	0.00
STD1	2.000	2.004	0.004	8207.98	0.20
STD2	10.000	5.716	4.284	45240.21	42.84
STD3	20.000	20.396	0.396	191689.61	1.98
STD4	60.000	70.480	10.480	691338.65	17.47
STD5	120.000	140.289	20.289	1387759.11	16.91



Intercept CPS=77.921740 Intercept Conc=0.006832
Sensitivity=11404.948698 Correlation Coeff=0.999929

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	78.32	0.00
STD1	1.000	0.982	0.018	11277.05	1.80
STD2	5.000	4.801	0.199	54833.16	3.98
STD3	10.000	9.266	0.734	105759.19	7.34
STD4	30.000	29.969	0.031	341876.72	0.10
STD5	60.000	60.000	0.000	684375.14	0.00

Semi Quant Calibration



Coeff 0=-1261.591468 Coeff 1=82.335330 Coeff 2=-0.133207

Symbol	Mass	RSF	Available	Excluded	Sensitivity Measured	Corrected	Calculated	%Error
9Be	9.01	0.7500	1	1	122.88	163.84	-530.39	-423.7
11B	11.01	0.5800	1	1	108.65	231.20	-371.28	-260.6
23Na	22.99	1.0000	1	1	1109.98	1109.98	560.87	-49.5
25Mg	24.99	0.9800	1	1	113.62	1146.76	712.46	-37.9
27Al	26.98	0.9800	1	1	1017.57	1038.34	862.97	-16.9
39K	38.96	1.0000	1	1	1087.16	1167.99	1744.27	49.3
44Ca	43.96	0.9900	1	1	39.56	1876.23	2100.13	11.9
51V	50.94	0.9900	1	1	1809.10	1831.77	2587.19	41.2

52Cr	51.94	0.9800	1	1	1714.56	2088.76	2655.58	27.1
55Mn	54.94	0.9500	1	1	2619.46	2757.33	2859.71	3.7
56Fe	55.93	0.9600	1	1	2244.77	2554.97	2927.06	14.6
59Co	58.93	0.9300	1	1	2066.34	2221.87	3128.05	40.8
60Ni	59.93	0.9100	1	1	423.57	1779.28	3194.39	79.5
65Cu	64.93	0.9000	1	1	554.25	1992.33	3522.71	76.8
66Zn	65.93	0.3750	1	1	421.44	4041.11	3587.50	-11.2
75As	74.92	0.0700	1	1	362.60	5179.98	4159.38	-19.7
82Se	81.92	0.1000	1	1	37.59	4252.13	4589.18	7.9
88Sr	87.91	0.9600	1	1	3986.76	5030.13	4946.80	-1.7
98Mo	97.91	0.9800	1	1	1237.71	5262.36	5522.63	4.9
107Ag	106.91	0.9300	1	1	2408.79	5044.00	6018.09	19.3
111Cd	110.90	0.5660	1	1	603.70	8293.95	6231.33	-24.9
121Sb	120.90	0.3900	1	1	1997.10	8944.56	6745.88	-24.6
123Sb	122.90	0.3900	1	1	1567.11	9399.35	6845.61	-27.2
135Ba	134.91	0.9100	1	1	398.62	6647.02	7421.60	11.7
182W	181.95	0.9400	1	1	1493.89	6040.45	9309.33	54.1
205Tl	204.97	1.0000	1	1	7931.91	11250.93	10018.34	-11.0
208Pb	207.98	0.9700	0	1	10722.53	21103.76	10100.45	-52.1
232Th	232.04	1.0000	1	1	9976.15	9976.15	10671.24	7.0
238U	238.05	1.0000	1	1	11404.95	11487.66	10789.79	-6.1

Dilution Corrected Concentrations

STD0 10/25/2016 12:59:40 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:00:02	98.784%	0.036	-3.250	4.522	-0.163	3.685	2.568	13.840	98.184%	0.000	0.867	0.015
2	13:00:24	100.634%	-0.028	-3.887	4.111	1.284	3.921	2.057	8.788	98.816%	0.000	1.437	0.042
3	13:00:45	100.582%	-0.109	-5.438	-5.326	0.282	3.089	0.482	3.332	103.000%	0.000	1.358	-0.010
x		100.000%	-0.034	-4.192	1.102	0.468	3.565	1.703	8.655	100.000%	0.000	1.221	0.016
σ		1.053%	0.073	1.125	5.571	0.741	0.429	1.087	5.257	2.617%	0.000	0.309	0.026
%RSD		1.053	216.100	26.840	505.300	158.400	12.030	63.850	60.750	2.617	0.000	25.330	165.900

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:00:02	9.973	0.128	9.046	0.066	0.076	0.005	-0.376	-0.162	0.341	0.090	0.000	0.000
2	13:00:24	9.154	0.073	9.491	0.075	-0.022	0.208	-0.434	-0.511	0.378	-1.258	0.000	0.000
3	13:00:45	9.025	0.133	4.908	0.038	0.092	0.065	-0.019	0.008	0.339	-0.321	0.000	0.000
x		9.384	0.111	7.815	0.060	0.049	0.093	-0.276	-0.222	0.352	-0.496	0.000	0.000
σ		0.514	0.033	2.527	0.019	0.062	0.104	0.225	0.264	0.022	0.691	0.000	0.000
%RSD		5.477	29.840	32.340	32.550	126.200	112.400	81.410	119.200	6.335	139.300	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:00:02	0.024	98.388%	2.670	-0.011	-1.500	0.022	99.474%	0.000	0.103	0.071	0.047	100.193%
2	13:00:24	0.014	100.795%	2.583	0.013	-1.357	0.002	100.302%	0.000	0.183	0.128	-0.005	101.002%
3	13:00:45	0.005	100.817%	2.065	0.001	-1.409	-0.027	100.224%	0.000	0.166	0.118	0.070	98.805%
x		0.014	100.000%	2.439	0.001	-1.422	-0.001	100.000%	0.000	0.151	0.106	0.037	100.000%
σ		0.010	1.396%	0.327	0.012	0.072	0.024	0.457%	0.000	0.042	0.031	0.039	1.111%
%RSD		67.050	1.396	13.410	1209.000	5.076	2219.000	0.457	0.000	27.920	28.810	103.700	1.111

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:00:02	0.056	0.047	0.193	99.435%	0.000	3.256	0.001
2	13:00:24	0.025	0.046	0.212	99.208%	0.000	2.972	-0.001
3	13:00:45	0.086	0.016	0.236	101.357%	0.000	2.726	0.000
x		0.056	0.036	0.214	100.000%	0.000	2.985	0.000
σ		0.030	0.017	0.022	1.181%	0.000	0.265	0.001
%RSD		54.710	47.790	10.190	1.181	0.000	8.893	1861.000

STD1 10/25/2016 01:05:23 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:05:45	105.952%	0.944	42.750	507.100	188.400	45.240	473.100	501.700	102.920%	0.000	5.190	3.791
2	13:06:07	102.944%	1.016	41.920	494.100	180.900	44.510	480.500	485.800	103.109%	0.000	5.255	3.930
3	13:06:28	101.702%	1.031	43.720	491.800	178.800	44.160	473.700	501.500	105.397%	0.000	5.604	3.925
x		103.532%	0.997	42.800	497.600	182.700	44.640	475.700	496.400	103.809%	0.000	5.349	3.882
σ		2.186%	0.046	0.902	8.232	5.045	0.552	4.103	9.140	1.379%	0.000	0.223	0.079

%RSD		2.111	4.651	2.108	1.654	2.761	1.236	0.862	1.841	1.328	0.000	4.160	2.025
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:05:45	9.457	1.689	192.000	0.861	1.641	4.957	21.140	1.587	0.332	2.337	0.000	0.000
2	13:06:07	9.503	1.625	190.500	0.915	1.637	4.494	20.380	2.167	0.279	4.168	0.000	0.000
3	13:06:28	9.174	1.758	186.400	0.889	1.886	5.018	21.110	2.033	0.281	3.722	0.000	0.000
x		9.378	1.691	189.600	0.888	1.721	4.823	20.880	1.929	0.297	3.409	0.000	0.000
σ		0.178	0.067	2.927	0.027	0.143	0.287	0.432	0.304	0.030	0.955	0.000	0.000
%RSD		1.902	3.943	1.544	3.073	8.282	5.942	2.070	15.750	10.210	28.020	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:05:45	4.592	104.223%	9.134	0.926	0.286	0.930	102.455%	0.000	1.680	1.628	9.773	100.029%
2	13:06:07	4.511	103.340%	9.480	1.008	-1.852	0.984	102.379%	0.000	1.765	1.667	9.536	101.603%
3	13:06:28	4.646	102.114%	9.426	1.005	-0.856	1.130	102.305%	0.000	1.797	1.742	9.665	100.308%
x		4.583	103.226%	9.347	0.980	-0.807	1.015	102.380%	0.000	1.748	1.679	9.658	100.646%
σ		0.068	1.059%	0.186	0.046	1.070	0.103	0.075%	0.000	0.061	0.058	0.119	0.840%
%RSD		1.479	1.026	1.992	4.726	132.500	10.170	0.073	0.000	3.465	3.439	1.232	0.835
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	13:05:45	1.750	1.608	0.865	104.627%	0.000	1.990	0.934					
2	13:06:07	1.602	1.635	0.903	100.355%	0.000	2.010	0.990					
3	13:06:28	1.804	1.724	0.978	100.118%	0.000	2.012	1.022					
x		1.719	1.656	0.915	101.700%	0.000	2.004	0.982					
σ		0.105	0.061	0.058	2.538%	0.000	0.013	0.045					
%RSD		6.091	3.677	6.287	2.495	0.000	0.627	4.539					

STD2 10/25/2016 01:11:06 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:11:28	102.102%	5.211	200.400	T 2543.000	927.900	231.400	T 2511.000	2417.000	99.324%	0.000	23.280	19.300
2	13:11:50	101.790%	5.047	213.800	T 2523.000	934.800	225.500	T 2455.000	2445.000	101.721%	0.000	23.170	18.110
3	13:12:12	99.965%	5.000	205.900	T 2398.000	894.700	224.900	T 2450.000	2407.000	101.910%	0.000	22.690	18.330
x		101.286%	5.086	206.700	T 2488.000	919.100	227.300	T 2472.000	2423.000	100.985%	0.000	23.050	18.580
σ		1.154%	0.111	6.725	T 78.910	21.430	3.566	T 34.220	19.960	1.441%	0.000	0.314	0.634
%RSD		1.139	2.173	3.254	T 3.172	2.332	1.569	T 1.384	0.824	1.427	0.000	1.362	3.411
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:11:28	10.080	8.993	T 1002.000	4.768	11.270	24.060	101.400	10.010	0.219	20.040	0.000	0.000
2	13:11:50	10.310	8.980	T 1008.000	4.841	10.690	23.750	102.400	10.150	0.192	20.960	0.000	0.000
3	13:12:12	9.661	9.282	T 978.600	4.457	9.712	23.150	99.930	10.470	0.162	23.240	0.000	0.000
x		10.020	9.085	T 995.900	4.689	10.560	23.650	101.200	10.210	0.191	21.410	0.000	0.000
σ		0.329	0.171	T 15.300	0.204	0.787	0.462	1.232	0.234	0.028	1.646	0.000	0.000
%RSD		3.286	1.877	T 1.536	4.353	7.457	1.953	1.217	2.286	14.940	7.687	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	13:11:28	22.140	101.564%	46.970	5.048	-1.733	4.824	101.746%	0.000	9.559	9.502	48.100	98.655%
2	13:11:50	22.490	101.869%	48.480	5.314	-0.628	4.913	99.931%	0.000	9.556	9.785	49.510	100.572%
3	13:12:12	22.480	100.648%	47.510	4.931	-0.308	5.263	100.695%	0.000	9.242	9.635	50.000	97.732%
x		22.370	101.360%	47.650	5.098	-0.890	5.000	100.791%	0.000	9.453	9.640	49.200	98.986%
σ		0.201	0.635%	0.766	0.196	0.747	0.232	0.911%	0.000	0.182	0.142	0.986	1.449%
%RSD		0.900	0.627	1.608	3.851	84.010	4.637	0.904	0.000	1.925	1.470	2.004	1.464

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:11:28	8.340	8.347	4.425	101.102%	0.000	5.578	4.709
2	13:11:50	8.508	8.833	4.442	99.781%	0.000	5.579	4.815
3	13:12:12	8.711	8.651	4.494	99.189%	0.000	5.991	4.879
x		8.520	8.611	4.454	100.024%	0.000	5.716	4.801
σ		0.186	0.245	0.036	0.979%	0.000	0.238	0.086
%RSD		2.182	2.849	0.805	0.979	0.000	4.164	1.792

STD3 10/25/2016 01:16:50 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:12	104.044%	632.300	245.900	T 9848.000	T 29620.000	T 30600.000	T 10090.000	29490.000	104.504%	0.000	T 1206.000	372.300
2	13:17:34	100.759%	627.900	246.800	T 10180.000	T 30410.000	T 31050.000	T 10120.000	29570.000	100.203%	0.000	T 1238.000	382.300
3	13:17:56	100.924%	629.600	251.900	T 9949.000	T 30100.000	T 30580.000	T 9952.000	29430.000	101.896%	0.000	T 1215.000	376.200
x		101.909%	629.900	248.200	T 9994.000	T 30040.000	T 30750.000	T 10050.000	29500.000	102.201%	0.000	T 1219.000	376.900
σ		1.851%	2.213	3.215	T 171.900	T 400.700	T 266.300	T 89.260	69.380	2.166%	0.000	T 16.430	5.064
%RSD		1.816	0.351	1.295	T 1.720	T 1.334	T 0.866	T 0.888	0.235	2.120	0.000	T 1.348	1.343

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:12	19.360	T 1247.000	T 30000.000	472.700	1235.000	1219.000	1273.000	198.400	-0.637	209.600	0.000	0.000
2	13:17:34	17.580	T 1276.000	T 30280.000	480.100	1259.000	1176.000	1248.000	200.200	-0.607	203.200	0.000	0.000
3	13:17:56	18.850	T 1257.000	T 30020.000	473.600	1233.000	1184.000	1252.000	202.700	-0.796	208.300	0.000	0.000
x		18.600	T 1260.000	T 30100.000	475.500	1242.000	1193.000	1258.000	200.400	-0.680	207.000	0.000	0.000
σ		0.918	T 14.360	T 159.500	4.025	14.320	22.740	13.470	2.156	0.102	3.368	0.000	0.000
%RSD		4.934	T 1.140	T 0.530	0.847	1.153	1.906	1.071	1.076	14.980	1.627	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:12	185.900	102.871%	1173.000	99.840	6.679	201.300	100.472%	0.000	249.200	250.200	1249.000	99.807%
2	13:17:34	181.300	101.536%	1227.000	98.700	-2.943	199.500	101.407%	0.000	245.200	246.200	1231.000	100.186%
3	13:17:56	181.100	100.757%	1258.000	101.000	14.330	202.700	100.342%	0.000	250.500	251.300	1241.000	99.478%
x		182.800	101.722%	1219.000	99.840	6.022	201.100	100.740%	0.000	248.300	249.200	1241.000	99.823%
σ		2.759	1.069%	42.790	1.142	8.656	1.601	0.581%	0.000	2.781	2.671	9.073	0.355%
%RSD		1.510	1.051	3.510	1.143	143.700	0.796	0.576	0.000	1.120	1.071	0.731	0.355

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:12	20.180	177.600	T 1206.000	100.109%	0.000	19.050	9.287
2	13:17:34	20.370	180.800	T 1229.000	98.816%	0.000	20.790	9.368
3	13:17:56	20.810	177.700	T 1194.000	101.749%	0.000	21.340	9.145

x		20.450	178.700	┬1210.000	100.225%	0.000	20.400	9.266
σ		0.320	1.823	┬17.710	1.470%	0.000	1.195	0.113
%RSD		1.566	1.020	┬1.464	1.466	0.000	5.859	1.218

STD4 10/25/2016 01:22:34 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:55	111.660%	1799.000	701.600	┬30480.000	┬90320.000	┬93720.000	┬31730.000	┬97200.000	105.354%	0.000	┬3902.000	┬1237.000
2	13:23:17	105.374%	1867.000	775.000	┬30470.000	┬91210.000	┬92700.000	┬31020.000	┬96110.000	107.061%	0.000	┬3817.000	┬1225.000
3	13:23:39	105.227%	1844.000	753.700	┬29860.000	┬90590.000	┬92880.000	┬31270.000	┬95640.000	107.454%	0.000	┬3770.000	┬1205.000
x		107.421%	1837.000	743.400	┬30270.000	┬90700.000	┬93100.000	┬31340.000	┬96320.000	106.623%	0.000	┬3830.000	┬1222.000
σ		3.672%	34.910	37.750	┬355.000	┬454.400	┬542.400	┬359.400	┬799.500	1.117%	0.000	┬66.670	┬16.310
%RSD		3.419	1.901	5.078	┬1.173	┬0.501	┬0.583	┬1.147	┬0.830	1.047	0.000	┬1.741	┬1.334

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:55	0.027	┬3932.000	┬92910.000	┬1560.000	3660.000	┬3854.000	3726.000	598.600	-2.382	607.700	0.000	0.000
2	13:23:17	3.242	┬3941.000	┬92100.000	┬1555.000	3729.000	┬3935.000	3724.000	603.900	-2.418	607.200	0.000	0.000
3	13:23:39	0.085	┬3839.000	┬90110.000	┬1541.000	3616.000	3560.000	3698.000	599.100	-2.352	611.400	0.000	0.000
x		1.118	┬3904.000	┬91710.000	┬1552.000	3668.000	┬3783.000	3716.000	600.500	-2.384	608.800	0.000	0.000
σ		1.839	┬56.330	┬1446.000	┬9.765	56.710	┬197.200	15.410	2.963	0.033	2.277	0.000	0.000
%RSD		164.500	┬1.443	┬1.576	┬0.629	1.546	┬5.214	0.415	0.493	1.379	0.374	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:55	┬607.700	102.790%	┬4048.000	300.500	7.038	601.400	101.805%	0.000	756.400	762.500	3866.000	101.503%
2	13:23:17	┬617.000	101.885%	┬4219.000	299.700	18.930	607.500	101.941%	0.000	760.600	769.700	┬4305.000	100.072%
3	13:23:39	┬619.500	102.185%	┬4191.000	301.600	24.590	601.600	101.152%	0.000	766.100	776.800	┬4349.000	101.116%
x		┬614.700	102.286%	┬4153.000	300.600	16.850	603.500	101.633%	0.000	761.000	769.700	┬4173.000	100.897%
σ		┬6.198	0.461%	┬91.870	0.935	8.958	3.444	0.422%	0.000	4.867	7.140	┬267.000	0.740%
%RSD		┬1.008	0.450	┬2.212	0.311	53.160	0.571	0.415	0.000	0.640	0.928	┬6.398	0.734

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:22:55	62.010	┬633.100	┬3924.000	97.432%	0.000	68.700	30.210
2	13:23:17	64.660	┬624.200	┬3858.000	99.627%	0.000	70.300	29.850
3	13:23:39	65.150	┬638.100	┬3947.000	98.069%	0.000	72.440	29.850
x		63.940	┬631.800	┬3909.000	98.376%	0.000	70.480	29.970
σ		1.694	┬7.053	┬46.260	1.129%	0.000	1.875	0.208
%RSD		2.649	┬1.116	┬1.183	1.148	0.000	2.660	0.694

STD5 10/25/2016 01:28:16 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:28:38	105.548%	2919.000	1187.000	T 48940.000	TM 150500.000	TM 155100.000	TM 52440.000	TM 161400.000	105.390%	0.000	TM 6368.000	TM 2049.000
2	13:29:00	108.384%	2873.000	1206.000	TM 50070.000	TM 151200.000	TM 153700.000	TM 51810.000	TM 162500.000	106.218%	0.000	TM 6380.000	TM 2025.000
3	13:29:22	104.569%	2938.000	1229.000	T 47750.000	T 148200.000	TM 150000.000	TM 51480.000	TM 160900.000	108.544%	0.000	TM 6314.000	TM 2028.000
x		106.167%	2910.000	1207.000	TM 48920.000	TM 150000.000	TM 152900.000	TM 51910.000	TM 161600.000	106.717%	0.000	TM 6354.000	TM 2034.000
σ		1.981%	33.340	21.100	TM 1160.000	TM 1545.000	TM 2608.000	TM 487.000	TM 797.500	1.635%	0.000	TM 34.880	TM 12.910
%RSD		1.866	1.146	1.747	TM 2.370	TM 1.031	TM 1.706	TM 0.938	TM 0.493	1.532	0.000	TM 0.549	TM 0.635

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:28:38	11.490	TM 6548.000	TM 152600.000	TM 2578.000	TM 6548.000	TM 6260.000	TM 6328.000	971.200	-3.988	940.600	0.000	0.000
2	13:29:00	-2.705	TM 6490.000	TM 153000.000	TM 2585.000	TM 6485.000	TM 6256.000	TM 6431.000	996.700	-4.050	954.100	0.000	0.000
3	13:29:22	-4.847	TM 6387.000	T 149500.000	TM 2522.000	TM 6367.000	TM 6293.000	TM 6399.000	986.800	-3.871	945.500	0.000	0.000
x		1.311	TM 6475.000	TM 151700.000	TM 2562.000	TM 6467.000	TM 6270.000	TM 6386.000	984.900	-3.969	946.700	0.000	0.000
σ		8.876	TM 81.470	TM 1929.000	TM 34.570	TM 91.900	TM 20.090	TM 52.720	12.860	0.091	6.812	0.000	0.000
%RSD		677.000	TM 1.258	TM 1.272	TM 1.350	TM 1.421	TM 0.321	TM 0.826	1.306	2.286	0.720	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:28:38	TM 1015.000	101.776%	TM 6916.000	481.500	39.060	962.000	103.652%	T 0.000	1245.000	M 1254.000	TM 6943.000	100.637%
2	13:29:00	TM 1016.000	99.826%	TM 7207.000	492.900	36.140	982.100	102.673%	T 0.000	M 1262.000	M 1281.000	TM 7138.000	102.025%
3	13:29:22	TM 1012.000	101.144%	TM 7124.000	485.800	45.870	974.300	102.974%	T 0.000	TM 1384.000	M 1282.000	TM 7140.000	102.161%
x		TM 1014.000	100.915%	TM 7082.000	486.700	40.360	972.800	103.100%	T 0.000	TM 1297.000	M 1272.000	TM 7074.000	101.608%
σ		TM 2.504	0.995%	TM 150.100	5.787	4.991	10.110	0.502%	T 0.000	TM 76.230	M 15.890	TM 112.800	0.844%
%RSD		TM 0.247	0.986	TM 2.120	1.189	12.370	1.040	0.486	T 0.000	TM 5.879	M 1.249	TM 1.595	0.830

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:28:38	M 126.600	TM 1047.000	TM 6419.000	98.843%	0.000	M 137.800	M 60.000
2	13:29:00	M 128.000	TM 1055.000	TM 6424.000	99.754%	0.000	M 141.800	60.000
3	13:29:22	M 130.100	TM 1043.000	TM 6384.000	101.184%	0.000	M 141.200	60.000
x		M 128.200	TM 1048.000	TM 6409.000	99.927%	0.000	M 140.300	M 60.000
σ		M 1.785	TM 6.066	TM 22.100	1.180%	0.000	M 2.163	M 0.001
%RSD		M 1.392	TM 0.579	TM 0.345	1.181	0.000	M 1.542	M 0.002

ICV 10/25/2016 01:34:00 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:34:22	98.835%	318.200	138.400	T 5263.000	T 15130.000	T 15810.000	T 5066.000	14620.000	98.235%	0.000	587.400	190.700
2	13:34:43	99.199%	317.500	136.200	T 5063.000	T 14390.000	T 15350.000	T 4838.000	14030.000	100.072%	0.000	565.800	182.200
3	13:35:05	97.242%	319.600	139.500	T 5229.000	T 15020.000	T 15720.000	T 5071.000	14800.000	96.979%	0.000	588.600	190.200
x		98.425%	101.892%	110.436%	T 103.698%	T 98.969%	T 104.178%	T 99.832%	96.557%	98.429%	0.000	92.893%	93.832%
σ		1.041%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	1.556%	0.000	n/a	n/a
%RSD		1.058	0.342	1.230	T 2.071	T 2.693	T 1.578	T 2.670	2.766	1.581	0.000	2.209	2.542

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:34:22	12.620	590.800	T 15180.000	241.200	624.700	597.300	627.500	100.200	-0.206	107.100	0.000	0.000
2	13:34:43	10.450	570.400	T 14500.000	235.200	624.300	605.300	636.600	99.030	-0.104	104.200	0.000	0.000
3	13:35:05	13.540	592.300	T 15280.000	244.500	652.100	611.700	630.800	102.100	-0.225	104.600	0.000	0.000
x		12.200	93.523%	T 99.927%	96.131%	101.393%	96.763%	101.065%	100.451%	-0.178	105.278%	0.000	0.000
σ		1.585	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.065	n/a	0.000	0.000
%RSD		12.990	2.091	T 2.830	1.953	2.512	1.198	0.732	1.550	36.560	1.498	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:34:22	88.840	98.698%	284.200	48.550	2.120	100.100	97.983%	0.000	125.000	125.500	616.700	95.807%
2	13:34:43	89.990	98.349%	290.300	48.640	-0.890	101.000	96.807%	0.000	125.500	127.000	617.100	97.088%
3	13:35:05	88.730	97.652%	298.200	49.350	-1.890	100.800	97.531%	0.000	126.400	127.200	627.500	95.736%
x		89.180	98.233%	93.082%	97.691%	-0.220	100.608%	97.440%	0.000	125.600	101.238%	99.267%	96.210%
σ		0.697	0.532%	n/a	n/a	2.087	n/a	0.593%	0.000	0.723	n/a	n/a	0.761%
%RSD		0.781	0.542	2.411	0.897	947.700	0.457	0.609	0.000	0.575	0.708	0.983	0.791
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	13:34:22	22.060	87.020	T 595.600	98.543%	0.000	17.170	8.868					
2	13:34:43	23.200	90.050	T 599.900	96.348%	0.000	18.850	9.151					
3	13:35:05	23.700	89.720	T 598.300	98.388%	0.000	19.590	9.074					
x		114.927%	88.932%	T 95.670%	97.760%	0.000	92.698%	90.310%					
σ		n/a	n/a	T n/a	1.225%	0.000	n/a	n/a					
%RSD		3.659	1.868	T 0.359	1.253	0.000	6.683	1.616					

ICVL 10/25/2016 01:39:44 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:40:06	105.186%	0.933	47.840	489.000	186.400	48.230	464.100	461.000	100.559%	0.000	5.147	3.579
2	13:40:28	100.612%	1.084	47.080	508.200	194.600	49.710	468.000	488.600	97.836%	0.000	5.310	3.808
3	13:40:49	100.903%	1.383	48.510	495.200	186.500	52.890	467.700	488.900	99.172%	0.000	5.723	3.698
x		102.234%	113.321%	119.525%	99.491%	94.585%	100.555%	93.317%	95.902%	99.189%	0.000	107.865%	92.373%
σ		2.561%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.362%	0.000	n/a	n/a
%RSD		2.505	20.210	1.490	1.970	2.486	4.731	0.456	3.335	1.373	0.000	5.507	3.096
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:40:06	8.312	1.750	182.600	1.008	1.992	4.953	19.980	1.817	0.270	3.279	0.000	0.000
2	13:40:28	8.032	1.837	194.500	1.158	2.020	4.928	19.630	1.805	0.293	3.866	0.000	0.000
3	13:40:49	7.366	2.099	195.200	1.097	1.965	4.867	20.390	2.042	0.274	3.662	0.000	0.000
x		7.903	94.768%	95.360%	108.763%	99.627%	98.317%	99.989%	94.395%	0.279	90.058%	0.000	0.000
σ		0.486	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.013	n/a	0.000	0.000
%RSD		6.145	9.575	3.712	6.902	1.389	0.895	1.914	7.070	4.481	8.281	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:40:06	4.453	102.370%	9.885	1.016	-1.153	0.997	100.057%	0.000	1.872	1.929	9.587	97.166%
2	13:40:28	4.471	101.155%	10.170	1.063	-1.916	1.039	99.856%	0.000	2.194	2.068	9.481	97.510%

3	13:40:49	4.383	101.040%	10.290	1.026	-0.992	0.843	99.302%	0.000	2.059	2.069	9.674	97.052%
x		88.715%	101.522%	101.138%	103.485%	-1.354	95.979%	99.738%	0.000	2.042	101.084%	95.804%	97.243%
σ		n/a	0.737%	n/a	n/a	0.493	n/a	0.391%	0.000	0.162	n/a	n/a	0.238%
%RSD		1.058	0.726	2.053	2.438	36.450	10.750	0.392	0.000	7.932	3.992	1.009	0.245

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:40:06	1.825	1.731	1.128	95.866%	0.000	2.137	0.945
2	13:40:28	1.540	1.722	1.195	100.127%	0.000	2.026	0.929
3	13:40:49	1.979	1.781	1.253	98.188%	0.000	2.116	0.959
x		89.083%	87.231%	119.200%	98.060%	0.000	104.648%	94.407%
σ		n/a	n/a	n/a	2.134%	0.000	n/a	n/a
%RSD		12.500	1.805	5.233	2.176	0.000	2.820	1.595

ICBIS 10/25/2016 01:45:28 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:45:49	109.611%	-0.133	-3.456	2.540	-8.045	-4.267	-1.533	-1.555	101.198%	0.000	0.812	0.069
2	13:46:11	107.766%	-0.113	-2.866	-1.962	-6.885	-4.648	-3.348	-5.716	104.983%	0.000	0.541	0.054
3	13:46:33	106.345%	-0.036	-3.899	-1.625	-7.275	-4.591	-3.837	-1.980	104.104%	0.000	0.272	0.048
x		107.907%	-0.094	-3.407	-0.349	-7.401	-4.502	-2.906	-3.084	103.428%	0.000	0.542	0.057
σ		1.638%	0.051	0.518	2.508	0.591	0.206	1.214	2.289	1.981%	0.000	0.270	0.011
%RSD		1.518	54.550	15.210	718.300	7.978	4.569	41.760	74.240	1.915	0.000	49.800	19.090

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:45:49	10.860	-0.087	1.916	-0.041	-0.239	-0.184	-0.219	-0.618	0.438	-1.362	0.000	0.000
2	13:46:11	11.040	-0.071	-0.745	-0.057	-0.197	-0.003	-0.510	-0.242	0.392	-0.127	0.000	0.000
3	13:46:33	11.440	-0.107	-0.251	-0.061	-0.252	-0.197	-0.503	-0.115	0.395	0.742	0.000	0.000
x		11.110	-0.088	0.307	-0.053	-0.229	-0.128	-0.411	-0.325	0.408	-0.249	0.000	0.000
σ		0.298	0.018	1.415	0.010	0.029	0.109	0.166	0.262	0.026	1.057	0.000	0.000
%RSD		2.681	20.600	461.200	19.760	12.650	84.780	40.330	80.510	6.298	424.400	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:45:49	-0.013	105.242%	-0.351	-0.012	-0.944	-0.078	101.856%	0.000	-0.219	-0.210	-0.120	100.930%
2	13:46:11	-0.018	105.803%	-0.363	-0.014	-1.324	-0.042	102.827%	0.000	-0.165	-0.175	-0.194	100.630%
3	13:46:33	-0.014	103.700%	-0.246	-0.018	-1.552	-0.025	103.207%	0.000	-0.179	-0.176	-0.097	96.551%
x		-0.015	104.915%	-0.320	-0.014	-1.273	-0.048	102.630%	0.000	-0.188	-0.187	-0.137	99.370%
σ		0.003	1.089%	0.065	0.003	0.307	0.027	0.696%	0.000	0.028	0.020	0.051	2.446%
%RSD		17.380	1.038	20.220	21.850	24.140	55.930	0.679	0.000	15.010	10.600	37.130	2.462

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:45:49	0.015	-0.061	0.040	99.991%	0.000	2.525	-0.004
2	13:46:11	0.035	-0.083	0.028	98.998%	0.000	2.520	-0.005
3	13:46:33	-0.010	-0.071	0.011	102.323%	0.000	2.349	-0.002
x		0.013	-0.072	0.026	100.437%	0.000	2.464	-0.003
σ		0.023	0.011	0.015	1.707%	0.000	0.100	0.002

%RSD	170.000	15.080	55.990	1.699	0.000	4.062	44.830	

ICSA 10/25/2016 01:51:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:51:32	113.141%	-0.098	-4.852	TM 95310.000	T 95800.000	T 98860.000	TM 98810.000	T 101300.000	117.712%	0.000	0.855	1.198
2	13:51:54	109.820%	-0.059	-4.229	TM 95270.000	T 96200.000	T 99150.000	TM 97730.000	T 101500.000	119.407%	0.000	1.238	1.083
3	13:52:16	108.989%	-0.020	-3.782	TM 93530.000	T 94180.000	T 97170.000	TM 97470.000	T 100300.000	121.939%	0.000	0.567	1.140
x		110.650%	-1.#IO%	-1.#IO%	TM 94.703%	T 95.394%	T 98.393%	TM 98.004%	T 101.073%	119.686%	0.000	1.#IO%	1.#IO%
σ		2.197%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	2.127%	0.000	n/a	n/a
%RSD		1.985	65.680	12.530	TM 1.074	T 1.121	T 1.086	TM 0.727	T 0.645	1.777	0.000	37.980	5.046

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:51:32	3.907	0.054	T 94960.000	-0.015	0.211	0.854	-1.630	0.001	0.303	0.237	0.000	0.000
2	13:51:54	3.036	0.077	T 96160.000	-0.018	0.154	0.758	-1.820	-0.323	0.333	-0.013	0.000	0.000
3	13:52:16	4.079	0.038	T 93640.000	0.006	0.212	0.900	-1.529	-0.145	0.325	-0.754	0.000	0.000
x		3.674	1.#IO%	T 94.918%	-1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	0.320	-1.#IO%	0.000	0.000
σ		0.559	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.016	n/a	0.000	0.000
%RSD		15.220	35.500	T 1.325	148.300	17.240	8.699	8.914	104.100	4.844	291.800	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:51:32	0.618	112.494%	T 2018.000	0.082	5.325	0.245	110.232%	0.000	-0.204	-0.237	0.009	109.006%
2	13:51:54	0.631	111.736%	T 2123.000	0.072	6.521	0.072	112.934%	0.000	-0.130	-0.183	0.047	110.746%
3	13:52:16	0.630	114.589%	T 2058.000	0.072	5.861	0.296	114.926%	0.000	-0.195	-0.190	-0.078	112.931%
x		1.#IO%	112.940%	T 103.318%	1.#IO%	5.902	1.#IO%	112.697%	0.000	-0.177	-1.#IO%	-1.#IO%	110.894%
σ		n/a	1.478%	T n/a	n/a	0.599	n/a	2.356%	0.000	0.040	n/a	n/a	1.967%
%RSD		1.102	1.309	T 2.548	7.538	10.150	57.540	2.091	0.000	22.840	14.410	879.100	1.774

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:51:32	0.199	-0.090	0.235	103.051%	0.000	2.667	-0.002
2	13:51:54	0.266	-0.081	0.207	108.181%	0.000	2.506	-0.004
3	13:52:16	0.241	-0.087	0.232	107.361%	0.000	2.335	-0.004
x		1.#IO%	-1.#IO%	1.#IO%	106.198%	0.000	1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	2.756%	0.000	n/a	n/a
%RSD		14.510	5.241	6.909	2.595	0.000	6.635	29.640

ICSAB 10/25/2016 01:56:53 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:57:14	102.818%	24.070	414.600	TM 96750.000	T 95630.000	T 97970.000	TM 97520.000	T 102600.000	110.288%	0.000	22.460	47.010
2	13:57:36	102.890%	24.330	390.900	TM 94530.000	T 94390.000	T 96020.000	TM 97600.000	T 101900.000	113.087%	0.000	21.570	46.760
3	13:57:58	101.707%	23.980	413.300	TM 95740.000	T 95000.000	T 96650.000	TM 97510.000	T 101200.000	113.938%	0.000	22.970	46.840
x		102.472%	96.509%	101.573%	TM 95.673%	T 95.005%	T 96.878%	TM 97.545%	T 101.892%	112.438%	0.000	89.328%	93.738%
σ		0.663%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.910%	0.000	n/a	n/a
%RSD		0.647	0.762	3.280	TM 1.159	T 0.656	T 1.027	TM 0.048	T 0.723	1.698	0.000	3.171	0.266

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:57:14	6.343	23.120	T 96290.000	22.840	22.590	45.930	43.130	44.160	-0.162	111.200	0.000	0.000
2	13:57:36	6.202	23.130	T 96580.000	23.150	23.820	45.310	42.950	44.270	-0.101	109.100	0.000	0.000
3	13:57:58	5.399	22.940	T 96840.000	22.910	22.310	43.860	42.990	43.000	-0.099	109.600	0.000	0.000
x		5.981	92.251%	T 96.570%	91.868%	91.637%	90.071%	86.045%	97.354%	-0.121	87.978%	0.000	0.000
σ		0.509	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.036	n/a	0.000	0.000
%RSD		8.511	0.452	T 0.282	0.707	3.501	2.357	0.217	1.602	29.810	0.998	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:57:14	0.609	108.993%	T 2042.000	23.750	6.971	22.490	107.621%	0.000	45.470	46.640	245.700	107.882%
2	13:57:36	0.593	107.826%	T 2095.000	23.610	5.623	22.890	110.515%	0.000	46.300	46.900	244.200	110.531%
3	13:57:58	0.615	111.731%	T 2087.000	23.040	6.296	23.750	112.841%	0.000	46.460	47.090	247.600	113.110%
x		0.605	109.517%	T 103.732%	93.867%	6.297	92.175%	110.325%	0.000	46.080	93.753%	98.340%	110.508%
σ		0.011	2.004%	T n/a	n/a	0.674	n/a	2.615%	0.000	0.530	n/a	n/a	2.614%
%RSD		1.842	1.830	T 1.369	1.618	10.700	2.788	2.370	0.000	1.150	0.474	0.708	2.366

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:57:14	19.560	21.940	22.260	105.302%	0.000	20.600	10.280
2	13:57:36	19.470	22.280	22.380	107.151%	0.000	21.610	10.350
3	13:57:58	19.500	22.240	22.670	108.546%	0.000	22.530	10.450
x		97.544%	88.617%	89.748%	106.999%	0.000	107.901%	103.595%
σ		n/a	n/a	n/a	1.627%	0.000	n/a	n/a
%RSD		0.217	0.856	0.944	1.521	0.000	4.492	0.841

CCV 10/25/2016 02:02:37 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:02:58	93.503%	621.600	238.300	T 9857.000	T 29410.000	T 30180.000	T 9812.000	T 30220.000	93.233%	0.000	T 1172.000	365.300
2	14:03:20	90.295%	641.300	248.900	T 9752.000	T 29140.000	T 29610.000	T 9705.000	28430.000	92.739%	0.000	T 1173.000	362.600
3	14:03:42	89.190%	623.900	248.400	T 9981.000	T 29240.000	T 30090.000	T 9875.000	29040.000	90.496%	0.000	T 1203.000	368.200
x		90.996%	100.626%	98.081%	T 98.634%	T 97.543%	T 99.877%	T 97.971%	T 97.434%	92.156%	0.000	T 94.617%	91.349%
σ		2.241%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.458%	0.000	T n/a	n/a
%RSD		2.462	1.711	2.433	T 1.166	T 0.459	T 1.027	T 0.877	T 3.120	1.582	0.000	T 1.483	0.767

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:02:58	18.320	T 1217.000	T 29340.000	467.600	1233.000	1140.000	1213.000	197.800	-0.783	207.200	0.000	0.000
2	14:03:20	19.520	T 1238.000	T 29650.000	459.900	1200.000	1099.000	1177.000	193.200	-0.692	198.500	0.000	0.000
3	14:03:42	20.080	T 1247.000	T 29910.000	471.300	1218.000	1119.000	1198.000	192.000	-0.638	201.500	0.000	0.000
x		19.310	T 98.726%	T 98.772%	93.251%	97.359%	89.548%	95.660%	97.164%	-0.704	101.198%	0.000	0.000
σ		0.900	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.073	n/a	0.000	0.000
%RSD		4.660	T 1.238	T 0.973	1.256	1.389	1.856	1.534	1.558	10.400	2.187	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:02:58	179.400	95.186%	1171.000	98.640	3.502	200.200	94.303%	0.000	244.100	249.300	1246.000	95.349%
2	14:03:20	175.300	95.458%	1189.000	96.610	16.150	193.200	96.239%	0.000	242.500	243.700	1221.000	93.990%
3	14:03:42	176.600	94.826%	1214.000	97.950	5.595	199.300	93.883%	0.000	246.900	249.800	1245.000	95.149%
x		177.100	95.157%	95.316%	97.732%	8.417	98.776%	94.808%	0.000	244.500	99.033%	98.959%	94.830%
σ		2.112	0.317%	n/a	n/a	6.782	n/a	1.257%	0.000	2.264	n/a	n/a	0.734%
%RSD		1.193	0.333	1.827	1.057	80.570	1.920	1.326	0.000	0.926	1.373	1.138	0.774

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:02:58	19.500	173.200	T 1180.000	98.133%	0.000	17.640	9.045
2	14:03:20	20.290	177.400	T 1219.000	96.758%	0.000	19.350	9.367
3	14:03:42	20.920	172.400	T 1171.000	99.317%	0.000	20.060	9.170
x		101.176%	87.172%	T 95.203%	98.069%	0.000	95.077%	91.940%
σ		n/a	n/a	T n/a	1.281%	0.000	n/a	n/a
%RSD		3.523	1.521	T 2.162	1.306	0.000	6.549	1.765

CCB 10/25/2016 02:08:20 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:08:42	102.218%	-0.030	-4.928	32.690	23.610	25.320	19.880	26.750	94.038%	0.000	0.594	0.043
2	14:09:04	97.393%	0.060	-4.104	21.190	22.380	23.400	17.140	24.160	95.679%	0.000	1.236	0.075
3	14:09:25	100.585%	0.154	-3.379	22.410	17.000	19.250	15.350	20.910	95.193%	0.000	0.926	-0.048
x		100.065%	0.061	-4.137	25.430	21.000	22.660	17.460	23.940	94.970%	0.000	0.919	0.023
σ		2.454%	0.092	0.775	6.319	3.516	3.102	2.281	2.925	0.843%	0.000	0.321	0.064
%RSD		2.452	150.600	18.740	24.850	16.750	13.690	13.070	12.220	0.887	0.000	34.970	276.500

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:08:42	9.969	0.173	32.510	0.076	0.056	0.110	-0.427	-0.256	0.352	-1.071	0.000	0.000
2	14:09:04	9.064	0.086	30.040	0.065	0.062	-0.007	-0.446	-0.378	0.377	-1.599	0.000	0.000
3	14:09:25	9.848	0.137	23.380	0.076	0.064	0.212	-0.336	-0.360	0.360	-0.558	0.000	0.000
x		9.627	0.132	28.650	0.072	0.061	0.105	-0.403	-0.331	0.363	-1.076	0.000	0.000
σ		0.491	0.043	4.721	0.006	0.004	0.109	0.059	0.066	0.013	0.521	0.000	0.000
%RSD		5.103	32.930	16.480	8.528	6.713	104.200	14.620	19.920	3.540	48.400	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:08:42	0.011	99.090%	2.154	0.013	-0.888	-0.039	95.839%	0.000	-0.070	-0.063	0.215	96.065%
2	14:09:04	0.026	98.333%	2.356	0.004	-0.724	-0.010	98.337%	0.000	0.004	0.006	0.369	96.902%

3	14:09:25	0.036	97.707%	1.953	0.008	-1.152	-0.011	97.303%	0.000	0.067	0.021	0.169	97.653%
x		0.024	98.377%	2.154	0.008	-0.921	-0.020	97.160%	0.000	0.000	-0.012	0.251	96.873%
σ		0.013	0.693%	0.202	0.005	0.216	0.016	1.255%	0.000	0.069	0.045	0.105	0.795%
%RSD		52.510	0.704	9.362	56.960	23.440	81.140	1.292	0.000	14960.000	384.700	41.760	0.820

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:08:42	0.036	0.019	0.284	98.133%	0.000	2.404	0.001
2	14:09:04	0.014	-0.009	0.264	97.659%	0.000	2.289	-0.002
3	14:09:25	-0.005	0.018	0.304	99.526%	0.000	2.204	-0.001
x		0.015	0.010	0.284	98.440%	0.000	2.299	-0.001
σ		0.020	0.016	0.020	0.970%	0.000	0.100	0.001
%RSD		134.800	164.200	7.093	0.986	0.000	4.368	221.900

MB 200-110491/1-A 10/25/2016 02:14:02 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:24	106.564%	-0.170	-4.998	85.430	-8.687	7.295	10.950	19.620	98.569%	0.000	0.677	0.370
2	14:14:46	101.730%	-0.170	-4.166	82.420	-7.699	7.079	10.670	18.150	98.373%	0.000	0.773	0.381
3	14:15:08	99.944%	-0.170	-4.100	96.550	-8.841	8.473	12.650	14.900	97.291%	0.000	0.316	0.413
x		102.746%	-0.170	-4.421	88.130	-8.409	7.616	11.430	17.560	98.078%	0.000	0.589	0.388
σ		3.425%	0.000	0.500	7.442	0.620	0.750	1.070	2.414	0.688%	0.000	0.241	0.023
%RSD		3.334	0.000	11.320	8.444	7.371	9.851	9.363	13.750	0.702	0.000	40.930	5.814

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:24	5.478	0.012	3.675	-0.047	0.410	-0.009	-0.270	-0.064	0.175	0.634	0.000	0.000
2	14:14:46	5.511	-0.047	4.751	-0.023	0.244	-0.077	-0.461	0.086	0.161	0.285	0.000	0.000
3	14:15:08	5.642	-0.005	4.145	-0.049	0.226	0.075	-0.111	-0.461	0.213	-1.732	0.000	0.000
x		5.544	-0.013	4.190	-0.040	0.293	-0.003	-0.281	-0.146	0.183	-0.271	0.000	0.000
σ		0.087	0.031	0.539	0.015	0.102	0.076	0.176	0.283	0.027	1.277	0.000	0.000
%RSD		1.564	227.600	12.870	37.400	34.710	2175.000	62.600	193.500	14.580	470.900	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:24	0.055	102.223%	-0.560	-0.016	-1.196	-0.059	100.427%	0.000	-0.330	-0.333	-0.218	98.955%
2	14:14:46	0.044	105.269%	-0.459	-0.016	-1.025	-0.072	101.615%	0.000	-0.324	-0.314	-0.193	99.070%
3	14:15:08	0.071	99.766%	-0.517	-0.015	-0.894	-0.082	98.507%	0.000	-0.332	-0.295	-0.167	93.912%
x		0.057	102.419%	-0.512	-0.016	-1.038	-0.071	100.183%	0.000	-0.329	-0.314	-0.193	97.312%
σ		0.013	2.757%	0.051	0.000	0.151	0.011	1.569%	0.000	0.004	0.019	0.026	2.946%
%RSD		23.640	2.692	9.943	0.837	14.580	15.710	1.566	0.000	1.220	6.039	13.280	3.027

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:14:24	-0.013	-0.122	0.020	99.171%	0.000	1.548	-0.005
2	14:14:46	-0.033	-0.112	0.040	100.692%	0.000	1.539	-0.005
3	14:15:08	-0.014	-0.105	0.052	96.357%	0.000	1.565	-0.005
x		-0.020	-0.113	0.037	98.740%	0.000	1.551	-0.005
σ		0.011	0.009	0.016	2.199%	0.000	0.013	0.000

%RSD		56.650	7.674	42.390	2.227	0.000	0.836	4.331

LCS 200-110491/2-A 10/25/2016 02:19:44 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:20:06	102.919%	9.319	381.600	T 5196.000	1874.000	461.500	T 4986.000	4625.000	98.199%	0.000	45.050	39.400
2	14:20:28	105.975%	9.084	376.000	T 5278.000	1918.000	461.700	T 5039.000	4775.000	97.218%	0.000	45.710	39.800
3	14:20:50	100.557%	8.814	386.700	T 5205.000	1892.000	466.600	T 4999.000	4760.000	96.993%	0.000	45.100	39.480
x		103.150%	9.072	381.400	T 5226.000	1895.000	463.300	T 5008.000	4720.000	97.470%	0.000	45.290	39.560
σ		2.716%	0.253	5.342	T 44.650	22.260	2.881	T 27.740	82.380	0.641%	0.000	0.364	0.210
%RSD		2.633	2.788	1.400	T 0.854	1.175	0.622	T 0.554	1.745	0.658	0.000	0.804	0.530

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:20:06	5.413	19.000	T 2015.000	9.310	20.710	46.960	172.300	17.700	-0.006	32.910	0.000	0.000
2	14:20:28	4.615	18.740	T 2013.000	9.738	20.890	48.040	176.700	17.990	-0.023	33.910	0.000	0.000
3	14:20:50	4.673	18.700	T 2067.000	9.584	19.900	46.770	172.800	17.230	0.007	32.810	0.000	0.000
x		4.901	18.810	T 2032.000	9.544	20.500	47.260	173.900	17.640	-0.007	33.210	0.000	0.000
σ		0.445	0.166	T 30.340	0.217	0.526	0.685	2.400	0.380	0.015	0.609	0.000	0.000
%RSD		9.078	0.883	T 1.493	2.275	2.565	1.450	1.380	2.153	201.100	1.834	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:20:06	45.100	102.708%	95.530	10.070	-1.825	9.618	99.954%	0.000	17.790	18.320	95.480	97.889%
2	14:20:28	45.040	101.079%	97.490	10.030	-1.512	9.105	99.055%	0.000	18.910	18.560	96.560	96.909%
3	14:20:50	45.330	103.187%	97.090	9.867	-1.698	9.069	99.044%	0.000	18.550	18.600	99.850	98.769%
x		45.160	102.325%	96.710	9.989	-1.678	9.264	99.351%	0.000	18.420	18.490	97.300	97.856%
σ		0.152	1.105%	1.034	0.108	0.158	0.307	0.522%	0.000	0.569	0.152	2.276	0.931%
%RSD		0.337	1.080	1.069	1.077	9.395	3.312	0.525	0.000	3.088	0.821	2.339	0.951

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:20:06	37.400	17.350	9.454	97.751%	0.000	18.300	9.695
2	14:20:28	37.560	17.540	9.523	97.650%	0.000	19.510	9.902
3	14:20:50	37.110	17.680	9.501	98.461%	0.000	19.820	9.717
x		37.350	17.520	9.493	97.954%	0.000	19.210	9.771
σ		0.225	0.164	0.035	0.442%	0.000	0.800	0.114
%RSD		0.603	0.934	0.372	0.451	0.000	4.165	1.163

200-35680-A-8-A 10/25/2016 02:25:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:25:48	117.149%	3.356	17.930	┬718.100	┬13430.000	┬57540.000	┬4081.000	20680.000	143.911%	0.000	86.710	68.330
2	14:26:10	114.725%	3.306	19.150	┬695.600	┬13420.000	┬57660.000	┬4082.000	20380.000	147.680%	0.000	87.460	68.520
3	14:26:31	116.719%	3.578	19.150	┬683.200	┬13840.000	┬60380.000	┬4234.000	21370.000	146.098%	0.000	87.840	71.040
x		116.198%	3.413	18.740	┬699.000	┬13560.000	┬58530.000	┬4132.000	20810.000	145.896%	0.000	87.340	69.300
σ		1.293%	0.145	0.702	┬17.710	┬238.900	┬1606.000	┬88.260	508.400	1.893%	0.000	0.576	1.515
%RSD		1.113	4.241	3.747	┬2.533	┬1.762	┬2.744	┬2.136	2.443	1.297	0.000	0.660	2.187

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:25:48	5.431	┬2715.000	┬87610.000	44.360	104.100	┬3656.000	1170.000	12.050	0.047	25.500	0.000	0.000
2	14:26:10	6.430	┬2773.000	┬89060.000	43.220	102.400	┬3590.000	1153.000	11.950	0.051	23.830	0.000	0.000
3	14:26:31	6.342	┬2862.000	┬90880.000	43.880	107.800	┬3638.000	1171.000	11.580	0.073	23.280	0.000	0.000
x		6.068	┬2783.000	┬89180.000	43.820	104.700	┬3628.000	1165.000	11.860	0.057	24.200	0.000	0.000
σ		0.553	┬74.030	┬1643.000	0.574	2.750	┬34.240	9.963	0.243	0.014	1.154	0.000	0.000
%RSD		9.119	┬2.660	┬1.842	1.309	2.626	┬0.944	0.855	2.053	24.560	4.766	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:25:48	96.100	298.411%	0.935	4.900	-3.531	7.355	116.781%	0.000	0.352	0.329	755.300	130.180%
2	14:26:10	95.490	303.568%	1.290	5.026	-5.481	7.405	118.895%	0.000	0.328	0.338	761.900	133.215%
3	14:26:31	96.180	318.829%	1.095	4.774	-3.394	7.523	121.230%	0.000	0.307	0.379	765.900	138.570%
x		95.920	306.936%	1.106	4.900	-4.136	7.428	118.968%	0.000	0.329	0.348	761.100	133.988%
σ		0.378	10.618%	0.177	0.126	1.167	0.086	2.225%	0.000	0.022	0.026	5.334	4.248%
%RSD		0.394	3.459	16.040	2.566	28.220	1.161	1.870	0.000	6.822	7.569	0.701	3.170

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:25:48	0.422	0.456	214.400	115.719%	0.000	19.820	7.518
2	14:26:10	0.415	0.504	218.600	117.151%	0.000	19.880	7.614
3	14:26:31	0.465	0.468	220.700	118.026%	0.000	19.510	7.713
x		0.434	0.476	217.900	116.965%	0.000	19.730	7.615
σ		0.027	0.025	3.223	1.165%	0.000	0.197	0.097
%RSD		6.155	5.259	1.479	0.996	0.000	0.996	1.280

200-35680-A-8-A SD@5 10/25/2016 02:31:09 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:31:30	111.259%	0.470	-2.233	171.500	3058.000	┬14040.000	┬986.300	5066.000	129.894%	0.000	20.780	16.500
2	14:31:52	111.687%	0.850	-2.645	165.100	3093.000	┬13920.000	┬992.600	5146.000	128.606%	0.000	22.580	16.730
3	14:32:14	108.721%	0.541	-1.473	168.000	3131.000	┬14220.000	┬997.200	5126.000	125.003%	0.000	22.350	17.240
x		110.556%	0.621	-2.117	168.200	3094.000	┬14060.000	┬992.100	5113.000	127.834%	0.000	21.900	16.820
σ		1.603%	0.202	0.594	3.181	36.760	┬153.000	┬5.455	41.380	2.535%	0.000	0.984	0.376
%RSD		1.450	32.560	28.060	1.891	1.188	┬1.088	┬0.550	0.809	1.983	0.000	4.490	2.237

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:31:30	6.985	T 654.200	T 21500.000	11.080	25.380	722.800	273.900	5.285	0.199	6.440	0.000	0.000
2	14:31:52	6.263	T 669.800	T 22030.000	11.170	25.550	742.100	280.700	4.906	0.245	5.056	0.000	0.000
3	14:32:14	6.637	T 681.700	T 22160.000	11.150	27.250	732.100	275.700	4.984	0.248	6.082	0.000	0.000
x		6.628	T 668.600	T 21900.000	11.140	26.060	732.300	276.800	5.058	0.231	5.860	0.000	0.000
σ		0.361	T 13.780	T 345.700	0.047	1.033	9.669	3.510	0.200	0.027	0.718	0.000	0.000
%RSD		5.450	T 2.061	T 1.579	0.423	3.963	1.320	1.268	3.955	11.690	12.260	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:31:30	20.050	164.599%	-0.289	1.071	-2.135	1.634	121.315%	0.000	-0.258	-0.267	161.600	120.434%
2	14:31:52	20.530	163.436%	-0.164	1.017	-2.066	1.666	119.616%	0.000	-0.255	-0.249	163.500	119.452%
3	14:32:14	20.150	162.947%	-0.111	1.050	-1.801	1.504	120.425%	0.000	-0.215	-0.242	162.800	120.176%
x		20.240	163.661%	-0.188	1.046	-2.001	1.601	120.452%	0.000	-0.242	-0.253	162.600	120.021%
σ		0.254	0.848%	0.091	0.027	0.176	0.086	0.850%	0.000	0.024	0.013	0.941	0.509%
%RSD		1.257	0.518	48.490	2.594	8.816	5.344	0.706	0.000	9.919	5.082	0.579	0.424

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:31:30	0.055	-0.020	47.540	111.827%	0.000	3.681	1.599
2	14:31:52	0.028	-0.018	48.140	112.692%	0.000	3.891	1.616
3	14:32:14	0.019	-0.026	47.610	112.629%	0.000	3.986	1.597
x		0.034	-0.021	47.760	112.383%	0.000	3.853	1.604
σ		0.019	0.004	0.325	0.483%	0.000	0.156	0.010
%RSD		54.930	20.190	0.680	0.429	0.000	4.058	0.648

200-35680-A-8-A PDS 10/25/2016 02:36:51 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:13	111.304%	12.500	406.800	T 4682.000	T 14840.000	T 58340.000	T 8260.000	25210.000	145.989%	0.000	123.000	98.740
2	14:37:35	112.287%	13.460	413.100	T 4745.000	T 15340.000	T 58690.000	T 8474.000	25600.000	145.289%	0.000	127.300	101.700
3	14:37:57	111.816%	13.300	416.800	T 4465.000	T 14660.000	T 57290.000	T 8120.000	T 25730.000	152.785%	0.000	122.600	98.120
x		111.802%	13.080	412.200	T 4631.000	T 14940.000	T 58100.000	T 8285.000	T 25510.000	148.021%	0.000	124.300	99.520
σ		0.492%	0.513	5.039	T 146.800	T 352.000	T 729.800	T 178.100	T 270.600	4.141%	0.000	2.639	1.912
%RSD		0.440	3.922	1.223	T 3.169	T 2.356	T 1.256	T 2.150	T 1.061	2.798	0.000	2.123	1.921

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:13	8.482	T 2772.000	T 90670.000	51.790	118.400	T 3591.000	1311.000	19.210	0.030	55.460	0.000	0.000
2	14:37:35	9.411	T 2863.000	T 93140.000	53.550	122.200	T 3759.000	1358.000	18.300	0.086	55.060	0.000	0.000
3	14:37:57	6.893	T 2785.000	T 89330.000	50.910	120.600	T 3696.000	1345.000	18.790	0.038	56.030	0.000	0.000
x		8.262	T 2807.000	T 91050.000	52.080	120.400	T 3682.000	1338.000	18.770	0.051	55.520	0.000	0.000
σ		1.273	T 49.260	T 1936.000	1.345	1.925	T 84.830	24.220	0.456	0.030	0.486	0.000	0.000
%RSD		15.410	T 1.755	T 2.126	2.583	1.599	T 2.304	1.810	2.428	59.440	0.876	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:13	136.200	303.223%	38.980	13.770	-2.924	15.710	121.105%	0.000	17.960	18.040	834.100	134.808%
2	14:37:35	139.600	312.904%	38.330	14.500	-5.832	16.040	120.094%	0.000	18.350	18.640	853.300	136.818%

3	14:37:57	138.500	317.266%	39.060	14.090	-8.419	16.170	121.699%	0.000	18.160	18.610	851.900	137.213%
x		138.100	311.131%	38.790	14.120	-5.725	15.970	120.966%	0.000	18.160	18.430	846.400	136.280%
σ		1.723	7.188%	0.403	0.363	2.749	0.241	0.812%	0.000	0.194	0.339	10.700	1.290%
%RSD		1.248	2.310	1.039	2.573	48.020	1.507	0.671	0.000	1.069	1.841	1.264	0.946

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:37:13	14.120	16.750	225.200	115.254%	0.000	36.670	16.460
2	14:37:35	14.050	16.710	225.400	118.017%	0.000	37.280	16.480
3	14:37:57	14.230	17.020	228.900	117.078%	0.000	38.310	16.910
x		14.130	16.830	226.500	116.783%	0.000	37.420	16.610
σ		0.090	0.167	2.065	1.405%	0.000	0.831	0.257
%RSD		0.636	0.990	0.912	1.203	0.000	2.220	1.545

200-35680-A-8-B MS 10/25/2016 02:42:34 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:42:56	112.649%	13.410	358.500	┬4809.000	┬15120.000	┬59420.000	┬8475.000	25270.000	150.663%	0.000	130.000	102.200
2	14:43:18	112.256%	13.040	367.500	┬4855.000	┬15120.000	┬59180.000	┬8472.000	┬26260.000	152.450%	0.000	128.100	102.400
3	14:43:39	111.139%	13.470	366.500	┬4754.000	┬14870.000	┬58350.000	┬8292.000	┬26310.000	155.923%	0.000	126.900	100.900
x		112.014%	13.310	364.200	┬4806.000	┬15040.000	┬58980.000	┬8413.000	┬25950.000	153.012%	0.000	128.300	101.800
σ		0.784%	0.231	4.933	┬50.370	┬143.700	┬564.100	┬105.000	┬584.100	2.674%	0.000	1.547	0.824
%RSD		0.700	1.738	1.355	┬1.048	┬0.956	┬0.956	┬1.248	┬2.251	1.748	0.000	1.205	0.809

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:42:56	6.445	┬2731.000	┬90400.000	51.630	119.200	┬3560.000	1294.000	19.630	0.006	60.080	0.000	0.000
2	14:43:18	7.524	┬2743.000	┬91590.000	52.610	122.100	┬3594.000	1304.000	19.850	0.016	58.440	0.000	0.000
3	14:43:39	6.761	┬2697.000	┬89480.000	51.250	118.600	┬3531.000	1291.000	19.230	0.032	59.090	0.000	0.000
x		6.910	┬2724.000	┬90490.000	51.830	119.900	┬3562.000	1296.000	19.570	0.018	59.200	0.000	0.000
σ		0.555	┬23.800	┬1059.000	0.703	1.879	┬31.240	6.678	0.312	0.013	0.822	0.000	0.000
%RSD		8.027	┬0.874	┬1.170	1.355	1.567	┬0.877	0.515	1.593	73.630	1.388	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:42:56	142.200	317.289%	38.740	14.420	-4.801	15.730	122.098%	0.000	3.034	3.119	844.800	138.118%
2	14:43:18	142.600	316.128%	39.050	14.940	-6.691	16.240	122.276%	0.000	3.013	3.216	871.800	140.185%
3	14:43:39	143.100	322.228%	39.170	14.200	-3.003	16.020	124.518%	0.000	3.175	3.185	859.200	138.986%
x		142.600	318.548%	38.990	14.520	-4.831	15.990	122.964%	0.000	3.074	3.173	858.600	139.096%
σ		0.411	3.239%	0.223	0.383	1.844	0.259	1.349%	0.000	0.088	0.050	13.470	1.038%
%RSD		0.288	1.017	0.571	2.640	38.170	1.621	1.097	0.000	2.879	1.561	1.569	0.746

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:42:56	14.990	17.570	261.300	116.129%	0.000	38.120	17.120
2	14:43:18	15.340	17.900	260.800	118.409%	0.000	38.960	17.420
3	14:43:39	15.740	17.630	261.600	120.470%	0.000	39.120	17.290
x		15.360	17.700	261.200	118.336%	0.000	38.730	17.280
σ		0.373	0.177	0.418	2.171%	0.000	0.538	0.154

%RSD		2.427	1.003	0.160	1.835	0.000	1.390	0.892

200-35680-A-8-C MSD 10/25/2016 02:48:17 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:48:39	113.582%	11.900	332.000	T 4663.000	T 13990.000	T 55280.000	T 7997.000	23680.000	150.123%	0.000	121.700	98.590
2	14:49:00	110.058%	12.640	357.400	T 4787.000	T 14060.000	T 55810.000	T 8112.000	23880.000	150.976%	0.000	122.600	98.090
3	14:49:22	110.093%	13.230	369.100	T 4724.000	T 13930.000	T 55220.000	T 8085.000	23990.000	151.874%	0.000	124.400	98.810
x		111.245%	12.590	352.800	T 4725.000	T 14000.000	T 55430.000	T 8064.000	23850.000	150.991%	0.000	122.900	98.500
σ		2.025%	0.664	18.950	T 61.780	T 64.570	T 326.400	T 60.330	155.000	0.875%	0.000	1.385	0.367
%RSD		1.820	5.274	5.372	T 1.308	T 0.461	T 0.589	T 0.748	0.650	0.580	0.000	1.127	0.373

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:48:39	7.560	T 2357.000	T 84860.000	48.870	112.500	3163.000	1177.000	19.030	0.057	53.360	0.000	0.000
2	14:49:00	8.061	T 2372.000	T 86000.000	48.660	113.600	T 3501.000	1207.000	19.020	0.005	56.300	0.000	0.000
3	14:49:22	6.922	T 2364.000	T 85630.000	48.850	115.100	T 3496.000	1202.000	18.870	0.028	54.180	0.000	0.000
x		7.514	T 2364.000	T 85500.000	48.790	113.700	T 3387.000	1195.000	18.970	0.030	54.610	0.000	0.000
σ		0.571	T 7.537	T 579.800	0.114	1.330	T 194.100	15.930	0.089	0.026	1.518	0.000	0.000
%RSD		7.600	T 0.319	T 0.678	0.234	1.169	T 5.731	1.333	0.469	86.790	2.780	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:48:39	133.400	305.741%	39.680	14.140	-2.816	14.640	123.400%	0.000	3.361	3.356	788.900	136.036%
2	14:49:00	136.800	311.176%	39.540	14.540	-3.395	14.980	122.917%	0.000	3.388	3.457	819.500	139.503%
3	14:49:22	133.600	308.689%	39.320	14.270	-3.016	14.880	124.352%	0.000	3.369	3.396	811.300	140.588%
x		134.600	308.535%	39.520	14.320	-3.075	14.830	123.556%	0.000	3.372	3.403	806.500	138.709%
σ		1.889	2.721%	0.182	0.208	0.294	0.179	0.730%	0.000	0.014	0.051	15.860	2.378%
%RSD		1.403	0.882	0.460	1.453	9.559	1.208	0.591	0.000	0.415	1.487	1.967	1.714

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:48:39	15.340	17.240	210.500	115.628%	0.000	36.220	16.770
2	14:49:00	15.700	17.640	213.300	118.309%	0.000	36.140	16.670
3	14:49:22	15.640	17.470	210.900	119.704%	0.000	36.580	16.780
x		15.560	17.450	211.500	117.880%	0.000	36.320	16.740
σ		0.194	0.198	1.497	2.071%	0.000	0.236	0.065
%RSD		1.249	1.133	0.708	1.757	0.000	0.649	0.388

200-35680-A-9-A 10/25/2016 02:54:01 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:54:22	116.167%	3.386	28.660	T 902.500	T 12770.000	T 54390.000	T 4447.000	T 23970.000	153.581%	0.000	87.440	64.450
2	14:54:44	118.717%	3.241	30.710	T 895.200	T 12670.000	T 53560.000	T 4365.000	23050.000	155.784%	0.000	88.250	65.140
3	14:55:06	116.418%	3.133	26.350	T 944.300	T 12990.000	T 55500.000	T 4446.000	T 24500.000	154.099%	0.000	89.940	65.330
x		117.101%	3.253	28.570	T 914.000	T 12810.000	T 54480.000	T 4419.000	T 23840.000	154.488%	0.000	88.540	64.970
σ		1.406%	0.127	2.180	T 26.480	T 162.100	T 974.300	T 46.880	T 732.800	1.152%	0.000	1.277	0.462
%RSD		1.200	3.893	7.628	T 2.897	T 1.266	T 1.788	T 1.061	T 3.074	0.746	0.000	1.442	0.710

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:54:22	6.177	TM 6605.000	T 98490.000	41.480	96.830	1961.000	978.400	9.152	0.106	15.960	0.000	0.000
2	14:54:44	4.822	TM 6648.000	T 100100.000	42.440	96.920	1952.000	980.900	8.952	0.100	14.750	0.000	0.000
3	14:55:06	5.873	TM 6784.000	T 100800.000	41.870	96.800	1993.000	1001.000	9.373	0.058	15.750	0.000	0.000
x		5.624	TM 6679.000	T 99800.000	41.930	96.850	1969.000	986.800	9.159	0.088	15.480	0.000	0.000
σ		0.711	TM 93.240	T 1203.000	0.482	0.062	21.460	12.530	0.211	0.026	0.648	0.000	0.000
%RSD		12.640	TM 1.396	T 1.206	1.149	0.064	1.090	1.269	2.301	29.680	4.187	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:54:22	103.500	307.101%	0.451	2.137	-7.530	4.272	125.008%	0.000	0.095	0.194	880.500	136.876%
2	14:54:44	100.600	311.349%	0.574	2.244	-4.990	4.097	127.352%	0.000	0.193	0.197	880.500	137.464%
3	14:55:06	103.800	312.547%	0.504	2.137	-4.850	4.137	126.340%	0.000	0.220	0.205	881.300	138.871%
x		102.600	310.332%	0.509	2.173	-5.790	4.168	126.233%	0.000	0.170	0.199	880.800	137.737%
σ		1.797	2.862%	0.062	0.062	1.508	0.092	1.176%	0.000	0.066	0.006	0.461	1.025%
%RSD		1.751	0.922	12.140	2.840	26.050	2.198	0.932	0.000	38.730	2.782	0.052	0.745

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:54:22	0.349	0.437	197.100	118.518%	0.000	17.000	5.754
2	14:54:44	0.416	0.456	199.000	120.506%	0.000	16.910	5.757
3	14:55:06	0.449	0.481	201.600	120.096%	0.000	17.120	5.742
x		0.405	0.458	199.200	119.707%	0.000	17.010	5.751
σ		0.051	0.022	2.295	1.050%	0.000	0.106	0.008
%RSD		12.500	4.839	1.152	0.877	0.000	0.625	0.145

200-35680-A-10-A 10/25/2016 02:59:44 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:00:06	112.673%	2.665	23.570	T 822.300	T 10700.000	T 46350.000	T 4203.000	18960.000	147.447%	0.000	77.540	56.250
2	15:00:28	113.712%	2.675	24.860	T 812.300	T 10600.000	T 46070.000	T 4150.000	19370.000	150.240%	0.000	77.260	55.740
3	15:00:50	113.822%	2.690	23.770	T 821.300	T 10620.000	T 46760.000	T 4278.000	19280.000	149.131%	0.000	78.120	56.830
x		113.402%	2.677	24.070	T 818.700	T 10640.000	T 46390.000	T 4210.000	19200.000	148.939%	0.000	77.640	56.270
σ		0.634%	0.013	0.692	T 5.505	T 54.590	T 349.700	T 64.450	218.400	1.406%	0.000	0.437	0.548
%RSD		0.560	0.470	2.875	T 0.672	T 0.513	T 0.754	T 1.531	1.137	0.944	0.000	0.563	0.974

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:00:06	6.082	┬2962.000	┬77560.000	32.910	80.460	1599.000	928.500	7.957	0.161	10.350	0.000	0.000
2	15:00:28	6.452	┬2952.000	┬77010.000	33.540	80.130	1613.000	921.800	8.579	0.090	13.800	0.000	0.000
3	15:00:50	6.326	┬3023.000	┬77910.000	32.420	78.350	1596.000	928.200	8.000	0.143	10.780	0.000	0.000
x		6.287	┬2979.000	┬77490.000	32.960	79.650	1603.000	926.200	8.179	0.131	11.640	0.000	0.000
σ		0.188	┬38.350	┬454.600	0.562	1.136	8.957	3.754	0.348	0.037	1.883	0.000	0.000
%RSD		2.993	┬1.287	┬0.587	1.707	1.427	0.559	0.405	4.252	28.190	16.170	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:00:06	83.500	270.141%	0.986	1.585	-3.218	3.043	122.831%	0.000	0.262	0.297	623.400	132.548%
2	15:00:28	82.520	273.467%	0.915	1.661	-4.739	2.905	125.030%	0.000	0.265	0.315	628.000	132.361%
3	15:00:50	83.770	271.812%	1.066	1.543	-2.262	2.832	124.809%	0.000	0.313	0.317	635.000	135.218%
x		83.270	271.807%	0.989	1.597	-3.406	2.926	124.224%	0.000	0.280	0.310	628.800	133.376%
σ		0.657	1.663%	0.076	0.060	1.249	0.107	1.211%	0.000	0.029	0.011	5.850	1.598%
%RSD		0.788	0.612	7.635	3.761	36.680	3.658	0.975	0.000	10.350	3.586	0.930	1.198

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:00:06	0.377	0.351	147.300	116.458%	0.000	14.020	4.971
2	15:00:28	0.333	0.371	150.500	116.676%	0.000	14.460	5.191
3	15:00:50	0.338	0.363	152.900	116.950%	0.000	14.900	5.086
x		0.349	0.362	150.200	116.695%	0.000	14.460	5.083
σ		0.024	0.010	2.816	0.247%	0.000	0.438	0.110
%RSD		7.010	2.795	1.875	0.211	0.000	3.029	2.165

200-35680-A-11-A 10/25/2016 03:05:28 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:05:50	114.766%	5.308	37.790	┬655.000	┬20000.000	┬74190.000	┬8225.000	┬37580.000	169.064%	0.000	115.100	93.880
2	15:06:12	115.171%	4.635	39.250	┬647.100	┬20290.000	┬74330.000	┬8239.000	┬37350.000	174.178%	0.000	115.100	93.770
3	15:06:34	114.192%	4.944	40.500	┬644.300	┬20400.000	┬74890.000	┬8269.000	┬37560.000	172.563%	0.000	116.100	94.970
x		114.710%	4.962	39.180	┬648.800	┬20230.000	┬74470.000	┬8244.000	┬37500.000	171.935%	0.000	115.400	94.210
σ		0.492%	0.337	1.359	┬5.551	┬206.000	┬371.100	┬22.290	┬126.500	2.614%	0.000	0.551	0.665
%RSD		0.429	6.788	3.468	┬0.856	┬1.018	┬0.498	┬0.270	┬0.337	1.521	0.000	0.477	0.706
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:05:50	6.521	┬5241.000	┬133900.000	60.480	139.900	1620.000	864.100	13.970	0.083	11.790	0.000	0.000
2	15:06:12	7.472	┬5222.000	┬132400.000	60.450	140.000	1638.000	870.000	13.940	0.100	10.710	0.000	0.000
3	15:06:34	6.596	┬5254.000	┬133400.000	61.580	140.700	1636.000	872.300	13.720	0.101	10.990	0.000	0.000
x		6.863	┬5239.000	┬133300.000	60.840	140.200	1631.000	868.800	13.880	0.095	11.170	0.000	0.000
σ		0.529	┬15.870	┬776.800	0.644	0.422	9.909	4.209	0.136	0.010	0.561	0.000	0.000
%RSD		7.706	┬0.303	┬0.583	1.058	0.301	0.608	0.484	0.978	10.830	5.022	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:05:50	136.100	344.277%	0.813	1.556	-4.891	3.218	127.606%	0.000	0.090	0.103	975.800	139.561%
2	15:06:12	137.800	349.113%	0.815	1.569	-4.395	3.007	127.840%	0.000	0.094	0.124	1012.000	145.055%

3	15:06:34	139.600	351.247%	0.915	1.535	-6.988	3.359	128.234%	0.000	0.142	0.124	1028.000	145.234%
x		137.800	348.213%	0.848	1.553	-5.424	3.195	127.893%	0.000	0.109	0.117	1005.000	143.283%
σ		1.761	3.571%	0.058	0.017	1.376	0.177	0.317%	0.000	0.029	0.012	26.730	3.225%
%RSD		1.278	1.026	6.877	1.104	25.380	5.537	0.248	0.000	26.870	10.300	2.659	2.251

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:05:50	0.341	0.672	169.500	119.585%	0.000	25.940	5.571
2	15:06:12	0.293	0.617	173.300	119.841%	0.000	26.920	5.829
3	15:06:34	0.272	0.700	171.300	123.188%	0.000	26.530	5.743
x		0.302	0.663	171.400	120.871%	0.000	26.470	5.714
σ		0.035	0.042	1.905	2.010%	0.000	0.496	0.131
%RSD		11.640	6.315	1.111	1.663	0.000	1.875	2.299

CCV 10/25/2016 03:11:12 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:11:34	97.311%	644.400	242.500	┬9660.000	┬28530.000	┬29190.000	┬9656.000	28030.000	108.980%	0.000	┬1202.000	368.500
2	15:11:56	92.118%	668.300	258.200	┬9669.000	┬29060.000	┬29590.000	┬9766.000	28670.000	105.535%	0.000	┬1218.000	368.200
3	15:12:18	89.299%	668.400	255.500	┬9775.000	┬28960.000	┬30320.000	┬10010.000	29170.000	100.007%	0.000	┬1234.000	379.800
x		92.909%	105.658%	100.825%	┬97.014%	┬96.164%	┬99.003%	┬98.113%	95.411%	104.841%	0.000	┬97.425%	93.041%
σ		4.064%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	n/a	4.527%	0.000	┬n/a	n/a
%RSD		4.375	2.092	3.325	┬0.658	┬0.974	┬1.929	┬1.859	2.009	4.318	0.000	┬1.317	1.780

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:11:34	20.240	┬1231.000	┬29470.000	471.100	1232.000	1191.000	1216.000	194.300	-0.684	208.400	0.000	0.000
2	15:11:56	23.110	┬1235.000	┬29870.000	470.100	1248.000	1191.000	1235.000	199.100	-0.775	213.900	0.000	0.000
3	15:12:18	17.700	┬1264.000	┬30380.000	477.500	1258.000	1172.000	1237.000	200.300	-0.655	207.500	0.000	0.000
x		20.350	┬99.463%	┬99.686%	94.581%	99.680%	94.764%	98.351%	98.935%	-0.705	104.969%	0.000	0.000
σ		2.707	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.063	n/a	0.000	0.000
%RSD		13.300	┬1.435	┬1.517	0.853	1.017	0.921	0.954	1.613	8.911	1.648	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:11:34	182.200	111.256%	1143.000	98.110	1.771	191.200	106.749%	0.000	240.600	241.900	1222.000	104.924%
2	15:11:56	185.000	106.572%	1211.000	100.900	-1.397	197.300	104.176%	0.000	246.400	246.200	1234.000	101.245%
3	15:12:18	181.600	103.896%	1229.000	101.100	5.527	199.800	101.851%	0.000	247.100	247.100	1222.000	98.368%
x		182.900	107.241%	95.549%	100.034%	1.967	98.046%	104.258%	0.000	244.700	98.038%	98.089%	101.513%
σ		1.839	3.726%	n/a	n/a	3.466	n/a	2.450%	0.000	3.573	n/a	n/a	3.286%
%RSD		1.005	3.474	3.785	1.670	176.200	2.248	2.350	0.000	1.460	1.140	0.568	3.237

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:11:34	19.500	175.300	┬1206.000	100.009%	0.000	17.260	8.943
2	15:11:56	19.940	177.900	┬1183.000	99.572%	0.000	18.880	8.952
3	15:12:18	20.230	178.900	┬1193.000	98.051%	0.000	19.550	9.014
x		99.433%	88.684%	┬95.533%	99.211%	0.000	92.816%	89.699%
σ		n/a	n/a	┬n/a	1.028%	0.000	n/a	n/a

%RSD		1.851	1.043	T 0.961	1.036	0.000	6.329	0.430

CCB 10/25/2016 03:16:57 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:19	103.168%	-0.150	-5.092	1.661	-4.629	-0.203	0.015	1.709	106.567%	0.000	0.793	-0.007
2	15:17:41	101.540%	-0.110	-5.418	-3.743	-4.677	-1.125	1.022	0.155	107.396%	0.000	0.541	-0.016
3	15:18:03	101.349%	-0.089	-6.267	-2.233	-6.162	-1.763	1.160	1.526	107.635%	0.000	1.239	0.033
x		102.019%	-0.116	-5.592	-1.438	-5.156	-1.031	0.732	1.130	107.199%	0.000	0.858	0.004
σ		1.000%	0.031	0.607	2.788	0.872	0.784	0.625	0.850	0.561%	0.000	0.353	0.026
%RSD		0.980	26.510	10.850	193.800	16.900	76.100	85.370	75.190	0.523	0.000	41.180	738.600

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:19	11.380	0.001	14.530	-0.021	0.001	0.076	-0.403	-0.313	0.455	-0.161	0.000	0.000
2	15:17:41	11.300	-0.055	12.420	-0.006	-0.200	-0.006	-0.398	-0.401	0.456	-0.639	0.000	0.000
3	15:18:03	10.520	-0.089	11.050	-0.015	-0.178	-0.066	-0.534	0.285	0.390	-0.292	0.000	0.000
x		11.070	-0.048	12.670	-0.014	-0.126	0.001	-0.445	-0.143	0.434	-0.364	0.000	0.000
σ		0.472	0.046	1.752	0.008	0.110	0.071	0.077	0.373	0.038	0.247	0.000	0.000
%RSD		4.261	95.110	13.830	55.750	87.600	4764.000	17.290	261.500	8.792	67.800	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:19	-0.003	109.244%	1.106	-0.014	-0.793	-0.082	107.329%	0.000	-0.191	-0.174	-0.020	101.317%
2	15:17:41	-0.009	112.167%	0.939	-0.016	-0.871	-0.068	106.908%	0.000	-0.155	-0.178	-0.078	103.450%
3	15:18:03	-0.010	111.731%	0.766	-0.008	-1.121	-0.042	107.154%	0.000	-0.130	-0.157	-0.090	103.514%
x		-0.007	111.047%	0.937	-0.013	-0.928	-0.064	107.130%	0.000	-0.159	-0.170	-0.063	102.760%
σ		0.004	1.577%	0.170	0.004	0.171	0.020	0.211%	0.000	0.030	0.011	0.037	1.250%
%RSD		49.900	1.420	18.140	31.290	18.450	31.490	0.197	0.000	19.200	6.701	59.660	1.217

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:17:19	-0.005	-0.039	0.089	99.636%	0.000	2.185	-0.005
2	15:17:41	0.009	-0.071	0.085	100.929%	0.000	2.074	-0.002
3	15:18:03	-0.014	-0.061	0.068	99.381%	0.000	2.009	-0.005
x		-0.004	-0.057	0.081	99.982%	0.000	2.089	-0.004
σ		0.011	0.017	0.011	0.830%	0.000	0.089	0.001
%RSD		315.300	29.190	13.430	0.830	0.000	4.260	39.430

CCVL 10/25/2016 03:22:41 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:23:03	100.012%	1.092	40.950	504.400	190.100	47.880	482.800	471.000	107.120%	0.000	4.888	3.788
2	15:23:24	103.623%	0.890	41.340	507.500	191.300	50.120	493.100	478.200	105.812%	0.000	5.713	4.028
3	15:23:47	99.157%	1.041	48.010	509.500	188.200	49.670	474.100	470.800	108.355%	0.000	5.550	3.729
x		100.931%	100.762%	108.584%	101.429%	94.931%	98.445%	96.664%	94.668%	107.095%	0.000	107.669%	96.202%
σ		2.371%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.272%	0.000	n/a	n/a
%RSD		2.349	10.380	9.136	0.508	0.830	2.405	1.960	0.893	1.188	0.000	8.121	4.109

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:23:03	9.822	1.988	203.600	0.968	1.619	5.607	20.990	2.501	0.319	3.744	0.000	0.000
2	15:23:24	9.622	1.934	206.800	1.043	1.944	5.036	21.820	2.025	0.343	3.314	0.000	0.000
3	15:23:47	8.672	1.958	201.600	0.961	2.185	5.281	21.510	2.182	0.322	3.983	0.000	0.000
x		9.372	98.004%	102.009%	99.067%	95.814%	106.162%	107.189%	111.797%	0.328	92.000%	0.000	0.000
σ		0.614	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.013	n/a	0.000	0.000
%RSD		6.556	1.389	1.283	4.598	14.830	5.403	1.960	10.850	4.057	9.214	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:23:03	4.832	110.580%	8.820	0.997	-1.367	1.058	105.713%	0.000	1.751	1.651	10.010	101.982%
2	15:23:24	4.530	111.114%	9.059	0.959	-1.189	1.004	107.334%	0.000	1.712	1.609	9.868	102.025%
3	15:23:47	4.734	112.298%	9.074	1.123	-0.866	0.921	107.920%	0.000	1.751	1.671	10.210	102.054%
x		93.973%	111.331%	89.842%	102.618%	-1.140	99.437%	106.989%	0.000	1.738	82.172%	100.291%	102.021%
σ		n/a	0.879%	n/a	n/a	0.254	n/a	1.143%	0.000	0.022	n/a	n/a	0.036%
%RSD		3.287	0.790	1.588	8.352	22.250	6.926	1.069	0.000	1.283	1.923	1.704	0.035

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:23:03	1.556	1.561	1.009	102.013%	0.000	1.938	0.877
2	15:23:24	1.684	1.576	1.090	100.091%	0.000	1.955	0.921
3	15:23:47	1.696	1.650	1.074	100.200%	0.000	1.940	0.921
x		82.266%	79.778%	105.752%	100.768%	0.000	97.224%	90.611%
σ		n/a	n/a	n/a	1.079%	0.000	n/a	n/a
%RSD		4.702	2.969	4.046	1.071	0.000	0.477	2.822

200-35680-A-12-A 10/25/2016 03:28:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:28:47	120.305%	7.542	49.990	T 1286.000	T 40240.000	T 107200.000	T 12390.000	T 89030.000	192.805%	0.000	147.100	137.700
2	15:29:09	120.721%	8.105	50.650	T 1247.000	T 39160.000	T 106700.000	T 12520.000	T 88200.000	202.616%	0.000	146.300	135.500
3	15:29:31	118.217%	7.971	54.140	T 1233.000	T 38990.000	T 104300.000	T 12270.000	T 88640.000	206.389%	0.000	146.900	135.400
x		119.748%	7.873	51.600	T 1256.000	T 39460.000	T 106100.000	T 12390.000	T 88620.000	200.603%	0.000	146.800	136.200
σ		1.342%	0.294	2.230	T 27.320	T 678.300	T 1524.000	T 121.000	T 417.100	7.012%	0.000	0.418	1.340
%RSD		1.121	3.737	4.322	T 2.175	T 1.719	T 1.437	T 0.976	T 0.471	3.496	0.000	0.285	0.984

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:28:47	5.784	T 6035.000	TM 196000.000	97.360	265.000	217.900	581.400	19.830	0.070	7.947	0.000	0.000
2	15:29:09	8.117	T 6050.000	TM 195000.000	97.970	262.400	224.200	594.200	20.090	0.019	13.950	0.000	0.000
3	15:29:31	5.966	T 5969.000	TM 195800.000	96.650	260.600	228.200	601.300	19.950	0.054	8.529	0.000	0.000
x		6.622	T 6018.000	TM 195600.000	97.330	262.700	223.400	592.300	19.960	0.048	10.140	0.000	0.000
σ		1.298	T 42.750	TM 545.600	0.661	2.174	5.144	10.080	0.129	0.026	3.312	0.000	0.000
%RSD		19.600	T 0.710	TM 0.279	0.679	0.827	2.303	1.703	0.644	54.880	32.650	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:28:47	349.000	438.984%	1.393	0.275	-7.712	0.991	125.195%	0.000	-0.049	-0.043	911.500	152.370%
2	15:29:09	T 383.900	452.915%	1.437	0.275	-7.776	1.282	127.756%	0.000	-0.033	-0.023	934.100	156.978%
3	15:29:31	356.000	462.455%	1.329	0.291	-11.910	1.567	129.164%	0.000	0.018	-0.006	946.000	158.898%
x		T 362.900	451.451%	1.387	0.280	-9.132	1.280	127.372%	0.000	-0.021	-0.024	930.500	156.082%
σ		T 18.480	11.804%	0.054	0.009	2.405	0.288	2.012%	0.000	0.035	0.018	17.560	3.355%
%RSD		T 5.093	2.615	3.914	3.356	26.330	22.480	1.580	0.000	165.800	75.660	1.887	2.150

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:28:47	0.089	1.140	122.000	119.020%	0.000	51.410	5.569
2	15:29:09	0.100	1.142	122.900	122.723%	0.000	52.340	5.656
3	15:29:31	0.080	1.118	123.600	124.766%	0.000	52.060	5.649
x		0.090	1.133	122.800	122.170%	0.000	51.940	5.624
σ		0.010	0.013	0.846	2.913%	0.000	0.481	0.048
%RSD		10.890	1.177	0.689	2.384	0.000	0.925	0.859

200-35700-A-9-A 10/25/2016 03:34:10 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:32	116.878%	7.995	24.980	T 724.600	T 17490.000	T 97960.000	T 6124.000	T 21030.000	191.056%	0.000	163.200	113.500
2	15:34:54	119.020%	7.882	21.970	T 714.000	T 17660.000	T 99020.000	T 6207.000	T 21080.000	193.412%	0.000	165.700	114.100
3	15:35:16	116.405%	7.416	24.810	T 734.500	T 17570.000	T 98010.000	T 6160.000	T 21050.000	198.939%	0.000	161.700	113.100
x		117.434%	7.764	23.920	T 724.400	T 17570.000	T 98330.000	T 6164.000	T 21050.000	194.469%	0.000	163.600	113.600
σ		1.393%	0.307	1.689	T 10.210	T 84.750	T 597.900	T 41.430	T 24.040	4.047%	0.000	2.010	0.498
%RSD		1.186	3.951	7.063	T 1.410	T 0.482	T 0.608	T 0.672	T 0.114	2.081	0.000	1.229	0.439

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:32	5.569	TM 6748.000	TM 188200.000	76.690	149.300	1555.000	1048.000	15.550	0.083	12.960	0.000	0.000
2	15:34:54	3.754	TM 6769.000	TM 188900.000	75.600	148.900	1563.000	1045.000	14.980	0.092	12.920	0.000	0.000
3	15:35:16	5.995	TM 6711.000	TM 185100.000	75.360	148.100	1555.000	1044.000	14.910	0.085	14.670	0.000	0.000
x		5.106	TM 6743.000	TM 187400.000	75.880	148.800	1558.000	1045.000	15.150	0.087	13.520	0.000	0.000
σ		1.190	TM 29.120	TM 1996.000	0.708	0.609	4.706	2.074	0.351	0.005	1.003	0.000	0.000
%RSD		23.300	TM 0.432	TM 1.065	0.934	0.409	0.302	0.198	2.315	5.528	7.425	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:32	123.600	489.005%	1.247	1.241	-9.670	3.426	130.654%	0.000	0.090	0.056	1408.000	159.315%
2	15:34:54	125.100	498.270%	1.187	1.348	-8.678	3.438	131.082%	0.000	-0.001	0.073	1406.000	160.437%

3	15:35:16	123.100	502.955%	1.175	1.453	-9.143	3.536	133.276%	0.000	0.023	0.061	1399.000	164.991%
x		123.900	496.743%	1.203	1.347	-9.164	3.467	131.670%	0.000	0.037	0.063	1404.000	161.581%
σ		1.082	7.099%	0.039	0.106	0.496	0.060	1.407%	0.000	0.047	0.009	4.933	3.006%
%RSD		0.873	1.429	3.227	7.866	5.414	1.736	1.068	0.000	127.200	13.830	0.351	1.860

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:34:32	0.317	0.888	243.600	123.060%	0.000	30.660	9.963
2	15:34:54	0.283	0.933	249.500	122.340%	0.000	31.400	10.210
3	15:35:16	0.355	0.941	249.600	124.611%	0.000	32.040	10.120
x		0.318	0.920	247.600	123.337%	0.000	31.370	10.100
σ		0.036	0.029	3.427	1.161%	0.000	0.690	0.127
%RSD		11.330	3.118	1.384	0.941	0.000	2.198	1.252

200-35700-A-10-A 10/25/2016 03:39:54 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:40:16	109.733%	6.004	19.390	T 771.800	T 17080.000	T 83540.000	T 5226.000	18620.000	177.723%	0.000	128.500	97.470
2	15:40:37	111.035%	6.317	21.540	T 790.700	T 17400.000	T 84130.000	T 5237.000	18650.000	177.752%	0.000	133.400	100.100
3	15:40:59	111.316%	6.648	20.010	T 802.000	T 17540.000	T 85360.000	T 5319.000	T 19980.000	178.644%	0.000	131.100	98.960
x		110.695%	6.323	20.310	T 788.200	T 17340.000	T 84340.000	T 5261.000	T 19080.000	178.039%	0.000	131.000	98.850
σ		0.845%	0.322	1.107	T 15.280	T 234.800	T 927.400	T 50.630	T 775.000	0.524%	0.000	2.415	1.322
%RSD		0.763	5.088	5.449	T 1.939	T 1.354	T 1.100	T 0.963	T 4.062	0.294	0.000	1.844	1.337

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:40:16	7.011	T 2608.000	T 117700.000	59.140	140.700	TM 11220.000	1653.000	10.730	0.106	20.210	0.000	0.000
2	15:40:37	6.722	T 2696.000	T 121900.000	61.410	143.800	TM 11190.000	1660.000	10.670	0.109	18.800	0.000	0.000
3	15:40:59	8.064	T 2656.000	T 120100.000	59.830	144.000	TM 11300.000	1676.000	10.670	0.095	20.790	0.000	0.000
x		7.266	T 2653.000	T 119900.000	60.130	142.800	TM 11240.000	1663.000	10.690	0.103	19.930	0.000	0.000
σ		0.706	T 44.230	T 2137.000	1.163	1.829	TM 55.760	11.660	0.034	0.007	1.023	0.000	0.000
%RSD		9.721	T 1.667	T 1.783	1.934	1.280	TM 0.496	0.701	0.318	7.073	5.131	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:40:16	112.000	447.231%	1.200	2.306	-6.861	6.165	126.558%	0.000	0.038	0.122	1054.000	150.803%
2	15:40:37	112.700	457.729%	1.219	2.234	-5.853	6.082	128.297%	0.000	0.092	0.125	1064.000	153.182%
3	15:40:59	113.400	454.727%	1.189	2.215	-6.586	6.234	128.277%	0.000	0.119	0.112	1083.000	158.236%
x		112.700	453.229%	1.203	2.251	-6.434	6.160	127.711%	0.000	0.083	0.120	1067.000	154.074%
σ		0.694	5.407%	0.015	0.048	0.521	0.076	0.998%	0.000	0.041	0.007	14.800	3.796%
%RSD		0.616	1.193	1.248	2.134	8.098	1.236	0.782	0.000	49.420	5.644	1.387	2.464

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:40:16	0.380	0.752	268.500	117.014%	0.000	28.240	14.030
2	15:40:37	0.363	0.742	271.200	119.549%	0.000	28.800	14.070
3	15:40:59	0.325	0.806	277.000	117.534%	0.000	29.450	14.390
x		0.356	0.767	272.200	118.032%	0.000	28.830	14.160
σ		0.028	0.034	4.371	1.339%	0.000	0.608	0.198

%RSD		7.949	4.453	1.606	1.134	0.000	2.109	1.395

200-35700-A-10-A @2 10/25/2016 03:45:36 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:45:58	114.685%	3.574	3.988	T 473.400	T 9759.000	T 48190.000	T 3033.000	10660.000	157.988%	0.000	74.890	56.690
2	15:46:20	111.351%	3.211	4.413	T 451.500	T 9722.000	T 47690.000	T 3044.000	10580.000	158.557%	0.000	75.000	55.900
3	15:46:42	111.493%	2.987	6.001	T 465.600	T 9689.000	T 48040.000	T 2988.000	10670.000	157.659%	0.000	76.250	56.340
x		112.509%	3.257	4.801	T 463.500	T 9723.000	T 47970.000	T 3022.000	10640.000	158.068%	0.000	75.380	56.310
σ		1.885%	0.296	1.061	T 11.110	T 35.050	T 254.000	T 29.510	50.610	0.454%	0.000	0.758	0.397
%RSD		1.676	9.085	22.100	T 2.396	T 0.360	T 0.529	T 0.977	0.476	0.287	0.000	1.005	0.706

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:45:58	6.776	T 1506.000	T 69110.000	34.990	82.240	T 5872.000	920.000	9.022	0.167	11.770	0.000	0.000
2	15:46:20	6.560	T 1525.000	T 69570.000	34.570	82.250	T 5814.000	905.100	9.270	0.140	11.680	0.000	0.000
3	15:46:42	6.971	T 1518.000	T 69180.000	35.090	82.280	T 5756.000	902.800	9.057	0.156	11.300	0.000	0.000
x		6.769	T 1517.000	T 69290.000	34.880	82.260	T 5814.000	909.300	9.117	0.154	11.580	0.000	0.000
σ		0.205	T 9.597	T 244.900	0.276	0.022	T 58.020	9.341	0.134	0.013	0.251	0.000	0.000
%RSD		3.034	T 0.633	T 0.353	0.790	0.027	T 0.998	1.027	1.472	8.598	2.166	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:45:58	56.830	298.383%	0.632	1.088	-2.853	3.035	127.870%	0.000	-0.170	-0.161	538.300	135.698%
2	15:46:20	57.290	296.852%	0.647	1.108	-2.557	3.221	128.614%	0.000	-0.171	-0.177	538.400	133.847%
3	15:46:42	57.140	297.291%	0.644	1.132	-3.494	3.071	130.018%	0.000	-0.167	-0.169	528.800	138.161%
x		57.090	297.509%	0.641	1.109	-2.968	3.109	128.834%	0.000	-0.169	-0.169	535.200	135.902%
σ		0.231	0.788%	0.008	0.022	0.479	0.099	1.091%	0.000	0.002	0.008	5.479	2.164%
%RSD		0.405	0.265	1.223	1.983	16.140	3.175	0.847	0.000	1.090	4.886	1.024	1.592

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:45:58	0.129	0.303	138.200	115.911%	0.000	14.010	7.147
2	15:46:20	0.132	0.294	137.500	118.737%	0.000	14.150	6.970
3	15:46:42	0.173	0.309	140.000	116.202%	0.000	14.830	7.346
x		0.145	0.302	138.600	116.950%	0.000	14.330	7.154
σ		0.025	0.008	1.326	1.555%	0.000	0.437	0.188
%RSD		16.920	2.529	0.957	1.329	0.000	3.052	2.630

CCV 10/25/2016 03:51:19 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:51:41	99.604%	652.100	246.300	┬9776.000	┬29230.000	┬30100.000	┬10030.000	29130.000	110.041%	0.000	┬1235.000	378.100
2	15:52:02	97.647%	648.300	247.600	┬9765.000	┬29030.000	┬29860.000	┬9928.000	28700.000	109.060%	0.000	┬1235.000	378.800
3	15:52:24	95.653%	650.600	251.700	┬9509.000	┬28740.000	┬29380.000	┬9674.000	28670.000	108.958%	0.000	┬1214.000	367.000
x		97.635%	104.053%	99.411%	┬96.834%	┬96.659%	┬99.262%	┬98.785%	96.109%	109.353%	0.000	┬98.255%	93.657%
σ		1.975%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	n/a	0.598%	0.000	┬n/a	n/a
%RSD		2.023	0.293	1.119	┬1.559	┬0.857	┬1.233	┬1.873	0.880	0.547	0.000	┬0.989	1.759

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:51:41	17.880	┬1254.000	┬30380.000	483.700	1277.000	1224.000	1246.000	200.800	-0.401	210.500	0.000	0.000
2	15:52:02	16.160	┬1245.000	┬30080.000	474.000	1245.000	1183.000	1224.000	196.700	-0.309	201.500	0.000	0.000
3	15:52:24	18.980	┬1208.000	┬29370.000	458.500	1217.000	1214.000	1252.000	202.000	-0.614	208.500	0.000	0.000
x		17.670	┬98.850%	┬99.804%	94.415%	99.717%	96.569%	99.240%	99.916%	-0.441	103.414%	0.000	0.000
σ		1.424	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.157	n/a	0.000	0.000
%RSD		8.057	┬1.957	┬1.731	2.700	2.399	1.789	1.159	1.378	35.490	2.282	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:51:41	181.200	111.234%	1178.000	99.660	-1.570	195.700	108.702%	0.000	242.200	242.200	1218.000	102.684%
2	15:52:02	183.100	111.387%	1190.000	97.040	13.470	194.200	109.144%	0.000	240.600	240.100	1198.000	102.326%
3	15:52:24	186.800	107.461%	1230.000	99.200	6.003	194.600	104.735%	0.000	247.000	246.800	1247.000	101.081%
x		183.700	110.027%	95.936%	98.632%	5.968	97.412%	107.527%	0.000	243.300	97.215%	97.693%	102.030%
σ		2.825	2.224%	n/a	n/a	7.521	n/a	2.428%	0.000	3.328	n/a	n/a	0.842%
%RSD		1.538	2.021	2.273	1.420	126.000	0.414	2.258	0.000	1.368	1.410	1.981	0.825

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:51:41	19.270	171.900	┬1181.000	100.874%	0.000	17.140	8.735
2	15:52:02	19.680	178.400	┬1209.000	98.060%	0.000	19.050	9.058
3	15:52:24	19.340	175.700	┬1182.000	99.399%	0.000	19.670	8.887
x		97.144%	87.671%	┬95.252%	99.444%	0.000	93.081%	88.936%
σ		n/a	n/a	┬n/a	1.408%	0.000	n/a	n/a
%RSD		1.114	1.853	┬1.340	1.416	0.000	7.081	1.819

CCB 10/25/2016 03:57:03 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:57:24	100.505%	-0.008	-7.264	1.765	-2.187	7.037	2.490	4.266	108.035%	0.000	0.674	0.181
2	15:57:46	100.934%	-0.089	-7.060	1.726	-1.537	11.600	2.992	2.745	109.976%	0.000	1.603	0.136
3	15:58:08	103.682%	-0.072	-7.306	-1.804	-0.212	15.430	1.300	3.826	110.339%	0.000	1.110	0.159
x		101.707%	-0.056	-7.210	0.562	-1.312	11.360	2.261	3.612	109.450%	0.000	1.129	0.159
σ		1.724%	0.043	0.132	2.050	1.007	4.200	0.869	0.783	1.239%	0.000	0.465	0.023
%RSD		1.695	76.190	1.824	364.600	76.740	36.990	38.430	21.670	1.132	0.000	41.170	14.310

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:57:24	10.940	0.231	27.390	-0.008	0.007	0.642	-0.254	0.534	0.407	0.139	0.000	0.000
2	15:57:46	9.727	0.314	30.710	-0.003	-0.052	1.051	-0.151	-0.223	0.477	-0.696	0.000	0.000
3	15:58:08	10.510	0.495	34.700	0.010	-0.032	1.351	-0.080	-0.197	0.473	-0.350	0.000	0.000
x		10.390	0.346	30.940	-0.001	-0.025	1.015	-0.162	0.038	0.452	-0.302	0.000	0.000
σ		0.616	0.135	3.660	0.009	0.030	0.356	0.087	0.430	0.040	0.419	0.000	0.000
%RSD		5.931	38.890	11.830	1505.000	118.800	35.070	53.980	1140.000	8.740	138.800	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:57:24	-0.008	111.256%	1.025	-0.003	-0.824	-0.065	109.409%	0.000	-0.170	-0.204	-0.024	102.347%
2	15:57:46	0.015	111.513%	1.270	0.003	-0.881	-0.068	109.047%	0.000	-0.154	-0.153	0.034	105.075%
3	15:58:08	0.031	112.740%	0.670	-0.005	-1.656	-0.018	109.418%	0.000	-0.090	-0.161	0.136	104.602%
x		0.012	111.836%	0.988	-0.002	-1.121	-0.050	109.291%	0.000	-0.138	-0.173	0.049	104.008%
σ		0.020	0.793%	0.302	0.004	0.465	0.028	0.212%	0.000	0.042	0.027	0.081	1.458%
%RSD		158.800	0.709	30.530	236.800	41.480	55.240	0.194	0.000	30.490	15.840	166.300	1.401
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	15:57:24	-0.003	-0.046	0.135	99.107%	0.000	2.198	-0.001					
2	15:57:46	-0.006	-0.037	0.141	101.476%	0.000	2.126	-0.003					
3	15:58:08	-0.006	-0.076	0.136	102.523%	0.000	2.034	-0.001					
x		-0.005	-0.053	0.138	101.035%	0.000	2.119	-0.001					
σ		0.002	0.021	0.003	1.750%	0.000	0.082	0.001					
%RSD		31.960	38.430	2.496	1.732	0.000	3.879	86.380					

CCVL 10/25/2016 04:02:46 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:03:08	103.407%	1.129	39.540	505.500	188.700	51.700	475.100	467.600	112.469%	0.000	5.714	3.737
2	16:03:29	103.984%	1.024	41.640	506.000	188.800	56.010	472.400	488.400	111.837%	0.000	5.361	3.935
3	16:03:51	103.620%	0.969	42.670	505.600	191.300	57.970	473.000	506.700	111.277%	0.000	4.797	3.857
x		103.671%	104.055%	103.206%	101.137%	94.791%	110.450%	94.693%	97.514%	111.861%	0.000	105.817%	96.070%
σ		0.292%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.597%	0.000	n/a	n/a
%RSD		0.282	7.802	3.869	0.054	0.769	5.810	0.298	4.011	0.533	0.000	8.737	2.600
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:03:08	8.813	1.975	205.300	0.957	1.978	5.478	20.590	2.281	0.333	5.318	0.000	0.000
2	16:03:29	9.281	2.181	212.300	1.019	2.329	5.477	19.470	1.641	0.415	3.271	0.000	0.000
3	16:03:51	9.851	2.156	217.400	0.957	2.088	6.221	21.140	2.162	0.355	4.760	0.000	0.000
x		9.315	105.185%	105.823%	97.753%	106.583%	114.509%	102.014%	101.413%	0.368	111.236%	0.000	0.000
σ		0.520	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.043	n/a	0.000	0.000
%RSD		5.579	5.342	2.863	3.663	8.419	7.491	4.175	16.780	11.630	23.780	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:03:08	4.568	115.812%	8.564	1.003	-0.727	0.996	109.337%	0.000	1.515	1.540	10.140	101.732%
2	16:03:29	4.667	115.402%	8.553	0.987	-1.783	0.936	111.318%	0.000	1.549	1.545	9.225	102.848%

3	16:03:51	4.593	115.135%	8.902	1.119	-0.902	0.906	111.488%	0.000	1.573	1.571	9.829	103.908%
x		92.186%	115.450%	86.731%	103.654%	-1.137	94.597%	110.714%	0.000	1.546	77.600%	97.320%	102.829%
σ		n/a	0.341%	n/a	n/a	0.566	n/a	1.195%	0.000	0.030	n/a	n/a	1.088%
%RSD		1.126	0.295	2.288	6.970	49.720	4.846	1.080	0.000	1.911	1.069	4.791	1.058

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:03:08	1.541	1.546	1.039	98.761%	0.000	1.951	0.916
2	16:03:29	1.643	1.609	1.053	99.645%	0.000	1.940	0.907
3	16:03:51	1.590	1.582	1.099	101.576%	0.000	1.991	0.925
x		79.557%	78.952%	106.376%	99.994%	0.000	98.024%	91.586%
σ		n/a	n/a	n/a	1.439%	0.000	n/a	n/a
%RSD		3.220	2.025	2.913	1.439	0.000	1.363	0.985

Mass Uncorrected ICPS

STD0 10/25/2016 12:59:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:00:02	135659.870	25.000	1045.033	181533.270	1180.042	10598.369	46394.484	1190.043	136315.180	10.000	12019.332	1520.069
2	13:00:24	138150.200	17.500	995.030	182251.040	1350.055	10903.565	46143.789	1000.030	137192.340	15.000	12154.430	1575.074
3	13:00:45	138069.540	7.500	825.020	179177.990	1290.050	10493.302	46334.317	820.020	143000.860	25.000	12364.585	1550.072
x		137293.200	16.667	955.028	180987.440	1273.382	10665.079	46290.863	1003.364	138836.130	16.667	12179.449	1548.405
σ		1415.082	8.780	115.332	1607.596	86.223	213.112	130.874	185.034	3633.330	7.638	173.981	27.540
%RSD		1.031	52.678	12.076	0.888	6.771	1.998	0.283	18.441	2.617	45.826	1.428	1.779

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:00:02	3995.479	1175.041	191771.980	315.003	165.001	290.003	535.009	1022.031	344.004	427.005	465.507	2150.139
2	13:00:24	3710.413	1040.032	193992.460	335.003	125.000	405.005	515.008	1044.033	351.004	431.006	446.006	2420.176
3	13:00:45	3805.434	1245.046	191610.140	270.002	180.001	325.003	690.014	1103.036	338.003	472.507	443.006	2450.180
x		3837.109	1153.373	192458.190	306.670	156.667	340.004	580.010	1056.367	344.337	443.506	451.506	2340.165
σ		145.149	104.210	1331.175	33.292	28.431	58.950	95.790	41.887	6.507	25.195	12.217	165.250
%RSD		3.783	9.035	0.692	10.856	18.148	17.338	16.515	3.965	1.890	5.681	2.706	7.061

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:00:02	220.001	182625.110	4670.654	30.000	5.000	40.000	802055.330	4685.659	1145.039	865.022	110.000	141195.560
2	13:00:24	180.001	187094.270	4675.656	90.000	0.000	35.000	808726.380	4740.674	1315.052	962.028	90.000	142335.200
3	13:00:45	145.001	187134.720	4030.487	60.000	5.000	15.000	808107.420	5070.771	1275.049	945.527	120.000	139239.210
x		181.668	185618.030	4458.932	60.000	3.333	30.000	806296.380	4832.368	1245.047	924.192	106.667	140923.320
σ		37.528	2592.027	371.053	30.000	2.887	13.229	3685.869	208.288	88.888	51.903	15.275	1565.845
%RSD		20.658	1.396	8.322	50.000	86.603	44.096	0.457	4.310	7.139	5.616	14.321	1.111

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:00:02	260.002	1925.111	1655.082	109901.160	0.000	20582.702	85.000
2	13:00:24	215.001	1910.109	1660.083	109649.510	0.000	17724.420	70.000
3	13:00:45	300.003	1715.088	1840.102	112025.230	0.000	15617.314	80.000
x		258.335	1850.103	1718.422	110525.300	0.000	17974.812	78.334
σ		42.525	117.167	105.407	1305.058	0.000	2492.146	7.638
%RSD		16.461	6.333	6.134	1.181	0.000	13.865	9.750

STD1 10/25/2016 01:05:23 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:05:45	145462.020	145.001	6416.235	764385.610	23286.256	54629.385	575062.660	21113.365	142889.910	5.000	20017.013	8257.045
2	13:06:07	141367.010	150.001	6141.131	750934.360	22455.117	53962.216	584409.490	20502.603	143152.150	15.000	20232.273	8517.176
3	13:06:28	139632.480	150.001	6266.178	764929.750	22695.442	54784.894	589618.210	21614.006	146329.560	10.000	20933.138	8697.269
x		142153.830	148.334	6274.515	760083.240	22812.272	54458.832	583030.120	21076.658	144123.870	10.000	20394.141	8490.496
σ		2993.361	2.887	137.741	7927.832	427.709	437.053	7375.163	556.610	1914.677	5.000	479.032	221.321
%RSD		2.106	1.946	2.195	1.043	1.875	0.803	1.265	2.641	1.328	50.000	2.349	2.607

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:05:45	4740.674	5440.888	623705.920	2020.122	855.022	3110.290	9842.906	1715.088	426.005	614.511	487.007	2775.231
2	13:06:07	4795.690	5275.835	621412.600	2140.137	855.022	2845.243	9507.711	1736.090	422.005	660.013	505.008	2650.211
3	13:06:28	4765.681	5760.996	625361.250	2130.136	985.029	3140.296	9817.891	1674.084	407.005	642.012	494.507	2650.211

x		4767.348	5492.573	623493.250	2096.799	898.358	3031.943	9722.836	1708.421	418.339	638.846	495.507	2691.884
σ		27.546	246.675	1982.897	66.592	75.060	162.382	186.723	31.536	10.017	22.916	9.042	72.181
%RSD		0.578	4.491	0.318	3.176	8.355	5.356	1.920	1.846	2.394	3.587	1.825	2.681
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:05:45	18885.694	193456.280	13285.293	2345.165	90.000	685.014	826035.010	980.029	4390.578	3391.345	4085.501	140963.610
2	13:06:07	18540.307	191817.500	13615.559	2545.194	45.000	620.012	825425.920	1010.031	4570.627	3450.357	3985.477	143182.410
3	13:06:28	19075.910	189541.690	13385.373	2535.193	55.000	755.017	824827.350	985.029	4625.642	3568.382	4035.488	141356.920
x		18833.970	191605.160	13428.742	2475.184	63.333	686.681	825429.430	991.696	4528.949	3470.028	4035.488	141834.310
σ		271.522	1965.917	169.351	112.711	23.629	67.518	603.838	16.074	122.949	90.143	50.012	1183.929
%RSD		1.442	1.026	1.261	4.554	37.309	9.833	0.073	1.621	2.715	2.598	1.239	0.835

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:05:45	2790.233	14976.726	5575.933	115639.790	0.000	8437.135	11223.778
2	13:06:07	2610.204	14586.380	5745.990	110917.860	0.000	8297.065	11413.907
3	13:06:28	2880.249	15256.980	5961.066	110656.130	0.000	8302.067	11744.136
x		2760.229	14940.029	5760.996	112404.590	0.000	8345.422	11460.607
σ		137.500	336.803	193.005	2804.818	0.000	79.465	263.304
%RSD		4.981	2.254	3.350	2.495	0.000	0.952	2.297

STD2 10/25/2016 01:11:06 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:11:28	140227.440	675.014	23671.799	T 2982585.400	105925.540	240832.530	T 2756088.800	95633.589	137898.130	5.000	52557.739	34385.434
2	13:11:50	139743.400	652.513	25078.854	T 3031931.900	109277.070	240578.900	T 2760092.300	99083.654	141225.820	15.000	53902.022	33137.911
3	13:12:12	137273.000	635.012	23771.941	T 2895541.200	104838.700	240411.510	T 2759510.600	97715.613	141488.030	25.000	52332.030	33583.802
x		139081.280	654.180	24174.198	T 2970019.500	106680.440	240607.650	T 2758563.900	97477.619	140203.990	15.000	52930.597	33702.382
σ		1584.609	20.053	785.054	T 69058.139	2313.481	211.973	T 2163.144	1737.302	2001.236	10.000	848.814	632.159
%RSD		1.139	3.065	3.247	T 2.325	2.169	0.088	T 0.078	1.782	1.427	66.667	1.604	1.876
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:11:28	7826.837	24252.633	T 2406824.300	9967.980	4875.713	13860.761	44213.568	4396.580	847.022	1244.046	476.007	3025.275
2	13:11:50	7871.859	24803.443	T 2478750.700	10363.221	4745.676	13440.417	43822.537	4371.573	836.021	1246.047	502.008	2930.258
3	13:12:12	7671.765	25654.730	T 2417013.700	9572.748	4330.563	13210.233	43120.710	4335.564	877.023	1288.550	448.506	2690.217
x		7790.154	24903.602	T 2434196.200	9967.983	4650.650	13503.804	43718.938	4367.906	853.355	1259.548	475.507	2881.916
σ		104.970	706.394	T 38920.229	395.236	284.727	329.864	553.745	30.673	21.222	25.137	26.754	172.680
%RSD		1.347	2.837	T 1.599	3.965	6.122	2.443	1.267	0.702	2.487	1.996	5.626	5.992
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:11:28	89921.926	188520.200	60504.625	12429.633	135.001	2980.266	820312.510	695.014	20297.352	15921.601	19601.520	139027.450
2	13:11:50	89710.793	189086.560	62592.314	12849.952	205.001	3030.276	805684.230	680.014	20032.031	16081.254	19811.768	141730.070
3	13:12:12	90389.445	186821.230	60630.080	12019.332	245.002	3280.323	811842.530	730.016	19456.350	15966.644	20162.188	137726.720
x		90007.388	188142.660	61242.340	12432.972	195.001	3096.955	812613.090	701.681	19928.578	15989.833	19858.492	139494.750
σ		347.304	1178.912	1170.793	415.320	55.678	160.758	7344.521	25.659	429.940	82.314	283.239	2042.176
%RSD		0.386	0.627	1.912	3.340	28.553	5.191	0.904	3.657	2.157	0.515	1.426	1.464

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:11:28	12464.659	68520.563	25799.954	111743.350	0.000	44348.926	54373.550
2	13:11:50	12960.037	71467.902	25604.653	110283.670	0.000	43777.418	54875.190
3	13:12:12	12889.983	69615.085	26405.902	109629.380	0.000	47592.856	55271.496
x		12771.560	69867.850	25936.836	110552.130	0.000	45239.733	54840.079

σ	268.082	1489.839	417.795	1082.252	0.000	2057.800	450.002
%RSD	2.099	2.132	1.611	0.979	0.000	4.549	0.821

STD3 10/25/2016 01:16:50 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:17:12	142849.570	80858.167	29260.663	┬11611699.000	┬3517853.200	┬32551844.000	┬11510114.000	1220177.800	145088.790	23561.643	┬2302284.800	66863
2	13:17:34	138351.860	77760.981	28444.252	┬11506525.000	┬3463710.500	┬31670477.000	┬11067675.000	1172983.600	139118.200	23136.047	┬2263184.400	65838
3	13:17:56	138583.780	78102.573	29040.278	┬11435807.000	┬3485432.300	┬31715798.000	┬11069694.000	1187209.800	141467.860	22420.070	┬2260758.800	65878
x		139928.400	78907.240	28915.064	┬11518011.000	┬3488998.700	┬31979373.000	┬11215828.000	1193457.100	141891.620	23039.253	┬2275409.300	66193
σ		2532.459	1698.163	422.363	┬88506.826	┬27246.972	┬496292.010	┬254861.330	24209.377	3007.764	576.909	┬23306.389	580
%RSD		1.810	2.152	1.461	┬0.768	┬0.781	┬1.552	┬2.272	2.029	2.120	2.504	┬1.024	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:17:12	84121.760	┬3415765.800	┬70548477.000	1020977.500	546799.940	679010.530	540132.740	71825.434	5751.992	8335.084	494.507	7186
2	13:17:34	81930.886	┬3349056.700	┬68293713.000	994204.450	534417.870	661444.900	534392.070	71662.736	5654.959	8114.975	460.006	6851
3	13:17:56	82599.173	┬3354718.000	┬68846844.000	997301.510	532368.840	658517.320	530603.870	71391.576	5550.924	8208.021	478.507	6701
x		82883.940	┬3373180.200	┬69229678.000	1004161.100	537862.220	666324.250	535042.890	71626.582	5652.625	8219.360	477.674	6913
σ		1122.854	┬36988.722	┬1175121.800	14645.470	7807.805	11083.723	4797.657	219.177	100.554	110.492	17.266	248
%RSD		1.355	┬1.097	┬1.697	1.458	1.452	1.663	0.897	0.306	1.779	1.344	3.615	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	13:17:12	744912.980	190947.600	1495062.900	241689.800	7976.908	122463.270	820448.990	743972.330	500498.800	394761.380	500333.960	140650
2	13:17:34	732907.930	188469.630	1543181.100	241147.030	7841.844	122075.440	828072.480	750239.070	496610.040	392048.460	497686.440	141185
3	13:17:56	724476.020	187023.480	1569776.100	244135.060	8352.092	123505.920	819619.640	759363.690	502301.850	395885.060	496666.690	140187
x		734098.970	188813.570	1536006.700	242323.960	8056.948	122681.540	822713.700	751191.700	499803.560	394231.630	498229.030	140674
σ		10270.408	1984.540	37869.766	1591.760	264.373	739.798	4659.324	7739.773	2908.899	1972.400	1892.890	499
%RSD		1.399	1.051	2.465	0.657	3.281	0.603	0.566	1.030	0.582	0.500	0.380	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:17:12	30267.459	1411974.600	┬7311541.600	110646.060	0.000	178485.620	106106.690
2	13:17:34	30658.172	1418723.200	┬7225659.200	109216.680	0.000	193339.940	105648.790
3	13:17:56	31093.978	1435606.000	┬7337458.100	112458.130	0.000	204638.640	106197.260
x		30673.203	1422101.300	┬7291552.900	110773.620	0.000	192154.740	105984.250
σ		413.465	12172.496	┬58518.411	1624.485	0.000	13116.732	294.021
%RSD		1.348	0.856	┬0.803	1.466	0.000	6.826	0.277

STD4 10/25/2016 01:22:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	13:22:55	153301.820	246814.080	86689.869	┬35838292.000	┬10812637.000	┬100476710.000	┬36385368.000	┬4052157.100	146269.030	74124.467	┬7435016.400
2	13:23:17	144685.300	241816.620	90208.468	┬36398897.000	┬11095730.000	┬100999080.000	┬36150085.000	┬4071541.000	148639.870	74059.178	┬7396042.800
3	13:23:39	144493.650	238420.720	87654.897	┬35809308.000	┬11061111.000	┬101563080.000	┬36576031.000	┬4066729.600	149184.710	74445.895	┬7327490.500
x		147493.590	242350.480	88184.411	┬36015499.000	┬10989826.000	┬101012960.000	┬36370495.000	┬4063475.900	148031.200	74209.847	┬7386183.200
σ		5030.985	4222.070	1818.083	┬332348.490	┬154423.700	┬543315.580	┬213362.000	┬10093.231	1550.208	207.014	┬54436.769
%RSD		3.411	1.742	2.062	┬0.923	┬1.405	┬0.538	┬0.587	┬0.248	1.047	0.279	┬0.737

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	13:22:55	255016.180	┬10851639.000	┬219923360.000	┬3395533.300	1633615.600	┬2174813.700	1600667.200	215052.530	16373.038	23036.910	510.508
2	13:23:17	257803.580	┬11054320.000	┬221537530.000	┬3439998.500	1690947.800	┬2223676.600	1601930.300	215031.260	16367.032	22995.853	525.508

3	13:23:39	253320.620	┬10807753.000	┬217531210.000	┬3421499.800	1645895.100	1996239.200	1578620.800	214096.340	16412.077	22998.357	478.00
x		255380.130	┬10904571.000	┬219664030.000	┬3419010.500	1656819.500	┬2131576.500	1593739.400	214726.710	16384.049	23010.373	504.67
σ		2263.530	┬131529.830	┬2015711.400	┬22336.904	30186.918	┬119724.830	13108.332	546.021	24.458	23.015	24.28
%RSD		0.886	┬1.206	┬0.918	┬0.653	1.822	┬5.617	0.822	0.254	0.149	0.100	4.81

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	13:22:55	┬2466733.200	190795.880	┬5151057.300	737049.710	23837.034	370053.070	854108.270	2380410.300	1538151.600	1217260.600	1568986.70
2	13:23:17	┬2507800.700	189116.900	┬5321267.800	735999.800	24137.466	374802.450	855244.370	2383090.900	1545502.100	1230367.000	┬1749321.10
3	13:23:39	┬2498290.400	189673.170	┬5302664.100	734845.510	23656.777	368555.430	848944.210	2387815.900	1548436.700	1232085.200	┬1753721.80
x		┬2490941.400	189861.980	┬5258329.700	735965.010	23877.092	371136.980	852765.620	2383772.400	1544030.100	1226570.900	┬1690676.50
σ		┬21497.465	855.264	┬93365.163	1102.512	242.835	3261.511	3357.833	3749.562	5298.199	8108.614	┬105409.47
%RSD		┬0.863	0.450	┬1.776	0.150	1.017	0.879	0.394	0.157	0.343	0.661	┬6.23

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:22:55	94200.462	┬4894271.700	┬22507995.000	107686.770	0.000	656302.480	335763.380
2	13:23:17	96845.557	┬4934104.500	┬22665355.000	110112.550	0.000	686961.610	339201.970
3	13:23:39	98595.774	┬4965299.300	┬22745825.000	108391.320	0.000	697151.920	333967.840
x		96547.264	┬4931225.200	┬22639725.000	108730.210	0.000	680138.670	336311.070
σ		2212.787	┬35601.212	┬120968.960	1247.890	0.000	21262.259	2659.695
%RSD		2.292	┬0.722	┬0.534	1.148	0.000	3.126	0.791

STD5 10/25/2016 01:28:16 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	13:28:38	144967.740	378560.970	137570.440	T 57440046.000	TM 18020048.000	TM 166324470.000	TM 60127391.000	TM 6731730.700	146319.470	123964.310	TM
2	13:29:00	148801.300	382701.440	143575.770	TM 59223856.000	TM 18244344.000	TM 166080870.000	TM 59879892.000	TM 6828788.400	147469.540	124825.700	TM
3	13:29:22	143595.940	377589.300	141084.630	T 57726708.000	T 18279675.000	TM 165712420.000	TM 60794299.000	TM 6911100.500	150698.230	125576.310	TM
x		145788.330	379617.240	140743.610	TM 58130204.000	TM 18181356.000	TM 166039250.000	TM 60267194.000	TM 6823873.200	148162.420	124788.770	TM
σ		2697.957	2714.821	3017.155	TM 957914.590	TM 140808.900	TM 308142.010	TM 472963.060	TM 89785.834	2270.118	806.634	
%RSD		1.851	0.715	2.144	TM 1.648	TM 0.774	TM 0.186	TM 0.785	TM 1.316	1.532	0.646	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	
1	13:28:38	426913.510	TM 18076339.000	TM 361160400.000	TM 5614358.600	TM 2923303.500	TM 3596504.000	TM 2767072.100	345108.380	25596.641	36095.043	
2	13:29:00	419488.510	TM 18059711.000	TM 365012080.000	TM 5674570.200	TM 2917709.400	TM 3560511.900	TM 2785583.600	347531.970	25754.884	36278.441	
3	13:29:22	428339.410	TM 18160388.000	T 364395690.000	TM 5657031.600	TM 2927515.500	TM 3591746.500	TM 2779678.100	349055.310	25707.811	35973.280	
x		424913.810	TM 18098813.000	TM 363522730.000	TM 5648653.500	TM 2922842.800	TM 3582920.800	TM 2777444.600	347231.890	25686.445	36115.588	
σ		4752.232	TM 53970.280	TM 2068915.700	TM 30967.791	TM 4919.237	TM 19551.935	TM 9455.702	1990.502	81.257	153.614	
%RSD		1.118	TM 0.298	TM 0.569	TM 0.548	TM 0.168	TM 0.546	TM 0.340	0.573	0.316	0.425	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	
1	13:28:38	TM 4195655.400	188914.630	TM 8713031.500	1202161.600	39191.024	603890.850	896752.950	T 4362627.500	2566808.100	M 2037140.900	
2	13:29:00	TM 4160531.900	185294.330	TM 8905958.200	1219146.200	39842.566	610484.660	890258.290	T 4462635.200	M 2585498.600	M 2061379.800	
3	13:29:22	TM 4153096.500	187741.480	TM 8920147.800	1205033.200	40223.479	607897.630	892250.710	T 4431610.200	TM 2844642.200	M 2068990.400	
x		TM 4169761.300	187316.810	TM 8846379.100	1208780.400	39752.356	607424.380	893087.320	T 4418957.600	TM 2665649.600	M 2055837.000	
σ		TM 22731.087	1847.135	TM 115700.210	9091.215	522.106	3322.284	3327.177	T 51190.343	TM 155293.570	M 16632.479	
%RSD		TM 0.545	0.986	TM 1.308	0.752	1.313	0.547	0.373	T 1.158	TM 5.826	M 0.809	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:28:38	M 190462.090	TM 8210985.700	TM 37416875.000	109246.880	0.000	M 1347328.100	M 676475.500
2	13:29:00	M 195201.450	TM 8349080.400	TM 37672260.000	110253.470	0.000	M 1399685.100	682675.790
3	13:29:22	M 198753.060	TM 8373043.300	TM 38067651.000	111833.950	0.000	M 1413588.200	692478.000
x		M 194805.530	TM 8311036.500	TM 37718929.000	110444.770	0.000	M 1386867.100	M 683876.430
σ		M 4159.639	TM 87470.997	TM 327888.360	1304.102	0.000	M 34940.296	M 8068.527
%RSD		M 2.135	TM 1.052	TM 0.869	1.181	0.000	M 2.519	M 1.180

ICV 10/25/2016 01:34:00 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:34:22	135710.280	38662.291	16257.926	T 5915916.100	T 1689898.700	T 15811372.000	T 5454280.800	569020.500	136385.760	11148.728	1057428.200	322617.530
2	13:34:43	136194.200	38717.419	16077.751	T 5803403.800	T 1637178.300	T 15634429.000	T 5307725.100	556219.060	138936.700	11298.829	1035562.300	314076.700
3	13:35:05	133502.560	38208.747	16112.785	T 5802914.600	T 1655926.200	T 15522775.000	T 5389369.200	568317.100	134641.660	11398.897	1047100.800	317684.110
x		135135.680	38529.486	16149.487	T 5840744.900	T 1661001.100	T 15656192.000	T 5383791.700	564518.880	136654.710	11282.151	1046697.100	318126.120
σ		1434.874	279.132	95.530	T 65100.693	T 26724.091	T 145524.460	T 73436.874	7196.460	2160.111	125.916	10938.539	4287.536
%RSD		1.062	0.724	0.592	T 1.115	T 1.609	T 0.930	T 1.364	1.275	1.581	1.116	1.045	1.348

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:34:22	41616.894	1521076.100	T 33651219.000	489849.320	260078.510	324631.070	259997.260	35176.082	2990.268	4319.560	469.507	4265.546
2	13:34:43	39887.674	1496176.500	T 32753649.000	486637.250	264761.390	325074.590	260606.670	34964.637	2971.265	4206.031	436.506	4465.598
3	13:35:05	41341.209	1505568.400	T 33438282.000	490137.610	267987.330	330943.410	260169.930	35420.599	2884.249	4255.043	478.007	4470.600
x		40948.592	1507607.000	T 33281050.000	488874.720	264275.740	326883.020	260257.950	35187.106	2948.594	4260.211	461.340	4400.581
σ		929.065	12574.344	T 468987.380	1943.066	3976.712	3523.383	314.095	228.180	56.528	56.941	21.923	116.971

%RSD		2.269	0.834	T 1.409	0.397	1.505	1.078	0.121	0.648	1.917	1.337	4.752	2.658
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:34:22	347153.190	183201.380	348597.880	114642.940	3920.461	59390.629	795114.340	367579.220	244743.890	193479.550	240959.340	135014.660
2	13:34:43	347418.640	182554.340	354740.470	113474.990	3735.419	59059.456	785661.510	369485.690	243551.610	193338.930	238220.390	136819.290
3	13:35:05	345121.650	181260.330	361810.030	115992.230	3745.421	59340.451	791592.490	376648.370	246499.480	195098.260	244028.510	134913.850
x		346564.500	182338.680	355049.460	114703.380	3800.434	59263.512	790789.440	371237.760	244931.660	193972.250	241069.410	135582.600
σ		1256.569	988.332	6611.489	1259.708	104.067	178.490	4777.307	4781.700	1482.876	977.685	2905.627	1072.189
%RSD		0.363	0.542	1.862	1.098	2.738	0.301	0.604	1.288	0.605	0.504	1.205	0.791

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:34:22	31740.194	681743.780	T 3557030.400	108914.710	0.000	157223.090	99747.597
2	13:34:43	33814.267	689722.190	T 3487929.300	106489.110	0.000	169851.090	100627.860
3	13:35:05	34064.777	701691.600	T 3553851.700	108743.600	0.000	180709.390	101895.530
x		33206.413	691052.520	T 3532937.100	108049.140	0.000	169261.190	100757.000
σ		1275.945	10040.230	T 39010.304	1353.731	0.000	11754.258	1079.774
%RSD		3.842	1.453	T 1.104	1.253	0.000	6.944	1.072

ICVL 10/25/2016 01:39:44 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:40:06	144372.610	142.501	6951.449	726704.980	22525.211	56440.404	552115.960	19010.836	139612.310	30.000	18109.834	7701.779
2	13:40:28	138180.450	155.001	6566.293	727863.940	22825.620	56380.201	541237.730	19561.473	135831.260	30.000	17584.271	7876.861
3	13:40:49	138553.530	192.501	6741.363	723447.770	22224.808	60359.099	548303.130	19841.804	137686.390	10.000	17779.478	7796.823
x		140368.860	163.334	6753.035	726005.560	22525.213	57726.568	547218.940	19471.371	137709.980	23.333	17824.528	7791.821
σ		3472.359	26.021	192.843	2289.659	300.406	2280.037	5519.559	422.748	1890.636	11.547	265.661	87.648
%RSD		2.474	15.931	2.856	0.315	1.334	3.950	1.009	2.171	1.373	49.487	1.490	1.125

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:40:06	4140.514	5475.899	588075.110	2280.156	985.029	3035.276	9122.496	1561.073	380.004	617.011	465.507	2615.205
2	13:40:28	3965.472	5550.924	598273.610	2520.191	970.028	3015.273	8957.406	1615.078	419.005	620.512	427.505	2525.191
3	13:40:49	3740.420	6306.193	608011.680	2430.177	960.028	2965.264	9227.554	1635.080	391.005	629.012	459.506	2605.204
x		3948.802	5777.672	598120.130	2410.175	971.695	3005.271	9102.485	1603.744	396.671	622.178	450.839	2581.867
σ		200.568	459.247	9969.173	121.261	12.584	36.062	136.181	38.283	20.109	6.171	20.429	49.336
%RSD		5.079	7.949	1.667	5.031	1.295	1.200	1.496	2.387	5.069	0.992	4.531	1.911

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:40:06	17889.596	190017.050	14000.878	2505.188	35.000	645.012	806722.700	2495.187	4665.653	3782.429	3915.460	136930.200
2	13:40:28	17924.634	187761.710	14186.035	2615.205	15.000	635.012	805107.330	2970.265	5300.843	3992.978	3865.448	137414.150
3	13:40:49	17474.156	187549.340	14326.155	2510.189	50.000	555.009	800650.130	3290.325	5005.752	3971.973	3920.461	136768.880
x		17762.795	188442.700	14171.023	2543.528	33.333	611.678	804160.050	2918.592	4990.749	3915.794	3900.456	137037.740
σ		250.582	1367.559	163.157	62.125	17.559	49.331	3145.158	400.080	317.861	115.973	30.421	335.812
%RSD		1.411	0.726	1.151	2.442	52.678	8.065	0.391	13.708	6.369	2.962	0.780	0.245

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:40:06	2820.239	14661.446	6941.445	105955.730	0.000	9142.507	10403.246
2	13:40:28	2415.175	15241.966	7331.612	110666.190	0.000	8437.135	10683.423
3	13:40:49	3040.277	15402.113	7511.692	108522.170	0.000	9152.512	10813.507
x		2758.564	15101.842	7261.583	108381.360	0.000	8910.718	10633.392
σ		317.082	389.709	291.502	2358.386	0.000	410.165	209.657
%RSD		11.494	2.581	4.014	2.176	0.000	4.603	1.972

ICBIS 10/25/2016 01:45:28 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:45:49	150476.240	5.000	1135.039	184879.760	310.003	2735.224	43306.190	610.011	140499.720	25.000	13360.353	1660.083
2	13:46:11	148014.340	7.500	1185.042	186548.200	460.006	2430.177	42855.026	460.006	145754.560	15.000	13560.514	1695.086
3	13:46:33	145976.490	17.500	1050.033	185375.220	410.005	2470.183	41942.709	610.011	144534.000	35.000	13445.421	1670.084
x		148155.690	10.000	1123.371	185601.060	393.338	2545.195	42701.308	560.010	143596.090	25.000	13455.429	1675.084
σ		2253.204	6.614	68.257	856.839	76.378	165.782	694.616	86.605	2750.105	10.000	100.455	18.030
%RSD		1.521	66.144	6.076	0.462	19.418	6.514	1.627	15.465	1.915	40.000	0.747	1.076

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:45:49	4480.602	640.012	181462.510	100.000	35.000	190.001	615.011	1253.047	430.006	476.007	473.507	2665.213
2	13:46:11	4715.667	710.015	181978.090	70.000	55.000	295.003	495.007	1245.046	420.005	482.507	497.507	2465.182
3	13:46:33	4840.703	605.011	181609.090	60.000	30.000	185.001	500.007	1278.049	442.006	508.008	476.507	2425.176
x		4678.991	651.679	181683.230	76.667	40.000	223.335	536.675	1258.714	430.672	488.841	482.507	2518.524
σ		182.830	53.465	265.663	20.817	13.229	62.116	67.887	17.216	11.015	16.914	13.077	128.602
%RSD		3.907	8.204	0.146	27.152	33.072	27.813	12.650	1.368	2.558	3.460	2.710	5.106

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:45:49	75.000	195348.160	1060.034	30.000	0.000	5.000	821225.880	2205.146	515.008	436.506	45.000	142234.340
2	13:46:11	55.000	196390.300	1050.033	25.000	0.000	10.000	829059.790	2585.200	630.012	497.007	15.000	141810.750
3	13:46:33	70.000	192485.130	1180.042	15.000	0.000	10.000	832116.620	2470.183	600.011	497.007	55.000	136063.140
x		66.667	194741.200	1096.703	23.333	0.000	8.333	827467.430	2420.177	581.677	476.840	38.333	140036.080
σ		10.408	2022.097	72.347	7.638	0.000	2.887	5617.270	194.900	59.654	34.931	20.817	3447.179
%RSD		15.613	1.038	6.597	32.733	0.000	34.641	0.679	8.053	10.255	7.325	54.304	2.462

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:45:49	200.001	1075.035	750.017	110515.200	0.000	13400.385	35.000
2	13:46:11	230.002	895.024	705.015	109417.990	0.000	13220.241	25.000
3	13:46:33	155.001	1025.032	565.010	113092.400	0.000	11919.261	60.000
x		195.001	998.363	673.347	111008.530	0.000	12846.629	40.000
σ		37.750	92.921	96.483	1886.226	0.000	808.160	18.028
%RSD		19.359	9.307	14.329	1.699	0.000	6.291	45.069

ICSA 10/25/2016 01:51:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:51:32	155370.840	10.000	1000.030	TM 124748130.000	T 12813654.000	T 118426510.000	TM 126507270.000	T 4720449.600	163427.350	266193.930	5896.043	4
2	13:51:54	150809.230	15.000	1045.033	TM 126481240.000	T 13053304.000	T 120478080.000	TM 126918190.000	T 4798158.100	165780.410	265518.280	5570.931	4
3	13:52:16	149699.290	20.000	1090.036	TM 126812390.000	T 13049878.000	T 120580040.000	TM 129269650.000	T 4841114.000	169295.480	270604.110	5720.982	4
x		151959.790	15.000	1045.033	TM 126013920.000	T 12972278.000	T 119828210.000	TM 127565030.000	T 4786573.900	166167.750	267438.780	5729.318	4
σ		3005.739	5.000	45.003	TM 1108643.700	T 137383.650	T 1214978.700	TM 1490469.600	T 61160.600	2953.182	2761.996	162.716	
%RSD		1.978	33.333	4.306	TM 0.880	T 1.059	T 1.014	TM 1.168	T 1.278	1.777	1.033	2.840	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:51:32	2275.155	1180.042	T 251113100.000	180.001	265.002	840.021	1540.071	1096.036	354.004	561.509	622.012	2
2	13:51:54	1875.105	1270.048	T 257950080.000	175.001	240.002	800.019	1475.065	1067.034	378.004	543.509	589.510	2
3	13:52:16	2425.176	1170.041	T 256535560.000	240.002	275.002	905.025	1615.078	1138.039	352.004	532.509	615.511	2
x		2191.812	1206.710	T 255199580.000	198.335	260.002	848.355	1543.405	1100.370	361.337	545.842	609.011	2

σ		284.348	55.080	T 3608973.500	36.171	18.028	52.996	70.066	35.700	14.469	14.641	17.198	
%RSD		12.973	4.564	T 1.414	18.238	6.934	6.247	4.540	3.244	4.004	2.682	2.824	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	13:51:32	2855.245	208809.900	T 2811519.400	280.002	315.003	530.008	888750.950	2200.145	590.010	426.005	105.000	153
2	13:51:54	2980.266	207402.490	T 2936986.300	260.002	405.005	485.007	910541.200	2485.185	770.018	532.008	125.000	156
3	13:52:16	3030.276	212698.620	T 2921117.200	265.002	380.004	615.011	926601.040	2595.202	635.012	528.508	70.000	159
x		2955.262	209637.000	T 2889874.300	268.336	366.671	543.342	908631.060	2426.844	665.013	495.507	100.000	156
σ		90.155	2743.228	T 68319.692	10.408	46.459	66.020	18997.203	203.888	93.679	60.216	27.839	27
%RSD		3.051	1.309	T 2.364	3.879	12.670	12.151	2.091	8.401	14.087	12.152	27.839	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:51:32	515.008	875.023	1975.117	113897.860	0.000	15271.994	55.000
2	13:51:54	635.012	995.030	1830.101	119567.360	0.000	14301.133	40.000
3	13:52:16	605.011	940.027	1915.110	118660.910	0.000	12354.577	35.000
x		585.010	936.693	1906.776	117375.380	0.000	13975.901	43.333
σ		62.452	60.073	72.867	3045.532	0.000	1485.652	10.408
%RSD		10.675	6.413	3.821	2.595	0.000	10.630	24.019

ICSAB 10/25/2016 01:56:53 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:57:14	141175.390	3062.781	47768.357	TM 118635190.000	T 11984673.000	T 109953080.000	TM 116978990.000	T 4479501.600	153120.160	253330.770	51820.436	9
2	13:57:36	141286.330	3097.788	45151.076	TM 118866540.000	T 12128773.000	T 110500320.000	TM 120042120.000	T 4558248.400	157006.060	257646.170	51128.303	9
3	13:57:58	139763.570	3017.773	47106.477	TM 121285350.000	T 12299250.000	T 112061580.000	TM 120841450.000	T 4561398.300	158187.150	257036.870	53310.123	9
x		140741.760	3059.448	46675.303	TM 119595690.000	T 12137565.000	T 110838330.000	TM 119287520.000	T 4533049.400	156104.460	256004.610	52086.287	9
σ		848.955	40.111	1360.872	TM 1467846.500	T 157472.770	T 1094134.200	TM 2038801.600	T 46400.541	2651.089	2335.562	1114.940	
%RSD		0.603	1.311	2.916	TM 1.227	T 1.297	T 0.987	TM 1.709	T 1.024	1.698	0.912	2.141	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:57:14	13055.111	67742.392	T 238590910.000	52251.779	10703.436	27708.013	21729.155	16851.515	3469.361	5045.764	563.510	
2	13:57:36	13270.281	69479.521	T 245368660.000	54303.322	11564.010	28073.624	22219.802	16931.596	3567.382	5096.279	581.010	
3	13:57:58	13030.092	69454.417	T 247877510.000	54152.833	10923.579	27758.096	22680.422	17040.707	3661.402	5199.311	598.011	
x		13118.494	68892.110	T 243945690.000	53569.311	11063.675	27846.578	22209.793	16941.273	3566.048	5113.784	580.843	
σ		132.045	995.764	T 4804046.200	1143.495	447.065	198.216	475.712	94.967	96.027	78.256	17.251	
%RSD		1.007	1.445	T 1.969	2.135	4.041	0.712	2.142	0.561	2.693	1.530	2.970	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	13:57:14	2745.226	202310.480	T 2756462.000	61633.751	1280.049	15051.794	867693.740	1610.078	98786.900	79481.569	105523.000	15
2	13:57:36	2750.227	200144.560	T 2797071.400	62923.557	1360.055	15652.346	891027.820	1940.113	103228.700	82063.034	107661.610	15
3	13:57:58	2905.253	207392.370	T 2887850.300	62677.633	1375.057	16603.266	909781.340	2035.124	105809.810	84118.745	111491.670	15
x		2800.235	203282.470	T 2813794.600	62411.647	1338.387	15769.135	889500.970	1861.772	102608.470	81887.782	108225.430	15
σ		90.982	3720.383	T 67271.597	684.808	51.076	782.302	21085.306	223.090	3552.298	2323.550	3024.016	
%RSD		3.249	1.830	T 2.391	1.097	3.816	4.961	2.370	11.983	3.462	2.837	2.794	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:57:14	31705.128	184869.650	133936.010	116384.950	0.000	203955.340	123495.850
2	13:57:36	32346.358	191058.860	138256.070	118429.280	0.000	218376.340	126593.960
3	13:57:58	33147.931	193208.430	143041.200	119970.240	0.000	231222.870	129450.780
x		32399.806	189712.310	138411.100	118261.490	0.000	217851.520	126513.530
σ		722.885	4329.402	4554.574	1798.523	0.000	13641.337	2978.281
%RSD		2.231	2.282	3.291	1.521	0.000	6.262	2.354

CCV 10/25/2016 02:02:37 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:02:58	128362.410	71435.263	25529.538	T 10368530.000	T 3116162.900	T 28641630.000	T 9986831.300	T 1115436.100	129440.700	20302.358	T 1996451.500	585346
2	14:03:20	123999.570	71169.128	25689.784	T 10205081.000	T 3071620.400	T 27950644.000	T 9825732.900	1043718.200	128755.430	20247.291	T 1988251.300	578043
3	14:03:42	122458.230	68395.049	25329.232	T 10189061.000	T 3007780.500	T 27719420.000	T 9755209.600	1040304.400	125641.800	20582.702	T 1989989.100	572755
x		124940.070	70333.146	25516.185	T 10254224.000	T 3065187.900	T 28103898.000	T 9855924.600	T 1066486.300	127945.980	20377.450	T 1991563.900	578714
σ		3062.391	1683.708	180.646	T 99315.465	T 54476.758	T 479825.750	T 118725.730	T 42426.201	2024.680	179.873	T 4320.997	6322
%RSD		2.451	2.394	0.708	T 0.969	T 1.777	T 1.707	T 1.205	T 3.978	1.582	0.883	T 0.217	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:02:58	73396.255	T 2973822.600	T 61559950.000	900939.950	487172.550	596263.470	483132.470	65798.628	5193.809	7679.269	441.506	6281
2	14:03:20	72964.365	T 3007177.200	T 61879606.000	881390.090	471331.680	586350.930	478223.900	64683.275	5147.795	7512.193	446.506	6256
3	14:03:42	72386.855	T 2957551.200	T 60923742.000	881569.200	467017.760	582545.930	474864.880	64034.778	5150.796	7430.656	439.506	6116
x		72915.825	T 2979517.000	T 61454433.000	887966.410	475174.000	588386.770	478740.420	64838.893	5164.133	7540.706	442.506	6217
σ		506.448	T 25298.338	T 486589.300	11235.765	10612.559	7081.753	4157.923	892.163	25.744	126.735	3.606	88

%RSD		0.695	T 0.849	T 0.792	1.265	2.233	1.204	0.869	1.376	0.499	1.681	0.815	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	14:02:58	674622.620	176681.550	1380700.400	224116.790	7536.704	114204.950	769974.250	691050.550	461348.090	369072.180	468308.220	134369
2	14:03:20	672572.200	177186.880	1406618.900	224010.370	7831.840	113037.030	785651.030	695760.560	465408.680	368228.830	468395.630	132454
3	14:03:42	661200.480	176014.550	1426414.900	221562.980	7216.562	113258.520	766719.220	700784.610	464730.130	368260.010	465871.340	134087
x		669465.100	176627.660	1404578.100	223230.050	7528.368	113500.160	774114.830	695865.240	463828.970	368520.340	467525.060	133636
σ		7230.423	588.017	22925.521	1444.701	307.724	620.325	10122.335	4867.876	2175.123	478.162	1432.835	1033
%RSD		1.080	0.333	1.632	0.647	4.088	0.547	1.308	0.700	0.469	0.130	0.306	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:02:58	27938.397	1349969.500	T 7033705.400	108461.770	0.000	161089.750	101306.960
2	14:03:20	28654.611	1362787.300	T 7085252.000	106942.000	0.000	175403.160	103440.000
3	14:03:42	29901.799	1359873.100	T 7036340.000	109770.300	0.000	187023.480	103948.150
x		28831.603	1357543.300	T 7051765.800	108391.360	0.000	174505.460	102898.370
σ		993.595	6718.978	T 29029.802	1415.464	0.000	12990.147	1401.425
%RSD		3.446	0.495	T 0.412	1.306	0.000	7.444	1.362

CCB 10/25/2016 02:08:20 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:08:42	140338.370	17.500	895.024	203272.070	3670.404	30853.532	62135.610	1620.079	130559.380	135.001	11043.658	1500.068
2	14:09:04	133734.400	27.500	940.027	194599.470	3600.389	29526.131	60369.135	1550.072	132837.270	50.000	11318.842	1580.075
3	14:09:25	138079.620	40.000	1050.033	194902.990	3000.270	25354.271	58211.480	1420.061	132161.930	75.000	11614.045	1370.056
x		137384.130	28.333	961.695	197591.510	3423.688	28577.978	60238.742	1530.070	131852.860	86.667	11325.515	1483.400
σ		3356.467	11.273	79.744	4921.849	368.358	2869.619	1965.312	101.498	1169.976	43.685	285.252	105.997
%RSD		2.443	39.788	8.292	2.491	10.759	10.041	3.263	6.634	0.887	50.405	2.519	7.146

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:08:42	3830.440	1235.046	233210.280	320.003	150.001	335.003	495.007	1034.032	325.003	442.506	436.006	2430.177
2	14:09:04	3565.381	1040.032	231968.120	305.003	155.001	280.002	500.007	1063.034	331.003	450.006	446.006	2570.198
3	14:09:25	3815.437	1160.040	216567.970	325.003	155.001	395.005	540.009	1006.030	342.004	470.507	457.006	2480.184
x		3737.086	1145.040	227248.790	316.670	153.334	336.670	511.675	1034.365	332.670	454.340	446.339	2493.520
σ		148.890	98.368	9270.689	10.409	2.887	57.519	24.665	28.503	8.622	14.495	10.504	70.957
%RSD		3.984	8.591	4.080	3.287	1.883	17.085	4.820	2.756	2.592	3.190	2.353	2.846

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:08:42	160.001	183929.330	4070.497	85.000	5.000	30.000	772727.380	3140.296	770.018	632.512	170.001	135377.590
2	14:09:04	225.002	182524.010	4285.551	65.000	15.000	55.000	792871.170	3665.403	935.026	755.517	235.002	136557.150
3	14:09:25	260.002	181361.420	3770.426	75.000	0.000	35.000	784540.510	3850.445	1050.033	770.018	155.001	137615.810
x		215.001	182604.920	4042.158	75.000	6.667	40.000	783379.690	3552.048	918.359	719.349	186.668	136516.850
σ		50.745	1285.866	258.729	10.000	7.638	13.229	10121.945	368.395	140.750	75.552	42.525	1119.653
%RSD		23.602	0.704	6.401	13.333	114.564	33.072	1.292	10.371	15.326	10.503	22.781	0.820

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:08:42	220.001	1685.085	2005.121	108461.770	0.000	11969.296	85.000
2	14:09:04	190.001	1460.064	1935.112	107938.390	0.000	10788.491	55.000
3	14:09:25	165.001	1695.086	2255.153	110001.820	0.000	10153.092	70.000
x		191.668	1613.412	2065.128	108800.660	0.000	10970.293	70.000
σ		27.538	132.897	168.247	1072.644	0.000	921.650	15.000
%RSD		14.368	8.237	8.147	0.986	0.000	8.401	21.429

MB 200-110491/1-A 10/25/2016 02:14:02 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:14:24	146359.830	0.000	925.026	270761.630	230.002	14261.099	55562.461	1420.061	136849.540	70.000	6461.252	2125.135
2	14:14:46	139642.560	0.000	975.029	266940.740	340.003	14015.891	55151.099	1360.055	136577.320	50.000	6656.329	2140.137
3	14:15:08	137232.670	0.000	965.028	279260.150	210.001	15241.966	56636.066	1220.045	135075.150	45.000	5931.055	2170.141
x		141078.350	0.000	955.027	272320.840	260.002	14506.319	55783.209	1333.387	136167.330	55.000	6349.545	2145.138
σ		4729.945	0.000	26.459	6305.975	70.001	648.780	766.700	102.640	955.603	13.229	375.319	22.916
%RSD		3.353	0.000	2.770	2.316	26.923	4.472	1.374	7.698	0.702	24.052	5.911	1.068

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:14:24	2350.166	880.023	180638.630	85.000	305.003	285.002	585.010	545.009	197.001	463.506	433.506	2230.149
2	14:14:46	2360.167	725.016	182655.440	135.001	235.002	250.002	510.008	569.010	176.001	459.506	462.506	2275.155
3	14:15:08	2390.171	825.020	179324.560	80.000	225.002	325.003	640.012	510.008	160.001	464.006	470.007	2665.213
x		2366.835	810.020	180872.880	100.000	255.002	286.669	578.343	541.342	177.668	462.340	455.340	2390.173
σ		20.820	78.585	1677.749	30.414	43.590	37.528	65.258	29.671	18.556	2.467	19.277	239.253
%RSD		0.880	9.702	0.928	30.414	17.094	13.091	11.284	5.481	10.444	0.533	4.234	10.010

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:14:24	345.004	189743.970	765.018	20.000	0.000	5.000	810016.840	24618.168	285.002	237.002	5.000	139450.970
2	14:14:46	305.003	195398.740	920.025	20.000	0.000	5.000	819598.650	24908.599	300.003	271.002	15.000	139612.310
3	14:15:08	400.005	185183.100	800.019	20.000	0.000	5.000	794527.310	24142.473	275.002	291.003	25.000	132343.370
x		350.004	190108.600	828.354	20.000	0.000	5.000	808047.600	24556.414	286.669	266.335	15.000	137135.550
σ		47.698	5117.575	81.296	0.000	0.000	0.000	12651.142	386.778	12.583	27.301	10.000	4150.935
%RSD		13.628	2.692	9.814	0.000	0.000	0.000	1.566	1.575	4.389	10.251	66.667	3.027

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:14:24	155.001	590.010	585.010	109609.240	0.000	3625.394	20.000
2	14:14:46	125.000	680.014	750.017	111290.330	0.000	3595.388	20.000
3	14:15:08	145.001	705.015	895.024	106499.180	0.000	3685.407	15.000
x		141.667	658.346	743.350	109132.920	0.000	3635.396	18.333
σ		15.275	60.486	155.114	2430.833	0.000	45.836	2.887
%RSD		10.783	9.188	20.867	2.227	0.000	1.261	15.746

LCS 200-110491/2-A 10/25/2016 02:19:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:20:06	141316.580	1200.043	44123.329	T 5840673.500	210288.320	468051.150	T 5366990.600	180350.540	136335.350	40.000	85192.176	67832.758
2	14:20:28	145492.280	1205.044	44785.090	T 5869871.700	213073.360	463640.400	T 5369522.800	184303.430	134974.340	45.000	84569.015	67817.697
3	14:20:50	138089.700	1110.037	43662.117	T 5777752.200	209650.360	467357.080	T 5314363.400	183302.480	134661.830	60.000	83378.037	67134.941
x		141632.860	1171.708	44190.179	T 5829432.500	211004.010	466349.540	T 5350292.300	182652.150	135323.840	48.333	84379.742	67595.132
σ		3711.409	53.467	564.464	T 47077.272	1820.273	2371.711	T 31141.087	2055.124	889.821	10.408	921.761	398.608
%RSD		2.620	4.563	1.277	T 0.808	0.863	0.509	T 0.582	1.125	0.658	21.535	1.092	0.590

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:20:06	9807.885	49724.064	T 4612943.000	19070.905	8747.295	26305.743	73310.881	6553.288	991.029	1632.080	459.506	3230.313
2	14:20:28	9482.697	48555.627	T 4563977.800	19741.685	8732.287	26661.308	74481.052	6498.267	994.030	1678.084	443.506	3315.330
3	14:20:50	9422.663	48334.987	T 4669255.100	19386.268	8307.070	25960.202	72848.862	6452.249	992.030	1652.582	474.007	3400.347
x		9571.082	48871.559	T 4615392.000	19399.619	8595.550	26309.084	73546.931	6501.268	992.363	1654.249	459.006	3315.330

σ		207.263	746.488	T 52681.353	335.589	249.944	350.565	841.309	50.587	1.528	23.048	15.257	85.017
%RSD		2.166	1.527	T 1.141	1.730	2.908	1.332	1.144	0.778	0.154	1.393	3.324	2.564
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:20:06	179860.280	190644.160	122926.660	24297.698	395.005	5816.015	806376.530	37146.349	36359.617	29452.501	38133.575	137948.540
2	14:20:28	177990.370	187620.130	123425.330	23997.264	315.003	5470.898	799087.760	33849.338	38223.782	29566.702	38218.770	136567.240
3	14:20:50	179112.290	191534.270	125490.670	23596.692	365.004	5440.888	798993.400	33819.278	37617.404	29616.290	39511.780	139188.790
x		178987.650	189932.850	123947.550	23963.885	358.337	5575.933	801485.900	34938.322	37400.268	29545.164	38621.375	137901.520
σ		941.168	2051.730	1359.436	351.693	40.415	208.457	4235.677	1912.267	950.862	83.992	772.289	1311.409
%RSD		0.526	1.080	1.097	1.468	11.279	3.739	0.528	5.473	2.542	0.284	2.000	0.951

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:20:06	54860.141	136078.260	53555.909	108039.040	0.000	166982.320	108154.790
2	14:20:28	54539.090	137368.780	53686.328	107928.330	0.000	178510.890	110349.100
3	14:20:50	54930.371	139617.350	54127.752	108824.120	5.000	183090.170	109191.520
x		54776.534	137688.130	53789.996	108263.830	1.667	176194.460	109231.800
σ		208.610	1791.027	299.686	488.376	2.887	8300.003	1097.711
%RSD		0.381	1.301	0.557	0.451	173.205	4.711	1.005

200-35680-A-8-A 10/25/2016 02:25:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	14:25:48	166689.410	507.508	3935.465	┬1405976.000	┬2197159.300	┬84266372.000	┬6448724.300	1178299.600	199800.470	13815.724	233331.960	170785.57
2	14:26:10	163285.970	490.007	4005.481	┬1405914.800	┬2253435.300	┬86663505.000	┬6619301.000	1191596.900	205033.450	13515.478	243216.780	175746.75
3	14:26:31	166113.710	537.509	4075.498	┬1370693.600	┬2298592.000	┬89773455.000	┬6790356.800	1236142.200	202836.820	14406.223	241451.390	180183.75
x		165363.030	511.675	4005.481	┬1394194.800	┬2249728.900	┬86901111.000	┬6619460.700	1202012.900	202556.910	13912.475	239333.370	175572.02
σ		1821.673	24.023	70.017	┬20352.672	┬50817.834	┬2761219.600	┬170816.310	30295.405	2627.695	453.186	5271.800	4701.52
%RSD		1.102	4.695	1.748	┬1.460	┬2.259	┬3.177	┬2.581	2.520	1.297	3.257	2.203	2.67

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	14:25:48	22520.205	┬10235658.000	┬283260830.000	132192.170	63636.256	┬2366748.900	576764.990	13439.416	1047.033	1604.077	577.010	5495.90
2	14:26:10	23741.898	┬10727940.000	┬295484990.000	132166.970	64243.579	┬2365921.500	578953.960	13608.554	1018.031	1569.074	622.012	5625.94
3	14:26:31	24157.495	┬10953682.000	┬298318630.000	132751.590	66883.935	┬2444685.900	599491.210	14097.960	1096.036	1551.572	593.511	5645.95
x		23473.199	┬10639093.000	┬292354820.000	132370.250	64921.257	┬2392452.100	585070.060	13715.310	1053.700	1574.908	597.511	5589.27
σ		851.075	┬367164.690	┬8002049.000	330.496	1726.641	┬45237.719	12536.953	342.005	39.428	26.734	22.766	81.47
%RSD		3.626	┬3.451	┬2.737	0.250	2.660	┬1.891	2.143	2.494	3.742	1.698	3.810	1.45

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159T
1	14:25:48	447569.940	553903.840	7756.805	13850.753	480.007	5110.783	942041.540	37096.238	1950.114	1487.066	351727.620	183454.14
2	14:26:10	452772.670	563476.840	9222.551	14461.271	360.004	5135.791	959104.620	38654.774	1930.112	1531.570	361202.050	187731.37
3	14:26:31	465007.720	591803.660	8917.385	14010.887	495.007	5435.886	977943.440	39647.101	1920.111	1638.081	370231.980	195277.33
x		455116.780	569728.110	8632.247	14107.637	445.006	5227.487	959696.530	38466.038	1933.446	1552.239	361053.880	188820.95
σ		8952.100	19708.068	773.357	316.549	73.995	180.912	17958.268	1285.862	15.277	77.600	9253.071	5986.43
%RSD		1.967	3.459	8.959	2.244	16.628	3.461	1.871	3.343	0.790	4.999	2.563	3.17

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:25:48	1050.033	5991.077	1425164.500	127898.870	0.000	215124.450	99309.995
2	14:26:10	1060.034	6511.272	1464189.300	129481.010	0.000	218497.910	101815.040
3	14:26:31	1205.044	6221.161	1494517.000	130448.510	0.000	215813.270	103912.930
x		1105.037	6241.170	1461290.300	129276.130	0.000	216478.550	101679.320
σ		86.753	260.674	34767.064	1287.112	0.000	1782.414	2304.467
%RSD		7.851	4.177	2.379	0.996	0.000	0.823	2.266

200-35680-A-8-A SD@5 10/25/2016 02:31:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:31:30	154018.380	87.500	1300.051	480909.540	452860.000	┬18561452.000	┬1450637.900	261231.330	180340.430	2740.225	58070.991	38729.948
2	14:31:52	154472.550	140.001	1255.047	467074.310	453548.340	┬18223874.000	┬1445026.100	262683.900	178551.320	3035.276	60599.971	38840.204
3	14:32:14	150435.880	95.000	1360.055	457935.900	446245.120	┬18099176.000	┬1410773.900	254346.060	173548.900	3260.319	58923.977	38845.216
x		152975.600	107.500	1305.051	468639.920	450884.490	┬18294834.000	┬1435479.300	259420.430	177480.220	3011.940	59198.313	38805.123
σ		2211.157	28.395	52.682	11566.564	4032.523	┬239167.740	┬21578.702	4454.146	3520.182	260.831	1286.616	65.151
%RSD		1.445	26.414	4.037	2.468	0.894	┬1.307	┬1.503	1.717	1.983	8.660	2.173	0.168

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:31:30	7956.899	┬2227056.300	┬62931698.000	29986.952	14140.996	486323.280	140958.570	4199.529	571.010	868.523	605.011	3565.381
2	14:31:52	7571.720	┬2257461.400	┬63819919.000	29926.844	14090.954	492330.850	142390.670	4186.526	592.011	827.521	583.010	3695.410
3	14:32:14	7666.763	┬2233153.100	┬62393240.000	29040.278	14596.389	488994.760	140802.260	4236.538	635.012	846.521	580.510	3545.377
x		7731.794	┬2239223.600	┬63048286.000	29651.358	14276.113	489216.300	141383.830	4207.531	599.344	847.522	589.510	3602.056
σ		200.655	┬16085.887	┬720449.430	530.064	278.493	3009.906	875.441	25.949	32.625	20.519	13.482	81.463

%RSD		2.595	┬0.718	┬1.143	1.788	1.951	0.615	0.619	0.617	5.444	2.421	2.287	2.262
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:31:30	97117.130	305524.930	1785.096	3200.307	90.000	1195.043	978197.730	8467.150	520.008	412.005	78263.324	169719.770
2	14:31:52	98062.642	303366.030	2025.123	3000.270	110.000	1205.044	964503.180	8717.279	520.008	441.006	78052.338	168335.840
3	14:32:14	96905.906	302459.780	2125.135	3115.291	80.000	1110.037	971026.060	8702.271	620.012	455.506	78263.324	169356.100
x		97361.893	303783.580	1978.451	3105.289	93.334	1170.041	971242.320	8628.900	553.343	436.172	78192.995	169137.230
σ		615.988	1574.659	174.758	100.393	15.275	52.205	6849.837	140.280	57.737	22.150	121.813	717.454
%RSD		0.633	0.518	8.833	3.233	16.366	4.462	0.705	1.626	10.434	5.078	0.156	0.424

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:31:30	310.003	1570.074	302693.970	123596.590	0.000	27883.305	20477.572
2	14:31:52	260.002	1600.077	311697.660	124553.680	0.000	30467.823	20853.037
3	14:32:14	245.002	1525.070	306339.680	124483.150	0.000	31514.767	20597.720
x		271.669	1565.074	306910.440	124211.140	0.000	29955.298	20642.777
σ		34.035	37.753	4528.898	533.382	0.000	1869.195	191.745
%RSD		12.528	2.412	1.476	0.429	0.000	6.240	0.929

200-35680-A-8-A PDS 10/25/2016 02:36:51 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**5**
1	14:37:13	158227.530	1732.590	50762.186	┬7849782.800	┬2462571.600	┬86677182.000	┬13174443.000	1457074.500	202684.990	17143.813	337911.140	249381.
2	14:37:35	159802.450	1880.106	51975.919	┬7912765.200	┬2533425.800	┬86775826.000	┬13449556.000	1472310.000	201713.310	19971.959	349256.460	255554.
3	14:37:57	159025.070	1850.103	52206.638	┬7846908.800	┬2546290.800	┬89074366.000	┬13556248.000	┬1556418.500	212121.330	14421.236	349481.090	259367.
x		159018.350	1820.933	51648.248	┬7869818.900	┬2514096.100	┬87509124.000	┬13393416.000	┬1495267.700	205506.540	17179.003	345549.560	254767.
σ		787.481	77.964	775.974	┬37220.318	┬45082.745	┬1356435.800	┬196996.090	┬53503.266	5749.139	2775.529	6616.022	5039.
%RSD		0.495	4.282	1.502	┬0.473	┬1.793	┬1.550	┬1.471	┬3.578	2.798	16.157	1.915	1.

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**8**
1	14:37:13	33263.160	┬10600955.000	┬297379440.000	156501.350	73391.233	┬2410532.500	670183.820	21363.683	2139.137	2987.768	614.511	6816.
2	14:37:35	34470.610	┬10897227.000	┬304029950.000	161029.170	75395.148	┬2502075.700	688216.840	21585.970	2294.158	2992.269	615.011	7101.
3	14:37:57	33678.994	┬11147772.000	┬306629490.000	160993.830	78278.395	┬2493686.800	691175.580	21954.450	2201.145	3074.284	640.012	7151.
x		33804.255	┬10881985.000	┬302679630.000	159508.120	75688.259	┬2468765.000	683192.080	21634.701	2211.480	3018.107	623.178	7023.
σ		613.393	┬273727.000	┬4770573.800	2604.000	2456.730	┬50604.982	11362.200	298.383	78.025	48.703	14.581	180.
%RSD		1.815	┬2.515	┬1.576	1.633	3.246	┬2.050	1.663	1.379	3.528	1.614	2.340	2.

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	14:37:13	657742.620	562835.720	150662.920	40253.552	930.026	11438.924	976915.720	37792.800	45211.239	35148.524	402753.210	189976.
2	14:37:35	668352.440	580806.780	152943.550	42012.886	805.019	11428.917	968780.890	39236.130	45908.140	35992.321	408577.420	192808.
3	14:37:57	672296.400	588903.600	157965.060	41366.271	785.018	11538.993	981737.000	40073.118	45998.388	36406.720	413363.290	193365.
x		666130.480	577515.370	153857.170	41210.903	840.021	11468.945	975811.210	39034.016	45705.922	35849.188	408231.310	192050.
σ		7527.016	13341.990	3735.821	889.898	78.585	60.870	6548.296	1153.516	430.778	641.194	5313.501	1817.
%RSD		1.130	2.310	2.428	2.159	9.355	0.531	0.671	2.955	0.943	1.789	1.302	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:37:13	28679.654	154906.550	1478138.600	127384.950	0.000	408054.850	216385.620
2	14:37:35	28950.121	158283.050	1517063.900	130438.440	0.000	424959.520	221877.120
3	14:37:57	29400.910	159852.930	1524498.600	129400.390	0.000	433695.270	225890.490
x		29010.228	157680.840	1506567.000	129074.590	0.000	422236.550	221384.410
σ		364.365	2527.579	24898.792	1552.593	0.000	13035.288	4771.552
%RSD		1.256	1.603	1.653	1.203	0.000	3.087	2.155

200-35680-A-8-B MS 10/25/2016 02:42:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	14:42:56	160388.030	1880.106	45466.933	┬8313743.200	┬2590413.000	┬91113337.000	┬13948146.000	1507409.100	209174.430	20317.376	363986.660	266402.
2	14:43:18	159963.990	1822.600	46409.525	┬8488901.700	┬2621605.700	┬91808871.000	┬14109792.000	┬1584767.400	211655.460	20017.013	365151.730	269913.
3	14:43:39	158449.630	1862.604	45817.892	┬8508224.400	┬2636991.900	┬92585098.000	┬14124985.000	┬1623915.800	216476.790	20522.628	368616.760	272077.
x		159600.550	1855.103	45898.117	┬8436956.400	┬2616336.900	┬91835769.000	┬14060975.000	┬1572030.800	212435.560	20285.672	365918.380	269464.
σ		1019.031	29.478	476.390	┬107142.270	┬23732.223	┬736248.820	┬98006.883	┬59288.436	3713.158	254.294	2408.380	2864.
%RSD		0.638	1.589	1.038	┬1.270	┬0.907	┬0.802	┬0.697	┬3.771	1.748	1.254	0.658	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:42:56	34159.971	┬10777645.000	┬306009040.000	161014.030	76264.088	┬2409199.400	666781.350	22591.301	2253.152	3175.302	636.012	6831.
2	14:43:18	35247.232	┬10956255.000	┬313703330.000	166012.710	79036.962	┬2435860.300	672972.900	22860.668	2230.149	3130.794	634.012	6981.
3	14:43:39	35131.989	┬11017580.000	┬313457560.000	165406.730	78509.478	┬2437469.100	678698.180	22750.517	2349.166	3231.313	635.512	7186.
x		34846.397	┬10917160.000	┬311056640.000	164144.490	77936.843	┬2427509.600	672817.480	22734.162	2277.489	3179.137	635.179	6999.
σ		597.248	┬124653.700	┬4373080.800	2727.938	1472.461	┬15877.479	5959.938	135.426	63.130	50.369	1.041	178.
%RSD		1.714	┬1.142	┬1.406	1.662	1.889	┬0.654	0.886	0.596	2.772	1.584	0.164	2.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	14:42:56	692535.310	588945.030	156713.320	42474.052	795.019	11443.928	985128.610	52793.482	8687.263	6893.926	411293.000	194639.
2	14:43:18	695406.220	586791.020	157359.370	44088.236	755.017	11739.133	986580.840	53937.135	8662.251	7090.008	425015.930	197553.
3	14:43:39	710341.710	598113.000	160872.670	42659.525	910.025	11989.311	1004654.000	53821.763	9202.540	7158.537	426595.530	195864.
x		699427.740	591283.010	158315.120	43073.938	820.020	11724.124	992121.140	53517.460	8850.685	7047.490	420968.150	196019.
σ		9560.149	6012.192	2238.334	883.290	80.471	273.001	10878.007	629.632	304.972	137.334	8416.066	1463.
%RSD		1.367	1.017	1.414	2.051	9.813	2.329	1.096	1.176	3.446	1.949	1.999	0.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:42:56	31174.128	163614.170	1735170.300	128352.330	0.000	427934.190	226792.620
2	14:43:18	32381.426	169972.320	1766537.900	130871.810	0.000	446219.450	235395.680
3	14:43:39	32917.475	170356.210	1802161.000	133149.750	0.000	456014.280	237647.290
x		32157.676	167980.900	1767956.400	130791.300	0.000	443389.310	233278.530
σ		892.952	3786.570	33517.879	2399.721	0.000	14252.370	5728.675
%RSD		2.777	2.254	1.896	1.835	0.000	3.214	2.456

200-35680-A-8-C MSD 10/25/2016 02:48:17 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	14:48:39	161377.520	1685.085	42574.308	┬8040167.100	┬2388711.300	┬84454325.000	┬13117812.000	1407547.600	208425.130	23236.186	342120.720	256041.73
2	14:49:00	156541.720	1732.590	44283.753	┬8292922.300	┬2414117.900	┬85751416.000	┬13381873.000	1427611.100	209609.850	20067.073	347668.780	256219.43
3	14:49:22	156511.440	1812.599	45702.576	┬8237369.400	┬2406198.600	┬85343317.000	┬13416193.000	1442265.800	210855.420	22134.689	352473.120	259611.32
x		158143.560	1743.425	44186.879	┬8190152.900	┬2403009.300	┬85183020.000	┬13305293.000	1425808.200	209630.130	21812.649	347420.870	257290.82
σ		2800.730	64.443	1566.382	┬132828.270	┬13000.130	┬663236.420	┬163267.140	17429.166	1215.268	1608.913	5180.648	2011.56
%RSD		1.771	3.696	3.545	┬1.622	┬0.541	┬0.779	┬1.227	1.222	0.580	7.376	1.491	0.78

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	14:48:39	33618.873	┬9270117.300	┬286247790.000	151858.690	71718.977	2163356.400	613352.110	21616.008	2188.144	2958.763	628.012	6911.43
2	14:49:00	33959.562	┬9382275.700	┬291723390.000	152080.700	72853.883	┬2385779.200	626253.840	21451.797	2123.135	3124.793	606.511	7201.55
3	14:49:22	33699.034	┬9404406.600	┬292213930.000	153579.350	74260.069	┬2409843.000	631262.580	21353.671	2143.138	3017.773	629.012	6961.45
x		33759.156	┬9352266.500	┬290061710.000	152506.250	72944.310	┬2319659.500	623622.840	21473.825	2151.472	3033.776	621.178	7024.81

σ		178.125	₸71998.734	₸3312037.900	935.940	1272.957	₸135896.160	9240.557	132.549	33.296	84.164	12.712	155.09
%RSD		0.528	₸0.770	₸1.142	0.614	1.745	₸5.858	1.482	0.617	1.548	2.774	2.046	2.20
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	14:48:39	656557.220	567510.290	154583.570	42088.075	860.022	10863.539	995551.390	47663.056	9567.746	7425.654	388142.620	191706.23
2	14:49:00	670537.630	577598.110	156768.840	43130.736	945.027	11048.661	991669.940	48194.581	9632.783	7590.228	401646.990	196592.66
3	14:49:22	662724.250	572982.840	154694.600	42809.910	800.019	11118.708	1003242.600	48545.597	9692.818	7560.715	402246.180	198120.60
x		663273.030	572697.080	155349.000	42676.240	868.356	11010.303	996821.320	48134.411	9631.115	7525.532	397345.260	195473.16
σ		7006.343	5049.978	1230.869	534.028	72.862	131.838	5889.942	444.337	62.553	87.747	7975.353	3350.51
%RSD		1.056	0.882	0.792	1.251	8.391	1.197	0.591	0.923	0.649	1.166	2.007	1.71

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:48:39	31414.578	159948.840	1388624.900	127798.100	0.000	404212.920	221299.510
2	14:49:00	32972.584	167350.990	1434393.000	130760.950	0.000	412599.710	224978.280
3	14:49:22	33097.831	167775.230	1449265.700	132303.050	0.000	422764.750	229225.560
x		32494.998	165025.020	1424094.500	130287.360	0.000	413192.460	225167.790
σ		937.764	4401.213	31604.923	2289.508	0.000	9290.110	3966.422
%RSD		2.886	2.667	2.219	1.757	0.000	2.248	1.762

200-35680-A-9-A 10/25/2016 02:54:01 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	14:54:22	164669.480	507.508	5255.829	T 1814750.300	T 2230194.400	T 85009501.000	T 7493194.500	T 1457457.100	213225.280	19576.490	252401.840	172048.
2	14:54:44	168396.440	497.507	5635.953	T 1828202.900	T 2244287.600	T 84914054.000	T 7462227.200	1421924.500	216284.320	17794.494	255792.950	176348.
3	14:55:06	165053.250	472.507	4975.743	T 1892347.200	T 2275577.300	T 87040113.000	T 7516565.400	T 1494874.800	213944.410	18084.806	259672.250	174948.
x		166039.730	492.507	5289.175	T 1845100.100	T 2250019.800	T 85654556.000	T 7490662.400	T 1458085.500	214484.670	18485.264	255955.680	174448.
σ		2049.979	18.028	331.366	T 41466.295	T 23228.102	T 1200876.000	T 27257.445	T 36479.226	1599.482	956.113	3637.939	2192.
%RSD		1.235	3.661	6.265	T 2.247	T 1.032	T 1.402	T 0.364	T 2.502	0.746	5.172	1.421	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:54:22	23316.298	TM 26572947.000	T 339802490.000	131920.030	63199.599	1359369.400	516578.430	11199.762	939.026	1251.047	673.014	6046.
2	14:54:44	23035.909	TM 27131799.000	T 350181120.000	136894.910	64163.270	1378195.200	527590.440	11064.672	887.024	1200.043	631.512	5976.
3	14:55:06	23476.523	TM 27384324.000	T 349125180.000	133603.360	63390.321	1395945.100	534242.380	11158.734	786.019	1270.048	658.013	6196.
x		23276.243	TM 27029690.000	T 346369600.000	134139.430	63584.397	1377836.600	526137.080	11141.056	870.690	1240.380	654.180	6072.
σ		223.021	TM 415214.380	T 5711737.100	2530.392	510.308	18290.492	8921.211	69.258	77.801	36.201	21.015	112.
%RSD		0.958	TM 1.536	T 1.649	1.886	0.803	1.327	1.696	0.622	8.936	2.919	3.212	1.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	14:54:22	516217.500	570034.270	6141.131	6506.270	155.001	2920.256	1008326.100	34205.064	1435.062	1327.553	438878.330	192889.
2	14:54:44	510706.560	577918.950	6701.347	6956.452	225.002	2985.267	1027250.900	35813.437	1710.088	1359.055	447092.380	193719.
3	14:55:06	522870.130	580144.300	6456.250	6576.297	250.002	3000.270	1019113.400	37366.842	1770.094	1363.056	443950.040	195702.
x		516598.060	576032.510	6432.909	6679.673	210.001	2968.598	1018230.100	35795.114	1638.415	1349.888	443306.920	194103.
σ		6090.707	5312.453	280.836	242.241	49.245	42.532	9493.286	1580.969	178.646	19.446	4144.616	1445.
%RSD		1.179	0.922	4.366	3.627	23.450	1.433	0.932	4.417	10.904	1.441	0.935	0.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:54:22	955.027	5956.064	1332823.600	130992.760	0.000	187008.310	77866.472
2	14:54:44	1095.036	6241.168	1374026.200	133190.070	0.000	189076.450	79222.841
3	14:55:06	1175.041	6456.250	1374790.500	132736.470	0.000	190967.830	78735.540
x		1075.035	6217.828	1360546.800	132306.430	0.000	189017.530	78608.284
σ		111.362	250.909	24012.009	1160.063	0.000	1980.417	687.081
%RSD		10.359	4.035	1.765	0.877	0.000	1.048	0.874

200-35680-A-10-A 10/25/2016 02:59:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	15:00:06	158893.820	392.505	4475.601	T 1611066.400	T 1794337.600	T 69557281.000	T 6803222.800	1106895.200	204709.510	22895.716	215747.430	144443.21
2	15:00:28	160388.030	397.505	4675.656	T 1624916.400	T 1810661.200	T 70438990.000	T 6845037.200	1152506.400	208587.140	21939.431	219739.070	145865.52
3	15:00:50	160539.480	400.005	4545.620	T 1627820.900	T 1800964.000	T 70974865.000	T 7002542.600	1138800.700	207048.130	20192.224	220205.160	147590.61
x		159940.450	396.671	4565.626	T 1621267.900	T 1801987.600	T 70323712.000	T 6883600.800	1132734.100	206781.590	21675.790	218563.890	145966.45
σ		909.559	3.819	101.517	T 8953.346	T 8209.808	T 715787.940	T 105106.940	23402.982	1952.510	1370.892	2450.233	1576.12
%RSD		0.569	0.963	2.224	T 0.552	T 0.456	T 1.018	T 1.527	2.066	0.944	6.325	1.121	1.08

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	15:00:06	19966.953	T 11441490.000	T 256985390.000	100527.260	50451.244	1088799.600	481707.090	9166.520	832.021	1135.039	651.013	6086.11
2	15:00:28	20412.492	T 11620536.000	T 259977240.000	104411.030	51198.518	1118113.100	486827.690	9261.573	773.018	1134.539	610.011	5260.83
3	15:00:50	20507.609	T 11810924.000	T 261075390.000	100185.210	49693.974	1104669.500	489298.490	9112.490	808.020	1062.034	655.513	5645.95
x		20295.685	T 11624317.000	T 259346010.000	101707.830	50447.912	1103860.700	485944.420	9180.194	804.353	1110.537	638.846	5664.29
σ		288.635	T 184746.060	T 2116804.900	2347.275	752.277	14673.466	3872.010	75.476	29.672	42.006	25.073	412.94

%RSD		1.422	┬1.589	┬0.816	2.308	1.491	1.329	0.797	0.822	3.689	3.782	3.925	7.29
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	15:00:06	409048.780	501431.210	7191.551	4760.680	225.002	2195.145	990842.860	38815.146	1820.099	1503.068	305351.800	186790.89
2	15:00:28	411513.340	507603.910	7041.487	5075.773	230.002	2045.126	1008591.400	40123.238	1855.103	1565.074	313113.840	186527.97
3	15:00:50	417002.270	504532.730	7506.690	4710.666	240.002	2125.135	1006808.300	40053.070	1980.118	1567.074	316048.450	190553.12
x		412521.460	504522.620	7246.576	4849.039	231.668	2121.802	1002080.900	39663.818	1885.107	1545.072	311504.700	187957.33
σ		4071.456	3086.360	237.433	197.943	7.638	75.065	9773.149	735.808	84.123	36.390	5526.898	2251.86
%RSD		0.987	0.612	3.276	4.082	3.297	3.538	0.975	1.855	4.462	2.355	1.774	1.19

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:00:06	980.029	5060.768	978361.960	128715.120	0.000	149189.750	66120.900
2	15:00:28	890.024	5255.829	1002080.800	128956.970	0.000	154578.530	69173.251
3	15:00:50	920.025	5195.810	1023739.400	129259.300	0.000	160039.710	67933.166
x		930.026	5170.802	1001394.100	128977.130	0.000	154602.660	67742.439
σ		45.828	99.906	22696.518	272.653	0.000	5425.019	1535.088
%RSD		4.928	1.932	2.266	0.211	0.000	3.509	2.266

200-35680-A-11-A 10/25/2016 03:05:28 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	15:05:50	165568.320	772.518	6331.202	┬1533225.000	┬3844228.700	┬127640600.000	┬15193408.000	┬2514568.600	234721.260	37757.721	363082.250	27469
2	15:06:12	166123.810	680.014	6536.281	┬1564441.000	┬4017226.700	┬131761980.000	┬15678961.000	┬2575073.900	241821.700	41105.628	376229.050	28268
3	15:06:34	164679.580	717.515	6636.321	┬1544415.000	┬4002131.400	┬131517920.000	┬15589652.000	┬2565658.900	239579.660	40674.572	373820.770	28361
x		165457.240	723.349	6501.268	┬1547360.300	┬3954528.900	┬130306830.000	┬15487341.000	┬2551767.200	238707.540	39845.974	371044.020	28033
σ		728.493	46.527	155.544	┬15815.074	┬95820.551	┬2312249.800	┬258440.150	┬32556.989	3629.667	1821.277	6999.454	490
%RSD		0.440	6.432	2.393	┬1.022	┬2.423	┬1.774	┬1.669	┬1.276	1.521	4.571	1.886	

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	15:05:50	35618.019	┬23212191.000	┬508634390.000	211599.760	100426.660	1145925.000	466056.410	18311.053	747.017	994.530	675.014	688
2	15:06:12	37306.707	┬23829201.000	┬518038600.000	217874.840	103515.470	1160846.400	470066.700	18726.515	773.018	1072.035	694.514	758
3	15:06:34	36775.528	┬23750991.000	┬517101780.000	219891.060	103062.680	1162977.600	472781.900	18574.344	791.019	1047.033	679.514	746
x		36566.751	┬23597461.000	┬514591590.000	216455.220	102334.930	1156583.000	469635.000	18537.304	770.351	1037.866	683.014	731
σ		863.486	┬335937.470	┬5180306.200	4324.105	1668.052	9291.378	3383.467	210.193	22.122	39.557	10.211	37
%RSD		2.361	┬1.424	┬1.007	1.998	1.630	0.803	0.720	1.134	2.872	3.811	1.495	

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	15:05:50	692379.010	639040.740	8427.130	4855.707	420.005	2320.162	1029301.800	36269.421	1450.063	1173.041	496455.530	196673
2	15:06:12	702431.820	648017.570	8557.196	4905.722	390.005	2190.144	1031204.200	37221.517	1470.065	1216.544	515892.670	204415
3	15:06:34	713789.420	651977.600	9042.452	4815.696	380.004	2320.162	1034371.700	36655.264	1600.077	1221.045	525547.390	204669
x		702866.750	646345.300	8675.593	4859.042	396.671	2276.822	1031625.900	36715.401	1506.735	1203.544	512631.860	201919
σ		10711.826	6628.571	324.297	45.106	20.817	75.066	2561.116	478.888	81.453	26.511	14817.511	4544
%RSD		1.524	1.026	3.738	0.928	5.248	3.297	0.248	1.304	5.406	2.203	2.890	2

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:05:50	955.027	8242.037	1152774.000	132172.010	0.000	295359.120	76073.219
2	15:06:12	890.024	7741.798	1184871.900	132454.240	0.000	307770.690	79760.396
3	15:06:34	845.021	8762.303	1204534.000	136153.870	0.000	311565.220	80785.315
x		896.691	8248.713	1180726.600	133593.380	0.000	304898.340	78872.976
σ		55.305	510.285	26127.808	2221.942	0.000	8476.269	2478.225
%RSD		6.168	6.186	2.213	1.663	0.000	2.780	3.142

CCV 10/25/2016 03:11:12 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:11:34	133643.680	77075.307	27011.872	┬11881179.000	┬3533982.900	┬32379123.000	┬11488522.000	1209134.900	151303.680	24212.575	┬2394061.900	690154
2	15:11:56	126508.320	75661.350	27137.075	┬11516798.000	┬3485787.800	┬31785294.000	┬11251871.000	1197777.200	146521.240	23381.389	┬2353368.600	667873
3	15:12:18	122659.710	73363.612	26050.343	┬11030549.000	┬3291585.200	┬30863135.000	┬10929948.000	1154979.100	138845.950	23271.235	┬2251943.100	652783
x		127603.900	75366.756	26733.096	┬11476175.000	┬3437118.700	┬31675851.000	┬11223447.000	1187297.100	145556.950	23621.733	┬2333124.500	670270
σ		5573.342	1873.302	594.587	┬426767.410	┬128318.640	┬763896.630	┬280370.000	28558.501	6284.597	514.640	┬73190.199	18800
%RSD		4.368	2.486	2.224	┬3.719	┬3.733	┬2.412	┬2.498	2.405	4.318	2.179	┬3.137	2

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:11:34	87287.979	┬3514325.100	┬72290227.000	1060967.900	569041.190	704840.380	548173.990	75851.210	6006.082	8784.815	510.008	7396
2	15:11:56	85659.563	┬3416161.700	┬70942761.000	1025412.700	558048.720	687909.530	543334.320	74194.779	5948.061	8747.295	503.508	7106
3	15:12:18	81327.944	┬3311327.400	┬68369663.000	987004.880	532817.850	661866.140	532183.040	73212.449	5748.991	8280.557	503.008	6726
x		84758.495	┬3413938.100	┬70534217.000	1024461.800	553302.580	684872.010	541230.450	74419.480	5901.045	8604.222	505.508	7076
σ		3080.494	┬101517.130	┬1991955.100	36990.673	18572.206	21647.545	8200.444	1333.654	134.840	280.930	3.905	336
%RSD		3.634	┬2.974	┬2.824	3.611	3.357	3.161	1.515	1.792	2.285	3.265	0.773	4

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	15:11:34	775391.950	206511.530	1575960.900	252330.770	8232.032	123405.180	871473.490	774025.580	512758.130	405491.930	520234.550	147863
2	15:11:56	768592.620	197817.020	1598322.400	253254.630	7761.807	124120.460	850500.630	757658.660	511624.070	402777.280	512588.020	142678
3	15:12:18	737514.610	192849.310	1582219.200	248077.640	7726.791	123178.510	831675.390	751713.320	501230.300	395232.340	496141.380	138624
x		760499.720	199059.290	1585500.800	251221.010	7906.877	123568.050	851216.500	761132.520	508537.500	401167.180	509654.650	143055
σ		20193.918	6915.310	11536.271	2761.157	282.137	491.643	19908.704	11554.653	6353.574	5315.926	12311.524	4630
%RSD		2.655	3.474	0.728	1.099	3.568	0.398	2.339	1.518	1.249	1.325	2.416	3

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:11:34	30743.328	1392265.600	┬7208706.100	110535.330	0.000	160453.660	102086.700
2	15:11:56	30332.577	1406504.900	┬7114719.500	110052.150	0.000	175772.010	101739.580
3	15:12:18	29896.791	1392933.100	┬7096134.100	108371.190	0.000	179678.340	100879.380
x		30324.232	1397234.500	┬7139853.200	109652.890	0.000	171968.000	101568.550
σ		423.331	8035.312	┬60348.116	1135.973	0.000	10161.196	621.565
%RSD		1.396	0.575	┬0.845	1.036	0.000	5.909	0.612

CCB 10/25/2016 03:16:57 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:17:19	141629.220	2.500	885.024	193648.490	740.016	7286.592	47397.299	780.018	147953.810	30.000	14681.464	1610.078
2	15:17:41	139430.800	7.500	835.021	188712.360	740.016	6336.204	48941.754	720.016	149103.990	15.000	14211.056	1605.077
3	15:18:03	139138.370	10.000	740.016	190937.480	560.009	5650.958	49212.549	780.018	149436.950	10.000	14606.398	1700.087
x		140066.130	6.667	820.020	191099.440	680.014	6424.585	48517.201	760.017	148831.580	18.333	14499.639	1638.414
σ		1361.549	3.819	73.658	2472.051	103.927	821.391	979.268	34.643	778.192	10.408	252.723	53.469
%RSD		0.972	57.282	8.982	1.294	15.283	12.785	2.018	4.558	0.523	56.773	1.743	3.263

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:17:19	4915.725	920.025	221264.050	150.001	145.001	355.004	565.010	1484.066	505.008	497.507	509.008	2550.195
2	15:17:41	4920.726	770.018	217890.030	185.001	55.000	305.003	565.010	1493.067	505.008	515.008	514.008	2730.224
3	15:18:03	4615.639	675.014	215078.870	165.001	65.000	270.002	505.008	1521.069	436.006	503.508	505.008	2605.204
x		4817.363	788.352	218077.650	166.668	88.334	310.003	545.009	1499.401	482.007	505.341	509.341	2628.541

σ		174.716	123.531	3096.854	17.560	49.329	42.721	34.642	19.298	39.838	8.893	4.509	92.255
%RSD		3.627	15.669	1.420	10.536	55.844	13.781	6.356	1.287	8.265	1.760	0.885	3.510
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:17:19	120.000	202776.090	3070.283	25.000	5.000	10.000	865356.820	3055.280	600.011	521.508	90.000	142778.970
2	15:17:41	95.000	208202.370	2920.256	20.000	5.000	15.000	861967.790	3290.325	675.014	511.508	65.000	145784.820
3	15:18:03	90.000	207392.370	2670.214	40.000	0.000	20.000	863956.920	3750.422	730.016	549.009	60.000	145875.610
x		101.667	206123.610	2886.918	28.333	3.333	15.000	863760.510	3365.342	668.347	527.342	71.667	144813.130
σ		16.073	2927.194	202.107	10.408	2.887	5.000	1703.026	353.591	65.259	19.419	16.073	1762.224
%RSD		15.809	1.420	7.001	36.735	86.603	33.333	0.197	10.507	9.764	3.682	22.427	1.217

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:17:19	170.001	1250.047	960.028	110122.610	0.000	9972.983	25.000
2	15:17:41	195.001	1005.030	980.029	111552.070	0.000	8987.423	55.000
3	15:18:03	160.001	1070.034	900.024	109840.760	0.000	8202.018	25.000
x		175.001	1108.371	946.694	110505.150	0.000	9054.141	35.000
σ		18.028	126.927	41.636	917.549	0.000	887.366	17.321
%RSD		10.302	11.452	4.398	0.830	0.000	9.801	49.487

CCVL 10/25/2016 03:22:41 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:23:03	137363.740	155.001	5861.030	792430.960	24447.918	59736.863	609826.200	20672.813	148720.590	25.000	20712.863	8587.212
2	15:23:24	142234.340	135.001	6116.122	786363.480	24287.684	61417.957	614233.700	20722.875	146904.590	35.000	21789.234	8917.385
3	15:23:47	136163.960	147.501	6571.295	807729.760	24487.977	62396.582	606705.340	20903.100	150435.880	5.000	20767.931	8577.207
x		138587.350	145.834	6182.816	795508.060	24407.859	61183.801	610255.080	20766.263	148687.020	21.667	21090.009	8693.934
σ		3214.856	10.104	359.799	11010.490	105.985	1345.231	3782.458	121.119	1765.884	15.275	606.172	193.579
%RSD		2.320	6.928	5.819	1.384	0.434	2.199	0.620	0.583	1.188	70.501	2.874	2.227

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:23:03	5085.776	6501.268	677089.700	2340.164	880.023	3590.387	10088.052	2137.137	480.007	662.513	522.008	2735.224
2	15:23:24	4990.747	6271.180	676413.040	2475.184	1015.031	3305.328	10618.381	2045.126	498.007	676.014	538.509	2870.247
3	15:23:47	4645.647	6491.264	680051.720	2350.166	1150.040	3470.361	10538.331	2053.126	500.007	706.515	467.507	2890.251
x		4907.390	6421.237	677851.490	2388.505	1015.031	3455.359	10414.921	2078.463	492.674	681.681	509.341	2831.907
σ		231.602	130.050	1935.257	75.233	135.008	143.120	285.893	50.970	11.015	22.542	37.157	84.325
%RSD		4.719	2.025	0.285	3.150	13.301	4.142	2.745	2.452	2.236	3.307	7.295	2.978

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:23:03	20497.597	205256.170	13665.600	2600.203	40.000	710.015	852299.090	990.029	4670.654	3535.875	4315.559	143716.980
2	15:23:24	19516.420	206248.300	14060.929	2540.194	55.000	695.014	865367.340	945.027	4650.649	3519.872	4320.560	143777.500
3	15:23:47	20502.603	208445.380	14231.073	2980.266	45.000	660.013	870094.150	1030.032	4755.678	3643.898	4490.605	143817.840
x		20172.207	206649.950	13985.867	2706.888	46.667	688.348	862586.860	988.363	4692.327	3566.548	4375.574	143770.770
σ		567.933	1632.105	290.113	238.647	7.638	25.659	9217.608	42.527	55.768	67.463	99.651	50.767
%RSD		2.815	0.790	2.074	8.816	16.366	3.728	1.069	4.303	1.188	1.892	2.277	0.035

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:23:03	2550.195	14226.069	6421.237	112750.090	0.000	7701.779	10278.168
2	15:23:24	2745.226	14075.941	6586.301	110625.930	0.000	7726.791	10593.366
3	15:23:47	2765.229	14676.459	6616.313	110746.730	0.000	7586.726	10598.369
x		2686.883	14326.156	6541.284	111374.250	0.000	7671.765	10489.967
σ		118.797	312.520	105.041	1193.045	0.000	74.700	183.441
%RSD		4.421	2.181	1.606	1.071	0.000	0.974	1.749

200-35680-A-12-A 10/25/2016 03:28:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:28:47	179703.610	1140.039	8232.032	T 3099286.400	T 8816952.800	T 210348670.000	T 26065493.000	T 6792893.700	267682.490	67099.800	524102.960	458
2	15:29:09	180249.450	1227.545	8347.090	T 3170034.600	T 9016779.800	T 219993000.000	T 27659436.000	T 7071709.400	281304.090	70458.618	553464.600	473
3	15:29:31	176641.130	1182.542	8622.230	T 3196786.900	T 9144976.800	T 219164430.000	T 27631617.000	T 7238964.300	286542.200	70378.280	560772.900	482
x		178864.730	1183.375	8400.451	T 3155369.300	T 8992903.100	T 216502030.000	T 27118849.000	T 7034522.500	278509.600	69312.233	546113.490	471
σ		1944.939	43.759	200.497	T 50377.476	T 165310.310	T 5345048.500	T 912338.670	T 225348.400	9735.453	1916.444	19408.771	12
%RSD		1.087	3.698	2.387	T 1.597	T 1.838	T 2.469	T 3.364	T 3.203	3.496	2.765	3.554	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:28:47	56590.913	T 30482914.000	TM 848496430.000	388229.610	216649.010	151591.280	308677.220	32499.656	616.011	719.516	675.514	13
2	15:29:09	60414.299	T 32109608.000	TM 887052390.000	410550.020	225505.330	159090.690	321898.830	33191.016	623.012	753.517	753.017	13
3	15:29:31	59771.989	T 32274342.000	TM 907520340.000	412558.720	228130.700	163705.050	329311.560	34193.039	586.010	765.518	748.017	14
x		58925.734	T 31622288.000	TM 881023050.000	403779.450	223428.340	158129.010	319962.540	33294.570	608.344	746.183	725.516	13
σ		2047.359	T 990158.480	TM 29970319.000	13503.956	6016.034	6113.878	10452.553	851.428	19.656	23.862	43.375	

%RSD		3.474	T 3.131	TM 3.402	3.344	2.693	3.866	3.267	2.557	3.231	3.198	5.979	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	15:28:47	1741856.700	814833.310	13900.795	900.024	425.005	435.006	1009801.500	31650.023	1085.035	865.022	454976.490	214
2	15:29:09	T 1955442.200	840691.260	14586.380	920.025	405.005	665.013	1030449.600	31840.385	1150.040	921.525	475816.450	221
3	15:29:31	1833153.300	858400.580	14276.112	980.029	310.003	655.013	1041825.100	33553.742	1300.051	966.528	487193.140	223
x		T 1843484.100	837975.050	14254.429	933.360	380.004	585.011	1027358.700	32348.050	1178.375	917.692	472662.030	219
σ		T 107166.840	21910.273	343.307	41.636	61.442	130.004	16234.009	1048.489	110.273	50.861	16338.329	4
%RSD		T 5.813	2.615	2.408	4.461	16.169	22.223	1.580	3.241	9.358	5.542	3.457	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:28:47	470.007	12619.776	831003.070	131547.100	0.000	596356.710	75681.441
2	15:29:09	510.008	13030.092	866577.870	135639.710	0.000	626388.770	79252.984
3	15:29:31	470.007	13010.076	882406.830	137898.130	0.000	633276.880	80473.813
x		483.340	12886.648	859995.920	135028.310	0.000	618674.120	78469.413
σ		23.095	231.334	26326.378	3219.354	0.000	19631.900	2490.421
%RSD		4.778	1.795	3.061	2.384	0.000	3.173	3.174

200-35700-A-9-A 10/25/2016 03:34:10 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	15:34:32	171467.520	1172.541	4820.697	T 1880331.600	T 3799233.700	T 190469650.000	T 12804684.000	T 1590928.700	265254.130	31043.885	574509.050	3747
2	15:34:54	174428.000	1177.542	4520.613	T 1880820.800	T 3883243.700	T 194896380.000	T 13136461.000	T 1614154.700	268525.900	31925.548	586211.140	3812
3	15:35:16	170689.600	1085.035	4780.686	T 1979666.500	T 3972684.200	T 198412190.000	T 13411814.000	T 1657768.300	276199.780	32090.865	593958.310	3887
x		172195.040	1145.039	4707.332	T 1913606.300	T 3885053.900	T 194592740.000	T 13117653.000	T 1620950.500	269993.270	31686.766	584892.830	3815
σ		1972.533	52.025	162.936	T 57210.354	T 86739.459	T 3979969.200	T 304001.680	T 33934.086	5618.427	562.854	9791.418	70
%RSD		1.146	4.544	3.461	T 2.990	T 2.233	T 2.045	T 2.318	T 2.093	2.081	1.776	1.674	

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	15:34:32	46870.814	TM 33773437.000	TM 807559060.000	303116.550	121098.350	1126169.300	578177.700	28822.901	932.026	1199.543	767.018	72
2	15:34:54	46299.219	TM 34293709.000	TM 820406030.000	302485.230	122236.620	1135918.700	578483.020	28486.323	988.029	1251.547	751.017	75
3	15:35:16	48976.856	TM 34974321.000	TM 827144160.000	310169.550	125082.620	1149065.600	587531.430	28514.371	1035.032	1287.050	751.517	72
x		47382.296	TM 34347156.000	TM 818369750.000	305257.110	122805.860	1137051.200	581397.380	28607.865	985.029	1246.047	756.517	73
σ		1410.194	TM 602223.110	TM 9950068.500	4265.989	2052.223	11490.094	5314.431	186.754	51.569	44.012	9.097	1
%RSD		2.976	TM 1.753	TM 1.216	1.398	1.671	1.011	0.914	0.653	5.235	3.532	1.202	

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	15:34:32	643887.010	907681.360	14601.393	3980.475	490.007	2260.153	1055538.900	154957.020	1505.068	1105.537	733430.160	2245
2	15:34:54	654171.090	924879.240	14506.310	4330.563	405.005	2335.164	1058998.400	155809.910	1265.048	1144.039	735002.190	2260
3	15:35:16	654087.920	933574.490	14566.363	4740.674	390.005	2425.176	1076732.200	158999.830	1355.055	1137.539	743245.980	2325
x		650715.340	922045.030	14558.022	4350.571	428.339	2340.164	1063756.500	156588.920	1375.057	1129.038	737226.110	2277
σ		5913.653	13177.180	48.087	380.494	53.930	82.625	11369.662	2131.013	121.254	20.611	5272.275	42
%RSD		0.909	1.429	0.330	8.746	12.591	3.531	1.069	1.361	8.818	1.826	0.715	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:34:32	1035.032	10588.362	1717320.800	136012.730	0.000	361876.440	139919.870
2	15:34:54	960.028	10963.605	1744769.000	135216.290	0.000	368872.330	142577.250
3	15:35:16	1165.041	11248.795	1775710.100	137726.720	0.000	383558.300	143989.310
x		1053.367	10933.587	1745933.300	136318.580	0.000	371435.690	142162.150
σ		103.729	331.238	29212.041	1282.858	0.000	11065.887	2066.233
%RSD		9.847	3.030	1.673	0.941	0.000	2.979	1.453

200-35700-A-10-A 10/25/2016 03:39:54 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:40:16	158984.680	832.521	3860.447	T 1842144.600	T 3451201.200	T 151098070.000	T 10175954.000	1310266.000	246743.040	40223.479	425949.310	29971(
2	15:40:37	161145.290	885.024	4165.520	T 1879720.100	T 3516818.900	T 152175560.000	T 10199770.000	1312674.900	246783.640	30057.078	440936.600	30779[
3	15:40:59	161296.740	932.526	3990.478	T 1911669.900	T 3561846.200	T 155182650.000	T 10409047.000	T 1413012.700	248021.810	27873.288	438601.180	30584(
x		160475.570	883.357	4005.482	T 1877844.900	T 3509955.400	T 152818760.000	T 10261590.000	T 1345317.900	247182.830	32717.949	435162.360	30444[
σ		1293.364	50.023	153.089	T 34800.550	T 55640.922	T 2116888.700	T 128255.300	T 58637.836	726.864	6591.053	8063.736	421(
%RSD		0.806	5.663	3.822	T 1.853	T 1.585	T 1.385	T 1.250	T 4.359	0.294	20.145	1.853	[

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:40:16	39030.648	T 12141342.000	T 469790790.000	217494.920	106187.200	TM 7870929.400	882786.150	18871.678	1269.048	1553.072	699.515	6826
2	15:40:37	39752.351	T 12554484.000	T 486888860.000	225870.220	108522.170	TM 7958105.800	898772.500	19250.111	1248.047	1490.567	672.514	6866
3	15:40:59	40489.121	T 12432309.000	T 481753710.000	221198.180	109196.550	TM 8033560.700	907101.010	18929.744	1257.047	1553.072	697.015	6726
x		39757.374	T 12376045.000	T 479477790.000	221521.110	107968.640	TM 7954198.600	896219.880	19017.178	1258.047	1532.237	689.681	6806
σ		729.250	T 212239.700	T 8773300.000	4196.977	1579.191	TM 81385.995	12356.780	203.804	10.536	36.088	14.920	72
%RSD		1.834	T 1.715	T 1.830	1.895	1.463	TM 1.023	1.379	1.072	0.838	2.355	2.163	[

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	15:40:16	565322.800	830141.700	13090.139	7101.513	535.009	4440.592	1020972.200	44644.715	1320.052	1202.043	531734.050	212516
2	15:40:37	576651.150	849627.750	13505.470	6976.460	625.012	4495.606	1034998.900	45251.347	1480.066	1224.045	544480.840	215868
3	15:40:59	580102.890	844055.040	13250.265	6916.435	480.007	4570.627	1034850.100	46138.775	1555.073	1198.043	553909.000	222991
x		574025.620	841274.830	13281.958	6998.136	546.676	4502.275	1030273.700	45344.946	1451.730	1208.044	543374.630	217125
σ		7731.936	10036.123	209.472	94.424	73.203	65.274	8055.710	751.415	120.045	14.001	11128.788	5349
%RSD		1.347	1.193	1.577	1.349	13.391	1.450	0.782	1.657	8.269	1.159	2.048	2

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:40:16	1120.038	8807.326	1792269.900	129329.850	0.000	315834.450	187382.480
2	15:40:37	1100.036	8907.380	1847712.000	132131.700	0.000	329377.850	191898.430
3	15:40:59	1045.033	9347.621	1859891.500	129904.290	0.000	331483.990	193011.170
x		1088.369	9020.776	1833291.100	130455.280	0.000	325565.430	190764.020
σ		38.840	287.443	36043.651	1479.959	0.000	8492.814	2980.887
%RSD		3.569	3.186	1.966	1.134	0.000	2.609	1.563

200-35700-A-10-A @2 10/25/2016 03:45:36 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:45:58	161791.500	527.508	2115.134	T 1114391.700	T 1753738.600	T 77477739.000	T 5279084.600	667483.640	219343.920	17203.875	224892.130	155971.410
2	15:46:20	157147.380	462.506	2105.133	T 1079843.100	T 1753350.700	T 76958020.000	T 5317648.300	664820.290	220134.230	17694.388	225616.820	154376.670
3	15:46:42	157187.760	432.506	2300.159	T 1098401.500	T 1737544.300	T 77077590.000	T 5191862.900	666869.780	218887.980	20052.055	228683.190	154689.550
x		158708.880	474.173	2173.475	T 1097545.500	T 1748211.200	T 77171116.000	T 5262865.300	666391.240	219455.380	18316.773	226397.380	155012.540
σ		2669.703	48.564	109.825	T 17290.212	T 9239.859	T 272189.660	T 64442.143	1394.670	630.559	1522.680	2012.460	845.013
%RSD		1.682	10.242	5.053	T 1.575	T 0.529	T 0.353	T 1.224	0.209	0.287	8.313	0.889	0.545

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:45:58	21959.457	T 6234930.100	T 245389880.000	114532.180	55246.413	T 4162105.000	496903.590	11337.855	970.028	1142.539	691.514	4885.716
2	15:46:20	21659.064	T 6336201.300	T 247887900.000	113555.530	55457.111	T 4144775.400	491707.860	11289.823	884.023	1155.040	676.514	4980.744
3	15:46:42	21924.411	T 6271491.500	T 245113900.000	114597.630	55161.132	T 4148383.800	495811.790	11228.781	923.026	1141.039	645.513	4990.747
x		21847.644	T 6280874.300	T 246130560.000	114228.450	55288.219	T 4151754.800	494807.750	11285.486	925.692	1146.206	671.180	4952.402

σ		164.252	T 51283.459	T 1528147.300	583.680	152.354	T 9143.342	2739.524	54.666	43.064	7.687	23.460	57.968
%RSD		0.752	T 0.817	T 0.621	0.511	0.276	T 0.220	0.554	0.484	4.652	0.671	3.495	1.171
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:45:58	289894.430	553852.160	6636.321	3425.352	290.003	2300.159	1031257.300	23501.558	780.018	647.513	274471.580	191230.820
2	15:46:20	293898.640	551010.250	6656.329	3505.369	310.003	2475.184	1037242.100	22970.819	780.018	618.011	276154.030	188621.330
3	15:46:42	296371.870	551826.610	6656.329	3620.393	220.001	2330.163	1048568.900	23316.298	800.019	641.512	274207.280	194700.650
x		293388.310	552229.670	6649.660	3517.038	273.336	2368.502	1039022.800	23262.892	786.685	635.679	274944.300	191517.600
σ		3268.736	1463.200	11.552	98.043	47.259	93.599	8792.114	269.370	11.548	15.592	1055.961	3049.785
%RSD		1.114	0.265	0.174	2.788	17.290	3.952	0.846	1.158	1.468	2.453	0.384	1.592

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:45:58	500.007	4600.635	913380.400	128110.480	0.000	148392.680	94567.532
2	15:46:20	500.007	4620.640	931508.570	131234.650	0.000	153629.820	94482.049
3	15:46:42	600.011	4660.652	927303.540	128432.950	0.000	158232.580	97449.059
x		533.342	4627.309	924064.170	129259.360	0.000	153418.360	95499.546
σ		57.737	30.559	9488.295	1718.231	0.000	4923.354	1688.868
%RSD		10.826	0.660	1.027	1.329	0.000	3.209	1.768

CCV 10/25/2016 03:51:19 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:51:41	136738.630	79830.732	28063.607	┬12138856.000	┬3655812.100	┬33712440.000	┬12052948.000	1268751.200	152777.030	25058.824	┬2481023.900	71498
2	15:52:02	134087.220	77808.703	27642.905	┬12017141.000	┬3598243.000	┬33142083.000	┬11819137.000	1239111.000	151414.680	24563.087	┬2456749.100	70993
3	15:52:24	131295.120	76490.120	27502.673	┬11696695.000	┬3558678.500	┬32580326.000	┬11507650.000	1236723.000	151273.410	24177.524	┬2416598.900	68732
x		134040.330	78043.185	27736.395	┬11950898.000	┬3604244.500	┬33144950.000	┬11793245.000	1248195.100	151821.710	24599.812	┬2451457.300	70408
σ		2722.057	1682.604	291.920	┬228402.710	┬48844.124	┬566062.550	┬273569.500	17842.112	830.344	441.796	┬32536.875	1473
%RSD		2.031	2.156	1.052	┬1.911	┬1.355	┬1.708	┬2.320	1.429	0.547	1.796	┬1.327	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:51:41	89187.998	┬3614309.700	┬75227041.000	1100096.400	595346.550	737791.470	571855.080	79503.171	6529.279	9000.930	522.008	736
2	15:52:02	87810.714	┬3558190.800	┬73830270.000	1068475.500	575373.100	715829.160	564304.140	78310.545	6365.215	8652.746	532.008	737
3	15:52:24	86428.517	┬3449080.800	┬72020017.000	1032399.900	561899.920	705273.120	553567.950	76522.267	5986.075	8583.210	514.508	720
x		87809.076	┬3540527.100	┬73692443.000	1066990.600	577539.860	719631.250	563242.390	78111.995	6293.523	8745.628	522.842	731
σ		1379.741	┬84018.749	┬1607948.300	33872.687	16828.257	16589.234	9189.683	1500.338	278.608	223.815	8.780	9
%RSD		1.571	┬2.373	┬2.182	3.175	2.914	2.305	1.632	1.921	4.427	2.559	1.679	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	15:51:41	785561.980	206471.040	1623148.300	261012.950	8247.040	128463.180	887422.920	788459.080	522663.810	413323.310	528018.690	14470
2	15:52:02	796754.970	206754.520	1642063.400	255178.640	8677.258	128689.920	890932.940	784378.130	520801.860	411567.150	521523.920	14420
3	15:52:24	780046.780	199466.510	1637352.000	250320.800	8121.979	123420.290	855286.440	777569.980	515129.600	405901.210	520549.150	14244
x		787454.570	204230.690	1634187.900	255504.130	8348.759	126857.800	877880.770	783469.060	519531.760	410263.890	523363.920	14378
σ		8513.359	4128.335	9846.514	5353.501	291.280	2979.127	19645.806	5501.176	3924.401	3878.887	4060.505	118
%RSD		1.081	2.021	0.603	2.095	3.489	2.348	2.238	0.702	0.755	0.945	0.776	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:51:41	29746.522	1377381.900	┬7213230.700	111491.670	0.000	160564.720	100572.530
2	15:52:02	30257.440	1389319.300	┬7187257.000	108381.250	0.000	174771.570	101382.420
3	15:52:24	29375.865	1386465.700	┬7136369.000	109860.890	0.000	183292.370	100829.080
x		29793.276	1384389.000	┬7178952.300	109911.270	0.000	172876.220	100928.010
σ		442.643	6233.773	┬39098.043	1555.820	0.000	11481.758	413.907
%RSD		1.486	0.450	┬0.545	1.416	0.000	6.642	0.410

CCB 10/25/2016 03:57:03 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:57:24	138019.120	20.000	625.012	196440.890	1050.033	15347.063	50957.782	900.024	149991.900	15.000	14095.958	1980.118
2	15:57:46	138593.860	10.000	650.013	199921.910	1150.040	20732.888	52472.471	850.022	152686.200	20.000	14606.398	1930.112
3	15:58:08	142395.710	12.500	640.012	196258.760	1320.052	25093.877	50616.745	900.024	153190.800	5.000	14691.472	1980.118
x		139669.560	14.167	638.346	197540.520	1173.375	20391.276	51348.999	883.357	151956.300	13.333	14464.609	1963.449
σ		2378.336	5.204	12.584	2064.356	136.514	4882.379	987.784	28.869	1719.826	7.638	322.082	28.871
%RSD		1.703	36.735	1.971	1.045	11.634	23.943	1.924	3.268	1.132	57.282	2.227	1.470

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:57:24	4840.703	1585.075	255503.560	180.001	150.001	705.015	645.012	1677.084	468.007	510.508	502.008	2555.196
2	15:57:46	4395.580	1850.103	268297.260	195.001	125.000	950.027	690.014	1633.080	524.008	528.008	530.008	2810.237
3	15:58:08	4750.677	2380.170	279056.790	225.002	135.001	1135.039	725.016	1644.081	536.009	511.508	522.508	2660.212
x		4662.320	1938.449	267619.200	200.001	136.667	930.027	686.681	1651.415	509.341	516.675	518.175	2675.215
σ		235.349	404.843	11791.241	22.913	12.583	215.708	40.106	22.901	36.296	9.828	14.495	128.181

%RSD		5.048	20.885	4.406	11.457	9.207	23.194	5.841	1.387	7.126	1.902	2.797	4.791
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:57:24	100.000	206511.530	3015.273	55.000	10.000	20.000	882132.890	3240.315	655.013	479.507	90.000	144231.390
2	15:57:46	200.001	206987.380	3360.339	70.000	0.000	15.000	879214.580	3385.344	690.014	565.010	115.000	148074.880
3	15:58:08	270.002	209265.570	2560.197	50.000	5.000	10.000	882206.640	3640.398	830.021	553.009	160.001	147409.010
x		190.001	207588.160	2978.603	58.333	5.000	15.000	881184.700	3422.019	725.016	532.509	121.667	146571.760
σ		85.441	1472.031	401.329	10.408	5.000	5.000	1706.572	202.547	92.605	46.291	35.473	2053.980
%RSD		44.969	0.709	13.474	17.843	100.000	33.333	0.194	5.919	12.773	8.693	29.156	1.401

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:57:24	175.001	1185.042	1225.045	109538.780	0.000	10048.028	70.000
2	15:57:46	175.001	1285.050	1360.055	112156.100	0.000	9562.743	45.000
3	15:58:08	175.001	980.029	1370.056	113313.900	0.000	8717.279	70.000
x		175.001	1150.040	1318.386	111669.590	0.000	9442.683	61.667
σ		0.000	155.494	80.990	1934.008	0.000	673.449	14.434
%RSD		0.000	13.521	6.143	1.732	0.000	7.132	23.406

CCVL 10/25/2016 04:02:46 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	16:03:08	141972.120	165.001	5901.045	833314.290	25479.461	67089.760	630868.060	21553.928	156148.060	20.000	22079.616	8917.385
2	16:03:29	142829.400	152.501	6171.142	829280.370	25359.278	71613.525	624038.010	22354.982	155269.910	20.000	21864.332	9247.565
3	16:03:51	142234.340	145.001	6266.178	824659.340	25539.553	73481.630	621672.010	23045.922	154492.740	20.000	21373.696	9052.458
x		142345.280	154.167	6112.788	829084.660	25459.431	70728.305	625526.020	22318.278	155303.570	20.000	21772.548	9072.469
σ		439.275	10.104	189.432	4330.791	91.791	3286.596	4775.195	746.674	828.173	0.000	361.799	165.997
%RSD		0.309	6.554	3.099	0.522	0.361	4.647	0.763	3.346	0.533	0.000	1.662	1.830

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:03:08	4885.716	6786.381	715140.530	2430.177	1095.036	3635.396	10253.153	2199.145	571.010	736.516	543.009	2755.228
2	16:03:29	5105.782	7351.621	728647.070	2560.197	1255.047	3700.411	9912.947	2236.150	603.011	688.014	531.508	2925.257
3	16:03:51	5310.846	7241.573	737713.110	2405.173	1135.039	4165.520	10713.442	2221.148	580.010	720.516	537.009	2775.231
x		5100.781	7126.525	727166.900	2465.182	1161.707	3833.776	10293.181	2218.814	584.677	715.015	537.175	2818.572
σ		212.609	299.668	11358.855	83.229	83.273	289.132	401.746	18.613	16.503	24.714	5.752	92.932
%RSD		4.168	4.205	1.562	3.376	7.168	7.542	3.903	0.839	2.823	3.456	1.071	3.297

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:03:08	20047.049	214967.450	13945.832	2705.220	55.000	725.016	881521.790	855.022	4295.554	3467.861	4520.613	143363.960
2	16:03:29	20853.037	214207.760	13880.778	2710.220	30.000	645.012	897491.140	990.029	4445.593	3538.876	4195.528	144937.480
3	16:03:51	20552.665	213711.450	14346.172	3070.283	60.000	670.013	898862.140	1155.040	4510.610	3589.887	4470.600	146430.440
x		20484.250	214295.550	14057.594	2828.574	48.333	680.014	892625.020	1000.031	4417.252	3532.208	4395.580	144910.630
σ		407.326	632.585	252.024	209.341	16.073	40.928	9640.086	150.259	110.294	61.286	175.046	1533.420
%RSD		1.988	0.295	1.793	7.401	33.254	6.019	1.080	15.025	2.497	1.735	3.982	1.058

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:03:08	2520.191	13650.588	6326.200	109156.290	0.000	7581.724	10393.240
2	16:03:29	2705.220	14276.112	6361.214	110132.680	0.000	7541.706	10383.233
3	16:03:51	2650.211	14336.163	6836.402	112266.850	0.000	8202.018	10793.494
x		2625.207	14087.621	6507.939	110518.600	0.000	7775.149	10523.322
σ		95.015	379.671	284.996	1590.786	0.000	370.220	234.029
%RSD		3.619	2.695	4.379	1.439	0.000	4.762	2.224

Analyte ICPS

STD0 10/25/2016 12:59:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:00:02	98.784%	4.451	-353.148	5019.148	-18.530	3749.803	2792.169	547.735	98.184%	10.184	1567.789	25.988
2	13:00:24	100.634%	-3.467	-422.281	4563.402	145.836	3989.642	2236.358	347.696	98.816%	15.166	2600.095	71.754
3	13:00:45	100.582%	-13.401	-590.796	-5911.662	32.084	3143.131	524.575	131.823	103.000%	24.296	2457.169	-17.265
x		100.000%	-4.139	-455.409	1223.629	53.130	3627.525	1851.034	342.418	100.000%	16.549	2208.351	26.826
σ		1.053%	8.944	122.238	6183.544	84.180	436.302	1181.885	208.006	2.617%	7.157	559.327	44.515
%RSD		1.053	216.093	26.841	505.345	158.442	12.028	63.850	60.746	2.617	43.247	25.328	165.943

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:00:02	3892.877	335.600	20306.194	136.938	32.337	3.021	-158.567	-58.755	357.522	3.398	467.967	2160.004
2	13:00:24	3573.160	191.322	21304.486	155.127	-9.217	115.272	-182.927	-185.210	397.096	-47.286	444.665	2411.683
3	13:00:45	3523.044	347.614	11017.399	78.248	39.043	35.761	-7.890	2.769	355.532	-12.054	442.015	2443.718
x		3663.027	291.512	17542.693	123.437	20.721	51.351	-116.461	-80.398	370.050	-18.648	451.549	2338.468
σ		200.627	86.975	5673.072	40.178	26.143	57.727	94.811	95.840	23.443	25.977	14.280	155.382
%RSD		5.477	29.836	32.339	32.549	126.166	112.416	81.410	119.207	6.335	139.306	3.162	6.645

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:00:02	96.513	98.388%	3305.260	-27.297	-68.360	13.008	99.474%	4710.425	206.035	111.485	18.734	100.193%
2	13:00:24	54.808	100.795%	3196.824	32.274	-61.864	1.312	100.302%	4726.421	365.928	201.025	-2.118	101.002%
3	13:00:45	20.025	100.817%	2555.882	2.411	-64.206	-16.316	100.224%	5059.427	330.756	185.301	27.885	98.805%
x		57.115	100.000%	3019.322	2.463	-64.810	-0.665	100.000%	4832.091	300.906	165.937	14.834	100.000%
σ		38.296	1.396%	404.996	29.786	3.290	14.761	0.457%	197.041	84.022	47.808	15.377	1.111%
%RSD		67.050	1.396	13.413	1209.425	5.076	2218.841	0.457	4.078	27.923	28.811	103.661	1.111

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:00:02	83.790	373.328	2065.527	99.435%	0.000	32484.318	7.561
2	13:00:24	37.158	362.650	2274.023	99.208%	0.000	29650.713	-7.362
3	13:00:45	127.921	129.409	2531.544	101.357%	0.000	27192.935	1.007
x		82.957	288.462	2290.365	100.000%	0.000	29775.989	0.402
σ		45.387	137.848	233.438	1.181%	0.000	2647.915	7.480
%RSD		54.712	47.787	10.192	1.181	0.000	8.893	1860.717

STD1 10/25/2016 01:05:23 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:05:45	105.952%	115.998	4644.750	562828.700	21405.230	46034.984	514287.830	19850.063	102.920%	4.855	9388.449	6500.600
2	13:06:07	102.944%	124.854	4554.475	548422.470	20557.703	45290.696	522329.300	19220.136	103.109%	14.546	9507.269	6738.191
3	13:06:28	101.702%	126.634	4750.297	545886.910	20312.829	44934.831	514963.960	19842.852	105.397%	9.502	10137.567	6729.695
x		103.532%	122.495	4649.841	552379.360	20758.587	45420.170	517193.700	19637.684	103.809%	9.634	9677.762	6656.162
σ		2.186%	5.697	98.010	9137.766	573.237	561.388	4460.395	361.625	1.379%	4.847	402.611	134.788
%RSD		2.111	4.651	2.108	1.654	2.761	1.236	0.862	1.841	1.328	50.307	4.160	2.025

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:05:45	3691.583	4425.358	430999.070	1778.921	695.050	2747.249	8908.272	575.399	348.760	87.833	475.338	2583.756
2	13:06:07	3709.417	4255.597	427664.760	1891.722	693.528	2490.603	8587.712	785.852	292.328	156.676	493.271	2465.836
3	13:06:28	3580.919	4604.807	418324.610	1837.163	798.871	2781.023	8897.719	737.194	294.926	139.907	483.365	2464.075

x		3660.639	4428.587	425662.810	1835.935	729.150	2672.958	8797.901	699.482	312.004	128.138	483.991	2504.556
σ		69.614	174.627	6570.110	56.410	60.385	158.825	182.106	110.178	31.858	35.899	8.983	68.595
%RSD		1.902	3.943	1.544	3.073	8.282	5.942	2.070	15.751	10.211	28.016	1.856	2.739
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:05:45	18308.516	104.223%	11305.075	2231.517	13.030	561.472	102.455%	956.546	3355.611	2551.974	3895.759	100.029%
2	13:06:07	17984.768	103.340%	11733.570	2428.587	-84.393	594.143	102.379%	986.557	3525.121	2612.059	3801.004	101.603%
3	13:06:28	18521.437	102.114%	11666.346	2420.614	-39.001	681.971	102.305%	962.834	3589.757	2729.869	3852.713	100.308%
x		18271.574	103.226%	11568.330	2360.239	-36.788	612.529	102.380%	968.646	3490.163	2631.300	3849.825	100.646%
σ		270.235	1.059%	230.450	111.549	48.749	62.318	0.075%	15.827	120.924	90.495	47.443	0.840%
%RSD		1.479	1.026	1.992	4.726	132.514	10.174	0.073	1.634	3.465	3.439	1.232	0.835

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:05:45	2613.726	12751.623	9272.378	104.627%	0.000	19848.704	10649.453
2	13:06:07	2393.311	12972.040	9687.087	100.355%	0.000	20052.425	11295.589
3	13:06:28	2695.704	13676.226	10486.460	100.118%	0.000	20076.977	11652.329
x		2567.580	13133.296	9815.308	101.700%	0.000	19992.702	11199.124
σ		156.388	482.934	617.114	2.538%	0.000	125.308	508.349
%RSD		6.091	3.677	6.287	2.495	0.000	0.627	4.539

STD2 10/25/2016 01:11:06 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:11:28	102.102%	640.258	21773.372	T 2823002.000	105425.660	235426.130	T 2730375.800	95619.784	99.324%	5.029	42117.764	33097.135
2	13:11:50	101.790%	620.182	23226.822	T 2800757.000	106207.590	229463.490	T 2668928.300	96742.738	101.721%	14.745	41914.100	31054.989
3	13:12:12	99.965%	614.375	22369.120	T 2661399.000	101653.320	228860.930	T 2663329.000	95219.820	101.910%	24.545	41048.044	31432.150
x		101.286%	624.938	22456.438	T 2761719.300	104428.860	231250.180	T 2687544.300	95860.781	100.985%	14.773	41693.303	31861.425
σ		1.154%	13.582	730.648	T 87589.044	2435.275	3629.006	T 37198.594	789.544	1.441%	9.758	568.013	1086.645
%RSD		1.139	2.173	3.254	T 3.172	2.332	1.569	T 1.384	0.824	1.427	66.054	1.362	3.411
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:11:28	3933.473	23556.430	T 2248183.400	9851.893	4773.163	13334.435	42746.371	3630.790	229.500	753.330	467.840	2374.159
2	13:11:50	4024.860	23522.570	T 2261795.300	10003.973	4529.658	13161.145	43143.438	3681.564	201.202	787.799	502.353	2323.615
3	13:12:12	3771.179	24312.713	T 2196699.400	9209.436	4113.680	12830.536	42114.178	3796.056	169.717	873.491	445.410	2063.038
x		3909.837	23797.238	T 2235559.400	9688.434	4472.167	13108.705	42667.996	3702.804	200.140	804.873	471.868	2253.604
σ		128.481	446.735	T 34335.021	421.736	333.479	256.010	519.086	84.656	29.905	61.873	28.684	166.959
%RSD		3.286	1.877	T 1.536	4.353	7.457	1.953	1.217	2.286	14.942	7.687	6.079	7.409
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:11:28	88254.471	101.564%	58131.249	12158.921	-78.973	2912.352	101.746%	683.090	19090.365	14890.322	19173.366	98.655%
2	13:11:50	89647.830	101.869%	60002.205	12801.333	-28.621	2966.132	99.931%	680.481	19084.456	15334.203	19733.544	100.572%
3	13:12:12	89640.890	100.648%	58797.660	11878.915	-14.053	3177.148	100.695%	724.977	18457.975	15098.326	19931.173	97.732%
x		89181.064	101.360%	58977.038	12279.723	-40.549	3018.544	100.791%	696.183	18877.599	15107.617	19612.695	98.986%
σ		802.461	0.635%	948.289	472.925	34.064	139.963	0.911%	24.971	363.417	222.086	393.092	1.449%
%RSD		0.900	0.627	1.608	3.851	84.007	4.637	0.904	3.587	1.925	1.470	2.004	1.464

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:11:28	12458.925	66210.945	47448.244	101.102%	0.000	55650.230	53702.935
2	13:11:50	12710.556	70061.769	47627.133	99.781%	0.000	55658.058	54917.497
3	13:12:12	13013.446	68621.283	48185.033	99.189%	0.000	59766.523	55645.269
x		12727.642	68297.999	47753.470	100.024%	0.000	57024.937	54755.234

σ		277.655	1945.661	384.298	0.979%	0.000	2374.286	981.281
%RSD		2.182	2.849	0.805	0.979	0.000	4.164	1.792

STD3 10/25/2016 01:16:50 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	13:17:12	104.044%	77694.279	26712.231	┬10931417.000	┬3365029.600	┬31141965.000	┬10969621.000	1166929.400	104.504%	22562.491	┬2181233.200	638301.
2	13:17:34	100.759%	77154.351	26818.938	┬11303323.000	┬3455467.100	┬31599217.000	┬11000774.000	1169940.900	100.203%	23075.370	┬2238879.700	655525.
3	13:17:56	100.924%	77367.036	27363.501	┬11043195.000	┬3419372.300	┬31118744.000	┬10819304.000	1164459.800	101.896%	22014.278	┬2197471.800	645004.
x		101.909%	77405.222	26964.890	┬11092645.000	┬3413289.600	┬31286642.000	┬10929900.000	1167110.000	102.201%	22550.713	┬2205861.600	646277.
σ		1.851%	271.982	349.306	┬190820.370	┬45524.574	┬270946.960	┬97036.995	2745.026	2.166%	530.644	┬29724.918	8682.
%RSD		1.816	0.351	1.295	┬1.720	┬1.334	┬0.866	┬0.888	0.235	2.120	2.353	┬1.348	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	13:17:12	7556.639	┬3267700.800	┬67333150.000	976794.160	523099.660	675532.760	536488.200	71923.540	-668.238	7876.977	492.185	2126.
2	13:17:34	6861.382	┬3341404.900	┬67980228.000	992004.700	533198.570	651981.560	525877.450	72584.746	-637.294	7638.273	453.626	1856.
3	13:17:56	7358.483	┬3291448.900	┬67391072.000	978564.790	522329.450	655982.310	527690.930	73481.340	-836.002	7830.687	476.874	1783.
x		7258.835	┬3300184.900	┬67568150.000	982454.550	526209.230	661165.540	530018.860	72663.209	-713.845	7781.979	474.228	1921.
σ		358.180	┬37620.617	┬358043.440	8317.925	6065.187	12602.152	5675.510	781.859	106.917	126.587	19.415	180.
%RSD		4.934	┬1.140	┬0.530	0.847	1.153	1.906	1.071	1.076	14.978	1.627	4.094	9.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	13:17:12	741289.540	102.871%	1451892.000	240497.150	304.404	121494.810	100.472%	740477.960	497656.560	392149.110	497892.090	99.80
2	13:17:34	722617.200	101.536%	1518390.400	237744.650	-134.134	120419.530	101.407%	739832.600	489590.870	385852.290	490691.240	100.18
3	13:17:56	721879.850	100.757%	1556537.500	243244.750	653.222	122348.790	100.342%	756773.150	500237.430	393776.410	494880.490	99.47
x		728595.530	101.722%	1508940.000	240495.520	274.498	121421.050	100.740%	745694.570	495828.290	390592.600	494487.940	99.82
σ		10999.515	1.069%	52958.988	2750.049	394.529	966.742	0.581%	9599.760	5553.761	4185.088	3616.439	0.35
%RSD		1.510	1.051	3.510	1.143	143.728	0.796	0.576	1.287	1.120	1.071	0.731	0.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:17:12	30150.354	1408870.800	┬12934097.000	100.109%	0.000	190075.540	105912.960
2	13:17:34	30425.535	1434159.400	┬13173930.000	98.816%	0.000	207441.240	106836.740
3	13:17:56	31081.563	1409369.400	┬12798948.000	101.749%	0.000	212906.220	104294.110
x		30552.484	1417466.500	┬12968992.000	100.225%	0.000	203474.330	105681.270
σ		478.409	14458.588	┬189910.950	1.470%	0.000	11921.083	1287.048
%RSD		1.566	1.020	┬1.464	1.466	0.000	5.859	1.218

STD4 10/25/2016 01:22:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	13:22:55	111.660%	221019.270	76226.098	┬33837238.000	┬10261954.000	┬95363775.000	┬34491924.000	┬3845575.600	105.354%	70437.412	┬7058344.900
2	13:23:17	105.374%	229462.580	84196.591	┬33818287.000	┬10362676.000	┬94330505.000	┬33721297.000	┬3802332.600	107.061%	69334.104	┬6905556.200
3	13:23:39	105.227%	226555.680	81889.362	┬33145432.000	┬10292608.000	┬94510850.000	┬33994380.000	┬3783966.200	107.454%	69443.998	┬6820283.000
x		107.421%	225679.180	80770.684	┬33600319.000	┬10305746.000	┬94735043.000	┬34069200.000	┬3810624.800	106.623%	69738.505	┬6928061.300
σ		3.672%	4289.352	4101.313	┬394057.460	┬51630.201	┬551913.550	┬390723.780	┬31630.699	1.117%	607.761	┬120616.030
%RSD		3.419	1.901	5.078	┬1.173	┬0.501	┬0.583	┬1.147	┬0.830	1.047	0.871	┬1.741

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	13:22:55	10.646	┬10299333.000	┬208572570.000	┬3222799.600	1550465.000	┬2135962.200	1570316.500	217033.960	-2499.879	22843.352	501.456
2	13:23:17	1265.392	┬10324356.000	┬206750710.000	┬3212924.900	1579283.300	┬2181039.100	1569439.100	218989.240	-2537.935	22825.059	515.500

3	13:23:39	33.201	┬10057184.000	┬202266590.000	┬3183974.800	1531587.700	1973220.000	1558652.900	217240.380	-2469.039	22981.609	472.564
x		436.413	┬10226958.000	┬205863290.000	┬3206566.400	1553778.600	┬2096740.500	1566136.200	217754.520	-2502.284	22883.340	496.507
σ		718.005	┬147559.420	┬3245304.200	┬20178.318	24019.858	┬109320.430	6495.537	1074.260	34.511	85.593	21.892
%RSD		164.524	┬1.443	┬1.576	┬0.629	1.546	┬5.214	0.415	0.493	1.379	0.374	4.409

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	13:22:55	┬2422869.400	102.790%	┬5009825.200	723923.170	320.800	363082.070	101.805%	2338201.800	1510547.000	1194918.500	1541074.200
2	13:23:17	┬2459916.100	101.885%	┬5221376.400	721925.550	862.610	366723.080	101.941%	2337706.000	1518985.900	1206177.100	┬1715914.200
3	13:23:39	┬2469718.300	102.185%	┬5187853.200	726420.550	1120.790	363163.830	101.152%	2360626.500	1529934.100	1217297.700	┬1733660.800
x		┬2450834.600	102.286%	┬5139685.000	724089.760	768.066	364323.000	101.633%	2345511.400	1519822.300	1206131.100	┬1663549.700
σ		┬24709.540	0.461%	┬113704.080	2252.126	408.289	2078.937	0.422%	13092.390	9720.576	11189.648	┬106437.450
%RSD		┬1.008	0.450	┬2.212	0.311	53.158	0.571	0.415	0.558	0.640	0.928	┬6.398

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:22:55	92630.012	┬5021717.500	┬42072844.000	97.432%	0.000	685386.740	344535.880
2	13:23:17	96600.625	┬4951037.100	┬41362531.000	99.627%	0.000	701321.380	340395.530
3	13:23:39	97331.510	┬5061492.100	┬42317386.000	98.069%	0.000	722661.990	340464.990
x		95520.716	┬5011415.600	┬41917587.000	98.376%	0.000	703123.370	341798.800
σ		2529.955	┬55943.471	┬495999.510	1.129%	0.000	18702.849	2370.633
%RSD		2.649	┬1.116	┬1.183	1.148	0.000	2.660	0.694

STD5 10/25/2016 01:28:16 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	13:28:38	105.548%	358641.820	128928.280	T 54322467.000	TM 17097212.000	TM 157810940.000	TM 57007781.000	TM 6386779.500	105.390%	117813.970	TM
2	13:29:00	108.384%	353078.000	131058.900	TM 55576799.000	TM 17175032.000	TM 156350830.000	TM 56329839.000	TM 6428341.300	106.218%	117859.700	TM
3	13:29:22	104.569%	361068.520	133508.460	T 53002919.000	T 16839582.000	TM 152661440.000	TM 55964458.000	TM 6366433.700	108.544%	116076.040	TM
x		106.167%	357596.110	131165.210	TM 54300728.000	TM 17037276.000	TM 155607740.000	TM 56434026.000	TM 6393851.500	106.717%	117249.900	TM
σ		1.981%	4096.611	2291.941	TM 1287077.400	TM 175573.120	TM 2653959.900	TM 529407.100	TM 31553.876	1.635%	1016.853	
%RSD		1.866	1.146	1.747	TM 2.370	TM 1.031	TM 1.706	TM 0.938	TM 0.494	1.532	0.867	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	
1	13:28:38	4483.179	TM 17150983.000	TM 342514240.000	TM 5327034.500	TM 2773658.600	TM 3469482.400	TM 2666793.000	352162.940	-4185.524	35355.809	
2	13:29:00	-1055.842	TM 17001567.000	TM 343467900.000	TM 5342175.800	TM 2746760.100	TM 3467519.500	TM 2710240.700	361418.820	-4250.575	35862.038	
3	13:29:22	-1891.993	TM 16730045.000	T 335537530.000	TM 5211558.400	TM 2696942.400	TM 3487715.200	TM 2696589.900	357801.750	-4062.983	35541.849	
x		511.781	TM 16960865.000	TM 340506560.000	TM 5293589.600	TM 2739120.400	TM 3474905.700	TM 2691207.900	357127.840	-4166.361	35586.565	
σ		3464.648	TM 213400.430	TM 4329641.300	TM 71443.314	TM 38924.514	TM 11136.686	TM 22218.231	4664.599	95.253	256.060	
%RSD		676.978	TM 1.258	TM 1.272	TM 1.350	TM 1.421	TM 0.320	TM 0.826	1.306	2.286	0.720	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	
1	13:28:38	TM 4047684.800	101.776%	TM 8559545.400	1159742.500	1780.368	580768.370	103.652%	T 4208897.800	2485529.100	M 1964598.300	
2	13:29:00	TM 4052080.800	99.826%	TM 8920074.700	1187346.300	1647.405	592877.590	102.673%	T 4346443.000	M 2519416.500	M 2006950.200	
3	13:29:22	TM 4033015.300	101.144%	TM 8817814.300	1170170.000	2090.725	588191.900	102.974%	T 4303609.100	TM 2764530.700	M 2008472.300	
x		TM 4044260.300	100.915%	TM 8765811.500	1172419.600	1839.499	587279.280	103.100%	T 4286316.600	TM 2589825.400	M 1993340.300	
σ		TM 9983.465	0.995%	TM 185805.210	13938.694	227.499	6105.977	0.502%	T 70384.266	TM 152244.990	M 24902.914	
%RSD		TM 0.247	0.986	TM 2.120	1.189	12.367	1.040	0.486	T 1.642	TM 5.879	M 1.249	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:28:38	M 189081.040	TM 8305509.000	TM 68827485.000	98.843%	0.000	M 1374879.400	M 684313.790
2	13:29:00	M 191150.740	TM 8368102.000	TM 68885688.000	99.754%	0.000	M 1414920.700	684280.980
3	13:29:22	M 194372.520	TM 8273501.300	TM 68449241.000	101.184%	0.000	M 1408831.400	684296.880
x		M 191534.760	TM 8315704.100	TM 68720805.000	99.927%	0.000	M 1399543.800	M 684297.210
σ		M 2666.563	TM 48117.344	TM 236974.780	1.180%	0.000	M 21575.906	M 16.407
%RSD		M 1.392	TM 0.579	TM 0.345	1.181	0.000	M 1.542	M 0.002

ICV 10/25/2016 01:34:00 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:34:22	98.835%	39097.270	15038.566	T 5842332.800	T 1719039.800	T 16088402.000	T 5507814.500	578579.460	98.235%	11346.613	1062607.500	326891.630
2	13:34:43	99.199%	39009.123	14796.501	T 5619331.600	T 1634772.800	T 15616067.000	T 5259422.700	555152.110	100.072%	11299.632	1023569.000	312327.160
3	13:35:05	97.242%	39271.663	15158.773	T 5803820.300	T 1706292.500	T 15999308.000	T 5512802.800	585357.440	96.979%	11750.323	1064807.000	326058.670
x		98.425%	101.892%	110.436%	T 103.698%	T 98.969%	T 104.178%	T 99.832%	96.557%	98.429%	11465.523	92.893%	93.832%
σ		1.041%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	1.556%	247.760	n/a	n/a
%RSD		1.058	0.341	1.230	T 2.071	T 2.693	T 1.578	T 2.670	2.766	1.581	2.161	2.209	2.542

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:34:22	4925.426	1547543.200	T 34080799.000	498466.280	264615.490	331024.670	264447.740	36333.310	-216.436	4025.028	479.171	1951.200
2	13:34:43	4079.974	1494232.300	T 32554927.000	486101.090	264434.020	335506.820	268299.630	35909.657	-109.070	3914.879	450.901	2179.690
3	13:35:05	5284.885	1551609.800	T 34304965.000	505222.870	276200.170	339034.250	265859.560	37027.565	-236.373	3931.913	490.110	2184.623
x		4763.429	93.523%	T 99.927%	96.131%	101.393%	96.763%	101.065%	100.451%	-187.293	105.278%	473.394	2105.171
σ		618.575	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	68.473	n/a	20.232	133.365

%RSD		12.986	2.091	T 2.830	1.953	2.512	1.198	0.732	1.550	36.559	1.498	4.274	6.335
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:34:22	354174.250	98.698%	351754.380	116945.260	96.608	60423.908	97.983%	375145.380	249610.910	196703.970	245827.340	95.807%
2	13:34:43	358751.630	98.349%	359251.910	117159.860	-40.562	60952.698	96.807%	381671.090	250540.830	198957.020	245984.900	97.088%
3	13:35:05	353735.350	97.652%	369066.410	118871.650	-86.159	60833.204	97.531%	386184.960	252442.670	199279.960	250115.380	95.736%
x		355553.750	98.233%	93.082%	97.691%	-10.038	100.608%	97.440%	381000.480	250864.800	101.238%	99.267%	96.210%
σ		2778.133	0.532%	n/a	n/a	95.130	n/a	0.593%	5550.261	1443.410	n/a	n/a	0.761%
%RSD		0.781	0.542	2.411	0.897	947.726	0.457	0.609	1.457	0.575	0.708	0.983	0.791

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:34:22	32953.533	690262.400	T 6386501.900	98.543%	0.000	171332.760	101144.700
2	13:34:43	34652.850	714301.530	T 6431935.800	96.348%	0.000	188073.570	104363.970
3	13:35:05	35406.415	711625.670	T 6415734.700	98.388%	0.000	195454.930	103487.100
x		114.927%	88.932%	T 95.670%	97.760%	0.000	92.698%	90.310%
σ		n/a	n/a	T n/a	1.225%	0.000	n/a	n/a
%RSD		3.659	1.868	T 0.359	1.253	0.000	6.683	1.616

ICVL 10/25/2016 01:39:44 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:40:06	105.186%	114.617	5197.659	542793.510	21179.586	49082.054	504586.130	18240.829	100.559%	29.809	9310.670	6136.768
2	13:40:28	100.612%	133.200	5115.300	564094.490	22110.175	50582.881	508750.720	19329.898	97.836%	30.618	9606.817	6528.921
3	13:40:49	100.903%	169.922	5270.020	549617.550	21190.000	53818.557	508421.390	19343.176	99.172%	10.075	10353.375	6339.737
x		102.234%	113.321%	119.525%	99.491%	94.585%	100.555%	93.317%	95.902%	99.189%	23.501	107.865%	92.373%
σ		2.561%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.362%	11.634	n/a	n/a
%RSD		2.505	20.211	1.490	1.970	2.486	4.731	0.456	3.335	1.373	49.505	5.507	3.096

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:40:06	3244.373	4584.284	409793.350	2083.589	843.838	2745.034	8418.510	658.797	283.355	123.247	465.242	2492.495
2	13:40:28	3135.369	4812.550	436496.340	2392.052	855.772	2731.114	8271.390	654.480	307.722	145.336	428.123	2407.135
3	13:40:49	2875.394	5497.680	438076.510	2266.579	832.329	2697.581	8593.521	740.381	287.114	137.640	462.735	2504.199
x		3085.045	94.768%	95.360%	108.763%	99.627%	98.317%	99.989%	94.395%	292.730	90.058%	452.033	2467.943
σ		189.568	n/a	n/a	n/a	n/a	n/a	n/a	n/a	13.118	n/a	20.745	52.986
%RSD		6.145	9.575	3.712	6.902	1.389	0.895	1.914	7.070	4.481	8.281	4.589	2.147

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:40:06	17754.765	102.370%	12234.809	2446.307	-52.570	601.937	100.057%	2493.767	3737.973	3022.167	3821.384	97.166%
2	13:40:28	17825.876	101.155%	12582.133	2561.528	-87.326	627.351	99.856%	2974.555	4381.976	3240.636	3779.185	97.510%
3	13:40:49	17472.269	101.040%	12736.690	2470.369	-45.216	508.978	99.302%	3313.441	4112.919	3241.768	3856.157	97.052%
x		88.715%	101.522%	101.138%	103.485%	-61.704	95.979%	99.738%	2927.254	4077.623	101.084%	95.804%	97.243%
σ		n/a	0.737%	n/a	n/a	22.492	n/a	0.391%	411.879	323.449	n/a	n/a	0.238%
%RSD		1.058	0.726	2.053	2.438	36.452	10.755	0.392	14.070	7.932	3.992	1.009	0.245

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:40:06	2726.771	13731.036	12099.329	95.866%	0.000	21321.522	10773.986
2	13:40:28	2301.142	13659.845	12808.180	100.127%	0.000	20211.118	10591.899
3	13:40:49	2956.917	14123.694	13436.304	98.188%	0.000	21106.177	10935.184
x		89.083%	87.231%	119.200%	98.060%	0.000	104.648%	94.407%
σ		n/a	n/a	n/a	2.134%	0.000	n/a	n/a
%RSD		12.500	1.805	5.233	2.176	0.000	2.820	1.595

ICBIS 10/25/2016 01:45:28 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:45:49	109.611%	-16.296	-375.526	2819.374	-914.063	-4341.728	-1666.889	-61.527	101.198%	24.661	1469.352	118.234
2	13:46:11	107.766%	-13.898	-311.404	-2177.866	-782.223	-4729.740	-3639.454	-226.144	104.983%	14.283	979.277	92.434
3	13:46:33	106.345%	-4.401	-423.658	-1804.018	-826.553	-4671.764	-4171.081	-78.352	104.104%	33.626	492.808	82.052
x		107.907%	-11.532	-370.196	-387.503	-840.946	-4581.077	-3159.141	-122.008	103.428%	24.190	980.479	97.573
σ		1.638%	6.290	56.316	2783.521	67.088	209.300	1319.382	90.576	1.981%	9.680	488.273	18.630
%RSD		1.518	54.549	15.213	718.322	7.978	4.569	41.764	74.238	1.915	40.017	49.799	19.093

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:45:49	4240.541	-228.738	4301.575	-85.074	-101.130	-101.977	-92.468	-224.132	459.198	-51.202	464.877	2616.140
2	13:46:11	4307.764	-184.859	-1672.062	-117.213	-83.326	-1.624	-214.858	-87.697	411.020	-4.780	483.828	2397.037
3	13:46:33	4466.987	-280.012	-562.685	-126.256	-106.898	-109.262	-211.796	-41.698	414.129	27.888	461.701	2349.365
x		4338.431	-231.203	688.943	-109.515	-97.118	-70.954	-173.041	-117.842	428.116	-9.365	470.135	2454.181
σ		116.296	47.625	3177.422	21.643	12.287	60.152	69.795	94.879	26.963	39.744	11.964	142.272
%RSD		2.681	20.599	461.203	19.763	12.652	84.776	40.334	80.514	6.298	424.404	2.545	5.797

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:45:49	-51.018	105.242%	-434.705	-28.002	-43.002	-47.196	101.856%	2164.957	-437.677	-329.560	-47.668	100.930%
2	13:46:11	-71.164	105.803%	-449.502	-33.143	-60.344	-25.350	102.827%	2514.118	-329.418	-274.768	-77.260	100.630%
3	13:46:33	-56.826	103.700%	-303.997	-42.921	-70.732	-15.185	103.207%	2393.433	-357.101	-276.545	-38.556	96.551%
x		-59.669	104.915%	-396.068	-34.689	-58.026	-29.244	102.630%	2357.503	-374.732	-293.624	-54.495	99.370%
σ		10.369	1.089%	80.078	7.579	14.010	16.357	0.696%	177.332	56.242	31.134	20.235	2.446%
%RSD		17.378	1.038	20.218	21.848	24.144	55.934	0.679	7.522	15.008	10.603	37.132	2.462

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:45:49	22.447	-487.583	423.612	99.991%	0.000	25186.335	-42.919
2	13:46:11	52.852	-658.634	295.831	98.998%	0.000	25138.754	-52.669
3	13:46:33	-15.173	-560.951	114.077	102.323%	0.000	23433.428	-19.284
x		20.042	-569.056	277.840	100.437%	0.000	24586.172	-38.290
σ		34.076	85.813	155.550	1.707%	0.000	998.589	17.167
%RSD		170.022	15.080	55.985	1.699	0.000	4.062	44.834

ICSA 10/25/2016 01:51:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	13:51:32	113.141%	-12.019	-527.164	TM 105797170.000	T 10884339.000	T 100599600.000	TM 107427020.000	T 4009490.400	117.712%	226615.580	1547.479	2054.77
2	13:51:54	109.820%	-7.199	-459.458	TM 105744380.000	T 10930530.000	T 100889730.000	TM 106245720.000	T 4017649.200	119.407%	223056.860	2239.644	1857.40
3	13:52:16	108.989%	-2.507	-410.910	TM 103816650.000	T 10700745.000	T 98878436.000	TM 105967210.000	T 3969444.700	121.939%	222563.850	1025.109	1955.39
x		110.650%	-1.#IO%	-1.#IO%	TM 94.703%	T 95.394%	T 98.393%	TM 98.004%	T 101.073%	119.686%	224078.760	1.#IO%	1.#IO
σ		2.197%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	2.127%	2210.732	n/a	n/
%RSD		1.985	65.680	12.534	TM 1.074	T 1.121	T 1.086	TM 0.727	T 0.645	1.777	0.987	37.981	5.04

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	13:51:32	1525.034	141.307	T 213152630.000	-30.975	89.412	473.535	-687.005	0.314	317.924	8.907	564.276	2527.29
2	13:51:54	1185.070	202.455	T 215850450.000	-37.333	65.279	419.880	-767.098	-117.166	349.377	-0.485	521.995	2435.07
3	13:52:16	1592.398	98.357	T 210205100.000	12.930	89.809	498.971	-644.285	-52.646	340.937	-28.328	535.573	2483.95
x		1434.167	1.#IO%	T 94.918%	-1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	336.079	-1.#IO%	540.615	2482.10

σ		218.338	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	16.280	n/a	21.587	46.13
%RSD		15.224	35.497	T 1.325	148.270	17.238	8.699	8.914	104.133	4.844	291.835	3.993	1.85
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	13:51:32	2465.568	112.494%	T 2497810.600	196.557	242.719	148.130	110.232%	1995.927	-407.865	-371.647	3.407	109.006%
2	13:51:54	2514.294	111.736%	T 2627058.800	172.769	297.213	43.265	112.934%	2200.564	-260.266	-287.031	18.837	110.746%
3	13:52:16	2512.072	114.589%	T 2547761.400	173.130	267.132	178.481	114.926%	2258.155	-390.060	-298.241	-30.938	112.931%
x		1.#IO%	112.940%	T 103.318%	1.#IO%	269.021	1.#IO%	112.697%	2151.548	-352.730	-1.#IO%	-1.#IO%	110.894%
σ		n/a	1.478%	T n/a	n/a	27.296	n/a	2.356%	137.814	80.570	n/a	n/a	1.967%
%RSD		1.102	1.309	T 2.548	7.538	10.147	57.545	2.091	6.405	22.842	14.409	879.148	1.77

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:51:32	296.749	-713.602	2518.202	103.051%	0.000	26604.509	-24.550
2	13:51:54	397.683	-642.933	2215.718	108.181%	0.000	25004.361	-40.947
3	13:52:16	360.024	-687.139	2486.646	107.361%	0.000	23292.249	-45.321
x		1.#IO%	-1.#IO%	1.#IO%	106.198%	0.000	1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	2.756%	0.000	n/a	n/a
%RSD		14.512	5.241	6.909	2.595	0.000	6.635	29.643

ICSAB 10/25/2016 01:56:53 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	13:57:14	102.818%	2957.971	45047.946	TM 107388270.000	T 10865445.000	T 99688905.000	TM 106021980.000	T 4060960.600	110.288%	229822.440	40628.512	80594.6
2	13:57:36	102.890%	2989.917	42471.789	TM 104930530.000	T 10723919.000	T 97705340.000	TM 106105470.000	T 4030069.000	113.087%	228334.230	39021.038	80176.0
3	13:57:58	101.707%	2946.275	44904.947	TM 106268650.000	T 10793463.000	T 98346049.000	TM 106014460.000	T 4002738.400	113.938%	225795.960	41552.997	80307.4
x		102.472%	96.509%	101.573%	TM 95.673%	T 95.005%	T 96.878%	TM 97.545%	T 101.892%	112.438%	227984.210	89.328%	93.738
σ		0.663%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.910%	2035.933	n/a	r
%RSD		0.647	0.762	3.280	TM 1.159	T 0.656	T 1.027	TM 0.048	T 0.723	1.698	0.893	3.171	0.2

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	13:57:14	2475.923	60561.775	T 216158610.000	47193.507	9569.235	25457.408	18175.968	16010.568	-170.360	4180.098	523.606	2566.0
2	13:57:36	2420.942	60577.651	T 216797720.000	47835.038	10090.020	25114.117	18101.823	16052.691	-106.430	4101.076	525.731	2575.7
3	13:57:58	2107.545	60096.890	T 217379660.000	47344.430	9451.583	24310.885	18115.803	15592.456	-103.506	4120.011	529.961	2464.1
x		2334.803	92.251%	T 96.570%	91.868%	91.637%	90.071%	86.045%	97.354%	-126.765	87.978%	526.433	2535.3
σ		198.722	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	37.783	n/a	3.235	61.8
%RSD		8.511	0.452	T 0.282	0.707	3.501	2.357	0.217	1.602	29.805	0.998	0.615	2.4

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	13:57:14	2426.177	108.993%	T 2527587.000	57211.820	317.748	13579.569	107.621%	1496.063	90817.347	73095.124	97958.743	107.882
2	13:57:36	2363.912	107.826%	T 2592617.400	56879.404	256.308	13817.118	110.515%	1755.526	92461.412	73497.251	97326.580	110.531
3	13:57:58	2450.002	111.731%	T 2583210.000	55487.859	286.964	14337.788	112.841%	1803.540	92794.924	73788.453	98712.774	113.110
x		2413.364	109.517%	T 103.732%	93.867%	287.006	92.175%	110.325%	1685.043	92024.561	93.753%	98.340%	110.508
σ		44.452	2.004%	T n/a	n/a	30.720	n/a	2.615%	165.413	1058.693	n/a	n/a	2.614
%RSD		1.842	1.830	T 1.369	1.618	10.704	2.788	2.370	9.817	1.150	0.474	0.708	2.3

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:57:14	29213.125	173999.270	238700.250	105.302%	0.000	205471.500	117200.260
2	13:57:36	29088.702	176744.870	239944.250	107.151%	0.000	215586.610	118067.150
3	13:57:58	29130.170	176434.930	243103.310	108.546%	0.000	224804.030	119181.540
x		97.544%	88.617%	89.748%	106.999%	0.000	107.901%	103.595%
σ		n/a	n/a	n/a	1.627%	0.000	n/a	n/a
%RSD		0.217	0.856	0.943	1.521	0.000	4.492	0.841

CCV 10/25/2016 02:02:37 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	14:02:58	93.503%	76377.824	25892.321	T 10941256.000	T 3341128.500	T 30713531.000	T 10667263.000	T 1195735.500	93.233%	21755.712	T 2120766.400	626311
2	14:03:20	90.295%	78797.789	27039.972	T 10824201.000	T 3310887.700	T 30131950.000	T 10550563.000	1124770.200	92.739%	21804.284	T 2121889.200	621777
3	14:03:42	89.190%	76663.948	26988.194	T 11079198.000	T 3322423.500	T 30623343.000	T 10735197.000	1148888.100	90.496%	22697.043	T 2176279.200	631381
x		90.996%	100.626%	98.081%	T 98.634%	T 97.543%	T 99.877%	T 97.971%	T 97.434%	92.156%	22085.680	T 94.617%	91.3
σ		2.241%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.458%	530.013	T n/a	
%RSD		2.462	1.711	2.433	T 1.166	T 0.459	T 1.027	T 0.877	T 3.120	1.582	2.400	T 1.483	0

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:02:58	7150.655	T 3188815.700	T 65853253.000	966150.580	522398.140	631994.830	511229.120	71708.259	-821.677	7788.334	468.177	1810
2	14:03:20	7620.780	T 3241758.200	T 66549359.000	950213.240	508098.130	608973.810	495834.010	70046.729	-726.818	7460.639	463.953	1762
3	14:03:42	7837.611	T 3267278.500	T 67146664.000	973963.690	515926.120	620216.370	504731.100	69635.046	-669.408	7574.385	468.144	1739
x		7536.349	T 98.726%	T 98.772%	93.251%	97.359%	89.548%	95.660%	97.164%	-739.301	101.198%	466.758	1770
σ		351.174	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	76.898	n/a	2.429	36

%RSD		4.660	T 1.238	T 0.973	1.256	1.389	1.856	1.534	1.558	10.401	2.187	0.520	2
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	14:02:58	715251.470	95.186%	1449093.600	237598.080	159.605	120852.930	94.303%	732796.450	487542.310	390609.470	496506.560	95.3
2	14:03:20	698728.000	95.458%	1472108.700	232706.020	736.293	116636.520	96.239%	722947.080	484227.650	381859.090	486606.130	93.9
3	14:03:42	704159.960	94.826%	1502799.200	235942.670	255.012	120293.740	93.883%	746448.060	493170.190	391497.890	496135.880	95.1
x		706046.480	95.157%	95.316%	97.732%	383.637	98.776%	94.808%	734063.860	488313.380	99.033%	98.959%	94.8
σ		8421.728	0.317%	n/a	n/a	309.113	n/a	1.257%	11801.641	4520.855	n/a	n/a	0.7
%RSD		1.193	0.333	1.827	1.057	80.574	1.920	1.326	1.608	0.926	1.373	1.138	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:02:58	29125.376	1374090.500	T 12653023.000	98.133%	0.000	175939.270	103156.440
2	14:03:20	30311.068	1406887.400	T 13073514.000	96.758%	0.000	193065.100	106828.040
3	14:03:42	31250.558	1367663.600	T 12554040.000	99.317%	0.000	200094.550	104585.180
x		101.176%	87.172%	T 95.203%	98.069%	0.000	95.077%	91.940%
σ		n/a	n/a	T n/a	1.281%	0.000	n/a	n/a
%RSD		3.523	1.521	T 2.162	1.306	0.000	6.549	1.765

CCB 10/25/2016 02:08:20 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:08:42	102.218%	-3.737	-535.439	36287.099	2682.693	25764.910	21614.357	1058.467	94.038%	143.226	1074.378	72.971
2	14:09:04	97.393%	7.379	-445.856	23516.168	2542.585	23814.948	18635.061	955.757	95.679%	52.194	2236.734	129.237
3	14:09:25	100.585%	18.910	-367.119	24874.305	1931.389	19590.098	16690.857	827.458	95.193%	78.696	1675.481	-82.948
x		100.065%	7.517	-449.471	28225.857	2385.556	23056.652	18980.092	947.227	94.970%	91.372	1662.198	39.753
σ		2.454%	11.324	84.218	7014.189	399.510	3156.475	2479.818	115.741	0.843%	46.821	581.292	109.924
%RSD		2.452	150.640	18.737	24.850	16.747	13.690	13.065	12.219	0.887	51.243	34.971	276.516

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:08:42	3891.420	452.169	72982.207	156.399	23.795	61.032	-180.170	-92.705	369.924	-40.240	454.934	2534.549
2	14:09:04	3538.129	225.828	67431.347	134.886	26.285	-3.777	-188.143	-137.035	396.161	-60.099	453.549	2612.116
3	14:09:25	3844.043	357.450	52492.354	157.525	27.113	117.437	-141.663	-130.426	377.565	-20.963	469.672	2547.111
x		3757.864	345.149	64301.969	149.603	25.731	58.231	-169.992	-120.055	381.217	-40.434	459.385	2564.592
σ		191.765	113.671	10597.324	12.758	1.727	60.656	24.856	23.916	13.494	19.569	8.936	41.634
%RSD		5.103	32.934	16.481	8.528	6.713	104.164	14.622	19.920	3.540	48.397	1.945	1.623

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:08:42	42.296	99.090%	2665.930	31.235	-40.485	-23.274	95.839%	3276.629	-140.741	-98.138	85.534	96.065%
2	14:09:04	104.156	98.333%	2916.258	8.644	-32.999	-5.998	98.337%	3727.396	8.828	10.185	147.129	96.902%
3	14:09:25	142.557	97.707%	2416.980	19.624	-52.516	-6.792	97.303%	3957.160	134.677	33.249	67.449	97.653%
x		96.336	98.377%	2666.389	19.834	-42.000	-12.021	97.160%	3653.728	0.921	-18.235	100.037	96.873%
σ		50.586	0.693%	249.639	11.297	9.847	9.754	1.255%	346.195	137.879	70.153	41.773	0.795%
%RSD		52.510	0.704	9.362	56.957	23.444	81.137	1.292	9.475	14963.361	384.719	41.757	0.820

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:08:42	53.304	154.429	3048.033	98.133%	0.000	23981.742	8.696
2	14:09:04	20.366	-67.659	2826.704	97.659%	0.000	22831.778	-21.603
3	14:09:25	-6.744	140.437	3258.543	99.526%	0.000	21986.133	-7.588
x		22.309	75.736	3044.427	98.440%	0.000	22933.218	-6.832
σ		30.071	124.380	215.942	0.970%	0.000	1001.664	15.164
%RSD		134.795	164.230	7.093	0.986	0.000	4.368	221.948

MB 200-110491/1-A 10/25/2016 02:14:02 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:14:24	106.564%	-20.857	-542.999	94820.864	-987.055	7423.555	11908.730	776.359	98.569%	70.901	1225.057	633.792
2	14:14:46	101.730%	-20.857	-452.599	91484.277	-874.768	7203.129	11602.915	718.233	98.373%	50.676	1397.770	653.340
3	14:15:08	99.944%	-20.857	-445.471	107164.440	-1004.547	8621.791	13752.707	589.700	97.291%	46.201	571.451	708.373
x		102.746%	-20.857	-480.356	97823.195	-955.456	7749.492	12421.451	694.764	98.078%	55.926	1064.759	665.168
σ		3.425%	0.000	54.367	8259.988	70.423	763.431	1162.998	95.517	0.688%	13.160	435.858	38.672
%RSD		3.334	0.000	11.318	8.444	7.371	9.851	9.363	13.748	0.702	23.532	40.935	5.814

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:14:24	2138.500	31.626	8248.571	-97.657	173.715	-4.724	-113.741	-23.062	184.023	23.820	431.662	2218.335
2	14:14:46	2151.191	-124.165	10663.995	-46.657	103.173	-42.487	-194.358	31.283	168.967	10.704	455.155	2236.959
3	14:15:08	2202.438	-13.180	9305.274	-101.663	95.551	41.415	-46.553	-167.255	223.203	-65.111	477.132	2702.863
x		2164.043	-35.240	9405.947	-81.992	124.146	-1.932	-118.217	-53.012	192.065	-10.196	454.650	2386.052
σ		33.851	80.204	1210.855	30.666	43.097	42.020	74.004	102.602	27.998	48.008	22.739	274.524
%RSD		1.564	227.596	12.873	37.402	34.714	2175.040	62.600	193.546	14.577	470.860	5.001	11.505

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:14:24	218.885	102.223%	-693.557	-37.540	-54.517	-35.818	100.427%	24513.469	-659.566	-522.116	-86.869	98.955%
2	14:14:46	175.504	105.269%	-567.966	-37.773	-46.696	-43.557	101.615%	24512.701	-647.663	-491.415	-77.086	99.070%
3	14:15:08	281.417	99.766%	-640.041	-37.152	-40.759	-49.232	98.507%	24508.458	-662.898	-462.696	-66.468	93.912%
x		225.269	102.419%	-633.854	-37.488	-47.324	-42.869	100.183%	24511.543	-656.709	-492.076	-76.808	97.312%
σ		53.245	2.757%	63.024	0.314	6.901	6.733	1.569%	2.699	8.009	29.716	10.203	2.946%
%RSD		23.636	2.692	9.943	0.837	14.582	15.707	1.566	0.011	1.220	6.039	13.284	3.027

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:14:24	-19.073	-967.774	218.050	99.171%	0.000	15440.418	-57.755
2	14:14:46	-49.536	-887.376	424.070	100.692%	0.000	15355.397	-58.059
3	14:15:08	-21.309	-831.048	552.744	96.357%	0.000	15609.456	-62.355
x		-29.973	-895.400	398.288	98.740%	0.000	15468.424	-59.389
σ		16.979	68.715	168.830	2.199%	0.000	129.324	2.572
%RSD		56.649	7.674	42.389	2.227	0.000	0.836	4.331

LCS 200-110491/2-A 10/25/2016 02:19:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:20:06	102.919%	1145.146	41460.711	T 5767936.800	212925.210	469591.970	T 5420976.200	182994.360	98.199%	40.653	81502.491	67554.811
2	14:20:28	105.975%	1116.247	40849.105	T 5857944.900	217949.260	469861.180	T 5478691.400	188912.270	97.218%	46.207	82684.874	68235.855
3	14:20:50	100.557%	1083.032	42009.243	T 5776982.000	214928.790	474799.830	T 5434639.800	188320.250	96.993%	61.691	81590.219	67693.824
x		103.150%	1114.808	41439.687	T 5800954.600	215267.750	471417.660	T 5444769.100	186742.290	97.470%	49.517	81925.861	67828.163
σ		2.716%	31.082	580.355	T 49561.875	2529.121	2932.135	T 30161.444	3259.273	0.641%	10.903	658.786	359.848
%RSD		2.633	2.788	1.400	T 0.854	1.175	0.622	T 0.554	1.745	0.658	22.019	0.804	0.531

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:20:06	2113.011	49774.973	T 4522545.200	19236.829	8772.030	26029.380	72623.197	6417.184	-6.004	1237.080	459.719	2011.789
2	14:20:28	1801.592	49083.693	T 4519546.700	20122.629	8846.414	26627.011	74469.536	6522.432	-24.223	1274.588	447.735	2128.660
3	14:20:50	1824.124	48972.122	T 4638982.200	19803.321	8428.860	25922.303	72830.513	6249.360	6.898	1233.109	478.583	2207.068
x		1912.909	49276.929	T 4560358.000	19720.926	8682.435	26192.898	73307.749	6396.325	-7.777	1248.259	462.012	2115.839

σ		173.659	434.911	T 68107.020	448.612	222.729	379.746	1011.463	137.726	15.636	22.888	15.551	98.269
%RSD		9.078	0.883	T 1.493	2.275	2.565	1.450	1.380	2.153	201.064	1.834	3.366	4.644
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:20:06	179818.710	102.708%	118243.900	24251.467	-83.193	5806.064	99.954%	37163.508	35537.058	28707.995	38059.342	97.889%
2	14:20:28	179562.870	101.079%	120666.310	24168.624	-68.904	5496.394	99.055%	34172.095	37760.817	29090.513	38491.342	96.909%
3	14:20:50	180716.770	103.187%	120172.480	23767.036	-77.394	5475.082	99.044%	34145.764	37051.022	29144.092	39801.374	98.769%
x		180032.780	102.325%	119694.230	24062.376	-76.497	5592.513	99.351%	35160.456	36782.966	28980.867	38784.019	97.856%
σ		606.001	1.105%	1280.067	259.104	7.187	185.247	0.522%	1734.744	1135.855	237.827	907.146	0.931%
%RSD		0.337	1.080	1.069	1.077	9.395	3.312	0.525	4.934	3.088	0.821	2.339	0.951

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:20:06	55867.458	137647.060	101368.140	97.751%	0.000	182609.740	110565.790
2	14:20:28	56103.013	139111.430	102109.150	97.650%	0.000	194590.940	112926.400
3	14:20:50	55439.189	140237.180	101877.090	98.461%	5.078	197737.020	110820.510
x		55803.220	138998.560	101784.790	97.954%	1.693	191645.900	111437.570
σ		336.542	1298.746	379.033	0.442%	2.932	7982.078	1295.643
%RSD		0.603	0.934	0.372	0.451	173.205	4.165	1.163

200-35680-A-8-A 10/25/2016 02:25:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:25:48	117.149%	412.358	1948.321	T 797104.650	T 1525528.200	T 58547455.000	T 4436589.700	818105.300	143.911%	9374.470	156863.200	117152.240
2	14:26:10	114.725%	406.256	2080.322	T 772128.310	T 1524668.300	T 58676186.000	T 4437725.900	806212.300	147.680%	8938.436	158229.970	117482.770
3	14:26:31	116.719%	439.657	2080.669	T 758330.090	T 1572101.500	T 61440374.000	T 4603348.900	845440.450	146.098%	9618.059	158910.450	121808.540
x		116.198%	419.424	2036.437	T 775854.350	T 1540766.000	T 59554672.000	T 4492554.800	823252.680	145.896%	9310.322	158001.210	118814.520
σ		1.293%	17.786	76.311	T 19653.987	T 27140.740	T 1634333.800	T 95952.170	20114.262	1.893%	344.323	1042.621	2598.164
%RSD		1.113	4.241	3.747	T 2.533	T 1.762	T 2.744	T 2.136	2.443	1.297	3.698	0.660	2.187

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:25:48	2119.817	T 7111630.100	T 196655540.000	91672.995	44083.456	T 2026366.800	492966.770	4367.639	49.346	958.340	494.096	2107.690
2	14:26:10	2509.997	T 7263444.200	T 199909370.000	89311.509	43366.111	T 1989641.200	486023.970	4333.818	53.521	895.899	523.162	2149.928
3	14:26:31	2475.426	T 7496627.700	T 204015740.000	90680.860	45644.467	T 2016285.500	493586.730	4200.645	76.630	875.006	489.575	2056.595
x		2368.413	T 7290567.300	T 200193550.000	90555.121	44364.678	T 2010764.500	490859.150	4300.701	59.832	909.748	502.278	2104.738
σ		215.984	T 193926.620	T 3688321.700	1185.754	1164.921	T 18975.094	4198.854	88.285	14.696	43.359	18.227	46.736
%RSD		9.119	T 2.660	T 1.842	1.309	2.626	T 0.944	0.855	2.053	24.562	4.766	3.629	2.221

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:25:48	383131.050	298.411%	1157.434	11802.993	-160.952	4440.104	116.781%	31765.637	702.532	515.270	301093.730	130.180%
2	14:26:10	380693.470	303.568%	1596.113	12105.633	-249.812	4470.595	118.895%	32511.764	655.662	530.063	303708.040	133.215%
3	14:26:31	383451.200	318.829%	1354.981	11499.853	-154.716	4541.556	121.230%	32704.125	612.917	593.111	305305.330	138.570%
x		382425.240	306.936%	1369.509	11802.826	-188.494	4484.085	118.968%	32327.175	657.037	546.148	303369.030	133.988%
σ		1508.272	10.618%	219.700	302.890	53.195	52.054	2.225%	495.726	44.823	41.338	2126.168	4.248%
%RSD		0.394	3.459	16.042	2.566	28.221	1.161	1.870	1.533	6.822	7.569	0.701	3.170

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:25:48	630.890	3614.543	2298477.900	115.719%	0.000	197687.030	85741.969
2	14:26:10	620.020	3995.321	2343554.900	117.151%	0.000	198295.060	86831.638
3	14:26:31	693.918	3708.296	2366390.900	118.026%	0.000	194637.140	87964.534
x		648.276	3772.720	2336141.200	116.965%	0.000	196873.080	86846.047
σ		39.899	198.396	34558.132	1.165%	0.000	1960.095	1111.353
%RSD		6.155	5.259	1.479	0.996	0.000	0.996	1.280

200-35680-A-8-A SD@5 10/25/2016 02:31:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:31:30	111.259%	57.789	-242.550	190359.690	347416.500	T 14282597.000	T 1072321.700	200446.140	129.894%	2089.380	37584.987	28294.282
2	14:31:52	111.687%	104.494	-287.325	183311.600	351445.130	T 14163291.000	T 1079148.500	203590.770	128.606%	2337.299	40858.247	28678.779
3	14:32:14	108.721%	66.523	-160.083	186469.520	355768.010	T 14471984.000	T 1084134.500	202808.150	125.003%	2580.618	40430.863	29553.310
x		110.556%	76.268	-229.986	186713.610	351543.210	T 14305957.000	T 1078534.900	202281.690	127.834%	2335.765	39624.699	28842.124
σ		1.603%	24.831	64.545	3530.381	4176.618	T 155666.980	T 5930.268	1637.082	2.535%	245.623	1779.321	645.212
%RSD		1.450	32.557	28.065	1.891	1.188	T 1.088	T 0.550	0.809	1.983	10.516	4.490	2.237

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:31:30	2726.587	T 1713651.000	T 48273321.000	22901.739	10750.813	400586.790	115450.820	1916.340	209.284	242.076	498.709	2396.174
2	14:31:52	2444.630	T 1754472.800	T 49449433.000	23086.322	10820.986	411303.190	118298.470	1778.936	256.593	190.057	487.400	2533.555
3	14:32:14	2590.671	T 1785622.800	T 49738505.000	23047.831	11541.144	405767.630	116180.400	1807.299	259.800	228.633	482.050	2398.460
x		2587.296	T 1751248.900	T 49153753.000	23011.964	11037.648	405885.870	116643.230	1834.191	241.893	220.256	489.386	2442.730
σ		141.009	T 36094.059	T 776054.980	97.379	437.450	5359.175	1479.169	72.542	28.285	27.003	8.506	78.665

%RSD		5.450	ŧ2.061	ŧ1.579	0.423	3.963	1.320	1.268	3.955	11.693	12.260	1.738	3.220
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:31:30	79928.805	164.599%	-357.426	2580.552	-97.310	986.297	121.315%	6979.455	-514.862	-418.495	64420.454	120.434%
2	14:31:52	81856.337	163.436%	-202.844	2450.789	-94.178	1005.574	119.616%	7287.700	-509.120	-389.426	65160.400	119.452%
3	14:32:14	80345.000	162.947%	-137.754	2529.450	-82.085	908.038	120.425%	7226.275	-428.935	-379.862	64897.199	120.176%
x		80710.048	163.661%	-232.675	2520.264	-91.191	966.636	120.452%	7164.477	-484.305	-395.928	64826.018	120.021%
σ		1014.293	0.848%	112.833	65.367	8.040	51.655	0.850%	163.150	48.038	20.120	375.074	0.509%
%RSD		1.257	0.518	48.494	2.594	8.816	5.344	0.706	2.277	9.919	5.082	0.579	0.424

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:31:30	81.694	-158.689	509763.880	111.827%	0.000	36719.155	18233.989
2	14:31:52	41.952	-142.854	516132.180	112.692%	0.000	38820.982	18426.455
3	14:32:14	28.159	-208.647	510502.270	112.629%	0.000	39765.853	18210.249
x		50.602	-170.063	512132.780	112.383%	0.000	38435.330	18290.231
σ		27.796	34.339	3483.209	0.483%	0.000	1559.531	118.569
%RSD		54.931	20.192	0.680	0.429	0.000	4.058	0.648

200-35680-A-8-A PDS 10/25/2016 02:36:51 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:37:13	111.304%	1535.776	44195.892	ŧ5197110.200	ŧ1685603.600	ŧ59365503.000	ŧ8979832.500	997409.480	145.989%	11466.720	222562.680	169300.600
2	14:37:35	112.287%	1653.517	44877.372	ŧ5266361.700	ŧ1742497.100	ŧ59719405.000	ŧ9212659.600	1012703.800	145.289%	13411.993	230381.690	174371.870
3	14:37:57	111.816%	1633.745	45278.910	ŧ4956031.000	ŧ1665359.500	ŧ58293269.000	ŧ8828277.500	ŧ1018031.500	152.785%	9216.665	221727.670	168237.200
x		111.802%	1607.679	44784.058	ŧ5139834.300	ŧ1697820.100	ŧ59126059.000	ŧ9006923.200	ŧ1009381.600	148.021%	11365.126	224890.680	170636.560
σ		0.492%	63.050	547.506	ŧ162900.840	ŧ39993.553	ŧ742607.620	ŧ193617.750	ŧ10704.901	4.141%	2099.508	4773.648	3278.285
%RSD		0.440	3.922	1.223	ŧ3.169	ŧ2.356	ŧ1.256	ŧ2.150	ŧ1.061	2.798	18.473	2.123	1.921

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:37:13	3310.959	ŧ7260631.300	ŧ203525370.000	107017.150	50136.161	ŧ1990153.000	552446.920	6966.397	31.116	2084.661	507.419	1946.155
2	14:37:35	3673.660	ŧ7499530.200	ŧ209084070.000	110649.980	51757.591	ŧ2083144.200	572121.320	6636.329	89.804	2069.794	512.109	2140.061
3	14:37:57	2690.762	ŧ7295498.400	ŧ200517920.000	105188.640	51098.497	ŧ2048764.800	566994.730	6814.886	39.400	2106.164	525.896	2130.958
x		3225.127	ŧ7351886.600	ŧ204375780.000	107618.590	50997.416	ŧ2040687.300	563854.320	6805.870	53.440	2086.873	515.141	2072.391
σ		497.039	ŧ129046.100	ŧ4345932.200	2779.905	815.427	ŧ47018.842	10206.231	165.218	31.764	18.285	9.605	109.419
%RSD		15.411	ŧ1.755	ŧ2.126	2.583	1.599	ŧ2.304	1.810	2.428	59.438	0.876	1.864	5.280

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:37:13	542991.140	303.223%	48245.301	33180.986	-133.250	9481.946	121.105%	31206.533	35870.997	28264.972	332472.320	134.808%
2	14:37:35	556400.190	312.904%	47436.760	34925.906	-265.819	9683.352	120.094%	32671.207	36646.058	29212.037	340123.100	136.818%
3	14:37:57	552298.850	317.266%	48347.471	33933.059	-383.729	9764.038	121.699%	32927.935	36270.332	29157.159	339567.260	137.213%
x		550563.390	311.131%	48009.844	34013.317	-260.933	9643.112	120.966%	32268.558	36262.462	28878.056	337387.560	136.280%
σ		6870.921	7.188%	498.927	875.224	125.311	145.287	0.812%	928.655	387.591	531.655	4265.783	1.290%
%RSD		1.248	2.310	1.039	2.573	48.024	1.507	0.671	2.878	1.069	1.841	1.264	0.946

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:37:13	21098.658	132841.640	2415085.800	115.254%	0.000	365832.690	187668.630
2	14:37:35	20983.834	132556.350	2416327.900	118.017%	0.000	371868.600	187926.740
3	14:37:57	21251.481	134973.140	2454039.200	117.078%	0.000	382218.680	192862.870
x		21111.324	133457.040	2428484.300	116.783%	0.000	373306.660	189486.080
σ		134.272	1320.701	22139.914	1.405%	0.000	8287.111	2927.232
%RSD		0.636	0.990	0.912	1.203	0.000	2.220	1.545

200-35680-A-8-B MS 10/25/2016 02:42:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:42:56	112.649%	1648.135	38950.495	T 5338240.500	T 1718124.100	T 60467951.000	T 9213395.000	999853.960	150.663%	13163.726	235111.490	175297.950
2	14:43:18	112.256%	1602.756	39931.615	T 5388452.900	T 1718430.900	T 60215299.000	T 9210906.400	T 1038869.300	152.450%	12821.505	231760.920	175528.190
3	14:43:39	111.139%	1655.073	39814.898	T 5276828.700	T 1689999.000	T 59371866.000	T 9014516.300	T 1040824.600	155.923%	12853.580	229555.060	172973.320
x		112.014%	1635.322	39565.669	T 5334507.300	T 1708851.300	T 60018372.000	T 9146272.500	T 1026515.900	153.012%	12946.270	232142.490	174599.820
σ		0.784%	28.415	535.943	T 55905.662	T 16327.340	T 573964.660	T 114111.060	T 23110.648	2.674%	189.004	2797.800	1413.286
%RSD		0.700	1.738	1.355	T 1.048	T 0.955	T 0.956	T 1.248	T 2.251	1.748	1.460	1.205	0.809

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:42:56	2515.629	T 7152625.400	T 202933510.000	106686.550	50483.332	T 1972879.400	545152.300	7119.406	5.973	2258.166	520.903	1749.422
2	14:43:18	2936.799	T 7185932.100	T 205599760.000	108712.720	51708.851	T 1991808.500	549421.330	7196.243	17.033	2196.797	518.508	1853.679
3	14:43:39	2639.207	T 7065199.500	T 200859160.000	105898.750	50215.879	T 1957233.900	544109.800	6973.617	33.557	2221.265	510.377	1903.685
x		2697.212	T 7134585.700	T 203130810.000	107099.340	50802.688	T 1973973.900	546227.810	7096.422	18.854	2225.409	516.596	1835.595
σ		216.494	T 62355.161	T 2376451.500	1451.689	796.073	T 17313.304	2814.361	113.079	13.882	30.894	5.517	78.705
%RSD		8.027	T 0.874	T 1.170	1.355	1.567	T 0.877	0.515	1.593	73.627	1.388	1.068	4.288

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:42:56	567071.420	317.289%	47949.459	34729.386	-218.822	9493.287	122.098%	43238.598	6058.583	4888.111	336762.860	138.118%
2	14:43:18	568592.980	316.128%	48335.128	35998.819	-304.953	9805.638	122.276%	44110.908	6016.885	5040.245	347494.990	140.185%
3	14:43:39	570348.130	322.228%	48483.189	34202.251	-136.866	9668.641	124.518%	43224.058	6341.736	4990.884	342505.430	138.986%
x		568670.840	318.548%	48255.926	34976.818	-220.214	9655.855	122.964%	43524.521	6139.068	4973.080	342254.430	139.096%
σ		1639.741	3.239%	275.539	923.489	84.052	156.567	1.349%	507.878	176.750	77.614	5370.470	1.038%
%RSD		0.288	1.017	0.571	2.640	38.168	1.621	1.097	1.167	2.879	1.561	1.569	0.746

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:42:56	22394.999	139326.850	2802054.900	116.129%	0.000	380282.540	195215.150
2	14:43:18	22923.289	141984.170	2796044.800	118.409%	0.000	388630.860	198721.010
3	14:43:39	23508.255	139847.020	2804802.300	120.470%	0.000	390314.270	197188.970
x		22942.181	140386.010	2800967.300	118.336%	0.000	386409.220	197041.710
σ		556.868	1408.271	4478.900	2.171%	0.000	5372.212	1757.564
%RSD		2.427	1.003	0.160	1.835	0.000	1.390	0.892

200-35680-A-8-C MSD 10/25/2016 02:48:17 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:48:39	113.582%	1462.723	36072.171	T 5175843.900	T 1589947.700	T 56249661.000	T 8693575.500	936931.160	150.123%	15120.325	220088.590	169032.300
2	14:49:00	110.058%	1553.397	38825.754	T 5312987.000	T 1597782.600	T 56790832.000	T 8819089.600	944921.010	150.976%	12980.784	221879.630	168186.020
3	14:49:22	110.093%	1625.561	40101.478	T 5243961.200	T 1583122.500	T 56186606.000	T 8789329.000	948984.510	151.874%	14238.192	225037.360	169416.880
x		111.245%	1547.227	38333.134	T 5244264.000	T 1590284.300	T 56409033.000	T 8767331.400	943612.230	150.991%	14113.100	222335.200	168878.400
σ		2.025%	81.594	2059.328	T 68572.048	T 7335.832	T 332147.020	T 65584.835	6132.332	0.875%	1075.242	2505.643	629.697
%RSD		1.820	5.274	5.372	T 1.308	T 0.461	T 0.589	T 0.748	0.650	0.580	7.619	1.127	0.373

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:48:39	2950.988	T 6174148.300	T 190500340.000	100972.210	47637.722	1752840.400	496115.270	6900.142	60.202	2005.668	508.925	1993.501
2	14:49:00	3146.549	T 6213535.800	T 193049430.000	100547.520	48119.416	T 1940673.200	508559.080	6895.597	5.168	2116.277	493.430	2160.240
3	14:49:22	2701.816	T 6191398.000	T 192231000.000	100939.250	48760.256	T 1937629.200	506713.150	6842.150	29.908	2036.518	505.831	1984.833
x		2933.117	T 6193027.300	T 191926920.000	100819.660	48172.465	T 1877047.600	503795.840	6879.297	31.760	2052.821	502.729	2046.191

σ		222.904	ᴛ 19744.210	ᴛ 1301465.800	236.255	563.144	ᴛ 107577.360	6715.293	32.250	27.564	57.078	8.200	98.864
%RSD		7.600	ᴛ 0.319	ᴛ 0.678	0.234	1.169	ᴛ 5.731	1.333	0.469	86.788	2.780	1.631	4.832
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:48:39	531932.590	305.741%	49118.374	34049.648	-128.339	8835.232	123.400%	38624.926	6711.365	5259.451	314449.040	136.036%
2	14:49:00	545394.330	311.176%	48937.595	35031.754	-154.719	9046.290	122.917%	39208.923	6765.872	5416.955	326669.910	139.503%
3	14:49:22	532816.740	308.689%	48671.440	34368.889	-137.448	8981.946	124.352%	39038.798	6728.033	5321.972	323381.520	140.588%
x		536714.550	308.535%	48909.136	34483.430	-140.169	8954.489	123.556%	38957.549	6735.090	5332.792	321500.160	138.709%
σ		7529.895	2.721%	224.822	500.972	13.398	108.175	0.730%	300.357	27.930	79.308	6323.928	2.378%
%RSD		1.403	0.882	0.460	1.453	9.559	1.208	0.591	0.771	0.415	1.487	1.967	1.714

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:48:39	22917.158	136767.930	2257066.100	115.628%	0.000	361365.460	191311.430
2	14:49:00	23459.994	139890.210	2286680.400	118.309%	0.000	360533.390	190084.290
3	14:49:22	23366.801	138595.860	2261139.200	119.704%	0.000	364960.260	191415.960
x		23247.984	138418.000	2268295.200	117.880%	0.000	362286.370	190937.220
σ		290.269	1568.719	16051.721	2.071%	0.000	2352.735	740.510
%RSD		1.249	1.133	0.708	1.757	0.000	0.649	0.388

200-35680-A-9-A 10/25/2016 02:54:01 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:54:22	116.167%	416.021	3113.331	T 1001756.400	T 1450913.000	T 55344693.000	T 4834539.500	T 948321.160	153.581%	12457.356	158185.010	110502.710
2	14:54:44	118.717%	398.211	3336.326	T 993679.360	T 1439421.300	T 54500551.000	T 4745654.500	912090.190	155.784%	11163.374	159647.870	111678.250
3	14:55:06	116.418%	385.013	2862.981	T 1048140.000	T 1475482.500	T 56476376.000	T 4833306.000	T 969413.050	154.099%	11465.690	162712.080	112008.050
x		117.101%	399.748	3104.213	T 1014525.300	T 1455272.300	T 55440540.000	T 4804500.000	T 943274.800	154.488%	11695.473	160181.650	111396.340
σ		1.406%	15.561	236.804	T 29389.994	T 18421.619	T 991393.400	T 50965.422	T 28992.705	1.152%	676.903	2310.255	791.274
%RSD		1.200	3.893	7.628	T 2.897	T 1.266	T 1.788	T 1.061	T 3.074	0.746	5.788	1.442	0.710

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:54:22	2410.965	TM 17301426.000	T 221078590.000	85712.424	41015.069	1087140.900	412330.550	3318.426	111.039	599.944	538.378	2036.790
2	14:54:44	1882.243	TM 17415445.000	T 224611460.000	87690.989	41051.644	1081903.900	413371.700	3245.884	104.436	554.299	495.879	1973.646
3	14:55:06	2292.302	TM 17769799.000	T 226384720.000	86516.074	41000.516	1104621.900	421949.630	3398.635	60.754	591.917	520.827	2098.377
x		2195.170	TM 17495557.000	T 224024920.000	86639.829	41022.409	1091222.200	415883.960	3320.981	92.076	582.053	518.361	2036.271
σ		277.422	TM 244247.600	T 2701255.500	995.071	26.343	11896.209	5278.757	76.408	27.326	24.369	21.357	62.367
%RSD		12.638	TM 1.396	T 1.206	1.149	0.064	1.090	1.269	2.301	29.678	4.187	4.120	3.063

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:54:22	412824.230	307.101%	557.773	5147.244	-343.190	2578.742	125.008%	27362.387	190.482	303.868	350989.470	136.876%
2	14:54:44	400894.580	311.349%	710.423	5404.920	-227.448	2473.125	127.352%	28121.583	385.408	309.053	350975.980	137.464%
3	14:55:06	413734.500	312.547%	623.748	5147.778	-221.038	2497.483	126.340%	29576.387	439.892	320.768	351300.930	138.871%
x		409151.110	310.332%	630.648	5233.314	-263.892	2516.450	126.233%	28353.452	338.594	311.230	351088.790	137.737%
σ		7164.831	2.862%	76.558	148.615	68.749	55.304	1.176%	1125.065	131.130	8.658	183.840	1.025%
%RSD		1.751	0.922	12.140	2.840	26.052	2.198	0.932	3.968	38.728	2.782	0.052	0.745

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:54:22	522.023	3462.721	2112929.300	118.518%	0.000	169573.210	65622.008
2	14:54:44	620.886	3616.402	2133481.300	120.506%	0.000	168686.290	65663.677
3	14:55:06	670.426	3813.192	2161935.000	120.096%	0.000	170797.360	65482.575
x		604.445	3630.771	2136115.200	119.707%	0.000	169685.620	65589.420
σ		75.555	175.677	24608.802	1.050%	0.000	1060.013	94.847
%RSD		12.500	4.839	1.152	0.877	0.000	0.625	0.145

200-35680-A-10-A 10/25/2016 02:59:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:00:06	112.673%	327.502	2561.178	T 912770.730	T 1215718.100	T 47167431.000	T 4569556.500	750043.560	147.447%	15207.839	140274.760	96440.705
2	15:00:28	113.712%	328.713	2700.779	T 901677.130	T 1203960.200	T 46877325.000	T 4511613.700	766446.860	150.240%	14304.119	139771.340	95566.266
3	15:00:50	113.822%	330.572	2582.570	T 911664.030	T 1206416.000	T 47585152.000	T 4651094.800	762958.540	149.131%	13262.377	141321.420	97444.693
x		113.402%	328.929	2614.842	T 908703.960	T 1208698.100	T 47209969.000	T 4577421.600	759816.320	148.939%	14258.112	140455.840	96483.888
σ		0.634%	1.547	75.188	T 6110.526	T 6202.232	T 355825.780	T 70072.388	8641.311	1.406%	973.547	790.744	939.958
%RSD		0.560	0.470	2.875	T 0.672	T 0.513	T 0.754	T 1.531	1.137	0.944	6.828	0.563	0.974

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:00:06	2374.026	T 7758877.100	T 174115170.000	67994.748	34080.846	886131.770	391301.510	2885.111	168.606	389.103	530.007	2697.005
2	15:00:28	2518.522	T 7733796.800	T 172866490.000	69312.353	33942.147	893985.620	388497.080	3110.912	94.149	518.901	487.891	1976.138
3	15:00:50	2469.153	T 7918954.300	T 174889100.000	66995.304	33186.580	884798.160	391168.980	2900.765	150.533	405.073	525.212	2258.392
x		2453.900	T 7803876.100	T 173956920.000	68100.801	33736.525	888305.180	390322.530	2965.596	137.763	437.692	514.370	2310.512
σ		73.446	T 100446.530	T 1020546.100	1162.160	481.288	4964.387	1582.267	126.091	38.836	70.781	23.056	363.249

%RSD		2.993	T 1.287	T 0.587	1.707	1.427	0.559	0.405	4.252	28.191	16.171	4.482	15.722
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:00:06	332892.670	270.141%	1220.204	3818.339	-146.669	1836.821	122.831%	31600.427	523.054	465.577	248503.050	132.548%
2	15:00:28	329006.400	273.467%	1132.956	4002.181	-215.995	1753.479	125.030%	32090.828	528.592	493.646	250338.640	132.361%
3	15:00:50	333987.170	271.812%	1319.779	3716.838	-103.080	1709.600	124.809%	32091.442	625.940	497.465	253133.450	135.218%
x		331962.080	271.807%	1224.313	3845.786	-155.248	1766.633	124.224%	31927.566	559.195	485.563	250658.380	133.376%
σ		2617.539	1.663%	93.479	144.638	56.944	64.623	1.211%	283.310	57.869	17.413	2331.700	1.598%
%RSD		0.789	0.612	7.635	3.761	36.679	3.658	0.975	0.887	10.349	3.586	0.930	1.198

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:00:06	563.667	2782.873	1579439.900	116.458%	0.000	139891.220	56698.876
2	15:00:28	496.710	2941.903	1613284.700	116.676%	0.000	144269.520	59208.474
3	15:00:50	504.693	2880.047	1639683.100	116.950%	0.000	148629.320	58009.452
x		521.690	2868.274	1610802.600	116.695%	0.000	144263.350	57972.267
σ		36.572	80.166	30198.166	0.247%	0.000	4369.054	1255.212
%RSD		7.010	2.795	1.875	0.211	0.000	3.029	2.165

200-35680-A-11-A 10/25/2016 03:05:28 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	15:05:50	114.766%	652.265	4105.560	T 727021.440	T 2272616.300	T 75491553.000	T 8942343.300	T 1486686.900	169.064%	21817.290	208191.420	160955.270
2	15:06:12	115.171%	569.580	4264.226	T 718314.970	T 2305174.000	T 75640938.000	T 8957239.200	T 1477752.600	174.178%	23062.791	208302.280	160775.880
3	15:06:34	114.192%	607.484	4400.506	T 715115.340	T 2318009.900	T 76207432.000	T 8989724.400	T 1486131.900	172.563%	23026.340	209969.810	162833.990
x		114.710%	609.776	4256.764	T 720150.580	T 2298600.100	T 75779974.000	T 8963102.300	T 1483523.800	171.935%	22635.474	208821.170	161521.710
σ		0.492%	41.390	147.615	T 6161.649	T 23399.964	T 377649.220	T 24228.601	T 5005.723	2.614%	708.803	996.296	1139.997
%RSD		0.429	6.788	3.468	T 0.856	T 1.018	T 0.498	T 0.270	T 0.337	1.521	3.131	0.477	0.706

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	15:05:50	2545.400	T 13729001.000	T 300678980.000	124976.010	59266.010	897731.550	364174.930	5065.267	86.974	443.337	528.984	1717.864
2	15:06:12	2916.770	T 13680103.000	T 297244420.000	124903.720	59295.208	907757.580	366630.450	5054.026	105.105	402.716	543.268	2209.197
3	15:06:34	2574.770	T 13762810.000	T 299484840.000	127242.710	59588.981	906630.480	367619.950	4975.008	106.103	413.242	529.902	2048.741
x		2678.980	T 13723971.000	T 299136080.000	125707.480	59383.399	904039.870	366141.780	5031.434	99.394	419.765	534.051	1991.934
σ		206.455	T 41582.023	T 1743634.500	1330.039	178.636	5492.155	1773.736	49.188	10.767	21.082	7.995	250.544
%RSD		7.706	T 0.303	T 0.583	1.058	0.301	0.608	0.484	0.978	10.833	5.022	1.497	12.578

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:05:50	542467.770	344.277%	1005.835	3747.787	-222.925	1942.806	127.606%	28423.035	179.163	161.160	388962.420	139.561%
2	15:06:12	549336.900	349.113%	1009.183	3779.936	-200.299	1815.552	127.840%	29115.697	187.394	193.505	403453.630	145.055%
3	15:06:34	556506.180	351.247%	1132.447	3697.945	-318.497	2027.751	128.234%	28584.691	283.941	194.091	409743.150	145.234%
x		549436.950	348.213%	1049.155	3741.889	-247.240	1928.703	127.893%	28707.808	216.833	182.919	400719.730	143.283%
σ		7019.742	3.571%	72.153	41.313	62.738	106.800	0.317%	362.372	58.263	18.846	10656.701	3.225%
%RSD		1.278	1.026	6.877	1.104	25.375	5.537	0.248	1.262	26.870	10.303	2.659	2.251

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:05:50	508.599	5329.467	1817708.000	119.585%	0.000	258770.860	63536.265
2	15:06:12	437.868	4897.361	1858530.700	119.841%	0.000	268601.320	66477.452
3	15:06:34	406.123	5550.237	1836791.500	123.188%	0.000	264703.260	65500.976
x		450.863	5259.022	1837676.700	120.871%	0.000	264025.150	65171.564
σ		52.460	332.090	20425.740	2.010%	0.000	4950.185	1498.008
%RSD		11.635	6.315	1.111	1.663	0.000	1.875	2.299

CCV 10/25/2016 03:11:12 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	15:11:34	97.311%	79184.033	26347.164	T 10722288.000	T 3241559.300	T 29704011.000	T 10497398.000	1108836.800	108.980%	22196.796	T 2173907.000	631763.
2	15:11:56	92.118%	82114.702	28048.103	T 10732865.000	T 3301736.200	T 30111095.000	T 10617244.000	1134288.900	105.535%	22145.237	T 2203634.600	631321.
3	15:12:18	89.299%	82134.353	27761.067	T 10849897.000	T 3290132.000	T 30853908.000	T 10884714.000	1154233.100	100.007%	23230.037	T 2231919.300	651214.
x		92.909%	105.658%	100.825%	T 97.014%	T 96.164%	T 99.003%	T 98.113%	95.411%	104.841%	22524.024	T 97.425%	93.04
σ		4.064%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	4.527%	611.969	T n/a	
%RSD		4.375	2.092	3.325	T 0.658	T 0.974	T 1.929	T 1.859	2.009	4.318	2.717	T 1.317	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	15:11:34	7900.860	T 3223880.500	T 66158437.000	973359.320	522015.980	659992.730	512431.000	70436.505	-718.428	7835.232	477.766	2004.
2	15:11:56	9022.517	T 3236121.200	T 67046767.000	971445.440	528643.080	660048.170	520469.140	72175.909	-813.668	8040.001	483.326	1819.
3	15:12:18	6910.166	T 3310232.000	T 68189815.000	986751.180	532644.450	649549.610	521427.450	72628.914	-687.109	7798.753	493.866	1694.
x		7944.514	T 99.463%	T 99.686%	94.581%	99.680%	94.764%	98.351%	98.935%	-739.735	104.969%	484.986	1839.
σ		1056.852	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	65.915	n/a	8.178	155.
%RSD		13.303	T 1.435	T 1.517	0.853	1.017	0.921	0.954	1.613	8.911	1.648	1.686	8.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	15:11:34	726247.980	111.256%	1415073.400	236321.280	80.710	115430.070	106.749%	725092.650	480536.420	379099.120	487254.120	104.92
2	15:11:56	737661.170	106.572%	1498315.000	243046.200	-63.653	119113.630	104.176%	727290.120	492110.560	385875.020	491950.570	101.24
3	15:12:18	723987.200	103.896%	1521448.700	243511.900	251.935	120598.270	101.851%	738052.530	493552.140	387291.730	487033.220	98.36
x		729298.780	107.241%	95.549%	100.034%	89.664	98.046%	104.258%	730145.100	488733.040	98.038%	98.089%	101.51
σ		7329.728	3.726%	n/a	n/a	157.984	n/a	2.450%	6935.620	7134.986	n/a	n/a	3.28
%RSD		1.005	3.474	3.785	1.670	176.196	2.248	2.350	0.950	1.460	1.140	0.568	3.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:11:34	29124.735	1390576.500	T 12933242.000	100.009%	0.000	172223.820	101999.510
2	15:11:56	29783.809	1410989.200	T 12688136.000	99.572%	0.000	188312.440	102099.070
3	15:12:18	30216.946	1419057.900	T 12792093.000	98.051%	0.000	195034.550	102806.650
x		99.433%	88.684%	T 95.533%	99.211%	0.000	92.816%	89.699%
σ		n/a	n/a	T n/a	1.028%	0.000	n/a	n/a
%RSD		1.851	1.043	T 0.961	1.036	0.000	6.329	0.430

CCB 10/25/2016 03:16:57 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:17:19	103.168%	-18.434	-553.200	1843.561	-525.982	-207.011	16.122	67.634	106.567%	28.120	1434.666	-11.336
2	15:17:41	101.540%	-13.471	-588.688	-4154.398	-531.339	-1144.697	1111.130	6.117	107.396%	13.940	978.915	-27.647
3	15:18:03	101.349%	-10.990	-680.878	-2478.633	-700.112	-1794.478	1261.177	60.369	107.635%	9.275	2240.693	57.292
x		102.019%	-14.298	-607.589	-1596.490	-585.811	-1048.729	796.143	44.707	107.199%	17.112	1551.425	6.103
σ		1.000%	3.790	65.904	3094.755	99.024	798.073	679.671	33.617	0.561%	9.815	638.941	45.075
%RSD		0.980	26.508	10.847	193.847	16.904	76.099	85.371	75.193	0.523	57.356	41.184	738.582

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:17:19	4440.555	2.157	32616.288	-43.134	0.350	42.249	-169.884	-113.419	477.514	-6.069	474.252	2375.305
2	15:17:41	4411.488	-144.181	27872.981	-11.630	-84.503	-3.220	-167.814	-145.290	478.953	-24.017	480.795	2553.208
3	15:18:03	4108.151	-234.043	24809.188	-30.595	-75.326	-36.538	-225.001	103.433	408.933	-10.968	471.293	2430.706
x		4320.065	-125.356	28432.819	-28.453	-53.160	0.830	-187.566	-51.759	455.133	-13.685	475.447	2453.073

σ		184.097	119.220	3933.544	15.861	46.567	39.549	32.436	135.342	40.017	9.278	4.863	91.036
%RSD		4.261	95.105	13.835	55.745	87.599	4764.266	17.293	261.486	8.792	67.796	1.023	3.711
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:17:19	-12.845	109.244%	1368.549	-34.162	-36.151	-49.516	107.329%	2846.660	-380.369	-272.212	-7.993	101.317%
2	15:17:41	-35.790	112.167%	1161.548	-38.748	-39.707	-41.310	106.908%	3077.721	-309.657	-279.653	-31.047	103.450%
3	15:18:03	-40.660	111.731%	947.926	-20.126	-51.095	-25.493	107.154%	3500.037	-259.387	-245.754	-35.853	103.514%
x		-29.765	111.047%	1159.341	-31.012	-42.318	-38.773	107.130%	3141.473	-316.471	-265.873	-24.964	102.760%
σ		14.854	1.577%	210.320	9.702	7.807	12.211	0.211%	331.321	60.778	17.816	14.893	1.250%
%RSD		49.905	1.420	18.141	31.286	18.448	31.493	0.197	10.547	19.205	6.701	59.657	1.217

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:17:19	-7.919	-308.098	950.381	99.636%	0.000	21794.176	-52.830
2	15:17:41	12.788	-566.936	916.294	100.929%	0.000	20689.423	-23.428
3	15:18:03	-21.141	-486.013	733.844	99.381%	0.000	20037.858	-52.766
x		-5.424	-453.682	866.839	99.982%	0.000	20840.486	-43.008
σ		17.102	132.413	116.432	0.830%	0.000	887.850	16.957
%RSD		315.299	29.186	13.432	0.830	0.000	4.260	39.427

CCVL 10/25/2016 03:22:41 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:23:03	100.012%	134.124	4449.267	559892.080	21602.634	48721.988	524834.830	18634.514	107.120%	23.305	8842.099	6494.284
2	15:23:24	103.623%	109.423	4491.213	563302.610	21733.333	51000.124	536037.740	18920.394	105.812%	33.006	10335.935	6905.421
3	15:23:47	99.157%	127.897	5216.089	565576.330	21379.372	50540.764	515463.430	18626.996	108.355%	4.607	10039.653	6393.646
x		100.931%	100.762%	108.584%	101.429%	94.931%	98.445%	96.664%	94.668%	107.095%	20.306	107.669%	96.202%
σ		2.371%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.272%	14.435	n/a	n/a
%RSD		2.349	10.376	9.136	0.508	0.830	2.405	1.960	0.893	1.188	71.087	8.121	4.109

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:23:03	3833.880	5208.000	457075.770	2000.739	685.819	3107.852	8844.041	906.832	334.540	140.722	493.799	2455.952
2	15:23:24	3755.892	5065.575	464249.990	2155.348	823.567	2790.976	9193.990	734.231	360.340	124.555	501.715	2550.857
3	15:23:47	3385.027	5129.566	452602.230	1985.059	925.648	2927.173	9066.085	791.188	338.150	149.704	433.198	2549.342
x		3658.266	98.004%	102.009%	99.067%	95.814%	106.162%	107.189%	111.797%	344.343	92.000%	476.238	2518.717
σ		239.823	n/a	n/a	n/a	n/a	n/a	n/a	n/a	13.971	n/a	37.483	54.361
%RSD		6.556	1.389	1.283	4.598	14.828	5.403	1.960	10.848	4.057	9.214	7.871	2.158

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:23:03	19265.279	110.580%	10916.188	2402.236	-62.292	638.485	105.713%	936.529	3496.353	2586.690	3990.503	101.982%
2	15:23:24	18058.308	111.114%	11212.526	2309.179	-54.177	606.397	107.334%	880.458	3419.687	2521.266	3933.510	102.025%
3	15:23:47	18873.363	112.298%	11230.655	2704.104	-39.474	556.009	107.920%	954.443	3497.272	2618.380	4069.213	102.054%
x		93.973%	111.331%	89.842%	102.618%	-51.981	99.437%	106.989%	923.810	3471.104	82.172%	100.291%	102.021%
σ		n/a	0.879%	n/a	n/a	11.566	n/a	1.143%	38.598	44.530	n/a	n/a	0.036%
%RSD		3.287	0.790	1.588	8.352	22.251	6.926	1.069	4.178	1.283	1.923	1.704	0.035

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:23:03	2324.913	12382.643	10818.550	102.013%	0.000	19334.532	9997.437
2	15:23:24	2515.019	12500.422	11683.824	100.091%	0.000	19504.487	10505.808
3	15:23:47	2533.865	13084.399	11515.353	100.200%	0.000	19356.282	10499.256
x		82.266%	79.778%	105.752%	100.768%	0.000	97.224%	90.611%
σ		n/a	n/a	n/a	1.079%	0.000	n/a	n/a
%RSD		4.702	2.969	4.046	1.071	0.000	0.477	2.822

200-35680-A-12-A 10/25/2016 03:28:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:28:47	120.305%	926.768	5431.598	T 1427603.700	T 4571777.900	T 109092340.000	T 13474661.000	T 3522536.000	192.805%	33915.673	266138.210	23614
2	15:29:09	120.721%	995.984	5503.298	T 1384682.300	T 4448962.900	T 108569320.000	T 13606706.000	T 3489539.900	202.616%	33901.759	264692.190	23223
3	15:29:31	118.217%	979.457	5882.514	T 1369043.700	T 4429726.100	T 106183040.000	T 13343678.000	T 3506776.300	206.389%	33242.414	265797.460	23209
x		119.748%	967.403	5605.804	T 1393776.500	T 4483489.000	T 107948230.000	T 13475015.000	T 3506284.100	200.603%	33686.615	265542.620	23349
σ		1.342%	36.148	242.305	T 30320.758	T 77063.050	T 1550908.600	T 131514.260	T 16503.536	7.012%	384.753	755.945	229
%RSD		1.121	3.737	4.322	T 2.175	T 1.719	T 1.437	T 0.976	T 0.471	3.496	1.142	0.285	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:28:47	2257.638	T 15809399.000	TM 439905910.000	201175.170	112231.400	120795.570	245028.240	7190.715	73.910	298.706	539.569	142
2	15:29:09	3168.476	T 15846664.000	TM 437624930.000	202440.870	111161.230	124238.680	250412.140	7283.916	19.979	524.411	589.419	38
3	15:29:31	2328.783	T 15636782.000	TM 439538960.000	199710.070	110398.730	126453.730	253416.630	7234.849	56.694	320.579	579.123	140
x		2584.966	T 15764281.000	TM 439023270.000	201108.700	111263.790	123829.330	249619.000	7236.493	50.194	381.232	569.370	107
σ		506.585	T 111978.850	TM 1224812.600	1366.614	920.631	2851.202	4250.065	46.622	27.547	124.478	26.317	59

%RSD		19.597	T 0.710	TM 0.279	0.680	0.827	2.303	1.703	0.644	54.881	32.651	4.622	5

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	15:28:47	1391189.800	438.984%	1724.645	661.442	-351.512	598.314	125.195%	25280.572	-98.322	-67.170	363322.290	152.
2	15:29:09	T 1530484.900	452.915%	1778.619	662.689	-354.407	774.230	127.756%	24922.853	-66.585	-36.792	372350.360	156.
3	15:29:31	1419122.700	462.455%	1645.085	701.294	-542.791	945.806	129.164%	25977.674	36.911	-9.813	377098.420	158.
x		T 1446932.500	451.451%	1716.117	675.142	-416.237	772.783	127.372%	25393.700	-42.665	-37.925	370923.690	156.
σ		T 73694.076	11.804%	67.174	22.657	109.609	173.750	2.012%	536.433	70.719	28.695	6997.996	3.
%RSD		T 5.093	2.615	3.914	3.356	26.333	22.484	1.580	2.112	165.753	75.662	1.887	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:28:47	132.755	9040.365	1307674.100	119.020%	0.000	512841.030	63509.295
2	15:29:09	149.181	9054.786	1317292.900	122.723%	0.000	522194.300	64500.953
3	15:29:31	120.081	8864.855	1325809.000	124.766%	0.000	519355.910	64421.810
x		134.006	8986.669	1316925.300	122.170%	0.000	518130.420	64144.019
σ		14.590	105.739	9073.047	2.913%	0.000	4795.549	551.110
%RSD		10.888	1.177	0.689	2.384	0.000	0.926	0.859

200-35700-A-9-A 10/25/2016 03:34:10 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	15:34:32	116.878%	982.359	2713.502	T 804309.230	T 1987328.800	T 99686288.000	T 6657613.200	T 832040.440	191.056%	15799.029	295264.980	194606.90
2	15:34:54	119.020%	968.508	2387.157	T 792570.720	T 2006535.700	T 100760360.000	T 6747493.100	T 833903.160	193.412%	16047.864	299809.440	195606.99
3	15:35:16	116.405%	911.264	2695.900	T 815238.920	T 1995711.300	T 99727937.000	T 6697196.800	T 832638.770	198.939%	15688.185	292618.780	193907.85
x		117.434%	954.044	2598.853	T 804039.620	T 1996525.300	T 100058200.000	T 6700767.700	T 832860.790	194.469%	15845.026	295897.730	194707.25
σ		1.393%	37.690	183.545	T 11336.505	T 9629.305	T 608451.460	T 45046.251	T 951.001	4.047%	184.198	3636.851	854.00
%RSD		1.186	3.951	7.063	T 1.410	T 0.482	T 0.608	T 0.672	T 0.114	2.081	1.162	1.229	0.43

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	15:34:32	2173.841	TM 17676425.000	TM 422507840.000	158469.730	63248.128	861659.740	441482.180	5639.507	87.378	486.974	587.061	2185.93
2	15:34:54	1465.390	TM 17730038.000	TM 424000070.000	156210.250	63064.365	866285.600	440265.730	5432.417	96.974	485.514	572.939	2373.65
3	15:35:16	2339.956	TM 17579526.000	TM 415601900.000	155727.670	62739.011	861883.940	439786.420	5408.152	89.472	551.564	563.882	2102.30
x		1993.062	TM 17661997.000	TM 420703270.000	156802.550	63017.168	863276.430	440511.440	5493.359	91.275	508.017	574.627	2220.63
σ		464.464	TM 76286.373	TM 4480480.900	1463.843	257.819	2608.430	874.173	127.149	5.046	37.719	11.681	138.96
%RSD		23.304	TM 0.432	TM 1.065	0.934	0.409	0.302	0.198	2.315	5.528	7.425	2.033	6.25

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tl
1	15:34:32	492694.050	489.005%	1544.001	2989.124	-440.736	2068.348	130.654%	118601.110	179.773	88.046	561261.460	159.315%
2	15:34:54	498931.960	498.270%	1469.395	3246.261	-395.540	2075.546	131.082%	118864.880	-2.914	114.659	560629.520	160.437%
3	15:35:16	490653.760	502.955%	1454.219	3499.590	-416.717	2134.554	133.276%	119301.520	46.163	95.414	557584.070	164.991%
x		494093.260	496.743%	1489.205	3244.992	-417.665	2092.816	131.670%	118922.500	74.341	99.373	559825.010	161.581%
σ		4312.828	7.099%	48.057	255.236	22.613	36.324	1.407%	353.741	94.547	13.741	1966.271	3.006%
%RSD		0.873	1.429	3.227	7.866	5.414	1.736	1.068	0.297	127.181	13.828	0.351	1.86

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:34:32	473.966	7041.493	2611984.600	123.060%	0.000	305849.130	113622.360
2	15:34:54	422.673	7398.895	2674799.400	122.340%	0.000	313299.610	116464.200
3	15:35:16	530.414	7464.410	2676417.100	124.611%	0.000	319589.170	115473.090
x		475.684	7301.599	2654400.400	123.337%	0.000	312912.640	115186.550
σ		53.891	227.628	36742.065	1.161%	0.000	6878.189	1442.426
%RSD		11.329	3.118	1.384	0.941	0.000	2.198	1.252

200-35700-A-10-A 10/25/2016 03:39:54 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:40:16	109.733%	737.820	2106.984	T 856657.320	T 1940684.000	T 85012054.000	T 5681294.000	736589.500	177.723%	22013.378	232519.090	167117.550
2	15:40:37	111.035%	776.212	2340.504	T 877626.100	T 1977279.900	T 85604247.000	T 5693750.500	737823.450	177.752%	16439.887	241254.400	171635.630
3	15:40:59	111.316%	816.868	2173.761	T 890231.530	T 1992608.000	T 86860144.000	T 5782252.100	T 790303.250	178.644%	15172.548	237113.240	169679.400
x		110.695%	776.966	2207.083	T 874838.310	T 1970190.600	T 85825482.000	T 5719098.900	T 754905.400	178.039%	17875.271	236962.240	169477.530
σ		0.845%	39.530	120.273	T 16959.826	T 26678.052	T 943699.210	T 55045.776	T 30661.645	0.524%	3639.297	4369.615	2265.795
%RSD		0.763	5.088	5.449	T 1.939	T 1.354	T 1.100	T 0.962	T 4.062	0.294	20.359	1.844	1.337

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:40:16	2736.637	T 6830767.900	T 264164490.000	122195.050	59613.159	TM 6218937.400	696516.860	3889.525	111.563	759.584	552.722	2365.325
2	15:40:37	2623.980	T 7062070.300	T 273740080.000	126886.720	60916.943	TM 6202600.400	699522.270	3867.151	114.215	706.572	524.186	2304.594
3	15:40:59	3147.770	T 6958420.400	T 269498120.000	123637.070	60989.657	TM 6262389.500	706120.360	3869.459	99.794	781.295	543.368	2177.526
x		2836.129	T 6950419.500	T 269134230.000	124239.610	60506.587	TM 6227975.800	700719.830	3875.378	108.524	749.151	540.092	2282.482
σ		275.704	T 115858.550	T 4798152.800	2403.169	774.584	TM 30902.296	4912.477	12.306	7.676	38.439	14.548	95.833
%RSD		9.721	T 1.667	T 1.783	1.934	1.280	TM 0.496	0.701	0.318	7.073	5.131	2.694	4.199

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:40:16	446565.950	447.231%	1484.990	5553.815	-312.724	3721.501	126.558%	35276.084	76.254	191.686	420058.560	150.803%
2	15:40:37	449341.990	457.729%	1508.599	5380.297	-266.785	3671.718	128.297%	35270.841	184.152	195.963	424299.870	153.182%
3	15:40:59	452102.920	454.727%	1471.956	5334.351	-300.190	3763.552	128.277%	35968.147	237.065	175.842	431715.900	158.236%
x		449336.950	453.229%	1488.515	5422.821	-293.233	3718.924	127.711%	35505.024	165.824	187.830	425358.110	154.074%
σ		2768.486	5.407%	18.574	115.747	23.746	45.971	0.998%	401.085	81.957	10.600	5900.281	3.796%
%RSD		0.616	1.193	1.248	2.134	8.098	1.236	0.782	1.130	49.424	5.644	1.387	2.464

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:40:16	567.006	5964.026	2878595.500	117.014%	0.000	281696.880	160059.160
2	15:40:37	542.414	5888.114	2907820.000	119.549%	0.000	287302.150	160440.950
3	15:40:59	484.715	6390.436	2970337.200	117.534%	0.000	293818.270	164140.030
x		531.379	6080.859	2918917.600	118.032%	0.000	287605.760	161546.710
σ		42.241	270.775	46866.833	1.339%	0.000	6066.398	2253.978
%RSD		7.949	4.453	1.606	1.134	0.000	2.109	1.395

200-35700-A-10-A @2 10/25/2016 03:45:36 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:45:58	114.685%	439.106	433.258	T 525495.100	T 1108827.600	T 49033336.000	T 3296993.900	421826.740	157.988%	10656.705	135475.250	97201.616
2	15:46:20	111.351%	394.503	479.499	T 501173.300	T 1104597.700	T 48529492.000	T 3309319.200	418630.190	158.557%	10923.552	135678.000	95841.394
3	15:46:42	111.493%	367.065	652.012	T 516822.090	T 1100868.100	T 48881679.000	T 3248631.100	422317.420	157.659%	12447.328	137944.940	96594.194
x		112.509%	400.225	521.589	T 514496.830	T 1104764.500	T 48814836.000	T 3284981.400	420924.780	158.068%	11342.528	136366.060	96545.735
σ		1.885%	36.360	115.291	T 12326.499	T 3982.387	T 258487.010	T 32077.815	2002.264	0.454%	966.043	1371.103	681.404
%RSD		1.676	9.085	22.104	T 2.396	T 0.360	T 0.530	T 0.976	0.476	0.287	8.517	1.005	0.706

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:45:58	2644.964	T 3945605.900	T 155147190.000	72310.503	34833.105	T 3254650.400	387737.570	3271.485	175.070	442.510	540.793	2283.742
2	15:46:20	2560.673	T 3995308.000	T 156165030.000	71434.276	34840.446	T 3222366.400	381457.500	3361.374	147.354	439.025	526.004	2323.323
3	15:46:42	2720.933	T 3977016.400	T 155295670.000	72503.019	34851.852	T 3190334.100	380485.690	3284.164	163.717	424.711	496.479	2293.025
x		2642.190	T 3972643.400	T 155535960.000	72082.599	34841.801	T 3222450.300	383226.920	3305.674	162.047	435.415	521.092	2300.030

σ		80.166	T 25137.968	T 549825.150	569.656	9.446	T 32158.255	3936.441	48.652	13.933	9.432	22.562	20.699
%RSD		3.034	T 0.633	T 0.354	0.790	0.027	T 0.998	1.027	1.472	8.598	2.166	4.330	0.900
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:45:58	226584.830	298.383%	782.158	2621.312	-130.019	1832.166	127.870%	18379.194	-338.721	-251.728	214556.330	135.698%
2	15:46:20	228388.070	296.852%	800.369	2668.047	-116.555	1944.635	128.614%	17860.322	-340.682	-277.592	214624.050	133.847%
3	15:46:42	227822.130	297.291%	797.052	2727.077	-159.252	1854.237	130.018%	17933.130	-333.560	-264.707	210807.620	138.161%
x		227598.340	297.509%	793.193	2672.145	-135.275	1877.013	128.834%	18057.549	-337.654	-264.676	213329.330	135.902%
σ		922.218	0.788%	9.699	53.001	21.828	59.593	1.091%	280.922	3.679	12.932	2184.127	2.164%
%RSD		0.405	0.265	1.223	1.983	16.136	3.175	0.847	1.556	1.090	4.886	1.024	1.592

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:45:58	192.759	2406.410	1481363.400	115.911%	0.000	139808.170	81508.723
2	15:46:20	197.857	2328.769	1474048.500	118.737%	0.000	141171.140	79494.482
3	15:46:42	258.574	2448.092	1501502.700	116.202%	0.000	147954.630	83783.628
x		216.397	2394.424	1485638.200	116.950%	0.000	142977.980	81595.611
σ		36.616	60.558	14217.591	1.555%	0.000	4363.450	2145.892
%RSD		16.921	2.529	0.957	1.329	0.000	3.052	2.630

CCV 10/25/2016 03:51:19 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	15:51:41	99.604%	80127.431	26764.197	┬10851314.000	┬3320998.800	┬30629135.000	┬10908657.000	1152313.300	110.041%	22761.114	┬2234557.900	648224.
2	15:52:02	97.647%	79662.983	26898.037	┬10838963.000	┬3298103.800	┬30381808.000	┬10792819.000	1135509.300	109.060%	22501.176	┬2234631.800	649435.
3	15:52:24	95.653%	79945.218	27341.439	┬10555154.000	┬3264873.400	┬29894617.000	┬10517063.000	1134378.800	108.958%	22203.757	┬2196527.200	629293.
x		97.635%	104.053%	99.411%	┬96.834%	┬96.659%	┬99.262%	┬98.785%	96.109%	109.353%	22488.683	┬98.255%	93.65
σ		1.975%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	n/a	0.598%	278.889	┬n/a	
%RSD		2.023	0.293	1.119	┬1.559	┬0.857	┬1.233	┬1.873	0.880	0.547	1.240	┬0.989	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	15:51:41	6978.496	┬3283642.700	┬68187561.000	999528.740	540885.460	678441.750	524984.540	72805.929	-421.290	7911.989	480.221	1877.
2	15:52:02	6306.743	┬3261738.100	┬67521915.000	979529.510	527439.100	655568.010	515938.630	71332.997	-323.781	7574.149	487.436	1804.
3	15:52:24	7409.565	┬3164645.700	┬65923718.000	947334.940	515566.350	673102.220	527448.830	73238.103	-644.442	7837.116	491.249	1826.
x		6898.268	┬98.850%	┬99.804%	94.415%	99.717%	96.569%	99.240%	99.916%	-463.171	103.414%	486.302	1836.
σ		555.771	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	164.382	n/a	5.601	37.
%RSD		8.057	┬1.957	┬1.731	2.700	2.399	1.789	1.159	1.378	35.491	2.282	1.152	2.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	15:51:41	722552.020	111.234%	1457772.800	240061.060	-71.579	118155.490	108.702%	725341.860	483720.630	379478.110	485658.230	102.68
2	15:52:02	729877.660	111.387%	1472753.500	233742.150	614.027	117210.890	109.144%	718662.410	480558.320	376327.670	477738.460	102.32
3	15:52:24	744659.550	107.461%	1522232.600	238947.410	273.602	117477.980	104.735%	742419.360	493322.180	386794.040	496925.490	101.08
x		732363.080	110.027%	95.936%	98.632%	272.017	97.412%	107.527%	728807.880	485867.040	97.215%	97.693%	102.03
σ		11261.377	2.224%	n/a	n/a	342.805	n/a	2.428%	12251.860	6647.133	n/a	n/a	0.84
%RSD		1.538	2.021	2.273	1.420	126.024	0.414	2.258	1.681	1.368	1.410	1.981	0.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:51:41	28793.330	1363880.500	┬12661084.000	100.874%	0.000	170957.730	99622.883
2	15:52:02	29393.954	1415240.700	┬12964196.000	98.060%	0.000	190013.710	103310.090
3	15:52:24	28886.114	1393287.900	┬12674956.000	99.399%	0.000	196185.590	101360.940
x		97.144%	87.671%	┬95.252%	99.444%	0.000	93.081%	88.936%
σ		n/a	n/a	┬n/a	1.408%	0.000	n/a	n/a
%RSD		1.114	1.853	┬1.340	1.416	0.000	7.081	1.819

CCB 10/25/2016 03:57:03 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:57:24	100.505%	-0.958	-789.170	1959.119	-248.459	7161.046	2707.443	168.769	108.035%	13.866	1219.758	310.652
2	15:57:46	100.934%	-10.950	-767.045	1915.805	-174.675	11807.653	3252.414	108.601	109.976%	18.174	2900.331	232.840
3	15:58:08	103.682%	-8.801	-793.761	-2002.887	-24.038	15697.900	1413.416	151.372	110.339%	4.527	2007.244	272.379
x		101.707%	-6.903	-783.325	624.012	-149.057	11555.533	2457.758	142.914	109.450%	12.189	2042.445	271.957
σ		1.724%	5.260	14.285	2275.064	114.383	4274.008	944.582	30.963	1.239%	6.976	840.839	38.908
%RSD		1.695	76.194	1.824	364.586	76.738	36.987	38.433	21.665	1.132	57.235	41.168	14.307

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:57:24	4271.727	606.012	61487.945	-17.277	3.129	355.869	-106.817	193.538	426.860	5.222	458.835	2334.831
2	15:57:46	3796.785	821.109	68947.850	-6.578	-22.053	582.695	-63.576	-80.944	501.076	-26.144	486.037	2575.847
3	15:58:08	4100.936	1295.965	77895.573	20.027	-13.365	748.831	-33.756	-71.575	496.091	-13.148	477.536	2429.575
x		4056.483	907.695	69443.789	-1.276	-10.763	562.465	-68.049	13.673	474.676	-11.357	474.136	2446.751
σ		240.571	353.032	8215.049	19.209	12.791	197.260	36.735	155.838	41.485	15.760	13.916	121.423

%RSD		5.931	38.893	11.830	1505.338	118.844	35.071	53.983	1139.749	8.740	138.767	2.935	4.963
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:57:24	-33.251	111.256%	1268.268	-7.185	-37.566	-39.163	109.409%	2961.651	-339.619	-319.840	-9.587	102.347%
2	15:57:46	58.757	111.513%	1571.479	6.737	-40.166	-41.134	109.047%	3104.485	-307.902	-239.975	13.612	105.075%
3	15:58:08	122.112	112.740%	828.949	-11.759	-75.491	-11.061	109.418%	3327.069	-180.591	-252.698	54.382	104.602%
x		49.206	111.836%	1222.898	-4.069	-51.074	-30.453	109.291%	3131.068	-276.037	-270.838	19.469	104.008%
σ		78.121	0.793%	373.338	9.634	21.185	16.822	0.212%	184.154	84.167	42.911	32.384	1.458%
%RSD		158.762	0.709	30.529	236.774	41.480	55.241	0.194	5.882	30.491	15.844	166.338	1.401

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:57:24	-4.723	-367.001	1449.830	99.107%	0.000	21923.246	-7.291
2	15:57:46	-9.161	-296.351	1517.334	101.476%	0.000	21208.421	-33.576
3	15:58:08	-8.409	-606.805	1458.121	102.523%	0.000	20287.476	-9.644
x		-7.431	-423.386	1475.095	101.035%	0.000	21139.714	-16.837
σ		2.375	162.726	36.814	1.750%	0.000	820.047	14.544
%RSD		31.963	38.434	2.496	1.732	0.000	3.879	86.380

CCVL 10/25/2016 04:02:46 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	16:03:08	103.407%	138.707	4295.571	561054.520	21434.192	52607.040	516464.240	18499.957	112.469%	17.759	10336.805	6406.533
2	16:03:29	103.984%	125.800	4523.636	561637.940	21454.855	56989.376	513529.450	19324.613	111.837%	17.858	9699.216	6746.609
3	16:03:51	103.620%	119.077	4636.195	561215.360	21730.927	58990.285	514210.180	20046.086	111.277%	17.946	8678.931	6612.870
x		103.671%	104.055%	103.206%	101.137%	94.791%	110.450%	94.693%	97.514%	111.861%	17.854	105.817%	96.070%
σ		0.292%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.597%	0.093	n/a	n/a
%RSD		0.282	7.802	3.869	0.054	0.769	5.810	0.298	4.011	0.533	0.523	8.737	2.600
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:03:08	3440.168	5172.812	460841.510	1976.856	837.916	3036.418	8678.607	827.252	349.224	199.885	496.636	2395.619
2	16:03:29	3622.742	5712.353	476514.670	2105.334	986.498	3035.667	8206.183	595.133	436.057	122.955	477.469	2500.830
3	16:03:51	3845.237	5646.525	487939.430	1977.538	884.296	3447.790	8910.690	783.954	372.803	178.908	481.675	2364.282
x		3636.049	105.185%	105.823%	97.753%	106.583%	114.509%	102.014%	101.413%	386.028	111.236%	485.260	2420.244
σ		202.862	n/a	n/a	n/a	n/a	n/a	n/a	n/a	44.902	n/a	10.074	71.527
%RSD		5.579	5.342	2.863	3.663	8.419	7.491	4.175	16.783	11.632	23.778	2.076	2.955
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:03:08	18210.376	115.812%	10599.874	2416.738	-33.154	601.324	109.337%	782.003	3024.813	2413.595	4042.704	101.732%
2	16:03:29	18608.210	115.402%	10586.209	2377.211	-81.254	564.891	111.318%	889.371	3094.492	2420.960	3677.112	102.848%
3	16:03:51	18310.263	115.135%	11018.358	2696.465	-41.126	547.028	111.488%	1036.025	3142.131	2461.874	3918.101	103.908%
x		92.186%	115.450%	86.731%	103.654%	-51.845	94.597%	110.714%	902.466	3087.145	77.600%	97.320%	102.829%
σ		n/a	0.341%	n/a	n/a	25.779	n/a	1.195%	127.516	59.003	n/a	n/a	1.088%
%RSD		1.126	0.295	2.288	6.970	49.724	4.846	1.080	14.130	1.911	1.069	4.791	1.058

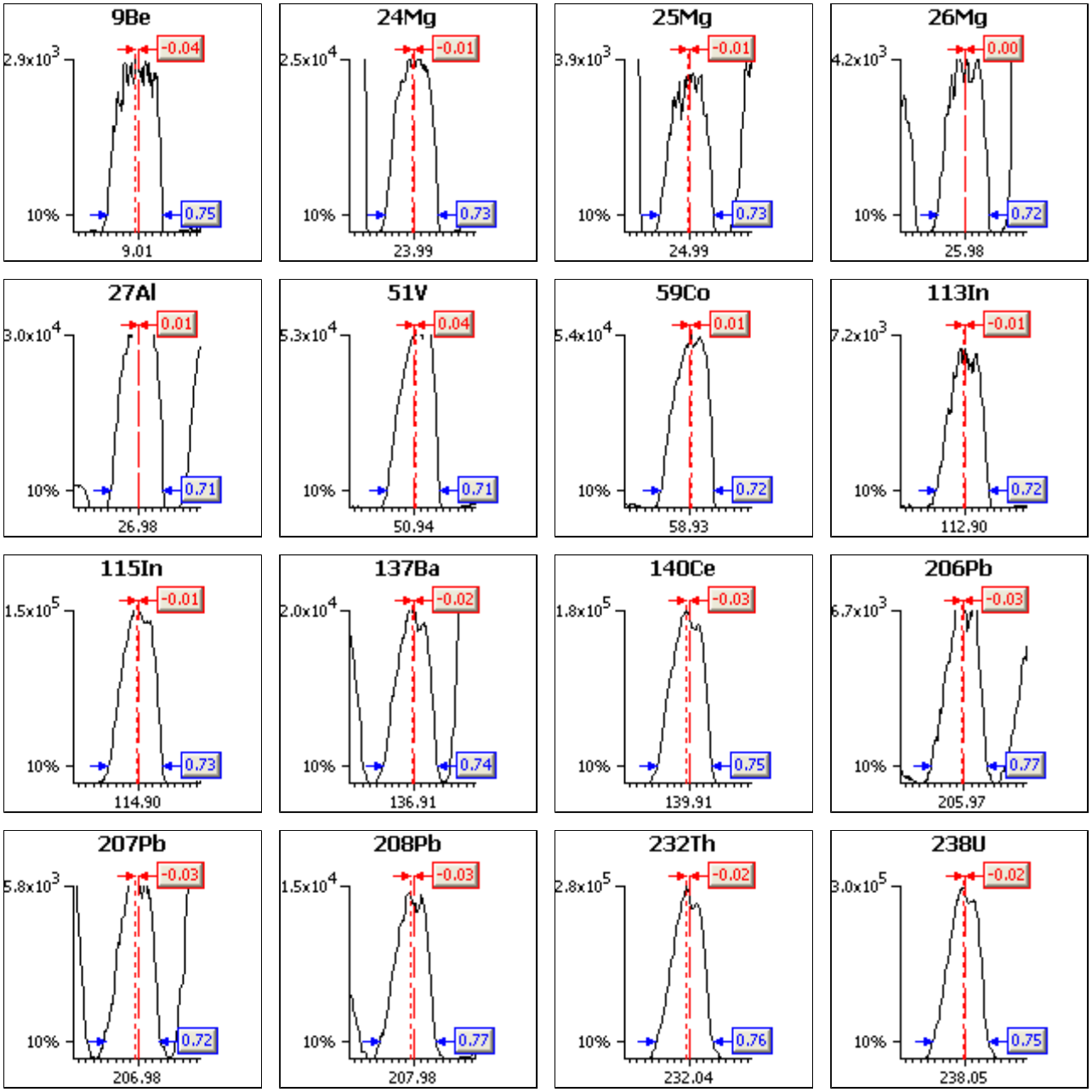
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:03:08	2301.576	12259.075	11144.782	98.761%	0.000	19461.537	10445.667
2	16:03:29	2454.586	12764.290	11293.636	99.645%	0.000	19353.317	10342.328
3	16:03:51	2374.828	12551.057	11780.048	101.576%	0.000	19859.508	10548.137
x		79.557%	78.952%	106.376%	99.994%	0.000	98.024%	91.586%
σ		n/a	n/a	n/a	1.439%	0.000	n/a	n/a
%RSD		3.220	2.025	2.913	1.439	0.000	1.363	0.985

Performance Report

Sample details
Sample name : ITUNE
Acquired at : 11/1/2016 10:39:15 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Mass Calibration verification

Acquisition parameters
Sweeps : 20
Dwell : 1.0 mSecs
Point spacing : 0.01 amu
Peak width measured at 10% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
9Be	0.90	0.65	0.10	0.75	-0.04
24Mg	0.90	0.65	0.10	0.73	-0.01

25Mg	0.90	0.65	0.10	0.73	-0.01
26Mg	0.90	0.65	0.10	0.72	0.00
27Al	0.90	0.65	0.10	0.71	0.01
51V	0.90	0.65	0.10	0.71	0.04
59Co	0.90	0.65	0.10	0.72	0.01
113In	0.90	0.65	0.10	0.72	-0.01
115In	0.90	0.65	0.10	0.73	-0.01
137Ba	0.90	0.65	0.10	0.74	-0.02
140Ce	0.90	0.65	0.10	0.75	-0.03
206Pb	0.90	0.65	0.10	0.77	-0.03
207Pb	0.90	0.65	0.10	0.72	-0.03
208Pb	0.90	0.65	0.10	0.77	-0.03
232Th	0.90	0.65	0.10	0.76	-0.02
238U	0.90	0.65	0.10	0.75	-0.02

Sample details
Sample name : ITUNE
Acquired at : 11/1/2016 10:39:15 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Tune conditions

Major	
Extraction	-114
Lens 1	-5.0
Focus	18.0
D1	-43.9
Pole Bias	1.0
Hexapole Bias	-3.0
Nebuliser	0.74
Sampling Depth	83

Minor	
Lens 2	-39.2
Lens 3	-177.3
Forward power	1404
Horizontal	70
Vertical	492
D2	-158
DA	-40.8
Cool	13.0
Auxiliary	0.90

Global	
Standard resolution	135
High resolution	115
Analogue Detector	2353
PC Detector	1196

Add. Gases	
CCT1	0.00
CCT2	0.00

Sensitivity and stability results

Acquisition parameters
Sweeps : 50

Run	Time	8Bkg	9Be	24Mg	25Mg	26Mg	27Al	51V	59Co	113In
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Countrate	-	>100	>100	>100	>100	>100	>100	>100	>100
1	10:40:11 AM	0.200	2758.228	24988.719	3466.360	4206.531	31742.198	54175.908	51732.162	6617.313
2	10:40:45 AM	0.100	2824.239	24714.310	3508.369	4216.533	31573.879	54212.025	51617.808	6587.302
3	10:41:18 AM	0.200	2852.244	24483.971	3496.367	4148.516	31473.690	53822.767	51726.143	6501.268
4	10:41:52 AM	0.100	2786.233	24538.050	3574.383	4148.516	30914.645	54296.299	51381.079	6579.298
5	10:42:26 AM	0.100	2808.237	24580.112	3330.333	3974.474	31395.543	54035.453	51545.585	6463.253
x		0.140	2805.836	24661.032	3475.162	4138.914	31419.991	54108.490	51600.556	6549.687
σ		0.05	35.88	202.02	90.07	97.24	310.79	185.41	145.42	64.58
%RSD		39.123	1.279	0.819	2.592	2.349	0.989	0.343	0.282	0.986

Run	Time	115In	137Ba	140Ce	156Ce O	206Pb	207Pb	208Pb	220Bkg	232Th
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	5.0%	5.0%	5.0%	-	5.0%	5.0%	5.0%	-	5.0%
	Countrate	>100	>100	>100	-	>100	>100	>100	-	>100
1	10:40:11 AM	152409.69	19603.522	174064.23	1074.035	6831.400	6115.122	14308.139	0.100	270046.17
2	10:40:45 AM	151683.11	19495.395	173152.81	968.028	6733.360	5917.050	14406.223	0.100	269657.96
3	10:41:18 AM	151909.15	19231.089	174381.52	1010.031	6643.324	6095.114	14510.314	0.100	271729.19
4	10:41:52 AM	151206.81	18944.761	174545.22	1016.031	6613.312	6007.082	14129.987	0.000	268192.60
5	10:42:26 AM	150258.29	18880.688	171334.16	984.029	6565.293	6125.125	14294.127	0.100	270783.99
x		151493.41	19231.091	173495.59	1010.431	6677.338	6051.899	14329.758	0.080	270081.98
σ		814.87	321.45	1322.80	40.53	105.69	88.63	141.50	0.04	1318.80
%RSD		0.538	1.672	0.762	4.012	1.583	1.464	0.987	55.902	0.488

Run	Time	238U
Dwell (mSecs)		0.0
Limits	%RSD	5.0%
	Countrate	>100
1	10:40:11 AM	290892.59
2	10:40:45 AM	290982.14
3	10:41:18 AM	290815.26
4	10:41:52 AM	287327.55
5	10:42:26 AM	292931.85
x		290589.88
σ		2026.32
%RSD		0.697

Ratio results

Run	Time	156Ce O/140Ce
	Ratio limits	<0.0200
1	10:40:11 AM	0.006
2	10:40:45 AM	0.006

3	10:41:18 AM	0.006
4	10:41:52 AM	0.006
5	10:42:26 AM	0.006
x		0.0058
σ		0.00
%RSD		3.6625

Result : The performance report passed.

Experiment Details

Description	PlasmaLab Template BlankExperiment
Template Filename	C:\Program Files\Thermo Fisher\PlasmaLab\TEMPLATES\6020A.tet
Created By User	user
Analyte Database	Default.tea
Creation Timestamp	8/29/2003 01:55:15 PM
Last Edited By	INORG-User
Last Edit Timestamp	11/1/2016 10:46:10 AM
Instrument Detector	Simultaneous
Database Version	3.51
Acquisition Mode	Unknown

Numerical Results report key (text indicates meaning)

Blue text indicates that cell is a statistic.
Underlining indicates that a data warning flag is set.

Column headings	Result cells	Data warning flags
No flag	Internal Standard	I - Invalid calibration
Semi Quant	Excluded	T - Tripped
Standard Addition	QC Warning	F - Interference correction failed
Multi Element	QC Failure	M - Result over max
	Transient TRA only:	V - Valley integration failed
	Peak Not Found	D - Different method used
	Manually Edited	
	Merged Peak	

Setup

Survey Scan Setup

Sweeps	10
Dwell Time	600
Channels Per Mass	10
Acquisition Duration	13247

Main Run Setup

Main Run	Peak Jumping
Sweeps	20
Dwell Time	10000
Channels Per Mass	1
Acquisition Duration	18211
Channel Spacing	0.02

Survey Scan Regions

Start AMU	End AMU	Channels	Dwell ms	Resolution

4.59	11.41	68	600	Standard
22.59	27.41	48	600	Standard
28.59	29.41	8	600	Standard
30.59	31.41	8	600	Standard
32.59	33.41	8	600	Standard
38.59	39.41	8	600	Standard
42.59	79.41	368	600	Standard
80.59	245.50	1649	600	Standard

Peak Jump Regions

Analyte	Channels	Dwell ms	Resolution
6Li	1	5000	Standard
7Li	1	5000	Standard
9Be	1	20000	Standard
11B	1	10000	Standard
23Na	1	5000	Standard
25Mg	1	5000	Standard
26Mg	1	5000	Standard
27Al	1	10000	Standard
39K	1	5000	Standard
43Ca	1	10000	Standard
44Ca	1	5000	Standard
45Sc	1	5000	Standard
47Ti	1	10000	Standard
51V	1	10000	Standard
52Cr	1	10000	Standard
53Cl O	1	10000	Standard
55Mn	1	10000	Standard
56Fe	1	10000	Standard
59Co	1	10000	Standard
60Ni	1	10000	Standard
65Cu	1	10000	Standard
66Zn	1	10000	Standard
75As	1	50000	Standard
77Ar Cl	1	50000	Standard
82Se	1	100000	Standard
83Kr	1	100000	Standard
84Kr	1	10000	Standard
88Sr	1	10000	Standard
89Y	1	5000	Standard
98Mo	1	10000	Standard
106Cd	1	10000	Standard
107Ag	1	10000	Standard
108Mo O	1	10000	Standard
111Cd	1	10000	Standard
115In	1	5000	Standard
118Sn	1	10000	Standard
121Sb	1	10000	Standard
123Sb	1	100000	Standard
135Ba	1	10000	Standard

159Tb	1	5000	Standard
182W	1	10000	Standard
205Tl	1	10000	Standard
206Pb	1	10000	Standard
207Pb	1	10000	Standard
208Pb	1	10000	Standard
209Bi	1	5000	Standard
220Bkg	1	10000	Standard
232Th	1	10000	Standard
238U	1	10000	Standard

Calibration Technique

Use External Drift Correction - No
Calibrate by - Isotope

Symbol	Interference Correction	RSF	Calibration Method	Line Fit	Weighting	Forcing	Use for Semi-Quant	Max Error	Minimum Correlation
6Li	Yes	1.00	None				No		
7Li	Yes	1.00	None				No		
9Be	Yes	0.75	Fully-Quantified	Linear	Absolute SD	None	Yes		
11B	Yes	0.58	Fully-Quantified	Linear	Absolute SD	None	Yes		
23Na	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
25Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
26Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
27Al	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
39K	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
43Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
44Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
45Sc	Yes	1.00	None				No		
47Ti	Yes	0.99	None				No		
51V	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
52Cr	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
55Mn	Yes	0.95	Fully-Quantified	Linear	Absolute SD	None	Yes		
56Fe	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
59Co	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
60Ni	No	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
65Cu	Yes	0.90	Fully-Quantified	Linear	Absolute SD	None	Yes		
66Zn	Yes	0.38	Fully-Quantified	Linear	Absolute SD	None	Yes		
75As	Yes	0.07	Fully-Quantified	Linear	Absolute SD	None	Yes		
82Se	Yes	0.10	Fully-Quantified	Linear	Absolute SD	None	Yes		
83Kr	Yes	0.01	None				No		
84Kr	Yes	0.01	None				No		
88Sr	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
89Y	Yes	0.98	None				No		
98Mo	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
107Ag	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
106Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
111Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
115In	Yes	0.99	None				No		
118Sn	Yes	0.96	None				No		

121Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
123Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
135Ba	Yes	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes
159Tb	Yes	0.99	None				No
182W	Yes	0.94	Fully-Quantified	Linear	Absolute SD	None	Yes
206Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
207Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
208Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	No
209Bi	Yes	0.92	None				No
232Th	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
238U	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
205Tl	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
220Bkg	Yes		Semi-Quantified				No
77Ar Cl	Yes		Semi-Quantified				No
53Cl O	Yes		Semi-Quantified				No
108Mo O	Yes		Semi-Quantified				No

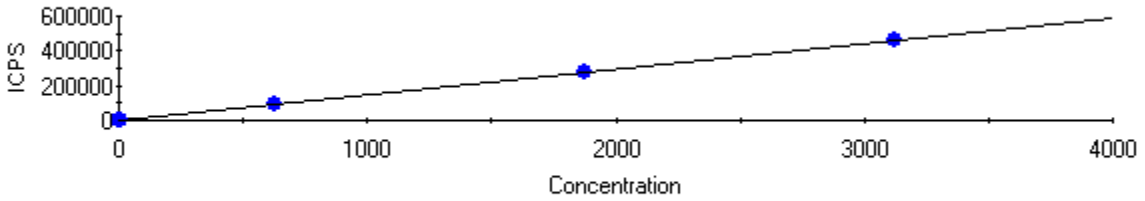
Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	STD0	Fully Quant Standard	1.000	0	1	2	144
2	STD1	Fully Quant Standard	1.000	0	1	3	144
3	STD2	Fully Quant Standard	1.000	0	1	4	144
4	STD3	Fully Quant Standard	1.000	0	1	5	144
5	STD4	Fully Quant Standard	1.000	1	1	1	144
6	STD5	Fully Quant Standard	1.000	1	1	2	144
7	ICV	QC Sample	1.000	0	1	6	144
8	ICVL	QC Sample	1.000	0	1	3	144
9	ICBIS	QC Sample	1.000	0	1	2	144
10	ICSA	QC Sample	1.000	1	1	3	144
11	ICSAB	QC Sample	1.000	1	1	4	144
12	CCV	QC Sample	1.000	0	1	5	144
13	CCB	QC Sample	1.000	0	1	2	144
14	MB 200-110769/1-A	Unknown	1.000	1	2	1	144
15	LCS 200-110769/2-A	Unknown	1.000	1	2	2	144
16	200-35700-A-11-A	Unknown	1.000	1	2	3	144
17	200-35700-A-12-A	Unknown	1.000	1	2	4	144
18	200-35700-A-12-A SD@5	Unknown	1.000	1	2	5	144
19	200-35700-A-12-A PDS	Unknown	1.000	1	2	6	144
20	200-35700-A-12-G MS	Unknown	1.000	1	2	7	144
21	200-35700-A-12-H MSD	Unknown	1.000	1	2	8	144
22	200-35700-A-13-A	Unknown	1.000	1	2	9	144
23	200-35700-A-14-A	Unknown	1.000	1	2	10	144
24	CCV	QC Sample	1.000	0	1	5	144
25	CCB	QC Sample	1.000	0	1	2	144
26	CCVL	QC Sample	1.000	0	1	3	144
27	200-35700-A-15-A	Unknown	1.000	1	2	11	144
28	200-35700-A-16-A	Unknown	1.000	1	2	12	144
29	200-35700-A-17-A	Unknown	1.000	1	3	1	144
30	200-35700-A-18-A	Unknown	1.000	1	3	2	144
31	200-35736-A-13-A	Unknown	1.000	1	3	3	144
32	200-35700-A-16-A @2	Unknown	1.000	1	3	4	144

33	CCV	QC Sample	1.000	0	1	5	144
34	CCB	QC Sample	1.000	0	1	2	144
35	CCVL	QC Sample	1.000	0	1	3	144

Fully Quant Calibration

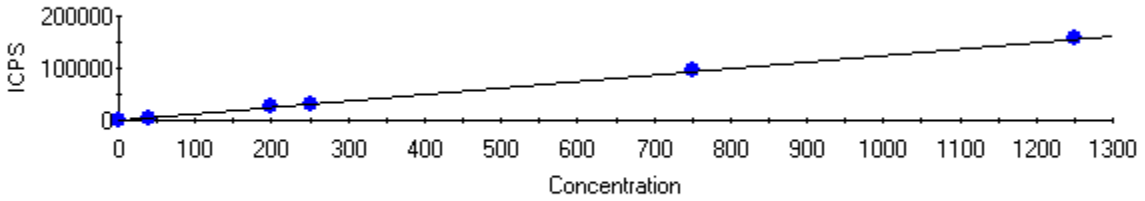
9Be FQ Block 1



Intercept CPS=6.429802 Intercept Conc=0.043447
Sensitivity=147.991948 Correlation Coeff=0.999971

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.010	0.010	4.98	0.00
STD1	1.000	1.063	0.063	163.69	6.27
STD2	5.000	5.050	0.050	753.72	0.99
STD3	625.000	614.459	10.541	90941.47	1.69
STD4	1875.000	1883.310	8.310	278721.12	0.44
STD5	3125.000	3098.876	26.124	458615.07	0.84

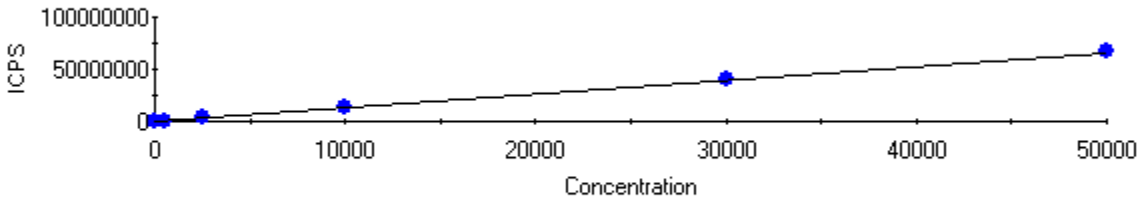
11B FQ Block 1



Intercept CPS=195.624832 Intercept Conc=1.559986
Sensitivity=125.401643 Correlation Coeff=0.999982

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.009	0.009	196.74	0.00
STD1	40.000	38.898	1.102	5073.49	2.76
STD2	200.000	198.820	1.180	25127.93	0.59
STD3	250.000	244.400	5.600	30843.74	2.24
STD4	750.000	757.264	7.264	95157.75	0.97
STD5	1250.000	1258.914	8.914	158065.45	0.71

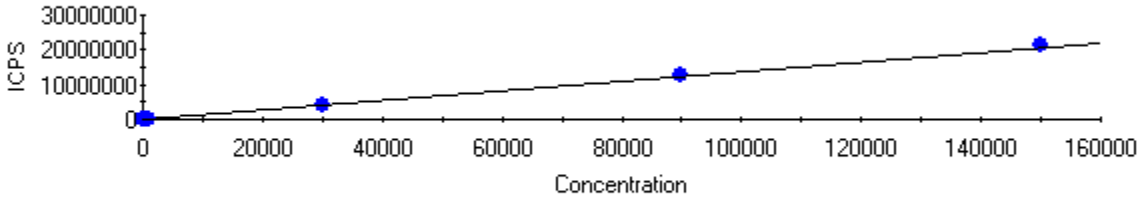
23Na FQ Block 1



Intercept CPS=177847.378623 Intercept Conc=138.029007
Sensitivity=1288.478284 Correlation Coeff=0.999927

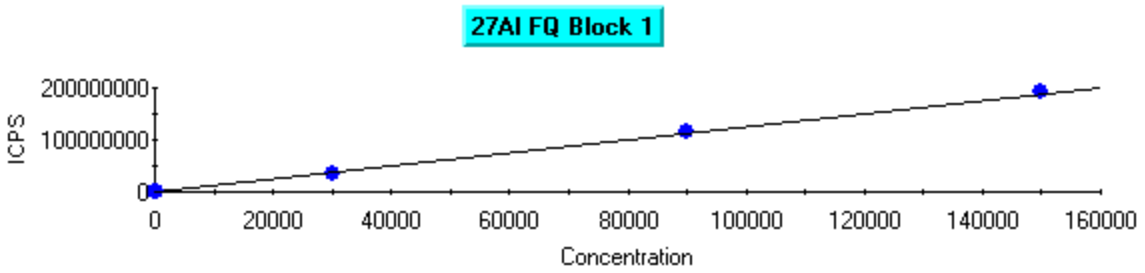
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.533	0.533	178534.40	0.00
STD1	500.000	474.574	25.426	789325.57	5.09
STD2	2500.000	2407.910	92.090	3280386.62	3.68
STD3	10000.000	9766.259	233.741	12761459.86	2.34
STD4	30000.000	31223.766	1223.766	40408991.25	4.08
STD5	50000.000	52265.661	2265.661	67521016.34	4.53

25Mg FQ Block 1



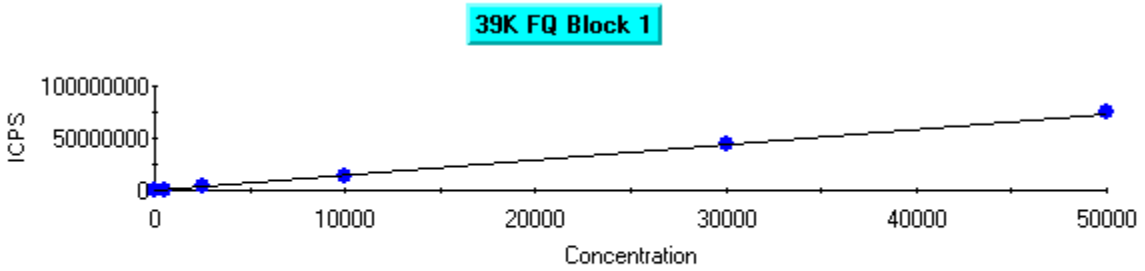
Intercept CPS=109.801456 Intercept Conc=0.803832
Sensitivity=136.597446 Correlation Coeff=0.999866

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.029	0.029	113.82	0.00
STD1	200.000	184.364	15.636	25293.48	7.82
STD2	1000.000	929.402	70.598	127063.71	7.06
STD3	30000.000	28364.356	1635.644	3874608.36	5.45
STD4	90000.000	91687.706	1687.706	12524416.27	1.88
STD5	150000.000	154710.486	4710.486	21133167.10	3.14



Intercept CPS=360.548580 Intercept Conc=0.289495
Sensitivity=1245.440207 Correlation Coeff=0.999894

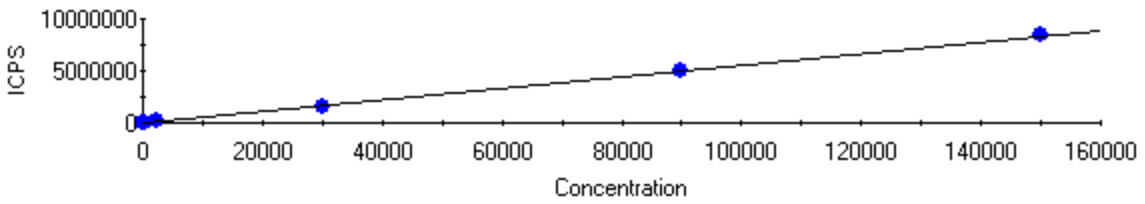
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.008	0.008	370.64	0.00
STD1	50.000	49.320	0.680	61785.92	1.36
STD2	250.000	235.210	14.790	293300.56	5.92
STD3	30000.000	28712.378	1287.622	35759910.91	4.29
STD4	90000.000	92943.651	2943.651	115756119.84	3.27
STD5	150000.000	155330.495	5330.495	193455204.73	3.55



Intercept CPS=53987.385889 Intercept Conc=37.181587
Sensitivity=1451.992528 Correlation Coeff=0.999876

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.698	0.698	55001.30	0.00
STD1	500.000	472.164	27.836	739565.57	5.57
STD2	2500.000	2368.961	131.039	3493701.27	5.24
STD3	10000.000	9479.542	520.458	13818211.84	5.20
STD4	30000.000	30882.712	882.712	44895453.85	2.94
STD5	50000.000	51810.430	1810.430	75282343.95	3.62

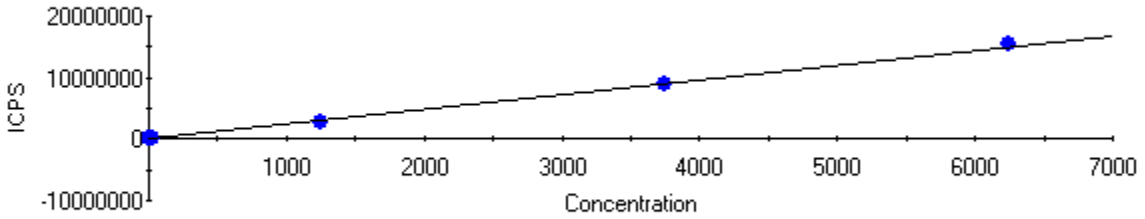
44Ca FQ Block 1



Intercept CPS=428.223066 Intercept Conc=7.757634
Sensitivity=55.200213 Correlation Coeff=0.999741

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	1.736	1.736	524.05	0.00
STD1	500.000	453.139	46.861	25441.60	9.37
STD2	2500.000	2301.742	198.258	127484.88	7.93
STD3	30000.000	27300.114	2699.886	1507400.33	9.00
STD4	90000.000	91207.724	1207.724	5035114.00	1.34
STD5	150000.000	154583.359	4583.359	8533462.52	3.06

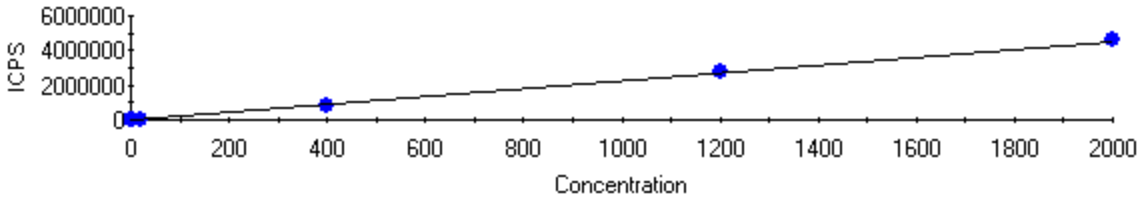
51V FQ Block 1



Intercept CPS=-1188.176418 Intercept Conc=-0.499799
Sensitivity=2377.307654 Correlation Coeff=0.999795

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.478	0.478	-51.56	0.00
STD1	5.000	5.043	0.043	10801.25	0.87
STD2	25.000	23.968	1.032	55790.48	4.13
STD3	1250.000	1167.238	82.762	2773695.63	6.62
STD4	3750.000	3806.677	56.677	9048455.32	1.51
STD5	6250.000	6469.025	219.025	15377675.41	3.50

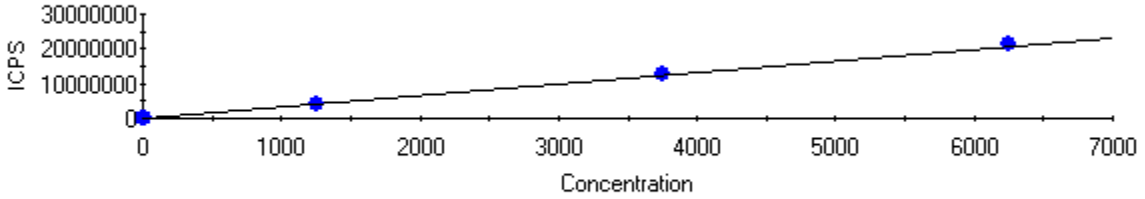
52Cr FQ Block 1



Intercept CPS=1140.289967 Intercept Conc=0.511343
Sensitivity=2229.991814 Correlation Coeff=0.999898

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	1139.73	0.00
STD1	4.000	4.099	0.099	10281.55	2.48
STD2	20.000	19.682	0.318	45030.47	1.59
STD3	400.000	381.513	18.487	851911.87	4.62
STD4	1200.000	1225.237	25.237	2733409.44	2.10
STD5	2000.000	2058.957	58.957	4592598.49	2.95

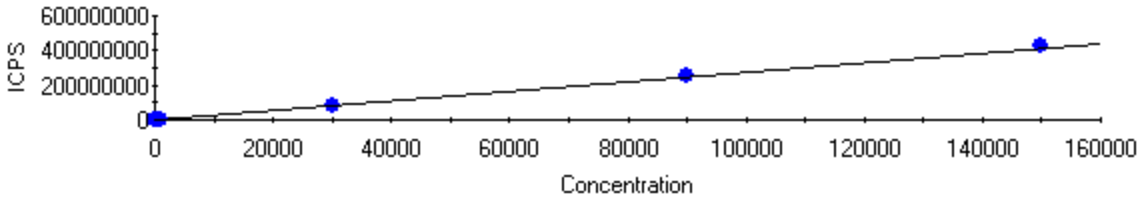
55Mn FQ Block 1



Intercept CPS=356.622768 Intercept Conc=0.107453
Sensitivity=3318.870436 Correlation Coeff=0.999847

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.001	0.001	353.14	0.00
STD1	2.000	2.105	0.105	7341.32	5.23
STD2	10.000	9.611	0.389	32254.25	3.89
STD3	1250.000	1157.639	92.361	3842410.34	7.39
STD4	3750.000	3791.679	41.679	12584448.76	1.11
STD5	6250.000	6366.226	116.226	21129035.34	1.86

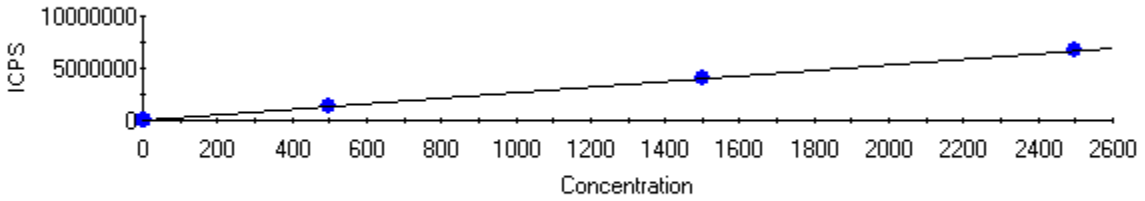
56Fe FQ Block 1



Intercept CPS=196810.517968 Intercept Conc=71.274682
Sensitivity=2761.296320 Correlation Coeff=0.999897

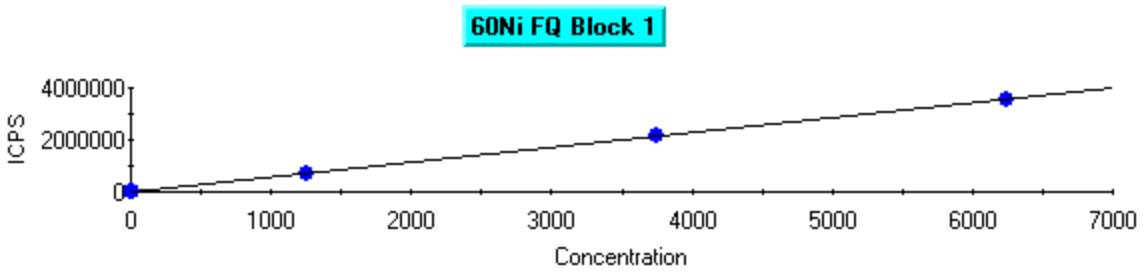
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.369	0.369	197829.80	0.00
STD1	200.000	199.131	0.869	746670.33	0.43
STD2	1000.000	965.333	34.667	2862379.63	3.47
STD3	30000.000	28274.952	1725.048	78272332.46	5.75
STD4	90000.000	91162.158	1162.158	251922542.32	1.29
STD5	150000.000	152786.878	2786.878	422086653.64	1.86

59Co FQ Block 1



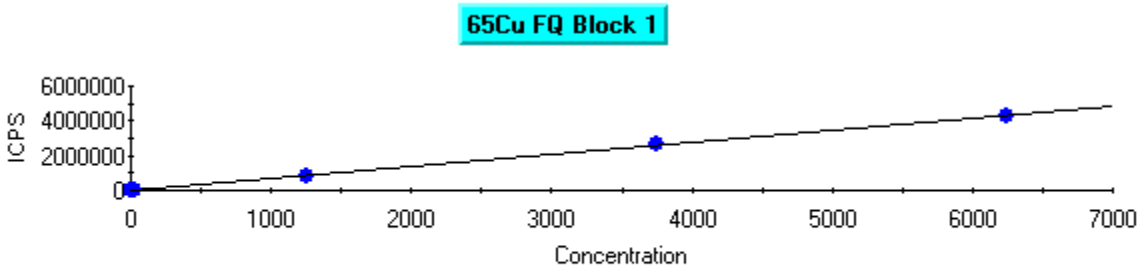
Intercept CPS=41.529330 Intercept Conc=0.015612
Sensitivity=2660.032155 Correlation Coeff=0.999942

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.001	0.001	45.30	0.00
STD1	1.000	1.022	0.022	2760.47	2.21
STD2	5.000	4.855	0.145	12955.72	2.90
STD3	500.000	478.055	21.945	1271683.82	4.39
STD4	1500.000	1507.373	7.373	4009702.54	0.49
STD5	2500.000	2529.574	29.574	6728789.64	1.18



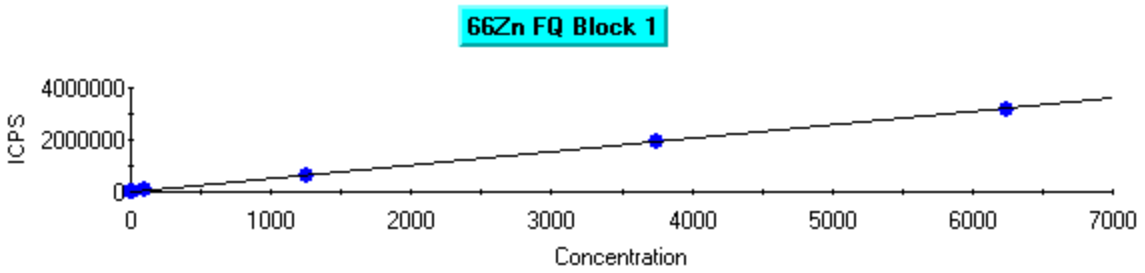
Intercept CPS=24.275682 Intercept Conc=0.042792
Sensitivity=567.289751 Correlation Coeff=0.999956

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.005	0.005	21.51	0.00
STD1	2.000	2.082	0.082	1205.36	4.10
STD2	10.000	10.113	0.113	5761.21	1.13
STD3	1250.000	1210.255	39.745	686589.37	3.18
STD4	3750.000	3806.690	56.690	2159520.68	1.51
STD5	6250.000	6294.065	44.065	3570582.99	0.71



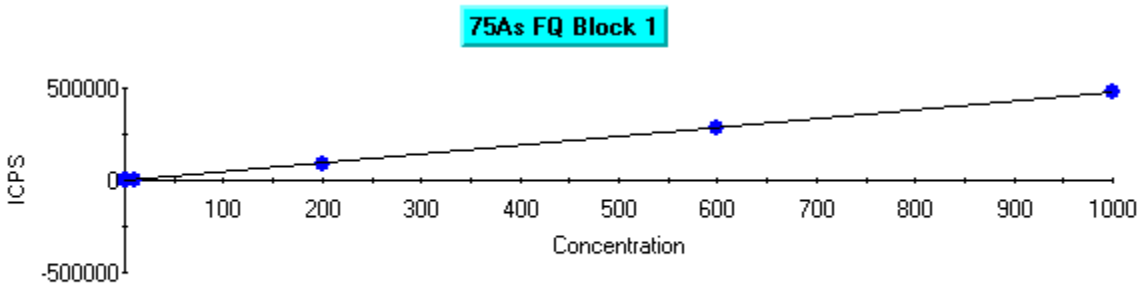
Intercept CPS=298.802673 Intercept Conc=0.430372
Sensitivity=694.289828 Correlation Coeff=0.999993

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.005	0.005	294.99	0.00
STD1	5.000	5.723	0.723	4272.00	14.45
STD2	25.000	27.330	2.330	19273.58	9.32
STD3	1250.000	1240.262	9.738	861400.05	0.78
STD4	3750.000	3759.985	9.985	2610818.05	0.27
STD5	6250.000	6225.586	24.414	4322659.69	0.39



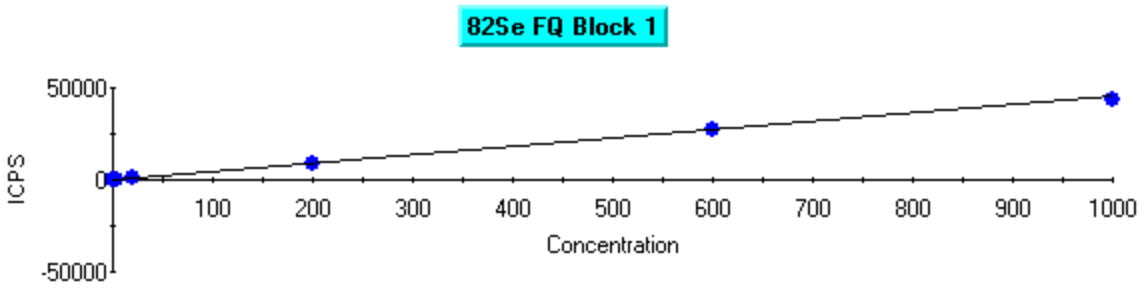
Intercept CPS=404.283502 Intercept Conc=0.777028
Sensitivity=520.294342 Correlation Coeff=0.999887

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.002	0.002	405.15	0.00
STD1	20.000	19.813	0.187	10713.07	0.93
STD2	100.000	102.771	2.771	53875.63	2.77
STD3	1250.000	1246.705	3.295	649057.86	0.26
STD4	3750.000	3766.943	16.943	1960323.18	0.45
STD5	6250.000	6109.286	140.714	3179031.26	2.25



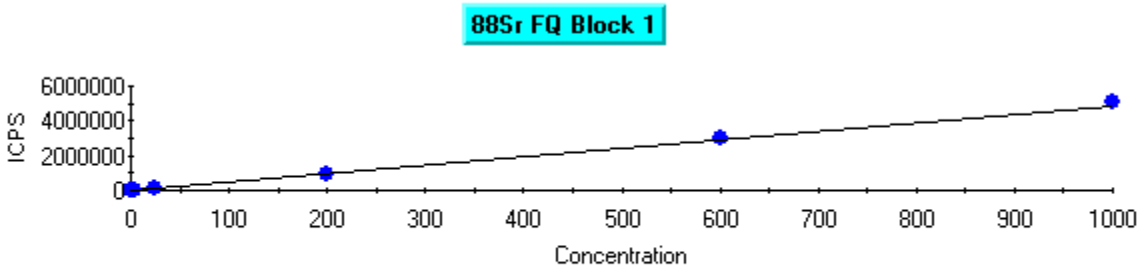
Intercept CPS=-220.855024 Intercept Conc=-0.464986
Sensitivity=474.971389 Correlation Coeff=0.999963

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.140	0.140	-287.29	0.00
STD1	2.000	2.093	0.093	773.42	4.67
STD2	10.000	10.010	0.010	4533.76	0.10
STD3	200.000	192.807	7.193	91356.72	3.60
STD4	600.000	603.111	3.111	286239.47	0.52
STD5	1000.000	1008.965	8.965	479008.71	0.90



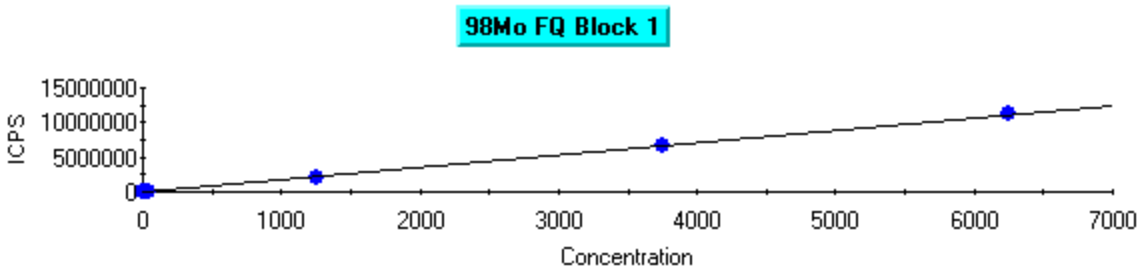
Intercept CPS=-56.712408 Intercept Conc=-1.249714
Sensitivity=45.380322 Correlation Coeff=0.999757

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.822	0.822	-94.00	0.00
STD1	4.000	4.238	0.238	135.63	5.96
STD2	20.000	18.739	1.261	793.69	6.30
STD3	200.000	200.729	0.729	9052.42	0.36
STD4	600.000	600.206	0.206	27180.85	0.03
STD5	1000.000	962.677	37.323	43629.87	3.73



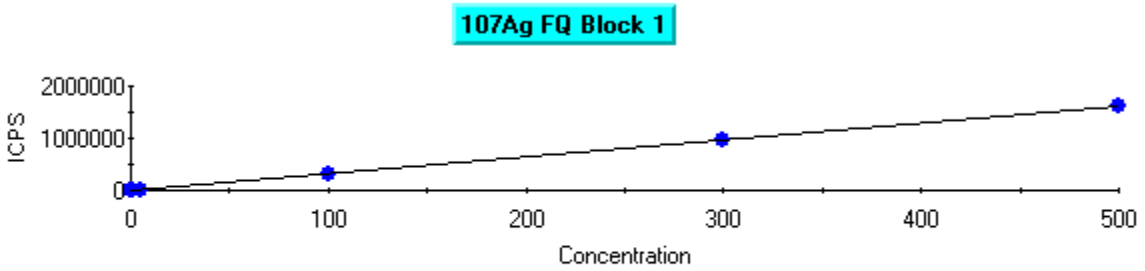
Intercept CPS=24.394564 Intercept Conc=0.005013
Sensitivity=4866.330983 Correlation Coeff=0.999900

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	25.09	0.00
STD1	5.000	4.839	0.161	23570.36	3.23
STD2	25.000	24.540	0.460	119442.26	1.84
STD3	200.000	193.406	6.594	941203.86	3.30
STD4	600.000	608.695	8.695	2962137.72	1.45
STD5	1000.000	1032.444	32.444	5024236.99	3.24



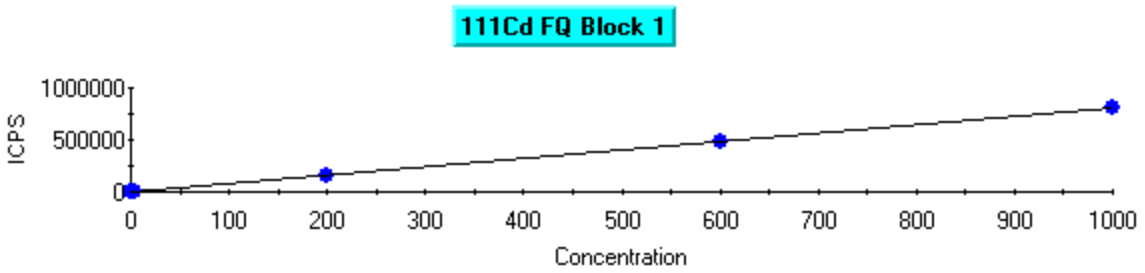
Intercept CPS=43.230187 Intercept Conc=0.024439
Sensitivity=1768.888660 Correlation Coeff=0.999628

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.006	0.006	53.26	0.00
STD1	10.000	9.193	0.807	16305.32	8.07
STD2	50.000	45.766	4.234	80998.52	8.47
STD3	1250.000	1124.557	125.443	1989258.81	10.04
STD4	3750.000	3699.084	50.916	6543311.38	1.36
STD5	6250.000	6382.710	132.710	11290346.94	2.12



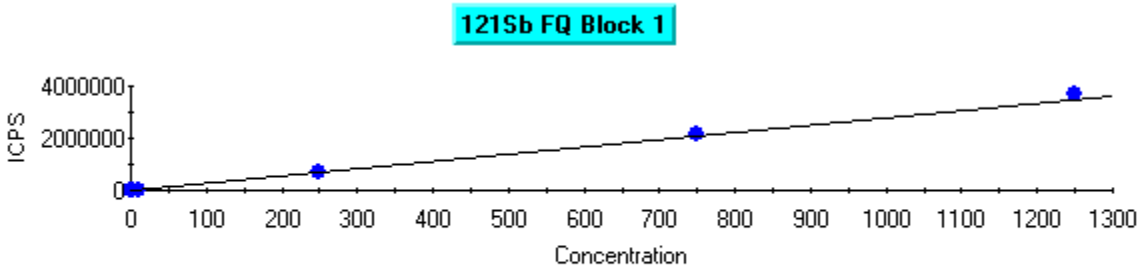
Intercept CPS=37.343841 Intercept Conc=0.011649
Sensitivity=3205.668712 Correlation Coeff=0.999964

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.001	0.001	34.94	0.00
STD1	1.000	1.010	0.010	3273.88	0.96
STD2	5.000	5.116	0.116	16437.87	2.32
STD3	100.000	97.465	2.535	312479.02	2.53
STD4	300.000	304.231	4.231	975299.65	1.41
STD5	500.000	509.337	9.337	1632801.53	1.87



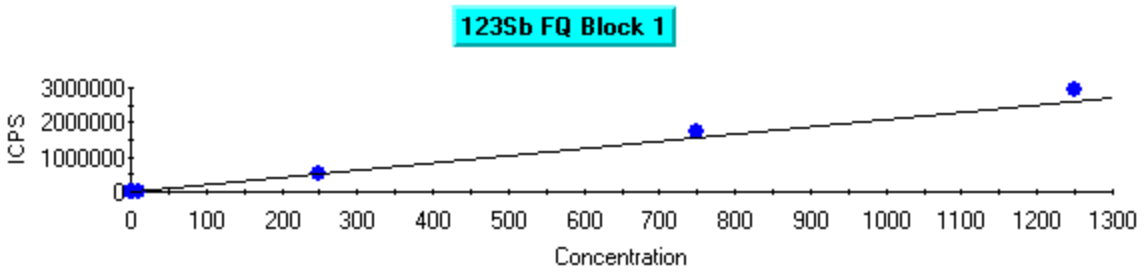
Intercept CPS=41.008483 Intercept Conc=0.050764
Sensitivity=807.828991 Correlation Coeff=0.999938

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.019	0.019	56.69	0.00
STD1	1.000	0.887	0.113	757.52	11.30
STD2	5.000	4.615	0.385	3768.90	7.71
STD3	200.000	190.447	9.553	153889.84	4.78
STD4	600.000	600.469	0.469	485117.33	0.08
STD5	1000.000	1009.292	9.292	815375.99	0.93



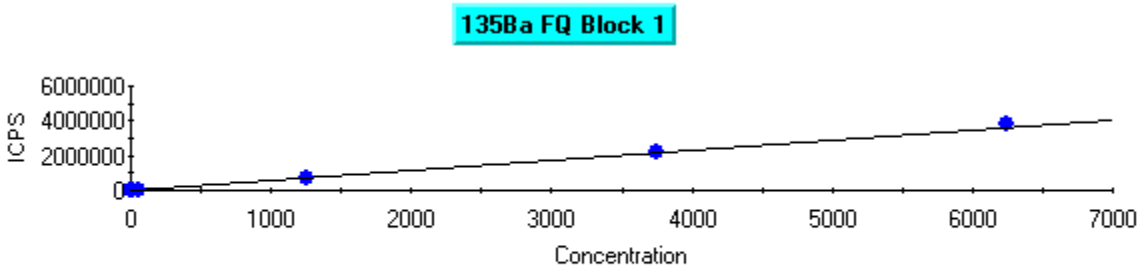
Intercept CPS=101.379373 Intercept Conc=0.036691
Sensitivity=2763.094545 Correlation Coeff=0.999849

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.001	0.001	103.26	0.00
STD1	2.000	1.905	0.095	5364.04	4.77
STD2	10.000	9.649	0.351	26763.77	3.51
STD3	250.000	243.225	6.775	672153.81	2.71
STD4	750.000	788.232	38.232	2178061.30	5.10
STD5	1250.000	1332.526	82.526	3681995.71	6.60



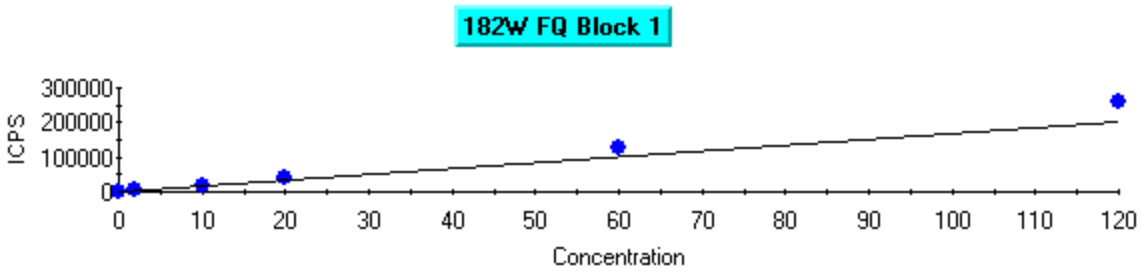
Intercept CPS=78.035435 Intercept Conc=0.037452
Sensitivity=2083.595934 Correlation Coeff=0.999673

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.001	0.001	79.68	0.00
STD1	2.000	1.964	0.036	4169.88	1.81
STD2	10.000	9.965	0.035	20842.07	0.35
STD3	250.000	252.691	2.691	526584.62	1.08
STD4	750.000	825.384	75.384	1719845.56	10.05
STD5	1250.000	1421.588	171.588	2962093.67	13.73



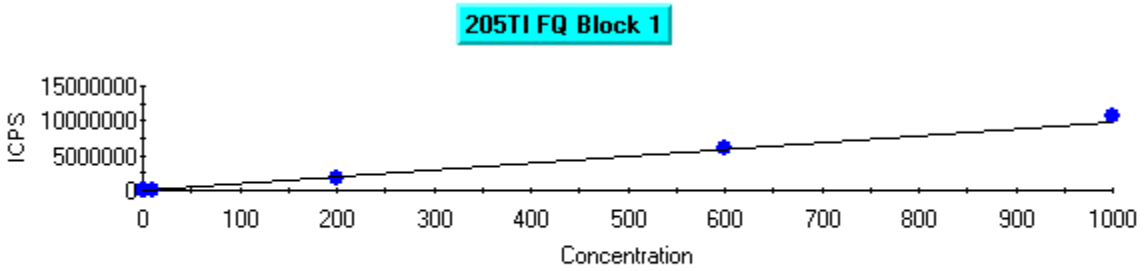
Intercept CPS=7.959232 Intercept Conc=0.013845
Sensitivity=574.866850 Correlation Coeff=0.999706

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.001	0.001	8.37	0.00
STD1	10.000	9.321	0.679	5366.10	6.79
STD2	50.000	47.412	2.588	27263.68	5.18
STD3	1250.000	1190.321	59.679	684284.28	4.77
STD4	3750.000	3822.775	72.775	2197594.48	1.94
STD5	6250.000	6594.028	344.028	3790696.31	5.50



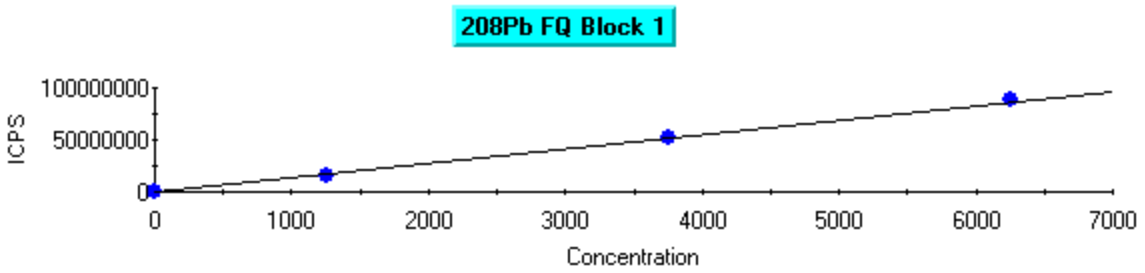
Intercept CPS=31.094435 Intercept Conc=0.018399
Sensitivity=1690.047717 Correlation Coeff=0.999687

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.005	0.005	39.97	0.00
STD1	2.000	1.838	0.162	3137.95	8.08
STD2	10.000	9.139	0.861	15477.02	8.61
STD3	20.000	22.739	2.739	38460.32	13.69
STD4	60.000	74.094	14.094	125254.00	23.49
STD5	120.000	153.175	33.175	258904.84	27.65



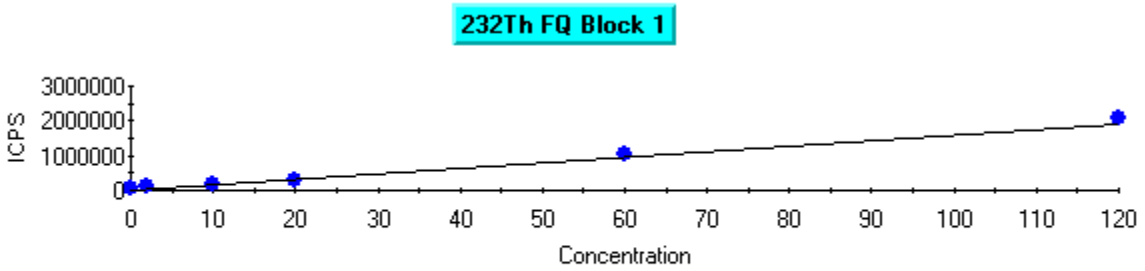
Intercept CPS=46.552517 Intercept Conc=0.004776
Sensitivity=9747.541891 Correlation Coeff=0.999585

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	46.67	0.00
STD1	2.000	1.876	0.124	18335.26	6.19
STD2	10.000	9.643	0.357	94039.91	3.57
STD3	200.000	189.696	10.304	1849116.04	5.15
STD4	600.000	623.888	23.888	6081421.12	3.98
STD5	1000.000	1080.488	80.488	10532148.00	8.05



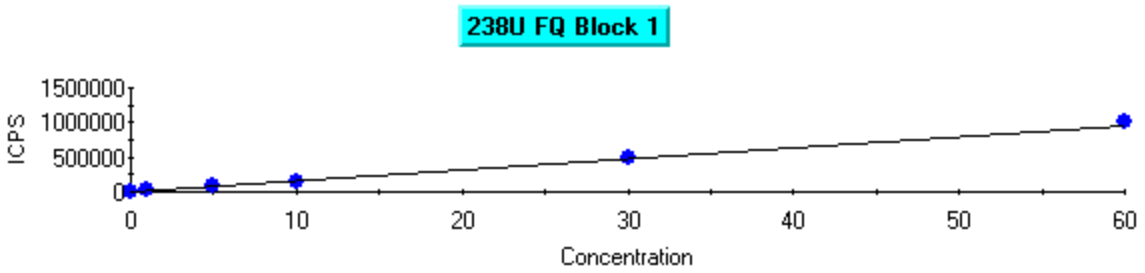
Intercept CPS=525.491865 Intercept Conc=0.038608
Sensitivity=13610.867443 Correlation Coeff=0.999719

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	520.00	0.00
STD1	1.000	1.045	0.045	14755.38	4.55
STD2	5.000	4.794	0.206	65779.69	4.11
STD3	1250.000	1148.521	101.479	15632897.75	8.12
STD4	3750.000	3792.749	42.749	51623131.94	1.14
STD5	6250.000	6473.812	223.812	88114720.04	3.58



Intercept CPS=26646.201479 Intercept Conc=1.704136
Sensitivity=15636.193272 Correlation Coeff=0.998279

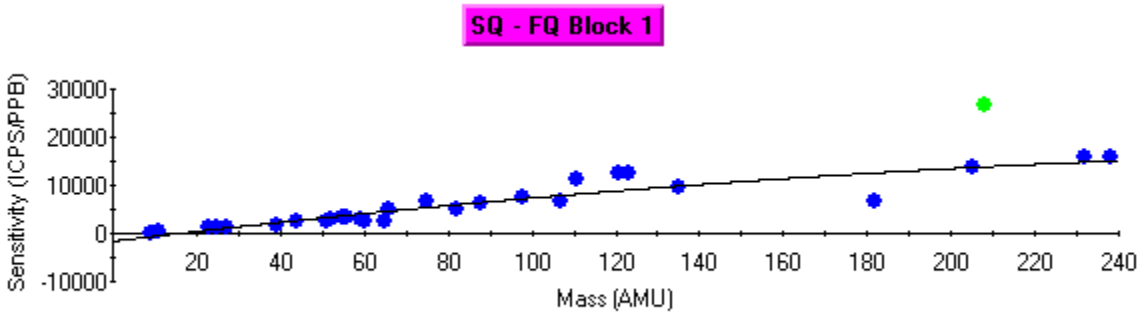
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.207	0.207	29876.16	0.00
STD1	2.000	5.777	3.777	116972.86	188.84
STD2	10.000	7.781	2.219	148309.10	22.19
STD3	20.000	16.993	3.007	292345.25	15.04
STD4	60.000	63.799	3.799	1024214.31	6.33
STD5	120.000	132.058	12.058	2091536.54	10.05



Intercept CPS=187.383712 Intercept Conc=0.011899
Sensitivity=15748.206179 Correlation Coeff=0.999551

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.010	0.010	349.99	0.00
STD1	1.000	0.950	0.050	15141.90	5.04
STD2	5.000	5.002	0.002	78959.96	0.04
STD3	10.000	8.983	1.017	141656.25	10.17
STD4	30.000	30.633	0.633	482602.74	2.11
STD5	60.000	64.022	4.022	1008421.58	6.70

Semi Quant Calibration



Coeff 0=-1602.791607 Coeff 1=103.999149 Coeff 2=-0.142558

Symbol	Mass	RSF	Available	Excluded	Sensitivity Measured	Corrected	Calculated	%Error
9Be	9.01	0.7500	1	1	147.99	197.32	-677.11	-443.1
11B	11.01	0.5800	1	1	125.40	266.86	-475.11	-278.0
23Na	22.99	1.0000	1	1	1288.48	1288.48	712.78	-44.7
25Mg	24.99	0.9800	1	1	136.60	1378.69	906.72	-34.2
27Al	26.98	0.9800	1	1	1245.44	1270.86	1099.48	-13.5
39K	38.96	1.0000	1	1	1451.99	1559.94	2232.97	43.1
44Ca	43.96	0.9900	1	1	55.20	2617.74	2693.11	2.9
51V	50.94	0.9900	1	1	2377.31	2407.10	3325.36	38.1

52Cr	51.94	0.9800	1	1	2229.99	2716.69	3414.38	25.7
55Mn	54.94	0.9500	1	1	3318.87	3493.55	3680.45	5.3
56Fe	55.93	0.9600	1	1	2761.30	3142.87	3768.37	19.9
59Co	58.93	0.9300	1	1	2660.03	2860.25	4031.09	40.9
60Ni	59.93	0.9100	1	1	567.29	2383.01	4117.93	72.8
65Cu	64.93	0.9000	1	1	694.29	2495.74	4548.67	82.3
66Zn	65.93	0.3750	1	1	520.29	4989.04	4633.87	-7.1
75As	74.92	0.0700	1	1	474.97	6785.31	5388.78	-20.6
82Se	81.92	0.1000	1	1	45.38	5133.52	5959.86	16.1
88Sr	87.91	0.9600	1	1	4866.33	6139.89	6437.72	4.9
98Mo	97.91	0.9800	1	1	1768.89	7520.79	7212.80	-4.1
107Ag	106.91	0.9300	1	1	3205.67	6712.67	7885.99	17.5
111Cd	110.90	0.5660	1	1	807.83	11098.44	8177.72	-26.3
121Sb	120.90	0.3900	1	1	2763.09	12375.30	8887.23	-28.2
123Sb	122.90	0.3900	1	1	2083.60	12497.20	9025.74	-27.8
135Ba	134.91	0.9100	1	1	574.87	9586.07	9832.79	2.6
182W	181.95	0.9400	1	1	1690.05	6833.61	12600.27	84.4
205Tl	204.97	1.0000	1	1	9747.54	13826.30	13724.76	-0.7
208Pb	207.98	0.9700	0	1	13610.87	26788.51	13860.36	-48.3
232Th	232.04	1.0000	1	1	15636.19	15636.19	14853.41	-5.0
238U	238.05	1.0000	1	1	15748.21	15862.42	15075.79	-5.0

Dilution Corrected Concentrations

STD0 11/1/2016 10:50:03 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:25	98.250%	-0.009	0.144	-0.150	0.250	0.020	1.061	2.671	97.280%	0.000	0.442	-0.013
2	10:50:47	99.305%	-0.026	-0.115	2.105	-0.001	0.051	1.177	1.275	100.282%	0.000	0.293	0.012
3	10:51:08	102.444%	0.006	-0.003	-0.356	-0.161	-0.047	-0.143	1.262	102.439%	0.000	0.699	0.001
x		100.000%	-0.010	0.009	0.533	0.029	0.008	0.698	1.736	100.000%	0.000	0.478	-0.000
σ		2.182%	0.016	0.130	1.365	0.207	0.050	0.731	0.810	2.591%	0.000	0.205	0.013
%RSD		2.182	165.300	1457.000	256.100	702.900	613.700	104.700	46.660	2.591	0.000	42.900	5028.000

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:25	4.836	-0.008	1.654	0.010	-0.016	0.008	0.071	0.060	0.200	-0.851	0.000	0.000
2	10:50:47	5.108	0.008	0.655	-0.002	-0.016	-0.025	-0.052	-0.423	0.256	-1.396	0.000	0.000
3	10:51:08	4.505	-0.003	-1.202	-0.003	0.017	0.001	-0.013	-0.057	0.227	-0.218	0.000	0.000
x		4.817	-0.001	0.369	0.001	-0.005	-0.005	0.002	-0.140	0.228	-0.822	0.000	0.000
σ		0.302	0.008	1.449	0.007	0.019	0.017	0.063	0.252	0.028	0.590	0.000	0.000
%RSD		6.275	806.600	392.600	495.000	396.900	312.100	3751.000	180.300	12.150	71.760	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:25	0.003	98.969%	-0.002	-0.004	-1.053	0.032	98.635%	0.000	0.000	-0.000	0.004	97.753%
2	10:50:47	-0.002	100.475%	0.001	0.001	-0.860	0.012	99.449%	0.000	-0.002	0.003	0.004	100.761%
3	10:51:08	-0.001	100.556%	0.018	0.001	-0.899	0.015	101.916%	0.000	0.004	-0.000	-0.005	101.485%
x		0.000	100.000%	0.006	-0.001	-0.937	0.019	100.000%	0.000	0.001	0.001	0.001	100.000%
σ		0.003	0.894%	0.011	0.003	0.102	0.011	1.708%	0.000	0.003	0.002	0.005	1.979%
%RSD		1962.000	0.894	185.300	346.000	10.880	56.600	1.708	0.000	474.300	225.700	735.800	1.979

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:25	0.003	-0.000	-0.003	99.972%	0.000	0.280	0.016
2	10:50:47	0.011	0.000	0.001	99.804%	0.000	0.211	0.006
3	10:51:08	0.002	-0.000	0.001	100.224%	0.000	0.129	0.009
x		0.005	0.000	-0.000	100.000%	0.000	0.207	0.010
σ		0.005	0.000	0.003	0.211%	0.000	0.075	0.005
%RSD		94.440	2525.000	628.900	0.211	0.000	36.520	52.430

STD1 11/1/2016 10:55:00 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:55:21	106.984%	1.109	37.090	464.500	178.700	49.050	467.300	450.600	109.685%	0.000	5.497	4.167
2	10:55:43	102.651%	1.010	40.160	T 485.400	192.800	49.000	472.300	458.100	107.919%	0.000	4.760	3.936
3	10:56:05	101.746%	1.069	39.440	473.900	181.500	49.920	476.900	450.700	107.296%	0.000	4.873	4.194
x		103.794%	1.063	38.900	T 474.600	184.400	49.320	472.200	453.100	108.300%	0.000	5.043	4.099
σ		2.800%	0.050	1.604	T 10.470	7.460	0.516	4.805	4.313	1.239%	0.000	0.397	0.142

%RSD		2.697	4.708	4.124	T 2.207	4.047	1.047	1.018	0.952	1.144	0.000	7.871	3.460
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:55:21	6.458	2.107	195.900	0.973	2.006	5.666	20.080	1.902	0.284	3.892	0.000	0.000
2	10:55:43	6.793	2.032	200.600	1.030	2.073	5.948	19.580	2.126	0.244	4.329	0.000	0.000
3	10:56:05	7.402	2.175	200.900	1.064	2.167	5.554	19.780	2.252	0.237	4.494	0.000	0.000
x		6.884	2.105	199.100	1.022	2.082	5.723	19.810	2.093	0.255	4.238	0.000	0.000
σ		0.479	0.072	2.784	0.046	0.081	0.203	0.248	0.177	0.025	0.311	0.000	0.000
%RSD		6.954	3.401	1.398	4.464	3.877	3.542	1.254	8.474	9.968	7.337	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:55:21	4.632	105.539%	9.285	0.940	-1.025	0.919	104.433%	0.000	1.936	1.928	8.874	100.226%
2	10:55:43	4.936	107.179%	9.045	1.041	-0.640	0.864	103.331%	0.000	1.853	1.965	9.617	103.371%
3	10:56:05	4.948	105.132%	9.251	1.049	-0.143	0.878	104.468%	0.000	1.924	1.999	9.471	101.184%
x		4.839	105.950%	9.193	1.010	-0.603	0.887	104.077%	0.000	1.905	1.964	9.321	101.593%
σ		0.179	1.084%	0.130	0.061	0.442	0.028	0.646%	0.000	0.045	0.035	0.394	1.612%
%RSD		3.695	1.023	1.414	6.001	73.320	3.187	0.621	0.000	2.364	1.803	4.223	1.587

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:55:21	1.791	1.857	1.043	100.997%	0.000	6.766	0.941
2	10:55:43	1.874	1.918	1.025	101.080%	0.000	5.710	0.944
3	10:56:05	1.850	1.854	1.068	101.583%	0.000	4.854	0.963
x		1.838	1.876	1.045	101.220%	0.000	5.777	0.950
σ		0.042	0.036	0.021	0.317%	0.000	0.958	0.012
%RSD		2.308	1.910	2.040	0.314	0.000	16.580	1.270

STD2 11/1/2016 11:00:43 AM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	11:01:05	105.302%	5.122	198.600	T 2406.000	924.100	233.100	T 2354.000	2282.000	111.228%	0.000	23.930	19.300
2	11:01:27	101.691%	5.007	206.200	T 2369.000	919.600	232.200	T 2346.000	2276.000	110.612%	0.000	23.680	19.670
3	11:01:48	102.766%	5.020	191.600	T 2450.000	944.500	240.400	T 2408.000	2348.000	106.547%	0.000	24.290	20.080
x		103.253%	5.050	198.800	T 2408.000	929.400	235.200	T 2369.000	2302.000	109.462%	0.000	23.970	19.680
σ		1.854%	0.063	7.267	T 40.510	13.240	4.513	T 33.810	39.880	2.543%	0.000	0.305	0.389
%RSD		1.796	1.254	3.655	T 1.682	1.425	1.919	T 1.427	1.733	2.324	0.000	1.273	1.977
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	11:01:05	6.734	9.354	T 946.300	4.923	10.430	26.880	103.700	10.500	0.156	20.480	0.000	0.000
2	11:01:27	6.391	9.596	T 956.000	4.806	9.720	28.890	101.700	9.766	0.222	18.900	0.000	0.000
3	11:01:48	7.227	9.883	T 993.700	4.836	10.180	26.220	102.900	9.768	0.255	16.840	0.000	0.000
x		6.784	9.611	T 965.300	4.855	10.110	27.330	102.800	10.010	0.211	18.740	0.000	0.000
σ		0.420	0.265	T 25.000	0.061	0.363	1.388	1.007	0.422	0.050	1.823	0.000	0.000
%RSD		6.194	2.755	T 2.590	1.251	3.586	5.078	0.980	4.213	23.950	9.728	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	11:01:05	24.850	107.005%	44.600	5.108	-2.214	4.647	103.972%	0.000	9.497	9.961	47.450	102.828%
2	11:01:27	24.490	106.383%	45.880	5.090	-0.436	4.767	103.731%	0.000	9.653	9.956	47.050	100.249%
3	11:01:48	24.280	105.016%	46.830	5.151	0.275	4.431	103.690%	0.000	9.798	9.980	47.740	102.413%
x		24.540	106.134%	45.770	5.116	-0.792	4.615	103.798%	0.000	9.649	9.965	47.410	101.830%
σ		0.290	1.018%	1.119	0.031	1.282	0.170	0.152%	0.000	0.150	0.012	0.347	1.385%
%RSD		1.180	0.959	2.445	0.609	162.000	3.693	0.147	0.000	1.559	0.125	0.732	1.360

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:01:05	9.106	9.528	4.754	98.976%	0.000	7.568	5.057
2	11:01:27	9.223	9.674	4.748	98.724%	0.000	7.744	4.938
3	11:01:48	9.088	9.727	4.880	98.678%	0.000	8.031	5.011
x		9.139	9.643	4.794	98.792%	0.000	7.781	5.002
σ		0.073	0.103	0.074	0.160%	0.000	0.234	0.060
%RSD		0.799	1.067	1.550	0.162	0.000	3.001	1.195

STD3 11/1/2016 11:06:27 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:06:49	98.850%	619.900	241.300	┬9791.000	┬28480.000	┬28790.000	┬9485.000	┬27170.000	97.450%	0.000	┬1166.000	382.400
2	11:07:10	95.233%	618.800	251.700	┬9572.000	┬27910.000	┬28010.000	┬9219.000	27030.000	98.317%	0.000	┬1158.000	377.900
3	11:07:32	96.332%	604.700	240.200	┬9937.000	┬28710.000	┬29330.000	┬9735.000	┬27700.000	94.330%	0.000	┬1178.000	384.200
x		96.805%	614.500	244.400	┬9766.000	┬28360.000	┬28710.000	┬9480.000	┬27300.000	96.699%	0.000	┬1167.000	381.500
σ		1.854%	8.496	6.326	┬183.700	┬411.600	┬662.400	┬257.800	┬356.900	2.097%	0.000	┬10.150	3.280
%RSD		1.916	1.383	2.588	┬1.881	┬1.451	┬2.307	┬2.720	┬1.307	2.168	0.000	┬0.870	0.860

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:06:49	16.900	┬1168.000	┬28250.000	476.700	1211.000	1242.000	1245.000	190.300	-0.600	199.500	0.000	0.000
2	11:07:10	14.470	┬1136.000	┬27900.000	470.500	1201.000	1249.000	1252.000	192.600	-0.555	200.400	0.000	0.000
3	11:07:32	14.190	┬1169.000	┬28670.000	487.000	1219.000	1230.000	1242.000	195.500	-0.640	202.400	0.000	0.000
x		15.190	┬1158.000	┬28270.000	478.100	1210.000	1240.000	1247.000	192.800	-0.598	200.700	0.000	0.000
σ		1.492	┬18.420	┬382.600	8.329	8.776	9.925	5.079	2.593	0.043	1.475	0.000	0.000
%RSD		9.826	┬1.592	┬1.353	1.742	0.725	0.800	0.407	1.345	7.140	0.735	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:06:49	193.500	98.911%	┬1094.000	97.510	4.819	190.100	95.718%	0.000	243.400	251.500	1178.000	93.608%
2	11:07:10	194.100	96.418%	1135.000	97.880	7.198	189.700	94.989%	0.000	244.400	253.500	1192.000	94.052%
3	11:07:32	192.600	94.605%	1145.000	97.000	3.869	191.600	94.790%	0.000	241.900	253.100	1200.000	95.635%
x		193.400	96.645%	┬1125.000	97.470	5.295	190.400	95.166%	0.000	243.200	252.700	1190.000	94.432%
σ		0.745	2.162%	┬27.030	0.440	1.715	1.000	0.488%	0.000	1.265	1.040	11.110	1.066%
%RSD		0.385	2.237	┬2.404	0.451	32.390	0.525	0.513	0.000	0.520	0.412	0.933	1.128

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:06:49	22.500	192.700	┬1164.000	94.841%	0.000	16.390	9.015
2	11:07:10	22.580	185.900	┬1120.000	98.035%	0.000	16.880	8.753
3	11:07:32	23.140	190.400	┬1161.000	95.214%	0.000	17.710	9.182

x	22.740	189.700	┬1149.000	96.030%	0.000	16.990	8.983
σ	0.348	3.441	┬24.400	1.746%	0.000	0.665	0.217
%RSD	1.529	1.814	┬2.124	1.819	0.000	3.914	2.411

STD4 11/1/2016 11:12:11 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:12:32	96.427%	1878.000	746.900	┬31510.000	┬92290.000	┬94070.000	┬31290.000	┬91050.000	92.678%	0.000	┬3810.000	┬1229.000
2	11:12:54	94.618%	1911.000	771.900	┬31470.000	┬92560.000	┬93210.000	┬30800.000	┬90960.000	92.671%	0.000	┬3828.000	┬1233.000
3	11:13:16	93.880%	1861.000	753.000	┬30690.000	┬90210.000	┬91550.000	┬30550.000	┬91610.000	92.730%	0.000	┬3782.000	┬1214.000
x		94.975%	1883.000	757.300	┬31220.000	┬91690.000	┬92940.000	┬30880.000	┬91210.000	92.693%	0.000	┬3807.000	┬1225.000
σ		1.310%	25.150	13.070	┬459.000	┬1290.000	┬1279.000	┬375.800	┬350.200	0.032%	0.000	┬23.190	┬10.180
%RSD		1.380	1.336	1.726	┬1.470	┬1.407	┬1.376	┬1.217	┬0.384	0.035	0.000	┬0.609	┬0.831

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:12:32	42.000	┬3805.000	┬90940.000	┬1503.000	3815.000	┬3725.000	3757.000	609.200	-2.196	603.100	0.000	0.000
2	11:12:54	39.250	┬3824.000	┬92050.000	┬1521.000	┬3834.000	┬3799.000	3813.000	597.800	-2.166	597.500	0.000	0.000
3	11:13:16	40.850	┬3746.000	┬90500.000	┬1498.000	3771.000	┬3756.000	3731.000	602.200	-2.259	600.000	0.000	0.000
x		40.700	┬3792.000	┬91160.000	┬1507.000	┬3807.000	┬3760.000	3767.000	603.100	-2.207	600.200	0.000	0.000
σ		1.383	┬40.560	┬800.200	┬12.370	┬32.060	┬37.390	41.740	5.751	0.048	2.779	0.000	0.000
%RSD		3.397	┬1.070	┬0.878	┬0.821	┬0.842	┬0.994	1.108	0.954	2.155	0.463	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:12:32	┬609.000	91.881%	┬3695.000	302.800	9.729	600.900	92.858%	┬0.000	779.900	817.000	┬3803.000	92.538%
2	11:12:54	┬610.000	92.479%	┬3690.000	305.500	23.120	600.300	92.279%	┬0.000	791.700	830.900	┬3860.000	93.645%
3	11:13:16	┬607.100	91.672%	┬3712.000	304.400	35.960	600.200	92.113%	┬0.000	793.100	828.300	┬3805.000	91.370%
x		┬608.700	92.011%	┬3699.000	304.200	22.940	600.500	92.417%	┬0.000	788.200	825.400	┬3823.000	92.518%
σ		┬1.459	0.419%	┬11.170	1.388	13.120	0.380	0.391%	┬0.000	7.288	7.410	┬32.230	1.138%
%RSD		┬0.240	0.455	┬0.302	0.456	57.190	0.063	0.423	┬0.000	0.925	0.898	┬0.843	1.230

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:12:32	73.130	┬615.400	┬3755.000	93.994%	0.000	62.820	30.370
2	11:12:54	73.510	┬627.100	┬3821.000	93.007%	0.000	64.220	30.770
3	11:13:16	75.650	┬629.100	┬3803.000	93.100%	0.000	64.350	30.760
x		74.090	┬623.900	┬3793.000	93.367%	0.000	63.800	30.630
σ		1.362	┬7.399	┬33.920	0.545%	0.000	0.848	0.229
%RSD		1.838	┬1.186	┬0.894	0.584	0.000	1.329	0.748

STD5 11/1/2016 11:17:53 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:14	93.034%	3110.000	M 1251.000	TM 53200.000	TM 155400.000	TM 157500.000	TM 52200.000	TM 154400.000	90.019%	0.000	TM 6438.000	TM 2040.000
2	11:18:36	91.096%	M 3156.000	M 1283.000	TM 52110.000	TM 155300.000	TM 154400.000	TM 51600.000	TM 154000.000	89.715%	0.000	TM 6513.000	TM 2067.000
3	11:18:58	91.631%	3030.000	1242.000	TM 51490.000	TM 153500.000	TM 154200.000	TM 51630.000	TM 155400.000	89.322%	0.000	TM 6455.000	TM 2070.000
x		91.920%	M 3099.000	M 1259.000	TM 52270.000	TM 154700.000	TM 155300.000	TM 51810.000	TM 154600.000	89.685%	0.000	TM 6469.000	TM 2059.000
σ		1.001%	M 63.720	M 21.240	TM 865.600	TM 1037.000	TM 1844.000	TM 340.600	TM 721.600	0.349%	0.000	TM 39.350	TM 16.810
%RSD		1.089	M 2.056	M 1.687	TM 1.656	TM 0.670	TM 1.187	TM 0.657	TM 0.467	0.389	0.000	TM 0.608	TM 0.816

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:14	69.910	TM 6335.000	TM 151400.000	TM 2511.000	TM 6266.000	TM 6322.000	T 6224.000	M 1005.000	-3.299	983.400	0.000	0.000
2	11:18:36	79.700	TM 6336.000	TM 153300.000	TM 2541.000	TM 6318.000	T 6188.000	T 6057.000	M 1018.000	-3.562	963.000	0.000	0.000
3	11:18:58	78.780	TM 6427.000	TM 153700.000	TM 2537.000	TM 6298.000	T 6167.000	T 6047.000	M 1004.000	-3.628	941.600	0.000	0.000
x		76.130	TM 6366.000	TM 152800.000	TM 2530.000	TM 6294.000	TM 6226.000	T 6109.000	M 1009.000	-3.496	962.700	0.000	0.000
σ		5.410	TM 52.880	TM 1249.000	TM 16.490	TM 26.100	TM 84.390	T 99.120	M 7.706	0.174	20.920	0.000	0.000
%RSD		7.106	TM 0.831	TM 0.817	TM 0.652	TM 0.415	TM 1.356	T 1.623	M 0.764	4.977	2.173	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:14	TM 1053.000	88.850%	TM 6369.000	M 520.200	38.640	M 1014.000	88.478%	T 0.000	TM 1343.000	M 1439.000	TM 6638.000	90.420%
2	11:18:36	TM 1029.000	87.387%	TM 6376.000	M 506.100	5.442	M 1013.000	89.605%	T 0.000	TM 1335.000	TM 1403.000	TM 6576.000	89.938%
3	11:18:58	TM 1015.000	87.660%	TM 6404.000	M 501.800	44.420	M 1001.000	90.221%	T 0.000	TM 1320.000	M 1423.000	TM 6568.000	91.890%
x		TM 1032.000	87.965%	TM 6383.000	M 509.300	29.500	M 1009.000	89.435%	T 0.000	TM 1333.000	TM 1422.000	TM 6594.000	90.749%
σ		TM 19.010	0.778%	TM 18.630	M 9.649	21.040	M 7.496	0.884%	T 0.000	TM 11.600	TM 18.170	TM 38.360	1.016%
%RSD		TM 1.841	0.884	TM 0.292	M 1.894	71.300	M 0.743	0.988	T 0.000	TM 0.870	TM 1.278	TM 0.582	1.120

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:14	M 151.300	TM 1076.000	TM 6412.000	91.844%	0.000	M 130.200	M 63.300
2	11:18:36	M 155.500	TM 1070.000	TM 6428.000	91.769%	0.000	M 131.000	M 63.480
3	11:18:58	M 152.700	TM 1096.000	TM 6581.000	89.768%	0.000	M 135.000	M 65.290
x		M 153.200	TM 1080.000	TM 6474.000	91.127%	0.000	M 132.100	M 64.020
σ		M 2.123	TM 13.490	TM 93.490	1.177%	0.000	M 2.577	M 1.102
%RSD		M 1.386	TM 1.249	TM 1.444	1.292	0.000	M 1.952	M 1.721

ICV 11/1/2016 11:23:36 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:23:58	95.462%	314.700	136.200	T 5434.000	T 15250.000	T 15590.000	T 4936.000	14680.000	89.352%	0.000	622.500	200.500
2	11:24:20	90.124%	327.500	141.300	T 5489.000	T 15470.000	T 15990.000	T 5043.000	14540.000	87.093%	0.000	638.000	206.000
3	11:24:42	89.775%	323.700	141.700	T 5433.000	T 15220.000	T 15650.000	T 5033.000	14780.000	87.723%	0.000	630.500	203.500
x		91.787%	103.031%	111.783%	T 109.035%	T 102.065%	T 104.946%	T 100.078%	97.772%	88.056%	0.000	100.849%	101.671%
σ		3.187%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	1.166%	0.000	n/a	n/a
%RSD		3.472	2.056	2.183	T 0.588	T 0.900	T 1.389	T 1.184	0.800	1.324	0.000	1.230	1.363

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:23:58	12.450	T 608.500	T 14930.000	252.900	646.400	670.700	662.500	100.900	-0.091	105.200	0.000	0.000
2	11:24:20	9.809	T 620.700	T 15310.000	261.000	664.300	657.100	663.800	103.900	-0.249	104.100	0.000	0.000
3	11:24:42	9.546	T 613.200	T 15080.000	261.200	659.100	657.800	659.800	101.800	-0.203	105.300	0.000	0.000
x		10.600	T 98.259%	T 100.711%	103.342%	105.059%	105.896%	105.927%	102.208%	-0.181	104.871%	0.000	0.000
σ		1.605	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.081	n/a	0.000	0.000
%RSD		15.140	T 1.005	T 1.282	1.823	1.400	1.154	0.309	1.515	44.910	0.677	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:23:58	102.200	90.180%	288.800	51.190	5.779	101.000	87.539%	0.000	132.900	137.600	635.500	87.460%
2	11:24:20	99.950	88.803%	293.900	50.530	0.576	100.600	88.455%	0.000	131.500	136.000	638.800	87.648%
3	11:24:42	100.700	88.751%	291.200	50.330	1.048	101.600	87.581%	0.000	131.200	137.200	642.300	90.518%
x		100.900	89.245%	93.219%	101.368%	2.468	101.062%	87.858%	0.000	131.900	109.553%	102.220%	88.542%
σ		1.117	0.810%	n/a	n/a	2.878	n/a	0.517%	0.000	0.865	n/a	n/a	1.714%
%RSD		1.106	0.908	0.878	0.880	116.600	0.532	0.589	0.000	0.656	0.616	0.536	1.936

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:23:58	25.720	103.200	T 627.800	87.665%	0.000	17.660	9.776
2	11:24:20	25.920	102.500	T 622.600	88.688%	0.000	18.160	9.666
3	11:24:42	25.220	101.300	T 609.000	90.029%	0.000	17.920	9.529
x		128.090%	102.329%	T 99.167%	88.794%	0.000	89.575%	96.570%
σ		n/a	n/a	T n/a	1.185%	0.000	n/a	n/a
%RSD		1.411	0.914	T 1.567	1.335	0.000	1.389	1.278

ICVL 11/1/2016 11:29:20 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:29:42	100.998%	1.144	46.610	542.100	209.100	58.990	498.900	495.100	89.989%	0.000	5.402	4.172
2	11:30:04	94.752%	0.955	49.580	519.500	210.100	62.670	491.100	478.600	92.634%	0.000	5.728	4.166
3	11:30:26	97.355%	1.379	48.330	518.900	206.900	65.960	490.800	476.400	91.071%	0.000	5.674	4.185
x		97.702%	115.949%	120.435%	105.365%	104.356%	125.079%	98.724%	96.670%	91.231%	0.000	112.024%	104.359%
σ		3.138%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.330%	0.000	n/a	n/a
%RSD		3.211	18.340	3.091	2.514	0.787	5.577	0.928	2.117	1.457	0.000	3.118	0.231

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:29:42	6.838	2.503	215.700	1.108	2.230	5.580	19.990	2.140	0.267	4.230	0.000	0.000
2	11:30:04	6.470	2.520	211.900	1.224	2.545	5.594	19.970	1.576	0.321	3.438	0.000	0.000
3	11:30:26	6.929	2.628	221.100	1.402	2.474	5.691	20.390	2.258	0.240	4.495	0.000	0.000
x		6.746	127.509%	108.109%	124.501%	120.808%	112.434%	100.590%	99.561%	0.276	101.357%	0.000	0.000
σ		0.243	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.041	n/a	0.000	0.000
%RSD		3.605	2.653	2.140	11.900	6.851	1.071	1.167	18.310	15.020	13.560	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:29:42	4.917	93.914%	10.510	1.003	-0.466	1.083	92.865%	0.000	2.374	2.462	9.728	90.300%
2	11:30:04	4.842	94.332%	10.800	1.013	-0.682	0.877	92.298%	0.000	2.510	2.608	10.420	90.835%

3	11:30:26	5.081	94.977%	11.020	1.027	-1.133	1.197	91.896%	0.000	2.461	2.631	10.460	91.400%
x		98.936%	94.408%	107.751%	101.421%	-0.760	105.228%	92.353%	0.000	2.448	128.347%	102.013%	90.845%
σ		n/a	0.536%	n/a	n/a	0.340	n/a	0.487%	0.000	0.069	n/a	n/a	0.550%
%RSD		2.475	0.567	2.380	1.206	44.770	15.390	0.527	0.000	2.823	3.580	4.020	0.606

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:29:42	1.957	2.142	1.306	90.773%	0.000	1.365	0.983
2	11:30:04	2.053	2.155	1.446	91.955%	0.000	1.181	1.001
3	11:30:26	1.960	2.226	1.523	91.099%	0.000	1.080	0.970
x		99.503%	108.728%	142.513%	91.276%	0.000	60.436%	98.470%
σ		n/a	n/a	n/a	0.611%	0.000	n/a	n/a
%RSD		2.751	2.083	7.695	0.669	0.000	11.980	1.611

ICBIS 11/1/2016 11:35:03 AM QC Status: WARNING (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:25	92.367%	-0.025	6.383	6.950	0.486	0.122	0.467	1.816	90.833%	0.000	1.003	-0.025
2	11:35:47	91.881%	-0.025	6.599	7.961	0.672	0.412	0.599	0.762	89.308%	0.000	0.241	-0.049
3	11:36:09	94.631%	-0.008	5.140	7.266	0.338	0.869	1.512	-0.292	89.789%	0.000	0.488	-0.027
x		92.960%	-0.019	6.040	7.392	0.498	0.467	0.859	0.762	89.977%	0.000	0.577	-0.034
σ		1.467%	0.010	0.787	0.517	0.167	0.377	0.569	1.054	0.780%	0.000	0.389	0.014
%RSD		1.579	51.890	13.040	6.997	33.590	80.590	66.250	138.400	0.867	0.000	67.350	40.120

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:25	4.611	-0.001	0.896	-0.014	-0.014	-0.180	-0.035	0.075	0.222	-0.169	0.000	0.000
2	11:35:47	5.610	-0.023	1.353	-0.007	-0.013	-0.045	-0.210	-0.264	0.267	-0.534	0.000	0.000
3	11:36:09	5.157	0.032	0.623	0.001	-0.004	-0.188	0.131	0.585	0.181	1.814	0.000	0.000
x		5.126	0.002	0.957	-0.007	-0.010	-0.137	-0.038	0.132	0.224	0.370	0.000	0.000
σ		0.500	0.028	0.369	0.007	0.006	0.080	0.171	0.427	0.043	1.263	0.000	0.000
%RSD		9.756	1121.000	38.520	112.700	56.500	58.400	452.400	323.700	19.280	341.400	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:25	-0.001	94.361%	0.356	-0.003	-0.931	0.024	91.894%	0.000	0.164	0.146	0.005	87.791%
2	11:35:47	0.005	93.618%	0.389	-0.005	-1.068	0.054	91.538%	0.000	0.180	0.166	0.015	89.042%
3	11:36:09	0.012	92.061%	0.421	0.002	-0.639	-0.004	92.025%	0.000	0.198	0.196	0.024	89.931%
x		0.005	93.347%	0.389	-0.002	-0.879	0.024	91.819%	0.000	0.180	0.169	0.015	88.921%
σ		0.006	1.174%	0.032	0.004	0.219	0.029	0.252%	0.000	0.017	0.025	0.009	1.075%
%RSD		113.200	1.257	8.334	173.100	24.890	119.400	0.275	0.000	9.595	14.980	64.790	1.209

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:25	0.056	0.113	0.020	88.707%	0.000	-1.651	-0.012
2	11:35:47	0.035	0.110	0.014	90.447%	0.000	-1.634	-0.011
3	11:36:09	0.054	0.096	0.030	90.857%	0.000	-1.659	-0.009
x		0.048	0.106	0.022	90.004%	0.000	-1.648	-0.011
σ		0.012	0.009	0.008	1.142%	0.000	0.013	0.001

%RSD	24.160	8.810	37.420	1.268	0.000	0.759	10.020	

ICSA 11/1/2016 11:40:46 AM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:07	98.893%	0.042	6.988	TM 96510.000	T 94080.000	T 93060.000	TM 93230.000	T 91380.000	106.844%	0.000	0.778	1.512
2	11:41:29	97.344%	-0.009	5.690	TM 94460.000	T 92290.000	T 91390.000	TM 93950.000	T 93030.000	106.873%	0.000	0.929	1.562
3	11:41:51	94.808%	0.010	6.136	TM 92820.000	T 91350.000	T 91490.000	TM 93940.000	T 92890.000	107.244%	0.000	0.541	1.565
x		97.015%	1.#IO%	1.#IO%	TM 94.596%	T 92.575%	T 91.978%	TM 93.709%	T 92.434%	106.987%	0.000	1.#IO%	1.#IO%
σ		2.062%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.223%	0.000	n/a	n/a
%RSD		2.126	177.900	10.510	TM 1.952	T 1.498	T 1.018	TM 0.438	T 0.989	0.209	0.000	26.080	1.924

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:07	2.490	0.263	T 92400.000	0.053	0.361	1.000	-0.580	-0.026	0.318	-0.076	0.000	0.000
2	11:41:29	2.203	0.253	T 93140.000	0.062	0.493	1.003	-0.629	0.251	0.281	1.045	0.000	0.000
3	11:41:51	2.728	0.306	T 92560.000	0.044	0.352	1.011	-0.795	-0.171	0.337	-1.039	0.000	0.000
x		2.474	1.#IO%	T 92.698%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	1.#IO%	0.312	-1.#IO%	0.000	0.000
σ		0.263	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.028	n/a	0.000	0.000
%RSD		10.640	10.100	T 0.418	16.810	19.660	0.565	16.940	1206.000	9.052	4440.000	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:07	0.690	105.196%	T 1724.000	0.088	5.759	0.244	103.249%	0.000	0.196	0.202	0.231	103.785%
2	11:41:29	0.701	105.469%	T 1764.000	0.079	6.937	0.088	105.019%	0.000	0.201	0.217	0.094	105.686%
3	11:41:51	0.665	104.498%	T 1789.000	0.085	5.846	0.147	104.455%	0.000	0.217	0.236	0.261	106.365%
x		1.#IO%	105.055%	T 87.960%	1.#IO%	6.181	1.#IO%	104.241%	0.000	0.205	1.#IO%	1.#IO%	105.279%
σ		n/a	0.501%	T n/a	n/a	0.656	n/a	0.904%	0.000	0.011	n/a	n/a	1.337%
%RSD		2.720	0.477	T 1.881	5.568	10.620	49.510	0.868	0.000	5.414	7.918	45.620	1.270

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:07	0.275	0.104	0.266	97.811%	0.000	-0.197	-0.010
2	11:41:29	0.323	0.087	0.258	99.302%	0.000	-0.484	-0.010
3	11:41:51	0.346	0.098	0.262	99.506%	0.000	-0.674	-0.007
x		1.#IO%	1.#IO%	1.#IO%	98.873%	0.000	-1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	0.925%	0.000	n/a	n/a
%RSD		11.470	9.274	1.509	0.936	0.000	53.210	16.940

ICSAB 11/1/2016 11:46:28 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:46:50	91.866%	24.080	426.400	TM 96880.000	T 93520.000	T 91500.000	TM 94040.000	T 93630.000	101.735%	0.000	23.180	48.610
2	11:47:12	90.999%	26.080	435.100	TM 97140.000	T 94410.000	T 93400.000	TM 95050.000	T 95510.000	100.978%	0.000	24.770	50.060
3	11:47:33	88.916%	25.080	439.000	TM 94140.000	T 91230.000	T 90910.000	TM 92070.000	T 93840.000	102.142%	0.000	23.960	49.740
x		90.593%	100.318%	108.376%	TM 96.054%	T 93.051%	T 91.937%	TM 93.721%	T 94.328%	101.618%	0.000	95.885%	98.942%
σ		1.516%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.591%	0.000	n/a	n/a
%RSD		1.674	3.975	1.489	TM 1.732	T 1.761	T 1.414	TM 1.620	T 1.093	0.581	0.000	3.310	1.546

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:46:50	4.793	24.090	T 92830.000	23.150	23.150	48.210	46.760	44.980	-0.190	114.400	0.000	0.000
2	11:47:12	4.001	25.120	T 95350.000	23.670	23.690	47.000	45.770	42.740	-0.049	111.000	0.000	0.000
3	11:47:33	3.389	24.180	T 92950.000	23.500	23.200	46.480	45.950	42.990	-0.066	112.800	0.000	0.000
x		4.061	97.844%	T 93.707%	93.771%	93.382%	94.457%	92.317%	96.828%	-0.102	90.200%	0.000	0.000
σ		0.704	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.077	n/a	0.000	0.000
%RSD		17.330	2.333	T 1.517	1.132	1.284	1.878	1.146	2.819	75.820	1.536	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:46:50	0.672	101.004%	T 1784.000	23.950	7.373	22.020	100.253%	0.000	48.750	51.060	244.800	101.289%
2	11:47:12	0.725	101.847%	T 1789.000	23.360	7.236	22.350	101.713%	0.000	49.090	51.220	249.900	105.045%
3	11:47:33	0.730	101.597%	T 1785.000	23.580	8.620	22.340	100.809%	0.000	49.540	52.110	252.700	105.136%
x		0.709	101.482%	T 89.294%	94.526%	7.743	88.957%	100.925%	0.000	49.120	102.926%	99.654%	103.823%
σ		0.032	0.433%	T n/a	n/a	0.763	n/a	0.737%	0.000	0.396	n/a	n/a	2.195%
%RSD		4.502	0.427	T 0.167	1.249	9.849	0.845	0.730	0.000	0.806	1.094	1.606	2.114

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:46:50	23.000	24.460	24.140	97.811%	0.000	16.740	10.380
2	11:47:12	22.570	24.530	24.290	98.985%	0.000	17.680	10.590
3	11:47:33	22.750	24.850	24.270	99.665%	0.000	17.800	10.450
x		113.860%	98.447%	96.919%	98.820%	0.000	87.041%	104.751%
σ		n/a	n/a	n/a	0.937%	0.000	n/a	n/a
%RSD		0.955	0.843	0.341	0.949	0.000	3.336	1.022

CCV 11/1/2016 11:52:12 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:52:34	81.491%	624.100	255.200	T 10510.000	T 30260.000	T 30330.000	T 9578.000	28580.000	76.116%	0.000	T 1207.000	395.900
2	11:52:56	79.844%	629.300	251.900	T 10250.000	T 29300.000	T 29100.000	T 9396.000	27830.000	78.018%	0.000	T 1168.000	385.100
3	11:53:17	79.870%	616.900	247.400	T 10630.000	T 30780.000	T 30440.000	T 9775.000	29170.000	73.623%	0.000	T 1201.000	394.000
x		80.402%	99.749%	100.602%	T 104.629%	T 100.372%	T 99.861%	T 95.831%	95.082%	75.919%	0.000	T 95.352%	97.916%
σ		0.944%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	2.204%	0.000	T n/a	n/a
%RSD		1.174	0.998	1.564	T 1.857	T 2.507	T 2.474	T 1.978	2.342	2.903	0.000	T 1.737	1.465

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:52:34	13.010	┬1186.000	┬29370.000	496.200	1261.000	1176.000	1214.000	191.300	-0.543	201.200	0.000	0.000
2	11:52:56	11.260	┬1151.000	┬28270.000	482.900	1215.000	1163.000	1188.000	192.200	-0.623	198.900	0.000	0.000
3	11:53:17	14.900	┬1194.000	┬29490.000	501.200	1267.000	1158.000	1197.000	192.100	-0.593	200.700	0.000	0.000
x		13.060	┬94.174%	┬96.811%	98.687%	99.823%	93.265%	95.951%	95.947%	-0.587	100.127%	0.000	0.000
σ		1.820	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.041	n/a	0.000	0.000
%RSD		13.940	┬1.980	┬2.308	1.924	2.295	0.790	1.100	0.256	6.906	0.604	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	11:52:34	194.800	82.274%	1133.000	98.150	-7.852	198.400	81.609%	0.000	252.300	265.300	1232.000	87.249%
2	11:52:56	190.700	81.282%	1168.000	97.010	-3.177	194.700	82.318%	0.000	247.700	261.500	1225.000	86.722%
3	11:53:17	192.000	79.559%	1170.000	97.180	11.810	194.900	80.681%	0.000	251.800	264.400	1238.000	82.474%
x		192.500	81.038%	92.577%	97.448%	0.260	97.990%	81.536%	0.000	250.600	105.505%	98.542%	85.482%
σ		2.074	1.374%	n/a	n/a	10.270	n/a	0.821%	0.000	2.504	n/a	n/a	2.618%
%RSD		1.077	1.695	1.780	0.634	3954.000	1.054	1.007	0.000	0.999	0.749	0.512	3.062
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	11:52:34	22.100	194.700	┬1159.000	87.032%	0.000	15.710	9.470					
2	11:52:56	22.550	196.700	┬1171.000	86.418%	0.000	16.770	9.493					
3	11:53:17	24.310	193.500	┬1162.000	87.023%	0.000	16.890	9.440					
x		114.936%	97.505%	┬93.120%	86.824%	0.000	82.273%	94.678%					
σ		n/a	n/a	┬n/a	0.352%	0.000	n/a	n/a					
%RSD		5.091	0.830	┬0.507	0.405	0.000	3.940	0.281					

CCB 11/1/2016 11:57:56 AM QC Status: WARNING (Initial: PASS)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	11:58:17	82.527%	0.059	4.963	16.360	1.858	1.707	4.734	4.947	77.004%	0.000	0.612	-0.005
2	11:58:39	81.892%	0.039	4.721	16.880	3.271	3.448	5.111	2.092	77.248%	0.000	0.487	-0.044
3	11:59:01	82.859%	0.018	5.081	20.400	6.987	5.941	5.241	4.381	76.116%	0.000	0.301	0.010
x		82.426%	0.039	4.921	17.880	4.039	3.699	5.029	3.806	76.790%	0.000	0.467	-0.013
σ		0.491%	0.021	0.183	2.199	2.649	2.128	0.263	1.511	0.596%	0.000	0.156	0.028
%RSD		0.596	53.420	3.727	12.300	65.590	57.530	5.237	39.710	0.776	0.000	33.490	217.000
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	11:58:17	4.697	0.018	4.749	0.011	0.049	-0.023	-0.026	0.068	0.225	-0.093	0.000	0.000
2	11:58:39	4.985	0.025	5.434	0.023	0.117	0.005	0.082	-0.127	0.241	-0.637	0.000	0.000
3	11:59:01	5.284	0.019	8.089	0.041	-0.008	-0.085	0.064	0.358	0.199	1.121	0.000	0.000
x		4.989	0.021	6.091	0.025	0.053	-0.034	0.040	0.100	0.222	0.130	0.000	0.000
σ		0.293	0.004	1.764	0.015	0.063	0.046	0.058	0.244	0.021	0.900	0.000	0.000
%RSD		5.882	18.940	28.960	59.670	119.100	133.200	144.400	244.300	9.437	691.200	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	11:58:17	0.011	81.607%	1.749	-0.006	-0.881	0.013	83.158%	0.000	0.240	0.252	0.049	82.956%
2	11:58:39	0.004	84.479%	1.602	0.005	-0.443	0.019	82.732%	0.000	0.271	0.293	0.007	84.470%

3	11:59:01	0.007	81.868%	1.557	0.003	-0.366	-0.017	83.387%	0.000	0.254	0.265	0.049	84.334%
x		0.007	82.651%	1.636	0.001	-0.564	0.005	83.093%	0.000	0.255	0.270	0.035	83.920%
σ		0.004	1.588%	0.101	0.006	0.278	0.019	0.332%	0.000	0.016	0.021	0.024	0.837%
%RSD		50.160	1.922	6.144	695.600	49.320	373.900	0.400	0.000	6.113	7.876	68.810	0.998

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:17	0.067	0.211	0.033	87.106%	0.000	-1.544	-0.008
2	11:58:39	0.055	0.199	0.056	84.808%	0.000	-1.543	-0.010
3	11:59:01	0.048	0.172	0.069	86.343%	0.000	-1.543	-0.009
x		0.057	0.194	0.053	86.086%	0.000	-1.543	-0.009
σ		0.010	0.020	0.018	1.171%	0.000	0.001	0.001
%RSD		16.860	10.470	34.810	1.360	0.000	0.059	8.059

MB 200-110769/1-A 11/1/2016 12:03:38 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:03:59	91.254%	0.160	4.601	124.100	56.770	63.680	52.190	55.600	84.065%	0.000	0.624	0.777
2	12:04:21	89.555%	0.032	5.386	95.520	33.490	36.370	37.780	36.600	84.961%	0.000	0.662	0.637
3	12:04:43	89.498%	0.051	3.786	93.350	18.180	22.210	29.830	24.070	83.680%	0.000	0.691	0.646
x		90.102%	0.081	4.591	104.300	36.150	40.750	39.930	38.760	84.235%	0.000	0.659	0.687
σ		0.998%	0.069	0.800	17.150	19.430	21.080	11.330	15.880	0.657%	0.000	0.034	0.078
%RSD		1.108	85.380	17.420	16.440	53.750	51.730	28.380	40.970	0.780	0.000	5.145	11.410

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:03:59	4.857	0.574	72.420	0.157	0.366	0.295	1.169	0.373	0.209	0.992	0.000	0.000
2	12:04:21	4.671	0.460	43.800	0.133	0.268	0.240	1.097	0.639	0.156	1.578	0.000	0.000
3	12:04:43	4.591	0.346	28.600	0.124	0.273	0.165	1.080	0.302	0.197	-0.242	0.000	0.000
x		4.706	0.460	48.270	0.138	0.303	0.234	1.115	0.438	0.187	0.776	0.000	0.000
σ		0.136	0.114	22.250	0.017	0.055	0.066	0.048	0.178	0.028	0.929	0.000	0.000
%RSD		2.897	24.710	46.090	12.360	18.200	28.070	4.262	40.610	14.890	119.700	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:03:59	0.055	88.484%	1.944	0.023	-0.591	0.041	89.287%	0.000	0.181	0.171	0.405	86.255%
2	12:04:21	0.043	90.180%	1.540	0.009	-0.454	0.010	89.159%	0.000	0.169	0.170	0.201	87.475%
3	12:04:43	0.025	88.525%	1.176	0.009	-0.341	0.029	89.518%	0.000	0.177	0.169	0.268	89.946%
x		0.041	89.063%	1.553	0.014	-0.462	0.027	89.321%	0.000	0.176	0.170	0.291	87.892%
σ		0.015	0.967%	0.384	0.008	0.125	0.016	0.182%	0.000	0.006	0.001	0.104	1.880%
%RSD		36.910	1.086	24.710	57.830	27.010	58.130	0.204	0.000	3.606	0.505	35.750	2.140

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:03:59	0.150	0.124	0.246	85.562%	0.000	0.603	-0.000
2	12:04:21	0.114	0.115	0.155	88.167%	0.000	0.122	-0.006
3	12:04:43	0.103	0.089	0.095	90.717%	0.000	-0.299	-0.008
x		0.122	0.109	0.165	88.149%	0.000	0.142	-0.005
σ		0.024	0.018	0.076	2.578%	0.000	0.452	0.004

%RSD		19.950	16.750	46.120	2.924	0.000	318.200	82.920

LCS 200-110769/2-A 11/1/2016 12:09:20 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:09:41	92.606%	9.826	408.400	T 5431.000	2083.000	523.300	T 4960.000	4717.000	88.352%	0.000	47.630	41.400
2	12:10:03	90.110%	9.293	420.500	T 5550.000	2100.000	525.500	T 4921.000	4829.000	87.826%	0.000	49.260	41.490
3	12:10:25	90.735%	10.100	415.300	T 5515.000	2097.000	532.500	T 5144.000	4890.000	85.783%	0.000	50.610	42.000
x		91.151%	9.741	414.700	T 5499.000	2093.000	527.100	T 5008.000	4812.000	87.320%	0.000	49.170	41.630
σ		1.299%	0.412	6.056	T 61.620	8.736	4.830	T 118.800	88.020	1.357%	0.000	1.495	0.322
%RSD		1.425	4.230	1.460	T 1.121	0.417	0.916	T 2.373	1.829	1.555	0.000	3.040	0.774

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:09:41	5.119	20.720	T 1987.000	9.988	20.540	50.170	176.300	17.510	0.089	33.260	0.000	0.000
2	12:10:03	4.461	20.930	T 2029.000	10.470	20.760	50.650	181.800	17.380	0.062	32.650	0.000	0.000
3	12:10:25	4.549	21.200	T 2071.000	10.550	21.760	50.170	177.600	17.860	0.027	32.300	0.000	0.000
x		4.710	20.950	T 2029.000	10.340	21.020	50.330	178.600	17.580	0.059	32.730	0.000	0.000
σ		0.357	0.241	T 42.010	0.306	0.647	0.274	2.917	0.250	0.031	0.487	0.000	0.000
%RSD		7.584	1.149	T 2.071	2.961	3.081	0.545	1.634	1.419	51.830	1.488	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:09:41	50.290	91.986%	96.700	10.300	-0.594	8.840	91.238%	0.000	19.700	20.090	97.120	90.496%
2	12:10:03	51.540	92.717%	97.130	10.630	-1.173	9.635	90.338%	0.000	19.740	20.610	100.300	92.266%
3	12:10:25	50.990	91.236%	97.320	10.490	1.082	9.209	90.494%	0.000	19.800	20.750	102.900	89.644%
x		50.940	91.980%	97.050	10.470	-0.228	9.228	90.690%	0.000	19.750	20.490	100.100	90.802%
σ		0.629	0.741%	0.317	0.166	1.171	0.398	0.481%	0.000	0.051	0.349	2.883	1.338%
%RSD		1.236	0.805	0.327	1.585	513.300	4.311	0.530	0.000	0.258	1.702	2.880	1.473

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:09:41	44.690	19.980	9.907	89.954%	0.000	16.920	10.370
2	12:10:03	44.700	20.450	10.110	90.345%	0.000	17.930	10.590
3	12:10:25	46.780	20.640	10.200	89.545%	0.000	18.400	10.720
x		45.390	20.360	10.070	89.948%	0.000	17.750	10.560
σ		1.207	0.335	0.151	0.400%	0.000	0.757	0.175
%RSD		2.659	1.647	1.496	0.445	0.000	4.266	1.657

200-35700-A-11-A 11/1/2016 12:15:02 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:15:23	102.612%	6.739	42.780	┬564.300	┬15210.000	┬74700.000	┬6556.000	┬15420.000	167.441%	0.000	98.120	92.330
2	12:15:45	99.241%	7.293	44.170	┬538.200	┬15020.000	┬73770.000	┬6448.000	15350.000	171.952%	0.000	99.100	91.460
3	12:16:07	102.649%	6.737	43.350	┬551.200	┬15010.000	┬73320.000	┬6392.000	┬15310.000	174.838%	0.000	98.440	92.560
x		101.501%	6.923	43.430	┬551.200	┬15080.000	┬73930.000	┬6465.000	┬15360.000	171.410%	0.000	98.550	92.120
σ		1.957%	0.320	0.697	┬13.070	┬111.000	┬707.800	┬83.240	┬54.660	3.728%	0.000	0.498	0.577
%RSD		1.928	4.629	1.604	┬2.371	┬0.736	┬0.957	┬1.288	┬0.356	2.175	0.000	0.506	0.627

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:15:23	5.767	┬4764.000	┬105400.000	45.910	117.400	1536.000	896.900	4.593	0.064	13.960	0.000	0.000
2	12:15:45	5.049	┬4689.000	┬103300.000	44.850	116.700	1534.000	886.500	4.615	0.069	11.440	0.000	0.000
3	12:16:07	3.558	┬4710.000	┬103600.000	44.330	115.900	1526.000	886.900	4.627	0.062	13.870	0.000	0.000
x		4.791	┬4721.000	┬104100.000	45.030	116.700	1532.000	890.100	4.612	0.065	13.090	0.000	0.000
σ		1.127	┬38.430	┬1125.000	0.805	0.738	5.282	5.896	0.017	0.003	1.434	0.000	0.000
%RSD		23.520	┬0.814	┬1.081	1.788	0.633	0.345	0.662	0.370	5.274	10.950	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:15:23	126.700	563.776%	0.828	1.965	-6.393	3.608	108.518%	0.000	0.925	1.056	1457.000	165.201%
2	12:15:45	127.300	572.765%	0.773	1.929	-7.123	3.741	111.150%	0.000	0.979	1.075	1459.000	167.353%
3	12:16:07	127.000	581.854%	0.792	1.855	-6.842	3.302	113.149%	0.000	0.958	1.073	1459.000	170.811%
x		127.000	572.799%	0.798	1.917	-6.786	3.550	110.939%	0.000	0.954	1.068	1458.000	167.788%
σ		0.315	9.039%	0.028	0.056	0.368	0.225	2.323%	0.000	0.027	0.010	1.161	2.830%
%RSD		0.248	1.578	3.463	2.925	5.422	6.345	2.094	0.000	2.870	0.967	0.080	1.687

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:15:23	0.424	1.108	173.700	116.428%	0.000	28.000	10.760
2	12:15:45	0.409	1.139	177.000	117.967%	0.000	27.900	10.650
3	12:16:07	0.385	1.085	174.500	120.578%	0.000	27.600	10.670
x		0.406	1.110	175.000	118.324%	0.000	27.830	10.700
σ		0.020	0.027	1.709	2.098%	0.000	0.209	0.059
%RSD		4.823	2.447	0.976	1.773	0.000	0.753	0.548

200-35700-A-12-A 11/1/2016 12:20:44 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:06	101.150%	8.291	35.260	┬677.600	┬16860.000	┬81340.000	┬6477.000	┬16440.000	182.499%	0.000	117.800	99.420
2	12:21:28	98.291%	7.691	37.510	┬663.200	┬16200.000	┬78510.000	┬6240.000	┬16140.000	186.978%	0.000	117.000	98.240
3	12:21:50	100.180%	7.629	37.410	┬648.700	┬16490.000	┬78140.000	┬6329.000	┬16340.000	187.836%	0.000	116.900	97.380
x		99.873%	7.870	36.730	┬663.100	┬16510.000	┬79330.000	┬6348.000	┬16310.000	185.771%	0.000	117.300	98.350
σ		1.454%	0.365	1.270	┬14.470	┬331.300	┬1749.000	┬119.700	┬150.900	2.866%	0.000	0.494	1.024
%RSD		1.456	4.642	3.458	┬2.183	┬2.006	┬2.205	┬1.886	┬0.925	1.543	0.000	0.422	1.042

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:06	5.868	T 6146.000	T 139400.000	55.200	130.500	1293.000	942.800	8.491	0.055	15.230	0.000	0.000
2	12:21:28	6.331	T 6085.000	T 136000.000	53.220	130.100	1298.000	946.800	8.461	0.065	13.190	0.000	0.000
3	12:21:50	5.691	T 6037.000	T 136600.000	53.700	129.900	1305.000	939.900	8.664	0.053	13.880	0.000	0.000
x		5.963	T 6089.000	T 137400.000	54.040	130.200	1299.000	943.100	8.538	0.057	14.100	0.000	0.000
σ		0.330	T 54.870	T 1800.000	1.033	0.290	6.164	3.445	0.110	0.006	1.040	0.000	0.000
%RSD		5.540	T 0.901	T 1.310	1.911	0.223	0.475	0.365	1.283	10.990	7.376	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:06	140.700	627.395%	1.430	1.831	-6.303	3.496	117.037%	0.000	0.852	0.959	1623.000	175.717%
2	12:21:28	139.400	621.176%	1.492	1.815	-4.947	3.142	118.186%	0.000	0.824	0.962	1646.000	178.927%
3	12:21:50	140.300	627.518%	1.439	1.847	-5.391	3.405	118.186%	0.000	0.889	0.944	1651.000	177.212%
x		140.100	625.363%	1.453	1.831	-5.547	3.347	117.803%	0.000	0.855	0.955	1640.000	177.285%
σ		0.657	3.627%	0.033	0.016	0.691	0.184	0.664%	0.000	0.033	0.010	15.220	1.606%
%RSD		0.469	0.580	2.300	0.866	12.460	5.487	0.563	0.000	3.820	1.052	0.928	0.906

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:06	0.460	1.122	178.600	122.117%	0.000	26.360	15.270
2	12:21:28	0.425	1.120	177.200	125.195%	0.000	25.880	14.970
3	12:21:50	0.464	1.091	178.400	124.803%	0.000	26.200	15.020
x		0.450	1.111	178.100	124.038%	0.000	26.150	15.090
σ		0.022	0.018	0.773	1.676%	0.000	0.245	0.161
%RSD		4.801	1.587	0.434	1.351	0.000	0.937	1.068

200-35700-A-12-A SD@5 11/1/2016 12:26:27 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:26:49	91.909%	1.831	9.676	202.200	4976.000	T 23760.000	T 1858.000	4770.000	115.495%	0.000	34.800	28.870
2	12:27:10	90.789%	1.650	9.508	205.400	4954.000	T 23580.000	T 1818.000	4737.000	114.924%	0.000	33.970	28.700
3	12:27:32	88.830%	1.706	9.033	196.000	4834.000	T 23580.000	T 1838.000	4700.000	114.011%	0.000	33.950	28.970
x		90.509%	1.729	9.406	201.200	4921.000	T 23640.000	T 1838.000	4736.000	114.810%	0.000	34.240	28.850
σ		1.559%	0.093	0.333	4.789	76.620	T 106.100	T 19.720	35.090	0.749%	0.000	0.483	0.133
%RSD		1.722	5.374	3.544	2.380	1.557	T 0.449	T 1.073	0.741	0.652	0.000	1.411	0.462

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:26:49	5.100	T 1747.000	T 40370.000	16.160	39.500	275.300	215.200	5.724	0.131	4.156	0.000	0.000
2	12:27:10	5.353	T 1738.000	T 40190.000	16.040	39.320	279.600	216.900	5.349	0.153	3.438	0.000	0.000
3	12:27:32	5.092	T 1766.000	T 40330.000	15.760	38.820	271.400	219.600	5.390	0.151	4.423	0.000	0.000
x		5.182	T 1750.000	T 40290.000	15.990	39.210	275.400	217.200	5.488	0.145	4.006	0.000	0.000
σ		0.148	T 14.630	T 93.700	0.207	0.354	4.079	2.195	0.205	0.012	0.509	0.000	0.000
%RSD		2.865	T 0.836	T 0.233	1.296	0.903	1.481	1.011	3.743	8.509	12.720	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:26:49	29.020	200.674%	0.811	0.410	-1.881	0.803	106.121%	0.000	0.220	0.210	342.800	115.074%
2	12:27:10	29.580	203.089%	0.826	0.400	-1.740	0.785	104.688%	0.000	0.225	0.207	342.500	114.206%

3	12:27:32	30.330	202.319%	0.775	0.405	-2.378	0.754	104.780%	0.000	0.192	0.211	343.100	113.655%
x		29.640	202.027%	0.804	0.405	-2.000	0.781	105.196%	0.000	0.212	0.209	342.800	114.311%
σ		0.656	1.233%	0.026	0.005	0.335	0.025	0.802%	0.000	0.018	0.002	0.299	0.715%
%RSD		2.212	0.610	3.276	1.311	16.750	3.190	0.763	0.000	8.244	1.008	0.087	0.626

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:26:49	0.108	0.247	40.030	103.363%	0.000	3.477	3.331
2	12:27:10	0.109	0.247	39.620	105.421%	0.000	3.553	3.345
3	12:27:32	0.114	0.253	40.120	103.176%	0.000	3.723	3.322
x		0.110	0.249	39.930	103.987%	0.000	3.585	3.333
σ		0.004	0.003	0.267	1.246%	0.000	0.126	0.012
%RSD		3.331	1.326	0.668	1.198	0.000	3.511	0.347

200-35700-A-12-A PDS 11/1/2016 12:32:10 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:32	92.983%	17.960	444.500	┬3753.000	┬17180.000	┬77190.000	┬9278.000	┬18590.000	171.803%	0.000	145.700	121.800
2	12:32:54	95.391%	17.440	451.600	┬3920.000	┬17840.000	┬79420.000	┬9444.000	┬19160.000	166.972%	0.000	148.500	124.600
3	12:33:15	94.840%	18.070	441.800	┬3839.000	┬17640.000	┬79050.000	┬9493.000	┬19200.000	166.800%	0.000	148.900	125.900
x		94.405%	17.820	446.000	┬3838.000	┬17550.000	┬78550.000	┬9405.000	┬18980.000	168.525%	0.000	147.700	124.100
σ		1.262%	0.340	5.021	┬83.420	┬338.000	┬1195.000	┬112.400	┬341.800	2.840%	0.000	1.740	2.083
%RSD		1.336	1.906	1.126	┬2.174	┬1.925	┬1.521	┬1.195	┬1.801	1.685	0.000	1.178	1.679

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:32	5.261	┬5846.000	┬133400.000	58.790	138.900	1278.000	1079.000	11.850	0.037	44.670	0.000	0.000
2	12:32:54	5.670	┬6116.000	┬138800.000	60.610	143.000	1281.000	1076.000	11.710	0.039	44.620	0.000	0.000
3	12:33:15	7.133	┬6066.000	┬137800.000	60.330	142.700	1262.000	1061.000	11.620	0.047	45.040	0.000	0.000
x		6.021	┬6009.000	┬136700.000	59.910	141.500	1274.000	1072.000	11.730	0.041	44.780	0.000	0.000
σ		0.984	┬143.500	┬2857.000	0.978	2.288	9.997	9.612	0.119	0.005	0.229	0.000	0.000
%RSD		16.350	┬2.387	┬2.090	1.632	1.617	0.785	0.896	1.011	12.160	0.512	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:32	183.600	568.953%	19.650	11.620	-3.546	11.920	111.251%	0.000	18.690	20.550	1687.000	164.602%
2	12:32:54	183.500	572.686%	19.400	11.370	-4.743	12.280	110.747%	0.000	18.610	20.780	1696.000	166.451%
3	12:33:15	182.000	573.083%	19.360	11.470	-4.451	11.970	111.496%	0.000	18.690	20.600	1679.000	166.376%
x		183.000	571.574%	19.470	11.490	-4.247	12.060	111.164%	0.000	18.660	20.640	1687.000	165.810%
σ		0.905	2.279%	0.157	0.128	0.624	0.195	0.382%	0.000	0.048	0.125	8.526	1.047%
%RSD		0.494	0.399	0.808	1.115	14.700	1.618	0.344	0.000	0.257	0.607	0.505	0.631

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:32	12.410	18.460	179.400	118.843%	0.000	42.180	23.330
2	12:32:54	12.620	18.540	181.800	119.076%	0.000	42.580	23.620
3	12:33:15	12.660	18.830	180.500	119.477%	0.000	42.430	23.850
x		12.560	18.610	180.600	119.132%	0.000	42.400	23.600
σ		0.134	0.194	1.208	0.321%	0.000	0.201	0.260

%RSD	1.070	1.043	0.669	0.269	0.000	0.473	1.100	

200-35700-A-12-G MS 11/1/2016 12:37:53 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:15	89.816%	14.160	365.300	T 4441.000	T 14980.000	T 61310.000	T 7618.000	T 19250.000	135.886%	0.000	126.900	109.900
2	12:38:37	92.541%	15.670	367.500	T 4423.000	T 14600.000	T 60570.000	T 7439.000	19140.000	139.150%	0.000	122.500	105.300
3	12:38:58	89.050%	14.790	366.900	T 4382.000	T 14820.000	T 60130.000	T 7398.000	T 19130.000	138.414%	0.000	127.000	109.000
x		90.469%	14.870	366.500	T 4415.000	T 14800.000	T 60670.000	T 7485.000	T 19170.000	137.817%	0.000	125.500	108.100
σ		1.835%	0.762	1.141	T 30.290	T 191.600	T 595.400	T 116.900	T 68.350	1.712%	0.000	2.566	2.386
%RSD		2.028	5.122	0.311	T 0.686	T 1.295	T 0.981	T 1.562	T 0.356	1.242	0.000	2.045	2.208

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:15	6.748	T 5869.000	T 104500.000	53.220	121.600	1423.000	984.000	11.850	0.047	44.630	0.000	0.000
2	12:38:37	5.747	T 5750.000	T 104000.000	53.380	119.700	1431.000	983.800	11.950	0.049	43.320	0.000	0.000
3	12:38:58	4.929	T 5774.000	T 103900.000	53.270	121.200	1428.000	986.000	11.850	0.039	44.730	0.000	0.000
x		5.808	T 5798.000	T 104100.000	53.290	120.800	1427.000	984.600	11.880	0.045	44.230	0.000	0.000
σ		0.911	T 62.810	T 330.700	0.082	1.016	3.837	1.236	0.057	0.005	0.784	0.000	0.000
%RSD		15.680	T 1.083	T 0.318	0.154	0.841	0.269	0.126	0.476	11.300	1.773	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:15	154.300	395.024%	25.720	11.550	-4.749	12.190	103.541%	0.000	6.635	7.235	1203.000	137.401%
2	12:38:37	153.200	392.891%	26.250	11.520	-1.401	12.090	104.349%	0.000	6.621	7.227	1213.000	139.443%
3	12:38:58	152.900	393.352%	26.010	11.780	-3.078	12.340	103.746%	0.000	6.711	7.232	1218.000	140.751%
x		153.500	393.756%	25.990	11.610	-3.076	12.210	103.879%	0.000	6.656	7.231	1211.000	139.198%
σ		0.749	1.122%	0.264	0.142	1.674	0.126	0.420%	0.000	0.049	0.004	7.520	1.689%
%RSD		0.488	0.285	1.015	1.219	54.420	1.035	0.404	0.000	0.729	0.058	0.621	1.213

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:15	17.420	19.160	159.700	109.503%	0.000	35.230	20.600
2	12:38:37	17.330	19.790	163.000	107.490%	0.000	36.300	21.050
3	12:38:58	17.250	19.740	161.200	109.428%	0.000	36.070	21.070
x		17.340	19.560	161.300	108.807%	0.000	35.870	20.910
σ		0.086	0.353	1.640	1.141%	0.000	0.560	0.263
%RSD		0.494	1.803	1.017	1.049	0.000	1.561	1.259

200-35700-A-12-H MSD 11/1/2016 12:43:37 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:58	92.337%	16.130	383.300	T 4336.000	T 16940.000	T 75060.000	T 9073.000	T 19710.000	146.634%	0.000	140.900	122.600
2	12:44:20	90.001%	16.510	385.900	T 4185.000	T 16360.000	T 72510.000	T 8727.000	T 18970.000	151.717%	0.000	139.300	117.200
3	12:44:42	88.765%	16.670	389.200	T 4261.000	T 16880.000	T 75540.000	T 9036.000	T 19540.000	147.742%	0.000	142.300	120.600
x		90.368%	16.440	386.100	T 4260.000	T 16730.000	T 74370.000	T 8945.000	T 19400.000	148.698%	0.000	140.900	120.100
σ		1.814%	0.276	2.999	T 75.660	T 317.900	T 1627.000	T 189.700	T 388.500	2.673%	0.000	1.539	2.748
%RSD		2.007	1.681	0.777	T 1.776	T 1.901	T 2.188	T 2.121	T 2.002	1.798	0.000	1.092	2.288

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:58	6.543	TM 6252.000	T 118200.000	56.360	134.600	1432.000	1051.000	11.990	0.051	42.950	0.000	0.000
2	12:44:20	7.122	T 6051.000	T 114900.000	55.390	131.900	1470.000	1066.000	12.130	0.043	44.700	0.000	0.000
3	12:44:42	6.495	TM 6271.000	T 119700.000	56.980	133.300	1439.000	1045.000	11.940	0.037	46.260	0.000	0.000
x		6.720	TM 6191.000	T 117600.000	56.240	133.300	1447.000	1054.000	12.020	0.044	44.640	0.000	0.000
σ		0.349	TM 122.100	T 2469.000	0.801	1.329	19.870	11.040	0.100	0.007	1.655	0.000	0.000
%RSD		5.189	TM 1.971	T 2.099	1.423	0.997	1.373	1.047	0.828	15.080	3.709	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:58	168.400	450.445%	23.400	11.750	-3.241	12.660	106.614%	0.000	6.967	7.404	1405.000	146.630%
2	12:44:20	170.600	454.742%	23.260	11.940	-1.918	12.030	105.887%	0.000	6.903	7.580	1434.000	148.023%
3	12:44:42	170.400	460.140%	22.910	11.800	-2.207	12.230	107.072%	0.000	6.762	7.445	1418.000	150.483%
x		169.800	455.109%	23.190	11.830	-2.455	12.310	106.524%	0.000	6.877	7.476	1419.000	148.379%
σ		1.233	4.858%	0.252	0.097	0.696	0.325	0.598%	0.000	0.105	0.092	14.130	1.951%
%RSD		0.726	1.067	1.087	0.820	28.340	2.643	0.561	0.000	1.523	1.236	0.996	1.315

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:58	14.370	19.460	175.800	111.422%	0.000	39.200	22.050
2	12:44:20	13.930	19.900	178.000	111.255%	0.000	39.870	22.360
3	12:44:42	14.240	19.590	175.100	112.727%	0.000	39.370	22.000
x		14.180	19.650	176.300	111.802%	0.000	39.480	22.140
σ		0.229	0.225	1.516	0.806%	0.000	0.350	0.194
%RSD		1.612	1.142	0.860	0.721	0.000	0.886	0.874

200-35700-A-13-A 11/1/2016 12:49:20 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:49:42	90.288%	11.560	49.680	T 601.500	T 26530.000	T 86590.000	T 6264.000	T 17880.000	208.362%	0.000	140.700	126.900
2	12:50:04	90.742%	9.768	49.240	T 586.000	T 26370.000	T 86230.000	T 6239.000	T 18090.000	208.250%	0.000	141.900	126.000
3	12:50:26	88.396%	10.660	48.610	T 574.200	T 25890.000	T 84780.000	T 6077.000	T 17670.000	211.967%	0.000	141.500	125.900
x		89.809%	10.660	49.170	T 587.200	T 26260.000	T 85860.000	T 6193.000	T 17880.000	209.527%	0.000	141.400	126.300
σ		1.245%	0.895	0.538	T 13.710	T 334.100	T 957.700	T 101.400	T 212.600	2.115%	0.000	0.629	0.535
%RSD		1.386	8.393	1.094	T 2.335	T 1.272	T 1.115	T 1.638	T 1.189	1.009	0.000	0.445	0.424

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:49:42	5.089	TM 13390.000	TM 216600.000	92.650	246.000	360.700	838.700	33.180	0.052	10.260	0.000	0.000
2	12:50:04	5.104	TM 13270.000	TM 215200.000	94.500	247.800	358.500	834.500	33.130	0.043	10.600	0.000	0.000
3	12:50:26	5.757	TM 13270.000	TM 217100.000	93.130	242.400	354.900	830.700	33.270	0.056	7.958	0.000	0.000
x		5.317	TM 13310.000	TM 216300.000	93.430	245.400	358.000	834.600	33.190	0.050	9.605	0.000	0.000
σ		0.382	TM 68.910	TM 961.500	0.960	2.759	2.899	3.963	0.071	0.007	1.436	0.000	0.000
%RSD		7.175	TM 0.518	TM 0.445	1.028	1.124	0.810	0.475	0.215	14.000	14.950	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:49:42	244.500	T 701.374%	3.974	0.549	-9.613	2.998	109.040%	0.000	1.706	1.877	1586.000	181.044%
2	12:50:04	244.100	696.114%	4.074	0.565	-12.220	3.205	109.790%	0.000	1.794	1.894	1586.000	183.214%
3	12:50:26	241.400	696.268%	4.075	0.635	-11.090	3.006	110.525%	0.000	1.744	1.910	1593.000	185.416%
x		243.300	T 697.918%	4.041	0.583	-10.980	3.070	109.785%	0.000	1.748	1.894	1589.000	183.224%
σ		1.702	T 2.993%	0.058	0.046	1.308	0.117	0.743%	0.000	0.044	0.017	4.009	2.186%
%RSD		0.700	T 0.429	1.438	7.806	11.920	3.818	0.677	0.000	2.543	0.880	0.252	1.193

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:49:42	0.183	1.563	171.600	126.557%	0.000	47.760	8.058
2	12:50:04	0.187	1.578	174.700	125.381%	0.000	48.250	8.279
3	12:50:26	0.197	1.559	172.600	126.753%	0.000	48.210	8.183
x		0.189	1.567	173.000	126.230%	0.000	48.070	8.173
σ		0.007	0.010	1.614	0.742%	0.000	0.268	0.111
%RSD		3.934	0.640	0.933	0.588	0.000	0.557	1.361

200-35700-A-14-A 11/1/2016 12:55:04 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:55:26	86.925%	3.532	33.580	T 783.300	T 11230.000	T 49790.000	T 3868.000	18250.000	119.660%	0.000	82.430	63.680
2	12:55:48	88.114%	3.101	34.690	T 759.400	T 11170.000	T 50350.000	T 3966.000	18330.000	118.539%	0.000	83.670	63.390
3	12:56:10	84.293%	3.263	35.100	T 733.800	T 11060.000	T 49590.000	T 3851.000	18170.000	120.217%	0.000	83.240	63.940
x		86.444%	3.299	34.460	T 758.800	T 11160.000	T 49910.000	T 3895.000	18250.000	119.472%	0.000	83.110	63.670
σ		1.955%	0.218	0.788	T 24.790	T 84.950	T 395.900	T 62.350	76.590	0.855%	0.000	0.630	0.276
%RSD		2.262	6.609	2.286	T 3.267	T 0.761	T 0.793	T 1.601	0.420	0.715	0.000	0.758	0.433
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:55:26	4.347	TM 7226.000	T 81340.000	38.610	87.590	1909.000	836.000	7.474	0.055	17.410	0.000	0.000
2	12:55:48	4.222	TM 7383.000	T 83940.000	38.560	88.970	1927.000	844.000	7.486	0.071	14.860	0.000	0.000
3	12:56:10	4.577	TM 7321.000	T 82560.000	38.320	88.030	1921.000	840.300	7.305	0.076	16.110	0.000	0.000
x		4.382	TM 7310.000	T 82610.000	38.490	88.200	1919.000	840.100	7.422	0.067	16.130	0.000	0.000
σ		0.180	TM 79.250	T 1299.000	0.155	0.705	9.015	4.040	0.101	0.011	1.274	0.000	0.000
%RSD		4.109	TM 1.084	T 1.573	0.404	0.800	0.470	0.481	1.363	16.720	7.902	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:55:26	95.820	299.186%	1.313	2.114	-4.411	3.809	100.556%	0.000	1.241	1.243	847.800	121.658%
2	12:55:48	96.830	299.607%	1.279	2.035	-4.127	3.592	101.460%	0.000	1.175	1.273	851.600	122.784%

3	12:56:10	95.600	299.981%	1.362	2.064	-4.212	3.599	101.085%	0.000	1.205	1.305	866.200	125.941%
x		96.080	299.591%	1.318	2.071	-4.250	3.667	101.034%	0.000	1.207	1.274	855.200	123.461%
σ		0.657	0.398%	0.042	0.040	0.145	0.123	0.454%	0.000	0.033	0.031	9.744	2.221%
%RSD		0.684	0.133	3.175	1.927	3.424	3.366	0.450	0.000	2.712	2.440	1.139	1.799

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	0.570	0.655	161.600	100.978%	0.000	12.980	6.712
2	12:55:48	0.603	0.692	159.300	103.577%	0.000	12.870	6.726
3	12:56:10	0.536	0.688	159.300	104.536%	0.000	12.800	6.624
x		0.570	0.678	160.100	103.030%	0.000	12.880	6.687
σ		0.034	0.020	1.283	1.841%	0.000	0.088	0.055
%RSD		5.903	2.967	0.801	1.787	0.000	0.680	0.829

CCV 11/1/2016 01:00:50 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:11	73.857%	650.300	249.600	T 10770.000	T 31180.000	T 31200.000	T 9828.000	28880.000	72.802%	0.000	T 1216.000	400.900
2	13:01:33	75.907%	631.300	250.700	T 11070.000	T 32370.000	T 32200.000	T 10080.000	29350.000	69.289%	0.000	T 1220.000	412.000
3	13:01:55	73.181%	639.800	259.200	T 10750.000	T 31210.000	T 31450.000	T 9831.000	28640.000	69.977%	0.000	T 1199.000	396.400
x		74.315%	102.472%	101.269%	T 108.676%	T 105.287%	T 105.386%	T 99.135%	96.524%	70.690%	0.000	T 96.959%	100.780%
σ		1.419%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	1.862%	0.000	T n/a	n/a
%RSD		1.910	1.484	2.062	T 1.655	T 2.140	T 1.633	T 1.466	1.235	2.634	0.000	T 0.917	1.991

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:11	13.230	T 1201.000	T 29340.000	498.400	1276.000	1169.000	1172.000	189.100	-0.519	199.600	0.000	0.000
2	13:01:33	19.550	T 1266.000	T 30640.000	515.700	1312.000	1189.000	1212.000	187.100	-0.423	203.200	0.000	0.000
3	13:01:55	20.620	T 1212.000	T 29540.000	498.000	1270.000	1161.000	1190.000	185.000	-0.481	198.600	0.000	0.000
x		17.800	T 98.111%	T 99.460%	100.812%	102.865%	93.849%	95.314%	93.532%	-0.474	100.218%	0.000	0.000
σ		3.997	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.048	n/a	0.000	0.000
%RSD		22.450	T 2.851	T 2.340	2.004	1.776	1.219	1.697	1.090	10.210	1.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:11	192.300	81.514%	1135.000	98.070	4.889	195.500	81.078%	0.000	246.500	258.900	1223.000	83.242%
2	13:01:33	197.500	79.675%	1146.000	100.800	-2.430	198.800	77.828%	0.000	252.700	268.100	1241.000	81.481%
3	13:01:55	196.100	79.449%	1155.000	99.270	-1.548	197.200	77.696%	0.000	252.000	266.000	1232.000	78.966%
x		195.300	80.213%	91.640%	99.379%	0.304	98.598%	78.867%	0.000	250.400	105.730%	98.579%	81.230%
σ		2.734	1.133%	n/a	n/a	3.996	n/a	1.916%	0.000	3.402	n/a	n/a	2.149%
%RSD		1.400	1.412	0.881	1.378	1315.000	0.840	2.429	0.000	1.359	1.825	0.728	2.646

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:11	22.480	200.100	T 1189.000	82.408%	0.000	15.290	9.456
2	13:01:33	22.830	194.400	T 1167.000	83.301%	0.000	15.970	9.450
3	13:01:55	23.540	192.200	T 1151.000	84.194%	0.000	16.060	9.212
x		114.761%	97.778%	T 93.527%	83.301%	0.000	78.875%	93.725%
σ		n/a	n/a	T n/a	0.893%	0.000	n/a	n/a

%RSD		2.345	2.077	T 1.662	1.072	0.000	2.686	1.485

CCB 11/1/2016 01:06:33 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:55	76.417%	0.001	4.440	19.200	15.490	53.040	8.315	13.240	75.058%	0.000	0.678	0.146
2	13:07:17	77.198%	0.000	3.398	19.120	14.690	53.040	6.592	14.050	75.599%	0.000	0.724	0.138
3	13:07:38	78.015%	-0.043	3.755	13.870	13.070	49.970	6.157	10.360	76.005%	0.000	0.485	0.064
x		77.210%	-0.014	3.865	17.400	14.410	52.020	7.021	12.550	75.554%	0.000	0.629	0.116
σ		0.799%	0.025	0.530	3.051	1.233	1.776	1.141	1.941	0.475%	0.000	0.127	0.045
%RSD		1.035	179.900	13.700	17.540	8.552	3.414	16.250	15.470	0.629	0.000	20.190	39.020

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:55	5.161	5.210	106.700	0.075	0.157	0.300	0.596	0.198	0.270	0.532	0.000	0.000
2	13:07:17	5.283	5.138	105.600	0.064	0.132	0.318	0.489	0.228	0.271	0.610	0.000	0.000
3	13:07:38	5.789	5.070	99.440	0.078	0.212	0.352	0.325	0.076	0.271	-0.214	0.000	0.000
x		5.411	5.139	103.900	0.072	0.167	0.323	0.470	0.167	0.271	0.309	0.000	0.000
σ		0.333	0.070	3.932	0.007	0.041	0.026	0.137	0.080	0.001	0.455	0.000	0.000
%RSD		6.154	1.359	3.783	10.330	24.590	8.135	29.070	48.110	0.336	147.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:55	0.072	84.723%	1.510	-0.004	-0.970	0.027	81.853%	0.000	0.198	0.231	0.645	80.449%
2	13:07:17	0.078	84.293%	1.585	0.005	-0.591	0.030	82.727%	0.000	0.252	0.256	0.501	83.988%
3	13:07:38	0.074	84.073%	1.320	0.005	-1.118	0.030	81.949%	0.000	0.208	0.237	0.464	82.354%
x		0.075	84.363%	1.472	0.002	-0.893	0.029	82.176%	0.000	0.219	0.242	0.537	82.264%
σ		0.003	0.331%	0.137	0.005	0.272	0.002	0.479%	0.000	0.028	0.013	0.096	1.771%
%RSD		4.508	0.392	9.272	241.100	30.460	5.645	0.583	0.000	12.900	5.326	17.820	2.153

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:55	0.077	0.106	0.113	82.650%	0.000	-1.528	-0.001
2	13:07:17	0.045	0.110	0.139	84.799%	0.000	-1.515	-0.004
3	13:07:38	0.071	0.106	0.150	85.543%	0.000	-1.537	-0.005
x		0.065	0.107	0.134	84.330%	0.000	-1.527	-0.003
σ		0.017	0.002	0.019	1.503%	0.000	0.011	0.002
%RSD		26.600	1.965	14.490	1.782	0.000	0.729	58.800

CCVL 11/1/2016 01:12:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:38	87.144%	1.023	45.070	561.300	216.500	79.850	502.400	486.700	81.430%	0.000	5.659	4.463
2	13:13:00	86.740%	1.067	42.850	533.800	220.500	93.470	483.300	467.700	83.576%	0.000	5.301	4.271
3	13:13:22	83.772%	1.045	43.900	547.800	220.700	102.600	491.100	468.200	82.266%	0.000	5.724	4.489
x		85.885%	104.495%	109.851%	109.524%	109.600%	183.953%	98.450%	94.839%	82.424%	0.000	111.224%	110.184%
σ		1.842%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.082%	0.000	n/a	n/a
%RSD		2.144	2.102	2.527	2.509	1.080	12.450	1.955	2.282	1.313	0.000	4.096	2.702

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:38	7.548	4.529	254.200	1.074	2.479	5.443	19.010	1.731	0.376	2.648	0.000	0.000
2	13:13:00	7.149	6.055	284.000	1.140	2.066	5.392	18.910	2.021	0.354	4.049	0.000	0.000
3	13:13:22	7.360	6.494	290.400	1.147	2.111	5.607	19.440	2.071	0.330	3.674	0.000	0.000
x		7.352	284.637%	138.085%	112.066%	110.941%	109.618%	95.605%	97.044%	0.353	86.421%	0.000	0.000
σ		0.200	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.023	n/a	0.000	0.000
%RSD		2.719	18.120	6.994	3.619	10.210	2.051	1.486	9.450	6.514	20.980	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:38	4.897	88.856%	9.590	1.021	-1.086	0.795	88.782%	0.000	1.993	2.096	9.667	87.573%
2	13:13:00	5.141	87.787%	10.340	1.010	-0.967	0.962	88.689%	0.000	2.072	2.141	9.922	87.143%
3	13:13:22	5.016	89.274%	9.840	1.045	0.430	0.906	87.678%	0.000	2.090	2.194	10.130	87.407%
x		100.361%	88.639%	99.219%	102.560%	-0.541	88.764%	88.383%	0.000	2.052	107.181%	99.049%	87.374%
σ		n/a	0.766%	n/a	n/a	0.843	n/a	0.612%	0.000	0.052	n/a	n/a	0.217%
%RSD		2.432	0.865	3.824	1.738	155.900	9.562	0.693	0.000	2.512	2.295	2.323	0.248

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:38	2.005	1.962	1.164	88.679%	0.000	0.747	1.003
2	13:13:00	1.998	2.021	1.254	88.204%	0.000	0.614	0.984
3	13:13:22	1.952	2.052	1.291	88.121%	0.000	0.623	1.007
x		99.258%	100.588%	123.626%	88.335%	0.000	33.051%	99.802%
σ		n/a	n/a	n/a	0.301%	0.000	n/a	n/a
%RSD		1.471	2.287	5.287	0.341	0.000	11.260	1.217

200-35700-A-15-A 11/1/2016 01:18:00 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:22	90.078%	3.032	31.950	T 747.300	T 10670.000	T 47930.000	T 3658.000	16960.000	115.644%	0.000	76.960	60.010
2	13:18:44	91.315%	3.675	28.830	T 721.800	T 10590.000	T 47990.000	T 3596.000	17120.000	118.205%	0.000	75.990	58.520
3	13:19:06	93.914%	3.248	30.410	T 719.800	T 10500.000	T 47400.000	T 3670.000	16940.000	120.484%	0.000	76.490	59.440
x		91.769%	3.319	30.400	T 729.600	T 10580.000	T 47770.000	T 3641.000	17010.000	118.111%	0.000	76.480	59.320
σ		1.958%	0.327	1.559	T 15.330	T 87.050	T 327.800	T 39.400	98.670	2.422%	0.000	0.484	0.750
%RSD		2.133	9.857	5.129	T 2.101	T 0.822	T 0.686	T 1.082	0.580	2.050	0.000	0.633	1.264

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:22	4.549	TM 6548.000	T 77870.000	36.280	83.860	1852.000	799.800	6.711	0.107	13.640	0.000	0.000
2	13:18:44	5.146	TM 6514.000	T 78520.000	36.980	83.920	1826.000	794.700	6.954	0.094	13.600	0.000	0.000
3	13:19:06	4.074	TM 6475.000	T 78010.000	36.260	82.200	1791.000	776.600	7.392	0.052	16.130	0.000	0.000
x		4.589	TM 6512.000	T 78130.000	36.510	83.330	1823.000	790.400	7.019	0.084	14.460	0.000	0.000
σ		0.537	TM 36.530	T 342.700	0.409	0.972	30.910	12.150	0.345	0.029	1.448	0.000	0.000
%RSD		11.700	TM 0.561	T 0.439	1.122	1.167	1.695	1.537	4.912	34.090	10.020	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:18:22	90.990	284.144%	1.411	1.888	-2.948	3.504	95.979%	0.000	1.186	1.290	825.600	118.584%
2	13:18:44	90.840	293.195%	1.381	1.840	-3.359	3.327	99.343%	0.000	1.216	1.254	816.200	119.710%
3	13:19:06	89.700	290.533%	1.347	1.764	-1.762	3.019	101.408%	0.000	1.230	1.266	802.400	121.175%
x		90.510	289.290%	1.380	1.831	-2.690	3.284	98.910%	0.000	1.211	1.270	814.800	119.823%
σ		0.706	4.651%	0.032	0.063	0.829	0.245	2.740%	0.000	0.022	0.018	11.670	1.299%
%RSD		0.780	1.608	2.345	3.436	30.830	7.471	2.770	0.000	1.841	1.441	1.432	1.084

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:18:22	0.518	0.653	155.000	98.808%	0.000	12.610	6.560
2	13:18:44	0.582	0.631	153.800	102.627%	0.000	12.210	6.353
3	13:19:06	0.524	0.665	154.500	102.720%	0.000	12.130	6.388
x		0.541	0.650	154.400	101.385%	0.000	12.320	6.434
σ		0.036	0.017	0.574	2.232%	0.000	0.260	0.111
%RSD		6.564	2.674	0.372	2.202	0.000	2.114	1.725

200-35700-A-16-A 11/1/2016 01:23:44 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:24:06	96.278%	5.747	30.870	T 683.100	T 13940.000	T 65050.000	T 4609.000	16350.000	146.812%	0.000	114.500	82.080
2	13:24:28	95.563%	5.808	31.150	T 683.400	T 13890.000	T 65440.000	T 4660.000	T 16580.000	145.131%	0.000	113.300	81.300
3	13:24:50	93.969%	5.907	31.160	T 667.000	T 13620.000	T 62810.000	T 4516.000	16330.000	144.915%	0.000	113.000	82.440
x		95.270%	5.821	31.060	T 677.800	T 13820.000	T 64430.000	T 4595.000	T 16420.000	145.619%	0.000	113.600	81.940
σ		1.182%	0.081	0.165	T 9.411	T 172.800	T 1419.000	T 73.000	T 141.600	1.039%	0.000	0.799	0.581
%RSD		1.241	1.390	0.531	T 1.388	T 1.251	T 2.202	T 1.589	T 0.862	0.713	0.000	0.703	0.709
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:24:06	5.166	TM 8139.000	T 122100.000	60.220	122.100	T 4260.000	1413.000	11.160	0.059	17.800	0.000	0.000
2	13:24:28	5.223	TM 8347.000	T 126300.000	60.720	119.400	T 4294.000	1414.000	11.030	0.060	18.600	0.000	0.000
3	13:24:50	4.014	TM 8373.000	T 125800.000	61.250	119.600	T 4215.000	1411.000	10.930	0.061	17.910	0.000	0.000
x		4.801	TM 8286.000	T 124700.000	60.730	120.400	T 4257.000	1413.000	11.040	0.060	18.100	0.000	0.000
σ		0.682	TM 128.500	T 2305.000	0.513	1.501	T 39.630	1.421	0.116	0.001	0.432	0.000	0.000
%RSD		14.210	TM 1.551	T 1.848	0.844	1.246	T 0.931	0.101	1.053	1.510	2.388	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:24:06	106.600	432.510%	1.809	2.112	-4.478	6.682	109.558%	0.000	1.455	1.505	1107.000	144.519%
2	13:24:28	108.800	431.391%	1.802	2.122	-2.137	6.471	106.669%	0.000	1.454	1.528	1156.000	147.387%

3	13:24:50	106.800	434.026%	1.786	1.979	-4.681	6.440	107.187%	0.000	1.388	1.558	1125.000	143.172%
x		107.400	432.642%	1.799	2.071	-3.765	6.531	107.805%	0.000	1.433	1.530	1129.000	145.026%
σ		1.204	1.322%	0.012	0.080	1.414	0.132	1.541%	0.000	0.038	0.026	24.450	2.153%
%RSD		1.121	0.306	0.646	3.840	37.540	2.017	1.429	0.000	2.669	1.729	2.165	1.484

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:24:06	0.667	0.838	240.100	111.106%	0.000	19.210	8.149
2	13:24:28	0.680	0.892	239.100	112.224%	0.000	19.280	8.018
3	13:24:50	0.622	0.840	242.500	111.003%	0.000	19.260	8.101
x		0.657	0.857	240.600	111.444%	0.000	19.250	8.089
σ		0.030	0.030	1.766	0.677%	0.000	0.036	0.066
%RSD		4.639	3.555	0.734	0.608	0.000	0.189	0.821

200-35700-A-17-A 11/1/2016 01:29:27 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:49	95.718%	6.398	30.560	┬572.800	┬14460.000	┬65460.000	┬4779.000	17510.000	142.467%	0.000	115.600	83.140
2	13:30:11	91.794%	6.563	32.630	┬558.700	┬14080.000	┬63210.000	┬4658.000	17490.000	144.893%	0.000	112.800	82.180
3	13:30:33	93.855%	6.760	29.070	┬547.200	┬14260.000	┬64940.000	┬4828.000	┬17370.000	143.799%	0.000	115.500	84.710
x		93.789%	6.574	30.750	┬559.600	┬14270.000	┬64540.000	┬4755.000	┬17460.000	143.720%	0.000	114.600	83.340
σ		1.963%	0.181	1.786	┬12.810	┬190.900	┬1179.000	┬87.360	┬74.820	1.215%	0.000	1.572	1.280
%RSD		2.093	2.756	5.806	┬2.289	┬1.338	┬1.826	┬1.837	┬0.429	0.845	0.000	1.372	1.536

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:49	5.287	┬4462.000	┬131000.000	59.930	119.600	┬3268.000	1236.000	9.146	0.071	14.790	0.000	0.000
2	13:30:11	5.358	┬4486.000	┬130200.000	58.960	115.200	┬3179.000	1242.000	9.411	0.064	15.280	0.000	0.000
3	13:30:33	4.322	┬4453.000	┬130100.000	58.870	117.100	┬3239.000	1247.000	9.322	0.070	13.730	0.000	0.000
x		4.989	┬4467.000	┬130400.000	59.260	117.300	┬3229.000	1242.000	9.293	0.068	14.600	0.000	0.000
σ		0.579	┬17.000	┬489.900	0.588	2.225	┬45.370	5.638	0.135	0.004	0.795	0.000	0.000
%RSD		11.610	┬0.381	┬0.376	0.992	1.897	┬1.405	0.454	1.453	5.612	5.443	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:49	105.500	458.306%	1.693	1.601	-3.703	5.012	106.147%	0.000	1.405	1.440	1005.000	146.782%
2	13:30:11	104.600	459.645%	1.663	1.482	-4.008	5.381	106.077%	0.000	1.411	1.475	1020.000	145.192%
3	13:30:33	104.300	455.273%	1.728	1.526	-4.625	5.315	105.338%	0.000	1.335	1.502	1017.000	147.554%
x		104.800	457.741%	1.695	1.536	-4.112	5.236	105.854%	0.000	1.384	1.472	1014.000	146.509%
σ		0.639	2.240%	0.032	0.060	0.469	0.197	0.448%	0.000	0.042	0.031	8.116	1.204%
%RSD		0.609	0.489	1.911	3.890	11.420	3.764	0.424	0.000	3.051	2.103	0.800	0.822

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:49	0.489	0.849	213.900	108.468%	0.000	24.840	8.283
2	13:30:11	0.515	0.856	212.000	110.714%	0.000	24.680	8.209
3	13:30:33	0.487	0.847	214.700	109.847%	0.000	24.750	8.268
x		0.497	0.851	213.500	109.677%	0.000	24.750	8.254
σ		0.016	0.005	1.392	1.133%	0.000	0.082	0.039

%RSD		3.177	0.534	0.652	1.033	0.000	0.330	0.471

200-35700-A-18-A 11/1/2016 01:35:09 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:31	88.437%	7.578	22.380	T 308.300	T 21360.000	T 81300.000	T 5516.000	14330.000	171.072%	0.000	103.700	107.700
2	13:35:53	87.754%	8.196	23.390	309.800	T 21460.000	T 80900.000	T 5501.000	14540.000	171.288%	0.000	105.100	108.600
3	13:36:14	87.238%	8.690	24.950	306.800	T 20980.000	T 78690.000	T 5362.000	14030.000	176.426%	0.000	101.900	106.700
x		87.810%	8.155	23.570	T 308.300	T 21270.000	T 80300.000	T 5460.000	14300.000	172.929%	0.000	103.600	107.700
σ		0.601%	0.557	1.295	T 1.528	T 253.100	T 1403.000	T 85.200	254.300	3.031%	0.000	1.564	0.947
%RSD		0.685	6.830	5.492	T 0.496	T 1.190	T 1.747	T 1.561	1.779	1.753	0.000	1.510	0.880

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:31	6.091	TM 7638.000	T 117000.000	63.770	148.600	133.700	737.600	3.215	0.044	10.840	0.000	0.000
2	13:35:53	5.489	TM 7782.000	T 119100.000	64.330	149.300	136.600	740.300	3.158	0.054	8.430	0.000	0.000
3	13:36:14	5.285	TM 7569.000	T 115000.000	61.910	142.500	135.000	745.600	3.210	0.052	8.617	0.000	0.000
x		5.622	TM 7663.000	T 117000.000	63.340	146.800	135.100	741.200	3.195	0.050	9.297	0.000	0.000
σ		0.419	TM 108.900	T 2015.000	1.267	3.714	1.457	4.089	0.032	0.005	1.342	0.000	0.000
%RSD		7.457	TM 1.421	T 1.722	2.000	2.529	1.078	0.552	0.993	10.570	14.440	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:31	196.700	658.537%	3.464	0.862	-8.764	3.038	102.996%	0.000	0.304	0.327	2350.000	169.180%
2	13:35:53	195.100	656.063%	3.440	0.832	-6.947	2.781	103.748%	0.000	0.323	0.330	2357.000	173.958%
3	13:36:14	192.600	651.757%	3.538	0.747	-7.793	3.023	103.426%	0.000	0.337	0.345	2381.000	173.533%
x		194.800	655.453%	3.481	0.814	-7.835	2.947	103.390%	0.000	0.321	0.334	2363.000	172.224%
σ		2.089	3.431%	0.051	0.060	0.909	0.144	0.377%	0.000	0.016	0.009	16.230	2.644%
%RSD		1.073	0.523	1.467	7.341	11.610	4.899	0.365	0.000	5.098	2.816	0.687	1.535

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:31	0.254	0.886	131.300	110.565%	0.000	40.440	7.192
2	13:35:53	0.215	0.912	129.000	112.774%	0.000	41.010	7.155
3	13:36:14	0.236	0.891	131.900	110.556%	0.000	41.580	7.374
x		0.235	0.896	130.700	111.298%	0.000	41.010	7.240
σ		0.020	0.014	1.528	1.278%	0.000	0.571	0.117
%RSD		8.478	1.580	1.169	1.148	0.000	1.391	1.618

200-35736-A-13-A 11/1/2016 01:40:52 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:13	92.971%	9.896	25.680	┬478.400	┬15770.000	┬94590.000	┬5629.000	14590.000	164.744%	0.000	145.000	105.400
2	13:41:35	91.549%	9.607	26.230	┬470.900	┬15680.000	┬92990.000	┬5547.000	14250.000	168.120%	0.000	146.000	105.800
3	13:41:56	91.163%	9.500	28.180	┬475.800	┬15840.000	┬95220.000	┬5671.000	14650.000	166.383%	0.000	145.500	106.700
x		91.894%	9.668	26.700	┬475.000	┬15760.000	┬94270.000	┬5616.000	14500.000	166.415%	0.000	145.500	106.000
σ		0.952%	0.205	1.318	┬3.806	┬82.770	┬1149.000	┬62.780	216.500	1.688%	0.000	0.504	0.672
%RSD		1.036	2.118	4.936	┬0.801	┬0.525	┬1.219	┬1.118	1.493	1.015	0.000	0.347	0.634

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:13	5.418	┬3276.000	┬137500.000	57.550	126.100	134.800	633.500	8.382	0.072	9.136	0.000	0.000
2	13:41:35	4.844	┬3191.000	┬133500.000	55.600	123.400	130.900	621.600	8.582	0.061	10.110	0.000	0.000
3	13:41:56	5.725	┬3281.000	┬136200.000	56.420	122.500	130.000	623.400	8.398	0.071	9.768	0.000	0.000
x		5.329	┬3250.000	┬135700.000	56.520	124.000	131.900	626.100	8.454	0.068	9.670	0.000	0.000
σ		0.447	┬50.340	┬2059.000	0.978	1.885	2.592	6.390	0.111	0.006	0.493	0.000	0.000
%RSD		8.391	┬1.549	┬1.517	1.731	1.520	1.965	1.021	1.311	8.811	5.100	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:13	116.800	538.407%	1.436	1.126	-8.276	3.408	103.545%	0.000	0.706	0.749	1782.000	155.882%
2	13:41:35	115.100	534.845%	1.462	0.965	-7.562	3.165	105.869%	0.000	0.684	0.735	1728.000	157.230%
3	13:41:56	116.700	538.705%	1.480	1.056	-7.557	3.059	104.912%	0.000	0.721	0.749	1759.000	157.692%
x		116.200	537.319%	1.460	1.049	-7.798	3.210	104.776%	0.000	0.703	0.744	1757.000	156.935%
σ		0.960	2.148%	0.022	0.080	0.414	0.179	1.168%	0.000	0.019	0.008	27.270	0.941%
%RSD		0.826	0.400	1.511	7.674	5.303	5.575	1.115	0.000	2.646	1.139	1.552	0.599

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:13	0.306	1.351	169.000	113.687%	0.000	28.240	10.820
2	13:41:35	0.303	1.379	171.500	113.986%	0.000	28.720	11.010
3	13:41:56	0.291	1.395	172.500	112.923%	0.000	29.320	11.030
x		0.300	1.375	171.000	113.532%	0.000	28.760	10.950
σ		0.008	0.022	1.810	0.548%	0.000	0.542	0.113
%RSD		2.654	1.626	1.058	0.483	0.000	1.886	1.034

200-35700-A-16-A @2 11/1/2016 01:46:34 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:56	88.113%	3.906	18.170	┬438.700	┬8811.000	┬40920.000	┬2905.000	10500.000	118.665%	0.000	72.580	52.000
2	13:47:17	88.678%	3.786	18.490	442.500	8901.000	┬41140.000	┬2914.000	10390.000	118.865%	0.000	70.370	51.510
3	13:47:39	89.730%	3.647	16.930	422.300	┬8511.000	┬39390.000	┬2790.000	10210.000	119.623%	0.000	71.050	51.480
x		88.840%	3.779	17.860	┬434.500	┬8741.000	┬40490.000	┬2870.000	10370.000	119.051%	0.000	71.330	51.660
σ		0.821%	0.130	0.828	┬10.750	┬204.400	┬953.800	┬69.540	147.800	0.505%	0.000	1.129	0.294
%RSD		0.924	3.435	4.635	┬2.473	┬2.338	┬2.356	┬2.423	1.425	0.424	0.000	1.582	0.569

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:56	5.110	┬5270.000	┬80050.000	39.310	77.790	┬2358.000	822.400	9.379	0.105	11.100	0.000	0.000
2	13:47:17	4.903	┬5243.000	┬79580.000	38.310	75.150	2389.000	840.300	9.655	0.099	11.470	0.000	0.000
3	13:47:39	3.628	┬5187.000	┬78480.000	37.420	76.000	2392.000	825.200	9.708	0.113	9.591	0.000	0.000
x		4.547	┬5233.000	┬79370.000	38.350	76.310	┬2380.000	829.300	9.581	0.106	10.720	0.000	0.000
σ		0.802	┬42.620	┬805.500	0.946	1.350	┬19.050	9.618	0.177	0.007	0.997	0.000	0.000
%RSD		17.640	┬0.814	┬1.015	2.467	1.769	┬0.800	1.160	1.843	6.481	9.298	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:46:56	59.050	274.137%	1.491	1.201	-3.041	3.519	101.467%	0.000	0.820	0.861	617.600	118.335%
2	13:47:17	60.120	268.972%	1.470	1.192	-3.920	4.113	99.888%	0.000	0.813	0.850	627.500	119.611%
3	13:47:39	59.040	267.138%	1.486	1.109	-1.384	3.558	100.039%	0.000	0.817	0.847	626.800	118.645%
x		59.400	270.082%	1.482	1.168	-2.782	3.730	100.465%	0.000	0.817	0.853	624.000	118.864%
σ		0.619	3.629%	0.011	0.051	1.288	0.332	0.871%	0.000	0.003	0.008	5.527	0.666%
%RSD		1.042	1.344	0.717	4.337	46.300	8.908	0.867	0.000	0.421	0.894	0.886	0.560

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:46:56	0.419	0.470	135.400	102.394%	0.000	9.841	4.548
2	13:47:17	0.367	0.472	134.100	103.540%	0.000	9.745	4.495
3	13:47:39	0.401	0.507	136.500	102.245%	0.000	9.817	4.471
x		0.396	0.483	135.300	102.726%	0.000	9.801	4.505
σ		0.026	0.021	1.190	0.708%	0.000	0.050	0.039
%RSD		6.613	4.276	0.880	0.690	0.000	0.515	0.876

CCV 11/1/2016 01:52:18 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:52:39	78.165%	647.100	254.300	┬10550.000	┬30460.000	┬30670.000	┬9636.000	28290.000	77.197%	0.000	┬1188.000	387.700
2	13:53:01	74.570%	663.400	259.300	┬10910.000	┬31130.000	┬31550.000	┬9925.000	28980.000	72.906%	0.000	┬1229.000	408.700
3	13:53:23	75.867%	642.900	262.000	┬10910.000	┬31650.000	┬31420.000	┬10080.000	29420.000	71.427%	0.000	┬1224.000	403.800
x		76.201%	104.184%	103.424%	┬107.912%	┬103.603%	┬104.042%	┬98.821%	96.319%	73.843%	0.000	┬97.105%	100.016%
σ		1.820%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	n/a	2.997%	0.000	┬n/a	n/a
%RSD		2.389	1.667	1.508	┬1.923	┬1.934	┬1.526	┬2.301	1.967	4.059	0.000	┬1.879	2.751
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:52:39	20.300	┬1193.000	┬29160.000	491.800	1240.000	1194.000	1215.000	193.600	-0.454	205.800	0.000	0.000
2	13:53:01	17.310	┬1231.000	┬30030.000	504.100	1273.000	1186.000	1225.000	197.700	-0.734	207.500	0.000	0.000
3	13:53:23	19.060	┬1228.000	┬30500.000	509.800	1282.000	1192.000	1225.000	195.800	-0.552	201.400	0.000	0.000
x		18.890	┬97.408%	┬99.657%	100.379%	101.209%	95.265%	97.757%	97.848%	-0.580	102.452%	0.000	0.000
σ		1.503	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.142	n/a	0.000	0.000
%RSD		7.957	┬1.736	┬2.273	1.830	1.719	0.340	0.481	1.036	24.520	1.523	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:52:39	196.700	81.717%	1149.000	100.800	9.642	199.700	80.794%	0.000	251.100	263.300	1222.000	82.392%
2	13:53:01	196.000	79.953%	1171.000	98.800	12.430	196.800	79.738%	0.000	252.400	265.400	1225.000	80.660%

3	13:53:23	195.200	77.610%	1193.000	100.500	16.650	197.100	78.200%	0.000	253.600	267.300	1238.000	79.666%
x		196.000	79.760%	93.682%	100.040%	12.910	98.937%	79.577%	0.000	252.400	106.127%	98.259%	80.906%
σ		0.756	2.060%	n/a	n/a	3.527	n/a	1.304%	0.000	1.262	n/a	n/a	1.379%
%RSD		0.386	2.583	1.865	1.092	27.320	0.800	1.639	0.000	0.500	0.760	0.730	1.705

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:39	22.570	196.800	T 1198.000	82.324%	0.000	15.690	9.427
2	13:53:01	23.670	194.700	T 1177.000	83.217%	0.000	16.280	9.454
3	13:53:23	23.530	199.000	T 1193.000	81.422%	0.000	16.770	9.326
x		116.278%	98.407%	T 95.152%	82.321%	0.000	81.240%	94.025%
σ		n/a	n/a	T n/a	0.898%	0.000	n/a	n/a
%RSD		2.566	1.080	T 0.925	1.091	0.000	3.336	0.717

CCB 11/1/2016 01:58:01 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:23	82.352%	-0.002	2.604	18.690	2.399	4.629	5.577	1.800	77.715%	0.000	0.387	0.063
2	13:58:45	80.096%	-0.022	3.617	15.510	3.311	4.355	1.965	3.331	80.053%	0.000	0.362	0.077
3	13:59:06	78.601%	0.021	2.803	19.410	3.106	5.119	5.200	3.335	76.760%	0.000	0.182	0.012
x		80.350%	-0.001	3.008	17.870	2.939	4.701	4.247	2.822	78.176%	0.000	0.310	0.050
σ		1.888%	0.022	0.537	2.076	0.479	0.387	1.986	0.885	1.694%	0.000	0.112	0.034
%RSD		2.350	1738.000	17.850	11.620	16.290	8.236	46.760	31.370	2.167	0.000	36.130	68.230

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:23	5.861	0.220	13.570	0.023	0.071	0.007	0.299	0.185	0.288	-0.475	0.000	0.000
2	13:58:45	5.761	0.171	7.607	0.015	0.012	0.033	-0.021	0.545	0.240	1.306	0.000	0.000
3	13:59:06	5.782	0.248	11.870	0.051	0.084	-0.052	0.231	0.220	0.259	0.681	0.000	0.000
x		5.801	0.213	11.020	0.029	0.055	-0.004	0.170	0.317	0.262	0.504	0.000	0.000
σ		0.053	0.039	3.073	0.019	0.038	0.044	0.169	0.199	0.024	0.903	0.000	0.000
%RSD		0.908	18.240	27.900	63.190	68.460	1109.000	99.290	62.640	9.284	179.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:23	0.017	85.762%	1.436	-0.004	-0.655	0.056	83.930%	0.000	0.199	0.200	0.131	81.563%
2	13:58:45	0.022	85.785%	1.435	-0.002	-0.510	-0.006	83.867%	0.000	0.190	0.222	0.121	83.227%
3	13:59:06	0.016	84.845%	1.455	-0.008	-0.437	0.003	83.848%	0.000	0.194	0.241	0.183	83.694%
x		0.018	85.464%	1.442	-0.005	-0.534	0.018	83.882%	0.000	0.195	0.221	0.145	82.828%
σ		0.003	0.536%	0.011	0.003	0.111	0.033	0.043%	0.000	0.005	0.020	0.033	1.120%
%RSD		17.760	0.627	0.773	58.770	20.780	191.000	0.051	0.000	2.354	9.195	23.000	1.352

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:23	0.054	0.111	0.091	82.091%	0.000	-1.532	-0.010
2	13:58:45	0.042	0.101	0.089	85.031%	0.000	-1.556	-0.009
3	13:59:06	0.052	0.098	0.093	82.622%	0.000	-1.548	-0.010
x		0.049	0.103	0.091	83.248%	0.000	-1.545	-0.009
σ		0.007	0.007	0.002	1.567%	0.000	0.012	0.001

%RSD		13.190	6.995	2.292	1.882	0.000	0.779	9.593

CCVL 11/1/2016 02:03:44 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:06	87.284%	1.060	42.350	568.200	216.900	62.400	506.000	464.300	83.673%	0.000	4.929	4.268
2	14:04:28	87.231%	1.312	41.000	560.200	213.900	67.770	507.800	503.100	84.309%	0.000	5.347	4.338
3	14:04:50	84.774%	1.152	44.540	588.300	230.300	74.770	516.800	495.300	81.333%	0.000	5.661	4.684
x		86.430%	117.468%	106.571%	114.448%	110.187%	136.626%	102.040%	97.518%	83.105%	0.000	106.248%	110.748%
σ		1.434%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.567%	0.000	n/a	n/a
%RSD		1.660	10.870	4.191	2.535	3.972	9.077	1.130	4.210	1.886	0.000	6.920	5.027

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:06	8.258	2.729	227.000	1.180	2.180	5.667	19.600	2.321	0.383	5.361	0.000	0.000
2	14:04:28	7.575	2.985	239.500	1.240	2.069	5.304	19.830	2.238	0.333	4.208	0.000	0.000
3	14:04:50	7.558	3.620	252.700	1.142	2.580	5.233	19.410	2.109	0.371	4.471	0.000	0.000
x		7.797	155.571%	119.858%	118.721%	113.811%	108.034%	98.075%	111.141%	0.362	117.004%	0.000	0.000
σ		0.399	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.026	n/a	0.000	0.000
%RSD		5.122	14.750	5.365	4.139	11.800	4.311	1.063	4.802	7.295	12.910	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:06	5.109	86.975%	10.010	1.076	-0.250	0.998	87.050%	0.000	2.033	2.161	10.290	85.539%
2	14:04:28	4.982	91.730%	9.591	1.086	-0.428	1.009	88.415%	0.000	2.027	2.152	9.884	87.791%
3	14:04:50	5.169	87.398%	10.510	1.087	-0.654	1.173	86.857%	0.000	2.160	2.260	10.460	86.586%
x		101.737%	88.701%	100.373%	108.308%	-0.444	106.012%	87.441%	0.000	2.073	109.548%	102.118%	86.639%
σ		n/a	2.632%	n/a	n/a	0.203	n/a	0.849%	0.000	0.076	n/a	n/a	1.127%
%RSD		1.873	2.967	4.572	0.568	45.630	9.201	0.971	0.000	3.645	2.730	2.906	1.301

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:06	1.798	2.015	1.268	85.962%	0.000	0.792	1.025
2	14:04:28	1.903	2.044	1.283	87.264%	0.000	0.734	0.981
3	14:04:50	2.032	2.058	1.260	86.734%	0.000	0.650	1.035
x		95.534%	101.952%	127.043%	86.653%	0.000	36.263%	101.394%
σ		n/a	n/a	n/a	0.655%	0.000	n/a	n/a
%RSD		6.143	1.077	0.914	0.756	0.000	9.869	2.820

Mass Uncorrected ICPS

STD0 11/1/2016 10:50:03 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:50:25	109246.880	5.000	210.001	172821.400	140.001	375.004	54017.395	560.009	132303.050	5.000	7061.496	1080.035
2	10:50:47	110464.870	2.500	180.001	181068.260	110.000	425.005	55853.432	500.007	136385.760	0.000	7341.617	1170.041
3	10:51:08	113867.650	7.500	200.001	181715.240	90.000	310.003	55090.900	510.008	139319.880	15.000	7541.706	1170.041
x		111193.130	5.000	196.668	178534.960	113.334	370.004	54987.242	523.342	136002.890	6.667	7314.939	1140.039
σ		2394.925	2.500	15.275	4958.659	25.166	57.664	922.397	32.147	3524.048	7.638	241.214	51.965
%RSD		2.154	50.000	7.767	2.777	22.205	15.585	1.677	6.143	2.591	114.564	3.298	4.558

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:50:25	2485.185	320.003	195899.570	65.000	15.000	300.003	435.006	651.013	193.001	710.515	751.017	3960.470
2	10:50:47	2705.220	385.004	199178.090	35.000	15.000	280.002	375.004	666.013	252.002	705.515	754.517	4060.495
3	10:51:08	2450.180	355.004	198211.670	35.000	35.000	305.003	405.005	719.016	255.002	756.017	765.018	4055.493
x		2546.862	353.337	197763.110	45.000	21.667	295.003	405.005	678.681	233.335	724.016	756.851	4025.486
σ		138.254	32.533	1684.657	17.321	11.547	13.229	30.001	35.727	34.962	27.827	7.286	56.361
%RSD		5.428	9.207	0.852	38.490	53.294	4.484	7.407	5.264	14.984	3.843	0.963	1.400

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:50:25	40.000	172043.410	40.000	25.000	0.000	5.000	785871.050	365.004	100.000	76.500	10.000	130690.400
2	10:50:47	15.000	174660.420	45.000	40.000	0.000	0.000	792357.590	400.005	95.000	83.500	10.000	134712.230
3	10:51:08	20.000	174801.890	75.000	40.000	0.000	0.000	812010.420	365.004	115.000	79.000	5.000	135680.030
x		25.000	173835.240	53.333	35.000	0.000	1.667	796746.350	376.671	103.334	79.667	8.333	133694.220
σ		13.229	1553.382	18.930	8.660	0.000	2.887	13611.121	20.208	10.408	3.547	2.887	2646.011
%RSD		52.915	0.894	35.493	24.744	0.000	173.205	1.708	5.365	10.073	4.453	34.641	1.979

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:50:25	35.000	45.000	240.002	108039.040	0.000	31013.829	445.006
2	10:50:47	50.000	50.000	290.003	107857.870	0.000	29881.764	280.002
3	10:51:08	35.000	45.000	305.003	108310.800	0.000	28729.741	325.003
x		40.000	46.667	278.336	108069.240	0.000	29875.111	350.004
σ		8.660	2.887	34.035	227.966	0.000	1142.059	85.295
%RSD		21.651	6.186	12.228	0.211	0.000	3.823	24.370

STD1 11/1/2016 10:55:00 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:55:21	118983.200	182.501	5185.807	851478.720	26901.694	67395.992	803450.160	27753.088	149174.620	25.000	23862.070	11443.928
2	10:55:43	114179.780	160.001	5370.865	T866851.110	28544.423	66246.396	798311.880	27753.088	146773.440	10.000	22139.695	10703.436
3	10:56:05	113162.880	167.501	5230.821	845968.480	26721.404	67089.760	800922.770	27152.099	145926.050	15.000	23301.277	11258.802
x		115441.950	170.001	5262.498	T854766.100	27389.173	66910.716	800894.940	27552.758	147291.370	16.667	23101.014	11135.388
σ		3108.675	11.457	96.510	T10822.487	1004.528	595.344	2569.257	346.981	1685.078	7.638	878.477	385.364
%RSD		2.693	6.739	1.834	T1.266	3.668	0.890	0.321	1.259	1.144	45.826	3.803	3.461

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:55:21	4860.709	8061.949	809261.440	2885.250	1275.049	4420.586	11333.852	1993.119	510.008	906.525	749.517	4005.481
2	10:55:43	4900.720	7661.761	810174.220	3000.270	1295.050	4575.628	10948.595	1957.115	474.007	960.528	781.018	4185.525
3	10:56:05	5270.833	8126.981	806313.600	3080.285	1345.054	4340.565	11178.748	1949.114	464.006	943.027	783.018	4055.493

x		5010.754	7950.230	808583.080	2988.602	1305.051	4445.593	11153.732	1966.449	482.674	936.693	771.185	4082.167
σ		226.122	251.929	2017.728	98.040	36.058	119.510	193.843	23.441	24.194	27.553	18.791	92.939
%RSD		4.513	3.169	0.250	3.280	2.763	2.688	1.738	1.192	5.013	2.942	2.437	2.277
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:55:21	23566.650	183464.250	17379.056	3185.304	20.000	755.017	832074.590	920.025	5660.961	4276.549	5335.854	133996.500
2	10:55:43	24843.502	186315.620	17193.864	3485.364	70.000	725.016	823294.270	925.026	5395.873	4311.057	5720.982	138200.620
3	10:56:05	25179.005	182756.530	17248.921	3550.378	75.000	775.018	832347.740	830.021	5635.953	4432.089	5695.973	135276.780
x		24529.719	184178.800	17273.947	3407.016	55.000	751.684	829238.870	891.691	5564.262	4339.898	5584.270	135824.630
σ		850.745	1884.066	95.099	194.740	30.414	25.167	5149.982	53.466	146.364	81.683	215.497	2154.940
%RSD		3.468	1.023	0.551	5.716	55.298	3.348	0.621	5.996	2.630	1.882	3.859	1.587

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:55:21	3065.282	18330.074	8011.925	109146.220	0.000	133764.640	15156.889
2	10:55:43	3305.328	18940.756	7631.747	109236.810	0.000	117175.460	15221.948
3	10:56:05	3195.306	18405.157	7826.837	109780.370	0.000	104174.560	15602.300
x		3188.639	18558.663	7823.503	109387.800	0.000	118371.550	15327.045
σ		120.162	333.026	190.111	342.976	0.000	14831.261	240.586
%RSD		3.768	1.794	2.430	0.314	0.000	12.529	1.570

STD2 11/1/2016 11:00:43 AM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:01:05	117089.860	805.019	26435.949	T 3645355.800	140529.970	323249.600	T 3861039.300	140560.230	151273.410	5.000	73406.299	49142.342
2	11:01:27	113092.400	760.017	26491.037	T 3572513.500	139067.780	320247.470	T 3826987.000	139440.880	150435.880	15.000	71774.214	49769.198
3	11:01:48	114340.870	770.018	24898.584	T 3552311.200	137575.480	319386.180	T 3782425.200	138533.360	144907.220	15.000	72035.337	48921.695
x		114841.040	778.352	25941.857	T 3590060.100	139057.740	320961.090	T 3823483.800	139511.490	148872.170	11.667	72405.283	49277.745
σ		2045.129	23.630	903.920	T 48941.156	1477.274	2028.160	T 39424.000	1015.275	3459.190	5.774	876.682	439.677
%RSD		1.781	3.036	3.484	T 1.363	1.062	0.632	T 1.031	0.728	2.324	49.487	1.211	0.892
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:01:05	9362.629	34926.558	T 3125369.800	14611.402	6611.311	19716.656	56530.709	5806.011	966.028	1696.086	782.518	4735.673
2	11:01:27	9222.551	35623.029	T 3137714.600	14186.035	6126.126	21113.365	55321.662	5700.975	998.030	1621.579	777.518	4730.671
3	11:01:48	9442.674	35327.401	T 3133110.000	13750.670	6181.146	19186.037	55963.801	5776.001	962.028	1562.573	812.020	4910.723
x		9342.618	35292.329	T 3132064.800	14182.702	6306.194	20005.352	55938.724	5760.996	975.362	1626.746	790.685	4792.356
σ		111.418	349.558	T 6238.419	430.376	265.667	995.569	604.913	54.102	19.733	66.906	18.644	102.540
%RSD		1.193	0.990	T 0.199	3.035	4.213	4.977	1.081	0.939	2.023	4.113	2.358	2.140
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:01:05	125757.670	186012.260	84458.456	17063.731	180.001	3810.436	828398.070	820.020	27347.418	21659.565	28369.124	137474.650
2	11:01:27	123657.040	184930.320	86373.232	16963.629	265.002	4010.483	826476.090	775.018	27642.905	21599.487	28063.607	134026.740
3	11:01:48	122523.710	182554.340	87031.643	17158.828	320.003	3770.426	826150.530	740.016	28128.717	21641.542	28464.286	136920.110
x		123979.470	184498.970	85954.444	17062.062	255.002	3863.782	827008.230	778.352	27706.347	21633.531	28299.006	136140.500
σ		1640.911	1768.854	1336.735	97.611	70.535	128.612	1214.594	40.106	394.494	30.830	209.340	1851.452
%RSD		1.324	0.959	1.555	0.572	27.660	3.329	0.147	5.153	1.424	0.143	0.740	1.360

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:01:05	15857.540	91968.045	34635.952	106962.130	0.000	143500.120	79006.820
2	11:01:27	15657.351	93139.524	33999.644	106690.400	0.000	145840.300	76962.286
3	11:01:48	15762.450	93602.105	35026.768	106640.080	0.000	150203.800	78052.338
x		15759.114	92903.225	34554.121	106764.200	0.000	146514.740	78007.148

σ		100.136	842.268	518.428	173.248	0.000	3402.349	1023.015
%RSD		0.635	0.907	1.500	0.162	0.000	2.322	1.311

STD3 11/1/2016 11:06:27 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:06:49	109911.220	90693.590	30107.169	┬12466608.000	┬3790718.700	┬34943000.000	┬13473213.000	┬1462003.000	132534.880	29050.296	┬2726291.700	8321
2	11:07:10	105875.220	87217.612	30242.413	┬12300124.000	┬3748162.900	┬34303362.000	┬13213955.000	1467153.700	133714.240	28369.124	┬2726039.100	8295
3	11:07:32	107143.290	86209.889	29205.567	┬12244923.000	┬3699254.100	┬34460622.000	┬13384280.000	┬1442947.700	128291.870	28764.801	┬2660512.700	8093
x		107643.240	88040.364	29851.716	┬12337218.000	┬3746045.200	┬34568994.000	┬13357149.000	┬1457368.100	131513.660	28728.073	┬2704281.200	8237
σ		2063.927	2352.357	563.653	┬115403.970	┬45769.044	┬333305.710	┬131740.980	┬12751.264	2851.786	342.068	┬37904.808	125
%RSD		1.917	2.672	1.888	┬0.935	┬1.222	┬0.964	┬0.986	┬0.875	2.168	1.191	┬1.402	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:06:49	103138.140	┬3776503.200	┬76218488.000	1235749.700	669497.030	825677.960	621049.430	86678.812	6210.157	9222.051	744.017	912
2	11:07:10	101714.430	┬3708383.600	┬75946848.000	1230485.800	669944.480	824129.050	619762.840	85714.846	6267.178	9147.510	705.015	886
3	11:07:32	98983.059	┬3660063.200	┬74857996.000	1221972.400	652143.920	809492.250	613590.650	85067.542	6226.163	9148.010	704.015	847
x		101278.540	┬3714983.300	┬75674444.000	1229402.600	663861.810	819766.420	618134.310	85820.400	6234.499	9172.523	717.682	881
σ		2111.557	┬58499.843	┬719991.190	6952.221	10150.453	8931.331	3987.159	810.805	29.411	42.893	22.812	32
%RSD		2.085	┬1.575	┬0.951	0.565	1.529	1.089	0.645	0.945	0.472	0.468	3.179	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	11:06:49	901309.130	171942.370	┬1913997.700	299237.390	9637.786	147282.900	776035.900	958152.110	641938.990	501684.150	648360.520	12514
2	11:07:10	897264.410	167608.560	1935306.700	298087.050	9507.711	145996.660	770309.210	963523.900	640624.850	501762.970	651182.400	12574
3	11:07:32	888550.690	164457.400	1916235.300	294799.340	9252.568	146955.030	768456.550	944452.400	634351.610	499919.300	654009.950	12785
x		895708.070	168002.780	┬1921846.600	297374.590	9466.022	146744.870	771600.550	955376.140	638971.820	501122.140	651184.290	12624
σ		6520.053	3758.025	┬11710.362	2303.206	195.964	668.380	3951.243	9834.127	4054.806	1042.440	2824.713	142
%RSD		0.728	2.237	┬0.609	0.775	2.070	0.455	0.512	1.029	0.635	0.208	0.434	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:06:49	35628.040	1781479.800	┬8083165.800	102494.190	0.000	268373.470	134818.080
2	11:07:10	35913.652	1776891.600	┬8049422.300	105945.670	0.000	284823.110	135312.060
3	11:07:32	37426.976	1767602.400	┬8117925.100	102896.650	0.000	289004.160	137862.840
x		36322.889	1775324.600	┬8083504.400	103778.840	0.000	280733.580	135997.660
σ		966.773	7070.175	┬34252.693	1887.291	0.000	10906.399	1634.065
%RSD		2.662	0.398	┬0.424	1.819	0.000	3.885	1.202

STD4 11/1/2016 11:12:11 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	11:12:32	107274.120	267961.930	90500.042	┬37789416.000	┬11684029.000	┬108581310.000	┬42158669.000	┬4658500.100	126044.820	89886.737	┬8452937.400
2	11:12:54	105211.040	267568.180	91776.997	┬37740390.000	┬11717284.000	┬107575740.000	┬41498610.000	┬4653506.300	126034.750	88826.073	┬8487814.100
3	11:13:16	104395.930	258623.640	88831.100	┬36838569.000	┬11426293.000	┬105735010.000	┬41187124.000	┬4689580.000	126115.350	89449.393	┬8394096.700
x		105627.030	264717.920	90369.380	┬37456125.000	┬11609202.000	┬107297350.000	┬41614801.000	┬4667195.400	126064.980	89387.401	┬8444949.400
σ		1483.504	5281.470	1477.289	┬535380.780	┬159274.000	┬1443429.200	┬496084.760	┬19545.710	43.919	533.042	┬47366.583
%RSD		1.404	1.995	1.635	┬1.429	┬1.372	┬1.345	┬1.192	┬0.419	0.035	0.596	┬0.561

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	11:12:32	309313.860	┬11704497.000	┬232897760.000	┬3705013.200	2005745.400	┬2401611.200	1817111.000	257109.990	17922.631	25549.568	679.014
2	11:12:54	308784.180	┬11760808.000	┬235733070.000	┬3750303.200	┬2015498.600	┬2434348.300	1832324.200	253896.280	17625.315	25154.969	704.515

3	11:13:16	305234.680	┬11529266.000	┬231910680.000	┬3694791.900	1983909.000	┬2402413.100	1789771.600	253228.230	17580.267	25113.907	701.01
x		307777.570	┬11664857.000	┬233513840.000	┬3716702.800	┬2001717.700	┬2412790.900	1813068.900	254744.830	17709.404	25272.815	694.84
σ		2218.075	┬120753.540	┬1984272.600	┬29544.232	┬16175.381	┬18673.564	21562.347	2075.340	186.029	240.553	13.82
%RSD		0.721	┬1.035	┬0.850	┬0.795	┬0.808	┬0.774	1.189	0.815	1.050	0.952	1.98

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	11:12:32	┬2751780.200	159721.680	┬6005771.100	901266.930	28494.337	451329.310	782225.410	┬3027554.000	2000075.900	1580705.700	┬2030099.20
2	11:12:54	┬2739319.700	160761.610	┬6036939.900	903803.930	29551.175	448771.620	777554.270	┬3023360.100	2022787.300	1597599.200	┬2047651.80
3	11:13:16	┬2721466.200	159358.230	┬6018807.100	898925.420	29626.308	448617.550	776255.800	┬3025207.100	2016510.600	1589866.100	┬2015044.80
x		┬2737522.000	159947.170	┬6020506.000	901332.100	29223.940	449572.830	778678.490	┬3025373.700	2013124.600	1589390.300	┬2030931.90
σ		┬15236.751	728.357	┬15653.684	2439.908	632.971	1523.108	3139.583	┬2101.903	11728.209	8456.792	┬16319.45
%RSD		┬0.557	0.455	┬0.260	0.271	2.166	0.339	0.403	┬0.069	0.583	0.532	┬0.80

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:12:32	114391.220	┬5638595.800	┬25784358.000	101578.610	0.000	948349.620	449701.170
2	11:12:54	116364.810	┬5685555.000	┬25973491.000	100512.170	0.000	958760.650	450805.410
3	11:13:16	116848.170	┬5709233.700	┬25801304.000	100612.770	5.000	961586.690	451231.720
x		115868.070	┬5677794.800	┬25853051.000	100901.180	1.667	956232.320	450579.440
σ		1301.623	┬35952.663	┬104647.280	588.818	2.887	6971.322	789.899
%RSD		1.123	┬0.633	┬0.405	0.584	173.205	0.729	0.175

STD5 11/1/2016 11:17:53 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti
1	11:18:14	103480.250	428216.300	M 146183.290	TM 61862524.000	TM 19103268.000	TM 176529050.000	TM 68281833.000	TM 7670226.300	122428.010	150430.830
2	11:18:36	101337.140	M 425508.250	M 146728.040	TM 60399448.000	TM 19027002.000	TM 172491080.000	TM 67265120.000	TM 7627187.500	122015.000	150375.340
3	11:18:58	101920.680	410929.190	142940.340	TM 59415053.000	TM 18730723.000	TM 171496740.000	TM 67007587.000	TM 7662177.000	121481.120	147772.210
x		102246.030	M 421551.250	M 145283.890	TM 60559009.000	TM 18953664.000	TM 173505620.000	TM 67518180.000	TM 7653196.900	121974.710	149526.130
σ		1107.977	M 9298.089	M 2047.769	TM 1231512.500	TM 196802.920	TM 2665145.100	TM 673762.180	TM 22881.539	474.729	1519.191
%RSD		1.084	M 2.206	M 1.409	TM 2.034	TM 1.038	TM 1.536	TM 0.998	TM 0.299	0.389	1.016

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se
1	11:18:14	498469.320	TM 18926859.000	TM 376432140.000	TM 6011926.800	TM 3199942.600	TM 3883972.200	T 2867655.800	M 411407.780	28151.756	39147.422
2	11:18:36	507459.610	TM 18867015.000	TM 379868390.000	TM 6064253.600	TM 3215462.200	T 3849898.500	T 2826681.400	M 409066.200	27637.897	39062.723
3	11:18:58	505527.200	TM 19053983.000	TM 379327490.000	TM 6027811.700	TM 3191410.700	T 3862976.900	T 2841084.400	M 404417.800	27049.933	38303.464
x		503818.710	TM 18949286.000	TM 378542670.000	TM 6034664.000	TM 3202271.800	TM 3865615.800	T 2845140.500	M 408297.260	27613.195	38837.870
σ		4732.390	TM 95480.024	TM 1847675.400	TM 26827.909	TM 12193.776	TM 17189.467	T 20786.135	M 3557.869	551.326	464.742
%RSD		0.939	TM 0.504	TM 0.488	TM 0.445	TM 0.381	TM 0.445	T 0.731	M 0.871	1.997	1.197

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb
1	11:18:14	TM 4533258.900	154452.370	TM 10009429.000	M 1475477.600	48380.117	M 726611.010	774988.830	T 5003571.500	TM 3292300.400	M 2653165.100
2	11:18:36	TM 4487875.500	151909.150	TM 9855271.000	M 1453638.000	46188.914	M 733952.420	784289.080	T 5026170.700	TM 3306946.600	TM 2619225.700
3	11:18:58	TM 4457444.700	152383.450	TM 9929860.400	M 1451209.400	46910.926	M 731680.730	789517.460	T 5049508.700	TM 3298626.800	M 2674618.800
x		TM 4492859.700	152914.990	TM 9931520.200	M 1460108.300	47159.986	M 730748.050	782931.790	T 5026417.000	TM 3299291.300	TM 2649003.200
σ		TM 38152.079	1352.362	TM 77092.397	M 13365.480	1116.632	M 3758.521	7358.800	T 22969.600	TM 7345.679	TM 27930.088
%RSD		TM 0.849	0.884	TM 0.776	M 0.915	2.368	M 0.514	0.940	T 0.457	TM 0.223	TM 1.054

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:18:14	M 231258.360	TM 9633915.200	TM 43105032.000	99254.667	5.000	M 1893962.100	M 915681.660
2	11:18:36	M 236369.310	TM 9568997.900	TM 43098441.000	99174.190	0.000	M 1904184.400	M 917576.740
3	11:18:58	M 237206.070	TM 9586955.900	TM 43168827.000	97011.518	0.000	M 1918768.400	M 923162.900
x		M 234944.580	TM 9596623.000	TM 43124100.000	98480.125	1.667	M 1905638.300	M 918807.100
σ		M 3219.662	TM 33520.909	TM 38874.733	1272.488	2.887	M 12466.896	M 3889.417
%RSD		M 1.370	TM 0.349	TM 0.090	1.292	173.205	M 0.654	M 0.423

ICV 11/1/2016 11:23:36 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:23:58	106157.010	44459.220	16493.157	T 6414442.100	T 1860934.700	T 17346902.000	T 6451793.600	724366.400	121521.410	14135.992	1338172.800	400520.360
2	11:24:20	100220.420	43692.195	16142.814	T 6314255.600	T 1840264.800	T 17347011.000	T 6424289.800	699518.030	118449.420	13865.765	1332915.500	401150.240
3	11:24:42	99838.137	43015.438	16127.799	T 6296784.800	T 1823303.300	T 17093745.000	T 6458022.600	715891.770	119305.490	13700.629	1326632.700	399076.330
x		102071.850	43722.284	16254.590	T 6341827.500	T 1841500.900	T 17262553.000	T 6444702.000	713258.740	119758.770	13900.796	1332573.700	400248.980
σ		3543.005	722.361	206.741	T 63489.903	T 18846.173	T 146191.610	T 17949.771	12631.707	1585.368	219.785	5777.616	1063.253
%RSD		3.471	1.652	1.272	T 1.001	T 1.023	T 0.847	T 0.279	1.771	1.324	1.581	0.434	0.266

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:23:58	51243.656	T 1804747.700	T 37000056.000	601175.270	327690.060	407870.420	302307.050	42677.571	3255.318	4667.654	660.513	5590.938
2	11:24:20	50019.947	T 1794473.500	T 36991474.000	604663.100	328240.740	403798.040	306095.250	42699.628	3062.281	4721.669	623.012	5846.025
3	11:24:42	49698.989	T 1785519.400	T 36711198.000	609447.730	328016.390	400254.070	301237.950	41943.712	3125.293	4723.169	601.511	5801.009
x		50320.864	T 1794913.500	T 36900910.000	605095.370	327982.400	403974.180	303213.410	42440.304	3147.631	4704.164	628.345	5745.991
σ		815.115	T 9621.691	T 164350.720	4153.133	276.908	3811.226	2552.349	430.202	98.438	31.628	29.861	136.153

%RSD		1.620	T 0.536	T 0.445	0.686	0.084	0.943	0.842	1.014	3.127	0.672	4.752	2.370
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:23:58	435188.450	156763.800	460715.960	143671.590	4770.683	71759.149	704240.810	484686.630	321394.230	251074.010	319798.990	116928.740
2	11:24:20	430257.880	154371.620	461718.130	143318.570	4480.602	71919.840	711645.600	492021.930	321068.040	250715.670	324845.180	117180.490
3	11:24:42	429360.170	154280.790	457231.970	141346.840	4665.653	71990.142	704595.330	486107.110	319116.080	250457.330	323402.530	121017.770
x		431602.170	155138.730	459888.690	142779.000	4638.979	71889.711	706827.250	487605.220	320526.120	250749.000	322682.230	118375.670
σ		3138.076	1408.076	2354.721	1252.785	146.868	118.407	4176.577	3890.361	1231.971	309.686	2599.064	2291.588
%RSD		0.727	0.908	0.512	0.877	3.166	0.165	0.591	0.798	0.384	0.124	0.805	1.936

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:23:58	38043.369	881553.400	T 3985256.900	94738.498	0.000	265462.410	135125.560
2	11:24:20	38419.230	886237.260	T 3980301.900	95844.797	0.000	275462.730	135165.880
3	11:24:42	38604.658	889151.490	T 3957063.000	97293.152	0.000	276291.280	135276.780
x		38355.752	885647.380	T 3974207.300	95958.816	0.000	272405.470	135189.400
σ		285.978	3833.237	T 15052.683	1281.138	0.000	6027.127	78.306
%RSD		0.746	0.433	T 0.379	1.335	0.000	2.213	0.058

ICVL 11/1/2016 11:29:20 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:29:42	112317.180	177.501	6101.117	788616.260	25799.954	66437.153	700477.080	24978.704	122387.720	40.000	19896.869	9397.649
2	11:30:04	105372.050	140.001	6076.107	784791.940	26691.356	72632.922	710581.610	24868.539	125984.370	45.000	20677.819	9662.800
3	11:30:26	108240.340	205.001	6091.113	770822.120	25840.016	75144.018	698215.070	24337.757	123858.520	60.000	20853.037	9537.728
x		108643.190	174.168	6089.446	781410.110	26110.442	71404.698	703091.250	24728.333	124076.870	48.333	20475.909	9532.726
σ		3490.049	32.628	12.588	9366.721	503.485	4481.492	6584.702	342.705	1808.239	10.408	509.058	132.647
%RSD		3.212	18.734	0.207	1.199	1.928	6.276	0.937	1.386	1.457	21.535	2.486	1.391

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:29:42	4160.519	7796.823	713147.810	2690.217	1160.040	3875.450	10038.022	1813.099	444.006	802.019	605.011	3480.363
2	11:30:04	4110.507	8076.957	724225.470	3055.280	1360.055	3860.447	9967.980	1784.095	487.007	753.517	628.512	3405.348
3	11:30:26	4255.543	8267.050	735179.780	3435.354	1300.051	3905.458	10123.073	1775.094	420.005	776.518	632.012	3310.329
x		4175.523	8046.943	724184.350	3060.284	1273.382	3880.452	10043.025	1790.763	450.339	777.351	621.845	3398.680
σ		73.673	236.546	11016.041	372.594	102.640	22.918	77.668	19.860	33.947	24.262	14.683	85.213
%RSD		1.764	2.940	1.521	12.175	8.060	0.591	0.773	1.109	7.538	3.121	2.361	2.507

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:29:42	22244.835	163255.680	17494.177	3020.274	80.000	825.020	739949.030	4120.509	6161.139	4835.701	5200.811	120725.660
2	11:30:04	21769.208	163982.760	18064.785	3030.276	50.000	655.013	735435.700	4520.613	6481.260	5086.776	5535.919	121440.830
3	11:30:26	22745.510	165103.750	18550.318	3060.281	40.000	865.022	732239.490	4995.749	6336.204	5110.283	5530.918	122196.320
x		22253.184	164114.060	18036.426	3036.943	56.667	781.685	735874.740	4545.624	6326.201	5010.920	5422.549	121454.270
σ		488.205	931.006	528.641	20.820	20.817	111.510	3873.477	438.155	160.295	152.199	192.047	735.422
%RSD		2.194	0.567	2.931	0.686	36.735	14.265	0.526	9.639	2.534	3.037	3.542	0.606

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:29:42	3015.273	18995.819	8817.332	98097.849	0.000	43566.868	14226.069
2	11:30:04	3180.303	19361.239	10283.171	99375.383	0.000	41481.557	14671.455
3	11:30:26	3055.280	19811.768	10208.125	98449.915	0.000	39657.125	14080.946
x		3083.619	19389.609	9769.543	98641.049	0.000	41568.517	14326.156
σ		86.088	408.714	825.492	659.866	0.000	1956.322	307.715
%RSD		2.792	2.108	8.450	0.669	0.000	4.706	2.148

ICBIS 11/1/2016 11:35:03 AM QC Status: WARNING (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:35:25	102775.910	2.500	920.025	169679.360	160.001	465.006	49653.855	480.007	123536.140	5.000	7491.683	985.029
2	11:35:47	102232.590	2.500	940.027	167992.400	180.001	780.018	48991.901	420.005	121460.980	0.000	7111.517	920.025
3	11:36:09	105221.100	5.000	795.019	168093.410	140.001	1295.050	50446.229	370.004	122115.730	0.000	7056.493	970.028
x		103409.870	3.333	885.024	168588.390	160.001	846.692	49697.328	423.339	122370.950	1.667	7219.898	958.361
σ		1591.925	1.443	78.585	946.157	20.000	419.019	728.138	55.077	1060.864	2.887	236.976	34.036
%RSD		1.539	43.301	8.879	0.561	12.500	49.489	1.465	13.010	0.867	173.205	3.282	3.552

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:35:25	2215.147	320.003	181017.710	5.000	15.000	160.001	355.004	715.015	237.002	625.512	642.512	3370.341
2	11:35:47	2620.206	250.002	179102.180	20.000	15.000	245.002	270.002	738.016	280.002	607.511	632.512	3355.338
3	11:36:09	2435.178	415.005	178258.210	40.000	20.000	155.001	435.006	760.017	246.002	635.012	614.511	3010.272
x		2423.510	328.337	179459.370	21.667	16.667	186.668	353.337	737.683	254.335	622.678	629.845	3245.317
σ		202.781	82.817	1414.002	17.559	2.887	50.581	82.514	22.503	22.679	13.968	14.190	203.693
%RSD		8.367	25.223	0.788	81.044	17.321	27.097	23.353	3.050	8.917	2.243	2.253	6.277

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:35:25	20.000	164033.250	635.012	25.000	0.000	5.000	732176.820	1135.039	505.008	350.504	10.000	117371.830
2	11:35:47	45.000	162740.680	685.014	20.000	0.000	20.000	729336.260	1195.043	545.009	387.505	15.000	119043.630
3	11:36:09	75.000	160034.660	725.016	40.000	5.000	0.000	733221.270	1365.056	595.011	447.506	20.000	120232.110
x		46.667	162269.530	681.681	28.333	1.667	8.333	731578.120	1231.713	548.342	395.171	15.000	118882.530
σ		27.538	2040.507	45.094	10.408	2.887	10.408	2010.514	119.313	45.094	48.954	5.000	1436.929
%RSD		59.010	1.257	6.615	36.735	173.205	124.900	0.275	9.687	8.224	12.388	33.333	1.209

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:35:25	110.000	1020.031	370.004	95864.912	0.000	740.016	5.000
2	11:35:47	80.000	1015.031	340.003	97745.789	0.000	985.029	15.000
3	11:36:09	110.000	890.024	455.006	98188.379	0.000	640.012	35.000
x		100.000	975.029	388.338	97266.360	0.000	788.353	18.333
σ		17.321	73.659	59.653	1233.699	0.000	177.515	15.275
%RSD		17.321	7.555	15.361	1.268	0.000	22.517	83.320

ICSA 11/1/2016 11:40:46 AM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:41:07	110021.950	12.500	1060.034	TM 133048200.000	T 13731115.000	T 123829930.000	TM 144699130.000	T 5389928.700	145310.710	323076.290	4775.684	48
2	11:41:29	108270.540	5.000	885.024	TM 130261440.000	T 13472923.000	T 121646260.000	TM 145853430.000	T 5488622.100	145351.060	327853.220	4690.660	49
3	11:41:51	105523.000	7.500	915.025	TM 128455440.000	T 13382796.000	T 122194280.000	TM 146337280.000	T 5499529.600	145855.430	330953.600	4580.629	49
x		107938.500	8.333	953.361	TM 130588360.000	T 13528945.000	T 122556830.000	TM 145629950.000	T 5459360.100	145505.730	327294.370	4682.324	49
σ		2267.781	3.819	93.591	TM 2313767.000	T 180791.010	T 1136082.800	TM 841631.290	T 60376.225	303.522	3968.282	97.794	
%RSD		2.101	45.826	9.817	TM 1.772	T 1.336	T 0.927	TM 0.578	T 1.106	0.209	1.212	2.089	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:41:07	1885.107	1315.052	T 272821100.000	195.001	245.002	1025.032	1745.091	1173.041	404.005	695.014	741.016	37
2	11:41:29	1745.091	1280.049	T 275066250.000	220.001	325.003	1045.033	1685.085	1153.040	396.005	736.016	730.516	36
3	11:41:51	2035.124	1470.065	T 274302430.000	170.001	240.002	1045.033	1595.076	1180.042	391.005	697.515	762.517	39
x		1888.441	1355.055	T 274063260.000	195.001	270.002	1038.366	1675.084	1168.708	397.005	709.515	744.683	38

σ		145.045	101.127	T 1141520.200	25.000	47.698	11.548	75.506	14.013	6.558	22.985	16.313	
%RSD		7.681	7.463	T 0.417	12.821	17.666	1.112	4.508	1.199	1.652	3.239	2.191	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	11:41:07	3490.365	182867.740	T 3207776.100	330.003	410.005	595.011	822653.780	2170.141	665.013	515.008	145.001	1387
2	11:41:29	3610.391	183342.920	T 3291618.100	305.003	490.007	545.009	836760.680	2425.176	690.014	556.009	65.000	1412
3	11:41:51	3405.348	181654.590	T 3307731.800	325.003	405.005	525.008	832274.200	2715.221	735.016	596.011	165.001	1422
x		3502.035	182621.750	T 3269042.000	320.003	435.006	555.009	830562.890	2436.846	696.681	555.676	125.001	1407
σ		103.018	870.635	T 53666.063	13.229	47.698	36.057	7207.468	272.727	35.474	40.502	52.915	17
%RSD		2.942	0.477	T 1.642	4.134	10.965	6.497	0.868	11.192	5.092	7.289	42.332	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:41:07	515.008	1040.032	2180.143	105704.140	0.000	23050.929	25.000
2	11:41:29	610.011	885.024	2030.124	107314.380	0.000	18950.768	30.000
3	11:41:51	655.013	995.030	2155.139	107535.800	0.000	16022.698	70.000
x		593.344	973.362	2121.802	106851.440	0.000	19341.465	41.667
σ		71.475	79.744	80.374	999.741	0.000	3530.367	24.664
%RSD		12.046	8.193	3.788	0.936	0.000	18.253	59.195

ICSAB 11/1/2016 11:46:28 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:46:50	102202.400	3280.323	49302.815	TM 127179340.000	T 12996177.000	T 115940000.000	TM 138970170.000	T 5258479.800	138361.950	310312.160	62321.301	1
2	11:47:12	101246.590	3517.871	49824.363	TM 126565730.000	T 13021801.000	T 117460320.000	TM 139421700.000	T 5324319.200	137333.490	318147.830	64444.352	1
3	11:47:33	98922.702	3305.328	49127.298	TM 124076460.000	T 12728835.000	T 115648140.000	TM 136602030.000	T 5291530.900	138916.530	314861.300	62256.058	1
x		100790.570	3367.841	49418.159	TM 125940510.000	T 12915604.000	T 116349490.000	TM 138331300.000	T 5291443.300	138203.990	314440.430	63007.237	1
σ		1686.736	130.530	362.564	TM 1643210.700	T 162253.610	T 973016.380	TM 1514510.900	T 32919.795	803.253	3934.752	1245.006	
%RSD		1.674	3.876	0.734	TM 1.305	T 1.256	T 0.836	TM 1.095	T 0.622	0.581	1.251	1.976	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:46:50	15151.884	81694.731	T 260968920.000	62697.709	13385.373	33854.349	26355.822	20541.651	3935.465	5850.026	716.515	
2	11:47:12	15011.758	84538.862	T 266053640.000	63631.237	13595.543	33493.621	26190.562	20240.283	4060.495	5806.511	733.016	
3	11:47:33	14786.556	82322.810	T 262353060.000	63897.251	13465.437	32832.307	26050.343	20236.278	4068.497	5787.505	735.516	
x		14983.399	82852.135	T 263125200.000	63408.732	13482.118	33393.426	26198.909	20339.404	4021.485	5814.681	728.349	
σ		184.308	1494.124	T 2628830.200	629.966	106.073	518.335	152.911	175.163	74.603	32.052	10.324	
%RSD		1.230	1.803	T 0.999	0.993	0.787	1.552	0.584	0.861	1.855	0.551	1.418	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	11:46:50	3305.328	175580.000	T 3186722.500	77002.471	1595.076	18310.052	798783.700	1755.092	135327.180	106734.680	141099.760	13
2	11:47:12	3615.392	177045.380	T 3223497.700	76218.882	1615.078	18840.643	810415.540	1955.115	138659.400	108635.900	146112.670	14
3	11:47:33	3605.390	176610.810	T 3207540.900	76243.996	1720.089	18745.536	803219.430	2230.149	138866.110	109525.700	146460.710	14
x		3508.703	176412.070	T 3205920.400	76488.450	1643.414	18632.077	804139.550	1980.119	137617.570	108298.760	144557.710	1
σ		176.199	752.635	T 18441.093	445.333	67.151	282.907	5870.256	238.513	1986.222	1425.727	2999.729	
%RSD		5.022	0.427	T 0.575	0.582	4.086	1.518	0.730	12.045	1.443	1.316	2.075	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:46:50	39401.519	233225.490	172275.790	105704.140	0.000	282107.500	160095.240
2	11:47:12	40093.166	236729.370	175190.940	106972.190	5.000	300006.020	165295.630
3	11:47:33	40459.049	241436.170	177085.810	107706.900	0.000	304007.560	164235.230
x		39984.578	237130.340	174850.850	106794.410	1.667	295373.700	163208.700
σ		537.062	4120.001	2422.978	1013.147	2.887	11661.774	2747.972
%RSD		1.343	1.737	1.386	0.949	173.205	3.948	1.684

CCV 11/1/2016 11:52:12 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:52:34	90645.831	75277.116	26240.641	T 10446858.000	T 3145846.300	T 28753674.000	T 10626683.000	1200997.000	103520.500	23151.068	T 2197601.000	672780
2	11:52:56	88805.966	74360.515	25379.309	T 10440655.000	T 3122075.900	T 28280313.000	T 10686194.000	1198957.700	106106.690	24027.307	T 2179244.900	670927
3	11:53:17	88826.073	72921.679	24933.637	T 10211600.000	T 3095964.800	T 27910628.000	T 10489355.000	1185611.900	100129.880	22745.510	T 2117760.200	647731
x		89425.957	74186.437	25517.862	T 10366371.000	T 3121295.700	T 28314872.000	T 10600744.000	1195188.800	103252.360	23307.962	T 2164868.700	663813
σ		1056.490	1187.328	664.427	T 134071.310	T 24949.889	T 422584.250	T 100950.460	8356.346	2997.413	655.143	T 41816.797	13957
%RSD		1.181	1.600	2.604	T 1.293	T 0.799	T 1.492	T 0.952	0.699	2.903	2.811	T 1.932	2

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:52:34	81669.609	T 2997561.400	T 61870554.000	1004712.300	544563.480	666640.890	516073.130	72690.171	5426.883	7865.355	521.008	7511
2	11:52:56	80895.849	T 2979670.800	T 61061548.000	1002117.900	537731.950	664877.510	509433.480	71887.702	5327.851	7857.852	573.010	7516
3	11:53:17	79348.437	T 2918721.800	T 60100624.000	981657.520	529334.450	649129.610	503017.970	70415.436	5308.845	7753.803	542.509	7336
x		80637.965	T 2965318.000	T 61010909.000	996162.590	537209.960	660216.000	509508.190	71664.436	5354.527	7825.670	545.509	7455
σ		1181.879	T 41333.053	T 886051.390	12628.558	7627.920	9641.499	6527.902	1153.685	63.379	62.352	26.130	102

%RSD		1.466	T 1.394	T 1.452	1.268	1.420	1.460	1.281	1.610	1.184	0.797	4.790	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	11:52:34	773507.330	143021.030	1649601.000	256813.470	8036.937	130428.360	662001.350	842031.430	573996.850	451246.100	578089.720	116646
2	11:52:56	763930.440	141296.410	1679271.000	256021.420	7996.918	129329.850	667712.540	846394.300	567463.750	448664.800	579823.410	115941
3	11:53:17	753992.910	138301.450	1646913.800	251376.520	8452.143	127631.830	654555.760	838258.190	563114.920	444545.080	574136.540	110263
x		763810.230	140872.960	1658595.300	254737.130	8161.999	129130.010	661423.220	842227.970	568191.840	448151.990	577349.890	114284
σ		9757.768	2388.115	17956.073	2937.202	252.067	1408.932	6597.414	4071.619	5477.381	3379.812	2914.731	3499
%RSD		1.278	1.695	1.083	1.153	3.088	1.091	0.997	0.483	0.964	0.754	0.505	3

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:52:34	32611.875	1652062.900	T 7413125.900	94054.642	0.000	236972.790	129954.680
2	11:52:56	33077.792	1657373.300	T 7412308.400	93390.925	0.000	249564.590	129360.080
3	11:53:17	33914.471	1641826.700	T 7433218.500	94044.585	0.000	253000.820	129536.440
x		33201.379	1650421.000	T 7419550.900	93830.050	0.000	246512.730	129617.070
σ		660.034	7902.293	T 11843.495	380.327	0.000	8438.589	305.389
%RSD		1.988	0.479	T 0.160	0.405	0.000	3.423	0.236

CCB 11/1/2016 11:57:56 AM QC Status: WARNING (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:58:17	91771.969	12.500	675.014	153180.710	280.002	1915.110	46865.800	540.009	104728.010	15.000	5735.987	870.023
2	11:58:39	91098.288	10.000	645.012	154189.950	430.006	3595.388	47437.413	420.005	105060.090	35.000	5866.032	805.019
3	11:59:01	92174.180	7.500	690.014	155380.940	810.020	5906.046	46885.856	510.008	103520.500	15.000	5791.006	885.024
x		91681.479	10.000	670.013	154250.530	506.676	3805.515	47063.023	490.007	104436.200	21.667	5797.675	853.355
σ		543.624	2.500	22.914	1101.364	273.200	2003.748	324.387	62.452	810.215	11.547	65.279	42.527
%RSD		0.593	25.000	3.420	0.714	53.920	52.654	0.689	12.745	0.776	53.294	1.126	4.983

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:58:17	1915.110	320.003	161650.140	55.000	40.000	235.002	325.003	624.012	208.001	573.010	543.009	3070.283
2	11:58:39	2025.123	340.003	163624.260	80.000	70.000	250.002	370.004	626.012	219.001	530.508	539.509	2960.263
3	11:59:01	2120.135	320.003	166805.570	115.000	15.000	200.001	365.004	651.013	218.001	568.010	555.009	2820.239
x		2020.123	326.670	164026.660	83.334	41.667	228.335	353.337	633.679	215.001	557.176	545.842	2950.261
σ		102.604	11.547	2601.163	30.139	27.538	25.658	24.665	15.045	6.083	23.230	8.129	125.322
%RSD		5.079	3.535	1.586	36.166	66.091	11.237	6.981	2.374	2.829	4.169	1.489	4.248

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:58:17	65.000	141861.180	2560.197	15.000	0.000	0.000	662583.830	1925.111	635.012	501.508	30.000	110907.790
2	11:58:39	35.000	146854.150	2430.177	45.000	0.000	25.000	659193.270	2105.133	705.015	570.510	10.000	112931.310
3	11:59:01	50.000	142315.020	2290.157	40.000	0.000	5.000	664414.590	2425.176	670.013	525.008	30.000	112750.090
x		50.000	143676.780	2426.844	33.333	0.000	10.000	662063.900	2151.807	670.013	532.342	23.333	112196.400
σ		15.000	2761.018	135.051	16.073	0.000	13.229	2649.203	253.279	35.001	35.081	11.547	1119.639
%RSD		30.000	1.922	5.565	48.218	0.000	132.288	0.400	11.771	5.224	6.590	49.487	0.998

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:58:17	120.000	1835.101	410.005	94135.094	0.000	2175.142	50.000
2	11:58:39	105.000	1685.085	600.011	91651.308	0.000	2140.137	30.000
3	11:59:01	95.000	1485.066	680.014	93310.476	0.000	2175.142	35.000
x		106.667	1668.418	563.343	93032.293	0.000	2163.474	38.333
σ		12.583	175.612	138.689	1265.045	0.000	20.210	10.408
%RSD		11.797	10.526	24.619	1.360	0.000	0.934	27.152

MB 200-110769/1-A 11/1/2016 12:03:38 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:03:59	101528.300	27.500	705.015	283897.510	6611.311	66979.317	109085.830	2940.259	114330.810	245.002	6491.264	2415.175
2	12:04:21	99646.998	10.000	780.018	255666.030	3980.475	38790.088	92475.844	2080.130	115549.160	145.001	6396.227	2175.142
3	12:04:43	99556.459	12.500	600.011	249473.240	2170.141	23446.481	81418.384	1470.065	113807.240	95.000	6256.174	2160.140
x		100243.920	16.667	695.015	263012.260	4253.976	43071.962	94326.685	2163.485	114562.400	161.668	6381.222	2250.152
σ		1113.228	9.465	90.419	18350.288	2233.181	22080.032	13926.272	738.633	893.758	76.377	118.261	143.111
%RSD		1.111	56.789	13.010	6.977	52.496	51.263	14.764	34.141	0.780	47.243	1.853	6.360

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:03:59	2325.162	1900.108	333544.490	385.004	195.001	450.006	905.025	746.017	243.002	584.510	595.511	2930.258
2	12:04:21	2240.151	1600.077	269963.850	335.003	150.001	415.005	870.023	671.014	202.001	589.010	591.510	2835.241
3	12:04:43	2175.142	1260.048	230766.610	310.003	150.001	370.004	865.022	672.014	188.001	565.010	616.011	3080.285
x		2246.818	1586.744	278091.650	343.337	165.001	411.672	880.023	696.348	211.001	579.510	601.011	2948.594
σ		75.232	320.239	51868.767	38.189	25.981	40.105	21.796	43.017	28.584	12.758	13.144	123.547
%RSD		3.348	20.182	18.652	11.123	15.746	9.742	2.477	6.178	13.547	2.201	2.187	4.190

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:03:59	260.002	153816.530	3080.285	100.000	5.000	35.000	712135.890	53465.620	535.009	387.505	215.001	115317.570
2	12:04:21	210.001	156763.800	2495.187	60.000	5.000	20.000	711071.870	50345.927	505.008	384.504	110.000	116948.880
3	12:04:43	130.001	153887.170	1880.106	60.000	0.000	40.000	713971.990	53199.771	530.008	385.504	145.001	120252.260
x		200.001	154822.500	2485.193	73.334	3.333	31.667	712393.250	52337.106	523.342	385.838	156.667	117506.230
σ		65.575	1681.584	600.152	23.094	2.887	10.408	1467.089	1729.527	16.073	1.528	53.464	2514.116
%RSD		32.787	1.086	24.149	31.492	86.603	32.868	0.206	3.305	3.071	0.396	34.126	2.140

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:03:59	245.002	1070.034	1890.107	92465.788	0.000	30868.560	155.001
2	12:04:21	195.001	1030.032	1260.048	95281.581	0.000	25173.998	85.000
3	12:04:43	185.001	825.020	870.023	98037.495	0.000	19926.905	55.000
x		208.335	975.029	1340.059	95261.621	0.000	25323.154	98.334
σ		32.146	131.442	514.728	2785.907	0.000	5472.352	51.316
%RSD		15.430	13.481	38.411	2.924	0.000	21.610	52.186

LCS 200-110769/2-A 11/1/2016 12:09:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:09:41	103017.400	1352.555	47607.898	T 6339352.000	251544.010	576149.240	T 6410202.500	230411.750	120161.610	55.000	105905.410	82574.049
2	12:10:03	100290.840	1245.046	47688.127	T 6437233.800	252031.290	575067.830	T 6323059.200	234467.730	119446.500	95.000	107797.490	82252.464
3	12:10:25	100934.710	1362.556	47437.413	T 6248754.500	245768.810	569253.250	T 6452847.700	231932.630	116666.910	85.000	108164.850	81312.871
x		101414.320	1320.052	47577.813	T 6341780.100	249781.370	573490.110	T 6395369.800	232270.710	118758.340	78.334	107289.250	82046.461
σ		1425.146	65.149	128.036	T 94263.105	3483.514	3708.853	T 66153.366	2049.016	1846.185	20.817	1212.434	655.340
%RSD		1.405	4.935	0.269	T 1.486	1.395	0.647	T 1.034	0.882	1.555	26.575	1.130	0.799

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:09:41	11684.094	61086.743	T 5021095.900	23511.572	10318.193	32055.798	84071.507	7793.822	1191.043	1840.602	597.511	4050.492
2	12:10:03	11343.859	61312.570	T 5093229.800	24508.006	10363.221	32035.759	85865.619	7691.775	1127.038	1872.105	593.011	4415.585
3	12:10:25	11228.781	60675.244	T 5074076.500	24117.437	10608.375	31790.290	84006.179	7644.753	1073.035	1858.604	561.509	4395.580
x		11418.912	61024.852	T 5062800.700	24045.672	10429.930	31960.616	84647.768	7710.116	1130.372	1857.103	584.010	4287.219

σ		236.753	323.139	T 37365.491	502.078	156.170	147.846	1055.195	76.208	59.075	15.805	19.616	205.255
%RSD		2.073	0.530	T 0.738	2.088	1.497	0.463	1.247	0.988	5.226	0.851	3.359	4.788
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:09:41	223285.740	159903.410	157379.560	30157.259	475.007	6521.276	727655.110	51875.607	49709.019	38266.379	50947.751	120987.550
2	12:10:03	226605.090	161175.580	159338.030	30818.467	455.006	7006.472	720483.410	51444.273	49518.453	38866.265	52106.325	123354.810
3	12:10:25	224577.930	158601.060	157096.910	30457.805	460.006	6826.398	721735.890	52096.294	49548.542	39204.556	53525.813	119849.370
x		224822.920	159893.350	157938.170	30477.844	463.340	6784.715	723291.470	51805.391	49592.005	38779.067	52193.296	121397.240
σ		1673.182	1287.290	1220.530	331.059	10.409	245.269	3830.562	331.633	102.448	475.128	1291.229	1788.270
%RSD		0.744	0.805	0.773	1.086	2.246	3.615	0.530	0.640	0.207	1.225	2.474	1.473

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:09:41	68374.967	175271.790	65649.040	97212.685	0.000	261972.840	147136.620
2	12:10:03	69725.545	180112.990	66391.974	97635.143	0.000	277318.120	150874.820
3	12:10:25	70905.508	180158.480	66487.353	96770.120	0.000	281553.250	151349.090
x		69668.673	178514.420	66176.122	97205.983	0.000	273614.740	149786.840
σ		1266.228	2808.294	458.951	432.550	0.000	10302.156	2307.378
%RSD		1.818	1.573	0.694	0.445	0.000	3.765	1.540

200-35700-A-11-A 11/1/2016 12:15:02 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:15:23	126901.290	1030.032	5705.977	┬1515232.400	┬3478663.100	┬155786420.000	┬16028956.000	┬1425995.000	227725.210	30027.024	403357.560	34667
2	12:15:45	122941.770	1077.535	5690.971	┬1498131.600	┬3527815.000	┬157986210.000	┬16191072.000	1457259.700	233859.270	32416.494	416330.790	35268
3	12:16:07	127042.350	1030.032	5781.002	┬1552734.800	┬3585782.100	┬159644020.000	┬16321340.000	┬1478725.700	237784.230	29741.513	416597.330	36286
x		125628.470	1045.866	5725.984	┬1522032.900	┬3530753.400	┬157805550.000	┬16180456.000	┬1453993.500	233122.900	30728.344	412095.230	35407
σ		2327.817	27.426	48.235	┬27929.612	┬53619.932	┬1935135.100	┬146480.520	┬26516.635	5069.778	1468.934	7568.215	818
%RSD		1.853	2.622	0.842	┬1.835	┬1.519	┬1.226	┬0.905	┬1.824	2.175	4.780	1.837	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:15:23	44368.980	┬26473551.000	┬487525820.000	204552.600	111552.070	1157735.900	507253.480	12576.743	998.030	1246.047	806.520	758
2	12:15:45	44564.500	┬26761707.000	┬490680250.000	205230.860	113857.580	1184491.200	513552.020	12963.039	955.027	1250.047	815.520	829
3	12:16:07	44489.300	┬27331011.000	┬500620800.000	206238.180	115015.490	1199381.600	522993.920	13043.102	1022.031	1348.055	852.522	818
x		44474.260	┬26855423.000	┬492942290.000	205340.550	113475.050	1180536.200	514599.810	12860.961	991.696	1281.383	824.854	802
σ		98.624	┬436344.460	┬6834269.600	848.127	1763.114	21102.703	7922.361	249.374	33.948	57.774	24.380	38
%RSD		0.222	┬1.625	┬1.386	0.413	1.554	1.788	1.540	1.939	3.423	4.509	2.956	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	12:15:23	668903.910	980041.450	8497.165	6876.418	425.005	2800.235	865546.280	67340.769	3025.275	2473.184	908863.230	22086
2	12:15:45	688524.150	995668.060	8081.959	6916.435	330.003	2940.259	886569.240	70779.976	3270.321	2577.199	932005.220	22374
3	12:16:07	699434.640	1011468.100	8402.117	6771.375	450.006	2610.204	902511.650	71824.430	3260.319	2617.706	949095.320	22836
x		685620.900	995725.880	8327.081	6854.743	401.672	2783.566	884875.720	69981.725	3185.305	2556.029	929987.920	22432
σ		15471.037	15713.423	217.536	74.920	63.313	165.658	18540.782	2345.998	138.680	74.551	20191.767	378
%RSD		2.257	1.578	2.612	1.093	15.762	5.951	2.095	3.352	4.354	2.917	2.171	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:15:23	1235.046	12624.780	1469878.900	125823.160	0.000	540829.810	197564.050
2	12:15:45	1210.044	13150.186	1517900.200	127485.720	0.000	546009.660	198130.710
3	12:16:07	1165.041	12804.917	1526740.500	130307.420	0.000	552482.820	202897.550
x		1203.377	12859.961	1504839.800	127872.100	0.000	546440.760	199530.770
σ		35.476	266.993	30598.050	2266.961	0.000	5838.454	2929.451
%RSD		2.948	2.076	2.033	1.773	0.000	1.068	1.468

200-35700-A-12-A 11/1/2016 12:20:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:21:06	125571.270	1247.547	4670.654	┬1917941.900	┬4203145.200	┬184881650.000	┬17261547.000	┬1656564.400	248204.500	31234.240	525423.580	4066
2	12:21:28	121853.830	1125.038	4815.696	┬1930234.000	┬4137578.800	┬182837480.000	┬17041741.000	┬1666716.300	254295.300	33879.399	536033.530	4117
3	12:21:50	124412.630	1137.539	4895.719	┬1903971.000	┬4229924.900	┬182804140.000	┬17361628.000	┬1695200.700	255462.950	33162.961	536281.320	4100
x		123945.910	1170.041	4794.023	┬1917382.300	┬4190216.300	┬183507760.000	┬17221639.000	┬1672827.100	252654.250	32758.867	532579.480	4095
σ		1902.160	67.412	114.087	┬13140.461	┬47511.224	┬1189939.500	┬163635.220	┬20029.923	3897.567	1368.096	6198.430	25
%RSD		1.535	5.762	2.380	┬0.685	┬1.134	┬0.648	┬0.950	┬1.197	1.543	4.176	1.164	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:21:06	51740.187	┬37227674.000	┬702888600.000	268027.980	135140.680	1050835.200	575057.490	25388.322	1077.035	1397.559	897.524	86
2	12:21:28	52883.768	┬37763016.000	┬702706930.000	264756.310	138064.500	1065440.100	583156.740	25294.179	1068.034	1445.063	929.026	93
3	12:21:50	52111.341	┬37633716.000	┬709077490.000	268373.470	138482.950	1071229.100	578938.430	25837.011	1001.030	1389.058	860.522	89
x		52245.098	┬37541468.000	┬704891010.000	267052.590	137229.370	1062501.400	579050.890	25506.504	1048.700	1410.560	895.691	90
σ		583.406	┬279338.270	┬3626741.200	1996.125	1820.923	10509.709	4050.797	290.072	41.528	30.181	34.289	3

%RSD		1.117	T 0.744	T 0.515	0.747	1.327	0.989	0.700	1.137	3.960	2.140	3.828	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	12:21:06	801473.310	1090633.900	16137.809	6911.433	355.004	2920.256	933257.450	55597.578	3010.272	2429.677	1091956.400	23492
2	12:21:28	801887.540	1079822.900	16658.321	6921.437	315.003	2705.220	942443.330	57574.272	2945.260	2462.182	1118641.900	23921
3	12:21:50	806665.000	1090847.200	16242.911	7041.487	280.002	2925.257	942422.180	56325.015	3165.300	2415.675	1122044.500	23692
x		803341.950	1087101.300	16346.347	6958.119	316.670	2850.244	939374.320	56498.955	3040.278	2435.845	1110880.900	23702
σ		2885.289	6304.212	275.241	72.372	37.528	125.620	5297.373	999.761	113.047	23.859	16477.187	214
%RSD		0.359	0.580	1.684	1.040	11.851	4.407	0.564	1.770	3.718	0.979	1.483	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:21:06	1420.061	13410.393	1582455.100	131970.430	0.000	535858.020	293908.820
2	12:21:28	1340.054	13730.654	1618727.800	135296.940	0.000	539941.700	295415.100
3	12:21:50	1445.063	13325.325	1615418.700	134873.530	0.000	544506.670	295404.930
x		1401.726	13488.790	1605533.900	134046.960	0.000	540102.130	294909.620
σ		54.853	213.735	20055.163	1810.753	0.000	4326.552	866.729
%RSD		3.913	1.585	1.249	1.351	0.000	0.801	0.294

200-35700-A-12-A SD@5 11/1/2016 12:26:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:26:49	104567.000	255.002	1295.050	506315.600	785190.050	T 34184422.000	T 3177948.800	304608.380	157076.720	5180.805	103173.360	75676.418
2	12:27:10	103319.260	227.502	1260.048	508541.860	777847.490	T 33754282.000	T 3096395.800	301024.140	156299.470	5530.918	100849.200	74872.801
3	12:27:32	101065.500	230.002	1180.042	490667.870	752931.500	T 33482215.000	T 3104062.400	296280.260	155057.950	5560.928	99541.369	74948.139
x		102983.920	237.502	1245.047	501841.780	771989.680	T 33806973.000	T 3126135.700	300637.590	156144.710	5424.217	101187.970	75165.786
σ		1774.673	15.207	58.953	9740.695	16908.249	T 354056.490	T 45034.957	4177.495	1018.244	211.334	1839.541	443.822
%RSD		1.723	6.403	4.735	1.941	2.190	T 1.047	T 1.441	1.390	0.652	3.896	1.818	0.590

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:26:49	11584.024	T 6697044.300	T 128973030.000	49709.019	25910.124	203165.790	119340.740	6126.126	471.007	860.022	722.016	4560.624
2	12:27:10	11624.052	T 6628247.000	T 127764050.000	49082.166	25659.737	203504.890	118665.950	6032.091	508.008	830.021	756.517	4595.633
3	12:27:32	11458.938	T 6684130.400	T 127175650.000	47843.572	25133.937	197751.250	120206.930	6028.090	538.009	874.523	692.514	4610.638
x		11555.671	T 6669807.200	T 127970910.000	48878.252	25567.933	201473.970	119404.540	6062.102	505.674	854.855	723.682	4588.965
σ		86.131	T 36566.803	T 916372.130	949.294	396.154	3228.431	772.470	55.482	33.562	22.697	32.034	25.665
%RSD		0.745	T 0.548	T 0.716	1.942	1.549	1.602	0.647	0.915	6.637	2.655	4.427	0.559

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:26:49	149901.090	348842.930	2965.264	1435.062	45.000	615.011	845663.580	10833.520	760.017	547.009	209144.060	153846.800
2	12:27:10	150703.280	353039.930	3055.280	1380.057	70.000	600.011	834238.860	10633.391	765.018	533.509	206131.880	152686.200
3	12:27:32	154669.360	351702.090	2860.245	1400.059	30.000	535.009	834974.350	10643.397	670.013	543.009	206673.520	151949.520
x		151757.910	351194.980	2960.263	1405.059	48.333	583.344	838292.260	10703.436	731.683	541.175	207316.480	152827.510
σ		2553.095	2143.960	97.613	27.841	20.207	42.526	6394.329	112.767	53.466	6.934	1605.726	956.504
%RSD		1.682	0.610	3.297	1.981	41.808	7.290	0.763	1.054	7.307	1.281	0.775	0.626

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:26:49	245.002	2540.194	300851.050	111703.080	0.000	83744.869	54418.697
2	12:27:10	245.002	2585.200	303554.410	113928.060	0.000	86664.739	55728.013
3	12:27:32	255.002	2590.201	300560.890	111501.740	0.000	87559.397	54167.882
x		248.335	2571.865	301655.450	112377.620	0.000	85989.668	54771.531
σ		5.774	27.542	1650.936	1346.486	0.000	1994.855	837.777
%RSD		2.325	1.071	0.547	1.198	0.000	2.320	1.530

200-35700-A-12-A PDS 11/1/2016 12:32:10 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:32:32	114995.350	2477.684	52016.044	┬8614277.800	┬4032010.100	┬165166760.000	┬23237886.000	┬1763569.900	233656.460	37001.027	606752.000	46858
2	12:32:54	117553.110	2467.683	54202.996	┬8730967.600	┬4068608.100	┬165165960.000	┬22986902.000	┬1766231.000	227086.580	29721.477	601807.480	46603
3	12:33:15	117250.990	2542.694	52733.292	┬8547268.600	┬4020489.600	┬164211180.000	┬23080466.000	┬1768793.700	226853.440	29936.862	606539.470	47002
x		116599.820	2496.020	52984.111	┬8630838.000	┬4040369.200	┬164847970.000	┬23101752.000	┬1766198.200	229198.830	32219.789	605032.980	46821
σ		1397.692	40.729	1114.842	┬92962.432	┬25124.752	┬551475.650	┬126838.650	┬2612.048	3862.183	4142.074	2795.384	202
%RSD		1.199	1.632	2.104	┬1.077	┬0.622	┬0.335	┬0.549	┬0.148	1.685	12.856	0.462	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:32:32	57955.591	┬33335248.000	┬633405460.000	268759.620	135382.630	987259.300	625776.400	31674.069	2075.129	2743.226	820.520	945
2	12:32:54	57880.330	┬33891780.000	┬640411060.000	269267.720	135468.320	985531.410	620655.140	31537.811	2082.130	2739.225	871.023	945
3	12:33:15	59556.219	┬33582201.000	┬635023040.000	267748.540	135034.830	977625.580	616551.980	31493.728	2170.141	2789.233	846.021	951
x		58464.046	┬33603077.000	┬636279850.000	268591.960	135295.260	983472.100	620994.510	31568.536	2109.133	2757.228	845.855	947
σ		946.597	┬278852.760	┬3668009.300	773.344	229.576	5136.410	4621.563	94.015	52.950	27.789	25.252	3
%RSD		1.619	┬0.830	┬0.576	0.288	0.170	0.522	0.744	0.298	2.511	1.008	2.985	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	12:32:32	994204.450	989040.390	197989.050	41491.582	790.019	10528.324	887106.730	51770.280	60238.665	47711.695	1078719.800	22006
2	12:32:54	988823.040	995530.180	196795.030	40398.903	825.020	10723.449	883070.640	50461.275	59782.025	48044.148	1079806.900	22253
3	12:33:15	987481.930	996219.600	196456.070	41045.480	835.021	10533.327	889035.540	50310.821	60404.262	47933.329	1076199.400	22243
x		990169.810	993596.720	197080.050	40978.655	816.687	10595.033	886404.310	50847.459	60141.651	47896.390	1078242.000	22167
σ		3557.864	3960.929	805.254	549.396	23.630	111.239	3043.858	802.720	322.263	169.277	1850.585	139
%RSD		0.359	0.399	0.409	1.341	2.893	1.050	0.343	1.579	0.536	0.353	0.172	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:32:32	34570.817	213954.540	1552937.900	128432.950	0.000	815478.750	436917.820
2	12:32:54	35547.869	215301.720	1577359.400	128684.880	0.000	824449.320	443133.740
3	12:33:15	35648.083	219394.580	1558180.000	129118.220	0.000	824554.330	449002.720
x		35255.590	216216.950	1562825.800	128745.350	0.000	821494.140	443018.090
σ		595.144	2833.149	12856.470	346.611	0.000	5209.737	6043.278
%RSD		1.688	1.310	0.823	0.269	0.000	0.634	1.364

200-35700-A-12-G MS 11/1/2016 12:37:53 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:38:15	106479.050	1887.607	41316.147	┬8017625.900	┬2779927.200	┬103755900.000	┬15103890.000	┬1444754.600	184808.980	24197.553	422298.140	33444
2	12:38:37	109558.920	2152.639	42824.949	┬8177082.100	┬2774334.200	┬104977320.000	┬15105775.000	1470533.000	189248.380	27107.026	415848.990	32848
3	12:38:58	105704.140	1955.115	41145.727	┬8061188.900	┬2802846.600	┬103653510.000	┬14942700.000	┬1462430.100	188247.140	25379.309	426764.780	33787
x		107247.370	1998.454	41762.274	┬8085298.900	┬2785702.700	┬104128910.000	┬15050788.000	┬1459239.200	187434.830	25561.296	421637.300	33359
σ		2039.008	137.729	924.240	┬82416.874	┬15108.135	┬736526.350	┬93611.565	┬13182.053	2328.508	1463.249	5487.818	475
%RSD		1.901	6.892	2.213	┬1.019	┬0.542	┬0.707	┬0.622	┬0.903	1.242	5.724	1.302	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:38:15	42729.705	┬26467504.000	┬392424140.000	192409.270	93747.921	1023511.000	530861.900	22139.695	1913.110	2636.709	696.015	8217
2	12:38:37	41461.508	┬26553407.000	┬399956940.000	197624.760	94497.134	1036976.300	534866.940	22235.823	1883.106	2530.192	753.017	7921
3	12:38:58	41942.709	┬26527258.000	┬397322730.000	196172.760	95226.266	1029041.400	532998.490	21926.414	1877.106	2609.204	729.016	8001
x		42044.641	┬26516056.000	┬396567940.000	195402.260	94490.440	1029842.900	532909.110	22100.644	1891.107	2592.035	726.016	8046

σ		640.214	T 44033.379	T 3822706.900	2691.765	739.196	6768.331	2004.017	158.358	19.289	55.295	28.619	152
%RSD		1.523	T 0.166	T 0.964	1.378	0.782	0.657	0.376	0.717	1.020	2.133	3.942	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	12:38:15	777611.870	686690.780	179885.550	38369.115	710.015	9952.971	825866.990	64986.451	19751.697	15688.881	716079.580	183696
2	12:38:37	777946.980	682983.000	182574.560	38559.554	785.018	10148.089	832316.220	66166.078	19876.846	15793.479	727623.790	186426
3	12:38:58	771984.090	683784.900	181154.180	39201.048	740.016	10198.119	827515.830	66457.233	20062.067	15714.405	726287.350	188176
x		775847.640	684486.230	181204.760	38709.905	745.017	10099.726	828566.340	65869.921	19896.870	15732.255	723330.240	186099
σ		3350.128	1950.850	1345.215	435.869	37.751	129.532	3350.500	778.834	156.151	54.536	6314.709	2257
%RSD		0.432	0.285	0.742	1.126	5.067	1.283	0.404	1.182	0.785	0.347	0.873	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:38:15	40504.158	204537.410	1271941.100	118338.630	0.000	632456.590	355496.320
2	12:38:37	40880.074	207402.490	1269990.400	116163.410	0.000	638723.940	356502.470
3	12:38:58	41085.578	210657.940	1274845.900	118258.070	0.000	646292.480	363276.410
x		40823.270	207532.620	1272259.100	117586.700	0.000	639157.670	358425.070
σ		294.843	3062.339	2443.326	1233.265	0.000	6928.134	4231.397
%RSD		0.722	1.476	0.192	1.049	0.000	1.084	1.181

200-35700-A-12-H MSD 11/1/2016 12:43:37 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:43:58	112266.850	2210.146	44559.487	T 8452687.500	T 3393004.300	T 137075110.000	T 19395534.000	T 1595850.200	199426.030	29916.826	504249.350	40254
2	12:44:20	109397.860	2205.146	43727.287	T 8449927.500	T 3391271.700	T 137017300.000	T 19307529.000	T 1589016.600	206339.420	35698.190	517057.960	39813
3	12:44:42	107918.260	2195.145	43501.698	T 8373813.000	T 3407655.700	T 139002320.000	T 19464757.000	T 1593879.000	200933.980	32651.953	512892.160	39915
x		109860.990	2203.479	43929.491	T 8425476.000	T 3397310.600	T 137698250.000	T 19389273.000	T 1592915.200	202233.140	32755.657	511399.820	39994
σ		2210.975	7.639	557.130	T 44762.730	T 9000.917	T 1129733.900	T 78800.953	T 3517.271	3635.193	2892.077	6533.408	230
%RSD		2.013	0.347	1.268	T 0.531	T 0.265	T 0.820	T 0.406	T 0.221	1.798	8.829	1.278	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:43:58	50707.019	TM 30428459.000	T 478824280.000	219891.060	112000.060	1060499.400	583570.860	25621.679	1954.115	2611.705	733.516	884
2	12:44:20	50812.339	T 30468147.000	T 481675630.000	223604.980	113595.810	1080792.800	588168.310	26021.297	1966.116	2640.209	774.018	867
3	12:44:42	50320.851	TM 30748776.000	T 488783460.000	223990.100	111728.240	1070371.500	582856.510	25807.966	2017.122	2642.209	771.518	826
x		50613.403	TM 30548461.000	T 483094460.000	222495.380	112441.370	1070554.600	584865.230	25816.981	1979.118	2631.374	759.684	859
σ		258.772	TM 174609.510	T 5128950.800	2263.615	1008.966	10147.939	2882.767	199.962	33.455	17.064	22.696	30
%RSD		0.511	TM 0.572	T 1.062	1.017	0.897	0.948	0.493	0.775	1.690	0.648	2.988	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	12:43:58	873569.030	783031.990	186639.210	40198.419	790.019	10748.465	850279.770	60354.081	21428.767	16530.193	861362.680	19603
2	12:44:20	878919.620	790502.540	187296.520	40564.304	835.021	10213.128	844507.090	61377.809	21123.377	16806.970	872658.120	19789
3	12:44:42	888129.080	799884.660	186674.600	40559.292	910.025	10483.296	853929.450	59917.510	20938.144	16692.355	872679.180	20118
x		880205.910	791139.730	186870.110	40440.672	845.021	10481.630	849572.110	60549.800	21163.429	16676.506	868900.000	19837
σ		7364.759	8444.381	369.706	209.812	60.625	267.672	4750.873	749.565	247.752	139.067	6527.514	260
%RSD		0.837	1.067	0.198	0.519	7.174	2.554	0.559	1.238	1.171	0.834	0.751	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:43:58	35663.115	211402.280	1424039.100	120413.420	0.000	712589.680	387078.290
2	12:44:20	34886.474	215818.340	1434344.000	120232.110	0.000	723233.770	391960.420
3	12:44:42	36254.389	215281.460	1430357.300	121823.610	0.000	723969.710	390854.910
x		35601.326	214167.360	1429580.100	120823.050	0.000	719931.060	389964.540
σ		686.047	2409.629	5196.227	871.241	0.000	6368.457	2559.955
%RSD		1.927	1.125	0.363	0.721	0.000	0.885	0.656

200-35700-A-13-A 11/1/2016 12:49:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:49:42	114441.560	1550.072	5801.009	T 1985463.200	T 7551101.200	T 224694390.000	T 19063029.000	T 2057416.000	283378.800	51353.995	710534.680	5
2	12:50:04	114371.080	1317.552	5781.002	T 1942782.200	T 7500915.700	T 223648180.000	T 18976812.000	T 2080939.500	283226.240	54393.615	716277.840	5
3	12:50:26	111753.410	1400.059	5560.928	T 1945143.900	T 7495717.800	T 223808920.000	T 18817667.000	T 2068323.600	288281.810	55888.549	729294.490	5
x		113522.020	1422.561	5714.313	T 1957796.400	T 7515911.600	T 224050490.000	T 18952503.000	T 2068893.000	284962.280	53878.720	718702.330	5
σ		1532.063	117.882	133.212	T 23989.208	T 30585.701	T 563387.470	T 124474.180	T 11772.067	2875.810	2310.710	9612.038	
%RSD		1.350	8.287	2.331	T 1.225	T 0.407	T 0.251	T 0.657	T 0.569	1.009	4.289	1.337	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:49:42	72808.687	TM 92586355.000	TM 1246503400.000	513588.110	290881.400	273368.680	477148.740	110517.210	855.022	981.529	845.021	
2	12:50:04	72306.507	TM 91736369.000	TM 1238035300.000	523571.640	292753.760	273597.380	478048.990	109244.860	783.018	942.527	860.022	
3	12:50:26	74270.114	TM 93325378.000	TM 1271014200.000	525212.060	291486.840	272687.660	479077.910	110145.760	809.020	956.527	847.522	
x		73128.436	TM 92549367.000	TM 1251851000.000	520790.600	291707.330	273217.910	478091.880	109969.280	815.687	960.194	850.855	
σ		1020.106	TM 795150.050	TM 17127413.000	6291.240	955.455	473.234	965.302	654.276	36.462	19.758	8.037	

%RSD		1.395	TM 0.859	TM 1.368	1.208	0.328	0.173	0.202	0.595	4.470	2.058	0.945	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	12:49:42	1297416.800	T 1219234.800	49603.706	1960.115	560.009	2070.129	869441.370	48400.175	5550.924	4349.568	994310.500	2
2	12:50:04	1304169.500	1210090.700	50461.275	2030.124	600.011	2100.132	875422.590	48691.021	5876.036	4417.585	1001247.900	2
3	12:50:26	1298253.300	1210359.200	50491.366	2290.157	545.009	2010.121	881290.000	49247.653	5755.994	4485.604	1012317.400	2
x		1299946.600	T 1213228.200	50185.449	2093.465	568.343	2060.127	875384.660	48779.616	5727.651	4417.586	1002625.300	2
σ		3681.037	T 5203.593	504.029	173.900	28.432	45.831	5924.406	430.629	164.398	68.018	9082.150	
%RSD		0.283	T 0.429	1.004	8.307	5.003	2.225	0.677	0.883	2.870	1.540	0.906	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:49:42	615.011	19336.210	1575297.300	136768.880	0.000	978912.950	160827.240
2	12:50:04	635.012	19346.222	1593123.200	135498.570	0.000	979252.020	163715.150
3	12:50:26	675.014	19326.199	1598267.400	136980.610	0.000	989236.530	163578.820
x		641.679	19336.210	1588896.000	136416.020	0.000	982467.160	162707.070
σ		30.552	10.012	12054.387	801.558	0.000	5864.891	1629.409
%RSD		4.761	0.052	0.759	0.588	0.000	0.597	1.001

200-35700-A-14-A 11/1/2016 12:55:04 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52**
1	12:55:26	101216.410	460.006	3830.440	T 1420537.500	T 1836161.200	T 74197518.000	T 6785225.000	1205881.400	162740.680	22765.537	241020.210	171300.8
2	12:55:48	102655.170	410.005	4005.481	T 1370629.200	T 1808803.900	T 74333504.000	T 6890672.200	1199666.000	161215.960	22715.469	242034.760	168916.6
3	12:56:10	98248.733	412.505	3875.450	T 1350369.900	T 1817102.300	T 74242241.000	T 6786343.100	1206482.700	163498.030	21308.613	244880.880	172786.0
x		100706.770	427.505	3903.791	T 1380512.200	T 1820689.100	T 74257755.000	T 6820746.800	1204010.000	162484.890	22263.207	242645.280	171001.1
σ		2246.992	28.174	90.897	T 36112.704	T 14026.923	T 69307.726	T 60559.767	3774.015	1162.338	827.081	2001.436	1952.0
%RSD		2.231	6.590	2.328	T 2.616	T 0.770	T 0.093	T 0.888	0.313	0.715	3.715	0.825	1.1
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84**
1	12:55:26	22139.695	TM 28696415.000	T 268993350.000	122936.740	59485.968	1333396.800	437995.560	10653.404	823.020	1239.546	655.513	5650.9
2	12:55:48	21769.208	TM 29046324.000	T 274973790.000	121627.180	59857.294	1357852.900	446193.770	10893.559	800.019	1235.046	684.014	6236.1
3	12:56:10	22460.124	TM 29211280.000	T 274313120.000	122579.120	60063.032	1348729.900	442558.760	10714.443	866.023	1276.549	672.514	6116.1
x		22123.009	TM 28984673.000	T 272760090.000	122381.010	59802.098	1346659.900	442249.360	10753.802	829.687	1250.380	670.680	6001.0
σ		345.760	TM 262910.810	T 3278774.500	676.881	292.465	12358.754	4107.854	124.822	33.503	22.774	14.339	309.1
%RSD		1.563	TM 0.907	T 1.202	0.553	0.489	0.918	0.929	1.161	4.038	1.821	2.138	5.1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	12:55:26	468899.500	520090.140	7076.502	6851.408	465.006	2875.248	801919.000	53470.636	3635.396	2683.216	490091.280	162649.7
2	12:55:48	478105.580	520822.490	6906.431	6656.329	290.003	2740.225	809125.050	53515.780	3480.363	2770.230	496697.590	164154.4
3	12:56:10	470272.380	521472.340	7356.623	6726.357	315.003	2730.224	806156.250	54875.190	3565.381	2828.240	503388.920	168376.2
x		472425.820	520794.990	7113.185	6744.698	356.671	2781.899	805733.430	53953.869	3560.380	2760.562	496725.930	165060.1
σ		4966.481	691.509	227.327	98.824	94.651	80.997	3621.583	798.207	77.637	72.994	6648.866	2968.7
%RSD		1.051	0.133	3.196	1.465	26.537	2.912	0.449	1.479	2.181	2.644	1.339	1.7

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:55:26	1210.044	6496.266	1187579.800	109126.090	0.000	231790.680	106921.870
2	12:55:48	1290.050	7031.483	1200540.800	111934.620	0.000	236075.190	109901.160
3	12:56:10	1180.042	7061.496	1210751.200	112971.580	0.000	237109.720	109236.810
x		1226.712	6863.082	1199623.900	111344.100	0.000	234991.860	108686.610
σ		56.867	318.026	11612.846	1989.597	0.000	2820.150	1563.993
%RSD		4.636	4.634	0.968	1.787	0.000	1.200	1.439

CCV 11/1/2016 01:00:50 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	13:01:11	82162.020	71081.254	23266.228	┬10235757.000	┬3101223.500	┬28294088.000	┬10428822.000	1160921.400	99013.238	23391.403	┬2118838.000	651686
2	13:01:33	84433.329	70923.082	24012.285	┬10010743.000	┬3063500.900	┬27783518.000	┬10180042.000	1122755.100	94235.660	22134.689	┬2030105.400	637430
3	13:01:55	81358.091	69293.750	23927.163	┬9820613.600	┬2983131.200	┬27406898.000	┬10026359.000	1106756.400	95170.952	21183.454	┬2016498.300	619436
x		82651.147	70432.695	23735.225	┬10022371.000	┬3049285.200	┬27828168.000	┬10211741.000	1130144.300	96139.950	22236.515	┬2055147.300	636184
σ		1594.900	989.521	408.387	┬207816.070	┬60315.954	┬445277.410	┬203095.130	27828.259	2531.903	1107.491	┬55575.842	16161
%RSD		1.930	1.405	1.721	┬2.074	┬1.978	┬1.600	┬1.989	2.462	2.634	4.981	┬2.704	2

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	13:01:11	79127.389	┬2902258.300	┬59115332.000	965297.230	526976.470	658506.930	494992.980	71234.908	5370.865	7684.771	532.008	7051
2	13:01:33	79469.009	┬2912211.300	┬58750219.000	950560.380	515696.740	642655.840	491517.360	69187.309	5352.859	7452.666	524.508	6656
3	13:01:55	77861.448	┬2814696.400	┬57223709.000	927039.440	504002.030	626539.270	481882.040	68022.529	5150.796	7315.105	475.007	6786
x		78819.282	┬2876388.700	┬58363087.000	947632.350	515558.410	642567.340	489464.130	69481.582	5291.507	7484.181	510.508	6831
σ		846.912	┬53658.316	┬1003475.600	19296.236	11487.841	15984.010	6792.354	1626.281	122.191	186.837	30.973	201
%RSD		1.074	┬1.865	┬1.719	2.036	2.228	2.488	1.388	2.341	2.309	2.496	6.067	2

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	13:01:11	758552.990	141699.820	1636631.100	254919.730	8222.028	128322.100	657602.240	830094.430	554213.890	437416.650	570184.270	111290
2	13:01:33	748179.520	138503.110	1615583.600	251518.640	7791.821	124926.450	631615.590	823562.030	546768.950	434815.910	555350.810	108934
3	13:01:55	741443.290	138109.870	1623456.200	247270.780	8011.925	123762.820	630400.870	811811.050	542296.320	430657.000	550338.600	105573
x		749391.930	139437.600	1625223.600	251236.380	8008.591	125670.460	639872.900	821822.500	547759.720	434296.520	558624.560	108599
σ		8619.047	1968.979	10634.460	3832.278	215.123	2368.951	15366.065	9264.983	6020.243	3409.628	10319.921	2873
%RSD		1.150	1.412	0.654	1.525	2.686	1.885	2.401	1.127	1.099	0.785	1.847	2

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:01:11	31655.033	1607192.600	┬7182520.300	89057.302	0.000	218958.900	122871.260
2	13:01:33	31469.682	1578302.700	┬7132127.900	90022.467	0.000	230224.190	124120.460
3	13:01:55	31439.626	1577529.400	┬7091273.900	90987.687	0.000	233925.190	122297.060
x		31521.447	1587674.900	┬7135307.400	90022.485	0.000	227702.760	123096.260
σ		116.661	16907.234	┬45706.178	965.192	0.000	7795.231	932.293
%RSD		0.370	1.065	┬0.641	1.072	0.000	3.423	0.757

CCB 11/1/2016 01:06:33 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:06:55	85026.332	5.000	575.010	152060.520	1670.084	49854.453	49583.647	870.023	102081.670	15.000	6241.168	1100.036
2	13:07:17	85890.748	5.000	480.007	153069.700	1600.077	50215.534	48049.162	910.025	102816.160	15.000	6511.272	1095.036
3	13:07:38	86795.416	0.000	520.008	148760.940	1440.062	47572.798	47828.529	760.017	103369.570	20.000	6701.347	975.029
x		85904.166	3.333	525.008	151297.050	1570.074	49214.262	48487.112	846.688	102755.800	16.667	6484.596	1056.700
σ		884.618	2.887	47.698	2253.552	117.909	1432.968	956.013	77.678	646.069	2.887	231.246	70.774
%RSD		1.030	86.603	9.085	1.489	7.510	2.912	1.972	9.174	0.629	17.321	3.566	6.698

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:06:55	2070.129	13245.261	368954.110	180.001	85.000	415.005	585.010	862.022	289.003	522.508	540.509	2705.220
2	13:07:17	2130.136	13160.194	369250.560	160.001	75.000	430.006	545.009	874.023	291.003	518.008	531.008	2670.214
3	13:07:38	2320.162	13060.115	358279.990	190.001	110.000	445.006	470.007	813.020	266.002	545.509	521.008	2955.262
x		2173.475	13155.190	365494.890	176.668	90.000	430.006	533.342	849.688	282.002	528.675	530.842	2776.898

σ		130.529	92.674	6250.045	15.275	18.028	15.000	58.383	32.318	13.893	14.751	9.751	155.456
%RSD		6.006	0.704	1.710	8.646	20.031	3.488	10.947	3.803	4.926	2.790	1.837	5.598
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:06:55	305.003	147277.860	2300.159	20.000	0.000	5.000	652185.510	1845.102	530.008	458.506	310.003	107555.930
2	13:07:17	335.003	146531.320	2400.173	45.000	0.000	25.000	659151.680	2055.127	660.013	506.008	245.002	112286.980
3	13:07:38	315.003	146147.980	2000.120	45.000	0.000	0.000	652944.370	1860.104	555.009	469.507	225.002	110102.480
x		318.336	146652.390	2233.484	36.667	0.000	10.000	654760.520	1920.111	581.677	478.007	260.002	109981.800
σ		15.276	574.587	208.194	14.434	0.000	13.229	3821.738	117.167	68.983	24.865	44.442	2367.832
%RSD		4.799	0.392	9.321	39.365	0.000	132.288	0.584	6.102	11.859	5.202	17.093	2.153

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:06:55	130.001	890.024	855.022	89318.695	0.000	2280.156	140.001
2	13:07:17	90.000	945.027	1125.038	91641.253	0.000	2505.188	110.000
3	13:07:38	125.000	925.026	1190.043	92445.677	0.000	2230.149	95.000
x		115.000	920.025	1056.701	91135.208	0.000	2338.498	115.000
σ		21.795	27.840	177.657	1623.750	0.000	146.508	22.913
%RSD		18.952	3.026	16.812	1.782	0.000	6.265	19.924

CCVL 11/1/2016 01:12:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:12:38	96900.877	137.501	5095.779	733722.620	24167.509	81277.700	637991.680	22224.808	110746.730	40.000	19386.268	9032.447
2	13:13:00	96498.553	142.501	4830.700	723479.080	25259.126	97589.879	631584.440	21934.424	113666.280	25.000	18675.457	8912.382
3	13:13:22	93219.972	135.001	4775.684	726934.680	24888.569	105427.400	630992.640	21614.006	111884.290	25.000	19476.373	9172.523
x		95539.800	138.334	4900.721	728045.460	24771.735	94764.992	633522.920	21924.413	112099.100	30.000	19179.366	9039.118
σ		2019.076	3.819	171.150	5211.326	555.108	12320.185	3881.351	305.524	1471.585	8.660	438.717	130.199
%RSD		2.113	2.761	3.492	0.716	2.241	13.001	0.613	1.394	1.313	28.868	2.287	1.440

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:12:38	4115.508	12529.708	731785.170	2360.167	1165.041	3620.393	9142.507	1951.114	500.007	657.013	589.010	3100.288
2	13:13:00	4015.484	17093.761	819798.110	2570.198	1000.030	3585.386	9087.477	1969.116	515.008	718.015	582.510	3130.294
3	13:13:22	4085.501	18024.741	821530.350	2545.194	1005.030	3675.405	9227.554	1930.112	479.007	742.517	564.010	3325.332
x		4072.164	15882.737	791037.880	2491.853	1056.700	3627.061	9152.513	1950.114	498.007	705.848	578.510	3185.305
σ		51.329	2940.881	51321.656	114.727	93.859	45.379	70.572	19.522	18.084	44.031	12.972	122.192
%RSD		1.260	18.516	6.488	4.604	8.882	1.251	0.771	1.001	3.631	6.238	2.242	3.836

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:12:38	21178.447	154462.460	15111.848	2940.259	30.000	550.009	707379.630	1405.059	4970.741	3945.967	4940.732	117079.790
2	13:13:00	22209.788	152605.470	16087.761	2905.253	40.000	675.014	706649.620	1760.093	5155.797	4025.986	5065.770	116505.790
3	13:13:22	21423.760	155189.160	15577.276	2970.265	70.000	700.015	698590.310	1755.092	5150.796	4076.499	5110.783	116858.240
x		21603.999	154085.700	15592.295	2938.592	46.667	641.679	704206.520	1640.082	5092.445	4016.151	5039.095	116814.610
σ		538.777	1332.415	488.130	32.538	20.817	80.367	4877.457	203.551	105.428	65.819	88.108	289.478
%RSD		2.494	0.865	3.131	1.107	44.607	12.524	0.693	12.411	2.070	1.639	1.748	0.248

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:12:38	2995.269	16998.664	7796.823	95834.739	0.000	33984.613	14176.026
2	13:13:00	2970.265	17419.098	8352.092	95321.810	0.000	31965.625	13835.740
3	13:13:22	2910.254	17669.361	8477.155	95231.295	0.000	32060.807	14135.992
x		2958.596	17362.374	8208.690	95462.615	0.000	32670.348	14049.253
σ		43.692	338.927	362.127	325.431	0.000	1139.181	185.988
%RSD		1.477	1.952	4.412	0.341	0.000	3.487	1.324

200-35700-A-15-A 11/1/2016 01:18:00 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	13:18:22	104607.250	410.005	3785.430	T 1319155.900	T 1685604.800	T 69032387.000	T 6204163.700	1083287.200	157278.610	21228.511	218239.560	156067.3
2	13:18:44	106006.050	502.508	3480.363	T 1309595.300	T 1709770.500	T 70654439.000	T 6235916.000	1117680.500	160761.610	21313.619	221431.250	155608.0
3	13:19:06	109065.700	457.506	3765.425	T 1331647.200	T 1727522.300	T 71121272.000	T 6484568.100	1127232.700	163861.580	24192.546	225165.780	161084.7
x		106559.670	456.673	3677.073	T 1320132.800	T 1707632.500	T 70269366.000	T 6308215.900	1109400.100	160633.930	22244.892	221612.200	157586.6
σ		2280.197	46.257	170.649	T 11058.336	T 21040.353	T 1096390.100	T 153548.430	23113.283	3293.340	1687.254	3466.655	3038.0
%RSD		2.140	10.129	4.641	T 0.838	T 1.232	T 1.560	T 2.434	2.083	2.050	7.585	1.564	1.9

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	13:18:22	20432.517	TM 25131530.000	T 248876090.000	111652.740	55040.735	1234555.900	399972.430	9715.831	852.022	1143.039	646.013	5851.0
2	13:18:44	20792.962	TM 25554838.000	T 256519440.000	116319.500	56299.930	1259815.000	411359.620	10211.127	830.021	1180.042	690.014	6046.0
3	13:19:06	20828.006	TM 25891494.000	T 259780200.000	116254.040	56214.643	1261026.700	410391.180	10198.119	763.017	1291.050	701.515	5986.0
x		20684.495	TM 25525954.000	T 255058580.000	114742.090	55851.769	1251799.200	407241.080	10041.692	815.020	1204.710	679.181	5961.0
σ		218.922	TM 380804.070	T 5596917.900	2675.657	703.670	14945.439	6313.426	282.279	46.360	77.027	29.294	99.9

%RSD		1.058	TM 1.492	T 2.194	2.332	1.260	1.194	1.550	2.811	5.688	6.394	4.313	1.6
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	13:18:22	424995.420	493942.500	7216.562	5846.025	185.001	2590.201	765390.180	48941.754	3330.333	2654.211	455557.020	158540.4
2	13:18:44	439186.290	509675.720	7286.592	5896.043	235.002	2515.190	792221.340	51078.150	3520.372	2672.714	466128.380	160044.7
3	13:19:06	442671.700	505047.990	7046.489	5770.999	240.002	2410.174	808684.420	52056.169	3630.395	2754.228	467794.080	162003.5
x		435617.800	502888.740	7183.215	5837.689	220.001	2505.188	788765.310	50692.024	3493.700	2693.718	463159.830	160196.2
σ		9362.869	8085.810	123.476	62.937	30.414	90.429	21853.053	1592.707	151.799	53.213	6636.686	1736.4
%RSD		2.149	1.608	1.719	1.078	13.825	3.610	2.771	3.142	4.345	1.975	1.433	1.0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:18:22	1075.035	6331.202	1110050.000	106780.970	0.000	221213.380	102267.800
2	13:18:44	1215.044	6361.214	1148851.600	110907.790	0.000	223341.480	102871.500
3	13:19:06	1110.037	6711.351	1153277.100	111008.460	0.000	222120.330	103525.530
x		1133.372	6467.922	1137392.900	109565.740	0.000	222225.060	102888.280
σ		72.863	211.349	23782.814	2412.206	0.000	1067.909	629.032
%RSD		6.429	3.268	2.091	2.202	0.000	0.481	0.611

200-35700-A-16-A 11/1/2016 01:23:44 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**5**
1	13:24:06	114280.460	825.020	3915.460	T 1553360.800	T 2795460.100	T 118933520.000	T 9903310.800	1325297.500	199668.910	27617.863	409581.620	270380
2	13:24:28	113374.300	827.521	3920.461	T 1536032.300	T 2754758.500	T 118291000.000	T 9898263.700	T 1329207.100	197381.910	29871.746	400842.980	264771
3	13:24:50	111612.470	827.521	3855.446	T 1503082.500	T 2696213.900	T 113365300.000	T 9580452.800	1307101.400	197088.470	26165.523	396536.790	268053
x		113089.080	826.687	3897.122	T 1530825.200	T 2748810.800	T 116863270.000	T 9794009.100	T 1320535.300	198046.430	27885.044	402320.460	267735
σ		1356.671	1.443	36.179	T 25540.362	T 49889.713	T 3046322.300	T 184962.390	T 11797.238	1412.749	1867.501	6646.742	2817
%RSD		1.200	0.175	0.928	T 1.668	T 1.815	T 2.607	T 1.889	T 0.893	0.713	6.697	1.652	1

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**8**
1	13:24:06	34630.942	TM 39655985.000	T 495245140.000	235238.480	101754.680	T 3241054.400	806156.250	23052.932	1017.031	1447.563	811.520	6926
2	13:24:28	33989.624	TM 40203510.000	T 506494220.000	234472.800	98379.501	T 3180494.900	785687.700	22757.527	1038.032	1480.566	770.018	6981
3	13:24:50	33478.591	TM 40272557.000	T 503706620.000	236151.250	98379.501	T 3137188.100	787908.960	22686.430	1018.031	1440.062	765.518	6876
x		34033.052	TM 40044017.000	T 501815330.000	235287.510	99504.559	T 3186245.800	793250.970	22832.296	1024.365	1456.064	782.352	6928
σ		577.402	TM 337814.330	T 5858174.000	840.298	1948.658	T 52171.388	11231.350	194.355	11.847	21.548	25.360	52
%RSD		1.697	TM 0.844	T 1.167	0.357	1.958	T 1.637	1.416	0.851	1.157	1.480	3.242	0

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	13:24:06	568156.770	751854.480	14025.899	7456.668	415.005	5670.965	873895.500	71482.966	4670.654	3521.372	697495.880	193213
2	13:24:28	564557.510	749909.740	13935.824	7296.597	550.009	5485.903	850879.240	71924.861	4565.625	3478.363	708714.590	197047
3	13:24:50	557102.850	754489.650	13900.795	6841.404	485.007	5325.851	855012.930	72140.792	4370.573	3562.881	693176.140	191412
x		563272.380	752084.620	13954.173	7198.223	483.340	5494.239	859929.220	71849.540	4535.618	3520.872	699795.530	193891
σ		5637.902	2298.611	64.539	319.211	67.517	172.708	12270.472	335.319	152.275	42.261	8020.421	2878
%RSD		1.001	0.306	0.463	4.435	13.969	3.143	1.427	0.467	3.357	1.200	1.146	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:24:06	1675.084	9127.499	1931937.300	120070.960	5.000	363281.520	142794.100
2	13:24:28	1740.091	9807.885	1954157.700	121279.660	0.000	368177.210	141911.610
3	13:24:50	1550.072	9142.507	1961129.800	119960.170	0.000	363812.920	141825.880
x		1655.082	9359.297	1949074.900	120436.930	1.667	365090.550	142177.190
σ		96.576	388.561	15245.525	731.929	2.887	2686.296	535.969
%RSD		5.835	4.152	0.782	0.608	173.205	0.736	0.377

200-35700-A-17-A 11/1/2016 01:29:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:29:49	113555.530	912.525	3855.446	T 1304843.500	T 2814823.000	T 116154540.000	T 9963461.400	1377853.600	193759.780	25559.584	401221.930	26577
2	13:30:11	108884.520	897.524	3935.465	T 1300774.600	T 2787192.100	T 114065520.000	T 9878841.700	1399424.500	197058.110	26425.933	398763.990	26717
3	13:30:33	111441.330	945.027	3605.390	T 1269645.900	T 2801934.700	T 116294850.000	T 10158639.000	T 1379638.000	195570.740	25819.985	402722.480	27329
x		111293.790	918.359	3798.767	T 1291754.700	T 2801316.600	T 115504970.000	T 10000314.000	T 1385638.700	195462.880	25935.167	400902.800	26874
σ		2339.000	24.283	172.182	T 19254.530	T 13825.802	T 1248575.400	T 143493.040	T 11972.126	1651.811	444.512	1998.449	399
%RSD		2.102	2.644	4.533	T 1.491	T 0.494	T 1.081	T 1.435	T 0.864	0.845	1.714	0.498	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:29:49	34079.807	T 21099762.000	T 515515720.000	227187.950	96709.772	T 2408664.400	683269.390	20286.339	977.029	1262.048	767.018	669
2	13:30:11	34355.372	T 21574387.000	T 521030910.000	227309.590	94708.328	T 2341627.400	686310.600	20780.947	951.027	1298.051	721.016	672
3	13:30:33	34275.207	T 21254748.000	T 516845230.000	225262.070	95568.215	T 2369429.300	684222.310	20496.596	917.025	1248.047	745.017	683
x		34236.796	T 21309632.000	T 517797290.000	226586.540	95662.105	T 2373240.400	684600.760	20521.294	948.360	1269.382	744.350	675
σ		141.741	T 242025.590	T 2878219.200	1148.632	1004.020	T 33680.611	1555.525	248.228	30.090	25.796	23.008	7
%RSD		0.414	T 1.136	T 0.556	0.507	1.050	T 1.419	0.227	1.210	3.173	2.032	3.091	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	13:29:49	544992.150	796697.310	13920.811	5485.903	455.006	4110.507	846515.220	56876.884	4395.580	3267.320	613061.710	196238
2	13:30:11	540039.800	799024.850	13720.645	5080.774	330.003	4405.582	845947.450	56039.053	4405.582	3343.335	621827.650	194113
3	13:30:33	534490.140	791424.800	14110.971	5190.808	355.004	4280.550	840071.130	56997.294	4155.518	3377.842	616147.430	197270
x		539840.700	795715.650	13917.476	5252.495	380.004	4265.546	844177.940	56637.744	4318.893	3329.499	617012.260	195874
σ		5253.838	3893.959	195.184	209.490	66.145	148.109	3567.907	521.965	141.575	56.545	4446.504	1609
%RSD		0.973	0.489	1.402	3.988	17.406	3.472	0.423	0.922	3.278	1.698	0.721	0

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:29:49	1260.048	9027.444	1686692.300	117220.780	0.000	450204.490	141694.770
2	13:30:11	1310.052	9287.587	1706482.800	119647.930	0.000	456707.890	143343.780
3	13:30:33	1260.048	9122.496	1712937.300	118711.270	0.000	454318.910	143232.840
x		1276.716	9145.842	1702037.500	118526.660	0.000	453743.760	142757.130
σ		28.870	131.633	13675.583	1224.064	0.000	3289.624	921.700
%RSD		2.261	1.439	0.803	1.033	0.000	0.725	0.646

200-35700-A-18-A 11/1/2016 01:35:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:35:31	112689.690	997.530	2655.211	T 983882.410	T 4991400.200	T 173223560.000	T 13793515.000	1353894.500	232662.700	41165.776	435829.890	412855
2	13:35:53	111773.550	1070.034	2745.226	988457.270	T 5021645.200	T 172574350.000	T 13774892.000	1375338.000	232956.770	40298.661	440120.450	416766
3	13:36:14	111401.070	1127.538	2900.252	1011160.300	T 5056480.200	T 172915020.000	T 13829995.000	1367305.800	239944.860	40022.998	439704.690	421821
x		111954.770	1065.034	2766.897	T 994499.990	T 5023175.200	T 172904310.000	T 13799467.000	1365512.800	235188.110	40495.811	438551.680	417147
σ		663.148	65.148	123.949	T 14608.432	T 32566.954	T 324741.720	T 28029.769	10833.615	4122.091	596.353	2366.289	449
%RSD		0.592	6.117	4.480	T 1.469	T 0.648	T 0.188	T 0.203	0.793	1.753	1.473	0.540	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:35:31	52296.921	TM 43367901.000	T 552966440.000	290281.070	144261.650	95925.258	396280.800	9824.895	757.017	904.025	757.517	8927
2	13:35:53	52231.717	TM 44241967.000	T 563459850.000	293181.170	145098.870	98721.515	400612.530	9884.931	754.017	874.523	792.019	9317
3	13:36:14	52768.403	TM 44318791.000	T 560728960.000	290627.020	142703.320	97273.035	402251.300	9927.956	740.016	854.022	770.518	9072
x		52432.347	TM 43976220.000	T 559051750.000	291363.090	144021.280	97306.603	399714.880	9879.261	750.350	877.523	773.351	9105

σ		292.854	TM 528218.210	T 5444052.500	1583.982	1215.729	1398.431	3084.810	51.764	9.074	25.136	17.424	197
%RSD		0.559	TM 1.201	T 0.974	0.544	0.844	1.437	0.772	0.524	1.209	2.864	2.253	2
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	13:35:31	985923.610	1144769.600	40639.487	2885.250	490.007	2040.125	821036.910	30282.486	1025.032	783.018	1391690.400	226184
2	13:35:53	984810.620	1140469.200	40203.431	2805.236	460.006	1950.114	827032.710	30768.375	1090.036	793.519	1405684.800	232571
3	13:36:14	969151.540	1132983.700	41070.541	2515.190	420.005	2095.132	824470.320	31119.025	1130.038	823.520	1415788.700	232003
x		979961.920	1139407.500	40637.820	2735.225	456.673	2028.457	824179.980	30723.295	1081.702	800.019	1404388.000	230253
σ		9378.595	5964.250	433.558	194.711	35.120	73.210	3008.428	420.087	52.997	21.019	12101.375	3535
%RSD		0.957	0.523	1.067	7.119	7.690	3.609	0.365	1.367	4.899	2.627	0.862	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:35:31	780.018	9597.763	1059621.100	119486.780	0.000	728594.860	125430.210
2	13:35:53	685.014	10083.049	1058790.800	121873.970	0.000	753224.300	127284.190
3	13:36:14	745.017	9652.795	1057151.500	119476.710	0.000	748263.150	128589.150
x		736.683	9777.869	1058521.100	120279.160	0.000	743360.770	127101.180
σ		48.047	265.722	1256.720	1381.162	0.000	13026.024	1587.400
%RSD		6.522	2.718	0.119	1.148	0.000	1.752	1.249

200-35736-A-13-A 11/1/2016 01:40:52 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:41:13	114562.390	1367.556	3175.302	┬1308485.600	┬3549062.500	┬194083240.000	┬13553743.000	1327622.000	224055.980	16588.251	579512.890	38917
2	13:41:35	112830.630	1307.551	3190.305	┬1319070.500	┬3600494.300	┬194707690.000	┬13632421.000	1323016.600	228647.710	17394.072	593942.770	39868
3	13:41:56	112256.780	1287.550	3400.347	┬1315969.000	┬3600828.600	┬197312390.000	┬13789841.000	1346132.000	226285.800	15407.118	587945.660	39791
x		113216.600	1320.886	3255.318	┬1314508.400	┬3583461.800	┬195367770.000	┬13658669.000	1332256.900	226329.830	16463.147	587133.770	39525
σ		1200.286	41.637	125.822	┬5441.513	┬29791.112	┬1712787.300	┬120217.590	12234.874	2296.182	999.367	7249.119	528
%RSD		1.060	3.152	3.865	┬0.414	┬0.831	┬0.877	┬0.880	0.918	1.015	6.070	1.235	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:41:13	48846.475	┬17913075.000	┬625765790.000	252249.560	117890.480	97252.918	342115.620	21891.368	829.021	1015.531	780.018	7166
2	13:41:35	49538.513	┬17808051.000	┬619902130.000	248706.910	117704.170	96553.872	343268.970	22008.522	792.019	1069.534	807.520	7191
3	13:41:56	50145.323	┬18118557.000	┬626184030.000	249767.600	115649.860	94969.809	341125.640	21925.412	852.022	1011.031	798.519	7021
x		49510.104	┬17946561.000	┬623950650.000	250241.360	117081.500	96258.866	342170.080	21941.767	824.354	1032.032	795.352	7126
σ		649.890	┬157938.450	┬3512351.400	1818.220	1243.332	1169.794	1072.706	60.265	30.272	32.556	14.021	91
%RSD		1.313	┬0.880	┬0.563	0.727	1.062	1.215	0.314	0.275	3.672	3.155	1.763	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	13:41:13	588763.790	935941.880	13910.803	3775.428	375.004	2390.171	825478.430	35016.747	2225.148	1697.586	1060935.900	208404
2	13:41:35	593176.180	929749.310	14065.933	3315.330	405.005	2280.156	844002.470	35708.211	2205.146	1703.087	1051681.100	210207
3	13:41:56	596056.250	936459.790	14336.163	3590.387	260.002	2170.141	836371.870	35096.915	2300.159	1719.589	1061069.000	210825
x		592665.410	934050.330	14104.300	3560.381	346.670	2280.156	835284.260	35273.958	2243.484	1706.754	1057895.400	209812
σ		3672.962	3733.785	215.260	231.512	76.541	110.015	9309.792	378.205	50.090	11.450	5382.095	1257
%RSD		0.620	0.400	1.526	6.502	22.079	4.825	1.115	1.072	2.233	0.671	0.509	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:41:13	855.022	15021.767	1398773.100	122861.180	0.000	532327.550	193962.110
2	13:41:35	855.022	15372.086	1422364.800	123183.550	0.000	542198.210	197832.200
3	13:41:56	825.020	15407.118	1417163.500	122035.150	5.000	547858.880	196284.060
x		845.021	15266.990	1412767.100	122693.290	1.667	540794.880	196026.120
σ		17.321	213.091	12395.092	592.323	2.887	7860.187	1947.896
%RSD		2.050	1.396	0.877	0.483	173.205	1.453	0.994

200-35700-A-16-A @2 11/1/2016 01:46:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:46:56	101588.670	515.008	2180.143	┬881817.910	┬1428385.400	┬60481577.000	┬5069928.100	688409.550	161387.610	14201.048	212602.400	138961.910
2	13:47:17	102222.520	502.508	2230.149	889130.410	1445368.100	┬60905472.000	┬5093694.400	682535.210	161660.240	14701.481	206359.670	137888.040
3	13:47:39	103339.380	490.007	2080.130	863630.650	┬1390814.700	┬58686423.000	┬4909697.000	674674.670	162690.190	14411.228	207270.870	138689.650
x		102383.520	502.508	2163.474	┬878192.990	┬1421522.700	┬60024491.000	┬5024439.800	681873.140	161912.680	14437.919	208744.310	138513.200
σ		886.392	12.500	76.386	┬13130.671	┬27916.634	┬1178023.700	┬100078.220	6891.337	687.000	251.282	3372.120	558.254
%RSD		0.866	2.488	3.531	┬1.495	┬1.964	┬1.963	┬1.992	1.011	0.424	1.740	1.615	0.403

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:46:56	18885.694	┬20755490.000	┬262548570.000	124125.500	52397.235	┬1661284.000	434742.020	12827.935	761.017	1080.035	684.514	5060.768
2	13:47:17	18645.424	┬20684962.000	┬261426270.000	121183.970	50702.004	1657323.700	437277.060	12870.968	740.016	1088.036	686.014	5055.767
3	13:47:39	17989.704	┬20591621.000	┬259478130.000	119109.090	51604.768	1661682.300	430093.730	13005.072	718.015	1052.533	700.515	5265.832
x		18506.940	┬20677358.000	┬261150990.000	121472.850	51568.002	┬1660096.700	434037.600	12901.325	739.683	1073.535	690.348	5127.456
σ		463.770	┬82198.505	┬1553617.600	2520.649	848.213	┬2409.707	3643.106	92.388	21.503	18.622	8.837	119.863

%RSD		2.506	┬0.398	┬0.595	2.075	1.645	┬0.145	0.839	0.716	2.907	1.735	1.280	2.338
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:46:56	291603.860	476546.880	7346.619	3945.467	250.002	2745.226	808946.700	36705.374	2450.180	1899.608	360251.810	158207.340
2	13:47:17	292250.030	467567.870	7111.517	3855.446	215.001	3130.294	796361.830	36399.705	2400.173	1846.602	360328.440	159913.510
3	13:47:39	287447.590	464380.590	7136.528	3595.388	275.002	2835.241	797567.480	36975.971	2410.174	1842.602	360476.590	158621.250
x		290433.830	469498.450	7198.221	3798.767	246.669	2903.587	800958.670	36693.683	2420.176	1862.938	360352.280	158914.030
σ		2606.261	6308.725	129.123	181.792	30.139	201.427	6944.052	288.311	26.461	31.821	114.272	889.968
%RSD		0.897	1.344	1.794	4.786	12.218	6.937	0.867	0.786	1.093	1.708	0.032	0.560

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:46:56	875.023	4740.674	1003444.300	110656.130	0.000	184849.430	73531.851
2	13:47:17	780.018	4815.696	1004712.300	111894.350	0.000	185349.940	73481.630
3	13:47:39	840.021	5100.780	1014159.500	110495.060	0.000	184197.270	72185.987
x		831.687	4885.717	1007438.700	111015.180	0.000	184798.880	73066.489
σ		48.047	189.990	5854.838	765.632	0.000	577.997	762.951
%RSD		5.777	3.889	0.581	0.690	0.000	0.313	1.044

CCV 11/1/2016 01:52:18 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**5**
1	13:52:39	86946.199	74862.756	25083.862	┬10632492.000	┬3211564.600	┬29484794.000	┬10842720.000	1205795.500	104989.650	24012.285	┬2202619.500	66826
2	13:53:01	82986.088	73220.485	24392.837	┬10381442.000	┬3100524.400	┬28644362.000	┬10546280.000	1166694.300	99154.071	23030.902	┬2149302.500	66535
3	13:53:23	84413.228	72185.987	25078.854	┬10166415.000	┬3088487.200	┬27954146.000	┬10497565.000	1160086.100	97142.276	23040.916	┬2098966.200	64394
x		84781.838	73423.076	24851.851	┬10393449.000	┬3133525.400	┬28694434.000	┬10628855.000	1177525.300	100428.660	23361.367	┬2150296.100	65918
σ		2005.624	1349.836	397.526	┬233270.160	┬67851.417	┬766551.570	┬186807.340	24704.657	4075.997	563.734	┬51833.781	1328
%RSD		2.366	1.838	1.600	┬2.244	┬2.165	┬2.671	┬1.758	2.098	4.059	2.413	┬2.411	2

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**8**
1	13:52:39	84051.406	┬3057458.000	┬62310703.000	1009928.900	543262.020	670199.430	511531.280	73401.277	5608.944	7880.363	493.507	711
2	13:53:01	82187.143	┬2979456.800	┬60602246.000	977673.260	526594.680	657045.930	509093.320	72405.938	5282.837	7808.829	514.008	686
3	13:53:23	80242.703	┬2911979.400	┬60294073.000	968563.800	519337.200	647248.530	499216.180	70174.423	5206.813	7530.201	482.007	713
x		82160.417	┬2982964.700	┬61069008.000	985388.650	529731.300	658164.630	506613.590	71993.879	5366.198	7739.797	496.507	703
σ		1904.492	┬72802.699	┬1086323.600	21735.057	12266.948	11516.274	6521.287	1652.420	213.633	185.006	16.210	14
%RSD		2.318	┬2.441	┬1.779	2.206	2.316	1.750	1.287	2.295	3.981	2.390	3.265	2

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	13:52:39	773528.270	142052.800	1661263.500	261221.180	8487.160	130826.460	655397.910	834223.100	562122.240	443249.250	567437.890	110152
2	13:53:01	760582.410	138987.120	1655979.400	252569.350	8632.235	127395.030	646905.590	828497.850	557154.540	440995.120	561320.900	107837
3	13:53:23	742937.680	134913.850	1637737.200	251909.470	8467.150	125314.350	634533.340	820060.560	549465.490	435584.600	556751.400	106509
x		759016.120	138651.260	1651660.000	255233.330	8528.849	127845.280	645612.280	827593.840	556247.420	439942.990	561836.730	108166
σ		15355.329	3581.306	12343.606	5196.112	90.093	2783.503	10492.239	7124.419	6376.947	3939.157	5361.888	1843
%RSD		2.023	2.583	0.747	2.036	1.056	2.177	1.625	0.861	1.146	0.895	0.954	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:52:39	31454.654	1579235.100	┬7240221.200	88966.821	0.000	223883.680	122372.610
2	13:53:01	32286.242	1579361.300	┬7185666.700	89931.980	0.000	234067.160	124054.980
3	13:53:23	31705.128	1579026.700	┬7097442.900	87991.664	0.000	235208.060	119738.580
x		31815.341	1579207.700	┬7174443.600	88963.488	0.000	231052.970	122055.390
σ		426.609	168.969	┬72047.766	970.162	0.000	6234.931	2175.613
%RSD		1.341	0.011	┬1.004	1.091	0.000	2.698	1.782

CCB 11/1/2016 01:58:01 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:58:23	91601.033	5.000	430.006	156925.300	340.003	4760.680	48249.740	410.005	105694.080	15.000	6756.369	995.030
2	13:58:45	89077.409	2.500	520.008	158368.860	450.006	4630.643	45502.028	490.007	108874.450	30.000	6791.383	1050.033
3	13:59:06	87428.714	7.500	430.006	155714.020	410.005	5170.802	47236.845	470.007	104395.930	10.000	6206.155	895.024
x		89369.052	5.000	460.006	157002.730	400.005	4854.042	46996.204	456.673	106321.490	18.333	6584.636	980.029
σ		2101.393	2.500	51.963	1329.112	55.679	281.922	1389.572	41.634	2304.238	10.408	328.241	78.586
%RSD		2.351	50.000	11.296	0.847	13.920	5.808	2.957	9.117	2.167	56.773	4.985	8.019

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:58:23	2400.173	845.021	182079.180	80.000	50.000	255.002	470.007	936.026	283.002	529.508	546.509	2930.258
2	13:58:45	2435.178	740.016	174367.370	65.000	25.000	270.002	330.003	907.025	282.002	546.509	536.509	2680.215
3	13:59:06	2330.163	905.025	176226.780	135.001	55.000	220.001	440.006	833.021	281.002	569.510	544.509	2910.254
x		2388.505	830.021	177557.780	93.334	43.333	248.335	413.339	892.024	282.002	548.509	542.509	2840.242
σ		53.471	83.521	4024.509	36.856	16.073	25.658	73.713	53.116	1.000	20.076	5.292	138.948
%RSD		2.239	10.062	2.267	39.488	37.091	10.332	17.834	5.955	0.355	3.660	0.975	4.892

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:58:23	90.000	149083.810	2215.147	20.000	0.000	40.000	668732.220	1935.112	545.009	415.505	70.000	109045.560
2	13:58:45	110.000	149124.170	2215.147	25.000	0.000	5.000	668232.780	1940.113	525.008	452.506	65.000	111270.200
3	13:59:06	85.000	147489.720	2220.148	10.000	0.000	15.000	668076.710	1810.098	535.009	486.007	95.000	111894.350
x		95.000	148565.900	2216.814	18.333	0.000	20.000	668347.240	1895.108	535.009	451.339	76.667	110736.700
σ		13.229	932.217	2.887	7.638	0.000	18.028	342.420	73.663	10.000	35.265	16.073	1497.451
%RSD		13.925	0.627	0.130	41.660	0.000	90.139	0.051	3.887	1.869	7.814	20.965	1.352

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:58:23	100.000	930.026	725.016	88715.486	0.000	2205.146	20.000
2	13:58:45	85.000	875.023	805.019	91892.631	0.000	1970.116	45.000
3	13:59:06	100.000	825.020	775.018	89288.534	0.000	2015.122	30.000
x		95.000	876.690	768.351	89965.551	0.000	2063.461	31.667
σ		8.660	52.523	40.416	1693.318	0.000	124.749	12.583
%RSD		9.116	5.991	5.260	1.882	0.000	6.046	39.736

CCVL 11/1/2016 02:03:44 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:04:06	97132.218	142.501	4805.693	761351.360	24878.554	65327.781	659942.050	21804.253	113797.170	15.000	19376.257	8917.385
2	14:04:28	97011.518	175.001	4655.650	758495.460	24728.331	71467.902	667150.700	23776.948	114663.080	20.000	19481.379	9117.493
3	14:04:50	94336.226	150.001	4900.720	761215.350	25679.768	76028.013	654202.280	22585.293	110615.860	45.000	19381.262	9422.663
x		96159.987	155.834	4787.354	760354.060	25095.551	70941.232	660431.680	22722.165	113025.370	26.667	19412.966	9152.514
σ		1580.576	17.017	123.560	1611.026	511.492	5369.523	6488.079	993.444	2131.137	16.073	59.300	254.453
%RSD		1.644	10.920	2.581	0.212	2.038	7.569	0.982	4.372	1.886	60.273	0.305	2.780

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:04:06	4485.604	7876.861	689055.440	2660.212	1055.033	3685.407	9232.557	2182.143	586.010	736.016	558.509	2970.265
2	14:04:28	4245.541	8652.245	723515.620	2815.238	1010.031	3520.372	9482.697	2068.128	512.008	720.016	555.009	3105.289
3	14:04:50	4160.519	10063.037	727555.920	2505.188	1210.044	3415.350	9127.499	2060.127	545.009	714.515	581.010	3040.277
x		4297.221	8864.048	713375.660	2660.213	1091.703	3540.376	9280.917	2103.466	547.676	723.516	564.843	3038.610

σ		168.592	1108.371	21158.588	155.025	104.928	136.136	182.471	68.253	37.073	11.170	14.110	67.528
%RSD		3.923	12.504	2.966	5.828	9.611	3.845	1.966	3.245	6.769	1.544	2.498	2.222
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:04:06	21664.071	151192.680	15442.150	3035.276	60.000	725.016	693587.750	1685.085	4965.740	3986.977	5155.797	114361.010
2	14:04:28	21458.806	159459.190	15602.300	3110.290	65.000	735.016	704459.780	1545.072	5035.761	4033.988	5030.759	117371.830
3	14:04:50	21869.339	151929.330	16282.950	3060.281	50.000	825.020	692045.580	1670.084	5270.833	4157.519	5230.821	115760.620
x		21664.072	154193.730	15775.800	3068.616	58.333	761.684	696697.700	1633.414	5090.778	4059.494	5139.126	115831.160
σ		205.267	4574.867	446.445	38.195	7.638	55.078	6766.236	76.873	159.815	88.085	101.067	1506.650
%RSD		0.947	2.967	2.830	1.245	13.093	7.231	0.971	4.706	3.139	2.170	1.967	1.301

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:04:06	2625.207	16923.588	8111.974	92898.183	0.000	33548.732	14040.912
2	14:04:28	2850.244	17429.108	8757.300	94306.056	0.000	33273.180	13650.588
3	14:04:50	3000.270	17439.119	8242.037	93732.836	0.000	31920.538	14301.133
x		2825.240	17263.938	8370.437	93645.692	0.000	32914.150	13997.544
σ		188.778	294.795	341.286	707.971	0.000	871.453	327.434
%RSD		6.682	1.708	4.077	0.756	0.000	2.648	2.339

Analyte ICPS

STD0 11/1/2016 10:50:03 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:50:25	98.250%	-1.341	18.117	-193.043	34.114	24.943	1540.602	147.447	97.280%	5.136	1051.104	-30.052
2	10:50:47	99.305%	-3.912	-14.365	2712.581	-0.110	63.264	1709.253	70.381	100.282%	0.000	697.366	26.467
3	10:51:08	102.444%	0.891	-0.396	-458.486	-21.944	-57.926	-208.112	69.642	102.439%	14.655	1661.382	1.894
x		100.000%	-1.454	1.119	687.018	4.020	10.093	1013.915	95.823	100.000%	6.597	1136.618	-0.564
σ		2.182%	2.404	16.294	1759.203	28.256	61.945	1061.660	44.709	2.591%	7.436	487.664	28.339
%RSD		2.182	165.329	1456.562	256.064	702.873	613.718	104.709	46.658	2.591	112.719	42.905	5027.618

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:50:25	2428.116	-27.671	4567.375	25.289	-8.856	5.352	36.727	28.600	272.451	-38.628	761.410	4015.002
2	10:50:47	2564.615	27.301	1808.434	-6.628	-9.318	-17.249	-27.214	-200.972	347.658	-63.343	758.697	4082.885
3	10:51:08	2261.636	-10.071	-3317.951	-7.363	9.891	0.467	-6.900	-26.936	308.599	-9.881	750.637	3979.124
x		2418.122	-3.480	1019.286	3.766	-2.761	-3.810	0.871	-66.436	309.570	-37.284	756.914	4025.670
σ		151.736	28.072	4001.457	18.643	10.959	11.892	32.671	119.775	37.613	26.756	5.603	52.696
%RSD		6.275	806.597	392.575	495.006	396.940	312.096	3751.146	180.287	12.150	71.764	0.740	1.309

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:50:25	16.159	98.969%	-2.814	-11.998	-62.909	25.837	98.635%	370.055	0.129	-0.477	2.179	97.753%
2	10:50:47	-9.311	100.475%	1.557	2.878	-51.383	9.450	99.449%	402.221	-6.022	5.927	2.096	100.761%
3	10:51:08	-4.771	100.556%	31.355	1.904	-53.721	11.745	101.916%	358.143	11.524	-0.520	-3.053	101.485%
x		0.692	100.000%	10.033	-2.405	-56.004	15.677	100.000%	376.806	1.877	1.643	0.407	100.000%
σ		13.586	0.894%	18.594	8.322	6.093	8.873	1.708%	22.801	8.903	3.710	2.997	1.979%
%RSD		1962.256	0.894	185.333	345.977	10.879	56.598	1.708	6.051	474.285	225.742	735.763	1.979

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:50:25	4.710	-1.540	-45.355	99.972%	0.000	4376.296	257.747
2	10:50:47	18.528	3.546	15.570	99.804%	0.000	3294.120	93.167
3	10:51:08	3.393	-1.653	13.307	100.224%	0.000	2019.465	136.895
x		8.877	0.118	-5.493	100.000%	0.000	3229.960	162.603
σ		8.384	2.969	34.540	0.211%	0.000	1179.725	85.248
%RSD		94.442	2524.510	628.858	0.211	0.000	36.524	52.427

STD1 11/1/2016 10:55:00 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:55:21	106.984%	164.157	4651.643	598448.020	24416.544	61084.556	678520.260	24874.341	109.685%	22.833	13067.832	9293.169
2	10:55:43	102.651%	149.439	5036.529	T 625392.360	26339.971	61024.547	685742.670	25288.284	107.919%	9.269	11315.002	8777.705
3	10:56:05	101.746%	158.196	4945.425	610594.190	24794.514	62167.024	692471.640	24877.499	107.296%	13.993	11585.433	9352.899
x		103.794%	157.264	4877.865	T 611478.190	25183.676	61425.375	685578.190	25013.375	108.300%	15.365	11989.422	9141.258
σ		2.800%	7.403	201.141	T 13493.903	1019.058	642.987	6977.144	238.084	1.239%	6.885	943.667	316.259
%RSD		2.697	4.708	4.124	T 2.207	4.047	1.047	1.018	0.952	1.144	44.812	7.871	3.460

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:55:21	3242.107	6993.478	540995.280	2588.961	1138.190	3934.132	10445.167	903.384	386.533	176.629	717.700	3682.451
2	10:55:43	3410.444	6742.902	553911.400	2738.575	1175.741	4129.320	10188.105	1009.659	332.440	196.473	755.841	3887.587
3	10:56:05	3716.186	7217.713	554672.740	2829.292	1229.313	3856.137	10293.083	1069.772	322.132	203.930	749.532	3718.646

x		3456.246	6984.698	549859.810	2718.942	1181.081	3973.196	10308.785	994.272	347.035	192.344	741.024	3762.895
σ		240.336	237.528	7686.340	121.363	45.796	140.719	129.248	84.254	34.592	14.111	20.444	109.493
%RSD		6.954	3.401	1.398	4.464	3.877	3.542	1.254	8.474	9.968	7.337	2.759	2.910
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:55:21	22541.862	105.539%	16423.697	3012.746	-61.236	742.092	104.433%	880.971	5350.289	4016.976	5101.390	100.226%
2	10:55:43	24018.224	107.179%	15998.901	3335.662	-38.227	698.174	103.331%	895.205	5120.274	4094.046	5528.594	103.371%
3	10:56:05	24077.825	105.132%	16363.681	3361.202	-8.567	709.279	104.468%	794.525	5317.415	4164.515	5444.424	101.184%
x		23545.970	105.950%	16262.093	3236.537	-36.010	716.515	104.077%	856.900	5262.659	4091.845	5358.136	101.593%
σ		870.094	1.084%	229.898	194.229	26.404	22.836	0.646%	54.486	124.400	73.794	226.296	1.612%
%RSD		3.695	1.023	1.414	6.001	73.324	3.187	0.621	6.358	2.364	1.803	4.223	1.587

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:55:21	3027.273	18102.653	14200.387	100.997%	0.000	105798.540	14819.947
2	10:55:43	3166.454	18691.756	13955.539	101.080%	0.000	89276.833	14871.865
3	10:56:05	3126.831	18071.726	14533.741	101.583%	0.000	75904.604	15171.725
x		3106.853	18288.712	14229.889	101.220%	0.000	90326.659	14954.513
σ		71.709	349.389	290.228	0.317%	0.000	14974.594	189.895
%RSD		2.308	1.910	2.040	0.314	0.000	16.578	1.270

STD2 11/1/2016 11:00:43 AM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:01:05	105.302%	758.057	24909.279	T 3099522.600	126234.170	290258.150	T 3417293.700	125942.950	111.228%	4.503	56886.445	43041.307
2	11:01:27	101.691%	740.948	25854.841	T 3051915.200	125615.670	289162.030	T 3405834.300	125634.550	110.612%	13.585	56303.566	43853.997
3	11:01:48	102.766%	742.862	24032.790	T 3156179.800	129011.880	299399.850	T 3496013.600	129592.480	106.547%	14.088	57745.966	44775.243
x		103.253%	747.289	24932.303	T 3102539.200	126953.900	292940.010	T 3439713.900	127056.660	109.462%	10.725	56978.659	43890.182
σ		1.854%	9.374	911.243	T 52197.702	1808.888	5621.167	T 49092.532	2201.493	2.543%	5.394	725.608	867.534
%RSD		1.796	1.254	3.655	T 1.682	1.425	1.919	T 1.427	1.733	2.324	50.295	1.273	1.977

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:01:05	3380.803	31044.223	T 2613064.300	13094.903	5919.647	18664.649	53950.459	4985.920	211.815	929.265	752.625	3734.698
2	11:01:27	3208.381	31848.694	T 2639868.300	12783.482	5514.103	20055.211	52911.740	4638.630	301.655	857.655	749.554	3752.289
3	11:01:48	3628.066	32799.965	T 2743774.700	12864.184	5777.048	18204.478	53551.854	4639.308	346.691	764.282	783.123	3934.821
x		3405.750	31897.627	T 2665569.100	12914.190	5736.933	18974.780	53471.351	4754.619	286.721	850.401	761.768	3807.269
σ		210.952	878.893	T 69041.307	161.621	205.727	963.555	524.018	200.313	68.667	82.730	18.558	110.812
%RSD		6.194	2.755	T 2.590	1.251	3.586	5.078	0.980	4.213	23.949	9.728	2.436	2.911
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:01:05	120929.160	107.005%	78886.278	16374.529	-132.298	3753.780	103.972%	788.694	26241.221	20754.104	27277.425	102.828%
2	11:01:27	119185.270	106.383%	81147.954	16316.181	-26.030	3850.797	103.731%	747.144	26673.493	20744.617	27046.329	100.249%
3	11:01:48	118139.180	105.016%	82831.637	16510.869	16.443	3579.097	103.690%	713.682	27072.451	20793.368	27443.394	102.413%
x		119417.870	106.134%	80955.290	16400.526	-47.295	3727.891	103.798%	749.840	26662.388	20764.030	27255.716	101.830%
σ		1409.457	1.018%	1979.724	99.914	76.617	137.688	0.152%	37.579	415.726	25.847	199.421	1.385%
%RSD		1.180	0.959	2.445	0.609	161.996	3.693	0.147	5.012	1.559	0.124	0.732	1.360

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:01:05	15390.378	92873.406	64712.219	98.976%	0.000	118339.210	79637.194
2	11:01:27	15587.411	94296.685	64629.259	98.724%	0.000	121078.910	77769.545
3	11:01:48	15359.986	94809.983	66421.102	98.678%	0.000	125570.590	78910.991
x		15445.925	93993.358	65254.194	98.792%	0.000	121662.900	78772.577

σ		123.469	1003.289	1011.423	0.160%	0.000	3650.889	941.486
%RSD		0.799	1.067	1.550	0.162	0.000	3.001	1.195

STD3 11/1/2016 11:06:27 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:06:49	98.850%	91742.054	30261.732	┬12614972.000	┬3889799.900	┬35856986.000	┬13771776.000	┬1499830.700	97.450%	29790.452	┬2772973.500	852825
2	11:07:10	95.233%	91576.721	31560.524	┬12332805.000	┬3812206.600	┬34890137.000	┬13386138.000	1491837.300	98.317%	28880.499	┬2751761.900	842649
3	11:07:32	96.332%	89486.361	30122.099	┬12803060.000	┬3921489.100	┬36531528.000	┬14134759.000	┬1529248.300	94.330%	30489.692	┬2799916.000	856839
x		96.805%	90935.045	30648.119	┬12583612.000	┬3874498.600	┬35759550.000	┬13764224.000	┬1506972.100	96.699%	29720.215	┬2774883.800	850771
σ		1.854%	1257.318	793.245	┬236690.900	┬56225.138	┬825021.770	┬374368.030	┬19701.384	2.097%	806.892	┬24133.826	7314
%RSD		1.916	1.383	2.588	┬1.881	┬1.451	┬2.307	┬2.720	┬1.307	2.168	2.715	┬0.870	0

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:06:49	8484.822	┬3874965.600	┬78016073.000	1268043.800	686991.360	862319.560	647953.550	90399.966	-816.050	9052.139	777.304	3146
2	11:07:10	7263.372	┬3771499.700	┬77049944.000	1251505.200	681386.970	867301.920	651575.470	91475.513	-754.967	9092.399	742.203	2925
3	11:07:32	7122.724	┬3879695.800	┬79160549.000	1295377.900	691316.960	853682.270	646431.710	92857.244	-871.170	9182.866	742.707	2582
x		7623.639	┬3842053.700	┬78075522.000	1271642.300	686565.100	861101.250	648653.580	91577.574	-814.062	9109.134	754.071	2884
σ		749.114	┬61147.326	┬1056557.900	22156.575	4978.701	6891.077	2642.364	1231.814	58.127	66.951	20.121	284
%RSD		9.826	┬1.592	┬1.353	1.742	0.725	0.800	0.407	1.345	7.140	0.735	2.668	9

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	11:06:49	941608.840	98.911%	┬1935025.100	312587.770	287.915	153548.530	95.718%	1001019.300	672617.980	524051.210	677359.880	93.6
2	11:07:10	944569.480	96.418%	2007160.300	313773.390	430.058	153234.460	94.989%	1014348.500	675231.390	528152.250	685523.420	94.0
3	11:07:32	937360.080	94.605%	2025461.300	310963.850	231.158	154763.510	94.790%	996358.490	668307.940	527316.290	689945.670	95.6
x		941179.470	96.645%	┬1989215.600	312441.670	316.377	153848.830	95.166%	1003908.800	672052.440	526506.580	684276.330	94.4
σ		3623.829	2.162%	┬47814.063	1410.454	102.459	807.552	0.488%	9336.562	3496.204	2167.105	6384.902	1.0
%RSD		0.385	2.237	┬2.404	0.451	32.385	0.525	0.513	0.930	0.520	0.412	0.933	1

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:06:49	38029.914	1878334.800	┬15847968.000	94.841%	0.000	256325.130	141963.970
2	11:07:10	38153.654	1812461.000	┬15249952.000	98.035%	0.000	263885.890	137836.860
3	11:07:32	39104.106	1856412.700	┬15799197.000	95.214%	0.000	276886.110	144605.780
x		38429.225	1849069.500	┬15632372.000	96.030%	0.000	265699.040	141468.870
σ		587.730	33545.204	┬332082.520	1.746%	0.000	10399.718	3411.507
%RSD		1.529	1.814	┬2.124	1.819	0.000	3.914	2.411

STD4 11/1/2016 11:12:11 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	11:12:32	96.427%	277885.900	93658.258	┬40597091.000	┬12607007.000	┬117159330.000	┬45435394.000	┬5026112.900	92.678%	97026.371	┬9057714.900
2	11:12:54	94.618%	282781.580	96801.836	┬40547447.000	┬12643899.000	┬116083600.000	┬44726767.000	┬5021126.000	92.671%	95860.374	┬9100289.600
3	11:13:16	93.880%	275476.580	94426.272	┬39548893.000	┬12322013.000	┬114024350.000	┬44362239.000	┬5056818.400	92.730%	96512.846	┬8990926.000
x		94.975%	278714.690	94962.122	┬40231144.000	┬12524306.000	┬115755760.000	┬44841466.000	┬5034685.800	92.693%	96466.530	┬9049643.500
σ		1.310%	3722.351	1638.863	┬591367.590	┬176159.370	┬1592994.600	┬545694.310	┬19328.911	0.032%	584.376	┬55126.750
%RSD		1.380	1.336	1.726	┬1.470	┬1.407	┬1.376	┬1.217	┬0.384	0.035	0.606	┬0.609

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	11:12:32	21086.098	┬12628845.000	┬251100850.000	┬3997683.200	2164183.400	┬2586021.400	1954937.600	289375.820	-2989.055	27367.964	731.237
2	11:12:54	19703.815	┬12690619.000	┬254180500.000	┬4046874.900	┬2174881.100	┬2637722.700	1983692.900	283959.900	-2947.159	27116.231	763.459

3	11:13:16	20506.392	┬12432813.000	┬249895840.000	┬3984424.900	2139424.700	┬2607813.600	1941126.200	286045.250	-3074.187	27228.478	761.03
x		20432.102	┬12584092.000	┬251725730.000	┬4009661.000	┬2159496.400	┬2610519.200	1959918.900	286460.320	-3003.467	27237.558	751.91
σ		694.130	┬134603.640	┬2209621.900	┬32902.911	┬18186.932	┬25956.622	21716.187	2731.712	64.729	126.112	17.94
%RSD		3.397	┬1.070	┬0.878	┬0.821	┬0.842	┬0.994	1.108	0.954	2.155	0.463	2.38

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	11:12:32	┬2963396.500	91.881%	┬6536418.500	970546.460	581.272	485429.440	92.858%	┬3260404.600	2154818.300	1702200.500	┬2186227.10
2	11:12:54	┬2968484.500	92.479%	┬6527839.300	979384.650	1381.300	484921.300	92.279%	┬3276313.900	2187567.000	1731186.600	┬2218963.60
3	11:13:16	┬2954459.000	91.672%	┬6565546.700	975855.810	2148.480	484878.240	92.113%	┬3284231.200	2191494.400	1725915.400	┬2187568.90
x		┬2962113.300	92.011%	┬6543268.200	975262.310	1370.351	485076.330	92.417%	┬3273649.900	2177959.900	1719767.500	┬2197586.50
σ		┬7100.249	0.419%	┬19764.899	4448.885	783.661	306.566	0.391%	┬12134.635	20137.164	15440.089	┬18525.24
%RSD		┬0.240	0.455	┬0.302	0.456	57.187	0.063	0.423	┬0.371	0.925	0.898	┬0.84

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:12:32	123584.780	┬5998842.100	┬51108400.000	93.994%	0.000	982300.710	478248.630
2	11:12:54	124230.020	┬6112980.300	┬52001783.000	93.007%	0.000	1004199.400	484512.100
3	11:13:16	127853.920	┬6132301.300	┬51757636.000	93.100%	5.371	1006204.200	484485.350
x		125222.910	┬6081374.600	┬51622606.000	93.367%	1.790	997568.110	482415.360
σ		2301.252	┬72125.132	┬461744.460	0.545%	3.101	13259.894	3608.520
%RSD		1.838	┬1.186	┬0.894	0.584	173.205	1.329	0.748

STD5 11/1/2016 11:17:53 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti
1	11:18:14	93.034%	460274.680	M 156933.860	TM 68544025.000	TM 21221339.000	TM 196102320.000	TM 75798971.000	TM 8520276.700	90.019%	167210.510
2	11:18:36	91.096%	M 467094.730	M 160874.900	TM 67145840.000	TM 21208162.000	TM 192265230.000	TM 74922457.000	TM 8501145.900	89.715%	167817.270
3	11:18:58	91.631%	448456.510	155800.700	TM 66339642.000	TM 20969671.000	TM 191996980.000	TM 74963642.000	TM 8577680.300	89.322%	165579.300
x		91.920%	M 458608.640	M 157869.820	TM 67343169.000	TM 21133057.000	TM 193454840.000	TM 75228357.000	TM 8533034.300	89.685%	166869.030
σ		1.001%	M 9430.143	M 2663.437	TM 1115361.400	TM 141650.140	TM 2296698.800	TM 494595.220	TM 39830.216	0.349%	1157.403
%RSD		1.089	M 2.056	M 1.687	TM 1.656	TM 0.670	TM 1.187	TM 0.657	TM 0.467	0.389	0.694

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se
1	11:18:14	35096.277	TM 21025122.000	TM 417974320.000	TM 6678490.900	TM 3554729.600	TM 4389472.400	T 3238094.800	M 477263.590	-4488.996	44628.191
2	11:18:36	40014.129	TM 21029588.000	TM 423219980.000	TM 6759422.700	TM 3584061.000	T 4296206.000	T 3151641.700	M 483452.700	-4846.899	43702.012
3	11:18:58	39553.518	TM 21331327.000	TM 424475230.000	TM 6748330.800	TM 3572885.500	T 4281404.200	T 3146144.400	M 476972.410	-4936.483	42729.554
x		38221.308	TM 21128679.000	TM 421889840.000	TM 6728748.100	TM 3570558.700	TM 4322360.900	T 3178627.000	M 479229.570	-4757.459	43686.586
σ		2716.138	TM 175512.370	TM 3448539.200	TM 43875.978	TM 14803.515	TM 58589.610	T 51573.932	M 3660.236	236.772	949.413
%RSD		7.106	TM 0.831	TM 0.817	TM 0.652	TM 0.415	TM 1.356	T 1.623	M 0.764	4.977	2.173

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb
1	11:18:14	TM 5123588.400	88.850%	TM 11265511.000	M 1667587.700	2308.937	M 818927.180	88.478%	T 5655172.900	TM 3710050.300	M 2998601.400
2	11:18:36	TM 5008465.800	87.387%	TM 11277707.000	M 1622229.400	325.153	M 818734.040	89.605%	T 5609230.200	TM 3688605.000	TM 2922990.200
3	11:18:58	TM 4940583.600	87.660%	TM 11327694.000	M 1608475.400	2654.090	M 808343.720	90.221%	T 5596848.700	TM 3647027.700	M 2964455.300
x		TM 5024212.600	87.965%	TM 11290304.000	M 1632764.200	1762.727	M 815334.980	89.435%	T 5620417.300	TM 3681894.300	TM 2962015.600
σ		TM 92513.014	0.778%	TM 32949.873	M 30932.183	1256.879	M 6055.382	0.884%	T 30729.339	TM 32042.695	TM 37864.606
%RSD		TM 1.841	0.884	TM 0.292	M 1.894	71.303	M 0.743	0.988	T 0.547	TM 0.870	TM 1.278

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:18:14	M 255728.010	TM 10489434.000	TM 87276848.000	91.844%	5.444	M 2035514.100	M 996813.790
2	11:18:36	M 262781.920	TM 10427206.000	TM 87487295.000	91.769%	0.000	M 2048326.600	M 999687.870
3	11:18:58	M 258111.310	TM 10679665.000	TM 89578440.000	89.768%	0.000	M 2110830.300	M 1028200.900
x		M 258873.750	TM 10532101.000	TM 88114195.000	91.127%	1.815	M 2064890.300	M 1008234.200
σ		M 3588.227	TM 131526.790	TM 1272432.300	1.177%	3.143	M 40297.602	M 17351.308
%RSD		M 1.386	TM 1.249	TM 1.444	1.292	173.205	M 1.952	M 1.721

ICV 11/1/2016 11:23:36 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:23:58	95.462%	46566.405	17081.625	T 7000991.800	T 2082589.000	T 19413739.000	T 7166654.400	810259.570	89.352%	15813.960	1479791.600	447109.330
2	11:24:20	90.124%	48473.413	17716.066	T 7072142.100	T 2112870.900	T 19917371.000	T 7322342.700	802754.090	87.093%	15906.664	1516633.900	459457.950
3	11:24:42	89.775%	47908.249	17769.049	T 7000204.100	T 2078373.900	T 19485740.000	T 7307868.000	815656.190	87.723%	15609.882	1498891.300	453788.780
x		91.787%	103.031%	111.783%	T 109.035%	T 102.065%	T 104.946%	T 100.078%	97.772%	88.056%	15776.835	100.849%	101.671%
σ		3.187%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	1.166%	151.834	n/a	n/a
%RSD		3.472	2.056	2.183	T 0.588	T 0.900	T 1.389	T 1.184	0.800	1.324	0.962	1.230	1.363

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:23:58	6249.810	T 2019459.400	T 41212473.000	672774.670	366716.000	465633.800	344682.840	47932.229	-123.799	4776.051	754.540	3016.227
2	11:24:20	4924.397	T 2060046.900	T 42276573.000	694228.930	376859.730	456202.310	345389.330	49361.451	-338.871	4721.953	704.326	3311.149
3	11:24:42	4792.699	T 2035055.200	T 41652305.000	694701.470	373899.650	456713.960	343296.660	48344.102	-276.713	4779.279	686.809	3299.761
x		5322.302	T 98.259%	T 100.711%	103.342%	105.059%	105.896%	105.927%	102.208%	-246.461	104.871%	715.225	3209.046
σ		805.940	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	110.681	n/a	35.156	167.083

%RSD		15.143	T 1.005	T 1.282	1.823	1.400	1.154	0.309	1.515	44.908	0.677	4.915	5.207
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:23:58	497115.080	90.180%	510844.310	164086.540	345.291	81594.303	87.539%	553683.940	367089.780	286737.480	365315.850	87.460%
2	11:24:20	486390.060	88.803%	519889.650	161986.930	34.411	81231.901	88.455%	556239.840	363327.360	283360.640	367235.490	87.648%
3	11:24:42	490221.910	88.751%	515141.000	161353.420	62.605	82096.338	87.581%	555040.330	362655.680	285895.810	369255.200	90.518%
x		491242.350	89.245%	93.219%	101.368%	147.436	101.062%	87.858%	554988.040	364357.610	109.553%	102.220%	88.542%
σ		5434.843	0.810%	n/a	n/a	171.926	n/a	0.517%	1278.749	2389.847	n/a	n/a	1.714%
%RSD		1.106	0.908	0.878	0.880	116.611	0.532	0.589	0.230	0.656	0.616	0.536	1.936

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:23:58	43467.012	1005551.000	T 8544622.400	87.665%	0.000	276169.660	153951.810
2	11:24:20	43802.387	999225.070	T 8474413.900	88.688%	0.000	283950.190	152218.110
3	11:24:42	42617.350	987586.400	T 8288786.500	90.029%	0.000	280246.800	150072.500
x		128.090%	102.329%	T 99.167%	88.794%	0.000	89.575%	96.570%
σ		n/a	n/a	T n/a	1.185%	0.000	n/a	n/a
%RSD		1.411	0.914	T 1.567	1.335	0.000	1.389	1.278

ICVL 11/1/2016 11:29:20 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:29:42	100.998%	169.317	5845.191	698499.490	28560.300	73467.489	724415.150	27329.268	89.989%	44.366	12842.044	9302.812
2	11:30:04	94.752%	141.325	6217.030	669352.760	28704.103	78048.287	713101.080	26417.912	92.634%	48.539	13616.243	9290.915
3	11:30:26	97.355%	204.142	6061.003	668554.110	28263.836	82151.365	712687.910	26295.859	91.071%	65.760	13489.164	9332.616
x		97.702%	115.949%	120.435%	105.365%	104.356%	125.079%	98.724%	96.670%	91.231%	52.888	112.024%	104.359%
σ		3.138%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.330%	11.341	n/a	n/a
%RSD		3.211	18.340	3.091	2.514	0.787	5.577	0.928	2.117	1.457	21.443	3.118	0.231

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:29:42	3432.848	8307.568	595672.310	2947.964	1264.815	3874.419	10401.580	1016.422	363.791	191.951	651.497	3585.370
2	11:30:04	3248.225	8362.629	585006.790	3256.713	1443.934	3883.808	10392.102	748.497	437.066	156.035	680.963	3529.620
3	11:30:26	3478.889	8721.014	610453.880	3730.662	1403.245	3951.085	10608.180	1072.402	326.097	203.969	687.750	3434.458
x		3386.654	127.509%	108.109%	124.501%	120.808%	112.434%	100.590%	99.561%	375.651	101.357%	673.403	3516.483
σ		122.073	n/a	n/a	n/a	n/a	n/a	n/a	n/a	56.427	n/a	19.273	76.309
%RSD		3.605	2.653	2.140	11.904	6.851	1.071	1.167	18.305	15.021	13.556	2.862	2.170

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:29:42	23929.628	93.914%	18584.633	3214.993	-27.836	874.738	92.865%	4437.110	6558.836	5129.218	5592.458	90.300%
2	11:30:04	23561.508	94.332%	19106.930	3245.816	-40.738	708.672	92.298%	4897.869	6936.171	5433.245	5989.946	90.835%
3	11:30:26	24727.089	94.977%	19488.119	3292.829	-67.686	966.770	91.896%	5436.334	6798.724	5482.934	6010.741	91.400%
x		98.936%	94.408%	107.751%	101.421%	-45.420	105.228%	92.353%	4923.771	6764.577	128.347%	102.013%	90.845%
σ		n/a	0.536%	n/a	n/a	20.333	n/a	0.487%	500.115	190.971	n/a	n/a	0.550%
%RSD		2.475	0.567	2.380	1.206	44.767	15.388	0.527	10.157	2.823	3.580	4.020	0.606

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:29:42	3308.084	20880.142	17781.956	90.773%	0.000	21349.124	15484.728
2	11:30:04	3470.102	21008.504	19684.554	91.955%	0.000	18464.369	15767.603
3	11:30:26	3311.668	21700.979	20725.452	91.099%	0.000	16885.733	15269.380
x		99.503%	108.728%	142.513%	91.276%	0.000	60.436%	98.470%
σ		n/a	n/a	n/a	0.611%	0.000	n/a	n/a
%RSD		2.751	2.083	7.695	0.669	0.000	11.975	1.611

ICBIS 11/1/2016 11:35:03 AM QC Status: WARNING (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:35:25	92.367%	-3.723	800.425	8955.308	66.346	151.384	677.328	100.224	90.833%	5.495	2384.201	-55.856
2	11:35:47	91.881%	-3.709	827.465	10257.913	91.750	512.857	870.071	42.067	89.308%	0.000	572.152	-110.115
3	11:36:09	94.631%	-1.146	644.503	9361.830	46.120	1081.776	2195.654	-16.142	89.789%	0.000	1161.200	-59.949
x		92.960%	-2.859	757.465	9525.017	68.072	582.006	1247.684	42.050	89.977%	1.832	1372.517	-75.306
σ		1.467%	1.484	98.757	666.459	22.864	469.035	826.603	58.183	0.780%	3.173	924.322	30.214
%RSD		1.579	51.891	13.038	6.997	33.588	80.589	66.251	138.366	0.867	173.205	67.345	40.122

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:35:25	2315.065	-4.326	2474.743	-36.025	-7.762	-124.689	-17.983	35.492	302.277	-7.687	699.185	3667.474
2	11:35:47	2816.470	-76.689	3734.680	-19.135	-7.480	-31.152	-109.344	-125.239	363.597	-24.235	690.984	3665.187
3	11:36:09	2588.951	105.577	1719.445	3.020	-2.001	-130.370	68.391	277.742	246.369	82.302	667.765	3270.588
x		2573.495	8.187	2642.956	-17.380	-5.748	-95.404	-19.645	62.665	304.081	16.793	685.978	3534.416
σ		251.060	91.775	1018.093	19.581	3.248	55.716	88.879	202.860	58.635	57.332	16.298	228.485
%RSD		9.756	1120.963	38.521	112.665	56.502	58.400	452.421	323.721	19.283	341.396	2.376	6.465

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:35:25	-2.630	94.361%	629.728	-10.139	-55.607	19.039	91.894%	1235.155	451.673	303.384	2.923	87.791%
2	11:35:47	24.766	93.618%	688.484	-15.495	-63.799	43.491	91.538%	1305.518	496.287	345.292	8.427	89.042%
3	11:36:09	57.105	92.061%	744.307	6.123	-38.196	-3.500	92.025%	1483.351	547.247	408.251	13.774	89.931%
x		26.413	93.347%	687.506	-6.504	-52.534	19.677	91.819%	1341.341	498.403	352.309	8.375	88.921%
σ		29.902	1.174%	57.296	11.258	13.075	23.502	0.252%	127.917	47.822	52.784	5.426	1.075%
%RSD		113.207	1.257	8.334	173.100	24.889	119.440	0.275	9.537	9.595	14.982	64.787	1.209

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:35:25	94.203	1103.336	274.903	88.707%	0.000	-25811.975	-181.747
2	11:35:47	58.751	1075.681	193.163	90.447%	0.000	-25557.138	-170.799
3	11:36:09	91.222	933.036	410.055	90.857%	0.000	-25941.784	-148.862
x		81.392	1037.351	292.707	90.004%	0.000	-25770.299	-167.136
σ		19.664	91.392	109.536	1.142%	0.000	195.680	16.746
%RSD		24.160	8.810	37.422	1.268	0.000	0.759	10.019

ICSA 11/1/2016 11:40:46 AM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:41:07	98.893%	6.210	876.273	TM 124348010.000	T 12851465.000	T 115897700.000	TM 135376510.000	T 5044251.000	106.844%	302596.880	1850.459	3371.619
2	11:41:29	97.344%	-1.293	713.548	TM 121705910.000	T 12606311.000	T 113822300.000	TM 136418970.000	T 5135196.600	106.873%	306953.020	2208.777	3482.682
3	11:41:51	94.808%	1.481	769.505	TM 119600420.000	T 12478678.000	T 113939690.000	TM 136398210.000	T 5127608.000	107.244%	308965.970	1286.983	3490.014
x		97.015%	1.#IO%	1.#IO%	TM 94.596%	T 92.575%	T 91.978%	TM 93.709%	T 92.434%	106.987%	306171.950	1.#IO%	1.#IO%
σ		2.062%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.223%	3255.589	n/a	n/a
%RSD		2.126	177.907	10.512	TM 1.952	T 1.498	T 1.018	TM 0.438	T 0.989	0.209	1.063	26.076	1.924

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:41:07	1249.999	874.194	T 255148860.000	140.981	205.033	693.978	-301.541	-12.420	432.172	-3.447	717.702	3609.502
2	11:41:29	1105.838	841.101	T 257178720.000	164.323	279.825	696.290	-327.187	119.083	383.019	47.409	695.606	3495.504
3	11:41:51	1369.797	1014.139	T 255576480.000	116.988	199.514	701.659	-413.858	-81.339	458.795	-47.160	729.996	3798.179
x		1241.878	1.#IO%	T 92.698%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	1.#IO%	424.662	-1.#IO%	714.435	3634.395

σ		132.167	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	38.442	n/a	17.426	152.865
%RSD		10.642	10.096	T 0.418	16.814	19.665	0.565	16.936	1206.283	9.052	4440.064	2.439	4.206
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:41:07	3356.153	105.196%	T 3049289.100	282.276	344.077	197.397	103.249%	2101.862	542.256	420.769	132.479	103.785%
2	11:41:29	3413.462	105.469%	T 3120880.200	253.083	414.457	70.959	105.019%	2309.282	555.095	451.403	53.935	105.686%
3	11:41:51	3235.714	104.498%	T 3165306.800	273.798	349.294	118.602	104.455%	2599.416	600.566	492.555	150.004	106.365%
x		1.#IO%	105.055%	T 87.960%	1.#IO%	369.276	1.#IO%	104.241%	2336.853	565.972	1.#IO%	1.#IO%	105.279%
σ		n/a	0.501%	T n/a	n/a	39.215	n/a	0.904%	249.920	30.639	n/a	n/a	1.337%
%RSD		2.720	0.477	T 1.881	5.568	10.619	49.506	0.868	10.695	5.414	7.918	45.624	1.270

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:41:07	465.129	1016.750	3615.325	97.811%	0.000	-3079.515	-161.824
2	11:41:29	546.096	844.696	3507.863	99.302%	0.000	-7562.133	-157.173
3	11:41:51	584.721	953.413	3564.893	99.506%	0.000	-10544.022	-117.036
x		1.#IO%	1.#IO%	1.#IO%	98.873%	0.000	-1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	0.925%	0.000	n/a	n/a
%RSD		11.473	9.274	1.509	0.936	0.000	53.205	16.943

ICSAB 11/1/2016 11:46:28 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:46:50	91.866%	3564.356	53472.815	TM 124833100.000	T 12774484.000	T 113962880.000	TM 136546760.000	T 5168395.200	101.735%	305121.610	55116.996	1083
2	11:47:12	90.999%	3859.406	54557.035	TM 125161610.000	T 12895526.000	T 116321910.000	TM 138016880.000	T 5272304.700	100.978%	314943.380	58889.043	1116
3	11:47:33	88.916%	3710.943	55055.927	TM 121296230.000	T 12461750.000	T 113222170.000	TM 133682950.000	T 5180118.100	102.142%	308332.580	56955.793	1109
x		90.593%	100.318%	108.376%	TM 96.054%	T 93.051%	T 91.937%	TM 93.721%	T 94.328%	101.618%	309465.860	95.885%	98
σ		1.516%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.591%	5007.993	n/a	
%RSD		1.674	3.975	1.489	TM 1.732	T 1.761	T 1.414	TM 1.620	T 1.093	0.581	1.618	3.310	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:46:50	2406.405	79945.224	T 256322620.000	61587.192	13132.878	33470.014	24329.003	21365.878	-258.813	5193.243	714.705	34
2	11:47:12	2008.896	83363.158	T 263279080.000	62973.196	13439.543	32630.779	23812.158	20300.357	-66.094	5036.216	720.672	35
3	11:47:33	1701.471	80239.548	T 256653650.000	62515.540	13158.737	32269.962	23906.980	20421.135	-90.394	5120.442	729.612	33
x		2038.924	97.844%	T 93.707%	93.771%	93.382%	94.457%	92.317%	96.828%	-138.434	90.200%	721.663	34
σ		353.425	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	104.958	n/a	7.503	1
%RSD		17.334	2.333	T 1.517	1.132	1.284	1.878	1.146	2.819	75.818	1.536	1.040	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	11:46:50	3272.582	101.004%	T 3155012.300	76770.583	440.506	17790.207	100.253%	1750.658	134695.730	106386.980	140735.310	101
2	11:47:12	3530.114	101.847%	T 3165006.800	74897.998	432.316	18057.820	101.713%	1922.190	135633.570	106728.420	143644.150	105
3	11:47:33	3552.055	101.597%	T 3157088.700	75594.648	515.012	18048.317	100.809%	2212.248	136877.460	108568.510	145277.120	105
x		3451.584	101.482%	T 89.294%	94.526%	462.611	88.957%	100.925%	1961.699	135735.590	102.926%	99.654%	103
σ		155.407	0.433%	T n/a	n/a	45.565	n/a	0.737%	233.317	1094.440	n/a	n/a	2
%RSD		4.502	0.427	T 0.167	1.249	9.849	0.845	0.730	11.894	0.806	1.094	1.606	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:46:50	38868.895	238397.280	328501.260	97.811%	0.000	261773.370	163489.940
2	11:47:12	38136.483	239110.570	330585.580	98.985%	5.051	276436.510	166803.430
3	11:47:33	38451.634	242201.830	330279.110	99.665%	0.000	278384.070	164600.350
x		113.860%	98.447%	96.919%	98.820%	1.684	87.041%	104.751%
σ		n/a	n/a	n/a	0.937%	2.916	n/a	n/a
%RSD		0.955	0.843	0.341	0.949	173.205	3.336	1.022

CCV 11/1/2016 11:52:12 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	11:52:34	81.491%	92367.968	32004.910	T 13546998.000	T 4132832.000	T 37775567.000	T 13907108.000	1577414.400	76.116%	30311.978	T 2868447.400	882743.
2	11:52:56	79.844%	93126.336	31590.669	T 13204526.000	T 4001630.000	T 36248103.000	T 13643108.000	1536343.100	78.018%	30740.989	T 2777230.700	858825.
3	11:53:17	79.870%	91294.257	31022.227	T 13692210.000	T 4205030.400	T 37909664.000	T 14193335.000	1609946.700	73.623%	30789.756	T 2854883.400	878651.
x		80.402%	99.749%	100.602%	T 104.629%	T 100.372%	T 99.861%	T 95.831%	95.082%	75.919%	30614.241	T 95.352%	97.91
σ		0.944%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	2.204%	262.901	T n/a	
%RSD		1.174	0.998	1.564	T 1.857	T 2.507	T 2.474	T 1.978	2.342	2.903	0.859	T 1.737	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	11:52:34	6532.953	T 3937771.800	T 81087326.000	1319926.800	715410.920	816572.370	631508.200	90877.842	-738.959	9130.127	638.419	2778.
2	11:52:56	5652.635	T 3818854.700	T 78069202.000	1284429.200	689216.940	807393.060	618001.460	91309.315	-848.046	9025.587	696.091	2839.
3	11:53:17	7479.984	T 3964040.600	T 81435753.000	1333309.400	718952.100	804262.520	622598.950	91246.496	-807.169	9106.983	672.411	2757.
x		6555.191	T 94.174%	T 96.811%	98.687%	99.823%	93.265%	95.951%	95.947%	-798.058	100.127%	668.974	2791.
σ		913.878	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	55.112	n/a	28.989	42.

%RSD		13.941	T 1.980	T 2.308	1.924	2.295	0.790	1.100	0.256	6.906	0.604	4.333	1.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	11:52:34	947796.020	82.274%	2004968.100	314650.100	-469.158	160240.630	81.609%	1031786.700	697051.310	552858.240	708356.680	87.24
2	11:52:56	927996.770	81.282%	2065943.300	310976.960	-189.828	157255.040	82.318%	1028198.100	684481.630	544959.060	704360.360	86.72
3	11:53:17	934509.360	79.559%	2070012.100	311530.360	705.542	157458.960	80.681%	1038976.000	695780.980	550911.740	711603.470	82.47
x		936767.380	81.038%	92.577%	97.448%	15.519	97.990%	81.536%	1032986.900	692437.970	105.505%	98.542%	85.48
σ		10090.913	1.374%	n/a	n/a	613.682	n/a	0.821%	5488.299	6919.606	n/a	n/a	2.61
%RSD		1.077	1.695	1.780	0.634	3954.414	1.054	1.007	0.531	0.999	0.749	0.512	3.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:52:34	37346.873	1898181.700	T 15777186.000	87.032%	0.000	245636.680	149131.170
2	11:52:56	38111.375	1917817.200	T 15932502.000	86.418%	0.000	262142.620	149504.300
3	11:53:17	41090.103	1886622.000	T 15819659.000	87.023%	0.000	264084.050	148666.530
x		114.936%	97.505%	T 93.120%	86.824%	0.000	82.273%	94.678%
σ		n/a	n/a	T n/a	0.352%	0.000	n/a	n/a
%RSD		5.091	0.830	T 0.507	0.405	0.000	3.940	0.282

CCB 11/1/2016 11:57:56 AM QC Status: WARNING (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:58:17	82.527%	8.717	622.310	21077.629	253.818	2126.470	6873.930	273.048	77.004%	19.430	1453.969	-10.453
2	11:58:39	81.892%	5.781	592.009	21755.345	446.851	4293.770	7421.524	115.484	77.248%	45.132	1158.461	-98.172
3	11:59:01	82.859%	2.622	637.134	26288.586	954.384	7398.682	7610.193	241.814	76.116%	19.644	715.735	22.434
x		82.426%	5.707	617.151	23040.520	551.684	4606.307	7301.882	210.115	76.790%	28.069	1109.388	-28.730
σ		0.491%	3.048	23.001	2833.245	361.857	2649.965	382.435	83.428	0.596%	14.778	371.556	62.346
%RSD		0.596	53.416	3.727	12.297	65.591	57.529	5.237	39.706	0.776	52.650	33.492	217.004

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:58:17	2358.217	58.943	13113.143	29.895	27.670	-16.207	-13.499	32.428	305.476	-4.207	652.982	3691.561
2	11:58:39	2502.771	83.520	15005.156	62.033	66.341	3.378	42.871	-60.199	327.590	-28.925	652.112	3577.827
3	11:59:01	2652.835	63.790	22334.868	109.556	-4.569	-58.956	33.326	170.086	271.144	50.859	665.580	3381.691
x		2504.608	68.751	16817.722	67.161	29.814	-23.929	20.900	47.439	301.403	5.909	656.891	3550.360
σ		147.317	13.018	4870.739	40.077	35.504	31.877	30.170	115.874	28.442	40.843	7.537	156.751
%RSD		5.882	18.935	28.962	59.673	119.084	133.216	144.356	244.260	9.437	691.204	1.147	4.415

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:58:17	53.770	81.607%	3094.009	-19.306	-52.671	10.714	83.158%	2314.994	662.492	525.040	28.117	82.956%
2	11:58:39	17.911	84.479%	2833.436	17.048	-26.471	15.204	82.732%	2544.506	748.394	611.548	4.128	84.470%
3	11:59:01	35.567	81.868%	2754.156	10.625	-21.886	-13.520	83.387%	2908.329	700.887	551.567	28.018	84.334%
x		35.749	82.651%	2893.867	2.789	-33.676	4.132	83.093%	2589.276	703.924	562.718	20.087	83.920%
σ		17.930	1.588%	177.803	19.403	16.609	15.452	0.332%	299.191	43.031	44.319	13.821	0.837%
%RSD		50.156	1.922	6.144	695.633	49.320	373.911	0.400	11.555	6.113	7.876	68.806	0.998

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:58:17	113.561	2060.185	450.337	87.106%	0.000	-24149.089	-129.982
2	11:58:39	93.211	1940.390	759.782	84.808%	0.000	-24122.691	-152.010
3	11:59:01	81.553	1673.404	945.404	86.343%	0.000	-24127.021	-146.848
x		96.108	1891.326	718.508	86.086%	0.000	-24132.934	-142.947
σ		16.199	198.003	250.101	1.171%	0.000	14.157	11.520
%RSD		16.855	10.469	34.808	1.360	0.000	0.059	8.059

MB 200-110769/1-A 11/1/2016 12:03:38 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:03:59	91.254%	23.706	576.956	159864.610	7754.723	79315.099	75776.313	3069.380	84.065%	290.782	1482.562	1732.696
2	12:04:21	89.555%	4.737	675.373	123074.920	4575.271	45295.897	54857.905	2020.117	84.961%	170.219	1574.276	1419.881
3	12:04:43	89.498%	7.537	474.791	120280.250	2483.579	27658.664	43309.902	1328.546	83.680%	113.246	1643.228	1441.139
x		90.102%	11.993	575.707	134406.590	4937.858	50756.553	57981.373	2139.348	84.235%	191.416	1566.689	1531.238
σ		0.998%	10.240	100.297	22091.528	2654.212	26257.587	16457.035	876.520	0.657%	90.646	80.602	174.791
%RSD		1.108	85.380	17.422	16.436	53.752	51.732	28.383	40.971	0.780	47.356	5.145	11.415

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:03:59	2438.390	1903.662	199959.330	416.455	207.689	205.196	608.442	177.115	284.246	45.017	666.961	3279.862
2	12:04:21	2344.827	1526.689	120940.500	352.774	152.277	166.663	571.017	303.544	211.986	71.621	663.433	3178.383
3	12:04:43	2305.074	1149.170	78962.157	328.933	154.979	114.526	561.702	143.308	268.164	-10.986	688.142	3439.980
x		2362.764	1526.507	133287.330	366.054	171.649	162.129	580.387	207.989	254.799	35.217	672.845	3299.408
σ		68.444	377.246	61436.243	45.247	31.241	45.505	24.739	84.462	37.939	42.166	13.364	131.889
%RSD		2.897	24.713	46.093	12.361	18.201	28.067	4.262	40.609	14.890	119.731	1.986	3.997

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:03:59	266.803	88.484%	3437.943	74.655	-35.279	32.835	89.287%	59880.534	500.692	355.963	232.838	86.255%
2	12:04:21	211.141	90.180%	2723.680	29.952	-27.143	8.077	89.159%	56467.525	466.519	353.221	115.416	87.475%
3	12:04:43	120.828	88.525%	2080.590	29.682	-20.387	23.695	89.518%	59429.090	490.306	352.609	154.020	89.946%
x		199.591	89.063%	2747.405	44.763	-27.603	21.536	89.321%	58592.383	485.839	353.931	167.425	87.892%
σ		73.670	0.967%	678.988	25.888	7.457	12.519	0.182%	1853.973	17.519	1.786	59.848	1.880%
%RSD		36.910	1.086	24.714	57.833	27.015	58.133	0.204	3.164	3.606	0.505	35.746	2.140

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:03:59	252.950	1204.048	3349.070	85.562%	0.000	9431.377	-6.227
2	12:04:21	191.828	1121.719	2111.618	88.167%	0.000	1906.376	-90.976
3	12:04:43	174.586	862.889	1287.869	90.717%	0.000	-4680.264	-126.756
x		206.455	1062.885	2249.519	88.149%	0.000	2219.163	-74.653
σ		41.179	178.027	1037.497	2.578%	0.000	7061.018	61.900
%RSD		19.946	16.749	46.121	2.924	0.000	318.184	82.917

LCS 200-110769/2-A 11/1/2016 12:09:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:09:41	92.606%	1454.114	51213.312	T 6997241.500	284596.060	651744.270	T 7201292.400	260359.440	88.352%	62.139	113227.220	92319.757
2	12:10:03	90.110%	1375.259	52726.230	T 7151647.100	286855.380	654417.050	T 7145506.900	266538.930	87.826%	107.909	117105.170	92513.133
3	12:10:25	90.735%	1495.253	52085.504	T 7106554.800	286391.900	663238.820	T 7468333.700	269944.150	85.783%	98.819	120323.420	93649.104
x		91.151%	1441.542	52008.348	T 7085147.800	285947.780	656466.710	T 7271711.000	265614.170	87.320%	89.622	116885.270	92827.331
σ		1.299%	60.977	759.404	T 79397.494	1193.344	6015.152	T 172549.640	4858.808	1.357%	24.231	3553.210	718.214
%RSD		1.425	4.230	1.460	T 1.121	0.417	0.916	T 2.373	1.829	1.555	27.037	3.040	0.774

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:09:41	2570.000	68783.379	T 5486232.400	26569.648	11654.197	34835.544	91707.838	8317.390	120.620	1509.250	654.894	2780.224
2	12:10:03	2239.734	69454.441	T 5602388.400	27863.515	11775.384	35163.146	94611.081	8254.319	84.124	1481.540	656.432	3187.130
3	12:10:25	2283.811	70374.733	T 5718226.400	28073.051	12342.296	34830.739	92392.902	8483.777	37.223	1465.569	620.490	3174.715
x		2364.515	69537.518	T 5602282.400	27502.071	11923.959	34943.143	92903.940	8351.829	80.656	1485.453	643.939	3047.356

σ		179.315	798.923	ᴛ115997.050	814.270	367.322	190.543	1517.589	118.542	41.807	22.102	20.322	231.426
%RSD		7.584	1.149	ᴛ2.071	2.961	3.081	0.545	1.634	1.419	51.833	1.488	3.156	7.594
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:09:41	244705.090	91.986%	171048.260	33016.135	-35.461	7141.375	91.238%	56857.596	54442.446	41863.340	55832.672	90.496%
2	12:10:03	250815.870	92.717%	171810.130	34077.125	-70.075	7783.612	90.338%	56946.182	54556.907	42944.934	57671.080	92.266%
3	12:10:25	248143.210	91.236%	172143.380	33619.749	64.645	7438.953	90.494%	57568.489	54722.508	43244.567	59140.205	89.644%
x		247888.050	91.980%	171667.260	33571.003	-13.631	7454.647	90.690%	57124.089	54573.954	42684.280	57547.986	90.802%
σ		3063.368	0.741%	561.368	532.172	69.963	321.406	0.481%	387.402	140.807	726.569	1657.199	1.338%
%RSD		1.236	0.805	0.327	1.585	513.278	4.311	0.530	0.678	0.258	1.702	2.880	1.473

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:09:41	75524.926	194799.300	134839.510	89.954%	0.000	264583.330	163381.210
2	12:10:03	75538.739	199314.790	137593.160	90.345%	0.000	280308.420	166811.160
3	12:10:25	79065.328	201147.670	138850.300	89.545%	0.000	287781.900	168833.600
x		76709.664	198420.590	137094.320	89.948%	0.000	277557.880	166341.990
σ		2040.076	3267.287	2051.400	0.400%	0.000	11841.344	2756.305
%RSD		2.659	1.647	1.496	0.445	0.000	4.266	1.657

200-35700-A-11-A 11/1/2016 12:15:02 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:15:23	102.612%	997.382	5365.103	┬727085.350	┬2077430.300	┬93038982.000	┬9518885.400	┬851209.820	167.441%	17360.353	233264.340	205904.310
2	12:15:45	99.241%	1079.342	5538.851	┬693404.050	┬2051521.700	┬91877894.000	┬9362071.300	847053.800	171.952%	18253.000	235587.850	203965.270
3	12:16:07	102.649%	997.024	5436.212	┬710253.690	┬2050811.500	┬91309516.000	┬9281154.200	┬845342.650	174.838%	16470.559	234024.080	206402.310
x		101.501%	1024.583	5446.722	┬710247.700	┬2059921.200	┬92075464.000	┬9387370.300	┬847868.760	171.410%	17361.304	234292.090	205423.960
σ		1.957%	47.423	87.350	┬16840.650	┬15167.492	┬881498.100	┬120867.920	┬3017.288	3.728%	891.221	1184.716	1287.569
%RSD		1.928	4.629	1.604	┬2.371	┬0.736	┬0.957	┬1.288	┬0.356	2.175	5.133	0.506	0.627

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:15:23	2895.122	┬15810276.000	┬290965170.000	122122.130	66597.267	1066566.800	466649.370	2181.725	86.517	633.663	743.216	2812.042
2	12:15:45	2534.838	┬15563147.000	┬285162550.000	119312.260	66190.591	1065369.600	461246.430	2191.976	93.627	518.990	733.711	3260.338
3	12:16:07	1786.212	┬15631869.000	┬286137900.000	117918.310	65759.902	1059701.300	461430.080	2197.742	84.858	629.584	753.449	3044.514
x		2405.391	┬15668430.000	┬287421870.000	119784.230	66182.587	1063879.200	463108.630	2190.481	88.334	594.079	743.459	3038.965
σ		565.675	┬127556.730	┬3107093.700	2141.285	418.740	3667.336	3067.752	8.112	4.658	65.061	9.872	224.200
%RSD		23.517	┬0.814	┬1.081	1.788	0.633	0.345	0.662	0.370	5.274	10.952	1.328	7.377

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:15:23	616377.480	563.776%	1463.958	6299.347	-381.988	2914.549	108.518%	62055.215	2556.069	2201.029	837518.910	165.201%
2	12:15:45	619430.100	572.765%	1367.812	6185.265	-425.572	3022.209	111.150%	63679.647	2706.201	2240.631	838502.680	167.353%
3	12:16:07	618128.170	581.854%	1400.794	5947.122	-408.777	2667.280	113.149%	63477.633	2647.479	2235.464	838791.940	170.811%
x		617978.580	572.799%	1410.854	6143.912	-405.446	2868.013	110.939%	63070.832	2636.583	2225.708	838271.180	167.788%
σ		1531.800	9.039%	48.856	179.717	21.982	181.983	2.323%	885.330	75.657	21.528	667.345	2.830%
%RSD		0.248	1.578	3.463	2.925	5.422	6.345	2.094	1.404	2.870	0.967	0.080	1.687

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:15:23	716.509	10796.843	2364067.700	116.428%	0.000	437871.350	169499.950
2	12:15:45	691.953	11100.818	2408542.700	117.967%	0.000	436204.440	167767.390
3	12:16:07	650.972	10573.086	2374487.400	120.578%	0.000	431550.260	168083.800
x		686.478	10823.582	2382365.900	118.324%	0.000	435208.680	168450.380
σ		33.110	264.880	23260.710	2.098%	0.000	3276.080	922.618
%RSD		4.823	2.447	0.976	1.773	0.000	0.753	0.548

200-35700-A-12-A 11/1/2016 12:20:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:21:06	101.150%	1226.939	4421.949	┬873082.970	┬2302990.700	┬101304970.000	┬9404424.300	┬907281.130	182.499%	16563.573	280118.450	221708.230
2	12:21:28	98.291%	1138.172	4703.814	┬854485.560	┬2212761.300	┬97785274.000	┬9060322.200	┬890969.460	186.978%	17544.312	278190.130	219080.670
3	12:21:50	100.180%	1129.063	4691.290	┬835785.170	┬2251809.800	┬97320571.000	┬9188964.100	┬902059.600	187.836%	17093.471	277990.250	217157.520
x		99.873%	1164.725	4605.684	┬854451.230	┬2255853.900	┬98803604.000	┬9217903.600	┬900103.400	185.771%	17067.119	278766.270	219315.470
σ		1.454%	54.071	159.243	┬18648.921	┬45250.441	┬2178669.800	┬173866.860	┬8329.929	2.866%	490.900	1175.275	2284.422
%RSD		1.456	4.642	3.458	┬2.183	┬2.006	┬2.205	┬1.886	┬0.925	1.543	2.876	0.422	1.042

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:21:06	2946.145	┬20398433.000	┬384948840.000	146823.580	74025.643	897569.670	490515.140	4032.897	75.187	691.318	766.874	2754.059
2	12:21:28	3178.249	┬20196161.000	┬375626800.000	141556.150	73815.749	901194.690	492592.450	4018.532	87.918	598.549	786.070	3351.368
3	12:21:50	2856.989	┬20035012.000	┬377300560.000	142834.650	73701.020	906096.390	489023.160	4114.950	71.551	629.830	728.111	2964.172
x		2993.795	┬20209868.000	┬379292060.000	143738.120	73847.471	901620.250	490710.250	4055.460	78.219	639.899	760.352	3023.200
σ		165.846	┬182097.980	┬4969876.000	2747.481	164.620	4279.258	1792.623	52.019	8.595	47.197	29.525	302.998

%RSD		5.540	T 0.901	T 1.310	1.911	0.223	0.475	0.365	1.283	10.988	7.376	3.883	10.022
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:21:06	684781.000	627.395%	2528.962	5868.014	-376.568	2823.945	117.037%	47504.416	2353.626	1997.961	932995.850	175.717%
2	12:21:28	678471.190	621.176%	2638.509	5819.044	-295.564	2538.184	118.186%	48714.923	2275.370	2005.274	946500.780	178.927%
3	12:21:50	682516.160	627.518%	2545.208	5920.644	-322.091	2750.422	118.186%	47658.082	2455.278	1965.931	949383.560	177.212%
x		681922.790	625.363%	2570.893	5869.234	-331.408	2704.183	117.803%	47959.140	2361.425	1989.722	942960.060	177.285%
σ		3196.482	3.627%	59.118	50.811	41.298	148.386	0.664%	659.021	90.208	20.925	8748.817	1.606%
%RSD		0.469	0.580	2.300	0.866	12.461	5.487	0.563	1.374	3.820	1.052	0.928	0.906

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:21:06	777.055	10935.082	2431132.500	122.117%	0.000	412162.480	240491.560
2	12:21:28	717.846	10920.889	2411475.600	125.195%	0.000	404635.460	235777.200
3	12:21:50	784.349	10630.544	2427790.700	124.803%	0.000	409647.130	236509.810
x		759.750	10828.838	2423466.300	124.038%	0.000	408815.020	237592.850
σ		36.473	171.874	10517.828	1.676%	0.000	3831.882	2536.936
%RSD		4.801	1.587	0.434	1.351	0.000	0.937	1.068

200-35700-A-12-A SD@5 11/1/2016 12:26:27 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:26:49	91.909%	271.020	1213.430	260539.580	679737.080	T 29597790.000	T 2697599.500	263313.090	115.495%	4399.269	82721.138	64383.181
2	12:27:10	90.789%	244.153	1192.264	264656.790	676728.790	T 29370693.000	T 2640319.900	261505.840	114.924%	4717.811	80755.332	64009.758
3	12:27:32	88.830%	252.494	1132.804	252522.370	660294.030	T 29367229.000	T 2668617.100	259442.190	114.011%	4780.866	80709.378	64597.480
x		90.509%	255.889	1179.499	259239.580	672253.300	T 29445237.000	T 2668845.500	261420.370	114.810%	4632.649	81395.283	64330.139
σ		1.559%	13.751	41.801	6170.779	10465.686	T 132125.580	T 28640.452	1936.869	0.749%	204.557	1148.454	297.429
%RSD		1.722	5.374	3.544	2.380	1.557	T 0.449	T 1.073	0.741	0.652	4.416	1.411	0.462
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:26:49	2560.205	T 5798194.600	T 111472860.000	42998.397	22409.678	191147.970	111964.340	2718.673	177.868	188.602	680.368	3339.852
2	12:27:10	2687.483	T 5767166.500	T 110976190.000	42666.976	22303.367	194093.540	112858.640	2540.747	208.424	156.012	722.642	3413.835
3	12:27:32	2556.644	T 5862361.700	T 111350240.000	41922.551	22020.955	188431.140	114231.760	2560.296	205.145	200.701	660.922	3399.484
x		2601.444	T 5809240.900	T 111266430.000	42529.308	22244.666	191224.220	113018.250	2606.572	197.146	181.772	687.977	3384.390
σ		74.533	T 48549.410	T 258725.650	550.977	200.900	2831.966	1142.108	97.573	16.775	23.114	31.556	39.233
%RSD		2.865	T 0.836	T 0.233	1.296	0.903	1.481	1.011	3.743	8.509	12.716	4.587	1.159
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:26:49	141230.100	200.674%	1434.419	1314.941	-112.372	648.877	106.121%	10208.621	607.205	437.421	197072.250	115.074%
2	12:27:10	143930.690	203.089%	1461.176	1280.917	-103.977	634.240	104.688%	10157.249	621.082	431.584	196893.740	114.206%
3	12:27:32	147589.040	202.319%	1370.499	1298.845	-142.061	609.097	104.780%	10157.852	531.263	440.202	197237.230	113.655%
x		144249.940	202.027%	1422.031	1298.234	-119.470	630.738	105.196%	10174.574	586.517	436.402	197067.740	114.311%
σ		3191.468	1.233%	46.590	17.020	20.009	20.120	0.802%	29.487	48.351	4.398	171.793	0.715%
%RSD		2.212	0.610	3.276	1.311	16.748	3.190	0.763	0.290	8.244	1.008	0.087	0.626

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:26:49	181.814	2411.005	544901.960	103.363%	0.000	54374.343	52461.006
2	12:27:10	183.433	2405.702	539295.110	105.421%	0.000	55561.747	52674.780
3	12:27:32	193.271	2463.911	546094.830	103.176%	0.000	58217.744	52312.980
x		186.173	2426.873	543430.630	103.987%	0.000	56051.278	52482.922
σ		6.201	32.186	3630.794	1.246%	0.000	1967.909	181.893
%RSD		3.331	1.326	0.668	1.198	0.000	3.511	0.347

200-35700-A-12-A PDS 11/1/2016 12:32:10 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	12:32:32	92.983%	2658.234	55745.840	┬4836209.200	┬2346776.000	┬96137182.000	┬13471938.000	┬1026081.400	171.803%	20854.243	346311.730	271603.44
2	12:32:54	95.391%	2580.492	56626.475	┬5051157.600	┬2436592.800	┬98918074.000	┬13712943.000	┬1057373.300	166.972%	17227.626	352942.250	277967.02
3	12:33:15	94.840%	2674.597	55406.583	┬4946400.600	┬2410249.200	┬98447324.000	┬13783185.000	┬1059996.800	166.800%	17369.896	353911.920	280648.86
x		94.405%	2637.775	55926.299	┬4944589.100	┬2397872.700	┬97834193.000	┬13656022.000	┬1047817.200	168.525%	18483.922	351055.300	276739.77
σ		1.262%	50.278	629.649	┬107485.650	┬46169.759	┬1488384.200	┬163244.510	┬18869.363	2.840%	2053.991	4136.562	4645.91
%RSD		1.336	1.906	1.126	┬2.174	┬1.925	┬1.521	┬1.195	┬1.801	1.685	11.112	1.178	1.67

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	12:32:32	2641.048	┬19402874.000	┬368485380.000	156393.630	78777.010	887117.780	561653.550	5629.766	50.696	2027.268	737.540	2437.70
2	12:32:54	2846.485	┬20297541.000	┬383347460.000	161223.790	81108.144	889598.330	559584.050	5561.380	53.357	2025.017	786.500	2486.27
3	12:33:15	3581.108	┬20132803.000	┬380511420.000	160478.750	80931.636	876530.100	552144.500	5518.034	63.563	2044.052	758.794	2531.57
x		3022.880	┬19944406.000	┬377448090.000	159365.390	80272.263	884415.400	557794.030	5569.726	55.872	2032.112	760.945	2485.18
σ		494.231	┬476158.940	┬7890396.900	2600.437	1297.931	6940.592	5000.866	56.332	6.792	10.401	24.551	46.94
%RSD		16.350	┬2.387	┬2.090	1.632	1.617	0.785	0.897	1.011	12.157	0.512	3.226	1.88

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159T
1	12:32:32	893634.960	568.953%	34755.625	37258.145	-211.840	9630.601	111.251%	46534.690	51653.272	42808.518	969619.600	164.602%
2	12:32:54	892844.960	572.686%	34320.279	36441.319	-283.379	9920.133	110.747%	45564.599	51417.280	43303.991	975016.350	166.451%
3	12:33:15	885644.630	573.083%	34237.351	36776.201	-265.958	9667.466	111.496%	45123.596	51639.328	42913.197	965231.470	166.376%
x		890708.180	571.574%	34437.752	36825.222	-253.726	9739.400	111.164%	45740.962	51569.960	43008.568	969955.810	165.810%
σ		4402.922	2.279%	278.391	410.614	37.305	157.601	0.382%	721.889	132.408	261.142	4901.093	1.047%
%RSD		0.494	0.399	0.808	1.115	14.703	1.618	0.344	1.578	0.257	0.607	0.505	0.63

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:32:32	20971.582	179984.380	2442229.800	118.843%	0.000	659534.150	367454.840
2	12:32:54	21325.219	180763.280	2475031.900	119.076%	0.000	665724.240	371955.200
3	12:33:15	21395.183	183582.110	2456553.100	119.477%	0.000	663488.470	375618.470
x		21230.661	181443.260	2457938.300	119.132%	0.000	662915.620	371676.170
σ		227.080	1892.797	16444.892	0.321%	0.000	3134.555	4088.962
%RSD		1.070	1.043	0.669	0.269	0.000	0.473	1.100

200-35700-A-12-G MS 11/1/2016 12:37:53 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	12:38:15	89.816%	2095.216	45805.427	┬5722408.700	┬2045668.200	┬76354711.000	┬11061126.000	┬1062782.100	135.886%	17276.751	301643.200	244979.29
2	12:38:37	92.541%	2319.728	46081.331	┬5698592.900	┬1993658.800	┬75441338.000	┬10801741.000	1056366.700	139.150%	18909.071	291248.770	234921.35
3	12:38:58	89.050%	2189.093	46009.539	┬5646119.100	┬2024862.500	┬74886181.000	┬10741664.000	┬1056133.500	138.414%	17796.124	301974.600	242960.85
x		90.469%	2201.346	45965.432	┬5689040.200	┬2021396.500	┬75560743.000	┬10868177.000	┬1058427.400	137.817%	17993.982	298288.860	240953.83
σ		1.835%	112.756	143.143	┬39031.633	┬26177.379	┬741510.710	┬169777.010	┬3773.026	1.712%	833.953	6099.143	5320.86
%RSD		2.028	5.122	0.311	┬0.686	┬1.295	┬0.981	┬1.562	┬0.356	1.242	4.635	2.045	2.20

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	12:38:15	3387.612	┬19477361.000	┬288592280.000	141554.490	68965.816	988204.950	511981.770	5626.638	63.738	2025.431	672.209	2844.09
2	12:38:37	2885.185	┬19082185.000	┬287231280.000	141981.030	67885.862	993460.710	511849.510	5674.446	66.009	1966.026	721.634	2537.06
3	12:38:58	2474.815	┬19164789.000	┬286856910.000	141687.390	68773.836	991588.510	513023.560	5629.406	53.106	2029.693	702.694	2667.93
x		2915.871	┬19241445.000	┬287560160.000	141740.970	68541.838	991084.720	512284.950	5643.497	60.951	2007.050	698.846	2683.03

σ		457.171	T 208441.980	T 913235.880	218.257	576.145	2663.850	643.064	26.839	6.888	35.592	24.937	154.06
%RSD		15.679	T 1.083	T 0.318	0.154	0.841	0.269	0.126	0.476	11.301	1.773	3.568	5.74
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	12:38:15	750990.730	395.024%	45494.658	37019.428	-283.728	9850.161	103.541%	62763.712	18334.038	15074.237	691579.480	137.401%
2	12:38:37	745501.040	392.891%	46426.289	36915.211	-83.722	9766.365	104.349%	63408.556	18293.684	15057.239	697291.550	139.443%
3	12:38:58	744086.760	393.352%	46010.698	37748.327	-183.881	9969.473	103.746%	64057.756	18543.386	15068.992	700056.370	140.751%
x		746859.510	393.756%	45977.215	37227.655	-183.777	9862.000	103.879%	63410.008	18390.370	15066.822	696309.130	139.198%
σ		3646.956	1.122%	466.717	453.916	100.003	102.070	0.420%	647.023	134.043	8.704	4322.992	1.689%
%RSD		0.488	0.285	1.015	1.219	54.415	1.035	0.404	1.020	0.729	0.058	0.621	1.21

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:38:15	29447.765	186741.150	2173465.500	109.503%	0.000	550925.970	324459.060
2	12:38:37	29285.657	192904.300	2218062.200	107.490%	0.000	567571.960	331474.280
3	12:38:58	29159.101	192461.610	2193988.500	109.428%	0.000	563963.290	331790.010
x		29297.508	190702.360	2195172.000	108.807%	0.000	560820.400	329241.120
σ		144.696	3437.634	22321.881	1.141%	0.000	8756.741	4144.393
%RSD		0.494	1.803	1.017	1.049	0.000	1.561	1.259

200-35700-A-12-H MSD 11/1/2016 12:43:37 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	12:43:58	92.337%	2387.140	48061.915	T 5586645.800	T 2313822.900	T 93480978.000	T 13173217.000	T 1087896.400	146.634%	19777.523	335065.460	273382.7
2	12:44:20	90.001%	2443.697	48389.548	T 5391687.500	T 2235152.700	T 90310786.000	T 12672033.000	T 1046927.900	151.717%	22817.445	331101.950	261282.1
3	12:44:42	88.765%	2466.553	48812.063	T 5489998.500	T 2306374.400	T 94083868.000	T 13120804.000	T 1078394.600	147.742%	21419.211	338409.100	269027.9
x		90.368%	2432.463	48421.176	T 5489443.900	T 2285116.700	T 92625211.000	T 12988685.000	T 1071072.900	148.698%	21338.060	334858.840	267897.6
σ		1.814%	40.881	376.073	T 97480.344	T 43430.051	T 2026892.100	T 275477.540	T 21443.148	2.673%	1521.585	3657.956	6128.9
%RSD		2.007	1.681	0.777	T 1.776	T 1.901	T 2.188	T 2.121	T 2.002	1.798	7.131	1.092	2.2

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	12:43:58	3285.119	TM 20750990.000	T 326347770.000	149917.930	76356.589	994413.740	546582.630	5694.349	68.778	1949.109	688.013	2743.1
2	12:44:20	3575.380	T 20081875.000	T 317286290.000	147341.480	74849.242	1020402.100	554674.040	5761.649	58.145	2028.604	730.983	2567.0
3	12:44:42	3260.670	TM 20812065.000	T 330638060.000	151566.990	75599.394	999371.040	543571.600	5670.443	51.006	2099.275	720.556	2092.5
x		3373.723	TM 20548310.000	T 324757370.000	149608.800	75601.742	1004729.000	548276.090	5708.814	59.310	2025.663	713.184	2467.5
σ		175.067	TM 405096.750	T 6816482.500	2129.648	753.676	13797.781	5741.680	47.292	8.943	75.126	22.413	336.5
%RSD		5.189	TM 1.971	T 2.099	1.423	0.997	1.373	1.047	0.828	15.079	3.709	3.143	13.6

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	12:43:58	819353.760	450.445%	41391.183	37667.411	-193.664	10230.865	106.614%	56610.083	19250.454	15426.726	807921.050	146.630
2	12:44:20	830027.390	454.742%	41144.158	38271.589	-114.571	9716.780	105.887%	57965.210	19073.575	15794.469	824130.470	148.023
3	12:44:42	829440.750	460.140%	40525.899	37842.869	-131.892	9879.349	107.072%	55959.755	18684.865	15511.733	815027.810	150.483
x		826273.970	455.109%	41020.413	37927.290	-146.709	9942.331	106.524%	56845.016	19002.964	15577.643	815693.110	148.379
σ		6000.249	4.858%	445.717	310.810	41.576	262.766	0.598%	1023.160	289.330	192.527	8125.161	1.951
%RSD		0.726	1.067	1.087	0.819	28.339	2.643	0.561	1.800	1.523	1.236	0.996	1.3

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:43:58	24290.705	189683.830	2392593.800	111.422%	0.000	612892.360	347209.590
2	12:44:20	23537.211	193939.250	2422441.200	111.255%	0.000	623424.060	352121.680
3	12:44:42	24060.930	190928.770	2382851.800	112.727%	0.000	615584.450	346538.450
x		23962.949	191517.280	2399295.600	111.802%	0.000	617300.290	348623.240
σ		386.185	2187.902	20628.014	0.806%	0.000	5471.496	3048.268
%RSD		1.612	1.142	0.860	0.721	0.000	0.886	0.874

200-35700-A-13-A 11/1/2016 12:49:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	12:49:42	90.288%	1710.381	6229.389	T 775042.340	T 3623914.400	T 107837940.000	T 9094993.300	T 986994.050	208.362%	23859.746	334415.800	282970.4
2	12:50:04	90.742%	1445.540	6175.161	T 755060.550	T 3601767.800	T 107393640.000	T 9058520.800	T 998821.700	208.250%	25288.078	337332.950	280950.1
3	12:50:26	88.396%	1577.422	6095.316	T 739814.390	T 3536149.700	T 105586110.000	T 8823635.400	T 975346.100	211.967%	25533.736	336443.930	280860.7
x		89.809%	1577.781	6166.622	T 756639.090	T 3587277.300	T 106939230.000	T 8992383.200	T 987053.950	209.527%	24893.854	336064.220	281593.7
σ		1.245%	132.421	67.443	T 17666.946	T 45641.410	T 1192704.400	T 147273.230	T 11737.915	2.115%	903.947	1495.183	1193.0
%RSD		1.386	8.393	1.094	T 2.335	T 1.272	T 1.115	T 1.638	T 1.189	1.009	3.631	0.445	0.4

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	12:49:42	2554.682	TM 44434909.000	TM 598041580.000	246446.460	139579.370	250406.930	436351.470	15759.344	70.115	465.470	774.967	2418.7
2	12:50:04	2562.677	TM 44050688.000	TM 594297500.000	251373.240	140553.650	248902.160	434198.920	15733.600	57.947	480.991	783.335	2137.2
3	12:50:26	2890.339	TM 44027816.000	TM 599430350.000	247738.100	137490.660	246420.850	432229.020	15800.660	76.809	361.142	766.812	2761.4
x		2669.233	TM 44171138.000	TM 597256480.000	248519.260	139207.890	248576.640	434259.810	15764.535	68.290	435.868	775.038	2439.1
σ		191.525	TM 228718.980	TM 2654964.100	2554.596	1564.924	2012.877	2061.902	33.830	9.562	65.178	8.262	312.5

%RSD		7.175	TM 0.518	TM 0.445	1.028	1.124	0.810	0.475	0.215	14.002	14.954	1.066	12.8

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	12:49:42	1189833.300	T 701.374%	7029.133	1760.273	-574.377	2421.539	109.040%	44387.680	4713.405	3910.942	911871.710	181.044
2	12:50:04	1187853.500	696.114%	7205.770	1811.756	-730.186	2588.899	109.790%	44349.288	4958.357	3945.638	911959.590	183.214
3	12:50:26	1174596.500	696.268%	7208.484	2034.722	-662.797	2428.556	110.525%	44557.806	4819.777	3980.405	915906.650	185.416
x		1184094.400	T 697.918%	7147.796	1868.917	-655.786	2479.665	109.785%	44431.591	4830.513	3945.662	913245.980	183.224
σ		8284.835	T 2.993%	102.774	145.881	78.141	94.665	0.743%	110.978	122.828	34.731	2304.625	2.186
%RSD		0.700	T 0.429	1.438	7.806	11.916	3.818	0.677	0.250	2.543	0.880	0.252	1.1

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:49:42	308.609	15232.139	2335522.200	126.557%	0.000	746851.230	126891.800
2	12:50:04	315.501	15383.363	2378415.000	125.381%	0.000	754373.280	130386.480
3	12:50:26	332.960	15200.624	2348723.700	126.753%	0.000	753800.310	128866.200
x		319.023	15272.042	2354220.300	126.230%	0.000	751674.940	128714.830
σ		12.552	97.686	21968.329	0.742%	0.000	4187.270	1752.254
%RSD		3.934	0.640	0.933	0.588	0.000	0.557	1.361

200-35700-A-14-A 11/1/2016 12:55:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:55:26	86.925%	522.767	4210.956	T 1009300.300	T 1534375.900	T 62006738.000	T 5616446.500	1007330.700	119.660%	18506.806	195962.070	142016.340
2	12:55:48	88.114%	458.882	4350.165	T 978424.800	T 1525809.600	T 62707894.000	T 5759031.000	1011618.300	118.539%	18637.003	198913.640	141358.970
3	12:56:10	84.293%	482.940	4401.964	T 945433.520	T 1511414.000	T 61756711.000	T 5591109.900	1003162.700	120.217%	17242.827	197888.370	142588.660
x		86.444%	488.196	4321.028	T 977719.530	T 1523866.500	T 62157114.000	T 5655529.100	1007370.500	119.472%	18128.879	197588.030	141987.990
σ		1.955%	32.265	98.781	T 31939.215	T 11603.611	T 493099.420	T 90526.025	4227.950	0.855%	770.100	1498.533	615.333
%RSD		2.262	6.609	2.286	T 3.267	T 0.761	T 0.793	T 1.601	0.420	0.715	4.248	0.758	0.433

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:55:26	2182.357	TM 23981328.000	T 224601780.000	102697.090	49688.335	1325726.300	434951.030	3550.081	74.222	790.007	651.889	2458.154
2	12:55:48	2119.737	TM 24503321.000	T 231772970.000	102564.000	50471.748	1338010.900	439151.810	3555.548	96.557	674.354	674.169	2951.510
3	12:56:10	2297.949	TM 24298521.000	T 227985620.000	101923.700	49938.076	1333950.700	437186.400	3469.742	103.469	731.155	665.293	2896.243
x		2200.014	TM 24261057.000	T 228120120.000	102394.930	50032.720	1332562.600	437096.410	3525.124	91.416	731.839	663.784	2768.635
σ		90.409	TM 263005.670	T 3587487.200	413.485	400.190	6258.850	2101.834	48.040	15.286	57.830	11.217	270.301
%RSD		4.109	TM 1.084	T 1.573	0.404	0.800	0.470	0.481	1.363	16.721	7.902	1.690	9.763

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:55:26	466282.760	299.186%	2322.024	6776.186	-263.550	3077.150	100.556%	53175.019	3428.449	2590.346	487373.810	121.658%
2	12:55:48	471199.930	299.607%	2261.933	6523.182	-246.608	2901.947	101.460%	52745.541	3247.698	2652.324	489540.790	122.784%
3	12:56:10	465198.980	299.981%	2409.135	6616.797	-251.679	2907.051	101.085%	54286.031	3330.845	2719.840	497976.400	125.941%
x		467560.560	299.591%	2331.031	6638.721	-253.946	2962.049	101.034%	53402.197	3335.664	2654.170	491630.330	123.461%
σ		3198.034	0.398%	74.013	127.919	8.696	99.713	0.454%	794.975	90.472	64.766	5601.643	2.221%
%RSD		0.684	0.133	3.175	1.927	3.424	3.366	0.450	1.489	2.712	2.440	1.139	1.799

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:55:26	963.533	6386.799	2199020.200	100.978%	0.000	202899.660	105698.980
2	12:55:48	1019.576	6742.116	2168726.300	103.577%	0.000	201276.710	105918.610
3	12:56:10	905.883	6708.513	2168816.400	104.536%	0.000	200174.260	104309.150
x		962.997	6612.476	2178854.300	103.030%	0.000	201450.210	105308.910
σ		56.848	196.163	17464.223	1.841%	0.000	1370.958	872.758
%RSD		5.903	2.967	0.802	1.787	0.000	0.681	0.829

CCV 11/1/2016 01:00:50 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	13:01:11	73.857%	96235.187	31306.062	┬13881814.000	┬4259677.900	┬38863917.000	┬14270864.000	1594193.600	72.802%	31974.097	┬2891358.100	894005.
2	13:01:33	75.907%	93428.058	31438.302	┬14269869.000	┬4421199.300	┬40097399.000	┬14638064.000	1619955.600	69.289%	31756.155	┬2901177.700	918813.
3	13:01:55	73.181%	94681.292	32500.088	┬13856181.000	┬4262897.600	┬39165135.000	┬14274059.000	1581168.600	69.977%	30108.070	┬2851301.000	884057.
x		74.315%	102.472%	101.269%	┬108.676%	┬105.287%	┬105.386%	┬99.135%	96.524%	70.690%	31279.441	┬96.959%	100.78
σ		1.419%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	n/a	1.862%	1020.273	┬n/a	
%RSD		1.910	1.484	2.062	┬1.655	┬2.140	┬1.633	┬1.466	1.235	2.634	3.262	┬0.917	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	13:01:11	6641.443	┬3986135.800	┬81003001.000	1325874.300	723821.610	811891.630	609653.300	89816.318	-706.901	9056.748	656.170	2353.
2	13:01:33	9816.640	┬4202608.200	┬84592747.000	1371827.300	744240.150	825442.360	630675.760	88854.639	-575.898	9219.159	673.935	2034.
3	13:01:55	10354.439	┬4021951.200	┬81578036.000	1324732.900	720213.720	806100.130	619352.570	87879.915	-654.135	9011.705	611.366	2264.
x		8937.507	┬98.111%	┬99.460%	100.812%	102.865%	93.849%	95.314%	93.532%	-645.645	100.218%	647.157	2217.
σ		2006.550	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	65.913	n/a	32.243	164.
%RSD		22.451	┬2.851	┬2.340	2.004	1.776	1.219	1.697	1.090	10.209	1.200	4.982	7.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	13:01:11	935561.040	81.514%	2007751.500	314376.000	292.136	157942.250	81.078%	1023823.300	681033.340	539423.690	703246.930	83.24
2	13:01:33	961302.960	79.675%	2027675.500	323136.090	-145.187	160618.140	77.828%	1058185.500	698143.140	558611.980	713555.980	81.48
3	13:01:55	954263.860	79.449%	2043358.200	318217.070	-92.488	159341.030	77.696%	1044856.400	696340.770	554206.990	708315.490	78.96
x		950375.950	80.213%	91.640%	99.379%	18.154	98.598%	78.867%	1042288.400	691839.080	105.730%	98.579%	81.23
σ		13304.079	1.133%	n/a	n/a	238.735	n/a	1.916%	17324.410	9401.338	n/a	n/a	2.14
%RSD		1.400	1.412	0.881	1.378	1315.077	0.840	2.429	1.662	1.359	1.825	0.728	2.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:01:11	37996.423	1950249.200	┬16189924.000	82.408%	0.000	239056.010	148914.410
2	13:01:33	38591.209	1894657.900	┬15883840.000	83.301%	0.000	249730.950	148815.460
3	13:01:55	39782.908	1873639.900	┬15663166.000	84.194%	0.000	251194.880	145069.080
x		114.761%	97.778%	┬93.527%	83.301%	0.000	78.875%	93.725%
σ		n/a	n/a	┬n/a	0.893%	0.000	n/a	n/a
%RSD		2.345	2.077	┬1.662	1.072	0.000	2.686	1.485

CCB 11/1/2016 01:06:33 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:06:55	76.417%	0.113	556.842	24742.097	2115.243	66060.290	12072.659	730.904	75.058%	19.881	1611.230	325.283
2	13:07:17	77.198%	0.047	426.165	24629.760	2006.744	66063.426	9570.960	775.537	75.599%	19.749	1721.417	308.199
3	13:07:38	78.015%	-6.430	470.924	17876.756	1784.882	62230.777	8940.403	571.728	76.005%	26.199	1152.268	142.551
x		77.210%	-2.090	484.643	22416.204	1968.956	64784.831	10194.674	692.723	75.554%	21.943	1494.972	258.678
σ		0.799%	3.759	66.410	3931.679	168.391	2211.876	1656.660	107.135	0.475%	3.687	301.860	100.931
%RSD		1.035	179.857	13.703	17.539	8.552	3.414	16.250	15.466	0.629	16.801	20.192	39.018

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:06:55	2590.947	17289.972	294745.200	198.285	88.970	208.208	310.181	94.009	366.766	24.137	660.338	3302.430
2	13:07:17	2652.568	17051.384	291625.790	170.116	74.933	220.984	254.276	108.200	368.442	27.688	641.878	3224.982
3	13:07:38	2906.383	16826.514	274576.920	208.454	120.451	244.228	169.028	36.065	369.177	-9.729	635.774	3603.631
x		2716.633	17055.957	286982.630	192.285	94.785	224.473	244.495	79.425	368.128	14.032	645.996	3377.015

σ		167.192	231.763	10856.292	19.861	23.310	18.262	71.083	38.215	1.236	20.654	12.789	200.040
%RSD		6.154	1.359	3.783	10.329	24.592	8.135	29.073	48.115	0.336	147.196	1.980	5.924
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:06:55	348.226	84.723%	2671.697	-12.910	-57.970	22.026	81.853%	2254.155	547.670	482.120	370.770	80.449%
2	13:07:17	380.554	84.293%	2804.179	17.052	-35.297	23.873	82.727%	2484.216	694.806	533.622	288.196	83.988%
3	13:07:38	359.996	84.073%	2335.806	17.569	-66.810	24.599	81.949%	2269.842	575.431	494.893	266.605	82.354%
x		362.926	84.363%	2603.894	7.237	-53.359	23.499	82.176%	2336.071	605.969	503.545	308.524	82.264%
σ		16.362	0.331%	241.436	17.450	16.255	1.327	0.479%	128.537	78.177	26.819	54.977	1.771%
%RSD		4.508	0.392	9.272	241.120	30.463	5.645	0.583	5.502	12.901	5.326	17.819	2.153

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:06:55	130.499	1030.313	1531.426	82.650%	0.000	-23887.376	-17.993
2	13:07:17	76.064	1067.884	1892.059	84.799%	0.000	-23691.923	-57.664
3	13:07:38	120.690	1034.805	2046.382	85.543%	0.000	-24039.151	-76.328
x		109.084	1044.334	1823.289	84.330%	0.000	-23872.817	-50.662
σ		29.014	20.518	264.276	1.503%	0.000	174.071	29.791
%RSD		26.598	1.965	14.494	1.782	0.000	0.729	58.804

CCVL 11/1/2016 01:12:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:12:38	87.144%	151.355	5651.886	723203.180	29569.191	99452.807	729500.460	26865.028	81.430%	48.936	13452.615	9952.037
2	13:13:00	86.740%	157.854	5373.530	687802.890	30113.007	116406.760	701709.980	25816.544	83.576%	29.848	12601.768	9523.468
3	13:13:22	83.772%	154.723	5505.213	705790.730	30143.933	127793.560	713026.720	25845.058	82.266%	30.281	13607.680	10009.531
x		85.885%	104.495%	109.851%	109.524%	109.600%	183.953%	98.450%	94.839%	82.424%	36.355	111.224%	110.184%
σ		1.842%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.082%	10.898	n/a	n/a
%RSD		2.144	2.102	2.527	2.509	1.080	12.450	1.955	2.282	1.313	29.976	4.096	2.702

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:12:38	3789.538	15030.528	701860.750	2856.882	1406.457	3779.059	9890.279	822.198	511.052	120.160	663.437	3330.303
2	13:13:00	3588.900	20096.241	784086.470	3033.740	1172.271	3743.828	9838.709	959.863	482.065	183.737	656.798	3359.715
3	13:13:22	3695.122	21553.666	801815.020	3052.326	1197.406	3893.138	10116.609	983.530	448.507	166.719	643.275	3627.002
x		3691.187	284.637%	138.085%	112.066%	110.941%	109.618%	95.605%	97.044%	480.541	86.421%	654.503	3439.007
σ		100.377	n/a	n/a	n/a	n/a	n/a	n/a	n/a	31.300	n/a	10.275	163.471
%RSD		2.719	18.122	6.994	3.619	10.214	2.051	1.486	9.450	6.514	20.980	1.570	4.753

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:12:38	23830.135	88.856%	16963.955	3274.443	-64.879	642.210	88.782%	1582.601	5507.992	4366.539	5557.078	87.573%
2	13:13:00	25017.815	87.787%	18282.586	3238.417	-57.786	776.836	88.689%	1984.558	5725.994	4461.386	5703.850	87.143%
3	13:13:22	24410.228	89.274%	17405.666	3350.357	25.719	732.129	87.678%	2001.750	5775.782	4571.368	5821.086	87.407%
x		100.361%	88.639%	99.219%	102.560%	-32.315	88.764%	88.383%	1856.303	5669.923	107.181%	99.049%	87.374%
σ		n/a	0.766%	n/a	n/a	50.384	n/a	0.612%	237.189	142.428	n/a	n/a	0.217%
%RSD		2.432	0.865	3.824	1.738	155.915	9.562	0.693	12.777	2.512	2.295	2.323	0.248

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:12:38	3389.224	19122.203	15839.710	88.679%	0.000	11676.971	15798.389
2	13:13:00	3377.382	19702.009	17073.253	88.204%	0.000	9594.200	15498.616
3	13:13:22	3298.445	20004.780	17566.745	88.121%	0.000	9736.660	15854.254
x		99.258%	100.588%	123.626%	88.335%	0.000	33.051%	99.802%
σ		n/a	n/a	n/a	0.301%	0.000	n/a	n/a
%RSD		1.471	2.287	5.287	0.341	0.000	11.257	1.217

200-35700-A-15-A 11/1/2016 01:18:00 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:18:22	90.078%	448.737	4006.767	T 962860.930	T 1457476.400	T 59693734.000	T 5310913.800	936318.330	115.644%	17862.499	182949.720	133815.160
2	13:18:44	91.315%	543.871	3615.755	T 930058.670	T 1446340.800	T 59772668.000	T 5221542.300	945119.530	118.205%	17542.424	180648.140	130502.730
3	13:19:06	93.914%	480.726	3813.829	T 927401.790	T 1433710.400	T 59029334.000	T 5328116.500	935159.660	120.484%	19545.782	181842.510	132557.840
x		91.769%	491.111	3812.117	T 940107.130	T 1445842.500	T 59498579.000	T 5286857.500	938865.840	118.111%	18316.902	181813.460	132291.910
σ		1.958%	48.410	195.512	T 19750.096	T 11890.865	T 408290.030	T 57214.903	5446.753	2.422%	1076.207	1151.064	1672.147
%RSD		2.133	9.857	5.129	T 2.101	T 0.822	T 0.686	T 1.082	0.580	2.050	5.875	0.633	1.264

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:18:22	2283.606	TM 21731529.000	T 215012800.000	96507.492	47570.875	1285976.800	416114.880	3187.654	145.043	619.068	673.076	3093.963
2	13:18:44	2583.357	TM 21618810.000	T 216816360.000	98363.732	47604.966	1267848.300	413468.240	3303.088	128.359	617.057	694.578	3088.707
3	13:19:06	2045.377	TM 21489233.000	T 215417240.000	96447.753	46633.118	1243224.600	404085.950	3510.838	70.565	731.875	691.778	2943.332
x		2304.113	TM 21613191.000	T 215748800.000	97106.325	47269.653	1265683.300	411223.030	3333.860	114.655	656.000	686.477	3042.001
σ		269.576	TM 121245.900	T 946395.150	1089.356	551.519	21458.154	6320.959	163.775	39.084	65.718	11.690	85.490

%RSD		11.700	TM 0.561	T 0.439	1.122	1.167	1.695	1.537	4.912	34.088	10.018	1.703	2.810
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:18:22	442775.520	284.144%	2496.525	6053.591	-176.136	2830.671	95.979%	50992.090	3278.320	2687.370	474633.890	118.584%
2	13:18:44	442066.570	293.195%	2442.010	5897.694	-200.675	2687.879	99.343%	51415.968	3360.103	2612.356	469203.280	119.710%
3	13:19:06	436502.950	290.533%	2382.140	5653.553	-105.271	2439.089	101.408%	51333.621	3399.028	2637.963	461293.070	121.175%
x		440448.350	289.290%	2440.225	5868.279	-160.694	2652.546	98.910%	51247.226	3345.817	2645.896	468376.750	119.823%
σ		3435.151	4.651%	57.213	201.635	49.541	198.168	2.740%	224.758	61.609	38.131	6708.710	1.299%
%RSD		0.780	1.608	2.345	3.436	30.829	7.471	2.770	0.439	1.841	1.441	1.432	1.084

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:18:22	875.462	6361.033	2109338.500	98.808%	0.000	197236.020	103314.230
2	13:18:44	983.899	6151.853	2093764.000	102.627%	0.000	190979.120	100051.240
3	13:19:06	884.969	6487.099	2102647.300	102.720%	0.000	189592.940	100597.050
x		914.777	6333.328	2101916.600	101.385%	0.000	192602.690	101320.840
σ		60.050	169.331	7812.932	2.232%	0.000	4071.997	1747.765
%RSD		6.564	2.674	0.372	2.202	0.000	2.114	1.725

200-35700-A-16-A 11/1/2016 01:23:44 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:24:06	96.278%	850.486	3871.206	T 880211.990	T 1903995.700	T 81010263.000	T 6691574.300	902287.680	146.812%	18247.392	272271.680	183027.260
2	13:24:28	95.563%	859.512	3906.862	T 880531.460	T 1898013.200	T 81506190.000	T 6766255.200	T 915441.010	145.131%	19962.414	269395.390	181296.370
3	13:24:50	93.969%	874.202	3907.267	T 859369.970	T 1860439.900	T 78228512.000	T 6557101.200	901550.330	144.915%	17509.606	268683.730	183832.660
x		95.270%	861.400	3895.112	T 873371.140	T 1887482.900	T 80248322.000	T 6671643.600	T 906426.340	145.619%	18573.137	270116.930	182718.770
σ		1.182%	11.970	20.704	T 12126.422	T 23610.173	T 1766694.300	T 105991.880	T 7815.632	1.039%	1258.431	1899.690	1295.983
%RSD		1.241	1.390	0.532	T 1.388	T 1.251	T 2.202	T 1.589	T 0.862	0.713	6.776	0.703	0.709
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:24:06	2593.491	TM 27011003.000	T 337135490.000	160189.300	69285.115	T 2957997.400	735112.370	5301.080	80.068	807.894	740.721	2806.123
2	13:24:28	2622.235	TM 27701238.000	T 348795050.000	161518.260	67762.570	T 2981362.000	735851.120	5240.530	81.957	844.055	721.879	2956.599
3	13:24:50	2015.324	TM 27790130.000	T 347391050.000	162917.040	67863.497	T 2926537.200	734372.550	5190.814	82.378	812.789	714.189	2891.452
x		2410.350	TM 27500790.000	T 344440530.000	161541.530	68303.727	T 2955298.900	735112.010	5244.141	81.468	821.580	725.596	2884.725
σ		342.404	TM 426490.240	T 6365180.300	1364.019	851.403	T 27511.824	739.285	55.222	1.230	19.618	13.651	75.463
%RSD		14.206	TM 1.551	T 1.848	0.844	1.246	T 0.931	0.101	1.053	1.510	2.388	1.881	2.616
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:24:06	518564.870	432.510%	3199.679	6768.784	-267.543	5397.934	109.558%	65246.603	4021.231	3136.123	636636.520	144.519%
2	13:24:28	529238.840	431.391%	3187.208	6803.094	-127.695	5227.330	106.669%	67428.357	4017.650	3182.872	664400.130	147.387%
3	13:24:50	519724.070	434.026%	3159.528	6345.336	-279.668	5202.372	107.187%	67303.668	3836.459	3245.950	646689.920	143.172%
x		522509.260	432.642%	3182.138	6639.071	-224.969	5275.879	107.805%	66659.543	3958.447	3188.315	649242.190	145.026%
σ		5856.740	1.322%	20.550	254.960	84.460	106.437	1.541%	1225.229	105.660	55.116	14056.673	2.153%
%RSD		1.121	0.306	0.646	3.840	37.543	2.017	1.429	1.838	2.669	1.729	2.165	1.484

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:24:06	1127.981	8168.605	3268577.100	111.106%	4.500	300323.430	128333.690
2	13:24:28	1149.532	8693.005	3253909.200	112.224%	0.000	301427.190	126266.460
3	13:24:50	1051.569	8189.713	3300887.300	111.003%	0.000	301104.140	127580.150
x		1109.694	8350.441	3274457.900	111.444%	1.500	300951.590	127393.430
σ		51.478	296.857	24034.826	0.677%	2.598	567.474	1046.191
%RSD		4.639	3.555	0.734	0.608	173.205	0.189	0.821

200-35700-A-17-A 11/1/2016 01:29:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:29:49	95.718%	946.917	3832.293	T 738041.870	T 1975656.700	T 81530256.000	T 6939515.600	966707.910	142.467%	17379.197	274726.330	185409.260
2	13:30:11	91.794%	971.333	4091.669	T 719903.600	T 1923516.700	T 78723831.000	T 6764057.600	965407.590	144.893%	17671.140	268208.220	183254.540
3	13:30:33	93.855%	1000.474	3645.833	T 705083.870	T 1948398.500	T 80872861.000	T 7010486.100	T 958993.210	143.799%	17397.760	274638.950	188911.460
x		93.789%	972.908	3856.598	T 721009.780	T 1949190.600	T 80375649.000	T 6904686.400	T 963702.900	143.720%	17482.699	272524.500	185858.420
σ		1.963%	26.813	223.910	T 16506.824	T 26079.040	T 1467794.300	T 126852.480	T 4130.208	1.215%	163.458	3738.263	2855.084
%RSD		2.093	2.756	5.806	T 2.289	T 1.338	T 1.826	T 1.837	T 0.429	0.845	0.935	1.372	1.536

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:29:49	2654.479	T 14809883.000	T 361651410.000	159425.100	67857.764	T 2268873.400	642978.110	4344.015	97.184	671.240	722.598	2827.485
2	13:30:11	2689.914	T 14889561.000	T 359401240.000	156839.920	65340.233	T 2207170.000	646270.200	4470.030	87.151	693.406	679.707	2889.291
3	13:30:33	2169.605	T 14780521.000	T 359225290.000	156609.170	66435.326	T 2249054.200	648829.170	4427.563	94.660	622.888	707.261	3045.006
x		2504.666	T 14826655.000	T 360092640.000	157624.730	66544.441	T 2241699.200	646025.830	4413.869	92.998	662.511	703.188	2920.594
σ		290.712	T 56421.787	T 1352791.800	1563.430	1262.307	T 31502.358	2933.173	64.114	5.219	36.060	21.734	112.088
%RSD		11.607	T 0.381	T 0.376	0.992	1.897	T 1.405	0.454	1.453	5.612	5.443	3.091	3.838

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:29:49	513405.790	458.306%	2994.219	5130.855	-221.262	4048.727	106.147%	53582.990	3883.393	3000.066	577549.700	146.782%
2	13:30:11	509074.960	459.645%	2941.823	4752.338	-239.458	4347.313	106.077%	52828.414	3899.297	3073.751	586193.390	145.192%
3	13:30:33	507379.230	455.273%	3056.223	4890.408	-276.313	4293.954	105.338%	54108.826	3689.718	3128.627	584914.790	147.554%
x		509953.330	457.741%	2997.422	4924.534	-245.678	4229.998	105.854%	53506.743	3824.136	3067.481	582885.960	146.509%
σ		3107.815	2.240%	57.267	191.552	28.048	159.236	0.448%	643.602	116.681	64.510	4665.349	1.204%
%RSD		0.609	0.489	1.911	3.890	11.416	3.764	0.424	1.203	3.051	2.103	0.800	0.822

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:29:49	827.356	8276.110	2911646.000	108.468%	0.000	388410.390	130445.140
2	13:30:11	871.192	8342.246	2885032.800	110.714%	0.000	385864.670	129284.590
3	13:30:33	822.865	8258.145	2921690.600	109.847%	0.000	386944.670	130205.150
x		840.471	8292.167	2906123.100	109.677%	0.000	387073.240	129978.290
σ		26.700	44.290	18942.659	1.133%	0.000	1277.722	612.635
%RSD		3.177	0.534	0.652	1.033	0.000	0.330	0.471

200-35700-A-18-A 11/1/2016 01:35:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:35:31	88.437%	1121.526	2806.752	T 397280.710	T 2917611.300	T 101257410.000	T 8009006.600	790990.310	171.072%	23254.547	246637.770	240194.490
2	13:35:53	87.754%	1212.932	2932.709	399225.580	T 2931585.600	T 100750570.000	T 7987956.000	802510.270	171.288%	22737.376	249741.530	242172.870
3	13:36:14	87.238%	1286.051	3128.893	395287.310	T 2865948.400	T 98009421.000	T 7784977.500	774572.940	176.426%	21934.071	242335.370	237951.790
x		87.810%	1206.836	2956.118	T 397264.530	T 2905048.400	T 100005800.000	T 7927313.400	789357.840	172.929%	22641.998	246238.220	240106.390
σ		0.601%	82.432	162.341	T 1969.182	T 34574.991	T 1747387.800	T 123715.010	14040.023	3.031%	665.385	3719.211	2111.920
%RSD		0.685	6.830	5.492	T 0.496	T 1.190	T 1.747	T 1.561	1.779	1.753	2.939	1.510	0.880

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:35:31	3057.980	TM 25350333.000	T 323039510.000	169642.160	84303.819	92835.961	383758.370	1527.254	59.464	492.041	735.481	2177.584
2	13:35:53	2755.788	TM 25828623.000	T 328757660.000	171121.080	84686.149	94856.412	385156.820	1500.003	72.935	382.561	763.407	2545.197
3	13:36:14	2653.106	TM 25119931.000	T 317629380.000	164688.470	80861.244	93752.367	387937.560	1524.774	70.302	391.052	744.997	2418.763
x		2822.291	TM 25432962.000	T 323142190.000	168483.900	83283.737	93814.913	385617.590	1517.343	67.567	421.884	747.962	2380.515

σ		210.470	TM 361499.490	T 5564852.000	3369.095	2106.632	1011.677	2127.357	15.069	7.139	60.905	14.197	186.767
%RSD		7.457	TM 1.421	T 1.722	2.000	2.529	1.078	0.552	0.993	10.566	14.436	1.898	7.846
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:35:31	957218.410	658.537%	6127.946	2763.973	-523.647	2453.990	102.996%	29401.559	840.769	682.205	1351197.800	169.180%
2	13:35:53	949210.090	656.063%	6084.750	2666.554	-415.070	2246.257	103.748%	29656.872	891.483	686.818	1354896.700	173.958%
3	13:36:14	937027.020	651.757%	6258.279	2394.538	-465.627	2441.974	103.426%	30088.304	931.067	718.208	1368887.100	173.533%
x		947818.510	655.453%	6156.992	2608.355	-468.115	2380.740	103.390%	29715.578	887.773	695.744	1358327.200	172.224%
σ		10167.371	3.431%	90.337	191.470	54.331	116.621	0.377%	347.116	45.263	19.591	9330.316	2.644%
%RSD		1.073	0.523	1.467	7.341	11.606	4.899	0.365	1.168	5.098	2.816	0.687	1.535

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:35:31	429.963	8634.097	1786836.500	110.565%	0.000	632327.870	113257.360
2	13:35:53	362.687	8894.384	1756150.100	112.774%	0.000	641259.940	112679.250
3	13:36:14	398.228	8684.606	1795825.300	110.556%	0.000	650173.810	116124.250
x		396.959	8737.696	1779604.000	111.298%	0.000	641253.870	114020.290
σ		33.656	138.026	20802.916	1.278%	0.000	8922.972	1844.870
%RSD		8.478	1.580	1.169	1.148	0.000	1.391	1.618

200-35736-A-13-A 11/1/2016 01:40:52 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:41:13	92.971%	1464.526	3219.760	┬616408.760	┬2154185.700	┬117808960.000	┬8173190.300	805443.780	164.744%	9751.791	344669.870	235088.210
2	13:41:35	91.549%	1421.831	3289.200	┬606754.450	┬2141515.200	┬115814530.000	┬8054769.900	786520.750	168.120%	10024.085	347065.720	236001.450
3	13:41:56	91.163%	1405.926	3534.328	┬613079.840	┬2164069.800	┬118588860.000	┬8234019.900	808627.620	166.383%	8969.391	345801.370	238018.140
x		91.894%	1430.761	3347.762	┬612081.020	┬2153256.900	┬117404120.000	┬8153993.300	800197.380	166.415%	9581.756	345845.650	236369.270
σ		0.952%	30.304	165.258	┬4904.045	┬11305.973	┬1430785.300	┬91153.873	11950.810	1.688%	547.521	1198.537	1499.194
%RSD		1.036	2.118	4.936	┬0.801	┬0.525	┬1.219	┬1.118	1.493	1.015	5.714	0.347	0.634

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:41:13	2719.960	┬10872953.000	┬379645580.000	153074.980	71535.725	93624.233	329583.510	3981.403	97.885	414.579	753.311	3066.021
2	13:41:35	2432.051	┬10592124.000	┬368529750.000	147892.860	69987.829	90902.386	323424.320	4076.087	83.238	458.675	762.753	2994.091
3	13:41:56	2874.415	┬10889307.000	┬376153980.000	150074.460	69483.911	90224.121	324333.690	3988.849	96.803	443.292	761.129	2840.671
x		2675.475	┬10784795.000	┬374776440.000	150347.430	70335.821	91583.580	325780.510	4015.446	92.642	438.849	759.064	2966.928
σ		224.512	┬167057.890	┬5684508.400	2601.823	1069.257	1799.502	3324.736	52.648	8.162	22.381	5.048	115.105
%RSD		8.391	┬1.549	┬1.517	1.731	1.520	1.965	1.021	1.311	8.811	5.100	0.665	3.880

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:41:13	568580.470	538.407%	2540.464	3608.815	-494.448	2752.873	103.545%	33817.794	1949.244	1561.427	1024602.200	155.882%
2	13:41:35	560267.720	534.845%	2586.677	3094.193	-451.810	2556.419	105.869%	33728.646	1888.783	1530.637	993370.850	157.230%
3	13:41:56	568122.000	538.705%	2617.995	3384.926	-451.491	2470.882	104.912%	33453.530	1991.060	1561.035	1011377.400	157.692%
x		565656.730	537.319%	2581.712	3362.645	-465.916	2593.391	104.776%	33666.656	1943.029	1551.033	1009783.500	156.935%
σ		4672.644	2.148%	39.003	258.034	24.710	144.586	1.168%	189.879	51.421	17.664	15676.545	0.941%
%RSD		0.826	0.400	1.511	7.674	5.303	5.575	1.115	0.564	2.646	1.139	1.552	0.599

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:41:13	517.412	13166.659	2300524.800	113.687%	0.000	441591.460	170422.540
2	13:41:35	512.709	13439.417	2334626.800	113.986%	0.000	449025.650	173371.300
3	13:41:56	492.090	13597.349	2348371.700	112.923%	4.428	458514.770	173633.590
x		507.404	13401.142	2327841.100	113.532%	1.476	449710.630	172475.810
σ		13.469	217.881	24634.661	0.548%	2.556	8482.427	1783.014
%RSD		2.654	1.626	1.058	0.483	173.205	1.886	1.034

200-35700-A-16-A @2 11/1/2016 01:46:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:46:56	88.113%	578.054	2278.625	┬565269.060	┬1203604.300	┬50968046.000	┬4218489.800	579701.130	118.665%	11659.145	172536.550	115964.250
2	13:47:17	88.678%	560.238	2319.268	570167.790	1215861.700	┬51238711.000	┬4231279.000	573780.780	118.865%	12054.737	167297.640	114863.330
3	13:47:39	89.730%	539.659	2122.576	544115.450	┬1162559.200	┬49059288.000	┬4050335.100	563574.500	119.623%	11745.140	168910.160	114799.060
x		88.840%	559.317	2240.157	┬559850.760	┬1194008.400	┬50422015.000	┬4166701.300	572352.130	119.051%	11819.674	169581.450	115208.880
σ		0.821%	19.214	103.835	┬13845.557	┬27916.866	┬1187890.100	┬100978.730	8157.685	0.505%	208.062	2683.187	654.956
%RSD		0.924	3.435	4.635	┬2.473	┬2.338	┬2.356	┬2.423	1.425	0.424	1.760	1.582	0.568

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:46:56	2565.239	┬17490494.000	┬221055390.000	104560.220	44131.378	┬1636959.400	427881.170	4454.814	142.765	503.705	674.614	3039.097
2	13:47:17	2461.767	┬17401664.000	┬219738090.000	101909.150	42630.736	1658875.900	437190.940	4585.846	134.697	520.688	686.780	3077.745
3	13:47:39	1821.632	┬17213467.000	┬216717180.000	99529.206	43115.375	1660739.900	429354.710	4610.989	153.255	435.230	700.243	3315.652
x		2282.879	┬17368542.000	┬219170220.000	101999.530	43292.496	┬1652191.700	431475.610	4550.550	143.573	486.541	687.213	3144.165
σ		402.788	┬141452.830	┬2224160.400	2516.726	765.840	┬13224.486	5004.161	83.857	9.305	45.241	12.820	149.764

%RSD		17.644	┬0.814	┬1.015	2.467	1.769	┬0.800	1.160	1.843	6.481	9.298	1.865	4.763
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:46:56	287362.220	274.137%	2636.677	3851.063	-181.690	2842.935	101.467%	36174.532	2266.452	1794.100	355033.810	118.335%
2	13:47:17	292552.040	268.972%	2600.733	3822.408	-234.218	3322.784	99.888%	36440.358	2247.472	1770.629	360722.920	119.611%
3	13:47:39	287311.850	267.138%	2628.242	3556.651	-82.671	2874.317	100.039%	36961.649	2256.366	1763.853	360329.010	118.645%
x		289075.370	270.082%	2621.884	3743.374	-166.193	3013.345	100.465%	36525.513	2256.763	1776.194	358695.240	118.864%
σ		3010.986	3.629%	18.796	162.340	76.953	268.441	0.871%	400.408	9.496	15.873	3177.007	0.666%
%RSD		1.042	1.344	0.717	4.337	46.303	8.908	0.867	1.096	0.421	0.894	0.886	0.560

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:46:56	708.350	4583.295	1843018.400	102.394%	0.000	153881.860	71625.459
2	13:47:17	621.033	4604.518	1825068.400	103.540%	0.000	152367.540	70782.272
3	13:47:39	676.919	4942.244	1857406.600	102.245%	0.000	153507.170	70413.820
x		668.767	4710.019	1841831.200	102.726%	0.000	153252.190	70940.517
σ		44.226	201.393	16201.763	0.708%	0.000	788.705	621.127
%RSD		6.613	4.276	0.880	0.690	0.000	0.515	0.876

CCV 11/1/2016 01:52:18 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**5**
1	13:52:39	78.165%	95769.340	31895.448	┬13595412.000	┬4160129.800	┬38194047.000	┬13991600.000	1561551.300	77.197%	31027.218	┬2823396.500	864524.
2	13:53:01	74.570%	98183.724	32515.664	┬14061670.000	┬4252668.600	┬39289163.000	┬14411627.000	1599847.000	72.906%	31463.472	┬2922766.100	911483.
3	13:53:23	75.867%	95141.240	32860.577	┬14055522.000	┬4323890.100	┬39136511.000	┬14643004.000	1623736.600	71.427%	32141.446	┬2910681.300	900406.
x		76.201%	104.184%	103.424%	┬107.912%	┬103.603%	┬104.042%	┬98.821%	96.319%	73.843%	31544.045	┬97.105%	100.01
σ		1.820%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	n/a	2.997%	561.467	┬n/a	
%RSD		2.389	1.667	1.508	┬1.923	┬1.934	┬1.526	┬2.301	1.967	4.059	1.780	┬1.879	2.

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**8**
1	13:52:39	10193.853	┬3960254.300	┬80520063.000	1308213.700	703713.760	829217.800	632252.200	91970.616	-617.281	9340.900	610.822	2310.
2	13:53:01	8691.419	┬4086361.600	┬82927167.000	1340966.400	722269.820	823705.640	637582.910	93896.180	-998.432	9414.207	644.620	2144.
3	13:53:23	9566.557	┬4076525.700	┬84217194.000	1355984.800	727067.630	827383.460	637511.130	92982.410	-750.790	9140.694	616.376	2684.
x		9483.943	┬97.408%	┬99.657%	100.379%	101.209%	95.265%	97.757%	97.848%	-788.835	102.452%	623.939	2379.
σ		754.616	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	193.402	n/a	18.124	276.
%RSD		7.957	┬1.736	┬2.273	1.830	1.719	0.340	0.481	1.036	24.517	1.523	2.905	11.

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	13:52:39	957383.980	81.717%	2032906.000	323280.300	576.116	161319.260	80.794%	1032531.300	693807.570	548538.680	702319.030	82.39
2	13:53:01	953825.650	79.953%	2071138.500	316711.080	742.780	158996.300	79.738%	1039023.100	697540.390	552976.060	703947.260	80.66
3	13:53:23	950022.310	77.610%	2110165.900	322097.030	994.655	159230.520	78.200%	1048669.200	700776.330	556934.650	711949.240	79.66
x		953743.980	79.760%	93.682%	100.040%	771.184	98.937%	79.577%	1040074.500	697374.760	106.127%	98.259%	80.90
σ		3681.511	2.060%	n/a	n/a	210.710	n/a	1.304%	8120.130	3487.327	n/a	n/a	1.37
%RSD		0.386	2.583	1.865	1.092	27.323	0.800	1.639	0.781	0.500	0.760	0.730	1.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:52:39	38145.920	1918272.400	┬16303501.000	82.324%	0.000	245308.430	148460.330
2	13:53:01	39996.485	1897836.400	┬16019383.000	83.217%	0.000	254627.040	148886.690
3	13:53:23	39766.319	1939275.900	┬16243321.000	81.422%	0.000	262230.650	146872.650
x		116.278%	98.407%	┬95.152%	82.321%	0.000	81.240%	94.025%
σ		n/a	n/a	┬n/a	0.898%	0.000	n/a	n/a
%RSD		2.566	1.080	┬0.925	1.091	0.000	3.336	0.717

CCB 11/1/2016 01:58:01 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:58:23	82.352%	-0.358	326.529	24077.801	327.701	5765.303	8098.442	99.355	77.715%	19.219	919.193	140.074
2	13:58:45	80.096%	-3.309	453.603	19982.538	452.333	5423.920	2852.465	183.880	80.053%	37.361	861.455	171.382
3	13:59:06	78.601%	3.112	351.449	25010.692	424.337	6375.768	7550.907	184.083	76.760%	12.971	431.625	25.712
x		80.350%	-0.185	377.194	23023.677	401.457	5854.997	6167.271	155.773	78.176%	23.184	737.424	112.389
σ		1.888%	3.214	67.335	2674.690	65.390	482.221	2883.731	48.859	1.694%	12.669	266.399	76.680
%RSD		2.350	1737.783	17.852	11.617	16.288	8.236	46.759	31.366	2.167	54.647	36.126	68.227

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:58:23	2942.484	730.717	37481.660	61.412	40.062	5.024	155.641	87.988	392.403	-21.542	651.148	3490.583
2	13:58:45	2892.425	567.785	21004.286	39.667	6.954	23.137	-10.885	258.902	326.692	59.273	639.711	3194.890
3	13:59:06	2902.720	822.407	32770.756	134.344	47.376	-36.421	120.410	104.545	351.965	30.927	649.400	3470.182
x		2912.543	706.970	30418.901	78.474	31.464	-2.753	88.389	150.478	357.020	22.886	646.753	3385.218
σ		26.436	128.962	8486.718	49.591	21.539	30.531	87.759	94.262	33.146	41.003	6.161	165.144
%RSD		0.908	18.241	27.899	63.194	68.457	1108.841	99.288	62.642	9.284	179.161	0.953	4.878

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:58:23	82.838	85.762%	2539.684	-13.514	-39.140	45.086	83.930%	2305.625	550.550	417.026	75.444	81.563%
2	13:58:45	106.765	85.785%	2538.985	-7.535	-30.465	-5.130	83.867%	2313.311	525.275	461.514	69.544	83.227%
3	13:59:06	76.980	84.845%	2573.494	-25.417	-26.119	2.530	83.848%	2158.786	536.850	501.593	105.341	83.694%
x		88.861	85.464%	2550.721	-15.489	-31.908	14.162	83.882%	2259.241	537.558	460.045	83.443	82.828%
σ		15.780	0.536%	19.725	9.103	6.629	27.053	0.043%	87.082	12.652	42.303	19.192	1.120%
%RSD		17.758	0.627	0.773	58.773	20.777	191.033	0.051	3.854	2.354	9.195	23.001	1.352

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:58:23	91.510	1086.363	1240.862	82.091%	0.000	-23959.991	-163.021
2	13:58:45	71.036	982.508	1209.195	85.031%	0.000	-24329.269	-134.462
3	13:59:06	88.388	952.000	1265.838	82.622%	0.000	-24207.225	-151.074
x		83.645	1006.957	1238.632	83.248%	0.000	-24165.495	-149.519
σ		11.031	70.439	28.387	1.567%	0.000	188.142	14.343
%RSD		13.188	6.995	2.292	1.882	0.000	0.779	9.593

CCVL 11/1/2016 02:03:44 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:04:06	87.284%	156.831	5310.187	732069.680	29623.410	77714.918	734731.940	25630.786	83.673%	17.896	11716.851	9517.182
2	14:04:28	87.231%	194.187	5141.509	721810.830	29220.692	84408.165	737325.990	27773.827	84.309%	23.635	12711.766	9674.050
3	14:04:50	84.774%	170.513	5585.315	758071.660	31463.634	93116.369	750358.410	27340.535	81.333%	55.153	13458.998	10444.933
x		86.430%	117.468%	106.571%	114.448%	110.187%	136.626%	102.040%	97.518%	83.105%	32.228	106.248%	110.748%
σ		1.434%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.567%	20.060	n/a	n/a
%RSD		1.660	10.872	4.191	2.535	3.972	9.077	1.130	4.210	1.886	62.244	6.920	5.027

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:04:06	4145.947	9057.283	626703.220	3137.781	1236.631	3934.858	10198.379	1102.476	521.577	243.292	641.595	3243.398
2	14:04:28	3802.839	9905.882	661357.790	3297.649	1173.731	3682.845	10317.511	1063.001	452.703	190.969	627.732	3347.623
3	14:04:50	3794.669	12015.944	697724.040	3038.615	1463.481	3633.368	10100.963	1001.846	505.185	202.903	668.930	3329.630
x		3914.485	155.571%	119.858%	118.721%	113.811%	108.034%	98.075%	111.141%	493.155	117.004%	646.086	3306.883

σ		200.493	n/a	n/a	n/a	n/a	n/a	n/a	n/a	35.978	n/a	20.963	55.711
%RSD		5.122	14.753	5.365	4.139	11.803	4.311	1.063	4.802	7.295	12.911	3.245	1.685
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:04:06	24862.496	86.975%	17711.531	3449.470	-14.934	806.528	87.050%	1935.764	5616.813	4502.057	5914.832	85.539%
2	14:04:28	24246.170	91.730%	16965.696	3480.489	-25.562	815.419	88.415%	1747.523	5599.735	4484.528	5681.983	87.791%
3	14:04:50	25154.278	87.398%	18587.474	3486.028	-39.088	947.241	86.857%	1922.806	5969.636	4708.611	6014.405	86.586%
x		101.737%	88.701%	100.373%	108.308%	-26.528	106.012%	87.441%	1868.698	5728.728	109.548%	102.118%	86.639%
σ		n/a	2.632%	n/a	n/a	12.106	n/a	0.849%	105.140	208.807	n/a	n/a	1.127%
%RSD		1.873	2.967	4.572	0.567	45.634	9.201	0.971	5.626	3.645	2.730	2.906	1.301

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:04:06	3037.914	19640.800	17258.877	85.962%	0.000	12381.320	16146.527
2	14:04:28	3215.520	19926.189	17463.532	87.264%	0.000	11482.921	15455.393
3	14:04:50	3433.976	20059.873	17152.447	86.734%	0.000	10156.571	16301.102
x		95.534%	101.952%	127.043%	86.653%	0.000	36.263%	101.394%
σ		n/a	n/a	n/a	0.655%	0.000	n/a	n/a
%RSD		6.143	1.077	0.914	0.756	0.000	9.869	2.820

Mercury Calibration Curve Worksheet

Instrument ID: MEPCV3II

Analyst: MDK

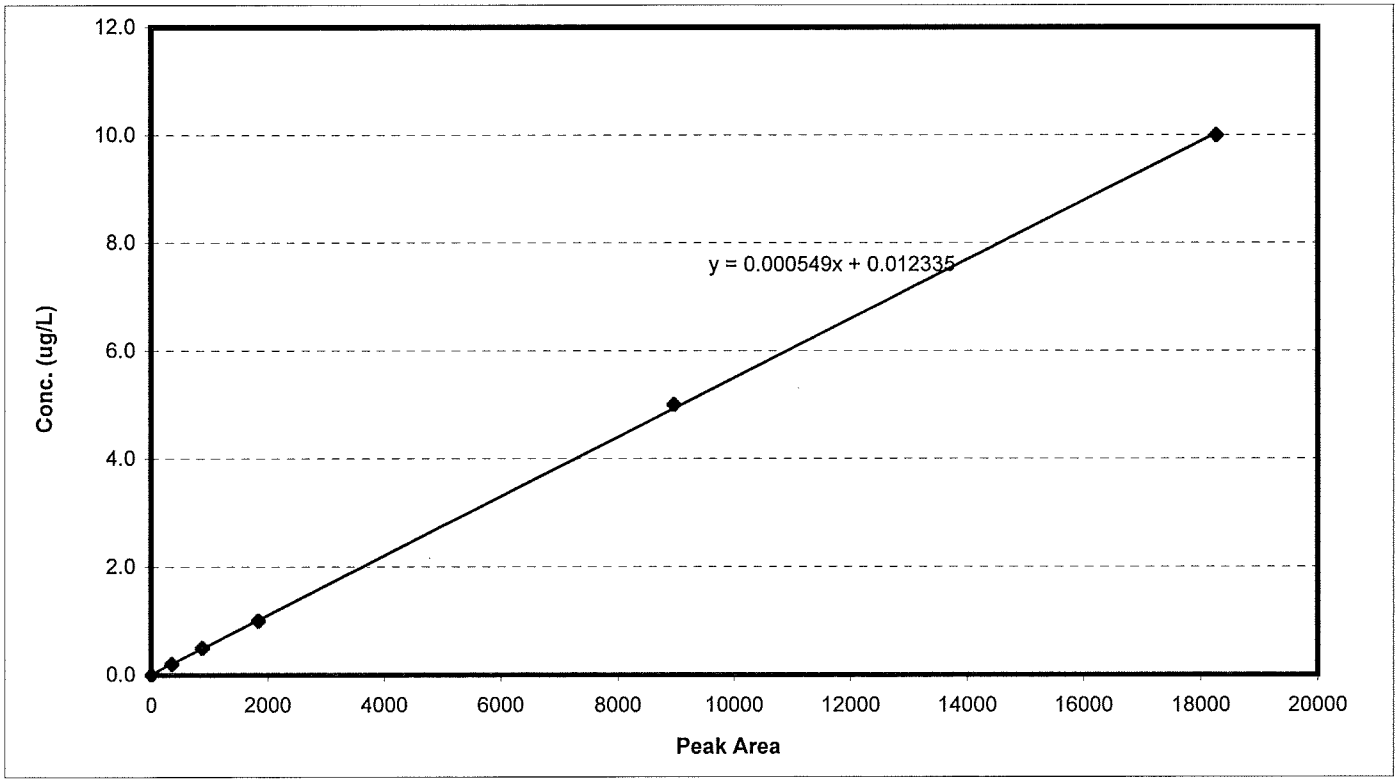
Run ID: 101716CC

Date: 10/17/2016

TALS Batch: 110261

	ICAL Conc. (ug/L)	ICAL Peak Area	Calculated Result	% Difference
Std 0	0.0	13	0.0195	
Std 1	0.2	356	0.2076	3.8
Std 2	0.5	874	0.4918	1.6
Std 3	1.0	1832	1.0174	1.7
Std 4	5.0	8967	4.9317	1.4
Std 5	10	18264	10.0320	0.3

N =	6
r =	0.999959263
Intercept =	0.012335458
Slope =	0.000548604



MEPCV3II * 7470A *
Folder: 081216L 101716CC* Page 307
Protocol: 081216L Analyst:MDK*
POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Standard: 1 Rep: 1				Seq: 1247	16:09:14 17 Oct 16				HG
Hg	.000	ppb	13	S01 *					=
*** Standard: 2 Rep: 1				Seq: 1248	16:11:00 17 Oct 16				HG
Hg	.200	ppb	356	S02 *					=
*** Standard: 3 Rep: 1				Seq: 1249	16:12:38 17 Oct 16				HG
Hg	.500	ppb	874	S03*					=
*** Standard: 4 Rep: 1				Seq: 1250	16:14:25 17 Oct 16				HG
Hg	1.00	ppb	1832	S04*					=
*** Standard: 5 Rep: 1				Seq: 1251	16:16:04 17 Oct 16				HG
Hg	5.00	ppb	8967	S05*					=
*** Standard: 6 Rep: 1				Seq: 1252	16:17:41 17 Oct 16				HG
Hg	10.0	ppb	18264	S06*					=
*** Sample ID:				Seq: 1253	16:19:19 17 Oct 16				HG
Hg	2.76	ppb	5000	ICV*					=
*** Sample ID:				Seq: 1254	16:20:56 17 Oct 16				HG
Hg	-.124	ppb	-248	ICB*					=
*** Sample ID:				Seq: 1255	16:22:42 17 Oct 16				HG
Hg	5.03	ppb	9154	CCV*					=
*** Sample ID: CCB				Seq: 1256	16:24:18 17 Oct 16				HG
Hg	-.124	ppb	-249						=
*** Sample ID: MB 110242				Seq: 1257	16:26:05 17 Oct 16				HG
Hg	-.051	ppb	-116						=

* MDK 10/7/16

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: LCS 110242				Seq: 1258	16:27:41 17 Oct 16		HG	
Hg	2.57	ppb	4666					
*** Sample ID: 35680A13B				Seq: 1259	16:29:17 17 Oct 16		HG	
Hg	-.083	ppb	-174					
*** Sample ID: 35680A13C				Seq: 1260	16:30:57 17 Oct 16		HG	
			MS					
Hg	2.46	ppb	4469					
*** Sample ID: 35680A13D				Seq: 1261	16:32:44 17 Oct 16		HG	
			MSD					
Hg	2.50	ppb	4533					
*** Sample ID: 35700A19B				Seq: 1262	16:34:21 17 Oct 16		HG	
Hg	-.091	ppb	-189					
*** Sample ID: 35736A14D				Seq: 1263	16:35:59 17 Oct 16		HG	
Hg	-.062	ppb	-136					
*** Sample ID: CCV				Seq: 1264	16:37:35 17 Oct 16		HG	
Hg	5.24	ppb	9538					
*** Sample ID: CCB				Seq: 1265	16:39:11 17 Oct 16		HG	
Hg	-.030	ppb	-78					

Mercury Calibration Curve Worksheet

Instrument ID: MEPCV3II

Analyst: MDK

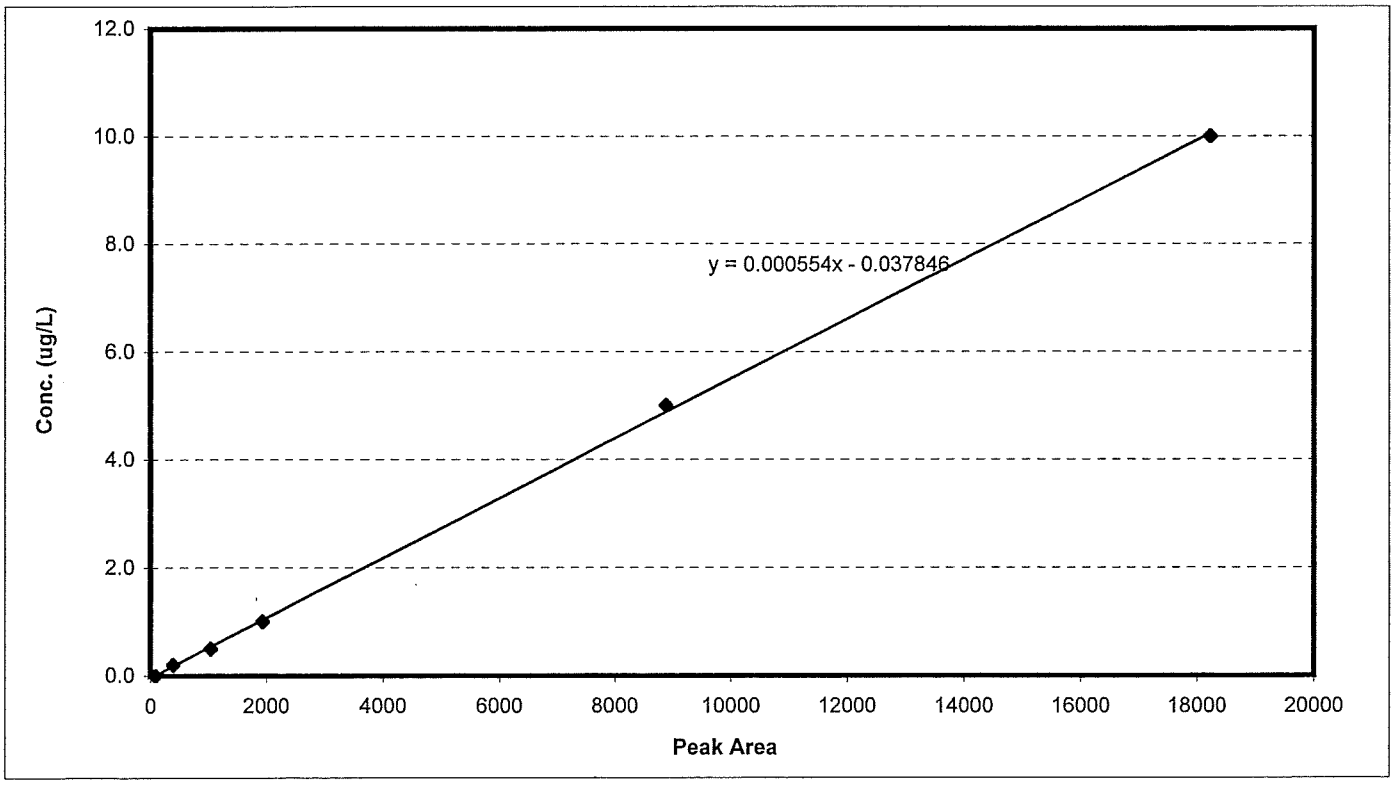
Run ID: 101716AA

Date: 10/17/2016

TALS Batch: 110260

	ICAL Conc. (ug/L)	ICAL Peak Area	Calculated Result	% Difference
Std 0	0.0	88	0.0109	
Std 1	0.2	396	0.1814	9.3
Std 2	0.5	1046	0.5414	8.3
Std 3	1.0	1933	1.0326	3.3
Std 4	5.0	8883	4.8813	2.4
Std 5	10	18221	10.0524	0.5

N =	6
r =	0.999874219
Intercept =	-0.037845846
Slope =	0.00055377



MEPCV3II *
Folder: 081216L
Protocol: 081216L
POST-RUN REPORT

7471B*
101716AA*
Analyst MDK*

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1				Seq: 1178	14:14:03 17 Oct 16		HG	
Hg	.000	ppb	88	S01*				
*** Standard: 2 Rep: 1				Seq: 1179	14:15:40 17 Oct 16		HG	
Hg	.200	ppb	396	S02*				
*** Standard: 3 Rep: 1				Seq: 1180	14:17:17 17 Oct 16		HG	
Hg	.500	ppb	1046	S03*				
*** Standard: 4 Rep: 1				Seq: 1181	14:18:57 17 Oct 16		HG	
Hg	1.00	ppb	1933	S04*				
*** Standard: 5 Rep: 1				Seq: 1182	14:20:38 17 Oct 16		HG	
Hg	5.00	ppb	8883	S05*				
*** Standard: 6 Rep: 1				Seq: 1183	14:22:15 17 Oct 16		HG	
Hg	10.0	ppb	18221	S06*				
*** Sample ID: ICV				Seq: 1184	14:23:53 17 Oct 16		HG	
Hg	2.77	ppb	5074					
*** Sample ID: ICB				Seq: 1185	14:25:31 17 Oct 16		HG	
Hg	-.038	ppb	0					
*** Sample ID: CCV				Seq: 1186	14:27:11 17 Oct 16		HG	
Hg	5.00	ppb	9098					
*** Sample ID: CCB				Seq: 1187	14:29:01 17 Oct 16		HG	
Hg	-.035	ppb	6					
*** Sample ID: MB 110231				Seq: 1188	14:30:37 17 Oct 16		HG	
Hg	-.008	ppb	53					

* MDK
10/17/16

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: LCS 110231				Seq: 1189	14:32:13 17 Oct 16				HG
Hg	2.46	ppb	4505						=
*** Sample ID: 35680A1C				Seq: 1190	14:33:52 17 Oct 16				HG
Hg	3.99	ppb	7271						=
*** Sample ID: 35680A2C				Seq: 1191	14:35:49 17 Oct 16				HG
Hg	6.27	ppb	11383						=
*** Sample ID: 35680A3C				Seq: 1192	14:37:30 17 Oct 16				HG
Hg	.308	ppb	625						=
*** Sample ID: 35680A4C				Seq: 1193	14:39:08 17 Oct 16				HG
Hg	5.99	ppb	10889						=
*** Sample ID: 35680A5C				Seq: 1194	14:40:59 17 Oct 16				HG
Hg	7.53	ppb	13670						=
*** Sample ID: 35680A6E				Seq: 1195	14:42:36 17 Oct 16				HG
Hg	8.91	ppb	16158						=
*** Sample ID: 35680A7C				Seq: 1196	14:44:14 17 Oct 16				HG
Hg	7.19	ppb	13052						=
*** Sample ID: 35680A14E				Seq: 1197	14:45:52 17 Oct 16				HG
Hg	8.64	ppb	15678						=
*** Sample ID: CCV				Seq: 1198	14:47:54 17 Oct 16				HG
Hg	4.87	ppb	8857						=

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: CCB				Seq: 1199	14:49:32 17 Oct 16		HG	
Hg	-.047	ppb	-16					
*** Sample ID: 35680A14F				Seq: 1200	14:51:10 17 Oct 16		HG	
			MS					
Hg	10.9	ppb	19728					
*** Sample ID: 35680A14G				Seq: 1201	14:52:57 17 Oct 16		HG	
			MSD					
Hg	11.2	ppb	20344					
*** Sample ID: 35700A1C				Seq: 1202	14:54:37 17 Oct 16		HG	
Hg	25.9	ppb	46820					
*** Sample ID: 35700A2C				Seq: 1203	14:56:19 17 Oct 16		HG	
Hg	37.0	ppb	66837					
*** Sample ID: 35700A3C				Seq: 1204	14:58:08 17 Oct 16		HG	
Hg	23.9	ppb	43280					
*** Sample ID: 35700A4C				Seq: 1205	14:59:51 17 Oct 16		HG	
Hg	5.48	ppb	9966					
*** Sample ID: 35700A5C				Seq: 1206	15:01:30 17 Oct 16		HG	
Hg	16.2	ppb	29292					
*** Sample ID: 35700A6C				Seq: 1207	15:03:18 17 Oct 16		HG	
Hg	13.6	ppb	24563					
*** Sample ID: 35700A7C				Seq: 1208	15:04:56 17 Oct 16		HG	
Hg	.195	ppb	421					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 35700A8C				Seq: 1209	15:06:32 17 Oct 16		HG	
Hg	17.2	ppb	31216					
*** Sample ID: CCV				Seq: 1210	15:08:10 17 Oct 16		HG	
Hg	4.91	ppb	8937					
*** Sample ID: CCB				Seq: 1211	15:09:51 17 Oct 16		HG	
Hg	-.077	ppb	-70					
*** Sample ID: MB 110232				Seq: 1212	15:11:29 17 Oct 16		HG	
Hg	-.046	ppb	-15					
*** Sample ID: LCS 110232				Seq: 1213	15:13:08 17 Oct 16		HG	
Hg	2.44	ppb	4479					
*** Sample ID: 35736A1B				Seq: 1214	15:14:46 17 Oct 16		HG	
Hg	.171	ppb	378					
*** Sample ID: 35736A2B				Seq: 1215	15:16:25 17 Oct 16		HG	
Hg	.123	ppb	291					
*** Sample ID: 35736A3B				Seq: 1216	15:18:22 17 Oct 16		HG	
Hg	.132	ppb	307					
*** Sample ID: 35736A4B				Seq: 1217	15:20:00 17 Oct 16		HG	
Hg	.173	ppb	381					
*** Sample ID: 35736A5D				Seq: 1218	15:21:38 17 Oct 16		HG	
Hg	.150	ppb	339					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 35736A5G				Seq: 1219	15:23:16 17 Oct 16		HG	
			MS					
Hg	2.70	ppb	4940					
*** Sample ID: 35736A5H				Seq: 1220	15:25:02 17 Oct 16		HG	
			MSD					
Hg	2.57	ppb	4709					
*** Sample ID: 35736A6B				Seq: 1221	15:26:39 17 Oct 16		HG	
Hg	.093	ppb	237					
*** Sample ID: CCV				Seq: 1222	15:28:16 17 Oct 16		HG	
Hg	4.93	ppb	8971					
*** Sample ID: CCB				Seq: 1223	15:29:56 17 Oct 16		HG	
Hg	-.071	ppb	-60					
*** Sample ID: 35736A7B				Seq: 1224	15:31:43 17 Oct 16		HG	
Hg	.147	ppb	333					
*** Sample ID: 35736A8B				Seq: 1225	15:33:30 17 Oct 16		HG	
Hg	.162	ppb	360					
*** Sample ID: 35736A9B				Seq: 1226	15:35:10 17 Oct 16		HG	
Hg	.153	ppb	344					
*** Sample ID: 35736A10B				Seq: 1227	15:36:47 17 Oct 16		HG	
Hg	.144	ppb	328					
*** Sample ID: 35736A11D				Seq: 1228	15:38:45 17 Oct 16		HG	
Hg	13.3	ppb	24011					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 35736A11G				Seq: 1229	15:40:25 17 Oct 16		HG	
			MS					
Hg	10.3	ppb	18673					
*** Sample ID: 35736A11H				Seq: 1230	15:42:03 17 Oct 16		HG	
			MSD					
Hg	11.3	ppb	20524					
*** Sample ID: 35736A12				Seq: 1231	15:43:41 17 Oct 16		HG	
Hg	6.98	ppb	12664					
*** Sample ID: CCV				Seq: 1232	15:45:23 17 Oct 16		HG	
Hg	4.95	ppb	9006					
*** Sample ID: CCB				Seq: 1233	15:47:02 17 Oct 16		HG	
Hg	-.102	ppb	-115					
*** Sample ID: 35700A1C				Seq: 1234	15:48:55 17 Oct 16		HG	
			@4					
~~Hg 3.91 ppb 7127~~ Sipper sent to wrong cup 10/17/16 MDK								
*** Sample ID: 35700A1C				Seq: 1235	15:51:08 17 Oct 16		HG	
			@4					
Hg	6.33	ppb	11507					
*** Sample ID: 35700A2C				Seq: 1236	15:52:46 17 Oct 16		HG	
			@4					
Hg	9.48	ppb	17194					
*** Sample ID: 35700A3C				Seq: 1237	15:54:23 17 Oct 16		HG	
			@4					
Hg	5.59	ppb	10168					
*** Sample ID: 35700A5C				Seq: 1238	15:56:02 17 Oct 16		HG	
			@2					
Hg	8.31	ppb	15071					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 35700A6C @2				Seq: 1239	15:57:40 17 Oct 16	HG		
Hg	6.80	ppb	12342					
*** Sample ID: 35700A8C @2				Seq: 1240	15:59:18 17 Oct 16	HG		
Hg	8.60	ppb	15603					
*** Sample ID: ~~CCV~~ 35736A11D @2 (*)				Seq: 1241	16:01:06 17 Oct 16	HG		
Hg	6.63	ppb	12038					
*** Sample ID: ~~CCB~~ 35736A11G @2 MS (*)				Seq: 1242	16:02:43 17 Oct 16	HG		
Hg	5.20	ppb	9466					
*** Sample ID: 35736A11H @2 MSD (*)				Seq: 1243	16:04:21 17 Oct 16	HG		
Hg	5.75	ppb	10445					
*** Sample ID: CCV (*)				Seq: 1244	16:06:02 17 Oct 16	HG		
Hg	4.95	ppb	9009					
*** Sample ID: CCB (*)				Seq: 1245	16:07:38 17 Oct 16	HG		
Hg	-.093	ppb	-99					

(*) instrument did not recognize changes to worklist during analysis. 10/19/16 MDK

Mercury Calibration Curve Worksheet

Instrument ID: MEPCV3II

Analyst: MDK

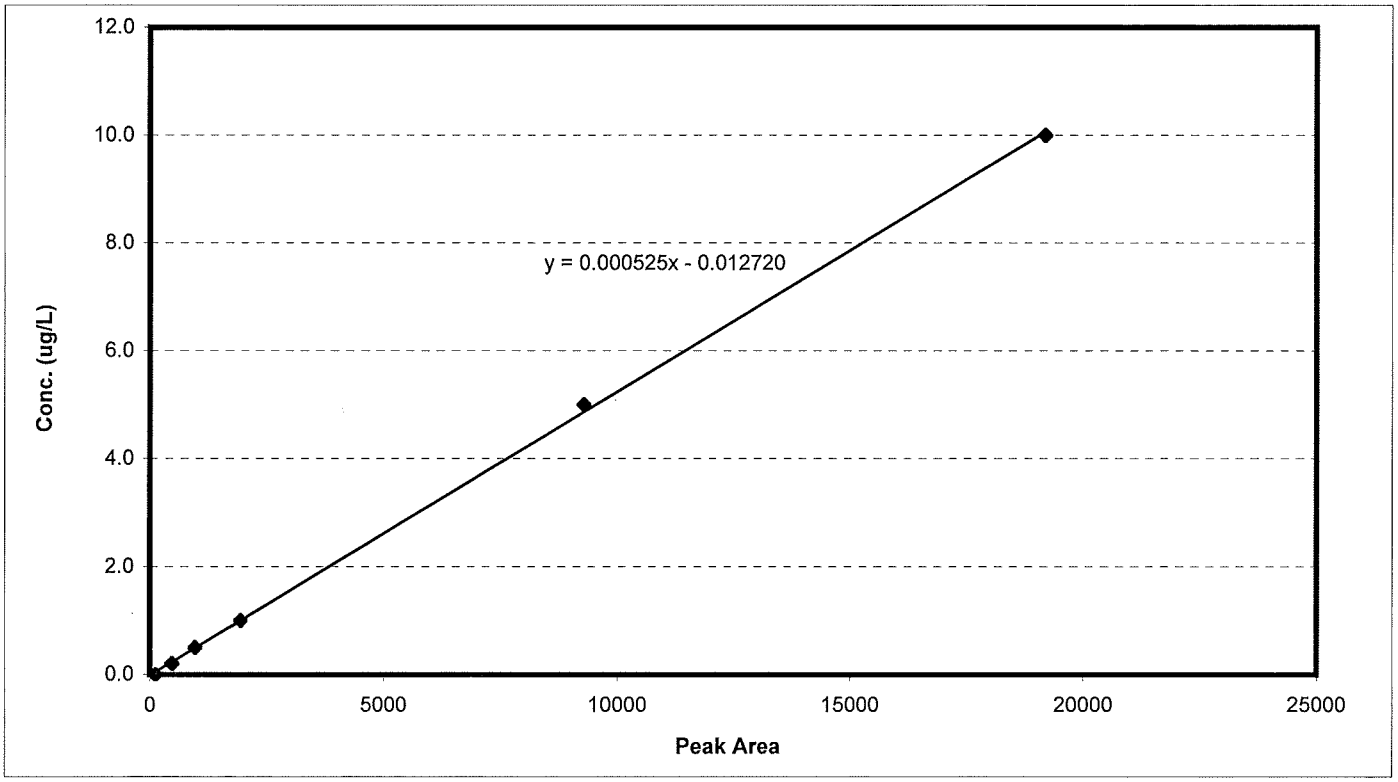
Run ID: 102616AA

Date: 10/26/2016

TALS Batch: 110575

	ICAL Conc. (ug/L)	ICAL Peak Area	Calculated Result	% Difference
Std 0	0.0	123	0.0519	
Std 1	0.2	465	0.2314	15.7
Std 2	0.5	957	0.4898	2.0
Std 3	1.0	1920	0.9954	0.5
Std 4	5.0	9294	4.8674	2.7
Std 5	10	19191	10.0641	0.6

N =	6
r =	0.999840222
Intercept =	-0.012720352
Slope =	0.000525081



MEPCV3II*
Folder: 081216L
Protocol: 081216L
POST-RUN REPORT

7471B*
102616HA*
Analyst: MDK*

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Standard: 1 Rep: 1				S01* Seq: 1283	09:53:04 26 Oct 16				HG
Hg	.000	ppb	123						=
*** Standard: 2 Rep: 1				Seq: 1284	09:54:52 26 Oct 16				HG
Hg	.200	ppb	465	S02*					=
*** Standard: 3 Rep: 1				Seq: 1285	09:56:39 26 Oct 16				HG
Hg	.500	ppb	957	S03*					=
*** Standard: 4 Rep: 1				Seq: 1286	09:58:17 26 Oct 16				HG
Hg	1.00	ppb	1920	S04*					=
*** Standard: 5 Rep: 1				Seq: 1287	09:59:55 26 Oct 16				HG
Hg	5.00	ppb	9294	S05*					=
*** Standard: 6 Rep: 1				Seq: 1288	10:01:35 26 Oct 16				HG
Hg	10.0	ppb	19191	S06*					=
*** Sample ID: ICV			102616AA	Seq: 1289	10:03:13 26 Oct 16				HG
Hg	2.77	ppb	5293						=
*** Sample ID: ICB			102616AA	Seq: 1290	10:04:50 26 Oct 16				HG
Hg	-.006	ppb	13						=
*** Sample ID: CCV			102616AA	Seq: 1291	10:06:26 26 Oct 16				HG
Hg	4.84	ppb	9247						=
*** Sample ID: CCB			102616AA	Seq: 1292	10:08:01 26 Oct 16				HG
Hg	.007	ppb	37						=
*** Sample ID: MB 110530			102616AA	Seq: 1293	10:09:38 26 Oct 16				HG
Hg	.018	ppb	58						=

* MDK 10/26/16

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: LCS 110530 102616AA Seq: 1294 10:11:16 26 Oct 16 HG								
Hg	2.43	ppb	4654					
*** Sample ID: 35680A8D 102616AA Seq: 1295 10:12:55 26 Oct 16 HG								
Hg	9.48	ppb	18075					
*** Sample ID: 35680A8E 102616AA Seq: 1296 10:14:31 26 Oct 16 HG MS								
Hg	12.5	ppb	23802					
*** Sample ID: 35680A8F 102616AA Seq: 1297 10:16:14 26 Oct 16 HG MSD								
Hg	11.4	ppb	21798					
*** Sample ID: 35680A9B 102616AA Seq: 1298 10:17:51 26 Oct 16 HG								
Hg	6.05	ppb	11538					
*** Sample ID: 35680A10B 102616AA Seq: 1299 10:19:28 26 Oct 16 HG								
Hg	5.87	ppb	11211					
*** Sample ID: 35680A11B 102616AA Seq: 1300 10:21:04 26 Oct 16 HG								
Hg	6.36	ppb	12146					
*** Sample ID: 35680A12B 102616AA Seq: 1301 10:22:45 26 Oct 16 HG								
Hg	.084	ppb	185					
*** Sample ID: 35700A9B 102616AA Seq: 1302 10:24:21 26 Oct 16 HG								
Hg	3.38	ppb	6463					
*** Sample ID: CCV 102616AA Seq: 1303 10:25:57 26 Oct 16 HG								
Hg	5.05	ppb	9644					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: CCB			102616AA	Seq: 1304	10:27:33 26 Oct 16		HG	
Hg	-.054	ppb	-79					
*** Sample ID: 35700A10B			102616AA	Seq: 1305	10:29:10 26 Oct 16		HG	
Hg	11.5	ppb	21948					
*** Sample ID: 35720A1A			102616AA	Seq: 1306	10:30:58 26 Oct 16		HG	
Hg	.670	ppb	1301					
*** Sample ID: 35720A1B			102616AA DU	Seq: 1307	10:32:35 26 Oct 16		HG	
Hg	.362	ppb	714					
*** Sample ID: 35720A1C			102616AA MS	Seq: 1308	10:34:12 26 Oct 16		HG	
Hg	2.93	ppb	5612					
*** Sample ID: 35720A2A			102616AA	Seq: 1309	10:35:52 26 Oct 16		HG	
Hg	2.40	ppb	4603					
*** Sample ID: 35720A2B			102616AA DU	Seq: 1310	10:37:33 26 Oct 16		HG	
Hg	2.79	ppb	5337					
*** Sample ID: 35720A2C			102616AA MS	Seq: 1311	10:39:10 26 Oct 16		HG	
Hg	4.62	ppb	8823					
*** Sample ID: 35720A3A			102616AA	Seq: 1312	10:40:46 26 Oct 16		HG	
Hg	3.56	ppb	6805					
*** Sample ID: 35720A3B			102616AA DU	Seq: 1313	10:42:24 26 Oct 16		HG	
Hg	3.65	ppb	6968					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 35720A3C 102616AA Seq: 1314 10:43:59 26 Oct 16 HG								
				MS				
Hg	6.36	ppb	12145					
*** Sample ID: CCV 102616AA Seq: 1315 10:45:46 26 Oct 16 HG								
Hg	5.17	ppb	9864					
*** Sample ID: CCB 102616AA Seq: 1316 10:47:24 26 Oct 16 HG								
Hg	-.080	ppb	-128					
*** Sample ID: 35720A4A 102616AA Seq: 1317 10:49:03 26 Oct 16 HG								
Hg	2.31	ppb	4428					
*** Sample ID: 35720A4B 102616AA Seq: 1318 10:50:43 26 Oct 16 HG								
				DU				
Hg	3.45	ppb	6601					
*** Sample ID: 35720A4C 102616AA Seq: 1319 10:52:23 26 Oct 16 HG								
				MS				
Hg	5.19	ppb	9912					
*** Sample ID: CCV 102616AA Seq: 1320 10:54:00 26 Oct 16 HG								
Hg	5.16	ppb	9856					
*** Sample ID: CCB 102616AA Seq: 1321 10:55:42 26 Oct 16 HG								
Hg	-.076	ppb	-121					
*** Sample ID: 35700A10B 102616AA Seq: 1322 11:09:24 26 Oct 16 HG								
				@2				
Hg	5.15	ppb	9832					
*** Sample ID: CCV 102616AA Seq: 1323 11:11:01 26 Oct 16 HG								
Hg	5.11	ppb	9763					

POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: CCB 102616AA Seq: 1324 11:12:38 26 Oct 16 HG

Hg	-.088	ppb	-144					

Mercury Calibration Curve Worksheet

Instrument ID: MEPCV3II

Analyst: MDK

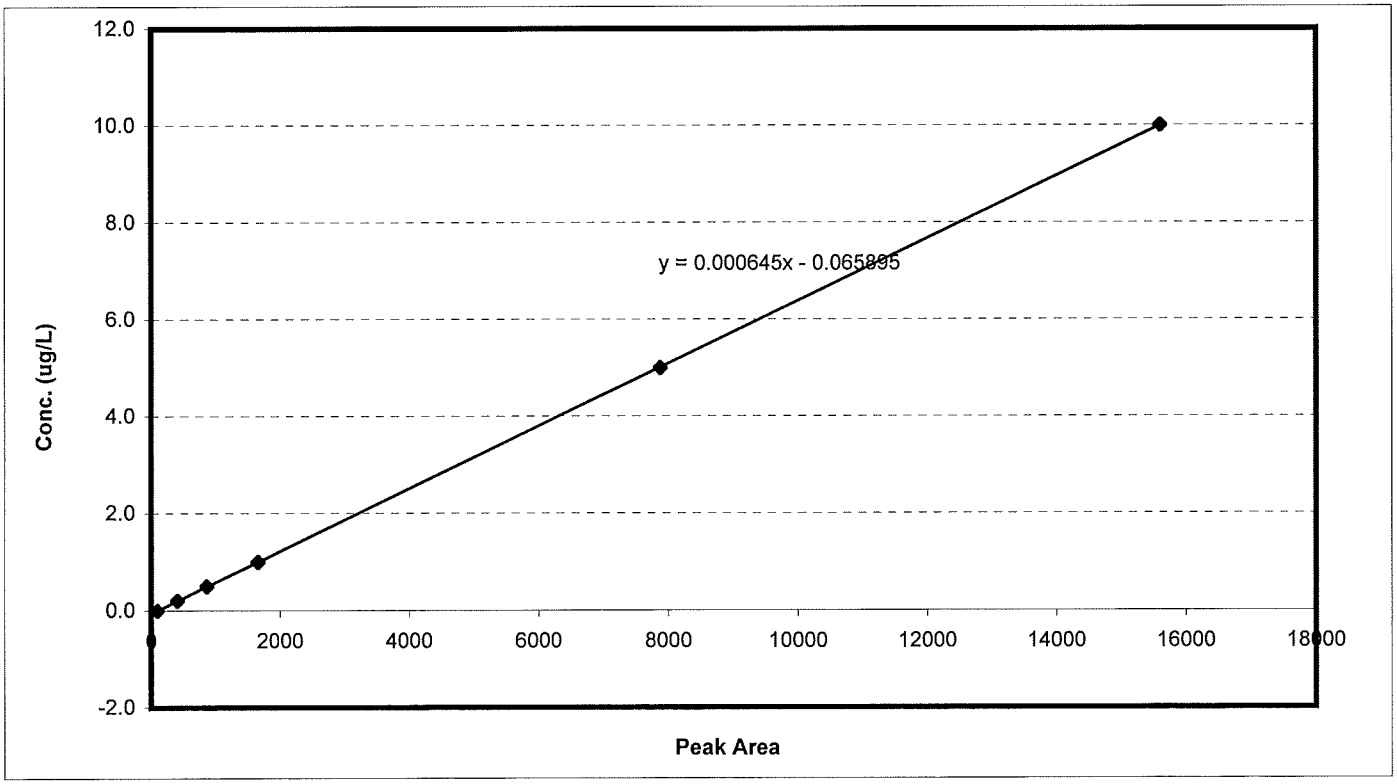
Run ID: 103116AA

Date: 10/31/2016

TALS Batch: 110792

	ICAL Conc. (ug/L)	ICAL Peak Area	Calculated Result	% Difference
Std 0	0.0	97	-0.0034	
Std 1	0.2	412	0.1998	0.1
Std 2	0.5	871	0.4957	0.9
Std 3	1.0	1655	1.0012	0.1
Std 4	5.0	7877	5.0131	0.3
Std 5	10	15601	9.9935	0.1

N =	6
r =	0.99999846
Intercept =	-0.065895056
Slope =	0.000644792



MEPCV3 II * 7471B *
Folder: 081216L 103116AA * Page 328
Protocol: 081216L Analyst MDK *
POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1				Seq: 1467	13:52:10 31 Oct 16		HG	
Hg	.000	ppb	97	S01*				
*** Standard: 2 Rep: 1				Seq: 1468	13:53:49 31 Oct 16		HG	
Hg	.200	ppb	412	S02*				
*** Standard: 3 Rep: 1				Seq: 1469	13:55:25 31 Oct 16		HG	
Hg	.500	ppb	871	S03*				
*** Standard: 4 Rep: 1				Seq: 1470	13:57:02 31 Oct 16		HG	
Hg	1.00	ppb	1655	S04*				
*** Standard: 5 Rep: 1				Seq: 1471	13:58:38 31 Oct 16		HG	
Hg	5.00	ppb	7877	S05*				
*** Standard: 6 Rep: 1				Seq: 1472	14:00:17 31 Oct 16		HG	
Hg	10.0	ppb	15601	S06*				
*** Sample ID: ICV		103116AA		Seq: 1473	14:01:53 31 Oct 16		HG	
Hg	2.92	ppb	4630					
*** Sample ID: ICB		103116AA		Seq: 1474	14:03:29 31 Oct 16		HG	
Hg	-.094	ppb	-44					
*** Sample ID: CCV		103116AA		Seq: 1475	14:05:06 31 Oct 16		HG	
Hg	5.05	ppb	7936					
*** Sample ID: CCB		103116AA		Seq: 1476	14:06:45 31 Oct 16		HG	
Hg	-.112	ppb	-72					
*** Sample ID: MB 110770		103116AA		Seq: 1477	14:08:24 31 Oct 16		HG	
Hg	-.059	ppb	11					

* 10/31/16
MDK

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: LCS 110770 103116AA			Seq: 1478	14:10:00 31 Oct 16					HG
Hg	2.47	ppb	3939						
*** Sample ID: 35700A11B 103116AA			Seq: 1479	14:11:38 31 Oct 16					HG
Hg	4.06	ppb	6404						
*** Sample ID: 35700A12D 103116AA			Seq: 1480	14:13:18 31 Oct 16					HG
Hg	4.81	ppb	7566						
*** Sample ID: 35700A12E 103116AA MS			Seq: 1481	14:14:58 31 Oct 16					HG
Hg	8.23	ppb	12870						
*** Sample ID: 35700A12F 103116AA MSD			Seq: 1482	14:16:35 31 Oct 16					HG
Hg	6.75	ppb	10570						
*** Sample ID: 35700A13B 103116AA			Seq: 1483	14:18:13 31 Oct 16					HG
Hg	.043	ppb	169						
*** Sample ID: 35700A14B 103116AA			Seq: 1484	14:19:50 31 Oct 16					HG
Hg	5.47	ppb	8593						
*** Sample ID: 35700A15B 103116AA			Seq: 1485	14:21:25 31 Oct 16					HG
Hg	5.65	ppb	8870						
*** Sample ID: 35700A16B 103116AA			Seq: 1486	14:23:02 31 Oct 16					HG
Hg	8.16	ppb	12752						
*** Sample ID: CCV 103116AA			Seq: 1487	14:24:38 31 Oct 16					HG
Hg	5.02	ppb	7887						

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: CCB			103116AA	Seq: 1488		14:26:15 31 Oct 16			HG
Hg	-.089	ppb	-36						=
*** Sample ID: 35700A17B			103116AA	Seq: 1489		14:27:51 31 Oct 16			HG
Hg	5.37	ppb	8423						=
*** Sample ID: 35700A18B			103116AA	Seq: 1490		14:29:31 31 Oct 16			HG
Hg	.160	ppb	351						=
*** Sample ID: 35736A13B			103116AA	Seq: 1491		14:31:10 31 Oct 16			HG
Hg	.136	ppb	313						=
*** Sample ID: CCV			103116AA	Seq: 1492		14:32:47 31 Oct 16			HG
Hg	5.08	ppb	7978						=
*** Sample ID: CCB			103116AA	Seq: 1493		14:34:30 31 Oct 16			HG
Hg	-.090	ppb	-38						=

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG No.: 200-35700-1

Project: Port Ewen DNS Sediment

Client Sample ID	Lab Sample ID
PE1016-P1SCD-01-A-0007IN	200-35700-1
PE1016-P1SCD-01-B-0006IN	200-35700-2
PE1016-P1SCD-01-A-0718IN	200-35700-3
PE1016-P1SCD-02-A-0004IN	200-35700-4
PE1016-P1SCD-02-B-0004IN	200-35700-5
PE1016-P1SCD-03-A-0006IN	200-35700-6
PE1016-P1SCD-03-A-0612IN	200-35700-7
PE1016-P1SCD-03-B-0006IN	200-35700-8
PE1016-P1SCD-11-A-0004IN	200-35700-9
PE1016-P1SCD-11-B-0006IN	200-35700-10
PE1016-P1SCD-12-A-0008IN	200-35700-11
PE1016-P1SCD-12-B-0006IN	200-35700-12
PE1016-P1SCD-13-A-0002IN	200-35700-13
PE1016-P1SCD-13-B-0006IN	200-35700-14
PE1016-P1SCD-13-B-0006IN-D	200-35700-15
PE1016-P1SCD-14-A-0004IN	200-35700-16
PE1016-P1SCD-14-B-0004IN	200-35700-17
PE1016-P1SCD-12-A-0814IN	200-35700-18

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-01-A-0007IN
Lab Sample ID: 200-35700-1
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 14:30
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	58500	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-01-B-0006IN
Lab Sample ID: 200-35700-2
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 14:35
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	36000	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-01-A-0718IN
Lab Sample ID: 200-35700-3
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 14:31
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	15900	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-02-A-0004IN
Lab Sample ID: 200-35700-4
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 14:00
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	15300	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-02-B-0004IN
Lab Sample ID: 200-35700-5
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 14:10
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	32800	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-03-A-0006IN
Lab Sample ID: 200-35700-6
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 13:00
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	42100	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-03-A-0612IN
Lab Sample ID: 200-35700-7
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 13:01
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	4070	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-03-B-0006IN
Lab Sample ID: 200-35700-8
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 13:10
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	50000	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-11-A-0004IN
Lab Sample ID: 200-35700-9
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 10:30
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	22000	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-11-B-0006IN
Lab Sample ID: 200-35700-10
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 10:40
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	29500	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-12-A-0008IN
Lab Sample ID: 200-35700-11
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 09:20
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	34300	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-12-B-0006IN
Lab Sample ID: 200-35700-12
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 09:30
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	34700	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-13-A-0002IN
Lab Sample ID: 200-35700-13
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 08:55
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	1450	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-13-B-0006IN
Lab Sample ID: 200-35700-14
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 09:05
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	77300	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-13-B-0006IN-D
Lab Sample ID: 200-35700-15
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 09:06
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	61000	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-14-A-0004IN
Lab Sample ID: 200-35700-16
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 08:30
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	30800	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-14-B-0004IN
Lab Sample ID: 200-35700-17
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 08:40
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	33700	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-12-A-0814IN
Lab Sample ID: 200-35700-18
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 09:21
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	4580	1000	380	mg/Kg			1	Lloyd Kahn

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Analyst: KSH Batch Start Date: 10/17/2016

Reporting Units: mg/Kg Analytical Batch No.: 110277

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	ICV	14:13	Total Organic Carbon	9330	9260	101	75-125		WCLKLCSs_00018
2	ICB	14:19	Total Organic Carbon	1000				U	
3	CCV	14:25	Total Organic Carbon	35620	35000	102	75-125		WCTOCCALs_00014
4	CCB	14:32	Total Organic Carbon	1000				U	
21	CCV	16:50	Total Organic Carbon	36740	35000	105	75-125		WCTOCCALs_00014
22	CCB	16:57	Total Organic Carbon	1000				U	
39	CCV	19:19	Total Organic Carbon	36210	35000	103	75-125		WCTOCCALs_00014
40	CCB	19:26	Total Organic Carbon	1000				U	
50	CCV	20:36	Total Organic Carbon	35770	35000	102	75-125		WCTOCCALs_00014
51	CCB	20:43	Total Organic Carbon	1000				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Analyst: KSH Batch Start Date: 10/19/2016

Reporting Units: mg/Kg Analytical Batch No.: 110363

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	ICV	12:23	Total Organic Carbon	8140	9260	88	75-125		WCLKLCSs_00018
2	ICB	12:30	Total Organic Carbon	1000				U	
3	CCV	12:36	Total Organic Carbon	34480	35000	99	75-125		WCTOCCALs_00014
4	CCB	12:42	Total Organic Carbon	1000				U	
12	CCV	13:57	Total Organic Carbon	33730	35000	96	75-125		WCTOCCALs_00014
13	CCB	14:04	Total Organic Carbon	1000				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 110277 Date: 10/17/2016 14:38							
Lloyd Kahn	MB 200-110277/5	Total Organic Carbon	1000	U	mg/Kg	1000	1
Batch ID: 110277 Date: 10/17/2016 17:44							
Lloyd Kahn	MB 200-110277/29	Total Organic Carbon	1000	U	mg/Kg	1000	1
Batch ID: 110363 Date: 10/19/2016 12:48							
Lloyd Kahn	MB 200-110363/5	Total Organic Carbon	1000	U	mg/Kg	1000	1

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Matrix: Sediment

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 110277 Date: 10/17/2016 18:59											
Lloyd Kahn	200-35700-12	Total Organic Carbon	34700		mg/Kg						
Lloyd Kahn	200-35700-12 MS	Total Organic Carbon	150400		mg/Kg	117000	99	75-125			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM V-IN

5-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Matrix: Sediment

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 110277 Date: 10/17/2016 19:05											
Lloyd Kahn	200-35700-12 MSD	Total Organic Carbon	156000		mg/Kg	109000	111	75-125	4	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM V-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Matrix: Sediment

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 110277	Date: 10/17/2016 14:51										
						LCS Source: WCLKLCSs_00018					
Lloyd Kahn	LCS 200-110277/6	Total Organic Carbon	8420		mg/Kg	9260	91	75-125			
Batch ID: 110277	Date: 10/17/2016 17:57										
						LCS Source: WCLKLCSs_00018					
Lloyd Kahn	LCS 200-110277/30	Total Organic Carbon	8935		mg/Kg	9260	96	75-125			
Batch ID: 110363	Date: 10/19/2016 13:01										
						LCS Source: WCLKLCSs_00018					
Lloyd Kahn	LCS 200-110363/6	Total Organic Carbon	8943		mg/Kg	9260	97	75-125			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG Number: 200-35700-1

Matrix: Sediment Instrument ID: WCCH1

Method: Lloyd Kahn MDL Date: 07/26/2016 16:22

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Total Organic Carbon		1000	380

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG Number: 200-35700-1

Matrix: Sediment Instrument ID: WCCH1

Method: Lloyd Kahn XMDL Date: 07/26/2016 16:23

Analyte	Wavelength/ Mass	XRL (mg/Kg)	XMDL (mg/Kg)
Total Organic Carbon		1000	380

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG Number: 200-35700-1

Matrix: Sediment Instrument ID: WCCH2

Method: Lloyd Kahn MDL Date: 07/26/2016 16:22

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Total Organic Carbon		1000	380

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG Number: 200-35700-1

Matrix: Sediment Instrument ID: WCCH2

Method: Lloyd Kahn XMDL Date: 07/26/2016 16:23

Analyte	Wavelength/ Mass	XRL (mg/Kg)	XMDL (mg/Kg)
Total Organic Carbon		1000	380

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG Number: 200-35700-1

Matrix: Sediment Instrument ID: NOEQUIP

Method: Moisture RL Date: 04/01/2009 07:55

Analyte	Wavelength/ Mass	RL (%)	
Percent Solids		0.1	

11-IN
LINEAR RANGES
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: WCCH1 Date: 01/01/2014 16:02

Analyte	Integ. Time (Sec.)	Concentration (mg/Kg)	Method
Total Organic Carbon		75000	Lloyd Kahn

11-IN
LINEAR RANGES
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: WCCH2 Date: 01/01/2015 10:45

Analyte	Integ. Time (Sec.)	Concentration (mg/Kg)	Method
Total Organic Carbon		75000	Lloyd Kahn

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: WCCH1 Analysis Method: Lloyd Kahn

Start Date: 10/17/2016 14:13 End Date: 10/17/2016 20:43

Lab Sample Id	D/F	Type	Time	Analytes																								
				TOC																								
ICV 200-110277/1	1		14:13	X																								
ICB 200-110277/2	1		14:19	X																								
CCV 200-110277/3	1		14:25	X																								
CCB 200-110277/4	1		14:32	X																								
MB 200-110277/5	1	T	14:38	X																								
LCS 200-110277/6	1	T	14:51	X																								
ZZZZZZ			15:17																									
ZZZZZZ			15:24																									
ZZZZZZ			15:31																									
ZZZZZZ			15:37																									
ZZZZZZ			15:44																									
ZZZZZZ			15:50																									
ZZZZZZ			15:57																									
ZZZZZZ			16:03																									
ZZZZZZ			16:10																									
ZZZZZZ			16:17																									
ZZZZZZ			16:23																									
ZZZZZZ			16:30																									
ZZZZZZ			16:37																									
200-35700-1	1	T	16:43	X																								
CCV 200-110277/21	1		16:50	X																								
CCB 200-110277/22	1		16:57	X																								
200-35700-2	1	T	17:03	X																								
200-35700-3	1	T	17:10	X																								
200-35700-4	1	T	17:17	X																								
200-35700-5	1	T	17:24	X																								
200-35700-6	1	T	17:30	X																								
200-35700-7	1	T	17:37	X																								
MB 200-110277/29	1	T	17:44	X																								
LCS 200-110277/30	1	T	17:57	X																								
200-35700-8	1	T	18:24	X																								
200-35700-9	1	T	18:31	X																								
200-35700-10	1	T	18:38	X																								
200-35700-11	1	T	18:45	X																								
200-35700-12	1	T	18:52	X																								
200-35700-12 MS	1	T	18:59	X																								
200-35700-12 MSD	1	T	19:05	X																								
ZZZZZZ			19:12																									
CCV 200-110277/39	1		19:19	X																								
CCB 200-110277/40	1		19:26	X																								
200-35700-14	1	T	19:33	X																								

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: WCCH1 Analysis Method: Lloyd Kahn

Start Date: 10/17/2016 14:13 End Date: 10/17/2016 20:43

Lab Sample Id	D/F	Type	Time	Analytes																								
				TOC																								
200-35700-15	1	T	19:40	X																								
200-35700-16	1	T	19:47	X																								
200-35700-17	1	T	19:54	X																								
200-35700-18	1	T	20:01	X																								
ZZZZZZ			20:07																									
ZZZZZZ			20:15																									
ZZZZZZ			20:22																									
ZZZZZZ			20:29																									
CCV 200-110277/50	1		20:36	X																								
CCB 200-110277/51	1		20:43	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: WCCH2 Analysis Method: Lloyd Kahn

Start Date: 10/19/2016 12:23 End Date: 10/19/2016 14:04

Lab Sample Id	D/F	Type	Time	Analytes																								
				TOC																								
ICV 200-110363/1	1		12:23	X																								
ICB 200-110363/2	1		12:30	X																								
CCV 200-110363/3	1		12:36	X																								
CCB 200-110363/4	1		12:42	X																								
MB 200-110363/5	1	T	12:48	X																								
LCS 200-110363/6	1	T	13:01	X																								
ZZZZZZ			13:26																									
200-35700-13	1	T	13:32	X																								
ZZZZZZ			13:38																									
ZZZZZZ			13:45																									
ZZZZZZ			13:51																									
CCV 200-110363/12	1		13:57	X																								
CCB 200-110363/13	1		14:04	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: NOEQUIP Analysis Method: Moisture

Start Date: 10/14/2016 16:15 End Date: 10/14/2016 16:15

Lab Sample Id	D/F	Type	Time	Analytes																									
				% Sol																									
200-35700-1	1	T	16:15	X																									
200-35700-2	1	T	16:15	X																									
200-35700-3	1	T	16:15	X																									
200-35700-4	1	T	16:15	X																									
200-35700-5	1	T	16:15	X																									
200-35700-6	1	T	16:15	X																									
200-35700-7	1	T	16:15	X																									
200-35700-8	1	T	16:15	X																									
200-35700-9	1	T	16:15	X																									
200-35700-10	1	T	16:15	X																									
200-35700-11	1	T	16:15	X																									
200-35700-12	1	T	16:15	X																									
200-35700-12 DU	1	T	16:15	X																									
200-35700-13	1	T	16:15	X																									
200-35700-14	1	T	16:15	X																									
200-35700-15	1	T	16:15	X																									
200-35700-16	1	T	16:15	X																									
200-35700-17	1	T	16:15	X																									
200-35700-18	1	T	16:15	X																									
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Instrument ID: NOEQUIP Analysis Method: Moisture

Start Date: 10/14/2016 16:15 End Date: 10/14/2016 16:15

Lab Sample Id	D/F	Type	Time	Analytes																									
				% Sol																									
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										
ZZZZZZ			16:15																										

Prep Types:
T = Total/NA

FORM XIII-IN

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110277 Batch Start Date: 10/17/16 14:13 Batch Analyst: Henry, Kayla S

Batch Method: Lloyd Kahn Batch End Date: 10/17/16 20:43

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	WCLKLCSs 00018	WCTOCCALs 00014			
ICV 200-110277/1		Lloyd Kahn			9.5 mg				
CCV 200-110277/3		Lloyd Kahn		10 mg		35 uL			
LCS 200-110277/6		Lloyd Kahn			10.275 mg				
CCV 200-110277/21		Lloyd Kahn		10 mg		35 uL			
LCS 200-110277/30		Lloyd Kahn			9.7 mg				
200-35700-A-12 MS	PE1016-P1SCD-12-B-0006IN	Lloyd Kahn	T	3 mg		35 uL			
200-35700-A-12 MSD	PE1016-P1SCD-12-B-0006IN	Lloyd Kahn	T	3.2 mg		35 uL			
CCV 200-110277/39		Lloyd Kahn		10 mg		35 uL			
CCV 200-110277/50		Lloyd Kahn		10 mg		35 uL			

Batch Notes	
Phosphoric Acid ID	977837

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110363 Batch Start Date: 10/19/16 12:23 Batch Analyst: Henry, Kayla S

Batch Method: Lloyd Kahn Batch End Date: 10/19/16 14:04

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	WCLKLCSs 00018	WCTOCCALs 00014			
ICV 200-110363/1		Lloyd Kahn			9.1 mg				
CCV 200-110363/3		Lloyd Kahn		10 mg		35 uL			
LCS 200-110363/6		Lloyd Kahn			9.6 mg				
CCV 200-110363/12		Lloyd Kahn		10 mg		35 uL			

Batch Notes	
Phosphoric Acid ID	977837

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110190 Batch Start Date: 10/14/16 16:15 Batch Analyst: Henry, Kayla S

Batch Method: Moisture Batch End Date: 10/15/16 09:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
200-35700-A-1	PE1016-P1SCD-01-A-0007IN	Moisture	T	1	1.03 g	8.11 g	4.59 g		
200-35700-A-2	PE1016-P1SCD-01-B-0006IN	Moisture	T	2	1.03 g	7.73 g	3.61 g		
200-35700-A-3	PE1016-P1SCD-01-A-0718IN	Moisture	T	3	1.02 g	7.75 g	5.62 g		
200-35700-A-4	PE1016-P1SCD-02-A-0004IN	Moisture	T	4	1.00 g	9.32 g	5.18 g		
200-35700-A-5	PE1016-P1SCD-02-B-0004IN	Moisture	T	5	0.97 g	9.71 g	5.17 g		
200-35700-A-6	PE1016-P1SCD-03-A-0006IN	Moisture	T	6	0.97 g	7.84 g	3.52 g		
200-35700-A-7	PE1016-P1SCD-03-A-0612IN	Moisture	T	7	0.99 g	9.28 g	7.22 g		
200-35700-A-8	PE1016-P1SCD-03-B-0006IN	Moisture	T	8	1.01 g	8.52 g	3.88 g		
200-35700-A-9	PE1016-P1SCD-11-A-0004IN	Moisture	T	9	1.00 g	8.74 g	4.97 g		
200-35700-A-10	PE1016-P1SCD-11-B-0006IN	Moisture	T	10	0.98 g	9.78 g	4.84 g		
200-35700-A-11	PE1016-P1SCD-12-A-0008IN	Moisture	T	11	0.98 g	9.12 g	4.30 g		
200-35700-A-12	PE1016-P1SCD-12-B-0006IN	Moisture	T	12	0.98 g	9.45 g	4.83 g		
200-35700-A-12 DU	PE1016-P1SCD-12-B-0006IN	Moisture	T	13	0.98 g	10.02 g	5.00 g		
200-35700-A-13	PE1016-P1SCD-13-A-0002IN	Moisture	T	14	0.98 g	9.40 g	6.97 g		
200-35700-A-14	PE1016-P1SCD-13-B-0006IN	Moisture	T	15	0.99 g	9.07 g	3.59 g		
200-35700-A-15	PE1016-P1SCD-13-B-0006IN-D	Moisture	T	16	0.99 g	9.58 g	3.70 g		
200-35700-A-16	PE1016-P1SCD-14-A-0004IN	Moisture	T	17	0.97 g	9.07 g	4.28 g		
200-35700-A-17	PE1016-P1SCD-14-B-0004IN	Moisture	T	18	0.98 g	9.39 g	4.88 g		
200-35700-A-18	PE1016-P1SCD-12-A-0814IN	Moisture	T	19	0.96 g	10.27 g	8.47 g		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110190 Batch Start Date: 10/14/16 16:15 Batch Analyst: Henry, Kayla S

Batch Method: Moisture Batch End Date: 10/15/16 09:30

Batch Notes	
Balance ID	M78711 No Unit
Date and Time Samples in Desiccator	10/15/16@0915
Date and Time Samples out of Desiccator	10/15/16@0930
Date samples were placed in the oven	10/14/16
Oven Temp In	105 Degrees C
Time samples were place in the oven	1615
Date samples were removed from oven	10/15/16
Oven Temp Out	106 Degrees C
Time Samples were removed from oven	0915
Oven ID	2
Thermometer ID	204
Uncorrected In Temperature	105 Celsius
Uncorrected Out Temperature	106 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Total Organic Carbon
by Lloyd Kahn

File:	101716B			Default Mass:	10	mg
Instrument ID:	1			TALS Batch:	110277	
STANDARD CURVE			**Reagent**	**Concentration**	**Amount**	
Lab ID	**Type**	**ICAL conc / ug/L**	**ID**	**ug/L**	**uL**	
CAL Level 1	CAL	0	NA	0	0	
CAL Level 2	CAL	1000	941210	100	100	Date Analyzed: 10/17/16
CAL Level 3	CAL	4000	941209	1001	40	Correlation Coefficient (r): 0.999994
CAL Level 4	CAL	25000	889816	10012	25	Criteria: (r) ≥ *0.995*
CAL Level 5	CAL	50000	889816	10012	50	Raw DataFile: 101716Z
CAL Level 6	CAL	750000	889816	10012	75	
STANDARD & REAGENT TRACEABILITY:						
ICAL/CCV Container ID:	889816			LCS Container ID:	895118	
ICV Container ID:	895118			1:19 Phosphoric Acid Container ID:	977837	
Matrix Spike Container ID:	889716					
PREPARATION INFORMATION:						
Date:	10/17/16	Start Time:	14:13	Balance ID:	1123452701	
Analyst:	KSH	Stop Time:	20:43	Oven ID:	2	

Drop	Weight	Sample ID	Carbon (%)	Carbon (mg/Kg)	Average Carbon (mg/Kg)	Sample RPD or RSD	RL (mg/Kg)
1	9.5	ICV	0.9332	9332.00			
2	10	ICB	0	0.00			
3	10	CCV	3.5619	35619.00			
4	10	CCB	0	0.00			
5	10	MB	0.0142	142.00	168.50	31	U1000
6	10	MB	0.0195	195.00			
7	10.1	LCS	0.8465	8465.00	8419.75	1	970
8	10.3	LCS	0.8484	8484.00			
9	10.1	LCS	0.8474	8474.00			
10	10.6	LCS	0.8256	8256.00			
11	3.9	200-35680-A-1	4.2711	42711.00			
12	3	200-35680-A-2	4.3359	43359.00			
13	4.5	200-35680-A-3	0.0528	528.00			
14	5	200-35680-A-4	4.323	43230.00			
15	3.1	200-35680-A-5	3.0285	30285.00			
16	3.9	200-35680-A-6	5.3777	53777.00			
17	3.2	200-35680-A-7	4.5758	45758.00			
18	3.6	200-35680-A-8	3.5634	35634.00			
19	3.1	200-35680-A-9	6.8953	68953.00			
20	3.5	200-35680-A-10	6.8811	68811.00			
21	3.3	200-35680-A-11	5.8656	58656.00			
22	4	200-35680-A-12	0.1294	1294.00			
23	4.3	200-35680-A-14	4.6879	46879.00			
24	4.6	200-35700-A-1	5.8499	58499.00			
25	10	CCV	3.6741	36741.00			
26	10	CCB	0.0326	326.00			
27	4.6	200-35700-A-2	3.5945	35945.00			
28	4.4	200-35700-A-3	1.5936	15936.00			
29	3.8	200-35700-A-4	1.5332	15332.00			
30	3.5	200-35700-A-5	3.2803	32803.00			
31	3.1	200-35700-A-6	4.2063	42063.00			
32	3.1	200-35700-A-7	0.4068	4068.00			
33	10	MB	0.0172	172.00	172.50	1	U1000

Date:	10/17/16	Start Time:	14:13	Balance ID:	1123452701
Analyst:	KSH	Stop Time:	20:43	Oven ID:	2

Drop	Weight	Sample ID	Carbon (%)	Carbon (mg/Kg)	Average Carbon (mg/Kg)	Sample RPD or RSD	RL (mg/Kg)
34	10	MB	0.0173	173.00			
35	9.3	LCS	0.8194	8194.00	8936.25	6	1030
36	10.2	LCS	0.9263	9263.00			
37	9.1	LCS	0.8819	8819.00			
38	10.2	LCS	0.9469	9469.00			
39	3.8	200-35700-A-8	4.995	49950.00			
40	4.1	200-35700-A-9	2.1955	21955.00			
41	4.1	200-35700-A-10	2.9461	29461.00			
42	4.8	200-35700-A-11	3.4279	34279.00			
43	3.4	200-35700-A-12	3.4702	34702.00			
44	3	200-35700-A-12 MS	15.0393	150393.00			
45	3.2	200-35700-A-12 MSD	15.5954	155954.00			
46	3.3	200-35700-A-13	0.0661	661.00			
47	10	CCV	3.6212	36212.00			
48	10	CCB	0	0.00			
49	3.3	200-35700-A-14	7.731	77310.00			
50	3.3	200-35700-A-15	6.0985	60985.00			
51	3.7	200-35700-A-16	3.0824	30824.00			
52	3.6	200-35700-A-17	3.3712	33712.00			
53	4.1	200-35700-A-18	0.4576	4576.00			
54	3.9	200-35649-A-1	3.0042	30042.00			
55	3.7	200-35649-A-2	3.2695	32695.00			
56	3.6	200-35649-A-3	1.636	16360.00			
57	3.3	200-35649-A-4	1.6336	16336.00			
58	10	CCV	3.5771	35771.00			
59	10	CCB	0	0.00			

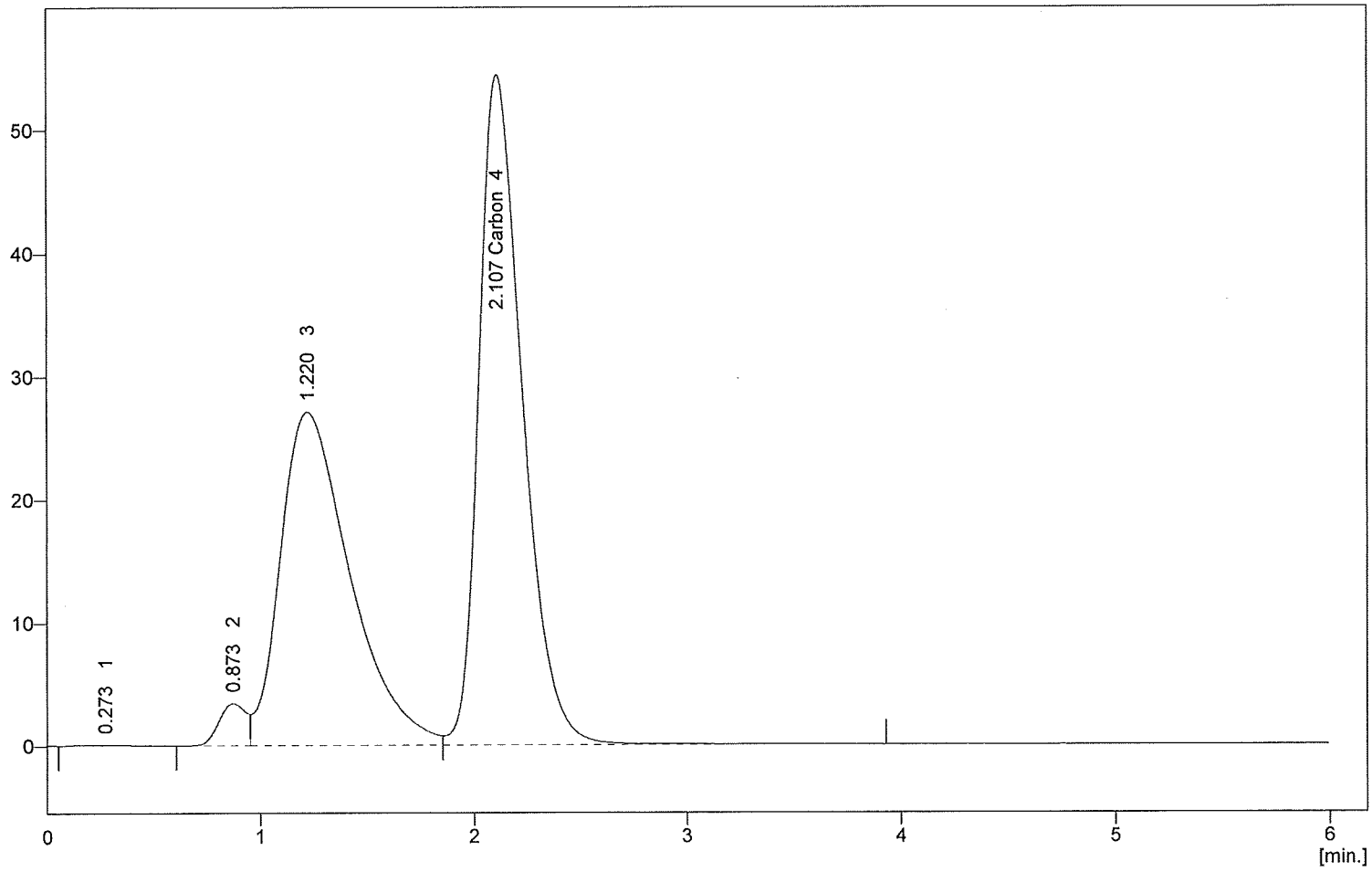
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 2:13:01 PM
Project : WORK1
Weight : 9.5 mg
Sample : ICV

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B001



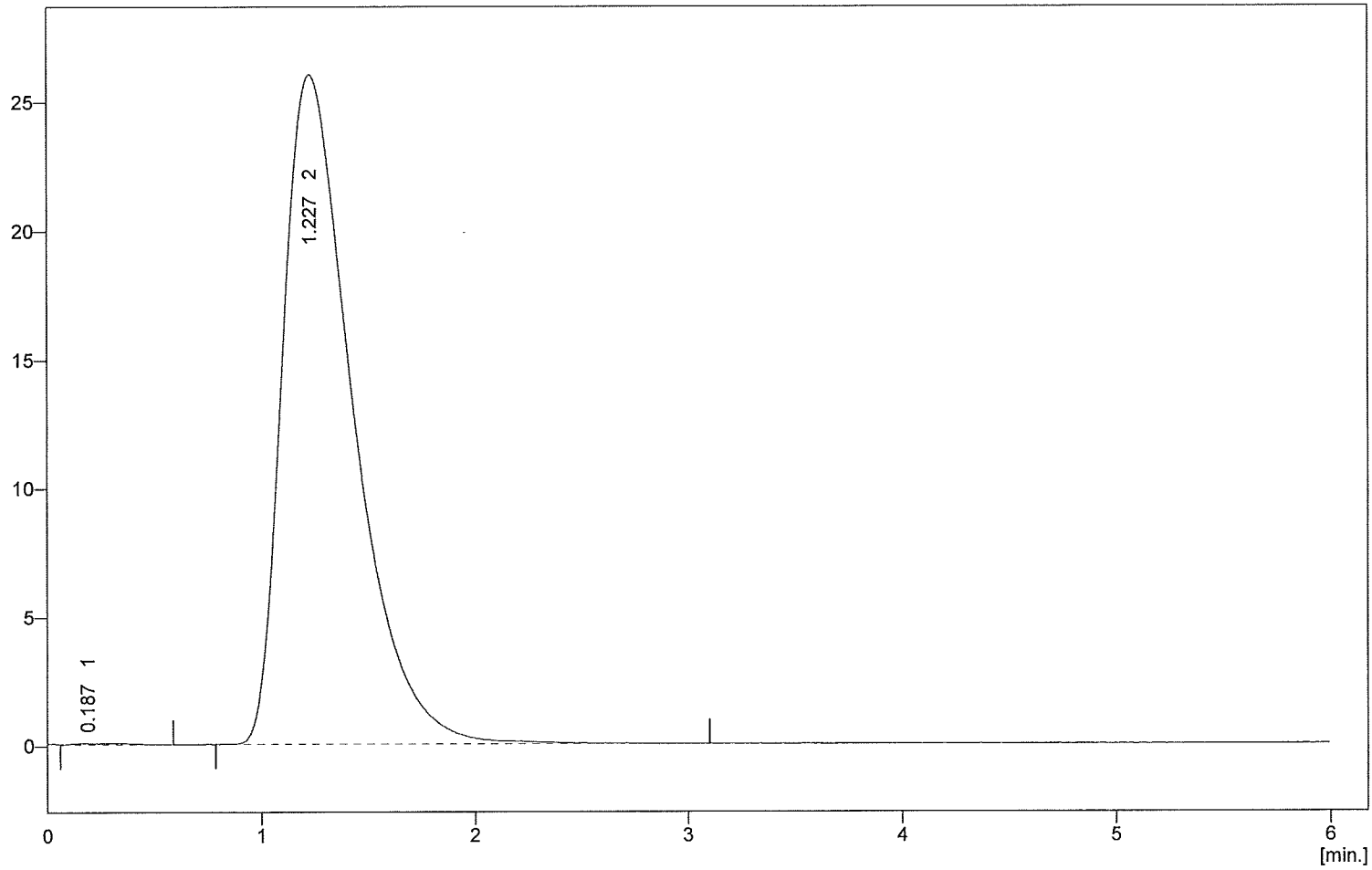
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.107	775.288	54.6	0.089	0.9332	1.0000	Ordnr
	Total	1418.813	100.0	9.500	0.9332		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 2:19:29 PM
Project : WORK1
Weight : 10 mg
Sample : ICB
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B002



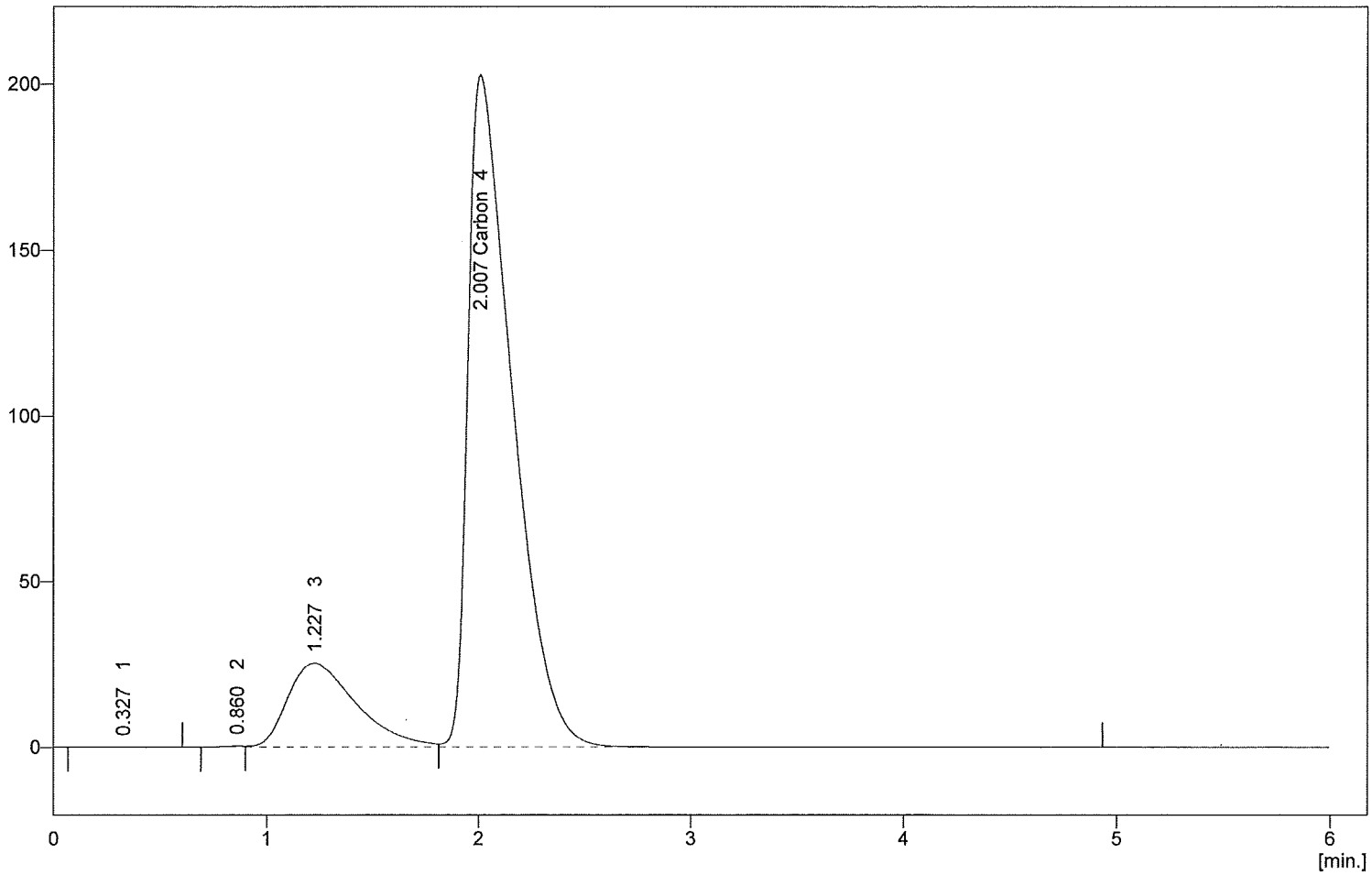
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.029						Ordnr
	Total	597.644	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 2:25:57 PM
Project : WORK1
Weight : 10 mg
Sample : CCV
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B003



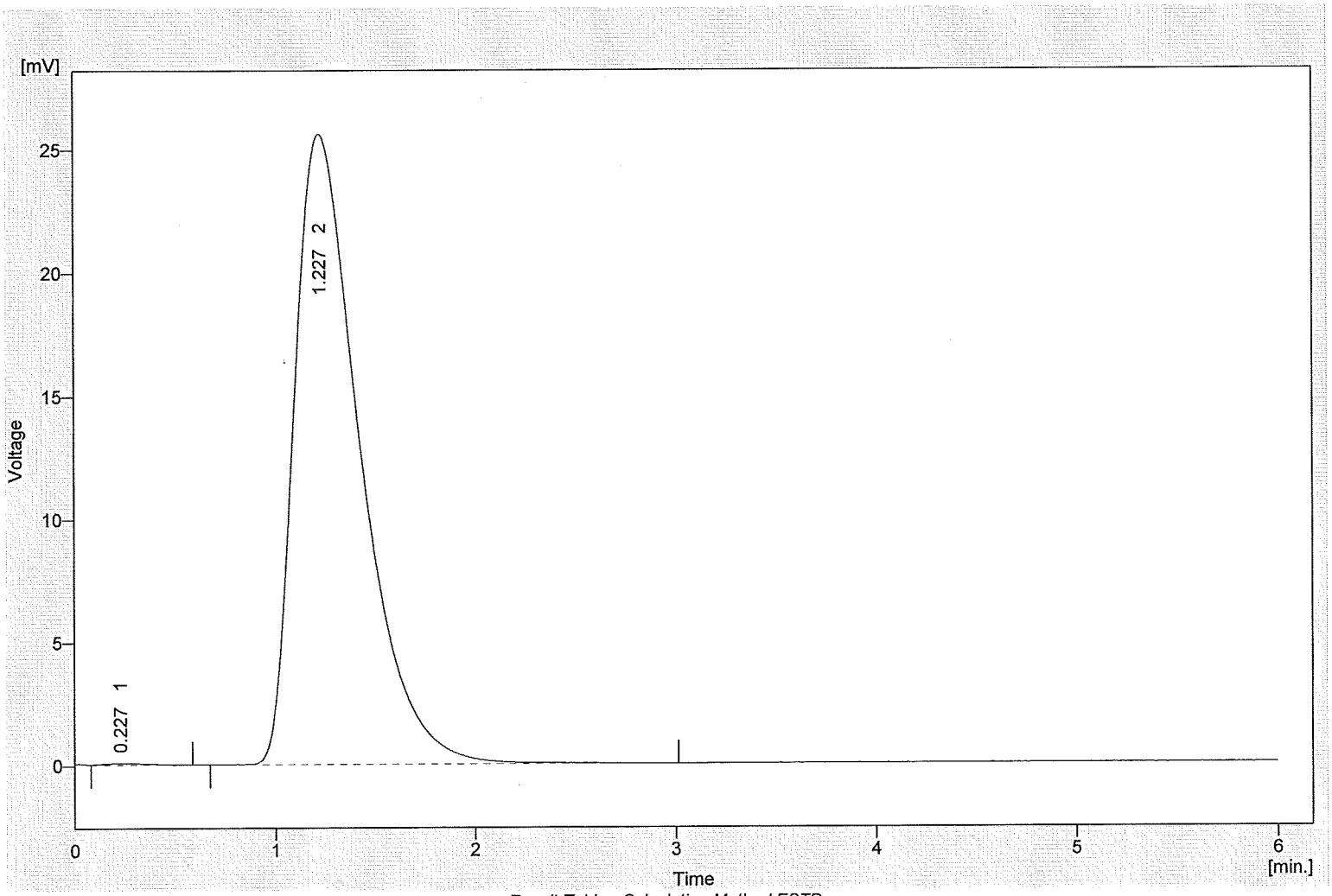
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.007	2934.812	83.6	0.356	3.5619	1.0000	Ordnr
	Total	3510.569	100.0	10.000	3.5619		

TOC BY LLOYD KAHN
Channel 1

Created : 10/17/2016 2:32:25 PM
Project : WORK1
Weight : 10 mg
Sample : CCB
Calibration : 101716B

By : None
Style : Chromatogram
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B004

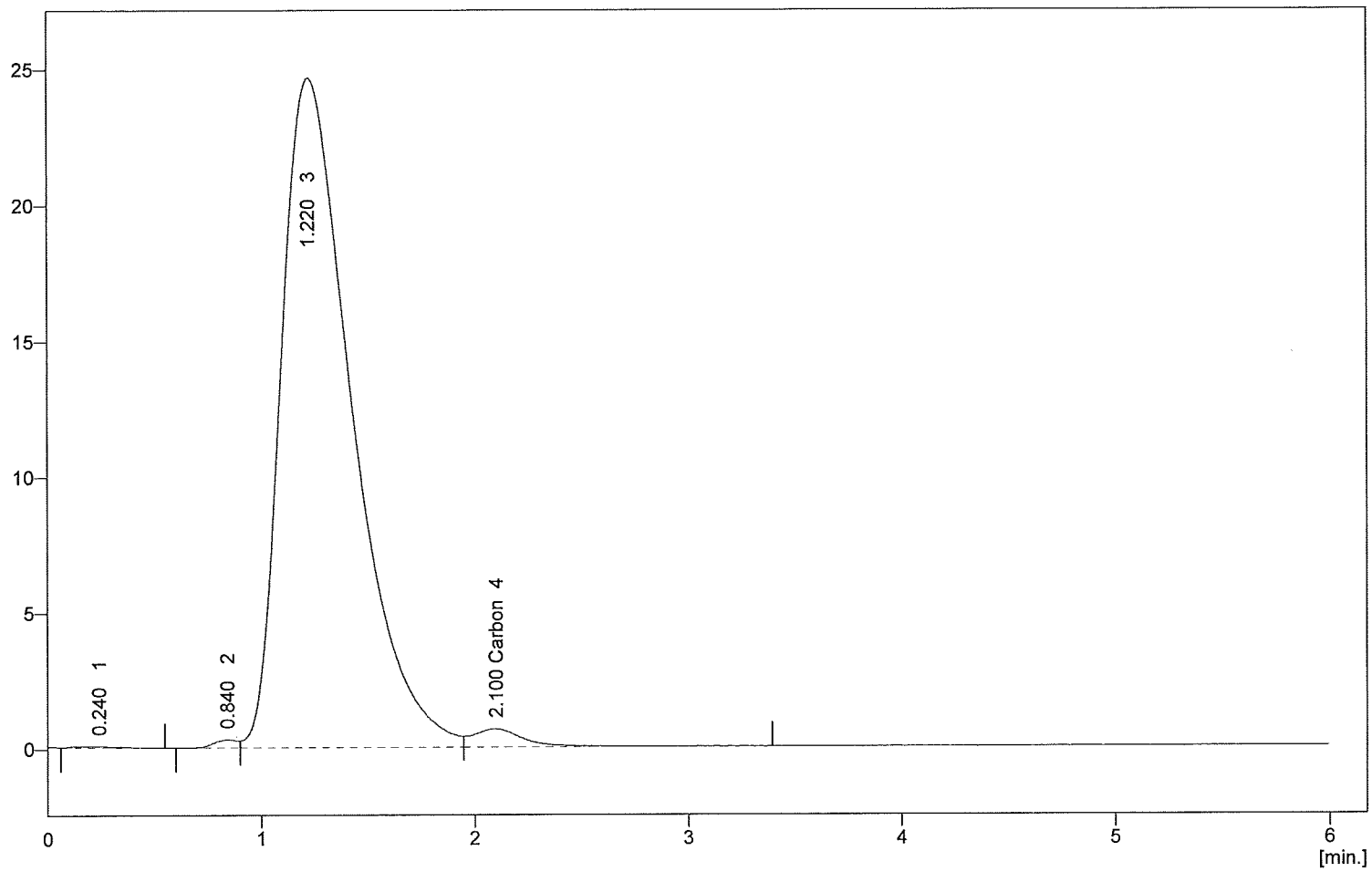


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.029						Ordnr
	Total	583.759	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 2:38:53 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 10 mg		
Sample	: MB	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B005
Calibration	: 101716B		



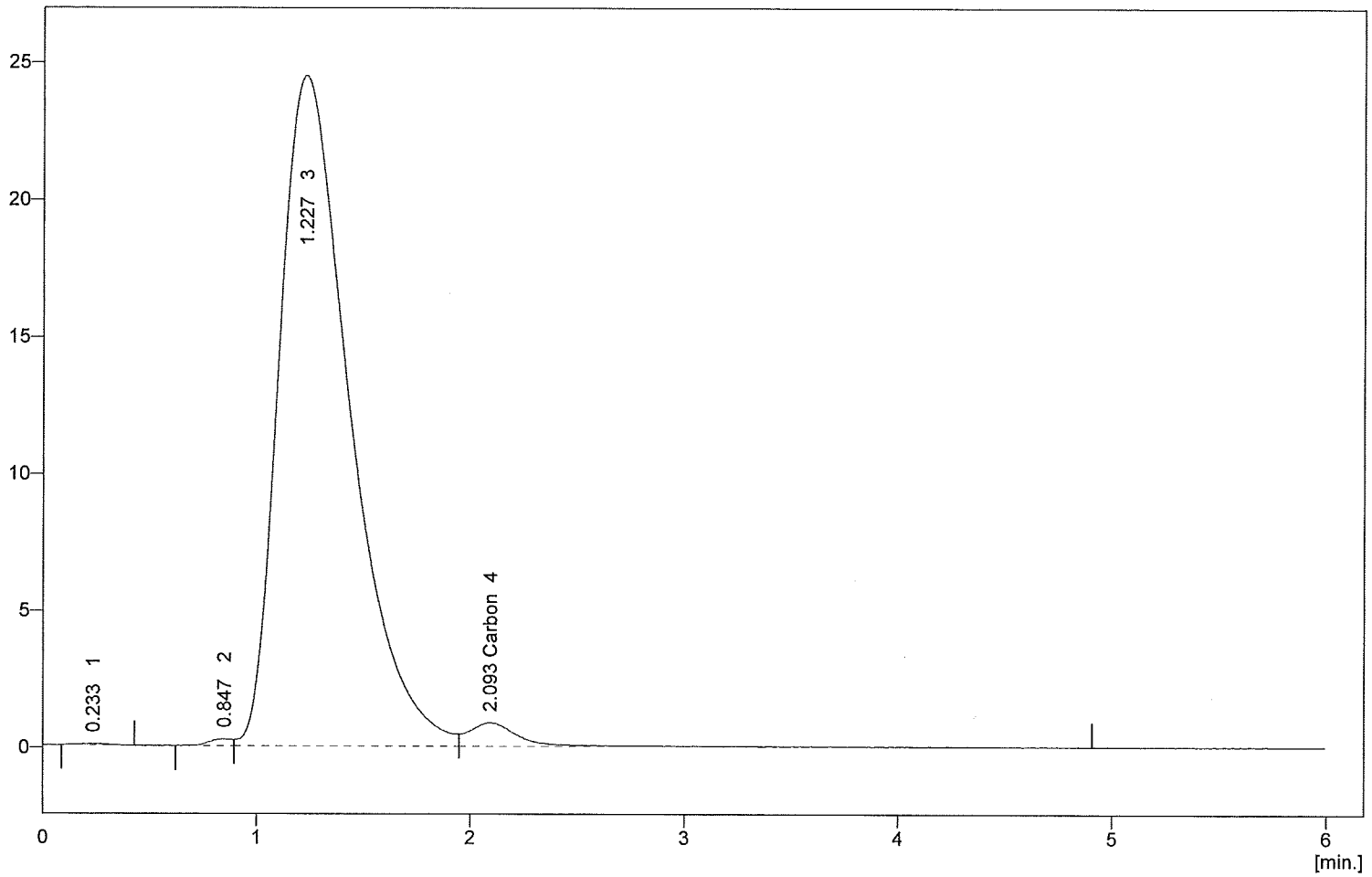
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.100	11.602	2.0	0.001	0.0142	1.0000	Free
	Total	579.716	100.0	10.000	0.0142		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 2:45:21 PM
Project : WORK1
Weight : 10 mg
Sample : MB
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B006



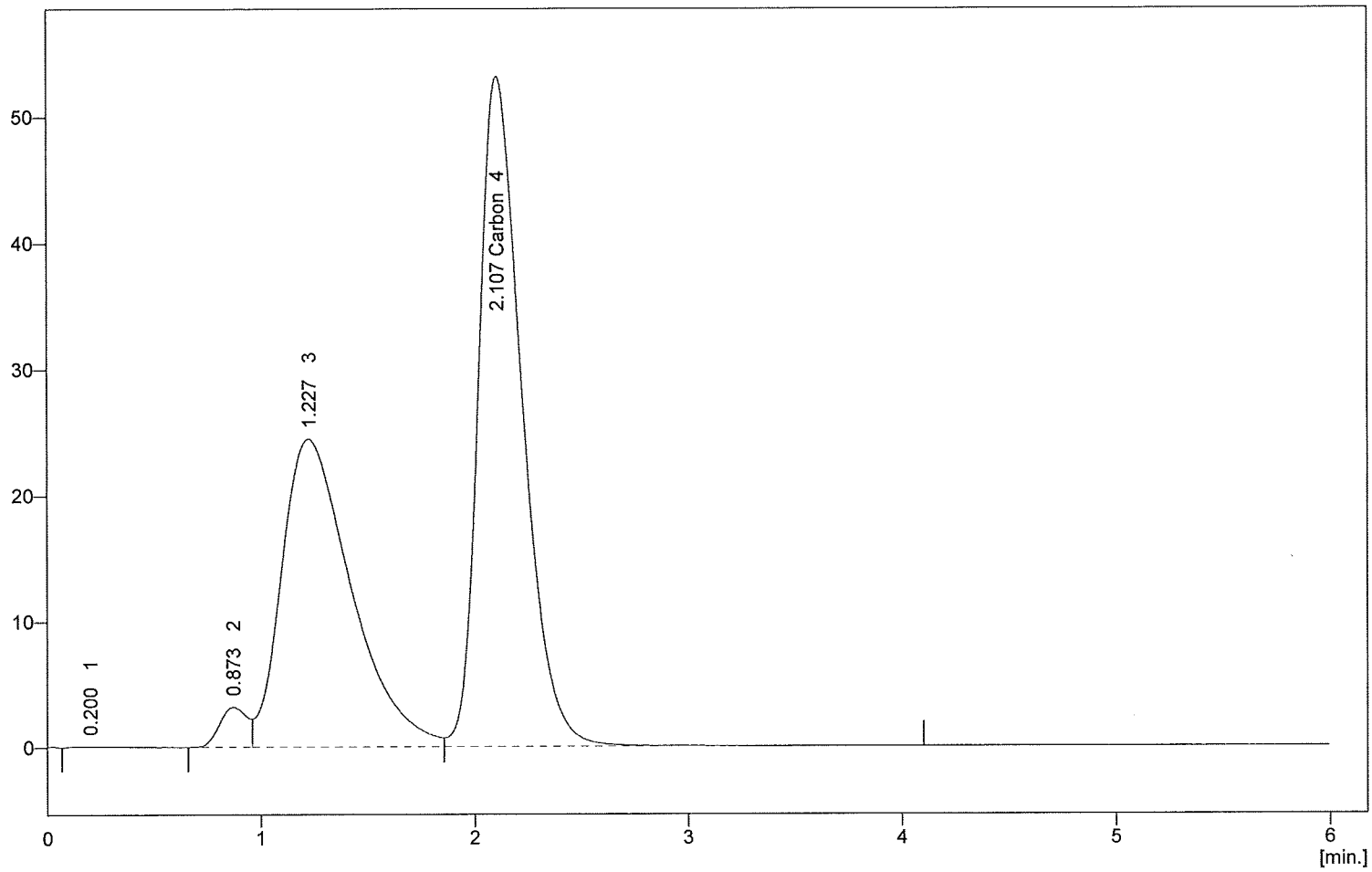
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.093	15.937	2.7	0.002	0.0195	1.0000	Free
	Total	581.059	100.0	10.000	0.0195		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 2:51:51 PM
Project : WORK1
Weight : 10.1 mg
Sample : LCS
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B007



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.107	749.849	56.3	0.086	0.8465	1.0000	Ordnr
	Total	1331.915	100.0	10.100	0.8465		

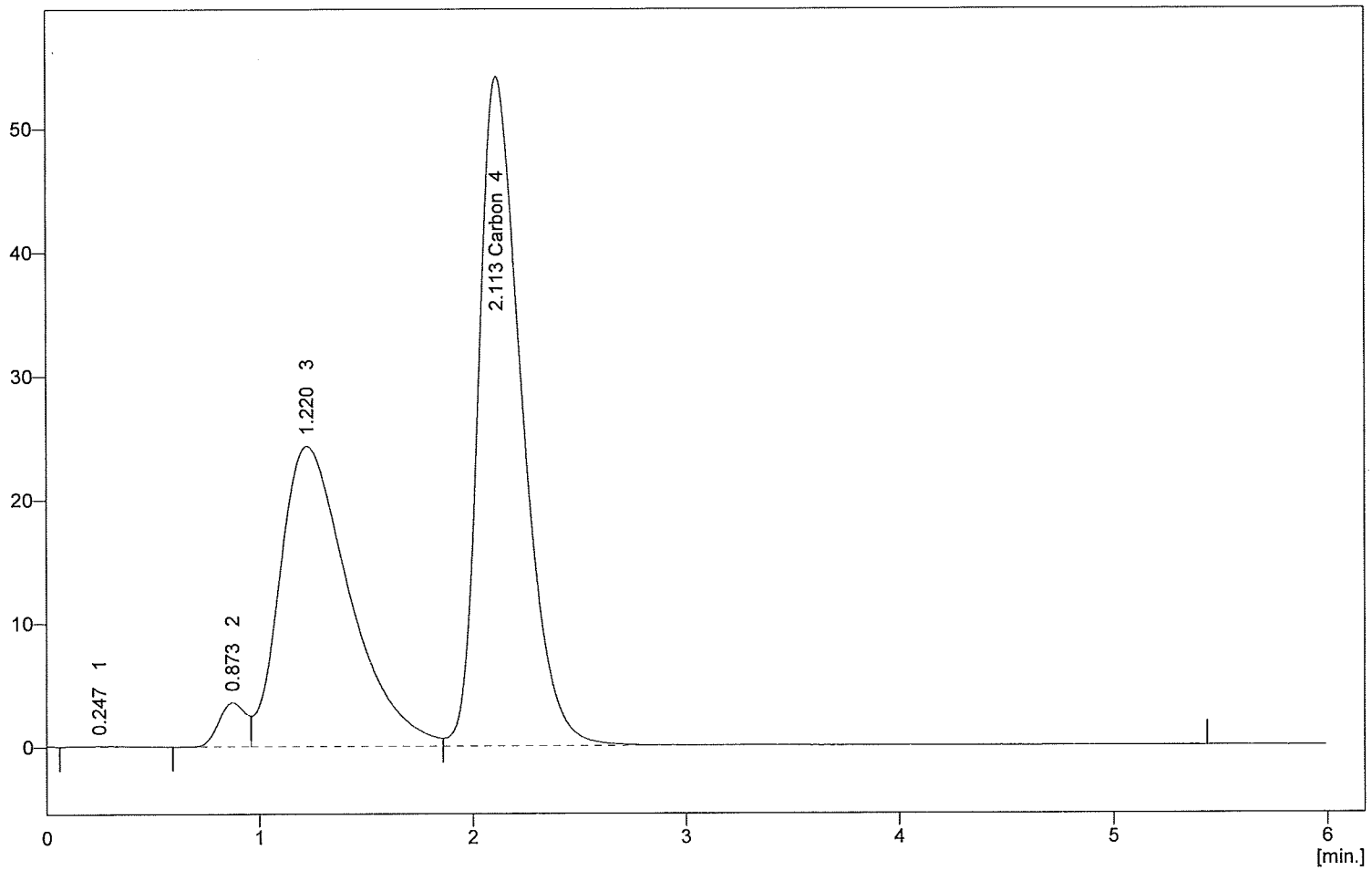
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 2:58:22 PM
Project : WORK1
Weight : 10.3 mg
Sample : LCS

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B008

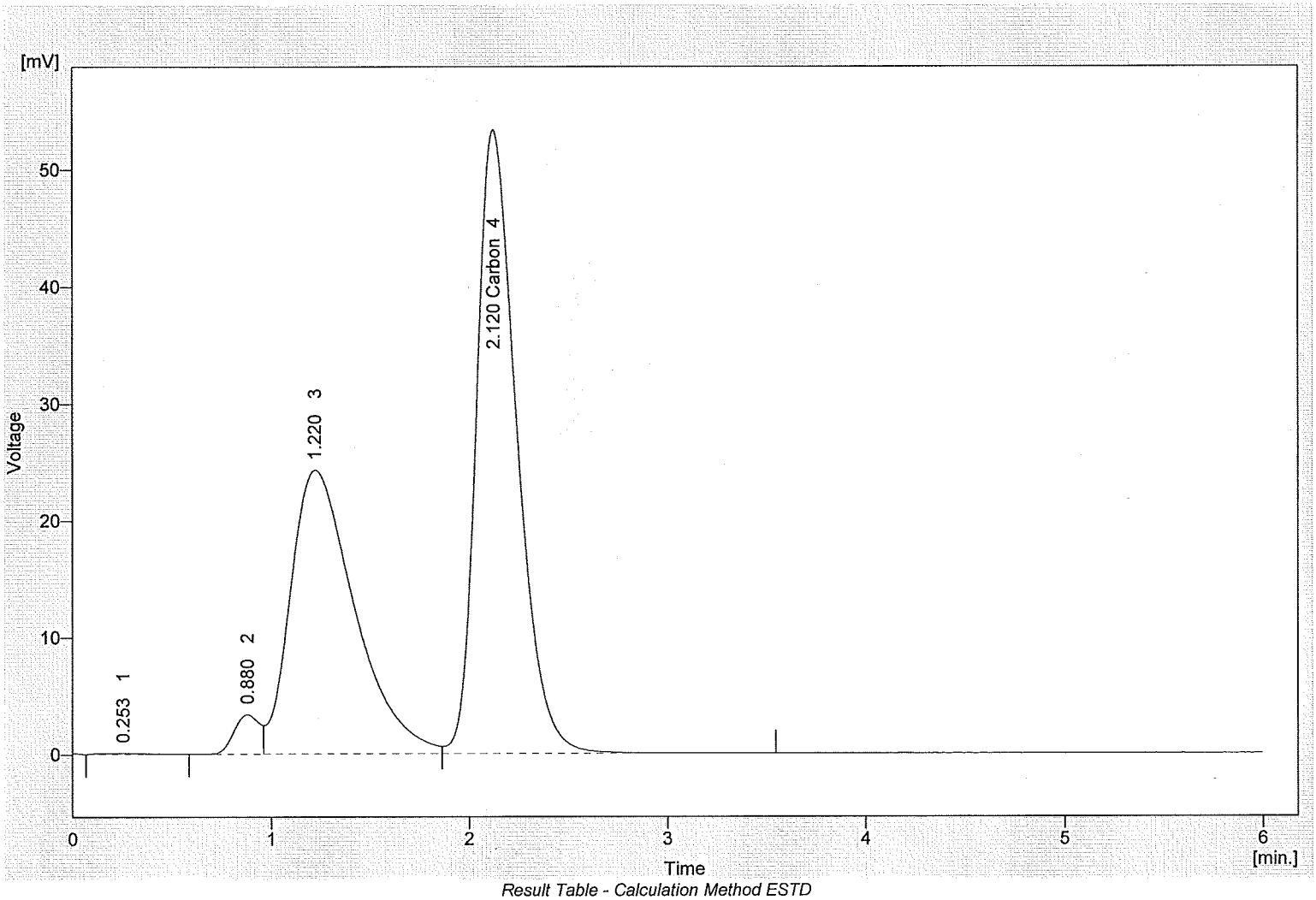


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	765.078	56.8	0.087	0.8484	1.0000	Ordnr
	Total	1347.037	100.0	10.300	0.8484		

TOC BY LLOYD KAHN
Channel 1

Created	: 10/17/2016 3:04:52 PM	By	: None
Project	: WORK1	Style	: Chromatogram
Weight	: 10.1 mg		
Sample	: LCS	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B009
Calibration	: 101716B		



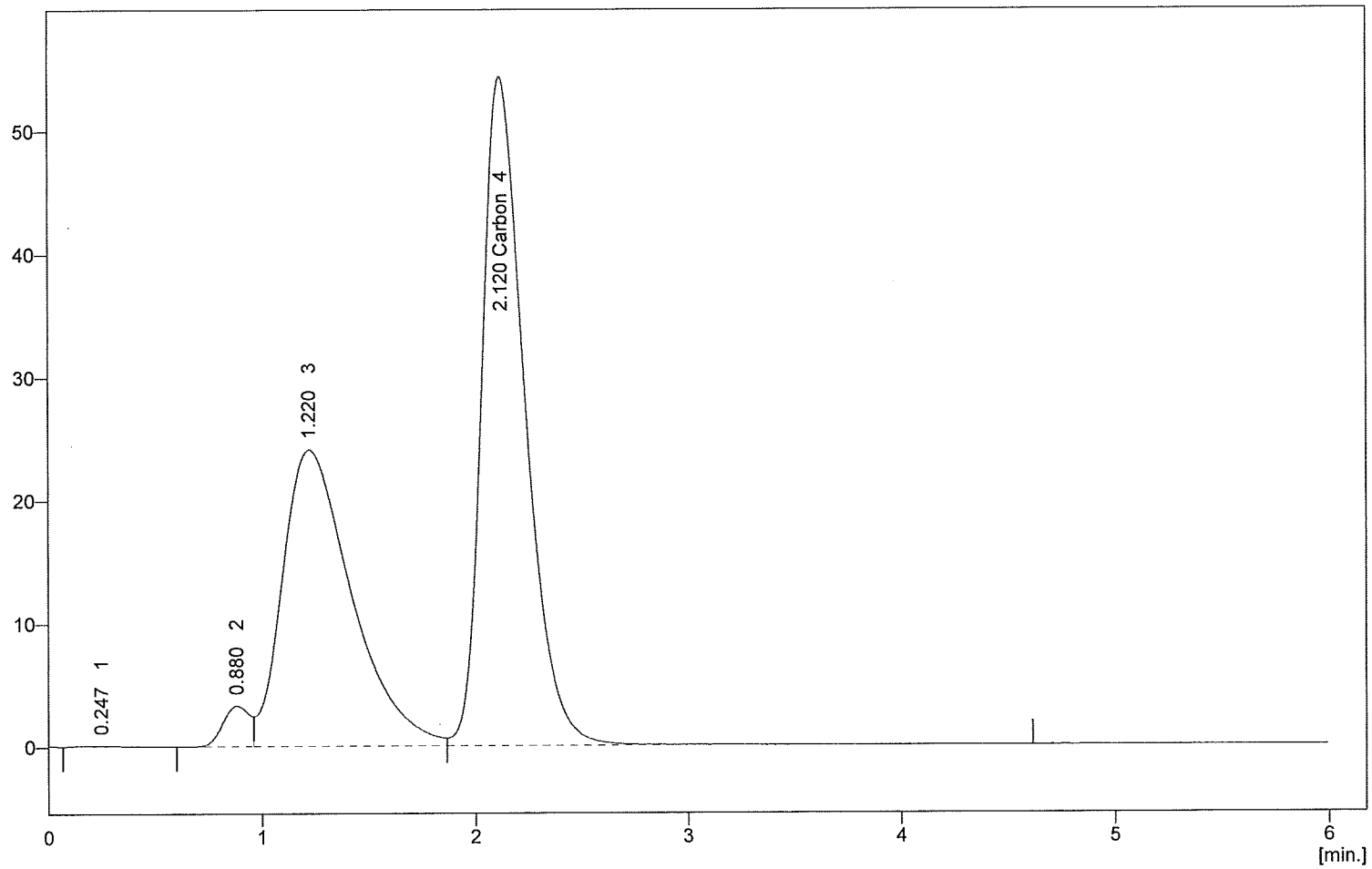
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.120	750.587	56.5	0.086	0.8474	1.0000	Ordnr
	Total	1328.821	100.0	10.100	0.8474		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:11:24 PM
Project : WORK1
Weight : 10.6 mg
Sample : LCS
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B010



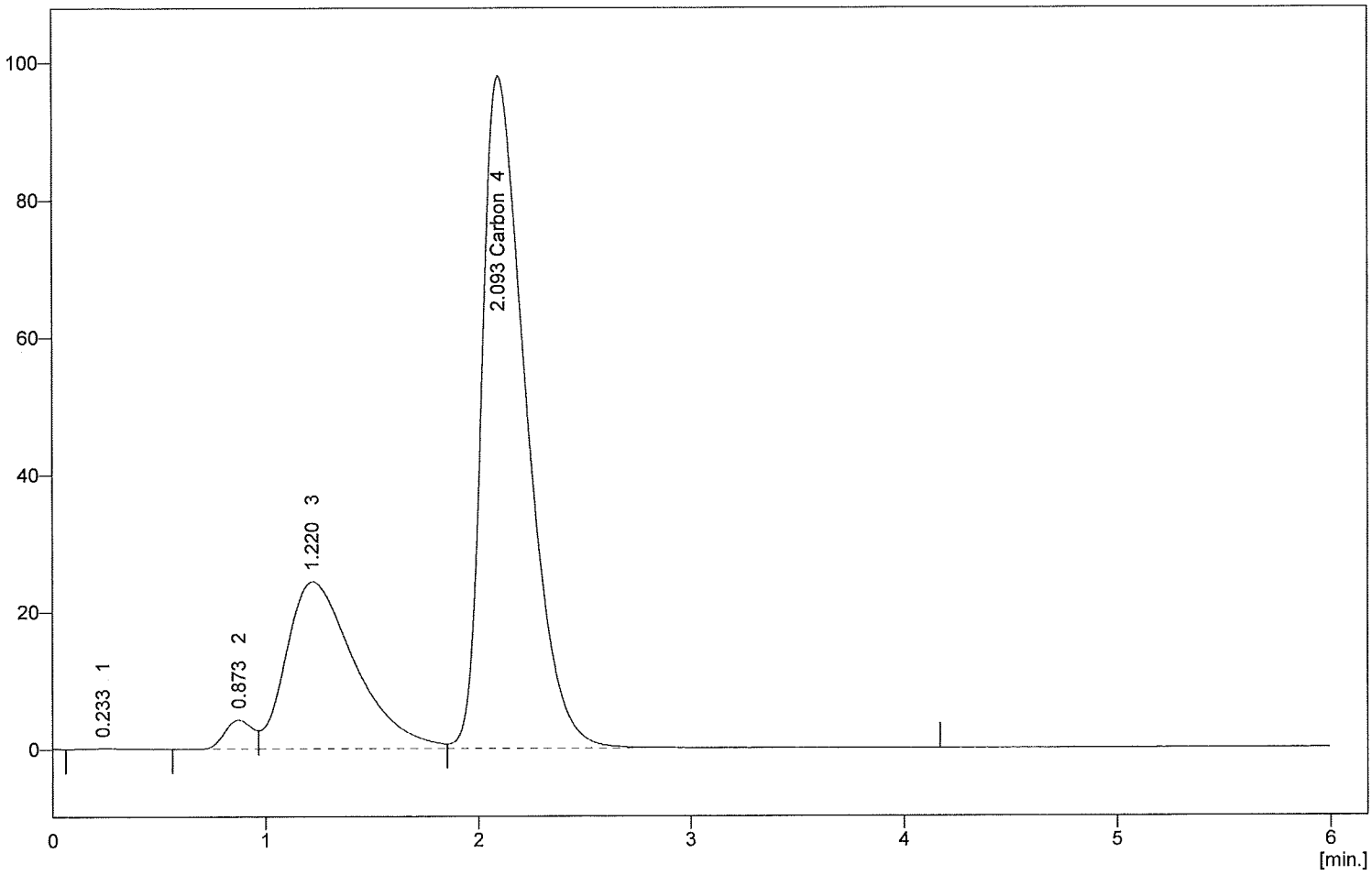
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.120	766.097	57.2	0.088	0.8256	1.0000	Ordnr
	Total	1339.527	100.0	10.600	0.8256		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:17:56 PM
Project : WORK1
Weight : 3.9 mg
Sample : 200-35680-A-1
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B011



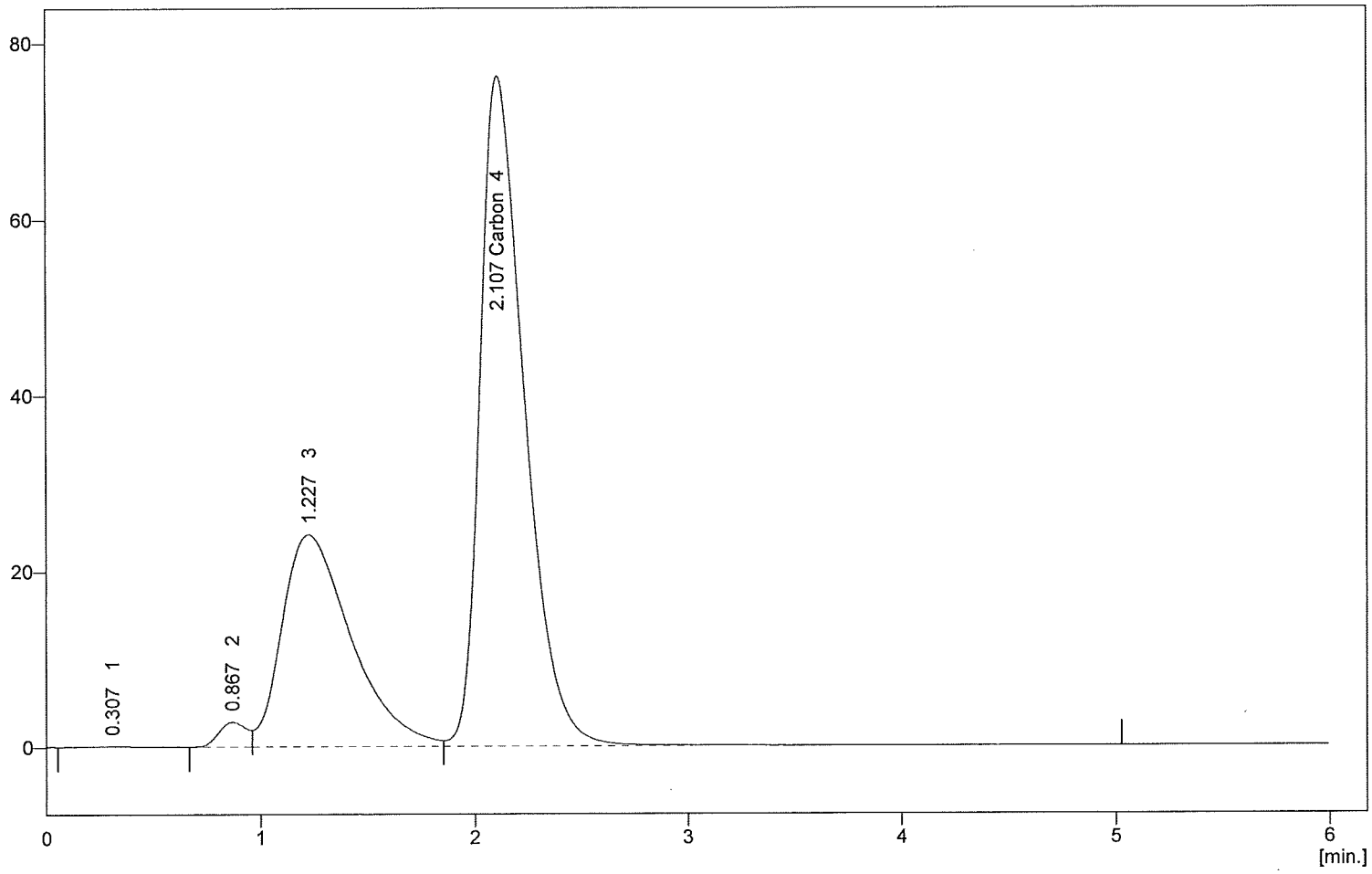
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.093	1404.244	70.5	0.167	4.2711	1.0000	Ordnr
	Total	1991.489	100.0	3.900	4.2711		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:24:29 PM
Project : WORK1
Weight : 3 mg
Sample : 200-35680-A-2
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B012



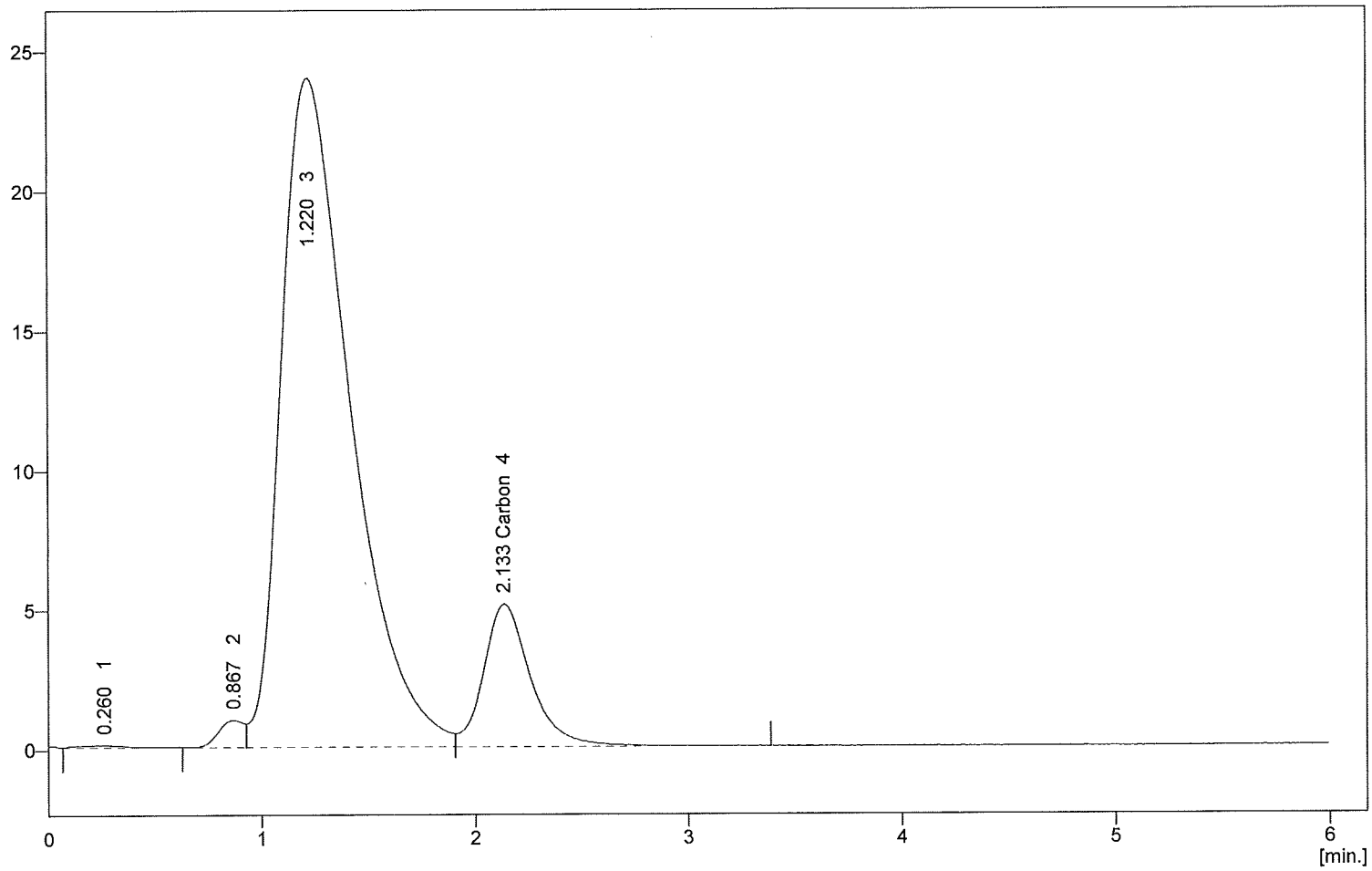
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.107	1109.672	66.2	0.130	4.3359	1.0000	Ordnr
	Total	1677.437	100.0	3.000	4.3359		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:31:01 PM
Project : WORK1
Weight : 4.5 mg
Sample : 200-35680-A-3
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B013



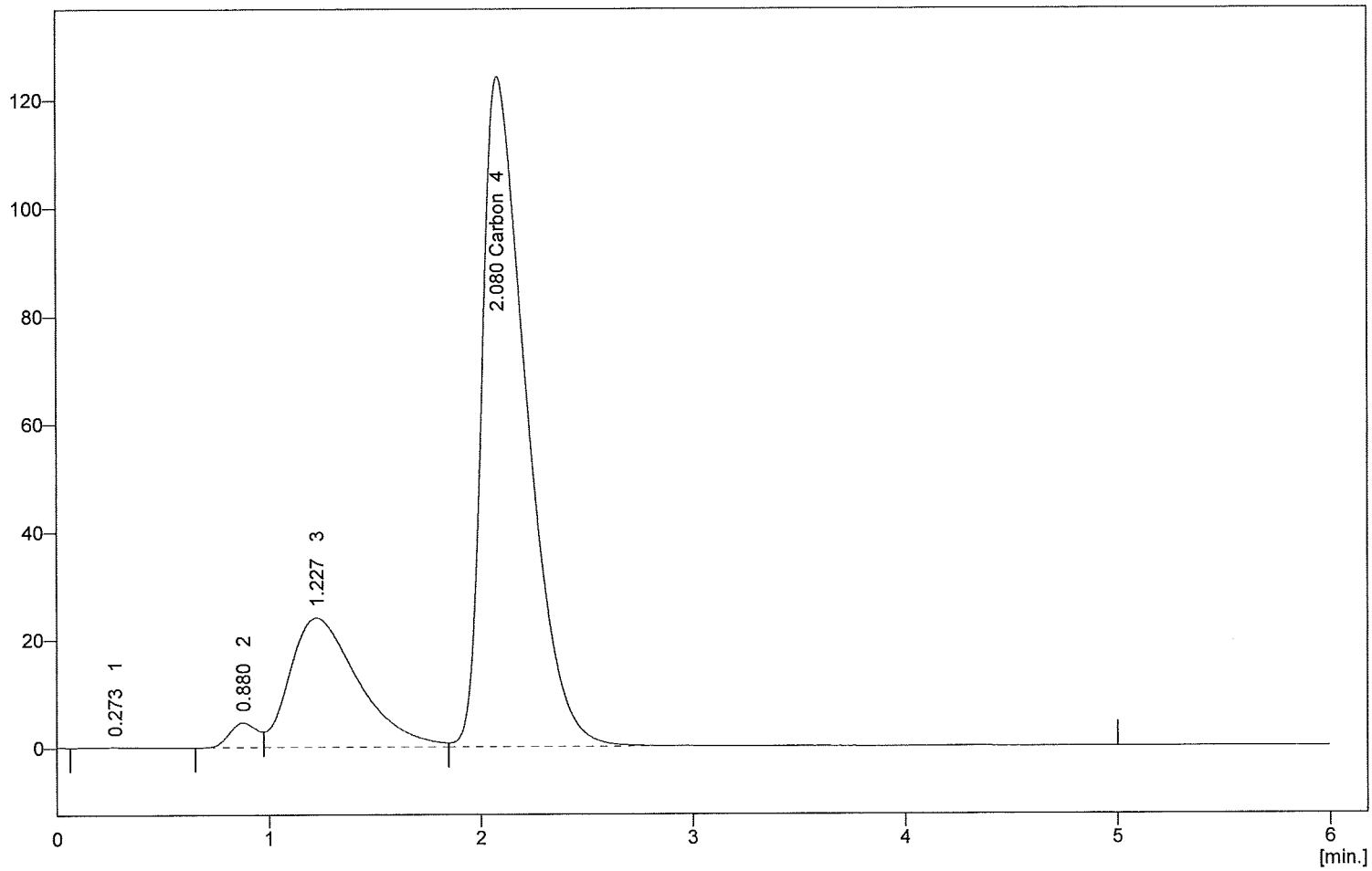
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	78.877	12.6	0.002	0.0528	1.0000	Ordnr
	Total	627.977	100.0	4.500	0.0528		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:37:36 PM
Project : WORK1
Weight : 5 mg
Sample : 200-35680-A-4
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B014



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.080	1804.446	75.6	0.216	4.3230	1.0000	Ordnr
	Total	2387.042	100.0	5.000	4.3230		

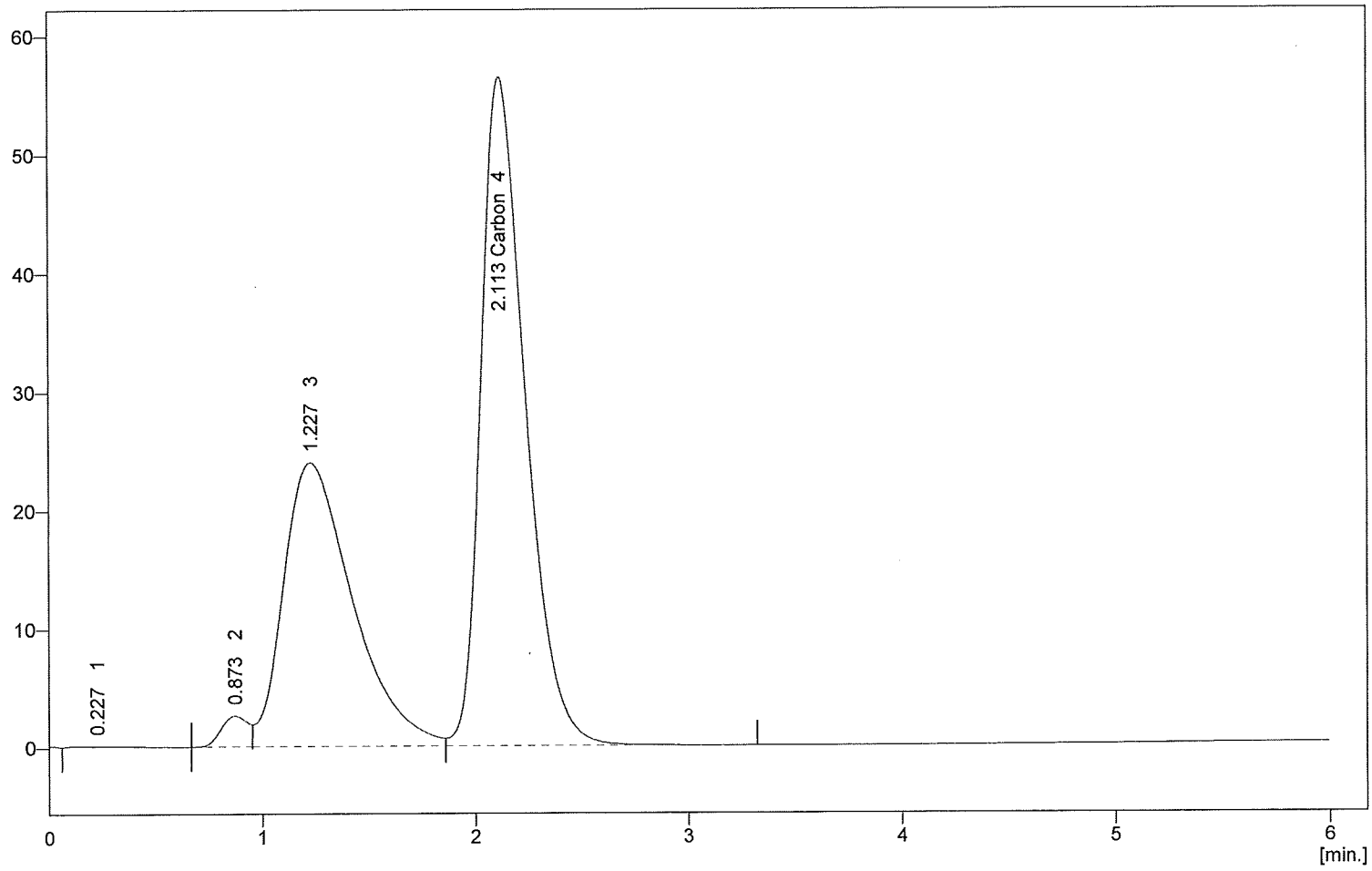
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:44:12 PM
Project : WORK1
Weight : 3.1 mg
Sample : 200-35680-A-5

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B015



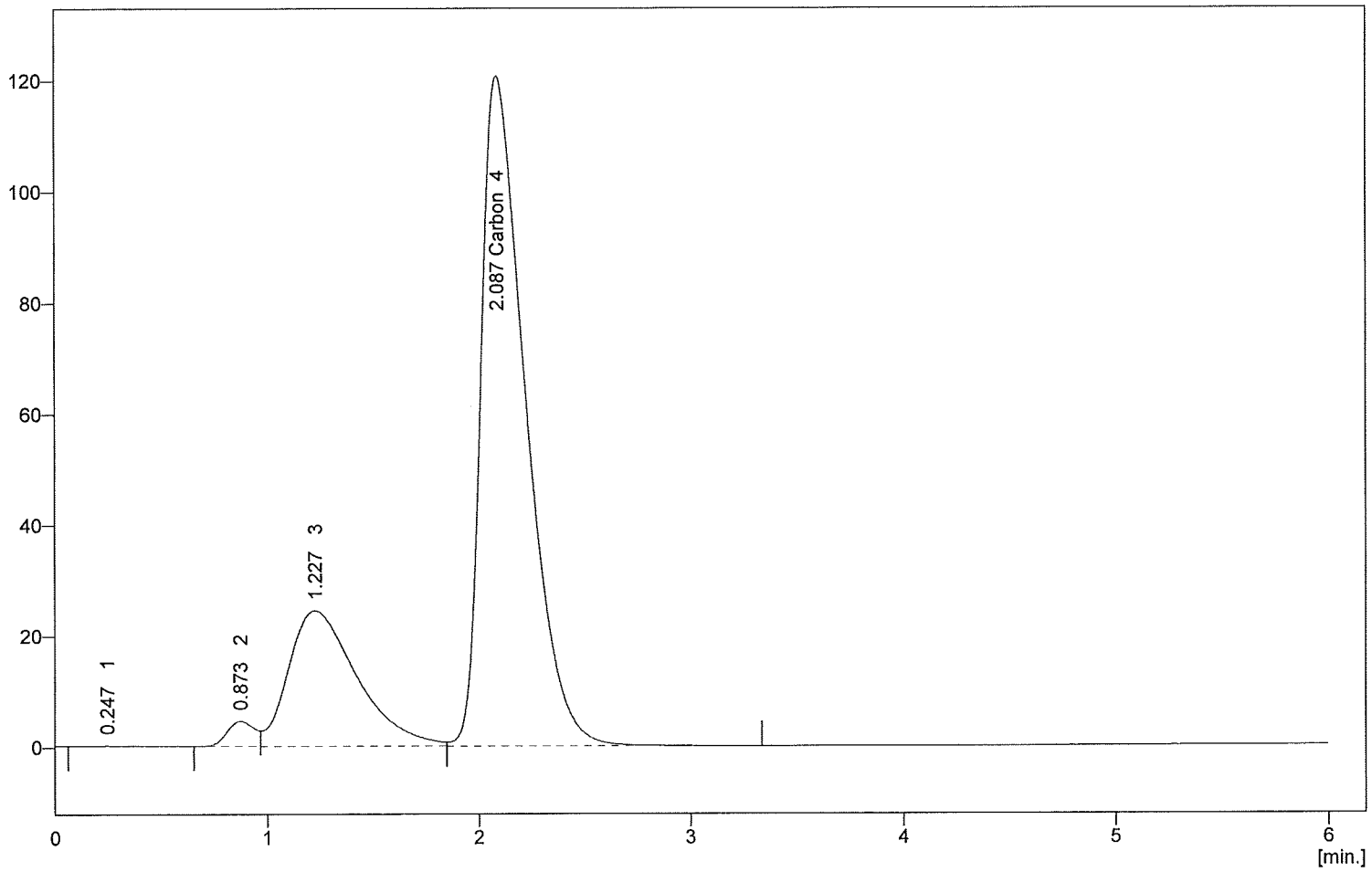
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	817.514	59.2	0.094	3.0285	1.0000	Ordnr
	Total	1380.605	100.0	3.100	3.0285		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:50:46 PM
Project : WORK1
Weight : 3.9 mg
Sample : 200-35680-A-6
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B016



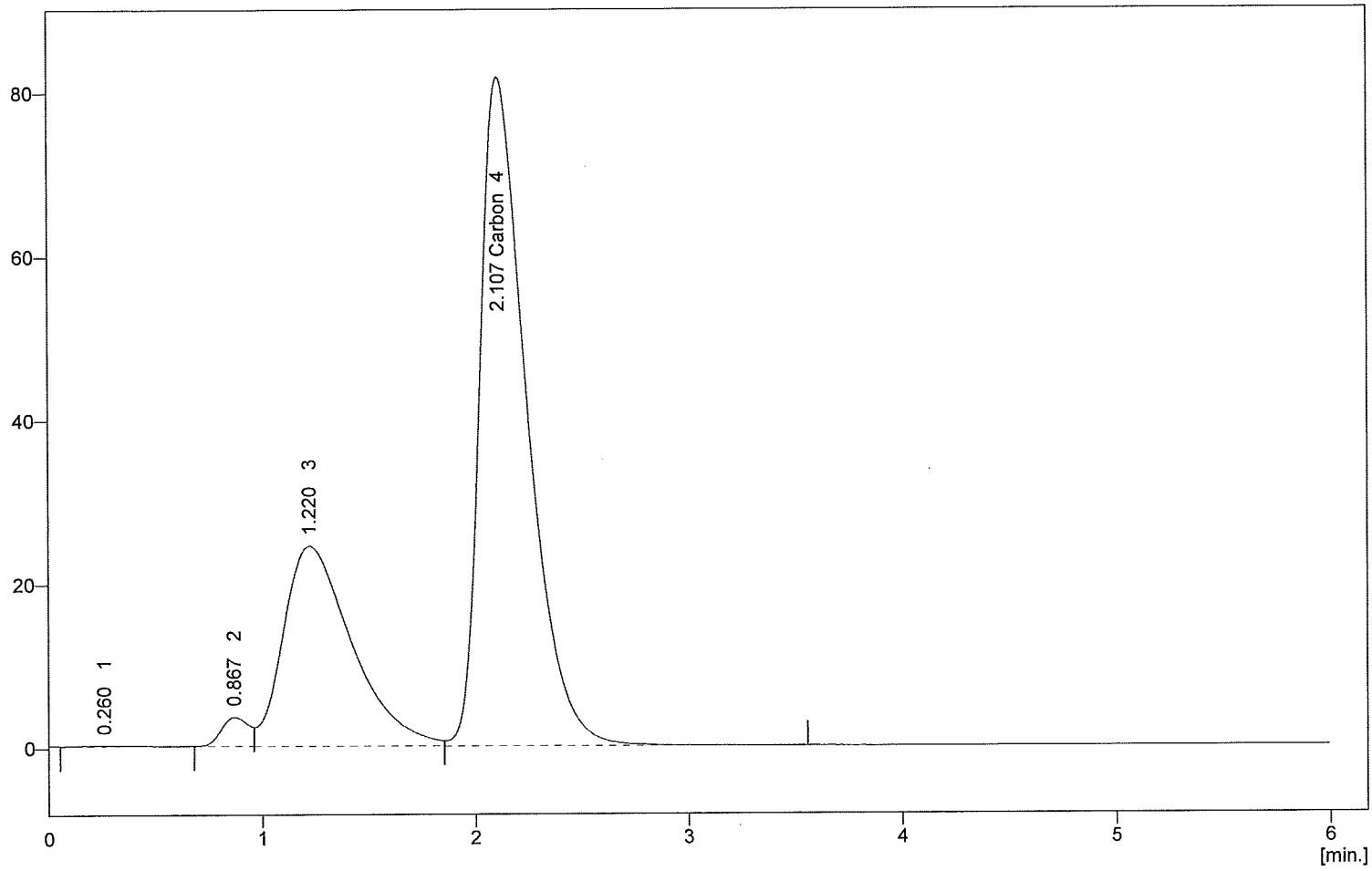
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.087	1752.608	74.8	0.210	5.3777	1.0000	Ordnr
	Total	2343.070	100.0	3.900	5.3777		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 3:57:20 PM
Project : WORK1
Weight : 3.2 mg
Sample : 200-35680-A-7
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B017



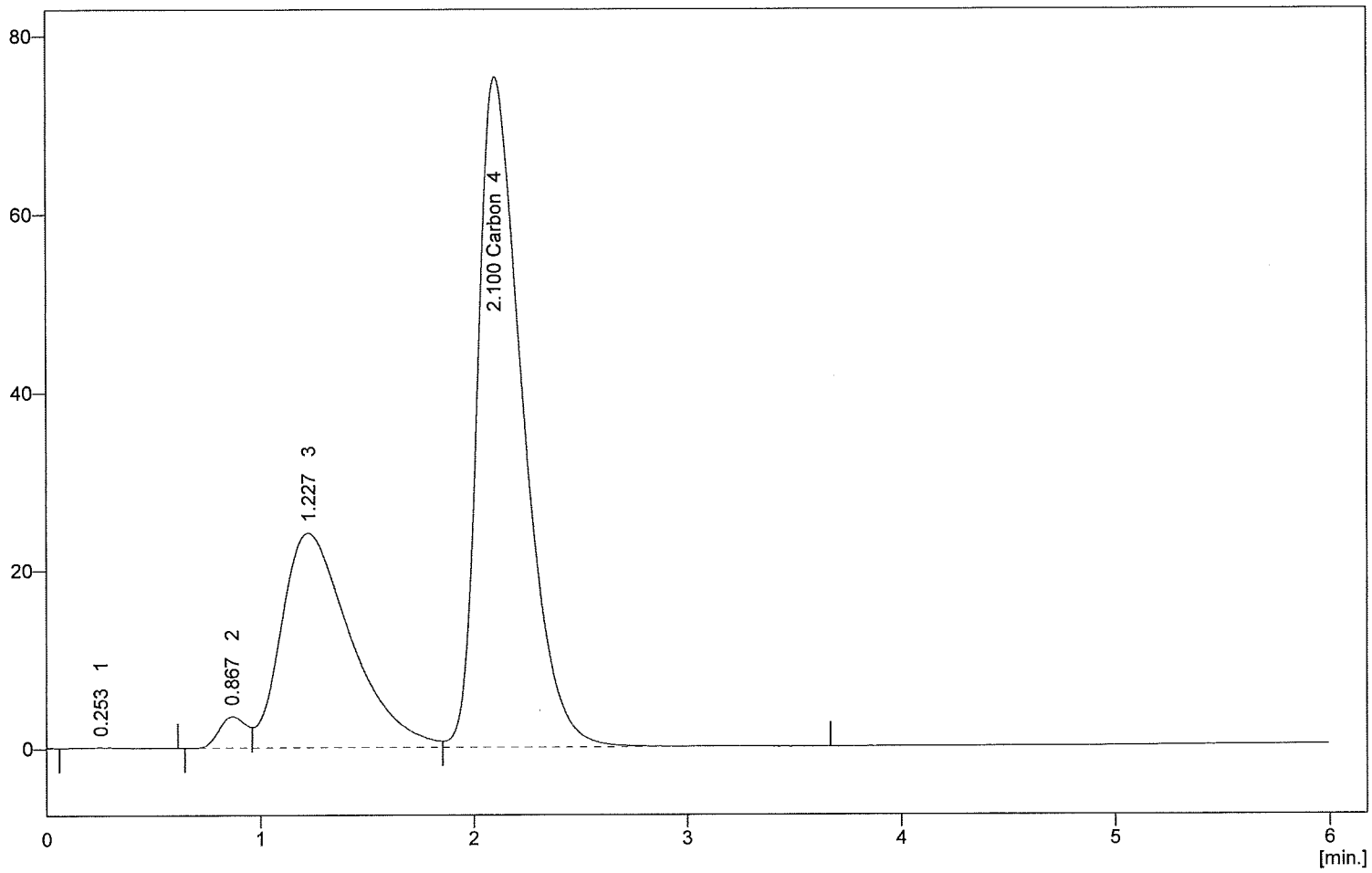
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.107	1241.625	68.1	0.146	4.5758	1.0000	Ordnr
	Total	1823.170	100.0	3.200	4.5758		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 4:03:55 PM
Project : WORK1
Weight : 3.6 mg
Sample : 200-35680-A-8
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B018

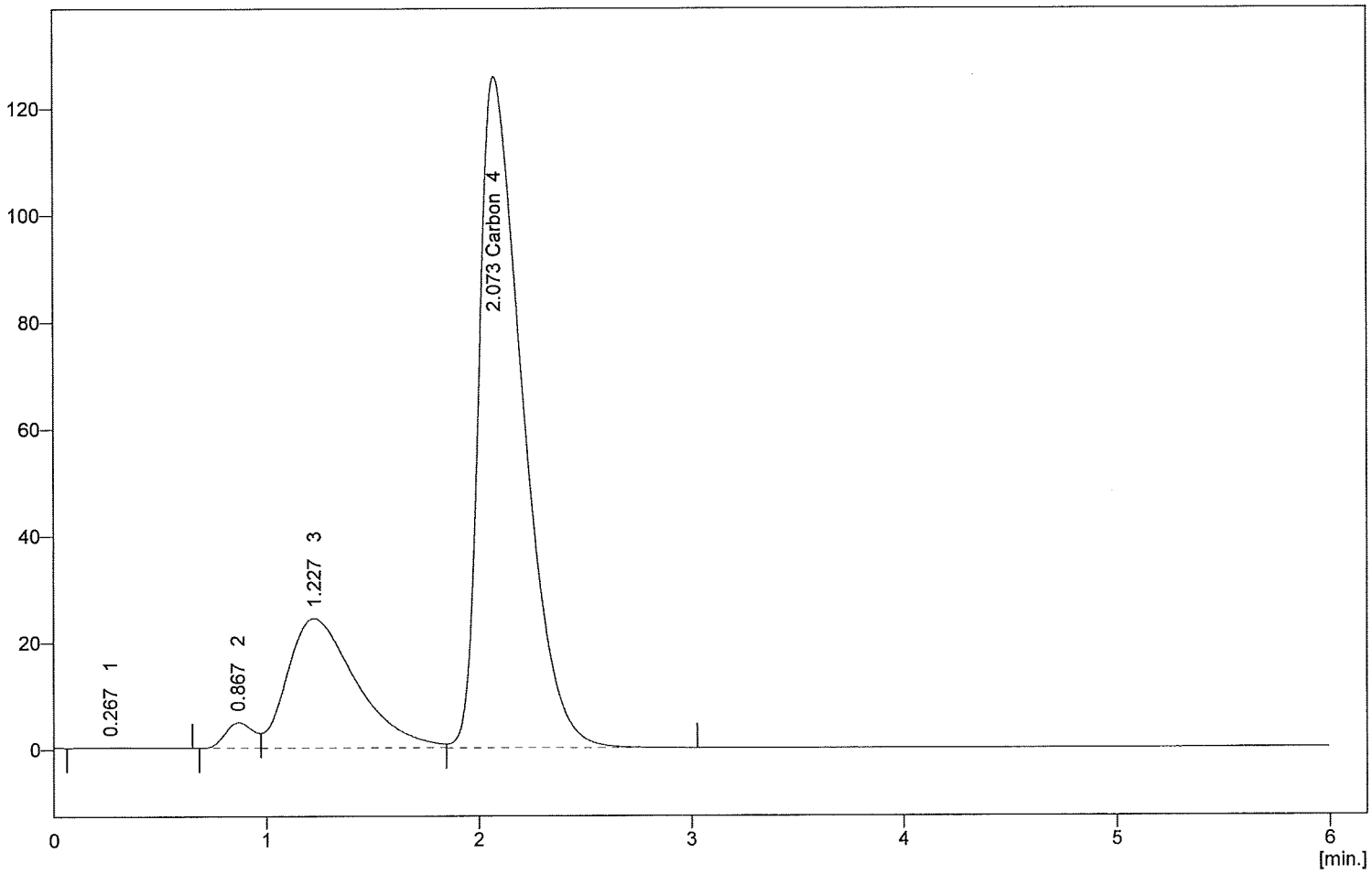


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.100	1095.178	65.4	0.128	3.5634	1.0000	Ordnr
	Total	1673.598	100.0	3.600	3.5634		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 4:10:30 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 3.1 mg		
Sample	: 200-35680-A-9	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B019
Calibration	: 101716B		



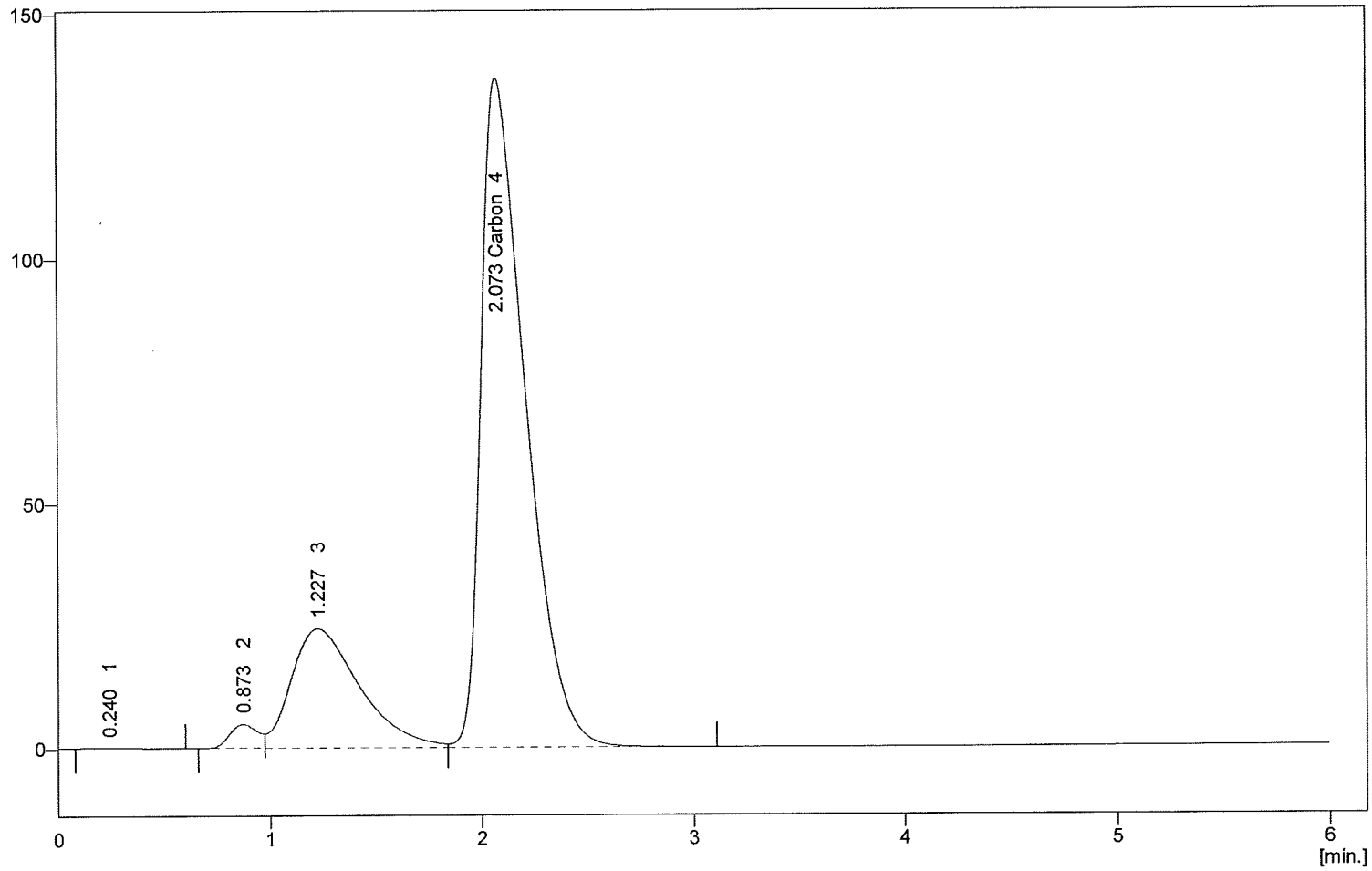
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.073	1785.100	75.2	0.214	6.8953	1.0000	Ordnr
	Total	2374.622	100.0	3.100	6.8953		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 4:17:06 PM
Project : WORK1
Weight : 3.5 mg
Sample : 200-35680-A-10
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B020



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.073	2003.733	77.1	0.241	6.8811	1.0000	Ordnr
	Total	2598.673	100.0	3.500	6.8811		

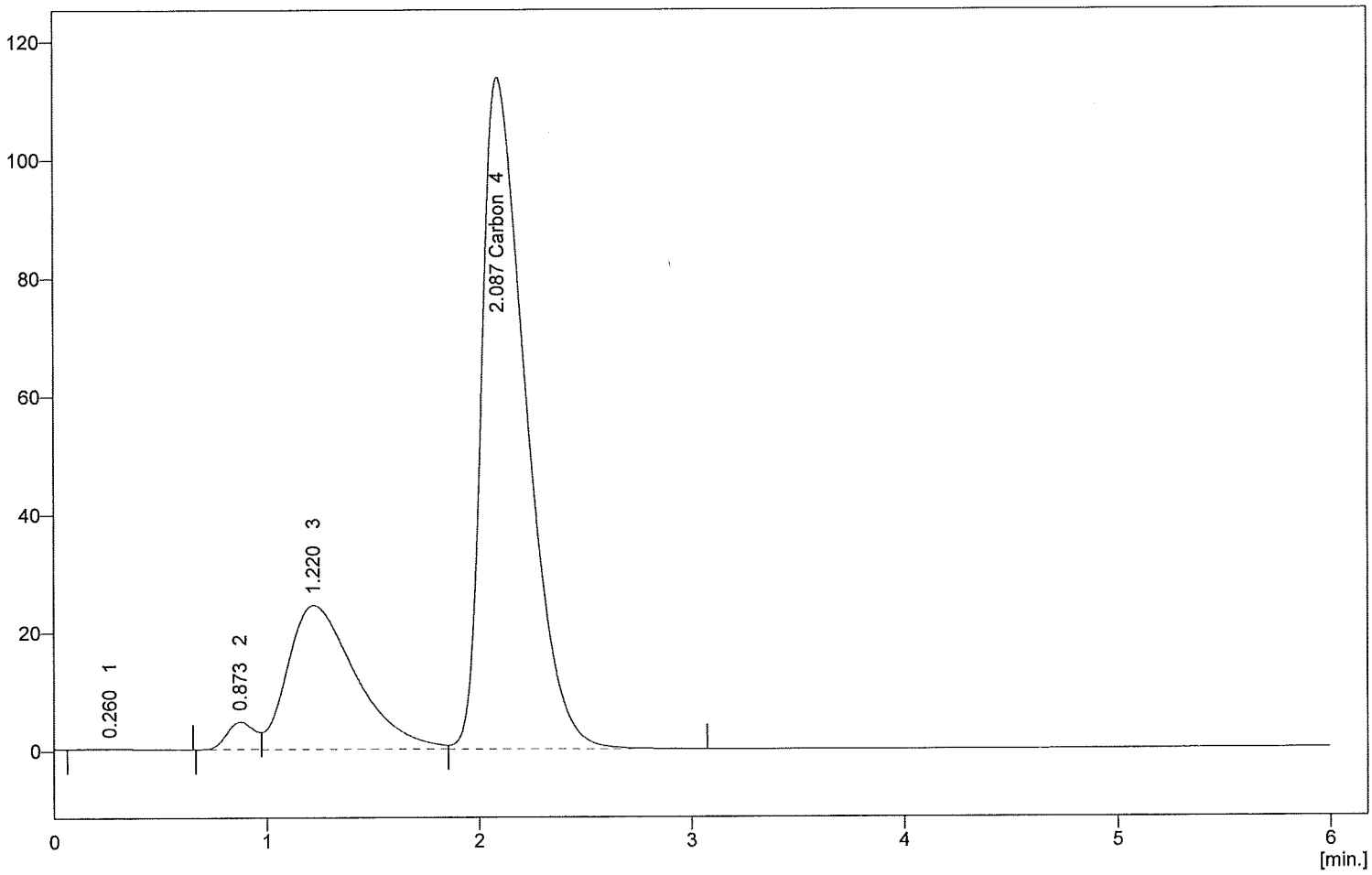
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 4:23:42 PM
Project : WORK1
Weight : 3.3 mg
Sample : 200-35680-A-11

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B021



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.087	1622.126	73.4	0.194	5.8656	1.0000	Ordnr
	Total	2211.345	100.0	3.300	5.8656		

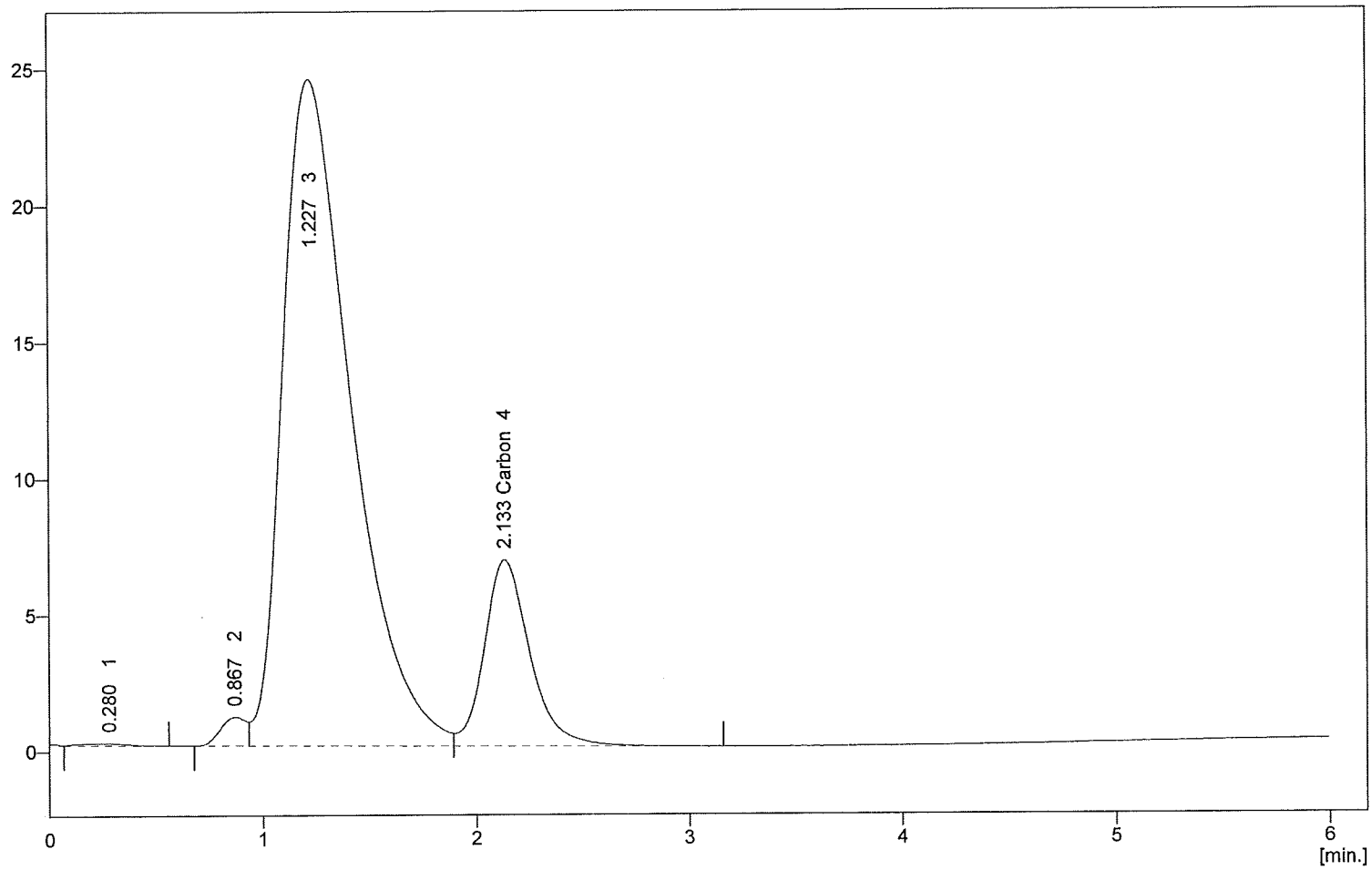
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 4:30:22 PM
Project : WORK1
Weight : 4 mg
Sample : 200-35680-A-12

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B022



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	101.476	15.5	0.005	0.1294	1.0000	Ordnr
	Total	656.749	100.0	4.000	0.1294		

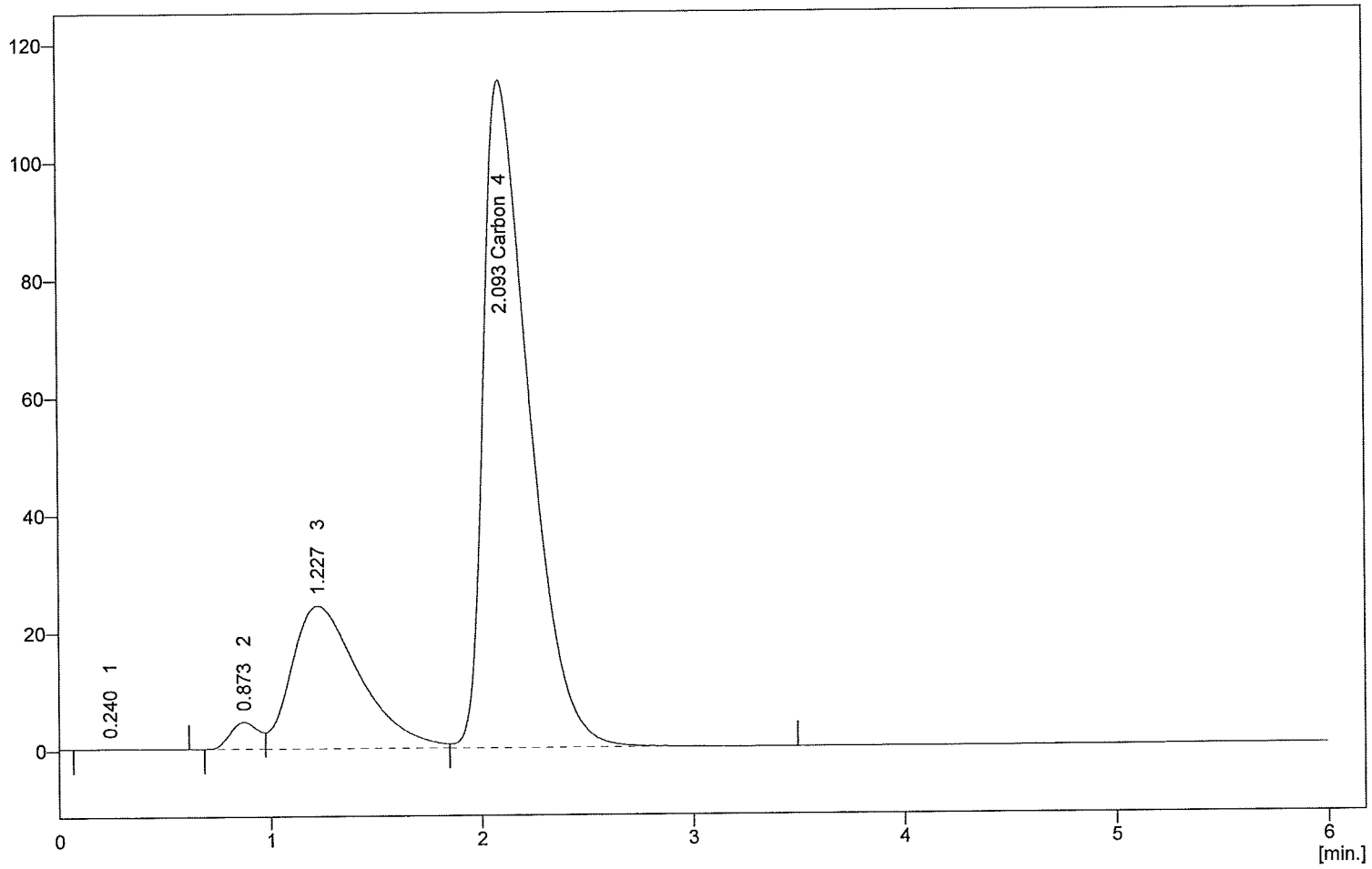
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 4:37:00 PM
Project : WORK1
Weight : 4.3 mg
Sample : 200-35680-A-14

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B023

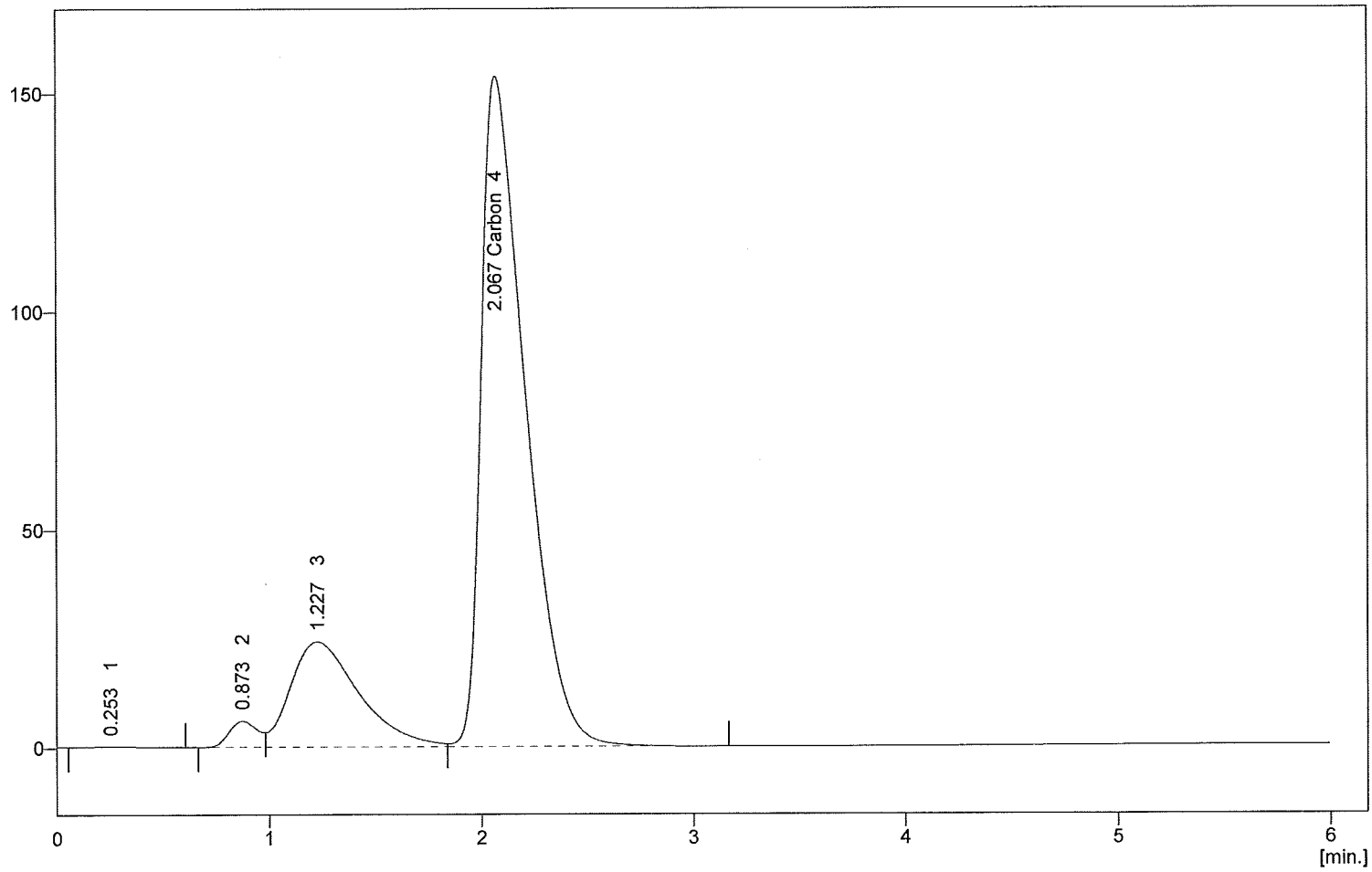


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.093	1686.843	74.1	0.202	4.6879	1.0000	Ordnr
	Total	2276.434	100.0	4.300	4.6879		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 4:43:42 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 4.6 mg		
Sample	: 200-35700-A-1	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B024
Calibration	: 101716B		



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.067	2231.804	78.9	0.269	5.8499	1.0000	Ordnr
	Total	2830.099	100.0	4.600	5.8499		

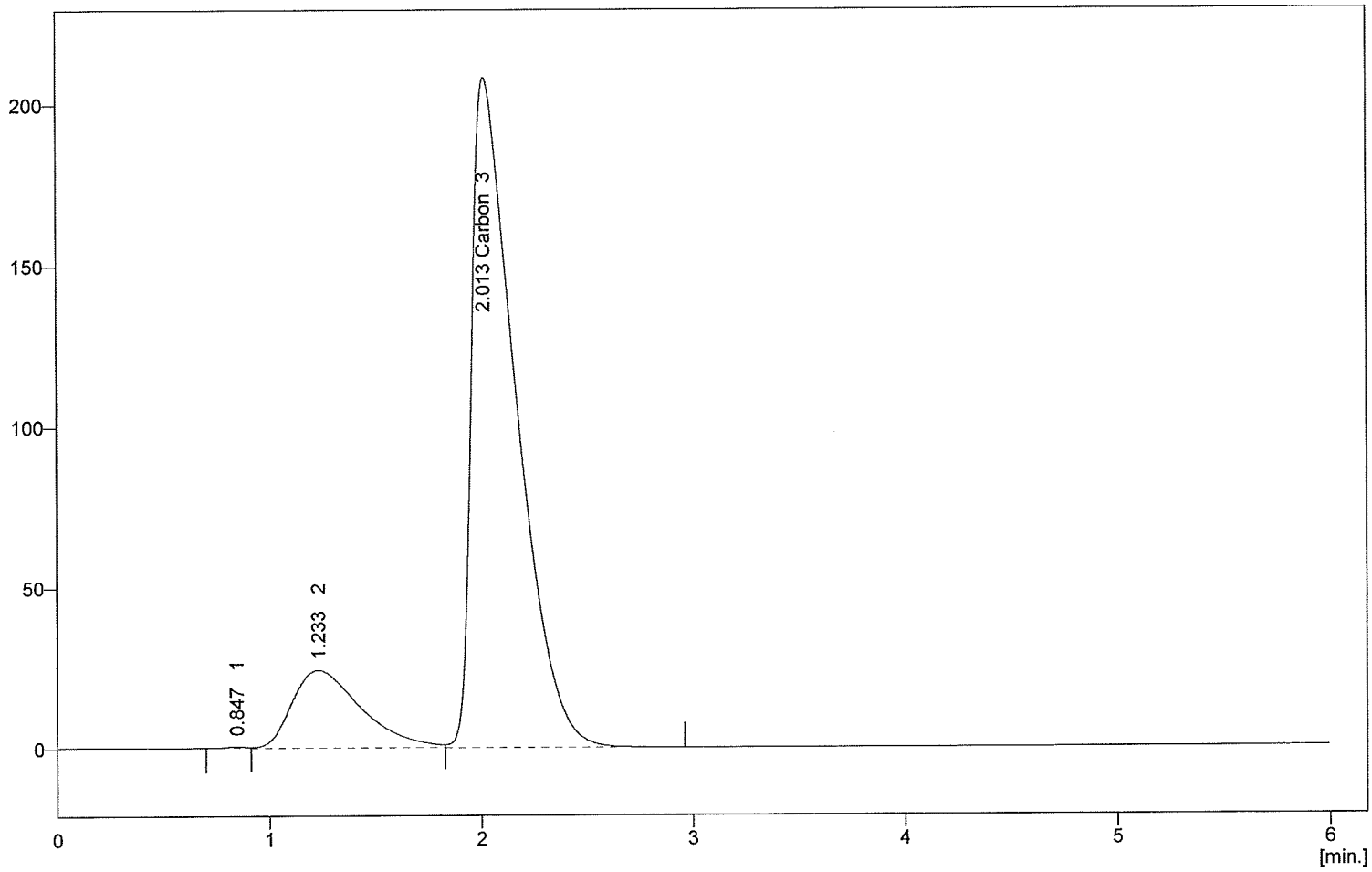
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 4:50:24 PM
Project : WORK1
Weight : 10 mg
Sample : CCV

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B025



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.013	3025.422	84.6	0.367	3.6741	1.0000	Ordnr
	Total	3575.354	100.0	10.000	3.6741		

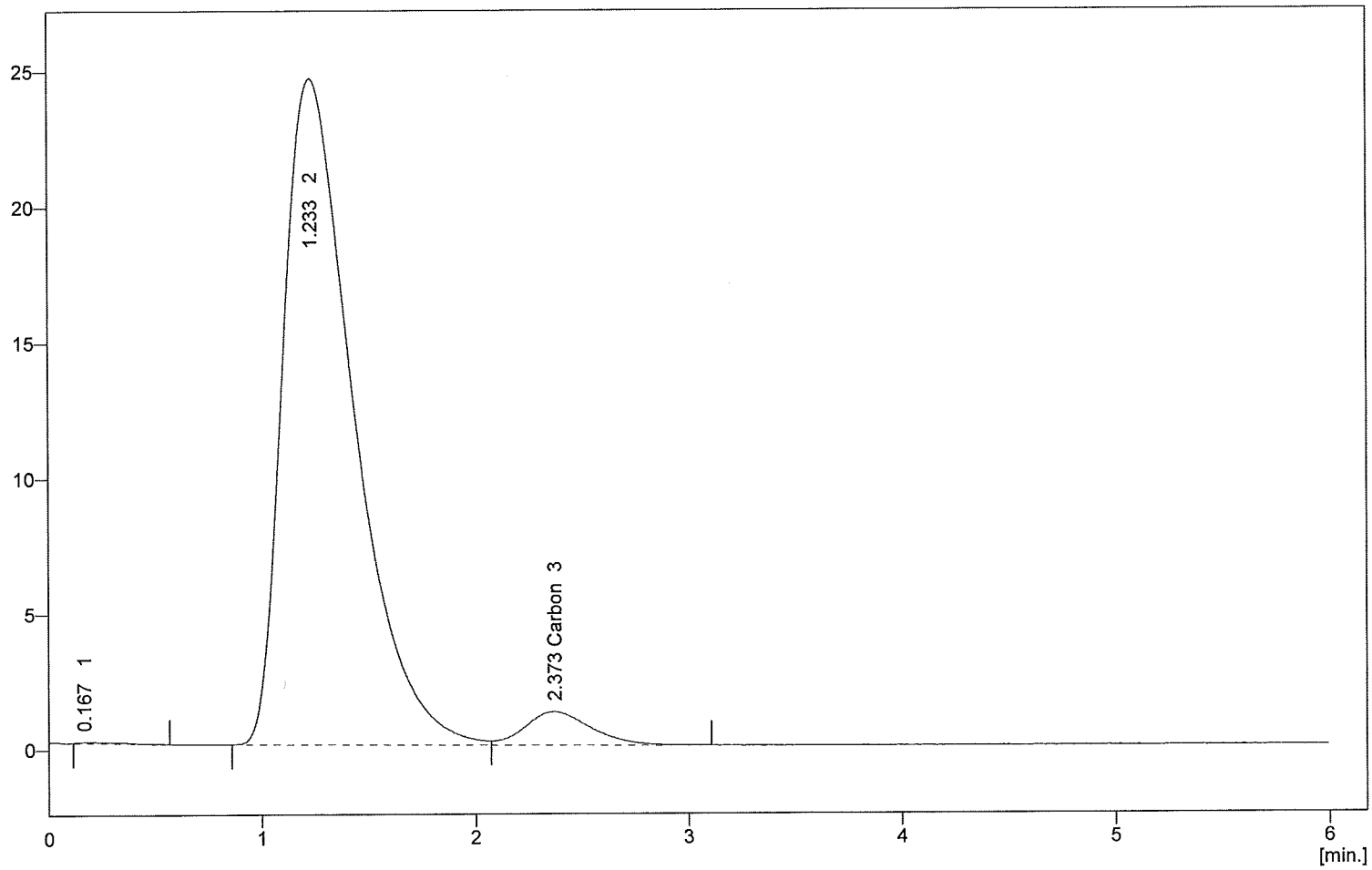
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 4:57:07 PM
Project : WORK1
Weight : 10 mg
Sample : CCB

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B026



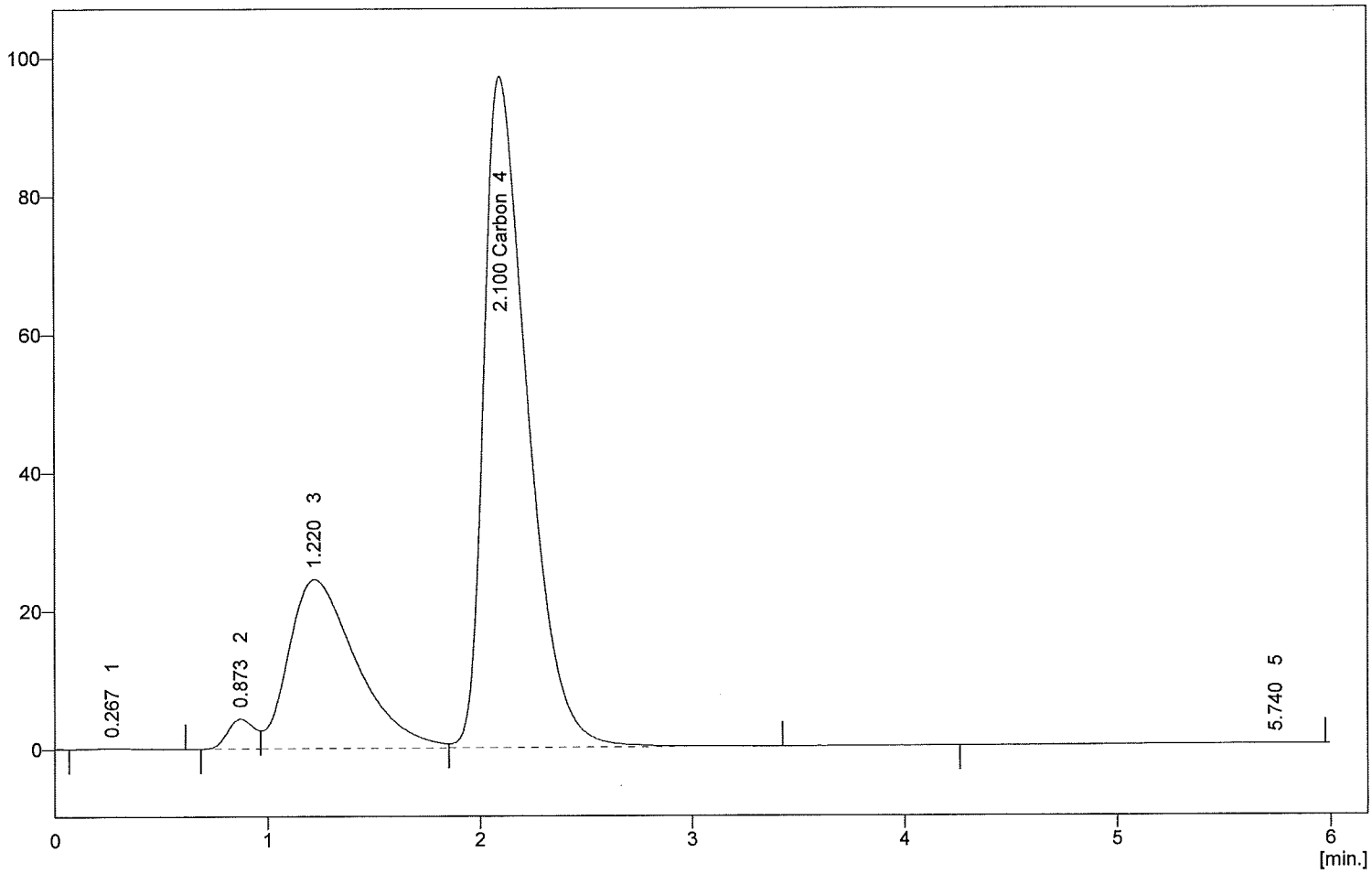
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.373	26.621	4.5	0.003	0.0326	1.0000	Free
	Total	588.713	100.0	10.000	0.0326		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:03:51 PM
Project : WORK1
Weight : 4.6 mg
Sample : 200-35700-A-2
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B027



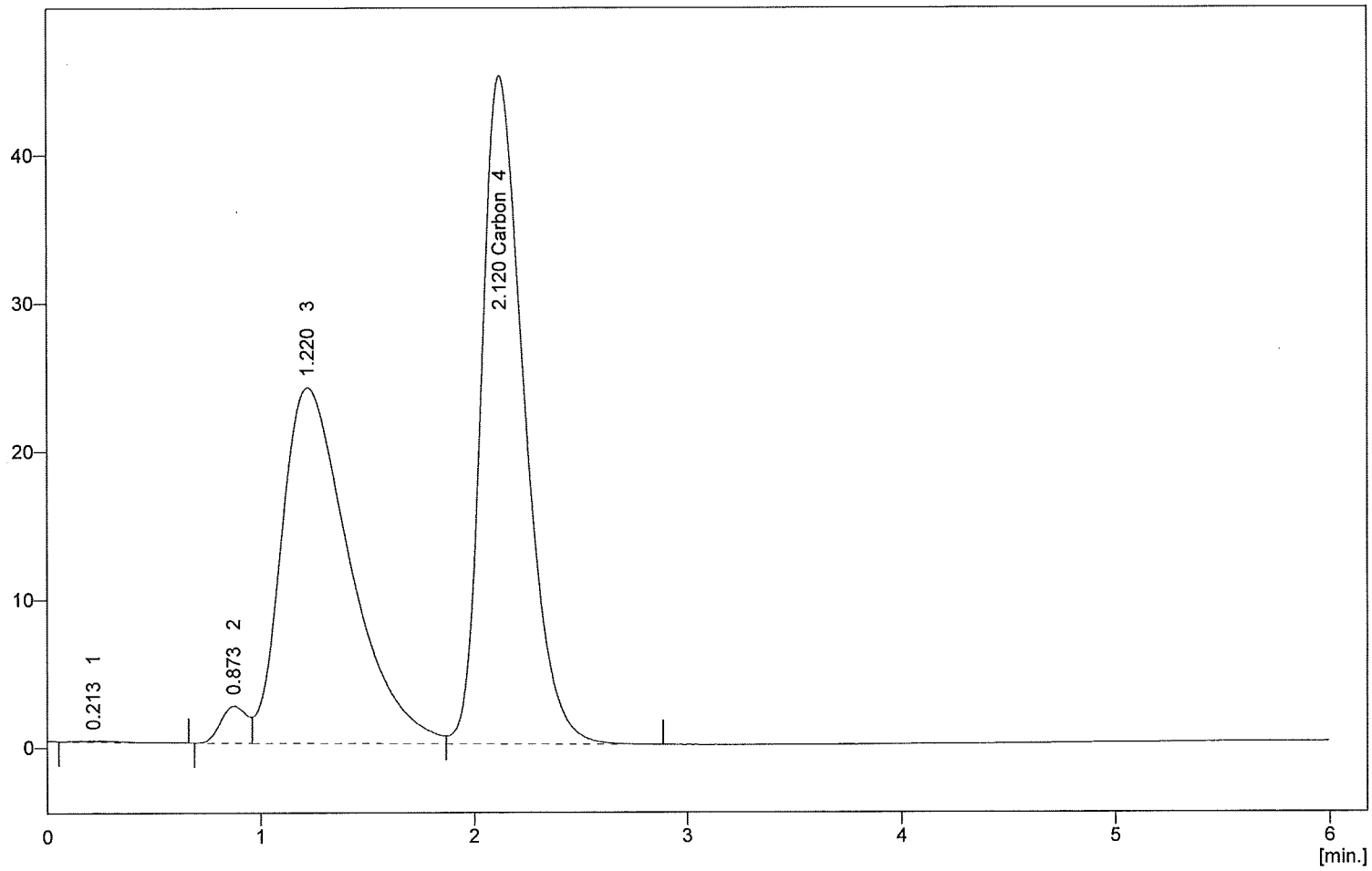
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.100	1394.379	70.5	0.165	3.5945	1.0000	Ordnr
	Total	1978.113	100.0	4.600	3.5945		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:10:31 PM
Project : WORK1
Weight : 4.4 mg
Sample : 200-35700-A-3
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B028



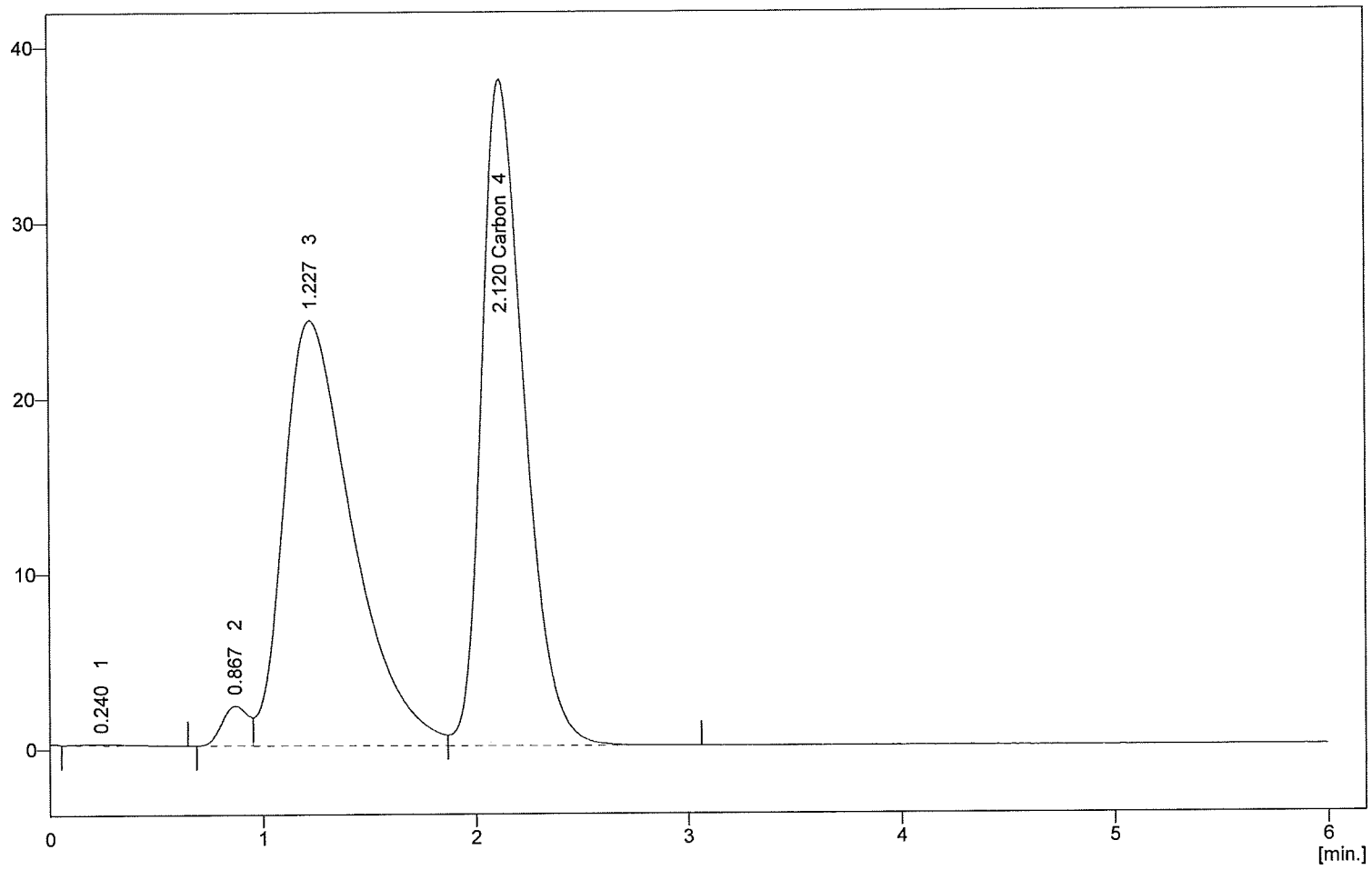
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.120	625.698	52.9	0.070	1.5936	1.0000	Ordnr
	Total	1182.027	100.0	4.400	1.5936		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:17:17 PM
Project : WORK1
Weight : 3.8 mg
Sample : 200-35700-A-4
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B029



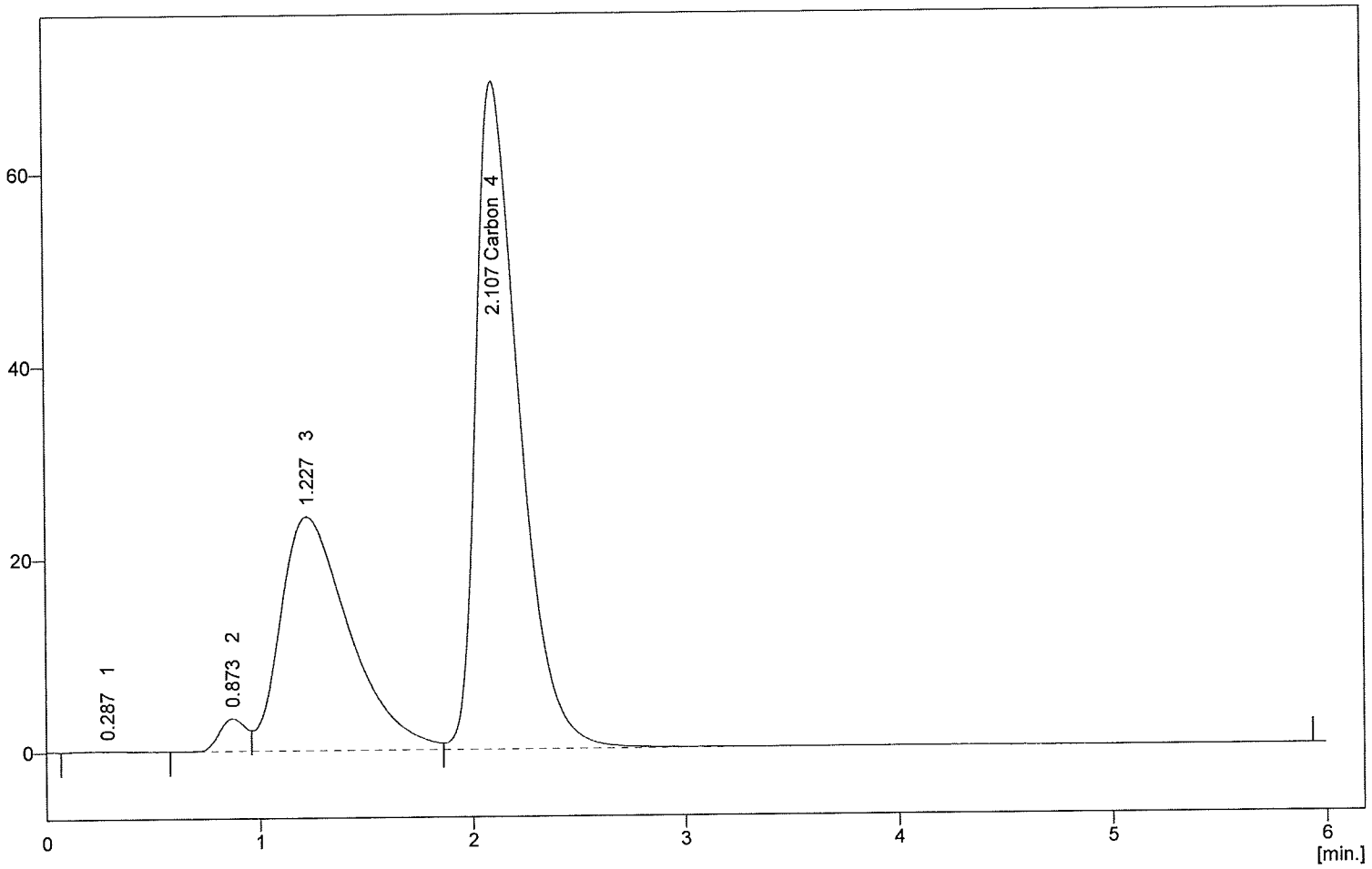
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.120	529.989	48.4	0.058	1.5332	1.0000	Ordnr
	Total	1094.912	100.0	3.800	1.5332		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:24:02 PM
Project : WORK1
Weight : 3.5 mg
Sample : 200-35700-A-5
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B030



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.107	986.431	63.1	0.115	3.2803	1.0000	Ordnr
	Total	1564.236	100.0	3.500	3.2803		

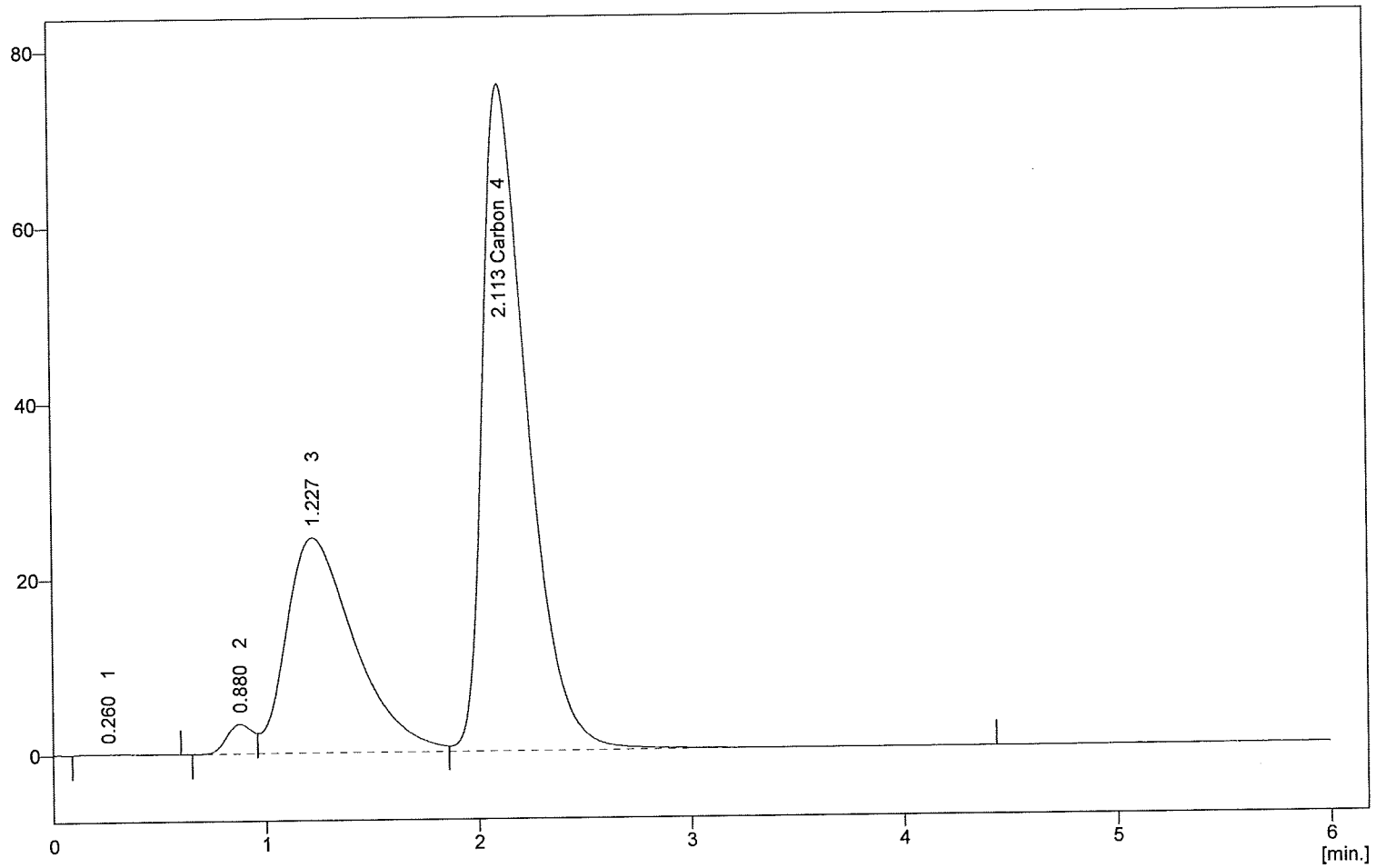
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:30:49 PM
Project : WORK1
Weight : 3.1 mg
Sample : 200-35700-A-6

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B031



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	1112.227	65.8	0.130	4.2063	1.0000	Ordnr
	Total	1689.638	100.0	3.100	4.2063		

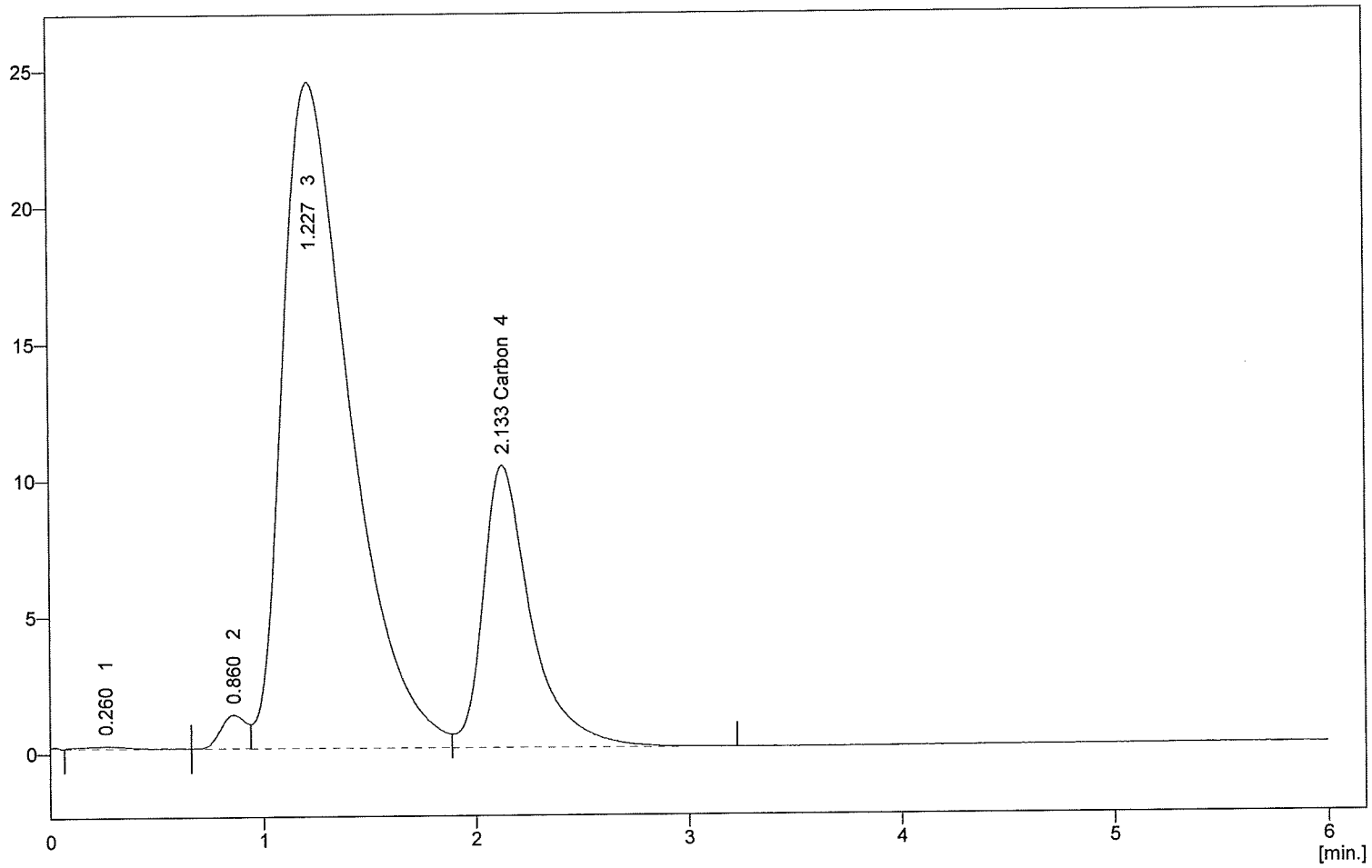
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:37:36 PM
Project : WORK1
Weight : 3.1 mg
Sample : 200-35700-A-7

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B032



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	161.488	22.6	0.013	0.4068	1.0000	Ordnr
	Total	714.130	100.0	3.100	0.4068		

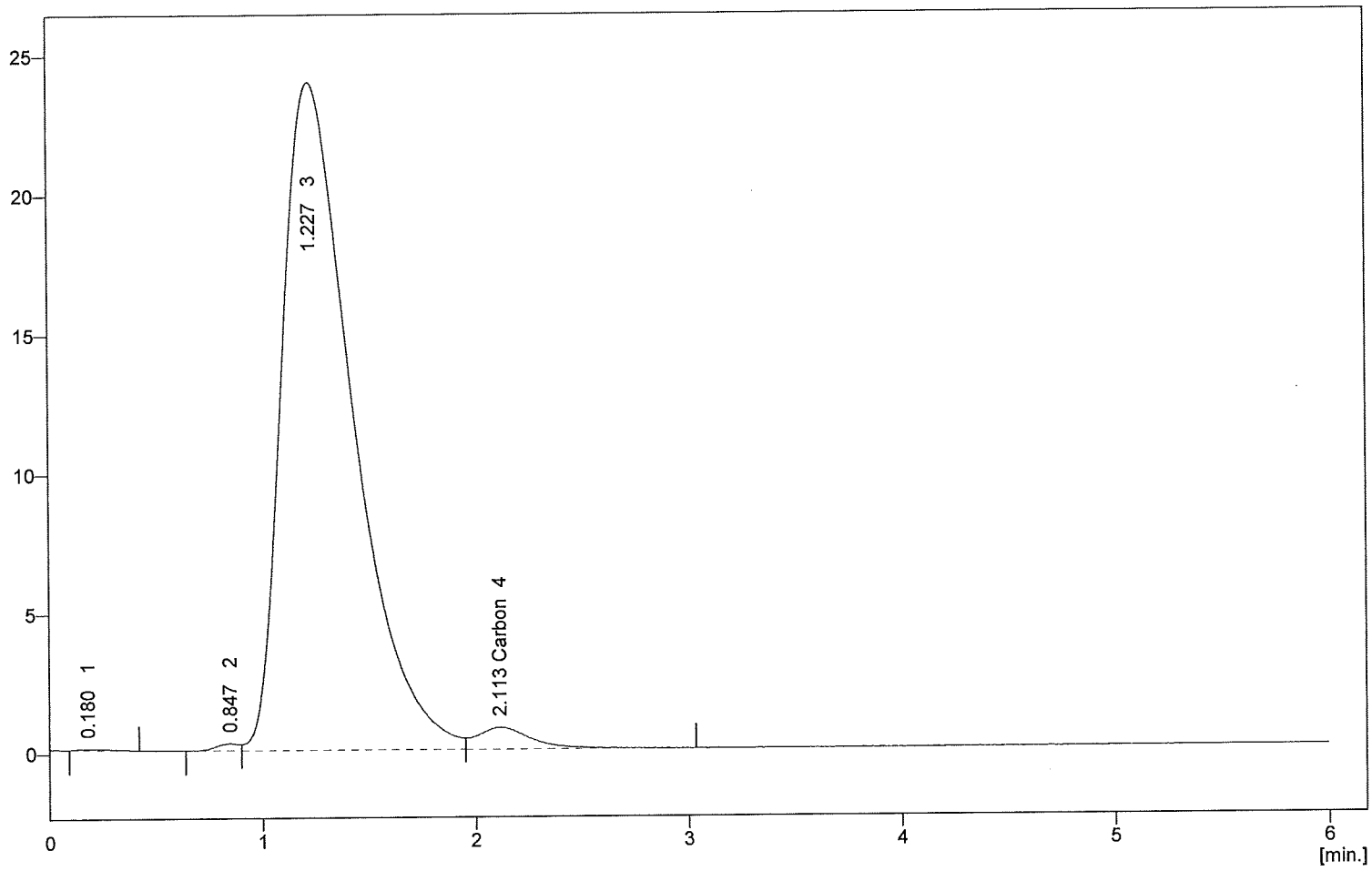
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:44:19 PM
Project : WORK1
Weight : 10 mg
Sample : MB

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B033



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	14.050	2.5	0.002	0.0172	1.0000	Free
	Total	567.026	100.0	10.000	0.0172		

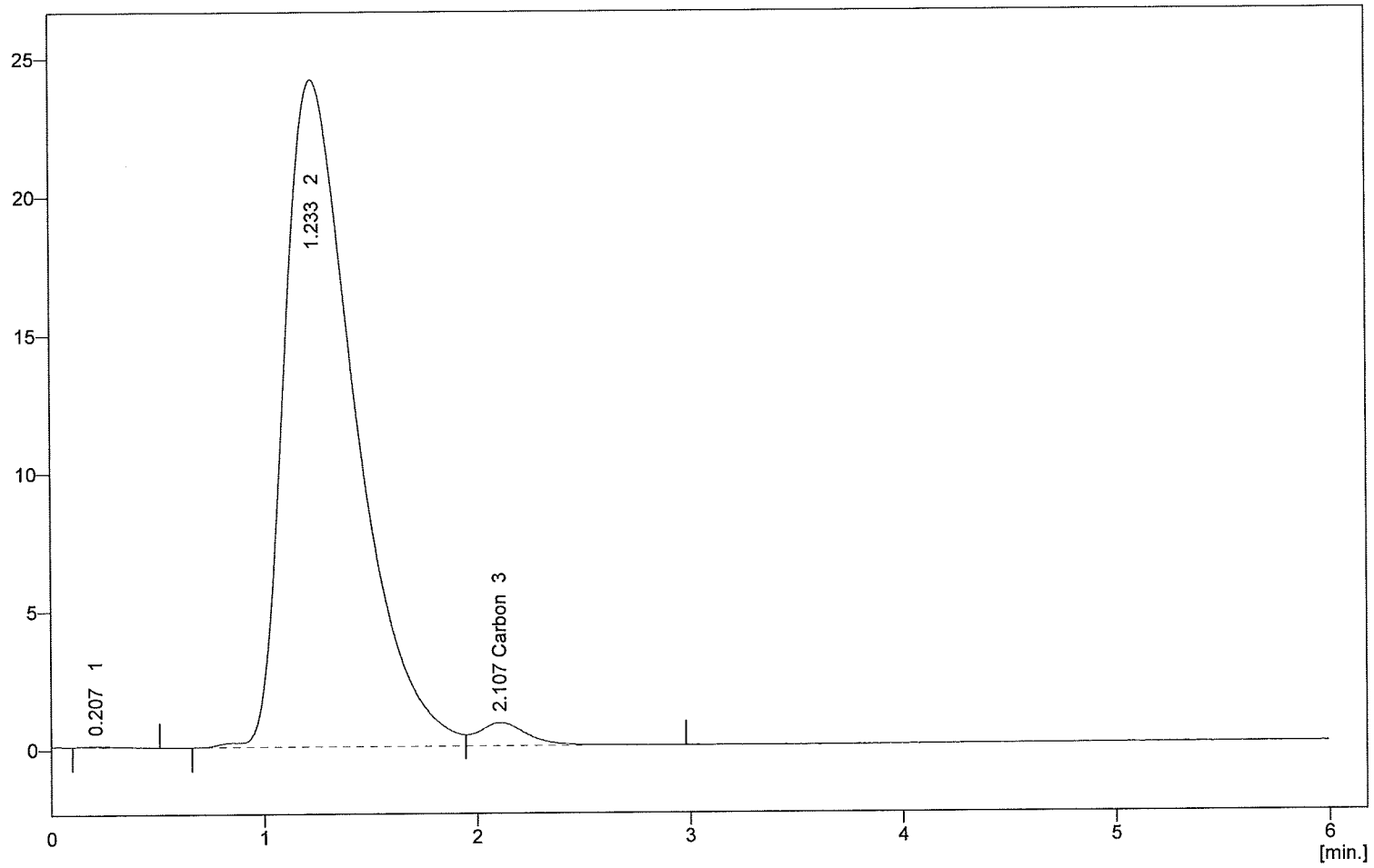
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:51:07 PM
Project : WORK1
Weight : 10 mg
Sample : MB

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B034



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.107	14.114	2.5	0.002	0.0173	1.0000	Free
	Total	571.794	100.0	10.000	0.0173		

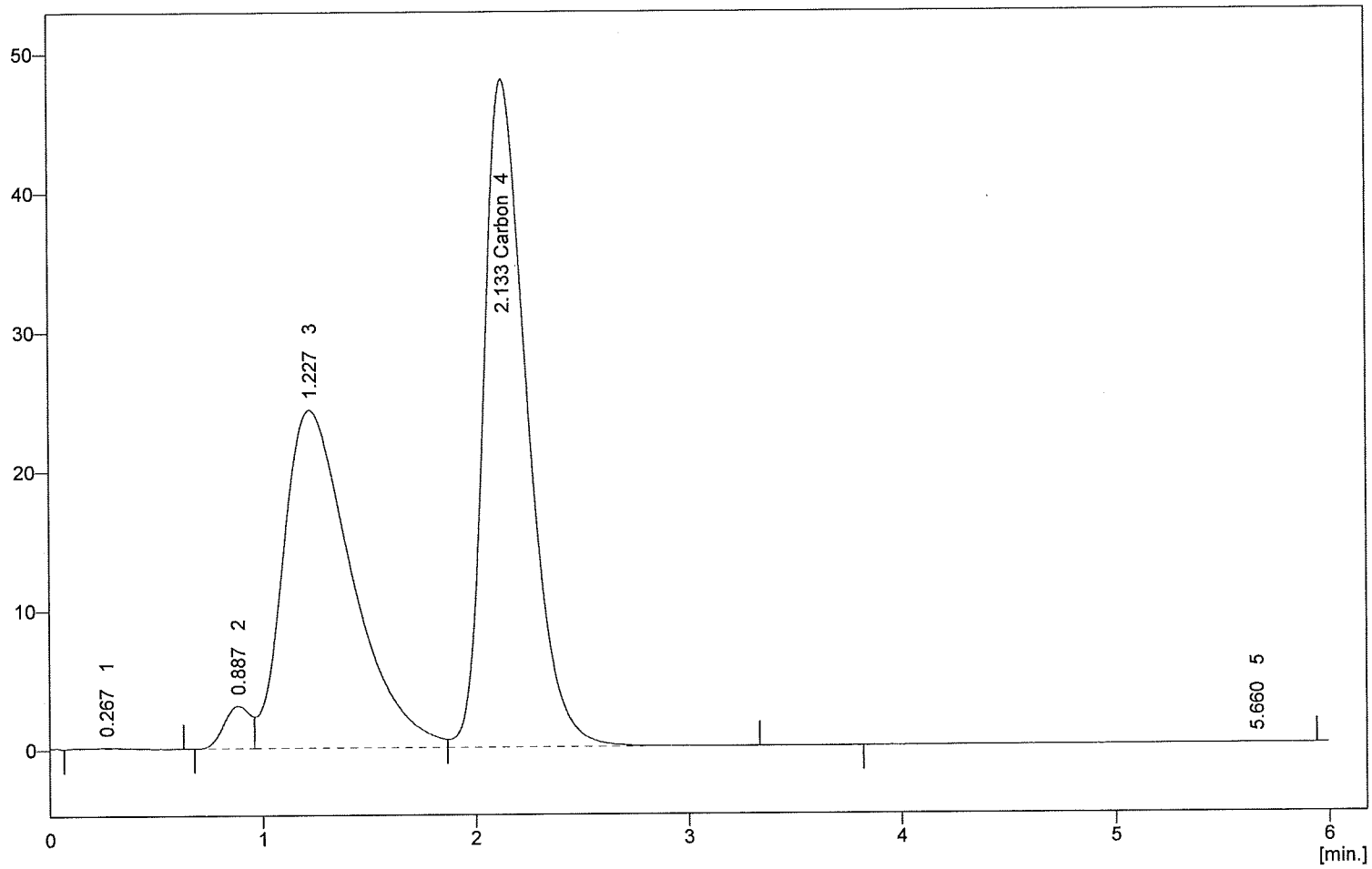
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 5:57:51 PM
Project : WORK1
Weight : 9.3 mg
Sample : LCS

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B035



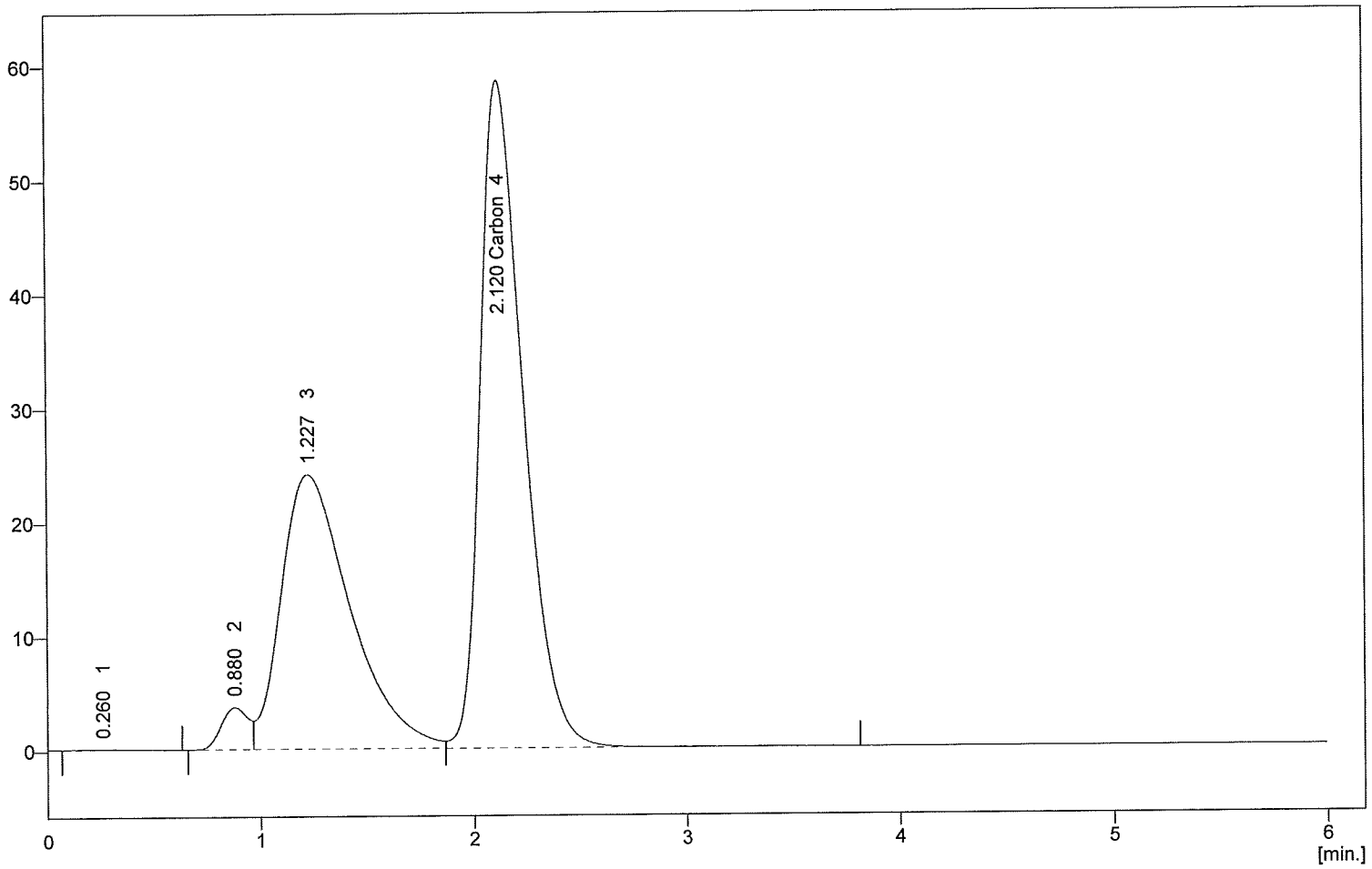
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	674.827	54.1	0.076	0.8194	1.0000	Ordnr
	Total	1248.212	100.0	9.300	0.8194		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:04:35 PM
Project : WORK1
Weight : 10.2 mg
Sample : LCS
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B036



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.120	822.388	58.8	0.094	0.9263	1.0000	Ordnr
	Total	1399.386	100.0	10.200	0.9263		

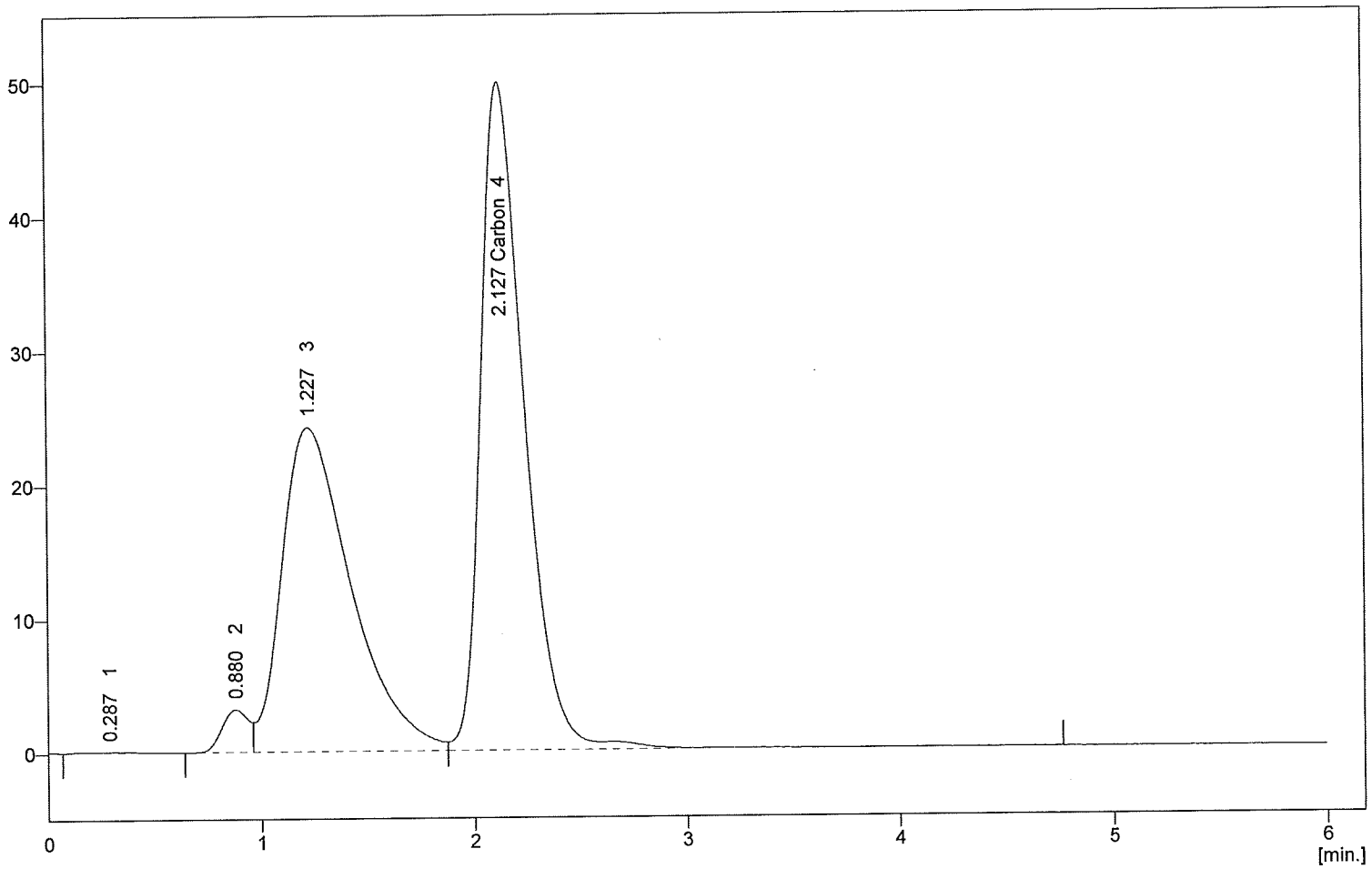
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:11:25 PM
Project : WORK1
Weight : 9.1 mg
Sample : LCS

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B037



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.127	707.457	55.1	0.080	0.8819	1.0000	Ordnr
	Total	1284.875	100.0	9.100	0.8819		

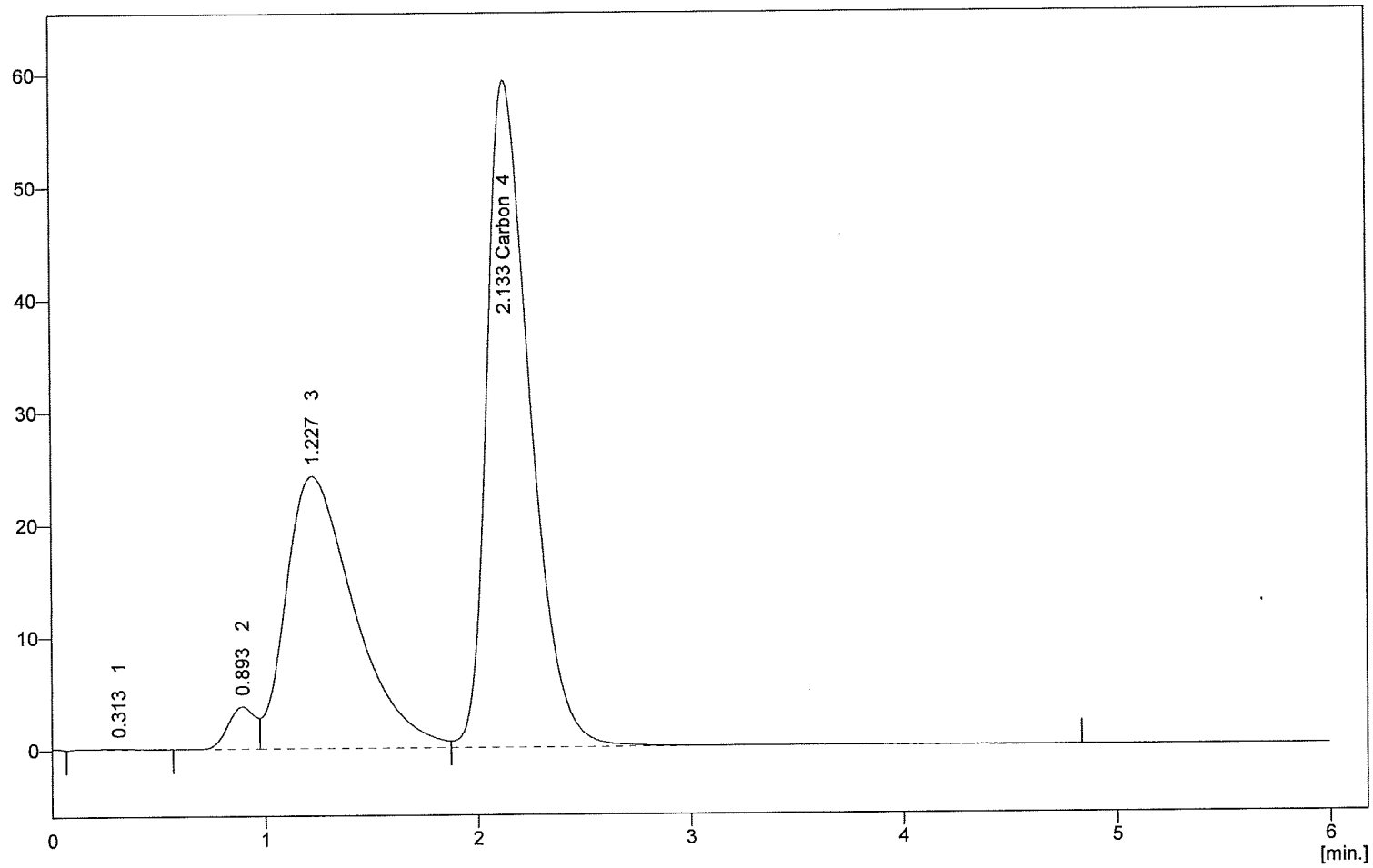
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:18:10 PM
Project : WORK1
Weight : 10.2 mg
Sample : LCS

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B038



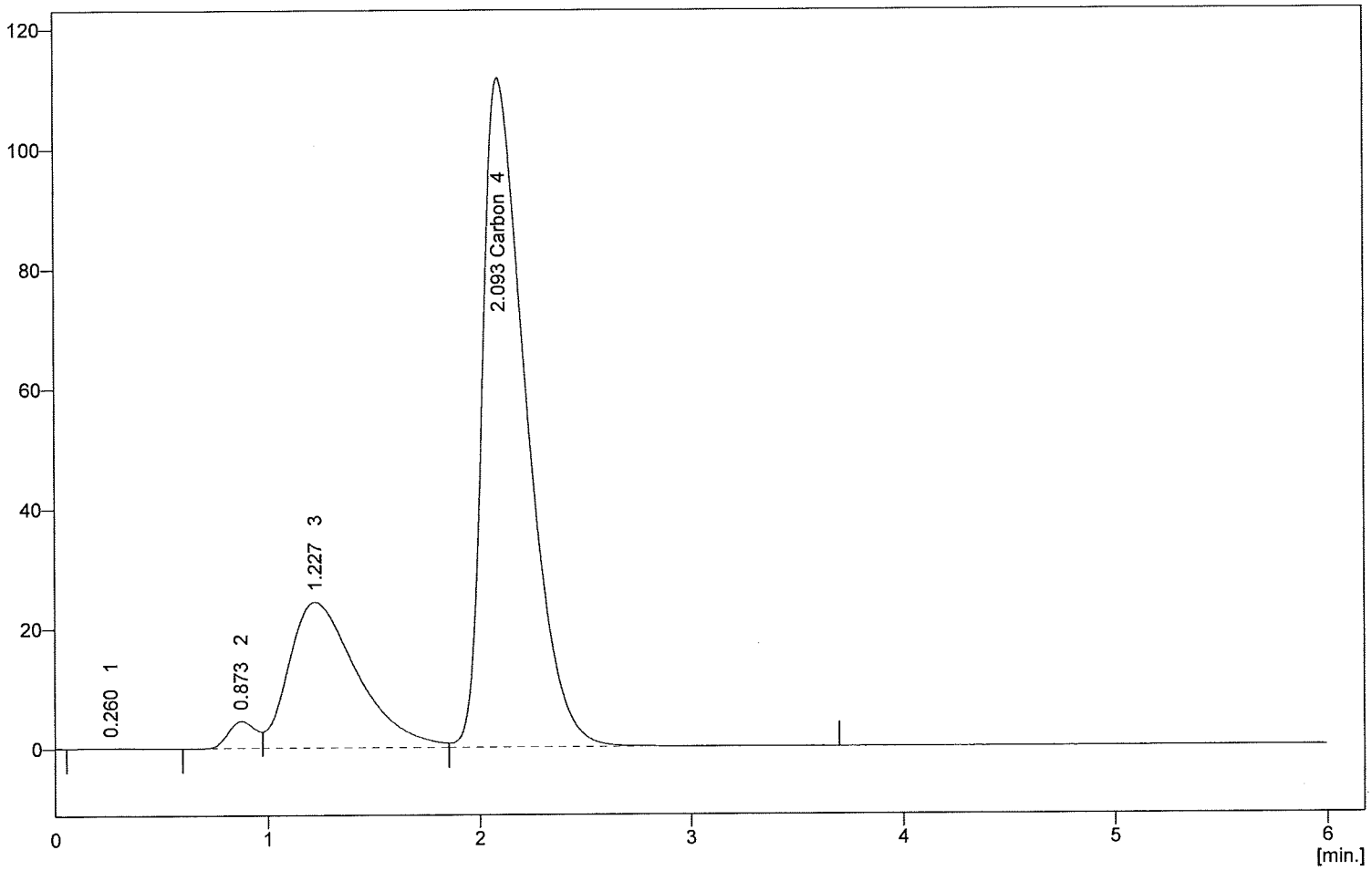
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	839.321	59.2	0.097	0.9469	1.0000	Ordnr
	Total	1416.953	100.0	10.200	0.9469		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:24:56 PM
Project : WORK1
Weight : 3.8 mg
Sample : 200-35700-A-8
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B039



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.093	1591.820	73.0	0.190	4.9950	1.0000	Ordnr
	Total	2181.840	100.0	3.800	4.9950		

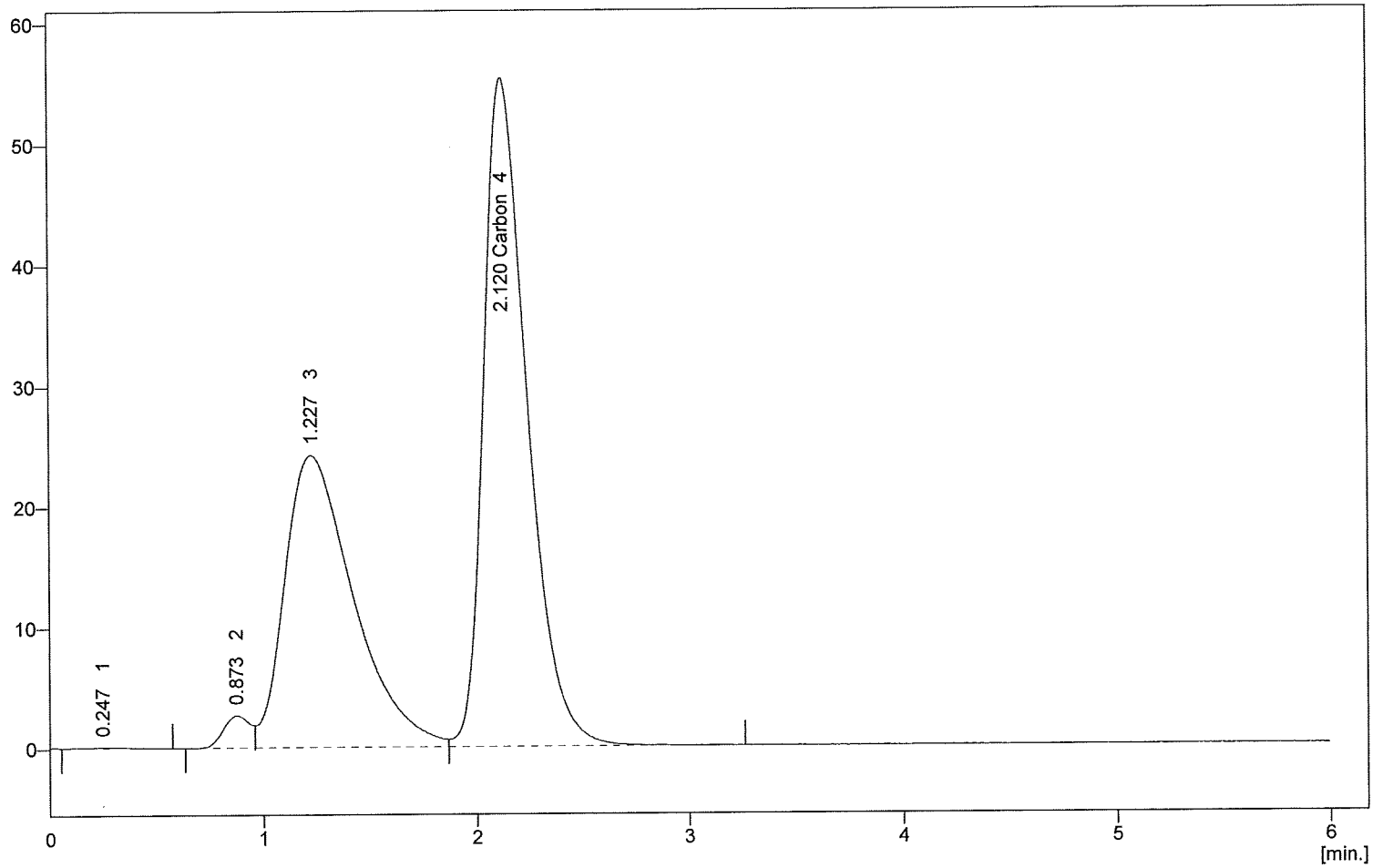
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:31:42 PM
Project : WORK1
Weight : 4.1 mg
Sample : 200-35700-A-9

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B040



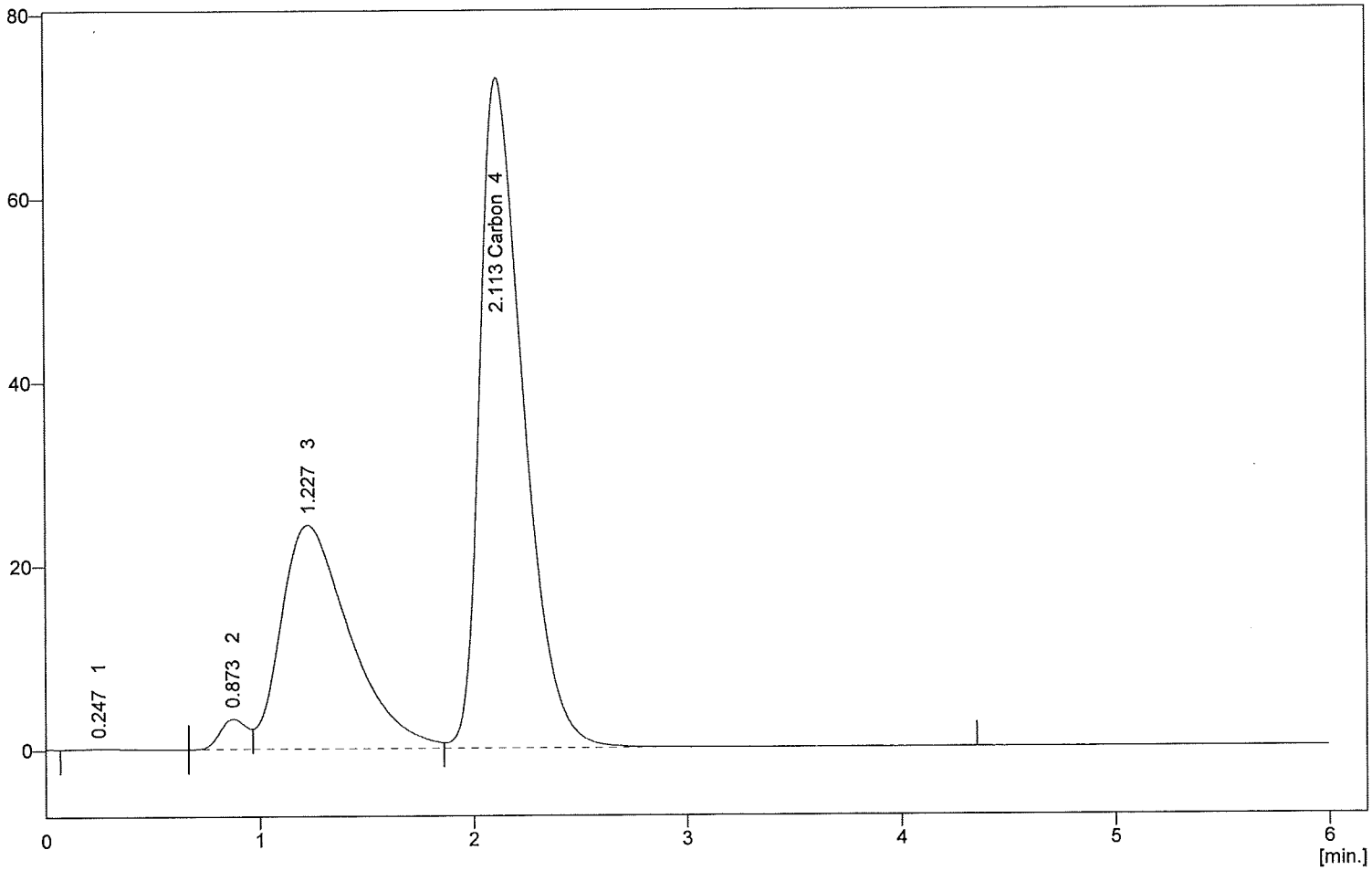
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.120	786.290	58.1	0.090	2.1955	1.0000	Ordnr
	Total	1353.698	100.0	4.100	2.1955		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:38:35 PM
Project : WORK1
Weight : 4.1 mg
Sample : 200-35700-A-10
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B041



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	1034.692	64.3	0.121	2.9461	1.0000	Ordnr
	Total	1609.331	100.0	4.100	2.9461		

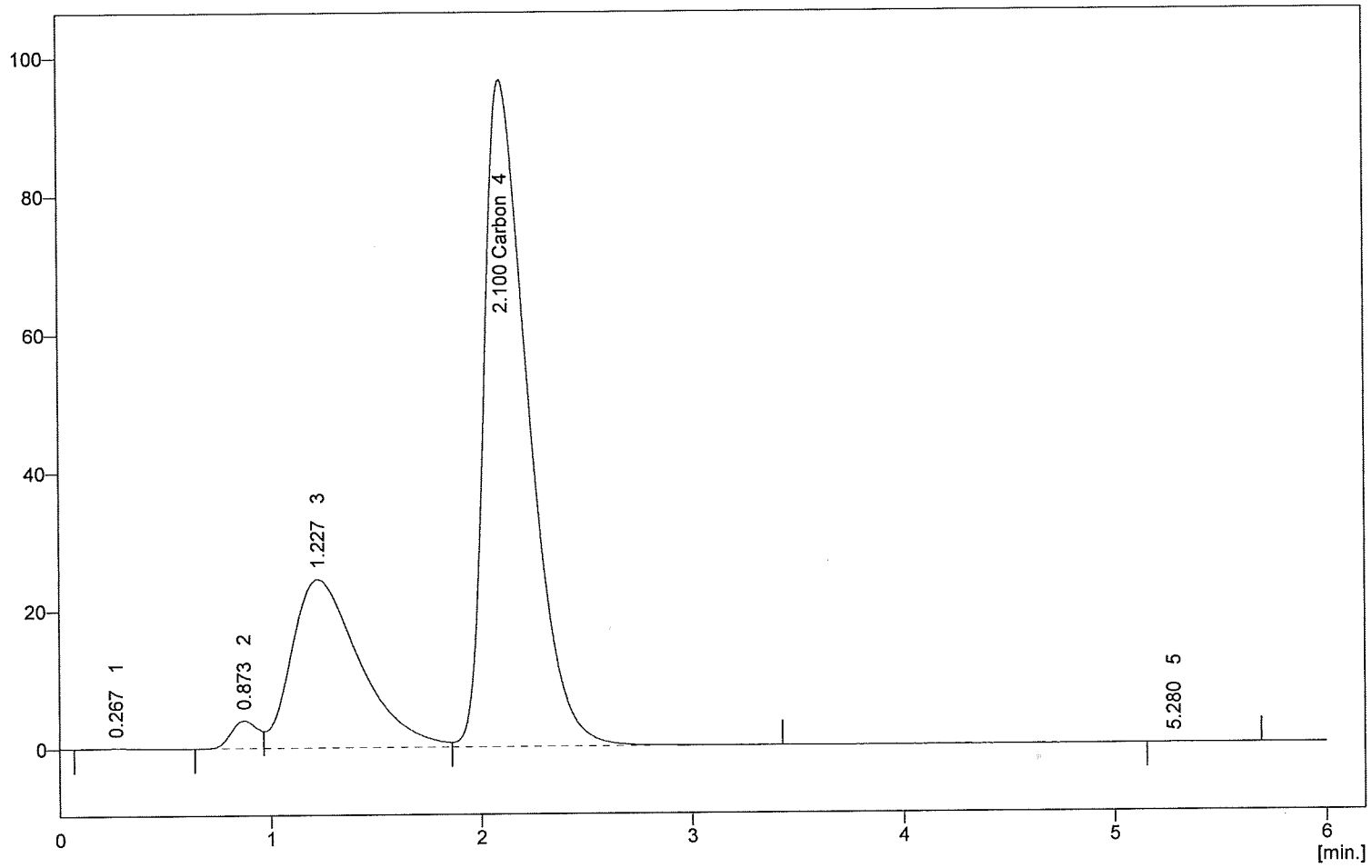
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:45:30 PM
Project : WORK1
Weight : 4.8 mg
Sample : 200-35700-A-11

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B042



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.100	1387.835	70.4	0.165	3.4279	1.0000	Ordnr
	Total	1972.620	100.0	4.800	3.4279		

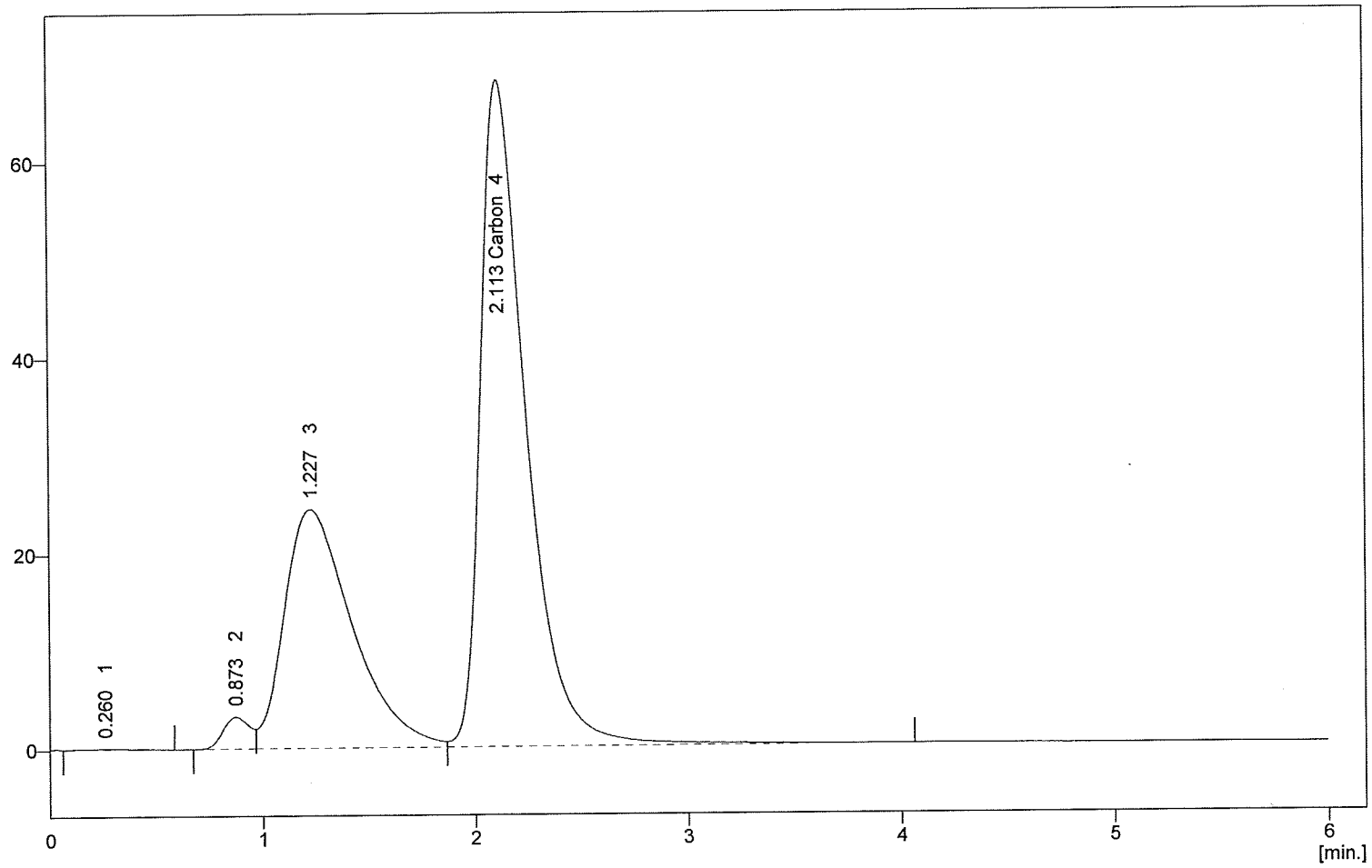
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:52:17 PM
Project : WORK1
Weight : 3.4 mg
Sample : 200-35700-A-12

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B043



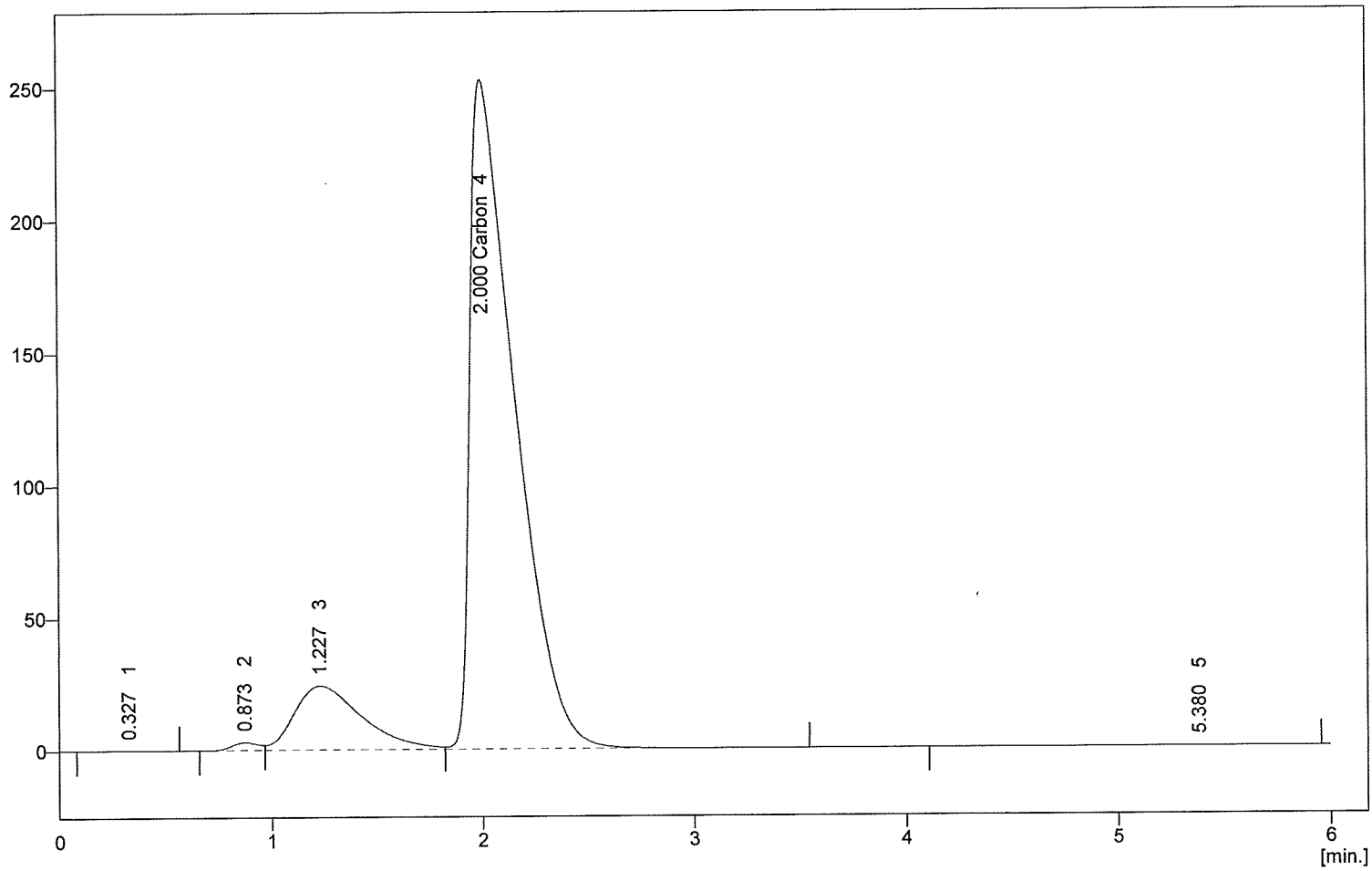
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	1012.062	63.9	0.118	3.4702	1.0000	Ordnr
	Total	1583.355	100.0	3.400	3.4702		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 6:59:05 PM
Project : WORK1
Weight : 3 mg
Sample : 200-35700-A-12 MS
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B044



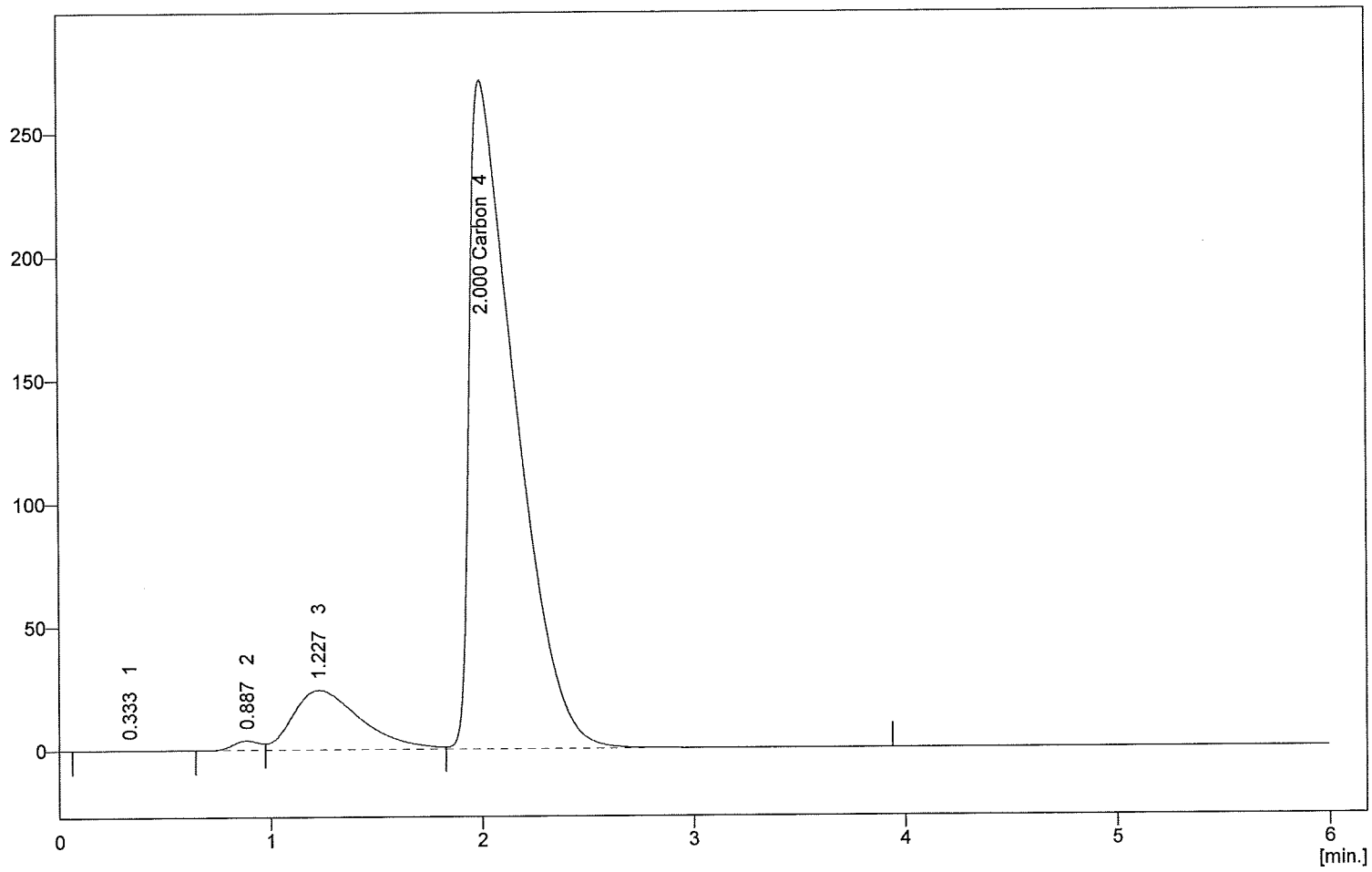
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.000	3701.588	86.7	0.451	15.0393	1.0000	Ordnr
	Total	4271.046	100.0	3.000	15.0393		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 7:05:53 PM
Project : WORK1
Weight : 3.2 mg
Sample : 200-35700-A-12 MSD
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B045



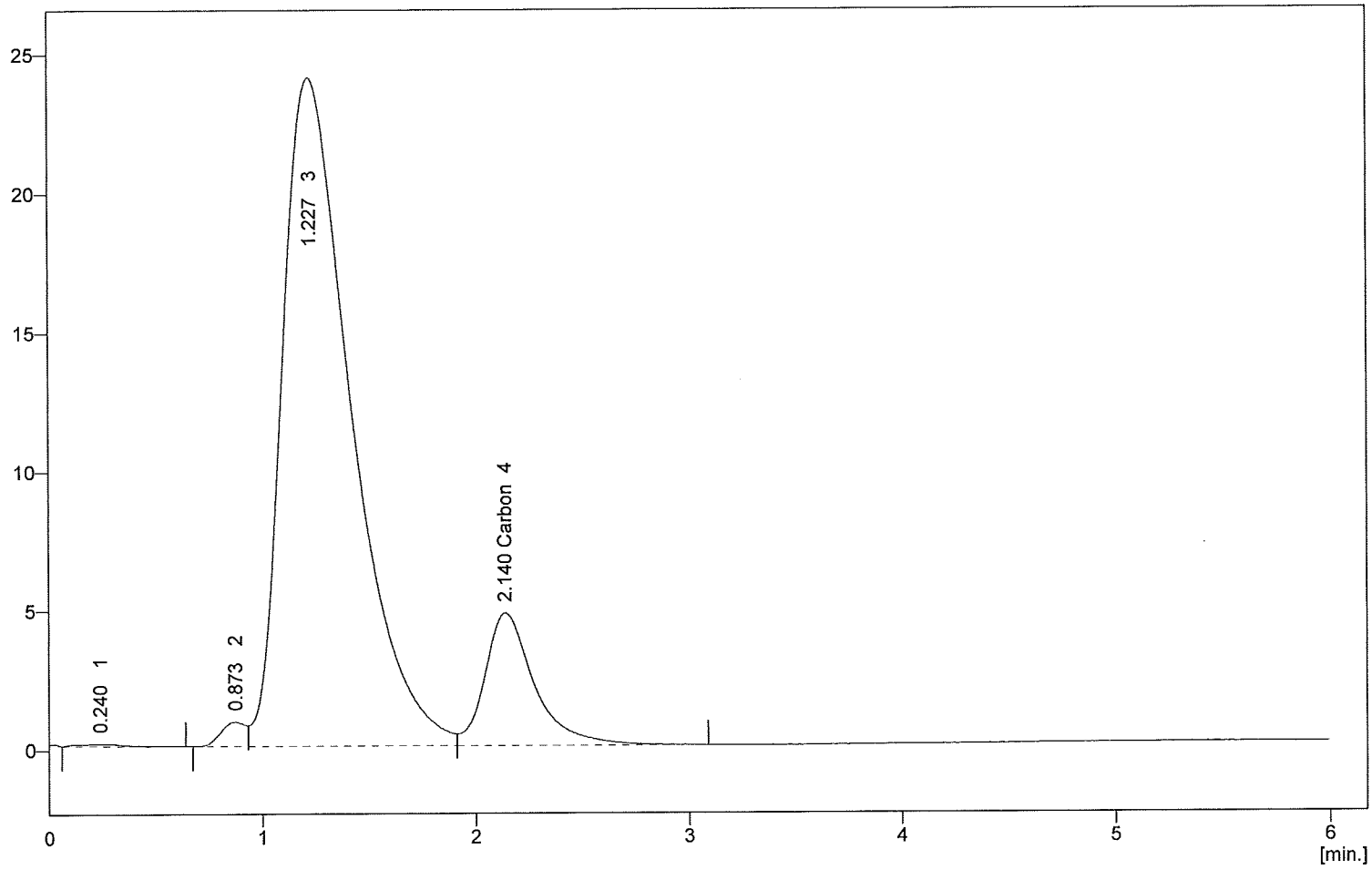
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.000	4088.011	87.7	0.499	15.5954	1.0000	Ordnr
	Total	4663.607	100.0	3.200	15.5954		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 7:12:43 PM
Project : WORK1
Weight : 3.3 mg
Sample : 200-35700-A-13
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B046



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.140	77.306	12.4	0.002	0.0661	1.0000	Ordnr
	Total	622.793	100.0	3.300	0.0661		

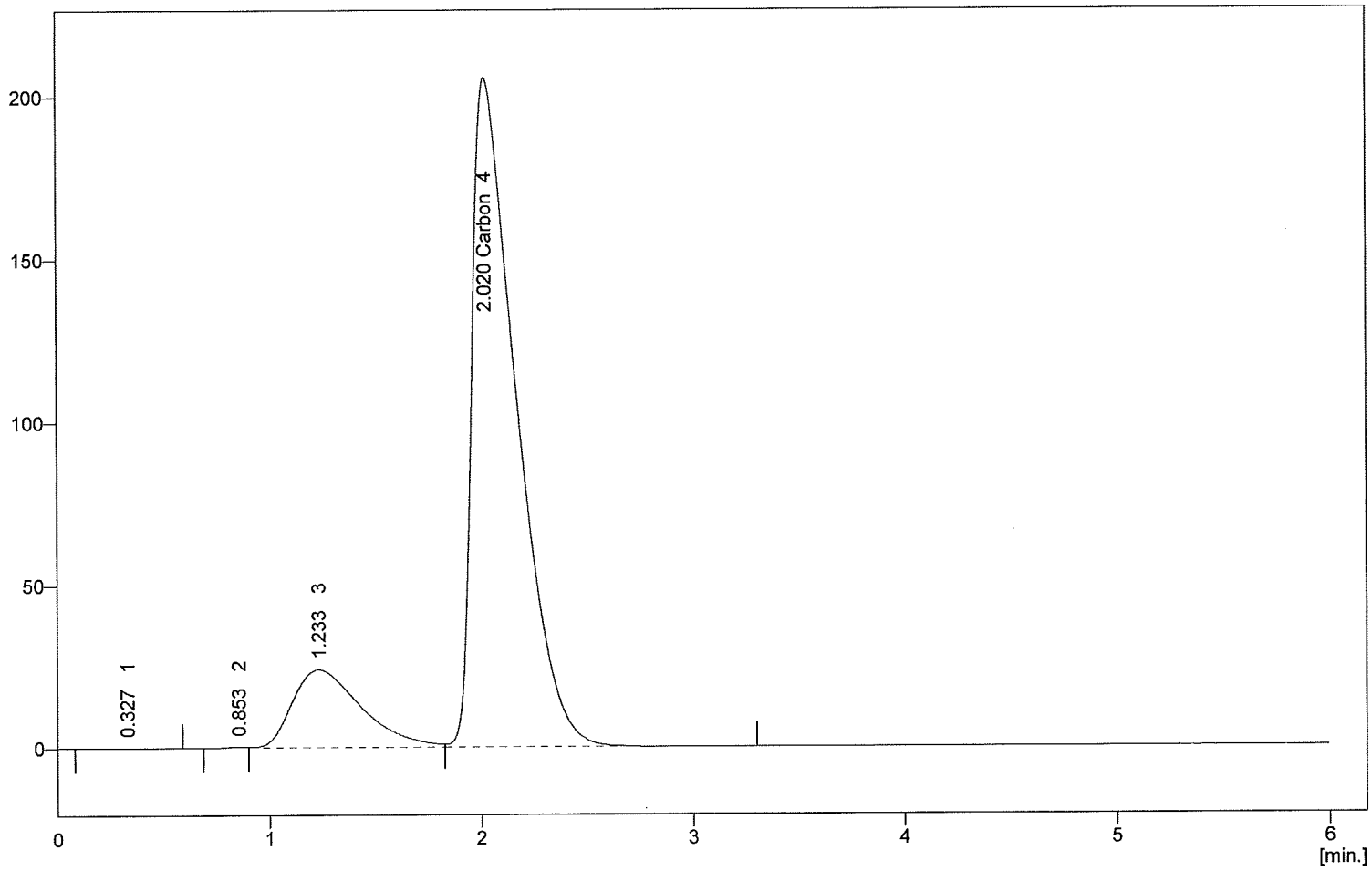
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 7:19:40 PM
Project : WORK1
Weight : 10 mg
Sample : CCV

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B047

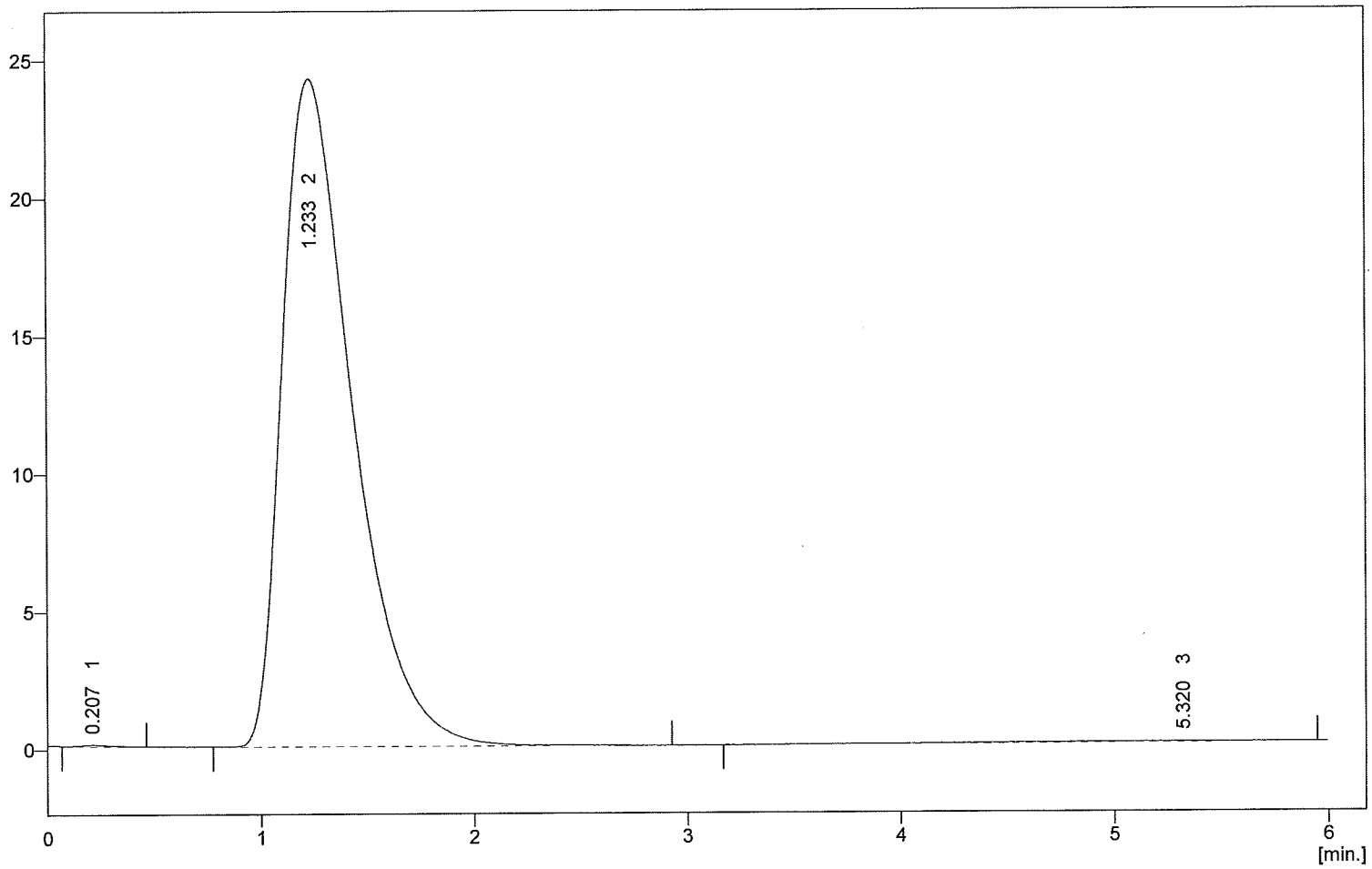


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.020	2982.734	84.5	0.362	3.6212	1.0000	Ordnr
	Total	3529.528	100.0	10.000	3.6212		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 7:26:31 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 10 mg		
Sample	: CCB	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B048
Calibration	: 101716B		



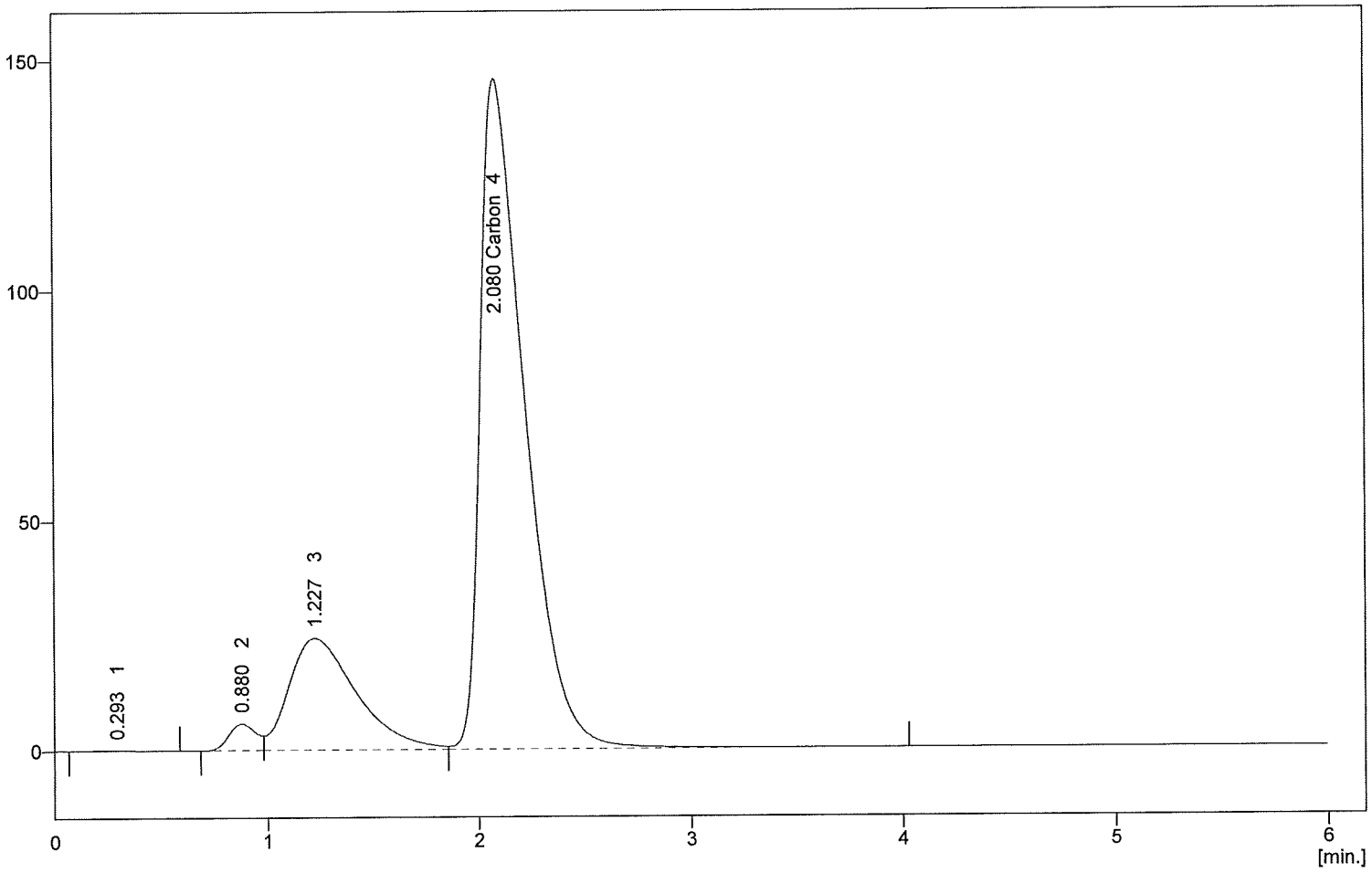
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.029						Ordnr
	Total	560.570	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 7:33:29 PM
Project : WORK1
Weight : 3.3 mg
Sample : 200-35700-A-14
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B049



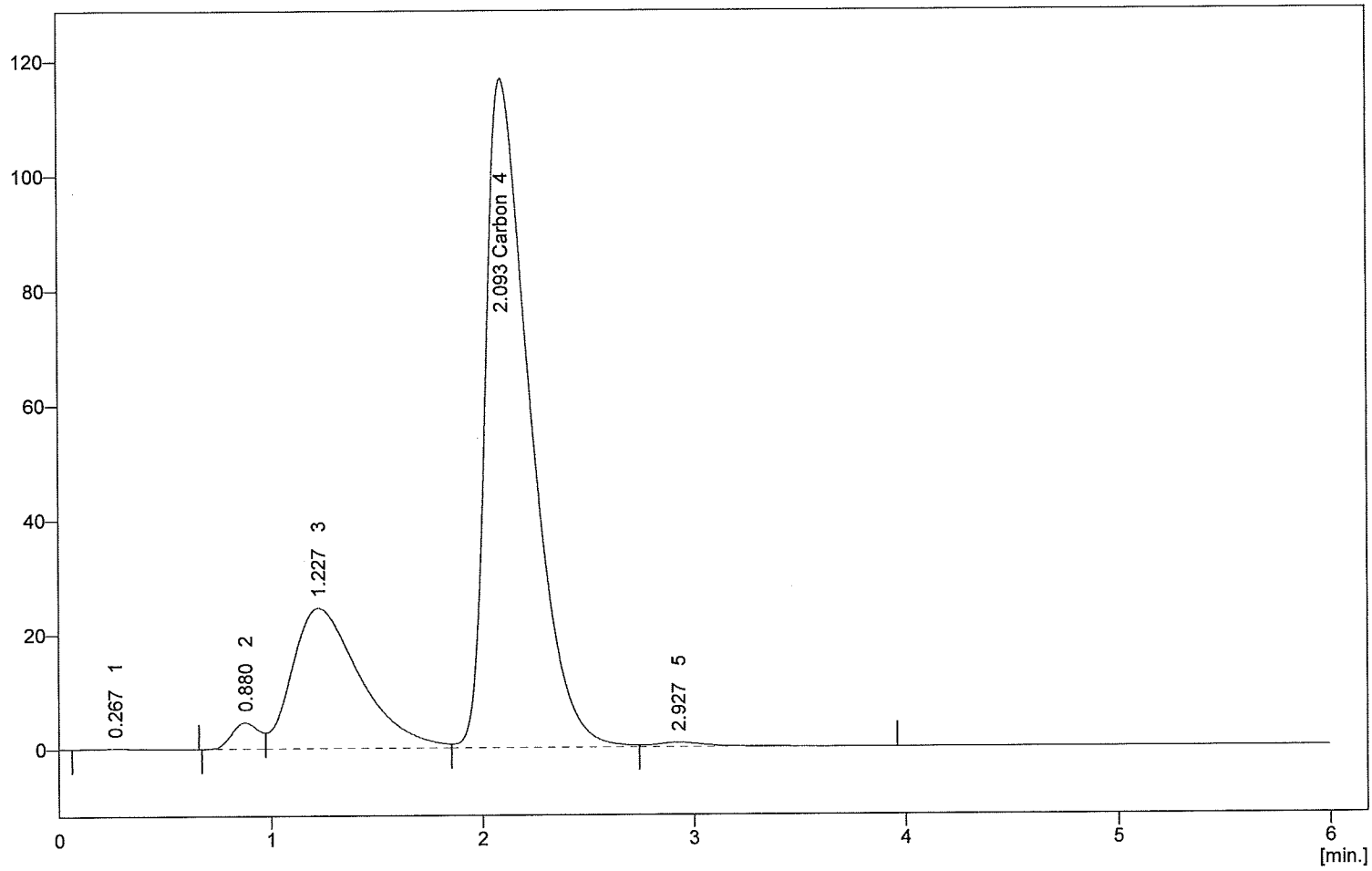
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.080	2119.038	78.2	0.255	7.7310	1.0000	Ordnr
	Total	2710.732	100.0	3.300	7.7310		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 7:40:29 PM
Project : WORK1
Weight : 3.3 mg
Sample : 200-35700-A-15
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B050



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.093	1684.182	73.7	0.201	6.0985	1.0000	Ordnr
	Total	2286.230	100.0	3.300	6.0985		

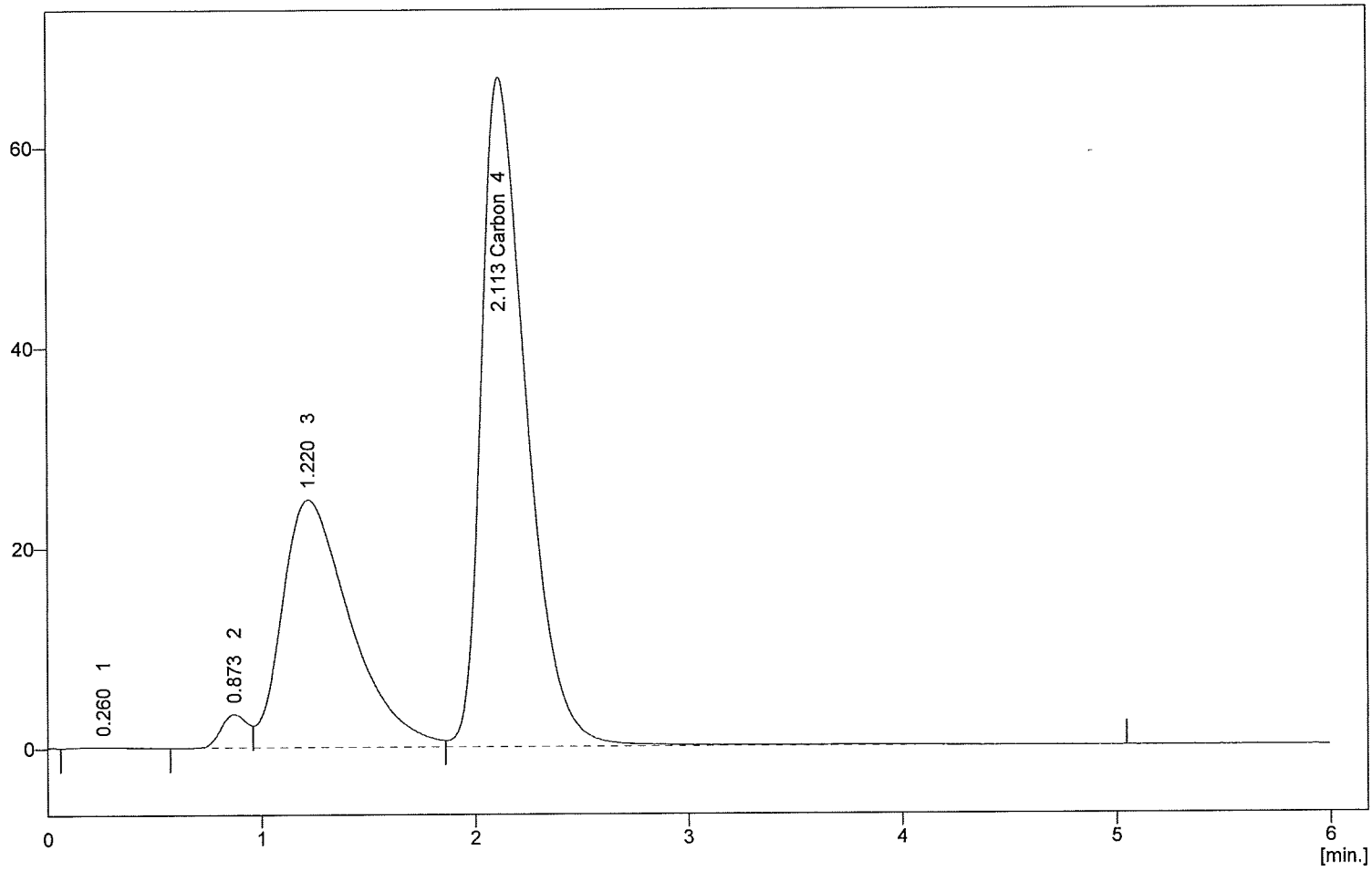
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 7:47:21 PM
Project : WORK1
Weight : 3.7 mg
Sample : 200-35700-A-16

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B051



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	980.289	62.7	0.114	3.0824	1.0000	Ordnr
	Total	1563.112	100.0	3.700	3.0824		

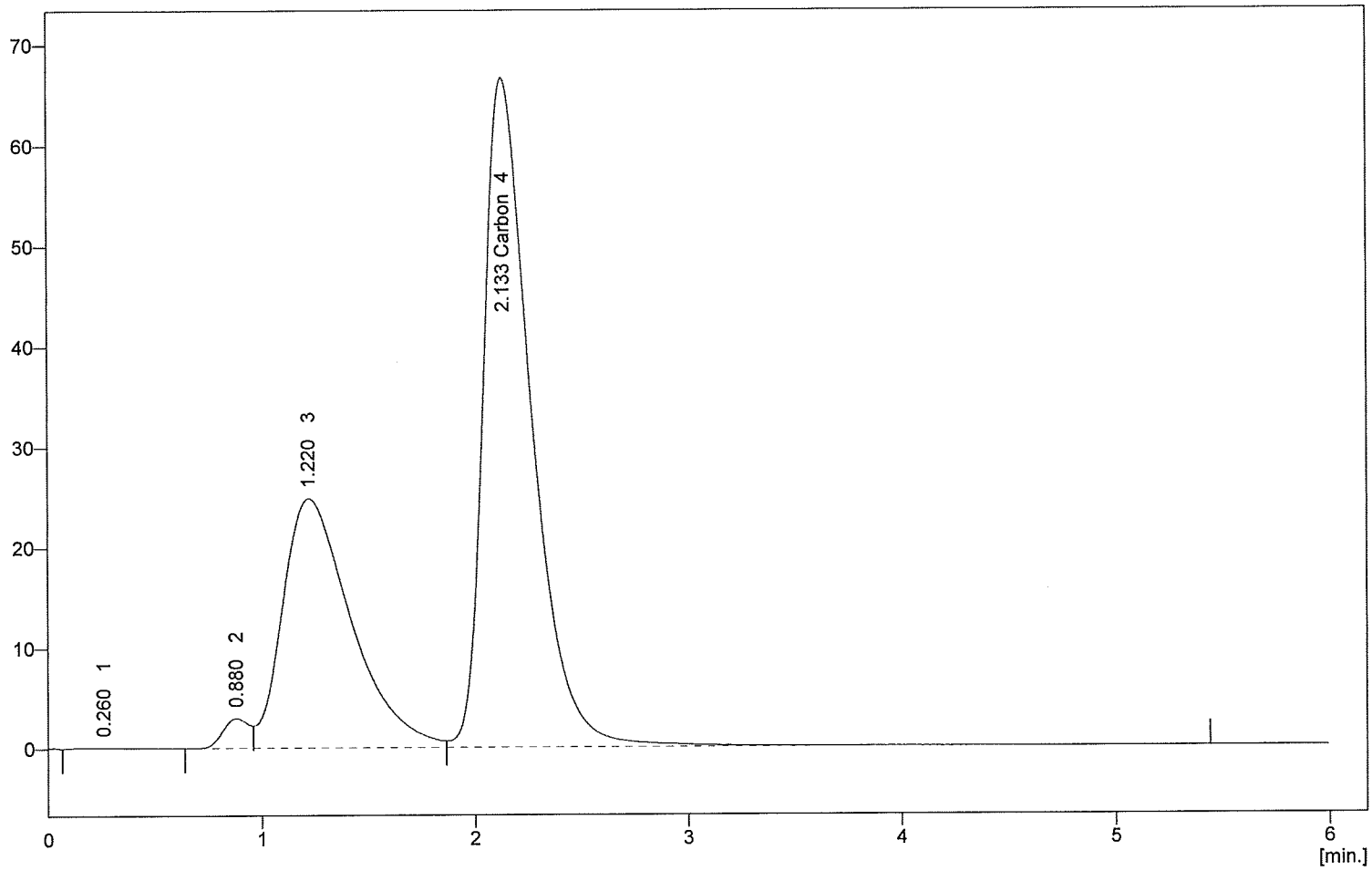
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 7:54:13 PM
Project : WORK1
Weight : 3.6 mg
Sample : 200-35700-A-17

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B052



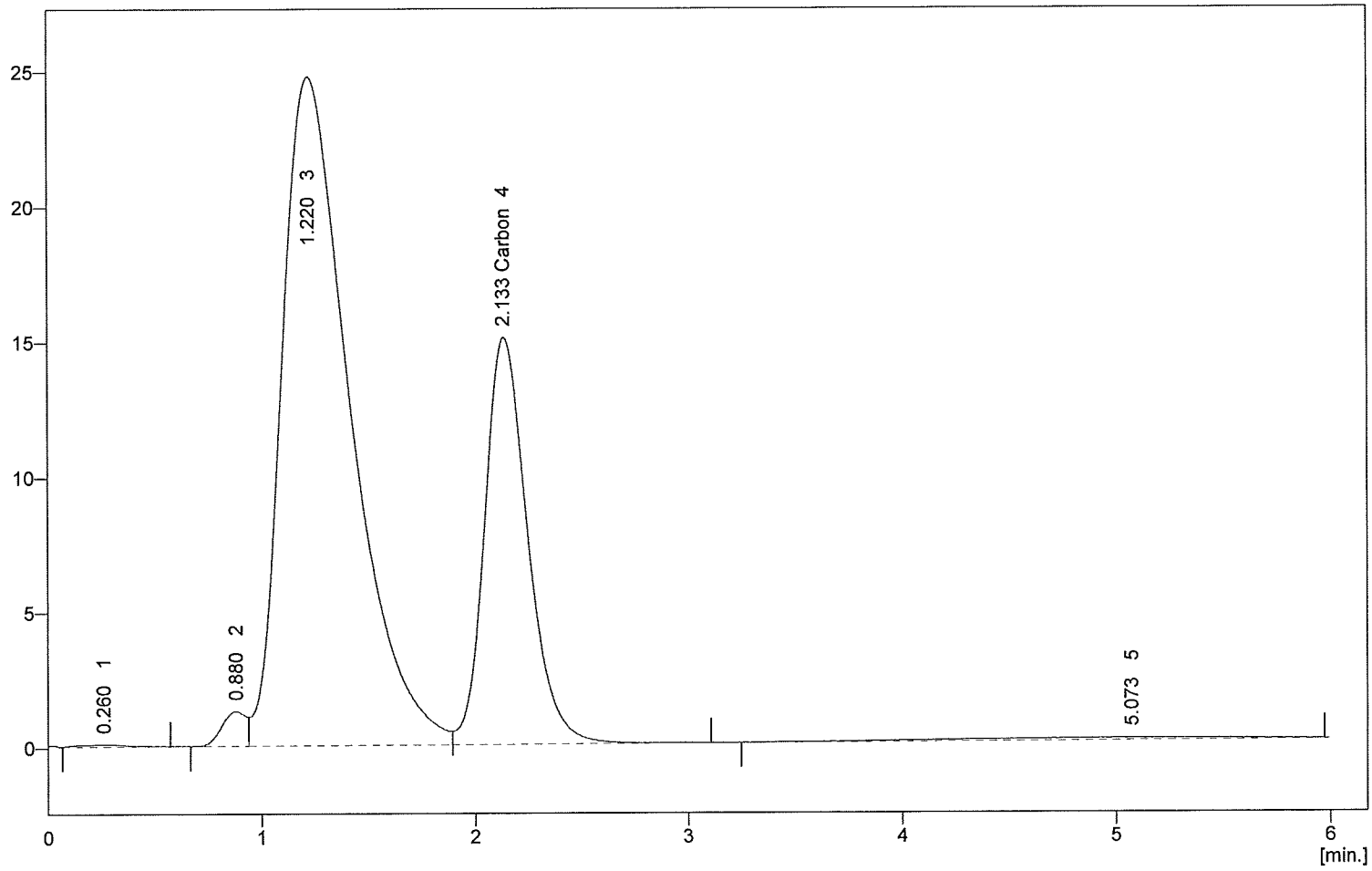
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	1039.336	64.0	0.121	3.3712	1.0000	Ordnr
	Total	1623.361	100.0	3.600	3.3712		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 8:01:05 PM
Project : WORK1
Weight : 4.1 mg
Sample : 200-35700-A-18
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B053



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	211.140	27.1	0.019	0.4576	1.0000	Ordnr
	Total	780.507	100.0	4.100	0.4576		

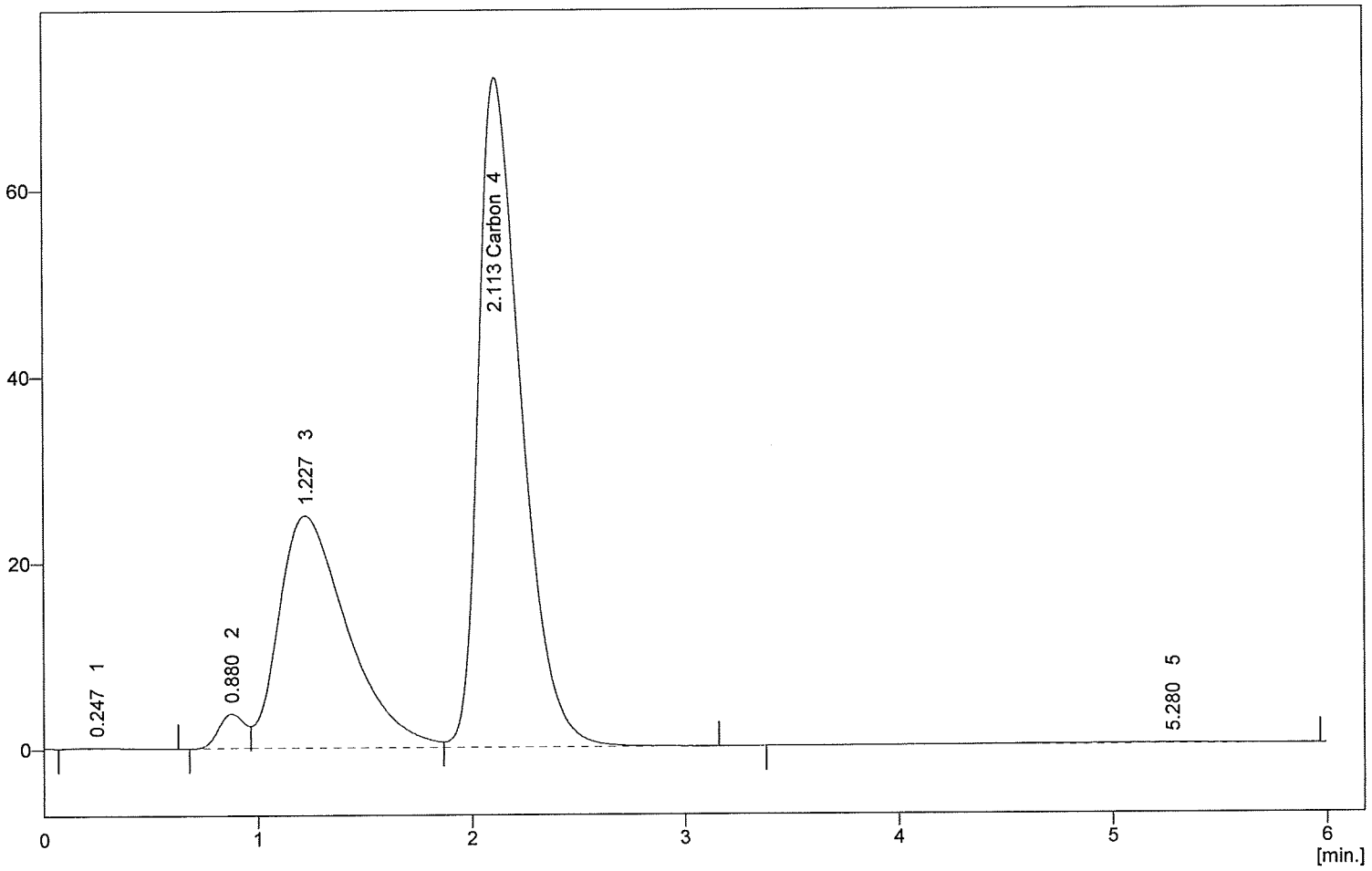
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 8:07:58 PM
Project : WORK1
Weight : 3.9 mg
Sample : 200-35649-A-1

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B054



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.113	1005.429	62.8	0.117	3.0042	1.0000	Ordnr
	Total	1600.799	100.0	3.900	3.0042		

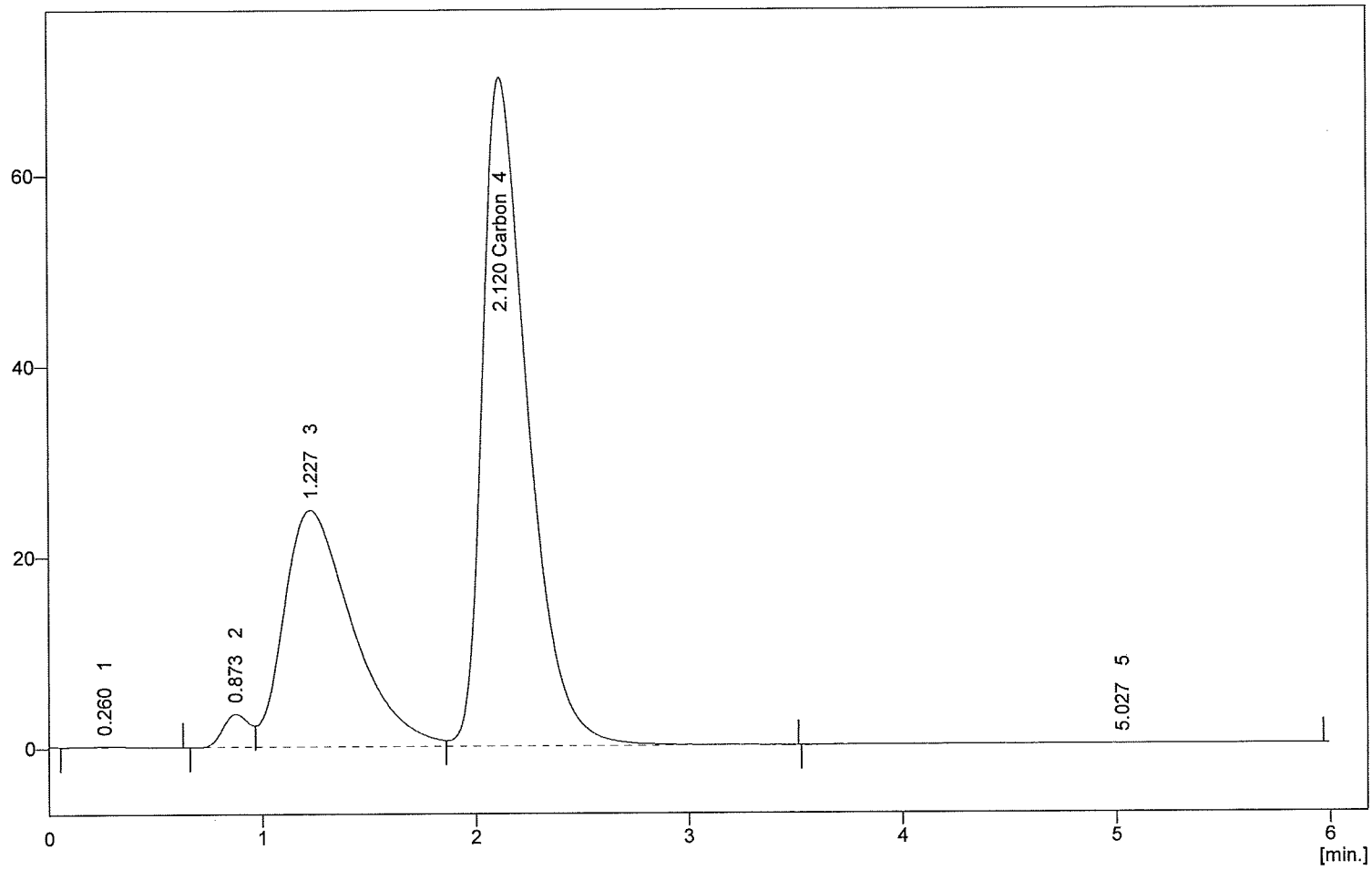
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 8:15:01 PM
Project : WORK1
Weight : 3.7 mg
Sample : 200-35649-A-2

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B055



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.120	1036.173	63.8	0.121	3.2695	1.0000	Ordnr
	Total	1625.211	100.0	3.700	3.2695		

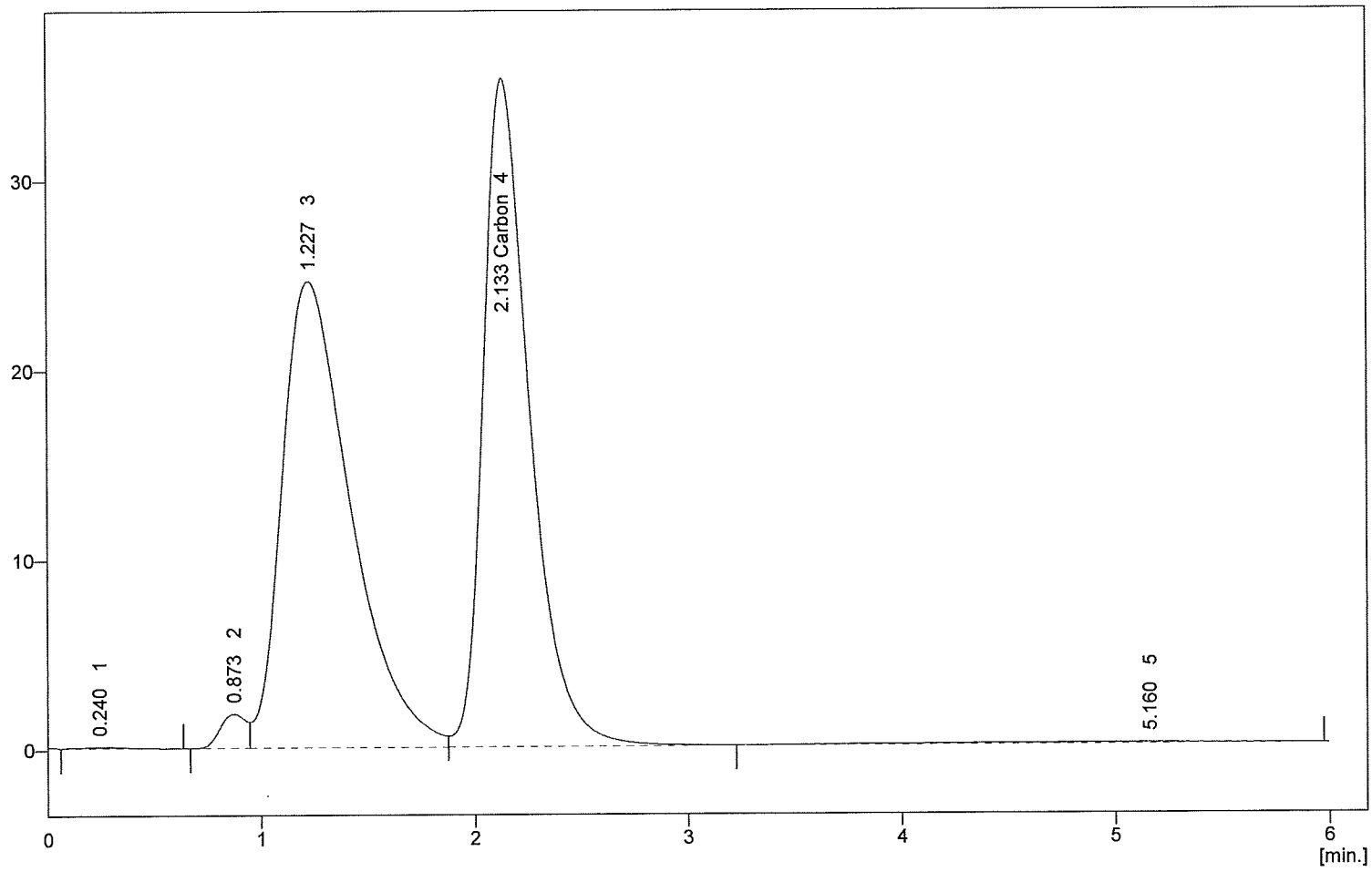
Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 8:22:05 PM
Project : WORK1
Weight : 3.6 mg
Sample : 200-35649-A-3

Calibration : 101716B

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\lnorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B056



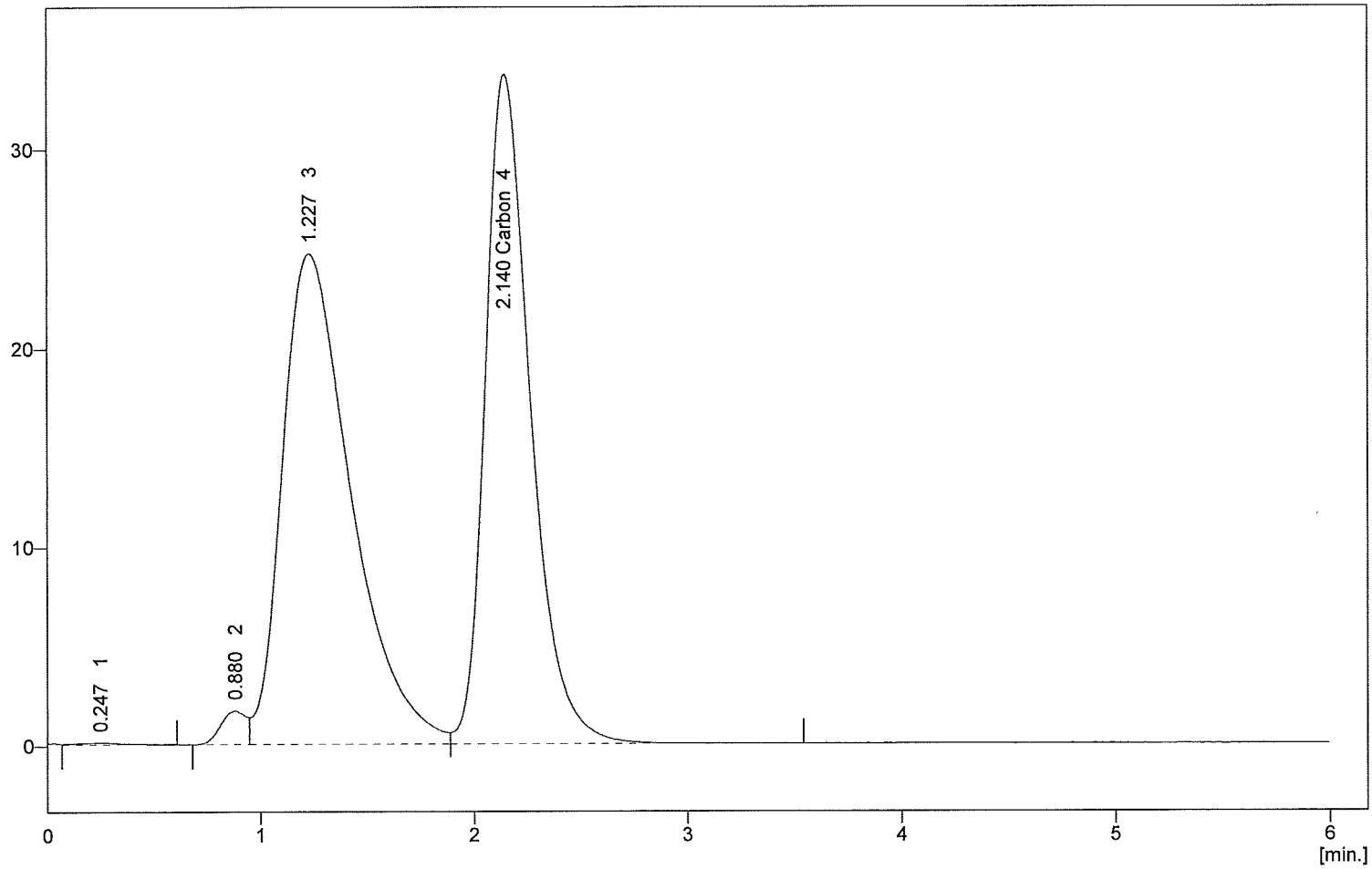
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	535.092	48.3	0.059	1.6360	1.0000	Ordnr
	Total	1108.109	100.0	3.600	1.6360		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 8:29:10 PM
Project : WORK1
Weight : 3.3 mg
Sample : 200-35649-A-4
Calibration : 101716B

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B057

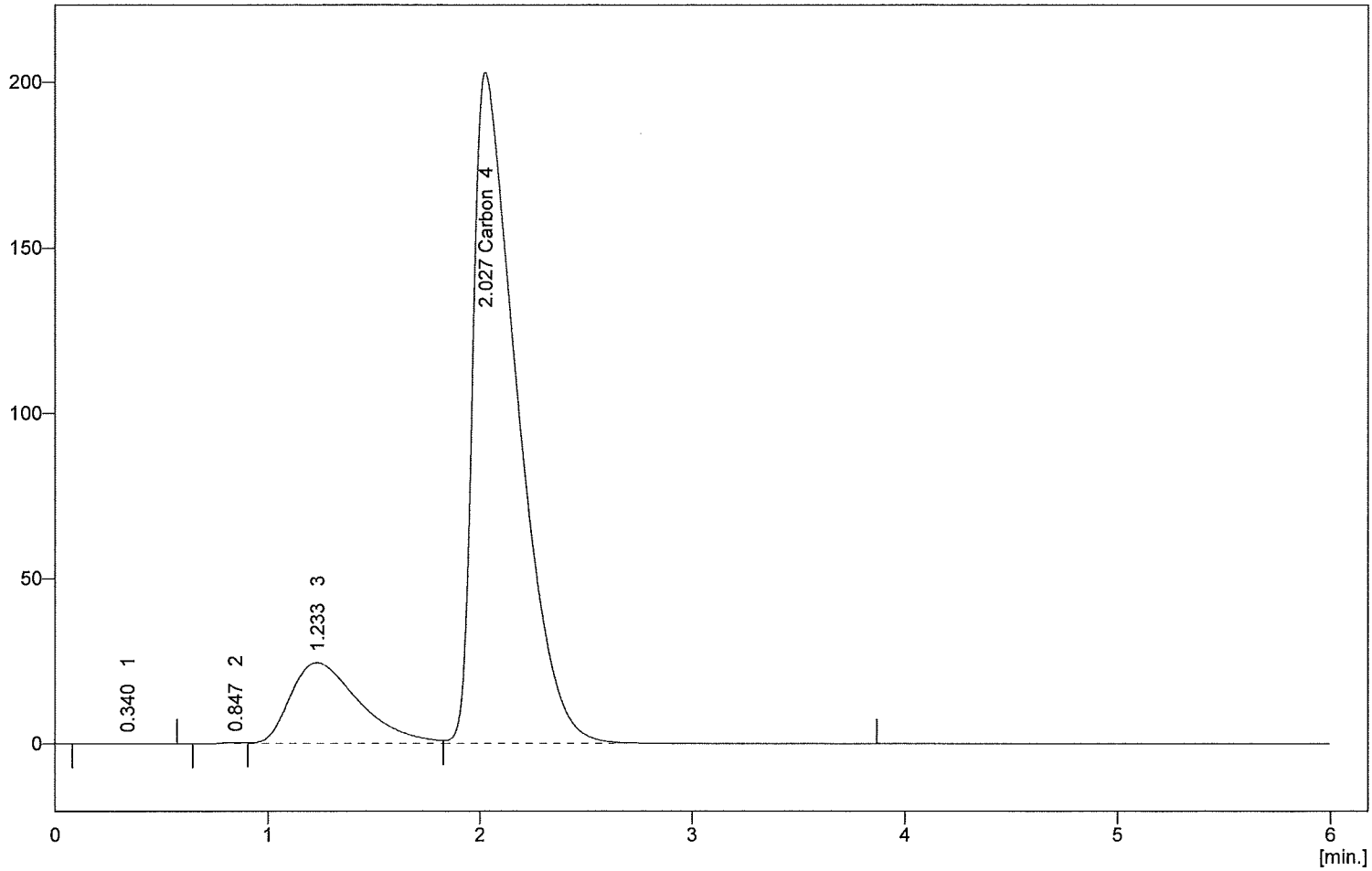


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.140	494.831	46.6	0.054	1.6336	1.0000	Ordnr
	Total	1061.923	100.0	3.300	1.6336		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 8:36:05 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 10 mg		
Sample	: CCV	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B058
Calibration	: 101716B		

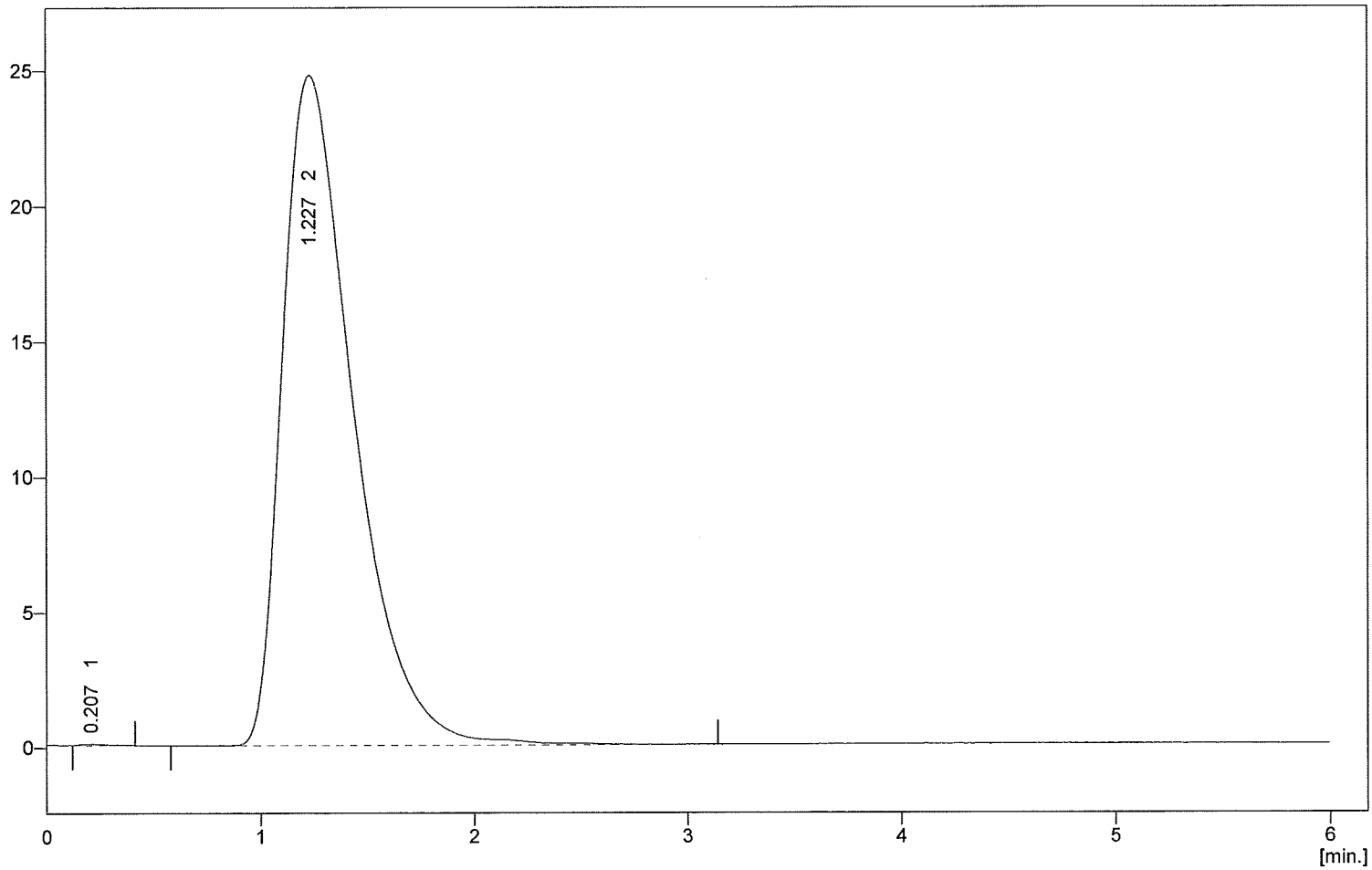


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.027	2947.140	84.1	0.358	3.5771	1.0000	Ordnr
	Total	3505.758	100.0	10.000	3.5771		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 8:43:01 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 10 mg		
Sample	: CCB	Chromatogram	: C:\Documents and Settings\Inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716B059
Calibration	: 101716B		



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.029						Ordnr
	Total	573.328	100.0	10.000	0.0000		

LLOYD KAHN TOC
Channel 1
CALIBRATION
Carbon - 2.029 min.

Peak Type : Ordnr

Left Window : 0.3 min

Right Window : 0.6 min

Response Base : Area

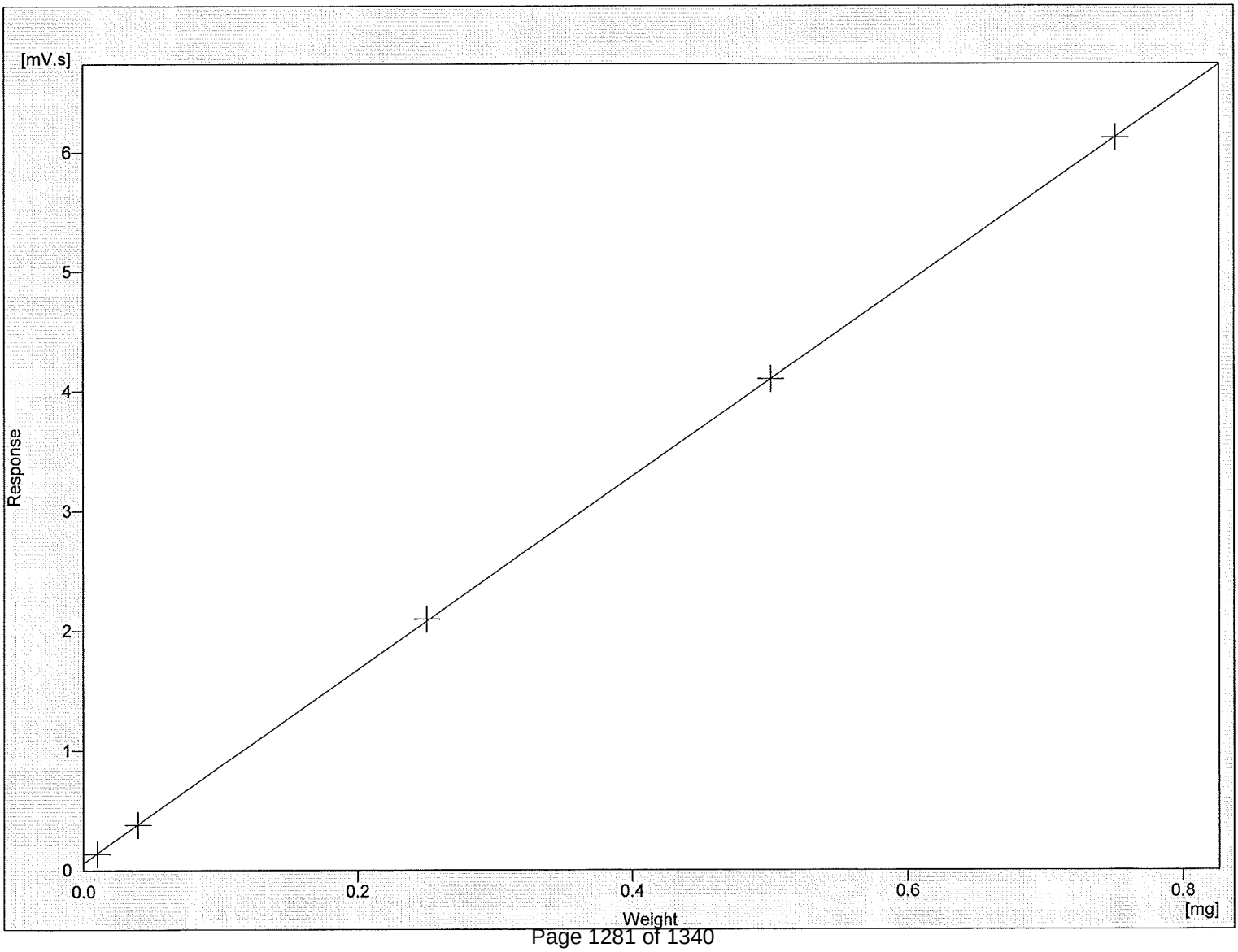
Curve Fit Type : Linear

Zero Type : Zero not used

Subst. Equation : Y = 8071.9467*X + 59.6917

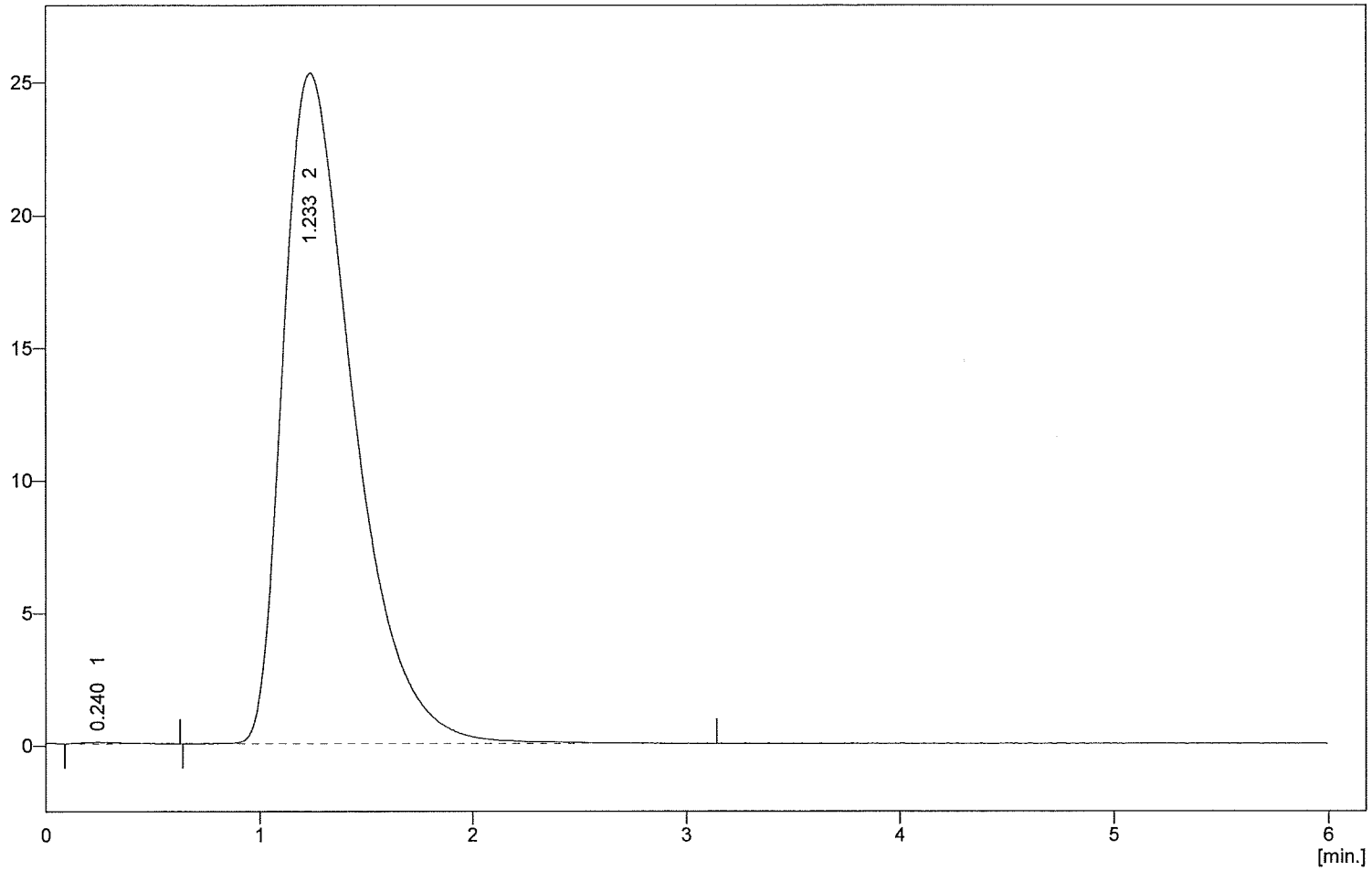
Correlation Coef. : 0.999994

	Response	Weight	Resp. Factor	Used
1	0.000	0.000	0.0000	Yes
2	135.604	0.010	0.0001	Yes
3	377.368	0.040	0.0001	Yes
4	2095.400	0.250	0.0001	Yes
5	4100.518	0.501	0.0001	Yes
6	6116.400	0.751	0.0001	Yes
7	0.000	0.000	0.0000	Yes
8	0.000	0.000	0.0000	Yes
9	0.000	0.000	0.0000	Yes
10	0.000	0.000	0.0000	Yes
11	0.000	0.000	0.0000	Yes
12	0.000	0.000	0.0000	Yes
13	0.000	0.000	0.0000	Yes
14	0.000	0.000	0.0000	Yes
15	0.000	0.000	0.0000	Yes
16	0.000	0.000	0.0000	Yes
17	0.000	0.000	0.0000	Yes
18	0.000	0.000	0.0000	Yes
19	0.000	0.000	0.0000	Yes
20	0.000	0.000	0.0000	Yes



Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 12:21:13 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 0 mg		
Sample	: STD 1	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716Z001
Calibration	: 101716Z		



Result Table - Calculation Method ESTD

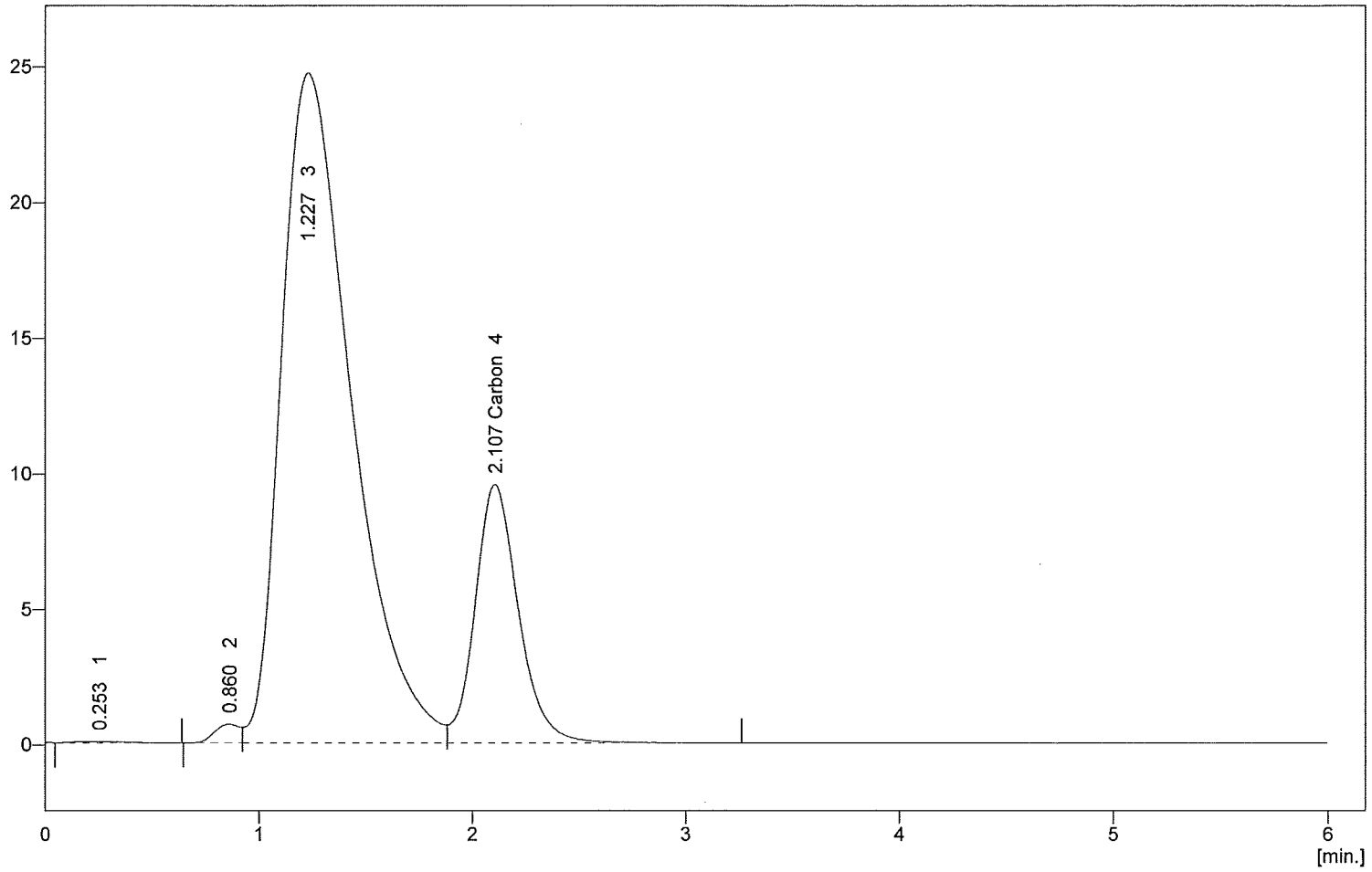
Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.033						Ordnr
	Total	585.344	100.0	0.000	100.0000		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 12:27:41 PM
Project : WORK1
Weight : 0.0213 mg
Sample : STD 2
Calibration : 101716Z

By : None
Style : Sequence

Chromatogram : 101716Z002

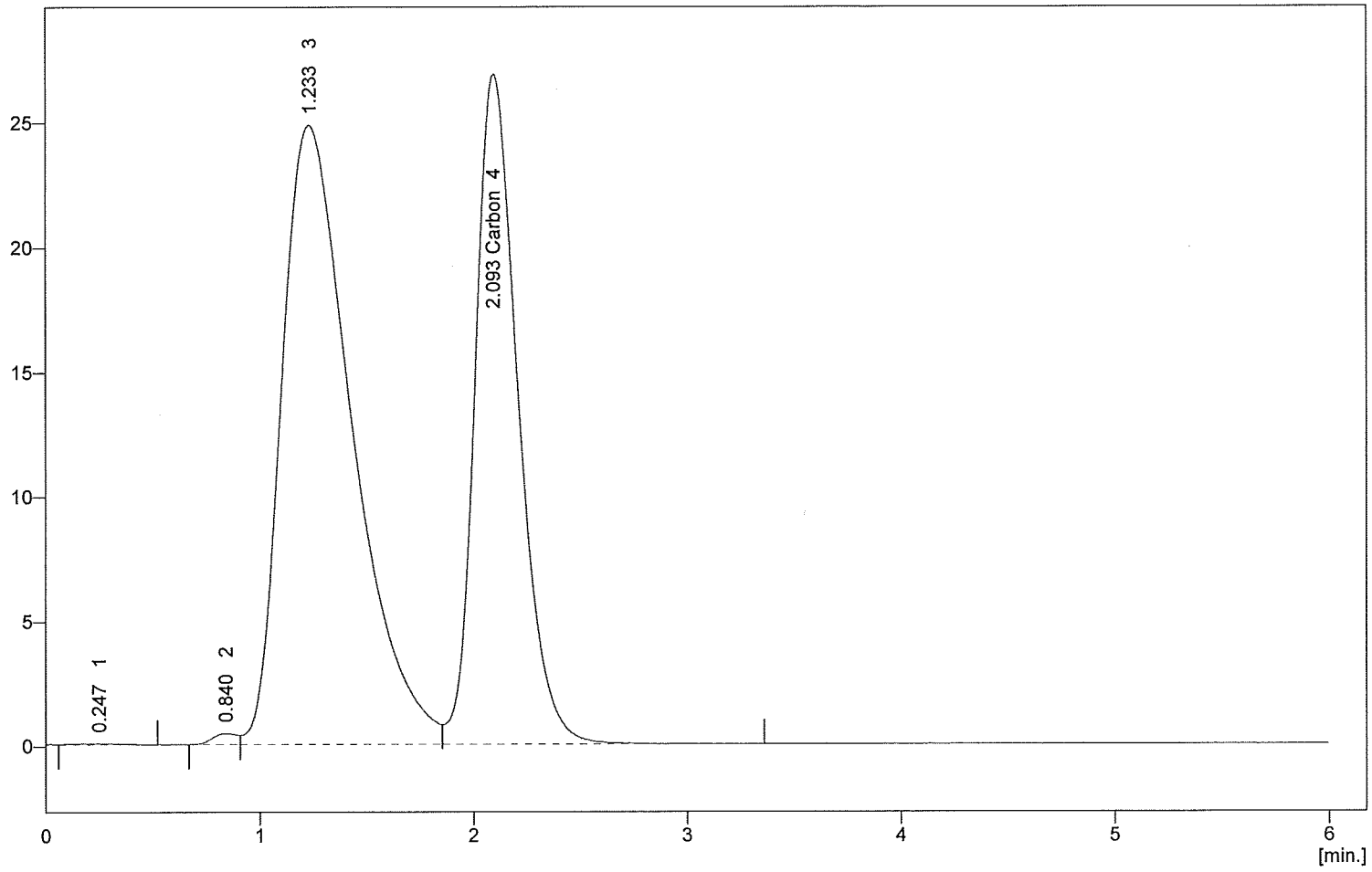


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.107	135.604	19.3	0.010	47.0500	1.0000	Ordnr
	Total	703.728	100.0	0.021	47.0500		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 12:34:08 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 0.0851 mg		
Sample	: STD 3	Chromatogram	: 101716Z003
Calibration	: 101716Z		

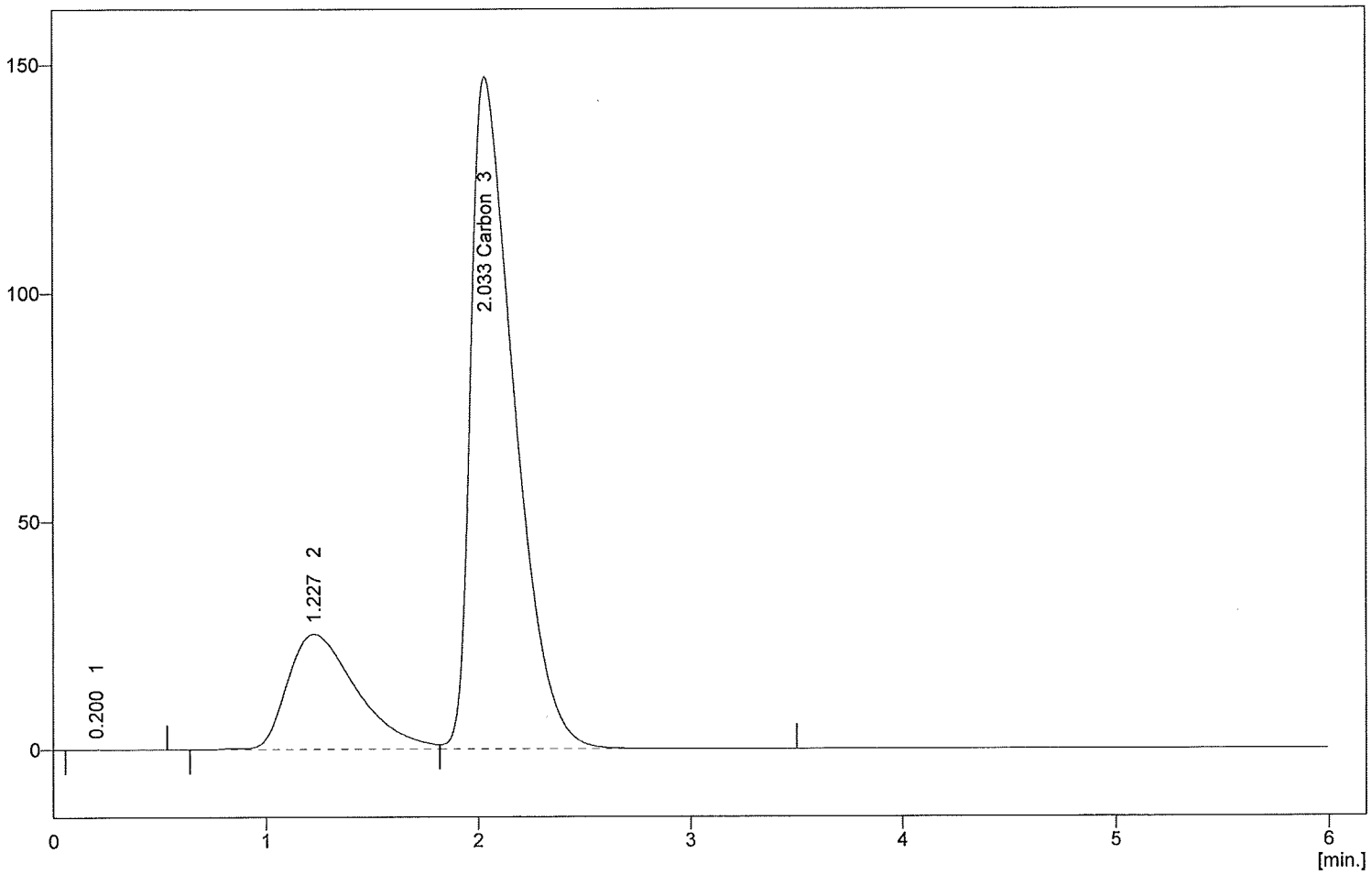


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.093	377.368	39.7	0.040	47.0500	1.0000	Ordnr
	Total	951.373	100.0	0.085	47.0500		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 12:40:37 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 0.532 mg		
Sample	: STD 4	Chromatogram	: 101716Z004
Calibration	: 101716Z		



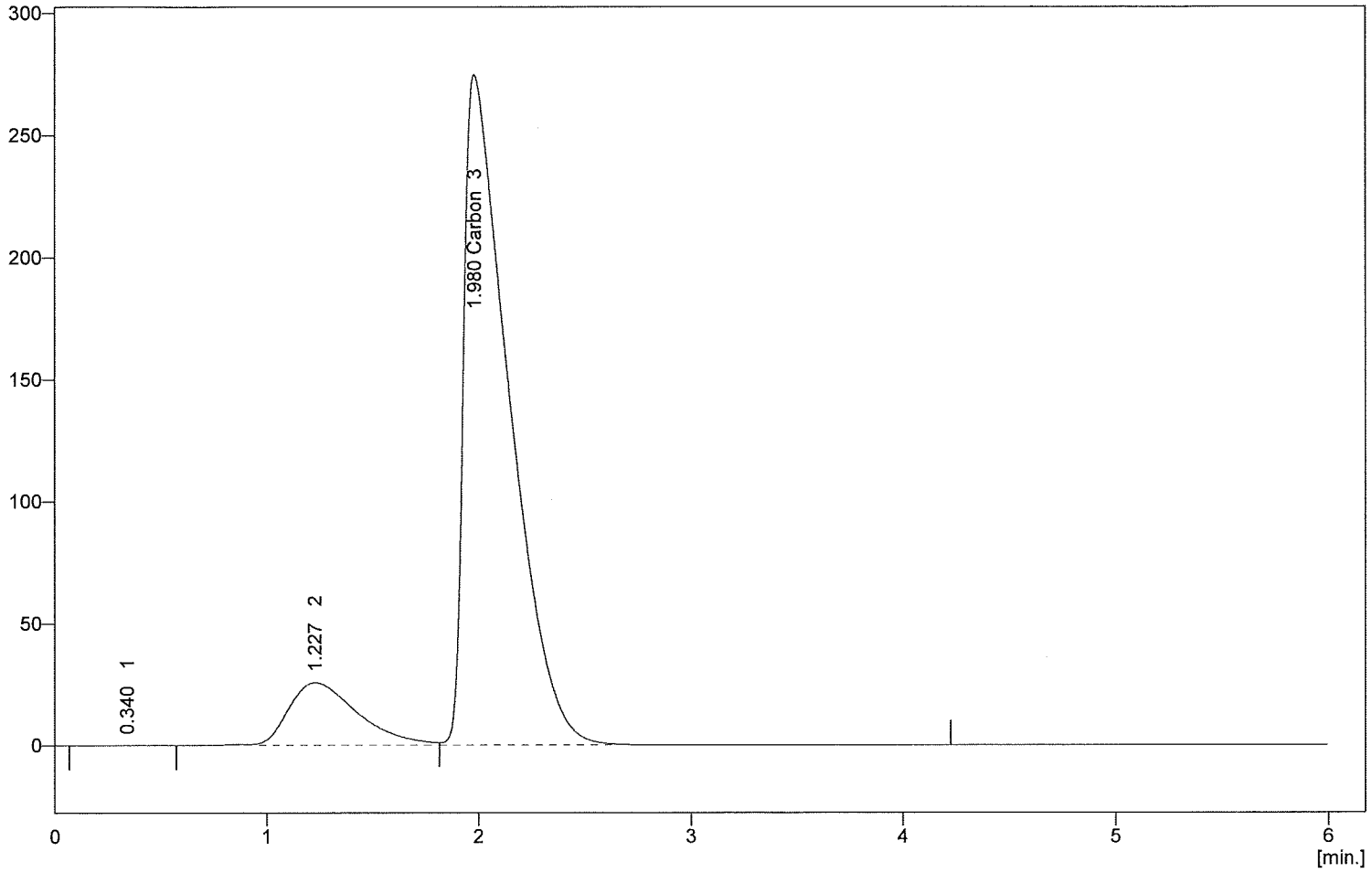
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.033	2095.400	78.4	0.250	47.0552	1.0000	Ordnr
	Total	2672.788	100.0	0.532	47.0552		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 12:47:07 PM
Project : WORK1
Weight : 1.064 mg
Sample : STD 5
Calibration : 101716Z

By : None
Style : Sequence
Chromatogram : 101716Z005

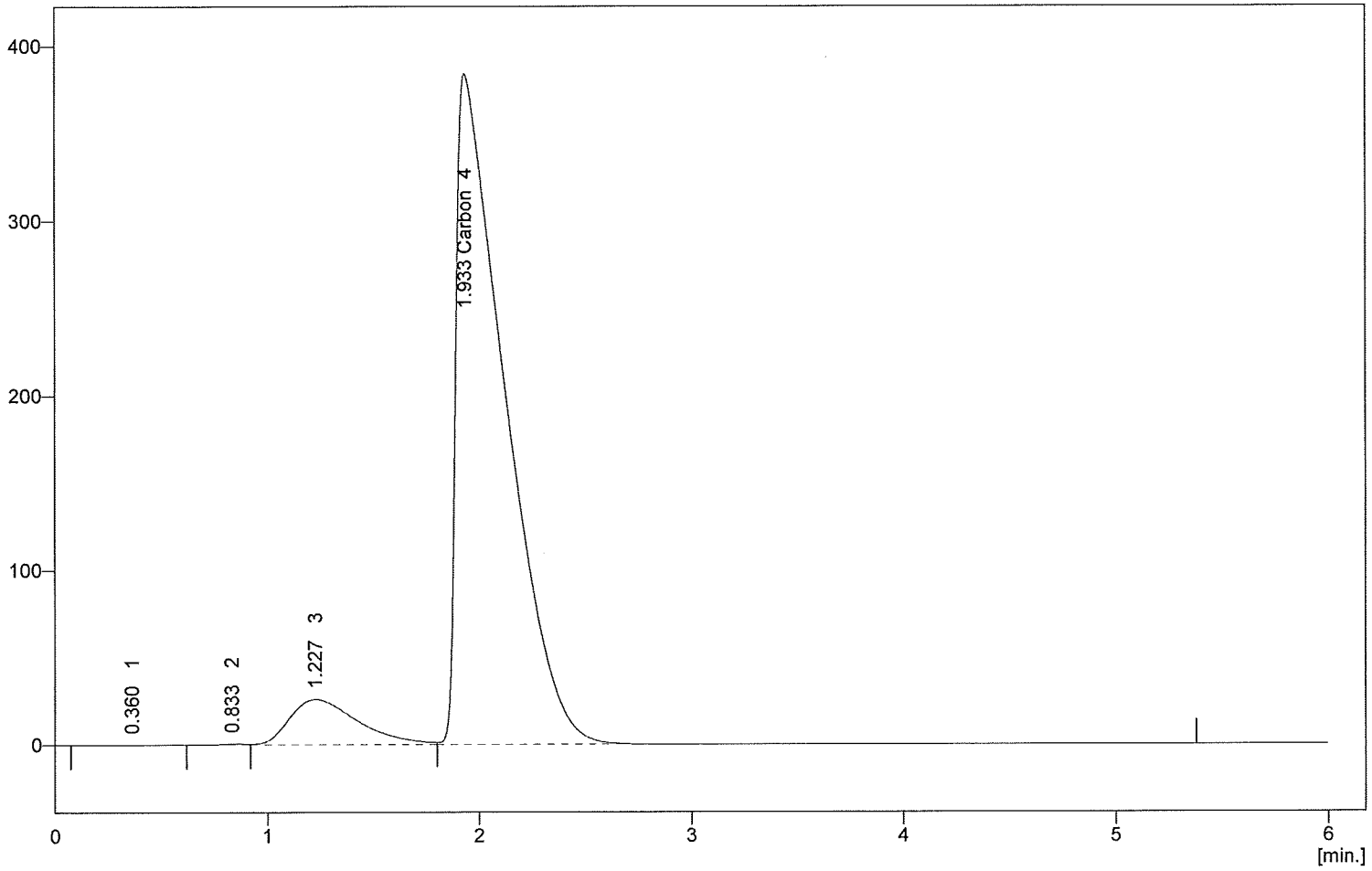


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	1.980	4100.518	87.5	0.500	46.9775	1.0000	Ordnr
	Total	4686.987	100.0	1.064	46.9775		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 12:53:35 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 1.596 mg		
Sample	: STD 6	Chromatogram	: 101716Z006
Calibration	: 101716Z		



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	1.933	6116.400	91.1	0.750	47.0138	1.0000	Ordnr
	Total	6710.782	100.0	1.596	47.0138		

Total Organic Carbon
by Lloyd Kahn

File:	101916B			Default Mass:	10 mg
Instrument ID:	2			TALS Batch:	110363

STANDARD CURVE			Reagent	Concentration	Amount	
Lab ID	Type	ICAL conc / ug/L	ID	ug/L	uL	
CAL Level 1	CAL	0	NA	0	0	
CAL Level 2	CAL	1000	941210	100	100	Date Analyzed: 10/19/16
CAL Level 3	CAL	4000	941209	1001	40	Correlation Coefficient (r) : 0.999973
CAL Level 4	CAL	25000	889816	10012	25	Criteria: (r) ≥ *0.995*
CAL Level 5	CAL	50000	889816	10012	50	Raw DataFile: 101916X
CAL Level 6	CAL	750000	889816	10012	75	

STANDARD & REAGENT TRACEABILITY:			
ICAL/CCV Container ID:	889816	LCS Container ID:	895118
ICV Container ID:	895118	1:19 Phosphoric Acid Container ID:	977837
Matrix Spike Container ID:	NA		

PREPARATION INFORMATION:					
Date:	10/19/16	Start Time:	12:23	Balance ID:	1123452701
Analyst:	KSH	Stop Time:	14:04	Oven ID:	2

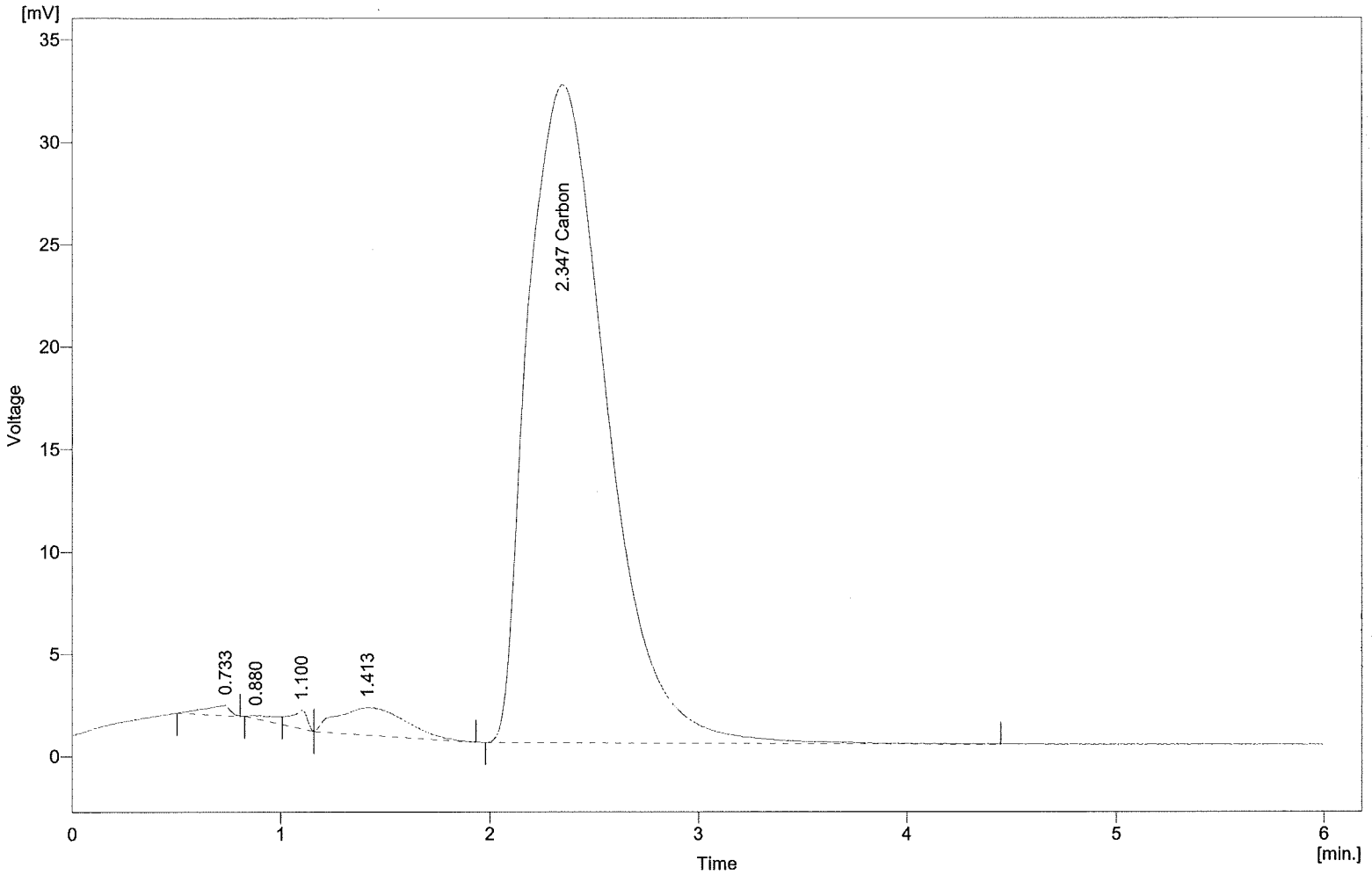
Drop	Weight	Sample ID	Carbon (%)	Carbon (mg/Kg)	Average Carbon (mg/Kg)	Sample RPD or RSD	RL (mg/Kg)
1	9.1	ICV	0.8144	8144.00			
2	10	ICB	0	0.00			
3	10	CCV	3.4484	34484.00			
4	10	CCB	0	0.00			
5	10	MB	0	0.00	0.00	#DIV/0!	U1000
6	10	MB	0	0.00			
7	9.5	LCS	0.8911	8911.00	8943.75	1	1040
8	9.3	LCS	0.8803	8803.00			
9	9.9	LCS	0.9117	9117.00			
10	9.7	LCS	0.8944	8944.00			
11	10	200-35680-A-3	0.1352	1352.00			
12	9.2	200-35700-A-13	0.1449	1449.00			
13	3.7	480-107724-B-1	11.9482	119482.00			
14	4.4	480-107724-B-2	8.1072	81072.00			
15	3	480-107724-B-3	10.3607	103607.00			
16	10	CCV	3.3733	33733.00			
17	10	CCB	0.025	250.00			

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 12:23:56 PM
Project : WORK2
Weight : 9.1 mg
Sample : ICV
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B001



Result Table - Calculation Method ESTD

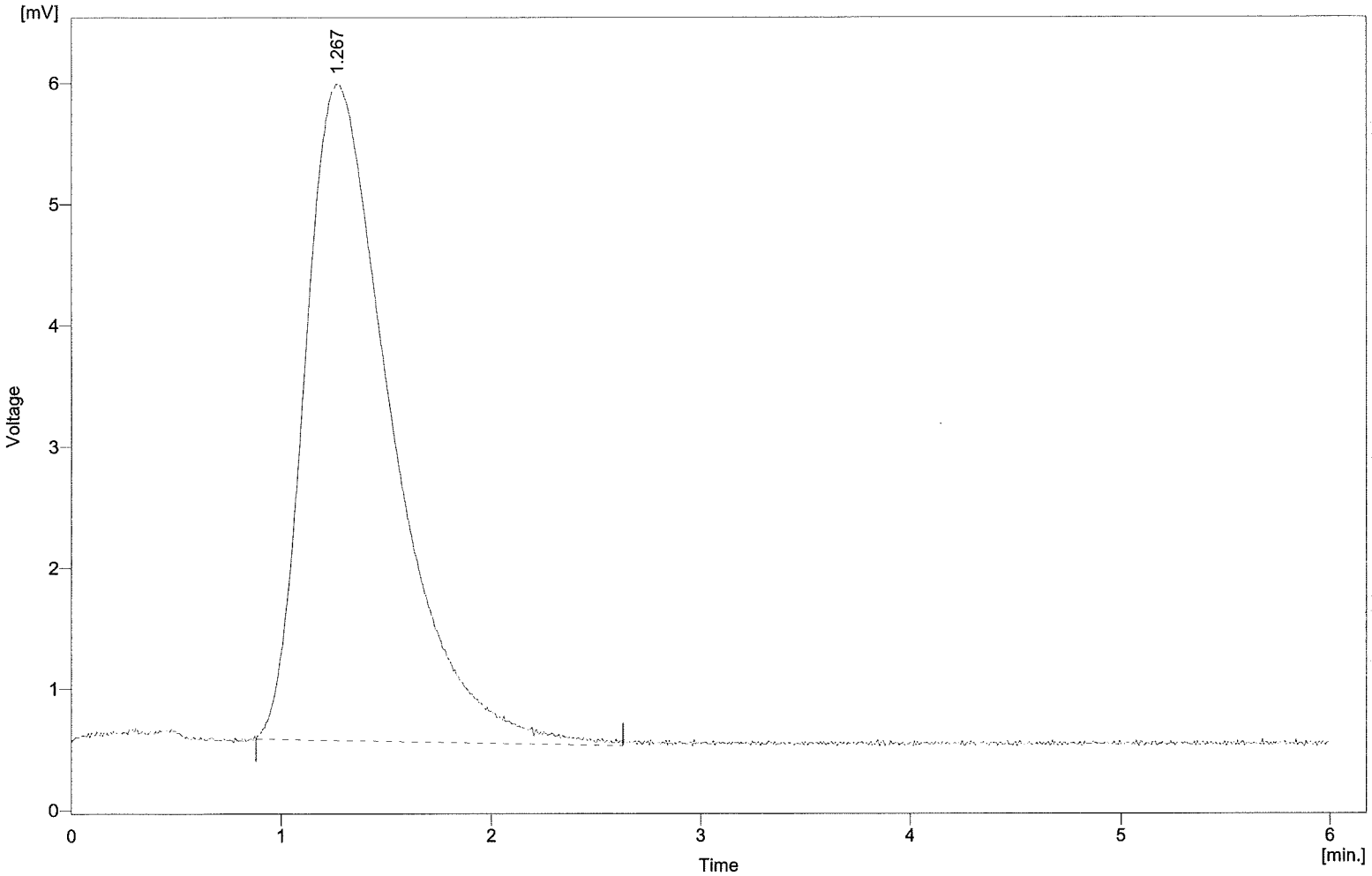
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
2.347	Carbon	845.6631	95.1	0.074	0.8144	1.0000	Ordnr
Total		888.8834	100.0	9.100	0.8144		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 12:30:09 PM
Project : WORK2
Weight : 10 mg
Sample : ICB
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B002



Result Table - Calculation Method ESTD

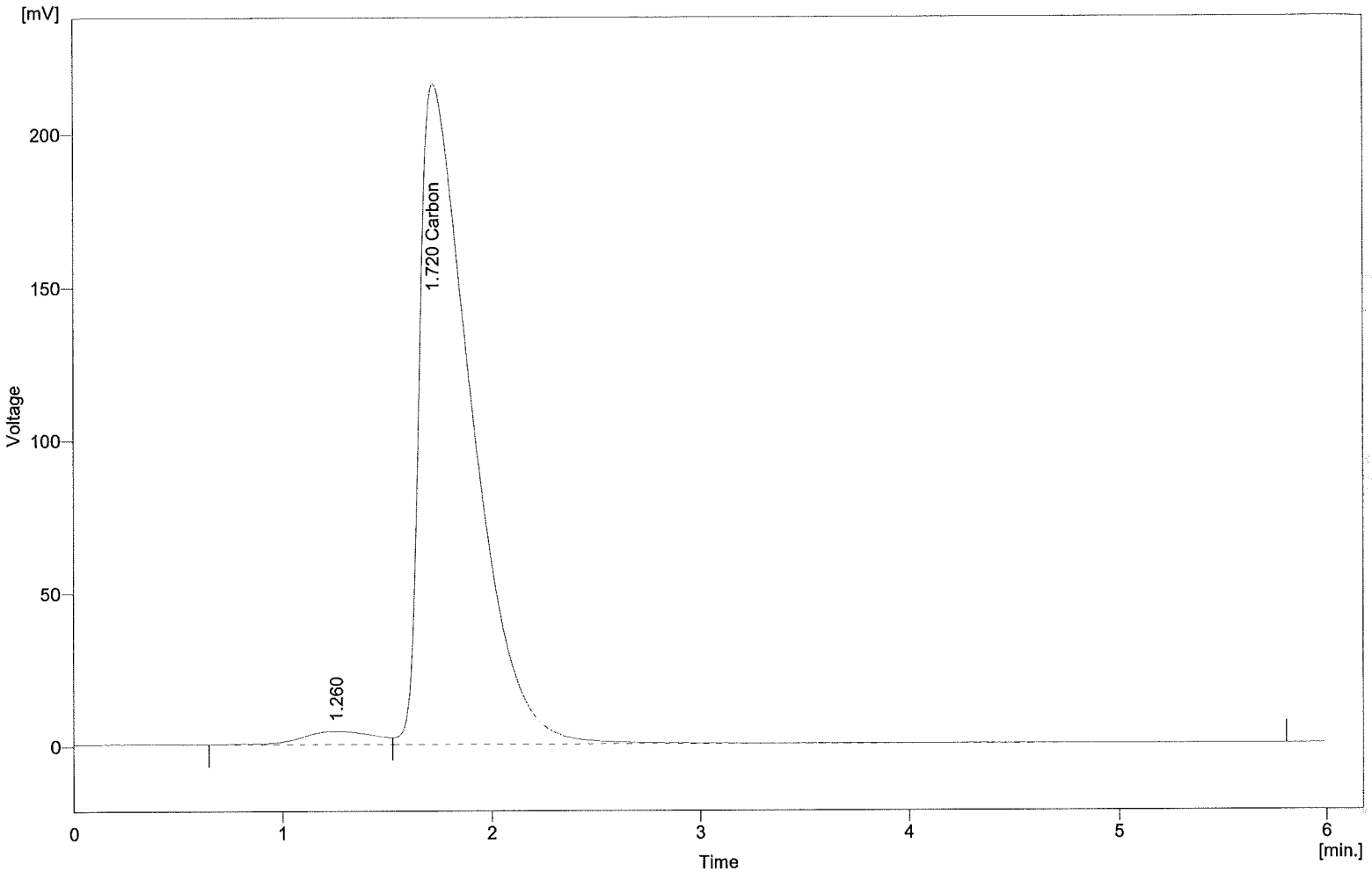
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
2.000	Carbon						Ordnr
Total		155.2176	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 12:36:21 PM
Project : WORK2
Weight : 10 mg
Sample : CCV
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B003

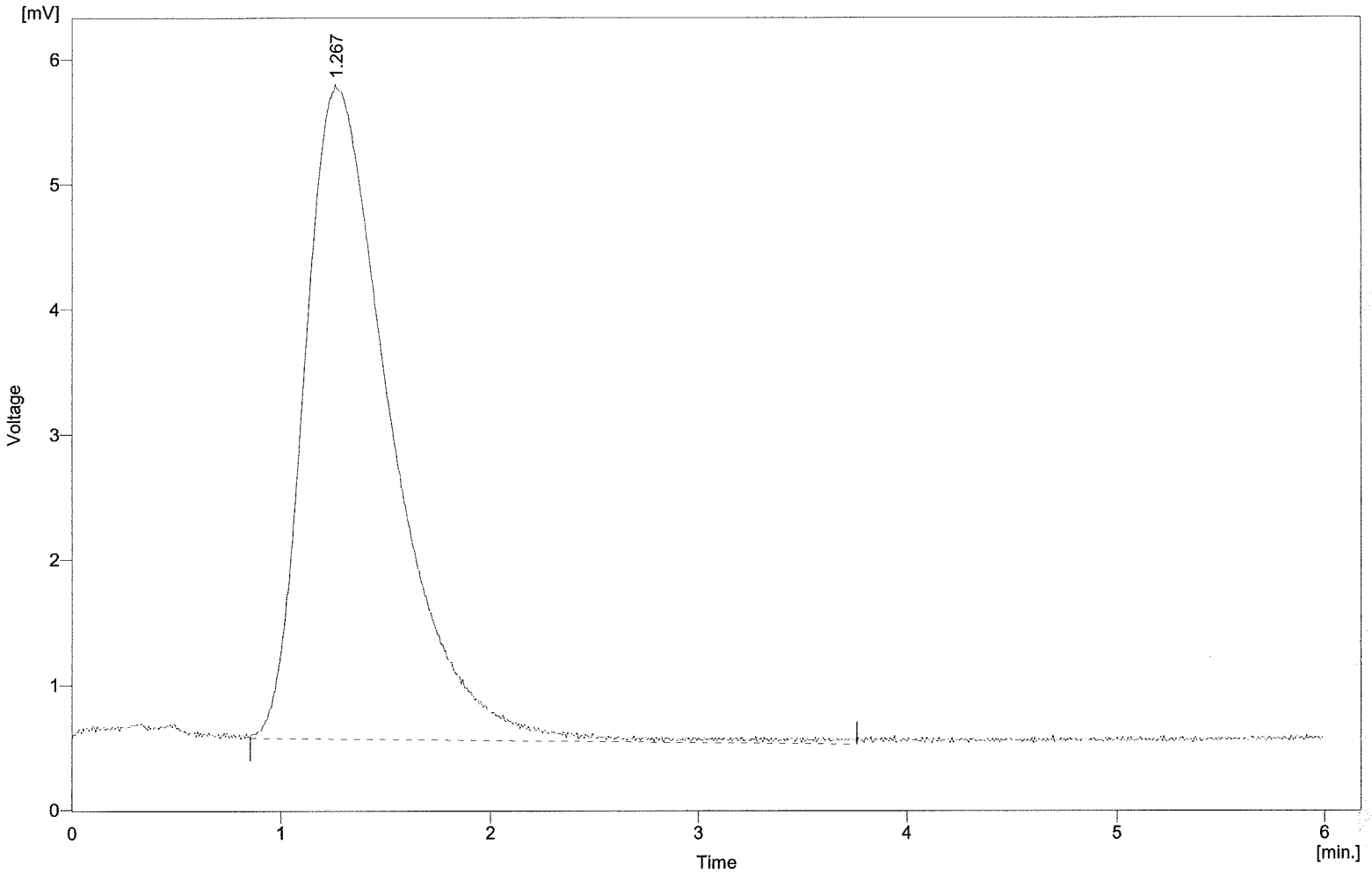


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.720	Carbon	3727.6499	97.3	0.345	3.4484	1.0000	Ordnr
Total		3832.9675	100.0	10.000	3.4484		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 12:42:35 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 10 mg		
Sample	: CCB	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B004
Calibration	: 101916B		



Result Table - Calculation Method ESTD

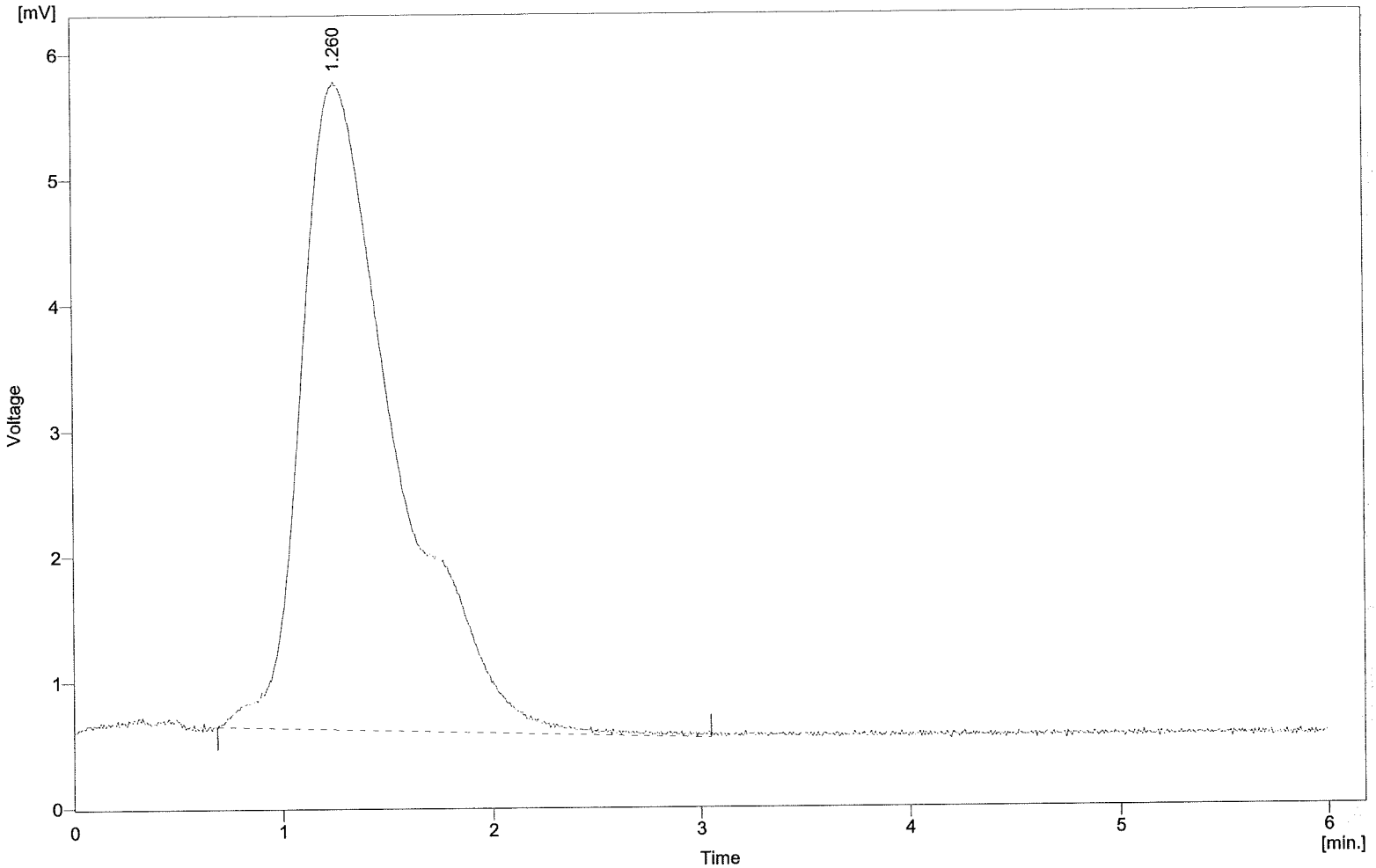
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
2.000	Carbon						Ordnr
Total		151.3360	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 12:48:48 PM
Project : WORK2
Weight : 10 mg
Sample : MB
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B005

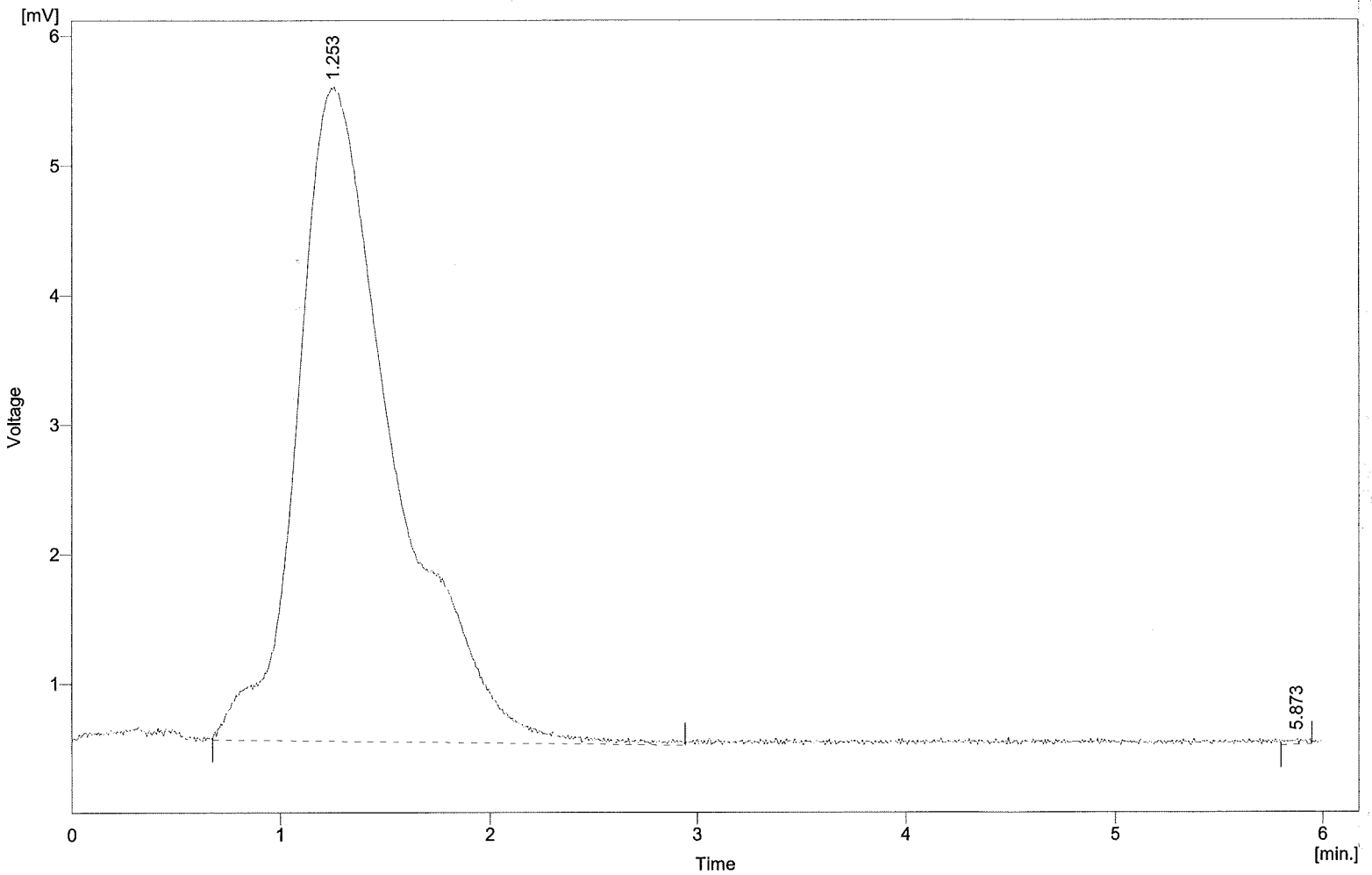


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
2.000	Carbon						Ordnr
Total		161.1788	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 12:55:02 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 10 mg		
Sample	: MB	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B006
Calibration	: 101916B		



Result Table - Calculation Method ESTD

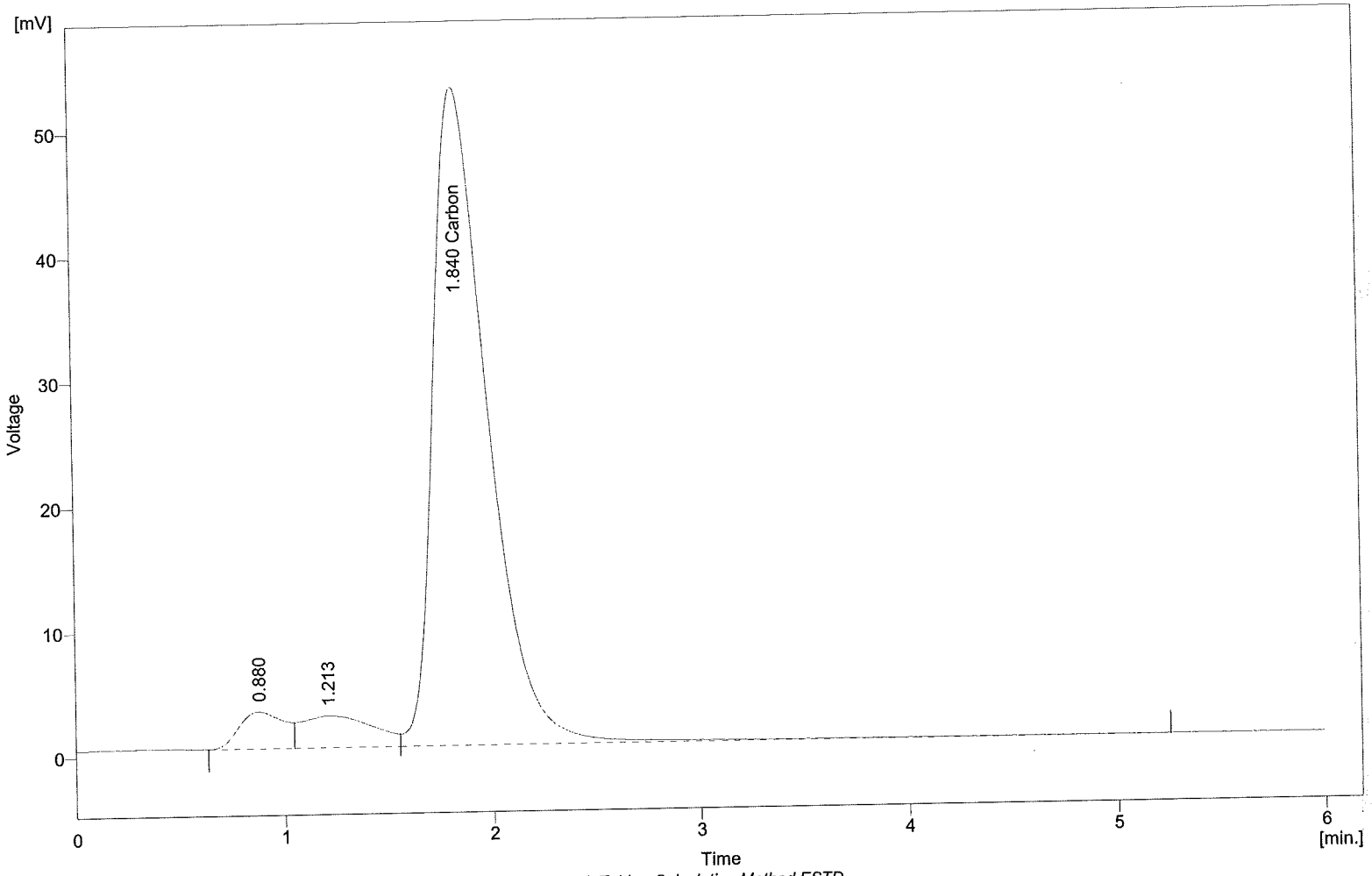
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
2.000	Carbon						Ordnr
Total		161.7248	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 1:01:16 PM
Project : WORK2
Weight : 9.5 mg
Sample : LCS
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B007



Result Table - Calculation Method ESTD

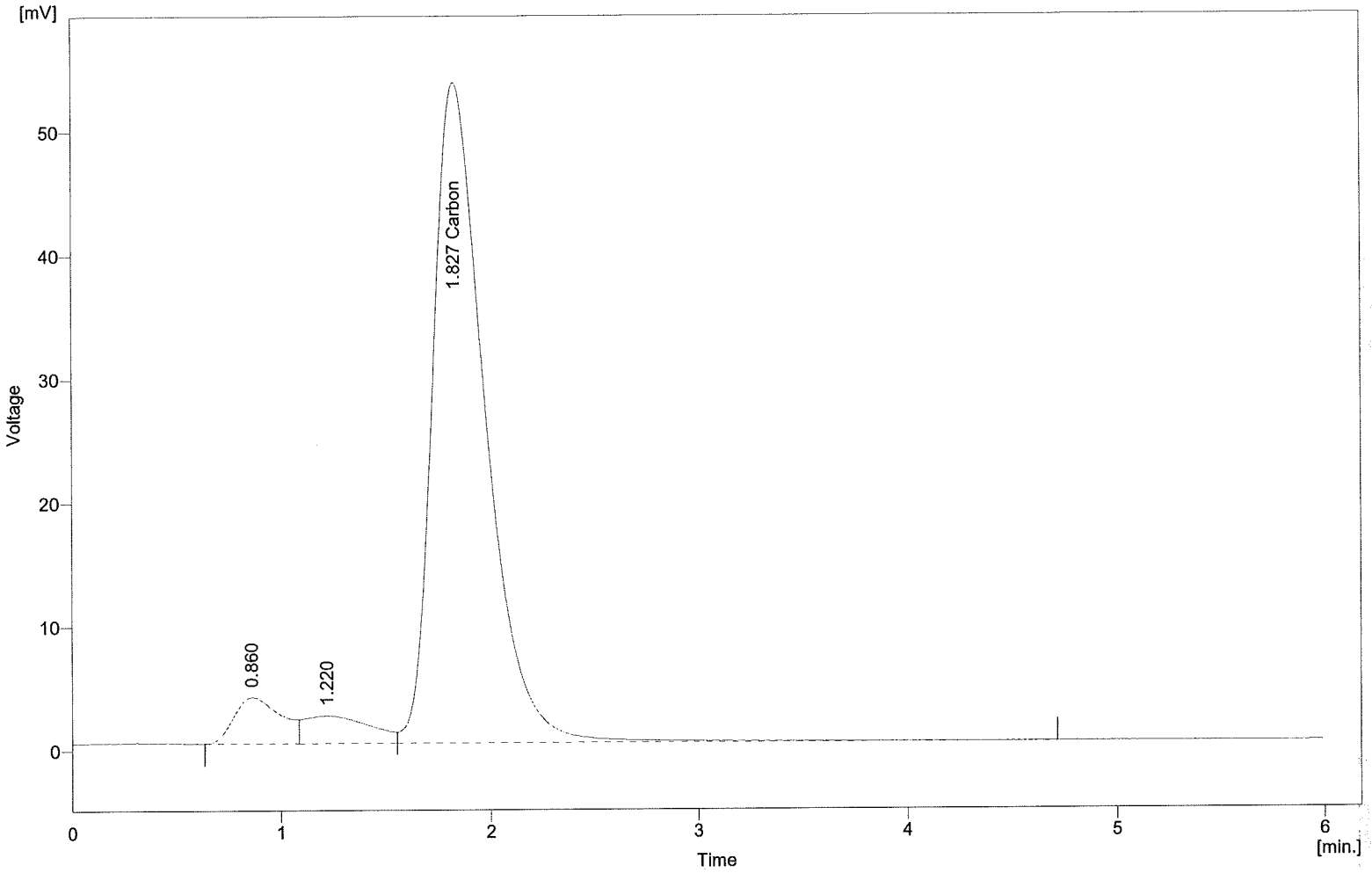
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.840	Carbon	957.9093	90.1	0.085	0.8911	1.0000	Ordnr
Total		1063.3073	100.0	9.500	0.8911		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 1:07:31 PM
Project : WORK2
Weight : 9.3 mg
Sample : LCS
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B008

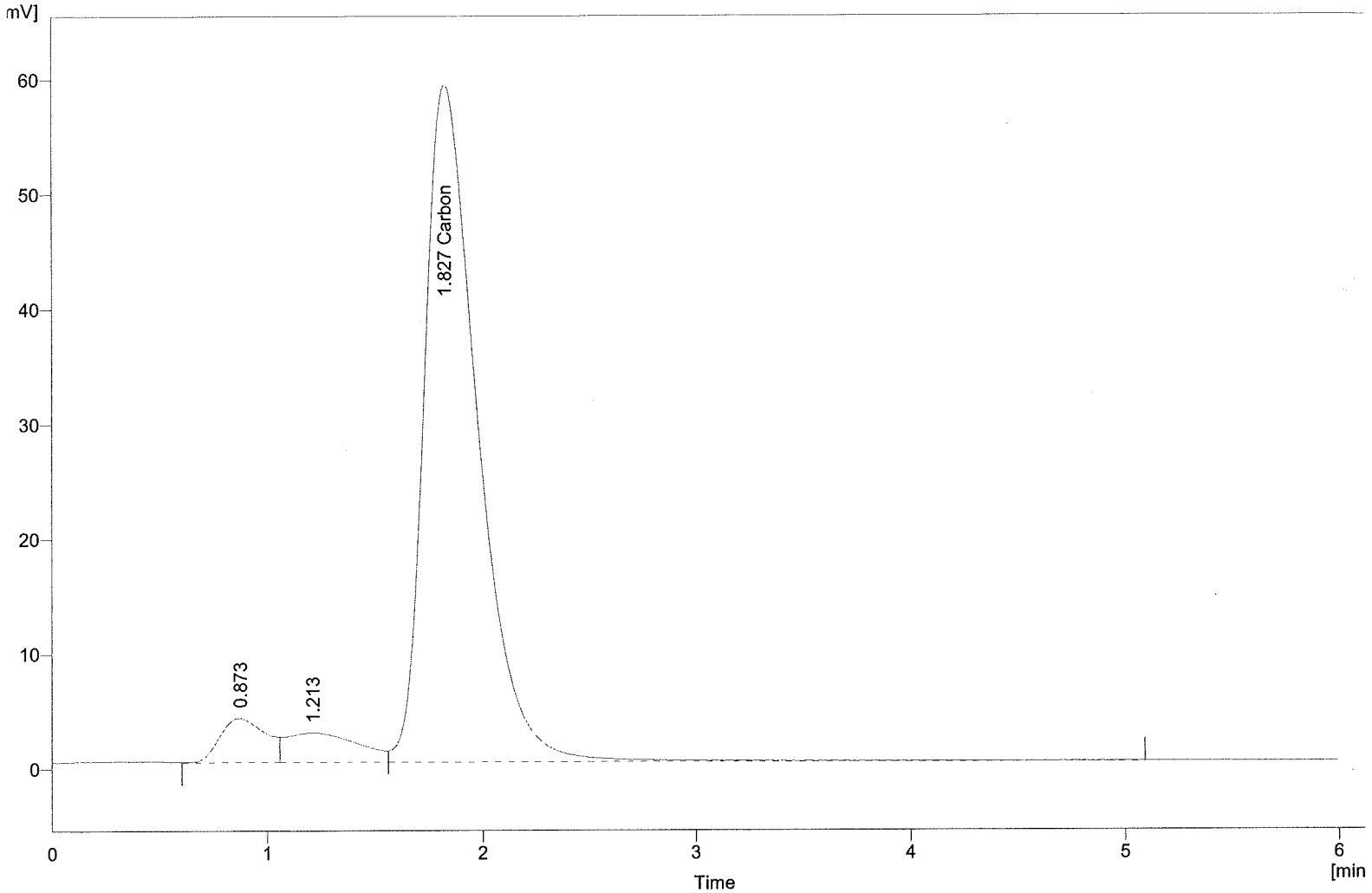


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.827	Carbon	928.1542	89.7	0.082	0.8803	1.0000	Ordnr
Total		1035.1150	100.0	9.300	0.8803		

Lloyd Kahn TOC
Instrument #2

eated	: 10/19/2016 1:13:47 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 9.9 mg		
mple	: LCS	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B009
alibration	: 101916B		



Result Table - Calculation Method ESTD

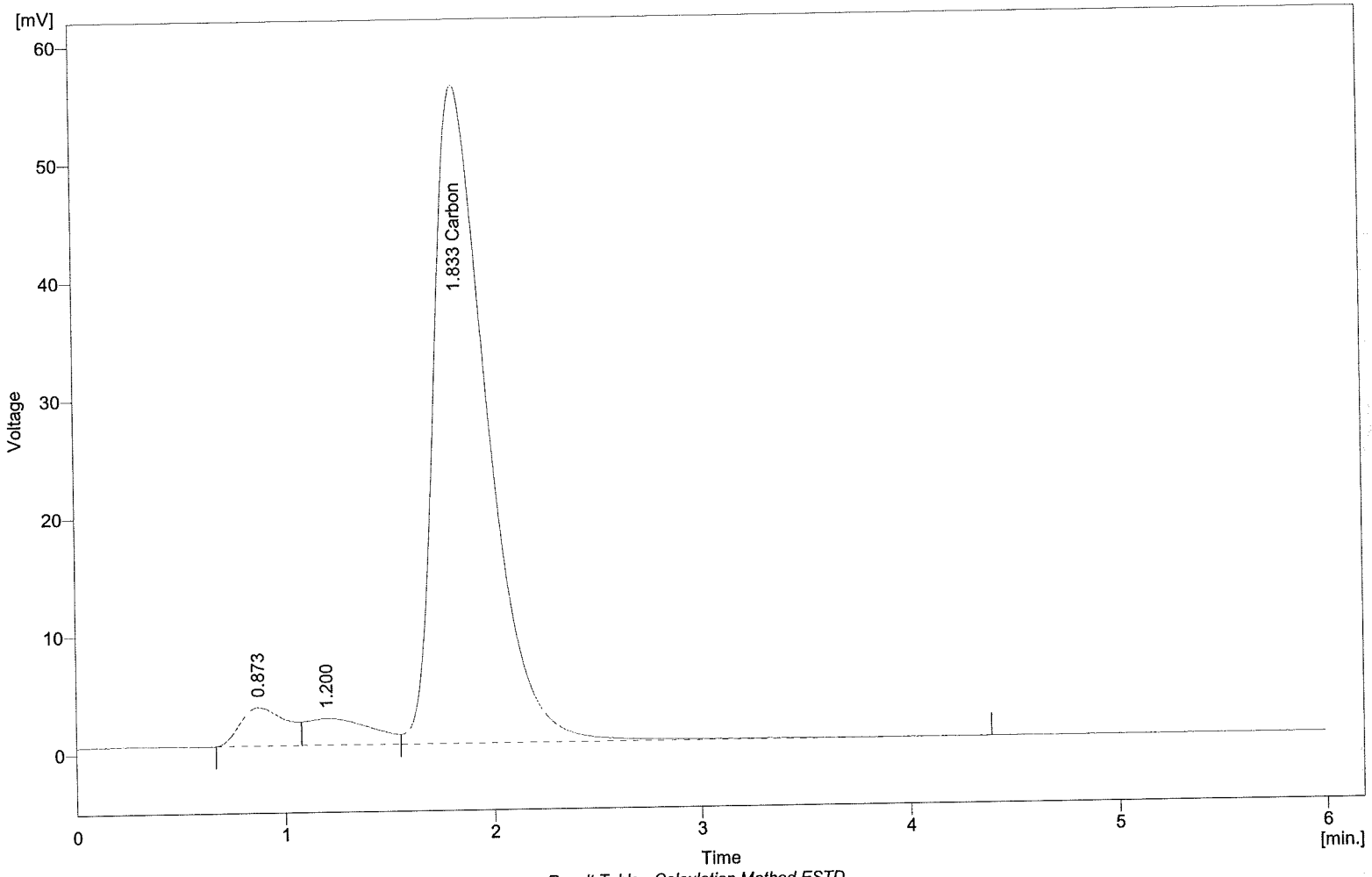
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.827	Carbon	1017.5242	89.7	0.090	0.9117	1.0000	Ordnr
Total		1134.7679	100.0	9.900	0.9117		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 1:20:02 PM
Project : WORK2
Weight : 9.7 mg
Sample : LCS
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B010



Result Table - Calculation Method ESTD

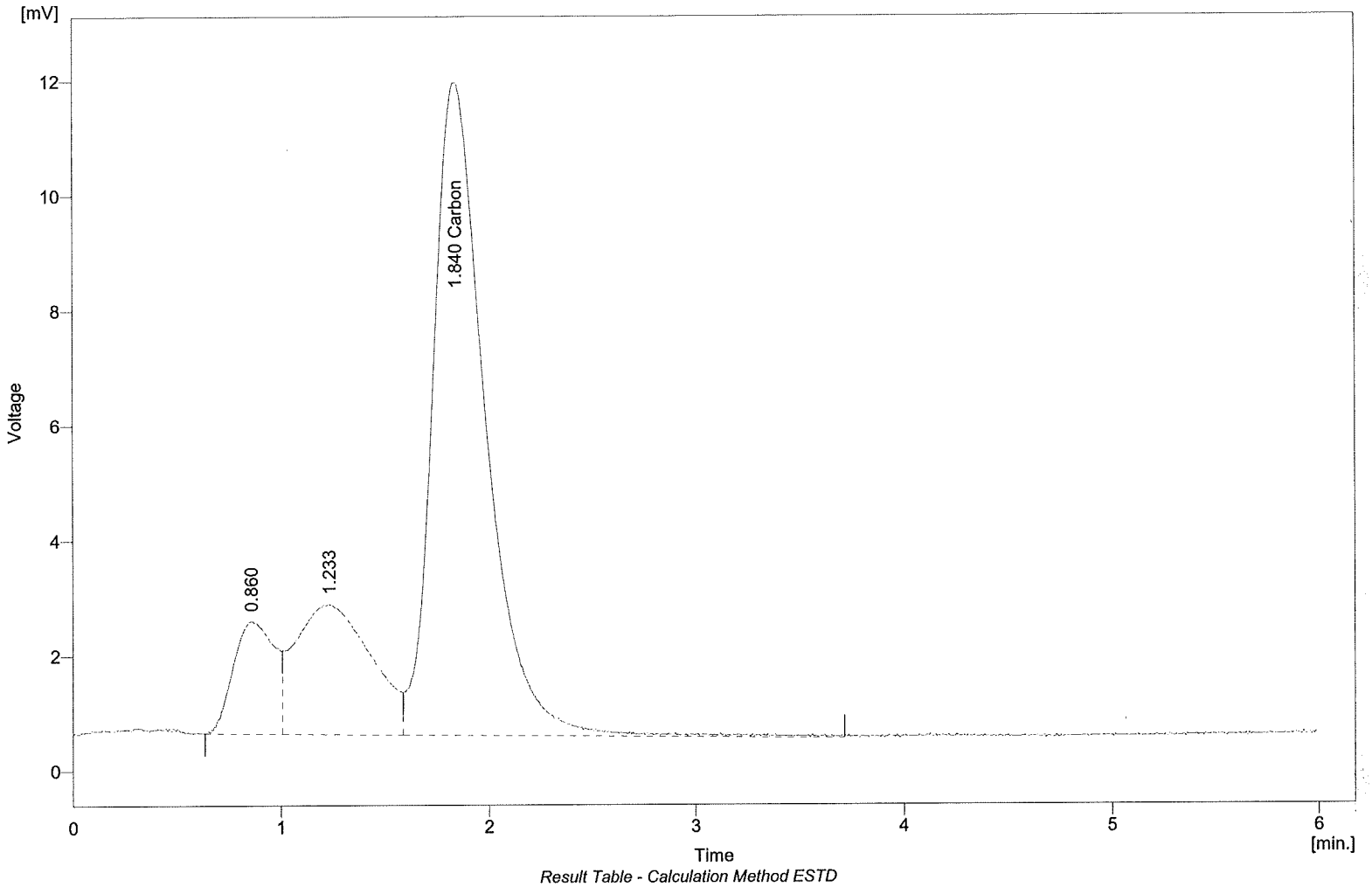
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.833	Carbon	980.2278	90.8	0.087	0.8944	1.0000	Ordnr
Total		1079.6282	100.0	9.700	0.8944		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 1:26:19 PM
Project : WORK2
Weight : 10 mg
Sample : 200-35680-A-3
Calibration : 101916B

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\101916B011

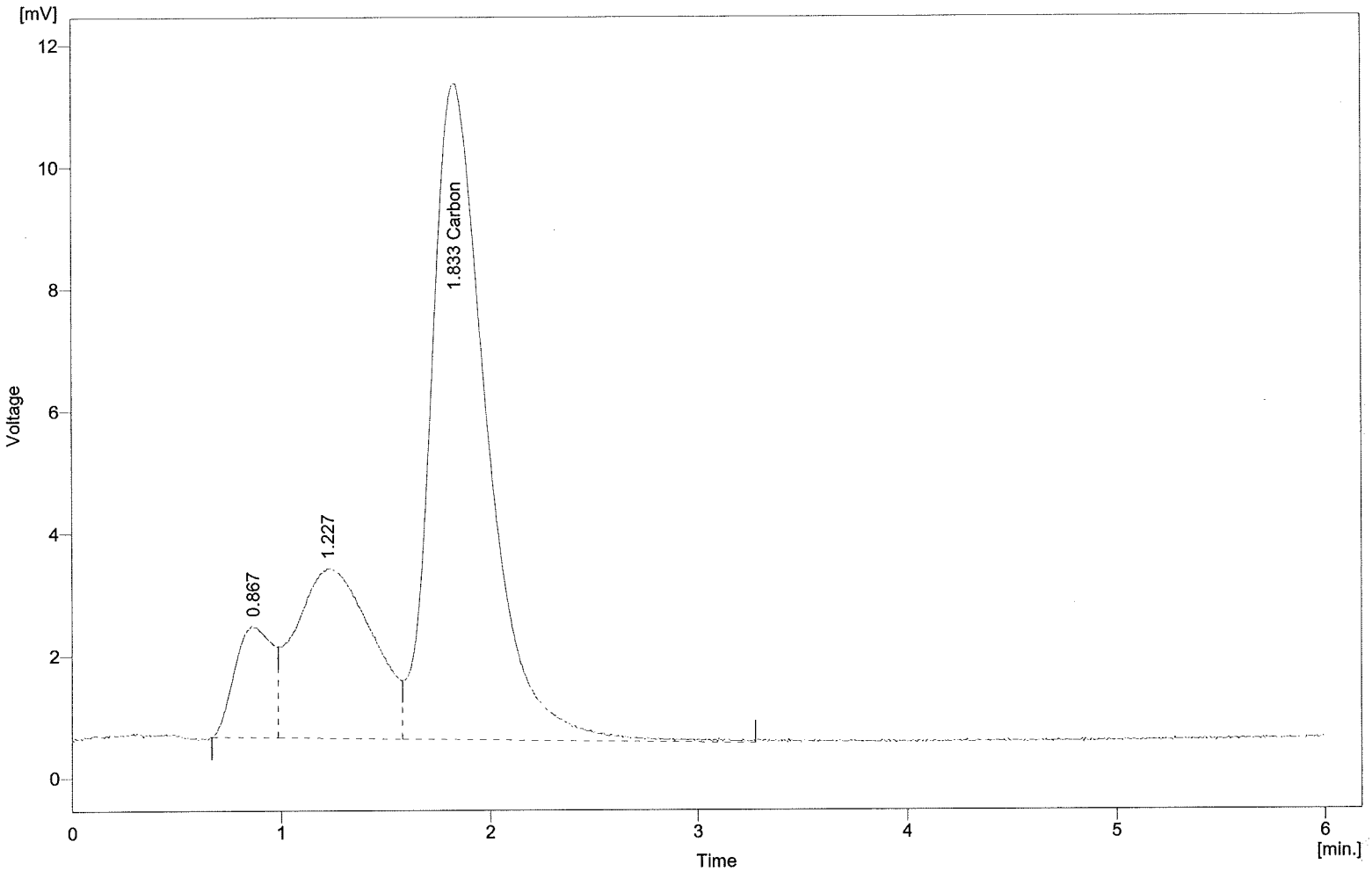


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.840	Carbon	200.6325	70.4	0.014	0.1352	1.0000	Ordnr
Total		284.8443	100.0	10.000	0.1352		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 1:32:36 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 9.2 mg		
Sample	: 200-35700-A-13	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B012
Calibration	: 101916B		

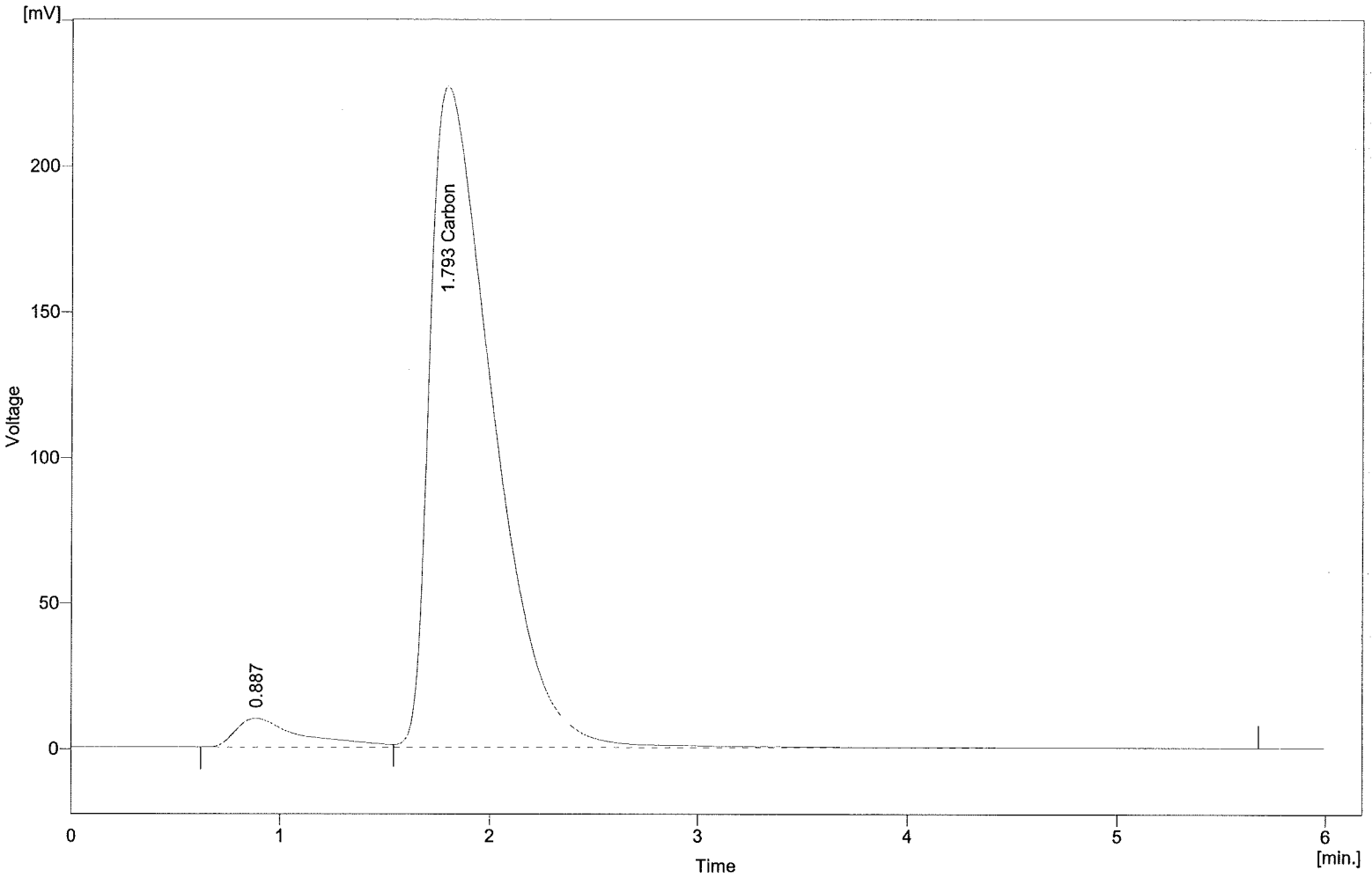


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.833	Carbon	198.5922	67.8	0.013	0.1449	1.0000	Ordnr
Total		292.7679	100.0	9.200	0.1449		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 1:38:54 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 3.7 mg		
Sample	: 480-107724-B-1	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B013
Calibration	: 101916B		

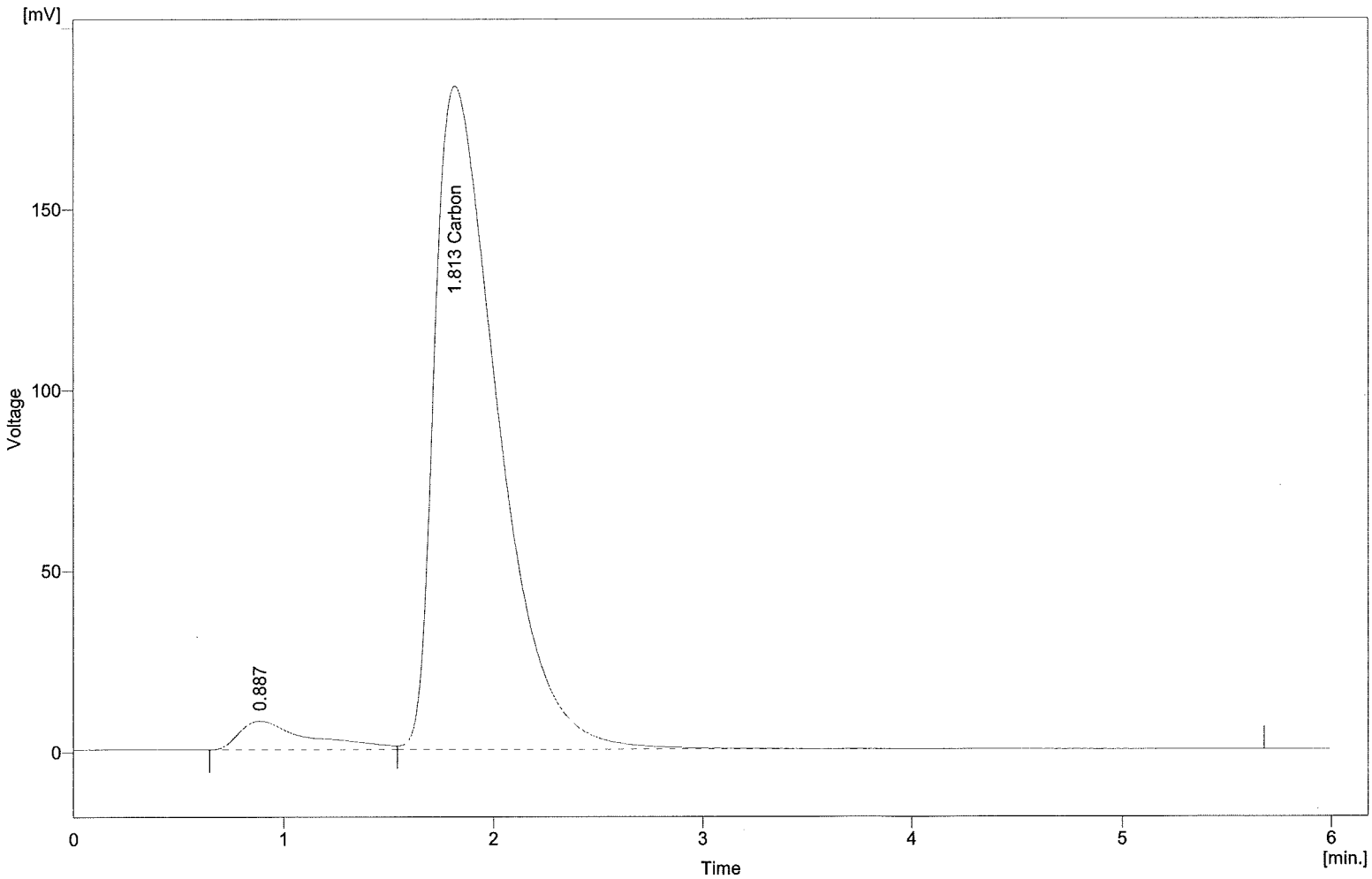


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.793	Carbon	4762.8758	95.7	0.442	11.9482	1.0000	Ordnr
Total		4977.6776	100.0	3.700	11.9482		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 1:45:12 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 4.4 mg		
Sample	: 480-107724-B-2	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B014
Calibration	: 101916B		

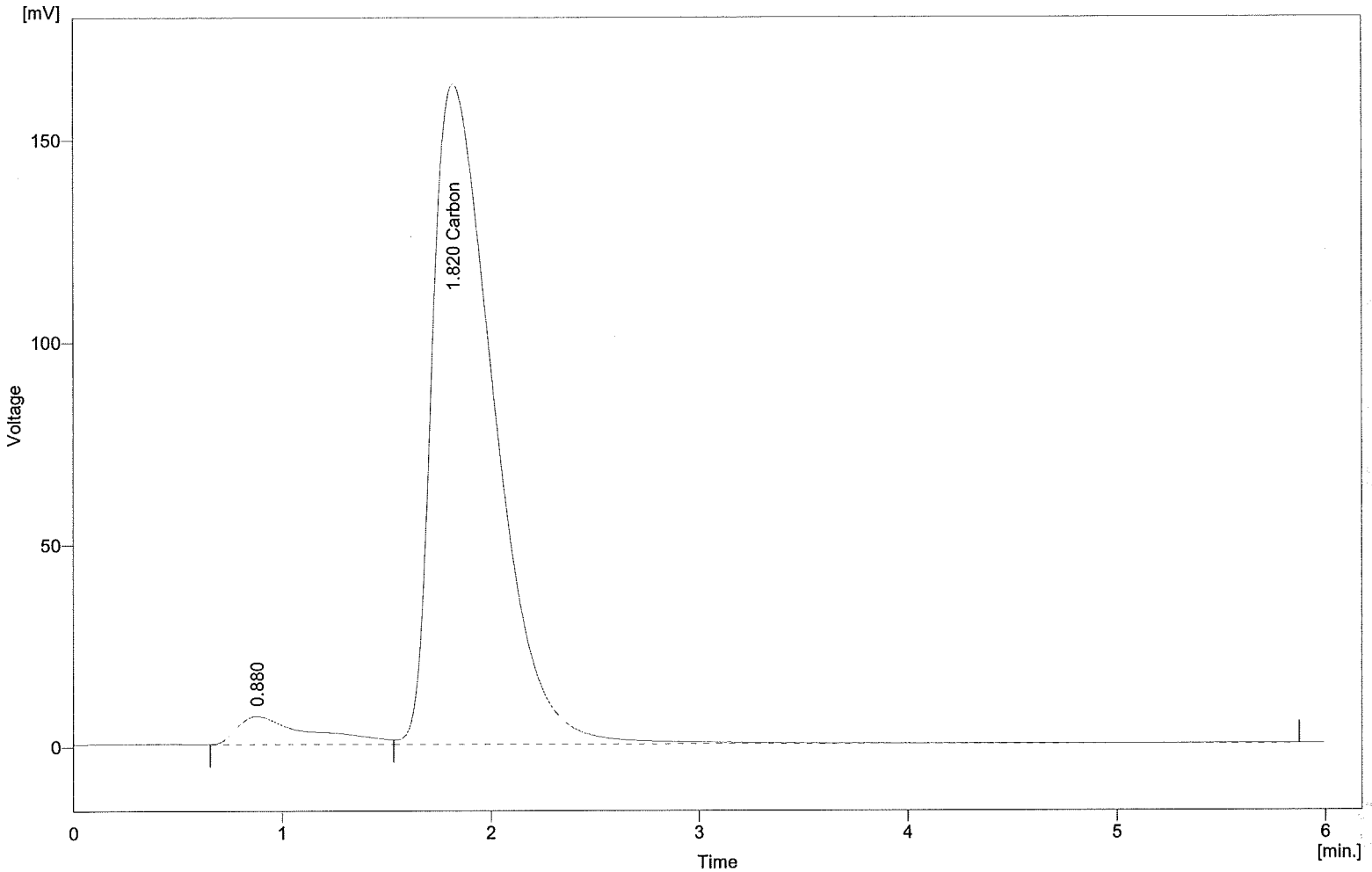


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.813	Carbon	3854.0869	95.4	0.357	8.1072	1.0000	Ordnr
Total		4038.5163	100.0	4.400	8.1072		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 1:51:30 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 3 mg		
Sample	: 480-107724-B-3	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B015
Calibration	: 101916B		

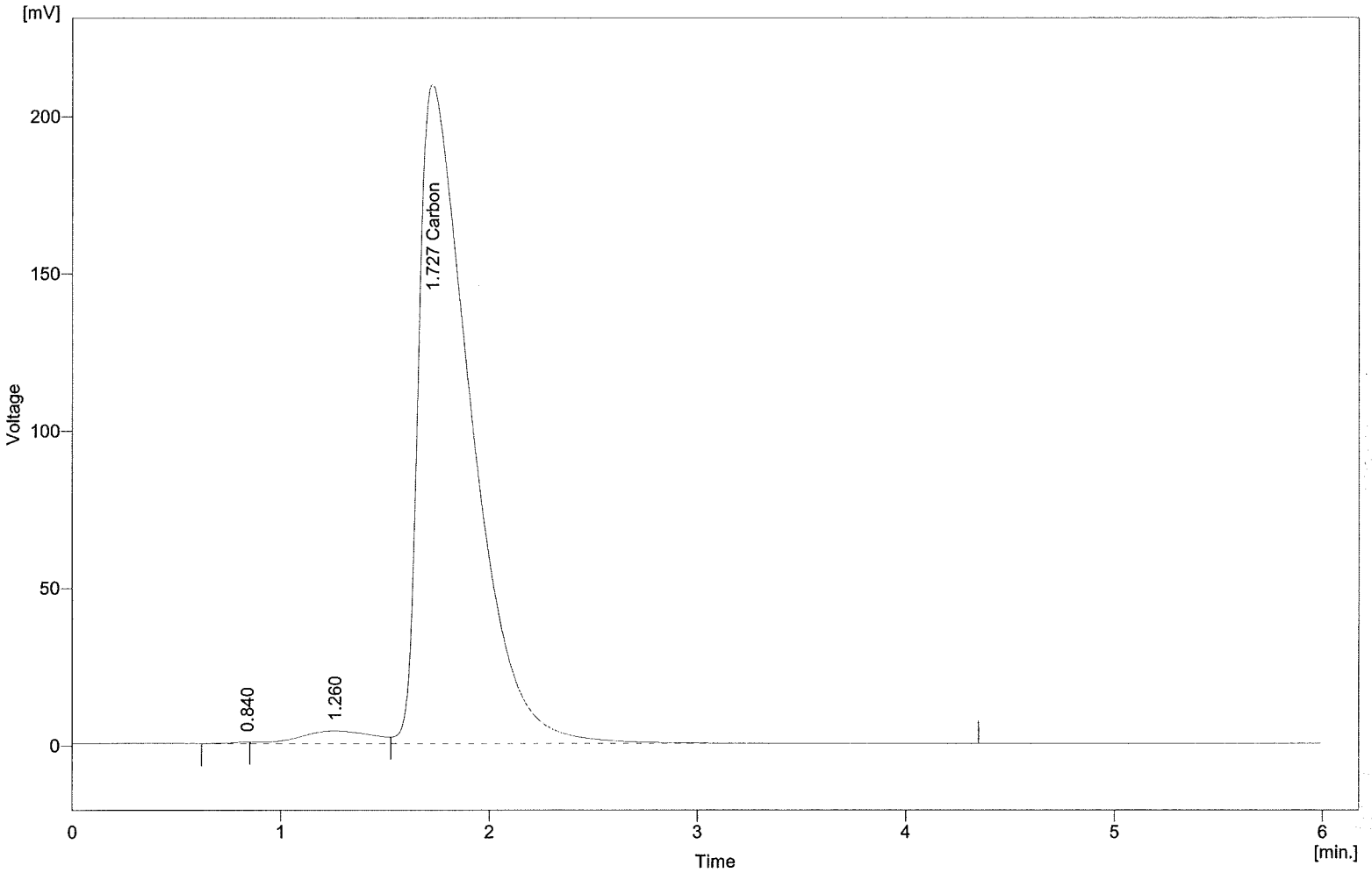


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.820	Carbon	3365.5146	95.2	0.311	10.3607	1.0000	Ordnr
Total		3536.4867	100.0	3.000	10.3607		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 1:57:50 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 10 mg		
Sample	: CCV	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B016
Calibration	: 101916B		

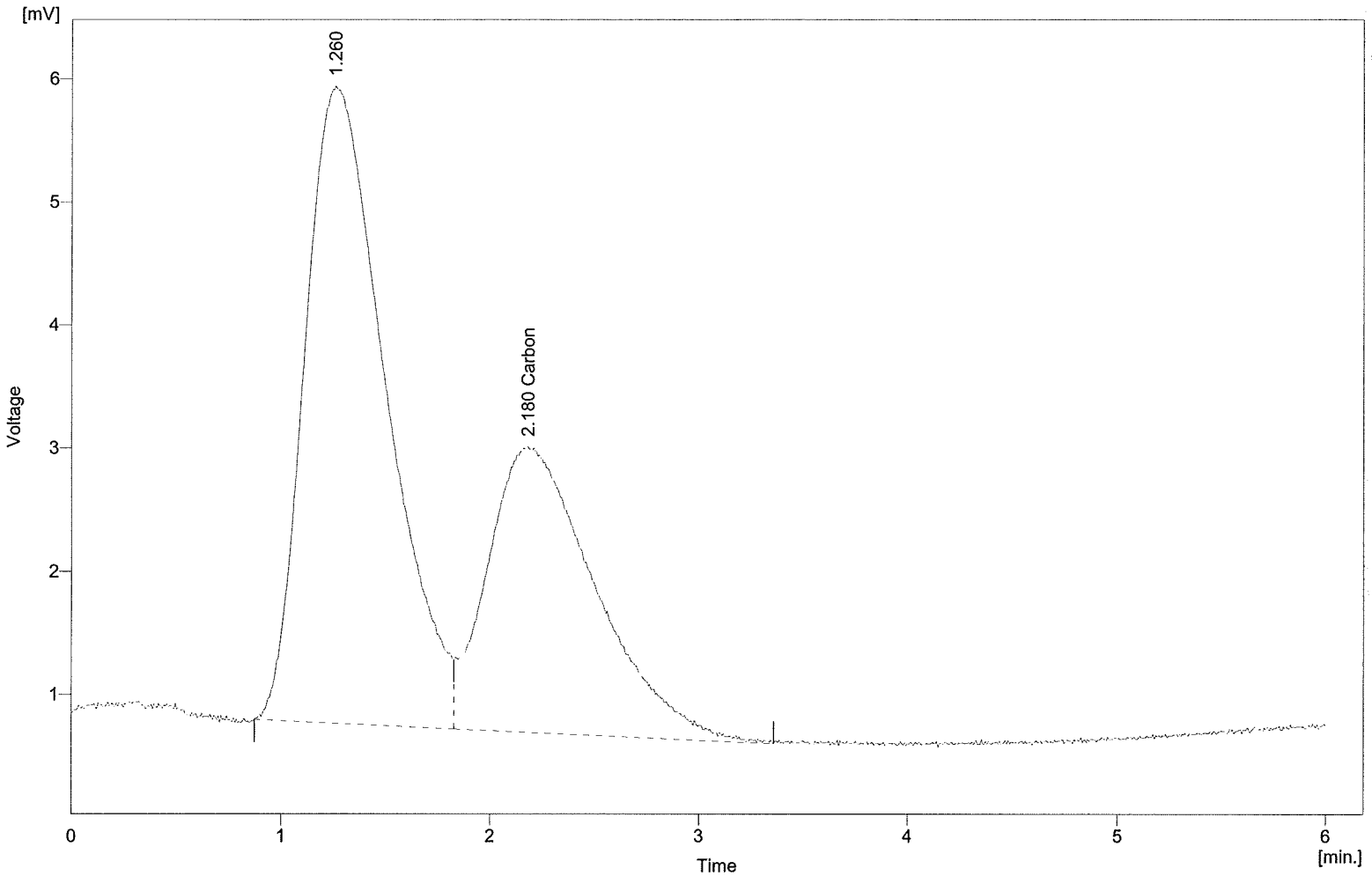


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.727	Carbon	3647.7536	97.4	0.337	3.3733	1.0000	Ordnr
Total		3746.9674	100.0	10.000	3.3733		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 2:04:09 PM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 10 mg		
Sample	: CCB	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916B017
Calibration	: 101916B		



Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
2.180	Carbon	83.3242	37.4	0.003	0.0250	1.0000	Ordnr
Total		222.9451	100.0	10.000	0.0250		

TOC BY LLOYD KAHN

CHANNEL 2

CALIBRATION

Carbon - 1.731 min.

Peak Type : Ordnr

Left Window : 0.3 min

Right Window : 0.6 min

Response Base : Area

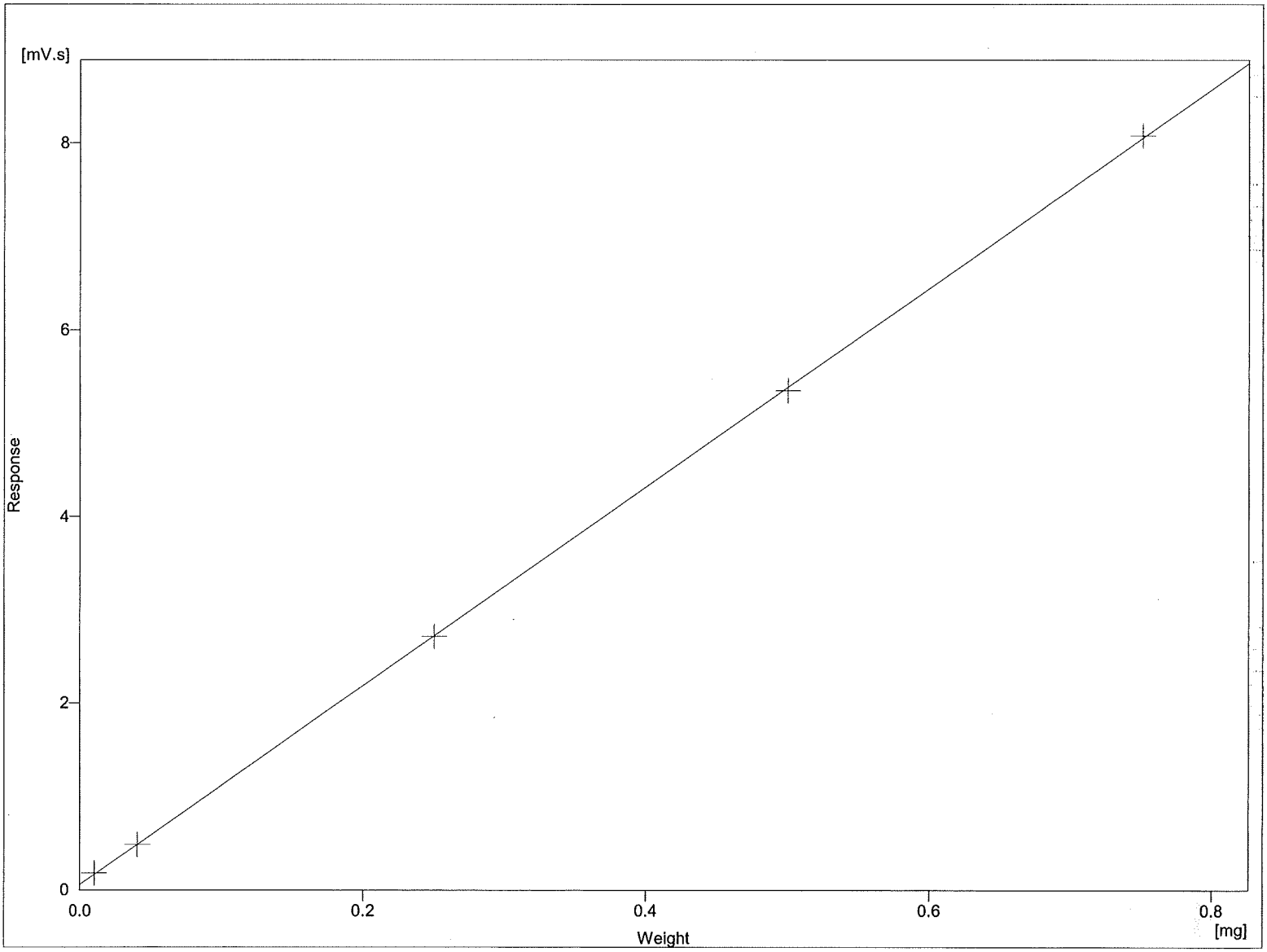
Curve Fit Type : Linear

Zero Type : Zero not used

Subst. Equation : Y = 10645.4882*X + 56.6786

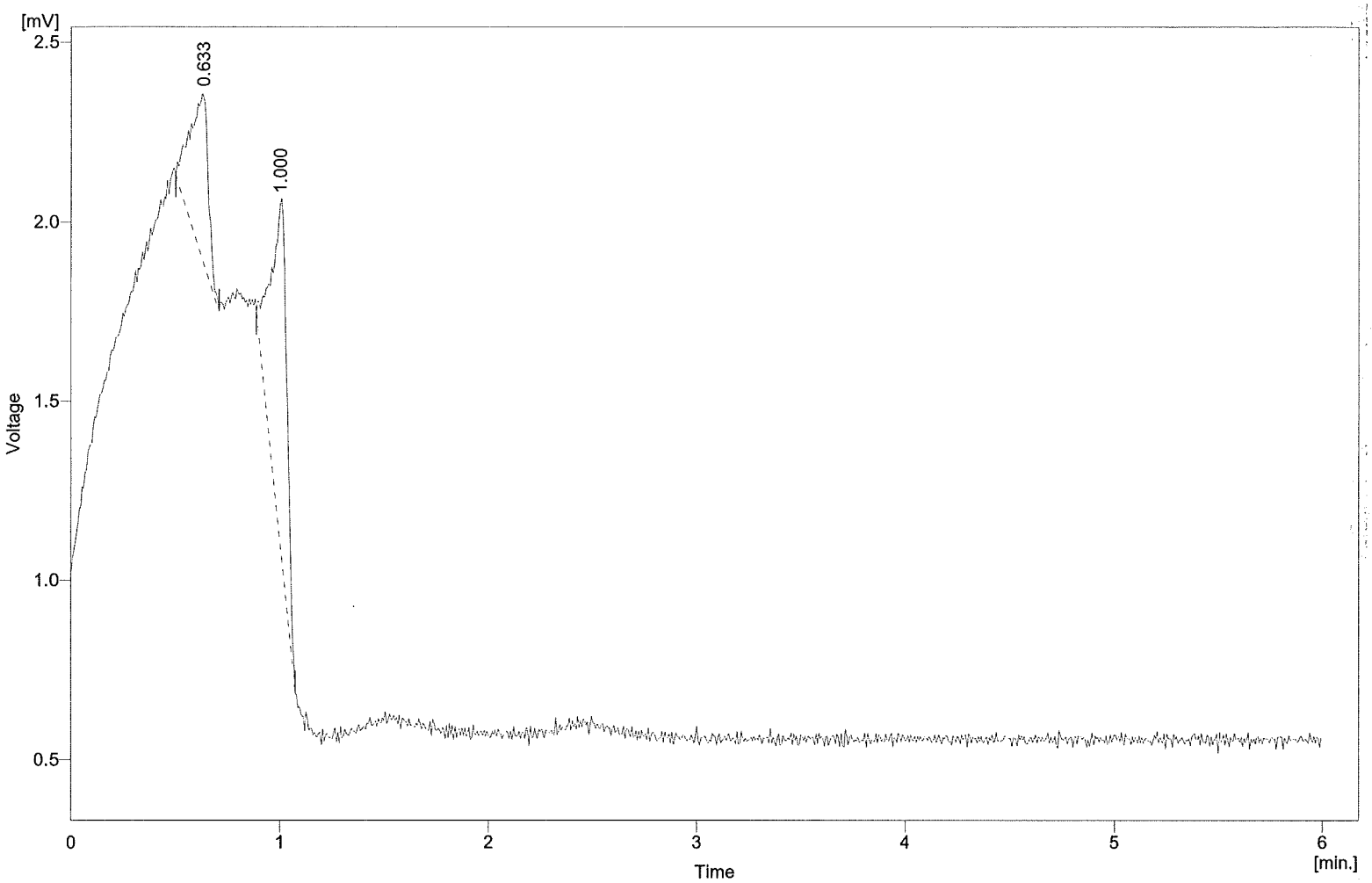
Correlation Coef. : 0.999973

	Response	Weight	Resp. Factor	Used
1	0.000	0.000	0.0000	Yes
2	178.301	0.010	0.0001	Yes
3	485.545	0.040	0.0001	Yes
4	2714.438	0.250	0.0001	Yes
5	5347.997	0.501	0.0001	Yes
6	8077.816	0.751	0.0001	Yes
7	0.000	0.000	0.0000	Yes
8	0.000	0.000	0.0000	Yes
9	0.000	0.000	0.0000	Yes
10	0.000	0.000	0.0000	Yes
11	0.000	0.000	0.0000	Yes
12	0.000	0.000	0.0000	Yes
13	0.000	0.000	0.0000	Yes
14	0.000	0.000	0.0000	Yes
15	0.000	0.000	0.0000	Yes
16	0.000	0.000	0.0000	Yes
17	0.000	0.000	0.0000	Yes
18	0.000	0.000	0.0000	Yes
19	0.000	0.000	0.0000	Yes
20	0.000	0.000	0.0000	Yes



Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 10:10:09 AM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 0 mg		
Sample	: STD 1	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\101916X001
Calibration	: 101916X		



Result Table - Calculation Method ESTD

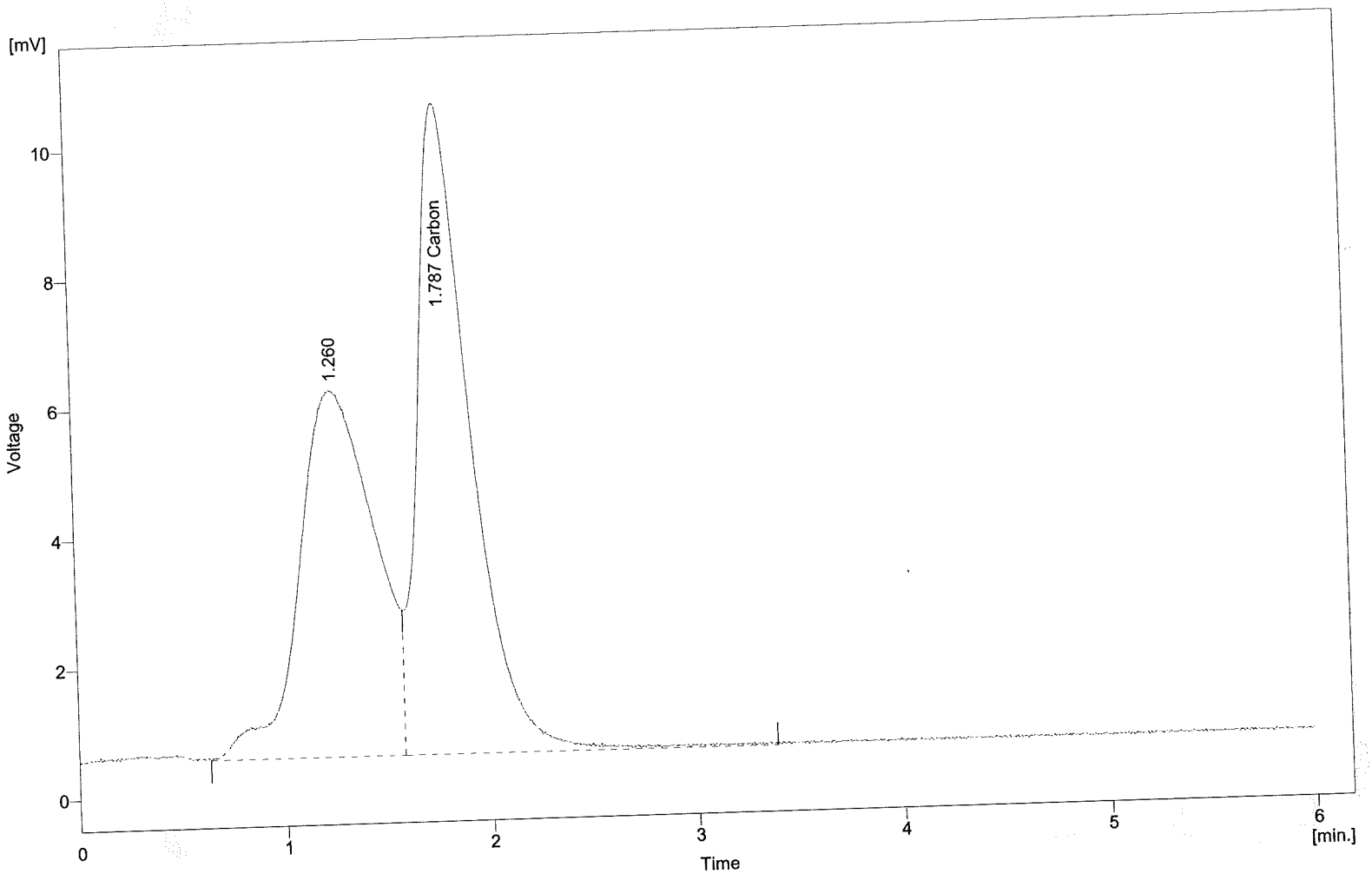
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.747	Carbon						Ordnr
Total		8.1651	100.0	0.000	100.0000		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 10:16:22 AM
Project : WORK2
Weight : 0.0213 mg
Sample : STD 2
Calibration : 101916X

By : None
Style : chromatogram

Chromatogram : 101916X002



Result Table - Calculation Method ESTD

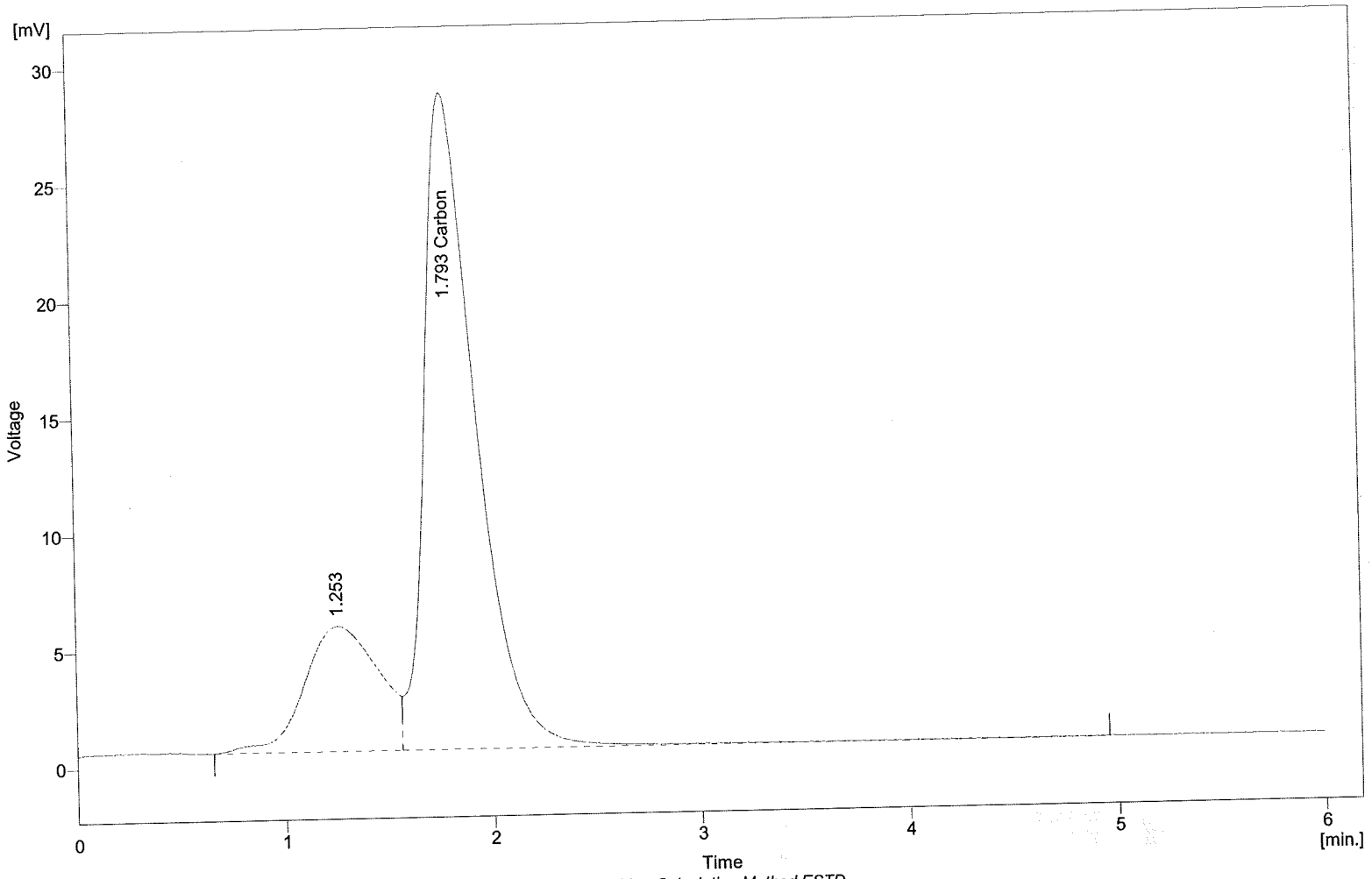
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.787	Carbon	178.3010	55.3	0.010	47.0500	1.0000	Ordnr
Total		322.3950	100.0	0.021	47.0500		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 10:22:34 AM
Project : WORK2
Weight : 0.0851 mg
Sample : STD 3
Calibration : 101916X

By : None
Style : chromatogram

Chromatogram : 101916X003



Result Table - Calculation Method ESTD

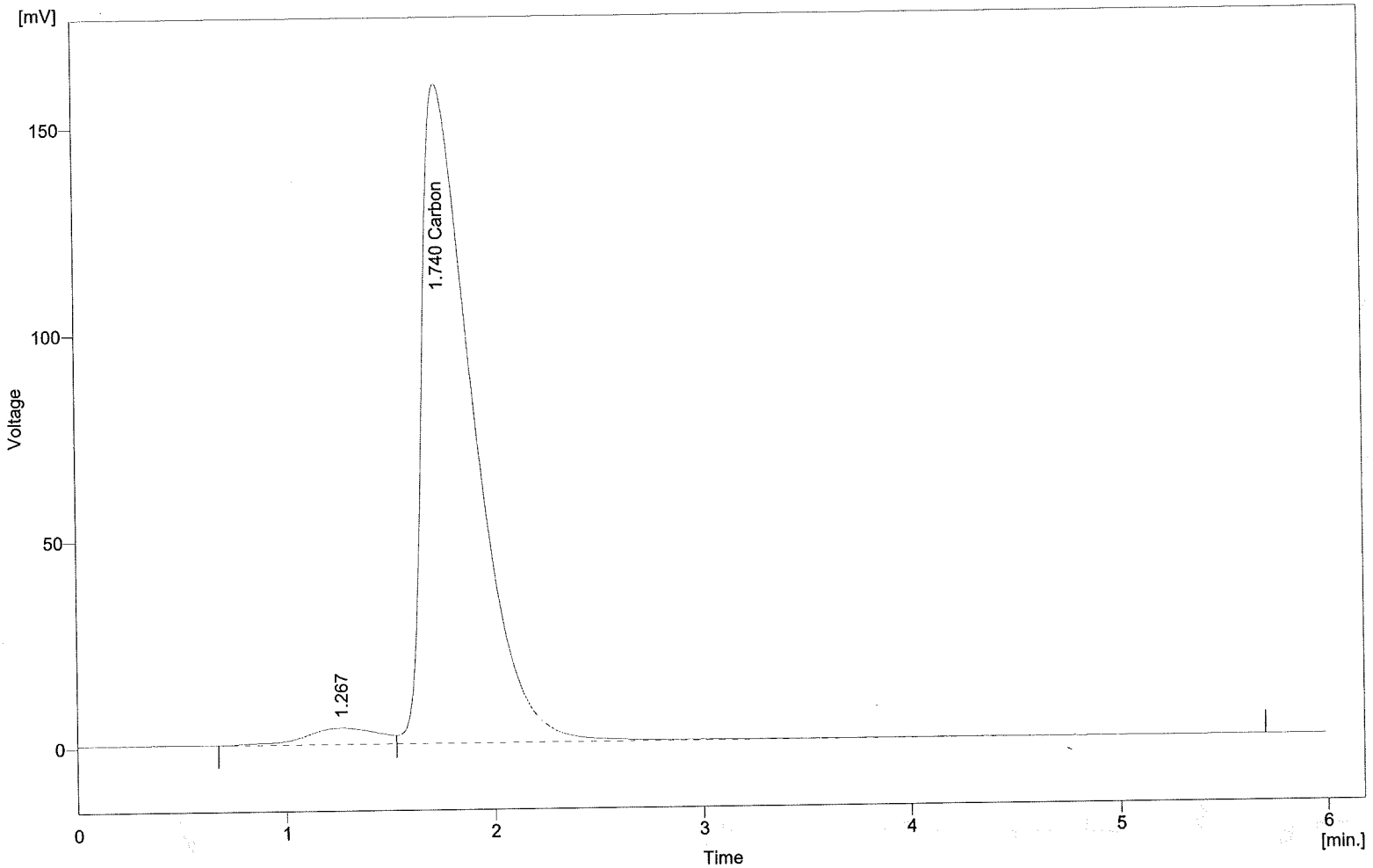
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.793	Carbon	485.5446	78.5	0.040	47.0500	1.0000	Ordnr
Total		618.7080	100.0	0.085	47.0500		

Lloyd Kahn TOC
Instrument #2

Created : 10/19/2016 10:28:48 AM
Project : WORK2
Weight : 0.532 mg
Sample : STD 4
Calibration : 101916X

By : None
Style : chromatogram

Chromatogram : 101916X004

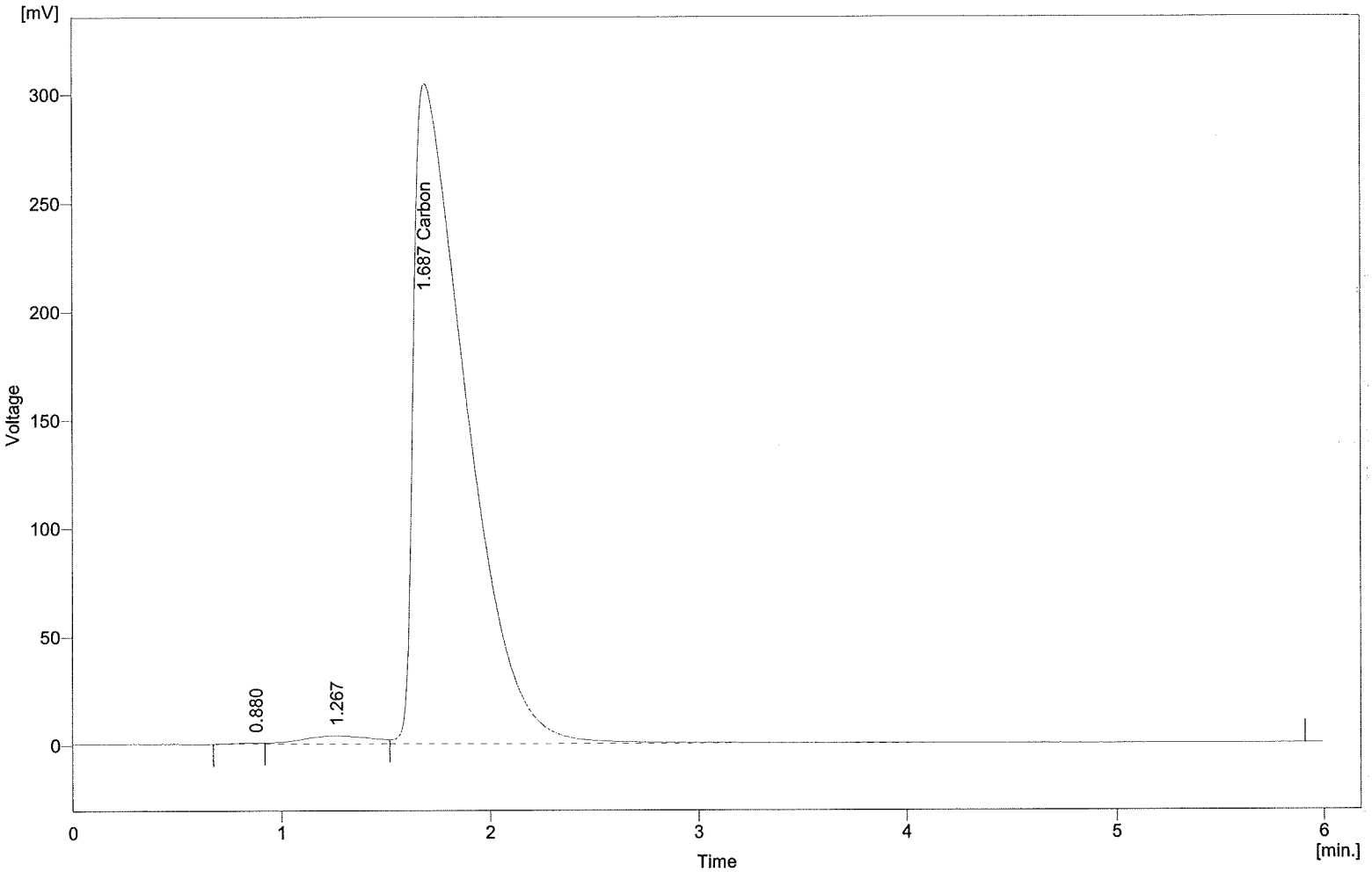


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.740	Carbon	2714.4377	96.5	0.250	47.0622	1.0000	Ordnr
Total		2812.0842	100.0	0.532	47.0622		

Lloyd Kahn TOC
Instrument #2

Created	: 10/19/2016 10:35:03 AM	By	: None
Project	: WORK2	Style	: chromatogram
Weight	: 1.064 mg		
Sample	: STD 5	Chromatogram	: 101916X005
Calibration	: 101916X		

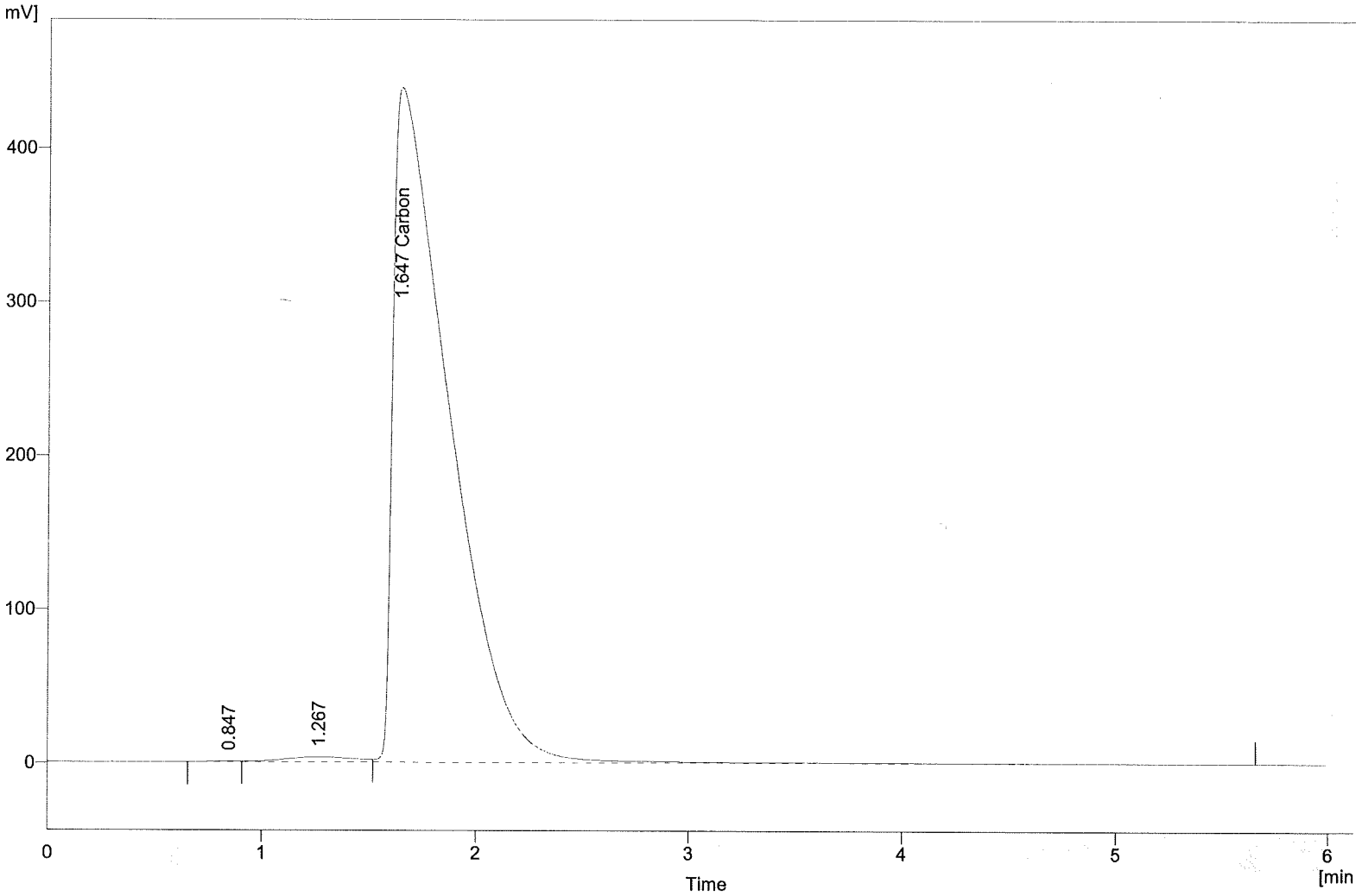


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.687	Carbon	5347.9972	98.3	0.500	47.0324	1.0000	Ordnr
Total		5441.5098	100.0	1.064	47.0324		

Lloyd Kahn TOC
Instrument #2

eated	: 10/19/2016 10:41:17 AM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 1.596 mg		
ample	: STD 6	Chromatogram	: 101916X006
alibration	: 101916X		



Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
1.647	Carbon	8077.8160	99.0	0.753	47.2104	1.0000	Ordnr
Total		8159.1947	100.0	1.596	47.2104		

COVER PAGE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job Number: 200-35700-1

SDG No.: 200-35700-1

Project: Port Ewen DNS Sediment

Client Sample ID	Lab Sample ID
PE1016-P1SCD-01-A-0007IN	200-35700-1
PE1016-P1SCD-01-B-0006IN	200-35700-2
PE1016-P1SCD-01-A-0718IN	200-35700-3
PE1016-P1SCD-02-A-0004IN	200-35700-4
PE1016-P1SCD-02-B-0004IN	200-35700-5
PE1016-P1SCD-03-A-0006IN	200-35700-6
PE1016-P1SCD-03-A-0612IN	200-35700-7
PE1016-P1SCD-03-B-0006IN	200-35700-8
PE1016-P1SCD-11-A-0004IN	200-35700-9
PE1016-P1SCD-11-B-0006IN	200-35700-10
PE1016-P1SCD-12-A-0008IN	200-35700-11
PE1016-P1SCD-12-B-0006IN	200-35700-12
PE1016-P1SCD-13-A-0002IN	200-35700-13
PE1016-P1SCD-13-B-0006IN	200-35700-14
PE1016-P1SCD-13-B-0006IN-D	200-35700-15
PE1016-P1SCD-14-A-0004IN	200-35700-16
PE1016-P1SCD-14-B-0004IN	200-35700-17
PE1016-P1SCD-12-A-0814IN	200-35700-18

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-01-A-0007IN
Lab Sample ID: 200-35700-1
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 14:30
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	0.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	29.6			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	12.5			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	7.5			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	9.6			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	100.0			% Passing			1	D422
	Silt	42.5			%			1	D422
	Clay	27.9			%			1	D422
	Sieve Size #10 - Percent Finer	87.5			% Passing			1	D422
	Sieve Size #20 - Percent Finer	83.4			% Passing			1	D422
	Sieve Size #40 - Percent Finer	80.0			% Passing			1	D422
	Sieve Size #60 - Percent Finer	76.5			% Passing			1	D422
	Sieve Size #80 - Percent Finer	74.4			% Passing			1	D422
	Sieve Size #100 - Percent Finer	73.4			% Passing			1	D422
	Sieve Size #200 - Percent Finer	70.9			% Passing			1	D422
	Sieve Size #230 - Percent Finer	70.4			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	49.0			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	45.1			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	39.4			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	33.6			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	27.9			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	13.9			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	8.7			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-01-B-0006IN
Lab Sample ID: 200-35700-2
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 14:35
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	12.1			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	22.8			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	4.6			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	8.4			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	9.8			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	87.9			% Passing			1	D422
	Silt	36.3			%			1	D422
	Clay	28.8			%			1	D422
	Sieve Size #10 - Percent Finer	83.3			% Passing			1	D422
	Sieve Size #20 - Percent Finer	78.0			% Passing			1	D422
	Sieve Size #40 - Percent Finer	74.9			% Passing			1	D422
	Sieve Size #60 - Percent Finer	71.5			% Passing			1	D422
	Sieve Size #80 - Percent Finer	69.7			% Passing			1	D422
	Sieve Size #100 - Percent Finer	68.5			% Passing			1	D422
	Sieve Size #200 - Percent Finer	65.6			% Passing			1	D422
	Sieve Size #230 - Percent Finer	65.1			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	59.5			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	54.8			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	45.3			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	38.3			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	28.8			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	17.1			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	9.4			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-01-A-0718IN
Lab Sample ID: 200-35700-3
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 14:31
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	0.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	4.6			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	0.0			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	0.9			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	3.7			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	100.0			% Passing			1	D422
	Silt	46.1			%			1	D422
	Clay	49.3			%			1	D422
	Sieve Size #10 - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #20 - Percent Finer	99.6			% Passing			1	D422
	Sieve Size #40 - Percent Finer	99.1			% Passing			1	D422
	Sieve Size #60 - Percent Finer	98.3			% Passing			1	D422
	Sieve Size #80 - Percent Finer	97.8			% Passing			1	D422
	Sieve Size #100 - Percent Finer	97.4			% Passing			1	D422
	Sieve Size #200 - Percent Finer	95.8			% Passing			1	D422
	Sieve Size #230 - Percent Finer	95.4			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	76.3			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	73.0			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	66.2			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	56.1			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	49.3			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	34.2			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	25.3			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-02-A-0004IN
Lab Sample ID: 200-35700-4
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 14:00
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	0.4			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	10.6			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	0.5			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	4.0			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	6.1			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	99.6			% Passing			1	D422
	Silt	41.7			%			1	D422
	Clay	47.3			%			1	D422
	Sieve Size #10 - Percent Finer	99.1			% Passing			1	D422
	Sieve Size #20 - Percent Finer	96.5			% Passing			1	D422
	Sieve Size #40 - Percent Finer	95.1			% Passing			1	D422
	Sieve Size #60 - Percent Finer	93.6			% Passing			1	D422
	Sieve Size #80 - Percent Finer	92.4			% Passing			1	D422
	Sieve Size #100 - Percent Finer	91.4			% Passing			1	D422
	Sieve Size #200 - Percent Finer	89.2			% Passing			1	D422
	Sieve Size #230 - Percent Finer	89.0			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	75.7			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	67.6			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	63.5			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	55.4			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	47.3			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	37.1			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	24.4			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-02-B-0004IN
Lab Sample ID: 200-35700-5
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 14:10
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	8.6			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	35.0			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	7.9			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	13.4			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	13.7			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	91.4			% Passing			1	D422
	Silt	35.0			%			1	D422
	Clay	21.4			%			1	D422
	Sieve Size #10 - Percent Finer	83.5			% Passing			1	D422
	Sieve Size #20 - Percent Finer	76.4			% Passing			1	D422
	Sieve Size #40 - Percent Finer	70.1			% Passing			1	D422
	Sieve Size #60 - Percent Finer	65.0			% Passing			1	D422
	Sieve Size #80 - Percent Finer	62.5			% Passing			1	D422
	Sieve Size #100 - Percent Finer	60.9			% Passing			1	D422
	Sieve Size #200 - Percent Finer	57.1			% Passing			1	D422
	Sieve Size #230 - Percent Finer	56.4			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	51.5			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	46.9			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	39.9			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	30.7			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	21.4			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	14.5			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	6.9			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-03-A-0006IN
Lab Sample ID: 200-35700-6
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 13:00
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	12.6			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	40.3			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	9.8			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	15.8			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	14.7			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	87.4			% Passing			1	D422
	Silt	28.6			%			1	D422
	Clay	18.5			%			1	D422
	Sieve Size #10 - Percent Finer	77.6			% Passing			1	D422
	Sieve Size #20 - Percent Finer	68.2			% Passing			1	D422
	Sieve Size #40 - Percent Finer	61.8			% Passing			1	D422
	Sieve Size #60 - Percent Finer	56.6			% Passing			1	D422
	Sieve Size #80 - Percent Finer	54.0			% Passing			1	D422
	Sieve Size #100 - Percent Finer	52.2			% Passing			1	D422
	Sieve Size #200 - Percent Finer	47.6			% Passing			1	D422
	Sieve Size #230 - Percent Finer	47.1			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	44.1			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	39.0			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	28.8			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	23.7			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	18.5			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	10.9			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	5.1			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-03-A-0612IN
Lab Sample ID: 200-35700-7
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 13:01
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	0.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	3.6			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	1.4			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	0.3			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	1.9			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	100.0			% Passing			1	D422
	Silt	53.2			%			1	D422
	Clay	43.2			%			1	D422
	Sieve Size #10 - Percent Finer	98.6			% Passing			1	D422
	Sieve Size #20 - Percent Finer	98.3			% Passing			1	D422
	Sieve Size #40 - Percent Finer	98.3			% Passing			1	D422
	Sieve Size #60 - Percent Finer	98.1			% Passing			1	D422
	Sieve Size #80 - Percent Finer	97.9			% Passing			1	D422
	Sieve Size #100 - Percent Finer	97.7			% Passing			1	D422
	Sieve Size #200 - Percent Finer	96.5			% Passing			1	D422
	Sieve Size #230 - Percent Finer	96.4			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	79.1			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	72.3			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	61.1			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	49.9			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	43.2			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	32.0			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	24.7			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-03-B-0006IN
Lab Sample ID: 200-35700-8
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 13:10
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	7.2			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	28.4			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	5.5			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	7.0			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	15.9			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	92.8			% Passing			1	D422
	Silt	47.2			%			1	D422
	Clay	17.2			%			1	D422
	Sieve Size #10 - Percent Finer	87.3			% Passing			1	D422
	Sieve Size #20 - Percent Finer	83.1			% Passing			1	D422
	Sieve Size #40 - Percent Finer	80.3			% Passing			1	D422
	Sieve Size #60 - Percent Finer	76.6			% Passing			1	D422
	Sieve Size #80 - Percent Finer	73.7			% Passing			1	D422
	Sieve Size #100 - Percent Finer	71.2			% Passing			1	D422
	Sieve Size #200 - Percent Finer	65.1			% Passing			1	D422
	Sieve Size #230 - Percent Finer	64.4			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	45.7			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	41.0			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	31.5			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	24.4			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	17.2			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	10.1			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	7.1			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-11-A-0004IN
Lab Sample ID: 200-35700-9
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 10:30
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	4.9			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	51.1			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	15.8			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	19.9			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	15.4			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	95.1			% Passing			1	D422
	Silt	30.6			%			1	D422
	Clay	13.4			%			1	D422
	Sieve Size #10 - Percent Finer	79.3			% Passing			1	D422
	Sieve Size #20 - Percent Finer	69.0			% Passing			1	D422
	Sieve Size #40 - Percent Finer	59.4			% Passing			1	D422
	Sieve Size #60 - Percent Finer	50.5			% Passing			1	D422
	Sieve Size #80 - Percent Finer	47.9			% Passing			1	D422
	Sieve Size #100 - Percent Finer	46.8			% Passing			1	D422
	Sieve Size #200 - Percent Finer	44.3			% Passing			1	D422
	Sieve Size #230 - Percent Finer	44.0			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	28.2			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	24.5			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	20.8			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	17.1			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	13.4			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	9.7			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	5.5			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-11-B-0006IN
Lab Sample ID: 200-35700-10
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 10:40
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	4.4			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	34.5			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	3.4			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	12.4			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	18.7			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	95.6			% Passing			1	D422
	Silt	36.6			%			1	D422
	Clay	24.5			%			1	D422
	Sieve Size #10 - Percent Finer	92.2			% Passing			1	D422
	Sieve Size #20 - Percent Finer	84.0			% Passing			1	D422
	Sieve Size #40 - Percent Finer	79.8			% Passing			1	D422
	Sieve Size #60 - Percent Finer	72.0			% Passing			1	D422
	Sieve Size #80 - Percent Finer	67.7			% Passing			1	D422
	Sieve Size #100 - Percent Finer	65.7			% Passing			1	D422
	Sieve Size #200 - Percent Finer	61.7			% Passing			1	D422
	Sieve Size #230 - Percent Finer	61.1			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	52.3			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	46.7			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	37.5			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	31.9			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	24.5			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	17.1			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	9.3			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-12-A-0008IN
Lab Sample ID: 200-35700-11
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 09:20
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	7.7			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	46.0			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	3.4			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	10.4			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	32.2			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	92.3			% Passing			1	D422
	Silt	25.3			%			1	D422
	Clay	21.0			%			1	D422
	Sieve Size #10 - Percent Finer	88.9			% Passing			1	D422
	Sieve Size #20 - Percent Finer	84.2			% Passing			1	D422
	Sieve Size #40 - Percent Finer	78.5			% Passing			1	D422
	Sieve Size #60 - Percent Finer	69.7			% Passing			1	D422
	Sieve Size #80 - Percent Finer	62.0			% Passing			1	D422
	Sieve Size #100 - Percent Finer	57.1			% Passing			1	D422
	Sieve Size #200 - Percent Finer	47.6			% Passing			1	D422
	Sieve Size #230 - Percent Finer	46.3			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	45.9			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	39.1			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	32.3			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	25.5			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	21.0			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	14.2			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	9.1			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-12-B-0006IN
Lab Sample ID: 200-35700-12
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 09:30
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	5.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	28.0			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	3.1			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	10.1			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	14.8			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	95.0			% Passing			1	D422
	Silt	34.8			%			1	D422
	Clay	32.2			%			1	D422
	Sieve Size #10 - Percent Finer	91.9			% Passing			1	D422
	Sieve Size #20 - Percent Finer	86.0			% Passing			1	D422
	Sieve Size #40 - Percent Finer	81.8			% Passing			1	D422
	Sieve Size #60 - Percent Finer	76.2			% Passing			1	D422
	Sieve Size #80 - Percent Finer	73.3			% Passing			1	D422
	Sieve Size #100 - Percent Finer	71.6			% Passing			1	D422
	Sieve Size #200 - Percent Finer	67.7			% Passing			1	D422
	Sieve Size #230 - Percent Finer	67.0			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	60.0			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	54.0			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	46.1			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	40.2			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	32.2			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	26.3			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	17.8			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-13-A-0002IN
Lab Sample ID: 200-35700-13
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 08:55
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	0.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	10.8			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	0.0			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	5.1			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	5.7			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	100.0			% Passing			1	D422
	Silt	48.9			%			1	D422
	Clay	40.3			%			1	D422
	Sieve Size #10 - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #20 - Percent Finer	97.3			% Passing			1	D422
	Sieve Size #40 - Percent Finer	94.9			% Passing			1	D422
	Sieve Size #60 - Percent Finer	92.8			% Passing			1	D422
	Sieve Size #80 - Percent Finer	91.8			% Passing			1	D422
	Sieve Size #100 - Percent Finer	91.2			% Passing			1	D422
	Sieve Size #200 - Percent Finer	89.5			% Passing			1	D422
	Sieve Size #230 - Percent Finer	89.2			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	73.8			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	66.1			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	58.3			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	49.3			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	40.3			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	27.4			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	15.8			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-13-B-0006IN
Lab Sample ID: 200-35700-14
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 09:05
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	11.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	31.8			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	3.2			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	13.8			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	14.8			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	89.0			% Passing			1	D422
	Silt	50.4			%			1	D422
	Clay	6.8			%			1	D422
	Sieve Size #10 - Percent Finer	85.8			% Passing			1	D422
	Sieve Size #20 - Percent Finer	75.7			% Passing			1	D422
	Sieve Size #40 - Percent Finer	72.0			% Passing			1	D422
	Sieve Size #60 - Percent Finer	67.9			% Passing			1	D422
	Sieve Size #80 - Percent Finer	65.4			% Passing			1	D422
	Sieve Size #100 - Percent Finer	63.6			% Passing			1	D422
	Sieve Size #200 - Percent Finer	58.1			% Passing			1	D422
	Sieve Size #230 - Percent Finer	57.2			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	30.8			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	24.8			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	21.8			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	12.8			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	6.8			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	0.8			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	0.8			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-13-B-0006IN-D
Lab Sample ID: 200-35700-15
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 09:06
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	5.6			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	33.9			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	4.6			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	13.0			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	16.3			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	94.4			% Passing			1	D422
	Silt	57.3			%			1	D422
	Clay	3.2			%			1	D422
	Sieve Size #10 - Percent Finer	89.8			% Passing			1	D422
	Sieve Size #20 - Percent Finer	80.8			% Passing			1	D422
	Sieve Size #40 - Percent Finer	76.8			% Passing			1	D422
	Sieve Size #60 - Percent Finer	72.2			% Passing			1	D422
	Sieve Size #80 - Percent Finer	69.5			% Passing			1	D422
	Sieve Size #100 - Percent Finer	67.6			% Passing			1	D422
	Sieve Size #200 - Percent Finer	61.6			% Passing			1	D422
	Sieve Size #230 - Percent Finer	60.5			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	23.9			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	23.9			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	18.7			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	8.4			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	3.2			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	0.6			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	0.6			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-14-A-0004IN
Lab Sample ID: 200-35700-16
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 08:30
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	3.5			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	44.2			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	5.7			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	13.1			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	25.4			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	96.5			% Passing			1	D422
	Silt	42.9			%			1	D422
	Clay	9.4			%			1	D422
	Sieve Size #10 - Percent Finer	90.8			% Passing			1	D422
	Sieve Size #20 - Percent Finer	83.2			% Passing			1	D422
	Sieve Size #40 - Percent Finer	77.7			% Passing			1	D422
	Sieve Size #60 - Percent Finer	67.5			% Passing			1	D422
	Sieve Size #80 - Percent Finer	61.8			% Passing			1	D422
	Sieve Size #100 - Percent Finer	59.1			% Passing			1	D422
	Sieve Size #200 - Percent Finer	53.1			% Passing			1	D422
	Sieve Size #230 - Percent Finer	52.3			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	29.2			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	24.8			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	20.4			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	16.0			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	9.4			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	7.2			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	0.6			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-14-B-0004IN
Lab Sample ID: 200-35700-17
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 08:40
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	7.8			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	40.2			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	6.3			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	11.5			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	22.4			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	92.2			% Passing			1	D422
	Silt	40.0			%			1	D422
	Clay	12.0			%			1	D422
	Sieve Size #10 - Percent Finer	85.9			% Passing			1	D422
	Sieve Size #20 - Percent Finer	79.1			% Passing			1	D422
	Sieve Size #40 - Percent Finer	74.4			% Passing			1	D422
	Sieve Size #60 - Percent Finer	65.7			% Passing			1	D422
	Sieve Size #80 - Percent Finer	60.9			% Passing			1	D422
	Sieve Size #100 - Percent Finer	58.3			% Passing			1	D422
	Sieve Size #200 - Percent Finer	52.8			% Passing			1	D422
	Sieve Size #230 - Percent Finer	52.0			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	33.2			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	29.4			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	21.7			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	15.9			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	12.0			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	6.3			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	0.5			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-12-A-0814IN
Lab Sample ID: 200-35700-18
Lab Name: TestAmerica Burlington
Job No.: 200-35700-1
SDG ID.: 200-35700-1
Matrix: Sediment
Date Sampled: 10/12/2016 09:21
Reporting Basis: WET
Date Received: 10/13/2016 12:40

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	0.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	3.6			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	0.0			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	0.3			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	3.3			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	100.0			% Passing			1	D422
	Silt	59.9			%			1	D422
	Clay	36.5			%			1	D422
	Sieve Size #10 - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #20 - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #40 - Percent Finer	99.7			% Passing			1	D422
	Sieve Size #60 - Percent Finer	99.1			% Passing			1	D422
	Sieve Size #80 - Percent Finer	98.7			% Passing			1	D422
	Sieve Size #100 - Percent Finer	98.4			% Passing			1	D422
	Sieve Size #200 - Percent Finer	96.8			% Passing			1	D422
	Sieve Size #230 - Percent Finer	96.4			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	64.8			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	61.7			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	52.3			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	46.0			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	36.5			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	28.7			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	17.7			% Passing			1	D422

6-IN
DUPLICATE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Matrix: Sediment

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
Batch ID: 110554 Date: 10/23/2016 18:09								
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Gravel	5.0	%			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Gravel	1.1	%	128	50	F3
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Sieve Size 2 inch - Percent Finer	100.0	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Sieve Size 2 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Sand	28.0	%			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Sand	28.2	%	0.7	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Sieve Size 1.5 inch - Percent Finer	100.0	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Sieve Size 1.5 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Coarse Sand	3.1	%			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Coarse Sand	3.8	%	20	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Sieve Size 1 inch - Percent Finer	100.0	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Sieve Size 1 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Medium Sand	10.1	%			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Medium Sand	11.0	%	9	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Sieve Size 0.75 inch - Percent Finer	100.0	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Sieve Size 0.75 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Fine Sand	14.8	%			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Fine Sand	13.4	%	10	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Sieve Size 0.375 inch - Percent Finer	100.0	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Sieve Size 0.375 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Sieve Size #4 - Percent Finer	95.0	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Sieve Size #4 - Percent Finer	98.9	% Passing	4	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Silt	34.8	%			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Silt	37.2	%	7	50	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

6-IN
DUPLICATE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Matrix: Sediment

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Clay	32.2	%			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Clay	33.5	%	4	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Sieve Size #10 - Percent Finer	91.9	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Sieve Size #10 - Percent Finer	95.1	% Passing	3	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Sieve Size #20 - Percent Finer	86.0	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Sieve Size #20 - Percent Finer	88.4	% Passing	3	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Sieve Size #40 - Percent Finer	81.8	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Sieve Size #40 - Percent Finer	84.1	% Passing	3	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Sieve Size #60 - Percent Finer	76.2	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Sieve Size #60 - Percent Finer	78.9	% Passing	3	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Sieve Size #80 - Percent Finer	73.3	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Sieve Size #80 - Percent Finer	76.3	% Passing	4	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Sieve Size #100 - Percent Finer	71.6	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Sieve Size #100 - Percent Finer	74.8	% Passing	4	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Sieve Size #200 - Percent Finer	67.7	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Sieve Size #200 - Percent Finer	71.2	% Passing	5	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Sieve Size #230 - Percent Finer	67.0	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Sieve Size #230 - Percent Finer	70.7	% Passing	5	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Hydrometer Reading 1 - Percent Finer	60.0	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Hydrometer Reading 1 - Percent Finer	60.2	% Passing	0.3	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Hydrometer Reading 2 - Percent Finer	54.0	% Passing			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

6-IN
DUPLICATE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Matrix: Sediment

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Hydrometer Reading 2 - Percent Finer	52.0	% Passing	4	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Hydrometer Reading 3 - Percent Finer	46.1	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Hydrometer Reading 3 - Percent Finer	45.8	% Passing	0.7	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Hydrometer Reading 4 - Percent Finer	40.2	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Hydrometer Reading 4 - Percent Finer	39.6	% Passing	2	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Hydrometer Reading 5 - Percent Finer	32.2	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Hydrometer Reading 5 - Percent Finer	33.5	% Passing	4	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Hydrometer Reading 6 - Percent Finer	26.3	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Hydrometer Reading 6 - Percent Finer	25.2	% Passing	4	50	
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12	Hydrometer Reading 7 - Percent Finer	17.8	% Passing			
D422	PE1016-P1SCD-12-B-0006IN	200-35700-12 DU	Hydrometer Reading 7 - Percent Finer	16.5	% Passing	8	50	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

GEOTECHNICAL BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110554 Batch Start Date: 10/18/16 14:52 Batch Analyst: Pham, Vu T

Batch Method: D422 Batch End Date: 10/28/16 13:51

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	AnalysisComment				
200-35700-B-1	PE1016-P1SCD-01-A-0007IN	D422	T	94.22 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-2	PE1016-P1SCD-01-B-0006IN	D422	T	86.01 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-3	PE1016-P1SCD-01-A-0718IN	D422	T	65.17 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-4	PE1016-P1SCD-02-A-0004IN	D422	T	73.7 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-5	PE1016-P1SCD-02-B-0004IN	D422	T	76.52 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-6	PE1016-P1SCD-03-A-0006IN	D422	T	76.02 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-7	PE1016-P1SCD-03-A-0612IN	D422	T	47.74 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-8	PE1016-P1SCD-03-B-0006IN	D422	T	75.75 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-9	PE1016-P1SCD-11-A-0004IN	D422	T	81.36 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-10	PE1016-P1SCD-11-B-0006IN	D422	T	94.01 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-11	PE1016-P1SCD-12-A-0008IN	D422	T	101.93 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-12	PE1016-P1SCD-12-B-0006IN	D422	T	86.61 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-12 DU	PE1016-P1SCD-12-B-0006IN	D422	T	78.08 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-13	PE1016-P1SCD-13-A-0002IN	D422	T	86.97 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-14	PE1016-P1SCD-13-B-0006IN	D422	T	82.15 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-15	PE1016-P1SCD-13-B-0006IN-D	D422	T	96.32 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-16	PE1016-P1SCD-14-A-0004IN	D422	T	79.45 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-17	PE1016-P1SCD-14-B-0004IN	D422	T	84.35 g	SEE-SAMPLE-DATA SHEETS				
200-35700-B-18	PE1016-P1SCD-12-A-0814IN	D422	T	62.38 g	SEE-SAMPLE-DATA SHEETS				

Batch Notes	

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GEOTECHNICAL BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35700-1

SDG No.: 200-35700-1

Batch Number: 110554 Batch Start Date: 10/18/16 14:52 Batch Analyst: Pham, Vu T

Batch Method: D422 Batch End Date: 10/28/16 13:51

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802.660.1990 fax 802.660.1919

200-35700 Chain of Custody

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: G. LONG	Site Contact: G. LONG	Date: 10/12/16	COC No:
EHS SUPPORT - ASHLAND	Tel/Fax:	Lab Contact: KRIS DUSABLON	Carrier:	1 of 2 COCs
	Analysis Turnaround Time			Sampler:
	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(215) 498 0548 Phone	TAT if different from Below _____			Walk-in Client:
( ) FAX	☐ 2 weeks			Lab Sampling:
Project Name: DNS SED SAMPLING	☐ 1 week			
Site: DN PORT EWEN NY	☐ 2 days			Job / SDG No.:
PO #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Cu, Se, Zn (6010A)	Hg (7471A)	TOC (Lloyd Kahn)	Grain Size (D422)	Moisture (25406)	Sample Specific Notes:
													METALS = Cu, Se, Zn, Hg
PE1016-P1SCD-01-A-0007IN	10/12/16	1430		SED	2			X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT
PE1016-P1SCD-01-B-0006IN		1435			2			X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT
PE1016-P1SCD-02-A-0718IN		1431			2			X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT
PE1016-P1SCD-02-A-0804IN		1400			2			X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT
PE1016-P1SCD-02-B-0004IN		1410			2			X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT
PE1016-P1SCD-03-A-0006IN		1300			2			X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT
PE1016-P1SCD-03-A-0612IN		1301			2			X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT
PE1016-P1SCD-03-B-0006IN		1310			2			X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT
PE1016-P1SCD-11-A-0004IN		1030			2			X	X	X	X	X	HOLD METALS/GS; TOC STD TAT
PE1016-P1SCD-11-B-0006IN		1040			2			X	X	X	X	X	
PE1016-P1SCD-12-A-0008IN		0920			2			X	X	X	X	X	
PE1016-P1SCD-12-B-0006IN	10/12/16	0930		SED	2			X	X	X	X	X	HOLD METALS/GS; TOC STD TAT

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:
* PLEASE REFER TO SPREADSHEET PROVIDED TO K. DUSABLON FOR DETAILS ON TATs AND SAMPLE HOLDS

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ | Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	EHS Support	10/13/16 12:??	[signature]	TABL	10/13/16 1240
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802.660.1990 fax 802.660.1919

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager:	Site Contact:	Date:	COC No:
* SEE PAGE 1	Tel/Fax:	Lab Contact:	Carrier:	2 of 2 COCs
( ) Phone	**Analysis Turnaround Time**			Sampler:
( ) FAX	☐ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
Project Name:	TAT if different from Below _____			Walk-in Client:
Site:	☐ 2 weeks			Lab Sampling:
P O #	☐ 1 week			Job / SDG No.:
	☐ 2 days			
	☐ 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Cu, Se, Zn (6020A)	Hg (7471A)	TOC (Lloyd Kahn)	Grain Size (D422)	Moisture (D2216)	Sample Specific Notes:
1	PE1016-P1SCD-13-A-0002IN	10/12/16	0855		SED	2			X	X	X	X	X	HOLD METALS/GS; TOC STD TAT
2	PE1016-P1SCD-13-B-0006IN		0905			2			X	X	X	X	X	
3	PE1016-P1SCD-13-B-0006IN-D		0906			2			X	X	X	X	X	
4	PE1016-P1SCD-14-A-0004IN		0830			2			X	X	X	X	X	
5	PE1016-P1SCD-14-B-0004IN		0840			2			X	X	X	X	X	
6	PE1016-P1SCD-12-B-0006IN-MS		0931			1	Y		X	X	X	X		
7	PE1016-P1SCD-12-B-0006IN-MSD		0932			1	Y		X	X	X	X		
8	PE1016-P1SCD-12-A-0814IN		0921		SED	2			X	X	X	X	X	HOLD METALS/GS; TOC STD TAT
9	PE1016-P1SCD-BLK-3-101216	10/12/16	1845		AQ	1			X	X				BLANK; STANDARD TAT

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 3

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:

* SEE PAGE 1 *

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

	Company:	Date/Time:		Company:	Date/Time:
Relinquished by:	EHS Support	10/13/16 1240	Received by:	TAB	10/13/16 1240
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 200-35700-1
SDG Number: 200-35700-1

Login Number: 35700
List Number: 1
Creator: Atherton, Joel E

List Source: TestAmerica Burlington

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.0ºC, 3.4ºC
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Job Number: 200-35736-1

SDG Number: 200-35736-1

Job Description: Port Ewen DNS Sediment

For:
Ashland LLC
Ashland Hercules Research Center
500 Hercules Rd Bldg 8139
Wilmington, DE 19808

Attention: John Hoffman

Approved for release.
Kristine A Dusablon
Project Manager II
11/8/2016 3:38 PM

Kristine A Dusablon, Project Manager II
30 Community Drive, South Burlington, VT, 05403
(802)660-1990
kris.dusablon@testamericainc.com
11/08/2016

cc: Melissa Hollinger
Gary Long

The test results in this report relate only to sample(s) as received by the laboratory. These test results were derived under a quality system that adheres to the requirements of NELAC. Pursuant to NELAC, this report may not be produced in full without written approval from the laboratory

Table of Contents

Cover Title Page 1

Data Summaries 5

- Definitions 5
- Case Narrative 6
- Detection Summary 8
- Client Sample Results 18
- Default Detection Limits 64
- QC Sample Results 65
- QC Association 73
- Chronicle 78
- Certification Summary 84
- Method Summary 85
- Sample Summary 86
- Reagent Traceability 87
  - COAs 121

Inorganic Sample Data 315

- Metals Data 315
  - Met Cover Page 316
  - Met Sample Data 317
  - Met QC Data 331
    - Met ICV/CCV 331
    - Met Blanks 347
    - Met ICSA/ICSAB 362
    - Met MS/MSD/PDS 368
    - Met LCS/LCSD 377
    - Met Serial Dilution 384

Table of Contents

Met MDL 387

Met Linear Ranges 395

Met Preparation Log 398

Met Analysis Run Log 404

Met ICP/MS Tune 413

Met ICP/MS Int Stds 416

Met Prep Data 424

Met Raw Data 436

General Chemistry Data 860

Gen Chem Cover Page 861

Gen Chem Sample Data 862

Gen Chem QC Data 875

Gen Chem ICV/CCV 875

Gen Chem Blanks 877

Gen Chem Duplicates 878

Gen Chem LCS/LCSD 879

Gen Chem MDL 880

Gen Chem Linear Ranges 883

Gen Chem Analysis Run Log 884

Gen Chem Prep Data 889

Gen Chem Raw Data 894

Geotechnical Data 979

Geo Cover Page 979

Geo Sample Data 980

Geo Duplicates 993

Geo Prep Data 999

Table of Contents

Shipping and Receiving Documents 1000

Client Chain of Custody 1001

Sample Receipt Checklist 1004

Definitions/Glossary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35736-1
SDG: 200-35736-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
U	Indicates the analyte was analyzed for but not detected.
W	PS: Post-digestion spike was outside control limits
V	Serial Dilution exceeds the control limits
^	Instrument related QC is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
F3	Duplicate RPD exceeds the control limit
U	Indicates the analyte was analyzed for but not detected.

Geotechnical

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Ashland LLC

Project: Port Ewen DNS Sediment

Report Number: 200-35736-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 10/14/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.8 C.

METALS (ICPMS)
Samples PE1016-P1SCD-REF1-A-0006IN, PE1016-P1SCD-REF1-B-0006IN, PE1016-P1SCD-REF2-A-0006IN, PE1016-P1SCD-REF2-B-0006IN, PE1016-P1SCD-REF3-A-0006IN, PE1016-P1SCD-REF3-B-0006IN, PE1016-P1SCD-REF4-A-0006IN, PE1016-P1SCD-REF4-B-0006IN, PE1016-P1SCD-REF5-A-0003IN, PE1016-P1SCD-REF5-B-0003IN, PE1016-P1SCD-05-A-0006IN, PE1016-P1SCD-05-B-0006IN and PE1016-P1SCD-REF3-A-0006IN-D were analyzed for metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 10/17/2016 and 10/31/2016 and analyzed on 10/18/2016, 10/19/2016 and 11/01/2016.

Selenium was detected in method blank MB 200-110769/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

For the MS of sample PE1016-P1SCD-05-A-0006IN MS and MSD of sample PE1016-P1SCD-05-A-0006IN MSD, Copper failed the recovery criteria. Due to the high concentration of Copper in the parent sample, the matrix spike and matrix spike duplcate could not be evaluated for accuracy and precision. The Zinc recovery was high in the MSD of sample PE1016-P1SCD-05-A-0006IN MSD. The post digestion spike % recovery for Selenium associated with sample PE1016-P1SCD-REF3-A-0006IN was outside of control limits. The serial dilution performed on sample PE1016-P1SCD-REF3-A-0006IN was outside of control limits for Zinc. Refer to the QC report for details.

Internal standards for the following elements were re-associated: Copper and Zinc were re-associated from Scandium to Indium. Selenium was re-associated from Yttrium to Indium

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)
Sample PE1016-P1SCD-BLK-2-101116 was analyzed for metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 10/17/2016 and analyzed on 10/18/2016 and 10/19/2016.

Copper was detected in method blank MB 200-110239/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY
Samples PE1016-P1SCD-REF1-A-0006IN, PE1016-P1SCD-REF1-B-0006IN, PE1016-P1SCD-REF2-A-0006IN, PE1016-P1SCD-REF2-B-0006IN, PE1016-P1SCD-REF3-A-0006IN, PE1016-P1SCD-REF3-B-0006IN, PE1016-P1SCD-REF4-A-0006IN, PE1016-P1SCD-REF4-B-0006IN, PE1016-P1SCD-REF5-A-0003IN, PE1016-P1SCD-REF5-B-0003IN, PE1016-P1SCD-05-A-0006IN, PE1016-P1SCD-05-B-0006IN and PE1016-P1SCD-REF3-A-0006IN-D were analyzed for mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared and analyzed on 10/17/2016 and 10/31/2016.

Sample PE1016-P1SCD-05-A-0006IN[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

For the MS of sample PE1016-P1SCD-05-A-0006IN MS and MSD of sample PE1016-P1SCD-05-A-0006IN MSD, Mercury failed the recovery criteria. Due to the high concentration of Mercury in the parent sample, the matrix spike and matrix spike duplcate could not be evaluated for accuracy and precision. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY

Sample PE1016-P1SCD-BLK-2-101116 was analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 10/17/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GRAIN SIZE

Samples PE1016-P1SCD-REF1-A-0006IN, PE1016-P1SCD-REF1-B-0006IN, PE1016-P1SCD-REF2-A-0006IN, PE1016-P1SCD-REF2-B-0006IN, PE1016-P1SCD-REF3-A-0006IN, PE1016-P1SCD-REF3-B-0006IN, PE1016-P1SCD-REF4-A-0006IN, PE1016-P1SCD-REF4-B-0006IN, PE1016-P1SCD-REF5-A-0003IN, PE1016-P1SCD-REF5-B-0003IN, PE1016-P1SCD-05-A-0006IN, PE1016-P1SCD-05-B-0006IN and PE1016-P1SCD-REF3-A-0006IN-D were analyzed for grain size in accordance with D422 grain size. The samples were analyzed on 10/23/2016, 10/25/2016 and 11/01/2016.

Hydrometer Reading 6 - Percent Finer and Hydrometer Reading 7 - Percent Finer exceeded the RPD limit for the duplicate of sample PE1016-P1SCD-05-A-0006INDU. Coarse Sand exceeded the RPD limit for the duplicate of sample PE1016-P1SCD-REF3-A-0006INDU. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Samples PE1016-P1SCD-REF1-A-0006IN, PE1016-P1SCD-REF1-B-0006IN, PE1016-P1SCD-REF2-A-0006IN, PE1016-P1SCD-REF2-B-0006IN, PE1016-P1SCD-REF3-A-0006IN, PE1016-P1SCD-REF3-B-0006IN, PE1016-P1SCD-REF4-A-0006IN, PE1016-P1SCD-REF4-B-0006IN, PE1016-P1SCD-REF5-A-0003IN, PE1016-P1SCD-REF5-B-0003IN, PE1016-P1SCD-05-A-0006IN, PE1016-P1SCD-05-B-0006IN and PE1016-P1SCD-REF3-A-0006IN-D were analyzed for total organic carbon in accordance with Lloyd Kahn Method. The samples were analyzed on 10/19/2016 and 10/29/2016.

Sample PE1016-P1SCD-REF3-A-0006IN-D was received within holding time but analyzed outside of holding time. The samples was placed on hold as listed on the chain of custody, but. released from hold on 10/29/16, outside of holding time. Analysis was performed at the direction of the client.

Total Organic Carbon exceeded the RPD limit for the duplicate of sample PE1016-P1SCD-REF3-A-0006INDU. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples PE1016-P1SCD-REF1-A-0006IN, PE1016-P1SCD-REF1-B-0006IN, PE1016-P1SCD-REF2-A-0006IN, PE1016-P1SCD-REF2-B-0006IN, PE1016-P1SCD-REF3-A-0006IN, PE1016-P1SCD-REF3-B-0006IN, PE1016-P1SCD-REF4-A-0006IN, PE1016-P1SCD-REF4-B-0006IN, PE1016-P1SCD-REF5-A-0003IN, PE1016-P1SCD-REF5-B-0003IN, PE1016-P1SCD-05-A-0006IN, PE1016-P1SCD-05-B-0006IN and PE1016-P1SCD-REF3-A-0006IN-D were analyzed for percent solids in accordance with EPA Moisture. The samples were analyzed on 10/18/2016 and 10/31/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35736-1
SDG: 200-35736-1

Client Sample ID: PE1016-P1SCD-REF1-A-0006IN — Lab Sample ID: 200-35736-1

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	5.7				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	26.5				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	1.5				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	14.5				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	10.5				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	94.3				% Passing	1		D422	Total/NA
Silt	42.0				%	1		D422	Total/NA
Clay	25.8				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	92.8				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	81.8				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	78.3				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	74.3				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	72.6				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	71.6				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	68.3				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	67.8				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	48.8				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	44.2				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	39.6				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	35.0				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	25.8				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	14.3				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	7.5				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	18.5		0.84	0.20	mg/Kg	1	☼	6020A	Total/NA
Selenium	1.4		0.67	0.11	mg/Kg	1	☼	6020A	Total/NA
Zinc	100		3.4	1.0	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.059	J	0.068	0.025	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	28400		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-REF1-B-0006IN — Lab Sample ID: 200-35736-2

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	4.1				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	27.9				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	2.6				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	12.7				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	12.6				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	95.9				% Passing	1		D422	Total/NA
Silt	47.9				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-REF1-B-0006IN (Continued) — Lab Sample ID: 200-35736-2

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Clay	20.1				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	93.3				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	84.3				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	80.6				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	76.2				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	74.1				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	72.8				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	68.7				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	68.0				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	39.7				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	37.5				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	33.2				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	24.5				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	20.1				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	11.4				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	2.7				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	14.9		0.71	0.17	mg/Kg	1	☼	6020A	Total/NA
Selenium	0.93		0.57	0.089	mg/Kg	1	☼	6020A	Total/NA
Zinc	76.5		2.8	0.88	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.042	J	0.068	0.025	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	35200		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-REF2-A-0006IN — Lab Sample ID: 200-35736-3

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	1.9				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	35.8				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	6.7				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	12.7				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	16.4				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	98.1				% Passing	1		D422	Total/NA
Silt	39.9				%	1		D422	Total/NA
Clay	22.4				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	91.4				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	82.3				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	78.7				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	73.4				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	70.6				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	68.8				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	63.2				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	62.3				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	46.7				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	41.8				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	37.0				% Passing	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-REF2-A-0006IN (Continued) — Lab Sample ID: 200-35736-3

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Hydrometer Reading 4 - Percent Finer	27.3				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	22.4				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	15.2				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	5.5				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	20.5		0.93	0.22	mg/Kg	1	☼	6020A	Total/NA
Selenium	1.3		0.75	0.12	mg/Kg	1	☼	6020A	Total/NA
Zinc	107		3.7	1.2	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.055	J	0.083	0.030	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	33700		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-REF2-B-0006IN — Lab Sample ID: 200-35736-4

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	5.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	46.6				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	12.6				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	19.3				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	14.7				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	95.0				% Passing	1		D422	Total/NA
Silt	36.9				%	1		D422	Total/NA
Clay	11.5				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	82.4				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	70.5				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	63.1				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	58.2				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	55.9				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	54.4				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	49.3				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	48.4				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	30.3				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	24.9				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	22.2				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	14.1				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	11.5				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	6.1				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	0.7				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	16.2		0.84	0.20	mg/Kg	1	☼	6020A	Total/NA
Selenium	1.3		0.67	0.11	mg/Kg	1	☼	6020A	Total/NA
Zinc	80.5		3.4	1.0	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.074	J	0.085	0.031	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	48700		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35736-1
SDG: 200-35736-1

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN — Lab Sample ID: 200-35736-5

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	1.2				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	22.7				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	3.7				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	9.0				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	10.0				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	98.8				% Passing	1		D422	Total/NA
Silt	47.2				%	1		D422	Total/NA
Clay	28.9				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	95.1				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	88.0				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	86.1				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	83.2				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	81.5				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	80.5				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	76.7				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	76.1				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	54.5				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	49.4				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	44.3				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	34.0				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	28.9				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	18.6				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	13.5				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	19.0		1.0	0.24	mg/Kg	1	☼	6020A	Total/NA
Selenium	1.3		0.81	0.13	mg/Kg	1	☼	6020A	Total/NA
Zinc	97.0		4.1	1.3	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.064	J	0.084	0.031	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	30600		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-REF3-B-0006IN — Lab Sample ID: 200-35736-6

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	3.1				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	35.5				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	4.1				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	18.7				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	12.7				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	96.9				% Passing	1		D422	Total/NA
Silt	34.5				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-REF3-B-0006IN (Continued) — Lab Sample ID: 200-35736-6

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Clay	26.9				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	92.8				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	80.4				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	74.1				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	68.4				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	66.2				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	65.1				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	61.9				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	61.4				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	51.6				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	46.3				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	39.3				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	30.4				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	26.9				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	16.3				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	7.5				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	18.5		0.73	0.18	mg/Kg	1	☼	6020A	Total/NA
Selenium	1.1		0.58	0.092	mg/Kg	1	☼	6020A	Total/NA
Zinc	92.9		2.9	0.91	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.036	J	0.077	0.028	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	55700		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-REF4-A-0006IN — Lab Sample ID: 200-35736-7

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	9.5				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	48.4				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	16.4				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	15.4				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	16.6				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	90.5				% Passing	1		D422	Total/NA
Silt	26.5				%	1		D422	Total/NA
Clay	15.6				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	74.1				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	65.9				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	58.7				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	51.5				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	48.6				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	47.1				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	42.8				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	42.1				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	36.3				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	32.2				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	26.7				% Passing	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-REF4-A-0006IN (Continued) — Lab Sample ID: 200-35736-7

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Hydrometer Reading 4 - Percent Finer	18.3				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	15.6				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	10.0				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	4.5				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	15.8		0.81	0.19	mg/Kg	1	☼	6020A	Total/NA
Selenium	1.1		0.65	0.10	mg/Kg	1	☼	6020A	Total/NA
Zinc	88.7		3.2	1.0	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.047	J	0.064	0.023	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	36500		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-REF4-B-0006IN — Lab Sample ID: 200-35736-8

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	6.6				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	33.6				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	5.6				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	9.7				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	18.3				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	93.4				% Passing	1		D422	Total/NA
Silt	41.7				%	1		D422	Total/NA
Clay	18.1				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	87.8				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	81.3				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	78.1				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	72.5				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	69.1				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	67.1				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	60.7				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	59.8				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	48.1				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	41.0				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	32.2				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	23.4				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	18.1				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	12.8				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	5.7				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	20.4		1.1	0.26	mg/Kg	1	☼	6020A	Total/NA
Selenium	1.4		0.88	0.14	mg/Kg	1	☼	6020A	Total/NA
Zinc	127		4.4	1.4	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.069	J	0.084	0.031	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	56500		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35736-1
SDG: 200-35736-1

Client Sample ID: PE1016-P1SCD-REF5-A-0003IN — Lab Sample ID: 200-35736-9

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	8.5				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	29.4				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	4.3				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	8.8				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	16.3				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	91.5				% Passing	1		D422	Total/NA
Silt	38.8				%	1		D422	Total/NA
Clay	23.3				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	87.2				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	81.0				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	78.4				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	74.3				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	71.5				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	69.6				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	63.1				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	62.1				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	51.7				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	44.1				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	38.4				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	32.7				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	23.3				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	15.7				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	6.2				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	17.5		0.82	0.20	mg/Kg	1	☼	6020A	Total/NA
Selenium	1.2		0.66	0.10	mg/Kg	1	☼	6020A	Total/NA
Zinc	105		3.3	1.0	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.056	J	0.073	0.026	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	62900		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-REF5-B-0003IN — Lab Sample ID: 200-35736-10

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	13.9				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	37.1				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	7.5				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	12.3				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	17.3				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	86.1				% Passing	1		D422	Total/NA
Silt	32.1				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-REF5-B-0003IN (Continued) — Lab Sample ID: 200-35736-10

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Clay	16.9				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	78.6				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	72.2				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	66.3				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	59.3				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	56.3				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	54.6				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	49.7				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	49.0				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	36.3				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	32.1				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	26.6				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	23.8				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	16.9				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	11.4				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	5.9				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	14.6		0.73	0.18	mg/Kg	1	☼	6020A	Total/NA
Selenium	1.1		0.58	0.092	mg/Kg	1	☼	6020A	Total/NA
Zinc	87.0		2.9	0.91	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.051	J	0.070	0.025	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	44100		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-05-A-0006IN — Lab Sample ID: 200-35736-11

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	14.2				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	54.8				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	17.6				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	12.7				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	24.5				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	85.8				% Passing	1		D422	Total/NA
Silt	21.1				%	1		D422	Total/NA
Clay	9.9				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	68.2				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	62.8				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	55.5				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	46.0				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	40.9				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	38.0				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	31.6				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	31.0				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	25.0				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	21.2				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	17.4				% Passing	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-05-A-0006IN (Continued) — Lab Sample ID: 200-35736-11

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Hydrometer Reading 4 - Percent Finer	13.7				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	9.9				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	4.2				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	1.9				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	540		1.3	0.30	mg/Kg	1	☼	6020A	Total/NA
Selenium	3.4		1.0	0.16	mg/Kg	1	☼	6020A	Total/NA
Zinc	200	F1	5.0	1.6	mg/Kg	1	☼	6020A	Total/NA
Mercury	6.4		0.19	0.070	mg/Kg	2	☼	7471B	Total/NA
Total Organic Carbon	46600		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-05-B-0006IN — Lab Sample ID: 200-35736-12

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	7.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	45.3				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	11.9				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	9.4				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	24.0				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	93.0				% Passing	1		D422	Total/NA
Silt	42.8				%	1		D422	Total/NA
Clay	4.9				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	81.1				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	77.4				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	71.7				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	63.3				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	58.1				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	54.8				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	48.3				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	47.7				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	17.1				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	14.0				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	9.5				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	8.0				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	4.9				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	0.4				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	0.0				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	481		1.2	0.28	mg/Kg	1	☼	6020A	Total/NA
Selenium	3.4		0.95	0.15	mg/Kg	1	☼	6020A	Total/NA
Zinc	192		4.7	1.5	mg/Kg	1	☼	6020A	Total/NA
Mercury	3.7		0.11	0.038	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	44400		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35736-1
SDG: 200-35736-1

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN-D — Lab Sample ID: 200-35736-13

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	2.6				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	24.7				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	3.4				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	8.2				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	13.1				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	97.4				% Passing	1		D422	Total/NA
Silt	39.7				%	1		D422	Total/NA
Clay	33.0				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	94.0				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	89.5				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	85.8				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	80.9				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	78.9				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	77.7				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	73.5				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	72.7				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	65.2				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	57.2				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	49.1				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	41.0				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	33.0				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	21.5				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	13.5				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	23.2		0.88	0.21	mg/Kg	1	☼	6020A	Total/NA
Selenium	1.7	B	0.70	0.11	mg/Kg	1	☼	6020A	Total/NA
Zinc	110		3.5	1.1	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.059	J	0.085	0.031	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	38500	H	1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE1016-P1SCD-BLK-2-101116 — Lab Sample ID: 200-35736-14

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE1016-P1SCD-REF1-A-0006IN

Date Collected: 10/11/16 11:05
Date Received: 10/14/16 10:20

Lab Sample ID: 200-35736-1

Matrix: Sediment
Percent Solids: 53.0

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	18.5		0.84	0.20	mg/Kg	☼	10/17/16 10:03	10/18/16 14:11	1
Selenium	1.4		0.67	0.11	mg/Kg	☼	10/17/16 10:03	10/18/16 14:11	1
Zinc	100		3.4	1.0	mg/Kg	☼	10/17/16 10:03	10/18/16 14:11	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.059	J	0.068	0.025	mg/Kg	☼	10/17/16 10:07	10/17/16 15:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	28400		1000	380	mg/Kg			10/19/16 12:26	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	53.0		0.3	0.3	%			10/18/16 14:19	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	5.7				%			10/23/16 18:44	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:44	1
Sand	26.5				%			10/23/16 18:44	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:44	1
Coarse Sand	1.5				%			10/23/16 18:44	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:44	1
Medium Sand	14.5				%			10/23/16 18:44	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:44	1
Fine Sand	10.5				%			10/23/16 18:44	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:44	1
Sieve Size #4 - Percent Finer	94.3				% Passing			10/23/16 18:44	1
Silt	42.0				%			10/23/16 18:44	1
Clay	25.8				%			10/23/16 18:44	1
Sieve Size #10 - Percent Finer	92.8				% Passing			10/23/16 18:44	1
Sieve Size #20 - Percent Finer	81.8				% Passing			10/23/16 18:44	1
Sieve Size #40 - Percent Finer	78.3				% Passing			10/23/16 18:44	1
Sieve Size #60 - Percent Finer	74.3				% Passing			10/23/16 18:44	1
Sieve Size #80 - Percent Finer	72.6				% Passing			10/23/16 18:44	1
Sieve Size #100 - Percent Finer	71.6				% Passing			10/23/16 18:44	1
Sieve Size #200 - Percent Finer	68.3				% Passing			10/23/16 18:44	1
Sieve Size #230 - Percent Finer	67.8				% Passing			10/23/16 18:44	1
Hydrometer Reading 1 - Percent Finer	48.8				% Passing			10/23/16 18:44	1
Hydrometer Reading 2 - Percent Finer	44.2				% Passing			10/23/16 18:44	1
Hydrometer Reading 3 - Percent Finer	39.6				% Passing			10/23/16 18:44	1
Hydrometer Reading 4 - Percent Finer	35.0				% Passing			10/23/16 18:44	1
Hydrometer Reading 5 - Percent Finer	25.8				% Passing			10/23/16 18:44	1
Hydrometer Reading 6 - Percent Finer	14.3				% Passing			10/23/16 18:44	1

Client Sample ID: PE1016-P1SCD-REF1-A-0006IN

Lab Sample ID: 200-35736-1

Date Collected: 10/11/16 11:05
Matrix: Sediment
Date Received: 10/14/16 10:20

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 7 - Percent Finer	7.5				% Passing			10/23/16 18:44	1

Client Sample ID: PE1016-P1SCD-REF1-B-0006IN

Lab Sample ID: 200-35736-2

Date Collected: 10/11/16 11:10
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 52.1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	14.9		0.71	0.17	mg/Kg	☼	10/17/16 10:03	10/18/16 14:17	1
Selenium	0.93		0.57	0.089	mg/Kg	☼	10/17/16 10:03	10/18/16 14:17	1
Zinc	76.5		2.8	0.88	mg/Kg	☼	10/17/16 10:03	10/18/16 14:17	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.042	J	0.068	0.025	mg/Kg	☼	10/17/16 10:07	10/17/16 15:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	35200		1000	380	mg/Kg			10/19/16 12:32	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	52.1		0.3	0.3	%			10/18/16 14:19	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	4.1				%			10/23/16 18:46	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:46	1
Sand	27.9				%			10/23/16 18:46	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:46	1
Coarse Sand	2.6				%			10/23/16 18:46	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:46	1
Medium Sand	12.7				%			10/23/16 18:46	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:46	1
Fine Sand	12.6				%			10/23/16 18:46	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:46	1
Sieve Size #4 - Percent Finer	95.9				% Passing			10/23/16 18:46	1
Silt	47.9				%			10/23/16 18:46	1
Clay	20.1				%			10/23/16 18:46	1
Sieve Size #10 - Percent Finer	93.3				% Passing			10/23/16 18:46	1
Sieve Size #20 - Percent Finer	84.3				% Passing			10/23/16 18:46	1
Sieve Size #40 - Percent Finer	80.6				% Passing			10/23/16 18:46	1
Sieve Size #60 - Percent Finer	76.2				% Passing			10/23/16 18:46	1
Sieve Size #80 - Percent Finer	74.1				% Passing			10/23/16 18:46	1
Sieve Size #100 - Percent Finer	72.8				% Passing			10/23/16 18:46	1
Sieve Size #200 - Percent Finer	68.7				% Passing			10/23/16 18:46	1
Sieve Size #230 - Percent Finer	68.0				% Passing			10/23/16 18:46	1
Hydrometer Reading 1 - Percent Finer	39.7				% Passing			10/23/16 18:46	1

Client Sample ID: PE1016-P1SCD-REF1-B-0006IN

Lab Sample ID: 200-35736-2

Date Collected: 10/11/16 11:10
Matrix: Sediment
Date Received: 10/14/16 10:20

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 2 - Percent Finer	37.5				% Passing			10/23/16 18:46	1
Hydrometer Reading 3 - Percent Finer	33.2				% Passing			10/23/16 18:46	1
Hydrometer Reading 4 - Percent Finer	24.5				% Passing			10/23/16 18:46	1
Hydrometer Reading 5 - Percent Finer	20.1				% Passing			10/23/16 18:46	1
Hydrometer Reading 6 - Percent Finer	11.4				% Passing			10/23/16 18:46	1
Hydrometer Reading 7 - Percent Finer	2.7				% Passing			10/23/16 18:46	1

Client Sample ID: PE1016-P1SCD-REF2-A-0006IN

Lab Sample ID: 200-35736-3

Date Collected: 10/11/16 10:50
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 47.8

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	20.5		0.93	0.22	mg/Kg	☼	10/17/16 10:03	10/18/16 14:22	1
Selenium	1.3		0.75	0.12	mg/Kg	☼	10/17/16 10:03	10/18/16 14:22	1
Zinc	107		3.7	1.2	mg/Kg	☼	10/17/16 10:03	10/18/16 14:22	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.055	J	0.083	0.030	mg/Kg	☼	10/17/16 10:07	10/17/16 15:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	33700		1000	380	mg/Kg			10/19/16 12:39	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	47.8		0.3	0.3	%			10/18/16 14:19	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	1.9				%			10/23/16 18:47	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:47	1
Sand	35.8				%			10/23/16 18:47	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:47	1
Coarse Sand	6.7				%			10/23/16 18:47	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:47	1
Medium Sand	12.7				%			10/23/16 18:47	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:47	1
Fine Sand	16.4				%			10/23/16 18:47	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:47	1
Sieve Size #4 - Percent Finer	98.1				% Passing			10/23/16 18:47	1
Silt	39.9				%			10/23/16 18:47	1
Clay	22.4				%			10/23/16 18:47	1
Sieve Size #10 - Percent Finer	91.4				% Passing			10/23/16 18:47	1
Sieve Size #20 - Percent Finer	82.3				% Passing			10/23/16 18:47	1

Client Sample ID: PE1016-P1SCD-REF2-A-0006IN

Lab Sample ID: 200-35736-3

Date Collected: 10/11/16 10:50
Matrix: Sediment
Date Received: 10/14/16 10:20

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Sieve Size #40 - Percent Finer	78.7				% Passing			10/23/16 18:47	1
Sieve Size #60 - Percent Finer	73.4				% Passing			10/23/16 18:47	1
Sieve Size #80 - Percent Finer	70.6				% Passing			10/23/16 18:47	1
Sieve Size #100 - Percent Finer	68.8				% Passing			10/23/16 18:47	1
Sieve Size #200 - Percent Finer	63.2				% Passing			10/23/16 18:47	1
Sieve Size #230 - Percent Finer	62.3				% Passing			10/23/16 18:47	1
Hydrometer Reading 1 - Percent Finer	46.7				% Passing			10/23/16 18:47	1
Hydrometer Reading 2 - Percent Finer	41.8				% Passing			10/23/16 18:47	1
Hydrometer Reading 3 - Percent Finer	37.0				% Passing			10/23/16 18:47	1
Hydrometer Reading 4 - Percent Finer	27.3				% Passing			10/23/16 18:47	1
Hydrometer Reading 5 - Percent Finer	22.4				% Passing			10/23/16 18:47	1
Hydrometer Reading 6 - Percent Finer	15.2				% Passing			10/23/16 18:47	1
Hydrometer Reading 7 - Percent Finer	5.5				% Passing			10/23/16 18:47	1

Client Sample ID: PE1016-P1SCD-REF2-B-0006IN

Lab Sample ID: 200-35736-4

Date Collected: 10/11/16 10:55
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 44.7

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	16.2		0.84	0.20	mg/Kg	☼	10/17/16 10:03	10/18/16 14:28	1
Selenium	1.3		0.67	0.11	mg/Kg	☼	10/17/16 10:03	10/18/16 14:28	1
Zinc	80.5		3.4	1.0	mg/Kg	☼	10/17/16 10:03	10/18/16 14:28	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.074	J	0.085	0.031	mg/Kg	☼	10/17/16 10:07	10/17/16 15:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	48700		1000	380	mg/Kg			10/19/16 12:45	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	44.7		0.3	0.3	%			10/18/16 14:19	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	5.0				%			10/23/16 18:49	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:49	1
Sand	46.6				%			10/23/16 18:49	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:49	1
Coarse Sand	12.6				%			10/23/16 18:49	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:49	1
Medium Sand	19.3				%			10/23/16 18:49	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:49	1

Client Sample ID: PE1016-P1SCD-REF2-B-0006IN

Lab Sample ID: 200-35736-4

Date Collected: 10/11/16 10:55
Matrix: Sediment
Date Received: 10/14/16 10:20

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Fine Sand	14.7				%			10/23/16 18:49	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:49	1
Sieve Size #4 - Percent Finer	95.0				% Passing			10/23/16 18:49	1
Silt	36.9				%			10/23/16 18:49	1
Clay	11.5				%			10/23/16 18:49	1
Sieve Size #10 - Percent Finer	82.4				% Passing			10/23/16 18:49	1
Sieve Size #20 - Percent Finer	70.5				% Passing			10/23/16 18:49	1
Sieve Size #40 - Percent Finer	63.1				% Passing			10/23/16 18:49	1
Sieve Size #60 - Percent Finer	58.2				% Passing			10/23/16 18:49	1
Sieve Size #80 - Percent Finer	55.9				% Passing			10/23/16 18:49	1
Sieve Size #100 - Percent Finer	54.4				% Passing			10/23/16 18:49	1
Sieve Size #200 - Percent Finer	49.3				% Passing			10/23/16 18:49	1
Sieve Size #230 - Percent Finer	48.4				% Passing			10/23/16 18:49	1
Hydrometer Reading 1 - Percent Finer	30.3				% Passing			10/23/16 18:49	1
Hydrometer Reading 2 - Percent Finer	24.9				% Passing			10/23/16 18:49	1
Hydrometer Reading 3 - Percent Finer	22.2				% Passing			10/23/16 18:49	1
Hydrometer Reading 4 - Percent Finer	14.1				% Passing			10/23/16 18:49	1
Hydrometer Reading 5 - Percent Finer	11.5				% Passing			10/23/16 18:49	1
Hydrometer Reading 6 - Percent Finer	6.1				% Passing			10/23/16 18:49	1
Hydrometer Reading 7 - Percent Finer	0.7				% Passing			10/23/16 18:49	1

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN

Lab Sample ID: 200-35736-5

Date Collected: 10/11/16 10:40
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 45.3

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	19.0		1.0	0.24	mg/Kg	☼	10/17/16 10:03	10/18/16 14:34	1
Selenium	1.3		0.81	0.13	mg/Kg	☼	10/17/16 10:03	10/18/16 14:34	1
Zinc	97.0		4.1	1.3	mg/Kg	☼	10/17/16 10:03	10/18/16 14:34	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.064	J	0.084	0.031	mg/Kg	☼	10/17/16 10:07	10/17/16 15:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	30600		1000	380	mg/Kg			10/19/16 12:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	45.3		0.3	0.3	%			10/18/16 14:19	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	1.2				%			10/23/16 18:51	1

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN

Lab Sample ID: 200-35736-5

Date Collected: 10/11/16 10:40
Matrix: Sediment
Date Received: 10/14/16 10:20

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/23/16 18:51	1
Sand	22.7				%			10/23/16 18:51	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/23/16 18:51	1
Coarse Sand	3.7				%			10/23/16 18:51	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/23/16 18:51	1
Medium Sand	9.0				%			10/23/16 18:51	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/23/16 18:51	1
Fine Sand	10.0				%			10/23/16 18:51	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/23/16 18:51	1
Sieve Size #4 - Percent Finer	98.8				% Passing			10/23/16 18:51	1
Silt	47.2				%			10/23/16 18:51	1
Clay	28.9				%			10/23/16 18:51	1
Sieve Size #10 - Percent Finer	95.1				% Passing			10/23/16 18:51	1
Sieve Size #20 - Percent Finer	88.0				% Passing			10/23/16 18:51	1
Sieve Size #40 - Percent Finer	86.1				% Passing			10/23/16 18:51	1
Sieve Size #60 - Percent Finer	83.2				% Passing			10/23/16 18:51	1
Sieve Size #80 - Percent Finer	81.5				% Passing			10/23/16 18:51	1
Sieve Size #100 - Percent Finer	80.5				% Passing			10/23/16 18:51	1
Sieve Size #200 - Percent Finer	76.7				% Passing			10/23/16 18:51	1
Sieve Size #230 - Percent Finer	76.1				% Passing			10/23/16 18:51	1
Hydrometer Reading 1 - Percent Finer	54.5				% Passing			10/23/16 18:51	1
Hydrometer Reading 2 - Percent Finer	49.4				% Passing			10/23/16 18:51	1
Hydrometer Reading 3 - Percent Finer	44.3				% Passing			10/23/16 18:51	1
Hydrometer Reading 4 - Percent Finer	34.0				% Passing			10/23/16 18:51	1
Hydrometer Reading 5 - Percent Finer	28.9				% Passing			10/23/16 18:51	1
Hydrometer Reading 6 - Percent Finer	18.6				% Passing			10/23/16 18:51	1
Hydrometer Reading 7 - Percent Finer	13.5				% Passing			10/23/16 18:51	1

Client Sample ID: PE1016-P1SCD-REF3-B-0006IN

Lab Sample ID: 200-35736-6

Date Collected: 10/11/16 10:45
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 46.5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	18.5		0.73	0.18	mg/Kg	☼	10/17/16 10:03	10/18/16 15:20	1
Selenium	1.1		0.58	0.092	mg/Kg	☼	10/17/16 10:03	10/18/16 15:20	1
Zinc	92.9		2.9	0.91	mg/Kg	☼	10/17/16 10:03	10/18/16 15:20	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.036	J	0.077	0.028	mg/Kg	☼	10/17/16 10:07	10/17/16 15:26	1

Client Sample ID: PE1016-P1SCD-REF3-B-0006IN

Lab Sample ID: 200-35736-6

Date Collected: 10/11/16 10:45
Matrix: Sediment
Date Received: 10/14/16 10:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	55700		1000	380	mg/Kg			10/19/16 13:26	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	46.5		0.3	0.3	%			10/18/16 14:19	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	3.1				%			10/25/16 10:06	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/25/16 10:06	1
Sand	35.5				%			10/25/16 10:06	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/25/16 10:06	1
Coarse Sand	4.1				%			10/25/16 10:06	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/25/16 10:06	1
Medium Sand	18.7				%			10/25/16 10:06	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/25/16 10:06	1
Fine Sand	12.7				%			10/25/16 10:06	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/25/16 10:06	1
Sieve Size #4 - Percent Finer	96.9				% Passing			10/25/16 10:06	1
Silt	34.5				%			10/25/16 10:06	1
Clay	26.9				%			10/25/16 10:06	1
Sieve Size #10 - Percent Finer	92.8				% Passing			10/25/16 10:06	1
Sieve Size #20 - Percent Finer	80.4				% Passing			10/25/16 10:06	1
Sieve Size #40 - Percent Finer	74.1				% Passing			10/25/16 10:06	1
Sieve Size #60 - Percent Finer	68.4				% Passing			10/25/16 10:06	1
Sieve Size #80 - Percent Finer	66.2				% Passing			10/25/16 10:06	1
Sieve Size #100 - Percent Finer	65.1				% Passing			10/25/16 10:06	1
Sieve Size #200 - Percent Finer	61.9				% Passing			10/25/16 10:06	1
Sieve Size #230 - Percent Finer	61.4				% Passing			10/25/16 10:06	1
Hydrometer Reading 1 - Percent Finer	51.6				% Passing			10/25/16 10:06	1
Hydrometer Reading 2 - Percent Finer	46.3				% Passing			10/25/16 10:06	1
Hydrometer Reading 3 - Percent Finer	39.3				% Passing			10/25/16 10:06	1
Hydrometer Reading 4 - Percent Finer	30.4				% Passing			10/25/16 10:06	1
Hydrometer Reading 5 - Percent Finer	26.9				% Passing			10/25/16 10:06	1
Hydrometer Reading 6 - Percent Finer	16.3				% Passing			10/25/16 10:06	1
Hydrometer Reading 7 - Percent Finer	7.5				% Passing			10/25/16 10:06	1

Client Sample ID: PE1016-P1SCD-REF4-A-0006IN

Lab Sample ID: 200-35736-7

Date Collected: 10/11/16 10:30
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 53.7

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	15.8		0.81	0.19	mg/Kg	☼	10/17/16 10:03	10/18/16 15:25	1
Selenium	1.1		0.65	0.10	mg/Kg	☼	10/17/16 10:03	10/18/16 15:25	1

Client Sample ID: PE1016-P1SCD-REF4-A-0006IN

Date Collected: 10/11/16 10:30
Date Received: 10/14/16 10:20

Lab Sample ID: 200-35736-7

Matrix: Sediment
Percent Solids: 53.7

Method: 6020A - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	88.7		3.2	1.0	mg/Kg	☼	10/17/16 10:03	10/18/16 15:25	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.047	J	0.064	0.023	mg/Kg	☼	10/17/16 10:07	10/17/16 15:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	36500		1000	380	mg/Kg			10/19/16 13:33	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	53.7		0.3	0.3	%			10/18/16 14:19	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	9.5				%			10/25/16 10:08	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/25/16 10:08	1
Sand	48.4				%			10/25/16 10:08	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/25/16 10:08	1
Coarse Sand	16.4				%			10/25/16 10:08	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/25/16 10:08	1
Medium Sand	15.4				%			10/25/16 10:08	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/25/16 10:08	1
Fine Sand	16.6				%			10/25/16 10:08	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/25/16 10:08	1
Sieve Size #4 - Percent Finer	90.5				% Passing			10/25/16 10:08	1
Silt	26.5				%			10/25/16 10:08	1
Clay	15.6				%			10/25/16 10:08	1
Sieve Size #10 - Percent Finer	74.1				% Passing			10/25/16 10:08	1
Sieve Size #20 - Percent Finer	65.9				% Passing			10/25/16 10:08	1
Sieve Size #40 - Percent Finer	58.7				% Passing			10/25/16 10:08	1
Sieve Size #60 - Percent Finer	51.5				% Passing			10/25/16 10:08	1
Sieve Size #80 - Percent Finer	48.6				% Passing			10/25/16 10:08	1
Sieve Size #100 - Percent Finer	47.1				% Passing			10/25/16 10:08	1
Sieve Size #200 - Percent Finer	42.8				% Passing			10/25/16 10:08	1
Sieve Size #230 - Percent Finer	42.1				% Passing			10/25/16 10:08	1
Hydrometer Reading 1 - Percent Finer	36.3				% Passing			10/25/16 10:08	1
Hydrometer Reading 2 - Percent Finer	32.2				% Passing			10/25/16 10:08	1
Hydrometer Reading 3 - Percent Finer	26.7				% Passing			10/25/16 10:08	1
Hydrometer Reading 4 - Percent Finer	18.3				% Passing			10/25/16 10:08	1
Hydrometer Reading 5 - Percent Finer	15.6				% Passing			10/25/16 10:08	1
Hydrometer Reading 6 - Percent Finer	10.0				% Passing			10/25/16 10:08	1
Hydrometer Reading 7 - Percent Finer	4.5				% Passing			10/25/16 10:08	1

Client Sample ID: PE1016-P1SCD-REF4-B-0006IN

Date Collected: 10/11/16 10:35
Date Received: 10/14/16 10:20

Lab Sample ID: 200-35736-8

Matrix: Sediment
Percent Solids: 43.4

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	20.4		1.1	0.26	mg/Kg	☼	10/17/16 10:03	10/18/16 15:31	1
Selenium	1.4		0.88	0.14	mg/Kg	☼	10/17/16 10:03	10/18/16 15:31	1
Zinc	127		4.4	1.4	mg/Kg	☼	10/17/16 10:03	10/18/16 15:31	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.069	J	0.084	0.031	mg/Kg	☼	10/17/16 10:07	10/17/16 15:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	56500		1000	380	mg/Kg			10/19/16 13:39	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	43.4		0.3	0.3	%			10/18/16 14:19	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	6.6				%			10/25/16 10:09	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/25/16 10:09	1
Sand	33.6				%			10/25/16 10:09	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/25/16 10:09	1
Coarse Sand	5.6				%			10/25/16 10:09	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/25/16 10:09	1
Medium Sand	9.7				%			10/25/16 10:09	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/25/16 10:09	1
Fine Sand	18.3				%			10/25/16 10:09	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/25/16 10:09	1
Sieve Size #4 - Percent Finer	93.4				% Passing			10/25/16 10:09	1
Silt	41.7				%			10/25/16 10:09	1
Clay	18.1				%			10/25/16 10:09	1
Sieve Size #10 - Percent Finer	87.8				% Passing			10/25/16 10:09	1
Sieve Size #20 - Percent Finer	81.3				% Passing			10/25/16 10:09	1
Sieve Size #40 - Percent Finer	78.1				% Passing			10/25/16 10:09	1
Sieve Size #60 - Percent Finer	72.5				% Passing			10/25/16 10:09	1
Sieve Size #80 - Percent Finer	69.1				% Passing			10/25/16 10:09	1
Sieve Size #100 - Percent Finer	67.1				% Passing			10/25/16 10:09	1
Sieve Size #200 - Percent Finer	60.7				% Passing			10/25/16 10:09	1
Sieve Size #230 - Percent Finer	59.8				% Passing			10/25/16 10:09	1
Hydrometer Reading 1 - Percent Finer	48.1				% Passing			10/25/16 10:09	1
Hydrometer Reading 2 - Percent Finer	41.0				% Passing			10/25/16 10:09	1
Hydrometer Reading 3 - Percent Finer	32.2				% Passing			10/25/16 10:09	1
Hydrometer Reading 4 - Percent Finer	23.4				% Passing			10/25/16 10:09	1
Hydrometer Reading 5 - Percent Finer	18.1				% Passing			10/25/16 10:09	1
Hydrometer Reading 6 - Percent Finer	12.8				% Passing			10/25/16 10:09	1

Client Sample ID: PE1016-P1SCD-REF4-B-0006IN

Lab Sample ID: 200-35736-8

Date Collected: 10/11/16 10:35
Matrix: Sediment
Date Received: 10/14/16 10:20

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 7 - Percent Finer	5.7				% Passing			10/25/16 10:09	1

Client Sample ID: PE1016-P1SCD-REF5-A-0003IN

Lab Sample ID: 200-35736-9

Date Collected: 10/11/16 10:15
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 46.2

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	17.5		0.82	0.20	mg/Kg	☼	10/17/16 10:03	10/18/16 15:37	1
Selenium	1.2		0.66	0.10	mg/Kg	☼	10/17/16 10:03	10/18/16 15:37	1
Zinc	105		3.3	1.0	mg/Kg	☼	10/17/16 10:03	10/18/16 15:37	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.056	J	0.073	0.026	mg/Kg	☼	10/17/16 10:07	10/17/16 15:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	62900		1000	380	mg/Kg			10/19/16 13:46	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	46.2		0.3	0.3	%			10/18/16 14:19	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	8.5				%			10/25/16 10:11	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/25/16 10:11	1
Sand	29.4				%			10/25/16 10:11	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/25/16 10:11	1
Coarse Sand	4.3				%			10/25/16 10:11	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/25/16 10:11	1
Medium Sand	8.8				%			10/25/16 10:11	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/25/16 10:11	1
Fine Sand	16.3				%			10/25/16 10:11	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/25/16 10:11	1
Sieve Size #4 - Percent Finer	91.5				% Passing			10/25/16 10:11	1
Silt	38.8				%			10/25/16 10:11	1
Clay	23.3				%			10/25/16 10:11	1
Sieve Size #10 - Percent Finer	87.2				% Passing			10/25/16 10:11	1
Sieve Size #20 - Percent Finer	81.0				% Passing			10/25/16 10:11	1
Sieve Size #40 - Percent Finer	78.4				% Passing			10/25/16 10:11	1
Sieve Size #60 - Percent Finer	74.3				% Passing			10/25/16 10:11	1
Sieve Size #80 - Percent Finer	71.5				% Passing			10/25/16 10:11	1
Sieve Size #100 - Percent Finer	69.6				% Passing			10/25/16 10:11	1
Sieve Size #200 - Percent Finer	63.1				% Passing			10/25/16 10:11	1
Sieve Size #230 - Percent Finer	62.1				% Passing			10/25/16 10:11	1
Hydrometer Reading 1 - Percent Finer	51.7				% Passing			10/25/16 10:11	1

Client Sample ID: PE1016-P1SCD-REF5-A-0003IN

Lab Sample ID: 200-35736-9

Date Collected: 10/11/16 10:15
Matrix: Sediment
Date Received: 10/14/16 10:20

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 2 - Percent Finer	44.1				% Passing			10/25/16 10:11	1
Hydrometer Reading 3 - Percent Finer	38.4				% Passing			10/25/16 10:11	1
Hydrometer Reading 4 - Percent Finer	32.7				% Passing			10/25/16 10:11	1
Hydrometer Reading 5 - Percent Finer	23.3				% Passing			10/25/16 10:11	1
Hydrometer Reading 6 - Percent Finer	15.7				% Passing			10/25/16 10:11	1
Hydrometer Reading 7 - Percent Finer	6.2				% Passing			10/25/16 10:11	1

Client Sample ID: PE1016-P1SCD-REF5-B-0003IN

Lab Sample ID: 200-35736-10

Date Collected: 10/11/16 10:20
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 54.8

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	14.6		0.73	0.18	mg/Kg	☼	10/17/16 10:03	10/18/16 15:42	1
Selenium	1.1		0.58	0.092	mg/Kg	☼	10/17/16 10:03	10/18/16 15:42	1
Zinc	87.0		2.9	0.91	mg/Kg	☼	10/17/16 10:03	10/18/16 15:42	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.051	J	0.070	0.025	mg/Kg	☼	10/17/16 10:07	10/17/16 15:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	44100		1000	380	mg/Kg			10/19/16 13:53	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	54.8		0.3	0.3	%			10/18/16 14:19	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	13.9				%			10/25/16 10:13	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/25/16 10:13	1
Sand	37.1				%			10/25/16 10:13	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/25/16 10:13	1
Coarse Sand	7.5				%			10/25/16 10:13	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/25/16 10:13	1
Medium Sand	12.3				%			10/25/16 10:13	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/25/16 10:13	1
Fine Sand	17.3				%			10/25/16 10:13	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/25/16 10:13	1
Sieve Size #4 - Percent Finer	86.1				% Passing			10/25/16 10:13	1
Silt	32.1				%			10/25/16 10:13	1
Clay	16.9				%			10/25/16 10:13	1
Sieve Size #10 - Percent Finer	78.6				% Passing			10/25/16 10:13	1
Sieve Size #20 - Percent Finer	72.2				% Passing			10/25/16 10:13	1

Client Sample ID: PE1016-P1SCD-REF5-B-0003IN

Lab Sample ID: 200-35736-10

Date Collected: 10/11/16 10:20
Matrix: Sediment
Date Received: 10/14/16 10:20

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Sieve Size #40 - Percent Finer	66.3				% Passing			10/25/16 10:13	1
Sieve Size #60 - Percent Finer	59.3				% Passing			10/25/16 10:13	1
Sieve Size #80 - Percent Finer	56.3				% Passing			10/25/16 10:13	1
Sieve Size #100 - Percent Finer	54.6				% Passing			10/25/16 10:13	1
Sieve Size #200 - Percent Finer	49.7				% Passing			10/25/16 10:13	1
Sieve Size #230 - Percent Finer	49.0				% Passing			10/25/16 10:13	1
Hydrometer Reading 1 - Percent Finer	36.3				% Passing			10/25/16 10:13	1
Hydrometer Reading 2 - Percent Finer	32.1				% Passing			10/25/16 10:13	1
Hydrometer Reading 3 - Percent Finer	26.6				% Passing			10/25/16 10:13	1
Hydrometer Reading 4 - Percent Finer	23.8				% Passing			10/25/16 10:13	1
Hydrometer Reading 5 - Percent Finer	16.9				% Passing			10/25/16 10:13	1
Hydrometer Reading 6 - Percent Finer	11.4				% Passing			10/25/16 10:13	1
Hydrometer Reading 7 - Percent Finer	5.9				% Passing			10/25/16 10:13	1

Client Sample ID: PE1016-P1SCD-05-A-0006IN

Lab Sample ID: 200-35736-11

Date Collected: 10/11/16 12:25
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 36.2

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	540		1.3	0.30	mg/Kg	☼	10/17/16 10:03	10/18/16 15:48	1
Selenium	3.4		1.0	0.16	mg/Kg	☼	10/17/16 10:03	10/19/16 11:13	1
Zinc	200	F1	5.0	1.6	mg/Kg	☼	10/17/16 10:03	10/18/16 15:48	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	6.4		0.19	0.070	mg/Kg	☼	10/17/16 10:07	10/17/16 16:01	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	46600		1000	380	mg/Kg			10/19/16 14:00	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	36.2		0.3	0.3	%			10/18/16 14:19	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	14.2				%			10/25/16 10:37	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/25/16 10:37	1
Sand	54.8				%			10/25/16 10:37	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/25/16 10:37	1
Coarse Sand	17.6				%			10/25/16 10:37	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/25/16 10:37	1
Medium Sand	12.7				%			10/25/16 10:37	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/25/16 10:37	1

Client Sample ID: PE1016-P1SCD-05-A-0006IN

Lab Sample ID: 200-35736-11

Date Collected: 10/11/16 12:25
Matrix: Sediment
Date Received: 10/14/16 10:20

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Fine Sand	24.5				%			10/25/16 10:37	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/25/16 10:37	1
Sieve Size #4 - Percent Finer	85.8				% Passing			10/25/16 10:37	1
Silt	21.1				%			10/25/16 10:37	1
Clay	9.9				%			10/25/16 10:37	1
Sieve Size #10 - Percent Finer	68.2				% Passing			10/25/16 10:37	1
Sieve Size #20 - Percent Finer	62.8				% Passing			10/25/16 10:37	1
Sieve Size #40 - Percent Finer	55.5				% Passing			10/25/16 10:37	1
Sieve Size #60 - Percent Finer	46.0				% Passing			10/25/16 10:37	1
Sieve Size #80 - Percent Finer	40.9				% Passing			10/25/16 10:37	1
Sieve Size #100 - Percent Finer	38.0				% Passing			10/25/16 10:37	1
Sieve Size #200 - Percent Finer	31.6				% Passing			10/25/16 10:37	1
Sieve Size #230 - Percent Finer	31.0				% Passing			10/25/16 10:37	1
Hydrometer Reading 1 - Percent Finer	25.0				% Passing			10/25/16 10:37	1
Hydrometer Reading 2 - Percent Finer	21.2				% Passing			10/25/16 10:37	1
Hydrometer Reading 3 - Percent Finer	17.4				% Passing			10/25/16 10:37	1
Hydrometer Reading 4 - Percent Finer	13.7				% Passing			10/25/16 10:37	1
Hydrometer Reading 5 - Percent Finer	9.9				% Passing			10/25/16 10:37	1
Hydrometer Reading 6 - Percent Finer	4.2				% Passing			10/25/16 10:37	1
Hydrometer Reading 7 - Percent Finer	1.9				% Passing			10/25/16 10:37	1

Client Sample ID: PE1016-P1SCD-05-B-0006IN

Lab Sample ID: 200-35736-12

Date Collected: 10/11/16 12:30
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 36.1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	481		1.2	0.28	mg/Kg	☼	10/17/16 10:03	10/18/16 16:34	1
Selenium	3.4		0.95	0.15	mg/Kg	☼	10/17/16 10:03	10/19/16 11:41	1
Zinc	192		4.7	1.5	mg/Kg	☼	10/17/16 10:03	10/18/16 16:34	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	3.7		0.11	0.038	mg/Kg	☼	10/17/16 10:07	10/17/16 15:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	44400		1000	380	mg/Kg			10/19/16 14:13	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	36.1		0.3	0.3	%			10/18/16 14:19	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	7.0				%			10/25/16 10:41	1

Client Sample ID: PE1016-P1SCD-05-B-0006IN

Lab Sample ID: 200-35736-12

Date Collected: 10/11/16 12:30
Matrix: Sediment
Date Received: 10/14/16 10:20

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Sieve Size 2 inch - Percent Finer	100.0				% Passing			10/25/16 10:41	1
Sand	45.3				%			10/25/16 10:41	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			10/25/16 10:41	1
Coarse Sand	11.9				%			10/25/16 10:41	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			10/25/16 10:41	1
Medium Sand	9.4				%			10/25/16 10:41	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			10/25/16 10:41	1
Fine Sand	24.0				%			10/25/16 10:41	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			10/25/16 10:41	1
Sieve Size #4 - Percent Finer	93.0				% Passing			10/25/16 10:41	1
Silt	42.8				%			10/25/16 10:41	1
Clay	4.9				%			10/25/16 10:41	1
Sieve Size #10 - Percent Finer	81.1				% Passing			10/25/16 10:41	1
Sieve Size #20 - Percent Finer	77.4				% Passing			10/25/16 10:41	1
Sieve Size #40 - Percent Finer	71.7				% Passing			10/25/16 10:41	1
Sieve Size #60 - Percent Finer	63.3				% Passing			10/25/16 10:41	1
Sieve Size #80 - Percent Finer	58.1				% Passing			10/25/16 10:41	1
Sieve Size #100 - Percent Finer	54.8				% Passing			10/25/16 10:41	1
Sieve Size #200 - Percent Finer	48.3				% Passing			10/25/16 10:41	1
Sieve Size #230 - Percent Finer	47.7				% Passing			10/25/16 10:41	1
Hydrometer Reading 1 - Percent Finer	17.1				% Passing			10/25/16 10:41	1
Hydrometer Reading 2 - Percent Finer	14.0				% Passing			10/25/16 10:41	1
Hydrometer Reading 3 - Percent Finer	9.5				% Passing			10/25/16 10:41	1
Hydrometer Reading 4 - Percent Finer	8.0				% Passing			10/25/16 10:41	1
Hydrometer Reading 5 - Percent Finer	4.9				% Passing			10/25/16 10:41	1
Hydrometer Reading 6 - Percent Finer	0.4				% Passing			10/25/16 10:41	1
Hydrometer Reading 7 - Percent Finer	0.0				% Passing			10/25/16 10:41	1

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN-D

Lab Sample ID: 200-35736-13

Date Collected: 10/11/16 14:41
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 40.0

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	23.2		0.88	0.21	mg/Kg	☼	10/31/16 11:39	11/01/16 13:40	1
Selenium	1.7	B	0.70	0.11	mg/Kg	☼	10/31/16 11:39	11/01/16 13:40	1
Zinc	110		3.5	1.1	mg/Kg	☼	10/31/16 11:39	11/01/16 13:40	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.059	J	0.085	0.031	mg/Kg	☼	10/31/16 11:40	10/31/16 14:31	1

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN-D

Lab Sample ID: 200-35736-13

Date Collected: 10/11/16 14:41
Matrix: Sediment
Date Received: 10/14/16 10:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	38500	H	1000	380	mg/Kg			10/29/16 21:11	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	40.0		0.3	0.3	%			10/31/16 13:56	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	2.6				%			11/01/16 09:40	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			11/01/16 09:40	1
Sand	24.7				%			11/01/16 09:40	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			11/01/16 09:40	1
Coarse Sand	3.4				%			11/01/16 09:40	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			11/01/16 09:40	1
Medium Sand	8.2				%			11/01/16 09:40	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			11/01/16 09:40	1
Fine Sand	13.1				%			11/01/16 09:40	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			11/01/16 09:40	1
Sieve Size #4 - Percent Finer	97.4				% Passing			11/01/16 09:40	1
Silt	39.7				%			11/01/16 09:40	1
Clay	33.0				%			11/01/16 09:40	1
Sieve Size #10 - Percent Finer	94.0				% Passing			11/01/16 09:40	1
Sieve Size #20 - Percent Finer	89.5				% Passing			11/01/16 09:40	1
Sieve Size #40 - Percent Finer	85.8				% Passing			11/01/16 09:40	1
Sieve Size #60 - Percent Finer	80.9				% Passing			11/01/16 09:40	1
Sieve Size #80 - Percent Finer	78.9				% Passing			11/01/16 09:40	1
Sieve Size #100 - Percent Finer	77.7				% Passing			11/01/16 09:40	1
Sieve Size #200 - Percent Finer	73.5				% Passing			11/01/16 09:40	1
Sieve Size #230 - Percent Finer	72.7				% Passing			11/01/16 09:40	1
Hydrometer Reading 1 - Percent Finer	65.2				% Passing			11/01/16 09:40	1
Hydrometer Reading 2 - Percent Finer	57.2				% Passing			11/01/16 09:40	1
Hydrometer Reading 3 - Percent Finer	49.1				% Passing			11/01/16 09:40	1
Hydrometer Reading 4 - Percent Finer	41.0				% Passing			11/01/16 09:40	1
Hydrometer Reading 5 - Percent Finer	33.0				% Passing			11/01/16 09:40	1
Hydrometer Reading 6 - Percent Finer	21.5				% Passing			11/01/16 09:40	1
Hydrometer Reading 7 - Percent Finer	13.5				% Passing			11/01/16 09:40	1

Client Sample ID: PE1016-P1SCD-BLK-2-101116

Lab Sample ID: 200-35736-14

Date Collected: 10/11/16 16:10
Matrix: Water
Date Received: 10/14/16 10:20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	5.0	U	5.0	2.2	ug/L		10/17/16 12:26	10/18/16 17:03	1
Selenium	4.0	U	4.0	0.97	ug/L		10/17/16 12:26	10/19/16 12:27	1

Client Sample ID: PE1016-P1SCD-BLK-2-101116
Date Collected: 10/11/16 16:10
Date Received: 10/14/16 10:20

Lab Sample ID: 200-35736-14
Matrix: Water

Method: 6020A - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	20.0	U	20.0	2.6	ug/L		10/17/16 12:26	10/18/16 17:03	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.044	ug/L		10/17/16 12:52	10/17/16 16:35	1

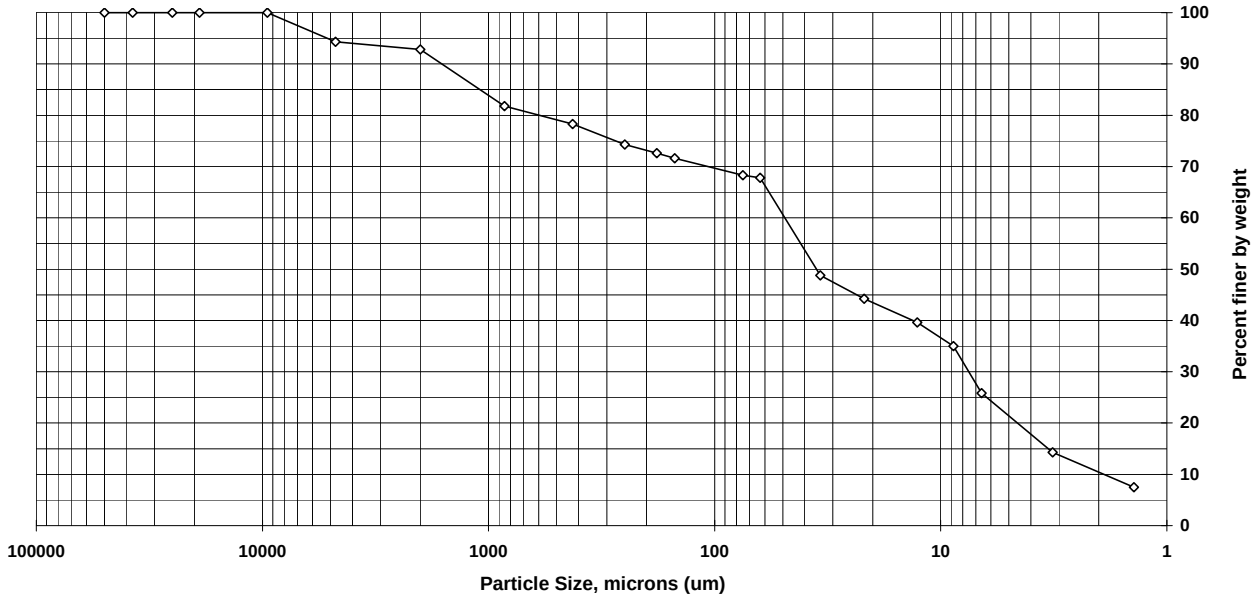
Particle Size of Soils by ASTM D422

				Date Received:	10/14/2016
Sample ID:	PE1016-P1SCD-REF1-A-	**Percent Solids:**	47.9%	**Start Date:**	10/23/2016
Lab ID:	200-35736-B-1	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	94.3	5.7
#10	2000	92.8	1.5
#20	850	81.8	11.0
#40	425	78.3	3.5
#60	250	74.3	4.0
#80	180	72.6	1.7
#100	150	71.6	1.0
#200	75	68.3	3.3
#230	63	67.8	0.5
Hyd1	34.1	48.8	19.0
Hyd2	21.8	44.2	4.6
Hyd3	12.7	39.6	4.6
Hyd4	8.8	35.0	4.6
Hyd5	6.6	25.8	9.2
Hyd6	3.2	14.3	11.5
Hyd7	1.4	7.5	6.8

Soil Classification	Percent of sample
Gravel	5.7
Sand	26.5
Coarse Sand	1.5
Medium Sand	14.5
Fine Sand	10.5
Silt	42.0
Clay	25.8

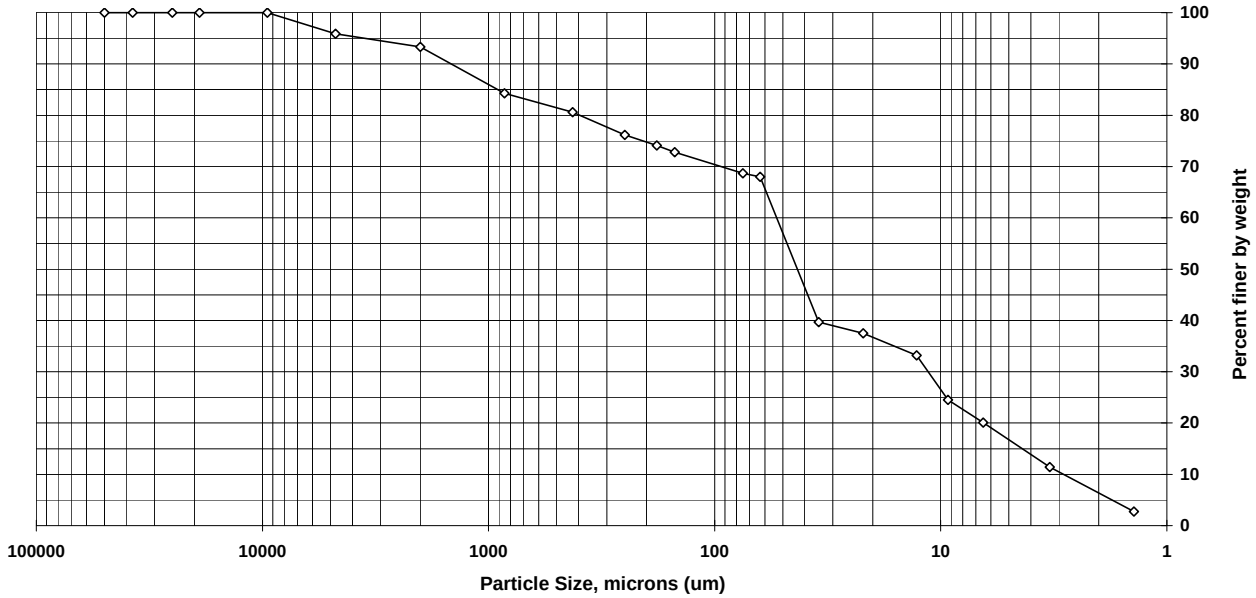
Particle Size of Soils by ASTM D422

Sample ID:	PE1016-P1SCD-REF1-B-	**Percent Solids:**	51.5%	**Date Received:**	10/14/2016
Lab ID:	200-35736-B-2	**Specific Gravity:**	2.650	**Start Date:**	10/23/2016
				End Date:	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	95.9	4.1
#10	2000	93.3	2.6
#20	850	84.3	9.0
#40	425	80.6	3.7
#60	250	76.2	4.4
#80	180	74.1	2.1
#100	150	72.8	1.3
#200	75	68.7	4.1
#230	63	68.0	0.7
Hyd1	34.6	39.7	28.3
Hyd2	22	37.5	2.2
Hyd3	12.8	33.2	4.3
Hyd4	9.3	24.5	8.7
Hyd5	6.5	20.1	4.4
Hyd6	3.3	11.4	8.7
Hyd7	1.4	2.7	8.7

Soil Classification	Percent of sample
Gravel	4.1
Sand	27.9
Coarse Sand	2.6
Medium Sand	12.7
Fine Sand	12.6
Silt	47.9
Clay	20.1

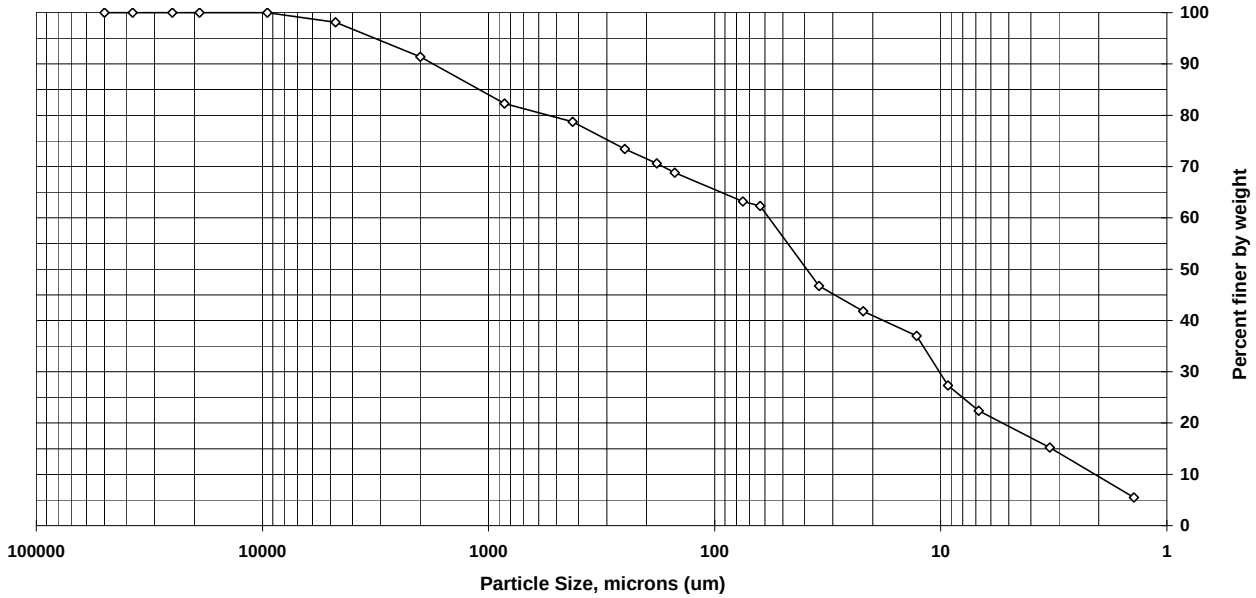
Particle Size of Soils by ASTM D422

				Date Received:	10/14/2016
Sample ID:	PE1016-P1SCD-REF2-A-	**Percent Solids:**	44.2%	**Start Date:**	10/23/2016
Lab ID:	200-35736-B-3	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	98.1	1.9
#10	2000	91.4	6.7
#20	850	82.3	9.1
#40	425	78.7	3.6
#60	250	73.4	5.3
#80	180	70.6	2.8
#100	150	68.8	1.8
#200	75	63.2	5.6
#230	63	62.3	0.9
Hyd1	34.5	46.7	15.6
Hyd2	22	41.8	4.9
Hyd3	12.8	37.0	4.8
Hyd4	9.3	27.3	9.7
Hyd5	6.8	22.4	4.9
Hyd6	3.3	15.2	7.2
Hyd7	1.4	5.5	9.7

Soil Classification	Percent of sample
Gravel	1.9
Sand	35.8
Coarse Sand	6.7
Medium Sand	12.7
Fine Sand	16.4
Silt	39.9
Clay	22.4

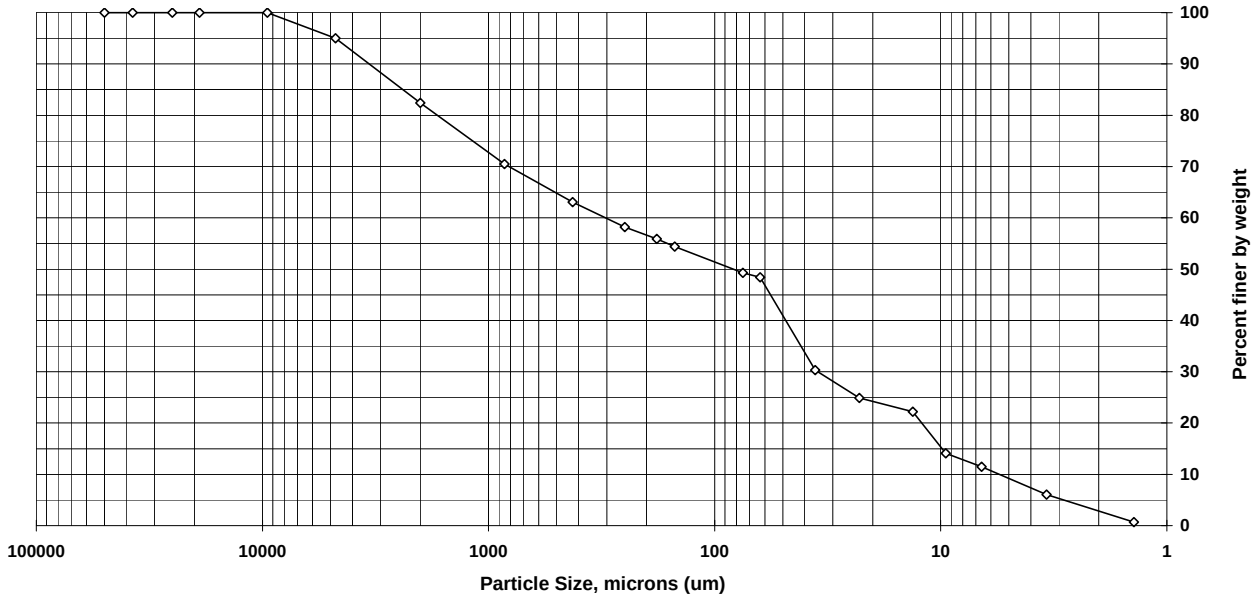
Particle Size of Soils by ASTM D422

				Date Received:	10/14/2016
Sample ID:	PE1016-P1SCD-REF2-B-	**Percent Solids:**	42.7%	**Start Date:**	10/23/2016
Lab ID:	200-35736-B-4	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	95.0	5.0
#10	2000	82.4	12.6
#20	850	70.5	11.9
#40	425	63.1	7.4
#60	250	58.2	4.9
#80	180	55.9	2.3
#100	150	54.4	1.5
#200	75	49.3	5.1
#230	63	48.4	0.9
Hyd1	35.9	30.3	18.1
Hyd2	22.9	24.9	5.4
Hyd3	13.3	22.2	2.7
Hyd4	9.5	14.1	8.1
Hyd5	6.6	11.5	2.6
Hyd6	3.4	6.1	5.4
Hyd7	1.4	0.7	5.4

Soil Classification	Percent of sample
Gravel	5.0
Sand	46.6
Coarse Sand	12.6
Medium Sand	19.3
Fine Sand	14.7
Silt	36.9
Clay	11.5

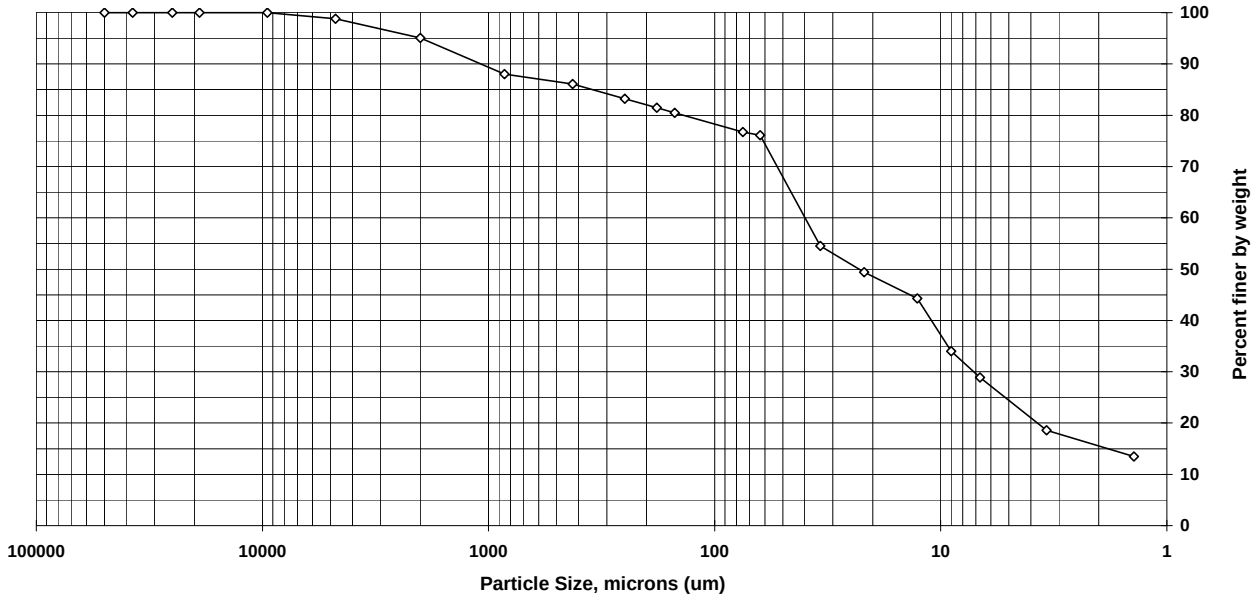
Particle Size of Soils by ASTM D422

				Date Received:	10/14/2016
Sample ID:	PE1016-P1SCD-REF3-A-	**Percent Solids:**	45.0%	**Start Date:**	10/23/2016
Lab ID:	200-35736-B-5	**Specific Gravity:**	2.650	**End Date:**	10/28/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	98.8	1.2
#10	2000	95.1	3.7
#20	850	88.0	7.1
#40	425	86.1	1.9
#60	250	83.2	2.9
#80	180	81.5	1.7
#100	150	80.5	1.0
#200	75	76.7	3.8
#230	63	76.1	0.6
Hyd1	34.1	54.5	21.6
Hyd2	21.8	49.4	5.1
Hyd3	12.7	44.3	5.1
Hyd4	9	34.0	10.3
Hyd5	6.7	28.9	5.1
Hyd6	3.4	18.6	10.3
Hyd7	1.4	13.5	5.1

Soil Classification	Percent of sample
Gravel	1.2
Sand	22.7
Coarse Sand	3.7
Medium Sand	9.0
Fine Sand	10.0
Silt	47.2
Clay	28.9

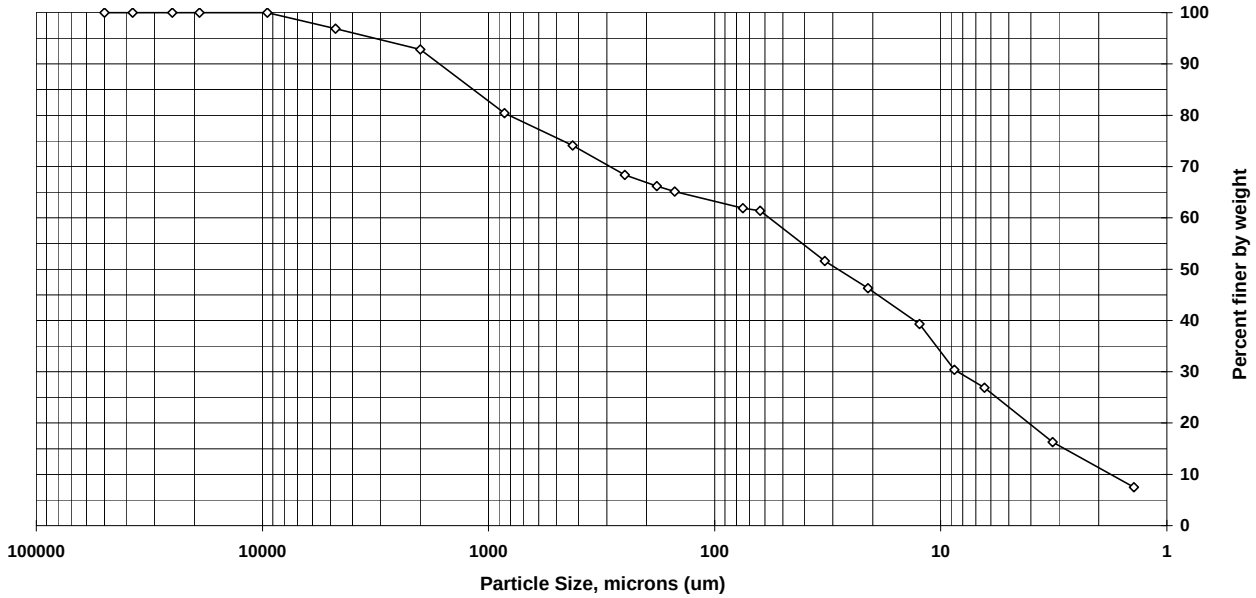
Particle Size of Soils by ASTM D422

				Date Received:	10/14/2016
Sample ID:	PE1016-P1SCD-REF3-B-	**Percent Solids:**	45.4%	**Start Date:**	10/25/2016
Lab ID:	200-35736-B-6	**Specific Gravity:**	2.650	**End Date:**	10/31/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	96.9	3.1
#10	2000	92.8	4.1
#20	850	80.4	12.4
#40	425	74.1	6.3
#60	250	68.4	5.7
#80	180	66.2	2.2
#100	150	65.1	1.1
#200	75	61.9	3.2
#230	63	61.4	0.5
Hyd1	32.6	51.6	9.8
Hyd2	21	46.3	5.3
Hyd3	12.4	39.3	7.0
Hyd4	8.7	30.4	8.9
Hyd5	6.4	26.9	3.5
Hyd6	3.2	16.3	10.6
Hyd7	1.4	7.5	8.8

Soil Classification	Percent of sample
Gravel	3.1
Sand	35.5
Coarse Sand	4.1
Medium Sand	18.7
Fine Sand	12.7
Silt	34.5
Clay	26.9

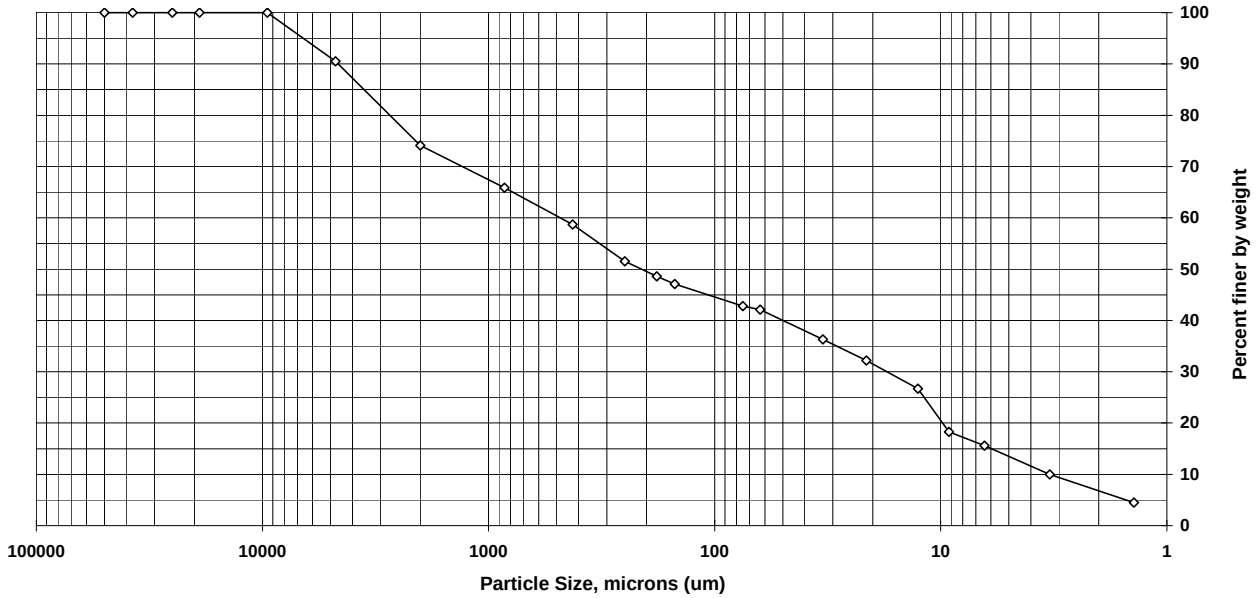
Particle Size of Soils by ASTM D422

Sample ID:	PE1016-P1SCD-REF4-A-	**Percent Solids:**	53.9%	**Date Received:**	10/14/2016
Lab ID:	200-35736-B-7	**Specific Gravity:**	2.650	**Start Date:**	10/25/2016
				End Date:	10/31/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	90.5	9.5
#10	2000	74.1	16.4
#20	850	65.9	8.2
#40	425	58.7	7.2
#60	250	51.5	7.2
#80	180	48.6	2.9
#100	150	47.1	1.5
#200	75	42.8	4.3
#230	63	42.1	0.7
Hyd1	33.2	36.3	5.8
Hyd2	21.3	32.2	4.1
Hyd3	12.6	26.7	5.5
Hyd4	9.2	18.3	8.4
Hyd5	6.4	15.6	2.7
Hyd6	3.3	10.0	5.6
Hyd7	1.4	4.5	5.5

Soil Classification	Percent of sample
Gravel	9.5
Sand	48.4
Coarse Sand	16.4
Medium Sand	15.4
Fine Sand	16.6
Silt	26.5
Clay	15.6

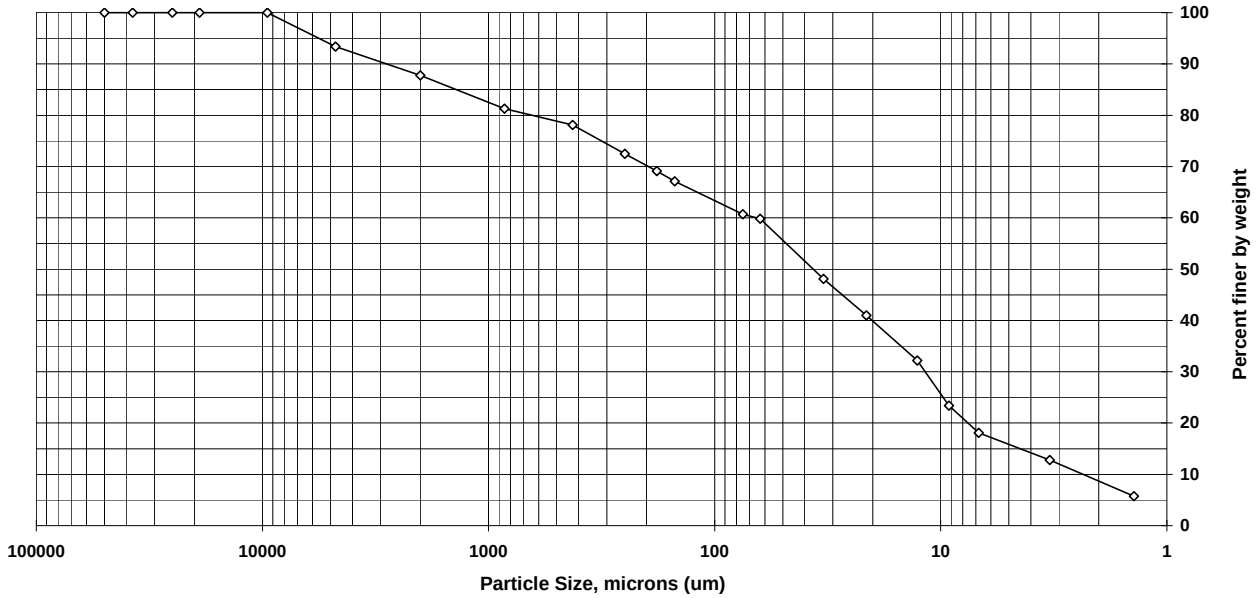
Particle Size of Soils by ASTM D422

				Date Received:	10/14/2016
Sample ID:	PE1016-P1SCD-REF4-B-	**Percent Solids:**	42.6%	**Start Date:**	10/25/2016
Lab ID:	200-35736-B-8	**Specific Gravity:**	2.650	**End Date:**	10/31/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	93.4	6.6
#10	2000	87.8	5.6
#20	850	81.3	6.5
#40	425	78.1	3.2
#60	250	72.5	5.6
#80	180	69.1	3.4
#100	150	67.1	2.0
#200	75	60.7	6.4
#230	63	59.8	0.9
Hyd1	33	48.1	11.7
Hyd2	21.3	41.0	7.1
Hyd3	12.7	32.2	8.8
Hyd4	9.2	23.4	8.8
Hyd5	6.8	18.1	5.3
Hyd6	3.3	12.8	5.3
Hyd7	1.4	5.7	7.1

Soil Classification	Percent of sample
Gravel	6.6
Sand	33.6
Coarse Sand	5.6
Medium Sand	9.7
Fine Sand	18.3
Silt	41.7
Clay	18.1

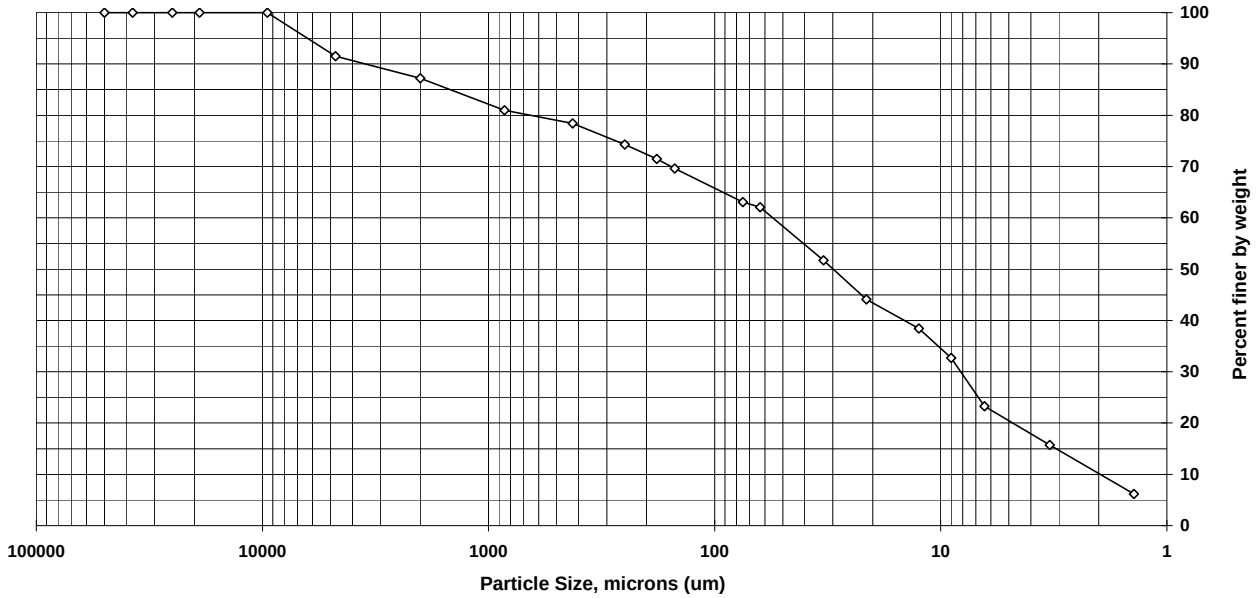
Particle Size of Soils by ASTM D422

				Date Received:	10/14/2016
Sample ID:	PE1016-P1SCD-REF5-A-	**Percent Solids:**	42.8%	**Start Date:**	10/25/2016
Lab ID:	200-35736-B-9	**Specific Gravity:**	2.650	**End Date:**	10/31/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	91.5	8.5
#10	2000	87.2	4.3
#20	850	81.0	6.2
#40	425	78.4	2.6
#60	250	74.3	4.1
#80	180	71.5	2.8
#100	150	69.6	1.9
#200	75	63.1	6.5
#230	63	62.1	1.0
Hyd1	33	51.7	10.4
Hyd2	21.3	44.1	7.6
Hyd3	12.5	38.4	5.7
Hyd4	9	32.7	5.7
Hyd5	6.4	23.3	9.4
Hyd6	3.3	15.7	7.6
Hyd7	1.4	6.2	9.5

Soil Classification	Percent of sample
Gravel	8.5
Sand	29.4
Coarse Sand	4.3
Medium Sand	8.8
Fine Sand	16.3
Silt	38.8
Clay	23.3

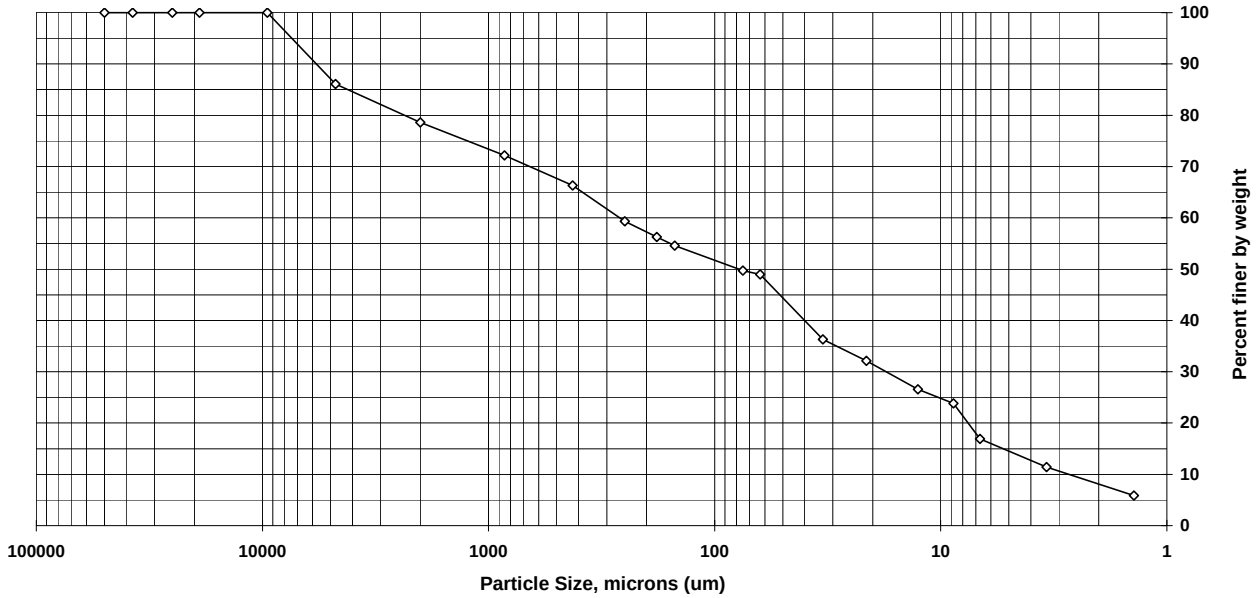
Particle Size of Soils by ASTM D422

				Date Received:	10/14/2016
Sample ID:	PE1016-P1SCD-REF5-B-	**Percent Solids:**	53.4%	**Start Date:**	10/25/2016
Lab ID:	200-35736-B-10	**Specific Gravity:**	2.650	**End Date:**	10/31/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	86.1	13.9
#10	2000	78.6	7.5
#20	850	72.2	6.4
#40	425	66.3	5.9
#60	250	59.3	7.0
#80	180	56.3	3.0
#100	150	54.6	1.7
#200	75	49.7	4.9
#230	63	49.0	0.7
Hyd1	33.2	36.3	12.7
Hyd2	21.3	32.1	4.2
Hyd3	12.6	26.6	5.5
Hyd4	8.8	23.8	2.8
Hyd5	6.7	16.9	6.9
Hyd6	3.4	11.4	5.5
Hyd7	1.4	5.9	5.5

Soil Classification	Percent of sample
Gravel	13.9
Sand	37.1
Coarse Sand	7.5
Medium Sand	12.3
Fine Sand	17.3
Silt	32.1
Clay	16.9

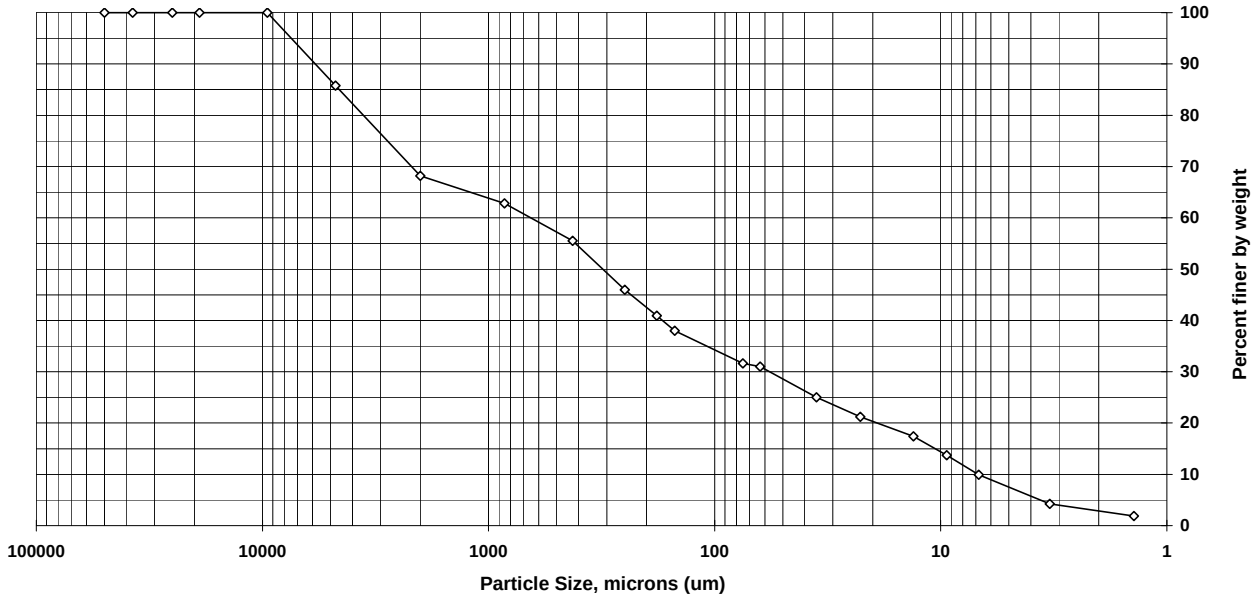
Particle Size of Soils by ASTM D422

				Date Received:	10/14/2016
Sample ID:	PE1016-P1SCD-05-A-00	**Percent Solids:**	32.9%	**Start Date:**	10/25/2016
Lab ID:	200-35736-B-11	**Specific Gravity:**	2.650	**End Date:**	11/1/2016

Shape (> #10): na

Non-soil material: plant

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	85.8	14.2
#10	2000	68.2	17.6
#20	850	62.8	5.4
#40	425	55.5	7.3
#60	250	46.0	9.5
#80	180	40.9	5.1
#100	150	38.0	2.9
#200	75	31.6	6.4
#230	63	31.0	0.6
Hyd1	35.5	25.0	6.0
Hyd2	22.7	21.2	3.8
Hyd3	13.2	17.4	3.8
Hyd4	9.4	13.7	3.7
Hyd5	6.8	9.9	3.8
Hyd6	3.3	4.2	5.7
Hyd7	1.4	1.9	2.3

Soil Classification	Percent of sample
Gravel	14.2
Sand	54.8
Coarse Sand	17.6
Medium Sand	12.7
Fine Sand	24.5
Silt	21.1
Clay	9.9

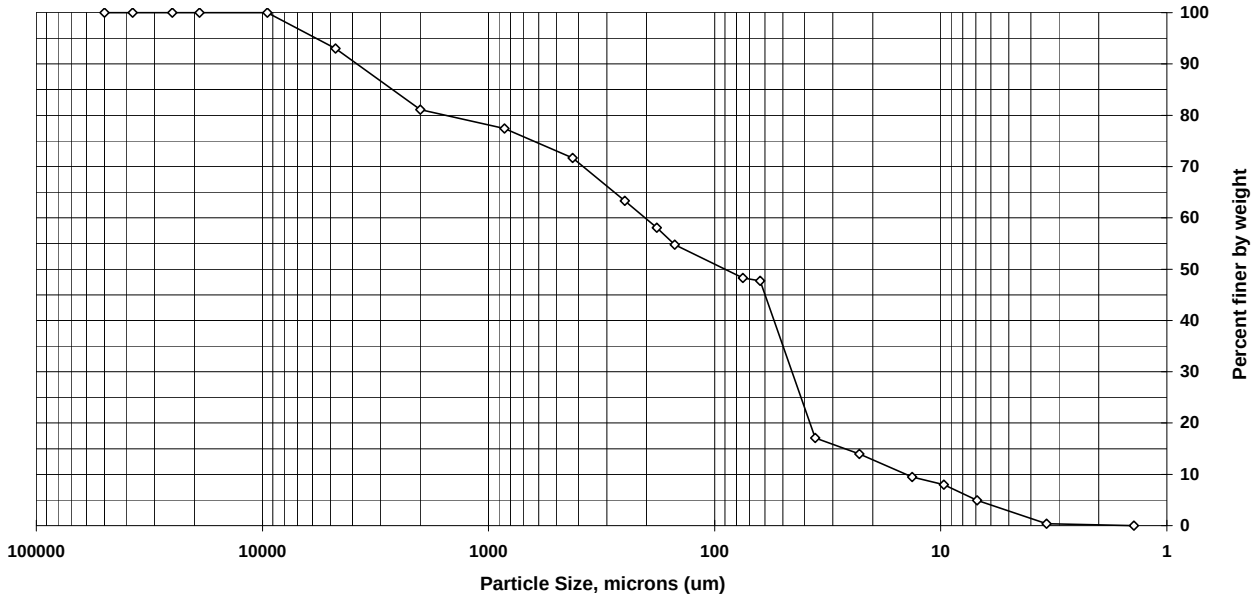
Particle Size of Soils by ASTM D422

Sample ID:	PE1016-P1SCD-05-B-00	**Percent Solids:**	38.4%	**Date Received:**	10/14/2016
Lab ID:	200-35736-B-12	**Specific Gravity:**	2.650	**Start Date:**	10/25/2016
				End Date:	11/1/2016

Shape (> #10): na

Non-soil material: plant

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	93.0	7.0
#10	2000	81.1	11.9
#20	850	77.4	3.7
#40	425	71.7	5.7
#60	250	63.3	8.4
#80	180	58.1	5.2
#100	150	54.8	3.3
#200	75	48.3	6.5
#230	63	47.7	0.6
Hyd1	35.9	17.1	30.6
Hyd2	22.9	14.0	3.1
Hyd3	13.4	9.5	4.5
Hyd4	9.7	8.0	1.5
Hyd5	6.9	4.9	3.0
Hyd6	3.4	0.4	4.6
Hyd7	1.4	0.0	0.4

Soil Classification	Percent of sample
Gravel	7.0
Sand	45.3
Coarse Sand	11.9
Medium Sand	9.4
Fine Sand	24.0
Silt	42.8
Clay	4.9

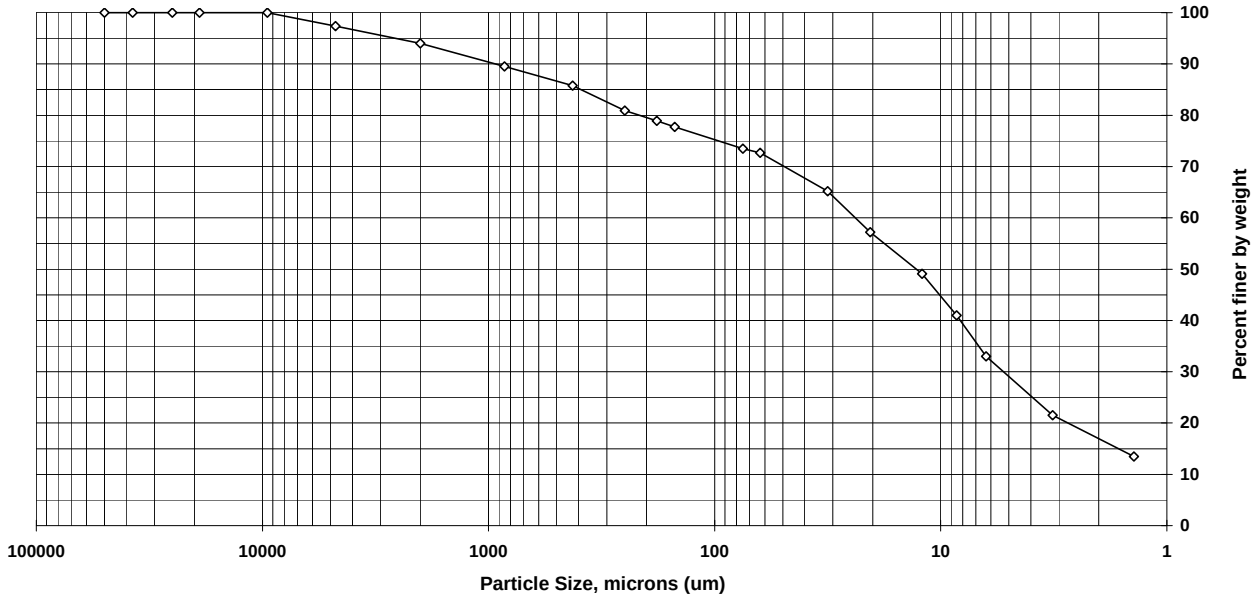
Particle Size of Soils by ASTM D422

				Date Received:	10/14/2016
Sample ID:	PE1016-P1SCD-REF3-A-	**Percent Solids:**	45.9%	**Start Date:**	11/1/2016
Lab ID:	200-35736-B-13	**Specific Gravity:**	2.650	**End Date:**	11/8/2016

Shape (> #10): subangular

Non-soil material: plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	97.4	2.6
#10	2000	94.0	3.4
#20	850	89.5	4.5
#40	425	85.8	3.7
#60	250	80.9	4.9
#80	180	78.9	2.0
#100	150	77.7	1.2
#200	75	73.5	4.2
#230	63	72.7	0.8
Hyd1	31.6	65.2	7.5
Hyd2	20.5	57.2	8.0
Hyd3	12.1	49.1	8.1
Hyd4	8.5	41.0	8.1
Hyd5	6.3	33.0	8.0
Hyd6	3.2	21.5	11.5
Hyd7	1.4	13.5	8.0

Soil Classification	Percent of sample
Gravel	2.6
Sand	24.7
Coarse Sand	3.4
Medium Sand	8.2
Fine Sand	13.1
Silt	39.7
Clay	33.0

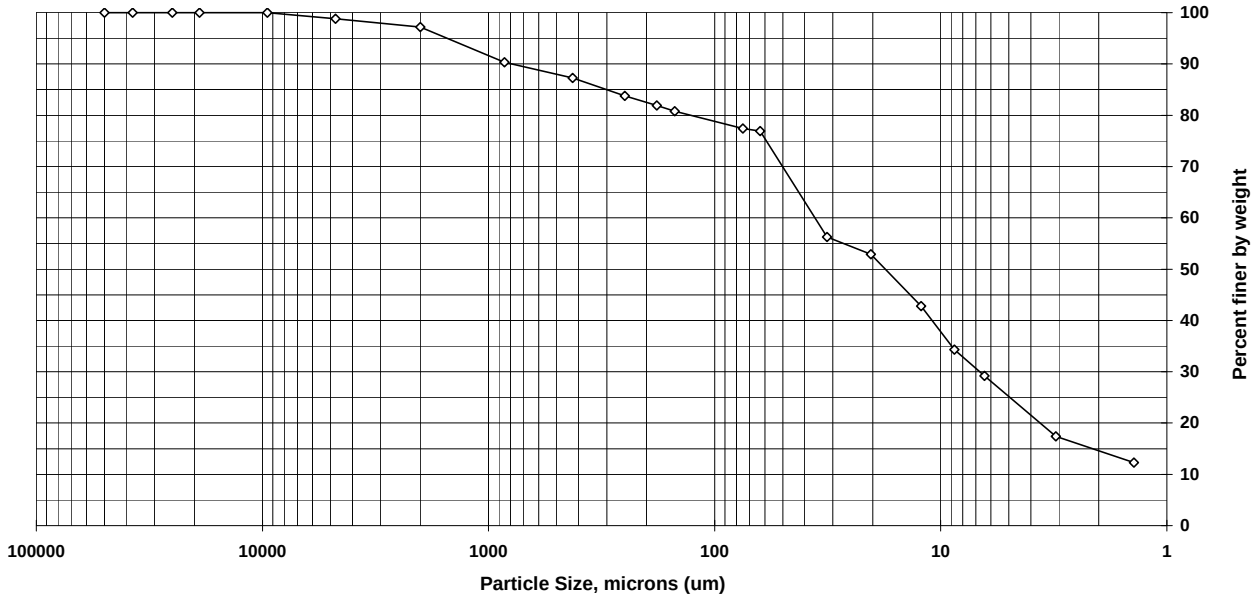
Particle Size of Soils by ASTM D422

Sample ID: PE1016-P1SCD-REF3-A-
Lab ID: 200-35736-B-5DU

Percent Solids: 44.3%
Specific Gravity: 2.650

Date Received: 10/14/2016
Start Date: 10/25/2016
End Date: 10/31/2016

Shape (> #10): subangular
Non-soil material: plant
Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	98.8	1.2
#10	2000	97.2	1.6
#20	850	90.3	6.9
#40	425	87.3	3.0
#60	250	83.8	3.5
#80	180	81.9	1.9
#100	150	80.8	1.1
#200	75	77.4	3.4
#230	63	76.9	0.5
Hyd1	31.8	56.3	20.6
Hyd2	20.4	52.9	3.4
Hyd3	12.2	42.8	10.1
Hyd4	8.7	34.3	8.5
Hyd5	6.4	29.2	5.1
Hyd6	3.1	17.4	11.8
Hyd7	1.4	12.3	5.1

Soil Classification	Percent of sample
Gravel	1.2
Sand	21.9
Coarse Sand	1.6
Medium Sand	9.9
Fine Sand	10.4
Silt	47.7
Clay	29.2

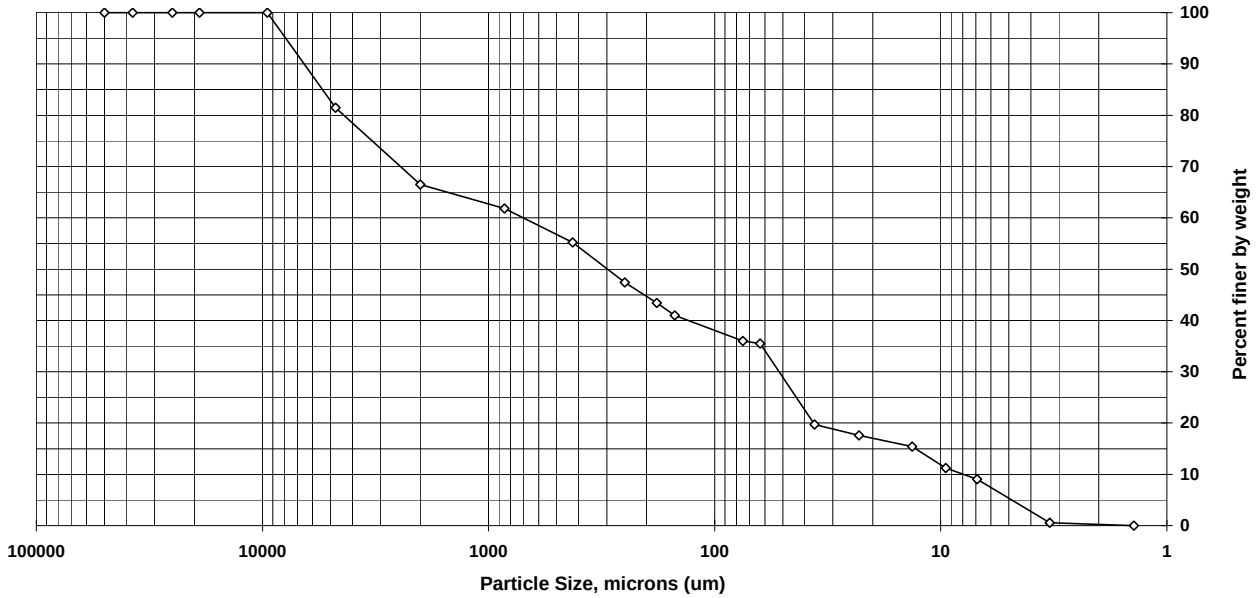
Particle Size of Soils by ASTM D422

				Date Received:	10/14/2016
Sample ID:	PE1016-P1SCD-05-A-00	**Percent Solids:**	31.7%	**Start Date:**	10/25/2016
Lab ID:	200-35736-B-11DU	**Specific Gravity:**	2.650	**End Date:**	11/1/2016

Shape (> #10): na

Non-soil material: plant

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	81.5	18.5
#10	2000	66.5	15.0
#20	850	61.8	4.7
#40	425	55.2	6.6
#60	250	47.4	7.8
#80	180	43.4	4.0
#100	150	41.0	2.4
#200	75	36.0	5.0
#230	63	35.5	0.5
Hyd1	36.2	19.7	15.8
Hyd2	23	17.6	2.1
Hyd3	13.4	15.4	2.2
Hyd4	9.5	11.2	4.2
Hyd5	6.9	9.1	2.2
Hyd6	3.3	0.5	8.5
Hyd7	1.4	0.0	0.5

Soil Classification	Percent of sample
Gravel	18.5
Sand	46.0
Coarse Sand	15.0
Medium Sand	11.3
Fine Sand	19.7
Silt	26.5
Clay	9.1

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-REF1-A-
Lab Sample ID	200-35736-B-1

Date Received	10/14/2016
Start Date	10/23/2016 18:44
End Date	10/28/2016 14:13

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	19.41	g
Dry Sample + Tin	9.81	g
% Moisture	52.15	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.64	117.71	73.07
Sample Weight (Oven Dried)			35

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			2.52
Sample <#10			32.5
% Passing #10			44.5

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	490.17	2.01	g	94.3	Gravel	
#10	2000	462.82	463.33	0.51	g	92.8	Sand	Coarse
#20	850	380.39	384.23	3.84	g	81.8	Sand	Medium
#40	425	354.99	356.23	1.24	g	78.3	Sand	Medium
#60	250	352.59	353.98	1.39	g	74.3	Sand	Fine
#80	180	338.73	339.31	0.58	g	72.6	Sand	Fine
#100	150	329.04	329.39	0.35	g	71.6	Sand	Fine
#200	75	323.77	324.91	1.14	g	68.3	Sand	Fine
#230	63	341.27	341.44	0.17	g	67.8	Sand	Fine
				0.00	g	67.8		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	35

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0150	19.5	34.1	48.8	Silt	
5	5	1.0140	19.5	21.8	44.2	Silt	
15	15	1.0130	19.5	12.7	39.6	Silt	
30	32	1.0120	19.5	8.8	35	Silt	
60	60	1.0100	19.5	6.6	25.8	Silt	
250	259	1.0075	19.5	3.2	14.3	Clay	
1440	1406	1.0060	19.5	1.4	7.46	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-REF1-B-
Lab Sample ID	200-35736-B-2

Date Received	10/14/2016
Start Date	10/23/2016 18:46
End Date	10/28/2016 14:23

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	20.79	g
Dry Sample + Tin	11.19	g
% Moisture	48.53	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.68	116.31	71.63
Sample Weight (Oven Dried)			36.9

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			2.47
Sample <#10			34.4
% Passing #10			48

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	489.67	1.51	g	95.9	Gravel	
#10	2000	462.82	463.78	0.96	g	93.3	Sand	Coarse
#20	850	380.39	383.72	3.33	g	84.3	Sand	Medium
#40	425	354.99	356.36	1.37	g	80.6	Sand	Medium
#60	250	352.59	354.22	1.63	g	76.2	Sand	Fine
#80	180	338.73	339.50	0.77	g	74.1	Sand	Fine
#100	150	329.04	329.51	0.47	g	72.8	Sand	Fine
#200	75	323.77	325.29	1.52	g	68.7	Sand	Fine
#230	63	341.27	341.54	0.27	g	68.0	Sand	Fine
				0.00	g	68.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	36.9

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0135	19.5	34.6	39.7	Silt	
5	5	1.0130	19.5	22	37.5	Silt	
15	15	1.0120	19.5	12.8	33.2	Silt	
30	30	1.0100	19.5	9.3	24.5	Silt	
60	63	1.0090	19.5	6.5	20.1	Silt	
250	253	1.0070	19.5	3.3	11.4	Clay	
1440	1400	1.0050	19.5	1.4	2.72	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-REF2-A-
Lab Sample ID	200-35736-B-3

Date Received	10/14/2016
Start Date	10/23/2016 18:47
End Date	10/28/2016 14:43

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	20.10	g
Dry Sample + Tin	9.44	g
% Moisture	55.84	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.85	119.75	74.9
Sample Weight (Oven Dried)			33.1

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			2.85
Sample <#10			30.3
% Passing #10			40.5

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	488.79	0.63	g	98.1	Gravel	
#10	2000	462.82	465.04	2.22	g	91.4	Sand	Coarse
#20	850	380.39	383.39	3.00	g	82.3	Sand	Medium
#40	425	354.99	356.19	1.20	g	78.7	Sand	Medium
#60	250	352.59	354.36	1.77	g	73.4	Sand	Fine
#80	180	338.73	339.66	0.93	g	70.6	Sand	Fine
#100	150	329.04	329.63	0.59	g	68.8	Sand	Fine
#200	75	323.77	325.64	1.87	g	63.2	Sand	Fine
#230	63	341.27	341.57	0.30	g	62.3	Sand	Fine
				0.00	g	62.3		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	33.1

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0140	19.5	34.5	46.7	Silt	
5	5	1.0130	19.5	22	41.8	Silt	
15	15	1.0120	19.5	12.8	37	Silt	
30	30	1.0100	19.5	9.3	27.3	Silt	
60	57	1.0090	19.5	6.8	22.4	Silt	
250	247	1.0075	19.5	3.3	15.2	Clay	
1440	1394	1.0055	19.5	1.4	5.46	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-REF2-B-
Lab Sample ID	200-35736-B-4

Date Received	10/14/2016
Start Date	10/23/2016 18:49
End Date	10/28/2016 14:53

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	19.21	g
Dry Sample + Tin	8.77	g
% Moisture	57.33	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.77	114.66	69.89
Sample Weight (Oven Dried)			29.8

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			5.25
Sample <#10			24.6
% Passing #10			35.2

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	489.65	1.49	g	95.0	Gravel	
#10	2000	462.82	466.58	3.76	g	82.4	Sand	Coarse
#20	850	380.39	383.93	3.54	g	70.5	Sand	Medium
#40	425	354.99	357.21	2.22	g	63.1	Sand	Medium
#60	250	352.59	354.05	1.46	g	58.2	Sand	Fine
#80	180	338.73	339.42	0.69	g	55.9	Sand	Fine
#100	150	329.04	329.49	0.45	g	54.4	Sand	Fine
#200	75	323.77	325.30	1.53	g	49.3	Sand	Fine
#230	63	341.27	341.53	0.26	g	48.4	Sand	Fine
				0.00	g	48.4		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	29.8

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0100	19.5	35.9	30.3	Silt	
5	5	1.0090	19.5	22.9	24.9	Silt	
15	15	1.0085	19.5	13.3	22.2	Silt	
30	30	1.0070	19.5	9.5	14.1	Silt	
60	63	1.0065	19.5	6.6	11.5	Silt	
250	241	1.0055	19.5	3.4	6.06	Clay	
1440	1388	1.0045	19.5	1.4	0.674	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-REF3-A-
Lab Sample ID	200-35736-B-5

Date Received	10/14/2016
Start Date	10/23/2016 18:51
End Date	10/28/2016 15:08

Dry Weight Determination

Tin Weight	0.99	g
Wet Sample + Tin	22.18	g
Dry Sample + Tin	10.52	g
% Moisture	55.03	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.92	114.60	69.68
Sample Weight (Oven Dried)			31.3

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			1.52
Sample <#10			29.8
% Passing #10			42.8

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	488.53	0.37	g	98.8	Gravel	
#10	2000	462.82	463.97	1.15	g	95.1	Sand	Coarse
#20	850	380.39	382.62	2.23	g	88.0	Sand	Medium
#40	425	354.99	355.58	0.59	g	86.1	Sand	Medium
#60	250	352.59	353.51	0.92	g	83.2	Sand	Fine
#80	180	338.73	339.25	0.52	g	81.5	Sand	Fine
#100	150	329.04	329.35	0.31	g	80.5	Sand	Fine
#200	75	323.77	324.95	1.18	g	76.7	Sand	Fine
#230	63	341.27	341.46	0.19	g	76.1	Sand	Fine
				0.00	g	76.1		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	31.3

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0150	19.5	34.1	54.5	Silt	
5	5	1.0140	19.5	21.8	49.4	Silt	
15	15	1.0130	19.5	12.7	44.3	Silt	
30	31	1.0110	19.5	9	34	Silt	
60	57	1.0100	19.5	6.7	28.9	Silt	
250	235	1.0080	19.5	3.4	18.6	Clay	
1440	1382	1.0070	19.5	1.4	13.5	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-REF3-B-
Lab Sample ID	200-35736-B-6

Date Received	10/14/2016
Start Date	10/25/2016 10:06
End Date	10/31/2016 14:00

Dry Weight Determination

Tin Weight	1.04	g
Wet Sample + Tin	33.32	g
Dry Sample + Tin	15.70	g
% Moisture	54.58	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.66	144.87	100.21
Sample Weight (Oven Dried)			45.5

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			3.27
Sample <#10			42.2
% Passing #10			42.1

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	489.56	1.40	g	96.9	Gravel	
#10	2000	462.83	464.70	1.87	g	92.8	Sand	Coarse
#20	850	380.27	385.91	5.64	g	80.4	Sand	Medium
#40	425	354.63	357.49	2.86	g	74.1	Sand	Medium
#60	250	352.35	354.93	2.58	g	68.4	Sand	Fine
#80	180	338.63	339.62	0.99	g	66.2	Sand	Fine
#100	150	329.03	329.54	0.51	g	65.1	Sand	Fine
#200	75	323.78	325.22	1.44	g	61.9	Sand	Fine
#230	63	341.29	341.50	0.21	g	61.4	Sand	Fine
				0.00	g	61.4		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	45.5

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0190	19.5	32.6	51.6	Silt	
5	5	1.0175	19.5	21	46.3	Silt	
15	15	1.0155	19.5	12.4	39.3	Silt	
30	32	1.0130	19.5	8.7	30.4	Silt	
60	60	1.0120	19.5	6.4	26.9	Silt	
250	259	1.0090	19.5	3.2	16.3	Clay	
1440	1406	1.0065	19.5	1.4	7.5	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-REF4-A-
Lab Sample ID	200-35736-B-7

Date Received	10/14/2016
Start Date	10/25/2016 10:08
End Date	10/31/2016 14:12

Dry Weight Determination

Tin Weight	0.99	g
Wet Sample + Tin	29.35	g
Dry Sample + Tin	16.28	g
% Moisture	46.09	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.77	152.42	107.65
Sample Weight (Oven Dried)			58

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			15
Sample <#10			43
% Passing #10			39.9

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	493.69	5.53	g	90.5	Gravel	
#10	2000	462.83	472.33	9.50	g	74.1	Sand	Coarse
#20	850	380.27	385.00	4.73	g	65.9	Sand	Medium
#40	425	354.63	358.82	4.19	g	58.7	Sand	Medium
#60	250	352.35	356.51	4.16	g	51.5	Sand	Fine
#80	180	338.63	340.34	1.71	g	48.6	Sand	Fine
#100	150	329.03	329.90	0.87	g	47.1	Sand	Fine
#200	75	323.78	326.29	2.51	g	42.8	Sand	Fine
#230	63	341.29	341.67	0.38	g	42.1	Sand	Fine
				0.00	g	42.1		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	58

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0175	19.5	33.2	36.3	Silt	
5	5	1.0160	19.5	21.3	32.2	Silt	
15	15	1.0140	19.5	12.6	26.7	Silt	
30	30	1.0110	19.5	9.2	18.3	Silt	
60	63	1.0100	19.5	6.4	15.6	Silt	
250	253	1.0080	19.5	3.3	10	Clay	
1440	1400	1.0060	19.5	1.4	4.5	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-REF4-B-
Lab Sample ID	200-35736-B-8

Date Received	10/14/2016
Start Date	10/25/2016 10:09
End Date	10/31/2016 14:24

Dry Weight Determination

Tin Weight	0.96	g
Wet Sample + Tin	21.73	g
Dry Sample + Tin	9.81	g
% Moisture	57.39	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.68	151.45	106.77
Sample Weight (Oven Dried)			45.5

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			5.56
Sample <#10			39.9
% Passing #10			37.4

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	491.17	3.01	g	93.4	Gravel	
#10	2000	462.83	465.38	2.55	g	87.8	Sand	Coarse
#20	850	380.27	383.25	2.98	g	81.3	Sand	Medium
#40	425	354.63	356.08	1.45	g	78.1	Sand	Medium
#60	250	352.35	354.88	2.53	g	72.5	Sand	Fine
#80	180	338.63	340.19	1.56	g	69.1	Sand	Fine
#100	150	329.03	329.96	0.93	g	67.1	Sand	Fine
#200	75	323.78	326.69	2.91	g	60.7	Sand	Fine
#230	63	341.29	341.70	0.41	g	59.8	Sand	Fine
				0.00	g	59.8		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	45.5

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0180	19.5	33	48.1	Silt	
5	5	1.0160	19.5	21.3	41	Silt	
15	15	1.0135	19.5	12.7	32.2	Silt	
30	30	1.0110	19.5	9.2	23.4	Silt	
60	57	1.0095	19.5	6.8	18.1	Silt	
250	247	1.0080	19.5	3.3	12.8	Clay	
1440	1394	1.0060	19.5	1.4	5.74	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-REF5-A-
Lab Sample ID	200-35736-B-9

Date Received	10/14/2016
Start Date	10/25/2016 10:11
End Date	10/31/2016 14:34

Dry Weight Determination

Tin Weight	0.93	g
Wet Sample + Tin	22.45	g
Dry Sample + Tin	10.13	g
% Moisture	57.25	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.72	143.72	99
Sample Weight (Oven Dried)			42.3

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			5.41
Sample <#10			36.9
% Passing #10			37.3

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	491.74	3.58	g	91.5	Gravel	
#10	2000	462.83	464.66	1.83	g	87.2	Sand	Coarse
#20	850	380.27	382.89	2.62	g	81.0	Sand	Medium
#40	425	354.63	355.74	1.11	g	78.4	Sand	Medium
#60	250	352.35	354.10	1.75	g	74.3	Sand	Fine
#80	180	338.63	339.81	1.18	g	71.5	Sand	Fine
#100	150	329.03	329.84	0.81	g	69.6	Sand	Fine
#200	75	323.78	326.53	2.75	g	63.1	Sand	Fine
#230	63	341.29	341.70	0.41	g	62.1	Sand	Fine
				0.00	g	62.1		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	42.3

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0180	19.5	33	51.7	Silt	
5	5	1.0160	19.5	21.3	44.1	Silt	
15	15	1.0145	19.5	12.5	38.4	Silt	
30	30	1.0130	19.5	9	32.7	Silt	
60	63	1.0105	19.5	6.4	23.3	Silt	
250	241	1.0085	19.5	3.3	15.7	Clay	
1440	1388	1.0060	19.5	1.4	6.17	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-REF5-B-
Lab Sample ID	200-35736-B-10

Date Received	10/14/2016
Start Date	10/25/2016 10:13
End Date	10/31/2016 14:55

Dry Weight Determination

Tin Weight	0.94	g
Wet Sample + Tin	21.12	g
Dry Sample + Tin	11.72	g
% Moisture	46.58	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	47.68	156.47	108.79
Sample Weight (Oven Dried)			58.1

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			12.4
Sample <#10			45.7
% Passing #10			42

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	496.21	8.05	g	86.1	Gravel	
#10	2000	462.83	467.18	4.35	g	78.6	Sand	Coarse
#20	850	380.27	383.98	3.71	g	72.2	Sand	Medium
#40	425	354.63	358.06	3.43	g	66.3	Sand	Medium
#60	250	352.35	356.40	4.05	g	59.3	Sand	Fine
#80	180	338.63	340.40	1.77	g	56.3	Sand	Fine
#100	150	329.03	330.03	1.00	g	54.6	Sand	Fine
#200	75	323.78	326.65	2.87	g	49.7	Sand	Fine
#230	63	341.29	341.67	0.38	g	49.0	Sand	Fine
				0.00	g	49.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	58.1

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0175	19.5	33.2	36.3	Silt	
5	5	1.0160	19.5	21.3	32.1	Silt	
15	15	1.0140	19.5	12.6	26.6	Silt	
30	31	1.0130	19.5	8.8	23.8	Silt	
60	57	1.0105	19.5	6.7	16.9	Silt	
250	235	1.0085	19.5	3.4	11.4	Clay	
1440	1382	1.0065	19.5	1.4	5.87	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-05-A-00
Lab Sample ID	200-35736-B-11

Date Received	10/14/2016
Start Date	10/25/2016 10:37
End Date	11/1/2016 11:54

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	18.70	g
Dry Sample + Tin	6.83	g
% Moisture	67.10	%

Non-soil material:	plant
Shape (> #10):	na
Hardness (> #10):	na
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.93	174.34	129.41
Sample Weight (Oven Dried)			42.6

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			13.6
Sample <#10			29
% Passing #10			22.4

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.14	494.20	6.06	g	85.8	Gravel	
#10	2000	462.80	470.29	7.49	g	68.2	Sand	Coarse
#20	850	380.27	382.55	2.28	g	62.8	Sand	Medium
#40	425	354.54	357.67	3.13	g	55.5	Sand	Medium
#60	250	352.30	356.36	4.06	g	46.0	Sand	Fine
#80	180	338.58	340.74	2.16	g	40.9	Sand	Fine
#100	150	329.02	330.27	1.25	g	38.0	Sand	Fine
#200	75	323.75	326.48	2.73	g	31.6	Sand	Fine
#230	63	341.23	341.48	0.25	g	31.0	Sand	Fine
				0.00	g	31.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	42.6

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0110	19.5	35.5	25	Silt	
5	5	1.0100	19.5	22.7	21.2	Silt	
15	15	1.0090	19.5	13.2	17.4	Silt	
30	30	1.0080	19.5	9.4	13.7	Silt	
60	59	1.0070	19.5	6.8	9.9	Silt	
250	256	1.0055	19.5	3.3	4.24	Clay	
1440	1440	1.0050	19.0	1.4	1.89	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-05-B-00
Lab Sample ID	200-35736-B-12

Date Received	10/14/2016
Start Date	10/25/2016 10:41
End Date	11/1/2016 12:16

Dry Weight Determination

Tin Weight	0.95	g
Wet Sample + Tin	22.92	g
Dry Sample + Tin	9.39	g
% Moisture	61.58	%

Non-soil material:	plant
Shape (> #10):	na
Hardness (> #10):	na

Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.86	182.48	137.62
Sample Weight (Oven Dried)			52.9

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			10
Sample <#10			42.9
% Passing #10			31.2

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.14	491.83	3.69	g	93.0	Gravel	
#10	2000	462.80	469.12	6.32	g	81.1	Sand	Coarse
#20	850	380.27	382.24	1.97	g	77.4	Sand	Medium
#40	425	354.54	357.54	3.00	g	71.7	Sand	Medium
#60	250	352.30	356.75	4.45	g	63.3	Sand	Fine
#80	180	338.58	341.34	2.76	g	58.1	Sand	Fine
#100	150	329.02	330.77	1.75	g	54.8	Sand	Fine
#200	75	323.75	327.20	3.45	g	48.3	Sand	Fine
#230	63	341.23	341.53	0.30	g	47.7	Sand	Fine
				0.00	g	47.7		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	52.9

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0100	19.5	35.9	17.1	Silt	
5	5	1.0090	19.5	22.9	14	Silt	
15	15	1.0075	19.5	13.4	9.49	Silt	
30	29	1.0070	19.5	9.7	7.97	Silt	
60	58	1.0060	19.5	6.9	4.93	Silt	
250	250	1.0045	19.5	3.4	0.38	Clay	
1440	1434	1.0045	19.0	1.4	0	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-REF3-A-
Lab Sample ID	200-35736-B-13

Date Received	10/14/2016
Start Date	11/1/2016 09:40
End Date	11/8/2016 12:50

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	30.26	g
Dry Sample + Tin	14.43	g
% Moisture	54.12	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.76	131.51	86.75
Sample Weight (Oven Dried)			39.8

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			2.42
Sample <#10			37.4
% Passing #10			43.1

Hydrometer Data

Serial Number	504381
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0045
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.007333333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.14	489.19	1.05	g	97.4	Gravel	
#10	2000	462.80	464.17	1.37	g	94.0	Sand	Coarse
#20	850	380.04	381.84	1.80	g	89.5	Sand	Medium
#40	425	354.00	355.46	1.46	g	85.8	Sand	Medium
#60	250	351.72	353.68	1.96	g	80.9	Sand	Fine
#80	180	338.44	339.24	0.80	g	78.9	Sand	Fine
#100	150	328.97	329.45	0.48	g	77.7	Sand	Fine
#200	75	323.73	325.41	1.68	g	73.5	Sand	Fine
#230	63	341.28	341.60	0.32	g	72.7	Sand	Fine
				0.00	g	72.7		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	39.8

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0200	21.0	31.6	65.2	Silt	
5	5	1.0180	21.0	20.5	57.2	Silt	
15	15	1.0160	21.0	12.1	49.1	Silt	
30	32	1.0140	21.0	8.5	41	Silt	
60	60	1.0120	21.0	6.3	33	Silt	
250	259	1.0095	19.0	3.2	21.5	Clay	
1440	1406	1.0075	19.0	1.4	13.5	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-REF3-A-
Lab Sample ID	200-35736-B-5DU

Date Received	10/14/2016
Start Date	10/25/2016 10:00
End Date	10/31/2016 13:49

Dry Weight Determination

Tin Weight	0.94	g
Wet Sample + Tin	30.05	g
Dry Sample + Tin	13.83	g
% Moisture	55.72	%

Non-soil material:	plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.67	151.82	107.15
Sample Weight (Oven Dried)			47.4

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			1.36
Sample <#10			46
% Passing #10			42.9

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.16	488.74	0.58	g	98.8	Gravel	
#10	2000	462.83	463.61	0.78	g	97.2	Sand	Coarse
#20	850	380.27	383.54	3.27	g	90.3	Sand	Medium
#40	425	354.63	356.04	1.41	g	87.3	Sand	Medium
#60	250	352.35	354.03	1.68	g	83.8	Sand	Fine
#80	180	338.63	339.51	0.88	g	81.9	Sand	Fine
#100	150	329.03	329.55	0.52	g	80.8	Sand	Fine
#200	75	323.78	325.38	1.60	g	77.4	Sand	Fine
#230	63	341.29	341.53	0.24	g	76.9	Sand	Fine
				0.00	g	76.9		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	47.4

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0210	19.5	31.8	56.3	Silt	
5	5	1.0200	19.5	20.4	52.9	Silt	
15	15	1.0170	19.5	12.2	42.8	Silt	
30	31	1.0145	19.5	8.7	34.3	Silt	
60	59	1.0130	19.5	6.4	29.2	Silt	
250	265	1.0095	19.5	3.1	17.4	Clay	
1440	1412	1.0080	19.5	1.4	12.3	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1016-P1SCD-05-A-00
Lab Sample ID	200-35736-B-11DU

Date Received	10/14/2016
Start Date	10/25/2016 10:39
End Date	11/1/2016 12:05

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	26.82	g
Dry Sample + Tin	9.20	g
% Moisture	68.27	%

Non-soil material:	plant
Shape (> #10):	na
Hardness (> #10):	na
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.66	163.45	118.79
Sample Weight (Oven Dried)			37.7

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			12.6
Sample <#10			25.1
% Passing #10			21.1

Hydrometer Data

Serial Number	426931
Calib. Date (mm/dd/yyyy)	11/13/2014
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.14	495.12	6.98	g	81.5	Gravel	
#10	2000	462.80	468.45	5.65	g	66.5	Sand	Coarse
#20	850	380.27	382.03	1.76	g	61.8	Sand	Medium
#40	425	354.54	357.02	2.48	g	55.2	Sand	Medium
#60	250	352.30	355.24	2.94	g	47.4	Sand	Fine
#80	180	338.58	340.08	1.50	g	43.4	Sand	Fine
#100	150	329.02	329.92	0.90	g	41.0	Sand	Fine
#200	75	323.75	325.65	1.90	g	36.0	Sand	Fine
#230	63	341.23	341.43	0.20	g	35.5	Sand	Fine
				0.00	g	35.5		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	37.7

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0090	19.5	36.2	19.7	Silt	
5	5	1.0085	19.5	23	17.6	Silt	
15	15	1.0080	19.5	13.4	15.4	Silt	
30	30	1.0070	19.5	9.5	11.2	Silt	
60	58	1.0065	19.5	6.9	9.05	Silt	
250	256	1.0045	19.5	3.3	0.533	Clay	
1440	1440	1.0045	19.0	1.4	0	Clay	

Default Detection Limits

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35736-1
SDG: 200-35736-1

Method: 6020A - Metals (ICP/MS)
Prep: 3010A

Analyte	RL	MDL	Units	Method
Copper	5.0	2.2	ug/L	6020A
Selenium	4.0	0.97	ug/L	6020A
Zinc	20.0	2.6	ug/L	6020A

Method: 6020A - Metals (ICP/MS)
Prep: 3050B

Analyte	RL	MDL	Units	Method
Copper	0.50	0.12	mg/Kg	6020A
Selenium	0.40	0.063	mg/Kg	6020A
Zinc	2.0	0.62	mg/Kg	6020A

Method: 7470A - Mercury (CVAA)
Prep: 7470A

Analyte	RL	MDL	Units	Method
Mercury	0.20	0.044	ug/L	7470A

Method: 7471B - Mercury (CVAA)
Prep: 7471B

Analyte	RL	MDL	Units	Method
Mercury	0.033	0.012	mg/Kg	7471B

General Chemistry

Analyte	RL	MDL	Units	Method
Total Organic Carbon	1000	380	mg/Kg	Lloyd Kahn
Percent Solids	0.1	0.1	%	Moisture

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 200-110229/1-A
Matrix: Sediment
Analysis Batch: 110334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110229

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.50	U	0.50	0.12	mg/Kg		10/17/16 10:03	10/18/16 13:48	1
Selenium	0.40	U	0.40	0.063	mg/Kg		10/17/16 10:03	10/18/16 13:48	1
Zinc	2.0	U	2.0	0.62	mg/Kg		10/17/16 10:03	10/18/16 13:48	1

Lab Sample ID: LCS 200-110229/2-A
Matrix: Sediment
Analysis Batch: 110334

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110229

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	5.00	4.90		mg/Kg		98	80 - 120
Selenium	4.00	3.45		mg/Kg		86	80 - 120
Zinc	20.0	18.27		mg/Kg		91	80 - 120

Lab Sample ID: 200-35736-5 MS
Matrix: Sediment
Analysis Batch: 110334

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN
Prep Type: Total/NA
Prep Batch: 110229

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	19.0		10.5	28.82		mg/Kg	☼	93	75 - 125
Selenium	1.3		8.41	7.73		mg/Kg	☼	77	75 - 125
Zinc	97.0		42.1	131.2		mg/Kg	☼	81	75 - 125

Lab Sample ID: 200-35736-5 MSD
Matrix: Sediment
Analysis Batch: 110334

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN
Prep Type: Total/NA
Prep Batch: 110229

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Copper	19.0		9.44	27.88		mg/Kg	☼	94	75 - 125	3	20
Selenium	1.3		7.55	7.01		mg/Kg	☼	76	75 - 125	10	20
Zinc	97.0		37.8	125.1		mg/Kg	☼	75	75 - 125	5	20

Lab Sample ID: 200-35736-11 MS
Matrix: Sediment
Analysis Batch: 110334

Client Sample ID: PE1016-P1SCD-05-A-0006IN
Prep Type: Total/NA
Prep Batch: 110229

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	540		12.1	613.1	4	mg/Kg	☼	606	75 - 125
Zinc	200	F1	48.4	244.4	4	mg/Kg	☼	92	75 - 125

Lab Sample ID: 200-35736-11 MS
Matrix: Sediment
Analysis Batch: 110361

Client Sample ID: PE1016-P1SCD-05-A-0006IN
Prep Type: Total/NA
Prep Batch: 110229

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	3.4		9.69	11.72		mg/Kg	☼	86	75 - 125

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 200-35736-11 MSD — **Client Sample ID: PE1016-P1SCD-05-A-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110334 — **Prep Batch: 110229**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Copper	540		12.8	605.5	4	mg/Kg	☼	514	75 - 125	1	20
Zinc	200	F1	51.1	267.5	F1	mg/Kg	☼	133	75 - 125	9	20

Lab Sample ID: 200-35736-11 MSD — **Client Sample ID: PE1016-P1SCD-05-A-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110361 — **Prep Batch: 110229**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	3.4		10.2	12.05		mg/Kg	☼	85	75 - 125	3	20

Lab Sample ID: MB 200-110239/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 110334 — **Prep Batch: 110239**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	2.66	J	5.0	2.2	ug/L		10/17/16 12:26	10/18/16 16:40	1
Zinc	20.0	U	20.0	2.6	ug/L		10/17/16 12:26	10/18/16 16:40	1

Lab Sample ID: MB 200-110239/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 110361 — **Prep Batch: 110239**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	4.0	U	4.0	0.97	ug/L		10/17/16 12:26	10/19/16 11:47	1

Lab Sample ID: LCS 200-110239/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 110334 — **Prep Batch: 110239**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	50.0	56.30		ug/L		113	80 - 120
Zinc	200	208.5		ug/L		104	80 - 120

Lab Sample ID: LCS 200-110239/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 110361 — **Prep Batch: 110239**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	40.0	38.84		ug/L		97	80 - 120

Lab Sample ID: 200-35736-14 MS — **Client Sample ID: PE1016-P1SCD-BLK-2-101116**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 110334 — **Prep Batch: 110239**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	5.0	U	50.0	57.00		ug/L		114	75 - 125
Zinc	20.0	U	200	217.1		ug/L		109	75 - 125

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 200-35736-14 MS — **Client Sample ID: PE1016-P1SCD-BLK-2-101116**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 110361 — **Prep Batch: 110239**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	4.0	U	40.0	41.46		ug/L		104	75 - 125

Lab Sample ID: 200-35736-14 MSD — **Client Sample ID: PE1016-P1SCD-BLK-2-101116**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 110334 — **Prep Batch: 110239**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Copper	5.0	U	50.0	56.20		ug/L		112	75 - 125	1	20
Zinc	20.0	U	200	212.9		ug/L		106	75 - 125	2	20

Lab Sample ID: 200-35736-14 MSD — **Client Sample ID: PE1016-P1SCD-BLK-2-101116**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 110361 — **Prep Batch: 110239**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	4.0	U	40.0	40.84		ug/L		102	75 - 125	2	20

Lab Sample ID: MB 200-110769/1-A — **Client Sample ID: Method Blank**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110848 — **Prep Batch: 110769**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.50	U	0.50	0.12	mg/Kg		10/31/16 11:39	11/01/16 12:03	1
Selenium	0.0776	J	0.40	0.063	mg/Kg		10/31/16 11:39	11/01/16 12:03	1
Zinc	2.0	U	2.0	0.62	mg/Kg		10/31/16 11:39	11/01/16 12:03	1

Lab Sample ID: LCS 200-110769/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110848 — **Prep Batch: 110769**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	5.00	5.03		mg/Kg		101	80 - 120
Selenium	4.00	3.27		mg/Kg		82	80 - 120
Zinc	20.0	17.86		mg/Kg		89	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 200-110242/11-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 110261 — **Prep Batch: 110242**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.044	ug/L		10/17/16 12:52	10/17/16 16:26	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 200-110242/12-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 110261 — **Prep Batch: 110242**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			2.50	2.57		ug/L		103	85 - 115		

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 200-110232/1-A — **Client Sample ID: Method Blank**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110260 — **Prep Batch: 110232**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.040	U	0.040	0.014	mg/Kg		10/17/16 10:07	10/17/16 15:11	1

Lab Sample ID: LCS 200-110232/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110260 — **Prep Batch: 110232**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.500	0.488		mg/Kg		98	80 - 120		

Lab Sample ID: 200-35736-5 MS — **Client Sample ID: PE1016-P1SCD-REF3-A-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110260 — **Prep Batch: 110232**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	0.064	J	0.969	1.05		mg/Kg	☼	101	80 - 120		

Lab Sample ID: 200-35736-5 MSD — **Client Sample ID: PE1016-P1SCD-REF3-A-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110260 — **Prep Batch: 110232**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.064	J	1.02	1.05		mg/Kg	☼	97	80 - 120	0	20

Lab Sample ID: 200-35736-11 MS — **Client Sample ID: PE1016-P1SCD-05-A-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110260 — **Prep Batch: 110232**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	6.4		1.26	5.22	4	mg/Kg	☼	-96	80 - 120		

Lab Sample ID: 200-35736-11 MSD — **Client Sample ID: PE1016-P1SCD-05-A-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110260 — **Prep Batch: 110232**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	6.4		1.17	5.38	4	mg/Kg	☼	-89	80 - 120	3	20

Method: 7471B - Mercury (CVAA) (Continued)

Lab Sample ID: MB 200-110770/11-A — **Client Sample ID: Method Blank**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110792 — **Prep Batch: 110770**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.040	U	0.040	0.014	mg/Kg		10/31/16 11:40	10/31/16 14:08	1

Lab Sample ID: LCS 200-110770/12-A — **Client Sample ID: Lab Control Sample**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110792 — **Prep Batch: 110770**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.500	0.494		mg/Kg		99	80 - 120

Method: Lloyd Kahn - Organic Carbon, Total (TOC)

Lab Sample ID: MB 200-110362/5 — **Client Sample ID: Method Blank**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110362

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1000	U	1000	380	mg/Kg			10/19/16 10:54	1

Lab Sample ID: LCS 200-110362/6 — **Client Sample ID: Lab Control Sample**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110362

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	9260	9330		mg/Kg		101	75 - 125

Lab Sample ID: 200-35736-5 DU — **Client Sample ID: PE1016-P1SCD-REF3-A-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110362

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	30600		49120	F3	mg/Kg		46	20

Lab Sample ID: 200-35736-11 DU — **Client Sample ID: PE1016-P1SCD-05-A-0006IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110362

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	46600		45180		mg/Kg		3	20

Lab Sample ID: MB 200-110752/5 — **Client Sample ID: Method Blank**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 110752

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1000	U	1000	380	mg/Kg			10/29/16 18:24	1

Method: Lloyd Kahn - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 200-110752/6
Matrix: Sediment
Analysis Batch: 110752

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	9260	8408		mg/Kg		91	75 - 125

Method: Moisture - Percent Moisture

Lab Sample ID: 200-35736-5 DU
Matrix: Sediment
Analysis Batch: 110312

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	45.3		45.8		%		1	20

Lab Sample ID: 200-35736-11 DU
Matrix: Sediment
Analysis Batch: 110312

Client Sample ID: PE1016-P1SCD-05-A-0006IN
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	36.2		34.9		%		4	20

Method: D422 - Grain Size

Lab Sample ID: 200-35736-5 DU
Matrix: Sediment
Analysis Batch: 110706

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gravel	1.2		1.2		%		0	50
Sieve Size 2 inch - Percent Finer	100.0		100.0		% Passing		0	50
Sand	22.7		21.9		%		4	50
Sieve Size 1.5 inch - Percent Finer	100.0		100.0		% Passing		0	50
Coarse Sand	3.7		1.6	F3	%		79	50
Sieve Size 1 inch - Percent Finer	100.0		100.0		% Passing		0	50
Medium Sand	9.0		9.9		%		10	50
Sieve Size 0.75 inch - Percent Finer	100.0		100.0		% Passing		0	50
Fine Sand	10.0		10.4		%		4	50
Sieve Size 0.375 inch - Percent Finer	100.0		100.0		% Passing		0	50
Sieve Size #4 - Percent Finer	98.8		98.8		% Passing		0	50
Silt	47.2		47.7		%		1	50
Clay	28.9		29.2		%		1	50
Sieve Size #10 - Percent Finer	95.1		97.2		% Passing		2	50
Sieve Size #20 - Percent Finer	88.0		90.3		% Passing		3	50
Sieve Size #40 - Percent Finer	86.1		87.3		% Passing		1	50
Sieve Size #60 - Percent Finer	83.2		83.8		% Passing		0.7	50
Sieve Size #80 - Percent Finer	81.5		81.9		% Passing		0.5	50
Sieve Size #100 - Percent Finer	80.5		80.8		% Passing		0.4	50
Sieve Size #200 - Percent Finer	76.7		77.4		% Passing		0.9	50
Sieve Size #230 - Percent Finer	76.1		76.9		% Passing		1	50

Method: D422 - Grain Size (Continued)

Lab Sample ID: 200-35736-5 DU
Matrix: Sediment
Analysis Batch: 110706

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Hydrometer Reading 1 - Percent Finer	54.5			56.3		% Passing				3	50
Hydrometer Reading 2 - Percent Finer	49.4			52.9		% Passing				7	50
Hydrometer Reading 3 - Percent Finer	44.3			42.8		% Passing				3	50
Hydrometer Reading 4 - Percent Finer	34.0			34.3		% Passing				0.9	50
Hydrometer Reading 5 - Percent Finer	28.9			29.2		% Passing				1	50
Hydrometer Reading 6 - Percent Finer	18.6			17.4		% Passing				7	50
Hydrometer Reading 7 - Percent Finer	13.5			12.3		% Passing				9	50

Lab Sample ID: 200-35736-11 DU
Matrix: Sediment
Analysis Batch: 110706

Client Sample ID: PE1016-P1SCD-05-A-0006IN
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Gravel	14.2			18.5		%				26	50
Sieve Size 2 inch - Percent Finer	100.0			100.0		% Passing				0	50
Sand	54.8			46.0		%				17	50
Sieve Size 1.5 inch - Percent Finer	100.0			100.0		% Passing				0	50
Coarse Sand	17.6			15.0		%				16	50
Sieve Size 1 inch - Percent Finer	100.0			100.0		% Passing				0	50
Medium Sand	12.7			11.3		%				12	50
Sieve Size 0.75 inch - Percent Finer	100.0			100.0		% Passing				0	50
Fine Sand	24.5			19.7		%				22	50
Sieve Size 0.375 inch - Percent Finer	100.0			100.0		% Passing				0	50
Sieve Size #4 - Percent Finer	85.8			81.5		% Passing				5	50
Silt	21.1			26.5		%				23	50
Clay	9.9			9.1		%				9	50
Sieve Size #10 - Percent Finer	68.2			66.5		% Passing				3	50
Sieve Size #20 - Percent Finer	62.8			61.8		% Passing				2	50
Sieve Size #40 - Percent Finer	55.5			55.2		% Passing				0.5	50
Sieve Size #60 - Percent Finer	46.0			47.4		% Passing				3	50
Sieve Size #80 - Percent Finer	40.9			43.4		% Passing				6	50
Sieve Size #100 - Percent Finer	38.0			41.0		% Passing				8	50
Sieve Size #200 - Percent Finer	31.6			36.0		% Passing				13	50
Sieve Size #230 - Percent Finer	31.0			35.5		% Passing				14	50
Hydrometer Reading 1 - Percent Finer	25.0			19.7		% Passing				24	50
Hydrometer Reading 2 - Percent Finer	21.2			17.6		% Passing				19	50
Hydrometer Reading 3 - Percent Finer	17.4			15.4		% Passing				12	50
Hydrometer Reading 4 - Percent Finer	13.7			11.2		% Passing				20	50

Method: D422 - Grain Size (Continued)

Lab Sample ID: 200-35736-11 DU
Matrix: Sediment
Analysis Batch: 110706

Client Sample ID: PE1016-P1SCD-05-A-0006IN
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Hydrometer Reading 5 - Percent Finer	9.9			9.1		% Passing				9	50
Hydrometer Reading 6 - Percent Finer	4.2			0.5	F3	% Passing				155	50
Hydrometer Reading 7 - Percent Finer	1.9			0.0	F3	% Passing				200	50

Metals

Prep Batch: 110229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-1	PE1016-P1SCD-REF1-A-0006IN	Total/NA	Sediment	3050B	
200-35736-2	PE1016-P1SCD-REF1-B-0006IN	Total/NA	Sediment	3050B	
200-35736-3	PE1016-P1SCD-REF2-A-0006IN	Total/NA	Sediment	3050B	
200-35736-4	PE1016-P1SCD-REF2-B-0006IN	Total/NA	Sediment	3050B	
200-35736-5	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	3050B	
200-35736-6	PE1016-P1SCD-REF3-B-0006IN	Total/NA	Sediment	3050B	
200-35736-7	PE1016-P1SCD-REF4-A-0006IN	Total/NA	Sediment	3050B	
200-35736-8	PE1016-P1SCD-REF4-B-0006IN	Total/NA	Sediment	3050B	
200-35736-9	PE1016-P1SCD-REF5-A-0003IN	Total/NA	Sediment	3050B	
200-35736-10	PE1016-P1SCD-REF5-B-0003IN	Total/NA	Sediment	3050B	
200-35736-11	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	3050B	
200-35736-12	PE1016-P1SCD-05-B-0006IN	Total/NA	Sediment	3050B	
MB 200-110229/1-A	Method Blank	Total/NA	Sediment	3050B	
LCS 200-110229/2-A	Lab Control Sample	Total/NA	Sediment	3050B	
200-35736-5 MS	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	3050B	
200-35736-5 MSD	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	3050B	
200-35736-11 MS	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	3050B	
200-35736-11 MSD	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	3050B	

Prep Batch: 110232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-1	PE1016-P1SCD-REF1-A-0006IN	Total/NA	Sediment	7471B	
200-35736-2	PE1016-P1SCD-REF1-B-0006IN	Total/NA	Sediment	7471B	
200-35736-3	PE1016-P1SCD-REF2-A-0006IN	Total/NA	Sediment	7471B	
200-35736-4	PE1016-P1SCD-REF2-B-0006IN	Total/NA	Sediment	7471B	
200-35736-5	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	7471B	
200-35736-6	PE1016-P1SCD-REF3-B-0006IN	Total/NA	Sediment	7471B	
200-35736-7	PE1016-P1SCD-REF4-A-0006IN	Total/NA	Sediment	7471B	
200-35736-8	PE1016-P1SCD-REF4-B-0006IN	Total/NA	Sediment	7471B	
200-35736-9	PE1016-P1SCD-REF5-A-0003IN	Total/NA	Sediment	7471B	
200-35736-10	PE1016-P1SCD-REF5-B-0003IN	Total/NA	Sediment	7471B	
200-35736-11	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	7471B	
200-35736-12	PE1016-P1SCD-05-B-0006IN	Total/NA	Sediment	7471B	
MB 200-110232/1-A	Method Blank	Total/NA	Sediment	7471B	
LCS 200-110232/2-A	Lab Control Sample	Total/NA	Sediment	7471B	
200-35736-5 MS	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	7471B	
200-35736-5 MSD	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	7471B	
200-35736-11 MS	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	7471B	
200-35736-11 MSD	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	7471B	

Prep Batch: 110239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-14	PE1016-P1SCD-BLK-2-101116	Total/NA	Water	3010A	
MB 200-110239/1-A	Method Blank	Total/NA	Water	3010A	
LCS 200-110239/2-A	Lab Control Sample	Total/NA	Water	3010A	
200-35736-14 MS	PE1016-P1SCD-BLK-2-101116	Total/NA	Water	3010A	
200-35736-14 MSD	PE1016-P1SCD-BLK-2-101116	Total/NA	Water	3010A	

Prep Batch: 110242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-14	PE1016-P1SCD-BLK-2-101116	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 110242 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 200-110242/11-A	Method Blank	Total/NA	Water	7470A	
LCS 200-110242/12-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 110260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-1	PE1016-P1SCD-REF1-A-0006IN	Total/NA	Sediment	7471B	110232
200-35736-2	PE1016-P1SCD-REF1-B-0006IN	Total/NA	Sediment	7471B	110232
200-35736-3	PE1016-P1SCD-REF2-A-0006IN	Total/NA	Sediment	7471B	110232
200-35736-4	PE1016-P1SCD-REF2-B-0006IN	Total/NA	Sediment	7471B	110232
200-35736-5	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	7471B	110232
200-35736-6	PE1016-P1SCD-REF3-B-0006IN	Total/NA	Sediment	7471B	110232
200-35736-7	PE1016-P1SCD-REF4-A-0006IN	Total/NA	Sediment	7471B	110232
200-35736-8	PE1016-P1SCD-REF4-B-0006IN	Total/NA	Sediment	7471B	110232
200-35736-9	PE1016-P1SCD-REF5-A-0003IN	Total/NA	Sediment	7471B	110232
200-35736-10	PE1016-P1SCD-REF5-B-0003IN	Total/NA	Sediment	7471B	110232
200-35736-11	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	7471B	110232
200-35736-12	PE1016-P1SCD-05-B-0006IN	Total/NA	Sediment	7471B	110232
MB 200-110232/1-A	Method Blank	Total/NA	Sediment	7471B	110232
LCS 200-110232/2-A	Lab Control Sample	Total/NA	Sediment	7471B	110232
200-35736-5 MS	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	7471B	110232
200-35736-5 MSD	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	7471B	110232
200-35736-11 MS	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	7471B	110232
200-35736-11 MSD	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	7471B	110232

Analysis Batch: 110261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-14	PE1016-P1SCD-BLK-2-101116	Total/NA	Water	7470A	110242
MB 200-110242/11-A	Method Blank	Total/NA	Water	7470A	110242
LCS 200-110242/12-A	Lab Control Sample	Total/NA	Water	7470A	110242

Analysis Batch: 110334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-1	PE1016-P1SCD-REF1-A-0006IN	Total/NA	Sediment	6020A	110229
200-35736-2	PE1016-P1SCD-REF1-B-0006IN	Total/NA	Sediment	6020A	110229
200-35736-3	PE1016-P1SCD-REF2-A-0006IN	Total/NA	Sediment	6020A	110229
200-35736-4	PE1016-P1SCD-REF2-B-0006IN	Total/NA	Sediment	6020A	110229
200-35736-5	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	6020A	110229
200-35736-6	PE1016-P1SCD-REF3-B-0006IN	Total/NA	Sediment	6020A	110229
200-35736-7	PE1016-P1SCD-REF4-A-0006IN	Total/NA	Sediment	6020A	110229
200-35736-8	PE1016-P1SCD-REF4-B-0006IN	Total/NA	Sediment	6020A	110229
200-35736-9	PE1016-P1SCD-REF5-A-0003IN	Total/NA	Sediment	6020A	110229
200-35736-10	PE1016-P1SCD-REF5-B-0003IN	Total/NA	Sediment	6020A	110229
200-35736-11	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	6020A	110229
200-35736-12	PE1016-P1SCD-05-B-0006IN	Total/NA	Sediment	6020A	110229
200-35736-14	PE1016-P1SCD-BLK-2-101116	Total/NA	Water	6020A	110239
MB 200-110229/1-A	Method Blank	Total/NA	Sediment	6020A	110229
MB 200-110239/1-A	Method Blank	Total/NA	Water	6020A	110239
LCS 200-110229/2-A	Lab Control Sample	Total/NA	Sediment	6020A	110229
LCS 200-110239/2-A	Lab Control Sample	Total/NA	Water	6020A	110239
200-35736-5 MS	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	6020A	110229
200-35736-5 MSD	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	6020A	110229

Metals (Continued)

Analysis Batch: 110334 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-11 MS	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	6020A	110229
200-35736-11 MSD	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	6020A	110229
200-35736-14 MS	PE1016-P1SCD-BLK-2-101116	Total/NA	Water	6020A	110239
200-35736-14 MSD	PE1016-P1SCD-BLK-2-101116	Total/NA	Water	6020A	110239

Analysis Batch: 110361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-11	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	6020A	110229
200-35736-12	PE1016-P1SCD-05-B-0006IN	Total/NA	Sediment	6020A	110229
200-35736-14	PE1016-P1SCD-BLK-2-101116	Total/NA	Water	6020A	110239
MB 200-110239/1-A	Method Blank	Total/NA	Water	6020A	110239
LCS 200-110239/2-A	Lab Control Sample	Total/NA	Water	6020A	110239
200-35736-11 MS	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	6020A	110229
200-35736-11 MSD	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	6020A	110229
200-35736-14 MS	PE1016-P1SCD-BLK-2-101116	Total/NA	Water	6020A	110239
200-35736-14 MSD	PE1016-P1SCD-BLK-2-101116	Total/NA	Water	6020A	110239

Prep Batch: 110769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-13	PE1016-P1SCD-REF3-A-0006IN-D	Total/NA	Sediment	3050B	
MB 200-110769/1-A	Method Blank	Total/NA	Sediment	3050B	
LCS 200-110769/2-A	Lab Control Sample	Total/NA	Sediment	3050B	

Prep Batch: 110770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-13	PE1016-P1SCD-REF3-A-0006IN-D	Total/NA	Sediment	7471B	
MB 200-110770/11-A	Method Blank	Total/NA	Sediment	7471B	
LCS 200-110770/12-A	Lab Control Sample	Total/NA	Sediment	7471B	

Analysis Batch: 110792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-13	PE1016-P1SCD-REF3-A-0006IN-D	Total/NA	Sediment	7471B	110770
MB 200-110770/11-A	Method Blank	Total/NA	Sediment	7471B	110770
LCS 200-110770/12-A	Lab Control Sample	Total/NA	Sediment	7471B	110770

Analysis Batch: 110848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-13	PE1016-P1SCD-REF3-A-0006IN-D	Total/NA	Sediment	6020A	110769
MB 200-110769/1-A	Method Blank	Total/NA	Sediment	6020A	110769
LCS 200-110769/2-A	Lab Control Sample	Total/NA	Sediment	6020A	110769

General Chemistry

Analysis Batch: 110312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-1	PE1016-P1SCD-REF1-A-0006IN	Total/NA	Sediment	Moisture	
200-35736-2	PE1016-P1SCD-REF1-B-0006IN	Total/NA	Sediment	Moisture	
200-35736-3	PE1016-P1SCD-REF2-A-0006IN	Total/NA	Sediment	Moisture	
200-35736-4	PE1016-P1SCD-REF2-B-0006IN	Total/NA	Sediment	Moisture	
200-35736-5	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	Moisture	

General Chemistry (Continued)

Analysis Batch: 110312 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-6	PE1016-P1SCD-REF3-B-0006IN	Total/NA	Sediment	Moisture	
200-35736-7	PE1016-P1SCD-REF4-A-0006IN	Total/NA	Sediment	Moisture	
200-35736-8	PE1016-P1SCD-REF4-B-0006IN	Total/NA	Sediment	Moisture	
200-35736-9	PE1016-P1SCD-REF5-A-0003IN	Total/NA	Sediment	Moisture	
200-35736-10	PE1016-P1SCD-REF5-B-0003IN	Total/NA	Sediment	Moisture	
200-35736-11	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	Moisture	
200-35736-12	PE1016-P1SCD-05-B-0006IN	Total/NA	Sediment	Moisture	
200-35736-5 DU	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	Moisture	
200-35736-11 DU	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	Moisture	

Analysis Batch: 110362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-1	PE1016-P1SCD-REF1-A-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35736-2	PE1016-P1SCD-REF1-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35736-3	PE1016-P1SCD-REF2-A-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35736-4	PE1016-P1SCD-REF2-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35736-5	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35736-6	PE1016-P1SCD-REF3-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35736-7	PE1016-P1SCD-REF4-A-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35736-8	PE1016-P1SCD-REF4-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35736-9	PE1016-P1SCD-REF5-A-0003IN	Total/NA	Sediment	Lloyd Kahn	
200-35736-10	PE1016-P1SCD-REF5-B-0003IN	Total/NA	Sediment	Lloyd Kahn	
200-35736-11	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35736-12	PE1016-P1SCD-05-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
MB 200-110362/5	Method Blank	Total/NA	Sediment	Lloyd Kahn	
LCS 200-110362/6	Lab Control Sample	Total/NA	Sediment	Lloyd Kahn	
200-35736-5 DU	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-35736-11 DU	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	Lloyd Kahn	

Analysis Batch: 110752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-13	PE1016-P1SCD-REF3-A-0006IN-D	Total/NA	Sediment	Lloyd Kahn	
MB 200-110752/5	Method Blank	Total/NA	Sediment	Lloyd Kahn	
LCS 200-110752/6	Lab Control Sample	Total/NA	Sediment	Lloyd Kahn	

Analysis Batch: 110789

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-13	PE1016-P1SCD-REF3-A-0006IN-D	Total/NA	Sediment	Moisture	

Geotechnical

Analysis Batch: 110706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-1	PE1016-P1SCD-REF1-A-0006IN	Total/NA	Sediment	D422	
200-35736-2	PE1016-P1SCD-REF1-B-0006IN	Total/NA	Sediment	D422	
200-35736-3	PE1016-P1SCD-REF2-A-0006IN	Total/NA	Sediment	D422	
200-35736-4	PE1016-P1SCD-REF2-B-0006IN	Total/NA	Sediment	D422	
200-35736-5	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	D422	
200-35736-6	PE1016-P1SCD-REF3-B-0006IN	Total/NA	Sediment	D422	
200-35736-7	PE1016-P1SCD-REF4-A-0006IN	Total/NA	Sediment	D422	

Geotechnical (Continued)

Analysis Batch: 110706 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-35736-8	PE1016-P1SCD-REF4-B-0006IN	Total/NA	Sediment	D422	
200-35736-9	PE1016-P1SCD-REF5-A-0003IN	Total/NA	Sediment	D422	
200-35736-10	PE1016-P1SCD-REF5-B-0003IN	Total/NA	Sediment	D422	
200-35736-11	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	D422	
200-35736-12	PE1016-P1SCD-05-B-0006IN	Total/NA	Sediment	D422	
200-35736-13	PE1016-P1SCD-REF3-A-0006IN-D	Total/NA	Sediment	D422	
200-35736-5 DU	PE1016-P1SCD-REF3-A-0006IN	Total/NA	Sediment	D422	
200-35736-11 DU	PE1016-P1SCD-05-A-0006IN	Total/NA	Sediment	D422	

Client Sample ID: PE1016-P1SCD-REF1-A-0006IN
Lab Sample ID: 200-35736-1
Date Collected: 10/11/16 11:05
Matrix: Sediment
Date Received: 10/14/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110362	10/19/16 12:26	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110312	10/18/16 14:19	KSH	TAL BUR
Total/NA	Analysis	D422		1	110706	10/23/16 18:44	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-REF1-A-0006IN
Lab Sample ID: 200-35736-1
Date Collected: 10/11/16 11:05
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 53.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 14:11	RM1	TAL BUR
Total/NA	Prep	7471B			110232	10/17/16 10:07	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 15:14	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-REF1-B-0006IN
Lab Sample ID: 200-35736-2
Date Collected: 10/11/16 11:10
Matrix: Sediment
Date Received: 10/14/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110362	10/19/16 12:32	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110312	10/18/16 14:19	KSH	TAL BUR
Total/NA	Analysis	D422		1	110706	10/23/16 18:46	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-REF1-B-0006IN
Lab Sample ID: 200-35736-2
Date Collected: 10/11/16 11:10
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 52.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 14:17	RM1	TAL BUR
Total/NA	Prep	7471B			110232	10/17/16 10:07	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 15:16	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-REF2-A-0006IN
Lab Sample ID: 200-35736-3
Date Collected: 10/11/16 10:50
Matrix: Sediment
Date Received: 10/14/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110362	10/19/16 12:39	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110312	10/18/16 14:19	KSH	TAL BUR
Total/NA	Analysis	D422		1	110706	10/23/16 18:47	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-REF2-A-0006IN
Lab Sample ID: 200-35736-3
Date Collected: 10/11/16 10:50
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 47.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 14:22	RM1	TAL BUR
Total/NA	Prep	7471B			110232	10/17/16 10:07	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 15:18	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-REF2-B-0006IN
Lab Sample ID: 200-35736-4
Date Collected: 10/11/16 10:55
Matrix: Sediment
Date Received: 10/14/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110362	10/19/16 12:45	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110312	10/18/16 14:19	KSH	TAL BUR
Total/NA	Analysis	D422		1	110706	10/23/16 18:49	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-REF2-B-0006IN
Lab Sample ID: 200-35736-4
Date Collected: 10/11/16 10:55
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 44.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 14:28	RM1	TAL BUR
Total/NA	Prep	7471B			110232	10/17/16 10:07	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 15:20	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN
Lab Sample ID: 200-35736-5
Date Collected: 10/11/16 10:40
Matrix: Sediment
Date Received: 10/14/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110362	10/19/16 12:52	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110312	10/18/16 14:19	KSH	TAL BUR
Total/NA	Analysis	D422		1	110706	10/23/16 18:51	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN
Lab Sample ID: 200-35736-5
Date Collected: 10/11/16 10:40
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 45.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 14:34	RM1	TAL BUR
Total/NA	Prep	7471B			110232	10/17/16 10:07	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 15:21	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-REF3-B-0006IN
Lab Sample ID: 200-35736-6
Date Collected: 10/11/16 10:45
Matrix: Sediment
Date Received: 10/14/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110362	10/19/16 13:26	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110312	10/18/16 14:19	KSH	TAL BUR
Total/NA	Analysis	D422		1	110706	10/25/16 10:06	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-REF3-B-0006IN
Lab Sample ID: 200-35736-6
Date Collected: 10/11/16 10:45
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 46.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 15:20	RM1	TAL BUR
Total/NA	Prep	7471B			110232	10/17/16 10:07	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 15:26	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-REF4-A-0006IN
Lab Sample ID: 200-35736-7
Date Collected: 10/11/16 10:30
Matrix: Sediment
Date Received: 10/14/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110362	10/19/16 13:33	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110312	10/18/16 14:19	KSH	TAL BUR
Total/NA	Analysis	D422		1	110706	10/25/16 10:08	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-REF4-A-0006IN
Lab Sample ID: 200-35736-7
Date Collected: 10/11/16 10:30
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 53.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 15:25	RM1	TAL BUR
Total/NA	Prep	7471B			110232	10/17/16 10:07	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 15:31	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-REF4-B-0006IN
Lab Sample ID: 200-35736-8
Date Collected: 10/11/16 10:35
Matrix: Sediment
Date Received: 10/14/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110362	10/19/16 13:39	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110312	10/18/16 14:19	KSH	TAL BUR
Total/NA	Analysis	D422		1	110706	10/25/16 10:09	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-REF4-B-0006IN
Lab Sample ID: 200-35736-8

Date Collected: 10/11/16 10:35
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 43.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 15:31	RM1	TAL BUR
Total/NA	Prep	7471B			110232	10/17/16 10:07	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 15:33	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-REF5-A-0003IN
Lab Sample ID: 200-35736-9

Date Collected: 10/11/16 10:15
Matrix: Sediment
Date Received: 10/14/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110362	10/19/16 13:46	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110312	10/18/16 14:19	KSH	TAL BUR
Total/NA	Analysis	D422		1	110706	10/25/16 10:11	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-REF5-A-0003IN
Lab Sample ID: 200-35736-9

Date Collected: 10/11/16 10:15
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 46.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 15:37	RM1	TAL BUR
Total/NA	Prep	7471B			110232	10/17/16 10:07	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 15:35	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-REF5-B-0003IN
Lab Sample ID: 200-35736-10

Date Collected: 10/11/16 10:20
Matrix: Sediment
Date Received: 10/14/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110362	10/19/16 13:53	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110312	10/18/16 14:19	KSH	TAL BUR
Total/NA	Analysis	D422		1	110706	10/25/16 10:13	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-REF5-B-0003IN
Lab Sample ID: 200-35736-10

Date Collected: 10/11/16 10:20
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 54.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 15:42	RM1	TAL BUR
Total/NA	Prep	7471B			110232	10/17/16 10:07	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 15:36	MDK	TAL BUR

Lab Chronicle

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35736-1
SDG: 200-35736-1

Client Sample ID: PE1016-P1SCD-05-A-0006IN
Lab Sample ID: 200-35736-11
Date Collected: 10/11/16 12:25
Matrix: Sediment
Date Received: 10/14/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110362	10/19/16 14:00	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110312	10/18/16 14:19	KSH	TAL BUR
Total/NA	Analysis	D422		1	110706	10/25/16 10:37	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-05-A-0006IN
Lab Sample ID: 200-35736-11
Date Collected: 10/11/16 12:25
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 36.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 15:48	RM1	TAL BUR
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110361	10/19/16 11:13	RM1	TAL BUR
Total/NA	Prep	7471B			110232	10/17/16 10:07	MDK	TAL BUR
Total/NA	Analysis	7471B		2	110260	10/17/16 16:01	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-05-B-0006IN
Lab Sample ID: 200-35736-12
Date Collected: 10/11/16 12:30
Matrix: Sediment
Date Received: 10/14/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110362	10/19/16 14:13	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110312	10/18/16 14:19	KSH	TAL BUR
Total/NA	Analysis	D422		1	110706	10/25/16 10:41	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-05-B-0006IN
Lab Sample ID: 200-35736-12
Date Collected: 10/11/16 12:30
Matrix: Sediment
Date Received: 10/14/16 10:20
Percent Solids: 36.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 16:34	RM1	TAL BUR
Total/NA	Prep	3050B			110229	10/17/16 10:03	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110361	10/19/16 11:41	RM1	TAL BUR
Total/NA	Prep	7471B			110232	10/17/16 10:07	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110260	10/17/16 15:43	MDK	TAL BUR

Lab Chronicle

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35736-1
SDG: 200-35736-1

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN-D
Date Collected: 10/11/16 14:41
Date Received: 10/14/16 10:20

Lab Sample ID: 200-35736-13
Matrix: Sediment

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	110752	10/29/16 21:11	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	110789	10/31/16 13:56	KSH	TAL BUR
Total/NA	Analysis	D422		1	110706	11/01/16 09:40	VTP	TAL BUR

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN-D
Date Collected: 10/11/16 14:41
Date Received: 10/14/16 10:20

Lab Sample ID: 200-35736-13
Matrix: Sediment
Percent Solids: 40.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			110769	10/31/16 11:39	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110848	11/01/16 13:40	RM1	TAL BUR
Total/NA	Prep	7471B			110770	10/31/16 11:40	MDK	TAL BUR
Total/NA	Analysis	7471B		1	110792	10/31/16 14:31	MDK	TAL BUR

Client Sample ID: PE1016-P1SCD-BLK-2-101116
Date Collected: 10/11/16 16:10
Date Received: 10/14/16 10:20

Lab Sample ID: 200-35736-14
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			110239	10/17/16 12:26	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110334	10/18/16 17:03	RM1	TAL BUR
Total/NA	Prep	3010A			110239	10/17/16 12:26	MDK	TAL BUR
Total/NA	Analysis	6020A		1	110361	10/19/16 12:27	RM1	TAL BUR
Total/NA	Prep	7470A			110242	10/17/16 12:52	MDK	TAL BUR
Total/NA	Analysis	7470A		1	110261	10/17/16 16:35	MDK	TAL BUR

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Certification Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35736-1
SDG: 200-35736-1

Laboratory: TestAmerica Burlington

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Connecticut	State Program	1	PH-0751	09-30-17
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	NA	02-02-17
Florida	NELAP	4	E87467	06-30-17
L-A-B	DoD ELAP		L2336	02-26-17
Maine	State Program	1	VT00008	04-17-17
Minnesota	NELAP	5	050-999-436	12-31-16 *
New Hampshire	NELAP	1	2006	12-18-16
New Jersey	NELAP	2	VT972	06-30-17
New York	NELAP	2	10391	04-01-17
Pennsylvania	NELAP	3	68-00489	04-30-17
Rhode Island	State Program	1	LAO00298	12-30-16
US Fish & Wildlife	Federal		LE-058448-0	10-31-17
USDA	Federal		P330-11-00093	10-28-16 *
Vermont	State Program	1	VT-4000	12-31-16
Virginia	NELAP	3	460209	12-14-16

* Certification renewal pending - certification considered valid.

Method Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35736-1
SDG: 200-35736-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL BUR
7470A	Mercury (CVAA)	SW846	TAL BUR
7471B	Mercury (CVAA)	SW846	TAL BUR
Lloyd Kahn	Organic Carbon, Total (TOC)	EPA	TAL BUR
Moisture	Percent Moisture	EPA	TAL BUR
D422	Grain Size	ASTM	TAL BUR

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Sample Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-35736-1
SDG: 200-35736-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
200-35736-1	PE1016-P1SCD-REF1-A-0006IN	Sediment	10/11/16 11:05	10/14/16 10:20
200-35736-2	PE1016-P1SCD-REF1-B-0006IN	Sediment	10/11/16 11:10	10/14/16 10:20
200-35736-3	PE1016-P1SCD-REF2-A-0006IN	Sediment	10/11/16 10:50	10/14/16 10:20
200-35736-4	PE1016-P1SCD-REF2-B-0006IN	Sediment	10/11/16 10:55	10/14/16 10:20
200-35736-5	PE1016-P1SCD-REF3-A-0006IN	Sediment	10/11/16 10:40	10/14/16 10:20
200-35736-6	PE1016-P1SCD-REF3-B-0006IN	Sediment	10/11/16 10:45	10/14/16 10:20
200-35736-7	PE1016-P1SCD-REF4-A-0006IN	Sediment	10/11/16 10:30	10/14/16 10:20
200-35736-8	PE1016-P1SCD-REF4-B-0006IN	Sediment	10/11/16 10:35	10/14/16 10:20
200-35736-9	PE1016-P1SCD-REF5-A-0003IN	Sediment	10/11/16 10:15	10/14/16 10:20
200-35736-10	PE1016-P1SCD-REF5-B-0003IN	Sediment	10/11/16 10:20	10/14/16 10:20
200-35736-11	PE1016-P1SCD-05-A-0006IN	Sediment	10/11/16 12:25	10/14/16 10:20
200-35736-12	PE1016-P1SCD-05-B-0006IN	Sediment	10/11/16 12:30	10/14/16 10:20
200-35736-13	PE1016-P1SCD-REF3-A-0006IN-D	Sediment	10/11/16 14:41	10/14/16 10:20
200-35736-14	PE1016-P1SCD-BLK-2-101116	Water	10/11/16 16:10	10/14/16 10:20

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEHCLACIDs_00226	20 mL	Hydrogen Chloride	100000000 ug/L
					MEHNO3s_00187	5 mL	Nitric acid	25000000 ug/L
					MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
							Ba-137 (Tune)	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
							Be-9 (Tune)	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
							Calcium hardness as calcium carbonate	1248500 ug/L
							Hardness as calcium carbonate	2072100 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
							Co-59 (Tune)	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Hardness as calcium carbonate	2072100 ug/L
							Magnesium hardness as calcium carbonate	823600 ug/L
							Mg	200000 ug/L
							Mg-24 (Tune)	200000 ug/L
							Mg-25 (Tune)	200000 ug/L
							Mg-26 (Tune)	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Cation Exchange Capacity	500000 ug/L
							Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
							Pb-206 (Tune)	1000 ug/L
							Pb-207 (Tune)	1000 ug/L
							Pb-208 (Tune)	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVSRs_00006	1 mL	Sr	5000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
.MEHCLACIDs_00226	08/18/17	Fisher 4116020, Lot 4116020			(Purchased Reagent)		Hydrogen Chloride	1 mL/mL
.MEHNO3s_00187	08/18/17	Macron 0000138698, Lot 0000138698			(Purchased Reagent)		Nitric acid	1 mL/mL
.MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
.MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
.MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
							Ba-137 (Tune)	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MEIVBEs_00010	05/23/17		IV J2-BE02038, Lot J2-BE02038		(Purchased Reagent)		Be	1000 ppm
							Be-9 (Tune)	1000 ppm
.MEIVCAwHRDs_00011	07/21/17		Inorg Vent./H2-CA04105, Lot H2-CA04105		(Purchased Reagent)		Ca	10000 ug/mL
							Calcium hardness as calcium carbonate	24970 ug/mL
							Hardness as calcium carbonate	24970 ug/mL
.MEIVCDs_00012	07/21/17		IV J2-CD02063, Lot J2-CD02063		(Purchased Reagent)		Cd	1000 ug/mL
.MEIVCOs_00012	07/21/17		IV J2-CO02068, Lot J2-CO02068		(Purchased Reagent)		Co	1000 ug/mL
							Co-59 (Tune)	1000 ug/mL
.MEIVCRs_00013	05/06/17		IV/J2-CR03111, Lot J2-CR03111		(Purchased Reagent)		Cr	1000 ppm
.MEIVCUs_00014	05/06/17		IV/J2-CU03026, Lot J2-CU03026		(Purchased Reagent)		Copper	1000 ug/mL
.MEIVFEs_00015	07/21/17		IV./K2-FE04057, Lot K2-FE04057		(Purchased Reagent)		Fe	10000 ppm
.MEIVKs_00013	07/12/17		IV J2-K03054, Lot J2-K03054		(Purchased Reagent)		K	10000 ug/mL
.MEIVMGs_00018	07/21/17		IV J2-MG03145, Lot J2-MG03145		(Purchased Reagent)		Hardness as calcium carbonate	41180 ppm
							Magnesium hardness as calcium carbonate	41180 ppm
							Mg	10000 ppm
							Mg-24 (Tune)	10000 ppm
							Mg-25 (Tune)	10000 ppm
							Mg-26 (Tune)	10000 ppm
.MEIVMNs_00010	01/06/17		IV G2-MN02110, Lot G2-MN02110		(Purchased Reagent)		Mn	1000 ug/mL
.MEIVMOs_00012	01/06/17		Inorganic Ventures H2-MO02073, Lot H2-MO02073		(Purchased Reagent)		Mo	1000 ug/mL
.MEIVNAs_00016	09/01/17		Inorganic Ventures J2-NA03138, Lot J2-NA03138		(Purchased Reagent)		Cation Exchange Capacity	10000 ug/mL
							Na	10000 ug/mL
.MEIVNIs_00011	01/06/17		Inorganic Ventures J2-NI02095, Lot J2-NI02095		(Purchased Reagent)		Ni	1000 ug/mL
.MEIVPBs_00017	05/06/17		IV/J2-PB03066, Lot J2-PB03066		(Purchased Reagent)		Pb	1000 ug/mL
							Pb-206 (Tune)	1000 ug/mL
							Pb-207 (Tune)	1000 ug/mL
							Pb-208 (Tune)	1000 ug/mL
.MEIVSBs_00011	05/06/17		IV/J2-SB03037, Lot J2-SB03037		(Purchased Reagent)		Sb	1000 ug/mL
.MEIVSEs_00013	05/23/17		IV J2-SE02059, Lot J2-SE02059		(Purchased Reagent)		Selenium	1000 ppm
.MEIVSRs_00006	04/14/17		IV J2-SR02053, Lot J2-SR02053		(Purchased Reagent)		Sr	1000 ppm
.MEIVTLs_00013	01/06/17		Inorganic Ventures J2-TL02025, Lot J2-TL02025		(Purchased Reagent)		Tl	1000 ug/mL
.MEIVVs_00010	01/06/17		Inorganic Ventures J2-V02106, Lot J2-V02106		(Purchased Reagent)		V	1000 ug/mL
.MEIVZNs_00014	01/06/17		IV J2-ZN02107, Lot J2-ZN02107		(Purchased Reagent)		Zinc	1000 ppm
ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
							Th-232 (Tune)	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
					MEMS2%0.5%Riw_00230	476.5 mL	Hydrogen Chloride	4765000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Nitric acid	19060000 ppb
.MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
.MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
.MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
.MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
							Th-232 (Tune)	1000 ug/mL
.MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEMS2%0.5%Riw_00230	07/19/17	08/10/16	DI WATER, Lot na	20 L	MEHCLACIDs_00225	100 mL	Hydrogen Chloride	0.5 %
					MEHNO3s_00186	400 mL	Nitric acid	2 %
..MEHCLACIDs_00225	08/05/17	Fisher 4116020, Lot 4116020			(Purchased Reagent)		Hydrogen Chloride	1 mL/mL
..MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
ME6020ICVw_00443	12/23/16	10/18/16	DI WATER, Lot na	100 mL	MESCPICVi_00007	1 mL	Copper	625 ug/L
							Selenium	100 ug/L
							Zinc	625 ug/L
.MESCPICVi_00007	12/23/16	08/03/16	DI WATER, Lot na	250 mL	MESCPICV1_00003	25 mL	Copper	62500 ppb
							Selenium	10000 ppb
							Zinc	62500 ppb
..MESCPICV1_00003	12/31/16	SCP Science/S151210015, Lot S151210015			(Purchased Reagent)		Copper	625000 ug/L
							Selenium	100000 ug/L
							Zinc	625000 ug/L
ME6020ICVw_00444	12/23/16	10/19/16	DI WATER, Lot na	100 mL	MESCPICVi_00007	1 mL	Selenium	100 ug/L
.MESCPICVi_00007	12/23/16	08/03/16	DI WATER, Lot na	250 mL	MESCPICV1_00003	25 mL	Selenium	10000 ppb
..MESCPICV1_00003	12/31/16	SCP Science/S151210015, Lot S151210015			(Purchased Reagent)		Selenium	100000 ug/L
ME6020ICVw_00447	12/23/16	11/01/16	DI WATER, Lot na	100 mL	MESCPICVi_00007	1 mL	Copper	625 ug/L
							Selenium	100 ug/L
							Zinc	625 ug/L
.MESCPICVi_00007	12/23/16	08/03/16	DI WATER, Lot na	250 mL	MESCPICV1_00003	25 mL	Copper	62500 ppb
							Selenium	10000 ppb
							Zinc	62500 ppb
..MESCPICV1_00003	12/31/16	SCP Science/S151210015, Lot S151210015			(Purchased Reagent)		Copper	625000 ug/L
							Selenium	100000 ug/L
							Zinc	625000 ug/L
ME6020STD1_00437	10/19/16	10/18/16	DI WATER, Lot na	250 mL	ME6020CALi_A_00022	0.25 mL	Ag	1 ug/L
							Al	50 ug/L
							Ba	10 ug/L
							Be	1 ug/L
							Ca	500 ug/L
							Cd	1 ug/L
							Co	1 ug/L
							Cr	4 ug/L
							Copper	5 ug/L
							Fe	200 ug/L
							K	500 ug/L
							Mg	200 ug/L
							Mn	2 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Mo	10 ug/L
							Na	500 ug/L
							Ni	2 ug/L
							Pb	1 ug/L
							Sb	2 ug/L
							Selenium	4 ug/L
							Tl	2 ug/L
							V	5 ug/L
							Zinc	20 ug/L
					ME6020CALi_B_00019	0.25 mL	W	2 ug/L
							As	2 ug/L
							B	40 ug/L
							Th	2 ug/L
							U	1 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17		IV/J2-AG03048, Lot J2-AG03048		(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17		IV J2-AL05009, Lot J2-AL05009		(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17		IV J2-BA02093, Lot J2-BA02093		(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17		IV J2-BE02038, Lot J2-BE02038		(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17		Inorg Vent./H2-CA04105, Lot H2-CA04105		(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17		IV J2-CD02063, Lot J2-CD02063		(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17		IV J2-CO02068, Lot J2-CO02068		(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17		IV/J2-CR03111, Lot J2-CR03111		(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17		IV/J2-CU03026, Lot J2-CU03026		(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17		IV./K2-FE04057, Lot K2-FE04057		(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17		IV J2-K03054, Lot J2-K03054		(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17		IV J2-MG03145, Lot J2-MG03145		(Purchased Reagent)		Mg	10000 ppm

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD1_00438	10/20/16	10/19/16	DI WATER, Lot na	250 mL	ME6020CALi_A_00022	0.25 mL	Ag	1 ug/L
							Al	50 ug/L
							Ba	10 ug/L
							Be	1 ug/L
							Ca	500 ug/L
							Cd	1 ug/L
							Co	1 ug/L
							Cr	4 ug/L
							Copper	5 ug/L
							Fe	200 ug/L
							K	500 ug/L
							Mg	200 ug/L
							Mn	2 ug/L
							Mo	10 ug/L
							Na	500 ug/L
							Ni	2 ug/L
							Pb	1 ug/L
							Sb	2 ug/L
							Selenium	4 ug/L
							Tl	2 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							V	5 ug/L
							Zinc	20 ug/L
					ME6020CALi_B_00019	0.25 mL	W	2 ug/L
							As	2 ug/L
							B	40 ug/L
							Th	2 ug/L
							U	1 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD1_00441	11/02/16	11/01/16	DI WATER, Lot na	250 mL	ME6020CALi_A_00022	0.25 mL	Ag	1 ug/L
							Al	50 ug/L
							Ba	10 ug/L
							Be	1 ug/L
							Ca	500 ug/L
							Cd	1 ug/L
							Co	1 ug/L
							Cr	4 ug/L
							Copper	5 ug/L
							Fe	200 ug/L
							K	500 ug/L
							Mg	200 ug/L
							Mn	2 ug/L
							Mo	10 ug/L
							Na	500 ug/L
							Ni	2 ug/L
							Pb	1 ug/L
							Sb	2 ug/L
							Selenium	4 ug/L
							Tl	2 ug/L
							V	5 ug/L
							Zinc	20 ug/L
					ME6020CALi_B_00019	0.25 mL	W	2 ug/L
							As	2 ug/L
							B	40 ug/L
							Th	2 ug/L
							U	1 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD2_00442	10/19/16	10/18/16	DI WATER, Lot na	100 mL	ME6020CALi_A_00022	0.5 mL	Ag	5 ug/L
							Al	250 ug/L
							Ba	50 ug/L
							Be	5 ug/L
							Ca	2500 ug/L
							Cd	5 ug/L
							Co	5 ug/L
							Cr	20 ug/L
							Copper	25 ug/L
							Fe	1000 ug/L
							K	2500 ug/L
							Mg	1000 ug/L
							Mn	10 ug/L
							Mo	50 ug/L
							Na	2500 ug/L
							Ni	10 ug/L
							Pb	5 ug/L
							Sb	10 ug/L
							Selenium	20 ug/L
							Tl	10 ug/L
							V	25 ug/L
							Zinc	100 ug/L
					ME6020CALi_B_00019	0.5 mL	W	10 ug/L
							As	10 ug/L
							B	200 ug/L
							Th	10 ug/L
							U	5 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD2_00443	10/20/16	10/19/16	DI WATER, Lot na	100 mL	ME6020CALi_A_00022	0.5 mL	Ag	5 ug/L
							Al	250 ug/L
							Ba	50 ug/L
							Be	5 ug/L
							Ca	2500 ug/L
							Cd	5 ug/L
							Co	5 ug/L
							Cr	20 ug/L
							Copper	25 ug/L
							Fe	1000 ug/L
							K	2500 ug/L
							Mg	1000 ug/L
							Mn	10 ug/L
							Mo	50 ug/L
							Na	2500 ug/L
							Ni	10 ug/L
							Pb	5 ug/L
							Sb	10 ug/L
							Selenium	20 ug/L
							Tl	10 ug/L
							V	25 ug/L
							Zinc	100 ug/L
					ME6020CALi_B_00019	0.5 mL	W	10 ug/L
							As	10 ug/L
							B	200 ug/L
							Th	10 ug/L
							U	5 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD2_00446	11/02/16	11/01/16	DI WATER, Lot na	100 mL	ME6020CALi_A_00022	0.5 mL	Ag	5 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Al	250 ug/L
							Ba	50 ug/L
							Be	5 ug/L
							Ca	2500 ug/L
							Cd	5 ug/L
							Co	5 ug/L
							Cr	20 ug/L
							Copper	25 ug/L
							Fe	1000 ug/L
							K	2500 ug/L
							Mg	1000 ug/L
							Mn	10 ug/L
							Mo	50 ug/L
							Na	2500 ug/L
							Ni	10 ug/L
							Pb	5 ug/L
							Sb	10 ug/L
							Selenium	20 ug/L
							Tl	10 ug/L
							V	25 ug/L
							Zinc	100 ug/L
					ME6020CALi_B_00019	0.5 mL	W	10 ug/L
							As	10 ug/L
							B	200 ug/L
							Th	10 ug/L
							U	5 ug/L
.ME6020CALi_A_00022	01/06/17	09/02/16	DI WATER, Lot NA	200 mL	MEIVAGs_00012	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00010	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00013	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00014	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00010	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00012	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00011	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00017	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00011	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00013	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00013	0.4 mL	Tl	2000 ug/L
					MEIVVs_00010	1 mL	V	5000 ug/L
					MEIVZNs_00014	4 mL	Zinc	20000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVAGs_00012	05/06/17	IV/J2-AG03048, Lot J2-AG03048			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00012	01/06/17	Inorganic Ventures H2-MO02073, Lot H2-MO02073			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00017	05/06/17	IV/J2-PB03066, Lot J2-PB03066			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
ME6020STD3_00443	10/19/16	10/18/16	DI WATER, Lot na	30 mL	6020CALi_UWTh_00014	0.3 mL	W	20 ug/L
							Th	20 ug/L
							U	10 ug/L
					MEIVCALi_00039	0.6 mL	Ag	100 ug/L
							As	200 ug/L
							B	250 ug/L
							Ba	1250 ug/L
							Be	625 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cd	200 ug/L
							Co	500 ug/L
							Copper	1250 ug/L
							Cr	400 ug/L
							Mn	1250 ug/L
							Ni	1250 ug/L
							Pb	1250 ug/L
							Selenium	200 ug/L
							Tl	200 ug/L
							V	1250 ug/L
							Zinc	1250 ug/L
							Ca	30000 ug/L
							K	10000 ug/L
							Mg	30000 ug/L
							Na	10000 ug/L
							Mo	1250 ug/L
							Sb	250 ug/L
							Al	30000 ug/L
							Fe	30000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD3_00444	10/20/16	10/19/16	DI WATER, Lot na	30 mL	6020CALi_UWTh_00014	0.3 mL	W	20 ug/L
							Th	20 ug/L
							U	10 ug/L
					MEIVCALi_00039	0.6 mL	Ag	100 ug/L
							As	200 ug/L
							B	250 ug/L
							Ba	1250 ug/L
							Be	625 ug/L
							Cd	200 ug/L
							Co	500 ug/L
							Copper	1250 ug/L
							Cr	400 ug/L
							Mn	1250 ug/L
							Ni	1250 ug/L
							Pb	1250 ug/L
							Selenium	200 ug/L
							Tl	200 ug/L
							V	1250 ug/L
							Zinc	1250 ug/L
							Ca	30000 ug/L
							K	10000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Mg	30000 ug/L
							Na	10000 ug/L
							Mo	1250 ug/L
							Sb	250 ug/L
							Al	30000 ug/L
							Fe	30000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD3_00448	11/02/16	11/01/16	DI WATER, Lot na	30 mL	6020CALi_UWTh_00014	0.3 mL	W	20 ug/L
							Th	20 ug/L
							U	10 ug/L
					MEIVCALi_00039	0.6 mL	Ag	100 ug/L
							As	200 ug/L
							B	250 ug/L
							Ba	1250 ug/L
							Be	625 ug/L
							Cd	200 ug/L
							Co	500 ug/L
							Copper	1250 ug/L
							Cr	400 ug/L
							Mn	1250 ug/L
							Ni	1250 ug/L
							Pb	1250 ug/L
							Selenium	200 ug/L
							Tl	200 ug/L
							V	1250 ug/L
							Zinc	1250 ug/L
							Ca	30000 ug/L
							K	10000 ug/L
							Mg	30000 ug/L
							Na	10000 ug/L
							Mo	1250 ug/L
							Sb	250 ug/L
							Al	30000 ug/L
							Fe	30000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Fe	15000 ug/mL
ME6020STD4_00183	10/19/16	10/18/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.3 mL	W	60 ug/L
							Th	60 ug/L
							U	30 ug/L
					MEIVCALi_00039	0.6 mL	Ag	300 ug/L
							As	600 ug/L
							B	750 ug/L
							Ba	3750 ug/L
							Be	1875 ug/L
							Cd	600 ug/L
							Co	1500 ug/L
							Copper	3750 ug/L
							Cr	1200 ug/L
							Mn	3750 ug/L
							Ni	3750 ug/L
							Pb	3750 ug/L
							Selenium	600 ug/L
							Tl	600 ug/L
							V	3750 ug/L
							Zinc	3750 ug/L
							Ca	90000 ug/L
							K	30000 ug/L
							Mg	90000 ug/L
							Na	30000 ug/L
							Mo	3750 ug/L
							Sb	750 ug/L
							Al	90000 ug/L
							Fe	90000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD4_00184	10/20/16	10/19/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.3 mL	W	60 ug/L
							Th	60 ug/L
							U	30 ug/L
					MEIVCALi_00039	0.6 mL	Ag	300 ug/L
							As	600 ug/L
							B	750 ug/L
							Ba	3750 ug/L
							Be	1875 ug/L
							Cd	600 ug/L
							Co	1500 ug/L
							Copper	3750 ug/L
							Cr	1200 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Mn	3750 ug/L
							Ni	3750 ug/L
							Pb	3750 ug/L
							Selenium	600 ug/L
							Tl	600 ug/L
							V	3750 ug/L
							Zinc	3750 ug/L
							Ca	90000 ug/L
							K	30000 ug/L
							Mg	90000 ug/L
							Na	30000 ug/L
							Mo	3750 ug/L
							Sb	750 ug/L
							Al	90000 ug/L
							Fe	90000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD4_00189	11/02/16	11/01/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.3 mL	W	60 ug/L
							Th	60 ug/L
							U	30 ug/L
					MEIVCALi_00039	0.6 mL	Ag	300 ug/L
							As	600 ug/L
							B	750 ug/L
							Ba	3750 ug/L
							Be	1875 ug/L
							Cd	600 ug/L
							Co	1500 ug/L
							Copper	3750 ug/L
							Cr	1200 ug/L
							Mn	3750 ug/L
							Ni	3750 ug/L
							Pb	3750 ug/L
							Selenium	600 ug/L
							Tl	600 ug/L
							V	3750 ug/L
							Zinc	3750 ug/L
							Ca	90000 ug/L
							K	30000 ug/L
							Mg	90000 ug/L
							Na	30000 ug/L
							Mo	3750 ug/L
							Sb	750 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Al	90000 ug/L
							Fe	90000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD5_00175	10/19/16	10/18/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.6 mL	W	120 ug/L
							Th	120 ug/L
							U	60 ug/L
					MEIVCALi_00039	1 mL	Ag	500 ug/L
							As	1000 ug/L
							B	1250 ug/L
							Ba	6250 ug/L
							Be	3125 ug/L
							Cd	1000 ug/L
							Co	2500 ug/L
							Cr	2000 ug/L
							Mn	6250 ug/L
							Ni	6250 ug/L
							Pb	6250 ug/L
							Tl	1000 ug/L
							V	6250 ug/L
							Ca	150000 ug/L
							K	50000 ug/L
							Mg	150000 ug/L
							Na	50000 ug/L
							Mo	6250 ug/L
							Sb	1250 ug/L
							Al	150000 ug/L
							Fe	150000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Tl	10000 ppb
							V	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD5_00175	10/19/16	10/18/16	DI WATER, Lot na	10 mL	MEIVCALi_00039	1 mL	Copper	6250 ug/L
							Selenium	1000 ug/L
							Zinc	6250 ug/L
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Copper	62500 ppb
							Selenium	10000 ppb
							Zinc	62500 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Copper	625 ug/mL
							Selenium	100 ug/mL
							Zinc	625 ug/mL
ME6020STD5_00176	10/20/16	10/19/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.6 mL	W	120 ug/L
							Th	120 ug/L
							U	60 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVCALi_00039	1 mL	Ag	500 ug/L
							As	1000 ug/L
							B	1250 ug/L
							Ba	6250 ug/L
							Be	3125 ug/L
							Cd	1000 ug/L
							Co	2500 ug/L
							Copper	6250 ug/L
							Cr	2000 ug/L
							Mn	6250 ug/L
							Ni	6250 ug/L
							Pb	6250 ug/L
							Selenium	1000 ug/L
							Tl	1000 ug/L
							V	6250 ug/L
							Zinc	6250 ug/L
							Ca	150000 ug/L
							K	50000 ug/L
							Mg	150000 ug/L
							Na	50000 ug/L
							Mo	6250 ug/L
							Sb	1250 ug/L
							Al	150000 ug/L
							Fe	150000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD5_00180	11/02/16	11/01/16	DI WATER, Lot na	10 mL	6020CALi_UWTh_00014	0.6 mL	W	120 ug/L
							Th	120 ug/L
							U	60 ug/L
					MEIVCALi_00039	1 mL	Ag	500 ug/L
							As	1000 ug/L
							B	1250 ug/L
							Ba	6250 ug/L
							Be	3125 ug/L
							Cd	1000 ug/L
							Co	2500 ug/L
							Copper	6250 ug/L
							Cr	2000 ug/L
							Mn	6250 ug/L
							Ni	6250 ug/L
							Pb	6250 ug/L
							Selenium	1000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Tl	1000 ug/L
							V	6250 ug/L
							Zinc	6250 ug/L
							Ca	150000 ug/L
							K	50000 ug/L
							Mg	150000 ug/L
							Na	50000 ug/L
							Mo	6250 ug/L
							Sb	1250 ug/L
							Al	150000 ug/L
							Fe	150000 ug/L
.6020CALi_UWTh_00014	01/06/17	09/06/16	DI WATER, Lot NA	100 mL	MEAWWs_00007	0.2 mL	W	2000 ug/L
					MEHPTHs_00004	0.2 mL	Th	2000 ug/L
					MEIVUs_00012	0.1 mL	U	1000 ug/L
..MEAWWs_00007	02/19/17	High Purity 1411305, Lot 1411305			(Purchased Reagent)		W	1000 ug/mL
..MEHPTHs_00004	05/20/17	High-Purity 1601307, Lot 1601307			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVCALi_00039	12/23/16	07/08/16	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00003	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00010	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00007	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00007	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00003	05/06/17	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00010	05/24/17	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00007	12/31/16	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00007	04/16/17	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
mehgccvw_01052	10/18/16	10/17/16	DI WATER, Lot na	100 mL	MEHGCCVi_00258	1 mL	Nitric acid	3030000 ppb
							Mercury	100 ppb
					MEHNO3s_00186	0.3 mL	Nitric acid	3030000 ppb
.MEHGCCVi_00258	10/30/16	09/30/16	DI WATER, Lot na	100 mL	MEHNO3s_00185	0.3 mL	Nitric acid	3000000 ppb
					MESPEXHgs_00014	1 mL	Mercury	10000 ppb
..MEHNO3s_00185	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
..MESPEXHgs_00014	12/30/16	SPEX Certiprep 21-3HGY, Lot 21-3HGY			(Purchased Reagent)		Mercury	1000 mg/L
.MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
mehgccvw_01056	11/01/16	10/31/16	DI WATER, Lot na	100 mL	MEHGCCVi_00259	1 mL	Nitric acid	3030000 ppb
							Mercury	100 ppb
					MEHNO3s_00186	0.3 mL	Nitric acid	3030000 ppb
.MEHGCCVi_00259	11/30/16	10/31/16	DI WATER, Lot na	100 mL	MEHNO3s_00185	0.3 mL	Nitric acid	3000000 ppb
					MESPEXHgs_00014	1 mL	Mercury	10000 ppb
..MEHNO3s_00185	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
..MESPEXHgs_00014	12/30/16	SPEX Certiprep 21-3HGY, Lot 21-3HGY			(Purchased Reagent)		Mercury	1000 mg/L
.MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
MEHGICVw_00085	10/20/16	10/13/16	DI WATER, Lot na	500 mL	MEHGICVi_00032	1.5 mL	Nitric acid	2030000 ppb
							Mercury	30 ppb
					MEHNO3s_00186	1 mL	Nitric acid	2030000 ppb
.MEHGICVi_00032	11/13/16	10/13/16	DI WATER, Lot na	100 mL	MEHNO3s_00185	1 mL	Nitric acid	10000000 ppb
					MEIVHGs_00015	1 mL	Mercury	10000 ppb
..MEHNO3s_00185	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
..MEIVHGs_00015	01/06/17	Inorg. Vent. J2-HG02133, Lot J2-HG02133			(Purchased Reagent)		Mercury	1000 ug/mL
.MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
MEHGICVw_00086	11/01/16	10/25/16	DI WATER, Lot na	500 mL	MEHGICVi_00032	1.5 mL	Nitric acid	2030000 ppb
							Mercury	30 ppb
					MEHNO3s_00186	1 mL	Nitric acid	2030000 ppb
.MEHGICVi_00032	11/13/16	10/13/16	DI WATER, Lot na	100 mL	MEHNO3s_00185	1 mL	Nitric acid	10000000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVHGs_00015	1 mL	Mercury	10000 ppb
..MEHNO3s_00185	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
..MEIVHGs_00015	01/06/17	Inorg. Vent. J2-HG02133, Lot J2-HG02133			(Purchased Reagent)		Mercury	1000 ug/mL
.MEHNO3s_00186	07/19/17	Macron 0000141598, Lot 0000141598			(Purchased Reagent)		Nitric acid	1 mL/mL
MEMSABw_00227	01/06/17	10/07/16	DI WATER, Lot na	200 mL	CLPICPMSCRQL_00001	0.5 mL	As	45 ppb
							Ba	250 ppb
							Be	25 ppb
							Cd	25 ppb
							Co	25 ppb
							Cr	50 ppb
							Copper	50 ppb
							Mn	25 ppb
							Ni	25 ppb
							Pb	25 ppb
							Sb	50 ppb
							Selenium	125 ppb
							Tl	25 ppb
							V	25 ppb
							Zinc	50 ppb
							Ag	25 ppb
					ME6020CALi_B_00019	2 mL	W	20 ppb
							As	45 ppb
							B	400 ppb
							Th	20 ppb
							U	10 ppb
					ME6020ICS-OAs_00016	20 mL	Al	100000 ppb
							Ca	100000 ppb
							Fe	100000 ppb
							K	100000 ppb
							Mg	100000 ppb
							Mo	2000 ppb
							Na	100000 ppb
.CLPICPMSCRQL_00001	01/06/17	10/07/16	DI WATER, Lot NA	100 mL	MEIVASs_00010	1 mL	As	10 ug/mL
					MEIVBAs_00016	10 mL	Ba	100 ug/mL
					MEIVBEs_00010	1 mL	Be	10 ug/mL
					MEIVCDs_00012	1 mL	Cd	10 ug/mL
					MEIVCOs_00012	1 mL	Co	10 ug/mL
					MEIVCRs_00013	2 mL	Cr	20 ug/mL
					MEIVCUs_00014	2 mL	Copper	20 ug/mL
					MEIVMNs_00010	1 mL	Mn	10 ug/mL
					MEIVNIs_00011	1 mL	Ni	10 ug/mL
					MEIVPBs_00018	1 mL	Pb	10 ug/mL
					MEIVSBs_00011	2 mL	Sb	20 ug/mL
					MEIVSEs_00013	5 mL	Selenium	50 ug/mL
					MEIVTLs_00013	1 mL	Tl	10 ug/mL
					MEIVVs_00010	1 mL	V	10 ug/mL
					MEIVZNs_00014	2 mL	Zinc	20 ug/mL

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MESPEXAGs_00011	1 mL	Ag	10 ug/mL
..MEIVASs_00010	02/04/17	Inorganic VenturesJ2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be	1000 ppm
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00013	05/06/17	IV/J2-CR03111, Lot J2-CR03111			(Purchased Reagent)		Cr	1000 ppm
..MEIVCUs_00014	05/06/17	IV/J2-CU03026, Lot J2-CU03026			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVMNs_00010	01/06/17	IV G2-MN02110, Lot G2-MN02110			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVNIs_00011	01/06/17	Inorganic Ventures J2-NI02095, Lot J2-NI02095			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00018	07/21/17	IV/J2-PB03074, Lot J2-PB03074			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00011	05/06/17	IV/J2-SB03037, Lot J2-SB03037			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00013	05/23/17	IV J2-SE02059, Lot J2-SE02059			(Purchased Reagent)		Selenium	1000 ppm
..MEIVTLs_00013	01/06/17	Inorganic Ventures J2-TL02025, Lot J2-TL02025			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00010	01/06/17	Inorganic Ventures J2-V02106, Lot J2-V02106			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00014	01/06/17	IV J2-ZN02107, Lot J2-ZN02107			(Purchased Reagent)		Zinc	1000 ppm
..MESPEXAGs_00011	02/28/17	SPEX 20-172AGY, Lot 20-172AGY			(Purchased Reagent)		Ag	1000 ppm
.ME6020CALi_B_00019	01/06/17	09/02/16	5% HCL / 2% HNO3, Lot 961049	500 mL	MEAWWs_00008	1 mL	W	2000 ppb
					MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00006	20 mL	B	40000 ppb
					MEIVTHs_00009	1 mL	Th	2000 ppb
					MEIVUs_00012	0.5 mL	U	1000 ppb
..MEAWWs_00008	02/23/17	High Purity 1426812, Lot 1426812			(Purchased Reagent)		W	1000 ug/mL
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00006	01/06/17	Inorganic Ventures H2-B02125, Lot H2-B02125			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00012	01/06/17	Inorganic Ventures J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.ME6020ICS-OAs_00016	07/21/17	IV J2-MEB613036, Lot J2-MEB613036			(Purchased Reagent)		Al	1000 ug/mL
							Ca	1000 ug/mL
							Fe	1000 ug/mL
							K	1000 ug/mL
							Mg	1000 ug/mL
							Mo	20 ug/mL
							Na	1000 ug/mL
MEMSICSAw_00210	07/19/17	10/07/16	DI WATER, Lot na	200 mL	ME6020ICS-OAs_00016	20 mL	Al	100000 ppb
							Ca	100000 ppb
							Fe	100000 ppb
							K	100000 ppb
							Mg	100000 ppb
							Mo	2000 ppb
							Na	100000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.ME6020ICS-OAs_00016	07/21/17	IV J2-MEB613036, Lot J2-MEB613036			(Purchased Reagent)		Al	1000 ug/mL
							Ca	1000 ug/mL
							Fe	1000 ug/mL
							K	1000 ug/mL
							Mg	1000 ug/mL
							Mo	20 ug/mL
							Na	1000 ug/mL
MEMSISw_00184	11/17/16	10/03/16	DI WATER, Lot na	8000 mL	MEIVLi_00005	1.92 mL	Li-6 Internal Standard	240 ug/L
					MEMSINSTDi_00055	16 mL	In-115 (IS)	100 ug/L
.MEIVLi_00005	01/06/17	IV J2-LI03018, Lot J2-LI03018			(Purchased Reagent)		Li-6 Internal Standard	1000 ppm
.MEMSINSTDi_00055	11/17/16	10/03/16	DI WATER, Lot na	100 mL	MEIVINs_00024	5 mL	In-115 (IS)	50000 ug/L
..MEIVINs_00024	01/06/17	IV J2-IN011115, Lot J2-IN011115			(Purchased Reagent)		In-115 (IS)	1000 ppm
MEMSTUNEw_00073	01/06/17	10/04/16	DI WATER, Lot na	500 mL	MEMS6020TUNEi_00043	5 mL	Ba-137 (Tune)	10 ppb
							Be-9 (Tune)	10 ppb
							Ce-140 (Tune)	10 ppb
							Co-59 (Tune)	10 ppb
							In-113 (Tune)	10 ppb
							In-115 (Tune)	10 ppb
							Mg-24 (Tune)	10 ppb
							Mg-25 (Tune)	10 ppb
							Mg-26 (Tune)	10 ppb
							Pb-206 (Tune)	1 ppb
							Pb-207 (Tune)	1 ppb
							Pb-208 (Tune)	1 ppb
							Th-232 (Tune)	10 ppb
.MEMS6020TUNEi_00043	01/06/17	10/04/16	DI WATER, Lot na	1000 mL	MEIVBAs_00016	1 mL	Ba-137 (Tune)	1 ppm
					MEIVBEs_00010	1 mL	Be-9 (Tune)	1 ppm
					MEIVCEs_00010	1 mL	Ce-140 (Tune)	1 ppm
					MEIVCOs_00012	1 mL	Co-59 (Tune)	1 ppm
					MEIVINs_00025	0.1 mL	In-113 (Tune)	1 ppm
							In-115 (Tune)	1 ppm
					MEIVMGs_00018	0.1 mL	Mg-24 (Tune)	1 ppm
							Mg-25 (Tune)	1 ppm
							Mg-26 (Tune)	1 ppm
					MEIVPBs_00018	0.1 mL	Pb-206 (Tune)	0.1 ppm
							Pb-207 (Tune)	0.1 ppm
							Pb-208 (Tune)	0.1 ppm
					MEIVTHs_00009	1 mL	Th-232 (Tune)	1 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba-137 (Tune)	1000 ug/mL
..MEIVBEs_00010	05/23/17	IV J2-BE02038, Lot J2-BE02038			(Purchased Reagent)		Be-9 (Tune)	1000 ppm
..MEIVCEs_00010	01/06/17	Inorganic Ventures J2-CE01096, Lot J2-CE01096			(Purchased Reagent)		Ce-140 (Tune)	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co-59 (Tune)	1000 ug/mL
..MEIVINs_00025	03/14/17	IV J2-IN01114, Lot J2-IN01114			(Purchased Reagent)		In-113 (Tune)	10000 ppm
							In-115 (Tune)	10000 ppm
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg-24 (Tune)	10000 ppm
							Mg-25 (Tune)	10000 ppm

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Mg-26 (Tune)	10000 ppm
..MEIVPBs_00018	07/21/17	IV/J2-PB03074, Lot J2-PB03074			(Purchased Reagent)		Pb-206 (Tune)	1000 ug/mL
							Pb-207 (Tune)	1000 ug/mL
							Pb-208 (Tune)	1000 ug/mL
..MEIVTHs_00009	05/06/17	IV/J2-TH01112, Lot J2-TH01112			(Purchased Reagent)		Th-232 (Tune)	1000 ug/mL
WCLKLCSs_00018	01/26/17	LECO 1017, Lot 1017			(Purchased Reagent)		Total Organic Carbon	0.00926 g/g
WCTOCCALs_00014	02/28/17	AccuSPEC, Lot S150220002			(Purchased Reagent)		Total Organic Carbon	10000 mg/L

Reagent

ME6020ICS-OAs_00016

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	6020ICS-0A
Lot Number:	J2-MEB613036
Matrix:	1% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Chloride, 2 000 µg/mL ea: Carbon, 1 000 µg/mL ea: Aluminum, Calcium, Iron, Potassium, Magnesium, Sodium, Phosphorus, Sulfur, 20 µg/mL ea: Molybdenum, Titanium

954502
ID: ME6020ICS-OAs_00016
Exp:07/21/17 Prpd:MDK Opn:07/21/16
6020ICS-OA Stock Std
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	1 001 ± 4 µg/mL	Calcium, Ca	1 001 ± 6 µg/mL
Carbon, C	2 001 ± 9 µg/mL	Chloride, Cl	10 010.0 ± 40.0 µg/mL
Iron, Fe	1 001 ± 4 µg/mL	Magnesium, Mg	1 001 ± 4 µg/mL
Molybdenum, Mo	20.01 ± 0.09 µg/mL	Phosphorus, P	1 001 ± 5 µg/mL
Potassium, K	1 001 ± 4 µg/mL	Sodium, Na	1 001 ± 4 µg/mL
Sulfur, S	1 001 ± 4 µg/mL	Titanium, Ti	20.01 ± 0.11 µg/mL

Certified Density: 1.034 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
C	Acidimetric	84L	84L
Ca	ICP Assay	3109a	050825
Ca	EDTA	928	928
Cl	Acidimetric	84L	84L
Fe	ICP Assay	3126a	051031
Fe	EDTA	928	928
K	ICP Assay	3141a	051220
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
Mo	ICP Assay	3134	891307
Mo	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
S	Acidimetric	84L	84L
S	ICP Assay	3154	892205
Ti	ICP Assay	3162a	060808
Ti	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000207	M	Eu	<	0.000103	s	Na	<		M	Se	<	0.003315	M	Zn	0.010362
s	Al	<		s	Fe	<		M	Nb	<	0.000621	n	Si	<		M	Zr	< 0.000828
O	As	<	0.041360	M	Ga	<	0.000103	M	Nd	<	0.000103	M	Sm	<	0.000103			
M	Au	<	0.000205	M	Gd	<	0.000103	O	Ni	<	0.009092	M	Sn	<	0.000414			
M	B	<	0.006320	M	Ge	<	0.005388	M	Os	<	0.000102	O	Sr		0.004446			
M	Ba		0.000932	M	Hf	<	0.000103	s	P	<		M	Ta	<	0.000103			
O	Be	<	0.000103	M	Hg	<	0.000308	M	Pb		0.004662	M	Tb	<	0.000103			
M	Bi	<	0.000414	M	Ho	<	0.000103	M	Pd	<	0.000205	M	Te	<	0.001761			
s	Ca	<		M	In	<	0.000103	M	Pr	<	0.000103	M	Th	<	0.000103			
O	Cd	<	0.000827	M	Ir	<	0.000102	M	Pt	<	0.000103	s	Ti	<				
M	Ce	<	0.000414	s	K	<		M	Rb		0.011812	M	Tl	<	0.000103			
M	Co	<	0.001036	M	La	<	0.000103	M	Re	<	0.000103	M	Tm	<	0.000103			
M	Cr		0.011294	O	Li		0.001095	M	Rh	<	0.000103	M	U	<	0.000103			
M	Cs	<	0.000103	M	Lu	<	0.000103	M	Ru	<	0.000205	O	V	<	0.006204			
O	Cu	<	0.006809	s	Mg	<		s	S	<		M	W		0.001347			
M	Dy	<	0.000103	M	Mn		0.001554	M	Sb	<	0.000621	M	Y	<	0.000103			
M	Er	<	0.000103	s	Mo	<		O	Sc	<	0.000310	M	Yb	<	0.000103			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 06, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- January 06, 2019

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MWK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

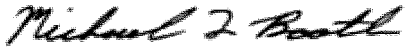
Certificate Prepared By:

James King Jr
Product Documentation Supervisor



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEAWWs_00007

HIGH-PURITY STANDARDS
www.highpuritystandards.com

P.O. Box 41727
Charleston, SC 29423
Phone (843) 767-7900
Fax (843) 767-7906

Certificate of Analysis

Product Description:

Name:	Tungsten	Source Material:	Tungsten Metal
Part Number:	**100063-3**	Material Purity:	99.99%
Lot Number:	**1411305**	Matrix:	1% (v/v) HF + 2% (v/v) HNO_3

Certified Value: 1000 µg/mL ± 4 µg/mL

The Certified value is based on gravimetric and volumetric preparation, and confirmed against SRM 3163 (lot number 080331) by inductively coupled plasma optical emission spectrometry (ICP-OES) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.

Density: 1.011 g/mL ± 0.002 g/mL @ 21.7°C

Uncertified Values:

Trace Metal Impurity Scan: The data reported are based upon a scan of this specific lot at 1000 µg/mL via ICP analysis. The values are reported in µg/L.

Ag	<	1	Cu	<	0.1	Li	<	0.02	Rb	<	0.02	Th		na
Al	<	5	Dy	<	0.02	Lu	<	0.02	Re		na	Ti	<	5
As	<	1	Er	<	0.02	Mg	<	0.5	Rh	<	0.1	Tl	<	0.02
Au		na	Eu	<	0.02	Mn	<	0.1	Ru	<	0.02	Tm	<	0.02
B	<	10	Fe	<	10	Mo	<	5	Sb	<	1	U	<	0.1
Ba	<	0.02	Ga	<	0.02	Na	<	3	Sc	<	0.02	V	<	1
Be	<	0.02	Gd	<	0.02	Nb	<	5	Se	<	0.1	W		M
Bi	<	0.02	Ge	<	0.02	Nd	<	0.02	Si	<	50	Y	<	0.02
Ca	<	5	Hf	<	0.1	Ni	<	0.02	Sm	<	0.02	Yb	<	0.02
Cd	<	0.02	Ho	<	0.02	Os	<	0.02	Sn	<	5	Zn	<	0.1
Ce	<	0.02	In	<	0.02	Pb	<	0.05	Sr	<	0.02	Zr	<	1
Co	<	0.05	Ir	<	1	Pd	<	0.02	Ta		na			
Cr	<	0.1	K	<	1	Pr	<	0.02	Tb	<	0.02			
Cs	<	0.02	La	<	0.02	Pt	<	0.02	Te	<	1	na - not analyzed		

Preparation Information:

The standard solution is prepared using high purity materials and assayed by analytical methods for conformity prior to use. This standard was prepared using the methods developed at NIST for SRM Spectrometric Standard Solutions under appropriate laboratory conditions.

Sub-boiling distilled high-purity acid has been used to place the materials in solution and to stabilize the standard. The matrix is as noted above in 18 megaohm deionized water.

Stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. This testing includes, but is not limited to, the effect of temperature and packaging on the product.

High-Purity Standards is certified to ISO 9001:2008 and accredited to ISO/IEC 17025:2005 and ISO Guide 34:2009.

Intended Use:

This Certified Reference Material (CRM) is intended for use as a calibration standard for the quantitative determination of tungsten, calibration of instruments such as ICPOES, ICPMS, AAS and XRF, and validation of analytical methods. It also can be used in EPA, ASTM and other methods.

Traceability Information:

The traceability of this standard is maintained through an unbroken chain of comparisons to appropriate standards with suitable procedure and measurement uncertainties. The maintenance of the base and derived units of International System of Units (SI) with traceability of measurement results (contemporary metrology) to SI ensures their comparability over time as follows.

a. **Standard Weight and Analytical Balance**
The standard weights (NBS weights Inventory No 20231A) are calibrated every two years by South Carolina Metrology Laboratory that is a participant in "NIST Weights and Measures Measurement Assurance Program" with a certificate of measurement traceability to NIST primary standards.
The balances are calibrated yearly by the ISO 17025 accredited metrology service, and are verified weekly by an in-house method using standard weights.

b. **Volumetric Device**
The calibration of volumetric vessels is checked annually using the ASTM method E542.

c. **Thermometer**
The standard thermometers are calibrated every year by the ISO 17025 accredited metrology service. The thermometers used in-house are verified against the standard thermometers yearly.

d. **Calibration Standards:**
The Calibration Standard is directly traceable to SRM 3100 Series Spectrometric Standard Solutions.

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Refer to Material Safety Datasheet (MSDS) for hazardous information.

Expiration Information:

The expiry date is guaranteed to be valid for eighteen months from the shipping date provided. For this reason, standards from the same lot may have different expiration dates.

Preparation Date:	**April 23, 2014**
Shipped Date:	**8/19/2015**
Expire Date:	**2/19/2017**
Certificate Issue Date:	**June 18, 2014**

Quality Information:

ACLASS ACCREDITED TESTING

ISO/IEC 17025:2005 Accreditation
Certificate Number AT-1529

ACLASS ACCREDITED REFERENCE MATERIAL PRODUCER

ISO Guide 34:2009 (RMP) Accreditation
Certificate Number AR-1436

Angel Sellers
Quality Manager

NOTICE: HPS products are intended for laboratory use only. All products should be handled and used by trained professional personnel. The responsibility for the safe handling and use of these products rests solely with the buyer and/or user. The data and information as stated was furnished by the manufacturer of the product. The information provided in this certificate pertains only to the lot number specified. None of the information provided in this certificate may be used, reproduced or transmitted in any form or by any means without written approval from High Purity Standards.

High-Purity Standards is certified to ISO 9001:2008 and accredited to ISO/IEC 17025:2005 and ISO Guide 34:2009.

Reagent

MEAWWs_00008

HIGH-PURITY STANDARDS
www.highpuritystandards.com

P.O Box 41727
Charleston, SC 29423
Phone (843) 767-7900
Fax (843) 767-7906

Certificate of Analysis

Product Description:

Name:	Tungsten	Source Material:	Tungsten Metal
Part Number:	**100063-3**	Material Purity:	99.99%
Lot Number:	**1426812**	Matrix:	1% (v/v) HF + 2% (v/v) HNO_3

Certified Value: 1000 µg/mL ± 4 µg/mL

The Certified value is based on gravimetric and volumetric preparation, and confirmed against SRM 3163 (lot number 080331) by inductively coupled plasma optical emission spectrometry (ICP-OES) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.

Density: 1.011 g/mL ± 0.002 g/mL @ 22.5°C

903063
ID: MEAWWs_00008
Exp 02/23/17 Prpd:MDK Opn 02/23/16
1000 PPM Tungsten

Rec'd 2/23/16 MDK

Uncertified Values:

Trace Metal Impurity Scan: The data reported are based upon a scan of this specific lot at 1000 µg/mL via ICP analysis. The values are reported in µg/L.

Ag	<	1	Cu	<	0.1	Li	<	0.02	Rb	<	0.02	Th		na
Al	<	5	Dy	<	0.02	Lu	<	0.02	Re		na	Ti	<	5
As	<	1	Er	<	0.02	Mg	<	1	Rh	<	0.02	Tl	<	0.02
Au		na	Eu	<	0.02	Mn	<	0.1	Ru	<	0.02	Tm	<	0.02
B	<	10	Fe	<	10	Mo	<	5	Sb	<	1	U	<	0.1
Ba	<	0.02	Ga	<	0.02	Na	<	3	Sc	<	0.02	V	<	1
Be	<	0.02	Gd	<	0.02	Nb	<	5	Se	<	0.5	W		M
Bi	<	0.02	Ge	<	0.02	Nd	<	0.02	Si	<	50	Y	<	0.02
Ca	<	5	Hf	<	0.02	Ni	<	0.02	Sm	<	0.02	Yb	<	0.02
Cd	<	0.02	Ho	<	0.02	Os	<	0.02	Sn	<	5	Zn	<	2
Ce	<	0.02	In	<	0.02	Pb	<	0.05	Sr	<	0.02	Zr	<	2
Co	<	0.05	Ir	<	0.02	Pd	<	0.02	Ta		na			
Cr	<	0.1	K	<	1	Pr	<	0.02	Tb	<	0.02			
Cs	<	0.02	La	<	0.02	Pt	<	0.02	Te	<	0.02	na - not analyzed		

Preparation Information:

The standard solution is prepared using high purity materials and assayed by analytical methods for conformity prior to use. This standard was prepared using the methods developed at NIST for SRM Spectrometric Standard Solutions under appropriate laboratory conditions.

Sub-boiling distilled high-purity acid has been used to place the materials in solution and to stabilize the standard. The matrix is as noted above in 18 megaohm deionized water.

Stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. This testing includes, but is not limited to, the effect of temperature and packaging on the product.

High-Purity Standards is certified to ISO 9001:2008 and accredited to ISO/IEC 17025:2005 and ISO Guide 34:2009.

Reagent

MEHPTHs_00004

HIGH-PURITY STANDARDS
www.highpuritystandards.com

P.O. Box 41727
Charleston, SC 29423
Phone (843) 767-7900
Fax (843) 767-7906

Certificate of Analysis

933454
ID: MEHPTHs_00004
Exp:05/20/17 Prpd:MDK Opn:05/20/16
1000 ppm Thorium
Rec'd 5/20/16

Product Description:

Name:	Thorium	Source Material:	Thorium Oxide
Part Number:	**100059-1**	Material Purity:	99.99%
Lot Number:	**1601307**	Matrix:	2% (v/v) HNO_3

Certified Value: 1000 µg/mL ± 4 µg/mL

The Certified value is based on gravimetric and volumetric preparation, and confirmed against a second source via inductively coupled plasma optical emission spectrometry (ICP-OES) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor *k* is about 2.

Density: 1.008 g/mL ± 0.002 g/mL @ 22.8°C

Uncertified Values:

Trace Metal Impurity Scan: The data reported are based upon a scan of this specific lot at 1000 µg/mL via ICP analysis. The values are reported in µg/L.

Ag	<	0.02	Cu	<	0.1	Li	<	0.02	Rb	<	0.02	Th		M
Al	<	0.1	Dy	<	0.02	Lu	<	0.02	Re	<	0.02	Ti	<	1
As	<	0.05	Er	<	0.02	Mg	<	0.5	Rh	<	0.02	Tl	<	0.02
Au	<	0.02	Eu	<	0.02	Mn	<	0.1	Ru	<	0.02	Tm	<	0.02
B	<	1	Fe	<	5	Mo	<	0.02	Sb	<	0.02	U	<	0.1
Ba	<	0.02	Ga	<	0.02	Na	<	3	Sc	<	0.02	V	<	0.05
Be	<	0.02	Gd	<	0.02	Nb	<	0.02	Se	<	0.1	W	<	0.02
Bi	<	0.02	Ge	<	0.02	Nd	<	2	Si	<	20	Y	<	0.02
Ca		20	Hf	<	0.02	Ni	<	0.02	Sm	<	0.5	Yb	<	0.02
Cd	<	0.02	Ho	<	0.02	Os	<	0.02	Sn	<	1	Zn	<	0.1
Ce	<	3	In	<	0.02	Pb	<	0.05	Sr	<	0.02	Zr	<	2
Co	<	0.05	Ir	<	0.02	Pd	<	0.02	Ta	<	0.02			
Cr	<	0.1	K	<	1	Pr	<	0.5	Tb	<	0.02			
Cs	<	0.02	La	<	1	Pt	<	0.02	Te	<	0.02			

Preparation Information:

The standard solution is prepared using high purity materials and assayed by analytical methods for conformity prior to use. This standard was prepared using the methods developed at NIST for SRM Spectrometric Standard Solutions under appropriate laboratory conditions.

Sub-boiling distilled high-purity acid has been used to place the materials in solution and to stabilize the standard. The matrix is as noted above in 18 megaohm deionized water.

Stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. This testing includes, but is not limited to, the effect of temperature and packaging on the product.

Intended Use:

This Certified Reference Material (CRM) is intended for use as a calibration standard for the quantitative determination of thorium, calibration of instruments such as ICPOES, ICPMS, AAS and XRF, and validation of analytical methods. It also can be used in EPA, ASTM and other methods.

Traceability Information:

The traceability of this standard is maintained through an unbroken chain of comparisons to appropriate standards with suitable procedure and measurement uncertainties. The maintenance of the base and derived units of International System of Units (SI) with traceability of measurement results (contemporary metrology) to SI ensures their comparability over time as follows.

a. **Standard Weight and Analytical Balance**
   The standard weights (NBS weights Inventory No 20231A) are calibrated every two years by South Carolina Metrology Laboratory that is a participant in "NIST Weights and Measures Measurement Assurance Program" with a certificate of measurement traceability to NIST primary standards.
   The balances are calibrated yearly by the ISO 17025 accredited metrology service, and are verified weekly by an in-house method using standard weights.

b. **Volumetric Device**
   The calibration of volumetric vessels is checked annually using the ASTM method E542.

c. **Thermometer**
   The standard thermometers are calibrated every year by the ISO 17025 accredited metrology service. The thermometers used in-house are verified against the standard thermometers yearly.

d. **Calibration Standards**
   The Calibration Standard is traceable to a second source.

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Refer to Material Safety Datasheet (MSDS) for hazardous information.

Expiration Information:

The expiry date is guaranteed to be valid for eighteen months from the shipping date provided. For this reason, standards from the same lot may have different expiration dates.

Preparation Date:	**January 13, 2016**
Shipped Date:	**5/13/2016**
Expire Date:	**November 13, 2017**
Certificate Issue Date:	**February 10, 2016**

Quality Information:

ISO/IEC 17025:2005 Accreditation
Certificate Number AT-1529

ISO Guide 34:2009 (RMP) Accreditation
Certificate Number AR-1436

Moven Mutuvari

Moven T. Mutuvari, Ph.D.
Laboratory Manager

NOTICE: HPS products are intended for laboratory use only. All products should be handled and used by trained professional personnel. The responsibility for the safe handling and use of these products rests solely with the buyer and/or user. The data and information as stated was furnished by the manufacturer of the product. The information provided in this certificate pertains only to the lot number specified. None of the information provided in this certificate may be used, reproduced or transmitted in any form or by any means without written approval from High Purity Standards.

Reagent

MEIVAGs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6729 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAG1
Lot Number:	J2-AG03048
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Ag
Starting Material:	Ag shot
Starting Material Lot#:	1641
Starting Material Purity:	99.9999%

929532
ID: MEIVAGs_00012
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000 ppm Silver Stock Std
Rec'd 5/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 6 µg/mL

Certified Density: 1.027 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 5 µg/mL**
ICP Assay NIST SRM 3151 Lot Number: 992212

Assay Method #2 **999 ± 2 µg/mL**
Volhard NIST SRM 999b Lot Number: 999b

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

s	Ag	<		M	Eu	<	0.007546	O	Na		0.000119	M	Se	<	0.020123	O	Zn		0.000198
O	Al		0.000158	O	Fe	<	0.001000	M	Nb	<	0.001257	O	Si	<	0.003400	M	Zr	<	0.012577
M	As	<	0.025154	M	Ga	<	0.002515	M	Nd	<	0.005030	M	Sm	<	0.002515				
O	Au	<	0.003000	M	Gd	<	0.002515	O	Ni	<	0.003000	M	Sn	<	0.012577				
M	B	<	0.176078	M	Ge	<	0.015092	n	Os	<		M	Sr	<	0.001257				
M	Ba	<	0.025154	M	Hf	<	0.005030	O	P	<	0.003000	M	Ta	<	0.017607				
M	Be	<	0.001257	O	Hg	<	0.015000	M	Pb	<	0.007546	M	Tb	<	0.000754				
M	Bi	<	0.001006	M	Ho	<	0.001257	O	Pd	<	0.004000	M	Te	<	0.075462				
O	Ca		0.000873	M	In	<	0.025154	M	Pr	<	0.000754	M	Th	<	0.002515				
O	Cd	<	0.005000	M	Ir	<	0.012577	O	Pt	<	0.017000	M	Ti	<	0.125770				
M	Ce	<	0.012577	O	K		0.000198	M	Rb	<	0.002515	M	Tl	<	0.002515				
M	Co	<	0.007546	M	La	<	0.001257	M	Re	<	0.002515	M	Tm	<	0.001006				
M	Cr	<	0.012577	O	Li	<	0.000020	M	Rh	<	0.002515	M	U	<	0.005030				
M	Cs	<	0.000754	M	Lu	<	0.001006	M	Ru	<	0.005030	M	V	<	0.005030				
O	Cu	<	0.003000	O	Mg	<	0.000030	O	S	<	0.025000	M	W	<	0.025154				
M	Dy	<	0.015092	M	Mn	<	0.010061	M	Sb	<	0.001257	M	Y	<	0.100616				
M	Er	<	0.012577	M	Mo	<	0.005030	M	Sc	<	0.025154	M	Yb	<	0.002515				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 107.87 +1 6 Ag(H2O)6+
Chemical Compatibility -Stable in HNO3, and HF. Avoid basic media. Ag forms more insoluble salts than any other metal. It also is subject to photochemical reduction to the metal in HCl media although 10 µg/mL solutions in 10% HCl [AgClx1-x] are commonly used in the analytical laboratory. The most common solubility problems exist with arsenate, arsenite , bromide, chloride, iodide, carbonate , chromate, cyanide, iodate, oxalate, oxide, sulfate, sulfide, tartrate, and thiocyanate in aqueous media. The addition of nitric acid renders many of these salts soluble.
Stability - 2-100 ppb levels stable for 75+ days when mixed with equivalent levels of all other elements including the precious metals (where chloride is present) when in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Ag Containing Samples (Preparation and Solution) -Metal (Soluble in HNO3); Oxides (Soluble in HNO3); Ores (Digestion with conc. HNO3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 107 amu	1 ppt	N/A	91Zr16O
ICP-OES 243.779 nm	0.12/0.01 µg/mL	1	Mn, Th, Ni, Rh
ICP-OES 328.068 nm	0.007/0.0007 µg/mL	1	Ce, Rh, V
ICP-OES 338.289 nm	0.013/0.001 µg/mL	1	Ce, Cr, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 30, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- March 30, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/6/16 MJK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVASs_00010

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.961.3636
fax: 540.394.9012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAS1
Lot Number:	J2-AS02122
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: As
Starting Material:	As pieces
Starting Material Lot#:	1665
Starting Material Purity:	99.9980%

898416
ID: MEIVASs_00010
Exp:02/04/17 Prpd:MDK Opn:02/04/16
1000ppm Arsenic

2/4/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 5 µg/mL

Certified Density: 1.012 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1001 ± 4 µg/mL**
ICP Assay NIST SRM 3103a Lot Number: 100818

Assay Method #2 **1001 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.010063	M	Eu	<	0.015094	O	Na		0.002724	M	Se	<	0.040252	O	Zn		0.000656
O	Al		0.000556	O	Fe		0.000099	O	Nb	<	0.002000	O	Si		0.007755	M	Zr	<	0.025157
s	As	<		M	Ga	<	0.005031	M	Nd	<	0.010063	M	Sm	<	0.005031				
M	Au	<	0.015094	M	Gd	<	0.005031	O	Ni	<	0.002000	O	Sn	<	0.004000				
O	B		0.000298	M	Ge	<	0.030189	n	Os	<		M	Sr	<	0.002515				
M	Ba	<	0.050315	M	Hf	<	0.010063	O	P	<	0.002600	M	Ta	<	0.035220				
M	Be	<	0.002515	O	Hg	<	0.012000	M	Pb	<	0.015094	M	Tb	<	0.001509				
M	Bi	<	0.002012	M	Ho	<	0.002515	M	Pd	<	0.025157	M	Te	<	0.150946				
O	Ca		0.007954	M	In	<	0.050315	M	Pr	<	0.001509	M	Th	<	0.005031				
M	Cd	<	0.015094	M	Ir	<	0.025157	M	Pt	<	0.010063	M	Ti	<	0.251578				
M	Ce	<	0.025157	O	K		0.000596	M	Rb	<	0.005031	M	Tl	<	0.005031				
M	Co	<	0.015094	M	La	<	0.002515	O	Re	<	0.010000	M	Tm	<	0.002012				
O	Cr	<	0.000800	O	Li	<	0.000020	M	Rh	<	0.005031	M	U	<	0.010063				
M	Cs	<	0.001509	M	Lu	<	0.002012	M	Ru	<	0.010063	M	V	<	0.010063				
M	Cu	<	0.030189	O	Mg		0.000159	n	S	<		M	W	<	0.050315				
M	Dy	<	0.030189	O	Mn	<	0.000030	O	Sb	<	0.010000	M	Y	<	0.201262				
M	Er	<	0.025157	M	Mo	<	0.010063	M	Sc	<	0.050315	M	Yb	<	0.005031				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 74.92 ; mix of +3 and +5 ; 6 ; H3AsO4 and HAsO2

Chemical Compatibility - Arsenic has no cationic chemistry. It is soluble in HCl, HNO3,H3PO4, H2SO4 and HF aqueous matrices water and NH4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO3 / LDPE container.

As Containing Samples (Preparation and Solution) - Metal (soluble in 1:1 H2O / HNO3); Oxides (the oxide exists in crystalline and amorphous forms where the amorphic form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (one gram of powered sample is fused in a Ni crucible with 10 grams of a 1:1 mix of K2CO3 and KNO3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of sample are fused with 15 grams of a 1:1 Na2CO3 / Na2O2 mix in a Ni crucible. The fuseate is extracted with water and acidified with HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 75 amu	20 ppt	N/A	40Ar35Cl, 59Co16O, 36Ar38Ar1H,8Ar37Cl,Ar39K, 150Nd2+,150Sm2+
ICP-OES 189.042 nm	0.05/0.005 µg/mL	1	Cr
ICP-OES 193.696 nm	0.1/0.01 µg/mL	1	V, Ge
ICP-OES 228.812 nm	0.1/0.01 µg/mL	1	Cd, Pt, Ir, Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 12, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 12, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

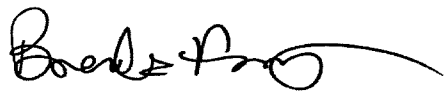
- Sealed TCT Bag Open Date: 2/4/16 mdk

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

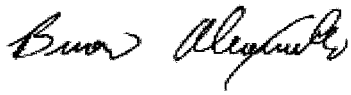
Certificate Prepared By:

Brenda Francis
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVASs_00011

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS
[illegible]

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAS1
Lot Number:	J2-AS02122
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: As
Starting Material:	As pieces
Starting Material Lot#:	1665
Starting Material Purity:	99.9980%

954503
ID: MEIVASs_00011
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000ppm Arsenic
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 5 µg/mL

Certified Density: 1.012 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1001 ± 4 µg/mL**
ICP Assay NIST SRM 3103a Lot Number: 100818

Assay Method #2 **1001 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.010063	M	Eu	<	0.015094	O	Na		0.002724	M	Se	<	0.040252	O	Zn		0.000656
O	Al		0.000556	O	Fe		0.000099	O	Nb	<	0.002000	O	Si		0.007755	M	Zr	<	0.025157
s	As	<		M	Ga	<	0.005031	M	Nd	<	0.010063	M	Sm	<	0.005031				
M	Au	<	0.015094	M	Gd	<	0.005031	O	Ni	<	0.002000	O	Sn	<	0.004000				
O	B		0.000298	M	Ge	<	0.030189	n	Os	<		M	Sr	<	0.002515				
M	Ba	<	0.050315	M	Hf	<	0.010063	O	P	<	0.002600	M	Ta	<	0.035220				
M	Be	<	0.002515	O	Hg	<	0.012000	M	Pb	<	0.015094	M	Tb	<	0.001509				
M	Bi	<	0.002012	M	Ho	<	0.002515	M	Pd	<	0.025157	M	Te	<	0.150946				
O	Ca		0.007954	M	In	<	0.050315	M	Pr	<	0.001509	M	Th	<	0.005031				
M	Cd	<	0.015094	M	Ir	<	0.025157	M	Pt	<	0.010063	M	Ti	<	0.251578				
M	Ce	<	0.025157	O	K		0.000596	M	Rb	<	0.005031	M	Tl	<	0.005031				
M	Co	<	0.015094	M	La	<	0.002515	O	Re	<	0.010000	M	Tm	<	0.002012				
O	Cr	<	0.000800	O	Li	<	0.000020	M	Rh	<	0.005031	M	U	<	0.010063				
M	Cs	<	0.001509	M	Lu	<	0.002012	M	Ru	<	0.010063	M	V	<	0.010063				
M	Cu	<	0.030189	O	Mg		0.000159	n	S	<		M	W	<	0.050315				
M	Dy	<	0.030189	O	Mn	<	0.000030	O	Sb	<	0.010000	M	Y	<	0.201262				
M	Er	<	0.025157	M	Mo	<	0.010063	M	Sc	<	0.050315	M	Yb	<	0.005031				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 74.92 ; mix of +3 and +5 ; 6 ; H_3AsO_4 and $HAsO_2$

Chemical Compatibility - Arsenic has no cationic chemistry. It is soluble in HCl, HNO_3,H_3PO_4, H_2SO_4 and HF aqueous matrices water and NH_4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO_3 / LDPE container.

As Containing Samples (Preparation and Solution) - Metal (soluble in 1:1 H_2O / HNO_3); Oxides (the oxide exists in crystalline and amorphous forms where the amorphic form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (one gram of powered sample is fused in a Ni crucible with 10 grams of a 1:1 mix of K_2CO_3 and KNO_3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of sample are fused with 15 grams of a 1:1 Na_2CO_3 / Na_2O_2 mix in a Ni crucible. The fuseate is extracted with water and acidified with HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 75 amu	20 ppt	N/A	40Ar35Cl, 59Co16O, 36Ar38Ar1H,8Ar37Cl,Ar39K, 150Nd2+,150Sm2+
ICP-OES 189.042 nm	0.05/0.005 µg/mL	1	Cr
ICP-OES 193.696 nm	0.1/0.01 µg/mL	1	V, Ge
ICP-OES 228.812 nm	0.1/0.01 µg/mL	1	Cd, Pt, Ir, Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 12, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 12, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

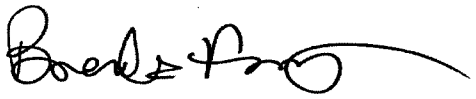
- Sealed TCT Bag Open Date: 2/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

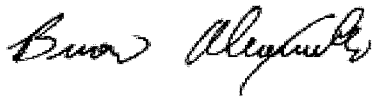
Certificate Prepared By:

Brenda Francis
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVBAs_00016

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBA1
Lot Number:	J2-BA02093
Matrix:	0.1% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Ba
Starting Material:	Ba(NO3)2
Starting Material Lot#:	1822
Starting Material Purity:	99.9991%

954505
ID: MEIVBAs_00016
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000ppm Barium Stock std
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 5 µg/mL

Certified Density: 1.000 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **997 ± 3 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

Assay Method #2 **998 ± 5 µg/mL**
ICP Assay NIST SRM 3104a Lot Number: 070222

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001998	O	Eu	<	0.001700	O	Na	<	0.020000	O	Se	<	0.050000	O	Zn	<	0.000400
O	Al	<	0.001500	O	Fe	<	0.001200	M	Nb	<	0.000199	O	Si	<	0.004000	M	Zr	<	0.000199
M	As	<	0.002997	M	Ga	<	0.000199	M	Nd	<	0.000199	O	Sm	<	0.007000				
M	Au	<	0.001998	M	Gd	<	0.000199	O	Ni	<	0.002000	M	Sn	<	0.003996				
M	B	<	0.005994	M	Ge	<	0.001198	n	Os	<		O	Sr		0.010487				
s	Ba	<		M	Hf	<	0.001998	O	P	<	0.050000	M	Ta	<	0.000999				
M	Be	<	0.000199	O	Hg	<	0.009000	M	Pb		0.001596	M	Tb	<	0.000199				
M	Bi	<	0.001398	M	Ho	<	0.000199	M	Pd	<	0.000199	M	Te	<	0.011988				
O	Ca		0.000499	M	In	<	0.000199	M	Pr	<	0.000199	M	Th	<	0.000199				
M	Cd	<	0.000199	M	Ir	<	0.000199	M	Pt	<	0.000199	O	Ti	<	0.000400				
M	Ce	<	0.000199	O	K	<	0.002000	M	Rb	<	0.000199	M	Tl	<	0.000199				
M	Co	<	0.000199	O	La	<	0.002000	M	Re	<	0.000199	M	Tm	<	0.000199				
M	Cr	<	0.000999	O	Li	<	0.000080	M	Rh	<	0.000199	M	U	<	0.000199				
M	Cs	<	0.000599	M	Lu	<	0.000199	M	Ru	<	0.000199	M	V	<	0.000199				
O	Cu	<	0.004000	O	Mg	<	0.000600	O	S		0.004994	M	W	<	0.005994				
M	Dy	<	0.000199	O	Mn	<	0.000400	M	Sb	<	0.001998	O	Y	<	0.000400				
M	Er	<	0.000199	O	Mo	<	0.000300	O	Sc	<	0.000300	M	Yb	<	0.000999				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001998	O	Eu	<	0.001700	O	Na	<	0.020000	O	Se	<	0.050000	O	Zn	<	0.000400
O	Al	<	0.001500	O	Fe	<	0.001200	M	Nb	<	0.000199	O	Si	<	0.004000	M	Zr	<	0.000199
M	As	<	0.002997	M	Ga	<	0.000199	M	Nd	<	0.000199	O	Sm	<	0.007000				
M	Au	<	0.001998	M	Gd	<	0.000199	O	Ni	<	0.002000	M	Sn	<	0.003996				
M	B	<	0.005994	M	Ge	<	0.001198	n	Os	<		O	Sr		0.010487				
s	Ba	<		M	Hf	<	0.001998	O	P	<	0.050000	M	Ta	<	0.000999				
M	Be	<	0.000199	O	Hg	<	0.009000	M	Pb		0.001596	M	Tb	<	0.000199				
M	Bi	<	0.001398	M	Ho	<	0.000199	M	Pd	<	0.000199	M	Te	<	0.011988				
O	Ca		0.000499	M	In	<	0.000199	M	Pr	<	0.000199	M	Th	<	0.000199				
M	Cd	<	0.000199	M	Ir	<	0.000199	M	Pt	<	0.000199	O	Ti	<	0.000400				
M	Ce	<	0.000199	O	K	<	0.002000	M	Rb	<	0.000199	M	Tl	<	0.000199				
M	Co	<	0.000199	O	La	<	0.002000	M	Re	<	0.000199	M	Tm	<	0.000199				
M	Cr	<	0.000999	O	Li	<	0.000080	M	Rh	<	0.000199	M	U	<	0.000199				
M	Cs	<	0.000599	M	Lu	<	0.000199	M	Ru	<	0.000199	M	V	<	0.000199				
O	Cu	<	0.004000	O	Mg	<	0.000600	O	S		0.004994	M	W	<	0.005994				
M	Dy	<	0.000199	O	Mn	<	0.000400	M	Sb	<	0.001998	O	Y	<	0.000400				
M	Er	<	0.000199	O	Mo	<	0.000300	O	Sc	<	0.000300	M	Yb	<	0.000999				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 137.33 +2 6 Ba(H2O)6+2
Chemical Compatibility - Soluble in HCl, and HNO3. Avoid H2SO4, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, iodate, molybdate, sulfite and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1 -10,000 ppm solutions chemically stable for years in 1-3.5% HNO3 / LDPE container.
Ba Containing Samples (Preparation and Solution) -Metal(is best dissolved in diluted HNO3); Ores(Carbonate fusion in Pt0 followed by HCl dissolution. If sulfate is present dissolve the fuseate using HCl / tartaric acid to prevent BaSO4 precipitate); Organic Matrices (dry ash and dissolve in dilute HCl.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 138 amu	1 ppt	N/A	122Sn16O, 122Te16O
ICP-OES 230.424 nm	0.004/0.0005 µg/mL	1	Mo, Ir, Co
ICP-OES 233.527 nm	0.004/0.0003 µg/mL	1	
ICP-OES 455.403 nm	0.002/0.0001 µg/mL	1	Zr, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 02, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 02, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MPK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVBEs_00010

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

Tel: 800.669.6799 - 540.585.3030
Fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBE1
Lot Number:	J2-BE02038
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Be
Starting Material:	Be Acetate
Starting Material Lot#:	1858
Starting Material Purity:	99.9998%

934046
ID: MEIVBEs_00010
Exp:05/23/17 Prpd:MDK Opn:05/23/16
1000ppm Beryllium stock s
Rec'd 5/23/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 4 µg/mL - weighted mean

Certified Density: 1.020 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **999 ± 4 µg/mL**
ICP Assay NIST SRM 3105a Lot Number: 090514

Assay Method #2 **999 ± 4 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001190	M	Eu	<	0.000238	O	Na		0.007553	M	Se	<	0.002379	O	Zn		0.003594
O	Al		0.000853	O	Fe		0.002314	M	Nb	<	0.000476	O	Si		0.003045	M	Zr	<	0.000714
M	As	<	0.007137	M	Ga	<	0.000238	M	Nd	<	0.000238	M	Sm	<	0.000238				
M	Au	<	0.000238	M	Gd	<	0.000238	O	Ni	<	0.002426	M	Sn	<	0.001190				
M	B	<	0.004758	M	Ge	<	0.000238	n	Os	<		O	Sr		0.000018				
O	Ba	<	0.004852	M	Hf	<	0.000238	O	P	<	0.060650	M	Ta	<	0.000238				
s	Be	<		O	Hg	<	0.011281	M	Pb	<	0.001190	M	Tb	<	0.000238				
M	Bi	<	0.000238	M	Ho	<	0.000238	M	Pd	<	0.004758	M	Te	<	0.011895				
O	Ca		0.002071	M	In	<	0.000238	M	Pr	<	0.000238	M	Th	<	0.000238				
O	Cd	<	0.000607	M	Ir	<	0.000238	M	Pt	<	0.000238	M	Ti	<	0.007137				
M	Ce	<	0.000238	O	K		0.006091	M	Rb	<	0.000238	M	Tl	<	0.000238				
O	Co	<	0.000728	M	La	<	0.000238	M	Re	<	0.000238	M	Tm	<	0.000238				
O	Cr		0.000305	O	Li	<	0.001213	M	Rh	<	0.000238	M	U	<	0.001190				
M	Cs	<	0.000476	M	Lu	<	0.000238	M	Ru	<	0.000238	M	V	<	0.000476				
O	Cu	<	0.003033	O	Mg		0.000365	i	S	<		M	W	<	0.000714				
M	Dy	<	0.000238	O	Mn	<	0.000121	M	Sb	<	0.000238	M	Y	<	0.000238				
M	Er	<	0.000238	M	Mo	<	0.000714	O	Sc	<	0.000121	M	Yb	<	0.000238				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 9.01 +2 4 Be+(H2O)4+2
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Stable with all metals and inorganic anions.
Stability - 2-100 ppb levels stable for months in 1 % HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 5-10 % HNO3 / LDPE container.
Be Containing Samples (Preparation and Solution) - Meta l(is best dissolved in diluted H2SO4); BeO (boiling nitric, hydrochloric, or sulfuric acids or KHSO4 fusion); Ores (H2SO4/HF digestion or carbonate fusion in Pt0); Organic Matrices (sulfuric/peroxide digestion or nitric/sulfuric/perchloric acid decomposition, or dry ash and dissolution according to the BeO procedure above).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 9 amu	4 ppt	N/A	
ICP-OES 234.861 nm	0.0003/0.00016 µg/mL	1	Fe, Ta, Mo
ICP-OES 313.042 nm	0.0003/0.00009 µg/mL	1	V, Ce, U
ICP-OES 313.107 nm	0.0007/0.0005 µg/mL	1	Ce, Th, Tm

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 12, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- May 12, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/23/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVBs_00006

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGB1
Lot Number:	H2-B02125
Matrix:	H2O
Value / Analyte(s):	1 000 µg/mL ea: B
Starting Material:	Recrystallized H3BO3
Starting Material Lot#:	F2-B02105
Starting Material Purity:	100.0000%

Inorganic Ventures 1,000

889361

ID: MEIVBs_00006

Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 6 µg/mL - weighted mean

Certified Density: 1.001 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1003 ± 5 µg/mL**
ICP Assay NIST SRM 3107 Lot Number: 110830

Assay Method #2 **1000 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	< 0.000100	M	Eu	< 0.000100	O	Na	0.000833	M	Se	< 0.005021	O	Zn	< 0.008176			
O	Al	< 0.008176	O	Fe	< 0.003066	M	Nb	< 0.000100	O	Si	< 0.009198	M	Zr	< 0.000100			
M	As	< 0.000502	M	Ga	< 0.000502	M	Nd	< 0.000100	M	Sm	< 0.000100						
M	Au	< 0.000100	M	Gd	< 0.000100	O	Ni	< 0.003066	M	Sn	< 0.000100						
s	B	<	M	Ge	< 0.003013	n	Os	<	M	Sr	< 0.000301						
M	Ba	< 0.000100	M	Hf	< 0.000100	O	P	< 0.153300	M	Ta	< 0.000100						
M	Be	< 0.000803	O	Hg	< 0.051100	M	Pb	< 0.000100	M	Tb	< 0.000100						
M	Bi	< 0.000100	M	Ho	< 0.001004	M	Pd	< 0.000100	M	Te	< 0.001004						
O	Ca	0.000552	M	In	< 0.000100	M	Pr	< 0.000100	M	Th	< 0.000100						
M	Cd	< 0.000100	M	Ir	< 0.000100	M	Pt	< 0.000100	O	Ti	< 0.001533						
M	Ce	< 0.000100	O	K	< 0.001635	M	Rb	< 0.001004	M	Tl	< 0.000100						
M	Co	< 0.001004	M	La	< 0.000100	M	Re	< 0.000100	M	Tm	< 0.000100						
M	Cr	< 0.002008	O	Li	< 0.000061	M	Rh	< 0.000100	M	U	< 0.000100						
M	Cs	< 0.003013	M	Lu	< 0.000100	M	Ru	< 0.000100	O	V	< 0.003066						
M	Cu	< 0.002008	O	Mg	< 0.000082	n	S	<	M	W	< 0.001004						
M	Dy	< 0.000100	O	Mn	< 0.005110	M	Sb	< 0.000100	M	Y	< 0.000100						
M	Er	< 0.000100	M	Mo	< 0.000100	O	Sc	< 0.010220	M	Yb	< 0.000100						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 10.81 +3 4 B(OH)3 and B(OH)4-1

Chemical Compatibility -Moderately soluble in HCl, HNO_3, H_2SO_4 and HF aqueous matrices and very soluble in NH_4OH . Stable with all metals and inorganic anions at low to moderate ppm levels.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-1,000 ppm solutions chemically stable for years in 1% HNO_3 / LDPE container. 1000 -10,000 ppm stable for years in dilute NH_4OH / LDPE container.

B Containing Samples (Preparation and Solution) -Metal (Crystalline form is scarcely attacked by acids or alkaline solutions; amorphous form is soluble in conc. HNO_3 or H_2SO_4); B(OH)3 (water soluble); Ores(avoid acid digestions and use caustic fusions in PtE); Organic Matrices (dry ash mixed with Na_2CO_3 in PtE at 450EC then increase heat to 1000EC to fuse; or perform a Na_2O_2 fusion in a NiE crucible / Parr bomb).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 11 amu	700 ppt	N/A	
ICP-OES 208.959 nm	0.007/0.0005 µg/mL	1	Mo
ICP-OES 249.678 nm	0.004/0.003 µg/mL	1	Os, W, Co, Cr, Hf
ICP-OES 249.773 nm	0.003/0.001 µg/mL	1	W, Ce, Co, Th, Ta, Mn, Mo, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 05, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- February 05, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MBK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVCAwHRDs_00011

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6779 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCA10
Lot Number:	H2-CA04105
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Calcium
Starting Material:	CaO
Starting Material Lot#:	1748
Starting Material Purity:	99.9971%

954506
ID: MEIVCAwHRDs_00011
Exp:07/21/17 Prpd:MDK Opn:07/21/16
10000ppm Calcium stock st
Recd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9950 ± 24 µg/mL - weighted mean

Certified Density: 1.040 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **9956 ± 50 µg/mL**
ICP Assay NIST SRM 3109a Lot Number: 130213

Assay Method #2 **9948 ± 25 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stablity standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001138	M	Eu	<	0.000569	O	Na		0.051844	M	Se	<	0.017081	O	Zn		0.000607
O	Al	<	0.058400	O	Fe		0.001626	M	Nb	<	0.000569	O	Si		0.010604	M	Zr	<	0.001708
M	As	<	0.005693	M	Ga	<	0.000569	M	Nd	<	0.000569	M	Sm	<	0.000569				
M	Au	<	0.000572	M	Gd	<	0.000569	O	Ni	<	0.003504	M	Sn	<	0.001708				
O	B	<	0.023360	M	Ge	<	0.002846	M	Os	<	0.000572	O	Sr		0.336991				
O	Ba		0.010173	M	Hf	<	0.000569	O	P	<	0.058400	M	Ta	<	0.000569				
O	Be	<	0.000233	M	Hg	<	0.000572	M	Pb		0.003216	M	Tb	<	0.000569				
M	Bi	<	0.000569	M	Ho	<	0.000569	M	Pd	<	0.000569	M	Te	<	0.000569				
s	Ca	<		M	In	<	0.000569	M	Pr	<	0.000569	M	Th	<	0.000569				
O	Cd	<	0.000487	M	Ir	<	0.000572	M	Pt	<	0.000569	M	Ti	<	0.003985				
M	Ce	<	0.000569	O	K		0.016496	M	Rb		0.004135	M	Tl	<	0.000569				
O	Co	<	0.002336	M	La	<	0.000569	M	Re	<	0.000569	M	Tm	<	0.000569				
O	Cr	<	0.002336	M	Li	<	0.006832	M	Rh	<	0.000569	M	U	<	0.000569				
M	Cs		0.009190	O	Lu	<	0.000268	M	Ru	<	0.000572	O	V	<	0.001752				
O	Cu	<	0.004672	O	Mg		0.022896	n	S	<		M	W	<	0.001138				
M	Dy	<	0.000569	O	Mn	<	0.000350	M	Sb	<	0.003416	M	Y	<	0.000569				
M	Er	<	0.000569	M	Mo	<	0.005693	O	Sc	<	0.000584	M	Yb	<	0.000569				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 40.08 +2 6 Ca(H2O)6+2
Chemical Compatibility - Soluble in HCl and HNO3. Avoid H2SO4, HF, H3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO3 / LDPE container.
Ca Containing Samples (Preparation and Solution) -Metal (best dissolved in diluted HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (dry ash and dissolution in dilute HCl. Do not heat when dissolving to avoid precipitation of SiO2). The oxide, hydroxide, carbonate, phosphate, and fluoride of calcium are soluble in % levels of HCl or HNO3. The sulfates (gypsum, anhydrite, etc.), certain silicates, and complex compounds require fusion with Na2CO3 followed by HCl / water dissolution. Note that contamination is a very real problem when analyzing for trace levels.
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 44 amu	1200 ppt	n/a	16O212C, 28Si16O, 88Sr
ICP-OES 393.366 nm	0.0002 / 0.00004 µg/mL	1	U, Ce
ICP-OES 396.847 nm	0.0005 / 0.00006 µg/mL	1	Th
ICP-OES 422.673 nm	0.01 / 0.001 µg/mL	1	Ge

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 03, 2014

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- December 03, 2017

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MMK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVCDs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6739 - 540.382.3082
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCO1
Lot Number:	J2-CO02068
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Cobalt
Starting Material:	Cobalt Carbonate
Starting Material Lot#:	1850
Starting Material Purity:	99.9990%

954510
ID: MEIVCDs_00012
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000 PPM Cd
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 996 ± 3 µg/mL

Certified Density: 1.017 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1	**997 ± 3 µg/mL** EDTA NIST SRM 928 Lot Number: 928
Assay Method #2	**994 ± 4 µg/mL** ICP Assay NIST SRM 3113 Lot Number: 000630 Co

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.005549	M	Eu	<	0.000555	O	Na		0.005793	M	Se	<	0.110979	O	Zn		0.000897
O	Al	<	0.034740	O	Fe	<	0.023160	M	Nb	<	0.001665	O	Si		0.002720	M	Zr	<	0.005549
i	As	<		M	Ga	<	0.000555	M	Nd	<	0.000555	M	Sm	<	0.001665				
M	Au	<	0.000555	M	Gd	<	0.000555	O	Ni		0.002094	M	Sn	<	0.016647				
M	B	<	0.066587	M	Ge	<	0.005549	n	Os	<		M	Sr	<	0.002774				
O	Ba		0.000625	M	Hf	<	0.000555	n	P	<		M	Ta	<	0.001110				
O	Be	<	0.000116	n	Hg	<		M	Pb	<	0.011098	M	Tb	<	0.000555				
M	Bi		0.005630	M	Ho	<	0.000555	M	Pd	<	0.000555	M	Te	<	0.022196				
O	Ca		0.005793	M	In	<	0.002774	M	Pr	<	0.001665	M	Th	<	0.000555				
M	Cd	<	0.000555	M	Ir	<	0.000555	M	Pt	<	0.000555	M	Ti	<	0.016647				
M	Ce	<	0.000555	O	K		0.000816	M	Rb	<	0.000555	M	Tl	<	0.000555				
s	Co	<		M	La	<	0.002774	M	Re	<	0.000555	M	Tm	<	0.000555				
M	Cr	<	0.022196	O	Li		0.000011	M	Rh	<	0.000555	M	U	<	0.000555				
M	Cs	<	0.000555	M	Lu	<	0.000555	M	Ru	<	0.000555	O	V	<	0.001158				
M	Cu	<	0.011098	O	Mg		0.001169	n	S	<		M	W	<	0.011098				
M	Dy	<	0.000555	O	Mn	<	0.001158	M	Sb	<	0.005549	M	Y	<	0.000555				
M	Er		0.001043	M	Mo	<	0.016647	M	Sc	<	0.005549	M	Yb	<	0.005549				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.93 +2 6 $Co(H_2O)_6^{2+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Co Containing Samples (Preparation and Solution) - Metal (soluble in HNO_3); Oxides (Soluble in HCl); Ores (dissolve in HCl / HNO_3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 59 amu	2 ppt	n/a	42Ca16O1H , 40Ar18O1H , 36Ar23Na, 43Ca16O, 24Mg35Cl
ICP-OES 228.616 nm	0.01/0.001 µg/mL	1	
ICP-OES 237.862 nm	0.01/0.002 µg/mL	1	W, Re, Al, Ta
ICP-OES 238.892 nm	0.01/0.002 µg/mL	1	Fe, W, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 15, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- September 15, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVCEs_00010

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCE1
Lot Number:	J2-CE01096
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Ce
Starting Material:	CeO2
Starting Material Lot#:	0609251 OCE
Starting Material Purity:	99.9980%

1000ppm Cerium stock std
889362
ID: MEIVCEs_00010
Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1003 ± 4 µg/mL

Certified Density: 1.040 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1003 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **1000 ± 4 µg/mL**
ICP Assay NIST SRM 3110 Lot Number: 090504

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001015	M	Eu	<	0.002031	M	Na		0.008011	M	Se	<	0.040628	O	Zn	<	0.050000
M	Al		0.008011	O	Fe	<	0.050000	M	Nb	<	0.002031	O	Si	<	0.200000	M	Zr	<	0.006094
M	As	<	0.001015	O	Ga	<	0.100000	M	Nd		0.005808	M	Sm	<	0.006094				
M	Au	<	0.000203	M	Gd	<	0.304715	M	Ni	<	0.016251	M	Sn	<	0.006094				
M	B	<	0.020314	M	Ge	<	0.002031	n	Os	<		M	Sr	<	0.002031				
M	Ba	<	0.040628	M	Hf	<	0.002031	i	P	<		M	Ta	<	0.002031				
M	Be	<	0.000203	i	Hg	<		M	Pb		0.000701	i	Tb	<					
M	Bi	<	0.000406	M	Ho	<	0.001015	M	Pd	<	0.001015	M	Te	<	0.040628				
O	Ca	<	0.100000	M	In	<	0.004062	M	Pr	<	0.406287	M	Th	<	0.001015				
M	Cd	<	0.002031	M	Ir	<	0.000203	M	Pt	<	0.000203	M	Ti	<	0.010157				
s	Ce	<		O	K	<	0.100000	M	Rb	<	0.000609	M	Tl	<	0.000203				
M	Co	<	0.000203	O	La	<	0.100000	M	Re	<	0.000203	M	Tm	<	0.000812				
M	Cr	<	0.020314	O	Li	<	0.005000	M	Rh	<	0.000203	M	U	<	0.000203				
M	Cs	<	0.002031	M	Lu		0.000630	M	Ru	<	0.000203	M	V	<	0.014220				
M	Cu	<	0.010157	O	Mg		0.000246	i	S	<		M	W	<	0.006094				
M	Dy		0.002113	M	Mn	<	0.006094	M	Sb	<	0.002031	M	Y		0.000360				
M	Er	<	0.004062	M	Mo	<	0.002031	M	Sc	<	0.001015	M	Yb		0.000650				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 140.12 +4 6 to 8,9,10 for some compounds Ce(OH)y(H2O)x+4-y
Chemical Compatibility -Soluble in HCl, and HNO3. Avoid HF, H3PO4, H2SO4 and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride and sparingly soluble sulfates (La - Eu exhibit low sulfate solubility). Avoid mixing with elements/solutions containing moderate amounts of fluoride.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5 % HNO3 / LDPE container.
Ce Containing Samples (Preparation and Solution) -Metal (Soluble in acids); Oxide (dissolved by heating in H2O / HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (dry ash and dissolve in 1:1 H2O/ HCl or HNO3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 140 amu	1 ppt	n/a	124Sn16O, 124Te16O
ICP-OES 413.765 nm	0.05 / 0.0058 µg/mL	1	a Ce 413.747 line may effect Bkg. Corr.
ICP-OES 418.660 nm	0.05 / 0.003 µg/mL	1	Zr
ICP-OES 453.975 nm	0.06 / 0.0063 µg/mL	1	

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 05, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- August 05, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDB

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVCOs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com
tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCD1
Lot Number:	J2-CD02063
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Cadmium
Starting Material:	Cd shot
Starting Material Lot#:	1714
Starting Material Purity:	99.9958%

954511
ID: MEIVCOs_00012
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000ppm Cobalt Stock Std
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 5 µg/mL

Certified Density: 1.016 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **997 ± 5 µg/mL**
ICP Assay NIST SRM 3108 Lot Number: 130116

Assay Method #2 **999 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.009150	M	Eu	<	0.013725	O	Na		0.005201	M	Se	<	0.036600	O	Zn		0.000570
O	Al		0.001755	O	Fe	<	0.001100	M	Nb	<	0.002287	O	Si		0.028532	M	Zr	<	0.022875
M	As	<	0.045750	M	Ga	<	0.004575	M	Nd	<	0.009150	M	Sm	<	0.004575				
M	Au	<	0.013725	M	Gd	<	0.004575	O	Ni	<	0.003000	M	Sn	<	0.022875				
O	B		0.003950	M	Ge	<	0.027450	n	Os	<		M	Sr	<	0.002287				
M	Ba	<	0.045750	M	Hf	<	0.009150	O	P	<	0.003000	M	Ta	<	0.032025				
M	Be	<	0.002287	O	Hg	<	0.012000	M	Pb	<	0.013725	M	Tb	<	0.001372				
M	Bi	<	0.001830	M	Ho	<	0.002287	M	Pd	<	0.022875	O	Te	<	0.007000				
O	Ca		0.002194	O	In	<	0.002000	M	Pr	<	0.001372	M	Th	<	0.004575				
s	Cd	<		M	Ir	<	0.022875	M	Pt	<	0.009150	M	Ti	<	0.228751				
M	Ce	<	0.022875	O	K		0.000219	M	Rb	<	0.004575	M	Tl	<	0.004575				
M	Co	<	0.013725	M	La	<	0.002287	M	Re	<	0.004575	M	Tm	<	0.001830				
M	Cr	<	0.022875	O	Li	<	0.000020	M	Rh	<	0.004575	M	U	<	0.009150				
M	Cs	<	0.001372	M	Lu	<	0.001830	M	Ru	<	0.009150	M	V	<	0.009150				
M	Cu	<	0.027450	O	Mg		0.000197	O	S	<	0.030000	M	W	<	0.045750				
M	Dy	<	0.027450	M	Mn	<	0.018300	M	Sb	<	0.002287	M	Y	<	0.183001				
M	Er	<	0.022875	M	Mo	<	0.009150	M	Sc	<	0.045750	M	Yb	<	0.004575				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 112.41 +2 4 Cd2(OH) (aq)3+ and Cd(OH)(aq)
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 , and HF. Avoid basic media forming insoluble carbonate and hydroxide.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO3 / LDPE container.
Cd Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (soluble in HCl or HNO3); Ores (dissolve in HCl /HNO3 then take to fumes with H2SO4. The silica and lead sulfate are filtered off after the addition of water); Organic based (dry ash at 450°C and dissolve ash in HCl), (sulfuric / peroxide acid digestion).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 111 amu	11 ppt	n/a	95Mo16O
ICP-OES 214.438 nm	0.003 / 0.0003 µg/mL	1	Pt, Ir
ICP-OES 226.502 nm	0.003 / 0.0003 µg/mL	1	Ir
ICP-OES 228.802 nm	0.003 / 0.0003 µg/mL	1	Co, Ir, As, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 20, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 20, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVCRs_00013

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCR(3)1
Lot Number:	J2-CR03111
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Chromium+3
Starting Material:	Cr Flake
Starting Material Lot#:	1661
Starting Material Purity:	99.9899%

929534
ID: MEIVCRs_00013
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000ppm Chromium (+3) sto

Rec'd 5/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 4 µg/mL

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **997 ± 5 µg/mL**
ICP Assay NIST SRM 3112a Lot Number: 030730Cr3

Assay Method #2 **999 ± 4 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001009	M	Eu	<	0.025220	O	Na		0.017703	M	Se	<	0.050441	O	Zn	<	0.036630
O	Al		0.002714	O	Fe		0.040127	M	Nb	<	0.025220	n	Si	<		M	Zr	<	0.015132
M	As	<	0.025220	O	Ga	<	0.024420	M	Nd	<	0.001009	M	Sm	<	0.000504				
M	Au	<	0.000504	M	Gd	<	0.000504	O	Ni		0.001210	M	Sn	<	0.015132				
O	B		0.000856	M	Ge	<	0.005044	n	Os	<		M	Sr	<	0.025220				
M	Ba	<	0.025220	M	Hf	<	0.000504	i	P	<		M	Ta	<	0.000504				
M	Be	<	0.002522	O	Hg	<	0.003663	M	Pb		0.000573	M	Tb	<	0.000504				
M	Bi	<	0.010088	M	Ho	<	0.000504	M	Pd	<	0.005044	M	Te	<	0.010088				
O	Ca		0.007435	M	In	<	0.001009	M	Pr	<	0.001513	M	Th	<	0.000504				
M	Cd	<	0.001513	M	Ir	<	0.000504	M	Pt	<	0.000504	O	Ti		0.002360				
M	Ce	<	0.001513	O	K		0.009442	i	Rb	<		M	Tl	<	0.000504				
O	Co		0.007701	M	La	<	0.000504	M	Re	<	0.015132	M	Tm	<	0.030264				
s	Cr	<		O	Li	<	0.004274	M	Rh	<	0.100881	M	U	<	0.000504				
M	Cs	<	0.005044	M	Lu	<	0.000504	M	Ru	<	0.050441	M	V	<	0.075661				
O	Cu		0.006314	O	Mg		0.000708	i	S	<		M	W		0.005461				
M	Dy	<	0.000504	O	Mn		0.000797	M	Sb	<	0.020176	M	Y	<	0.001513				
M	Er	<	0.010088	M	Mo		0.020087	M	Sc	<	0.020176	M	Yb	<	0.000504				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 52.00 +3 6 $Cr(H_2O)_6^{3+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4, HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Cr3 Containing Samples (Preparation and Solution) -Metal (soluble in HCl); Oxides/Ores (Chrome ore/oxides are very difficult to dissolve. The following procedures [A-D] are commonly used: A. Fusion with $KHSO_4$ and extraction with hot KCl. The residue fused with Na_2CO_3 and $KClO_3$, 3:1. B. Fusion with $NaKSO_4$ and NaF 2:1, C. Fusion with magnesia or lime and sodium or potassium carbonates, 4:1. D. Fusion with Na_2O_2 or NaOH and KNO_3 or NaOH and Na_2O_2. Nickel, iron, copper, or silver crucibles should be used for D. Platinum may be used for A, B, C); Organic Matrices (ash at 4500C followed by one of the fusion methods above or sulfuric/hydrogen peroxide acid digestions may be applicable to non oxide containing samples).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 52 amu	40 ppt	N/A	36S16O, 36Ar16O - The 50Cr, 53Cr, 54Cr lines suffer from many more potential interferences from sulfur, chlorine and argon compounds of oxygen, nitrogen and carbon.
ICP-OES 205.552 nm	0.006/0.0008 µg/mL	1	Os
ICP-OES 276.654 nm	0.01/0.001 µg/mL	1	Cu, Ta, V
ICP-OES 284.325 nm	0.008/0.0007 µg/mL	1	

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 17, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- November 17, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

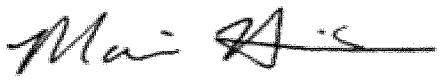
- Sealed TCT Bag Open Date: 5/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

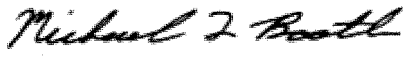
Certificate Prepared By:

Maurice Harris
Product Documentation Technician



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVCUs_00014

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

fax: 800.669.6795 - 540.585.3012
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCU1
Lot Number:	J2-CU03026
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Copper
Starting Material:	Cu Metal
Starting Material Lot#:	1806
Starting Material Purity:	99.9996%

929533
ID: MEIVCUs_00014
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000ppm Copper stock std
Rec'd 5/6/17 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 5 µg/mL

Certified Density: 1.014 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 5 µg/mL**
ICP Assay NIST SRM 3114 Lot Number: 121207

Assay Method #2 **1001 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.004691	M	Eu	<	0.000938	O	Na		0.000312	M	Se	<	0.018765	O	Zn	<	0.001230
O	Al		0.000312	O	Fe		0.000718	M	Nb	<	0.004691	O	Si		0.000983	O	Zr	<	0.002460
O	As	<	0.007380	M	Ga	<	0.000938	M	Nd	<	0.000938	M	Sm	<	0.000938				
M	Au	<	0.000938	M	Gd	<	0.000938	M	Ni	<	0.002815	O	Sn	<	0.002460				
O	B	<	0.001230	M	Ge	<	0.009383	n	Os	<		O	Sr	<	0.000062				
O	Ba	<	0.000086	M	Hf	<	0.004691	O	P	<	0.061500	M	Ta	<	0.009383				
O	Be	<	0.000062	O	Hg	<	0.002460	M	Pb		0.000155	M	Tb	<	0.000938				
M	Bi	<	0.018765	M	Ho	<	0.000938	M	Pd	<	0.002815	M	Te	<	0.037530				
O	Ca		0.000296	M	In	<	0.000938	M	Pr	<	0.000938	M	Th	<	0.000938				
M	Cd	<	0.002815	M	Ir	<	0.000938	M	Pt	<	0.000938	O	Ti	<	0.000615				
M	Ce	<	0.000938	O	K		0.000359	M	Rb	<	0.000938	M	Tl	<	0.000938				
O	Co	<	0.003690	M	La	<	0.000938	M	Re	<	0.000938	M	Tm	<	0.000938				
O	Cr	<	0.002460	M	Li	<	0.046913	O	Rh	<	0.008610	M	U	<	0.000938				
M	Cs	<	0.018765	M	Lu	<	0.000938	M	Ru	<	0.000938	O	V	<	0.000615				
s	Cu	<		O	Mg		0.001295	O	S		0.000749	M	W	<	0.005630				
M	Dy	<	0.000938	O	Mn	<	0.000615	M	Sb	<	0.004691	O	Y	<	0.000369				
M	Er	<	0.000938	O	Mo	<	0.003075	O	Sc	<	0.000369	M	Yb	<	0.000938				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 63.55 +2 6 $Cu(H_2O)_6^{2+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4, HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Cu Containing Samples (Preparation and Solution) -Metal (soluble in HNO_3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO_3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 63 amu	10 ppt	n/a	40Ar23Na 47Ti16O, 14N12C37Cl, 16O12C35Cl, 23Na40Ca
ICP-OES 219.958 nm	0.01/.002 µg/mL	1	Th, Ta, Nb, U, Hf
ICP-OES 224.700 nm	0.01/.001 µg/mL	1	Pb, Ir, Ni, W
ICP-OES 324.754 nm	0.06/.001 µg/mL		Nb, U, Th, Mo, Hf

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 01, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- December 01, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/6/16 mbh

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVFEs_00015

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGFE10
Lot Number:	K2-FE04057
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Iron
Starting Material:	Iron Metal
Starting Material Lot#:	2031
Starting Material Purity:	99.9970%

954508

ID: MEIVFEs_00015

Exp:07/21/17 Prpd:MDK Opn:07/21/16

10,000 ppm Iron

Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10 003 ± 26 µg/mL

Certified Density: 1.041 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **9998 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **10038 ± 66 µg/mL**
ICP Assay NIST SRM 3126a Lot Number: 140812

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001204	M	Eu	<	0.000602	O	Na		0.014010	M	Se	<	0.003000	M	Zn	<	0.021079
O	Al		0.005094	s	Fe	<		M	Nb	<	0.001204	O	Si		0.056296	M	Zr	<	0.002409
M	As	<	0.063841	M	Ga	<	0.018068	M	Nd	<	0.000602	M	Sm	<	0.000602				
M	Au	<	0.000600	M	Gd	<	0.000602	M	Ni		0.029566	M	Sn	<	0.006022				
O	B	<	0.037050	i	Ge	<		M	Os	<	0.000600	M	Sr	<	0.000602				
O	Ba	<	0.001852	M	Hf	<	0.000602	i	P	<		M	Ta	<	0.000602				
O	Be	<	0.000617	M	Hg	<	0.003000	M	Pb	<	0.004818	M	Tb	<	0.000602				
M	Bi	<	0.000602	M	Ho	<	0.000602	M	Pd	<	0.001204	M	Te	<	0.008431				
O	Ca		0.011717	M	In	<	0.000602	M	Pr	<	0.000602	M	Th	<	0.000602				
M	Cd	<	0.000602	M	Ir	<	0.000600	M	Pt	<	0.000602	M	Ti	<	0.001806				
M	Ce	<	0.000602	O	K		0.005604	M	Rb	<	0.001204	M	Tl	<	0.000602				
M	Co		0.038013	M	La	<	0.000602	M	Re	<	0.000602	M	Tm	<	0.000602				
O	Cr		0.030058	O	Li	<	0.000123	M	Rh	<	0.000602	M	U	<	0.000602				
M	Cs	<	0.000602	M	Lu	<	0.000602	M	Ru	<	0.000600	M	V	<	0.004818				
M	Cu		0.023230	O	Mg		0.001783	O	S		0.020124	M	W	<	0.001204				
M	Dy	<	0.000602	O	Mn		0.076420	M	Sb		0.035404	M	Y	<	0.000602				
M	Er	<	0.000602	M	Mo		0.005838	M	Sc	<	0.001204	M	Yb	<	0.000602				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 55.85 +3 6 $Fe(H_2O)_6^{3+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF and H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Fe Containing Samples (Preparation and Solution) - Metal (Soluble in HCl); Oxides (If the oxide has been at a high temperature then Na_2CO_3 fusion in Pt0 followed by HCl dissolution otherwise dissolve in dilute HCl); Ores (See Oxides above using only the fusion approach).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 56 amu	970 ppt	N/A	40Ar15N1H, 40Ar16O, 36Ar17O1H , 38Ar18O, 37Cl18O1H, 40Ca16O
ICP-OES 238.204 nm	0.005/0.001 µg/mL	1	Ru, Co
ICP-OES 239.562 nm	0.005/0.001 µg/mL	1	Co, W, Cr
ICP-OES 259.940 nm	0.006/0.001 µg/mL	1	Hf, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 27, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- February 27, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVHGs_00015

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com
tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGHG1
Lot Number:	J2-HG02133
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Hg
Starting Material:	Hg metal
Starting Material Lot#:	1780
Starting Material Purity:	99.9997%

1000ppm Mercury stock std
889371
ID: MEIVHGs_00015
Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 3 µg/mL - weighted mean

Certified Density: 1.029 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1001 ± 5 µg/mL**
ICP Assay NIST SRM 3133 Lot Number: 061204

Assay Method #2 **1002 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.006542	M	Eu	<	0.000218	O	Na		0.000553	O	Se	<	0.030000	O	Zn	<	0.000400
O	Al	<	0.001000	O	Fe	<	0.000800	M	Nb	<	0.002180	O	Si		0.000691	O	Zr	<	0.001000
M	As	<	0.006542	M	Ga	<	0.000436	M	Nd	<	0.000218	M	Sm	<	0.000218				
M	Au	<	0.004361	M	Gd	<	0.000218	O	Ni	<	0.002000	O	Sn	<	0.002000				
M	B	<	0.004361	M	Ge	<	0.001090	n	Os	<		O	Sr	<	0.000200				
O	Ba	<	0.000260	M	Hf	<	0.006542	O	P	<	0.030000	M	Ta	<	0.001090				
O	Be	<	0.000180	s	Hg	<		M	Pb	<	0.002180	M	Tb	<	0.000218				
M	Bi	<	0.002180	M	Ho	<	0.000218	M	Pd	<	0.008723	M	Te	<	0.010904				
O	Ca		0.001706	M	In	<	0.000218	M	Pr	<	0.000218	M	Th	<	0.000436				
O	Cd	<	0.000500	M	Ir	<	0.000218	M	Pt	<	0.000218	O	Ti	<	0.000600				
M	Ce	<	0.000218	O	K		0.000322	M	Rb	<	0.000218	O	Tl	<	0.010000				
M	Co	<	0.000436	M	La	<	0.000218	M	Re	<	0.000218	M	Tm	<	0.000218				
O	Cr	<	0.002000	O	Li	<	0.000040	M	Rh	<	0.000218	M	U	<	0.000218				
M	Cs	<	0.001090	M	Lu	<	0.000218	M	Ru	<	0.000218	O	V	<	0.000550				
M	Cu	<	0.002180	O	Mg		0.000359	O	S	<	0.030000	M	W	<	0.004361				
M	Dy	<	0.000218	O	Mn	<	0.000160	M	Sb	<	0.001090	M	Y	<	0.000218				
M	Er	<	0.000218	O	Mo	<	0.001500	O	Sc	<	0.000600	M	Yb	<	0.000218				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59 +2 4 Hg(OH)(aq) 1+
Chemical Compatibility - Stable in HNO3. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.
Stability - 2-100 ppb levels not stable in 1% HNO3 / LDPE container, stable in 10% HNO3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO3 / LDPE container.
Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO3); Oxide (Soluble in HNO3); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th ,Rh , Fe, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 11, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **February 11, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVINs_00024

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGIN1
Lot Number:	J2-IN01115
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: In
Starting Material:	In shot
Starting Material Lot#:	1810
Starting Material Purity:	99.9998%

1000ppm Indium stock std

889359

ID: MEIVINs_00024

Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 997 ± 3 µg/mL

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **996 ± 4 µg/mL**
ICP Assay NIST SRM 3124a Lot Number: 110516

Assay Method #2 **998 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.002886	M	Eu	<	0.000577	O	Na		0.000344	M	Se	<	0.040406	O	Zn	<	0.000400
O	Al	<	0.001000	O	Fe		0.000120	M	Nb	<	0.002886	O	Si		0.000637	M	Zr	<	0.001154
M	As	<	0.011544	M	Ga	<	0.000577	M	Nd	<	0.000577	M	Sm	<	0.000577				
M	Au	<	0.000577	M	Gd	<	0.000577	O	Ni	<	0.003000	M	Sn	<	0.028861				
O	B	<	0.020000	M	Ge	<	0.005772	n	Os	<		O	Sr	<	0.000070				
O	Ba	<	0.000500	M	Hf	<	0.001154	O	P	<	0.030000	M	Ta	<	0.002886				
O	Be	<	0.000100	O	Hg	<	0.009000	M	Pb	<	0.017316	M	Tb	<	0.000577				
M	Bi	<	0.005772	M	Ho	<	0.000577	M	Pd	<	0.001731	M	Te	<	0.034633				
O	Ca		0.000344	s	In	<		M	Pr	<	0.000577	M	Th	<	0.000577				
O	Cd	<	0.001000	M	Ir	<	0.000577	M	Pt	<	0.000577	O	Ti	<	0.000400				
M	Ce	<	0.000577	O	K		0.000258	M	Rb	<	0.000577	M	Tl	<	0.005772				
M	Co	<	0.002886	M	La	<	0.000577	M	Re	<	0.000577	M	Tm	<	0.005772				
O	Cr	<	0.002000	O	Li	<	0.000060	M	Rh	<	0.000577	M	U	<	0.000577				
M	Cs	<	0.000577	M	Lu	<	0.000577	M	Ru	<	0.000577	O	V	<	0.000400				
O	Cu	<	0.002000	O	Mg		0.000034	O	S	<	0.015000	M	W	<	0.028861				
M	Dy	<	0.000577	O	Mn	<	0.000400	M	Sb	<	0.005772	M	Y	<	0.000577				
M	Er	<	0.000577	M	Mo	<	0.005772	O	Sc	<	0.000300	M	Yb	<	0.000577				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 114.82 +3 6 In(H2O)6+3
Chemical Compatibility -Soluble in HCl, HNO3, and H2SO4. Avoid neutral and basic media. Stable with most metals and inorganic anions. The oxalate, sulfide, carbonate, hydroxide and phosphate are insoluble in water.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
In Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO3); Oxide (Soluble in mineral acids); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 115 amu	1 ppt	n/a	115Sn, 99Ru16O
ICP-OES 158.583 nm	0.05 / 0.002 µg/mL	1	
ICP-OES 230.606 nm	0.1 / 0.03 µg/mL	1	Ni, Os
ICP-OES 325.609 nm	0.2 / 0.05 µg/mL	1	Mn, Mo, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 01, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- September 01, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVKs_00013

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGK10
Lot Number:	J2-K03054
Matrix:	2% (v/v) HNO_3
Value / Analyte(s):	10 000 µg/mL ea: Potassium
Starting Material:	KNO_3
Starting Material Lot#:	1727
Starting Material Purity:	99.9990%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10 003 ± 24 µg/mL

Certified Density: 1.025 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **10008 ± 64 µg/mL**
ICP Assay NIST SRM 3141a Lot Number: 140813

Assay Method #2 **10003 ± 24 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

951638
ID MEIVKs_00013
Exp 07/12/17 Prpd RM1 Opn 07/12/16
10,000ppm Potassium Stock

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	< 0.000639	M	Eu	< 0.000639	O	Na	0.133153	M	Se	< 0.005751	O	Zn	0.000333			
O	Al	0.000592	O	Fe	0.000999	O	Nb	< 0.002994	O	Si	0.002589	M	Zr	< 0.000639			
O	As	< 0.005545	M	Ga	< 0.000639	M	Nd	< 0.000639	M	Sm	< 0.000639						
M	Au	< 0.000639	M	Gd	< 0.000639	O	Ni	< 0.003660	M	Sn	< 0.000639						
O	B	< 0.003327	M	Ge	< 0.001917	M	Os	< 0.000639	O	Sr	0.000142						
O	Ba	0.000592	M	Hf	< 0.000639	O	P	< 0.033270	M	Ta	< 0.000639						
O	Be	< 0.000222	M	Hg	< 0.003194	M	Pb	< 0.003834	M	Tb	< 0.000639						
M	Bi	< 0.000639	M	Ho	< 0.000639	M	Pd	< 0.000639	M	Te	< 0.007669						
O	Ca	0.007952	M	In	< 0.000639	M	Pr	< 0.000639	M	Th	< 0.000639						
M	Cd	< 0.000639	M	Ir	< 0.000639	M	Pt	< 0.000639	O	Ti	< 0.000588						
M	Ce	< 0.000639	s	K	<	M	Rb	0.102731	M	Tl	< 0.000639						
M	Co	< 0.000639	M	La	< 0.000639	M	Re	< 0.000639	M	Tm	< 0.000639						
O	Cr	< 0.002440	O	Li	< 0.000067	M	Rh	< 0.000639	M	U	< 0.000639						
M	Cs	< 0.000639	M	Lu	< 0.000639	M	Ru	< 0.001278	O	V	< 0.001331						
M	Cu	0.036233	O	Mg	0.000888	O	S	0.007212	M	W	< 0.000639						
M	Dy	< 0.000639	O	Mn	< 0.000776	M	Sb	< 0.001278	M	Y	< 0.000639						
M	Er	< 0.000639	O	Mo	< 0.001331	O	Sc	< 0.000288	M	Yb	< 0.000639						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 39.10 +1 (6) K+(aq)
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Avoid use of HClO4 due to insolubility of the perchlorate. Stable with all metals and inorganic anions except ClO4-.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
K Containing Samples (Preparation and Solution) - Metal (Dissolves very rapidly in water); Ores (Sodium carbonate fusion in Pt0 followed by HCl dissolution-blank levels of K in sodium carbonate critical); Organic Matrices (Sulfuric/peroxide digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 39 amu	10 ppt	n/a	38ArH, 23Na16O, 78Se
ICP-OES 404.721 nm	1.1 / 0.05 µg/mL	1	U, Ce
ICP-OES 766.490 nm	0.4 / 0.001 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 771.531 nm	1.0 / 0.03 µg/mL	1	2nd order radiation from R.E.s on some optical designs

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 01, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- December 01, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVMGs_00018

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMG10
Lot Number:	J2-MG03145
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Magnesium
Starting Material:	Mg chips
Starting Material Lot#:	1484
Starting Material Purity:	99.9987%

954509
ID: MEIVMGs_00018
Exp:07/21/17 Prpd:MDK Opn:07/21/16
10,000ppm Magnesium
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9970 ± 24 µg/mL

Certified Density: 1.053 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **9954 ± 58 µg/mL**
ICP Assay NIST SRM 3131a Lot Number: 050302

Assay Method #2 **9973 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001107	M	Eu	<	0.000554	O	Na		0.074480	M	Se	<	0.011074	O	Zn	<	0.002432
O	Al	<	0.006080	O	Fe	<	0.001459	M	Nb	<	0.000554	O	Si	<	0.006080	M	Zr	<	0.000554
M	As	<	0.003322	M	Ga	<	0.000554	M	Nd	<	0.008306	M	Sm	<	0.000554				
M	Au	<	0.002216	M	Gd	<	0.000554	M	Ni	<	0.005537	M	Sn	<	0.001107				
O	B	<	0.002432	M	Ge	<	0.000554	M	Os	<	0.002770	O	Sr		0.000056				
M	Ba	<	0.000554	M	Hf	<	0.000554	O	P	<	0.060800	M	Ta	<	0.000554				
M	Be	<	0.000554	M	Hg	<	0.005540	M	Pb		0.005869	M	Tb	<	0.000554				
M	Bi	<	0.000554	M	Ho	<	0.000554	M	Pd	<	0.000554	M	Te	<	0.002769				
O	Ca		0.018942	M	In	<	0.000554	M	Pr	<	0.002769	M	Th	<	0.000554				
M	Cd	<	0.000554	M	Ir	<	0.000554	M	Pt	<	0.000554	O	Ti	<	0.000973				
M	Ce	<	0.016611	O	K		0.018270	M	Rb	<	0.001107	M	Tl	<	0.000554				
M	Co	<	0.001661	M	La	<	0.008306	M	Re	<	0.000554	M	Tm	<	0.000554				
O	Cr	<	0.003648	O	Li		0.026060	M	Rh	<	0.000554	M	U	<	0.000554				
M	Cs	<	0.000554	M	Lu	<	0.000554	M	Ru	<	0.000554	M	V	<	0.001107				
M	Cu		0.004338	s	Mg	<		O	S		0.012301	M	W	<	0.000554				
M	Dy	<	0.000554	O	Mn		0.006725	M	Sb	<	0.000554	M	Y	<	0.000554				
M	Er	<	0.000554	M	Mo	<	0.001661	O	Sc		0.000336	M	Yb	<	0.000554				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 24.31 +2 6 $Mg(H_2O)_6^{+2}$
Chemical Compatibility -Soluble in HCl, HNO_3, and H_2SO_4 avoid HF, H_3PO_4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicates, carbonates, hydroxides, oxides, and tungstates in neutral and slightly acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO_3 / LDPE container.
Mg Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO_3); Oxide (Readily soluble in above compatible aqueous acidic solutions); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric / peroxide digestion or nitric / sulfuric / perchloric acid decomposition, or dry ash and dissolution in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 24 amu	42 ppt	n/a	7Li17O, 48Ti+2 , 48Ca+2
ICP-OES 279.553 nm	0.0002 / 0.00003 µg/mL	1	Th
ICP-OES 280.270 nm	0.0003 / 0.00005 µg/mL	1	U, V
ICP-OES 285.213 nm	0.002 / 0.00003 µg/mL	1	U, Hf, Cr, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 16, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 16, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MBK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVMOs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMO1
Lot Number:	H2-MO02073
Matrix:	H2O tr. NH4OH
Value / Analyte(s):	1 000 µg/mL ea: Mo
Starting Material:	Ammonium Molybdate
Starting Material Lot#:	1934
Starting Material Purity:	99.9942%

1000 PPM Mo
889365
ID: MEIVMOs_00012
Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 6 µg/mL - weighted mean

Certified Density: 1.000 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **999 ± 4 µg/mL**
ICP Assay NIST SRM 3134 Lot Number: 130418

Assay Method #2 **1000 ± 4 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	< 0.006076	M	Eu	< 0.001519	O	Na	< 0.010480	M	Se	< 0.005063	M	Zn	< 0.026834			
M	Al	0.002201	M	Fe	0.000618	M	Nb	< 0.126574	i	Si	<	M	Zr	< 0.003797			
M	As	0.010793	M	Ga	0.000472	i	Nd	<	M	Sm	< 0.005063						
M	Au	< 0.001519	M	Gd	< 0.002531	M	Ni	< 0.010126	M	Sn	< 0.002025						
M	B	< 0.016455	M	Ge	< 0.022277	M	Os	< 0.006077	O	Sr	< 0.001572						
M	Ba	< 0.012657	M	Hf	< 0.001519	i	P	<	M	Ta	< 0.001013						
M	Be	< 0.000506	M	Hg	< 0.015193	M	Pb	< 0.010632	M	Tb	< 0.000253						
M	Bi	< 0.000253	M	Ho	< 0.000506	M	Pd	< 0.040504	i	Te	<						
O	Ca	0.001735	M	In	< 0.025315	M	Pr	< 0.101259	M	Th	< 0.001013						
O	Cd	< 0.010480	M	Ir	< 0.001519	M	Pt	< 0.001519	O	Ti	< 0.001048						
M	Ce	< 0.063287	O	K	0.008228	M	Rb	< 0.010632	M	Tl	< 0.005569						
M	Co	< 0.006076	M	La	< 0.001519	M	Re	0.002232	M	Tm	< 0.000253						
M	Cr	< 0.011139	O	Li	< 0.005240	M	Rh	< 0.001013	M	U	< 0.002531						
M	Cs	< 0.006582	M	Lu	< 0.000253	M	Ru	< 0.001519	O	V	<						
M	Cu	< 0.014176	M	Mg	0.000566	i	S	<	M	W	0.111288						
M	Dy	< 0.010632	M	Mn	< 0.037972	M	Sb	< 0.012657	M	Y	< 0.000253						
M	Er	< 0.001519	s	Mo	<	O	Sc	< 0.010480	M	Yb	< 0.002025						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 95.94 +6 6,7,8,9 [MoO4] -2(chemical form as received)

Chemical Compatibility -Mo is received in a NH4OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO4]-2 is soluble in concentrated HCl [MoOCl5]-2, dilute HF / HNO3 [MoOF5] -2 and basic media [MoO4]-2. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO4]-2 chemical form.

Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [MoO4] -2 chemically stable for years in 1% NH4OH in a LDPE container.

Mo Containing Samples (Preparation and Solution) -Metal (Soluble in HF / HNO3 or hot dilute HCl); Oxide (soluble in HF or NH4OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 95 amu	3 ppt	n/a	40Ar39K16O,79Br16O,190Os2+,190Pt2+
ICP-OES 202.030 nm	0.008 / 0.0002 µg/mL	1	Os, Hf
ICP-OES 203.844 nm	0.012 / 0.002 µg/mL	1	
ICP-OES 204.598 nm	0.012 / 0.001 µg/mL	1	Ir, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 09, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- January 09, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MOL

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVNIs_00011

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
Inorganicventures.com

CERTIFICATE OF ANALYSIS

Tel: 800.669.6795 - 540.585.3030
Fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGNI1
Lot Number:	J2-NI02095
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Ni
Starting Material:	Ni pieces
Starting Material Lot#:	1559
Starting Material Purity:	99.9993%

1000 PPM NI
889360
ID: MEIVNIs_00011
Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/26/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 4 µg/mL - weighted mean

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1000 ± 4 µg/mL**
ICP Assay NIST SRM 3136 Lot Number: 120619

Assay Method #2 **1001 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.015884	M	Eu	<	0.023826	O	Na		0.000739	O	Se	<	0.006000	M	Zn	<	0.158844
O	Al	<	0.003000	O	Fe		0.001402	M	Nb	<	0.003971	O	Si		0.001784	M	Zr	<	0.039711
O	As	<	0.005400	M	Ga	<	0.007942	M	Nd	<	0.015884	M	Sm	<	0.007942				
M	Au	<	0.023826	M	Gd	<	0.007942	s	Ni	<	0.000900	M	Sn	<	0.039711				
O	B	<	0.009900	M	Ge	<	0.047653	n	Os	<		M	Sr	<	0.003971				
M	Ba	<	0.079422	M	Hf	<	0.015884	O	P	<	0.100000	M	Ta	<	0.055595				
O	Be	<	0.002000	O	Hg	<	0.011000	M	Pb	<	0.023826	M	Tb	<	0.002382				
M	Bi	<	0.003176	M	Ho	<	0.003971	M	Pd	<	0.039711	M	Te	<	0.238267				
O	Ca		0.002294	M	In	<	0.079422	M	Pr	<	0.002382	M	Th	<	0.007942				
M	Cd	<	0.023826	M	Ir	<	0.039711	M	Pt	<	0.015884	M	Ti	<	0.397111				
M	Ce	<	0.039711	O	K		0.000280	M	Rb	<	0.007942	M	Tl	<	0.007942				
O	Co		0.000446	M	La	<	0.003971	M	Re	<	0.007942	M	Tm	<	0.003176				
M	Cr	<	0.039711	O	Li	<	0.000020	M	Rh	<	0.007942	M	U	<	0.015884				
M	Cs	<	0.002382	M	Lu	<	0.003176	M	Ru	<	0.015884	M	V	<	0.015884				
M	Cu	<	0.047653	O	Mg		0.000025	O	S	<	0.025000	M	W	<	0.079422				
M	Dy	<	0.047653	M	Mn	<	0.031768	M	Sb	<	0.003971	M	Y	<	0.317689				
M	Er	<	0.039711	M	Mo	<	0.015884	M	Sc	<	0.079422	M	Yb	<	0.007942				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.69 +2 6 $Ni(H_2O)_6^{2+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Ni Containing Samples (Preparation and Solution) -Metal (Soluble in HNO_3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO_3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 60 amu	100 ppt	n/a	43Ca16O1H , 44Ca16O, 23Na37Cl
ICP-OES 221.647 nm	0.01 / 0.0009 µg/mL	1	Si
ICP-OES 231.604 nm	0.02 / 0.002 µg/mL	1	Sb, Ta, Co
ICP-OES 232.003 nm	0.02 / 0.006 µg/mL	1	Cr, Re, Os, Nb, Ag, Pt, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 24, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- February 24, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVPBs_00017

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGPB1
Lot Number:	J2-PB03066
Matrix:	0.5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Pb
Starting Material:	Lead nitrate
Starting Material Lot#:	1840 and 1908
Starting Material Purity:	99.9994%

929535
ID: MEIVPBs_00017
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000 PPM Pb

Rec'd 5/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 3 µg/mL

Certified Density: 1.002 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 3 µg/mL**
ICP Assay NIST SRM 3128 Lot Number: 101026

Assay Method #2 **1004 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000304	M	Eu	<	0.000304	O	Na		0.000155	M	Se	<	0.006074	O	Zn		0.000323
O	Al		0.003019	O	Fe		0.000359	M	Nb	<	0.000304	O	Si		0.001006	M	Zr	<	0.000911
M	As	<	0.000607	M	Ga	<	0.000304	M	Nd	<	0.000304	M	Sm	<	0.000304				
M	Au	<	0.000611	M	Gd	<	0.000304	M	Ni	<	0.000607	M	Sn	<	0.000304				
O	B	<	0.000624	M	Ge	<	0.000304	M	Os	<	0.000306	O	Sr		0.000012				
O	Ba		0.000647	M	Hf	<	0.000304	O	P	<	0.020800	M	Ta	<	0.000304				
O	Be	<	0.000031	O	Hg	<	0.002080	s	Pb	<		M	Tb	<	0.000304				
O	Bi		0.002588	M	Ho	<	0.000304	M	Pd	<	0.000304	M	Te	<	0.003037				
O	Ca		0.000359	M	In	<	0.000304	M	Pr	<	0.000304	M	Th	<	0.004555				
O	Cd	<	0.000208	M	Ir	<	0.000306	M	Pt	<	0.000304	O	Ti		0.000115				
M	Ce	<	0.000304	O	K		0.000575	M	Rb	<	0.000304	M	Tl	<	0.003037				
M	Co	<	0.000304	M	La	<	0.000304	M	Re	<	0.000304	M	Tm	<	0.000304				
O	Cr	<	0.000520	O	Li	<	0.000416	O	Rh	<	0.010400	M	U	<	0.000304				
M	Cs		0.000168	M	Lu	<	0.000304	M	Ru	<	0.000306	M	V	<	0.000304				
M	Cu	<	0.000304	O	Mg		0.000043	O	S	<	0.010400	M	W	<	0.000304				
M	Dy	<	0.000304	M	Mn	<	0.000607	M	Sb	<	0.000304	M	Y	<	0.000304				
M	Er	<	0.000304	M	Mo	<	0.000304	M	Sc	<	0.000304	M	Yb	<	0.000304				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 207.20 +2 6 $Pb(H_2O)_6^{+2}$
Chemical Compatibility - Soluble in HCl, HF and HNO_3. Avoid H_2SO_4. Stable with most metals and inorganic anions forming insoluble carbonate, borate, sulfate, sulfite, sulfide, phosphate, oxalate, chromate, tannate, iodate, and cyanide in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO_3 / LDPE container.
Pb Containing Samples (Preparation and Solution) -Metal (Best dissolved in 1:1 H_2O / HNO_3); Oxides (The many different Pb oxides are soluble in HNO_3 with the exception of PbO_2 which is soluble in HCl or HF); Ores and Alloys (Best attacked using 1:1 H_2O / HNO_3); Organic Matrices (Dry ash and dissolve in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 208 amu	5 ppt	n/a	192Pt16O, 192Os16O
ICP-OES 168.215 nm	0.03 / 0.003 µg/mL	1	Co
ICP-OES 217.000 nm	0.09 / 0.03 µg/mL	1	W, Ir, Hf, Sb, Th
ICP-OES 220.353 nm	0.04 / 0.006 µg/mL	1	Bi, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 08, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 08, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/6/16 MBK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVPBs_00018

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGPB1
Lot Number:	K2-PB03074
Matrix:	0.5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Lead
Starting Material:	Lead nitrate
Starting Material Lot#:	1840 and 1908
Starting Material Purity:	99.9994%

954504

ID: MEIVPBs_00018

Exp:07/21/17 Prpd:MDK Opn:07/21/16

1000 PPM Pb

Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1003 ± 4 µg/mL

Certified Density: 1.002 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1003 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **1003 ± 4 µg/mL**
ICP Assay NIST SRM 3128 Lot Number: 101026

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000304	M	Eu	<	0.000304	O	Na		0.000155	M	Se	<	0.006074	O	Zn		0.000324
O	Al		0.003025	O	Fe		0.000360	M	Nb	<	0.000304	O	Si		0.001008	M	Zr	<	0.000911
M	As	<	0.000607	M	Ga	<	0.000304	M	Nd	<	0.000304	M	Sm	<	0.000304				
M	Au	<	0.000611	M	Gd	<	0.000304	M	Ni	<	0.000607	M	Sn	<	0.000304				
O	B	<	0.000624	M	Ge	<	0.000304	M	Os	<	0.000306	O	Sr		0.000012				
O	Ba		0.000648	M	Hf	<	0.000304	O	P	<	0.020800	M	Ta	<	0.000304				
O	Be	<	0.000031	O	Hg	<	0.002080	s	Pb	<		M	Tb	<	0.000304				
O	Bi		0.002593	M	Ho	<	0.000304	M	Pd	<	0.000304	M	Te	<	0.003037				
O	Ca		0.000360	M	In	<	0.000304	M	Pr	<	0.000304	M	Th	<	0.004555				
O	Cd	<	0.000208	M	Ir	<	0.000306	M	Pt	<	0.000304	O	Ti		0.000115				
M	Ce	<	0.000304	O	K		0.000576	M	Rb	<	0.000304	M	Tl	<	0.003037				
M	Co	<	0.000304	M	La	<	0.000304	M	Re	<	0.000304	M	Tm	<	0.000304				
O	Cr	<	0.000520	O	Li	<	0.000416	O	Rh	<	0.010400	M	U	<	0.000304				
M	Cs		0.000168	M	Lu	<	0.000304	M	Ru	<	0.000306	M	V	<	0.000304				
M	Cu	<	0.000304	O	Mg		0.000043	O	S	<	0.010400	M	W	<	0.000304				
M	Dy	<	0.000304	M	Mn	<	0.000607	M	Sb	<	0.000304	M	Y	<	0.000304				
M	Er	<	0.000304	M	Mo	<	0.000304	M	Sc	<	0.000304	M	Yb	<	0.000304				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 207.20 +2 6 $Pb(H_2O)_6^{+2}$
Chemical Compatibility - Soluble in HCl, HF and HNO_3. Avoid H_2SO_4. Stable with most metals and inorganic anions forming insoluble carbonate, borate, sulfate, sulfite, sulfide, phosphate, oxalate, chromate, tannate, iodate, and cyanide in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO_3 / LDPE container.
Pb Containing Samples (Preparation and Solution) -Metal (Best dissolved in 1:1 H_2O / HNO_3); Oxides (The many different Pb oxides are soluble in HNO_3 with the exception of PbO_2 which is soluble in HCl or HF); Ores and Alloys (Best attacked using 1:1 H_2O / HNO_3); Organic Matrices (Dry ash and dissolve in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 208 amu	5 ppt	n/a	192Pt16O, 192Os16O
ICP-OES 168.215 nm	0.03 / 0.003 µg/mL	1	Co
ICP-OES 217.000 nm	0.09 / 0.03 µg/mL	1	W, Ir, Hf, Sb, Th
ICP-OES 220.353 nm	0.04 / 0.006 µg/mL	1	Bi, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 19, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 19, 2020**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVSBs_00011

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 540.961.0330
fax: 540.961.0329
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSB1
Lot Number:	J2-SB03037
Matrix:	1% (v/v) HNO3 3% Tartaric Acid
Value / Analyte(s):	1 000 µg/mL ea: Sb
Starting Material:	Sb Metal
Starting Material Lot#:	1857
Starting Material Purity:	99.9898%

929536
ID: MEIVSBs_00011
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000 PPM Sb
Rec'd 5/12/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 7 µg/mL

Certified Density: 1.022 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **996 ± 5 µg/mL**
ICP Assay NIST SRM 3102A Lot Number: 061229

Assay Method #2 **1002 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000101	M	Eu	<	0.000101	O	Na		0.007416	M	Se	<	0.003733	M	Zn	0.000243
O	Al		0.000971	O	Fe		0.002142	O	Nb	<	0.001814	O	Si		0.019082	M	Zr	< 0.001211
M	As	<	0.003228	M	Ga	<	0.000101	M	Nd	<	0.000101	M	Sm	<	0.000101			
M	Au	<	0.001994	M	Gd	<	0.000101	O	Ni		0.000525	M	Sn	<	0.001816			
O	B		0.003127	M	Ge	<	0.000807	M	Os	<	0.000100	O	Sr	<	0.000085			
O	Ba	<	0.001067	M	Hf	<	0.000101	O	P		0.006812	O	Ta	<	0.001014			
O	Be	<	0.000028	M	Hg	<	0.000299	M	Pb	<	0.000605	M	Tb	<	0.000101			
M	Bi	<	0.000101	M	Ho	<	0.000101	M	Pd	<	0.000202	M	Te	<	0.001110			
O	Ca		0.001111	M	In	<	0.000101	M	Pr	<	0.001009	M	Th	<	0.000101			
M	Cd	<	0.000101	M	Ir	<	0.000399	M	Pt	<	0.000101	O	Ti		0.001104			
O	Ce	<	0.007469	O	K		0.052182	M	Rb	<	0.002825	M	Tl	<	0.000101			
M	Co	<	0.000101	O	La	<	0.000760	M	Re	<	0.000101	M	Tm	<	0.000101			
O	Cr		0.010294	O	Li	<	0.000053	M	Rh	<	0.000101	M	U	<	0.000101			
M	Cs	<	0.002018	M	Lu	<	0.000101	M	Ru	<	0.000100	M	V	<	0.000101			
O	Cu	<	0.000598	O	Mg		0.000486	n	S	<		M	W	<	0.001009			
M	Dy	<	0.000404	O	Mn		0.000172	s	Sb	<		M	Y	<	0.000101			
M	Er	<	0.000101	M	Mo		0.000317	O	Sc	<	0.000049	O	Yb	<	0.000064			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 121.75 +3 6 Sb(O)C4H4O6-1
Chemical Compatibility -Stable in conc. HCl, dilute or conc. HF. Stable in dilute HNO3 as the fluoride or tartrate complex. Avoid basic media. Stable with most metals and inorganic anions in acidic media as the tartrate provided the acidity is not too high or the acid is oxidizing causing loss of the stabilizing tartrate ion. The fluoride complex of antimony is stable in strong acid but you should only mix with other metals that are fluorinated.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-2% HNO3 / LDPE container.
Sb Containing Samples (Preparation and Solution) -Metal and alloys (Soluble in H2O / HF / HNO3 mixture); Oxides (Soluble in HCl and tartaric acid or H2O / HF / HNO3 mixtures); Ores (fusion with Na2CO3 in Pt0 followed by dissolving the fuseate in a H2O / HF / HNO3 mixture); Organic based (sulfuric acid / hydrogen peroxide digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 121 amu	5 ppt	N/A	105Pd16O, 89Y16O2
ICP-OES 206.833 nm	0.03/0.003 µg/mL	1	Ta, Cr, Ge, Hf
ICP-OES 217.581 nm	0.05/0.005 µg/mL	1	Nb, W, Re, Fe
ICP-OES 231.147 nm	0.06/0.006 µg/mL	1	Ni, Co, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 21, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 21, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/6/16 MBL

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVSEs_00013

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSE(4)1
Lot Number:	J2-SE02059
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Se
Starting Material:	Se shot
Starting Material Lot#:	1616
Starting Material Purity:	99.9996%

934044
ID: MEIVSEs_00013
Exp:05/23/17 Prpd:MDK Opn:05/23/16
1000 ppm Se
Rec'd 5/23/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1003 ± 4 µg/mL

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1006 ± 5 µg/mL**
ICP Assay NIST SRM 3149 Lot Number: 100901

Assay Method #2 **1001 ± 4 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.007579	M	Eu	<	0.011369	O	Na		0.002646	s	Se	<		O	Zn	<	0.000200
O	Al		0.000169	O	Fe		0.000198	O	Nb	<	0.004000	O	Si	<	0.003000	O	Zr	<	0.000400
O	As	<	0.005000	M	Ga	<	0.003789	M	Nd	<	0.007579	M	Sm	<	0.003789				
M	Au	<	0.011369	M	Gd	<	0.003789	O	Ni	<	0.000900	M	Sn	<	0.018949				
O	B		0.000688	M	Ge	<	0.022739	n	Os	<		M	Sr	<	0.001894				
M	Ba	<	0.037899	M	Hf	<	0.007579	O	P	<	0.003000	M	Ta	<	0.026529				
O	Be	<	0.000090	O	Hg	<	0.014000	M	Pb	<	0.011369	M	Tb	<	0.001136				
M	Bi	<	0.001515	M	Ho	<	0.001894	M	Pd	<	0.018949	M	Te	<	0.113699				
O	Ca		0.000436	M	In	<	0.037899	M	Pr	<	0.001136	M	Th	<	0.003789				
M	Cd	<	0.011369	M	Ir	<	0.018949	M	Pt	<	0.007579	M	Ti	<	0.189499				
M	Ce	<	0.018949	O	K		0.000211	M	Rb	<	0.003789	M	Tl	<	0.003789				
M	Co	<	0.011369	M	La	<	0.001894	O	Re	<	0.009000	M	Tm	<	0.001515				
M	Cr	<	0.018949	O	Li	<	0.000030	M	Rh	<	0.003789	M	U	<	0.007579				
M	Cs	<	0.001136	M	Lu	<	0.001515	O	Ru	<	0.007000	M	V	<	0.007579				
M	Cu	<	0.022739	O	Mg		0.000066	O	S	<	0.040000	M	W	<	0.037899				
M	Dy	<	0.022739	M	Mn	<	0.015159	M	Sb	<	0.001894	M	Y	<	0.151599				
M	Er	<	0.018949	O	Mo	<	0.004000	M	Sc	<	0.037899	M	Yb	<	0.003789				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 78.96 +4 6 H2SeO3
Chemical Compatibility -Soluble in HCl, HNO3,H3PO4, H2SO4 and HF aqueous matrices and water. It is stable with most inorganic anions but many cationic metals form the insoluble selenites under pH neutral conditions. When fluorinated and/or under acidic conditions precipitation is typically not a problem at moderate to low concentrations.
Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Se Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (readily soluble in water); Minerals and alloys (acid digestion with HNO3or HNO3 / HF); Organic Matrices (acid digestion with hot concentrated H2SO4 accompanied by the careful dropwise addition of H2O2 until clear).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 82 amu	200 ppt	N/A	12C35Cl2
ICP-OES 196.026 nm	0.08/0.006 µg/mL	1	Fe
ICP-OES 203.985 nm	0.2/0.05 µg/mL	1	Sb, Ir, Cr, Ta
ICP-OES 206.279 nm	0.3/0.16 µg/mL	1	Cr, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 09, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 09, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/23/16 MOK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVSRs_00006

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSR1
Lot Number:	J2-SR02053
Matrix:	0.1% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Sr
Starting Material:	SrCO3
Starting Material Lot#:	1716
Starting Material Purity:	99.9989%

919362
ID: MEIVSRs_00006
Exp:04/14/17 Prpd:MDK Opn:04/14/16
1000ppm Strontium Stock S

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL

Certified Density: 1.001 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1001 ± 5 µg/mL**
ICP Assay NIST SRM 3153a Lot Number: 990906

Assay Method #2 **1002 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.009865	M	Eu	<	0.014798	O	Na		0.000711	O	Se	<	0.050000	O	Zn	<	0.000400				
O	Al		0.000325	O	Fe		0.000732	M	Nb	<	0.002466	O	Si		0.001423	M	Zr	<	0.024664				
O	As	<	0.005000	M	Ga	<	0.004932	M	Nd	<	0.009865	M	Sm	<	0.004932								
M	Au	<	0.014798	M	Gd	<	0.004932	O	Ni	<	0.003000	M	Sn	<	0.024664								
O	B	<	0.000600	M	Ge	<	0.029597	n	Os	<		s	Sr	<									
O	Ba		0.009965	M	Hf	<	0.009865	O	P	<	0.004800	M	Ta	<	0.034530								
O	Be	<	0.000090	O	Hg	<	0.015000	M	Pb	<	0.014798	M	Tb	<	0.001479								
M	Bi	<	0.001973	M	Ho	<	0.002466	O	Pd	<	0.004000	O	Te	<	0.100000								
O	Ca		0.006101	O	In	<	0.002000	M	Pr	<	0.001479	M	Th	<	0.004932								
M	Cd	<	0.014798	M	Ir	<	0.024664	M	Pt	<	0.009865	M	Ti	<	0.246648								
M	Ce	<	0.024664	O	K	<	0.001700	i	Rb	<		M	Tl	<	0.004932								
M	Co	<	0.014798	M	La	<	0.002466	M	Re	<	0.004932	M	Tm	<	0.001973								
O	Cr	<	0.000800	O	Li	<	0.000030	O	Rh	<	0.006000	M	U	<	0.009865								
M	Cs	<	0.001479	M	Lu	<	0.001973	O	Ru	<	0.003000	M	V	<	0.009865								
O	Cu	<	0.001400	O	Mg		0.000101	n	S	<		M	W	<	0.049329								
M	Dy	<	0.029597	O	Mn	<	0.000030	M	Sb	<	0.002466	O	Y	<	0.000040								
M	Er	<	0.024664	M	Mo	<	0.009865	M	Sc	<	0.049329	M	Yb	<	0.004932								

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 87.62 +2 6 $Sr(H_2O)_{6+2}$
Chemical Compatibility - Soluble in HCl, and HNO_3. Avoid H_2SO_4, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% HNO_3 / LDPE container.
Sr Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO_3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolution in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 88 amu	1200 ppt	N/A	72Ge16O, 176Yb+2, 176Lu+2 , 176Hf+2
ICP-OES 407.771 nm	0.0004 / 0.00006 µg/mL	1	U, Ce
ICP-OES 421.552 nm	0.0008 / 0.00004 µg/mL	1	Rb
ICP-OES 460.733 nm	0.07 / 0.003 µg/mL	1	Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 09, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 09, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 4/14/16

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVTA-68-R1_00003

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

RATION

redited to ISO Guide 34, "General Requirements for
Material Producers" and ISO/IEC 17025, "General
nce of Testing and Calibration Laboratories".
SO 9001 registered manufacturer (SAI Global File

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

lti Analyte Custom Grade Solution

929531

-68-REV1

ID: MEIVTA-68-R1_00003

Exp:05/06/17 Prpd:MDK Opn:05/06/16

-MEB628028

6010 ICV stock part 1

(v/v) HNO3

Rec'd 5/6/17 MDK

5 µg/mL ea:

ium,	Copper,	Manganese,
kel,	Lead,	Vanadium,
c,		

2.5 µg/mL ea:

yllium,

) µg/mL ea:

balt, Phosphorus,

) µg/mL ea:

omium+3,

5 µg/mL ea:

on,

) µg/mL ea:

enic,	Cadmium,	Selenium,
ntium,	Thallium,	

ug/mL ea:

er

NCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	100.0 ± 0.8 µg/mL	Barium, Ba	625.0 ± 2.6 µg/mL
Beryllium, Be	312.6 ± 1.5 µg/mL	Boron, B	125.0 ± 1.0 µg/mL
Cadmium, Cd	100.1 ± 0.4 µg/mL	Chromium+3, Cr3	200.0 ± 0.8 µg/mL
Cobalt, Co	250.0 ± 1.1 µg/mL	Copper, Cu	624.9 ± 2.5 µg/mL
Lead, Pb	625.0 ± 2.8 µg/mL	Manganese, Mn	625.2 ± 2.3 µg/mL
Nickel, Ni	625.1 ± 2.6 µg/mL	Phosphorus, P	250.3 ± 1.1 µg/mL
Selenium, Se	100.0 ± 0.6 µg/mL	Silver, Ag	50.00 ± 0.30 µg/mL
Strontium, Sr	100.1 ± 0.5 µg/mL	Thallium, Tl	100.0 ± 0.7 µg/mL
Vanadium, V	625.0 ± 2.6 µg/mL	Zinc, Zn	625.1 ± 2.6 µg/mL

Certified Density: 1.059 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	992212
Ag	Volhard	999b	999b
As	ICP Assay	3103a	100818
B	ICP Assay	3107	110830
Ba	ICP Assay	3104a	070222
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Cd	ICP Assay	3108	060531
Cd	EDTA	928	928
Co	ICP Assay	3113	000630 Co
Co	EDTA	928	928
Cr3	ICP Assay	3112a	030730Cr3
Cr3	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric		traceable to 84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	3153a	990906
Tl	ICP Assay	3158	993012
V	EDTA	928	928
V	ICP Assay	3165	992706
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 21, 2016

11.2 Expiration Date

EXPIRES
1 APR 2017

11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVTHs_00009

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTH1
Lot Number:	J2-TH01112
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Th
Starting Material:	Th(NO3)4x4H2O
Starting Material Lot#:	1803
Starting Material Purity:	99.9934%

929537
ID: MEIVTHs_00009
Exp:05/06/17 Prpd:MDK Opn:05/06/16
1000ppm Thorium stock std
Rec'd 5/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 4 µg/mL

Certified Density: 1.026 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1000 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.012727	M	Eu	<	0.000848	i	Na	<	2.121309	M	Se	<	0.006363	M	Zn	<	0.019091
M	Al	<	0.063639	M	Fe	<	0.530327	M	Nb	<	0.004242	i	Si	<		M	Zr		0.014506
M	As	<	0.004242	M	Ga	<	0.001060	M	Nd		0.000725	M	Sm	<	0.002121				
M	Au	<	0.006363	M	Gd	<	0.021213	M	Ni		0.010361	M	Sn	<	0.001484				
M	B	<	0.010606	M	Ge	<	0.006363	n	Os	<		M	Sr		0.000725				
M	Ba	<	0.042426	M	Hf	<	0.001272	i	P	<		M	Ta	<	0.004242				
M	Be	<	0.001060	i	Hg	<		M	Pb	<	0.006363	M	Tb	<	0.004242				
M	Bi	<	0.014849	M	Ho	<	0.000212	M	Pd	<	0.010606	M	Te	<	0.063639				
O	Ca	<	0.100000	M	In	<	0.000212	M	Pr	<	0.004242	s	Th	<					
M	Cd	<	0.000636	M	Ir	<	0.010606	M	Pt	<	0.004242	M	Ti	<	0.106065				
M	Ce		0.001450	i	K	<		M	Rb		0.045590	M	Tl	<	0.001484				
M	Co	<	0.004242	M	La	<	0.008485	M	Re	<	0.002121	M	Tm	<	0.000212				
M	Cr		0.023831	O	Li		0.000634	M	Rh	<	0.002121	M	U		0.044554				
M	Cs	<	0.106065	M	Lu	<	0.000212	M	Ru	<	0.004242	M	V	<	0.004242				
M	Cu	<	0.021213	M	Mg		0.051807	i	S	<		M	W	<	0.021213				
M	Dy	<	0.001484	M	Mn	<	0.008485	M	Sb	<	0.001060	M	Y	<	0.001060				
M	Er	<	0.004242	M	Mo	<	0.042426	M	Sc		0.003108	M	Yb	<	0.000636				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 232.04 +4 8 Th(OH) 3+ and Th(OH)22+

Chemical Compatibility -Soluble in HCl, and HNO3. Avoid H3PO4, H2SO4 and HF although solubilities may not be a problem depending upon pH and matrix (For example: ThF4 is soluble in acids). Avoid neutral to basic media. Th4+ is stable with most metals and inorganic anions forming an insoluble carbonate, oxide, fluoride, oxalate, sulfate and phosphate in neutral to slightly acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

Th Containing Samples (Preparation and Solution) -Metal (Soluble in Aqua Regia); Oxide (The heated oxide is not soluble in acids except hot conc. H2SO4); Ores (Na2O2 fusion at 480 ± 20EC for 7 minutes, cool and treat sintered mass with 50 mL cold water and stand until disintegrated. The mass is transferred to a beaker and acidified with HCl with 25 mL excess HCl added. Any residue is collected on a Whatman No. 42 filter, dried and ignited to 1000 EC in Pt0 crucible and the ash treated with H2SO4 / HF and fumed. If residue remains, then treat it by peroxide fusion as above.)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 232 amu	1 ppt	N/A	
ICP-OES 274.716 nm	0.08 / 0.008 µg/mL	1	Ti, Ta, Fe, V
ICP-OES 283.231 nm	0.07 / 0.007 µg/mL	1	U, Mo, Ti, Fe, Cr
ICP-OES 283.730 nm	0.07 / 0.007 µg/mL	1	U, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 14, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **September 14, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 5/6/16

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVTLs_00013

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTL1
Lot Number:	J2-TL02025
Matrix:	0.7% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Tl
Starting Material:	TlNO3
Starting Material Lot#:	1741 and 1793
Starting Material Purity:	99.9988%

1000 PPM Tl
889366
ID: MEIVTLs_00013
Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 6 µg/mL

Certified Density: 1.003 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 5 µg/mL**
ICP Assay NIST SRM 3158 Lot Number: 993012

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.000267	M	Eu	<	0.001195	O	Na		0.000939	M	Se	<	0.002988	O	Zn		0.000917
M	Al	<	0.007170	O	Fe		0.000345	M	Nb	<	0.000199	O	Si		0.000755	M	Zr	<	0.000199
M	As	<	0.002390	M	Ga	<	0.000199	M	Nd	<	0.000199	M	Sm	<	0.000199				
M	Au	<	0.001395	M	Gd	<	0.000199	O	Ni	<	0.000628	M	Sn	<	0.000398				
O	B	<	0.000647	M	Ge	<	0.000996	M	Os	<	0.000797	O	Sr		0.000016				
O	Ba	<	0.002092	M	Hf	<	0.000199	O	P	<	0.031380	M	Ta	<	0.000199				
O	Be	<	0.000084	O	Hg	<	0.003138	M	Pb		0.003339	M	Tb	<	0.000199				
M	Bi		0.000134	M	Ho	<	0.000199	M	Pd	<	0.001195	M	Te	<	0.001593				
O	Ca		0.001873	M	In	<	0.000199	M	Pr	<	0.000199	M	Th	<	0.000199				
M	Cd		0.000709	M	Ir	<	0.003188	M	Pt	<	0.000398	O	Ti	<	0.000209				
M	Ce	<	0.004780	O	K		0.002374	M	Rb	<	0.011950	s	Tl	<					
M	Co	<	0.000797	M	La	<	0.000797	M	Re		0.003843	M	Tm	<	0.000199				
M	Cr	<	0.000598	O	Li	<	0.000066	M	Rh	<	0.000199	M	U	<	0.000199				
M	Cs	<	0.005975	M	Lu	<	0.000199	M	Ru	<	0.000199	M	V	<	0.000199				
M	Cu		0.000370	O	Mg		0.000305	O	S	<	0.047818	M	W		0.000092				
M	Dy	<	0.000199	M	Mn	<	0.000199	M	Sb	<	0.000199	M	Y	<	0.000199				
M	Er	<	0.000199	M	Mo		0.000277	O	Sc	<	0.000146	M	Yb	<	0.000199				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 204.38 +1 6 Tl(H2O)61+
Chemical Compatibility - Soluble in HCl, HNO3, and H2SO4. Stable with most metals and inorganic anions. The sulfite, thiocyanate and oxalate are moderately soluble; the phosphate and arsenite are slightly soluble and the sulfide is insoluble.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
Tl Containing Samples (Preparation and Solution) -Metal (Best dissolved in HNO3 which forms chiefly the Tl1+ ion.); Oxide (The thallous oxide is readily soluble in water. The thallic oxide requires high levels of acid); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 205 amu	2 ppt	N/A	189Os16O
ICP-OES 190.864 nm	0.04 / 0.004 µg/mL	1	V, Ti
ICP-OES 276.787 nm	0.1 / 0.01 µg/mL	1	Ta, V, Fe, Cr
ICP-OES 351.924 nm	0.2 / 0.02 µg/mL	1	Th, Ce, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 24, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 24, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVUs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGU1
Lot Number:	J2-U01107R
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: U
Starting Material:	UO2(NO3)2.6H2O
Starting Material Lot#:	1841
Starting Material Purity:	99.9817%

1000 ppm U

889368

ID: MEIVUs_00012

Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1005 ± 4 µg/mL - weighted mean

Certified Density: 1.026 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1005 ± 3 µg/mL**
ICP Assay NIST SRM 3164 Lot Number: 080521

Assay Method #2 **1005 ± 3 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.21 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.025329	M	Eu	<	0.000253	O	Na		0.008722	M	Se	<	0.012664	M	Zn	<	0.050658
M	Al	<	0.037993	M	Fe	<	1.266462	M	Nb	<	0.002532	i	Si	<		M	Zr	<	0.005065
M	As	<	0.151975	M	Ga	<	0.002532	M	Nd	<	0.012664	M	Sm	<	0.002532				
M	Au	<	0.000253	M	Gd	<	0.002532	M	Ni	<	0.050658	M	Sn	<	0.050658				
M	B	<	0.025329	M	Ge	<	0.005065	n	Os	<		M	Sr	<	0.012664				
M	Ba	<	0.025329	M	Hf	<	0.002532	i	P	<		M	Ta	<	0.002532				
M	Be	<	0.001266	i	Hg	<		M	Pb	<	0.075987	M	Tb	<	0.007598				
M	Bi	<	0.007598	M	Ho	<	0.000759	M	Pd	<	0.001266	M	Te	<	0.075987				
O	Ca		0.030527	M	In	<	0.050658	M	Pr	<	0.002532	M	Th	<	0.007598				
M	Cd	<	0.007598	M	Ir	<	0.000253	M	Pt	<	0.000253	M	Ti	<	0.012664				
M	Ce		0.351469	i	K	<		M	Rb	<	0.002532	M	Tl	<	0.012664				
M	Co	<	0.007598	M	La	<	0.025329	M	Re	<	0.000759	M	Tm	<	0.000506				
M	Cr	<	0.050658	O	Li	<	0.014000	M	Rh	<	0.000253	s	U	<	0.005065				
M	Cs	<	0.017730	M	Lu	<	0.005065	M	Ru	<	0.000253	M	V	<	0.075987				
M	Cu	<	0.025329	M	Mg	<	0.075987	i	S	<		M	W	<	0.126646				
M	Dy	<	0.002532	M	Mn	<	0.015197	M	Sb	<	0.012664	M	Y	<	0.012664				
M	Er	<	0.002532	M	Mo	<	0.037993	M	Sc	<	0.025329	M	Yb	<	0.005065				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 238.03 +6 8 UO22+(uranyl)
Chemical Compatibility - Soluble in HCl and HNO3. Avoid H3PO4. H2SO4 and HF matrices should not be a problem depending upon [U]. Although the UO22+ ion is distinctly basic, any U+4 will precipitate in basic media. UO22+salts are generally soluble in water and UO22+ is stable with most metals and inorganic anions. The uranyl phosphate is insoluble in water. UF4 and UF6 are water soluble.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
U Containing Samples (Preparation and Solution) -Metal (Dissolves rapidly in HCl and HNO3); Oxide (Soluble in HNO3); Ores (Digest for 1-2 hours with 1 gram of ore to 30 mL 1:1 HNO3. Silica insolubles are removed by filtration after bringing the sample to fumes with conc. H2SO4.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 238 amu	2 ppt	N/A	206Pb16O2
ICP-OES 263.553 nm	0.3 / 0.01 µg/mL	1	Ce, Ir, Th, Rh, W, Zr, Ta, Ti, V, Hf, Fe, Re, Ru
ICP-OES 367.007 nm	0.3 / 0.02 µg/mL	1	Th, Ce
ICP-OES 385.958 nm	0.3 / 0.01 µg/mL	1	Th, Fe

Uranium Note: If uranium is present in this standard, it is natural abundance unless specified in Section 3.0

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 16, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 16, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/6/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

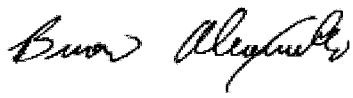
Certificate Prepared By:

Zach Saunders
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVVs_00010

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

fax: 800.859.8799 - 540.585.3060
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGV1
Lot Number:	J2-V02106
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: V
Starting Material:	V2O5
Starting Material Lot#:	1782
Starting Material Purity:	99.9947%

1000 ppm V

889367

ID: MEIVVs_00010

Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 11/16/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 996 ± 5 µg/mL - weighted mean

Certified Density: 1.016 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **995 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **998 ± 4 µg/mL**
ICP Assay NIST SRM 3165 Lot Number: 992706

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

0	Ag	< 0.000200	0	Eu	< 0.000100	0	Na	0.007884	0	Se	< 0.006683	0	Zn	< 0.006624			
0	Al	0.009315	0	Fe	0.033448	0	Nb	0.001123	0	Si	0.002628	0	Zr	< 0.001995			
0	As	< 0.001596	0	Ga	0.000432	0	Nd	< 0.000399	0	Sm	< 0.000100						
0	Au	< 0.000300	0	Gd	< 0.000100	0	Ni	< 0.006983	0	Sn	< 0.001397						
0	B	< 0.016459	0	Ge	< 0.000399	0	Os	< 0.000100	0	Sr	0.000143						
0	Ba	0.000183	0	Hf	< 0.000100	0	P	< 0.055200	0	Ta	< 0.000100						
0	Be	< 0.000499	0	Hg	< 0.008002	0	Pb	0.000237	0	Tb	< 0.000100						
0	Bi	< 0.000399	0	Ho	< 0.000100	0	Pd	< 0.000100	0	Te	< 0.001197						
0	Ca	0.011946	0	In	< 0.000100	0	Pr	< 0.000100	0	Th	< 0.000200						
0	Cd	< 0.000100	0	Ir	< 0.000100	0	Pt	< 0.000200	0	Ti	0.001446						
0	Ce	< 0.000399	0	K	< 0.110400	0	Rb	< 0.000599	0	Tl	< 0.001397						
0	Co	< 0.000100	0	La	< 0.000200	0	Re	< 0.000100	0	Tm	< 0.000100						
0	Cr	0.016246	0	Li	< 0.003312	0	Rh	< 0.000399	0	U	< 0.000200						
0	Cs	< 0.006185	0	Lu	< 0.000100	0	Ru	< 0.000100	s	V	<						
0	Cu	< 0.002793	0	Mg	< 0.033120	n	S	<	0	W	0.000367						
0	Dy	< 0.000100	0	Mn	0.000648	0	Sb	0.009326	0	Y	< 0.000100						
0	Er	< 0.000100	0	Mo	0.010977	0	Sc	< 0.000499	0	Yb	< 0.000100						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 50.94 +5 6 H2V10O284-
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4, HF, H3PO4 and strong basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
V Containing Samples (Preparation and Solution) -Metal (Fusion with NaOH or KOH in Ni0 or Na2CO3 / KNO3); Oxides (V2O3 - use HCl, V2O4 - use HCl or HNO3, V2O5 - use concentrated acids); Ores (Na2CO3 / KNO3 in Pt0 caution - nitrates attack Pto followed by water extraction of fuseate); Organic Matrices (Ash at 450 EC followed by dissolving according to V2O5 above) .
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 51 amu	4 ppt	N/A	34S16O1H, 35Cl16O, 38Ar13C, 36Ar15N, 36Ar14N1H, 37Cl14N,36S15N, 33S18O, 34S17O, 102Ru+2,02Pd+2
ICP-OES 290.882 nm	0.008 / 0.0008 µg/mL	1	Hf, Nb
ICP-OES 292.402 nm	0.006 / 0.001 µg/mL	1	Th
ICP-OES 309.311 nm	0.005 / 0.001 µg/mL	1	Mg, U, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 04, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 04, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/26/16 mok

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Zach Saunders
Product Documentation Technician

Zachary Saunders

Certificate Approved By:

Michael Booth
QC Supervisor

Michael 2 Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGU1
Lot Number:	J2-U01107R
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: U
Starting Material:	UO2(NO3)2.6H2O
Starting Material Lot#:	1841
Starting Material Purity:	99.9817%

1000 ppm U
889368
ID: MEIVUs_00012
Exp:01/06/17 Prpd:MDK Opn:01/06/16

Rec'd 1/6/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1005 ± 4 µg/mL - weighted mean

Certified Density: 1.026 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1005 ± 3 µg/mL**
ICP Assay NIST SRM 3164 Lot Number: 080521

Assay Method #2 **1005 ± 3 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Reagent

MEIVZNs_00014

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGZN1
Lot Number:	J2-ZN02107
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Zn
Starting Material:	Zn Shot
Starting Material Lot#:	1887
Starting Material Purity:	99.9994%

1000 ppm Zinc
889364
ID: MEIVZNs_00014
Exp:01/06/17 Prpd:MDK Opn:01/06/16

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 5 µg/mL

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 4 µg/mL**
ICP Assay NIST SRM 3168a Lot Number: 120629

Assay Method #2 **1000 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001528	M	Eu	<	0.000509	O	Na		0.000718	M	Se	<	0.050920	s	Zn	<	
O	Al	<	0.011300	O	Fe		0.000470	M	Nb	<	0.000509	O	Si	<	0.022600	O	Zr	<	0.001130
M	As	<	0.005092	M	Ga	<	0.005092	M	Nd	<	0.001018	M	Sm	<	0.000509				
M	Au	<	0.000509	M	Gd	<	0.002037	O	Ni	<	0.000904	M	Sn	<	0.000509				
O	B	<	0.001130	M	Ge	<	0.001018	n	Os	<		O	Sr		0.000009				
O	Ba	<	0.001130	M	Hf	<	0.000509	O	P	<	0.033900	M	Ta	<	0.000509				
O	Be	<	0.000113	O	Hg	<	0.002260	O	Pb		0.004232	M	Tb	<	0.000509				
M	Bi	<	0.010184	M	Ho	<	0.000509	M	Pd	<	0.000509	M	Te	<	0.005092				
O	Ca		0.000601	M	In	<	0.000509	M	Pr	<	0.000509	M	Th	<	0.000509				
O	Cd		0.000290	M	Ir	<	0.000509	M	Pt	<	0.000509	O	Ti	<	0.000565				
M	Ce	<	0.000509	O	K		0.000322	M	Rb	<	0.000509	M	Tl		0.000312				
M	Co	<	0.000509	M	La	<	0.000509	M	Re	<	0.000509	O	Tm	<	0.000379				
O	Cr	<	0.002260	O	Li	<	0.000565	M	Rh	<	0.000509	M	U	<	0.000509				
M	Cs	<	0.001528	M	Lu	<	0.000509	O	Ru	<	0.006780	O	V	<	0.001130				
O	Cu		0.000148	O	Mg		0.000023	O	S	<	0.011300	M	W	<	0.000509				
M	Dy	<	0.000509	O	Mn	<	0.000226	M	Sb	<	0.000509	O	Y		0.000082				
M	Er	<	0.000509	M	Mo	<	0.001528	O	Sc	<	0.000565	M	Yb	<	0.000509				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 65.39 +2 4 $Zn(OH)(aq)^{1+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media forming insoluble carbonate and hydroxide. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Zn Containing Samples (Preparation and Solution) -Metal (soluble in HNO_3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO_3); Organic based (dry ash at 4500C and dissolve ash in HCl) (sulfuric/peroxide acid digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 66 amu	7 ppt	N/A	50Ti16O,50Cr16O, 50V16O, 34S16O2, 32S16O18O, 32S17O2, 33S16O17O, 32S34S, 33S2
ICP-OES 202.548 nm	0.004/0.0002 µg/mL	1	Nb, Cu, Co, Hf
ICP-OES 206.200 nm	0.006/0.0006 µg/mL	1	Sb, Ta, Bi, Os
ICP-OES 213.856 nm	0.002/0.0004 µg/mL	1	Ni, Cu, V

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 20, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- April 20, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 1/16/16 mdh

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MESCPICV1_00003

SCP SCIENCE
Providing Innovative Solutions to Analytical Chemists

Certificate of Analysis

1.0 DESCRIPTION : ***Plasma*CAL – Custom Standard**

Catalogue Number : **600-304-822** **Cal #1**
Lot Number : **S151210015**
Matrix: **7.0% HNO3**
Expiration Date : **December 2016**

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Method of Analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)

Traceability: Applicable NIST Standard Reference Materials (see list below):

3101a	Al	3109a	Ca	3117a	Eu	3126a	Fe	3134	Mo	3142a	Pr	3151	Ag	3159	Th	3167a	Y
3102a	Sb	3110	Ce	3118a	Gd	3127a	La	3135a	Nd	3143	Re	3152a	Na	3160a	Tm	3168a	Zn
3103a	As	3111a	Cs	3119a	Ga	3128	Pb	3136	Ni	3144	Rh	3153a	Sr	3161a	Sn	3169	Zr
3104a	Ba	3112a	Cr	3120a	Ge	3129a	Li	3137	Nb	3145a	Rb	3154	S	3162a	Ti		
3105a	Be	3113	Co	3121	Au	3130a	Lu	3138	Pd	3147a	Sm	3155	Ta	3163	W		
3106	Bi	3114	Cu	3122	Hf	3131a	Mg	3139a	P	3148a	Sc	3156	Te	3164	U		
3107	B	3115a	Dy	3123a	Ho	3132	Mn	3140	Pt	3149	Se	3157a	Tb	3165	V		
3108	Cd	3116a	Er	3124a	In	3133	Hg	3141a	K	3150	Si	3158	Tl	3166a	Yb		

Certified Concentrations:

Ag	49.58 ± 0.46	µg/ml	P	251.6 ± 1.9	µg/ml
As	100.2 ± 0.7	µg/ml	Pb	625 ± 6	µg/ml
B	124.5 ± 0.9	µg/ml	Se	100.1 ± 0.6	µg/ml
Ba	626 ± 4	µg/ml	Sr	99.9 ± 0.8	µg/ml
Be	313.0 ± 2.0	µg/ml	Tl	99.6 ± 0.7	µg/ml
Cd	100.4 ± 0.9	µg/ml	V	625 ± 6	µg/ml
Co	251.4 ± 2.3	µg/ml	Zn	625 ± 6	µg/ml
Cr	199.5 ± 1.9	µg/ml			
Cu	626 ± 5	µg/ml			
Mn	627 ± 5	µg/ml			
Ni	628 ± 6	µg/ml			

ACCREDITED
Reference Material Producer
ISO Guide 34
CERTIFICATE #2885.02

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) such as the SRM inherited uncertainty, weighing and dilution errors and instrument variability. The combined uncertainty ($uc = v\Sigma u_i^2$) has been multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:

Density: **1.043 g/ml** @ **21.2 °C**

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Yaling Sui, Chemist
Certification Date: **December 11, 2015**

Yaling Sui

888892
ID: MESCPICV1_00003
Exp:12/31/16 Prpd:MDK Opn:01/05/16

Rec'd 1/5/16 MPK

Reagent

MESPEXAGs_00011

ACCREDITED
Reference Materials Producer
Cert #2495.01

SPEXertificate®

Certificate of Reference Material

ilac-MRA ACCREDITED
Chemical Testing
Cert #2495.02

Catalog Number: PLAG2-2Y **Lot No.** 20-172AGY

Description: 1000 µg/mL Silver

Matrix: 2% HNO_3

This **ASSURANCE®** Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for inorganic spectroscopic instrumentation such as ICP-OES, DCP, AA, ICP-MS, and XRF. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

Certified Value: 1001 µg/mL ±5 µg/mL

903018
ID: MESPEXAGs_00011
Exp:02/28/17 Prpd:MDK Opn:02/23/16
1000ppm Silver stock

Certified Value is Traceable to: 3151*

* - indicates NIST SRM † - indicates SPEX CertiPrep CRM (when NIST SRM is not available)

The CRM is prepared gravimetrically using high purity Silver nitrate, Lot# 12141H. The certified value listed is the average of values obtained by classical wet assay and ICP spectrometer analysis.

Refer to side 2 for details of measurement uncertainties.

Classical Wet Assay: 1001 µg/mL

Method: Precipitation using Hydrochloric Acid. Filter, dry, and weigh as AgCl.

Instrumental Analysis by ICP Spectrometer: 1001 µg/mL

Uncertified Properties

Density: 1.010 g/mL @ 20.0°C

Rec'd 2/23/16 MDK

Trace Metallic Impurities in the Actual Solution via ICP-MS Analysis:

Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL
Al	0.002	Cs	<0.001	Ho	<0.001	Nb	<0.001	Ru	<0.001	Th	<0.001
As	<0.001	Cu	<0.001	In	<0.001	Nd	<0.001	Sb	<0.001	Ti	<0.001
Au	<0.001	Dy	<0.001	Ir	<0.001	Ni	<0.001	Sc	<0.001	Tl	<0.001
B	<0.001	Er	<0.001	K	<0.1	P	<0.1	Se	<0.003	Tm	<0.001
Ba	<0.001	Eu	<0.001	La	<0.001	Pb	<0.001	Si	<0.1	U	<0.001
Be	<0.001	Fe	<0.1	Li	<0.001	Pd	<0.001	Sm	<0.001	V	<0.001
Bi	<0.001	Ga	<0.001	Lu	<0.001	Pr	<0.001	Sn	<0.001	W	<0.002
Ca	0.002	Gd	<0.001	Mg	<0.001	Pt	<0.001	Sr	<0.001	Y	<0.001
Cd	<0.001	Ge	<0.001	Mn	<0.001	Rb	<0.001	Ta	<0.001	Yb	<0.001
Ce	<0.001	Hf	<0.001	Mo	<0.001	Re	<0.001	Tb	<0.001	Zn	0.005
Co	<0.001	Hg	<0.001	Na	0.003	Rh	<0.001	Te	<0.001	Zr	<0.001
Cr	<0.001										

Balances are calibrated regularly with weight sets traceable to NIST #32856, #32867 and others. This CRM is guaranteed stable and accurate to +/- 0.5% of the certified value. This includes uncertainty components due to preparation, homogeneity by the most precise method, and short-term and long-term stability. This guarantee is valid for a period of one year from the date of certification only when the material is unopened and stored under ambient laboratory conditions.

Date of Certification: FEB 2016 Certifying Officer:

©2013 SPEX CertiPrep, Inc.

Reagent

MESPEXHgs_00014

ACCREDITED
Reference Materials Producer
Cert #2495.01

SPEXertificate®

Certificate of Reference Material

ilac-MRA ACCREDITED
Chemical Testing
Cert #2495.02

Catalog Number: PLHG4-2Y **Lot No.** 21-3HGY

Description: 1000 µg/mL Mercury

Matrix: 10% HNO_3

This **ASSURANCE®** Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for inorganic spectroscopic instrumentation such as ICP-OES, DCP, AA, ICP-MS, and XRF. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

Certified Value: 1000 µg/mL ±5 µg/mL

Certified Value is Traceable to: 3133*

* - indicates NIST SRM † - indicates SPEX CertiPrep CRM (when NIST SRM is not available)

The CRM is prepared gravimetrically using high purity Mercury Metal, Lot# 03141E. The certified value listed is the average of values obtained by classical wet assay and ICP spectrometer analysis.

Refer to side 2 for details of measurement uncertainties.

Classical Wet Assay: 999 µg/mL

Method: Titration with Ammonium Thiocyanate using Ferric Nitrate as indicator.

Instrumental Analysis by ICP Spectrometer: 1000 µg/mL

Uncertified Properties

Density: 1.047 g/mL @ 20.0°C

Trace Metallic Impurities in the Actual Solution via ICP-MS Analysis:

Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL
Ag	<0.001	Cr	<0.002	Ho	<0.001	Nb	<0.001	Ru	<0.001	Th	<0.001
Al	<0.001	Cs	<0.001	In	<0.001	Nd	<0.001	Sb	<0.001	Ti	<0.001
As	<0.001	Cu	<0.001	Ir	<0.001	Ni	<0.001	Sc	<0.001	Tl	0.002
Au	<0.01	Dy	<0.001	K	<0.1	P	<0.1	Se	<0.005	Tm	<0.001
B	0.003	Er	<0.001	La	<0.001	Pb	<0.001	Si	<0.1	U	<0.001
Ba	<0.001	Eu	<0.001	Li	<0.001	Pd	<0.01	Sm	<0.001	V	<0.001
Be	<0.001	Fe	<0.004	Lu	<0.001	Pr	<0.001	Sn	<0.001	W	<0.001
Bi	<0.001	Ga	<0.001	Mg	0.003	Pt	<0.001	Sr	<0.001	Y	<0.001
Ca	<0.05	Gd	<0.001	Mn	<0.001	Rb	<0.001	Ta	<0.001	Yb	<0.001
Cd	<0.001	Ge	<0.001	Mo	<0.001	Re	<0.001	Tb	<0.001	Zn	0.004
Ce	<0.001	Hf	<0.001	Na	0.002	Rh	<0.001	Te	<0.001	Zr	<0.001
Co	<0.001										

Balances are calibrated regularly with weight sets traceable to NIST #32856, #32867 and others. This CRM is guaranteed stable and accurate to +/- 0.5% of the certified value. This includes uncertainty components due to preparation, homogeneity by the most precise method, and short-term and long-term stability. This guarantee is valid for a period of one year from the date of certification only when the material is unopened and stored under ambient laboratory conditions.

888957
ID: MESPEXHgs_00014
Exp:12/30/16 Prpd:RRP Opn:01/05/16
1000ppm Mercury stock sta

Date of Certification: DEC 2015 Certifying Officer:

72

©2015 SPEX CertiPrep, LLC

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/21/2015 Reviewed on 05/21/2015

1 Identification

· **Product identifier**

· **Product Name: 1000 µg/mL Mercury**

· **Part Number:** PLHG4-2M / 2Y / 2T / 2X
· **Relevant identified uses of the substance or mixture and uses advised against** No further relevant information available.
· **Application of the substance / the mixture** Certified Reference Material

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA

· **Information department:** product safety department
· **Emergency telephone number:**
Emergency Phone Number (24 hours)
CHEMTREC (800-424-9300)
Outside US: 703-527-3887

2 Hazard(s) identification

· **Classification of the substance or mixture**



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Corrosive
Causes burns.
· **Information concerning particular hazards for human and environment:**
The product has to be labeled due to the calculation procedure of international guidelines.
· **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**



GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
nitric acid
· **Hazard statements**
Causes severe skin burns and eye damage.
· **Precautionary statements**
Do not breathe dusts or mists.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**



Health = 3
Fire = 0
Reactivity = 0

(Contd. on page 2)

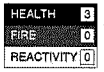
Safety Data Sheet
acc. to OSHA HCS

Printing date 05/21/2015 Reviewed on 05/21/2015

Product Name: 1000 µg/mL Mercury

(Contd. of page 1)

· **HMIS-ratings (scale 0 - 4)**



Health = 3
Fire = 0
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**		
7697-37-2	nitric acid	10.0%
7439-97-6	mercury	0.1%
· **Chemical identification of the substance/preparation**		
7732-18-5	water, distilled, conductivity or of similar purity	89.9%

4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.
· **Information for Doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/21/2015 Reviewed on 05/21/2015

Product Name: 1000 µg/mL Mercury

(Contd. of page 4)

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)		
7439-97-6	mercury	3

· NTP (National Toxicology Program)
None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· UN-Number	
· DOT, ADR, IMDG, IATA	UN3264
· UN proper shipping name	
· DOT	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution)
· ADR	3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution)
· IMDG, IATA	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/21/2015 Reviewed on 05/21/2015

Product Name: 1000 µg/mL Mercury

(Contd. of page 5)

· **Transport hazard class(es)**
· **DOT**



· Class	8 Corrosive substances
· Label	8

· **ADR, IMDG, IATA**



· Class	8 Corrosive substances
· Label	8
· Packing group	
· DOT, ADR, IMDG, IATA	II
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Corrosive substances
· Danger code (Kemler):	80
· EMS Number:	F-A,S-B
· Segregation groups	Acids
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution), 8, II

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· Section 355 (extremely hazardous substances):	
7697-37-2	nitric acid

· Section 313 (Specific toxic chemical listings):	
7697-37-2	nitric acid
7439-97-6	mercury

· TSCA (Toxic Substances Control Act):
All ingredients are listed.

· **Proposition 65**

· Chemicals known to cause cancer:
None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:
None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:
None of the ingredients is listed.

(Contd. on page 7)

Reagent

META-69_00010

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-69
Lot Number:	K2-MEB637108
Matrix:	1% (v/v) HNO3
Value / Analyte(s):	15 000 µg/mL ea: Calcium, Magnesium, 5 000 µg/mL ea: Potassium, Sodium

934537
ID: META-69_00010
Exp:05/24/17 Prpd:MDK Opn:05/24/16
6010 ICV stock part 2
Rec'd 5/24/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Calcium, Ca	**15 000.0 ± 60.0 µg/mL**	**Magnesium, Mg**	**15 000.0 ± 60.0 µg/mL**
Potassium, K	**5 000 ± 18 µg/mL**	**Sodium, Na**	**5 000 ± 18 µg/mL**

Certified Density: 1.136 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ca	ICP Assay	3109a	050825
Ca	EDTA	928	928
K	ICP Assay	3141a	051220
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 19, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 19, 2019**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

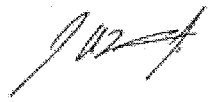
- Sealed TCT Bag Open Date: 5/24/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

META-70_00007

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 29, 2015

11.2 Expiration Date

EXPIRES
1 FEB 2017

11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-70
Lot Number:	J2-MEB615044
Matrix:	5% (v/v) HNO3 0.4% (v/v) HF
Value / Analyte(s):	625 µg/mL ea: Molybdenum, 500 µg/mL ea: Silicon, 250 µg/mL ea: Tin, 125 µg/mL ea: Antimony, 100 µg/mL ea: Titanium

Rec'd 12/31/15 MDK

6010 ICV stock part 3
888263
ID: META-70_00007
Exp:01/04/17 Prpd:MDK Opn:01/04/16
2010 ICV stock part 3

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	**125.0 ± 0.9 µg/mL**	**Molybdenum, Mo**	**625.0 ± 3.3 µg/mL**
Silicon, Si	**500.0 ± 3.6 µg/mL**	**Tin, Sn**	**250.1 ± 0.9 µg/mL**
Titanium, Ti	**100.0 ± 0.6 µg/mL**		

Certified Density: 1.027 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	891307
Sb	ICP Assay	3102A	061229
Sb	Calculated		See Sec. 4.2
Si	ICP Assay	3150	071204
Si	Calculated		See Sec. 4.2
Sn	ICP Assay	3161a	070330
Sn	Calculated		See Sec. 4.2
Ti	ICP Assay	3162a	060808
Ti	Calculated		See Sec. 4.2

Reagent

META-71_00007

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

920731
ID: META-71_00007
Exp:04/16/17 Prpd:MDK Opn:04/16/16
6010 Cal stock part 4

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-71QC
Lot Number:	K2-MEB628027
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	15 000 µg/mL ea: Aluminum, Iron

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	15 000.0 ± 70.0 µg/mL	Iron, Fe	15 000.0 ± 60.0 µg/mL

Certified Density: 1.144 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 21, 2016

11.2 Expiration Date

EXPIRES
1 APR 2017

11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

WCLKLCSs_00018

LECO Reference Material

LECO Corporation; Saint Joseph, Michigan USA

Part No: 502-062
Lot No: 1017

895118
ID: WCLKLCSs_00018
Exp:01/26/17 Prpd:KSH Opn:01/26/16
Lloyd Kahn LCS

ACCREDITED
Reference Material Producer
Certificate # 3285.02

LECO Reference Materials are traceable to national or international Certified Reference Materials whenever possible. When these Certified Reference Materials do not exist or are inadequate for calibration purposes, other appropriate materials are used. The accuracy of the reported results for LECO Reference Materials is greatly influenced by the accuracy of the primary reference materials used. The intended use of this reference material is for calibration purposes.

Category	Reference Value	+/-
% Carbon	0.926	0.04
% Hydrogen	0.36	0.03
% Nitrogen	0.092	0.016
% Sulfur	0.016	0.003

- +/- indicates two times the standard deviation (2s).
- Refer to the reverse side of certificate for additional information regarding calculations.

Homogeneity:
Homogeneity of this material was confirmed through analysis of a random selection of bottled material and was found to be highly homogeneous.

Material:
LECO 502-062 Lot: 1017 is a soil calibration material.

Traceability: The following Certified Reference Materials were used to validate the analytical data:
NIST SRM 915b, Calcium Carbonate @ 12.0% Carbon
NIST SRM 2690, Coal Fly Ash @ 0.15% Sulfur
LECO CRM EDTA 502-812 (HS10007A) @ 41.1% Carbon, 5.55% Hydrogen and 9.56% Nitrogen

Preparation:
A separate portion of this reference material must be dried for one hour at 105°Celsius prior to usage. The dried sample should be stored in a desiccator and must be used for analysis within 24 hours. Any unused portion of the dried sample should be discarded.

Analysis:
LECO analytical instruments were used to characterize this material. This material was analyzed by high temperature combustion using a resistance furnace utilizing LECO infrared (IR) and thermal conductivity (TC) detection technology.

Category	Method/Detection	n
% Carbon	Combustion/IR	60
% Hydrogen	Combustion/IR	30
% Nitrogen	Combustion/TC	40
% Sulfur	Combustion/IR	40

Expiration:
ISO Guide 31 States that the certificate should contain an expiration date for all materials where instability has been demonstrated or considered possible, after which the certified value is no longer guaranteed by the certifying body. This reference material is valid within the stated deviation until **August 5th, 2019** provided the RM is stored in its original bottle at room temperature. This reference material is nullified if it is contaminated or otherwise altered.

Certificate of Analysis

Analysis Data:

Data Set	Number of Analyses	% Carbon	Carbon Standard Dev.	% Hydrogen	Hydrogen Standard Dev.	% Nitrogen	Nitrogen Standard Dev.	% Sulfur	Sulfur Standard Dev.	Method	Instrument
1	10	0.9420	0.0078	0.371	0.010	0.0921	0.0121	-	-	TSL-C001	LECO CHN628-Argon
2	10	-	-	-	-	-	-	0.0158	0.0004	TSL-C001	LECO 628 S-Module
3	10	0.9250	0.0032	-	-	0.0842	0.0015	0.0156	0.0029	TSL-C001	LECO TruMac CNS
4	10	0.8905	0.0054	-	-	-	-	0.0159	0.0011	TSL-C001	LECO SC632
5	10	-	-	-	-	-	-	0.0146	0.0005	TSL-C001	LECO S632
6	10	0.9380	0.0063	0.365	0.012	0.0936	0.0019	-	-	TSL-C001	LECO CHN628
7	10	0.9288	0.0069	0.348	0.011	-	-	-	-	TSL-C001	LECO TruSpec CHN
8	10	0.9286	0.0066	-	-	0.0980	0.0005	-	-	TSL-C001	LECO TruMac CN
Average		0.9255		0.361		0.0920		0.0155			
Std Dev		0.0179		0.014		0.0078		0.0016			

- Each Data Set value represents an average of the sample analyses.
- Underline indicates last significant digit.

Participating Laboratories:

Lab:
LECO Technical Services Laboratory

Accreditation:
A2LA Accredited to ISO 17025:2005

Calculations:
In compliance with the requirements of ISO Guides 31, 34 and 35 for the production of Reference Materials, the values for this material were calculated using a mean and standard deviation of the overall data.

References:
LECO TSL-C001: In house method for the analysis of Plant Tissue and Soil materials

ISO Standard 17025:2005 General requirements for the competence of testing and calibration laboratories.
ISO Guide 30:1992 Terms and definitions used in connection with reference materials.
ISO Guide 31:2000 Reference Materials-Contents of certificates and labels.
ISO Guide 33:2000 Uses of certified reference materials.
ISO Guide 34:2009 General requirements for the competence of reference material producers.
ISO Guide 35:2006 Reference Materials-General and statistical principles for certification.

ASTM Documents available from ASTM, 1916 Race Street, Philadelphia, PA, 19103
ISO Guides and Standards available from Global Engineering – www.global.ihs.com

Approved by: Dennis Lawrenz
Technical Services Laboratory Director
Date of release: August 5th, 2014

No warranties of description, merchantability, or fitness for a particular purpose or any other express or implied warranties arise out of LECO's sale of this product. Remedies for any claimed defect in this product will be limited to replacement of the product or refund of the purchase price. In no event shall LECO be liable for incidental or consequential damages.

LECO Corporation • Technical Services Laboratory
3000 Lakeview Avenue • St. Joseph, MI. USA 49085
Phone: 800-292-6141 • Fax: 269-982-8977 • www.leco.com
info@leco.com • A2LA Accredited to ISO 17025:2005
LECO is a registered trademark of LECO Corporation.

METALS

COVER PAGE
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35736-1

SDG No.: 200-35736-1

Project: Port Ewen DNS Sediment

Client Sample ID	Lab Sample ID
PE1016-P1SCD-REF1-A-0006IN	200-35736-1
PE1016-P1SCD-REF1-B-0006IN	200-35736-2
PE1016-P1SCD-REF2-A-0006IN	200-35736-3
PE1016-P1SCD-REF2-B-0006IN	200-35736-4
PE1016-P1SCD-REF3-A-0006IN	200-35736-5
PE1016-P1SCD-REF3-B-0006IN	200-35736-6
PE1016-P1SCD-REF4-A-0006IN	200-35736-7
PE1016-P1SCD-REF4-B-0006IN	200-35736-8
PE1016-P1SCD-REF5-A-0003IN	200-35736-9
PE1016-P1SCD-REF5-B-0003IN	200-35736-10
PE1016-P1SCD-05-A-0006IN	200-35736-11
PE1016-P1SCD-05-B-0006IN	200-35736-12
PE1016-P1SCD-REF3-A-0006IN-D	200-35736-13
PE1016-P1SCD-BLK-2-101116	200-35736-14

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-REF1-A-0006IN
Lab Sample ID: 200-35736-1
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 11:05
Reporting Basis: DRY
Date Received: 10/14/2016 10:20
% Solids: 53.0

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	18.5	0.84	0.20	mg/Kg			1	6020A
7782-49-2	Selenium	1.4	0.67	0.11	mg/Kg			1	6020A
7440-66-6	Zinc	100	3.4	1.0	mg/Kg			1	6020A
7439-97-6	Mercury	0.059	0.068	0.025	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-REF1-B-0006IN
Lab Sample ID: 200-35736-2
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 11:10
Reporting Basis: DRY
Date Received: 10/14/2016 10:20
% Solids: 52.1

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	14.9	0.71	0.17	mg/Kg			1	6020A
7782-49-2	Selenium	0.93	0.57	0.089	mg/Kg			1	6020A
7440-66-6	Zinc	76.5	2.8	0.88	mg/Kg			1	6020A
7439-97-6	Mercury	0.042	0.068	0.025	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-REF2-A-0006IN
Lab Sample ID: 200-35736-3
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:50
Reporting Basis: DRY
Date Received: 10/14/2016 10:20
% Solids: 47.8

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	20.5	0.93	0.22	mg/Kg			1	6020A
7782-49-2	Selenium	1.3	0.75	0.12	mg/Kg			1	6020A
7440-66-6	Zinc	107	3.7	1.2	mg/Kg			1	6020A
7439-97-6	Mercury	0.055	0.083	0.030	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-REF2-B-0006IN
Lab Sample ID: 200-35736-4
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:55
Reporting Basis: DRY
Date Received: 10/14/2016 10:20
% Solids: 44.7

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	16.2	0.84	0.20	mg/Kg			1	6020A
7782-49-2	Selenium	1.3	0.67	0.11	mg/Kg			1	6020A
7440-66-6	Zinc	80.5	3.4	1.0	mg/Kg			1	6020A
7439-97-6	Mercury	0.074	0.085	0.031	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN
Lab Sample ID: 200-35736-5
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:40
Reporting Basis: DRY
Date Received: 10/14/2016 10:20
% Solids: 45.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	19.0	1.0	0.24	mg/Kg			1	6020A
7782-49-2	Selenium	1.3	0.81	0.13	mg/Kg			1	6020A
7440-66-6	Zinc	97.0	4.1	1.3	mg/Kg			1	6020A
7439-97-6	Mercury	0.064	0.084	0.031	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-REF3-B-0006IN
Lab Sample ID: 200-35736-6
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:45
Reporting Basis: DRY
Date Received: 10/14/2016 10:20
% Solids: 46.5

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	18.5	0.73	0.18	mg/Kg			1	6020A
7782-49-2	Selenium	1.1	0.58	0.092	mg/Kg			1	6020A
7440-66-6	Zinc	92.9	2.9	0.91	mg/Kg			1	6020A
7439-97-6	Mercury	0.036	0.077	0.028	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-REF4-A-0006IN
Lab Sample ID: 200-35736-7
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:30
Reporting Basis: DRY
Date Received: 10/14/2016 10:20
% Solids: 53.7

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	15.8	0.81	0.19	mg/Kg			1	6020A
7782-49-2	Selenium	1.1	0.65	0.10	mg/Kg			1	6020A
7440-66-6	Zinc	88.7	3.2	1.0	mg/Kg			1	6020A
7439-97-6	Mercury	0.047	0.064	0.023	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-REF4-B-0006IN
Lab Sample ID: 200-35736-8
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:35
Reporting Basis: DRY
Date Received: 10/14/2016 10:20
% Solids: 43.4

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	20.4	1.1	0.26	mg/Kg			1	6020A
7782-49-2	Selenium	1.4	0.88	0.14	mg/Kg			1	6020A
7440-66-6	Zinc	127	4.4	1.4	mg/Kg			1	6020A
7439-97-6	Mercury	0.069	0.084	0.031	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-REF5-A-0003IN
Lab Sample ID: 200-35736-9
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:15
Reporting Basis: DRY
Date Received: 10/14/2016 10:20
% Solids: 46.2

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	17.5	0.82	0.20	mg/Kg			1	6020A
7782-49-2	Selenium	1.2	0.66	0.10	mg/Kg			1	6020A
7440-66-6	Zinc	105	3.3	1.0	mg/Kg			1	6020A
7439-97-6	Mercury	0.056	0.073	0.026	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-REF5-B-0003IN
Lab Sample ID: 200-35736-10
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:20
Reporting Basis: DRY
Date Received: 10/14/2016 10:20
% Solids: 54.8

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	14.6	0.73	0.18	mg/Kg			1	6020A
7782-49-2	Selenium	1.1	0.58	0.092	mg/Kg			1	6020A
7440-66-6	Zinc	87.0	2.9	0.91	mg/Kg			1	6020A
7439-97-6	Mercury	0.051	0.070	0.025	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-05-A-0006IN
Lab Sample ID: 200-35736-11
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 12:25
Reporting Basis: DRY
Date Received: 10/14/2016 10:20
% Solids: 36.2

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	540	1.3	0.30	mg/Kg			1	6020A
7782-49-2	Selenium	3.4	1.0	0.16	mg/Kg			1	6020A
7440-66-6	Zinc	200	5.0	1.6	mg/Kg		F1	1	6020A
7439-97-6	Mercury	6.4	0.19	0.070	mg/Kg			2	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-05-B-0006IN
Lab Sample ID: 200-35736-12
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 12:30
Reporting Basis: DRY
Date Received: 10/14/2016 10:20
% Solids: 36.1

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	481	1.2	0.28	mg/Kg			1	6020A
7782-49-2	Selenium	3.4	0.95	0.15	mg/Kg			1	6020A
7440-66-6	Zinc	192	4.7	1.5	mg/Kg			1	6020A
7439-97-6	Mercury	3.7	0.11	0.038	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN-D
Lab Sample ID: 200-35736-13
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 14:41
Reporting Basis: DRY
Date Received: 10/14/2016 10:20
% Solids: 40.0

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	23.2	0.88	0.21	mg/Kg			1	6020A
7782-49-2	Selenium	1.7	0.70	0.11	mg/Kg		B	1	6020A
7440-66-6	Zinc	110	3.5	1.1	mg/Kg			1	6020A
7439-97-6	Mercury	0.059	0.085	0.031	mg/Kg	J		1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE1016-P1SCD-BLK-2-101116 Lab Sample ID: 200-35736-14

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG ID.: 200-35736-1

Matrix: Water Date Sampled: 10/11/2016 16:10

Reporting Basis: WET Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	5.0	5.0	2.2	ug/L	U		1	6020A
7782-49-2	Selenium	4.0	4.0	0.97	ug/L	U		1	6020A
7440-66-6	Zinc	20.0	20.0	2.6	ug/L	U		1	6020A
7439-97-6	Mercury	0.20	0.20	0.044	ug/L	U		1	7470A

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: ME6020ICVw_00443 Concentration Units: ug/L

CCV Source: ME6020STD3_00443

Analyte	ICV 200-110334/8 10/18/2016 13:02				CCV 200-110334/13 10/18/2016 13:37				CCV 200-110334/25 10/18/2016 14:45			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	619.8		625	99	1126		1250	90	1203		1250	96
Selenium	108.0		100	108	209.1		200	105	214.4		200	107
Zinc	640.0		625	102	1194		1250	95	1225		1250	98

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: ME6020ICVw_00443 Concentration Units: ug/L

CCV Source: ME6020STD3_00443

Analyte	CCV 200-110334/38 10/18/2016 16:00				CCV 200-110334/51 10/18/2016 17:14				CCV 200-110334/58 10/18/2016 17:54			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	1213		1250	97	1298		1250	104	1323		1250	106
Selenium	212.6		200	106								
Zinc	1237		1250	99	1319		1250	105	1341		1250	107

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: ME6020STD1_00437 Concentration Units: ug/L

CCV Source: ME6020STD1_00437

Analyte	ICVL 200-110334/9 10/18/2016 13:08				CCVL 200-110334/27 10/18/2016 14:57				CCVL 200-110334/40 10/18/2016 16:11			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	5.17		5.00	103	5.26		5.00	105	5.70		5.00	114
Selenium	2.99	J	4.00	75	3.41	J	4.00	85	3.47	J	4.00	87
Zinc	22.09		20.0	110	21.62		20.0	108	23.72		20.0	119

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: ME6020STD1_00437 Concentration Units: ug/L

CCV Source: ME6020STD1_00437

Analyte	CCVL 200-110334/53 10/18/2016 17:26				CCVL 200-110334/60 10/18/2016 18:05							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	5.93		5.00	119	5.96		5.00	119				
Selenium												
Zinc	23.46		20.0	117	23.50		20.0	118				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: ME6020ICVw_00444 Concentration Units: ug/L

CCV Source: ME6020STD3_00444

Analyte	ICV 200-110361/8 10/19/2016 10:33				CCV 200-110361/13 10/19/2016 11:01				CCV 200-110361/25 10/19/2016 12:10			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Selenium	107.0		100	107	211.0		200	105	218.5		200	109

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: ME6020ICVw_00444 Concentration Units: ug/L

CCV Source: ME6020STD3_00444

Analyte	CCV 200-110361/33 10/19/2016 12:55											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Selenium	219.1		200	110								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: ME6020STD1_00438 Concentration Units: ug/L

CCV Source: ME6020STD1_00438

Analyte	ICVL 200-110361/9 10/19/2016 10:38				CCVL 200-110361/27 10/19/2016 12:21				CCVL 200-110361/35 10/19/2016 13:06			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Selenium	3.80	J	4.00	95	3.91	J	4.00	98	3.78	J	4.00	95

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: ME6020ICVw_00447 Concentration Units: ug/L

CCV Source: ME6020STD3_00448

Analyte	ICV 200-110848/8 11/01/2016 11:23				CCV 200-110848/13 11/01/2016 11:52				CCV 200-110848/25 11/01/2016 13:00			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	661.9		625	106	1166		1250	93	1173		1250	94
Selenium	104.9		100	105	200.3		200	100	200.5		200	100
Zinc	662.0		625	106	1200		1250	96	1191		1250	95

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: ME6020ICVw_00447 Concentration Units: ug/L

CCV Source: ME6020STD3_00448

Analyte	CCV 200-110848/34 11/01/2016 13:52											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	1191		1250	95								
Selenium	204.9		200	102								
Zinc	1222		1250	98								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: ME6020STD1_00441 Concentration Units: ug/L

CCV Source: ME6020STD1_00441

Analyte	ICVL 200-110848/9 11/01/2016 11:29				CCVL 200-110848/27 11/01/2016 13:12				CCVL 200-110848/36 11/01/2016 14:03			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	5.62		5.00	112	5.48		5.00	110	5.40		5.00	108
Selenium	4.05		4.00	101	3.46	J	4.00	86	4.68		4.00	117
Zinc	20.12		20.0	101	19.12	J	20.0	96	19.61	J	20.0	98

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: MEHGICVw_00085 Concentration Units: ug/L

CCV Source: mehgccvw_01052

Analyte	ICV 200-110231/7-A 10/17/2016 14:23				CCV 200-110231/9-A 10/17/2016 14:27				CCV 200-110231/9-A 10/17/2016 14:47			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	2.77		3.00	92	5.00		5.00	100	4.87		5.00	97

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: MEHGICVw_00085 Concentration Units: ug/L

CCV Source: mehgccvw_01052

Analyte	CCV 200-110231/9-A 10/17/2016 15:08				CCV 200-110231/9-A 10/17/2016 15:28				CCV 200-110231/9-A 10/17/2016 15:45			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	4.91		5.00	98	4.93		5.00	99	4.95		5.00	99

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: MEHGICVw_00085 Concentration Units: ug/L

CCV Source: mehgccvw_01052

Analyte	CCV 200-110231/9-A 10/17/2016 16:06											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	4.95		5.00	99								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: MEHGICVw_00085 Concentration Units: ug/L

CCV Source: mehgccvw_01052

Analyte	ICV 200-110242/7-A 10/17/2016 16:19				CCV 200-110242/9-A 10/17/2016 16:22				CCV 200-110242/9-A 10/17/2016 16:37			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	2.76		3.00	92	5.03		5.00	101	5.24		5.00	105

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: MEHGICVw_00086 Concentration Units: ug/L

CCV Source: mehgccvw_01056

Analyte	ICV 200-110770/7-A 10/31/2016 14:01				CCV 200-110770/9-A 10/31/2016 14:05				CCV 200-110770/9-A 10/31/2016 14:24			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	2.92		3.00	97	5.05		5.00	101	5.02		5.00	100

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICV Source: MEHGICVw_00086 Concentration Units: ug/L

CCV Source: mehgccvw_01056

Analyte	CCV 200-110770/9-A 10/31/2016 14:32											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	5.08		5.00	102								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Concentration Units: ug/L

Analyte	RL	ICBIS 200-110334/10 10/18/2016 13:19		CCB 200-110334/14 10/18/2016 13:42		CCB 200-110334/26 10/18/2016 14:51		CCB 200-110334/39 10/18/2016 16:05	
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U	5.0	U	5.0	U	5.0	U
Selenium	4.0	4.0	U	4.0	U	4.0	U	4.0	U
Zinc	20.0	20.0	U	20.0	U	20.0	U	20.0	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Concentration Units: ug/L

Analyte	RL	CCB 200-110334/52 10/18/2016 17:20		CCB 200-110334/59 10/18/2016 17:59					
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U	5.0	U				
Selenium	4.0								
Zinc	20.0	20.0	U	20.0	U				

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Concentration Units: ug/L

Analyte	RL	ICBIS 200-110361/10 10/19/2016 10:44		CCB 200-110361/14 10/19/2016 11:07		CCB 200-110361/26 10/19/2016 12:16		CCB 200-110361/34 10/19/2016 13:00	
		Found	C	Found	C	Found	C	Found	C
Selenium	4.0	4.0	U	4.0	U	4.0	U	4.0	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Concentration Units: ug/L

Analyte	RL	ICBIS 200-110848/10 11/01/2016 11:35		CCB 200-110848/14 11/01/2016 11:57		CCB 200-110848/26 11/01/2016 13:06		CCB 200-110848/35 11/01/2016 13:58	
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U	5.0	U	5.0	U	5.0	U
Selenium	4.0	4.0	U	4.0	U	4.0	U	4.0	U
Zinc	20.0	20.0	U	20.0	U	20.0	U	20.0	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Concentration Units: ug/L

Analyte	RL	ICB 200-110231/8-A 10/17/2016 14:25		CCB 200-110231/10-A 10/17/2016 14:29		CCB 200-110231/10-A 10/17/2016 14:49		CCB 200-110231/10-A 10/17/2016 15:09	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U	0.20	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Concentration Units: ug/L

Analyte	RL	CCB 200-110231/10-A 10/17/2016 15:29		CCB 200-110231/10-A 10/17/2016 15:47		CCB 200-110231/10-A 10/17/2016 16:07			
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U		

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Concentration Units: ug/L

Analyte	RL	ICB 200-110242/8-A 10/17/2016 16:20		CCB 200-110242/10-A 10/17/2016 16:24		CCB 200-110242/10-A 10/17/2016 16:39			
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U		

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Concentration Units: ug/L

Analyte	RL	ICB 200-110770/8-A 10/31/2016 14:03		CCB 200-110770/10-A 10/31/2016 14:06		CCB 200-110770/10-A 10/31/2016 14:26		CCB 200-110770/10-A 10/31/2016 14:34	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U	0.20	U

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-110229/1-A

Instrument Code: METICPMS2 Batch No.: 110334

CAS No.	Analyte	Concentration	C	Q	Method
7440-50-8	Copper	0.50	U		6020A
7782-49-2	Selenium	0.40	U		6020A
7440-66-6	Zinc	2.0	U		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Concentration Units: ug/L Lab Sample ID: MB 200-110239/1-A

Instrument Code: METICPMS2 Batch No.: 110334

CAS No.	Analyte	Concentration	C	Q	Method
7440-50-8	Copper	2.66	J		6020A
7440-66-6	Zinc	20.0	U		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Concentration Units: ug/L Lab Sample ID: MB 200-110239/1-A

Instrument Code: METICPMS2 Batch No.: 110361

CAS No.	Analyte	Concentration	C	Q	Method
7782-49-2	Selenium	4.0	U		6020A

FORM III-IN

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-110769/1-A

Instrument Code: METICPMS2 Batch No.: 110848

CAS No.	Analyte	Concentration	C	Q	Method
7440-50-8	Copper	0.50	U		6020A
7782-49-2	Selenium	0.0776	J		6020A
7440-66-6	Zinc	2.0	U		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Concentration Units: ug/L Lab Sample ID: MB 200-110242/11-A

Instrument Code: MEPCV3 II Batch No.: 110261

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.20	U		7470A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-110232/1-A

Instrument Code: MEPCV3 II Batch No.: 110260

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.040	U		7471B

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-110770/11-A

Instrument Code: MEPCV3 II Batch No.: 110792

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.040	U		7471B

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Lab Sample ID: ICSA 200-110334/11 Instrument ID: METICPMS2

Lab File ID: 101816-05 6020A.xml ICS Source: MEMSICSAw_00210

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Copper		**1.14**	
Selenium		**-0.430**	
Zinc		**-1.21**	
Aluminum	*100000*	*98733*	*99*
Antimony		*-0.134*	
Arsenic		*-0.0747*	
Barium		*0.373*	
Beryllium		*0.146*	
Boron		*0.872*	
Cadmium		*0.299*	
Calcium	*100000*	*104300*	*104*
Chromium		*1.33*	
Cobalt		*0.140*	
Iron	*100000*	*97747*	*98*
Lead		*0.394*	
Magnesium	*100000*	*99843*	*100*
Manganese		*0.634*	
Molybdenum	*2000*	*2068*	*103*
Nickel		*0.617*	
Potassium	*100000*	*101293*	*101*
Silver		*0.177*	
Sodium	*100000*	*99067*	*99*
Thallium		*0.108*	
Thorium		*4.79*	
Tungsten		*0.297*	
Uranium		*0.0020*	
Vanadium		*0.542*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Lab Sample ID: ICSAB 200-110334/12 Instrument ID: METICPMS2

Lab File ID: 101816-05 6020A.xml ICS Source: MEMSABw_00227

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Copper	**50.0**	**45.4**	**91**
Selenium	**125**	**112**	**90**
Zinc	**50.0**	**43.6**	**87**
Aluminum	*100000*	*95100*	*95*
Antimony	*50.0*	*47.4*	*95*
Arsenic	*45.0*	*43.6*	*97*
Barium	*250*	*239*	*96*
Beryllium	*25.0*	*27.6*	*111*
Boron	*400*	*454*	*113*
Cadmium	*25.0*	*23.4*	*94*
Calcium	*100000*	*102233*	*102*
Chromium	*50.0*	*48.1*	*96*
Cobalt	*25.0*	*22.8*	*91*
Iron	*100000*	*96390*	*96*
Lead	*25.0*	*23.8*	*95*
Magnesium	*100000*	*95993*	*96*
Manganese	*25.0*	*24.2*	*97*
Molybdenum	*2000*	*2073*	*104*
Nickel	*25.0*	*24.5*	*98*
Potassium	*100000*	*97770*	*98*
Silver	*25.0*	*24.7*	*99*
Sodium	*100000*	*96563*	*97*
Thallium	*25.0*	*22.7*	*91*
Thorium	*20.0*	*20.1*	*100*
Tungsten	*20.0*	*18.4*	*92*
Uranium	*10.0*	*10.9*	*109*
Vanadium	*25.0*	*24.5*	*98*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Lab Sample ID: ICSA 200-110361/11 Instrument ID: METICPMS2

Lab File ID: 101916-03 6020A.xml ICS Source: MEMSICSAw_00210

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Selenium		**-1.08**	
Aluminum	*100000*	*102533*	*103*
Antimony		*0.330*	
Arsenic		*-0.248*	
Barium		*0.357*	
Beryllium		*0.111*	
Boron		*5.71*	
Cadmium		*0.0883*	
Calcium	*100000*	*105633*	*106*
Chromium		*1.27*	
Cobalt		*0.141*	
Copper		*1.19*	
Iron	*100000*	*101400*	*101*
Lead		*0.415*	
Magnesium	*100000*	*103600*	*104*
Manganese		*0.540*	
Molybdenum	*2000*	*2179*	*109*
Nickel		*0.750*	
Potassium	*100000*	*98567*	*99*
Silver		*0.168*	
Sodium	*100000*	*101733*	*102*
Thallium		*0.123*	
Thorium		*5.04*	
Tungsten		*0.328*	
Uranium		*-0.0080*	
Vanadium		*0.553*	
Zinc		*-0.811*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Lab Sample ID: ICSAB 200-110361/12 Instrument ID: METICPMS2

Lab File ID: 101916-03 6020A.xml ICS Source: MEMSABw_00227

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Selenium	**125**	**115**	**92**
Aluminum	*100000*	*104400*	*104*
Antimony	*50.0*	*51.0*	*102*
Arsenic	*45.0*	*44.9*	*100*
Barium	*250*	*243*	*97*
Beryllium	*25.0*	*27.7*	*111*
Boron	*400*	*459*	*115*
Cadmium	*25.0*	*24.0*	*96*
Calcium	*100000*	*105900*	*106*
Chromium	*50.0*	*47.8*	*96*
Cobalt	*25.0*	*23.5*	*94*
Copper	*50.0*	*46.4*	*93*
Iron	*100000*	*102933*	*103*
Lead	*25.0*	*23.2*	*93*
Magnesium	*100000*	*103833*	*104*
Manganese	*25.0*	*23.9*	*95*
Molybdenum	*2000*	*2214*	*111*
Nickel	*25.0*	*23.3*	*93*
Potassium	*100000*	*100333*	*100*
Silver	*25.0*	*25.0*	*100*
Sodium	*100000*	*101537*	*102*
Thallium	*25.0*	*22.7*	*91*
Thorium	*20.0*	*19.7*	*98*
Tungsten	*20.0*	*20.9*	*104*
Uranium	*10.0*	*11.6*	*116*
Vanadium	*25.0*	*22.8*	*91*
Zinc	*50.0*	*45.6*	*91*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Lab Sample ID: ICSA 200-110848/11 Instrument ID: METICPMS2

Lab File ID: 110116-04 6020A.xml ICS Source: MEMSICSAw_00210

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Copper		**1.00**	
Selenium		**-0.0233**	
Zinc		**-0.668**	
Aluminum	*100000*	*91980*	*92*
Antimony		*0.218*	
Arsenic		*0.0180*	
Barium		*0.195*	
Beryllium		*0.0143*	
Boron		*6.27*	
Cadmium		*0.160*	
Calcium	*100000*	*92433*	*92*
Chromium		*1.55*	
Cobalt		*0.0530*	
Iron	*100000*	*92700*	*93*
Lead		*0.262*	
Magnesium	*100000*	*92573*	*93*
Manganese		*0.274*	
Molybdenum	*2000*	*1759*	*88*
Nickel		*0.402*	
Potassium	*100000*	*93707*	*94*
Silver		*0.0840*	
Sodium	*100000*	*94597*	*95*
Thallium		*0.0963*	
Thorium		*-0.452*	
Tungsten		*0.315*	
Uranium		*-0.0090*	
Vanadium		*0.749*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Lab Sample ID: ICSAB 200-110848/12 Instrument ID: METICPMS2

Lab File ID: 110116-04 6020A.xml ICS Source: MEMSABw_00227

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Copper	**50.0**	**47.2**	**94**
Selenium	**125**	**113**	**90**
Zinc	**50.0**	**46.2**	**92**
Aluminum	*100000*	*91937*	*92*
Antimony	*50.0*	*51.5*	*103*
Arsenic	*45.0*	*43.6*	*97*
Barium	*250*	*249*	*100*
Beryllium	*25.0*	*25.1*	*100*
Boron	*400*	*434*	*108*
Cadmium	*25.0*	*22.2*	*89*
Calcium	*100000*	*94327*	*94*
Chromium	*50.0*	*49.5*	*99*
Cobalt	*25.0*	*23.4*	*94*
Iron	*100000*	*93710*	*94*
Lead	*25.0*	*24.2*	*97*
Magnesium	*100000*	*93053*	*93*
Manganese	*25.0*	*24.5*	*98*
Molybdenum	*2000*	*1786*	*89*
Nickel	*25.0*	*23.3*	*93*
Potassium	*100000*	*93720*	*94*
Silver	*25.0*	*23.6*	*95*
Sodium	*100000*	*96053*	*96*
Thallium	*25.0*	*24.6*	*98*
Thorium	*20.0*	*17.4*	*87*
Tungsten	*20.0*	*22.8*	*114*
Uranium	*10.0*	*10.5*	*105*
Vanadium	*25.0*	*24.0*	*96*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: PE1016-P1SCD-REF3-A-0006IN MS Lab ID: 200-35736-5 MS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Matrix: Sediment Concentration Units: mg/Kg

% Solids: 45.3

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	28.82		19.0		10.5	93	75-125		6020A
Selenium	7.73		1.3		8.41	77	75-125		6020A
Zinc	131.2		97.0		42.1	81	75-125		6020A
Mercury	1.05		0.064	J	0.969	101	80-120		7471B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: PE1016-P1SCD-05-A-0006IN MS
Lab ID: 200-35736-11 MS
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG No.: 200-35736-1
Matrix: Sediment
Concentration Units: mg/Kg
% Solids: 36.2

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	613.1		540		12.1	606	75-125	4	6020A
Selenium	11.72		3.4		9.69	86	75-125		6020A
Zinc	244.4		200		48.4	92	75-125	4	6020A
Mercury	5.22		6.4		1.26	-96	80-120	4	7471B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: PE1016-P1SCD-BLK-2-101116 MS Lab ID: 200-35736-14 MS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Matrix: Water Concentration Units: ug/L

% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	57.00		5.0	U	50.0	114	75-125		6020A
Selenium	41.46		4.0	U	40.0	104	75-125		6020A
Zinc	217.1		20.0	U	200	109	75-125		6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: PE1016-P1SCD-REF3-A-0006IN MSD Lab ID: 200-35736-5 MSD

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Matrix: Sediment Concentration Units: mg/Kg

% Solids: 45.3

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Copper	27.88		9.44	94	75-125	3	20		6020A
Selenium	7.01		7.55	76	75-125	10	20		6020A
Zinc	125.1		37.8	75	75-125	5	20		6020A
Mercury	1.05		1.02	97	80-120	0	20		7471B

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VD - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: PE1016-P1SCD-05-A-0006IN MSD
Lab ID: 200-35736-11 MSD
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG No.: 200-35736-1
Matrix: Sediment
Concentration Units: mg/Kg
% Solids: 36.2

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Copper	605.5		12.8	514	75-125	1	20	4	6020A
Selenium	12.05		10.2	85	75-125	3	20		6020A
Zinc	267.5		51.1	133	75-125	9	20	F1	6020A
Mercury	5.38		1.17	-89	80-120	3	20	4	7471B

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VD - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: PE1016-P1SCD-BLK-2-101116 MSD Lab ID: 200-35736-14 MSD

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Matrix: Water Concentration Units: ug/L

% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Copper	56.20		50.0	112	75-125	1	20		6020A
Selenium	40.84		40.0	102	75-125	2	20		6020A
Zinc	212.9		200	106	75-125	2	20		6020A

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: PE1016-P1SCD-REF3-A-0006IN PDS Lab ID: 200-35736-5 PDS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Matrix: Sediment Concentration Units: mg/Kg

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	28.31		19.0		10.1	92	80-120		6020A
Selenium	7.42		1.3		8.11	76	80-120	W	6020A
Zinc	129.6		97.0		40.5	81	80-120		6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VB - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: PE1016-P1SCD-05-A-0006IN PDS Lab ID: 200-35736-11 PDS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Matrix: Sediment Concentration Units: mg/Kg

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	545.0		540		12.6	NC	80-120		6020A
Selenium	11.96		3.4		10.0	85	80-120		6020A
Zinc	244.2		200		50.2	89	80-120		6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VB - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: PE1016-P1SCD-BLK-2-101116 PDS Lab ID: 200-35736-14 PDS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Matrix: Water Concentration Units: ug/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	54.00		5.0	U	50.0	108	80-120		6020A
Selenium	40.61		4.0	U	40.0	102	80-120		6020A
Zinc	207.7		20.0	U	200	104	80-120		6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VB - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110229/2-A

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

Sample Matrix: Sediment LCS Source: ME6020CALi_A_00022

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Copper	5.00	4.90		98	80	120		6020A
Selenium	4.00	3.45		86	80	120		6020A
Zinc	20.0	18.27		91	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110239/2-A

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

Sample Matrix: Water LCS Source: ME6020CALi_A_00022

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Copper	50.0	56.30		113	80	120		6020A
Zinc	200	208.5		104	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110239/2-A

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

Sample Matrix: Water LCS Source: ME6020CALi_A_00022

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Selenium	40.0	38.84		97	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110769/2-A

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

Sample Matrix: Sediment LCS Source: ME6020CALi_A_00022

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Copper	5.00	5.03		101	80	120		6020A
Selenium	4.00	3.27		82	80	120		6020A
Zinc	20.0	17.86		89	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110242/12-A

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

Sample Matrix: Water LCS Source: mehgccvw_01052

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Mercury	2.50	2.57		103	85	115		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110232/2-A

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

Sample Matrix: Sediment LCS Source: mehgccvw_01052

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Mercury	0.500	0.488		98	80	120		7471B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-110770/12-A

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

Sample Matrix: Sediment LCS Source: mehgccvw_01056

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Mercury	0.500	0.494		99	80	120		7471B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 200-35736-5

SDG No: 200-35736-1

Lab Name: TestAmerica Burlington Job No: 200-35736-1

Matrix: Sediment Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Copper	19.0		20.01		5.2		6020A
Selenium	1.3		0.937	J	NC		6020A
Zinc	97.0		114.8		18	V	6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 200-35736-11

SDG No: 200-35736-1

Lab Name: TestAmerica Burlington Job No: 200-35736-1

Matrix: Sediment Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Copper	540		540.6		0.16		6020A
Selenium	3.4		2.97	J	NC		6020A
Zinc	200		217.3		8.9		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 200-35736-14

SDG No: 200-35736-1

Lab Name: TestAmerica Burlington Job No: 200-35736-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Copper	5.0	U	25.0	U	NC		6020A
Selenium	4.0	U	20.0	U	NC		6020A
Zinc	20.0	U	100	U	NC		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35736-1

SDG Number: 200-35736-1

Matrix: Water Instrument ID: METICPMS2

Method: 6020A MDL Date: 08/25/2016 17:21

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Copper		5	2.2
Selenium		4	0.97
Zinc		20	2.6

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35736-1

SDG Number: 200-35736-1

Matrix: Water Instrument ID: METICPMS2

Method: 6020A XMDL Date: 08/25/2016 17:21

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Copper		5	2.2
Selenium		4	0.97
Zinc		20	2.6

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35736-1

SDG Number: 200-35736-1

Matrix: Sediment Instrument ID: METICPMS2

Method: 6020A MDL Date: 09/04/2014 14:11

Prep Method: 3050B

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Copper		0.5	0.12
Selenium		0.4	0.063
Zinc		2	0.62

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35736-1

SDG Number: 200-35736-1

Matrix: Sediment Instrument ID: METICPMS2

Method: 6020A XMDL Date: 09/19/2014 14:34

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Copper		5	2.1
Selenium		4	0.79
Zinc		20	9.3

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35736-1

SDG Number: 200-35736-1

Matrix: Water Instrument ID: MEPCV3 II

Method: 7470A MDL Date: 03/16/2016 14:58

Prep Method: 7470A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Mercury	253.7	0.2	0.044

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35736-1

SDG Number: 200-35736-1

Matrix: Water Instrument ID: MEPCV3 II

Method: 7470A XMDL Date: 03/16/2016 14:58

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury	253.7	0.2	0.044

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35736-1

SDG Number: 200-35736-1

Matrix: Sediment Instrument ID: MEPCV3 II

Method: 7471B MDL Date: 02/23/2015 16:26

Prep Method: 7471B

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Mercury	253.7	0.033	0.012

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-35736-1

SDG Number: 200-35736-1

Matrix: Sediment Instrument ID: MEPCV3 II

Method: 7471B XMDL Date: 03/16/2016 14:59

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury	253.7	0.2	0.044

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Burlington Job No: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: METICPMS2 Date: 03/25/2015 10:58

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Copper		6250	6020A
Selenium		1000	6020A
Zinc		6250	6020A

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Burlington Job No: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: MEPCV3 II Date: 01/01/2011 09:52

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Mercury	10	10	7470A

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Burlington Job No: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: MEPCV3 II Date: 04/18/2011 17:05

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Mercury	10	10	7471B

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Prep Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-110229/1-A	10/17/2016 10:03	110229	1.00		100.00
LCS 200-110229/2-A	10/17/2016 10:03	110229	1.00		100.00
200-35736-1	10/17/2016 10:03	110229	1.12		100.00
200-35736-2	10/17/2016 10:03	110229	1.35		100.00
200-35736-3	10/17/2016 10:03	110229	1.12		100.00
200-35736-4	10/17/2016 10:03	110229	1.33		100.00
200-35736-5	10/17/2016 10:03	110229	1.09		100.00
200-35736-5 MS	10/17/2016 10:03	110229	1.05		100.00
200-35736-5 MSD	10/17/2016 10:03	110229	1.17		100.00
200-35736-6	10/17/2016 10:03	110229	1.47		100.00
200-35736-7	10/17/2016 10:03	110229	1.15		100.00
200-35736-8	10/17/2016 10:03	110229	1.05		100.00
200-35736-9	10/17/2016 10:03	110229	1.32		100.00
200-35736-10	10/17/2016 10:03	110229	1.25		100.00
200-35736-11	10/17/2016 10:03	110229	1.10		100.00
200-35736-11 MS	10/17/2016 10:03	110229	1.14		100.00
200-35736-11 MSD	10/17/2016 10:03	110229	1.08		100.00
200-35736-12	10/17/2016 10:03	110229	1.17		100.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 200-110239/1-A	10/17/2016 12:26	110239		50.00	50.00
LCS 200-110239/2-A	10/17/2016 12:26	110239		50.00	50.00
200-35736-14	10/17/2016 12:26	110239		50.00	50.00
200-35736-14 MS	10/17/2016 12:26	110239		50.00	50.00
200-35736-14 MSD	10/17/2016 12:26	110239		50.00	50.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Prep Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-110769/1-A	10/31/2016 11:39	110769	1.00		100.00
LCS 200-110769/2-A	10/31/2016 11:39	110769	1.00		100.00
200-35736-13	10/31/2016 11:39	110769	1.42		100.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Prep Method: 7471B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-110232/1-A	10/17/2016 10:07	110232	0.50		100.00
LCS 200-110232/2-A	10/17/2016 10:07	110232	0.50		100.00
200-35736-1	10/17/2016 10:07	110232	0.55		100.00
200-35736-2	10/17/2016 10:07	110232	0.56		100.00
200-35736-3	10/17/2016 10:07	110232	0.50		100.00
200-35736-4	10/17/2016 10:07	110232	0.52		100.00
200-35736-5	10/17/2016 10:07	110232	0.52		100.00
200-35736-5 MS	10/17/2016 10:07	110232	0.57		100.00
200-35736-5 MSD	10/17/2016 10:07	110232	0.54		100.00
200-35736-6	10/17/2016 10:07	110232	0.55		100.00
200-35736-7	10/17/2016 10:07	110232	0.58		100.00
200-35736-8	10/17/2016 10:07	110232	0.54		100.00
200-35736-9	10/17/2016 10:07	110232	0.59		100.00
200-35736-10	10/17/2016 10:07	110232	0.52		100.00
200-35736-11	10/17/2016 10:07	110232	0.57		100.00
200-35736-11 MS	10/17/2016 10:07	110232	0.55		100.00
200-35736-11 MSD	10/17/2016 10:07	110232	0.59		100.00
200-35736-12	10/17/2016 10:07	110232	0.52		100.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Prep Method: 7470A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 200-110242/11-A	10/17/2016 12:52	110242		50.00	50.00
LCS 200-110242/12-A	10/17/2016 12:52	110242		50.00	50.00
200-35736-14	10/17/2016 12:52	110242		50.00	50.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Prep Method: 7471B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-110770/11-A	10/31/2016 11:40	110770	0.50		100.00
LCS 200-110770/12-A	10/31/2016 11:40	110770	0.50		100.00
200-35736-13	10/31/2016 11:40	110770	0.58		100.00

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/18/2016 09:54 End Date: 10/18/2016 18:05

Lab Sample Id	D/F	Type	Time	Analytes																										
				Cu	Se	Zn																								
ITUNE 200-110334/1	1		09:54																											
STD0 200-110334/2 IC	1		12:40	X	X	X																								
STD1 200-110334/3 IC	1		12:44	X	X	X																								
STD2 200-110334/4 IC	1		12:47	X	X	X																								
STD3 200-110334/5 IC	1		12:50	X	X	X																								
STD4 200-110334/6 IC	1		12:54	X	X	X																								
STD5 200-110334/7 IC	1		12:57	X	X	X																								
ICV 200-110334/8	1		13:02	X	X	X																								
ICVL 200-110334/9	1		13:08	X	X	X																								
ICBIS 200-110334/10	1		13:19	X	X	X																								
ICSA 200-110334/11	1		13:25	X	X	X																								
ICSAB 200-110334/12	1		13:31	X	X	X																								
CCV 200-110334/13	1		13:37	X	X	X																								
CCB 200-110334/14	1		13:42	X	X	X																								
MB 200-110229/1-A	1	T	13:48	X	X	X																								
LCS 200-110229/2-A	1	T	13:54	X	X	X																								
ZZZZZZ			13:59																											
ZZZZZZ			14:05																											
200-35736-1	1	T	14:11	X	X	X																								
200-35736-2	1	T	14:17	X	X	X																								
200-35736-3	1	T	14:22	X	X	X																								
200-35736-4	1	T	14:28	X	X	X																								
200-35736-5	1	T	14:34	X	X	X																								
200-35736-5 SD	5	T	14:39	X	X	X																								
CCV 200-110334/25	1		14:45	X	X	X																								
CCB 200-110334/26	1		14:51	X	X	X																								
CCVL 200-110334/27	1		14:57	X	X	X																								
200-35736-5 PDS	1	T	15:02	X	X	X																								
200-35736-5 MS	1	T	15:08	X	X	X																								
200-35736-5 MSD	1	T	15:14	X	X	X																								
200-35736-6	1	T	15:20	X	X	X																								
200-35736-7	1	T	15:25	X	X	X																								
200-35736-8	1	T	15:31	X	X	X																								
200-35736-9	1	T	15:37	X	X	X																								
200-35736-10	1	T	15:42	X	X	X																								
200-35736-11	1	T	15:48	X		X																								
200-35736-11 SD	5	T	15:54	X		X																								
CCV 200-110334/38	1		16:00	X	X	X																								
CCB 200-110334/39	1		16:05	X	X	X																								
CCVL 200-110334/40	1		16:11	X	X	X																								
200-35736-11 PDS	1	T	16:17	X		X																								
200-35736-11 MS	1	T	16:23	X		X																								

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/18/2016 09:54 End Date: 10/18/2016 18:05

Lab Sample Id	D/F	Type	Time	Analytes																										
				Cu	Se	Zn																								
200-35736-11 MSD	1	T	16:28	X		X																								
200-35736-12	1	T	16:34	X		X																								
MB 200-110239/1-A	1	T	16:40	X		X																								
LCS 200-110239/2-A	1	T	16:46	X		X																								
ZZZZZZ			16:51																											
ZZZZZZ			16:57																											
200-35736-14	1	T	17:03	X		X																								
200-35736-14 SD	5	T	17:08	X		X																								
CCV 200-110334/51	1		17:14	X		X																								
CCB 200-110334/52	1		17:20	X		X																								
CCVL 200-110334/53	1		17:26	X		X																								
CCVL 200-110334/54			17:30																											
200-35736-14 PDS	1	T	17:36	X		X																								
200-35736-14 MS	1	T	17:42	X		X																								
200-35736-14 MSD	1	T	17:48	X		X																								
CCV 200-110334/58	1		17:54	X		X																								
CCB 200-110334/59	1		17:59	X		X																								
CCVL 200-110334/60	1		18:05	X		X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/19/2016 09:50 End Date: 10/19/2016 14:15

Lab Sample Id	D/F	Type	Time	Analytes
				Se
ITUNE 200-110361/1	1		09:50	
STD0 200-110361/2 IC	1		10:04	X
STD1 200-110361/3 IC	1		10:09	X
STD2 200-110361/4 IC	1		10:13	X
STD3 200-110361/5 IC	1		10:17	X
STD4 200-110361/6 IC	1		10:21	X
STD5 200-110361/7 IC	1		10:27	X
ICV 200-110361/8	1		10:33	X
ICVL 200-110361/9	1		10:38	X
ICBIS 200-110361/10	1		10:44	X
ICSA 200-110361/11	1		10:50	X
ICSAB 200-110361/12	1		10:56	X
CCV 200-110361/13	1		11:01	X
CCB 200-110361/14	1		11:07	X
200-35736-11	1	T	11:13	X
200-35736-11 SD	5	T	11:18	X
200-35736-11 PDS	1	T	11:24	X
200-35736-11 MS	1	T	11:30	X
200-35736-11 MSD	1	T	11:36	X
200-35736-12	1	T	11:41	X
MB 200-110239/1-A	1	T	11:47	X
LCS 200-110239/2-A	1	T	11:53	X
ZZZZZZ			11:58	
ZZZZZZ			12:04	
CCV 200-110361/25	1		12:10	X
CCB 200-110361/26	1		12:16	X
CCVL 200-110361/27	1		12:21	X
200-35736-14	1	T	12:27	X
200-35736-14 SD	5	T	12:33	X
200-35736-14 PDS	1	T	12:39	X
200-35736-14 MS	1	T	12:44	X
200-35736-14 MSD	1	T	12:49	X
CCV 200-110361/33	1		12:55	X
CCB 200-110361/34	1		13:00	X
CCVL 200-110361/35	1		13:06	X
ZZZZZZ			13:11	
ZZZZZZ			13:17	
ZZZZZZ			13:23	
ZZZZZZ			13:29	
ZZZZZZ			13:34	
ZZZZZZ			13:40	
ZZZZZZ			13:46	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 10/19/2016 09:50 End Date: 10/19/2016 14:15

Lab Sample Id	D/F	Type	Time	Analytes
				Se
ZZZZZZ			13:52	
ZZZZZZ			13:57	
CCV 200-110361/45			14:03	
CCB 200-110361/46			14:09	
CCVL 200-110361/47			14:15	

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 11/01/2016 10:39 End Date: 11/01/2016 14:03

Lab Sample Id	D/F	Type	Time	Analytes																										
				Cu	Se	Zn																								
ITUNE 200-110848/1	1		10:39																											
STD0 200-110848/2 IC	1		10:50	X	X	X																								
STD1 200-110848/3 IC	1		10:55	X	X	X																								
STD2 200-110848/4 IC	1		11:00	X	X	X																								
STD3 200-110848/5 IC	1		11:06	X	X	X																								
STD4 200-110848/6 IC	1		11:12	X	X	X																								
STD5 200-110848/7 IC	1		11:17	X	X	X																								
ICV 200-110848/8	1		11:23	X	X	X																								
ICVL 200-110848/9	1		11:29	X	X	X																								
ICBIS 200-110848/10	1		11:35	X	X	X																								
ICSA 200-110848/11	1		11:40	X	X	X																								
ICSAB 200-110848/12	1		11:46	X	X	X																								
CCV 200-110848/13	1		11:52	X	X	X																								
CCB 200-110848/14	1		11:57	X	X	X																								
MB 200-110769/1-A	1	T	12:03	X	X	X																								
LCS 200-110769/2-A	1	T	12:09	X	X	X																								
ZZZZZZ			12:15																											
ZZZZZZ			12:20																											
ZZZZZZ			12:26																											
ZZZZZZ			12:32																											
ZZZZZZ			12:37																											
ZZZZZZ			12:43																											
ZZZZZZ			12:49																											
ZZZZZZ			12:55																											
CCV 200-110848/25	1		13:00	X	X	X																								
CCB 200-110848/26	1		13:06	X	X	X																								
CCVL 200-110848/27	1		13:12	X	X	X																								
ZZZZZZ			13:18																											
ZZZZZZ			13:23																											
ZZZZZZ			13:29																											
ZZZZZZ			13:35																											
200-35736-13	1	T	13:40	X	X	X																								
ZZZZZZ			13:46																											
CCV 200-110848/34	1		13:52	X	X	X																								
CCB 200-110848/35	1		13:58	X	X	X																								
CCVL 200-110848/36	1		14:03	X	X	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: MEPCV3 II Analysis Method: 7470A

Start Date: 10/17/2016 16:09 End Date: 10/17/2016 16:39

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
IC 200-110242/1-A	1		16:09	X																								
IC 200-110242/2-A	1		16:11	X																								
IC 200-110242/3-A	1		16:12	X																								
IC 200-110242/4-A	1		16:14	X																								
IC 200-110242/5-A	1		16:16	X																								
IC 200-110242/6-A	1		16:17	X																								
ICV 200-110242/7-A	1		16:19	X																								
ICB 200-110242/8-A	1		16:20	X																								
CCV 200-110242/9-A	1		16:22	X																								
CCB 200-110242/10-A	1		16:24	X																								
MB 200-110242/11-A	1	T	16:26	X																								
LCS 200-110242/12-A	1	T	16:27	X																								
ZZZZZZ			16:29																									
ZZZZZZ			16:30																									
ZZZZZZ			16:32																									
ZZZZZZ			16:34																									
200-35736-14	1	T	16:35	X																								
CCV 200-110242/9-A	1		16:37	X																								
CCB 200-110242/10-A	1		16:39	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: MEPCV3 II Analysis Method: 7471B

Start Date: 10/17/2016 14:14 End Date: 10/17/2016 16:07

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
IC 200-110231/1-A	1		14:14	X																								
IC 200-110231/2-A	1		14:15	X																								
IC 200-110231/3-A	1		14:17	X																								
IC 200-110231/4-A	1		14:18	X																								
IC 200-110231/5-A	1		14:20	X																								
IC 200-110231/6-A	1		14:22	X																								
ICV 200-110231/7-A	1		14:23	X																								
ICB 200-110231/8-A	1		14:25	X																								
CCV 200-110231/9-A	1		14:27	X																								
CCB 200-110231/10-A	1		14:29	X																								
ZZZZZZ			14:30																									
ZZZZZZ			14:32																									
ZZZZZZ			14:33																									
ZZZZZZ			14:35																									
ZZZZZZ			14:37																									
ZZZZZZ			14:39																									
ZZZZZZ			14:40																									
ZZZZZZ			14:42																									
ZZZZZZ			14:44																									
ZZZZZZ			14:45																									
CCV 200-110231/9-A	1		14:47	X																								
CCB 200-110231/10-A	1		14:49	X																								
ZZZZZZ			14:51																									
ZZZZZZ			14:52																									
ZZZZZZ			14:54																									
ZZZZZZ			14:56																									
ZZZZZZ			14:58																									
ZZZZZZ			14:59																									
ZZZZZZ			15:01																									
ZZZZZZ			15:03																									
ZZZZZZ			15:04																									
ZZZZZZ			15:06																									
CCV 200-110231/9-A	1		15:08	X																								
CCB 200-110231/10-A	1		15:09	X																								
MB 200-110232/1-A	1	T	15:11	X																								
LCS 200-110232/2-A	1	T	15:13	X																								
200-35736-1	1	T	15:14	X																								
200-35736-2	1	T	15:16	X																								
200-35736-3	1	T	15:18	X																								
200-35736-4	1	T	15:20	X																								
200-35736-5	1	T	15:21	X																								
200-35736-5 MS	1	T	15:23	X																								

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: MEPCV3 II Analysis Method: 7471B

Start Date: 10/17/2016 14:14 End Date: 10/17/2016 16:07

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
200-35736-5 MSD	1	T	15:25	X																								
200-35736-6	1	T	15:26	X																								
CCV 200-110231/9-A	1		15:28	X																								
CCB 200-110231/10-A	1		15:29	X																								
200-35736-7	1	T	15:31	X																								
200-35736-8	1	T	15:33	X																								
200-35736-9	1	T	15:35	X																								
200-35736-10	1	T	15:36	X																								
ZZZZZZ			15:38																									
ZZZZZZ			15:40																									
ZZZZZZ			15:42																									
200-35736-12	1	T	15:43	X																								
CCV 200-110231/9-A	1		15:45	X																								
CCB 200-110231/10-A	1		15:47	X																								
ZZZZZZ			15:48																									
ZZZZZZ			15:51																									
ZZZZZZ			15:52																									
ZZZZZZ			15:54																									
ZZZZZZ			15:56																									
ZZZZZZ			15:57																									
ZZZZZZ			15:59																									
200-35736-11	2	T	16:01	X																								
200-35736-11 MS	2	T	16:02	X																								
200-35736-11 MSD	2	T	16:04	X																								
CCV 200-110231/9-A	1		16:06	X																								
CCB 200-110231/10-A	1		16:07	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: MEPCV3 II Analysis Method: 7471B

Start Date: 10/31/2016 13:52 End Date: 10/31/2016 14:34

Lab Sample Id	D/F	Type	Time	Analytes
				Hg
IC 200-110770/1-A	1		13:52	X
IC 200-110770/2-A	1		13:53	X
IC 200-110770/3-A	1		13:55	X
IC 200-110770/4-A	1		13:57	X
IC 200-110770/5-A	1		13:58	X
IC 200-110770/6-A	1		14:00	X
ICV 200-110770/7-A	1		14:01	X
ICB 200-110770/8-A	1		14:03	X
CCV 200-110770/9-A	1		14:05	X
CCB 200-110770/10-A	1		14:06	X
MB 200-110770/11-A	1	T	14:08	X
LCS 200-110770/12-A	1	T	14:10	X
ZZZZZZ			14:11	
ZZZZZZ			14:13	
ZZZZZZ			14:14	
ZZZZZZ			14:16	
ZZZZZZ			14:18	
ZZZZZZ			14:19	
ZZZZZZ			14:21	
ZZZZZZ			14:23	
CCV 200-110770/9-A	1		14:24	X
CCB 200-110770/10-A	1		14:26	X
ZZZZZZ			14:27	
ZZZZZZ			14:29	
200-35736-13	1	T	14:31	X
CCV 200-110770/9-A	1		14:32	X
CCB 200-110770/10-A	1		14:34	X

Prep Types:
T = Total/NA

FORM XIII-IN

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICP-MS Instrument ID: METICPMS2 Analysis Date: 10/18/16

Lab ID: ITUNE 200-110334/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	8.9922	0.73	1.079	
Mg-24	23.975	0.72	1.468	
Mg-25	24.9858	0.69	1.872	
Mg-26	25.9926	0.71	3.116	
Al-27	26.9915	0.69	0.406	
V-51	50.994	0.68	0.808	
Co-59	58.9532	0.69	0.472	
In-113	112.9441	0.68	1.952	
In-115	114.9239	0.69	0.378	
Ba-137	136.9158	0.68	1.055	
Ce-140	139.9154	0.71	0.577	
Pb-206	205.9845	0.72	1.154	
Pb-207	206.9859	0.72	1.327	
Pb-208	207.9866	0.72	1.288	
Th-232	232.0681	0.72	0.416	
U-238	238.0908	0.71	0.167	

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICP-MS Instrument ID: METICPMS2 Analysis Date: 10/19/16

Lab ID: ITUNE 200-110361/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	8.9922	0.73	2.508	
Mg-24	23.975	0.71	1.298	
Mg-25	24.9858	0.68	2.679	
Mg-26	25.9826	0.69	2.272	
Al-27	26.9915	0.68	1.069	
V-51	50.994	0.69	1.570	
Co-59	58.9532	0.71	1.213	
In-113	112.9141	0.71	2.138	
In-115	114.9139	0.69	1.014	
Ba-137	136.9158	0.72	0.790	
Ce-140	139.9054	0.72	0.881	
Pb-206	205.9745	0.72	2.882	
Pb-207	206.9859	0.68	1.441	
Pb-208	207.9866	0.73	0.824	
Th-232	232.0581	0.73	0.554	
U-238	238.0708	0.72	0.726	

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICP-MS Instrument ID: METICPMS2 Analysis Date: 11/01/16

Lab ID: ITUNE 200-110848/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	8.9722	0.75	1.279	
Mg-24	23.975	0.73	0.819	
Mg-25	24.9758	0.73	2.592	
Mg-26	25.9826	0.72	2.349	
Al-27	26.9915	0.71	0.989	
V-51	50.984	0.71	0.343	
Co-59	58.9432	0.72	0.282	
In-113	112.8941	0.72	0.986	
In-115	114.8939	0.73	0.538	
Ba-137	136.8858	0.74	1.672	
Ce-140	139.8754	0.75	0.762	
Pb-206	205.9445	0.77	1.583	
Pb-207	206.9459	0.72	1.464	
Pb-208	207.9466	0.77	0.987	
Th-232	232.0181	0.76	0.488	
U-238	238.0308	0.75	0.697	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/18/2016 End Date: 10/18/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
STD0 200-110334/2 I	12:40	100		100		100		100		100	
STD1 200-110334/3 I	12:44	105		105		104		103		102	
STD2 200-110334/4 I	12:47	98		98		99		98		98	
STD3 200-110334/5 I	12:50	98		99		97		96		98	
STD4 200-110334/6 I	12:54	102		104		100		99		102	
STD5 200-110334/7 I	12:57	101		106		99		101		103	
ICV 200-110334/8	13:02	93		98		99		98		98	
ICVL 200-110334/9	13:08	96		103		104		103		100	
ICBIS 200-110334/10	13:19	101		108		109		107		103	
ICSA 200-110334/11	13:25	96		111		108		108		108	
ICSAB 200-110334/12	13:31	90		111		108		109		111	
CCV 200-110334/13	13:37	86		97		101		100		101	
CCB 200-110334/14	13:42	88		100		103		102		100	
MB 200-110229/1-A	13:48	97		106		109		107		104	
LCS 200-110229/2-A	13:54	91		101		102		101		101	
200-35736-1	14:11	108		203		521		134		172	
200-35736-2	14:17	107		197		477		133		165	
200-35736-3	14:22	105		200		505		132		168	
200-35736-4	14:28	110		202		483		136		165	
200-35736-5	14:34	106		193		436		133		158	
200-35736-5 SD	14:39	104		152		202		133		130	
CCV 200-110334/25	14:45	89		110		113		109		105	
CCB 200-110334/26	14:51	94		117		116		114		106	
CCVL 200-110334/27	14:57	97		119		119		116		107	
200-35736-5 PDS	15:02	107		181		399		124		148	
200-35736-5 MS	15:08	106		181		390		126		148	
200-35736-5 MSD	15:14	105		189		424		127		153	
200-35736-6	15:20	104		204		552		128		166	
200-35736-7	15:25	106		193		454		131		157	
200-35736-8	15:31	107		189		449		131		159	
200-35736-9	15:37	103		186		424		127		149	
200-35736-10	15:42	102		189		433		128		153	
200-35736-11	15:48	98		150		310		119		132	
200-35736-11 SD	15:54	93		127		154		116		110	
CCV 200-110334/38	16:00	85		106		104		103		97	
CCB 200-110334/39	16:05	91		114		109		107		99	
CCVL 200-110334/40	16:11	93		116		111		107		99	
200-35736-11 PDS	16:17	94		138		277		107		120	
200-35736-11 MS	16:23	92		140		299		107		122	
200-35736-11 MSD	16:28	95		144		287		109		122	
200-35736-12	16:34	87		131		258		105		116	
MB 200-110239/1-A	16:40	95		127		118		112		105	

FORM XV - IN

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/18/2016 End Date: 10/18/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
LCS 200-110239/2-A	16:46	86		109		102		99		95	
200-35736-14	17:03	97		126		116		110		102	
200-35736-14 SD	17:08	97		126		115		109		101	
CCV 200-110334/51	17:14	83		102		95		92		88	
CCB 200-110334/52	17:20	90		107		100		96		90	
CCVL 200-110334/53	17:26	91		110		101		98		91	
200-35736-14 PDS	17:36	88		106		97		94		89	
200-35736-14 MS	17:42	89		106		95		92		89	
200-35736-14 MSD	17:48	89		107		95		93		89	
CCV 200-110334/58	17:54	87		102		93		91		87	
CCB 200-110334/59	17:59	92		108		97		93		89	
CCVL 200-110334/60	18:05	92		111		98		95		90	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/18/2016 End Date: 10/18/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
STD0 200-110334/2 I	12:40	100									
STD1 200-110334/3 I	12:44	100									
STD2 200-110334/4 I	12:47	97									
STD3 200-110334/5 I	12:50	96									
STD4 200-110334/6 I	12:54	99									
STD5 200-110334/7 I	12:57	98									
ICV 200-110334/8	13:02	97									
ICVL 200-110334/9	13:08	98									
ICBIS 200-110334/10	13:19	101									
ICSA 200-110334/11	13:25	102									
ICSAB 200-110334/12	13:31	104									
CCV 200-110334/13	13:37	99									
CCB 200-110334/14	13:42	99									
MB 200-110229/1-A	13:48	102									
LCS 200-110229/2-A	13:54	98									
200-35736-1	14:11	129									
200-35736-2	14:17	125									
200-35736-3	14:22	125									
200-35736-4	14:28	128									
200-35736-5	14:34	122									
200-35736-5 SD	14:39	116									
CCV 200-110334/25	14:45	99									
CCB 200-110334/26	14:51	102									
CCVL 200-110334/27	14:57	104									
200-35736-5 PDS	15:02	116									
200-35736-5 MS	15:08	117									
200-35736-5 MSD	15:14	119									
200-35736-6	15:20	120									
200-35736-7	15:25	120									
200-35736-8	15:31	119									
200-35736-9	15:37	117									
200-35736-10	15:42	116									
200-35736-11	15:48	109									
200-35736-11 SD	15:54	101									
CCV 200-110334/38	16:00	92									
CCB 200-110334/39	16:05	96									
CCVL 200-110334/40	16:11	94									
200-35736-11 PDS	16:17	99									
200-35736-11 MS	16:23	101									
200-35736-11 MSD	16:28	100									
200-35736-12	16:34	98									
MB 200-110239/1-A	16:40	99									

FORM XV - IN

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/18/2016 End Date: 10/18/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
LCS 200-110239/2-A	16:46	91									
200-35736-14	17:03	97									
200-35736-14 SD	17:08	96									
CCV 200-110334/51	17:14	86									
CCB 200-110334/52	17:20	89									
CCVL 200-110334/53	17:26	90									
200-35736-14 PDS	17:36	87									
200-35736-14 MS	17:42	86									
200-35736-14 MSD	17:48	86									
CCV 200-110334/58	17:54	85									
CCB 200-110334/59	17:59	87									
CCVL 200-110334/60	18:05	89									

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/19/2016 End Date: 10/19/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
STD0 200-110361/2 I	10:04	100		100		100		100		100	
STD1 200-110361/3 I	10:09	97		99		100		98		98	
STD2 200-110361/4 I	10:13	90		91		93		91		92	
STD3 200-110361/5 I	10:17	88		85		89		88		90	
STD4 200-110361/6 I	10:21	85		81		84		83		86	
STD5 200-110361/7 I	10:27	81		76		80		80		83	
ICV 200-110361/8	10:33	75		72		79		78		79	
ICVL 200-110361/9	10:38	77		73		79		78		79	
ICBIS 200-110361/10	10:44	76		72		79		79		78	
ICSA 200-110361/11	10:50	75		79		84		84		87	
ICSAB 200-110361/12	10:56	68		74		80		82		86	
CCV 200-110361/13	11:01	61		61		71		73		75	
CCB 200-110361/14	11:07	66		64		73		75		75	
200-35736-11	11:13	74		87		207		82		99	
200-35736-11 SD	11:18	72		79		109		85		86	
200-35736-11 PDS	11:24	74		92		211		86		102	
200-35736-11 MS	11:30	73		94		228		85		103	
200-35736-11 MSD	11:36	73		94		219		87		104	
200-35736-12	11:41	68		88		198		84		97	
MB 200-110239/1-A	11:47	71		81		90		87		83	
LCS 200-110239/2-A	11:53	67		72		79		79		77	
CCV 200-110361/25	12:10	64		65		72		71		71	
CCB 200-110361/26	12:16	68		68		75		75		73	
CCVL 200-110361/27	12:21	68		71		77		76		74	
200-35736-14	12:27	71		73		78		77		75	
200-35736-14 SD	12:33	71		72		79		77		76	
200-35736-14 PDS	12:39	70		71		75		74		73	
200-35736-14 MS	12:44	69		70		74		72		72	
200-35736-14 MSD	12:49	68		70		73		73		72	
CCV 200-110361/33	12:55	64		63		69		68		69	
CCB 200-110361/34	13:00	67		67		72		71		70	
CCVL 200-110361/35	13:06	69		68		72		70		69	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICP-MS Instrument ID: METICPMS2 Start Date: 10/19/2016 End Date: 10/19/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
STD0 200-110361/2 I	10:04	100									
STD1 200-110361/3 I	10:09	99									
STD2 200-110361/4 I	10:13	93									
STD3 200-110361/5 I	10:17	90									
STD4 200-110361/6 I	10:21	87									
STD5 200-110361/7 I	10:27	84									
ICV 200-110361/8	10:33	81									
ICVL 200-110361/9	10:38	80									
ICBIS 200-110361/10	10:44	81									
ICSA 200-110361/11	10:50	86									
ICSAB 200-110361/12	10:56	84									
CCV 200-110361/13	11:01	78									
CCB 200-110361/14	11:07	79									
200-35736-11	11:13	88									
200-35736-11 SD	11:18	86									
200-35736-11 PDS	11:24	90									
200-35736-11 MS	11:30	89									
200-35736-11 MSD	11:36	90									
200-35736-12	11:41	87									
MB 200-110239/1-A	11:47	84									
LCS 200-110239/2-A	11:53	78									
CCV 200-110361/25	12:10	74									
CCB 200-110361/26	12:16	76									
CCVL 200-110361/27	12:21	78									
200-35736-14	12:27	77									
200-35736-14 SD	12:33	76									
200-35736-14 PDS	12:39	74									
200-35736-14 MS	12:44	74									
200-35736-14 MSD	12:49	75									
CCV 200-110361/33	12:55	71									
CCB 200-110361/34	13:00	73									
CCVL 200-110361/35	13:06	73									

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICP-MS Instrument ID: METICPMS2 Start Date: 11/01/2016 End Date: 11/01/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
STD0 200-110848/2 I	10:50	100		100		100		100		100	
STD1 200-110848/3 I	10:55	104		108		106		104		102	
STD2 200-110848/4 I	11:00	103		110		106		104		102	
STD3 200-110848/5 I	11:06	97		97		97		95		94	
STD4 200-110848/6 I	11:12	95		93		92		92		93	
STD5 200-110848/7 I	11:17	92		90		88		89		91	
ICV 200-110848/8	11:23	92		88		89		88		89	
ICVL 200-110848/9	11:29	98		91		94		92		91	
ICBIS 200-110848/10	11:35	93		90		93		92		89	
ICSA 200-110848/11	11:40	97		107		105		104		105	
ICSAB 200-110848/12	11:46	91		102		102		101		104	
CCV 200-110848/13	11:52	80		76		81		82		86	
CCB 200-110848/14	11:57	82		77		83		83		84	
MB 200-110769/1-A	12:03	90		84		89		89		88	
LCS 200-110769/2-A	12:09	91		87		92		91		91	
CCV 200-110848/25	13:00	74		71		80		79		81	
CCB 200-110848/26	13:06	77		76		84		82		82	
CCVL 200-110848/27	13:12	86		82		89		88		87	
200-35736-13	13:40	92		166		537		105		157	
CCV 200-110848/34	13:52	76		74		80		80		81	
CCB 200-110848/35	13:58	80		78		86		84		83	
CCVL 200-110848/36	14:03	86		83		89		87		87	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

ICP-MS Instrument ID: METICPMS2 Start Date: 11/01/2016 End Date: 11/01/2016

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
STD0 200-110848/2 I	10:50	100									
STD1 200-110848/3 I	10:55	101									
STD2 200-110848/4 I	11:00	99									
STD3 200-110848/5 I	11:06	96									
STD4 200-110848/6 I	11:12	93									
STD5 200-110848/7 I	11:17	91									
ICV 200-110848/8	11:23	89									
ICVL 200-110848/9	11:29	91									
ICBIS 200-110848/10	11:35	90									
ICSA 200-110848/11	11:40	99									
ICSAB 200-110848/12	11:46	99									
CCV 200-110848/13	11:52	87									
CCB 200-110848/14	11:57	86									
MB 200-110769/1-A	12:03	88									
LCS 200-110769/2-A	12:09	90									
CCV 200-110848/25	13:00	83									
CCB 200-110848/26	13:06	84									
CCVL 200-110848/27	13:12	88									
200-35736-13	13:40	114									
CCV 200-110848/34	13:52	82									
CCB 200-110848/35	13:58	83									
CCVL 200-110848/36	14:03	87									

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110229 Batch Start Date: 10/17/16 10:03 Batch Analyst: Kirk, Matthew D

Batch Method: 3050B Batch End Date: 10/17/16 14:25

Lab Sample ID	Client Sample ID	Method Chain	Basis	CalcMsg	InitialAmount	FinalAmount	ME6020CALi_A 00022	ME6020CALi_B 00019	
MB 200-110229/1		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL			
LCS 200-110229/2		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL	1 mL	1 mL	
200-35736-A-1	PE1016-P1SCD-REF 1-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.12 g	100.00 mL			
200-35736-A-2	PE1016-P1SCD-REF 1-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.35 g	100.00 mL			
200-35736-A-3	PE1016-P1SCD-REF 2-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.12 g	100.00 mL			
200-35736-A-4	PE1016-P1SCD-REF 2-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.33 g	100.00 mL			
200-35736-A-5	PE1016-P1SCD-REF 3-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.09 g	100.00 mL			
200-35736-A-5 MS	PE1016-P1SCD-REF 3-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.05 g	100.00 mL	1 mL	1 mL	
200-35736-A-5 MSD	PE1016-P1SCD-REF 3-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.17 g	100.00 mL	1 mL	1 mL	
200-35736-A-6	PE1016-P1SCD-REF 3-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.47 g	100.00 mL			
200-35736-A-7	PE1016-P1SCD-REF 4-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.15 g	100.00 mL			
200-35736-A-8	PE1016-P1SCD-REF 4-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.05 g	100.00 mL			
200-35736-A-9	PE1016-P1SCD-REF 5-A-0003IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.32 g	100.00 mL			
200-35736-A-10	PE1016-P1SCD-REF 5-B-0003IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.25 g	100.00 mL			
200-35736-A-11	PE1016-P1SCD-05-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.10 g	100.00 mL			
200-35736-A-11 MS	PE1016-P1SCD-05-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.14 g	100.00 mL	1 mL	1 mL	
200-35736-A-11 MSD	PE1016-P1SCD-05-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.08 g	100.00 mL	1 mL	1 mL	
200-35736-A-12	PE1016-P1SCD-05-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.17 g	100.00 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110229 Batch Start Date: 10/17/16 10:03 Batch Analyst: Kirk, Matthew D

Batch Method: 3050B Batch End Date: 10/17/16 14:25

Batch Notes	
Balance ID	L92017
First End time	1425
Hydrogen Peroxide ID	975367
Lot # of hydrochloric acid	933665
Lot # of Nitric Acid	1:1 978119 Conc. 974279
Hot Block ID	B6
Nominal Amount Used	1.0g g
Oven, Bath or Block Temperature 1	94 Degrees C
Pipette ID	HJ17902
Analyst ID - Reagent Drop Witness	ERJ
Perform Calculation (0=No, 1=Yes)	0
First Start time	1200
Thermometer ID	97, CF=-1
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	95 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110239 Batch Start Date: 10/17/16 12:26 Batch Analyst: Kirk, Matthew D

Batch Method: 3010A Batch End Date: 10/17/16 15:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	ME6020CALi_A 00022	ME6020CALi_B 00019	
MB 200-110239/1		3010A, 6020A			50.00 mL	50.00 mL			
LCS 200-110239/2		3010A, 6020A			50.00 mL	50.00 mL	0.5 mL	0.5 mL	
200-35736-A-14	PE1016-P1SCD-BLK -2-101116	3010A, 6020A	T	<2	50.00 mL	50.00 mL			
200-35736-A-14 MS	PE1016-P1SCD-BLK -2-101116	3010A, 6020A	T	<2	50.00 mL	50.00 mL	0.5 mL	0.5 mL	
200-35736-A-14 MSD	PE1016-P1SCD-BLK -2-101116	3010A, 6020A	T	<2	50.00 mL	50.00 mL	0.5 mL	0.5 mL	

Batch Notes	
First End time	1530
Lot # of hydrochloric acid	1:1 933665
Lot # of Nitric Acid	974279
Hot Block ID	B5
Oven, Bath or Block Temperature 1	93 Degrees C
pH Paper ID	HC682547
Pipette ID	129654
Analyst ID - Spike Witness Analyst	JWM
First Start time	1230
Thermometer ID	73, CF=-2
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	95 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110769 Batch Start Date: 10/31/16 11:39 Batch Analyst: Kirk, Matthew D

Batch Method: 3050B Batch End Date: 10/31/16 15:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	CalcMsg	InitialAmount	FinalAmount	ME6020CALi_A 00022	ME6020CALi_B 00019	
MB 200-110769/1		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL			
LCS 200-110769/2		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL	1 mL	1 mL	
200-35736-A-13	PE1016-P1SCD-REF 3-A-0006IN-D	3050B, 6020A	T	CALC NOT SET TO RUN	1.42 g	100.00 mL			

Batch Notes	
Balance ID	L92017
First End time	1515
Hydrogen Peroxide ID	984249
Lot # of hydrochloric acid	933665
Lot # of Nitric Acid	1:1 978119 Conc. 983882
Hot Block ID	B2
Nominal Amount Used	1.00g g
Oven, Bath or Block Temperature 1	93 Degrees C
Pipette ID	129654
Analyst ID - Reagent Drop Witness	KNK
Perform Calculation (0=No, 1=Yes)	0
First Start time	1200
Thermometer ID	153, CF=-1
Digestion Tube/Cup ID	252941-0026
Uncorrected Temperature	94 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110242 Batch Start Date: 10/17/16 12:52 Batch Analyst: Kirk, Matthew D

Batch Method: 7470A Batch End Date: 10/17/16 15:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	mehgccvw 01052	MEHGICVw 00085	
IC 200-110242/1	S01	7470A, 7470A			50.00 mL	50.00 mL			
IC 200-110242/2	S02	7470A, 7470A			50.00 mL	50.00 mL	0.1 mL		
IC 200-110242/3	S03	7470A, 7470A			50.00 mL	50.00 mL	0.25 mL		
IC 200-110242/4	S04	7470A, 7470A			50.00 mL	50.00 mL	0.5 mL		
IC 200-110242/5	S05	7470A, 7470A			50.00 mL	50.00 mL	2.5 mL		
IC 200-110242/6	S06	7470A, 7470A			50.00 mL	50.00 mL	5 mL		
ICV 200-110242/7	ICV	7470A, 7470A			50.00 mL	50.00 mL		5 mL	
ICB 200-110242/8	ICB	7470A, 7470A			50.00 mL	50.00 mL			
CCV 200-110242/9	CCV	7470A, 7470A			50.00 mL	50.00 mL	2.5 mL		
CCB 200-110242/10	CCB	7470A, 7470A			50.00 mL	50.00 mL			
MB 200-110242/11		7470A, 7470A			50.00 mL	50.00 mL			
LCS 200-110242/12		7470A, 7470A			50.00 mL	50.00 mL	1.25 mL		
200-35736-A-14	PE1016-P1SCD-BLK-2-101116	7470A, 7470A	T	<2	50.00 mL	50.00 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110242 Batch Start Date: 10/17/16 12:52 Batch Analyst: Kirk, Matthew D

Batch Method: 7470A Batch End Date: 10/17/16 15:15

Batch Notes	
Hydroxylamine Hydrochloride ID	981762
Batch Comment	LCS+ MS/MSD inadvertantly spiked with 1.25mL
Digestion End Time	1515
Digestion Start Time	1300
Sulfuric Acid Lot Number	921859
Lot # of hydrochloric acid	969548
Lot # of Nitric Acid	974279
Hot Block ID	B4
Potassium Persulfate ID	921392
Potassium Permanganate ID	971259
Oven, Bath or Block Temperature 1	93 Celsius
pH Paper ID	HC682547
Pipette ID	HJ17902
Stannous Chloride ID	978394
SOP Number	BR-ME-015 r16.3
Analyst ID - Spike Witness Analyst	KSH
Temperature	93
Thermometer ID	36, CF=-2
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	95 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110231 Batch Start Date: 10/17/16 10:05 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/17/16 13:10

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	mehgccvw 01052	MEHGICVw 00085		
IC 200-110231/1	S01	7471B, 7471B		100.00 mL	100.00 mL				
IC 200-110231/2	S02	7471B, 7471B		100.00 mL	100.00 mL	0.2 mL			
IC 200-110231/3	S03	7471B, 7471B		100.00 mL	100.00 mL	0.5 mL			
IC 200-110231/4	S04	7471B, 7471B		100.00 mL	100.00 mL	1 mL			
IC 200-110231/5	S05	7471B, 7471B		100.00 mL	100.00 mL	5 mL			
IC 200-110231/6	S06	7471B, 7471B		100.00 mL	100.00 mL	10 mL			
ICV 200-110231/7	ICV	7471B, 7471B		100.00 mL	100.00 mL		10 mL		
ICB 200-110231/8	ICB	7471B, 7471B		100.00 mL	100.00 mL				
CCV 200-110231/9	CCV	7471B, 7471B		100.00 mL	100.00 mL	5 mL			
CCB 200-110231/10	CCB	7471B, 7471B		100.00 mL	100.00 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110231 Batch Start Date: 10/17/16 10:05 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/17/16 13:10

Batch Notes	
Hydroxylamine Hydrochloride ID	981762
Balance ID	L92017
Digestion End Time	1310
Digestion Start Time	1210
Lot # of hydrochloric acid	968481
Lot # of Nitric Acid	974279
Hot Block ID	B4\B1
Potassium Permanganate ID	971259
Nominal Amount Used	0.60g g
Oven, Bath or Block Temperature 1	94\95 Celsius
Pipette ID	HJ17902 and 129654
Stannous Chloride ID	978394
SOP Number	BR-ME-004 r15.1
Analyst ID - Spike Witness Analyst	ERJ
Thermometer ID	74\36 (CF=0\-2)
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	94\93 Celsius

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110232 Batch Start Date: 10/17/16 10:07 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/17/16 13:10

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	mehgccvw 01052			
MB 200-110232/1		7471B, 7471B		0.50 g	100.00 mL				
LCS 200-110232/2		7471B, 7471B		0.50 g	100.00 mL	2.5 mL			
200-35736-A-1	PE1016-P1SCD-REF 1-A-0006IN	7471B, 7471B	T	0.55 g	100.00 mL				
200-35736-A-2	PE1016-P1SCD-REF 1-B-0006IN	7471B, 7471B	T	0.56 g	100.00 mL				
200-35736-A-3	PE1016-P1SCD-REF 2-A-0006IN	7471B, 7471B	T	0.50 g	100.00 mL				
200-35736-A-4	PE1016-P1SCD-REF 2-B-0006IN	7471B, 7471B	T	0.52 g	100.00 mL				
200-35736-A-5	PE1016-P1SCD-REF 3-A-0006IN	7471B, 7471B	T	0.52 g	100.00 mL				
200-35736-A-5 MS	PE1016-P1SCD-REF 3-A-0006IN	7471B, 7471B	T	0.57 g	100.00 mL	2.5 mL			
200-35736-A-5 MSD	PE1016-P1SCD-REF 3-A-0006IN	7471B, 7471B	T	0.54 g	100.00 mL	2.5 mL			
200-35736-A-6	PE1016-P1SCD-REF 3-B-0006IN	7471B, 7471B	T	0.55 g	100.00 mL				
200-35736-A-7	PE1016-P1SCD-REF 4-A-0006IN	7471B, 7471B	T	0.58 g	100.00 mL				
200-35736-A-8	PE1016-P1SCD-REF 4-B-0006IN	7471B, 7471B	T	0.54 g	100.00 mL				
200-35736-A-9	PE1016-P1SCD-REF 5-A-0003IN	7471B, 7471B	T	0.59 g	100.00 mL				
200-35736-A-10	PE1016-P1SCD-REF 5-B-0003IN	7471B, 7471B	T	0.52 g	100.00 mL				
200-35736-A-11	PE1016-P1SCD-05-A-0006IN	7471B, 7471B	T	0.57 g	100.00 mL				
200-35736-A-11 MS	PE1016-P1SCD-05-A-0006IN	7471B, 7471B	T	0.55 g	100.00 mL	2.5 mL			
200-35736-A-11 MSD	PE1016-P1SCD-05-A-0006IN	7471B, 7471B	T	0.59 g	100.00 mL	2.5 mL			
200-35736-A-12	PE1016-P1SCD-05-B-0006IN	7471B, 7471B	T	0.52 g	100.00 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110232 Batch Start Date: 10/17/16 10:07 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/17/16 13:10

Batch Notes	
Hydroxylamine Hydrochloride ID	981762
Balance ID	L92017
Digestion End Time	1310
Digestion Start Time	1210
Lot # of hydrochloric acid	968481
Lot # of Nitric Acid	974279
Hot Block ID	B8
Potassium Permanganate ID	971258
Nominal Amount Used	0.60g g
Oven, Bath or Block Temperature 1	95 Celsius
Pipette ID	HJ17902
Stannous Chloride ID	978394
SOP Number	BR-ME-004 r15.1
Analyst ID - Spike Witness Analyst	ERJ
Thermometer ID	170 (CF=0)
Digestion Tube/Cup ID	246757-9884
Uncorrected Temperature	95 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110770 Batch Start Date: 10/31/16 11:40 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/31/16 12:55

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	mehgccvw 01056	MEHGICVw 00086		
IC 200-110770/1	S01	7471B, 7471B		100.00 mL	100.00 mL				
IC 200-110770/2	S02	7471B, 7471B		100.00 mL	100.00 mL	0.2 mL			
IC 200-110770/3	S03	7471B, 7471B		100.00 mL	100.00 mL	0.5 mL			
IC 200-110770/4	S04	7471B, 7471B		100.00 mL	100.00 mL	1 mL			
IC 200-110770/5	S05	7471B, 7471B		100.00 mL	100.00 mL	5 mL			
IC 200-110770/6	S06	7471B, 7471B		100.00 mL	100.00 mL	10 mL			
ICV 200-110770/7	ICV	7471B, 7471B		100.00 mL	100.00 mL		10 mL		
ICB 200-110770/8	ICB	7471B, 7471B		100.00 mL	100.00 mL				
CCV 200-110770/9	CCV	7471B, 7471B		100.00 mL	100.00 mL	5 mL			
CCB 200-110770/10	CCB	7471B, 7471B		100.00 mL	100.00 mL				
MB 200-110770/11		7471B, 7471B		0.50 g	100.00 mL				
LCS 200-110770/12		7471B, 7471B		0.50 g	100.00 mL	2.5 mL			
200-35736-A-13	PE1016-P1SCD-REF 3-A-0006IN-D	7471B, 7471B	T	0.58 g	100.00 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110770 Batch Start Date: 10/31/16 11:40 Batch Analyst: Kirk, Matthew D

Batch Method: 7471B Batch End Date: 10/31/16 12:55

Batch Notes	
Hydroxylamine Hydrochloride ID	981762
Balance ID	L92017
Digestion End Time	1230
Digestion Start Time	1145
Lot # of hydrochloric acid	968479 (10% 982732)
Lot # of Nitric Acid	983882
Hot Block ID	B1
Potassium Permanganate ID	985839
Nominal Amount Used	0.6g g
Oven, Bath or Block Temperature 1	94 Celsius
Pipette ID	HJ17902 and 129654
Stannous Chloride ID	978394
SOP Number	BR-ME-005 r.15.1
Analyst ID - Spike Witness Analyst	VTP
Thermometer ID	74, CF=0
Digestion Tube/Cup ID	252941-0026
Uncorrected Temperature	94 Celsius

Basis	Basis Description
T	Total/NA

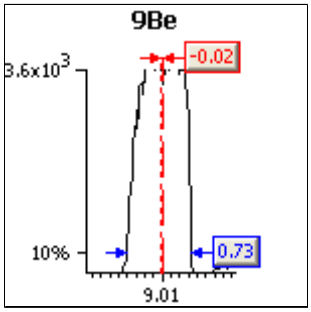
The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

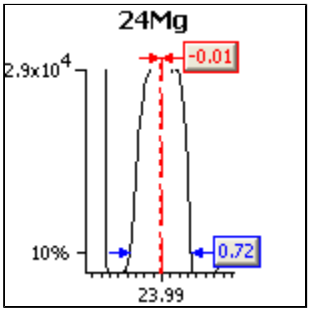
Performance Report

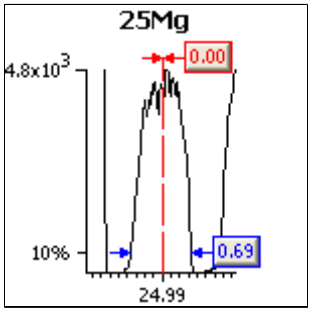
Sample details
Sample name : ITUNE
Acquired at : 10/18/2016 09:54:25 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

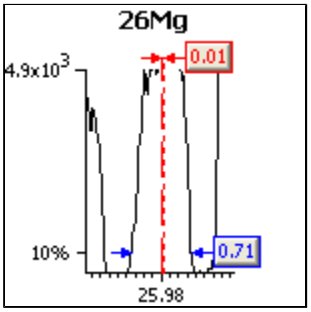
Mass Calibration verification

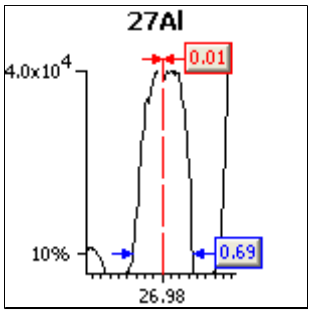
Acquisition parameters
Sweeps : 20
Dwell : 1.0 mSecs
Point spacing : 0.01 amu
Peak width measured at 10% of the peak maximum

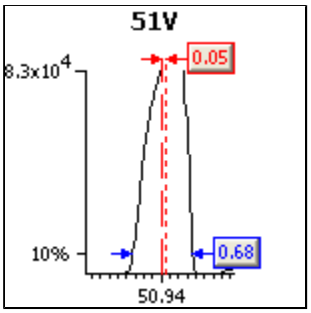


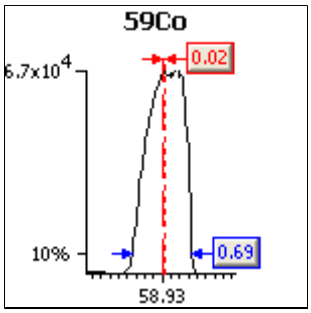


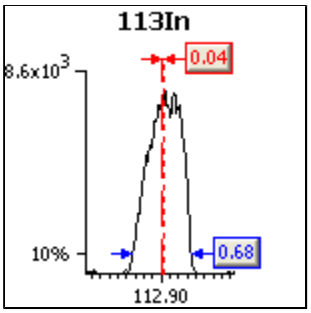


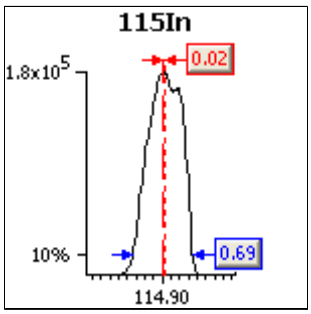


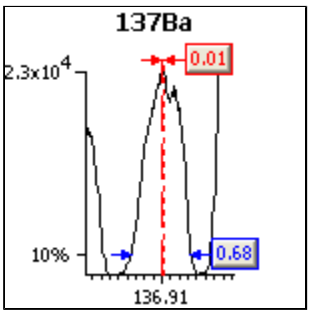


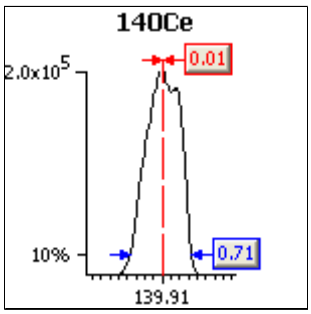


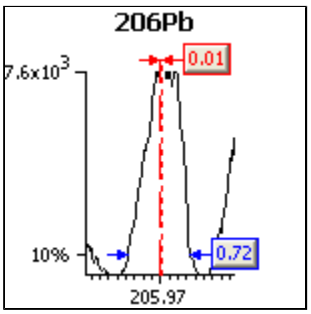


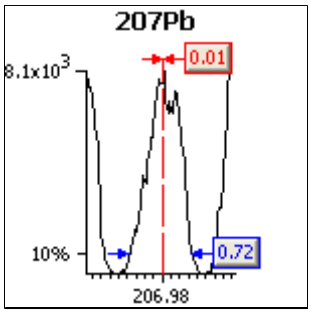


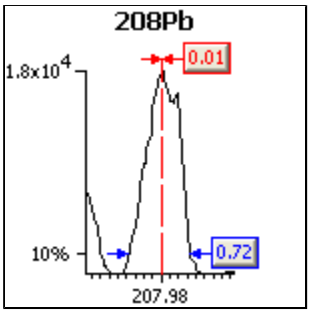


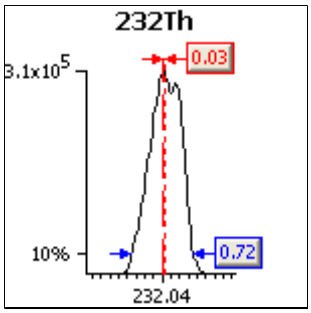


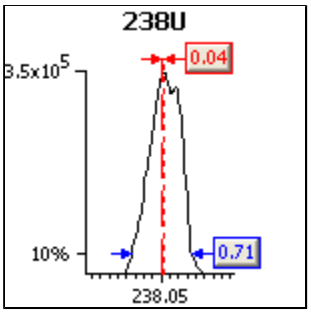












Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
9Be	0.90	0.65	0.10	0.73	-0.02
24Mg	0.90	0.65	0.10	0.72	-0.01

25Mg	0.90	0.65	0.10	0.69	0.00
26Mg	0.90	0.65	0.10	0.71	0.01
27Al	0.90	0.65	0.10	0.69	0.01
51V	0.90	0.65	0.10	0.68	0.05
59Co	0.90	0.65	0.10	0.69	0.02
113In	0.90	0.65	0.10	0.68	0.04
115In	0.90	0.65	0.10	0.69	0.02
137Ba	0.90	0.65	0.10	0.68	0.01
140Ce	0.90	0.65	0.10	0.71	0.01
206Pb	0.90	0.65	0.10	0.72	0.01
207Pb	0.90	0.65	0.10	0.72	0.01
208Pb	0.90	0.65	0.10	0.72	0.01
232Th	0.90	0.65	0.10	0.72	0.03
238U	0.90	0.65	0.10	0.71	0.04

Sample details
Sample name : ITUNE
Acquired at : 10/18/2016 09:54:25 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Tune conditions

Major	
Extraction	-110
Lens 1	-4.1
Focus	18.0
D1	-43.9
Pole Bias	1.0
Hexapole Bias	-3.0
Nebuliser	0.74
Sampling Depth	133

Minor	
Lens 2	-39.2
Lens 3	-177.3
Forward power	1404
Horizontal	70
Vertical	522
D2	-158
DA	-40.8
Cool	13.0
Auxiliary	0.90

Global	
Standard resolution	135
High resolution	115
Analogue Detector	2353
PC Detector	1196

Add. Gases	
CCT1	0.00
CCT2	0.00

Sensitivity and stability results

Acquisition parameters
Sweeps : 50

Run	Time	8Bkg	9Be	24Mg	25Mg	26Mg	27Al	51V	59Co	113In
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Countrate	-	>100	>100	>100	>100	>100	>100	>100	>100
1	09:55:21 AM	0.100	4056.494	31894.489	4410.584	5446.890	40144.289	87613.681	66847.791	7925.884
2	09:55:55 AM	0.100	4004.481	30994.794	4300.555	5184.806	40102.188	86123.947	66476.309	7617.741
3	09:56:29 AM	0.000	4008.482	30732.308	4382.576	5110.783	40186.390	85963.119	66572.693	7937.890
4	09:57:03 AM	0.100	4004.481	30966.741	4382.576	5276.835	40092.164	85985.233	66325.711	7647.754
5	09:57:37 AM	0.000	4102.505	31403.558	4212.532	5024.757	39777.411	86208.381	67116.869	7731.793
x		0.060	4035.288	31198.378	4337.765	5208.814	40060.488	86378.872	66667.874	7772.212
σ		0.05	43.54	457.98	81.22	162.30	162.60	697.60	314.96	151.70
%RSD		91.287	1.079	1.468	1.872	3.116	0.406	0.808	0.472	1.952

Run	Time	115In	137Ba	140Ce	156Ce O	206Pb	207Pb	208Pb	220Bkg	232Th
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	5.0%	5.0%	5.0%	-	5.0%	5.0%	5.0%	-	5.0%
	Countrate	>100	>100	>100	-	>100	>100	>100	-	>100
1	09:55:21 AM	180866.08	22725.483	206667.45	1300.051	8186.010	7449.665	17619.308	0.000	305871.20
2	09:55:55 AM	180682.10	22689.434	208018.09	1314.052	8081.959	7483.680	17699.393	0.000	306032.11
3	09:56:29 AM	182125.69	22949.790	207540.19	1314.052	7985.913	7453.666	17288.963	0.000	307486.51
4	09:57:03 AM	180591.12	23272.237	209366.83	1316.052	7985.913	7417.650	17479.161	0.000	308994.01
5	09:57:37 AM	181717.26	23061.945	209459.99	1344.054	7965.903	7237.571	17889.596	0.000	307523.18
x		181196.45	22939.778	208210.51	1317.652	8041.140	7408.446	17595.284	0.000	307181.40
σ		684.63	241.94	1200.59	16.09	92.76	98.34	226.58	0.00	1277.98
%RSD		0.378	1.055	0.577	1.221	1.154	1.327	1.288	0.000	0.416

Run	Time	238U
Dwell (mSecs)		0.0
Limits	%RSD	5.0%
	Countrate	>100
1	09:55:21 AM	335393.04
2	09:55:55 AM	336135.78
3	09:56:29 AM	335172.67
4	09:57:03 AM	336515.32
5	09:57:37 AM	336094.97
x		335862.36
σ		559.28
%RSD		0.167

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0200
1	09:55:21 AM	0.006
2	09:55:55 AM	0.006

3	09:56:29 AM	0.006
4	09:57:03 AM	0.006
5	09:57:37 AM	0.006
x		0.0063
σ		0.00
%RSD		0.8358

Result : The performance report passed.

Experiment Details

Description	PlasmaLab Template BlankExperiment
Template Filename	C:\Program Files\Thermo Fisher\PlasmaLab\TEMPLATES\6020A.tet
Created By User	user
Analyte Database	Default.tea
Creation Timestamp	8/29/2003 01:55:15 PM
Last Edited By	INORG-User
Last Edit Timestamp	10/19/2016 09:26:35 AM
Instrument Detector	Simultaneous
Database Version	3.51
Acquisition Mode	Unknown

Numerical Results report key (text indicates meaning)

Blue text indicates that cell is a statistic.
Underlining indicates that a data warning flag is set.

Column headings	Result cells	Data warning flags
No flag	Internal Standard	I - Invalid calibration
Semi Quant	Excluded	T - Tripped
Standard Addition	QC Warning	F - Interference correction failed
Multi Element	QC Failure	M - Result over max
	Transient TRA only:	V - Valley integration failed
	Peak Not Found	D - Different method used
	Manually Edited	
	Merged Peak	

Setup

Survey Scan Setup

Sweeps	10
Dwell Time	600
Channels Per Mass	10
Acquisition Duration	13247

Main Run Setup

Main Run	Peak Jumping
Sweeps	20
Dwell Time	10000
Channels Per Mass	1
Acquisition Duration	18211
Channel Spacing	0.02

Survey Scan Regions

Start AMU	End AMU	Channels	Dwell ms	Resolution

4.59	11.41	68	600	Standard
22.59	27.41	48	600	Standard
28.59	29.41	8	600	Standard
30.59	31.41	8	600	Standard
32.59	33.41	8	600	Standard
38.59	39.41	8	600	Standard
42.59	79.41	368	600	Standard
80.59	245.50	1649	600	Standard

Peak Jump Regions

Analyte	Channels	Dwell ms	Resolution
6Li	1	5000	Standard
7Li	1	5000	Standard
9Be	1	20000	Standard
11B	1	10000	Standard
23Na	1	5000	Standard
25Mg	1	5000	Standard
26Mg	1	5000	Standard
27Al	1	10000	Standard
39K	1	5000	Standard
43Ca	1	10000	Standard
44Ca	1	5000	Standard
45Sc	1	5000	Standard
47Ti	1	10000	Standard
51V	1	10000	Standard
52Cr	1	10000	Standard
53Cl O	1	10000	Standard
55Mn	1	10000	Standard
56Fe	1	10000	Standard
59Co	1	10000	Standard
60Ni	1	10000	Standard
65Cu	1	10000	Standard
66Zn	1	10000	Standard
75As	1	50000	Standard
77Ar Cl	1	50000	Standard
82Se	1	100000	Standard
83Kr	1	100000	Standard
84Kr	1	10000	Standard
88Sr	1	10000	Standard
89Y	1	5000	Standard
98Mo	1	10000	Standard
106Cd	1	10000	Standard
107Ag	1	10000	Standard
108Mo O	1	10000	Standard
111Cd	1	10000	Standard
115In	1	5000	Standard
118Sn	1	10000	Standard
121Sb	1	10000	Standard
123Sb	1	100000	Standard
135Ba	1	10000	Standard

159Tb	1	5000	Standard
182W	1	10000	Standard
205Tl	1	10000	Standard
206Pb	1	10000	Standard
207Pb	1	10000	Standard
208Pb	1	10000	Standard
209Bi	1	5000	Standard
220Bkg	1	10000	Standard
232Th	1	10000	Standard
238U	1	10000	Standard

Calibration Technique

Use External Drift Correction - No
Calibrate by - Isotope

Symbol	Interference Correction	RSF	Calibration Method	Line Fit	Weighting	Forcing	Use for Semi-Quant	Max Error	Minimum Correlation
6Li	Yes	1.00	None				No		
7Li	Yes	1.00	None				No		
9Be	Yes	0.75	Fully-Quantified	Linear	Absolute SD	None	Yes		
11B	Yes	0.58	Fully-Quantified	Linear	Absolute SD	None	Yes		
23Na	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
25Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
26Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
27Al	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
39K	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
43Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
44Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
45Sc	Yes	1.00	None				No		
47Ti	Yes	0.99	None				No		
51V	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
52Cr	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
55Mn	Yes	0.95	Fully-Quantified	Linear	Absolute SD	None	Yes		
56Fe	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
59Co	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
60Ni	No	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
65Cu	Yes	0.90	Fully-Quantified	Linear	Absolute SD	None	Yes		
66Zn	Yes	0.38	Fully-Quantified	Linear	Absolute SD	None	Yes		
75As	Yes	0.07	Fully-Quantified	Linear	Absolute SD	None	Yes		
82Se	Yes	0.10	Fully-Quantified	Linear	Absolute SD	None	Yes		
83Kr	Yes	0.01	None				No		
84Kr	Yes	0.01	None				No		
88Sr	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
89Y	Yes	0.98	None				No		
98Mo	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
107Ag	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
106Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
111Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
115In	Yes	0.99	None				No		
118Sn	Yes	0.96	None				No		

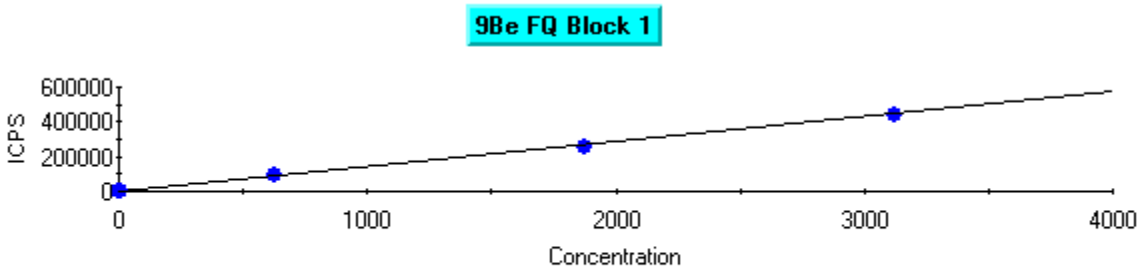
121Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
123Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
135Ba	Yes	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes
159Tb	Yes	0.99	None				No
182W	Yes	0.94	Fully-Quantified	Linear	Absolute SD	None	Yes
206Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
207Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
208Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	No
209Bi	Yes	0.92	None				No
232Th	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
238U	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
205Tl	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
220Bkg	Yes		Semi-Quantified				No
77Ar Cl	Yes		Semi-Quantified				No
53Cl O	Yes		Semi-Quantified				No
108Mo O	Yes		Semi-Quantified				No

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	STD0	Fully Quant Standard	1.000	0	1	2	144
2	STD1	Fully Quant Standard	1.000	0	1	3	144
3	STD2	Fully Quant Standard	1.000	0	1	4	144
4	STD3	Fully Quant Standard	1.000	0	1	5	144
5	STD4	Fully Quant Standard	1.000	1	1	1	144
6	STD5	Fully Quant Standard	1.000	1	1	2	144
7	ICV	QC Sample	1.000	0	1	6	144
8	ICVL	QC Sample	1.000	0	1	3	144
9	ICBIS	QC Sample	1.000	0	1	2	144
10	ICSA	QC Sample	1.000	1	1	3	144
11	ICSAB	QC Sample	1.000	1	1	4	144
12	CCV	QC Sample	1.000	0	1	5	144
13	CCB	QC Sample	1.000	0	1	2	144
14	MB 200-110229/1-A	Unknown	1.000	1	2	1	144
15	LCS 200-110229/2-A	Unknown	1.000	1	2	2	144
16	200-35680-A-7-B	Unknown	1.000	1	2	3	144
17	200-35680-A-14-D	Unknown	1.000	1	2	4	144
18	200-35736-A-1-A	Unknown	1.000	1	2	5	144
19	200-35736-A-2-A	Unknown	1.000	1	2	6	144
20	200-35736-A-3-A	Unknown	1.000	1	2	7	144
21	200-35736-A-4-A	Unknown	1.000	1	2	8	144
22	200-35736-A-5-A	Unknown	1.000	1	2	9	144
23	200-35736-A-5-A SD@5	Unknown	1.000	1	2	10	144
24	CCV	QC Sample	1.000	0	1	5	144
25	CCB	QC Sample	1.000	0	1	2	144
26	CCVL	QC Sample	1.000	0	1	3	144
27	200-35736-A-5-A PDS	Unknown	1.000	1	2	11	144
28	200-35736-A-5-I MS	Unknown	1.000	1	2	12	144
29	200-35736-A-5-J MSD	Unknown	1.000	1	3	1	144
30	200-35736-A-6-A	Unknown	1.000	1	3	2	144
31	200-35736-A-7-A	Unknown	1.000	1	3	3	144
32	200-35736-A-8-A	Unknown	1.000	1	3	4	144

33	200-35736-A-9-A	Unknown	1.000	1	3	5	144
34	200-35736-A-10-A	Unknown	1.000	1	3	6	144
35	200-35736-A-11-A	Unknown	1.000	1	3	7	144
36	200-35736-A-11-A SD@5	Unknown	1.000	1	3	8	144
37	CCV	QC Sample	1.000	0	1	5	144
38	CCB	QC Sample	1.000	0	1	2	144
39	CCVL	QC Sample	1.000	0	1	3	144
40	200-35736-A-11-A PDS	Unknown	1.000	1	3	9	144
41	200-35736-A-11-I MS	Unknown	1.000	1	3	10	144
42	200-35736-A-11-J MSD	Unknown	1.000	1	3	11	144
43	200-35736-A-12-A	Unknown	1.000	1	3	12	144
44	MB 200-110239/1-A	Unknown	1.000	1	4	1	144
45	LCS 200-110239/2-A	Unknown	1.000	1	4	2	144
46	200-35680-A-13-A	Unknown	1.000	1	4	3	144
47	200-35700-A-19-A	Unknown	1.000	1	4	4	144
48	200-35736-A-14-A	Unknown	1.000	1	4	5	144
49	200-35736-A-14-A SD@5	Unknown	1.000	1	4	6	144
50	CCV	QC Sample	1.000	0	1	5	144
51	CCB	QC Sample	1.000	0	1	2	144
52	CCVL	QC Sample	1.000	0	1	3	144
53	CCVL	QC Sample	1.000	0	1	3	144
54	200-35736-A-14-A PDS	Unknown	1.000	1	4	7	144
55	200-35736-A-14-B MS	Unknown	1.000	1	4	8	144
56	200-35736-A-14-C MSD	Unknown	1.000	1	4	9	144
57	CCV	QC Sample	1.000	0	1	5	144
58	CCB	QC Sample	1.000	0	1	2	144
59	CCVL	QC Sample	1.000	0	1	3	144

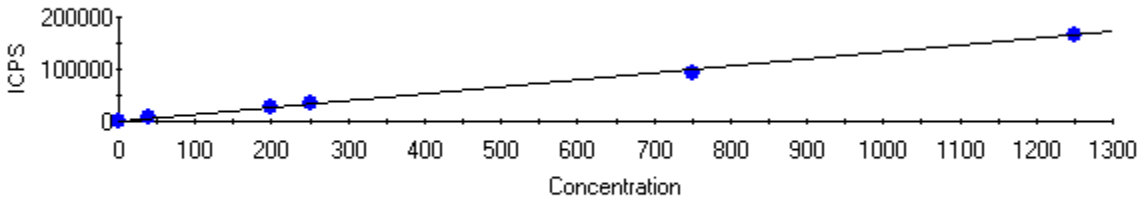
Fully Quant Calibration



Intercept CPS=7.182359 Intercept Conc=0.050176
Sensitivity=143.142683 Correlation Coeff=0.999777

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.009	0.009	5.88	0.00
STD1	1.000	1.151	0.151	171.97	15.12
STD2	5.000	5.615	0.615	811.00	12.31
STD3	625.000	647.608	22.608	92707.57	3.62
STD4	1875.000	1781.392	93.608	255000.44	4.99
STD5	3125.000	3054.577	70.423	437247.57	2.25

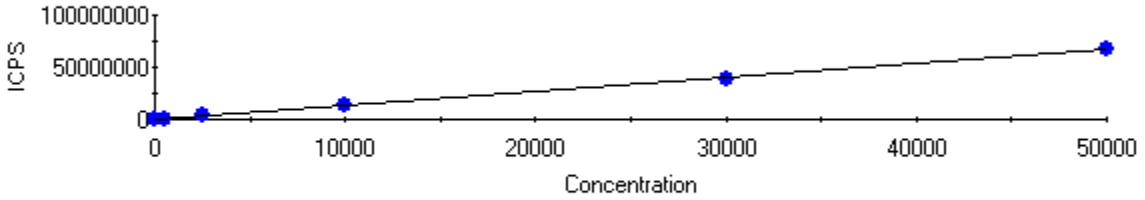
11B FQ Block 1



Intercept CPS=1241.290135 Intercept Conc=9.464432
Sensitivity=131.153159 Correlation Coeff=0.999587

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.076	0.076	1231.31	0.00
STD1	40.000	39.598	0.402	6434.64	1.01
STD2	200.000	200.199	0.199	27498.08	0.10
STD3	250.000	254.509	4.509	34620.97	1.80
STD4	750.000	708.624	41.376	94179.61	5.52
STD5	1250.000	1237.045	12.955	163483.66	1.04

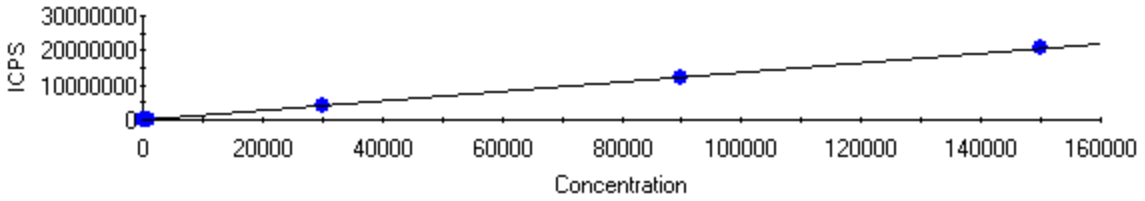
23Na FQ Block 1



Intercept CPS=243715.829137 Intercept Conc=181.111879
Sensitivity=1345.664520 Correlation Coeff=0.999866

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-2.028	2.028	240987.09	0.00
STD1	500.000	506.126	6.126	924791.07	1.23
STD2	2500.000	2653.919	153.919	3815000.07	6.16
STD3	10000.000	10224.154	224.154	14001997.19	2.24
STD4	30000.000	28846.473	1153.527	39061391.63	3.85
STD5	50000.000	49184.844	815.156	66430015.08	1.63

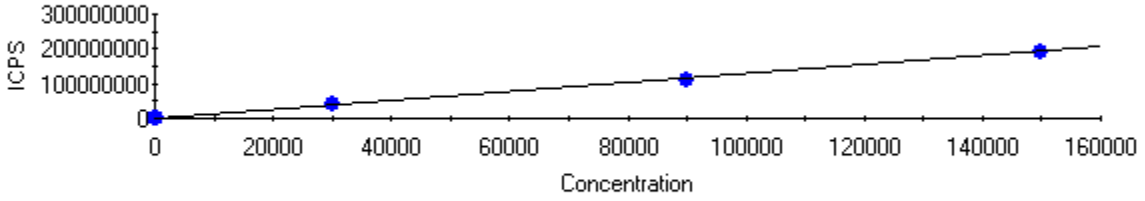
25Mg FQ Block 1



Intercept CPS=193.490143 Intercept Conc=1.401222
Sensitivity=138.086758 Correlation Coeff=0.999729

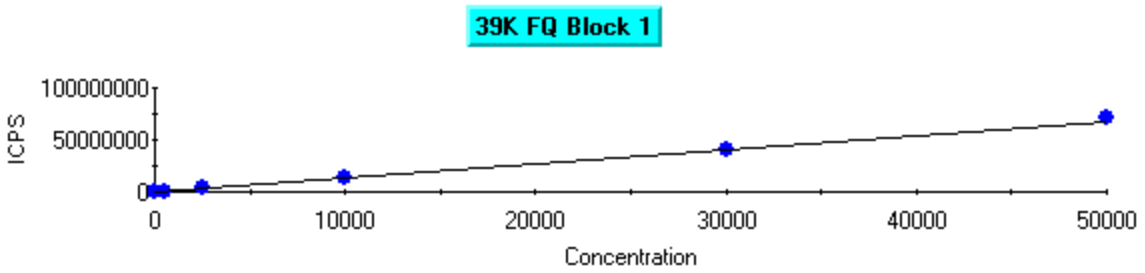
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	193.54	0.00
STD1	200.000	203.839	3.839	28340.96	1.92
STD2	1000.000	972.955	27.045	134545.71	2.70
STD3	30000.000	30651.629	651.629	4232777.56	2.17
STD4	90000.000	86604.797	3395.203	11959169.08	3.77
STD5	150000.000	150349.914	349.914	20761525.69	0.23

27Al FQ Block 1



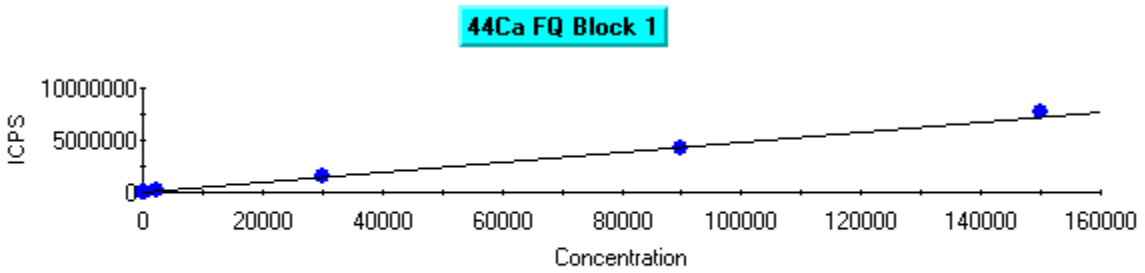
Intercept CPS=1307.442661 Intercept Conc=1.015458
Sensitivity=1287.540410 Correlation Coeff=0.999737

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.304	0.304	915.87	0.00
STD1	50.000	52.417	2.417	68796.59	4.83
STD2	250.000	237.631	12.369	307267.20	4.95
STD3	30000.000	30626.133	626.133	39433690.76	2.09
STD4	90000.000	86200.612	3799.388	110988078.84	4.22
STD5	150000.000	149468.935	531.065	192448600.70	0.35



Intercept CPS=47204.310921 Intercept Conc=34.784621
Sensitivity=1357.045434 Correlation Coeff=0.999293

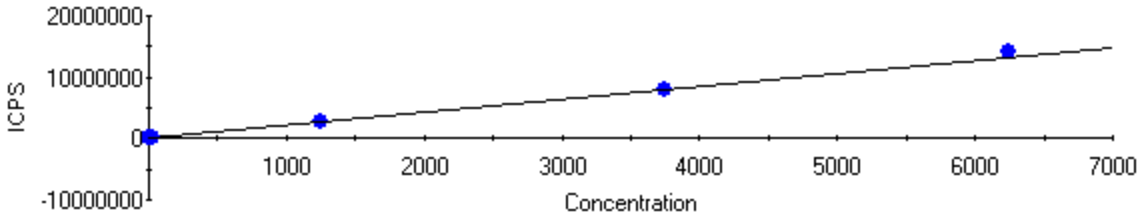
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.402	0.402	47749.41	0.00
STD1	500.000	485.015	14.985	705391.54	3.00
STD2	2500.000	2588.646	88.646	3560115.14	3.55
STD3	10000.000	10035.464	35.464	13665785.47	0.35
STD4	30000.000	29214.760	785.240	39692961.50	2.62
STD5	50000.000	52182.888	2182.888	70861753.92	4.37



Intercept CPS=339.385934 Intercept Conc=7.035441
Sensitivity=48.239465 Correlation Coeff=0.999237

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.050	0.050	337.00	0.00
STD1	500.000	514.410	14.410	25154.23	2.88
STD2	2500.000	2417.952	82.048	116980.08	3.28
STD3	30000.000	30320.497	320.497	1462983.96	1.07
STD4	90000.000	88907.253	1092.747	4289177.77	1.21
STD5	150000.000	159416.681	9416.681	7690514.89	6.28

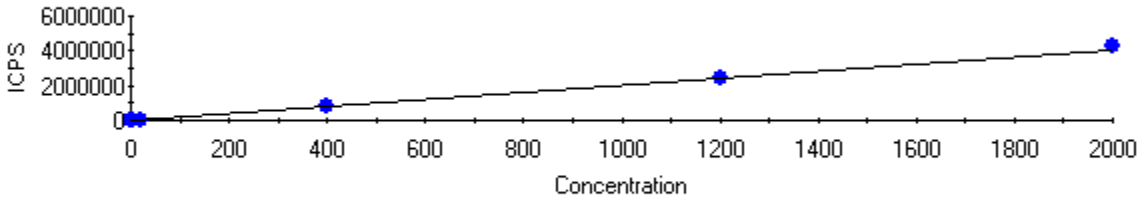
51V FQ Block 1



Intercept CPS=-1001.149747 Intercept Conc=-0.474535
Sensitivity=2109.749680 Correlation Coeff=0.999320

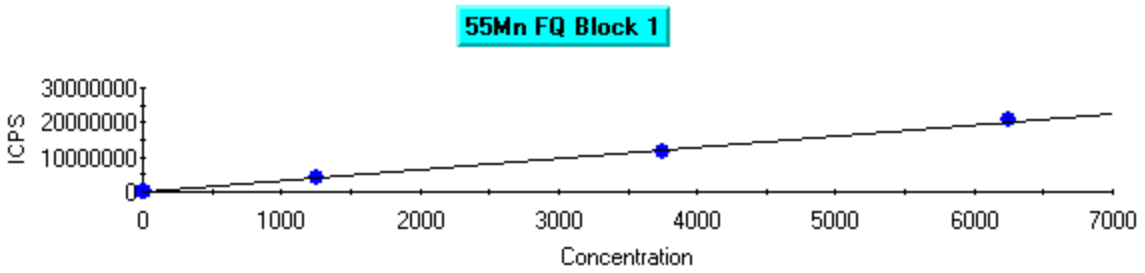
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.417	0.417	-122.33	0.00
STD1	5.000	5.492	0.492	10585.18	9.84
STD2	25.000	23.689	1.311	48977.46	5.24
STD3	1250.000	1280.213	30.213	2699928.32	2.42
STD4	3750.000	3712.885	37.115	7832257.60	0.99
STD5	6250.000	6631.329	381.329	13989442.85	6.10

52Cr FQ Block 1



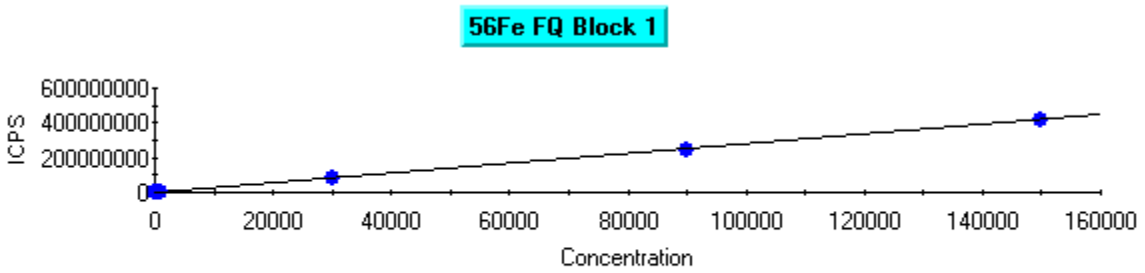
Intercept CPS=1757.571216 Intercept Conc=0.875087
Sensitivity=2008.453119 Correlation Coeff=0.999303

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.019	0.019	1719.96	0.00
STD1	4.000	4.071	0.071	9934.07	1.78
STD2	20.000	20.237	0.237	42401.97	1.18
STD3	400.000	386.689	13.311	778403.88	3.33
STD4	1200.000	1192.843	7.157	2397527.58	0.60
STD5	2000.000	2124.734	124.734	4269185.70	6.24



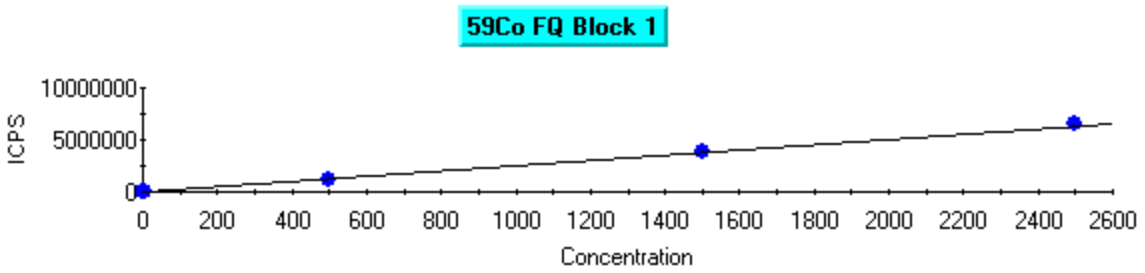
Intercept CPS=411.082180 Intercept Conc=0.126911
Sensitivity=3239.132564 Correlation Coeff=0.999472

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.008	0.008	384.25	0.00
STD1	2.000	2.175	0.175	7454.64	8.73
STD2	10.000	9.659	0.341	31697.70	3.41
STD3	1250.000	1246.021	3.979	4036437.06	0.32
STD4	3750.000	3615.426	134.574	11711254.73	3.59
STD5	6250.000	6403.515	153.515	20742243.53	2.46



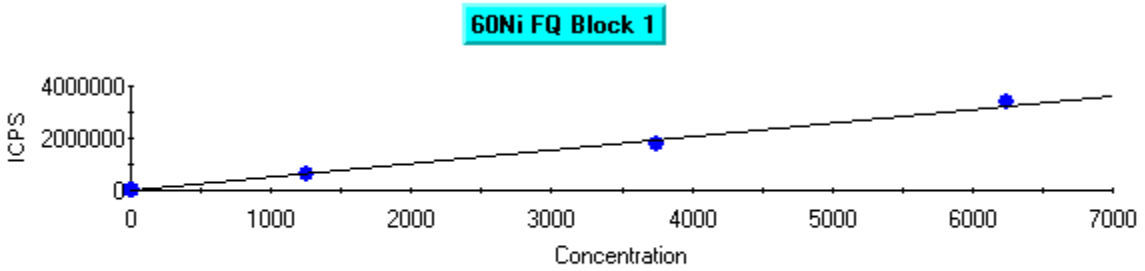
Intercept CPS=194744.856531 Intercept Conc=69.711525
Sensitivity=2793.581931 Correlation Coeff=0.999623

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.121	0.121	194407.84	0.00
STD1	200.000	195.562	4.438	741064.04	2.22
STD2	1000.000	1041.465	41.465	3104162.08	4.15
STD3	30000.000	29528.119	471.881	82683964.36	1.57
STD4	90000.000	85028.047	4971.953	237727559.60	5.52
STD5	150000.000	149092.866	907.134	416697880.32	0.60



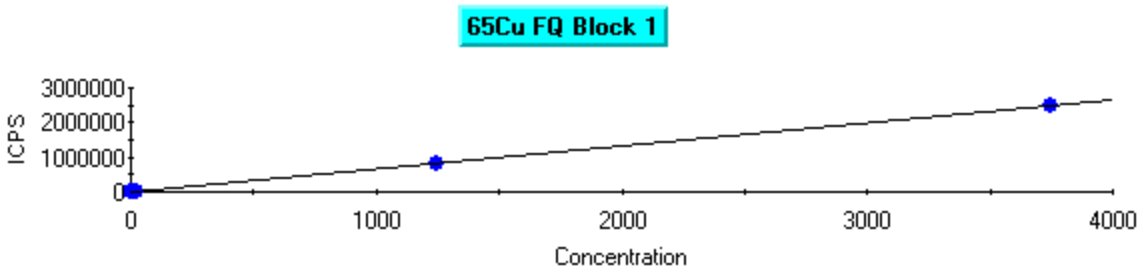
Intercept CPS=42.660256 Intercept Conc=0.016787
Sensitivity=2541.298758 Correlation Coeff=0.999631

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	43.33	0.00
STD1	1.000	1.069	0.069	2758.63	6.87
STD2	5.000	4.963	0.037	12656.09	0.73
STD3	500.000	466.776	33.224	1186258.99	6.64
STD4	1500.000	1475.740	24.260	3750339.01	1.62
STD5	2500.000	2568.758	68.758	6528024.90	2.75



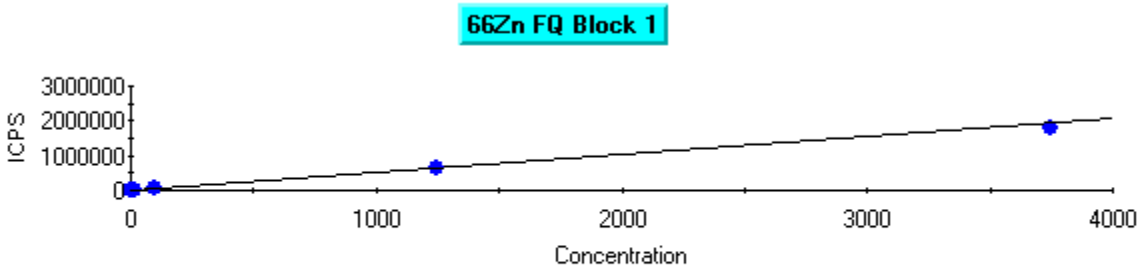
Intercept CPS=28.268916 Intercept Conc=0.055237
Sensitivity=511.777496 Correlation Coeff=0.997682

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.013	0.013	21.79	0.00
STD1	2.000	2.544	0.544	1330.22	27.20
STD2	10.000	10.811	0.811	5561.28	8.11
STD3	1250.000	1242.912	7.088	636122.77	0.57
STD4	3750.000	3463.085	286.915	1772357.40	7.65
STD5	6250.000	6574.968	324.968	3364948.71	5.20



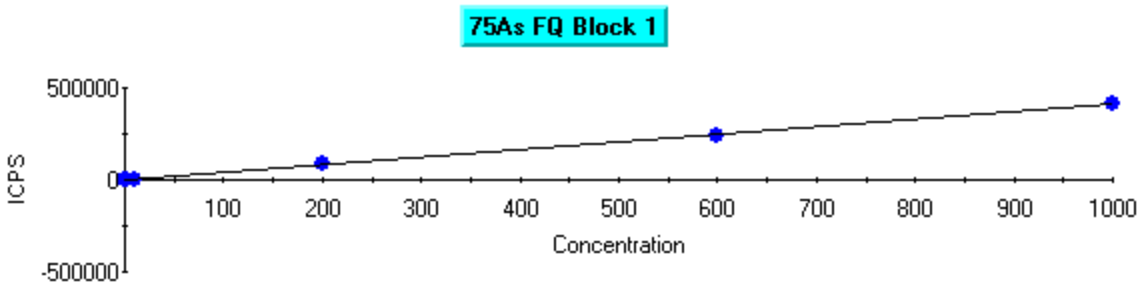
Intercept CPS=230.560936 Intercept Conc=0.347200
Sensitivity=664.057459 Correlation Coeff=0.999960

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.074	0.074	181.52	0.00
STD1	5.000	5.597	0.597	3947.19	11.94
STD2	25.000	24.595	0.405	16562.90	1.62
STD3	1250.000	1219.592	30.408	810109.52	2.43
STD4	3750.000	3756.770	6.770	2494941.49	0.18



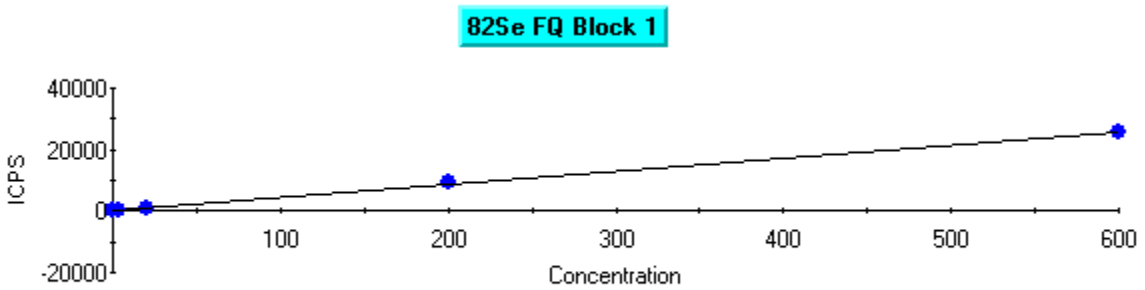
Intercept CPS=757.552099 Intercept Conc=1.480050
Sensitivity=511.842399 Correlation Coeff=0.999463

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.344	0.344	581.52	0.00
STD1	20.000	21.976	1.976	12005.66	9.88
STD2	100.000	104.439	4.439	54213.94	4.44
STD3	1250.000	1270.030	20.030	650812.59	1.60
STD4	3750.000	3471.793	278.207	1777768.23	7.42



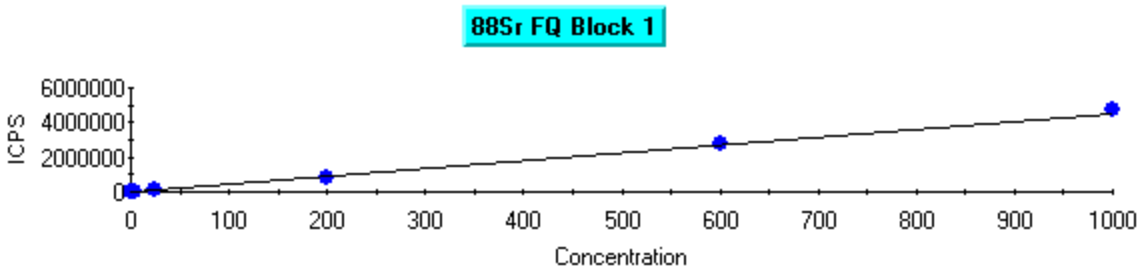
Intercept CPS=181.204690 Intercept Conc=0.436967
Sensitivity=414.687627 Correlation Coeff=0.999888

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.700	0.700	-109.22	0.00
STD1	2.000	1.624	0.376	854.70	18.80
STD2	10.000	10.135	0.135	4384.00	1.35
STD3	200.000	210.632	10.632	87527.80	5.32
STD4	600.000	589.155	10.845	244496.45	1.81
STD5	1000.000	995.854	4.146	413149.67	0.41



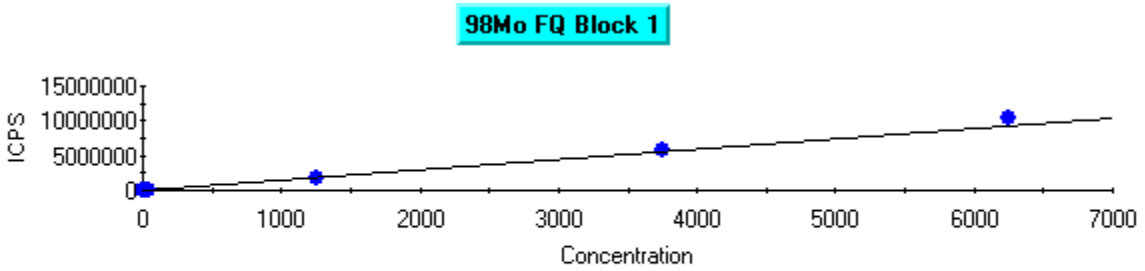
Intercept CPS=20.779464 Intercept Conc=0.482031
Sensitivity=43.108109 Correlation Coeff=0.999436

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.660	0.660	-7.68	0.00
STD1	4.000	3.611	0.389	176.44	9.72
STD2	20.000	21.261	1.261	937.31	6.31
STD3	200.000	217.775	17.775	9408.66	8.89
STD4	600.000	595.467	4.533	25690.25	0.76



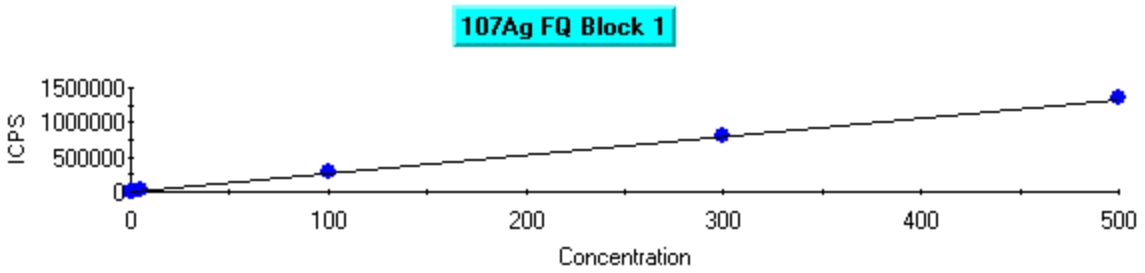
Intercept CPS=26.611526 Intercept Conc=0.005960
Sensitivity=4465.003728 Correlation Coeff=0.999640

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	26.68	0.00
STD1	5.000	4.974	0.026	22235.69	0.52
STD2	25.000	24.107	0.893	107665.87	3.57
STD3	200.000	192.233	7.767	858346.71	3.88
STD4	600.000	609.611	9.611	2721943.91	1.60
STD5	1000.000	1060.385	60.385	4734650.33	6.04



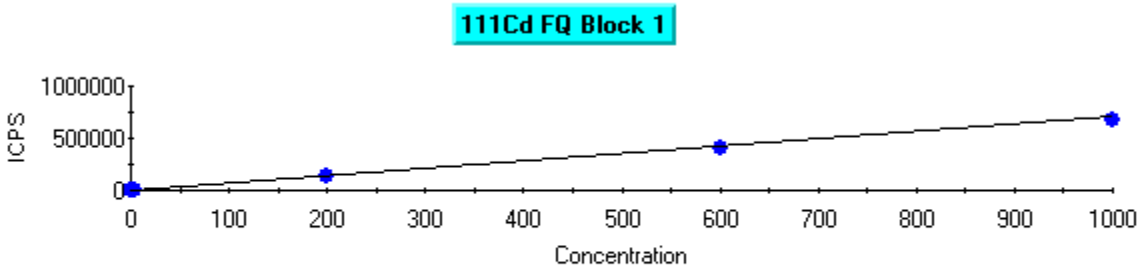
Intercept CPS=951.929259 Intercept Conc=0.642644
Sensitivity=1481.270309 Correlation Coeff=0.998762

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.369	0.369	1499.00	0.00
STD1	10.000	9.567	0.433	15123.19	4.33
STD2	50.000	48.574	1.426	72902.97	2.85
STD3	1250.000	1207.732	42.268	1789929.75	3.38
STD4	3750.000	3883.684	133.684	5753737.98	3.56
STD5	6250.000	7053.487	803.487	10449072.47	12.86



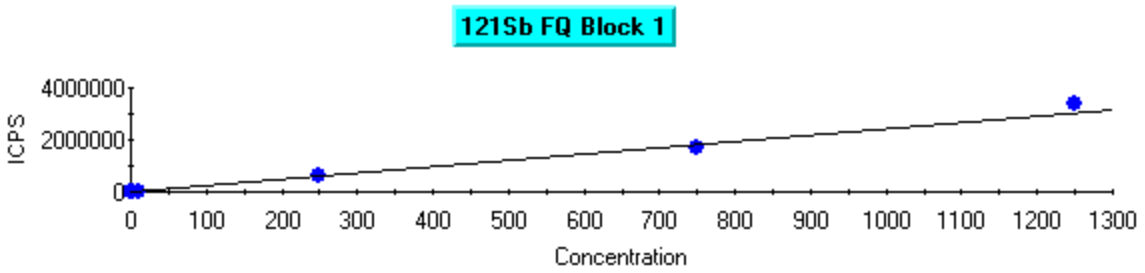
Intercept CPS=22.523318 Intercept Conc=0.008411
Sensitivity=2677.892722 Correlation Coeff=0.999838

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.002	0.002	16.69	0.00
STD1	1.000	1.079	0.079	2911.91	7.90
STD2	5.000	5.530	0.530	14831.36	10.60
STD3	100.000	107.408	7.408	287650.55	7.41
STD4	300.000	298.550	1.450	799507.41	0.48
STD5	500.000	509.205	9.205	1363618.15	1.84



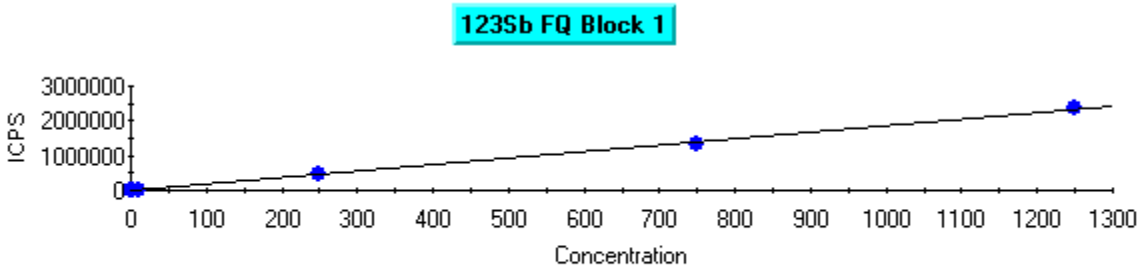
Intercept CPS=48.351116 Intercept Conc=0.068800
Sensitivity=702.780392 Correlation Coeff=0.999771

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.003	0.003	46.08	0.00
STD1	1.000	1.069	0.069	799.41	6.87
STD2	5.000	5.222	0.222	3718.43	4.44
STD3	200.000	202.124	2.124	142097.07	1.06
STD4	600.000	561.153	38.847	394415.99	6.47
STD5	1000.000	966.280	33.720	679131.26	3.37



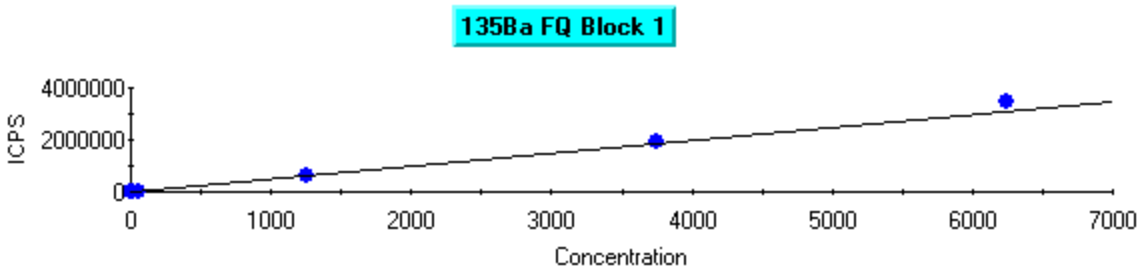
Intercept CPS=1169.196924 Intercept Conc=0.487907
Sensitivity=2396.353240 Correlation Coeff=0.996452

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.146	0.146	1518.22	0.00
STD1	2.000	1.764	0.236	5397.05	11.79
STD2	10.000	9.733	0.267	24493.00	2.67
STD3	250.000	249.475	0.525	598998.88	0.21
STD4	750.000	712.684	37.316	1709011.07	4.98
STD5	1250.000	1397.412	147.412	3349861.31	11.79



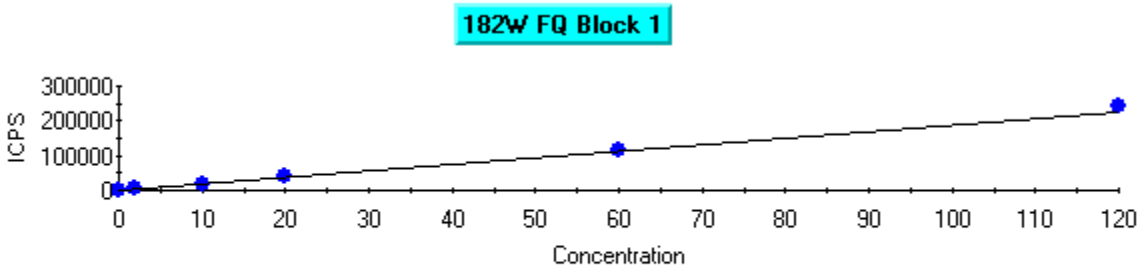
Intercept CPS=933.313984 Intercept Conc=0.497619
Sensitivity=1875.560320 Correlation Coeff=0.999567

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.116	0.116	1151.52	0.00
STD1	2.000	1.818	0.182	4343.49	9.09
STD2	10.000	9.759	0.241	19237.47	2.41
STD3	250.000	250.354	0.354	470486.45	0.14
STD4	750.000	716.846	33.154	1345420.47	4.42
STD5	1250.000	1261.607	11.607	2367153.96	0.93



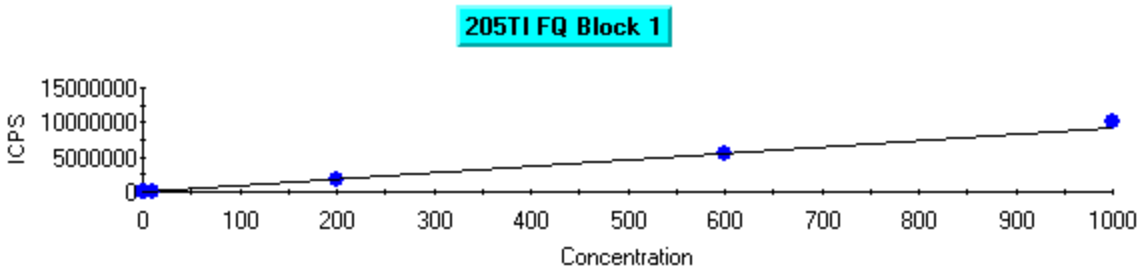
Intercept CPS=16.793678 Intercept Conc=0.033781
Sensitivity=497.139528 Correlation Coeff=0.999198

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	16.67	0.00
STD1	10.000	10.178	0.178	5076.77	1.78
STD2	50.000	47.743	2.257	23751.56	4.51
STD3	1250.000	1216.452	33.548	604763.08	2.68
STD4	3750.000	3944.259	194.259	1960863.92	5.18
STD5	6250.000	7016.928	766.928	3488408.83	12.27



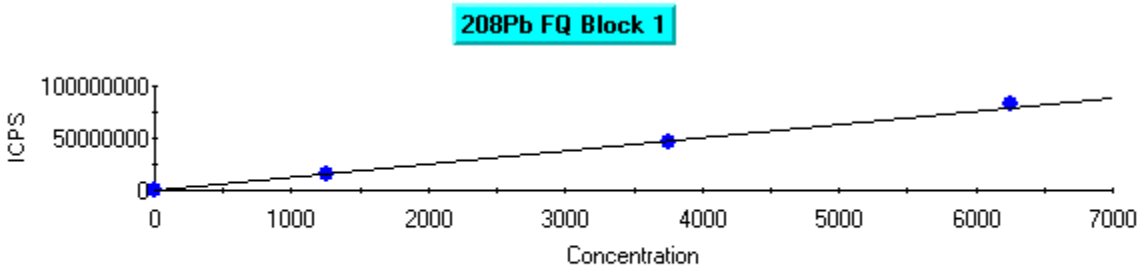
Intercept CPS=91.638542 Intercept Conc=0.049386
Sensitivity=1855.574049 Correlation Coeff=0.999426

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.089	0.089	257.22	0.00
STD1	2.000	1.681	0.319	3211.36	15.94
STD2	10.000	8.418	1.582	15712.39	15.82
STD3	20.000	20.840	0.840	38761.77	4.20
STD4	60.000	60.924	0.924	113141.12	1.54
STD5	120.000	130.515	10.515	242272.30	8.76



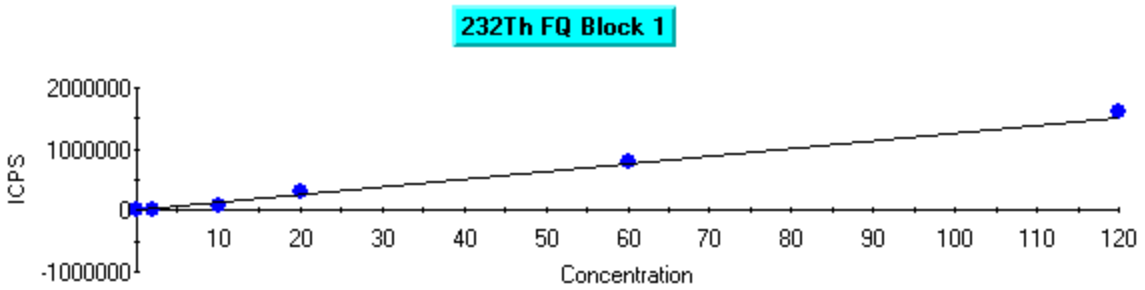
Intercept CPS=633.350024 Intercept Conc=0.067729
Sensitivity=9351.228370 Correlation Coeff=0.998836

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.189	0.189	2399.82	0.00
STD1	2.000	1.916	0.084	18550.13	4.20
STD2	10.000	8.960	1.040	84417.44	10.40
STD3	200.000	180.946	19.054	1692703.45	9.53
STD4	600.000	597.974	2.026	5592423.41	0.34
STD5	1000.000	1078.309	78.309	10084144.32	7.83



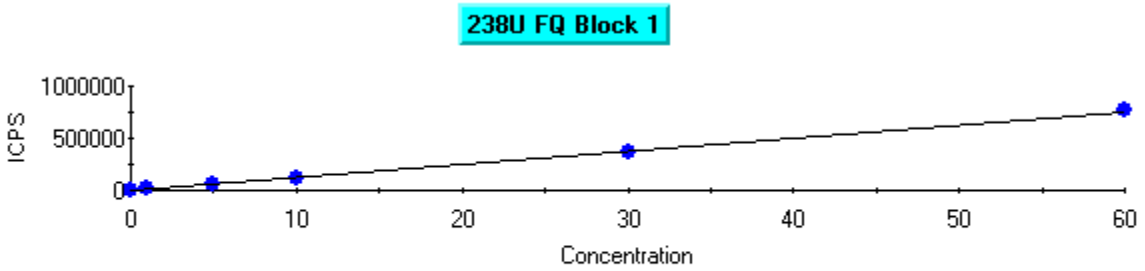
Intercept CPS=1814.161826 Intercept Conc=0.142091
Sensitivity=12767.604251 Correlation Coeff=0.999425

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.062	0.062	1020.47	0.00
STD1	1.000	1.078	0.078	15580.98	7.83
STD2	5.000	4.579	0.421	60276.50	8.42
STD3	1250.000	1260.723	10.723	16098227.34	0.86
STD4	3750.000	3671.551	78.449	46878721.52	2.09
STD5	6250.000	6520.749	270.749	83256158.66	4.33



Intercept CPS=-5155.352780 Intercept Conc=-0.409539
Sensitivity=12588.197027 Correlation Coeff=0.998465

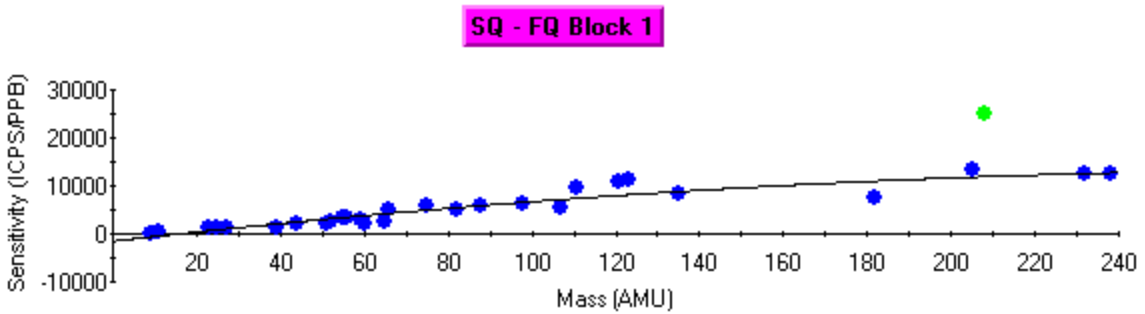
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.772	0.772	4566.81	0.00
STD1	2.000	1.470	0.530	13347.26	26.51
STD2	10.000	5.521	4.479	64348.77	44.79
STD3	20.000	24.639	4.639	305003.19	23.19
STD4	60.000	62.564	2.564	782406.54	4.27
STD5	120.000	129.173	9.173	1620904.57	7.64



Intercept CPS=59.650921 Intercept Conc=0.004782
Sensitivity=12473.673133 Correlation Coeff=0.999418

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.002	0.002	31.91	0.00
STD1	1.000	1.034	0.034	12953.09	3.37
STD2	5.000	5.128	0.128	64021.16	2.55
STD3	10.000	9.809	0.191	122419.49	1.91
STD4	30.000	28.877	1.123	360260.54	3.74
STD5	60.000	61.975	1.975	773119.53	3.29

Semi Quant Calibration



Coeff 0=-1506.109315 Coeff 1=98.445948 Coeff 2=-0.162720

Symbol	Mass	RSF	Available	Excluded	Sensitivity Measured	Corrected	Calculated	%Error
9Be	9.01	0.7500	1	1	143.14	190.86	-632.11	-431.2
11B	11.01	0.5800	1	1	131.15	279.10	-442.01	-258.4
23Na	22.99	1.0000	1	1	1345.66	1345.66	671.14	-50.1
25Mg	24.99	0.9800	1	1	138.09	1393.72	852.06	-38.9
27Al	26.98	0.9800	1	1	1287.54	1313.82	1031.65	-21.5
39K	38.96	1.0000	1	1	1357.05	1457.93	2082.67	42.9
44Ca	43.96	0.9900	1	1	48.24	2287.64	2506.75	9.6
51V	50.94	0.9900	1	1	2109.75	2136.19	3086.81	44.5
52Cr	51.94	0.9800	1	1	2008.45	2446.80	3168.23	29.5
55Mn	54.94	0.9500	1	1	3239.13	3409.61	3411.20	0.0
56Fe	55.93	0.9600	1	1	2793.58	3179.61	3491.35	9.8
59Co	58.93	0.9300	1	1	2541.30	2732.58	3730.48	36.5
60Ni	59.93	0.9100	1	1	511.78	2149.82	3809.39	77.2
65Cu	64.93	0.9000	1	1	664.06	2387.06	4199.80	75.9
66Zn	65.93	0.3750	1	1	511.84	4907.99	4276.82	-12.9
75As	74.92	0.0700	1	1	414.69	5924.11	4956.23	-16.3
82Se	81.92	0.1000	1	1	43.11	4876.48	5466.35	12.1
88Sr	87.91	0.9600	1	1	4465.00	5633.53	5890.44	4.6
98Mo	97.91	0.9800	1	1	1481.27	6297.92	6572.54	4.4
107Ag	106.91	0.9300	1	1	2677.89	5607.51	7158.59	27.7
111Cd	110.90	0.5660	1	1	702.78	9655.22	7410.55	-23.2
121Sb	120.90	0.3900	1	1	2396.35	10732.74	8017.79	-25.3
123Sb	122.90	0.3900	1	1	1875.56	11249.42	8135.36	-27.7
135Ba	134.91	0.9100	1	1	497.14	8289.94	8813.38	6.3
182W	181.95	0.9400	1	1	1855.57	7502.91	11019.09	46.9
205Tl	204.97	1.0000	1	1	9351.23	13264.15	11836.12	-10.8
208Pb	207.98	0.9700	0	1	12767.60	25128.83	11930.02	-52.5
232Th	232.04	1.0000	1	1	12588.20	12588.20	12576.00	-0.1
238U	238.05	1.0000	1	1	12473.67	12564.13	12707.99	1.1

Dilution Corrected Concentrations

STD0 10/18/2016 12:40:20 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:40:42	98.553%	0.003	0.710	-2.767	0.153	-0.499	1.392	-0.043	97.833%	0.000	-0.031	0.026
2	12:41:04	98.850%	0.003	-1.172	2.126	-0.093	-0.462	0.162	0.660	99.668%	0.000	0.505	-0.011
3	12:41:25	102.597%	-0.033	0.234	-5.442	-0.059	0.049	-0.349	-0.766	102.499%	0.000	0.775	-0.071
x		100.000%	-0.009	-0.076	-2.028	0.000	-0.304	0.402	-0.050	100.000%	0.000	0.417	-0.019
σ		2.254%	0.021	0.979	3.838	0.134	0.307	0.894	0.713	2.350%	0.000	0.410	0.049
%RSD		2.254	228.500	1285.000	189.300	36500.000	100.800	222.700	1440.000	2.350	0.000	98.490	261.200

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:40:42	12.300	-0.018	1.383	-0.003	0.005	-0.084	-0.436	-1.330	0.439	-1.141	0.000	0.000
2	12:41:04	11.880	-0.017	-0.985	0.005	-0.016	-0.120	-0.368	-0.417	0.350	-0.191	0.000	0.000
3	12:41:25	11.440	0.010	-0.761	-0.001	-0.027	-0.018	-0.228	-0.354	0.341	-0.648	0.000	0.000
x		11.870	-0.008	-0.121	0.000	-0.013	-0.074	-0.344	-0.700	0.376	-0.660	0.000	0.000
σ		0.429	0.016	1.307	0.004	0.016	0.052	0.106	0.546	0.054	0.475	0.000	0.000
%RSD		3.610	192.700	1084.000	1557.000	125.800	69.900	30.910	77.950	14.360	72.010	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:40:42	-0.000	98.845%	0.560	-0.007	-0.942	0.010	100.116%	0.000	0.158	0.120	-0.014	98.341%
2	12:41:04	0.001	99.783%	0.355	0.001	-0.543	-0.013	99.271%	0.000	0.105	0.133	0.007	101.683%
3	12:41:25	-0.000	101.372%	0.193	-0.001	-0.736	-0.006	100.613%	0.000	0.174	0.096	0.006	99.976%
x		0.000	100.000%	0.369	-0.002	-0.740	-0.003	100.000%	0.000	0.146	0.116	-0.000	100.000%
σ		0.001	1.278%	0.184	0.004	0.200	0.012	0.679%	0.000	0.036	0.019	0.012	1.671%
%RSD		4499.000	1.278	49.700	179.300	26.960	362.700	0.679	0.000	24.820	16.170	4725.000	1.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:40:42	0.121	0.227	-0.075	98.272%	0.000	0.786	0.000
2	12:41:04	0.067	0.176	-0.067	101.051%	0.000	0.787	-0.003
3	12:41:25	0.080	0.164	-0.044	100.677%	0.000	0.744	-0.004
x		0.089	0.189	-0.062	100.000%	0.000	0.772	-0.002
σ		0.028	0.033	0.016	1.508%	0.000	0.025	0.002
%RSD		31.180	17.610	25.390	1.508	0.000	3.205	94.820

STD1 10/18/2016 12:44:20 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:42	105.148%	1.295	40.440	498.500	210.800	52.500	485.100	510.100	103.950%	0.000	5.307	4.218
2	12:45:04	105.840%	1.022	37.770	T 529.300	200.800	51.620	479.600	525.200	105.981%	0.000	5.700	4.017
3	12:45:25	103.070%	1.136	40.590	490.600	199.900	53.130	490.300	507.900	104.061%	0.000	5.469	3.978
x		104.686%	1.151	39.600	T 506.100	203.800	52.420	485.000	514.400	104.664%	0.000	5.492	4.071
σ		1.442%	0.137	1.587	T 20.440	6.036	0.759	5.314	9.438	1.142%	0.000	0.197	0.129

%RSD		1.377	11.900	4.009	T 4.039	2.961	1.448	1.096	1.835	1.091	0.000	3.593	3.164
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:44:42	13.030	2.134	198.200	1.111	2.670	5.440	21.850	1.891	0.354	4.081	0.000	0.000
2	12:45:04	12.870	2.149	190.600	1.151	2.388	5.722	22.280	1.757	0.384	3.458	0.000	0.000
3	12:45:25	13.090	2.241	197.900	0.944	2.574	5.628	21.800	1.224	0.419	3.294	0.000	0.000
x		13.000	2.175	195.600	1.069	2.544	5.597	21.980	1.624	0.386	3.611	0.000	0.000
σ		0.119	0.058	4.330	0.110	0.144	0.143	0.268	0.353	0.032	0.415	0.000	0.000
%RSD		0.912	2.676	2.214	10.290	5.648	2.560	1.218	21.740	8.317	11.500	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:44:42	4.986	104.679%	9.387	1.031	-1.246	1.000	102.268%	0.000	1.708	1.795	9.969	101.335%
2	12:45:04	5.008	103.265%	9.485	1.129	-0.472	1.194	102.615%	0.000	1.796	1.817	10.280	102.050%
3	12:45:25	4.928	105.370%	9.828	1.077	-1.302	1.012	102.831%	0.000	1.789	1.843	10.290	102.249%
x		4.974	104.438%	9.567	1.079	-1.007	1.069	102.571%	0.000	1.764	1.818	10.180	101.878%
σ		0.041	1.073%	0.231	0.049	0.464	0.109	0.284%	0.000	0.048	0.024	0.181	0.481%
%RSD		0.824	1.027	2.419	4.561	46.100	10.190	0.277	0.000	2.747	1.324	1.777	0.472

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:44:42	1.647	1.889	1.097	98.630%	0.000	1.451	1.041
2	12:45:04	1.577	1.932	1.070	100.043%	0.000	1.491	1.036
3	12:45:25	1.819	1.927	1.067	100.848%	0.000	1.467	1.025
x		1.681	1.916	1.078	99.840%	0.000	1.470	1.034
σ		0.125	0.024	0.017	1.123%	0.000	0.021	0.008
%RSD		7.406	1.239	1.542	1.125	0.000	1.399	0.786

STD2 10/18/2016 12:47:26 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:47:47	98.735%	5.610	191.700	T 2687.000	983.500	238.200	T 2621.000	2394.000	97.801%	0.000	23.530	20.290
2	12:48:09	96.124%	5.837	207.000	T 2615.000	956.600	233.800	T 2513.000	2402.000	98.569%	0.000	24.030	19.970
3	12:48:31	98.394%	5.399	202.000	T 2660.000	978.700	240.900	T 2632.000	2458.000	97.111%	0.000	23.510	20.450
x		97.751%	5.615	200.200	T 2654.000	973.000	237.600	T 2589.000	2418.000	97.827%	0.000	23.690	20.240
σ		1.419%	0.219	7.806	T 36.170	14.330	3.581	T 65.540	35.310	0.729%	0.000	0.293	0.242
%RSD		1.452	3.897	3.899	T 1.363	1.473	1.507	T 2.532	1.460	0.745	0.000	1.239	1.196
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	12:47:47	12.720	9.750	T 1039.000	4.918	10.790	25.250	105.200	10.070	0.311	21.830	0.000	0.000
2	12:48:09	11.750	9.505	T 1031.000	5.001	11.010	24.250	103.000	10.350	0.238	20.680	0.000	0.000
3	12:48:31	12.210	9.721	T 1054.000	4.971	10.640	24.280	105.100	9.992	0.289	21.270	0.000	0.000
x		12.230	9.659	T 1041.000	4.963	10.810	24.590	104.400	10.130	0.279	21.260	0.000	0.000
σ		0.486	0.134	T 11.540	0.042	0.185	0.569	1.237	0.186	0.038	0.576	0.000	0.000
%RSD		3.974	1.386	T 1.108	0.851	1.712	2.314	1.184	1.835	13.460	2.711	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	12:47:47	24.050	98.764%	48.230	5.499	-0.567	5.071	97.995%	0.000	9.792	9.879	48.590	97.781%
2	12:48:09	23.910	97.936%	49.380	5.638	-1.000	5.370	98.183%	0.000	9.855	9.698	46.700	97.543%
3	12:48:31	24.370	99.405%	48.110	5.453	0.144	5.226	98.978%	0.000	9.553	9.701	47.940	98.592%
x		24.110	98.702%	48.570	5.530	-0.474	5.222	98.385%	0.000	9.733	9.759	47.740	97.972%
σ		0.236	0.736%	0.701	0.096	0.578	0.149	0.522%	0.000	0.159	0.104	0.960	0.550%
%RSD		0.981	0.746	1.442	1.745	121.900	2.858	0.530	0.000	1.638	1.065	2.010	0.562

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:47:47	8.550	8.704	4.467	97.102%	0.000	5.271	5.030
2	12:48:09	8.308	9.090	4.691	96.258%	0.000	5.504	5.166
3	12:48:31	8.397	9.085	4.578	97.671%	0.000	5.789	5.187
x		8.418	8.960	4.579	97.010%	0.000	5.521	5.128
σ		0.122	0.221	0.112	0.711%	0.000	0.260	0.085
%RSD		1.452	2.471	2.448	0.733	0.000	4.701	1.657

STD3 10/18/2016 12:50:40 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:51:01	100.176%	636.000	251.100	T 10280.000	T 30500.000	T 30380.000	T 10000.000	T 29870.000	99.915%	0.000	T 1265.000	382.100
2	12:51:23	96.617%	652.800	254.000	T 10100.000	T 30450.000	T 30400.000	T 9977.000	T 30240.000	99.714%	0.000	T 1274.000	386.100
3	12:51:45	95.925%	654.000	258.400	T 10290.000	T 31010.000	T 31090.000	T 10130.000	T 30850.000	97.586%	0.000	T 1302.000	391.900
x		97.573%	647.600	254.500	T 10220.000	T 30650.000	T 30630.000	T 10040.000	T 30320.000	99.072%	0.000	T 1280.000	386.700
σ		2.281%	10.070	3.668	T 111.200	T 307.200	T 405.300	T 78.860	T 493.600	1.290%	0.000	T 19.300	4.909
%RSD		2.338	1.555	1.441	T 1.088	T 1.002	T 1.324	T 0.786	T 1.628	1.302	0.000	T 1.508	1.269

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:51:01	14.720	T 1235.000	T 29140.000	463.500	1241.000	1238.000	1271.000	211.400	-0.580	218.800	0.000	0.000
2	12:51:23	17.410	T 1236.000	T 29380.000	463.700	1233.000	1205.000	1261.000	208.200	-0.356	214.600	0.000	0.000
3	12:51:45	19.010	T 1267.000	T 30060.000	473.100	1255.000	1216.000	1278.000	212.300	-0.627	219.900	0.000	0.000
x		17.050	T 1246.000	T 29530.000	466.800	1243.000	1220.000	1270.000	210.600	-0.521	217.800	0.000	0.000
σ		2.169	T 17.770	T 476.400	5.484	11.260	16.870	8.836	2.185	0.145	2.817	0.000	0.000
%RSD		12.720	T 1.426	T 1.613	1.175	0.906	1.383	0.696	1.037	27.820	1.294	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:51:01	192.300	97.745%	1156.000	107.700	6.732	202.100	95.491%	0.000	248.500	250.500	1219.000	97.549%
2	12:51:23	190.300	96.585%	1234.000	107.100	3.594	201.700	96.470%	0.000	250.500	250.100	1219.000	98.933%
3	12:51:45	194.100	97.861%	1233.000	107.500	-4.265	202.500	96.351%	0.000	249.400	250.400	1211.000	97.517%
x		192.200	97.397%	1208.000	107.400	2.021	202.100	96.104%	0.000	249.500	250.400	1216.000	98.000%
σ		1.923	0.706%	44.430	0.296	5.665	0.438	0.534%	0.000	1.008	0.198	4.402	0.809%
%RSD		1.000	0.725	3.679	0.276	280.400	0.217	0.556	0.000	0.404	0.079	0.362	0.825

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:51:01	20.280	175.200	T 1234.000	97.898%	0.000	24.130	9.640
2	12:51:23	20.680	182.700	T 1267.000	95.502%	0.000	24.930	9.735
3	12:51:45	21.560	185.000	T 1280.000	95.047%	0.000	24.860	10.050

x		20.840	180.900	┬1261.000	96.149%	0.000	24.640	9.809
σ		0.657	5.127	┬23.670	1.532%	0.000	0.443	0.217
%RSD		3.151	2.833	┬1.878	1.593	0.000	1.797	2.208

STD4 10/18/2016 12:54:09 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:54:31	103.595%	1759.000	697.800	┬28650.000	┬85510.000	┬84660.000	┬28870.000	┬88230.000	104.015%	0.000	┬3647.000	┬1170.000
2	12:54:53	101.499%	1769.000	695.000	┬28600.000	┬85780.000	┬85190.000	┬28790.000	┬87980.000	104.588%	0.000	┬3678.000	┬1197.000
3	12:55:15	100.407%	1816.000	733.100	┬29290.000	┬88520.000	┬88750.000	┬29980.000	┬90510.000	102.420%	0.000	┬3814.000	┬1212.000
x		101.834%	1781.000	708.600	┬28850.000	┬86600.000	┬86200.000	┬29210.000	┬88910.000	103.674%	0.000	┬3713.000	┬1193.000
σ		1.620%	30.570	21.210	┬385.400	┬1666.000	┬2227.000	┬660.400	┬1396.000	1.123%	0.000	┬88.780	┬21.200
%RSD		1.591	1.716	2.993	┬1.336	┬1.924	┬2.584	┬2.260	┬1.570	1.083	0.000	┬2.391	┬1.778

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:54:31	-1.261	┬3531.000	┬83790.000	┬1448.000	3424.000	™3795.000	3504.000	593.400	-2.037	598.100	0.000	0.000
2	12:54:53	-7.695	┬3618.000	┬84250.000	┬1471.000	3445.000	™3752.000	3444.000	585.700	-2.267	594.000	0.000	0.000
3	12:55:15	-3.529	┬3697.000	┬87040.000	┬1508.000	3520.000	┬3723.000	3468.000	588.300	-2.193	594.300	0.000	0.000
x		-4.161	┬3615.000	┬85030.000	┬1476.000	3463.000	™3757.000	3472.000	589.200	-2.166	595.500	0.000	0.000
σ		3.263	┬83.370	┬1758.000	┬30.120	50.190	™36.060	29.960	3.938	0.117	2.298	0.000	0.000
%RSD		78.420	┬2.306	┬2.068	┬2.041	1.449	™0.960	0.863	0.668	5.425	0.386	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:54:31	┬606.100	99.031%	┬3805.000	298.700	18.800	557.100	97.588%	┬0.000	711.400	719.700	┬3965.000	100.942%
2	12:54:53	┬609.100	100.848%	┬3889.000	298.300	41.380	561.900	100.178%	┬0.000	707.700	712.100	┬3925.000	101.773%
3	12:55:15	┬613.700	100.434%	┬3957.000	298.600	30.080	564.500	100.133%	┬0.000	718.900	718.800	┬3942.000	101.915%
x		┬609.600	100.104%	┬3884.000	298.600	30.080	561.200	99.300%	┬0.000	712.700	716.800	┬3944.000	101.543%
σ		┬3.819	0.952%	┬75.930	0.206	11.290	3.774	1.482%	┬0.000	5.722	4.146	┬20.070	0.525%
%RSD		┬0.626	0.951	┬1.955	0.069	37.530	0.673	1.493	┬0.000	0.803	0.578	┬0.509	0.517

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:54:31	59.540	┬596.300	┬3692.000	97.257%	0.000	62.720	29.100
2	12:54:53	61.620	┬600.000	┬3674.000	99.117%	0.000	62.760	28.820
3	12:55:15	61.610	┬597.600	┬3649.000	99.889%	0.000	62.210	28.710
x		60.920	┬598.000	┬3672.000	98.754%	0.000	62.560	28.880
σ		1.195	┬1.902	┬21.690	1.353%	0.000	0.305	0.199
%RSD		1.961	┬0.318	┬0.591	1.370	0.000	0.488	0.691

STD5 10/18/2016 12:57:15 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:57:36	103.127%	2958.000	1194.000	T 49350.000	TM 150100.000	T 147100.000	TM 51480.000	TM 155000.000	105.219%	0.000	TM 6574.000	TM 2091.000
2	12:57:58	100.950%	3055.000	1238.000	T 49480.000	TM 152400.000	TM 151900.000	TM 52920.000	TM 161000.000	104.959%	0.000	TM 6748.000	TM 2172.000
3	12:58:20	97.483%	M 3151.000	M 1279.000	T 48730.000	T 148500.000	T 149400.000	TM 52140.000	TM 162300.000	106.593%	0.000	TM 6572.000	TM 2111.000
x		100.520%	M 3055.000	M 1237.000	T 49180.000	TM 150300.000	TM 149500.000	TM 52180.000	TM 159400.000	105.590%	0.000	TM 6631.000	TM 2125.000
σ		2.846%	M 96.180	M 42.220	T 404.100	TM 1971.000	TM 2375.000	TM 719.600	TM 3863.000	0.878%	0.000	TM 101.000	TM 41.890
%RSD		2.831	M 3.149	M 3.413	T 0.822	TM 1.311	TM 1.589	TM 1.379	TM 2.423	0.831	0.000	TM 1.523	TM 1.972

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:57:36	-35.060	TM 6319.000	T 147400.000	TM 2558.000	TM 6549.000	TM 6416.000	TM 6473.000	992.500	-3.491	M 966.500	0.000	0.000
2	12:57:58	-28.450	TM 6439.000	TM 150400.000	TM 2587.000	TM 6684.000	TM 6585.000	TM 6593.000	M 1005.000	-3.737	M 988.600	0.000	0.000
3	12:58:20	-6.098	TM 6453.000	T 149500.000	TM 2562.000	TM 6491.000	TM 6418.000	TM 6493.000	989.600	-3.519	M 970.600	0.000	0.000
x		-23.200	TM 6404.000	TM 149100.000	TM 2569.000	TM 6575.000	TM 6473.000	TM 6520.000	M 995.900	-3.583	M 975.200	0.000	0.000
σ		15.180	TM 73.910	TM 1545.000	TM 15.790	TM 98.950	TM 96.990	TM 64.340	M 8.411	0.135	M 11.740	0.000	0.000
%RSD		65.410	TM 1.154	TM 1.037	TM 0.615	TM 1.505	TM 1.498	TM 0.987	M 0.845	3.755	M 1.204	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:57:36	TM 1050.000	99.561%	TM 6877.000	M 507.400	39.980	961.700	100.917%	T 0.000	TM 1384.000	1240.000	TM 6915.000	101.760%
2	12:57:58	TM 1072.000	98.996%	TM 7059.000	M 510.900	48.180	974.700	100.689%	T 0.000	TM 1407.000	M 1276.000	TM 7128.000	102.881%
3	12:58:20	TM 1060.000	97.669%	TM 7224.000	M 509.200	48.090	962.500	102.501%	T 0.000	TM 1401.000	M 1269.000	TM 7008.000	103.769%
x		TM 1060.000	98.742%	TM 7053.000	M 509.200	45.420	966.300	101.369%	T 0.000	TM 1397.000	M 1262.000	TM 7017.000	102.803%
σ		TM 10.980	0.971%	TM 174.000	M 1.755	4.709	7.285	0.987%	T 0.000	TM 11.950	M 19.330	TM 106.300	1.007%
%RSD		TM 1.035	0.984	TM 2.466	M 0.345	10.370	0.754	0.974	T 0.000	TM 0.855	M 1.532	TM 1.516	0.979

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:57:36	M 129.400	TM 1071.000	TM 6462.000	97.606%	0.000	M 128.000	M 61.400
2	12:57:58	M 131.600	TM 1088.000	TM 6580.000	98.028%	0.000	M 129.600	M 61.860
3	12:58:20	M 130.600	TM 1076.000	TM 6520.000	99.328%	0.000	M 129.900	M 62.660
x		M 130.500	TM 1078.000	TM 6521.000	98.321%	0.000	M 129.200	M 61.980
σ		M 1.111	TM 8.886	TM 59.010	0.898%	0.000	M 1.025	M 0.640
%RSD		M 0.851	TM 0.824	TM 0.905	0.913	0.000	M 0.793	M 1.033

ICV 10/18/2016 01:02:59 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:03:20	95.778%	325.600	139.600	T 5321.000	T 15540.000	T 15780.000	T 5206.000	14510.000	97.755%	0.000	606.300	196.400
2	13:03:42	91.250%	335.000	139.700	T 5353.000	T 15620.000	T 16090.000	T 5225.000	14600.000	98.165%	0.000	595.700	194.800
3	13:04:04	90.396%	340.100	151.600	T 5427.000	T 15750.000	T 15800.000	T 5138.000	14590.000	98.282%	0.000	611.300	194.700
x		92.475%	106.741%	114.916%	T 107.343%	T 104.234%	T 105.916%	T 103.798%	97.100%	98.068%	0.000	96.710%	97.663%
σ		2.893%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.277%	0.000	n/a	n/a
%RSD		3.128	2.210	4.799	T 1.004	T 0.668	T 1.098	T 0.879	0.352	0.282	0.000	1.320	0.497

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:03:20	14.080	┬631.400	┬15190.000	240.300	638.700	609.100	633.400	105.000	-0.047	106.300	0.000	0.000
2	13:03:42	14.210	┬638.200	┬15330.000	243.600	648.500	636.100	652.300	107.700	-0.108	108.900	0.000	0.000
3	13:04:04	13.910	┬628.800	┬15100.000	239.300	642.900	614.300	634.300	104.200	-0.071	108.900	0.000	0.000
x		14.070	┬101.249%	┬101.355%	96.413%	102.936%	99.175%	102.404%	105.613%	-0.075	108.038%	0.000	0.000
σ		0.150	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.031	n/a	0.000	0.000
%RSD		1.069	┬0.772	┬0.768	0.938	0.768	2.309	1.661	1.731	40.770	1.388	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:03:20	92.790	98.668%	281.000	51.570	0.134	98.530	97.853%	0.000	124.700	124.600	596.000	96.925%
2	13:03:42	95.170	99.864%	284.700	52.910	1.253	101.300	96.232%	0.000	129.000	129.400	617.700	96.590%
3	13:04:04	92.750	99.112%	292.200	51.600	1.367	101.300	98.763%	0.000	124.600	126.300	600.600	99.764%
x		93.570	99.215%	91.505%	104.052%	0.918	100.374%	97.616%	0.000	126.100	101.397%	96.760%	97.760%
σ		1.386	0.604%	n/a	n/a	0.681	n/a	1.282%	0.000	2.513	n/a	n/a	1.744%
%RSD		1.481	0.609	1.983	1.475	74.210	1.591	1.313	0.000	1.993	1.920	1.890	1.784
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	13:03:20	22.090	90.230	┬613.300	95.210%	0.000	16.660	9.440					
2	13:03:42	22.060	90.010	┬611.500	96.916%	0.000	17.350	9.471					
3	13:04:04	22.280	90.130	┬608.900	97.517%	0.000	18.120	9.494					
x		110.708%	90.123%	┬97.797%	96.547%	0.000	86.877%	94.683%					
σ		n/a	n/a	┬n/a	1.197%	0.000	n/a	n/a					
%RSD		0.536	0.122	┬0.365	1.239	0.000	4.194	0.286					

ICVL 10/18/2016 01:08:43 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:09:05	95.546%	1.394	49.400	489.300	210.700	52.110	478.900	500.500	103.254%	0.000	5.635	3.915
2	13:09:27	94.354%	1.449	50.190	493.600	200.100	53.560	486.600	502.700	102.609%	0.000	5.380	3.998
3	13:09:50	97.374%	1.277	49.240	481.600	203.000	53.710	485.000	517.600	102.765%	0.000	5.366	3.966
x		95.758%	137.339%	124.021%	97.635%	102.299%	106.253%	96.697%	101.386%	102.876%	0.000	109.207%	98.994%
σ		1.521%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.336%	0.000	n/a	n/a
%RSD		1.588	6.396	1.022	1.245	2.698	1.659	0.841	1.843	0.327	0.000	2.775	1.064
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:09:05	9.803	2.164	197.100	1.119	2.424	4.995	22.330	1.494	0.317	2.905	0.000	0.000
2	13:09:27	10.360	2.258	198.200	1.111	2.449	5.341	21.750	1.269	0.336	2.164	0.000	0.000
3	13:09:50	10.620	2.294	192.800	1.107	2.607	5.160	22.190	1.993	0.272	3.912	0.000	0.000
x		10.260	111.926%	98.011%	111.231%	124.662%	103.311%	110.448%	79.272%	0.308	74.846%	0.000	0.000
σ		0.417	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.033	n/a	0.000	0.000
%RSD		4.066	2.992	1.433	0.545	3.977	3.350	1.352	23.360	10.580	29.310	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:09:05	4.604	104.179%	10.820	1.156	-0.884	1.022	102.186%	0.000	2.132	2.164	9.574	99.416%
2	13:09:27	4.960	104.891%	10.610	1.103	-1.432	1.042	103.651%	0.000	2.356	2.260	10.020	101.348%

3	13:09:50	4.862	103.406%	11.220	1.105	-0.976	1.104	102.281%	0.000	2.360	2.338	9.939	99.249%
x		96.168%	104.159%	108.835%	112.134%	-1.097	105.587%	102.706%	0.000	2.283	112.707%	98.443%	100.004%
σ		n/a	0.742%	n/a	n/a	0.293	n/a	0.820%	0.000	0.130	n/a	n/a	1.167%
%RSD		3.821	0.713	2.863	2.650	26.750	4.075	0.798	0.000	5.715	3.873	2.415	1.167

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:09:05	1.753	2.078	1.170	96.063%	0.000	1.572	1.071
2	13:09:27	1.769	2.031	1.123	99.613%	0.000	1.509	0.982
3	13:09:50	2.003	2.057	1.188	97.907%	0.000	1.534	1.067
x		92.100%	102.769%	116.035%	97.861%	0.000	76.930%	104.010%
σ		n/a	n/a	n/a	1.775%	0.000	n/a	n/a
%RSD		7.600	1.131	2.903	1.814	0.000	2.062	4.853

ICBIS 10/18/2016 01:19:56 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:20:18	101.127%	0.019	-0.266	2.366	-0.037	-0.302	3.578	-0.981	106.150%	0.000	0.514	0.058
2	13:20:40	101.459%	0.088	0.569	-1.124	-0.205	-0.313	1.260	1.335	108.976%	0.000	0.573	-0.002
3	13:21:01	100.799%	0.036	0.143	-1.448	0.519	-0.252	0.863	-0.400	109.341%	0.000	0.006	-0.094
x		101.128%	0.048	0.148	-0.068	0.093	-0.289	1.900	-0.016	108.156%	0.000	0.364	-0.013
σ		0.330%	0.036	0.417	2.115	0.379	0.033	1.466	1.205	1.746%	0.000	0.312	0.077
%RSD		0.327	74.850	280.900	3089.000	409.700	11.340	77.160	7759.000	1.615	0.000	85.640	604.300

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:20:18	12.060	-0.019	2.914	-0.008	-0.037	-0.018	-0.572	-0.597	0.371	-0.813	0.000	0.000
2	13:20:40	11.690	-0.004	-0.731	-0.004	-0.019	-0.086	-0.310	-0.277	0.347	-0.648	0.000	0.000
3	13:21:01	12.350	-0.008	1.231	-0.008	-0.020	0.053	-0.486	-0.259	0.338	-0.739	0.000	0.000
x		12.030	-0.010	1.138	-0.006	-0.025	-0.017	-0.456	-0.377	0.352	-0.734	0.000	0.000
σ		0.327	0.008	1.824	0.002	0.010	0.070	0.134	0.190	0.017	0.083	0.000	0.000
%RSD		2.720	76.900	160.300	31.280	39.800	409.300	29.300	50.450	4.805	11.260	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:20:18	0.001	107.415%	-0.181	0.002	-1.189	0.028	107.552%	0.000	-0.266	-0.287	-0.024	103.531%
2	13:20:40	0.001	109.860%	-0.256	0.007	-1.260	0.060	106.847%	0.000	-0.234	-0.251	0.032	101.754%
3	13:21:01	0.000	109.820%	-0.203	-0.005	-1.005	0.021	107.142%	0.000	-0.261	-0.234	0.004	102.076%
x		0.001	109.032%	-0.213	0.001	-1.152	0.036	107.180%	0.000	-0.253	-0.257	0.004	102.453%
σ		0.001	1.400%	0.038	0.006	0.132	0.021	0.354%	0.000	0.017	0.027	0.028	0.947%
%RSD		59.860	1.284	18.020	418.900	11.420	57.830	0.330	0.000	6.627	10.680	740.800	0.924

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:20:18	0.044	0.081	-0.060	100.726%	0.000	0.620	-0.003
2	13:20:40	0.049	0.060	-0.069	101.238%	0.000	0.628	-0.003
3	13:21:01	0.067	0.069	-0.066	100.198%	0.000	0.649	-0.004
x		0.053	0.070	-0.065	100.720%	0.000	0.632	-0.003
σ		0.012	0.010	0.005	0.520%	0.000	0.015	0.000

%RSD	22.400	14.940	7.270	0.516	0.000	2.409	12.370	

ICSA 10/18/2016 01:25:39 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:26:00	96.815%	0.058	1.640	TM 98720.000	T 98220.000	T 97120.000	TM 99880.000	T 102900.000	111.275%	0.000	0.504	1.266
2	13:26:22	96.045%	0.150	0.856	TM 100700.000	T 101400.000	T 99920.000	TM 101900.000	T 104200.000	110.226%	0.000	0.480	1.393
3	13:26:44	93.865%	0.229	0.121	TM 97780.000	T 99910.000	T 99160.000	TM 102100.000	T 105800.000	112.630%	0.000	0.642	1.333
x		95.575%	1.#IO%	1.#IO%	TM 99.057%	T 99.832%	T 98.732%	TM 101.282%	T 104.293%	111.377%	0.000	1.#IO%	1.#IO%
σ		1.530%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.205%	0.000	n/a	n/a
%RSD		1.601	58.720	87.070	TM 1.492	T 1.581	T 1.463	TM 1.203	T 1.409	1.082	0.000	16.110	4.758

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:26:00	5.191	0.508	T 96380.000	0.114	0.498	1.235	-1.352	-0.080	0.285	-0.461	0.000	0.000
2	13:26:22	5.548	0.641	T 99400.000	0.139	0.610	0.844	-1.173	-0.043	0.303	-0.218	0.000	0.000
3	13:26:44	5.302	0.752	T 97460.000	0.168	0.743	1.348	-1.100	-0.101	0.300	-0.610	0.000	0.000
x		5.347	1.#IO%	T 97.746%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	0.296	-1.#IO%	0.000	0.000
σ		0.183	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.009	n/a	0.000	0.000
%RSD		3.423	19.220	T 1.565	19.390	19.880	23.130	10.740	39.390	3.126	46.060	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:26:00	0.776	106.284%	T 2030.000	0.160	6.734	0.294	105.160%	0.000	-0.167	-0.170	0.282	106.140%
2	13:26:22	0.740	107.521%	T 2086.000	0.169	8.057	0.290	109.327%	0.000	-0.102	-0.134	0.325	108.157%
3	13:26:44	0.820	110.441%	T 2089.000	0.203	7.983	0.314	108.845%	0.000	-0.111	-0.097	0.511	110.554%
x		1.#IO%	108.082%	T 103.432%	1.#IO%	7.591	1.#IO%	107.777%	0.000	-0.127	-1.#IO%	1.#IO%	108.284%
σ		n/a	2.134%	T n/a	n/a	0.744	n/a	2.279%	0.000	0.035	n/a	n/a	2.210%
%RSD		5.178	1.975	T 1.618	12.580	9.795	4.153	2.115	0.000	27.810	27.000	32.730	2.041

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:26:00	0.288	0.104	0.285	98.613%	0.000	5.755	-0.001
2	13:26:22	0.327	0.087	0.353	101.798%	0.000	4.774	0.002
3	13:26:44	0.275	0.132	0.543	104.058%	0.000	3.846	0.005
x		1.#IO%	1.#IO%	1.#IO%	101.490%	0.000	1.#IO%	1.#IO%
σ		n/a	n/a	n/a	2.735%	0.000	n/a	n/a
%RSD		9.104	21.380	34.050	2.695	0.000	19.930	149.400

ICSAB 10/18/2016 01:31:21 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:31:43	89.414%	29.490	465.700	TM 98950.000	T 97610.000	T 96000.000	TM 98800.000	T 102900.000	109.920%	0.000	25.530	48.910
2	13:32:05	90.154%	26.730	444.500	TM 94790.000	T 95460.000	T 94320.000	TM 96430.000	T 101500.000	111.874%	0.000	24.640	47.670
3	13:32:26	89.485%	26.690	450.700	TM 95950.000	T 94910.000	T 94980.000	TM 98080.000	T 102300.000	111.164%	0.000	23.470	47.710
x		89.684%	110.538%	113.402%	TM 96.561%	T 95.991%	T 95.098%	TM 97.770%	T 102.239%	110.986%	0.000	98.190%	96.192%
σ		0.408%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.989%	0.000	n/a	n/a
%RSD		0.455	5.805	2.399	TM 2.228	T 1.484	T 0.887	TM 1.247	T 0.656	0.891	0.000	4.213	1.463

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:31:43	6.952	24.620	T 95880.000	23.500	25.750	46.990	44.320	44.050	-0.043	109.800	0.000	0.000
2	13:32:05	6.396	24.050	T 95760.000	22.210	24.180	44.640	43.360	43.300	0.033	113.000	0.000	0.000
3	13:32:26	6.948	23.800	T 97530.000	22.750	23.630	44.600	42.980	43.370	-0.031	113.300	0.000	0.000
x		6.765	96.620%	T 96.389%	91.269%	98.081%	90.816%	87.105%	96.824%	-0.014	89.623%	0.000	0.000
σ		0.320	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.041	n/a	0.000	0.000
%RSD		4.726	1.738	T 1.031	2.844	4.484	3.020	1.580	0.946	293.000	1.737	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:31:43	0.976	106.279%	T 2052.000	24.810	7.134	23.570	108.109%	0.000	46.940	46.930	237.400	109.098%
2	13:32:05	0.802	107.840%	T 2078.000	24.580	10.720	23.080	108.886%	0.000	47.230	47.530	238.000	111.772%
3	13:32:26	0.725	108.567%	T 2090.000	24.560	7.253	23.540	109.524%	0.000	47.670	47.670	242.700	112.481%
x		0.835	107.562%	T 103.668%	98.616%	8.368	93.586%	108.840%	0.000	47.280	94.758%	95.736%	111.117%
σ		0.129	1.169%	T n/a	n/a	2.035	n/a	0.709%	0.000	0.369	n/a	n/a	1.785%
%RSD		15.400	1.087	T 0.923	0.567	24.320	1.174	0.651	0.000	0.781	0.828	1.210	1.606

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:31:43	18.350	22.670	24.200	102.830%	0.000	19.570	10.700
2	13:32:05	18.330	22.460	23.540	105.139%	0.000	19.820	10.860
3	13:32:26	18.450	23.090	23.680	103.578%	0.000	20.870	11.170
x		91.881%	90.954%	95.237%	103.849%	0.000	100.448%	109.064%
σ		n/a	n/a	n/a	1.178%	0.000	n/a	n/a
%RSD		0.360	1.429	1.468	1.134	0.000	3.430	2.199

CCV 10/18/2016 01:37:05 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:37:27	84.830%	707.300	269.100	T 10050.000	T 29600.000	T 29920.000	T 9988.000	28080.000	97.281%	0.000	T 1265.000	381.200
2	13:37:49	86.663%	672.000	268.400	T 9967.000	T 29720.000	T 29640.000	T 9825.000	T 29740.000	97.131%	0.000	T 1256.000	378.600
3	13:38:10	85.381%	687.300	275.800	T 10070.000	T 30420.000	T 30190.000	T 9855.000	28800.000	95.466%	0.000	T 1286.000	386.100
x		85.625%	110.221%	108.441%	T 100.268%	T 99.709%	T 99.720%	T 98.891%	T 96.249%	96.626%	0.000	T 101.496%	95.492%
σ		0.941%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.007%	0.000	T n/a	n/a
%RSD		1.099	2.571	1.512	T 0.527	T 1.492	T 0.929	T 0.875	T 2.885	1.042	0.000	T 1.212	1.005

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:37:27	19.770	T 1243.000	T 29490.000	453.400	1207.000	1119.000	1186.000	198.500	-0.635	209.700	0.000	0.000
2	13:37:49	15.850	T 1227.000	T 29460.000	456.700	1206.000	1117.000	1193.000	201.900	-0.577	210.100	0.000	0.000
3	13:38:10	17.580	T 1245.000	T 29740.000	467.400	1233.000	1142.000	1202.000	199.200	-0.506	207.400	0.000	0.000
x		17.740	T 99.044%	T 98.549%	91.836%	97.226%	90.068%	95.498%	99.921%	-0.573	104.537%	0.000	0.000
σ		1.965	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.065	n/a	0.000	0.000
%RSD		11.080	T 0.793	T 0.519	1.596	1.281	1.257	0.679	0.893	11.270	0.704	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:37:27	184.700	101.231%	1140.000	102.500	3.421	197.200	100.671%	0.000	237.000	239.300	1168.000	101.264%
2	13:37:49	189.200	101.423%	1173.000	104.300	8.606	197.000	98.769%	0.000	242.100	245.700	1191.000	101.824%
3	13:38:10	187.400	100.505%	1192.000	102.300	3.321	197.000	99.647%	0.000	244.000	244.400	1180.000	101.090%
x		187.100	101.053%	93.474%	103.049%	5.116	98.525%	99.696%	0.000	241.000	97.242%	94.388%	101.393%
σ		2.234	0.484%	n/a	n/a	3.023	n/a	0.952%	0.000	3.616	n/a	n/a	0.384%
%RSD		1.194	0.479	2.251	1.046	59.080	0.077	0.955	0.000	1.500	1.387	0.974	0.378

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:37:27	19.800	176.100	T 1230.000	98.816%	0.000	16.900	9.577
2	13:37:49	20.540	178.000	T 1232.000	99.661%	0.000	18.050	9.556
3	13:38:10	20.460	179.900	T 1242.000	98.743%	0.000	19.090	9.691
x		101.329%	88.995%	T 98.775%	99.074%	0.000	90.058%	96.081%
σ		n/a	n/a	T n/a	0.510%	0.000	n/a	n/a
%RSD		2.014	1.049	T 0.527	0.515	0.000	6.073	0.754

CCB 10/18/2016 01:42:49 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:43:10	89.310%	0.067	0.140	-2.455	0.900	0.654	4.914	1.817	100.696%	0.000	0.314	-0.222
2	13:43:32	88.323%	0.009	1.240	2.054	0.886	0.978	7.087	2.045	98.172%	0.000	0.671	-0.211
3	13:43:54	87.144%	0.050	-0.540	3.183	3.538	2.089	8.896	3.569	99.694%	0.000	0.104	-0.221
x		88.259%	0.042	0.280	0.927	1.775	1.241	6.966	2.477	99.521%	0.000	0.363	-0.218
σ		1.084%	0.030	0.898	2.983	1.527	0.753	1.993	0.953	1.271%	0.000	0.287	0.006
%RSD		1.229	70.780	320.400	321.700	86.070	60.660	28.620	38.470	1.277	0.000	78.970	2.917

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:43:10	9.021	-0.038	2.816	-0.007	-0.007	-0.083	-0.556	-0.909	0.321	-1.172	0.000	0.000
2	13:43:32	9.004	-0.017	3.162	0.007	-0.025	-0.009	-0.450	-0.355	0.254	-0.562	0.000	0.000
3	13:43:54	9.394	0.008	3.879	-0.001	-0.006	-0.104	-0.542	-0.715	0.301	-0.562	0.000	0.000
x		9.140	-0.016	3.286	-0.000	-0.013	-0.065	-0.516	-0.660	0.292	-0.765	0.000	0.000
σ		0.221	0.023	0.542	0.007	0.011	0.050	0.057	0.281	0.034	0.352	0.000	0.000
%RSD		2.414	146.200	16.510	2857.000	85.400	76.250	11.130	42.590	11.730	46.040	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:43:10	0.001	102.119%	1.738	0.006	-0.985	0.006	102.517%	0.000	-0.071	-0.122	0.025	100.021%
2	13:43:32	-0.002	104.053%	1.651	0.004	-1.027	0.037	102.437%	0.000	-0.076	-0.080	0.015	98.701%

3	13:43:54	0.002	102.094%	1.685	0.003	-1.229	0.038	102.052%	0.000	-0.050	-0.055	0.035	100.949%
x		0.000	102.755%	1.691	0.004	-1.080	0.027	102.335%	0.000	-0.066	-0.086	0.025	99.890%
σ		0.002	1.124%	0.044	0.002	0.130	0.018	0.249%	0.000	0.014	0.034	0.010	1.129%
%RSD		693.300	1.093	2.573	41.220	12.070	67.950	0.243	0.000	21.520	39.460	39.480	1.131

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:43:10	0.064	0.167	-0.068	98.321%	0.000	0.579	-0.001
2	13:43:32	0.046	0.148	-0.057	99.816%	0.000	0.593	-0.003
3	13:43:54	0.065	0.138	-0.038	99.986%	0.000	0.567	-0.002
x		0.058	0.151	-0.054	99.374%	0.000	0.580	-0.002
σ		0.011	0.015	0.015	0.916%	0.000	0.013	0.001
%RSD		18.240	9.748	27.330	0.922	0.000	2.326	46.810

MB 200-110229/1-A 10/18/2016 01:48:31 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:52	96.415%	0.131	-0.567	107.900	39.150	42.040	44.370	58.370	105.551%	0.000	0.777	0.569
2	13:49:14	97.367%	0.237	-0.145	113.400	49.740	53.970	48.120	65.570	106.508%	0.000	0.691	0.745
3	13:49:36	96.913%	0.166	0.567	110.000	44.840	44.650	44.700	61.000	106.046%	0.000	0.732	0.658
x		96.898%	0.178	-0.049	110.500	44.580	46.890	45.730	61.650	106.035%	0.000	0.733	0.657
σ		0.477%	0.054	0.573	2.772	5.298	6.274	2.075	3.643	0.479%	0.000	0.043	0.088
%RSD		0.492	30.300	1180.000	2.510	11.890	13.380	4.537	5.910	0.451	0.000	5.823	13.420

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:52	9.200	0.974	46.820	0.222	0.602	0.384	0.039	-0.279	0.270	-0.762	0.000	0.000
2	13:49:14	9.760	0.999	56.470	0.223	0.706	0.474	0.166	-0.703	0.312	-0.729	0.000	0.000
3	13:49:36	9.444	0.968	46.660	0.195	0.525	0.407	0.303	-0.385	0.277	-0.744	0.000	0.000
x		9.468	0.981	49.980	0.213	0.611	0.421	0.169	-0.456	0.286	-0.745	0.000	0.000
σ		0.281	0.017	5.617	0.016	0.091	0.046	0.132	0.221	0.022	0.017	0.000	0.000
%RSD		2.968	1.694	11.240	7.551	14.860	11.020	78.060	48.460	7.854	2.268	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:52	0.077	108.926%	1.490	0.023	-1.159	0.053	106.029%	0.000	-0.194	-0.218	0.365	102.874%
2	13:49:14	0.078	108.021%	1.808	0.023	-1.145	0.104	107.332%	0.000	-0.183	-0.155	0.482	104.188%
3	13:49:36	0.074	110.759%	1.338	0.026	-0.788	0.077	107.860%	0.000	-0.156	-0.164	0.377	105.728%
x		0.076	109.235%	1.545	0.024	-1.031	0.078	107.074%	0.000	-0.178	-0.179	0.408	104.263%
σ		0.002	1.395%	0.239	0.002	0.210	0.026	0.943%	0.000	0.019	0.034	0.064	1.428%
%RSD		2.654	1.277	15.490	7.498	20.400	33.160	0.880	0.000	10.850	18.860	15.800	1.370

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:48:52	0.076	0.102	0.192	100.060%	0.000	3.447	0.003
2	13:49:14	0.077	0.136	0.255	104.041%	0.000	2.860	0.005
3	13:49:36	0.091	0.094	0.198	102.457%	0.000	2.490	0.001
x		0.081	0.111	0.215	102.186%	0.000	2.932	0.003
σ		0.008	0.022	0.035	2.005%	0.000	0.482	0.002

%RSD	9.900	20.220	16.100	1.962	0.000	16.440	65.160	

LCS 200-110229/2-A 10/18/2016 01:54:13 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:54:35	92.558%	10.990	436.500	T 5472.000	1979.000	483.700	T 5150.000	4850.000	103.058%	0.000	47.500	39.570
2	13:54:57	93.233%	10.460	438.200	T 5399.000	1964.000	481.700	T 5175.000	4864.000	102.121%	0.000	46.820	41.010
3	13:55:18	87.744%	11.930	445.900	T 5493.000	1982.000	494.200	T 5283.000	5086.000	98.393%	0.000	48.100	41.730
x		91.179%	11.130	440.200	T 5455.000	1975.000	486.500	T 5202.000	4933.000	101.191%	0.000	47.470	40.770
σ		2.993%	0.747	5.020	T 49.700	9.743	6.725	T 70.840	132.400	2.468%	0.000	0.641	1.098
%RSD		3.283	6.708	1.140	T 0.911	0.493	1.382	T 1.362	2.684	2.439	0.000	1.351	2.694

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:54:35	9.693	19.320	T 2091.000	9.714	20.640	48.490	178.100	18.790	0.124	34.290	0.000	0.000
2	13:54:57	9.015	20.100	T 2094.000	10.020	20.420	48.910	185.400	18.790	0.172	34.970	0.000	0.000
3	13:55:18	8.670	20.570	T 2165.000	10.610	22.030	49.650	184.500	18.940	0.103	34.100	0.000	0.000
x		9.126	20.000	T 2117.000	10.110	21.030	49.020	182.700	18.840	0.133	34.450	0.000	0.000
σ		0.520	0.631	T 41.500	0.453	0.873	0.588	3.986	0.089	0.035	0.456	0.000	0.000
%RSD		5.704	3.154	T 1.961	4.478	4.151	1.200	2.182	0.471	26.410	1.324	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:54:35	48.400	101.484%	100.600	11.130	0.569	9.326	102.018%	0.000	19.280	18.760	97.220	99.854%
2	13:54:57	49.820	102.407%	101.600	11.260	0.950	9.425	100.950%	0.000	19.550	19.270	99.200	101.721%
3	13:55:18	49.300	101.559%	101.900	11.210	-0.080	9.916	101.335%	0.000	19.540	19.330	96.690	100.511%
x		49.170	101.817%	101.400	11.200	0.479	9.556	101.434%	0.000	19.460	19.120	97.700	100.695%
σ		0.722	0.513%	0.689	0.066	0.521	0.316	0.541%	0.000	0.156	0.313	1.322	0.947%
%RSD		1.468	0.504	0.679	0.585	108.600	3.309	0.534	0.000	0.803	1.635	1.353	0.941

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:54:35	36.690	18.300	9.465	98.711%	0.000	17.580	10.650
2	13:54:57	37.070	18.860	9.662	97.541%	0.000	18.730	11.090
3	13:55:18	37.440	18.770	9.505	97.882%	0.000	19.220	10.900
x		37.070	18.640	9.544	98.045%	0.000	18.510	10.880
σ		0.373	0.298	0.104	0.602%	0.000	0.841	0.222
%RSD		1.005	1.597	1.086	0.614	0.000	4.544	2.044

200-35680-A-7-B 10/18/2016 01:59:56 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:00:18	104.854%	3.115	20.240	┬505.000	┬11180.000	┬48020.000	┬3669.000	16790.000	144.739%	0.000	77.200	59.560
2	14:00:39	101.865%	4.219	21.450	┬492.200	┬11160.000	┬48540.000	┬3693.000	16990.000	147.843%	0.000	79.440	59.010
3	14:01:01	104.921%	3.978	22.480	┬495.300	┬11190.000	┬49100.000	┬3738.000	17250.000	148.176%	0.000	77.990	59.850
x		103.880%	3.771	21.390	┬497.500	┬11180.000	┬48550.000	┬3700.000	17010.000	146.920%	0.000	78.210	59.470
σ		1.746%	0.581	1.118	┬6.688	┬15.310	┬541.800	┬35.040	233.400	1.896%	0.000	1.135	0.429
%RSD		1.680	15.400	5.228	┬1.344	┬0.137	┬1.116	┬0.947	1.372	1.290	0.000	1.451	0.722

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:00:18	6.239	┬2715.000	┬76200.000	35.280	86.570	┬2813.000	1050.000	23.520	0.127	20.220	0.000	0.000
2	14:00:39	6.701	┬2783.000	┬78910.000	36.380	87.170	┬2777.000	1062.000	24.020	0.118	20.920	0.000	0.000
3	14:01:01	8.686	┬2746.000	┬78220.000	36.600	89.430	┬2826.000	1062.000	23.840	0.130	20.020	0.000	0.000
x		7.209	┬2748.000	┬77780.000	36.090	87.730	┬2805.000	1058.000	23.790	0.125	20.390	0.000	0.000
σ		1.300	┬33.750	┬1410.000	0.710	1.509	┬25.780	6.996	0.252	0.006	0.471	0.000	0.000
%RSD		18.040	┬1.228	┬1.813	1.967	1.720	┬0.919	0.661	1.060	5.118	2.311	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:00:18	77.250	284.425%	1.819	2.543	-3.813	5.917	117.399%	0.000	0.654	0.633	621.300	134.532%
2	14:00:39	78.310	298.321%	1.675	2.649	-3.219	5.878	120.025%	0.000	0.708	0.694	624.900	134.066%
3	14:01:01	78.620	296.782%	1.741	2.565	-3.216	6.090	121.135%	0.000	0.597	0.693	632.800	140.489%
x		78.060	293.176%	1.745	2.586	-3.416	5.962	119.520%	0.000	0.653	0.673	626.300	136.362%
σ		0.716	7.617%	0.072	0.056	0.344	0.113	1.919%	0.000	0.056	0.035	5.861	3.581%
%RSD		0.917	2.598	4.135	2.168	10.060	1.891	1.605	0.000	8.500	5.196	0.936	2.626

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:00:18	0.513	0.498	165.800	113.236%	0.000	16.580	6.694
2	14:00:39	0.483	0.502	169.300	115.026%	0.000	15.980	6.777
3	14:01:01	0.459	0.484	171.300	115.807%	0.000	15.530	6.738
x		0.485	0.495	168.800	114.690%	0.000	16.030	6.737
σ		0.027	0.010	2.799	1.318%	0.000	0.531	0.042
%RSD		5.633	1.938	1.658	1.149	0.000	3.312	0.616

200-35680-A-14-D 10/18/2016 02:05:39 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:06:00	105.592%	3.688	23.860	┬543.400	┬12410.000	┬49740.000	┬4037.000	┬22980.000	160.764%	0.000	74.880	61.340
2	14:06:22	106.325%	3.810	21.520	┬542.700	┬12350.000	┬49650.000	┬3990.000	┬23110.000	161.530%	0.000	75.630	61.940
3	14:06:44	104.441%	3.378	21.600	┬538.100	┬12380.000	┬50050.000	┬4050.000	┬23210.000	161.157%	0.000	78.680	63.120
x		105.453%	3.625	22.330	┬541.400	┬12380.000	┬49810.000	┬4026.000	┬23100.000	161.150%	0.000	76.400	62.130
σ		0.950%	0.223	1.331	┬2.883	┬31.880	┬207.500	┬31.430	┬113.600	0.383%	0.000	2.011	0.903
%RSD		0.900	6.144	5.959	┬0.532	┬0.258	┬0.416	┬0.781	┬0.492	0.238	0.000	2.633	1.453

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:06:00	6.534	T 4133.000	T 96140.000	40.900	91.120	2288.000	938.000	28.220	0.139	15.010	0.000	0.000
2	14:06:22	6.788	T 4165.000	T 96890.000	40.200	90.620	2297.000	936.900	28.900	0.112	16.340	0.000	0.000
3	14:06:44	5.564	T 4209.000	T 97090.000	39.970	91.490	2303.000	952.000	29.630	0.104	16.800	0.000	0.000
x		6.295	T 4169.000	T 96710.000	40.360	91.080	2296.000	942.300	28.920	0.118	16.050	0.000	0.000
σ		0.646	T 38.140	T 499.100	0.485	0.436	7.809	8.418	0.703	0.019	0.928	0.000	0.000
%RSD		10.260	T 0.915	T 0.516	1.201	0.478	0.340	0.893	2.431	15.710	5.782	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:06:00	102.300	317.960%	1.953	2.223	-3.660	3.908	128.279%	0.000	0.473	0.486	752.000	140.896%
2	14:06:22	102.500	323.761%	1.960	2.105	-2.769	3.743	128.598%	0.000	0.546	0.501	761.800	146.521%
3	14:06:44	104.000	321.896%	1.920	2.201	-2.871	3.895	128.585%	0.000	0.491	0.526	777.100	147.310%
x		103.000	321.206%	1.944	2.176	-3.100	3.849	128.488%	0.000	0.503	0.504	763.600	144.909%
σ		0.909	2.962%	0.021	0.063	0.488	0.092	0.180%	0.000	0.038	0.020	12.620	3.498%
%RSD		0.882	0.922	1.087	2.898	15.740	2.385	0.140	0.000	7.554	3.983	1.652	2.414

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:06:00	0.457	0.510	140.300	121.616%	0.000	14.520	7.857
2	14:06:22	0.433	0.533	142.000	120.924%	0.000	14.920	8.003
3	14:06:44	0.382	0.513	139.200	124.692%	0.000	14.530	7.838
x		0.424	0.518	140.500	122.411%	0.000	14.660	7.899
σ		0.038	0.012	1.413	2.006%	0.000	0.228	0.090
%RSD		9.021	2.409	1.006	1.639	0.000	1.554	1.138

200-35736-A-1-A 10/18/2016 02:11:21 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:11:43	108.532%	8.753	17.130	T 566.800	T 16260.000	T 96530.000	T 6290.000	T 16720.000	200.902%	0.000	140.200	102.500
2	14:12:05	106.964%	8.653	16.200	T 567.700	T 15980.000	T 95640.000	T 6263.000	T 16680.000	203.503%	0.000	140.500	101.100
3	14:12:26	107.438%	8.680	15.870	T 549.900	T 15940.000	T 93890.000	T 6164.000	15870.000	204.712%	0.000	141.300	102.800
x		107.645%	8.695	16.400	T 561.400	T 16060.000	T 95350.000	T 6239.000	T 16420.000	203.039%	0.000	140.700	102.100
σ		0.805%	0.052	0.651	T 10.040	T 175.000	T 1340.000	T 66.400	T 476.400	1.947%	0.000	0.552	0.935
%RSD		0.747	0.593	3.971	T 1.787	T 1.089	T 1.406	T 1.064	T 2.901	0.959	0.000	0.393	0.915

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:11:43	7.867	T 4228.000	TM 175400.000	67.560	127.300	108.400	587.500	93.270	0.122	7.704	0.000	0.000
2	14:12:05	6.379	T 4262.000	TM 177300.000	67.190	127.500	109.500	598.600	94.710	0.111	8.825	0.000	0.000
3	14:12:26	8.219	T 4284.000	TM 177800.000	67.250	128.300	111.700	595.300	94.880	0.125	7.962	0.000	0.000
x		7.488	T 4258.000	TM 176800.000	67.330	127.700	109.900	593.800	94.290	0.119	8.164	0.000	0.000
σ		0.977	T 28.220	TM 1281.000	0.199	0.493	1.698	5.709	0.884	0.008	0.587	0.000	0.000
%RSD		13.050	T 0.663	TM 0.724	0.296	0.386	1.546	0.962	0.937	6.339	7.191	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:11:43	115.300	516.062%	1.690	0.968	-6.549	2.170	133.070%	0.000	0.236	0.201	1489.000	171.208%
2	14:12:05	116.900	517.753%	1.814	0.912	-6.078	2.292	132.930%	0.000	0.239	0.240	1519.000	169.108%

3	14:12:26	118.200	529.630%	1.792	0.949	-8.550	2.448	134.362%	0.000	0.234	0.266	1546.000	175.130%
x		116.800	521.148%	1.765	0.943	-7.059	2.303	133.454%	0.000	0.236	0.236	1518.000	171.815%
σ		1.452	7.394%	0.066	0.029	1.312	0.139	0.790%	0.000	0.003	0.032	28.220	3.057%
%RSD		1.243	1.419	3.756	3.052	18.590	6.045	0.592	0.000	1.098	13.700	1.859	1.779

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:11:43	0.199	0.984	127.000	127.208%	0.000	28.780	8.972
2	14:12:05	0.220	0.933	127.500	128.828%	0.000	29.360	9.065
3	14:12:26	0.180	0.933	127.700	130.839%	0.000	29.420	8.916
x		0.200	0.950	127.400	128.958%	0.000	29.180	8.985
σ		0.020	0.029	0.352	1.819%	0.000	0.356	0.075
%RSD		10.030	3.058	0.277	1.411	0.000	1.219	0.836

200-35736-A-2-A 10/18/2016 02:17:04 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:26	107.418%	7.852	33.130	┬575.000	┬17000.000	┬99850.000	┬7777.000	13280.000	194.238%	0.000	139.200	105.200
2	14:17:47	107.938%	8.348	34.230	┬551.100	┬17130.000	┬98860.000	┬7731.000	13490.000	197.980%	0.000	140.800	103.300
3	14:18:09	105.159%	8.088	34.880	┬539.400	┬16780.000	┬99390.000	┬7573.000	┬14280.000	199.490%	0.000	138.800	104.300
x		106.838%	8.096	34.080	┬555.200	┬16970.000	┬99370.000	┬7694.000	┬13680.000	197.236%	0.000	139.600	104.300
σ		1.478%	0.248	0.885	┬18.130	┬179.900	┬495.500	┬106.700	┬524.000	2.704%	0.000	1.070	0.960
%RSD		1.383	3.064	2.595	┬3.265	┬1.060	┬0.499	┬1.387	┬3.829	1.371	0.000	0.766	0.921

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:26	10.190	┬3338.000	┬121500.000	53.450	122.400	104.700	538.200	31.560	0.178	5.863	0.000	0.000
2	14:17:47	9.580	┬3320.000	┬121200.000	53.080	122.700	105.300	542.900	31.670	0.169	7.158	0.000	0.000
3	14:18:09	10.710	┬3372.000	┬120700.000	52.350	122.000	104.800	534.900	31.580	0.169	6.668	0.000	0.000
x		10.160	┬3343.000	┬121100.000	52.960	122.300	104.900	538.600	31.600	0.172	6.563	0.000	0.000
σ		0.566	┬26.410	┬377.400	0.561	0.384	0.310	4.040	0.063	0.005	0.654	0.000	0.000
%RSD		5.570	┬0.790	┬0.312	1.059	0.313	0.295	0.750	0.199	3.187	9.964	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:26	97.930	476.050%	0.462	0.752	-6.174	1.903	131.943%	0.000	0.124	0.123	1314.000	164.858%
2	14:17:47	97.500	478.709%	0.426	0.742	-4.735	1.818	133.171%	0.000	0.144	0.147	1327.000	164.618%
3	14:18:09	98.060	475.834%	0.499	0.746	-5.021	1.817	135.189%	0.000	0.158	0.158	1299.000	164.566%
x		97.830	476.865%	0.462	0.746	-5.310	1.846	133.434%	0.000	0.142	0.142	1313.000	164.681%
σ		0.292	1.601%	0.037	0.005	0.762	0.050	1.639%	0.000	0.017	0.018	13.990	0.156%
%RSD		0.299	0.336	7.917	0.661	14.340	2.691	1.228	0.000	11.920	12.550	1.065	0.094

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:17:26	0.235	0.898	112.100	124.684%	0.000	29.010	7.544
2	14:17:47	0.212	0.958	115.100	124.082%	0.000	29.540	7.740
3	14:18:09	0.221	0.938	114.900	125.026%	0.000	29.460	7.694
x		0.223	0.931	114.100	124.597%	0.000	29.340	7.659
σ		0.011	0.030	1.674	0.478%	0.000	0.287	0.103

%RSD		5.109	3.247	1.467	0.384	0.000	0.977	1.341

200-35736-A-3-A 10/18/2016 02:22:47 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:23:09	105.752%	8.009	40.870	T 595.600	T 16590.000	T 104100.000	T 8089.000	15340.000	197.087%	0.000	141.400	105.800
2	14:23:31	105.914%	7.206	41.410	T 581.400	T 16180.000	T 101300.000	T 8147.000	T 16500.000	204.147%	0.000	138.100	102.300
3	14:23:52	104.448%	8.361	42.410	T 606.100	T 16750.000	T 105800.000	T 8330.000	T 16970.000	197.671%	0.000	143.100	108.100
x		105.371%	7.859	41.560	T 594.400	T 16510.000	T 103700.000	T 8189.000	T 16270.000	199.635%	0.000	140.900	105.400
σ		0.804%	0.592	0.783	T 12.400	T 297.200	T 2263.000	T 125.600	T 841.300	3.918%	0.000	2.563	2.935
%RSD		0.763	7.537	1.883	T 2.087	T 1.800	T 2.183	T 1.533	T 5.171	1.963	0.000	1.819	2.785

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:23:09	10.770	T 2816.000	T 99670.000	47.440	120.500	111.900	576.100	23.620	0.192	7.181	0.000	0.000
2	14:23:31	11.290	T 2814.000	T 97740.000	46.860	117.800	109.400	570.200	23.320	0.191	5.905	0.000	0.000
3	14:23:52	11.390	T 2905.000	T 101200.000	48.560	122.300	107.700	568.100	24.490	0.179	7.485	0.000	0.000
x		11.150	T 2845.000	T 99550.000	47.620	120.200	109.700	571.400	23.810	0.187	6.857	0.000	0.000
σ		0.334	T 52.210	T 1759.000	0.862	2.272	2.124	4.174	0.608	0.007	0.838	0.000	0.000
%RSD		2.997	T 1.835	T 1.767	1.809	1.890	1.936	0.731	2.555	3.758	12.230	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:23:09	111.700	501.335%	0.166	0.833	-6.459	2.681	129.669%	0.000	0.034	0.078	1340.000	165.745%
2	14:23:31	111.300	506.056%	0.141	0.814	-6.164	2.411	132.206%	0.000	0.091	0.093	1348.000	168.415%
3	14:23:52	109.500	507.951%	0.163	0.786	-6.027	2.413	134.206%	0.000	0.065	0.086	1344.000	169.160%
x		110.800	505.114%	0.156	0.811	-6.217	2.502	132.027%	0.000	0.063	0.086	1344.000	167.773%
σ		1.147	3.407%	0.014	0.023	0.221	0.156	2.274%	0.000	0.029	0.007	4.110	1.795%
%RSD		1.035	0.675	8.759	2.885	3.553	6.214	1.722	0.000	45.550	8.661	0.306	1.070

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:23:09	0.222	0.908	119.600	121.136%	0.000	29.330	10.200
2	14:23:31	0.295	0.882	116.700	127.745%	0.000	28.860	9.898
3	14:23:52	0.199	0.922	120.300	124.904%	0.000	29.550	10.150
x		0.239	0.904	118.900	124.595%	0.000	29.250	10.080
σ		0.050	0.020	1.926	3.315%	0.000	0.348	0.162
%RSD		20.890	2.253	1.620	2.661	0.000	1.191	1.605

200-35736-A-4-A 10/18/2016 02:28:30 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:28:52	111.379%	6.410	36.270	T 530.600	T 15190.000	T 86400.000	T 7498.000	T 20230.000	200.186%	0.000	128.300	92.800
2	14:29:14	110.220%	6.827	38.000	T 521.400	T 15100.000	T 86040.000	T 7362.000	T 20560.000	202.721%	0.000	127.000	92.660
3	14:29:36	106.887%	6.600	41.230	T 506.700	T 14950.000	T 85460.000	T 7538.000	T 20430.000	203.293%	0.000	127.800	92.180
x		109.495%	6.613	38.500	T 519.600	T 15080.000	T 85970.000	T 7466.000	T 20410.000	202.067%	0.000	127.700	92.550
σ		2.332%	0.209	2.515	T 12.080	T 121.800	T 475.900	T 92.150	T 167.900	1.654%	0.000	0.659	0.325
%RSD		2.130	3.154	6.533	T 2.325	T 0.808	T 0.554	T 1.234	T 0.823	0.818	0.000	0.516	0.351

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:28:52	8.296	TM 9238.000	TM 182700.000	41.680	109.400	94.580	471.600	84.540	0.130	8.051	0.000	0.000
2	14:29:14	9.118	TM 9275.000	TM 182200.000	41.900	109.100	97.000	483.000	86.160	0.132	8.299	0.000	0.000
3	14:29:36	8.623	TM 9263.000	TM 185000.000	42.550	109.600	97.270	479.900	84.140	0.145	6.689	0.000	0.000
x		8.679	TM 9259.000	TM 183300.000	42.040	109.400	96.280	478.200	84.950	0.136	7.680	0.000	0.000
σ		0.414	TM 19.010	TM 1475.000	0.452	0.261	1.478	5.892	1.071	0.008	0.867	0.000	0.000
%RSD		4.768	TM 0.205	TM 0.804	1.076	0.239	1.535	1.232	1.260	6.214	11.290	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:28:52	126.800	481.776%	0.444	0.866	-6.765	1.668	135.971%	0.000	0.008	-0.004	1410.000	164.877%
2	14:29:14	129.200	483.735%	0.445	0.905	-7.012	1.502	134.768%	0.000	0.002	0.035	1435.000	162.675%
3	14:29:36	128.100	483.597%	0.411	0.874	-7.760	1.606	137.397%	0.000	0.102	0.045	1439.000	166.173%
x		128.000	483.036%	0.433	0.882	-7.179	1.592	136.045%	0.000	0.037	0.025	1428.000	164.575%
σ		1.188	1.093%	0.019	0.020	0.518	0.084	1.316%	0.000	0.056	0.026	15.700	1.768%
%RSD		0.928	0.226	4.443	2.308	7.217	5.259	0.967	0.000	150.400	101.300	1.099	1.075

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:28:52	0.248	0.823	118.000	126.337%	0.000	24.350	4.782
2	14:29:14	0.260	0.801	119.600	127.305%	0.000	24.500	4.805
3	14:29:36	0.233	0.842	118.900	128.983%	0.000	24.350	4.743
x		0.247	0.822	118.800	127.542%	0.000	24.400	4.777
σ		0.014	0.021	0.798	1.339%	0.000	0.085	0.031
%RSD		5.597	2.495	0.671	1.050	0.000	0.349	0.653

200-35736-A-5-A 10/18/2016 02:34:14 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:36	107.308%	6.477	32.460	T 481.700	T 14420.000	T 92780.000	T 7408.000	11750.000	192.191%	0.000	127.700	94.850
2	14:34:57	107.225%	6.726	34.840	T 496.800	T 15000.000	T 94870.000	T 7528.000	11890.000	192.138%	0.000	132.700	97.290
3	14:35:19	104.076%	7.065	37.280	T 474.800	T 14480.000	T 91850.000	T 7374.000	11650.000	195.557%	0.000	130.200	95.810
x		106.203%	6.756	34.860	T 484.500	T 14630.000	T 93160.000	T 7437.000	11760.000	193.295%	0.000	130.200	95.980
σ		1.842%	0.295	2.410	T 11.260	T 320.500	T 1546.000	T 80.900	121.000	1.959%	0.000	2.480	1.227
%RSD		1.735	4.374	6.912	T 2.323	T 2.190	T 1.660	T 1.088	1.028	1.014	0.000	1.905	1.278

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:36	11.200	T 2616.000	T 100700.000	44.880	109.000	92.180	475.300	24.390	0.203	5.440	0.000	0.000
2	14:34:57	10.100	T 2629.000	T 102000.000	45.820	110.400	94.520	478.100	24.960	0.197	6.357	0.000	0.000
3	14:35:19	11.630	T 2633.000	T 101000.000	45.520	108.200	94.770	482.000	24.210	0.182	6.768	0.000	0.000
x		10.980	T 2626.000	T 101200.000	45.410	109.200	93.830	478.500	24.520	0.194	6.189	0.000	0.000
σ		0.791	T 9.032	T 708.100	0.483	1.105	1.428	3.379	0.388	0.011	0.680	0.000	0.000
%RSD		7.208	T 0.344	T 0.699	1.063	1.012	1.522	0.706	1.581	5.764	10.980	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:36	83.800	429.355%	0.470	0.783	-5.969	2.062	131.834%	0.000	0.094	0.068	1193.000	156.938%
2	14:34:57	86.000	440.774%	0.469	0.728	-5.748	1.984	132.831%	0.000	0.099	0.063	1204.000	157.870%
3	14:35:19	84.260	438.835%	0.458	0.707	-4.557	1.972	133.462%	0.000	0.077	0.106	1213.000	158.524%
x		84.690	436.321%	0.466	0.739	-5.425	2.006	132.709%	0.000	0.090	0.079	1203.000	157.777%
σ		1.161	6.110%	0.006	0.040	0.759	0.049	0.821%	0.000	0.012	0.024	9.847	0.797%
%RSD		1.371	1.400	1.383	5.357	14.000	2.434	0.619	0.000	13.210	30.350	0.818	0.505

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:34:36	0.219	0.833	115.000	121.982%	0.000	24.830	7.929
2	14:34:57	0.242	0.854	118.000	121.860%	0.000	25.310	8.039
3	14:35:19	0.241	0.864	118.700	120.851%	0.000	25.840	8.143
x		0.234	0.850	117.200	121.564%	0.000	25.330	8.037
σ		0.014	0.016	1.989	0.621%	0.000	0.508	0.107
%RSD		5.782	1.834	1.697	0.511	0.000	2.004	1.333

200-35736-A-5-A SD@5 10/18/2016 02:39:58 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:40:19	103.766%	1.397	2.477	114.200	3547.000	T 24330.000	T 1908.000	3016.000	151.516%	0.000	34.130	25.410
2	14:40:41	104.161%	1.509	5.103	105.200	3536.000	T 24200.000	T 1892.000	3004.000	154.217%	0.000	33.930	24.830
3	14:41:03	103.798%	1.178	4.934	109.300	3635.000	T 24670.000	T 1928.000	3124.000	149.470%	0.000	34.660	25.640
x		103.909%	1.362	4.171	109.600	3573.000	T 24400.000	T 1909.000	3048.000	151.735%	0.000	34.240	25.290
σ		0.219%	0.168	1.470	4.490	54.140	T 242.700	T 18.350	66.230	2.381%	0.000	0.381	0.415
%RSD		0.211	12.370	35.240	4.099	1.515	T 0.995	T 0.961	2.173	1.569	0.000	1.114	1.640

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:40:19	10.060	T 665.100	T 26480.000	11.630	28.970	19.990	112.900	5.532	0.342	1.118	0.000	0.000
2	14:40:41	9.134	T 665.300	T 25940.000	11.870	28.550	19.490	114.200	5.434	0.360	0.671	0.000	0.000
3	14:41:03	9.904	T 684.700	T 27280.000	12.330	29.540	19.770	112.700	5.367	0.341	0.987	0.000	0.000
x		9.700	T 671.700	T 26570.000	11.940	29.020	19.750	113.300	5.444	0.348	0.925	0.000	0.000
σ		0.496	T 11.280	T 677.400	0.357	0.495	0.250	0.817	0.083	0.010	0.230	0.000	0.000
%RSD		5.116	T 1.680	T 2.550	2.988	1.706	1.266	0.721	1.525	2.948	24.840	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:40:19	17.310	201.614%	-0.150	0.159	-2.375	0.503	132.631%	0.000	-0.349	-0.349	240.600	129.985%
2	14:40:41	17.410	202.074%	-0.046	0.158	-1.908	0.353	133.460%	0.000	-0.326	-0.336	244.200	128.481%

3	14:41:03	17.450	202.876%	-0.132	0.181	-1.595	0.367	133.252%	0.000	-0.309	-0.332	244.100	130.366%
x		17.390	202.188%	-0.110	0.166	-1.959	0.407	133.114%	0.000	-0.328	-0.339	243.000	129.610%
σ		0.070	0.638%	0.056	0.013	0.393	0.083	0.431%	0.000	0.020	0.009	2.076	0.997%
%RSD		0.402	0.316	50.720	7.714	20.040	20.290	0.324	0.000	6.154	2.571	0.855	0.769

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:40:19	0.034	0.157	24.150	115.522%	0.000	4.454	1.640
2	14:40:41	0.035	0.169	24.710	114.700%	0.000	4.707	1.618
3	14:41:03	0.044	0.153	24.460	116.181%	0.000	4.839	1.635
x		0.037	0.160	24.440	115.468%	0.000	4.667	1.631
σ		0.006	0.008	0.282	0.742%	0.000	0.196	0.011
%RSD		14.960	5.173	1.154	0.642	0.000	4.192	0.691

CCV 10/18/2016 02:45:42 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:46:03	91.582%	688.900	264.100	┬10160.000	┬29780.000	┬30280.000	┬10240.000	┬30120.000	109.738%	0.000	┬1299.000	386.800
2	14:46:25	86.634%	709.900	282.000	┬9941.000	┬29250.000	┬29820.000	┬9814.000	┬29720.000	110.773%	0.000	┬1266.000	376.600
3	14:46:46	87.685%	695.800	273.000	┬9960.000	┬29300.000	┬29980.000	┬9861.000	┬29100.000	108.722%	0.000	┬1262.000	376.900
x		88.634%	111.714%	109.216%	┬100.202%	┬98.141%	┬100.087%	┬99.721%	┬98.817%	109.744%	0.000	┬102.032%	95.021%
σ		2.607%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.026%	0.000	┬n/a	n/a
%RSD		2.941	1.531	3.289	┬1.208	┬0.991	┬0.772	┬2.347	┬1.733	0.935	0.000	┬1.591	1.523

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:46:03	20.970	┬1256.000	┬30190.000	479.500	1282.000	1188.000	1219.000	207.200	-0.341	214.500	0.000	0.000
2	14:46:25	18.490	┬1205.000	┬29330.000	468.500	1259.000	1229.000	1232.000	210.500	-0.414	215.000	0.000	0.000
3	14:46:46	21.010	┬1230.000	┬29660.000	464.400	1242.000	1191.000	1225.000	206.300	-0.407	213.700	0.000	0.000
x		20.150	┬98.424%	┬99.093%	94.160%	100.865%	96.209%	98.054%	103.994%	-0.387	107.188%	0.000	0.000
σ		1.443	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.040	n/a	0.000	0.000
%RSD		7.162	┬2.090	┬1.465	1.664	1.589	1.879	0.532	1.076	10.340	0.318	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:46:03	189.100	115.581%	1101.000	104.200	3.263	191.500	110.815%	0.000	233.500	232.600	1134.000	107.107%
2	14:46:25	189.700	112.053%	1157.000	104.900	16.750	194.400	108.413%	0.000	239.900	237.700	1157.000	104.491%
3	14:46:46	189.700	110.456%	1174.000	103.700	4.169	193.900	107.077%	0.000	239.000	237.300	1162.000	103.112%
x		189.500	112.696%	91.533%	104.291%	8.061	96.632%	108.769%	0.000	237.500	94.342%	92.112%	104.903%
σ		0.388	2.622%	n/a	n/a	7.539	n/a	1.894%	0.000	3.460	n/a	n/a	2.029%
%RSD		0.205	2.327	3.313	0.584	93.530	0.793	1.741	0.000	1.457	1.208	1.295	1.934

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:46:03	19.030	174.000	┬1225.000	100.003%	0.000	16.030	9.181
2	14:46:25	19.860	180.600	┬1246.000	98.004%	0.000	17.660	9.729
3	14:46:46	20.260	175.500	┬1217.000	99.694%	0.000	18.090	9.315
x		98.577%	88.356%	┬98.362%	99.234%	0.000	86.297%	94.083%
σ		n/a	n/a	┬n/a	1.076%	0.000	n/a	n/a

%RSD	3.171	1.937	T 1.235	1.084	0.000	6.303	3.037

CCB 10/18/2016 02:51:26 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:51:48	95.066%	0.042	-3.569	-4.566	3.325	3.637	5.192	5.425	116.461%	0.000	0.672	-0.108
2	14:52:09	93.329%	-0.031	-3.174	-4.902	1.255	3.248	3.949	1.629	117.236%	0.000	0.222	-0.051
3	14:52:31	94.697%	0.116	-2.701	-3.840	2.967	3.834	4.024	5.468	116.057%	0.000	0.812	-0.051
x		94.364%	0.042	-3.148	-4.436	2.516	3.573	4.389	4.174	116.584%	0.000	0.568	-0.070
σ		0.915%	0.074	0.435	0.543	1.106	0.298	0.697	2.204	0.599%	0.000	0.308	0.033
%RSD		0.970	175.300	13.810	12.230	43.980	8.340	15.870	52.810	0.514	0.000	54.220	46.500

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:51:48	10.460	0.088	12.640	0.022	0.037	-0.049	-0.261	-0.559	0.385	-1.220	0.000	0.000
2	14:52:09	11.340	0.106	11.990	0.039	0.028	-0.071	-0.431	-0.602	0.394	-1.007	0.000	0.000
3	14:52:31	10.580	0.058	12.490	0.010	0.079	0.021	-0.464	-0.637	0.409	-1.530	0.000	0.000
x		10.790	0.084	12.370	0.024	0.048	-0.033	-0.386	-0.600	0.396	-1.252	0.000	0.000
σ		0.477	0.024	0.339	0.014	0.027	0.048	0.109	0.039	0.012	0.263	0.000	0.000
%RSD		4.424	28.960	2.736	59.980	56.920	146.300	28.210	6.547	3.088	21.000	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:51:48	0.008	116.329%	1.412	0.006	-1.420	0.045	113.813%	0.000	-0.167	-0.195	0.090	104.272%
2	14:52:09	0.012	115.378%	1.318	0.010	-1.293	0.042	114.528%	0.000	-0.125	-0.156	0.036	104.858%
3	14:52:31	0.019	117.021%	1.302	0.010	-0.883	0.011	114.396%	0.000	-0.122	-0.153	0.089	108.176%
x		0.013	116.243%	1.344	0.008	-1.199	0.032	114.246%	0.000	-0.138	-0.168	0.072	105.769%
σ		0.006	0.825%	0.060	0.002	0.281	0.019	0.381%	0.000	0.025	0.023	0.031	2.105%
%RSD		45.850	0.710	4.434	21.660	23.420	58.710	0.333	0.000	18.250	13.890	42.680	1.991

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:51:48	0.075	0.105	-0.035	103.131%	0.000	0.570	-0.004
2	14:52:09	0.079	0.098	-0.027	100.458%	0.000	0.571	-0.002
3	14:52:31	0.053	0.098	-0.012	102.026%	0.000	0.570	-0.001
x		0.069	0.101	-0.025	101.872%	0.000	0.570	-0.002
σ		0.014	0.004	0.012	1.343%	0.000	0.000	0.001
%RSD		20.500	4.222	46.330	1.319	0.000	0.085	59.150

CCVL 10/18/2016 02:57:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:57:32	98.719%	1.489	42.100	T 535.200	199.700	55.000	478.900	498.700	118.637%	0.000	5.458	4.295
2	14:57:55	97.865%	1.431	39.980	T 519.300	199.600	53.240	467.700	487.600	119.706%	0.000	4.751	3.866
3	14:58:18	94.234%	1.358	43.380	T 522.100	200.500	55.780	467.400	502.100	119.035%	0.000	5.226	4.041
x		96.939%	142.616%	104.552%	T 105.106%	99.989%	109.344%	94.266%	99.231%	119.126%	0.000	102.900%	101.689%
σ		2.381%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.540%	0.000	n/a	n/a
%RSD		2.456	4.589	4.109	T 1.616	0.244	2.381	1.389	1.527	0.454	0.000	7.009	5.304

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:57:32	12.260	2.242	205.700	1.131	2.350	5.337	21.280	1.650	0.403	3.323	0.000	0.000
2	14:57:55	12.620	2.297	200.300	1.152	2.573	5.133	22.200	1.424	0.446	3.688	0.000	0.000
3	14:58:18	12.050	2.352	198.500	1.064	2.251	5.304	21.390	1.466	0.418	3.214	0.000	0.000
x		12.310	114.842%	100.753%	111.573%	119.560%	105.159%	108.123%	75.676%	0.422	85.202%	0.000	0.000
σ		0.289	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.022	n/a	0.000	0.000
%RSD		2.347	2.398	1.852	4.101	6.894	2.080	2.334	7.943	5.115	7.282	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:57:32	4.843	119.054%	9.340	1.105	-0.272	1.055	116.726%	0.000	1.526	1.548	9.523	107.951%
2	14:57:55	4.917	119.130%	9.322	1.223	-0.499	1.165	115.424%	0.000	1.713	1.585	9.527	106.675%
3	14:58:18	4.728	117.906%	9.620	1.096	-2.374	1.022	117.123%	0.000	1.681	1.581	9.122	106.501%
x		96.589%	118.697%	94.275%	114.141%	-1.048	108.071%	116.424%	0.000	1.640	78.565%	93.905%	107.042%
σ		n/a	0.686%	n/a	n/a	1.154	n/a	0.889%	0.000	0.100	n/a	n/a	0.792%
%RSD		1.965	0.578	1.775	6.183	110.000	6.911	0.763	0.000	6.112	1.296	2.480	0.740

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:57:32	1.493	1.774	1.027	103.074%	0.000	1.239	0.952
2	14:57:55	1.547	1.734	1.081	103.066%	0.000	1.240	0.999
3	14:58:18	1.666	1.847	1.066	104.903%	0.000	1.258	1.006
x		78.446%	89.249%	105.821%	103.681%	0.000	62.289%	98.547%
σ		n/a	n/a	n/a	1.058%	0.000	n/a	n/a
%RSD		5.637	3.194	2.637	1.021	0.000	0.876	2.941

200-35736-A-5-A PDS 10/18/2016 03:02:58 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:03:20	107.870%	16.660	456.400	T 4149.000	T 16130.000	T 94030.000	T 11100.000	T 15820.000	178.668%	0.000	156.500	120.000
2	15:03:41	106.954%	17.060	466.000	T 4237.000	T 16320.000	T 94370.000	T 11070.000	14790.000	182.109%	0.000	160.600	123.300
3	15:04:03	106.144%	16.950	473.600	T 4157.000	T 16400.000	T 95440.000	T 11190.000	15160.000	181.808%	0.000	162.100	121.700
x		106.989%	16.890	465.400	T 4181.000	T 16280.000	T 94610.000	T 11120.000	T 15260.000	180.862%	0.000	159.700	121.700
σ		0.864%	0.208	8.586	T 48.410	T 140.400	T 735.300	T 60.540	T 520.600	1.906%	0.000	2.863	1.681
%RSD		0.807	1.233	1.845	T 1.158	T 0.862	T 0.777	T 0.544	T 3.412	1.054	0.000	1.792	1.381

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:03:20	13.130	T 2573.000	T 101100.000	51.560	120.000	137.100	632.800	41.110	0.193	36.290	0.000	0.000
2	15:03:41	12.670	T 2600.000	T 99850.000	50.340	118.400	141.300	645.200	41.420	0.218	36.100	0.000	0.000
3	15:04:03	12.880	T 2623.000	T 102600.000	51.140	121.600	140.900	641.200	43.190	0.182	37.470	0.000	0.000
x		12.890	T 2598.000	T 101200.000	51.010	120.000	139.700	639.700	41.910	0.198	36.620	0.000	0.000
σ		0.231	T 25.030	T 1392.000	0.617	1.592	2.323	6.336	1.119	0.019	0.744	0.000	0.000
%RSD		1.791	T 0.963	T 1.376	1.209	1.326	1.662	0.991	2.671	9.456	2.032	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:03:20	128.200	389.857%	30.840	10.730	-5.457	10.220	122.565%	0.000	17.410	17.340	1224.000	145.247%
2	15:03:41	131.500	400.328%	30.840	10.930	-4.435	10.650	123.091%	0.000	17.410	17.810	1271.000	147.265%
3	15:04:03	130.800	406.077%	30.810	10.740	-9.379	10.850	125.253%	0.000	17.580	17.630	1263.000	150.201%
x		130.200	398.754%	30.830	10.800	-6.424	10.570	123.636%	0.000	17.470	17.600	1253.000	147.571%
σ		1.754	8.224%	0.018	0.115	2.610	0.320	1.425%	0.000	0.098	0.237	25.000	2.491%
%RSD		1.347	2.062	0.059	1.066	40.630	3.024	1.153	0.000	0.562	1.349	1.995	1.688

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:03:20	13.200	17.130	119.900	113.383%	0.000	46.260	17.590
2	15:03:41	13.260	17.450	120.900	116.018%	0.000	45.370	17.400
3	15:04:03	13.140	17.520	121.600	117.889%	0.000	44.320	17.620
x		13.200	17.360	120.800	115.763%	0.000	45.310	17.540
σ		0.059	0.208	0.826	2.264%	0.000	0.972	0.122
%RSD		0.448	1.198	0.684	1.956	0.000	2.145	0.698

200-35736-A-5-I MS 10/18/2016 03:08:42 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:09:04	104.824%	17.000	386.900	T 4301.000	T 15240.000	T 85790.000	T 9926.000	15240.000	178.235%	0.000	155.800	117.300
2	15:09:26	107.050%	16.380	376.400	T 4282.000	T 15200.000	T 85620.000	T 10040.000	T 16250.000	181.375%	0.000	153.200	116.500
3	15:09:48	105.509%	17.480	390.600	T 4321.000	T 15040.000	T 84690.000	T 9825.000	15070.000	182.752%	0.000	156.700	118.800
x		105.794%	16.950	384.600	T 4302.000	T 15160.000	T 85370.000	T 9930.000	T 15520.000	180.787%	0.000	155.200	117.500
σ		1.140%	0.552	7.368	T 19.320	T 108.500	T 591.000	T 106.400	T 638.000	2.315%	0.000	1.814	1.177
%RSD		1.078	3.255	1.916	T 0.449	T 0.716	T 0.692	T 1.072	T 4.110	1.280	0.000	1.169	1.001

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:09:04	12.330	T 2673.000	T 101900.000	51.150	116.300	135.800	625.300	44.550	0.222	37.330	0.000	0.000
2	15:09:26	12.690	T 2693.000	T 102700.000	51.470	118.000	137.100	621.800	43.950	0.214	36.560	0.000	0.000
3	15:09:48	11.820	T 2674.000	T 103200.000	52.480	118.000	138.100	624.500	44.840	0.179	36.360	0.000	0.000
x		12.280	T 2680.000	T 102600.000	51.700	117.400	137.000	623.900	44.450	0.205	36.750	0.000	0.000
σ		0.436	T 11.580	T 625.400	0.696	0.987	1.123	1.864	0.454	0.023	0.515	0.000	0.000
%RSD		3.551	T 0.432	T 0.610	1.346	0.840	0.820	0.299	1.022	11.150	1.400	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:09:04	129.600	385.920%	31.120	11.490	-4.860	10.880	123.750%	0.000	4.865	4.830	1165.000	145.726%
2	15:09:26	127.200	390.812%	31.930	11.250	-5.775	10.700	127.044%	0.000	4.790	4.903	1155.000	148.701%

3	15:09:48	128.000	393.717%	31.690	11.330	-4.686	10.560	127.847%	0.000	4.740	4.912	1173.000	150.544%
x		128.300	390.150%	31.580	11.360	-5.107	10.710	126.214%	0.000	4.798	4.882	1164.000	148.324%
σ		1.252	3.940%	0.416	0.119	0.585	0.160	2.171%	0.000	0.063	0.045	9.099	2.431%
%RSD		0.976	1.010	1.319	1.047	11.450	1.491	1.720	0.000	1.313	0.927	0.781	1.639

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:09:04	11.260	13.940	118.700	114.635%	0.000	41.990	17.360
2	15:09:26	11.490	13.850	117.400	118.418%	0.000	40.580	17.350
3	15:09:48	11.300	13.920	119.900	116.555%	0.000	42.220	18.090
x		11.350	13.910	118.600	116.536%	0.000	41.600	17.600
σ		0.121	0.045	1.260	1.891%	0.000	0.887	0.425
%RSD		1.068	0.327	1.062	1.623	0.000	2.132	2.416

200-35736-A-5-J MSD 10/18/2016 03:14:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:47	106.725%	17.720	383.100	┬4226.000	┬16360.000	┬94240.000	┬10750.000	┬16970.000	187.388%	0.000	165.000	123.600
2	15:15:09	104.444%	18.040	406.200	┬4190.000	┬16480.000	┬95110.000	┬10640.000	┬17090.000	190.445%	0.000	166.700	124.300
3	15:15:31	104.974%	17.890	407.600	┬4274.000	┬17110.000	┬97570.000	┬10920.000	┬17380.000	188.188%	0.000	168.500	127.500
x		105.381%	17.880	399.000	┬4230.000	┬16650.000	┬95640.000	┬10770.000	┬17150.000	188.674%	0.000	166.700	125.100
σ		1.194%	0.161	13.700	┬42.480	┬402.500	┬1727.000	┬140.500	┬209.600	1.585%	0.000	1.778	2.063
%RSD		1.133	0.898	3.435	┬1.004	┬2.417	┬1.806	┬1.304	┬1.222	0.840	0.000	1.066	1.648

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:47	12.340	┬2719.000	┬105200.000	53.730	123.900	147.100	658.100	47.120	0.180	37.680	0.000	0.000
2	15:15:09	13.020	┬2772.000	┬105700.000	54.250	124.800	149.800	668.600	46.660	0.198	36.980	0.000	0.000
3	15:15:31	12.640	┬2854.000	┬108900.000	54.450	126.400	146.400	661.300	45.550	0.200	36.760	0.000	0.000
x		12.670	┬2781.000	┬106600.000	54.140	125.000	147.700	662.700	46.440	0.193	37.140	0.000	0.000
σ		0.339	┬68.070	┬2012.000	0.369	1.284	1.776	5.353	0.809	0.011	0.483	0.000	0.000
%RSD		2.679	┬2.447	┬1.886	0.682	1.027	1.202	0.808	1.742	5.776	1.301	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:47	136.700	417.999%	28.430	11.070	-7.042	11.120	126.276%	0.000	4.651	4.696	1294.000	153.132%
2	15:15:09	138.700	425.064%	28.460	11.250	-5.789	11.410	126.530%	0.000	4.666	4.740	1317.000	152.880%
3	15:15:31	137.400	428.369%	28.630	10.890	-6.146	11.110	129.210%	0.000	4.611	4.650	1299.000	151.935%
x		137.600	423.811%	28.510	11.070	-6.325	11.210	127.339%	0.000	4.643	4.695	1303.000	152.649%
σ		1.039	5.297%	0.109	0.182	0.646	0.170	1.625%	0.000	0.028	0.045	12.170	0.631%
%RSD		0.755	1.250	0.382	1.644	10.210	1.519	1.276	0.000	0.607	0.961	0.934	0.413

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:14:47	9.862	13.380	126.500	118.329%	0.000	42.810	17.640
2	15:15:09	10.400	13.300	126.000	119.801%	0.000	43.110	17.760
3	15:15:31	10.420	13.250	127.700	120.216%	0.000	43.310	18.260
x		10.230	13.310	126.700	119.449%	0.000	43.070	17.890
σ		0.316	0.062	0.888	0.992%	0.000	0.250	0.328

%RSD	3.094	0.469	0.700	0.830	0.000	0.580	1.834	

200-35736-A-6-A 10/18/2016 03:20:08 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:20:29	105.405%	8.616	42.770	┬604.600	┬17680.000	┬114100.000	┬8738.000	┬17870.000	202.839%	0.000	137.200	110.000
2	15:20:52	105.069%	8.261	42.800	┬597.700	┬17780.000	┬111500.000	┬8610.000	┬17940.000	203.897%	0.000	136.900	110.400
3	15:21:13	102.327%	9.730	44.380	┬614.000	┬17920.000	┬114600.000	┬8779.000	17080.000	203.917%	0.000	139.300	112.500
x		104.267%	8.869	43.320	┬605.500	┬17800.000	┬113400.000	┬8709.000	┬17630.000	203.551%	0.000	137.800	111.000
σ		1.689%	0.766	0.923	┬8.176	┬121.700	┬1670.000	┬88.040	┬474.200	0.616%	0.000	1.315	1.358
%RSD		1.620	8.642	2.130	┬1.350	┬0.684	┬1.472	┬1.011	┬2.689	0.303	0.000	0.954	1.224

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:20:29	12.010	┬1663.000	┬101400.000	47.500	124.800	126.900	629.100	17.920	0.191	8.533	0.000	0.000
2	15:20:52	12.340	┬1708.000	┬103700.000	47.260	123.600	126.900	641.900	18.240	0.181	7.525	0.000	0.000
3	15:21:13	11.220	┬1737.000	┬105300.000	47.630	125.600	126.100	633.700	18.090	0.194	6.922	0.000	0.000
x		11.850	┬1703.000	┬103500.000	47.470	124.700	126.700	634.900	18.080	0.188	7.660	0.000	0.000
σ		0.574	┬37.310	┬1978.000	0.188	1.027	0.475	6.464	0.159	0.006	0.814	0.000	0.000
%RSD		4.840	┬2.191	┬1.911	0.397	0.824	0.375	1.018	0.881	3.446	10.620	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:20:29	122.000	549.224%	-0.037	0.860	-6.549	2.716	126.861%	0.000	-0.114	-0.068	1331.000	166.283%
2	15:20:52	125.000	552.295%	-0.094	0.886	-5.853	2.889	127.077%	0.000	-0.028	-0.078	1343.000	165.784%
3	15:21:13	123.200	554.493%	-0.071	0.858	-5.114	2.628	128.475%	0.000	-0.038	-0.059	1360.000	165.933%
x		123.400	552.004%	-0.067	0.868	-5.839	2.744	127.471%	0.000	-0.060	-0.068	1344.000	166.000%
σ		1.503	2.646%	0.029	0.016	0.718	0.133	0.877%	0.000	0.047	0.009	14.530	0.256%
%RSD		1.218	0.479	43.190	1.836	12.290	4.832	0.688	0.000	78.100	13.820	1.081	0.154

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:20:29	0.218	1.050	109.600	118.687%	0.000	29.490	12.380
2	15:20:52	0.199	1.054	110.800	120.713%	0.000	29.640	12.560
3	15:21:13	0.225	0.985	112.400	120.810%	0.000	29.820	12.600
x		0.214	1.030	110.900	120.070%	0.000	29.650	12.510
σ		0.013	0.039	1.389	1.199%	0.000	0.167	0.115
%RSD		6.217	3.784	1.252	0.999	0.000	0.564	0.916

200-35736-A-7-A 10/18/2016 03:25:50 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:26:12	106.217%	7.103	37.960	┬508.200	┬15130.000	┬90020.000	┬7120.000	┬15480.000	192.591%	0.000	129.900	95.020
2	15:26:33	104.425%	7.409	36.840	┬514.900	┬15260.000	┬89890.000	┬7034.000	┬15600.000	194.002%	0.000	130.800	96.940
3	15:26:55	107.766%	7.243	38.520	┬513.800	┬15180.000	┬90470.000	┬7104.000	14490.000	193.372%	0.000	133.000	97.580
x		106.136%	7.252	37.770	┬512.300	┬15190.000	┬90130.000	┬7086.000	┬15190.000	193.321%	0.000	131.200	96.510
σ		1.672%	0.154	0.855	┬3.631	┬62.390	┬305.900	┬45.680	┬606.900	0.707%	0.000	1.595	1.330
%RSD		1.575	2.117	2.264	┬0.709	┬0.411	┬0.339	┬0.645	┬3.995	0.366	0.000	1.216	1.378

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:26:12	9.880	┬3784.000	┬139800.000	48.060	109.700	96.770	543.700	47.640	0.170	7.685	0.000	0.000
2	15:26:33	8.963	┬3809.000	┬142800.000	49.310	111.600	100.000	556.800	47.510	0.180	7.289	0.000	0.000
3	15:26:55	7.969	┬3799.000	┬142700.000	49.160	108.300	96.080	541.500	46.630	0.189	5.719	0.000	0.000
x		8.937	┬3797.000	┬141800.000	48.840	109.800	97.620	547.300	47.260	0.180	6.898	0.000	0.000
σ		0.956	┬12.800	┬1746.000	0.684	1.674	2.100	8.229	0.550	0.010	1.040	0.000	0.000
%RSD		10.700	┬0.337	┬1.231	1.401	1.524	2.151	1.504	1.164	5.326	15.070	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:26:12	96.470	445.351%	0.629	0.754	-7.937	2.185	131.340%	0.000	0.088	0.053	1172.000	157.294%
2	15:26:33	98.830	455.965%	0.609	0.797	-6.349	2.108	129.641%	0.000	0.082	0.106	1180.000	153.521%
3	15:26:55	98.390	459.244%	0.615	0.696	-6.751	2.093	132.818%	0.000	0.103	0.086	1174.000	158.718%
x		97.900	453.520%	0.618	0.749	-7.012	2.128	131.266%	0.000	0.091	0.082	1175.000	156.511%
σ		1.254	7.262%	0.010	0.051	0.826	0.049	1.590%	0.000	0.011	0.027	4.228	2.686%
%RSD		1.281	1.601	1.649	6.755	11.780	2.319	1.211	0.000	11.920	32.670	0.360	1.716

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:26:12	0.247	0.861	133.100	118.979%	0.000	25.160	5.639
2	15:26:33	0.205	0.863	133.900	120.265%	0.000	25.350	5.806
3	15:26:55	0.237	0.850	135.300	120.241%	0.000	25.630	5.815
x		0.230	0.858	134.100	119.828%	0.000	25.380	5.753
σ		0.022	0.007	1.089	0.735%	0.000	0.237	0.099
%RSD		9.551	0.806	0.812	0.614	0.000	0.934	1.724

200-35736-A-8-A 10/18/2016 03:31:32 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:31:54	108.665%	8.774	28.780	┬439.200	┬12220.000	┬79180.000	┬5906.000	13280.000	190.209%	0.000	130.700	85.800
2	15:32:16	107.599%	8.683	32.880	┬453.800	┬12410.000	┬79660.000	┬5990.000	13610.000	187.651%	0.000	133.900	88.800
3	15:32:37	104.969%	9.251	33.290	┬443.800	┬12320.000	┬79070.000	┬5897.000	13550.000	189.763%	0.000	132.700	88.420
x		107.077%	8.903	31.650	┬445.600	┬12320.000	┬79300.000	┬5931.000	13480.000	189.207%	0.000	132.400	87.680
σ		1.902%	0.305	2.493	┬7.444	┬93.530	┬312.900	┬51.050	173.000	1.367%	0.000	1.617	1.633
%RSD		1.777	3.428	7.877	┬1.671	┬0.759	┬0.395	┬0.861	1.283	0.722	0.000	1.221	1.863

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:31:54	6.840	T 4787.000	TM 251100.000	54.080	102.500	91.780	578.500	148.300	0.144	5.867	0.000	0.000
2	15:32:16	7.439	T 4944.000	TM 258100.000	55.550	105.600	93.900	580.700	149.500	0.128	6.808	0.000	0.000
3	15:32:37	7.477	T 4877.000	TM 252500.000	54.560	104.100	92.750	582.800	147.200	0.140	6.179	0.000	0.000
x		7.252	T 4870.000	TM 253900.000	54.730	104.100	92.810	580.700	148.300	0.137	6.284	0.000	0.000
σ		0.357	T 78.730	TM 3727.000	0.751	1.541	1.058	2.172	1.162	0.009	0.479	0.000	0.000
%RSD		4.930	T 1.617	TM 1.468	1.372	1.480	1.140	0.374	0.783	6.299	7.626	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:31:54	87.510	447.459%	3.007	0.619	-6.778	2.296	130.274%	0.000	0.239	0.241	1090.000	157.851%
2	15:32:16	87.420	452.602%	2.991	0.651	-6.919	2.755	130.249%	0.000	0.311	0.308	1104.000	160.687%
3	15:32:37	87.690	447.059%	2.980	0.644	-6.655	2.574	131.062%	0.000	0.322	0.315	1105.000	159.146%
x		87.540	449.040%	2.993	0.638	-6.784	2.542	130.528%	0.000	0.291	0.288	1100.000	159.228%
σ		0.140	3.091%	0.014	0.017	0.132	0.231	0.462%	0.000	0.045	0.041	8.466	1.420%
%RSD		0.160	0.688	0.467	2.608	1.947	9.097	0.354	0.000	15.450	14.210	0.770	0.892

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:31:54	0.217	0.688	132.300	120.216%	0.000	22.380	6.745
2	15:32:16	0.217	0.716	137.500	116.596%	0.000	23.500	7.199
3	15:32:37	0.240	0.698	135.400	120.208%	0.000	23.030	7.055
x		0.225	0.701	135.100	119.007%	0.000	22.970	7.000
σ		0.013	0.014	2.655	2.088%	0.000	0.565	0.232
%RSD		5.925	1.997	1.966	1.754	0.000	2.460	3.316

200-35736-A-9-A 10/18/2016 03:37:15 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:37	103.699%	6.064	36.280	T 591.900	T 16570.000	T 90230.000	T 6848.000	T 21400.000	186.070%	0.000	129.100	96.790
2	15:37:58	103.575%	6.509	34.010	T 590.800	T 16550.000	T 90810.000	T 6869.000	T 21230.000	186.057%	0.000	129.100	96.180
3	15:38:20	102.144%	6.841	33.800	T 593.700	T 16330.000	T 90360.000	T 6754.000	T 21500.000	185.781%	0.000	131.100	97.480
x		103.139%	6.471	34.700	T 592.100	T 16480.000	T 90470.000	T 6824.000	T 21380.000	185.969%	0.000	129.800	96.820
σ		0.865%	0.390	1.373	T 1.475	T 136.400	T 306.500	T 61.070	T 138.400	0.163%	0.000	1.175	0.651
%RSD		0.838	6.026	3.957	T 0.249	T 0.828	T 0.339	T 0.895	T 0.647	0.088	0.000	0.905	0.672

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:37	9.497	T 3869.000	T 123400.000	52.300	117.800	106.300	637.000	24.780	0.181	8.639	0.000	0.000
2	15:37:58	11.160	T 3982.000	T 125700.000	53.400	122.200	108.600	642.400	25.370	0.178	7.337	0.000	0.000
3	15:38:20	8.912	T 3907.000	T 125900.000	53.210	121.200	104.800	637.600	24.050	0.196	5.705	0.000	0.000
x		9.858	T 3919.000	T 125000.000	52.970	120.400	106.600	639.000	24.740	0.185	7.227	0.000	0.000
σ		1.168	T 57.610	T 1365.000	0.588	2.309	1.931	2.954	0.663	0.010	1.470	0.000	0.000
%RSD		11.850	T 1.470	T 1.092	1.111	1.918	1.812	0.462	2.679	5.206	20.340	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:37	123.300	422.946%	0.532	0.740	-6.985	3.228	125.448%	0.000	0.148	0.153	1222.000	146.793%
2	15:37:58	124.200	425.195%	0.597	0.745	-5.694	3.042	126.643%	0.000	0.157	0.162	1221.000	149.703%

3	15:38:20	122.600	424.294%	0.559	0.810	-7.736	3.141	127.739%	0.000	0.237	0.160	1236.000	150.053%
x		123.400	424.145%	0.563	0.765	-6.805	3.137	126.610%	0.000	0.181	0.158	1227.000	148.850%
σ		0.798	1.132%	0.032	0.039	1.032	0.093	1.146%	0.000	0.049	0.005	8.335	1.790%
%RSD		0.646	0.267	5.758	5.105	15.170	2.961	0.905	0.000	27.100	2.927	0.679	1.202

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:37:37	0.246	0.845	149.100	115.571%	0.000	24.620	6.996
2	15:37:58	0.293	0.878	150.300	116.392%	0.000	25.130	7.157
3	15:38:20	0.229	0.885	150.200	117.580%	0.000	25.250	7.180
x		0.256	0.870	149.900	116.514%	0.000	25.000	7.111
σ		0.033	0.021	0.646	1.010%	0.000	0.335	0.100
%RSD		12.870	2.436	0.431	0.867	0.000	1.341	1.409

200-35736-A-10-A 10/18/2016 03:42:58 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:19	103.666%	7.616	29.010	┬530.500	┬15070.000	┬86000.000	┬5988.000	┬19360.000	188.110%	0.000	129.300	93.370
2	15:43:41	101.430%	7.354	29.330	┬519.200	┬15090.000	┬85500.000	┬5997.000	┬19300.000	189.186%	0.000	128.200	94.130
3	15:44:03	101.279%	7.175	30.590	┬520.500	┬15140.000	┬86030.000	┬6058.000	┬19510.000	189.107%	0.000	129.300	95.770
x		102.125%	7.382	29.640	┬523.400	┬15100.000	┬85850.000	┬6014.000	┬19390.000	188.801%	0.000	128.900	94.420
σ		1.336%	0.221	0.838	┬6.194	┬38.350	┬299.300	┬37.980	┬109.100	0.600%	0.000	0.640	1.228
%RSD		1.309	2.999	2.825	┬1.183	┬0.254	┬0.349	┬0.631	┬0.563	0.318	0.000	0.497	1.300

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:19	9.147	┬4531.000	┬134200.000	51.740	112.100	99.970	595.300	35.590	0.176	6.780	0.000	0.000
2	15:43:41	8.740	┬4588.000	┬135400.000	51.510	111.900	99.840	593.900	34.750	0.176	8.144	0.000	0.000
3	15:44:03	9.861	┬4579.000	┬136900.000	52.470	112.800	100.200	597.200	35.250	0.179	7.182	0.000	0.000
x		9.249	┬4566.000	┬135500.000	51.900	112.300	100.000	595.400	35.200	0.177	7.368	0.000	0.000
σ		0.568	┬30.800	┬1377.000	0.503	0.467	0.210	1.655	0.424	0.002	0.701	0.000	0.000
%RSD		6.138	┬0.675	┬1.016	0.970	0.416	0.210	0.278	1.204	1.100	9.514	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:19	110.900	429.376%	0.672	0.715	-6.491	2.814	127.070%	0.000	0.106	0.153	1197.000	152.725%
2	15:43:41	110.700	429.045%	0.715	0.671	-6.241	2.650	128.297%	0.000	0.174	0.161	1192.000	151.625%
3	15:44:03	112.500	439.030%	0.685	0.662	-5.281	2.547	128.758%	0.000	0.141	0.173	1216.000	154.019%
x		111.400	432.484%	0.691	0.683	-6.004	2.670	128.042%	0.000	0.140	0.162	1202.000	152.789%
σ		0.980	5.671%	0.022	0.028	0.638	0.135	0.872%	0.000	0.034	0.010	12.450	1.198%
%RSD		0.880	1.311	3.179	4.134	10.630	5.036	0.681	0.000	24.470	6.273	1.036	0.784

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:43:19	0.192	0.796	144.000	115.636%	0.000	24.440	6.758
2	15:43:41	0.221	0.810	146.400	115.319%	0.000	24.790	6.847
3	15:44:03	0.239	0.738	144.100	118.207%	0.000	24.440	6.740
x		0.218	0.781	144.800	116.387%	0.000	24.560	6.782
σ		0.024	0.038	1.341	1.584%	0.000	0.201	0.057

%RSD		10.880	4.895	0.926	1.361	0.000	0.819	0.843

200-35736-A-11-A 10/18/2016 03:48:41 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:03	99.703%	4.066	26.220	T 462.000	T 11740.000	T 48440.000	T 4201.000	T 46560.000	150.608%	0.000	76.130	59.690
2	15:49:24	97.603%	3.851	26.630	T 468.700	T 11760.000	T 49710.000	T 4329.000	T 47530.000	150.392%	0.000	78.520	61.110
3	15:49:46	95.983%	4.262	28.190	T 467.500	T 11920.000	T 49840.000	T 4307.000	T 47870.000	149.863%	0.000	78.500	60.710
x		97.763%	4.060	27.010	T 466.100	T 11810.000	T 49330.000	T 4279.000	T 47320.000	150.287%	0.000	77.720	60.500
σ		1.865%	0.206	1.043	T 3.559	T 97.140	T 773.300	T 68.140	T 680.100	0.383%	0.000	1.374	0.732
%RSD		1.908	5.071	3.862	T 0.763	T 0.823	T 1.568	T 1.593	T 1.437	0.255	0.000	1.768	1.210

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:03	6.945	TM 6470.000	T 91690.000	43.410	82.940	2150.000	789.500	33.060	0.118	13.240	0.000	0.000
2	15:49:24	6.343	TM 6515.000	T 92580.000	43.130	85.870	2131.000	798.300	32.800	0.140	11.800	0.000	0.000
3	15:49:46	6.583	TM 6582.000	T 94490.000	43.820	85.930	2169.000	797.300	33.240	0.101	14.400	0.000	0.000
x		6.624	TM 6523.000	T 92920.000	43.460	84.910	2150.000	795.100	33.030	0.120	13.150	0.000	0.000
σ		0.303	TM 56.530	T 1433.000	0.349	1.708	18.940	4.807	0.221	0.020	1.303	0.000	0.000
%RSD		4.577	TM 0.867	T 1.542	0.803	2.011	0.881	0.605	0.670	16.490	9.908	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:03	145.400	308.758%	1.382	2.015	-4.680	3.572	118.221%	0.000	0.260	0.288	761.800	132.671%
2	15:49:24	145.100	308.499%	1.499	1.976	-3.824	3.843	118.466%	0.000	0.303	0.280	769.800	131.018%
3	15:49:46	146.300	311.474%	1.535	2.024	-5.339	3.663	119.096%	0.000	0.300	0.295	768.600	132.813%
x		145.600	309.577%	1.472	2.005	-4.614	3.693	118.594%	0.000	0.287	0.288	766.700	132.168%
σ		0.647	1.648%	0.080	0.025	0.759	0.138	0.451%	0.000	0.024	0.008	4.336	0.998%
%RSD		0.444	0.532	5.461	1.263	16.460	3.729	0.381	0.000	8.379	2.631	0.566	0.755

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:49:03	0.590	0.418	153.600	107.707%	0.000	13.280	5.413
2	15:49:24	0.574	0.422	154.600	108.187%	0.000	13.520	5.605
3	15:49:46	0.628	0.417	153.800	110.374%	0.000	13.100	5.486
x		0.598	0.419	154.000	108.756%	0.000	13.300	5.501
σ		0.028	0.002	0.528	1.422%	0.000	0.210	0.097
%RSD		4.673	0.591	0.343	1.307	0.000	1.580	1.764

200-35736-A-11-A SD@5 10/18/2016 03:54:24 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:46	92.687%	0.704	0.654	96.020	2465.000	T 11030.000	T 936.000	9626.000	125.952%	0.000	17.820	13.190
2	15:55:08	95.138%	0.831	0.874	93.430	2487.000	T 11220.000	T 956.900	9653.000	126.631%	0.000	17.360	13.260
3	15:55:30	92.208%	1.067	0.996	89.910	2472.000	T 11030.000	T 932.200	9535.000	128.607%	0.000	17.160	13.340
x		93.345%	0.867	0.842	93.120	2475.000	T 11090.000	T 941.700	9605.000	127.063%	0.000	17.450	13.260
σ		1.572%	0.185	0.173	3.071	10.860	T 111.400	T 13.330	61.600	1.379%	0.000	0.341	0.079
%RSD		1.684	21.280	20.600	3.298	0.439	T 1.004	T 1.415	0.641	1.086	0.000	1.957	0.596

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:46	6.567	T 1450.000	T 20720.000	9.754	19.450	430.100	174.800	6.798	0.274	2.420	0.000	0.000
2	15:55:08	7.146	T 1458.000	T 20840.000	9.800	20.160	428.400	169.700	6.064	0.271	1.866	0.000	0.000
3	15:55:30	7.347	T 1433.000	T 20710.000	9.825	19.230	433.600	175.000	6.374	0.277	1.431	0.000	0.000
x		7.020	T 1447.000	T 20760.000	9.793	19.610	430.700	173.100	6.412	0.274	1.906	0.000	0.000
σ		0.405	T 12.790	T 68.240	0.036	0.484	2.639	3.008	0.368	0.003	0.496	0.000	0.000
%RSD		5.770	T 0.884	T 0.329	0.368	2.468	0.613	1.737	5.748	1.204	26.020	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:46	28.130	151.986%	0.193	0.422	-3.230	0.977	113.725%	0.000	-0.298	-0.329	149.500	109.272%
2	15:55:08	28.020	156.404%	0.121	0.395	-2.113	0.815	116.984%	0.000	-0.286	-0.304	146.200	109.536%
3	15:55:30	28.200	154.606%	0.196	0.453	-1.748	0.794	115.844%	0.000	-0.316	-0.314	150.100	111.237%
x		28.120	154.332%	0.170	0.423	-2.364	0.862	115.518%	0.000	-0.300	-0.316	148.600	110.015%
σ		0.089	2.222%	0.042	0.029	0.772	0.100	1.654%	0.000	0.015	0.012	2.100	1.067%
%RSD		0.316	1.440	24.740	6.760	32.660	11.580	1.432	0.000	4.961	3.951	1.413	0.970

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:46	0.153	0.061	30.450	100.799%	0.000	2.424	1.075
2	15:55:08	0.083	0.056	30.840	101.327%	0.000	2.511	1.062
3	15:55:30	0.132	0.050	30.950	100.612%	0.000	2.666	1.130
x		0.123	0.056	30.750	100.913%	0.000	2.534	1.089
σ		0.036	0.006	0.265	0.371%	0.000	0.122	0.036
%RSD		29.000	10.310	0.862	0.367	0.000	4.826	3.295

CCV 10/18/2016 04:00:08 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:30	85.869%	722.300	277.400	T 10490.000	T 30310.000	T 30480.000	T 9865.000	27500.000	106.300%	0.000	T 1275.000	382.700
2	16:00:52	84.349%	722.500	287.800	T 10200.000	T 29710.000	T 30170.000	T 9728.000	27290.000	106.690%	0.000	T 1252.000	374.000
3	16:01:14	83.906%	716.800	282.200	T 10050.000	T 29500.000	T 29600.000	T 9698.000	27740.000	105.447%	0.000	T 1275.000	379.400
x		84.708%	115.289%	112.994%	T 102.450%	T 99.469%	T 100.274%	T 97.636%	91.695%	106.146%	0.000	T 101.396%	94.671%
σ		1.030%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.636%	0.000	T n/a	n/a
%RSD		1.216	0.453	1.831	T 2.214	T 1.402	T 1.471	T 0.910	0.834	0.599	0.000	T 1.037	1.165

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:30	21.710	T 1237.000	T 29170.000	459.500	1241.000	1236.000	1250.000	210.700	-0.497	217.200	0.000	0.000
2	16:00:52	16.480	T 1219.000	T 29230.000	460.400	1230.000	1204.000	1228.000	206.800	-0.397	211.200	0.000	0.000
3	16:01:14	15.240	T 1202.000	T 28840.000	453.200	1210.000	1198.000	1233.000	208.900	-0.325	209.400	0.000	0.000
x		17.810	T 97.535%	T 96.932%	91.537%	98.153%	97.012%	98.988%	104.393%	-0.406	106.306%	0.000	0.000
σ		3.434	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.086	n/a	0.000	0.000
%RSD		19.280	T 1.413	T 0.734	0.859	1.268	1.702	0.924	0.954	21.270	1.915	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:30	188.700	106.193%	1127.000	104.500	12.530	189.300	103.323%	0.000	234.000	228.500	1140.000	96.796%
2	16:00:52	185.600	103.346%	1165.000	102.500	9.007	190.600	102.990%	0.000	235.300	228.800	1120.000	96.545%
3	16:01:14	188.600	103.457%	T 1280.000	102.900	6.378	193.200	101.251%	0.000	238.600	230.900	1143.000	96.410%
x		187.600	104.332%	T 95.267%	103.310%	9.304	95.520%	102.521%	0.000	236.000	91.772%	90.771%	96.584%
σ		1.782	1.613%	T n/a	n/a	3.085	n/a	1.112%	0.000	2.398	n/a	n/a	0.196%
%RSD		0.950	1.546	T 6.696	1.050	33.160	1.036	1.085	0.000	1.016	0.561	1.104	0.203

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:00:30	19.280	173.600	T 1228.000	92.692%	0.000	15.770	9.188
2	16:00:52	19.670	179.300	T 1253.000	90.638%	0.000	17.200	9.332
3	16:01:14	20.370	175.600	T 1221.000	92.619%	0.000	17.930	9.339
x		98.876%	88.077%	T 98.733%	91.983%	0.000	84.841%	92.860%
σ		n/a	n/a	T n/a	1.166%	0.000	n/a	n/a
%RSD		2.792	1.643	T 1.373	1.267	0.000	6.486	0.919

CCB 10/18/2016 04:05:52 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:06:14	92.799%	0.082	-4.083	4.405	2.131	4.234	5.389	2.157	112.760%	0.000	0.455	-0.120
2	16:06:35	88.512%	-0.011	-3.779	4.715	2.563	4.510	4.521	2.849	113.255%	0.000	0.418	-0.044
3	16:06:57	90.627%	0.046	-4.543	0.104	2.118	4.776	4.827	2.319	115.236%	0.000	0.418	-0.048
x		90.646%	0.039	-4.135	3.075	2.271	4.507	4.912	2.442	113.750%	0.000	0.430	-0.071
σ		2.144%	0.047	0.385	2.577	0.253	0.271	0.440	0.362	1.310%	0.000	0.021	0.043
%RSD		2.365	119.300	9.299	83.810	11.160	6.006	8.960	14.820	1.152	0.000	4.981	60.660

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:06:14	10.850	0.120	14.940	0.020	0.092	0.059	-0.315	-0.628	0.379	-1.790	0.000	0.000
2	16:06:35	11.680	0.116	15.930	0.020	0.014	0.050	-0.378	-0.489	0.364	-0.373	0.000	0.000
3	16:06:57	11.090	0.124	15.400	0.004	-0.004	-0.032	-0.316	-0.859	0.405	-1.374	0.000	0.000
x		11.210	0.120	15.420	0.014	0.034	0.026	-0.337	-0.659	0.383	-1.179	0.000	0.000
σ		0.428	0.004	0.499	0.009	0.051	0.050	0.036	0.187	0.021	0.728	0.000	0.000
%RSD		3.822	3.298	3.234	64.370	151.500	195.000	10.690	28.350	5.486	61.770	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:06:14	0.013	109.264%	1.498	0.006	-1.187	0.028	105.656%	0.000	-0.161	-0.195	0.099	98.882%
2	16:06:35	0.016	107.698%	1.617	0.007	-1.681	0.072	108.137%	0.000	-0.173	-0.161	0.078	98.611%

3	16:06:57	0.015	110.057%	1.317	0.005	-0.877	0.011	107.436%	0.000	-0.114	-0.173	0.135	97.974%
x		0.015	109.006%	1.478	0.006	-1.249	0.037	107.076%	0.000	-0.149	-0.176	0.104	98.489%
σ		0.001	1.200%	0.151	0.001	0.405	0.031	1.279%	0.000	0.031	0.017	0.029	0.466%
%RSD		9.303	1.101	10.220	14.470	32.470	85.200	1.194	0.000	20.900	9.627	27.610	0.473

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:06:14	0.062	0.111	-0.027	94.341%	0.000	0.620	-0.001
2	16:06:35	0.063	0.104	-0.029	95.876%	0.000	0.625	-0.001
3	16:06:57	0.044	0.102	-0.028	97.379%	0.000	0.591	0.001
x		0.056	0.106	-0.028	95.865%	0.000	0.612	-0.000
σ		0.011	0.005	0.001	1.519%	0.000	0.019	0.001
%RSD		18.820	4.386	3.380	1.584	0.000	3.034	348.600

CCVL 10/18/2016 04:11:36 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:59	93.310%	1.391	40.680	486.300	199.300	51.980	470.000	478.400	116.897%	0.000	5.133	3.931
2	16:12:22	94.075%	1.639	42.460	T 522.100	188.400	51.030	456.100	483.100	118.650%	0.000	5.112	4.070
3	16:12:46	90.894%	1.564	44.150	T 562.700	206.900	57.430	495.200	491.400	113.040%	0.000	5.744	4.611
x		92.760%	153.140%	106.068%	T 104.734%	99.104%	106.963%	94.752%	96.861%	116.196%	0.000	106.587%	105.097%
σ		1.660%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	2.870%	0.000	n/a	n/a
%RSD		1.790	8.309	4.093	T 7.302	4.716	6.460	4.187	1.367	2.470	0.000	6.735	8.542

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:59	12.840	2.059	192.800	1.167	2.168	5.707	23.690	1.184	0.431	3.118	0.000	0.000
2	16:12:22	12.970	2.033	194.700	1.033	2.325	5.600	23.010	1.440	0.417	3.666	0.000	0.000
3	16:12:46	12.820	2.281	214.000	1.172	2.598	5.800	24.450	1.609	0.439	3.636	0.000	0.000
x		12.880	106.225%	100.247%	112.388%	118.180%	114.048%	118.583%	70.548%	0.429	86.838%	0.000	0.000
σ		0.084	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.011	n/a	0.000	0.000
%RSD		0.656	6.416	5.831	7.010	9.213	1.749	3.051	15.180	2.570	8.863	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:59	4.858	112.149%	9.262	1.111	-0.625	1.155	108.216%	0.000	1.506	1.530	10.080	99.506%
2	16:12:22	4.904	112.942%	9.333	1.082	-0.399	0.961	108.886%	0.000	1.623	1.553	9.611	100.356%
3	16:12:46	5.290	107.148%	10.150	1.179	-0.128	1.020	104.130%	0.000	1.706	1.741	10.200	95.927%
x		100.348%	110.746%	95.802%	112.416%	-0.384	104.564%	107.077%	0.000	1.612	80.403%	99.623%	98.596%
σ		n/a	3.142%	n/a	n/a	0.249	n/a	2.574%	0.000	0.100	n/a	n/a	2.351%
%RSD		4.728	2.837	5.132	4.399	64.870	9.520	2.404	0.000	6.215	7.181	3.110	2.384

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:59	1.768	1.681	1.061	97.768%	0.000	1.233	0.929
2	16:12:22	1.487	1.804	1.086	94.138%	0.000	1.311	0.976
3	16:12:46	1.793	1.973	1.162	90.906%	0.000	1.406	1.137
x		84.132%	90.952%	110.310%	94.271%	0.000	65.826%	101.404%
σ		n/a	n/a	n/a	3.433%	0.000	n/a	n/a

%RSD		10.120	8.048	4.774	3.642	0.000	6.558	10.770

200-35736-A-11-A PDS 10/18/2016 04:17:25 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:47	94.214%	15.240	474.000	T 4833.000	T 13610.000	T 49670.000	T 8454.000	T 50120.000	136.745%	0.000	113.900	91.450
2	16:18:09	94.351%	14.810	462.200	T 4819.000	T 13700.000	T 50190.000	T 8541.000	T 50640.000	137.509%	0.000	115.100	93.080
3	16:18:30	93.671%	15.560	477.700	T 4847.000	T 13600.000	T 50080.000	T 8502.000	T 50420.000	138.730%	0.000	114.900	92.700
x		94.078%	15.210	471.300	T 4833.000	T 13640.000	T 49980.000	T 8499.000	T 50390.000	137.662%	0.000	114.600	92.410
σ		0.360%	0.373	8.120	T 14.260	T 53.550	T 277.200	T 43.360	T 263.000	1.001%	0.000	0.629	0.855
%RSD		0.382	2.450	1.723	T 0.295	T 0.393	T 0.555	T 0.510	T 0.522	0.727	0.000	0.549	0.926

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:47	8.520	TM 6438.000	T 92850.000	49.460	98.030	2169.000	972.400	53.960	0.037	49.790	0.000	0.000
2	16:18:09	7.799	TM 6441.000	T 92800.000	51.400	99.720	2160.000	962.700	52.870	0.050	50.460	0.000	0.000
3	16:18:30	7.164	TM 6538.000	T 93680.000	50.380	100.800	2183.000	983.200	52.910	0.074	50.550	0.000	0.000
x		7.828	TM 6472.000	T 93110.000	50.410	99.510	2171.000	972.700	53.240	0.054	50.270	0.000	0.000
σ		0.678	TM 56.960	T 495.000	0.973	1.385	11.590	10.280	0.618	0.018	0.414	0.000	0.000
%RSD		8.662	TM 0.880	T 0.532	1.930	1.392	0.534	1.056	1.161	34.280	0.823	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:47	193.300	278.924%	39.290	12.450	-4.237	12.440	105.375%	0.000	18.730	18.350	848.700	118.343%
2	16:18:09	190.500	274.987%	40.050	12.110	-2.630	12.350	108.459%	0.000	18.370	18.410	845.500	121.291%
3	16:18:30	193.200	277.445%	40.690	12.730	-3.159	12.320	107.129%	0.000	18.700	18.820	859.000	120.330%
x		192.300	277.118%	40.010	12.430	-3.342	12.370	106.988%	0.000	18.600	18.530	851.100	119.988%
σ		1.599	1.989%	0.703	0.309	0.819	0.063	1.547%	0.000	0.202	0.258	7.056	1.503%
%RSD		0.832	0.718	1.757	2.486	24.490	0.507	1.446	0.000	1.085	1.390	0.829	1.253

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:17:47	15.050	17.660	162.400	97.898%	0.000	35.580	15.590
2	16:18:09	14.430	17.510	160.200	101.189%	0.000	34.510	15.400
3	16:18:30	15.050	18.200	165.800	98.370%	0.000	34.980	16.300
x		14.850	17.790	162.800	99.152%	0.000	35.020	15.760
σ		0.356	0.367	2.834	1.779%	0.000	0.538	0.476
%RSD		2.401	2.062	1.741	1.795	0.000	1.537	3.022

200-35736-A-11-I MS 10/18/2016 04:23:09 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:23:31	93.575%	16.000	415.500	T 4937.000	T 14570.000	T 56870.000	T 8917.000	T 58680.000	140.337%	0.000	124.800	98.260
2	16:23:53	91.436%	16.530	426.200	T 4987.000	T 14860.000	T 58360.000	T 9108.000	T 60460.000	138.606%	0.000	128.800	103.100
3	16:24:14	89.673%	16.020	427.200	T 4768.000	T 14270.000	T 55520.000	T 8711.000	T 58210.000	141.865%	0.000	125.300	99.340
x		91.561%	16.180	423.000	T 4898.000	T 14570.000	T 56920.000	T 8912.000	T 59120.000	140.269%	0.000	126.300	100.200
σ		1.954%	0.300	6.478	T 114.500	T 296.700	T 1421.000	T 198.600	T 1185.000	1.630%	0.000	2.199	2.551
%RSD		2.134	1.856	1.532	T 2.338	T 2.037	T 2.496	T 2.229	T 2.004	1.162	0.000	1.741	2.545

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:23:31	7.453	TM 6683.000	T 94240.000	48.970	106.200	2529.000	1012.000	55.570	0.093	48.200	0.000	0.000
2	16:23:53	6.713	TM 6854.000	T 96390.000	50.260	109.900	2547.000	1012.000	56.050	0.083	48.220	0.000	0.000
3	16:24:14	7.279	TM 6662.000	T 93950.000	48.600	103.300	2518.000	1002.000	54.960	0.095	47.930	0.000	0.000
x		7.148	TM 6733.000	T 94860.000	49.280	106.500	2531.000	1009.000	55.530	0.090	48.120	0.000	0.000
σ		0.387	TM 105.100	T 1335.000	0.870	3.286	14.660	5.940	0.547	0.007	0.163	0.000	0.000
%RSD		5.413	TM 1.560	T 1.408	1.765	3.086	0.579	0.589	0.985	7.285	0.338	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:23:31	216.600	295.661%	35.910	12.890	-4.358	12.250	105.973%	0.000	4.665	4.719	876.000	122.917%
2	16:23:53	215.700	301.525%	35.870	12.420	-5.063	12.220	107.618%	0.000	4.759	4.732	878.800	121.955%
3	16:24:14	216.100	299.716%	36.180	12.830	-3.963	12.090	107.354%	0.000	4.776	4.735	868.600	121.536%
x		216.100	298.967%	35.990	12.710	-4.461	12.190	106.982%	0.000	4.733	4.729	874.500	122.136%
σ		0.467	3.003%	0.169	0.253	0.557	0.086	0.883%	0.000	0.060	0.009	5.302	0.708%
%RSD		0.216	1.004	0.470	1.990	12.480	0.706	0.825	0.000	1.266	0.183	0.606	0.580

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:23:31	15.170	14.500	151.500	101.124%	0.000	32.910	15.700
2	16:23:53	15.660	14.930	155.400	100.190%	0.000	33.610	15.940
3	16:24:14	15.960	14.610	155.800	100.718%	0.000	33.450	16.200
x		15.600	14.680	154.200	100.677%	0.000	33.320	15.950
σ		0.398	0.224	2.402	0.469%	0.000	0.364	0.250
%RSD		2.552	1.528	1.557	0.465	0.000	1.093	1.570

200-35736-A-11-J MSD 10/18/2016 04:28:54 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:29:15	96.358%	13.650	390.000	T 4764.000	T 14490.000	T 51600.000	T 8441.000	T 41390.000	144.693%	0.000	118.600	95.330
2	16:29:37	93.348%	15.050	408.400	T 4848.000	T 15010.000	T 53880.000	T 8584.000	T 42160.000	142.623%	0.000	123.100	98.400
3	16:29:59	95.122%	15.410	407.800	T 4852.000	T 14860.000	T 51990.000	T 8526.000	T 42430.000	145.994%	0.000	118.400	95.960
x		94.943%	14.700	402.100	T 4822.000	T 14790.000	T 52490.000	T 8517.000	T 41990.000	144.437%	0.000	120.000	96.560
σ		1.513%	0.928	10.480	T 49.410	T 271.000	T 1223.000	T 71.490	T 540.800	1.700%	0.000	2.644	1.624
%RSD		1.594	6.311	2.607	T 1.025	T 1.832	T 2.330	T 0.839	T 1.288	1.177	0.000	2.203	1.682

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:29:15	8.139	T 5778.000	T 89130.000	48.000	105.000	2375.000	1049.000	54.370	0.064	51.740	0.000	0.000
2	16:29:37	7.048	T 6008.000	T 91830.000	48.530	106.700	2381.000	1043.000	55.490	0.074	49.960	0.000	0.000
3	16:29:59	8.399	T 5880.000	T 91530.000	48.480	104.000	2347.000	1044.000	52.480	0.111	47.760	0.000	0.000
x		7.862	T 5889.000	T 90830.000	48.340	105.200	2368.000	1046.000	54.110	0.083	49.820	0.000	0.000
σ		0.717	T 115.400	T 1476.000	0.296	1.348	18.010	3.422	1.521	0.025	1.994	0.000	0.000
%RSD		9.114	T 1.959	T 1.625	0.612	1.281	0.761	0.327	2.810	29.750	4.003	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:29:15	170.900	285.875%	37.770	12.830	-3.114	14.200	107.494%	0.000	4.521	4.693	808.800	122.078%
2	16:29:37	170.300	286.205%	38.540	12.600	-3.492	14.440	108.843%	0.000	4.669	4.701	813.900	122.388%
3	16:29:59	169.700	289.657%	38.050	12.490	-3.925	14.300	109.986%	0.000	4.586	4.786	808.000	122.420%
x		170.300	287.245%	38.120	12.640	-3.510	14.310	108.774%	0.000	4.592	4.726	810.200	122.295%
σ		0.631	2.095%	0.390	0.171	0.406	0.117	1.247%	0.000	0.074	0.051	3.202	0.189%
%RSD		0.371	0.729	1.024	1.354	11.560	0.821	1.147	0.000	1.616	1.089	0.395	0.154

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:29:15	16.060	15.230	161.500	99.190%	0.000	31.530	15.690
2	16:29:37	16.480	15.220	161.200	100.848%	0.000	31.630	15.730
3	16:29:59	16.400	15.450	162.600	100.775%	0.000	32.200	16.100
x		16.310	15.300	161.800	100.271%	0.000	31.790	15.840
σ		0.224	0.132	0.748	0.937%	0.000	0.363	0.225
%RSD		1.374	0.864	0.462	0.934	0.000	1.142	1.418

200-35736-A-12-A 10/18/2016 04:34:38 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:35:00	86.133%	3.924	24.000	T 491.500	T 15060.000	T 44970.000	T 3884.000	T 60800.000	131.615%	0.000	71.220	56.670
2	16:35:22	86.578%	4.327	24.090	T 484.700	T 14950.000	T 45170.000	T 3908.000	T 60740.000	131.413%	0.000	73.160	57.140
3	16:35:43	87.234%	3.293	23.840	T 486.000	T 15070.000	T 45740.000	T 3940.000	T 61890.000	131.184%	0.000	72.500	57.480
x		86.648%	3.848	23.980	T 487.400	T 15030.000	T 45290.000	T 3911.000	T 61140.000	131.404%	0.000	72.290	57.090
σ		0.554%	0.521	0.128	T 3.612	T 64.650	T 395.200	T 28.390	T 648.200	0.215%	0.000	0.988	0.406
%RSD		0.639	13.540	0.532	T 0.741	T 0.430	T 0.873	T 0.726	T 1.060	0.164	0.000	1.367	0.710

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:35:00	5.102	TM 7124.000	T 90490.000	38.520	84.870	2030.000	805.500	35.580	0.042	16.540	0.000	0.000
2	16:35:22	4.514	TM 7200.000	T 93850.000	39.150	84.250	2029.000	810.500	33.350	0.110	11.980	0.000	0.000
3	16:35:43	4.913	TM 7216.000	T 92220.000	39.210	85.390	2039.000	816.500	34.670	0.081	13.810	0.000	0.000
x		4.843	TM 7180.000	T 92190.000	38.960	84.830	2033.000	810.800	34.540	0.078	14.110	0.000	0.000
σ		0.300	TM 49.310	T 1681.000	0.381	0.571	5.351	5.520	1.119	0.034	2.295	0.000	0.000
%RSD		6.201	TM 0.687	T 1.823	0.977	0.673	0.263	0.681	3.239	44.140	16.260	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:35:00	170.700	256.208%	0.998	1.680	-4.201	3.609	104.396%	0.000	0.100	0.120	741.000	115.492%
2	16:35:22	170.800	256.913%	0.880	1.827	-2.404	3.607	105.487%	0.000	0.084	0.155	743.500	116.331%

3	16:35:43	172.900	259.833%	0.872	1.597	-4.336	3.687	104.824%	0.000	0.105	0.157	754.400	117.124%
x		171.500	257.651%	0.917	1.701	-3.647	3.635	104.902%	0.000	0.096	0.144	746.300	116.316%
σ		1.288	1.922%	0.070	0.117	1.079	0.046	0.550%	0.000	0.011	0.021	7.149	0.816%
%RSD		0.751	0.746	7.666	6.865	29.580	1.257	0.524	0.000	11.060	14.500	0.958	0.701

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:35:00	0.452	0.474	124.100	97.825%	0.000	11.650	4.530
2	16:35:22	0.456	0.483	125.800	97.785%	0.000	11.850	4.685
3	16:35:43	0.438	0.456	127.000	97.809%	0.000	11.930	4.716
x		0.449	0.471	125.700	97.806%	0.000	11.810	4.643
σ		0.009	0.014	1.481	0.020%	0.000	0.146	0.100
%RSD		2.036	3.025	1.178	0.021	0.000	1.236	2.146

MB 200-110239/1-A 10/18/2016 04:40:22 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:40:44	96.941%	-0.050	-0.026	154.000	17.270	65.190	12.280	74.140	126.435%	0.000	0.924	0.076
2	16:41:05	93.967%	-0.050	-0.823	144.600	15.620	56.170	10.380	73.260	128.072%	0.000	0.518	0.019
3	16:41:27	94.419%	0.024	-0.702	148.200	14.840	55.420	9.419	72.640	127.505%	0.000	0.021	0.035
x		95.109%	-0.026	-0.517	148.900	15.910	58.930	10.690	73.350	127.337%	0.000	0.488	0.043
σ		1.603%	0.043	0.430	4.766	1.241	5.436	1.454	0.751	0.831%	0.000	0.452	0.029
%RSD		1.685	167.400	83.100	3.200	7.796	9.226	13.600	1.024	0.653	0.000	92.650	67.810

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:40:44	6.828	7.040	122.800	0.052	0.177	2.986	1.379	-0.601	0.325	-1.293	0.000	0.000
2	16:41:05	7.350	6.139	108.100	0.034	0.128	2.305	1.085	-0.840	0.358	-2.242	0.000	0.000
3	16:41:27	8.009	6.013	101.700	0.054	0.198	2.695	0.858	-0.575	0.332	-0.994	0.000	0.000
x		7.396	6.398	110.900	0.047	0.167	2.662	1.107	-0.672	0.339	-1.509	0.000	0.000
σ		0.592	0.560	10.780	0.011	0.036	0.342	0.261	0.146	0.017	0.651	0.000	0.000
%RSD		7.999	8.751	9.728	23.730	21.390	12.830	23.580	21.760	5.118	43.160	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:40:44	0.294	117.684%	-0.496	0.007	-1.239	0.025	112.061%	0.000	-0.441	-0.454	0.828	103.647%
2	16:41:05	0.365	117.820%	-0.456	0.008	-1.374	0.042	112.720%	0.000	-0.451	-0.451	0.867	105.096%
3	16:41:27	0.289	119.550%	-0.510	0.028	-1.252	0.051	112.369%	0.000	-0.437	-0.451	0.682	104.697%
x		0.316	118.351%	-0.488	0.014	-1.288	0.039	112.383%	0.000	-0.443	-0.452	0.792	104.480%
σ		0.042	1.040%	0.028	0.012	0.074	0.013	0.330%	0.000	0.007	0.002	0.098	0.749%
%RSD		13.400	0.879	5.706	84.090	5.765	33.730	0.293	0.000	1.548	0.436	12.300	0.717

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:40:44	0.023	-0.019	0.069	98.175%	0.000	0.917	0.007
2	16:41:05	0.010	-0.019	0.064	99.588%	0.000	0.870	0.011
3	16:41:27	0.025	-0.021	0.055	98.963%	0.000	0.855	0.010
x		0.019	-0.020	0.063	98.909%	0.000	0.881	0.009
σ		0.009	0.001	0.007	0.708%	0.000	0.033	0.002

%RSD		44.110	5.208	10.920	0.716	0.000	3.704	18.730

LCS 200-110239/2-A 10/18/2016 04:46:04 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:46:26	89.583%	12.000	442.000	T 5288.000	1833.000	445.800	T 4895.000	4539.000	114.395%	0.000	46.000	38.030
2	16:46:47	84.598%	11.530	477.200	T 5559.000	1928.000	474.800	T 5132.000	4672.000	107.739%	0.000	46.470	39.200
3	16:47:11	83.758%	12.000	479.100	T 5492.000	1917.000	473.800	T 5104.000	4792.000	106.105%	0.000	47.600	40.080
x		85.980%	11.840	466.100	T 5446.000	1892.000	464.800	T 5044.000	4668.000	109.413%	0.000	46.690	39.100
σ		3.149%	0.271	20.920	T 140.800	51.950	16.480	T 129.600	126.400	4.391%	0.000	0.823	1.028
%RSD		3.662	2.285	4.488	T 2.584	2.745	3.546	T 2.570	2.708	4.014	0.000	1.762	2.629

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:46:26	8.292	18.190	T 1995.000	9.432	19.630	56.110	210.900	21.510	0.179	41.030	0.000	0.000
2	16:46:47	8.331	19.100	T 2092.000	10.050	21.490	56.550	209.900	21.430	0.163	41.980	0.000	0.000
3	16:47:11	6.976	19.420	T 2069.000	9.832	20.600	56.250	204.600	22.550	0.035	43.670	0.000	0.000
x		7.866	18.900	T 2052.000	9.770	20.570	56.300	208.500	21.830	0.125	42.230	0.000	0.000
σ		0.771	0.636	T 50.650	0.312	0.930	0.225	3.381	0.629	0.079	1.341	0.000	0.000
%RSD		9.806	3.365	T 2.468	3.194	4.523	0.399	1.622	2.880	62.930	3.176	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:46:26	48.820	102.715%	96.680	11.070	-0.470	9.162	100.372%	0.000	19.110	18.040	93.510	95.901%
2	16:46:47	49.980	103.073%	95.640	10.900	1.079	9.569	98.763%	0.000	18.940	18.350	94.700	95.464%
3	16:47:11	49.830	101.085%	96.870	10.950	-0.290	9.853	98.187%	0.000	18.910	18.380	93.590	93.649%
x		49.540	102.291%	96.400	10.970	0.106	9.528	99.108%	0.000	18.990	18.260	93.930	95.005%
σ		0.632	1.060%	0.662	0.089	0.848	0.347	1.132%	0.000	0.108	0.184	0.667	1.194%
%RSD		1.276	1.036	0.687	0.807	798.000	3.646	1.143	0.000	0.568	1.008	0.710	1.257

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:46:26	34.060	17.320	8.924	90.963%	0.000	13.060	10.270
2	16:46:47	34.750	17.610	8.953	90.687%	0.000	13.800	10.240
3	16:47:11	36.190	17.650	8.989	91.036%	0.000	14.420	10.150
x		35.000	17.520	8.955	90.895%	0.000	13.760	10.220
σ		1.088	0.181	0.033	0.184%	0.000	0.680	0.066
%RSD		3.108	1.031	0.364	0.203	0.000	4.940	0.644

200-35680-A-13-A 10/18/2016 04:51:48 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:52:10	92.086%	-0.031	0.720	155.200	7.981	24.660	8.829	44.730	117.334%	0.000	0.481	-0.001
2	16:52:32	92.948%	-0.013	1.733	155.000	6.669	21.440	8.366	45.870	117.562%	0.000	0.188	-0.064
3	16:52:53	90.059%	0.027	1.669	150.300	6.135	17.900	7.122	38.040	118.194%	0.000	0.237	-0.001
x		91.698%	-0.005	1.374	153.500	6.928	21.330	8.106	42.880	117.697%	0.000	0.302	-0.022
σ		1.483%	0.030	0.567	2.769	0.950	3.385	0.883	4.229	0.446%	0.000	0.157	0.036
%RSD		1.617	547.400	41.280	1.803	13.710	15.870	10.890	9.862	0.379	0.000	51.990	166.000

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:52:10	9.235	2.766	46.250	0.022	0.078	1.098	2.045	-0.813	0.393	-2.312	0.000	0.000
2	16:52:32	10.150	2.358	38.980	0.028	0.227	1.159	1.670	-0.500	0.358	-1.388	0.000	0.000
3	16:52:53	10.120	2.074	34.820	0.010	0.143	0.889	1.598	-0.820	0.376	-1.397	0.000	0.000
x		9.835	2.399	40.020	0.020	0.149	1.049	1.771	-0.711	0.376	-1.699	0.000	0.000
σ		0.520	0.348	5.785	0.009	0.075	0.142	0.240	0.183	0.017	0.530	0.000	0.000
%RSD		5.288	14.490	14.460	46.990	50.080	13.500	13.560	25.730	4.530	31.220	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:52:10	0.193	107.633%	-0.357	0.013	-1.028	0.016	104.756%	0.000	-0.423	-0.429	0.245	95.612%
2	16:52:32	0.180	107.420%	-0.429	0.004	-1.062	0.018	105.448%	0.000	-0.420	-0.428	0.147	97.858%
3	16:52:53	0.158	108.825%	-0.404	0.008	-1.005	0.021	104.741%	0.000	-0.421	-0.422	0.293	97.613%
x		0.177	107.959%	-0.397	0.008	-1.032	0.018	104.982%	0.000	-0.422	-0.427	0.228	97.028%
σ		0.018	0.757%	0.036	0.005	0.029	0.003	0.404%	0.000	0.002	0.004	0.074	1.232%
%RSD		10.080	0.701	9.172	55.180	2.782	13.610	0.384	0.000	0.406	0.902	32.420	1.270

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:52:10	0.106	-0.004	-0.017	92.213%	0.000	3.180	0.014
2	16:52:32	0.105	-0.000	-0.017	94.966%	0.000	2.833	0.010
3	16:52:53	0.100	-0.013	-0.047	94.714%	0.000	2.615	0.005
x		0.103	-0.006	-0.027	93.965%	0.000	2.876	0.010
σ		0.003	0.007	0.017	1.522%	0.000	0.285	0.005
%RSD		3.117	115.600	64.240	1.620	0.000	9.901	50.610

200-35700-A-19-A 10/18/2016 04:57:31 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:57:53	97.655%	-0.014	-0.915	160.700	1.126	6.924	3.753	32.680	123.207%	0.000	0.520	0.174
2	16:58:14	96.885%	-0.050	-2.342	157.100	1.118	6.426	4.597	23.320	123.611%	0.000	0.151	0.168
3	16:58:36	97.061%	-0.032	-0.823	152.400	1.579	6.640	4.499	31.280	123.918%	0.000	0.013	0.242
x		97.200%	-0.032	-1.360	156.700	1.275	6.664	4.283	29.090	123.579%	0.000	0.228	0.195
σ		0.403%	0.018	0.852	4.157	0.264	0.250	0.462	5.046	0.356%	0.000	0.262	0.041
%RSD		0.415	55.450	62.640	2.652	20.710	3.746	10.770	17.350	0.288	0.000	115.000	21.120

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:57:53	12.200	0.244	9.983	-0.004	0.127	0.324	0.317	-0.765	0.451	-2.181	0.000	0.000
2	16:58:14	12.800	0.232	11.590	-0.010	0.087	0.538	0.532	-0.931	0.477	-2.034	0.000	0.000
3	16:58:36	12.810	0.198	11.690	-0.004	0.087	0.377	0.614	-0.859	0.455	-1.820	0.000	0.000
x		12.600	0.225	11.090	-0.006	0.100	0.413	0.487	-0.852	0.461	-2.012	0.000	0.000
σ		0.346	0.024	0.959	0.004	0.023	0.111	0.154	0.083	0.014	0.182	0.000	0.000
%RSD		2.749	10.530	8.649	59.610	23.200	26.960	31.520	9.783	2.975	9.037	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:57:53	0.068	114.949%	-0.554	0.002	-1.313	0.031	107.658%	0.000	-0.464	-0.463	0.022	100.871%
2	16:58:14	0.057	114.069%	-0.563	0.005	-1.166	0.020	109.726%	0.000	-0.440	-0.457	0.003	100.781%
3	16:58:36	0.070	112.644%	-0.541	-0.002	-1.665	0.070	109.153%	0.000	-0.438	-0.458	0.012	101.322%
x		0.065	113.887%	-0.553	0.002	-1.381	0.040	108.846%	0.000	-0.447	-0.459	0.012	100.992%
σ		0.007	1.163%	0.011	0.003	0.257	0.027	1.067%	0.000	0.015	0.003	0.010	0.290%
%RSD		10.430	1.021	2.010	180.500	18.580	66.520	0.981	0.000	3.325	0.627	77.680	0.287
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	16:57:53	0.036	-0.031	-0.069	95.673%	0.000	1.412	-0.003					
2	16:58:14	0.020	-0.030	-0.074	96.412%	0.000	1.381	-0.004					
3	16:58:36	0.022	-0.031	-0.082	98.256%	0.000	1.327	-0.003					
x		0.026	-0.031	-0.075	96.780%	0.000	1.373	-0.003					
σ		0.009	0.001	0.006	1.330%	0.000	0.043	0.000					
%RSD		32.930	2.073	8.555	1.375	0.000	3.131	15.870					

200-35736-A-14-A 10/18/2016 05:03:14 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:03:35	96.181%	-0.032	-2.488	154.600	2.502	7.101	3.627	28.450	126.174%	0.000	0.183	0.116
2	17:03:57	98.696%	-0.032	-2.318	154.900	1.580	5.834	4.489	27.100	126.305%	0.000	0.339	0.223
3	17:04:19	94.952%	-0.032	-2.197	155.800	2.248	6.136	2.904	31.100	125.039%	0.000	0.221	0.188
x		96.610%	-0.032	-2.334	155.100	2.110	6.357	3.673	28.890	125.839%	0.000	0.248	0.175
σ		1.908%	0.000	0.146	0.631	0.476	0.662	0.793	2.031	0.696%	0.000	0.081	0.055
%RSD		1.975	1.106	6.262	0.407	22.560	10.410	21.600	7.032	0.553	0.000	32.880	31.230
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:03:35	13.330	0.812	18.160	-0.006	0.162	0.544	1.293	-0.781	0.467	-1.387	0.000	0.000
2	17:03:57	13.660	0.592	15.130	-0.004	0.161	0.485	1.377	-0.457	0.460	-0.543	0.000	0.000
3	17:04:19	13.690	0.711	16.920	-0.004	0.242	0.553	1.358	-1.050	0.480	-2.132	0.000	0.000
x		13.560	0.705	16.740	-0.005	0.188	0.528	1.342	-0.763	0.469	-1.354	0.000	0.000
σ		0.202	0.110	1.523	0.001	0.046	0.037	0.044	0.297	0.010	0.795	0.000	0.000
%RSD		1.489	15.610	9.101	19.410	24.610	6.979	3.271	38.890	2.182	58.730	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:03:35	0.062	114.822%	-0.607	-0.003	-1.432	0.046	108.147%	0.000	-0.457	-0.463	0.096	101.380%
2	17:03:57	0.073	114.721%	-0.587	0.012	-1.354	0.040	109.420%	0.000	-0.436	-0.452	0.067	103.840%

3	17:04:19	0.073	118.103%	-0.557	-0.000	-0.908	0.006	111.196%	0.000	-0.450	-0.457	0.039	100.511%
x		0.069	115.882%	-0.584	0.003	-1.231	0.031	109.588%	0.000	-0.448	-0.458	0.067	101.910%
σ		0.006	1.924%	0.025	0.008	0.282	0.021	1.531%	0.000	0.011	0.006	0.029	1.727%
%RSD		8.617	1.660	4.347	274.400	22.940	69.390	1.397	0.000	2.356	1.209	42.880	1.695

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:03:35	0.009	-0.037	-0.062	94.974%	0.000	0.996	-0.001
2	17:03:57	0.003	-0.033	-0.052	98.508%	0.000	0.925	-0.002
3	17:04:19	0.028	-0.043	-0.058	96.842%	0.000	0.929	-0.002
x		0.013	-0.038	-0.057	96.775%	0.000	0.950	-0.001
σ		0.013	0.005	0.005	1.768%	0.000	0.040	0.001
%RSD		100.800	13.840	8.615	1.827	0.000	4.167	51.680

200-35736-A-14-A SD@5 10/18/2016 05:08:56 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:09:18	97.989%	-0.032	-5.224	29.630	0.392	2.968	2.160	8.033	125.196%	0.000	0.354	0.058
2	17:09:40	96.048%	-0.032	-4.979	32.470	-0.023	2.823	1.691	7.925	126.096%	0.000	0.481	0.057
3	17:10:02	95.774%	-0.032	-4.051	28.370	0.093	2.767	2.072	9.582	125.998%	0.000	0.604	0.052
x		96.604%	-0.032	-4.751	30.160	0.154	2.853	1.974	8.513	125.763%	0.000	0.480	0.055
σ		1.207%	0.000	0.619	2.100	0.214	0.104	0.249	0.927	0.494%	0.000	0.125	0.003
%RSD		1.250	0.699	13.020	6.963	138.900	3.641	12.620	10.890	0.393	0.000	26.060	5.849

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:09:18	13.860	0.030	10.260	-0.009	0.023	0.018	0.077	-0.734	0.499	-0.995	0.000	0.000
2	17:09:40	13.600	0.015	8.698	-0.012	0.007	-0.007	0.251	-1.143	0.548	-2.938	0.000	0.000
3	17:10:02	13.720	0.047	8.421	-0.011	-0.001	0.047	0.133	-1.032	0.517	-1.137	0.000	0.000
x		13.730	0.031	9.125	-0.011	0.010	0.019	0.154	-0.970	0.522	-1.690	0.000	0.000
σ		0.128	0.016	0.990	0.002	0.012	0.027	0.089	0.212	0.024	1.083	0.000	0.000
%RSD		0.931	52.280	10.850	15.090	127.200	139.000	57.840	21.820	4.693	64.070	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:09:18	0.019	114.868%	-0.619	0.002	-1.192	0.028	107.302%	0.000	-0.466	-0.474	-0.006	99.468%
2	17:09:40	0.015	114.069%	-0.601	-0.002	-0.870	0.004	108.348%	0.000	-0.463	-0.468	0.013	101.451%
3	17:10:02	0.010	114.721%	-0.613	0.002	-1.033	0.009	110.793%	0.000	-0.452	-0.470	-0.025	101.245%
x		0.015	114.553%	-0.611	0.001	-1.032	0.014	108.814%	0.000	-0.460	-0.471	-0.006	100.721%
σ		0.004	0.425%	0.009	0.002	0.161	0.013	1.791%	0.000	0.008	0.003	0.019	1.090%
%RSD		30.250	0.371	1.494	265.800	15.620	92.980	1.646	0.000	1.654	0.651	315.900	1.083

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:09:18	0.010	-0.043	-0.096	94.869%	0.000	0.489	-0.005
2	17:09:40	0.006	-0.036	-0.108	95.681%	0.000	0.502	-0.005
3	17:10:02	-0.009	-0.039	-0.104	96.639%	0.000	0.499	-0.004
x		0.002	-0.039	-0.102	95.730%	0.000	0.497	-0.005
σ		0.010	0.004	0.006	0.886%	0.000	0.007	0.000

%RSD	438.300	9.009	5.878	0.926	0.000	1.361	5.157	

CCV 10/18/2016 05:14:40 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:15:02	85.266%	730.400	279.800	┬10660.000	┬30450.000	┬31120.000	┬9931.000	27690.000	102.648%	0.000	┬1281.000	378.900
2	17:15:23	82.584%	749.200	290.300	┬10700.000	┬30780.000	┬30870.000	┬9966.000	┬30150.000	100.306%	0.000	┬1311.000	387.200
3	17:15:45	80.336%	754.200	296.100	┬10360.000	┬29530.000	┬30130.000	┬9680.000	┬29550.000	101.601%	0.000	┬1272.000	375.800
x		82.729%	119.138%	115.496%	┬105.748%	┬100.850%	┬102.361%	┬98.592%	┬97.099%	101.518%	0.000	┬103.058%	95.166%
σ		2.468%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.173%	0.000	┬n/a	n/a
%RSD		2.983	1.691	2.851	┬1.729	┬2.137	┬1.682	┬1.582	┬4.409	1.156	0.000	┬1.557	1.552

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:15:02	19.200	┬1227.000	┬29500.000	467.500	1253.000	1311.000	1319.000	215.100	-0.315	218.400	0.000	0.000
2	17:15:23	19.040	┬1245.000	┬29810.000	472.100	1261.000	1302.000	1328.000	218.200	-0.406	218.800	0.000	0.000
3	17:15:45	15.810	┬1215.000	┬29390.000	461.200	1230.000	1280.000	1309.000	219.500	-0.383	221.600	0.000	0.000
x		18.010	┬98.305%	┬98.557%	93.392%	99.830%	103.809%	105.484%	108.791%	-0.368	109.787%	0.000	0.000
σ		1.914	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.048	n/a	0.000	0.000
%RSD		10.620	┬1.204	┬0.740	1.171	1.270	1.237	0.726	1.049	12.970	0.793	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:15:02	191.000	96.292%	1138.000	105.400	12.880	189.200	93.409%	0.000	236.100	228.300	1143.000	88.193%
2	17:15:23	194.200	94.769%	1186.000	105.400	9.953	192.300	92.337%	0.000	238.600	230.000	1154.000	86.701%
3	17:15:45	194.100	94.295%	1201.000	106.200	8.636	191.400	91.602%	0.000	240.900	233.000	1158.000	88.708%
x		193.100	95.119%	93.998%	105.692%	10.490	95.479%	92.449%	0.000	238.500	92.175%	92.131%	87.867%
σ		1.810	1.043%	n/a	n/a	2.175	n/a	0.909%	0.000	2.391	n/a	n/a	1.042%
%RSD		0.937	1.097	2.812	0.429	20.730	0.841	0.983	0.000	1.002	1.027	0.687	1.186

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:15:02	19.650	173.100	┬1194.000	86.652%	0.000	16.040	9.663
2	17:15:23	20.200	175.800	┬1203.000	85.329%	0.000	17.580	9.720
3	17:15:45	19.660	176.900	┬1218.000	85.150%	0.000	18.560	9.655
x		99.185%	87.616%	┬96.426%	85.710%	0.000	86.971%	96.793%
σ		n/a	n/a	┬n/a	0.820%	0.000	n/a	n/a
%RSD		1.597	1.106	┬1.005	0.957	0.000	7.306	0.369

CCB 10/18/2016 05:20:23 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:45	92.628%	-0.012	-3.702	6.439	2.888	4.568	4.912	4.074	106.365%	0.000	0.079	-0.100
2	17:21:08	88.979%	0.009	-3.337	3.669	2.843	4.235	4.844	6.078	107.498%	0.000	0.463	-0.125
3	17:21:29	86.856%	0.010	-4.109	1.687	3.685	4.299	3.259	6.359	106.788%	0.000	1.022	-0.155
x		89.488%	0.002	-3.716	3.932	3.139	4.367	4.338	5.504	106.884%	0.000	0.521	-0.127
σ		2.920%	0.013	0.386	2.387	0.474	0.177	0.935	1.246	0.572%	0.000	0.474	0.027
%RSD		3.263	594.300	10.390	60.710	15.090	4.053	21.560	22.650	0.536	0.000	90.960	21.510

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:45	11.810	0.118	14.000	0.029	0.129	0.170	-0.158	-0.544	0.375	-1.293	0.000	0.000
2	17:21:08	11.590	0.120	12.890	0.022	0.045	0.056	-0.179	-1.419	0.428	-2.062	0.000	0.000
3	17:21:29	10.810	0.115	12.000	0.024	0.091	0.108	-0.381	-0.702	0.368	-0.534	0.000	0.000
x		11.400	0.118	12.960	0.025	0.088	0.111	-0.239	-0.888	0.390	-1.296	0.000	0.000
σ		0.525	0.003	1.005	0.004	0.042	0.057	0.123	0.466	0.033	0.764	0.000	0.000
%RSD		4.601	2.432	7.750	16.200	47.610	51.590	51.540	52.500	8.517	58.950	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:45	0.022	98.597%	1.692	0.009	-1.262	0.042	96.019%	0.000	-0.162	-0.182	0.060	88.251%
2	17:21:08	0.022	100.005%	1.589	0.015	-1.104	0.037	95.320%	0.000	-0.166	-0.150	0.082	90.618%
3	17:21:29	0.023	100.010%	1.237	0.013	-1.263	0.042	95.954%	0.000	-0.127	-0.132	0.061	91.834%
x		0.022	99.537%	1.506	0.012	-1.210	0.040	95.764%	0.000	-0.152	-0.154	0.068	90.235%
σ		0.001	0.814%	0.238	0.003	0.092	0.003	0.386%	0.000	0.022	0.025	0.013	1.822%
%RSD		2.818	0.818	15.830	24.590	7.568	6.385	0.403	0.000	14.250	16.480	18.540	2.019

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:45	0.042	0.117	-0.003	89.997%	0.000	0.630	-0.002
2	17:21:08	0.070	0.092	-0.009	88.957%	0.000	0.619	-0.000
3	17:21:29	0.039	0.090	-0.004	87.334%	0.000	0.628	-0.002
x		0.050	0.099	-0.005	88.763%	0.000	0.626	-0.001
σ		0.017	0.015	0.003	1.342%	0.000	0.006	0.001
%RSD		33.730	14.860	52.260	1.512	0.000	1.004	66.290

CCVL 10/18/2016 05:26:07 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:26:29	91.657%	1.550	40.830	T 558.900	190.800	52.310	472.500	493.100	110.207%	0.000	5.534	4.112
2	17:26:51	91.597%	1.323	39.740	T 555.600	198.000	53.410	468.000	478.500	110.623%	0.000	4.595	4.131
3	17:27:12	89.645%	1.528	42.390	491.200	192.200	52.650	466.400	490.600	110.428%	0.000	5.582	3.890
x		90.966%	146.701%	102.464%	T 107.044%	96.843%	105.579%	93.789%	97.486%	110.419%	0.000	104.740%	101.112%
σ		1.145%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.209%	0.000	n/a	n/a
%RSD		1.259	8.555	3.244	T 7.136	1.956	1.070	0.672	1.607	0.189	0.000	10.620	3.318

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:26:29	13.230	2.057	192.000	1.153	2.356	6.056	23.990	1.726	0.388	3.512	0.000	0.000
2	17:26:51	14.410	2.184	191.900	1.093	2.223	5.849	22.770	1.428	0.426	2.648	0.000	0.000
3	17:27:12	12.940	2.189	194.300	1.081	2.183	5.870	23.620	1.126	0.467	2.059	0.000	0.000
x		13.530	107.169%	96.345%	110.889%	112.713%	118.495%	117.295%	71.329%	0.427	68.491%	0.000	0.000
σ		0.782	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.039	n/a	0.000	0.000
%RSD		5.779	3.482	0.706	3.465	4.015	1.920	2.672	21.020	9.219	26.680	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:26:29	4.930	101.786%	9.204	1.151	-1.086	0.906	98.088%	0.000	1.704	1.448	9.534	91.339%
2	17:26:51	4.951	99.551%	9.877	1.110	-1.602	1.147	96.859%	0.000	1.765	1.581	9.541	90.708%
3	17:27:12	4.889	100.404%	9.979	1.000	-0.313	0.884	97.995%	0.000	1.677	1.540	9.307	91.551%
x		98.472%	100.580%	96.868%	108.676%	-1.000	97.896%	97.648%	0.000	1.715	76.161%	94.608%	91.199%
σ		n/a	1.128%	n/a	n/a	0.648	n/a	0.684%	0.000	0.045	n/a	n/a	0.438%
%RSD		0.641	1.122	4.346	7.200	64.810	14.910	0.701	0.000	2.619	4.473	1.408	0.481

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:26:29	1.535	1.741	1.059	89.193%	0.000	1.239	1.014
2	17:26:51	1.668	1.772	1.025	90.987%	0.000	1.283	0.960
3	17:27:12	1.708	1.771	1.068	90.354%	0.000	1.315	1.006
x		81.844%	88.080%	105.100%	90.178%	0.000	63.962%	99.319%
σ		n/a	n/a	n/a	0.910%	0.000	n/a	n/a
%RSD		5.530	1.008	2.154	1.009	0.000	2.980	2.932

CCVL 10/18/2016 05:30:57 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:31:19	95.561%	1.156	40.090	481.900	197.500	51.650	451.700	466.600	112.832%	0.000	5.151	3.892
2	17:31:40	92.885%	1.379	42.260	474.300	194.500	52.640	456.300	463.400	111.796%	0.000	5.022	3.885
3	17:32:03	90.713%	1.644	40.640	T 548.300	201.300	53.260	462.300	477.200	110.330%	0.000	4.804	4.014
x		93.053%	139.301%	102.495%	T 100.305%	98.873%	105.037%	91.358%	93.809%	111.653%	0.000	99.845%	98.260%
σ		2.428%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.257%	0.000	n/a	n/a
%RSD		2.609	17.540	2.749	T 8.115	1.726	1.541	1.165	1.536	1.126	0.000	3.511	1.841

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:31:19	13.660	2.019	185.800	1.026	2.413	6.036	23.510	0.931	0.487	2.705	0.000	0.000
2	17:31:40	13.980	2.092	189.000	1.011	2.575	5.975	23.030	1.424	0.449	1.434	0.000	0.000
3	17:32:03	13.360	2.136	191.600	1.010	2.371	5.905	22.810	1.760	0.405	3.283	0.000	0.000
x		13.660	104.120%	94.390%	101.587%	122.652%	119.439%	115.589%	68.596%	0.447	61.852%	0.000	0.000
σ		0.313	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.041	n/a	0.000	0.000
%RSD		2.289	2.846	1.543	0.870	4.399	1.092	1.550	30.410	9.166	38.220	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:31:19	4.883	102.130%	8.738	1.174	-1.301	1.009	96.626%	0.000	1.590	1.425	9.377	90.921%
2	17:31:40	4.877	100.727%	9.402	1.158	-1.238	1.047	98.147%	0.000	1.493	1.424	9.672	93.230%

3	17:32:03	5.063	102.765%	9.469	1.054	-1.309	0.975	97.917%	0.000	1.562	1.481	8.606	92.458%
x		98.819%	101.874%	92.029%	112.865%	-1.283	101.037%	97.563%	0.000	1.548	72.178%	92.182%	92.203%
σ		n/a	1.043%	n/a	n/a	0.039	n/a	0.820%	0.000	0.050	n/a	n/a	1.176%
%RSD		2.133	1.024	4.391	5.789	3.057	3.570	0.840	0.000	3.224	2.268	5.973	1.275

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:31:19	1.569	1.770	1.036	91.807%	0.000	1.373	0.933
2	17:31:40	1.549	1.748	1.051	89.493%	0.000	1.409	0.993
3	17:32:03	1.466	1.826	1.067	89.859%	0.000	1.437	0.993
x		76.403%	89.060%	105.129%	90.386%	0.000	70.324%	97.269%
σ		n/a	n/a	n/a	1.244%	0.000	n/a	n/a
%RSD		3.565	2.266	1.444	1.376	0.000	2.260	3.579

200-35736-A-14-A PDS 10/18/2016 05:36:47 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:08	89.860%	12.060	441.300	T 5590.000	1870.000	459.100	T 5035.000	4445.000	106.964%	0.000	45.400	38.220
2	17:37:30	87.304%	11.550	458.100	T 5489.000	1859.000	448.000	T 4991.000	4547.000	105.428%	0.000	46.070	38.050
3	17:37:52	88.177%	12.250	459.300	T 5502.000	1856.000	456.300	T 5032.000	4559.000	104.295%	0.000	47.620	39.020
x		88.447%	11.950	452.900	T 5527.000	1862.000	454.500	T 5019.000	4517.000	105.562%	0.000	46.360	38.430
σ		1.299%	0.360	10.060	T 54.970	7.357	5.729	T 24.810	62.500	1.340%	0.000	1.141	0.518
%RSD		1.469	3.014	2.222	T 0.994	0.395	1.261	T 0.494	1.384	1.269	0.000	2.460	1.347

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:08	12.630	18.640	T 1989.000	9.126	19.900	54.360	204.800	20.130	0.336	37.420	0.000	0.000
2	17:37:30	11.530	18.020	T 1982.000	9.233	20.780	54.960	211.800	19.640	0.379	39.250	0.000	0.000
3	17:37:52	9.902	18.600	T 2018.000	9.338	20.130	52.670	206.500	20.520	0.207	38.970	0.000	0.000
x		11.350	18.420	T 1996.000	9.232	20.270	54.000	207.700	20.100	0.307	38.550	0.000	0.000
σ		1.370	0.346	T 19.470	0.106	0.459	1.190	3.669	0.442	0.090	0.987	0.000	0.000
%RSD		12.070	1.877	T 0.975	1.144	2.264	2.204	1.767	2.199	29.150	2.560	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:08	46.920	98.295%	91.300	10.500	-0.032	9.093	94.162%	0.000	17.950	16.990	89.060	87.917%
2	17:37:30	48.370	96.776%	94.680	10.740	-0.538	8.958	92.725%	0.000	18.220	17.580	91.000	89.936%
3	17:37:52	47.680	94.457%	96.000	10.550	1.036	8.936	93.535%	0.000	18.390	17.650	90.260	89.885%
x		47.660	96.509%	93.990	10.600	0.155	8.996	93.474%	0.000	18.190	17.410	90.110	89.246%
σ		0.724	1.933%	2.422	0.129	0.804	0.085	0.720%	0.000	0.225	0.361	0.977	1.152%
%RSD		1.520	2.003	2.576	1.221	517.700	0.942	0.771	0.000	1.235	2.075	1.084	1.290

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:08	16.020	16.860	8.627	87.667%	0.000	15.120	9.889
2	17:37:30	16.190	17.290	8.785	86.303%	0.000	16.080	10.120
3	17:37:52	16.900	17.210	8.824	86.920%	0.000	16.580	10.220
x		16.370	17.120	8.746	86.963%	0.000	15.930	10.070
σ		0.469	0.231	0.104	0.683%	0.000	0.744	0.169

%RSD		2.866	1.348	1.192	0.785	0.000	4.673	1.676

200-35736-A-14-B MS 10/18/2016 05:42:30 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:42:52	91.058%	11.920	465.200	T 5649.000	1902.000	452.100	T 5018.000	4696.000	107.986%	0.000	46.110	38.480
2	17:43:14	88.768%	11.320	464.300	T 5603.000	1905.000	464.400	T 5169.000	4802.000	105.564%	0.000	46.650	38.810
3	17:43:35	87.642%	12.620	475.300	T 5625.000	1911.000	463.800	T 5152.000	4783.000	105.349%	0.000	47.280	39.850
x		89.156%	11.960	468.300	T 5626.000	1906.000	460.100	T 5113.000	4760.000	106.300%	0.000	46.680	39.050
σ		1.740%	0.652	6.103	T 23.120	4.610	6.938	T 82.800	56.210	1.464%	0.000	0.589	0.718
%RSD		1.952	5.451	1.303	T 0.411	0.242	1.508	T 1.619	1.181	1.377	0.000	1.261	1.839

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:42:52	10.520	18.480	T 2025.000	9.418	19.600	55.710	214.300	21.600	0.159	42.000	0.000	0.000
2	17:43:14	9.714	18.640	T 2089.000	9.701	20.350	58.580	219.000	22.050	0.134	43.810	0.000	0.000
3	17:43:35	8.983	18.780	T 2101.000	9.758	20.680	56.700	217.900	21.020	0.203	42.600	0.000	0.000
x		9.740	18.630	T 2072.000	9.626	20.210	57.000	217.100	21.560	0.165	42.800	0.000	0.000
σ		0.770	0.152	T 40.940	0.183	0.552	1.456	2.504	0.518	0.035	0.924	0.000	0.000
%RSD		7.909	0.816	T 1.976	1.896	2.730	2.555	1.153	2.403	21.180	2.160	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:42:52	49.560	96.403%	96.630	10.760	-1.103	9.558	93.132%	0.000	18.220	17.910	91.890	88.804%
2	17:43:14	51.010	93.347%	101.700	11.390	-0.286	9.827	90.946%	0.000	18.930	18.600	97.560	90.033%
3	17:43:35	50.380	94.129%	101.300	11.290	0.502	9.647	92.216%	0.000	19.080	18.560	95.200	88.373%
x		50.320	94.626%	99.890	11.150	-0.296	9.677	92.098%	0.000	18.740	18.360	94.880	89.070%
σ		0.726	1.588%	2.827	0.342	0.803	0.137	1.098%	0.000	0.458	0.390	2.848	0.861%
%RSD		1.442	1.678	2.830	3.070	271.400	1.417	1.192	0.000	2.442	2.125	3.001	0.967

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:42:52	34.990	18.020	9.123	85.288%	0.000	18.250	10.240
2	17:43:14	35.170	18.150	9.215	86.051%	0.000	18.470	10.470
3	17:43:35	35.240	18.270	9.242	85.938%	0.000	19.250	10.610
x		35.140	18.150	9.193	85.759%	0.000	18.660	10.440
σ		0.129	0.123	0.062	0.412%	0.000	0.521	0.186
%RSD		0.366	0.677	0.675	0.480	0.000	2.793	1.782

200-35736-A-14-C MSD 10/18/2016 05:48:15 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:38	90.832%	11.640	449.400	T 5574.000	1873.000	452.100	T 5086.000	4647.000	106.463%	0.000	47.170	38.310
2	17:49:00	88.862%	12.760	459.600	T 5613.000	1930.000	455.700	T 5109.000	4574.000	106.918%	0.000	46.460	38.870
3	17:49:23	87.818%	13.040	467.500	T 5409.000	1843.000	441.100	T 4928.000	4617.000	107.648%	0.000	45.000	38.610
x		89.171%	12.480	458.900	T 5532.000	1882.000	449.600	T 5041.000	4613.000	107.010%	0.000	46.210	38.600
σ		1.531%	0.740	9.054	T 108.100	44.300	7.580	T 98.330	37.080	0.598%	0.000	1.105	0.283
%RSD		1.717	5.929	1.973	T 1.954	2.354	1.686	T 1.951	0.804	0.559	0.000	2.390	0.733

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:38	8.653	17.840	T 2020.000	9.227	21.250	55.450	211.600	20.510	0.216	39.960	0.000	0.000
2	17:49:00	9.703	18.310	T 2041.000	9.381	20.400	56.450	212.100	21.010	0.149	41.100	0.000	0.000
3	17:49:23	9.384	18.170	T 2011.000	9.493	20.590	56.710	214.900	20.350	0.231	39.630	0.000	0.000
x		9.247	18.110	T 2024.000	9.367	20.750	56.200	212.900	20.620	0.199	40.230	0.000	0.000
σ		0.538	0.242	T 15.290	0.134	0.446	0.666	1.764	0.348	0.044	0.768	0.000	0.000
%RSD		5.824	1.339	T 0.755	1.427	2.151	1.184	0.829	1.688	22.170	1.909	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:38	48.700	95.067%	95.980	11.000	-1.328	9.350	92.252%	0.000	18.400	17.790	93.470	89.711%
2	17:49:00	49.030	94.381%	98.050	11.080	-0.437	9.139	93.147%	0.000	18.460	17.770	93.230	89.248%
3	17:49:23	49.260	95.284%	99.770	10.840	1.346	9.326	92.914%	0.000	18.610	18.040	94.060	88.914%
x		49.000	94.910%	97.940	10.970	-0.140	9.272	92.771%	0.000	18.490	17.860	93.590	89.291%
σ		0.283	0.471%	1.898	0.125	1.361	0.115	0.464%	0.000	0.105	0.151	0.427	0.401%
%RSD		0.578	0.496	1.938	1.138	976.000	1.244	0.500	0.000	0.569	0.845	0.456	0.449

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:38	34.090	17.400	8.897	86.425%	0.000	18.370	10.170
2	17:49:00	35.130	17.790	9.222	85.329%	0.000	18.940	10.300
3	17:49:23	35.340	17.670	8.986	87.374%	0.000	19.080	10.260
x		34.850	17.620	9.035	86.376%	0.000	18.800	10.250
σ		0.667	0.201	0.168	1.024%	0.000	0.379	0.069
%RSD		1.913	1.138	1.862	1.185	0.000	2.018	0.678

CCV 10/18/2016 05:54:01 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:54:23	87.797%	739.100	277.800	T 10630.000	T 30860.000	T 31290.000	T 10270.000	T 30370.000	101.880%	0.000	T 1290.000	386.000
2	17:54:44	86.778%	739.400	283.500	T 10900.000	T 31540.000	T 31740.000	T 10220.000	28370.000	99.291%	0.000	T 1319.000	391.400
3	17:55:06	85.544%	739.600	286.800	T 10430.000	T 29640.000	T 29940.000	T 9750.000	T 29650.000	103.859%	0.000	T 1251.000	366.300
x		86.706%	118.297%	113.085%	T 106.518%	T 102.265%	T 103.309%	T 100.820%	T 98.210%	101.677%	0.000	T 102.934%	95.310%
σ		1.128%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.291%	0.000	T n/a	n/a
%RSD		1.301	0.031	1.617	T 2.218	T 3.129	T 3.014	T 2.862	T 3.434	2.253	0.000	T 2.637	3.461

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:54:23	14.880	T 1250.000	T 29720.000	462.800	1249.000	1343.000	1349.000	220.000	-0.316	221.100	0.000	0.000
2	17:54:44	23.390	T 1275.000	T 30190.000	467.100	1263.000	1317.000	1349.000	220.600	-0.347	220.000	0.000	0.000
3	17:55:06	17.770	T 1212.000	T 29000.000	450.000	1213.000	1309.000	1326.000	217.100	-0.413	220.600	0.000	0.000
x		18.680	T 99.649%	T 98.786%	91.997%	99.336%	105.835%	107.318%	109.602%	-0.359	110.290%	0.000	0.000
σ		4.326	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.050	n/a	0.000	0.000
%RSD		23.160	T 2.538	T 2.022	1.937	2.066	1.374	0.979	0.854	13.880	0.260	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:54:23	194.400	93.504%	1142.000	105.500	15.860	187.300	90.320%	0.000	235.900	228.900	1154.000	86.438%
2	17:54:44	192.600	92.410%	1185.000	105.300	12.890	188.700	90.426%	0.000	237.300	230.000	1160.000	86.425%
3	17:55:06	192.200	91.563%	1208.000	105.800	14.400	189.500	90.703%	0.000	236.000	229.700	1151.000	88.238%
x		193.100	92.492%	94.276%	105.520%	14.380	94.247%	90.483%	0.000	236.400	91.806%	92.381%	87.033%
σ		1.212	0.973%	n/a	n/a	1.487	n/a	0.198%	0.000	0.768	n/a	n/a	1.043%
%RSD		0.628	1.052	2.837	0.204	10.330	0.608	0.219	0.000	0.325	0.235	0.407	1.199

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:54:23	19.910	171.300	T 1219.000	85.995%	0.000	21.820	9.340
2	17:54:44	20.420	176.100	T 1234.000	85.370%	0.000	22.850	9.462
3	17:55:06	20.260	177.900	T 1211.000	84.745%	0.000	23.420	9.560
x		100.977%	87.534%	T 97.717%	85.370%	0.000	113.496%	94.540%
σ		n/a	n/a	T n/a	0.625%	0.000	n/a	n/a
%RSD		1.295	1.955	T 0.967	0.732	0.000	3.561	1.164

CCB 10/18/2016 05:59:45 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:00:06	95.040%	-0.013	0.003	6.656	4.403	4.699	6.003	7.859	108.559%	0.000	0.308	-0.079
2	18:00:28	90.501%	0.066	1.488	0.256	3.719	4.320	4.713	7.051	108.904%	0.000	0.465	-0.228
3	18:00:50	90.698%	0.142	1.633	7.425	4.721	4.917	5.902	4.188	105.284%	0.000	0.122	-0.133
x		92.079%	0.065	1.041	4.779	4.281	4.645	5.539	6.366	107.583%	0.000	0.299	-0.147
σ		2.565%	0.078	0.902	3.935	0.512	0.302	0.718	1.929	1.998%	0.000	0.172	0.075
%RSD		2.786	120.100	86.660	82.350	11.950	6.500	12.960	30.310	1.857	0.000	57.460	51.410

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:00:06	11.180	0.166	11.520	0.041	0.089	0.089	0.039	-0.055	0.292	0.741	0.000	0.000
2	18:00:28	10.760	0.134	10.090	0.027	0.061	0.090	0.022	-0.687	0.361	-0.858	0.000	0.000
3	18:00:50	11.490	0.118	13.180	0.028	0.056	0.079	-0.333	-0.814	0.369	-1.814	0.000	0.000
x		11.140	0.139	11.600	0.032	0.069	0.086	-0.091	-0.519	0.341	-0.643	0.000	0.000
σ		0.367	0.024	1.544	0.008	0.018	0.006	0.210	0.407	0.043	1.291	0.000	0.000
%RSD		3.299	17.580	13.310	25.210	25.490	7.070	231.700	78.420	12.480	200.600	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:00:06	0.022	96.963%	1.693	0.018	-1.083	0.044	93.243%	0.000	-0.150	-0.196	0.139	88.470%
2	18:00:28	0.037	97.316%	1.626	0.004	-0.869	0.020	92.990%	0.000	-0.161	-0.139	0.074	88.991%

3	18:00:50	0.010	95.843%	1.583	0.010	-1.079	0.081	93.638%	0.000	-0.158	-0.138	0.106	89.647%
x		0.023	96.707%	1.634	0.010	-1.010	0.048	93.290%	0.000	-0.156	-0.157	0.106	89.036%
σ		0.014	0.769%	0.056	0.007	0.122	0.031	0.327%	0.000	0.006	0.033	0.032	0.590%
%RSD		60.940	0.795	3.396	68.400	12.120	63.950	0.350	0.000	3.647	21.160	30.290	0.662

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:00:06	0.097	0.150	0.016	87.196%	0.000	0.749	0.002
2	18:00:28	0.066	0.110	0.011	85.986%	0.000	0.740	0.001
3	18:00:50	0.089	0.101	-0.000	88.170%	0.000	0.725	-0.002
x		0.084	0.120	0.009	87.117%	0.000	0.738	0.000
σ		0.016	0.026	0.008	1.094%	0.000	0.012	0.002
%RSD		19.310	21.690	93.530	1.256	0.000	1.656	400.900

CCVL 10/18/2016 06:05:29 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:50	95.342%	1.397	40.170	T 532.600	185.700	50.920	441.600	458.800	111.926%	0.000	5.324	3.860
2	18:06:12	90.004%	1.366	42.480	468.700	188.400	51.900	447.200	465.100	110.246%	0.000	4.696	3.688
3	18:06:34	89.415%	1.415	42.600	472.100	191.700	51.410	448.000	459.000	109.516%	0.000	5.181	3.729
x		91.587%	139.271%	104.372%	T 98.218%	94.291%	102.825%	89.117%	92.187%	110.563%	0.000	101.340%	93.972%
σ		3.266%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.236%	0.000	n/a	n/a
%RSD		3.566	1.758	3.285	T 7.320	1.585	0.952	0.787	0.783	1.118	0.000	6.501	2.385

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:50	11.680	2.000	176.900	1.020	2.206	5.948	22.940	1.357	0.428	2.383	0.000	0.000
2	18:06:12	11.920	1.978	181.200	0.981	2.364	6.369	24.700	1.415	0.381	4.150	0.000	0.000
3	18:06:34	11.750	2.030	182.500	0.957	2.050	5.561	22.860	1.224	0.416	2.654	0.000	0.000
x		11.780	100.139%	90.100%	98.612%	110.333%	119.186%	117.502%	66.608%	0.408	76.562%	0.000	0.000
σ		0.123	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.024	n/a	0.000	0.000
%RSD		1.048	1.305	1.631	3.248	7.115	6.779	4.428	7.337	5.961	31.060	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:50	4.790	97.588%	9.126	1.083	-1.694	0.995	95.103%	0.000	1.443	1.403	9.073	88.348%
2	18:06:12	4.825	98.411%	9.226	1.037	-0.900	0.984	93.960%	0.000	1.524	1.454	9.644	91.017%
3	18:06:34	4.719	97.452%	9.296	1.046	-1.571	1.017	94.950%	0.000	1.460	1.459	9.448	91.763%
x		95.564%	97.817%	92.159%	105.529%	-1.388	99.841%	94.671%	0.000	1.476	71.939%	93.882%	90.376%
σ		n/a	0.519%	n/a	n/a	0.427	n/a	0.620%	0.000	0.043	n/a	n/a	1.796%
%RSD		1.130	0.530	0.925	2.333	30.780	1.686	0.655	0.000	2.901	2.172	3.091	1.987

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:50	1.506	1.674	1.006	89.233%	0.000	1.357	0.956
2	18:06:12	1.736	1.749	1.065	90.126%	0.000	1.356	0.939
3	18:06:34	1.666	1.737	1.012	88.275%	0.000	1.411	0.976
x		81.797%	86.015%	102.778%	89.212%	0.000	68.728%	95.719%
σ		n/a	n/a	n/a	0.926%	0.000	n/a	n/a

%RSD	7.196	2.339	3.166	1.038	0.000	2.269	1.914

Mass Uncorrected ICPS

STD0 10/18/2016 12:40:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:40:42	142819.310	7.500	1315.052	234792.250	210.001	650.013	48029.104	330.003	151767.870	0.000	16027.703	1770.094
2	12:41:04	143242.920	7.500	1075.035	245758.660	180.001	710.015	47266.930	370.004	154613.850	0.000	16858.522	1730.090
3	12:41:25	148649.960	2.500	1305.051	242298.550	190.001	1405.059	47898.730	310.003	159004.880	15.000	17288.963	1655.082
x		144904.060	5.833	1231.713	240949.820	193.334	921.696	47731.588	336.670	155128.870	5.000	16725.062	1718.422
σ		3250.949	2.887	135.779	5606.229	15.275	419.679	407.651	30.551	3645.886	8.660	641.134	58.387
%RSD		2.244	49.487	11.024	2.327	7.901	45.533	0.854	9.075	2.350	173.205	3.833	3.398

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:40:42	5806.011	345.004	194306.080	35.000	30.000	175.001	535.009	1321.052	519.008	355.504	378.504	1890.107
2	12:41:04	5710.978	355.004	191357.260	55.000	20.000	150.001	565.010	1371.056	447.006	402.505	340.503	1920.111
3	12:41:25	5650.958	455.006	197432.500	40.000	15.000	220.001	645.012	1382.057	426.005	360.504	388.005	1810.098
x		5722.649	385.005	194365.280	43.333	21.667	181.668	581.677	1358.055	464.007	372.838	369.004	1873.439
σ		78.183	60.829	3038.055	10.408	7.638	35.473	56.864	32.514	48.776	25.814	25.135	56.869
%RSD		1.366	15.800	1.563	24.019	35.251	19.527	9.776	2.394	10.512	6.924	6.812	3.036

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:40:42	25.000	198262.270	1760.093	5.000	0.000	5.000	895529.740	4405.582	1545.072	1160.040	10.000	154169.770
2	12:41:04	30.000	200144.560	1475.065	25.000	0.000	10.000	887970.980	4650.649	1415.060	1174.041	20.000	159408.710
3	12:41:25	25.000	203332.810	1255.047	20.000	0.000	5.000	899969.570	4315.559	1595.076	1120.038	20.000	156733.510
x		26.667	200579.880	1496.735	16.667	0.000	6.667	894490.100	4457.263	1518.403	1151.373	16.667	156770.660
σ		2.887	2563.147	253.219	10.408	0.000	2.887	6066.480	173.420	92.924	28.026	5.774	2619.667
%RSD		10.825	1.278	16.918	62.450	0.000	43.301	0.678	3.891	6.120	2.434	34.641	1.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:40:42	310.003	2705.220	455.006	121853.830	0.000	4660.652	60.000
2	12:41:04	220.001	2305.159	515.008	125299.230	0.000	4800.691	25.000
3	12:41:25	240.002	2180.143	720.016	124835.770	0.000	4235.538	10.000
x		256.669	2396.840	563.343	123996.280	0.000	4565.627	31.667
σ		47.259	274.282	138.959	1869.831	0.000	294.316	25.658
%RSD		18.412	11.443	24.667	1.508	0.000	6.446	81.025

STD1 10/18/2016 12:44:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:44:42	152413.730	202.501	6881.420	950660.880	30457.805	71623.568	733419.720	25930.156	161256.350	15.000	29816.647	10633.391
2	12:45:04	153382.550	162.501	6556.289	T 1013130.600	29596.255	71824.430	739854.990	27212.197	164406.910	30.000	31023.848	10413.252
3	12:45:25	149396.590	175.001	6766.373	940582.500	28925.078	72547.552	741453.740	25850.031	161428.000	10.000	30292.504	10143.086
x		151730.960	180.001	6734.694	T 968124.670	29659.713	71998.516	738242.820	26330.795	162363.750	18.333	30377.666	10396.576
σ		2078.846	20.464	164.864	T 39300.715	768.331	485.969	4252.727	764.367	1771.504	10.408	608.089	245.578
%RSD		1.370	11.369	2.448	T 4.059	2.590	0.675	0.576	2.903	1.091	56.773	2.002	2.362

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:44:42	7521.697	7611.738	777978.390	2980.266	1450.063	3930.463	12214.474	2435.178	628.012	570.010	382.504	1970.116
2	12:45:04	7536.704	7811.830	770591.830	3145.297	1325.053	4135.513	12484.674	2481.185	638.012	581.510	382.004	2160.140
3	12:45:25	7501.688	7981.911	778030.750	2540.194	1400.059	4080.499	12254.504	2429.177	688.014	605.511	381.504	2310.160

x		7520.029	7801.826	775533.660	2888.586	1391.725	4048.825	12317.884	2448.513	651.346	585.677	382.004	2146.805
σ		17.567	185.289	4279.829	312.796	62.921	106.131	145.825	28.453	32.147	18.114	0.500	170.414
%RSD		0.234	2.375	0.552	10.829	4.521	2.621	1.184	1.162	4.935	3.093	0.131	7.938
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:44:42	22795.578	209964.270	15552.253	2845.243	55.000	700.015	914742.120	2160.140	5375.867	4396.580	5085.776	158863.540
2	12:45:04	22970.819	207129.130	15492.197	3125.293	65.000	885.024	917856.540	2615.205	5610.944	4455.596	5260.830	159984.180
3	12:45:25	22655.388	211351.640	16343.009	2990.268	15.000	710.015	919788.810	2690.217	5605.943	4513.611	5275.835	160297.170
x		22807.262	209481.680	15795.820	2986.935	45.000	765.018	917462.490	2488.521	5530.918	4455.262	5207.480	159714.960
σ		158.040	2152.227	474.830	140.055	26.458	104.048	2546.316	286.849	134.301	58.516	105.666	753.779
%RSD		0.693	1.027	3.006	4.689	58.795	13.601	0.278	11.527	2.428	1.313	2.029	0.472

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:44:42	3190.305	18044.763	8417.125	122297.060	0.000	12925.010	12859.959
2	12:45:04	3080.285	18710.497	8202.018	124049.940	0.000	13625.567	12985.056
3	12:45:25	3545.377	18810.609	8522.178	125047.350	0.000	13430.409	12950.029
x		3271.989	18521.956	8380.440	123798.120	0.000	13326.995	12931.682
σ		243.068	416.282	163.202	1392.333	0.000	361.547	64.535
%RSD		7.429	2.248	1.947	1.125	0.000	2.713	0.499

STD2 10/18/2016 12:47:26 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:47:47	143071.460	800.019	26045.335	T 3774024.000	133008.630	301202.310	T 3524454.000	113263.560	151717.420	25.000	65222.370	41576.794
2	12:48:09	139319.880	810.020	27287.320	T 3708779.100	130398.120	298015.790	T 3408283.900	114532.180	152908.220	30.000	65408.095	41271.036
3	12:48:31	142577.250	767.518	27282.311	T 3713028.900	131436.230	302485.230	T 3514325.500	115498.820	150647.780	10.000	64012.693	41586.819
x		141656.200	792.519	26871.655	T 3731944.000	131614.330	300567.780	T 3482354.500	114431.520	151757.810	21.667	64881.053	41478.216
σ		2038.344	22.222	715.619	T 36504.259	1314.335	2301.294	T 64346.586	1121.026	1130.764	10.408	757.733	179.494
%RSD		1.439	2.804	2.663	T 0.978	0.999	0.766	T 1.848	0.980	0.745	48.038	1.168	0.433
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:47:47	10533.327	31289.343	T 3029820.000	12264.511	5425.883	16658.321	53520.797	5465.896	1152.040	1328.053	363.504	2610.204
2	12:48:09	10098.058	30753.347	T 3031461.500	12569.738	5580.934	16037.713	52527.644	5297.842	1021.031	1307.051	405.505	2735.224
3	12:48:31	10263.159	30978.764	T 3048377.100	12309.544	5315.848	16187.858	54017.395	5402.876	1116.037	1319.052	373.004	2655.211
x		10298.182	31007.151	T 3036552.900	12381.264	5440.888	16294.630	53355.279	5388.871	1096.370	1318.052	380.671	2666.880
σ		219.738	269.123	T 10272.950	164.769	133.179	323.788	758.542	84.898	67.683	10.536	22.025	63.322
%RSD		2.134	0.868	T 0.338	1.331	2.448	1.987	1.422	1.575	6.173	0.799	5.786	2.374
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:47:47	105246.260	198100.360	71503.052	14451.262	240.002	3510.370	876517.970	1610.078	24132.459	19072.406	23686.820	153291.720
2	12:48:09	104828.640	196440.890	72567.639	14846.610	195.001	3700.411	878203.300	2110.134	24312.720	18775.069	22810.599	152918.320
3	12:48:31	107716.970	199385.550	71784.257	14476.284	245.002	3690.409	885315.140	2050.126	23801.984	18931.746	23606.706	154563.390
x		105930.620	197975.600	71951.649	14591.385	226.668	3633.730	880012.140	1923.446	24082.388	18926.407	23368.042	153591.140
σ		1561.050	1476.288	551.680	221.384	27.538	106.950	4669.204	273.038	259.024	148.741	484.419	862.440
%RSD		1.474	0.746	0.767	1.517	12.149	2.943	0.531	14.195	1.076	0.786	2.073	0.562

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:47:47	15602.300	79649.869	30763.365	120403.340	0.000	59420.736	60986.376
2	12:48:09	15126.862	82428.330	31655.033	119355.850	0.000	61734.122	62085.423
3	12:48:31	15452.160	83599.140	31224.221	121108.420	0.000	66140.979	63249.789
x		15393.774	81892.446	31214.206	120289.210	0.000	62431.946	62107.196

σ	243.037	2028.439	445.918	881.845	0.000	3414.035	1131.863
%RSD	1.579	2.477	1.429	0.733	0.000	5.468	1.822

STD3 10/18/2016 12:50:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:51:01	145169.480	91206.377	34235.125	T 14071898.000	T 4208099.900	T 39086311.000	T 13612536.000	T 1440080.900	154997.390	26280.704	T 2685648.900	7684
2	12:51:23	140035.840	90286.388	33388.410	T 13789669.000	T 4193004.600	T 39033331.000	T 13546975.000	T 1454999.500	154684.500	25880.078	T 2704185.400	7750
3	12:51:45	139057.700	89813.846	33699.034	T 13752705.000	T 4178264.900	T 39069762.000	T 13454586.000	T 1452541.900	151384.410	26946.766	T 2705524.900	7697
x		141421.010	90435.537	33774.190	T 13871424.000	T 4193123.200	T 39063135.000	T 13538032.000	T 1449207.400	153688.770	26369.183	T 2698453.100	7710
σ		3282.909	708.145	428.332	T 174596.300	T 14917.879	T 27104.921	T 79353.935	T 7998.780	2001.756	538.820	T 11108.927	34
%RSD		2.321	0.783	1.268	T 1.259	T 0.356	T 0.069	T 0.586	T 0.552	1.302	2.043	T 0.412	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:51:01	94456.907	T 3997857.600	T 81531887.000	1177008.000	634554.110	785132.430	622507.330	81671.619	6648.326	9366.131	360.004	72
2	12:51:23	96443.234	T 3993740.200	T 82045502.000	1175046.600	629139.530	771853.240	623731.860	82110.768	6859.411	9162.018	384.004	66
3	12:51:45	96387.915	T 4003815.900	T 82137987.000	1173326.500	626824.710	778533.430	631625.970	82618.267	6693.344	9335.114	360.004	65
x		95762.685	T 3998471.200	T 81905126.000	1175127.000	630172.780	778506.360	625955.060	82133.551	6733.694	9287.754	368.004	68
σ		1131.176	T 5065.780	T 326524.870	1842.054	3966.938	6639.638	4949.173	473.735	111.177	109.990	13.857	3
%RSD		1.181	T 0.127	T 0.399	0.157	0.629	0.853	0.791	0.577	1.651	1.184	3.765	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	12:51:01	819766.610	196056.400	1675283.100	275345.830	8852.350	136048.010	865956.810	847230.210	571368.820	449534.770	578560.650	15292
2	12:51:23	819698.380	193729.430	1766238.500	276662.360	9042.452	136960.440	874895.990	860341.930	582199.120	453469.750	584766.700	15509
3	12:51:45	835231.780	196289.120	1788072.900	277313.040	8887.369	136980.610	873769.120	855875.560	577996.580	453456.900	580263.330	15287
x		824898.920	195358.310	1743198.200	276440.410	8927.390	136663.020	871540.640	854482.570	577188.170	452153.810	581196.890	15363
σ		8948.583	1415.449	59820.830	1002.213	101.173	532.707	4868.455	6665.932	5460.217	2268.159	3206.620	126
%RSD		1.085	0.725	3.432	0.363	1.133	0.390	0.559	0.780	0.946	0.502	0.552	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:51:01	36795.573	1604275.600	T 8485229.000	121390.470	0.000	292316.180	117779.700
2	12:51:23	38053.392	1632229.200	T 8467359.500	118419.200	0.000	294794.250	116022.440
3	12:51:45	39105.824	1644601.300	T 8489324.100	117855.230	0.000	292499.350	119250.100
x		37984.930	1627035.400	T 8480637.500	119221.630	0.000	293203.260	117684.080
σ		1156.646	20658.452	T 11679.976	1899.314	0.000	1380.882	1615.954
%RSD		3.045	1.270	T 0.138	1.593	0.000	0.471	1.373

STD4 10/18/2016 12:54:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	12:54:31	150193.710	260837.740	96101.267	T 40353094.000	T 12282409.000	T 113377630.000	T 40805684.000	T 4427649.800	161357.320	78228.160	T 8000577.100
2	12:54:53	147156.800	257026.720	93773.062	T 40506545.000	T 12388626.000	T 114719370.000	T 40917337.000	T 4438934.000	162245.890	78820.943	T 8102419.000
3	12:55:15	145502.370	261043.420	97780.995	T 40618965.000	T 12519893.000	T 117041920.000	T 41711605.000	T 4472267.300	158883.730	79273.079	T 8234925.600
x		147617.630	259635.960	95885.108	T 40492868.000	T 12396976.000	T 115046310.000	T 41144875.000	T 4446283.700	160828.980	78774.060	T 8112640.600
σ		2379.378	2262.011	2012.691	T 133462.370	T 118962.220	T 1853892.100	T 493967.330	T 23198.982	1742.236	524.035	T 117508.150
%RSD		1.612	0.871	2.099	T 0.330	T 0.960	T 1.611	T 1.201	T 0.522	1.083	0.665	T 1.448

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	12:54:31	278202.680	T 11896300.000	T 243672850.000	T 3827789.400	1822772.000	TM 2459602.200	1752251.300	232461.930	18000.716	24793.428	396.505
2	12:54:53	283124.530	T 12257361.000	T 246372800.000	T 3910660.400	1844214.600	TM 2496031.100	1768206.700	234569.150	18062.783	25185.014	458.506

3	12:55:15	282651.610	T 12266882.000	T 249240430.000	T 3924614.500	1844944.100	T 2476127.400	1779537.900	235891.620	18170.900	25137.442	436.00
x		281326.270	T 12140181.000	T 246428700.000	T 3887688.100	1837310.200	TM 2477253.600	1766665.300	234307.560	18078.133	25038.628	430.33
σ		2715.423	T 211260.790	T 2784213.400	T 52340.871	12595.772	TM 18240.517	13708.445	1729.742	86.124	213.678	31.38
%RSD		0.965	T 1.740	T 1.130	T 1.346	0.686	TM 0.736	0.776	0.738	0.476	0.853	7.29

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	12:54:31	T 2640946.100	198636.680	T 5582860.000	780696.150	25229.081	383072.310	912388.210	T 2823546.200	1672437.500	1318111.900	T 1923825.40
2	12:54:53	T 2724399.700	202280.110	T 5810582.500	800325.060	26741.436	397857.710	936660.620	T 2903050.800	1703709.500	1338865.800	T 1954974.60
3	12:55:15	T 2743701.400	201450.150	T 5887430.200	800692.070	26320.767	398892.000	936502.070	T 2920431.700	1730389.500	1350880.600	T 1962325.50
x		T 2703015.700	200788.980	T 5760290.900	793904.430	26097.095	393274.010	928516.970	T 2882342.900	1702178.800	1335952.700	T 1947041.90
σ		T 54613.363	1909.582	T 158390.890	11440.175	780.594	8850.048	13968.138	T 51655.742	29006.309	16577.441	T 20439.20
%RSD		T 2.020	0.951	T 2.750	1.441	2.991	2.250	1.504	T 1.792	1.704	1.241	T 1.05

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:54:31	111622.540	T 5423635.000	T 25126419.000	120594.720	0.000	762805.640	353050.140
2	12:54:53	116455.440	T 5562131.600	T 25427508.000	122901.480	0.000	777983.630	356436.080
3	12:55:15	116606.490	T 5582765.400	T 25448156.000	123858.520	5.000	777119.690	357764.080
x		114894.820	T 5522844.000	T 25334028.000	122451.570	1.667	772636.320	355750.100
σ		2834.887	T 86534.711	T 180090.560	1677.771	2.887	8524.570	2430.684
%RSD		2.467	T 1.567	T 0.711	1.370	173.205	1.103	0.683

STD5 10/18/2016 12:57:15 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	12:57:36	149537.850	436694.580	162836.610	T 70124190.000	TM 21813302.000	T 199318310.000	TM 73561206.000	TM 7868592.900	163225.380	140777.040	TM
2	12:57:58	146309.390	441455.060	165134.040	T 70146845.000	TM 22091288.000	TM 205242630.000	TM 75426806.000	TM 8151008.600	162821.460	145941.180	TM
3	12:58:20	141316.580	M 439640.530	M 164719.980	T 70150361.000	T 21857618.000	T 205051010.000	TM 75478064.000	TM 8343393.200	165356.230	145567.940	TM
x		145721.270	M 439263.390	M 164230.210	T 70140466.000	TM 21920736.000	TM 203203980.000	TM 74822025.000	TM 8120998.200	163801.020	144095.390	TM
σ		4142.068	M 2402.543	M 1224.525	T 14204.258	TM 149355.350	TM 3366452.500	TM 1092202.200	TM 238818.510	1361.907	2879.822	
%RSD		2.842	M 0.547	M 0.746	T 0.020	TM 0.681	TM 1.657	TM 1.460	TM 2.941	0.831	1.999	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	
1	12:57:36	486812.250	TM 21535238.000	T 433385010.000	TM 6838647.000	TM 3526782.200	TM 4300189.900	TM 3346652.500	401981.920	29936.862	M 41079.564	
2	12:57:58	508196.560	TM 21891686.000	TM 441075480.000	TM 6899882.700	TM 3590488.700	TM 4403247.900	TM 3401164.900	M 405554.930	30360.628	M 41899.100	
3	12:58:20	512495.230	TM 22280361.000	T 445525290.000	TM 6939995.300	TM 3541173.200	TM 4368611.700	TM 3410045.900	407420.620	30671.196	M 41885.065	
x		502501.350	TM 21902428.000	TM 439995260.000	TM 6892841.700	TM 3552814.700	TM 4357349.800	TM 3385954.400	M 404985.820	30322.895	M 41621.243	
σ		13756.107	TM 372677.820	TM 6141803.400	TM 51039.744	TM 33410.671	TM 52443.890	TM 34324.903	M 2763.651	368.618	M 469.160	
%RSD		2.738	TM 1.702	TM 1.396	TM 0.740	TM 0.940	TM 1.204	TM 1.014	M 0.682	1.216	M 1.127	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	
1	12:57:36	TM 4730506.200	199699.270	TM 10142347.000	M 1371326.900	44469.246	684253.550	975252.430	T 5187494.400	TM 3352241.400	2347472.900	TI
2	12:57:58	TM 4818326.000	198565.850	TM 10352887.000	M 1377696.400	45677.507	692337.330	973546.930	T 5211218.000	TM 3406700.400	M 2411439.200	TI
3	12:58:20	TM 4849407.600	195904.630	TM 10452796.000	M 1397828.500	45331.565	695995.050	991574.510	T 5340923.200	TM 3447721.700	M 2439919.500	TI
x		TM 4799413.300	198056.580	TM 10316010.000	M 1382283.900	45159.440	690861.980	980124.620	T 5246545.200	TM 3402221.200	M 2399610.600	TI
σ		TM 61665.638	1947.904	TM 158475.520	M 13833.608	622.249	6008.175	9952.492	T 82589.973	TM 47897.466	M 47344.841	
%RSD		TM 1.285	0.984	TM 1.536	M 1.001	1.378	0.870	1.015	T 1.574	TM 1.408	M 1.973	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:57:36	M 244353.220	TM 9773706.600	TM 43993305.000	121027.840	0.000	M 1567693.000	M 747615.020
2	12:57:58	M 251275.000	TM 9975051.700	TM 44866075.000	121551.630	0.000	M 1594468.100	M 756471.520
3	12:58:20	M 251589.700	TM 9995743.000	TM 45369857.000	123163.400	0.000	M 1619085.200	M 776470.460
x		M 249072.640	TM 9914833.800	TM 44743079.000	121914.290	0.000	M 1593748.800	M 760185.670
σ		M 4090.165	TM 122656.820	TM 696469.540	1113.011	0.000	M 25703.613	M 14781.922
%RSD		M 1.642	TM 1.237	TM 1.557	0.913	0.000	M 1.613	M 1.945

ICV 10/18/2016 01:02:59 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:03:20	138795.530	44642.208	18725.513	T 7238363.900	T 2098021.500	T 19859261.000	T 6952550.100	684399.360	151646.780	13365.357	1269036.700	387416.000
2	13:03:42	132313.130	43767.392	17854.558	T 7311038.300	T 2117125.000	T 20335743.000	T 7007059.400	691764.260	152282.540	13460.433	1252487.500	385829.840
3	13:04:04	131083.470	44013.038	19095.933	T 7416488.100	T 2137359.900	T 19990199.000	T 6899649.100	691930.970	152464.180	12714.848	1285957.800	386085.660
x		134064.040	44140.879	18558.668	T 7321963.400	T 2117502.100	T 20061734.000	T 6953086.200	689364.860	152131.170	13180.213	1269160.700	386443.830
σ		4143.459	451.202	637.284	T 89563.215	T 19671.865	T 246164.380	T 53707.158	4301.058	429.212	405.812	16735.518	851.584
%RSD		3.091	1.022	3.434	T 1.223	T 0.929	T 1.227	T 0.772	0.624	0.282	3.079	1.319	0.220

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:03:20	50576.624	T 1999809.700	T 41661661.000	596942.120	319549.260	396035.070	318254.850	42596.364	3613.392	4841.203	401.005	4405.582
2	13:03:42	50481.335	T 2029799.100	T 42224401.000	607685.080	325834.210	406712.640	322276.020	42723.689	3564.381	4875.213	366.504	4430.589
3	13:04:04	50381.033	T 2002026.700	T 41638920.000	597605.260	323382.140	403121.960	321664.370	42575.310	3707.412	4999.250	365.504	4460.597
x		50479.664	T 2010545.200	T 41841661.000	600744.160	322921.870	401956.560	320731.750	42631.788	3628.395	4905.222	377.671	4432.256
σ		97.806	T 16711.205	T 331657.860	6020.158	3167.650	5433.347	2166.748	80.282	72.686	83.187	20.214	27.545

%RSD		0.194	T 0.831	T 0.793	1.002	0.981	1.352	0.676	0.188	2.003	1.696	5.352	0.621
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:03:20	405421.750	197908.090	411687.570	135145.720	4610.638	67812.677	881448.040	444822.850	293104.850	229516.020	289945.300	151949.520
2	13:03:42	408951.430	200306.490	422041.770	136375.680	4420.586	68641.057	867030.520	450266.120	298743.650	234394.210	295516.880	151424.770
3	13:04:04	409053.900	198798.600	429868.020	136491.620	4395.580	70403.386	889667.990	450117.180	296478.740	234893.670	294896.030	156400.410
x		407809.030	199004.390	421199.120	136004.340	4475.601	68952.373	879382.180	448402.050	296109.080	232934.630	293452.740	153258.230
σ		2068.076	1212.370	9119.469	745.843	117.612	1323.114	11459.254	3100.574	2837.518	2971.119	3053.352	2733.822
%RSD		0.507	0.609	2.165	0.548	2.628	1.919	1.303	0.691	0.958	1.276	1.040	1.784

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:03:20	39817.506	803937.860	T 4212015.900	118056.650	0.000	194766.410	112166.170
2	13:03:42	39622.041	816344.640	T 4294175.400	120171.680	0.000	206663.400	114557.350
3	13:04:04	41331.185	822522.540	T 4282777.900	120917.040	0.000	217368.290	115539.100
x		40256.911	814268.340	T 4262989.700	119715.120	0.000	206266.030	114087.540
σ		935.468	9464.714	T 44510.973	1483.847	0.000	11306.177	1734.848
%RSD		2.324	1.162	T 1.044	1.239	0.000	5.481	1.521

ICVL 10/18/2016 01:08:43 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:09:05	138533.360	197.501	7376.632	931524.420	30247.422	70629.339	719742.400	25279.157	160176.010	15.000	25599.645	9932.959
2	13:09:27	136829.370	202.501	7381.634	931630.090	28544.423	72100.618	725974.140	25229.081	159176.500	25.000	25699.799	10043.025
3	13:09:50	141135.050	185.001	7496.686	916462.900	29005.217	72406.942	724867.500	26010.280	159418.800	35.000	26085.397	9992.995
x		138832.600	195.001	7418.317	926539.140	29265.687	71712.300	723528.010	25506.173	159590.440	25.000	25794.947	9989.660
σ		2168.382	9.014	67.915	8726.439	880.872	950.296	3324.800	437.287	521.390	10.000	256.474	55.109
%RSD		1.562	4.623	0.916	0.942	3.010	1.325	0.460	1.714	0.327	40.000	0.994	0.552
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:09:05	5846.025	7661.761	769482.290	2980.266	1310.052	3625.394	12454.652	2105.133	534.009	587.510	376.504	2300.159
2	13:09:27	6096.115	7926.885	767865.210	2940.259	1315.052	3915.460	12329.559	2108.133	537.009	561.009	413.505	2335.164
3	13:09:50	6221.161	8056.947	753752.390	2935.258	1400.059	3740.420	12394.607	2129.136	510.008	603.011	402.505	2165.141
x		6054.434	7881.864	763699.960	2951.928	1341.721	3760.425	12392.939	2114.134	527.008	583.844	397.505	2266.821
σ		191.010	201.403	8652.713	24.669	50.584	146.064	62.563	13.078	14.799	21.239	19.000	89.780
%RSD		3.155	2.555	1.133	0.836	3.770	3.884	0.505	0.619	2.808	3.638	4.780	3.961
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:09:05	21033.264	208961.790	17684.377	3185.304	35.000	735.016	914045.420	4605.636	6391.225	5101.281	4880.715	155855.340
2	13:09:27	22980.833	210389.580	17484.166	3085.286	40.000	730.016	927160.920	5635.953	7041.487	5360.862	5180.805	158883.730
3	13:09:50	22229.815	207412.620	18174.904	3050.279	70.000	790.019	914911.020	5660.961	6951.449	5440.388	5070.771	155592.900
x		22081.304	208921.330	17781.149	3106.956	48.333	751.684	918705.790	5300.850	6794.721	5300.843	5044.097	156777.320
σ		982.241	1488.895	355.392	70.073	18.930	33.293	7335.141	602.203	352.325	177.342	151.813	1828.915
%RSD		4.448	0.713	1.999	2.255	39.165	4.429	0.798	11.360	5.185	3.346	3.010	1.167

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:09:05	3325.332	19271.135	8622.230	119114.130	0.000	14060.929	12894.986
2	13:09:27	3420.351	19551.461	8562.199	123516.000	0.000	13790.703	12259.507
3	13:09:50	3780.429	19456.350	8882.366	121400.540	0.000	13860.761	13090.139
x		3508.704	19426.315	8688.932	121343.550	0.000	13904.131	12748.211
σ		240.069	142.556	170.187	2201.487	0.000	140.236	434.332
%RSD		6.842	0.734	1.959	1.814	0.000	1.009	3.407

ICBIS 10/18/2016 01:19:56 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:20:18	146632.210	10.000	1220.045	262084.570	200.001	975.029	55261.463	310.003	164669.480	10.000	18239.975	1990.119
2	13:20:40	147096.270	20.000	1335.054	263943.570	180.001	985.029	53305.107	440.006	169053.040	15.000	18300.041	1910.109
3	13:21:01	146147.980	12.500	1270.048	264349.930	290.003	1075.035	52893.800	350.004	169618.750	15.000	18064.785	1715.088
x		146625.480	14.167	1275.049	263459.360	223.335	1011.697	53820.123	366.671	167780.420	13.333	18201.600	1871.772
σ		474.180	5.204	57.667	1207.810	58.595	55.079	1265.065	66.585	2708.961	2.887	122.233	141.466
%RSD		0.323	36.735	4.523	0.458	26.237	5.444	2.351	18.159	1.615	21.651	0.672	7.558

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:20:18	6186.148	370.004	215362.500	25.000	10.000	235.002	500.007	1484.066	486.007	395.005	413.005	2020.122
2	13:20:40	6151.135	435.006	209999.710	35.000	20.000	185.001	640.012	1560.073	471.007	422.005	430.006	2115.134
3	13:21:01	6481.260	420.005	216694.600	25.000	20.000	285.002	545.009	1529.070	455.006	398.505	412.005	2020.122
x		6272.848	408.338	214018.940	28.333	16.667	235.002	561.676	1524.403	470.673	405.172	418.339	2051.793
σ		181.337	34.035	3543.901	5.774	5.774	50.001	71.475	38.218	15.503	14.683	10.116	54.855
%RSD		2.891	8.335	1.656	20.377	34.641	21.277	12.725	2.507	3.294	3.624	2.418	2.674

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:20:18	35.000	215453.660	735.016	30.000	0.000	5.000	962004.810	2130.136	570.010	424.005	5.000	162306.470
2	13:20:40	35.000	220357.150	630.012	45.000	0.000	25.000	955697.000	2080.130	645.012	494.507	35.000	159519.760
3	13:21:01	30.000	220276.090	715.015	10.000	0.000	10.000	958342.610	2310.160	580.010	530.508	20.000	160024.570
x		33.333	218695.640	693.348	28.333	0.000	13.333	958681.470	2173.475	598.344	483.007	20.000	160616.930
σ		2.887	2807.921	55.755	17.559	0.000	10.408	3167.532	120.984	40.724	54.175	15.000	1484.795
%RSD		8.660	1.284	8.041	61.974	0.000	78.063	0.330	5.566	6.806	11.216	75.000	0.924

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:20:18	180.001	1400.059	580.010	124896.230	0.000	2665.213	25.000
2	13:20:40	185.001	1210.044	495.007	125530.970	0.000	2790.233	20.000
3	13:21:01	220.001	1280.049	495.007	124241.360	0.000	3025.275	15.000
x		195.001	1296.717	523.342	124889.520	0.000	2826.907	20.000
σ		21.795	96.098	49.076	644.831	0.000	182.811	5.000
%RSD		11.177	7.411	9.377	0.516	0.000	6.467	25.000

ICSA 10/18/2016 01:25:39 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:26:00	140398.880	15.000	1410.060	TM 148091860.000	T 15091946.000	T 139150940.000	TM 150875480.000	T 5523702.100	172619.320	295954.550	8262.047	4
2	13:26:22	139259.370	27.500	1300.051	TM 149596810.000	T 15429700.000	T 141805300.000	TM 152462340.000	T 5538551.500	170992.680	308748.520	8687.263	5
3	13:26:44	136073.220	37.500	1180.042	TM 148466700.000	T 15538276.000	T 143792970.000	TM 156068910.000	T 5750146.900	174721.050	311305.430	8867.358	4
x		138577.160	26.667	1296.717	TM 148718460.000	T 15353307.000	T 141583070.000	TM 153135580.000	T 5604133.500	172777.680	305336.170	8605.556	4
σ		2242.073	11.273	115.045	TM 783422.060	T 232764.730	T 2328978.400	TM 2661369.000	T 126669.090	1869.223	8224.691	310.817	
%RSD		1.618	42.274	8.872	TM 0.527	T 1.516	T 1.645	TM 1.738	T 2.260	1.082	2.694	3.612	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:26:00	3235.314	2290.157	T 299810530.000	370.004	315.003	1105.037	1885.107	1339.054	380.004	419.505	441.006	2
2	13:26:22	3420.351	2740.225	T 306286670.000	435.006	375.004	865.022	1985.118	1448.063	417.005	429.006	503.508	2
3	13:26:44	3350.337	3205.308	T 306875360.000	530.008	460.006	1225.045	2065.128	1443.063	409.005	440.506	495.507	2
x		3335.334	2745.230	T 304324190.000	445.006	383.338	1065.035	1978.451	1410.060	402.005	429.672	480.007	2

σ		93.426	457.596	T 3920008.700	80.470	72.860	183.314	90.196	61.544	19.468	10.516	34.012	
%RSD		2.801	16.669	T 1.288	18.083	19.007	17.212	4.559	4.365	4.843	2.447	7.086	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	13:26:00	3670.404	213184.770	T 3197006.800	475.007	435.006	645.012	940635.360	3715.414	810.020	647.013	165.001	1663
2	13:26:22	3640.398	215666.390	T 3324045.600	520.008	525.008	745.017	977911.660	4425.587	1010.031	745.517	195.001	1695
3	13:26:44	4015.484	221522.450	T 3419217.000	615.011	555.009	755.017	973610.480	5245.825	985.029	817.020	295.003	1733
x		3775.428	216791.200	T 3313423.100	536.675	505.008	715.015	964052.500	4462.276	935.026	736.516	218.335	169
σ		208.435	4281.136	T 111485.310	71.475	62.452	60.830	20393.548	765.865	108.978	85.360	68.070	3
%RSD		5.521	1.975	T 3.365	13.318	12.367	8.508	2.115	17.163	11.655	11.590	31.177	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:26:00	665.013	1580.075	2770.230	122276.910	0.000	66361.854	50.000
2	13:26:22	755.017	1470.065	3365.340	126226.190	0.000	55928.683	80.000
3	13:26:44	665.013	1945.113	4640.646	129027.520	0.000	45010.697	130.001
x		695.015	1665.084	3592.072	125843.540	0.000	55767.078	86.667
σ		51.964	248.672	955.599	3391.532	0.000	10676.496	40.415
%RSD		7.477	14.934	26.603	2.695	0.000	19.145	46.632

ICSAB 10/18/2016 01:31:21 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:31:43	129652.340	3780.429	55717.979	TM 146635410.000	T 14815285.000	T 135861020.000	TM 147434890.000	T 5455270.200	170517.850	297751.120	68947.318	1(
2	13:32:05	130710.560	3455.358	53676.295	TM 142966900.000	T 14746985.000	T 135866290.000	TM 146445680.000	T 5480157.700	173548.900	301696.120	67190.163	1(
3	13:32:26	129753.120	3425.352	54002.346	TM 143795850.000	T 14569041.000	T 135938450.000	TM 148010850.000	T 5486492.100	172447.550	301202.310	64886.061	1(
x		130038.670	3553.713	54465.540	TM 144466050.000	T 14710437.000	T 135888590.000	TM 147297140.000	T 5473973.300	172171.430	300216.520	67007.847	1(
σ		584.047	196.914	1096.827	TM 1923895.900	T 127125.350	T 43263.097	TM 791623.110	T 16504.104	1534.272	2149.324	2036.758	
%RSD		0.449	5.541	2.014	TM 1.332	T 0.864	T 0.032	TM 0.537	T 0.302	0.891	0.716	3.040	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:31:43	16087.761	88097.220	T 294625340.000	65689.198	14516.319	33984.613	27107.026	19761.709	4130.512	5544.922	472.507	
2	13:32:05	15767.455	87624.739	T 299480700.000	63184.542	13875.774	32526.709	26786.508	19886.858	4385.577	5679.968	465.006	
3	13:32:26	15962.641	86137.014	T 303106390.000	64303.811	13475.445	32687.022	26666.316	19762.710	4335.564	5722.482	463.006	
x		15939.285	87286.324	T 299070810.000	64392.517	13955.846	33066.115	26853.283	19803.759	4283.884	5649.124	466.840	
σ		161.425	1022.984	T 4255360.600	1254.682	525.036	799.472	227.817	71.967	135.158	92.711	5.008	
%RSD		1.013	1.172	T 1.423	1.948	3.762	2.418	0.848	0.363	3.155	1.641	1.073	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	13:31:43	4740.674	213174.640	T 3231953.200	71864.602	1535.071	18370.118	967023.090	4785.687	123027.400	96172.677	127596.560	17
2	13:32:05	3930.463	216304.580	T 3320385.100	71708.934	1775.094	18335.080	973970.640	4670.654	124941.560	98088.293	128841.080	17
3	13:32:26	3575.383	217763.390	T 3361705.000	72065.467	1595.076	18595.368	979670.570	4065.496	126860.980	98947.851	132146.810	17
x		4082.174	215747.540	T 3304681.100	71879.668	1635.081	18433.522	973554.770	4507.279	124943.320	97736.274	129528.150	17
σ		597.275	2344.544	T 66286.094	178.743	124.912	141.253	6333.991	386.895	1916.790	1420.681	2351.647	
%RSD		14.631	1.087	T 2.006	0.249	7.640	0.766	0.651	8.584	1.534	1.454	1.816	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:31:43	37246.573	218599.230	170341.060	127505.870	0.000	248052.260	137257.870
2	13:32:05	38113.529	221451.510	168714.640	130367.890	0.000	256960.710	142425.970
3	13:32:26	38614.681	224339.760	169290.430	128432.950	0.000	266798.490	144347.390
x		37991.594	221463.500	169448.710	128768.900	0.000	257270.490	141343.740
σ		692.157	2870.282	824.680	1460.284	0.000	9376.950	3666.567
%RSD		1.822	1.296	0.487	1.134	0.000	3.645	2.594

CCV 10/18/2016 01:37:05 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:37:27	122992.140	85895.774	30993.792	T 13388079.000	T 3975852.000	T 37479544.000	T 13230835.000	1318066.500	150910.140	24788.420	T 2621730.800	7465
2	13:37:49	125651.870	83370.499	31579.890	T 13264194.000	T 3986292.700	T 37062897.000	T 12996475.000	T 1393871.200	150678.050	25539.553	T 2594270.000	7402
3	13:38:10	123788.000	84006.179	31945.586	T 13165684.000	T 4010729.600	T 37111022.000	T 12811869.000	1326735.400	148095.050	25679.768	T 2612408.200	7420
x		124144.010	84424.151	31506.423	T 13272652.000	T 3990958.100	T 37217821.000	T 13013060.000	T 1346224.400	149894.410	25335.914	T 2609469.700	7429
σ		1365.135	1313.498	480.132	T 111438.670	T 17900.736	T 227932.170	T 209974.370	T 41490.373	1562.606	479.298	T 13964.216	32
%RSD		1.100	1.556	1.524	T 0.840	T 0.449	T 0.612	T 1.614	T 3.082	1.042	1.892	T 0.535	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:37:27	94064.698	T 3915668.700	T 80343549.000	1120901.300	600879.900	748048.850	612470.560	80528.074	6629.318	9328.110	385.004	665
2	13:37:49	91555.785	T 3860124.000	T 80123986.000	1127451.800	599434.220	732704.260	604139.620	80574.297	6577.298	9262.573	368.504	710
3	13:38:10	92405.455	T 3849751.400	T 79501131.000	1134031.400	602579.650	756011.330	614456.700	80510.992	6641.323	9171.022	410.505	684
x		92675.313	T 3875181.400	T 79989555.000	1127461.500	600964.590	745588.150	610355.630	80537.788	6615.980	9253.902	388.005	686
σ		1276.040	T 35444.579	T 437002.280	6565.060	1574.424	11846.778	5474.050	32.751	34.033	78.902	21.161	22

%RSD		1.377	T 0.915	T 0.546	0.582	0.262	1.589	0.897	0.041	0.514	0.853	5.454	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	13:37:27	830330.770	203049.380	1710428.200	276459.030	9132.501	139768.610	912451.540	858653.100	573432.930	452747.500	584673.510	15875
2	13:37:49	834217.850	203434.030	1763721.800	275854.130	8862.356	137217.540	895445.390	859252.850	576526.970	456010.170	584911.660	15963
3	13:38:10	833713.530	201591.850	1775449.400	273053.570	9132.501	138155.240	903387.230	865656.810	584994.490	457634.800	584652.810	15847
x		832754.050	202691.750	1749866.400	275122.240	9042.453	138380.470	903761.390	861187.590	578318.130	455464.160	584745.990	15895
σ		2113.712	971.767	34654.251	1816.871	155.969	1290.360	8509.248	3882.059	5985.283	2488.977	143.842	60
%RSD		0.254	0.479	1.980	0.660	1.725	0.932	0.942	0.451	1.035	0.546	0.025	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:37:27	37291.673	1628251.900	T 8474547.400	122528.750	0.000	205124.560	118107.000
2	13:37:49	38905.356	1659119.900	T 8601552.500	123576.440	0.000	221294.450	118857.310
3	13:38:10	38469.346	1661528.000	T 8576237.400	122438.090	0.000	232155.700	119421.320
x		38222.125	1649633.300	T 8550779.100	122847.760	0.000	219524.910	118795.210
σ		834.764	18555.912	T 67221.031	632.684	0.000	13602.174	659.355
%RSD		2.184	1.125	T 0.786	0.515	0.000	6.196	0.555

CCB 10/18/2016 01:42:49 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:43:10	129521.330	15.000	1125.038	242085.480	320.003	2165.141	54248.142	430.006	156208.620	35.000	12544.719	1320.052
2	13:43:32	128009.710	7.500	1240.046	241973.880	310.003	2520.191	55783.197	430.006	152292.630	35.000	12945.025	1310.052
3	13:43:54	126377.330	12.500	1020.031	247240.330	680.014	3985.477	59094.580	510.008	154654.220	45.000	12504.689	1310.052
x		127969.460	11.667	1128.372	243766.570	436.673	2890.269	56375.306	456.673	154385.160	38.333	12664.811	1313.385
σ		1572.386	3.819	110.045	3008.887	210.798	964.948	2476.880	46.189	1971.813	5.774	243.496	5.774
%RSD		1.229	32.733	9.753	1.234	48.274	33.386	4.394	10.114	1.277	15.061	1.923	0.440
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:43:10	4380.576	290.003	204021.140	25.000	25.000	180.001	485.007	1078.035	385.004	387.004	409.505	2055.127
2	13:43:32	4265.546	350.004	199856.130	60.000	15.000	230.002	540.009	1067.034	328.003	383.504	361.004	1905.109
3	13:43:54	4510.610	435.006	204952.460	40.000	25.000	165.001	490.007	1083.035	382.004	384.504	364.504	1910.109
x		4385.577	358.337	202943.250	41.667	21.667	191.668	505.008	1076.035	365.004	385.004	378.338	1956.782
σ		122.609	72.860	2713.769	17.559	5.774	34.035	30.415	8.186	32.079	1.803	27.048	85.206
%RSD		2.796	20.333	1.337	42.143	26.647	17.757	6.023	0.761	8.789	0.468	7.149	4.354
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:43:10	30.000	204830.980	3600.389	40.000	0.000	0.000	916990.780	3345.336	1020.031	722.516	30.000	156804.170
2	13:43:32	20.000	208708.650	3535.375	35.000	5.000	20.000	916272.860	3705.412	1005.030	801.519	25.000	154734.970
3	13:43:54	35.000	204780.370	3520.372	30.000	5.000	10.000	912831.520	3855.446	1070.034	847.522	35.000	158257.820
x		28.333	206106.670	3552.045	35.000	3.333	10.000	915365.060	3635.398	1031.699	790.519	30.000	156598.990
σ		7.638	2253.524	42.534	5.000	2.887	10.000	2223.271	262.163	34.036	63.225	5.000	1770.364
%RSD		26.956	1.093	1.197	14.286	86.603	100.000	0.243	7.211	3.299	7.998	16.667	1.131

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:43:10	210.001	2155.139	520.008	121914.270	0.000	2095.132	45.000
2	13:43:32	175.001	2015.122	585.010	123767.850	0.000	2310.160	20.000
3	13:43:54	215.001	1920.111	675.014	123979.420	0.000	1975.117	30.000
x		200.001	2030.124	593.344	123220.510	0.000	2126.803	31.667
σ		21.795	118.230	77.838	1136.177	0.000	169.752	12.583
%RSD		10.897	5.824	13.119	0.922	0.000	7.982	39.736

MB 200-110229/1-A 10/18/2016 01:48:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:48:52	139783.740	25.000	1125.038	410565.390	5911.048	58507.514	113384.370	3330.333	163740.400	215.001	14446.258	3060.281
2	13:49:14	141124.970	40.000	1190.043	422149.440	7521.697	75405.193	119829.230	3730.417	165224.940	190.001	15231.957	3465.360
3	13:49:36	140529.970	30.000	1275.049	415403.070	6771.375	62351.413	114391.220	3480.363	164507.900	155.001	14781.552	3265.320
x		140479.560	31.667	1196.710	416039.300	6734.707	65421.373	115868.270	3513.704	164491.080	186.668	14819.922	3263.654
σ		672.036	7.638	75.227	5818.175	805.950	8857.279	3467.032	202.115	742.415	30.139	394.252	202.545
%RSD		0.478	24.119	6.286	1.398	11.967	13.539	2.992	5.752	0.451	16.146	2.660	6.206

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:48:52	4870.712	3765.425	343621.120	640.012	355.004	515.008	825.020	1216.044	357.004	394.005	396.505	2005.121
2	13:49:14	5235.822	3885.453	375431.370	650.013	415.005	585.010	905.025	1196.043	412.005	370.004	415.505	1880.106
3	13:49:36	5035.761	3760.424	344738.850	570.010	315.003	540.009	985.029	1221.045	374.004	385.504	403.505	1960.115
x		5047.431	3803.767	354597.110	620.012	361.671	546.676	905.025	1211.044	381.004	383.171	405.172	1948.447
σ		182.835	70.786	18051.646	43.591	50.333	35.474	80.004	13.230	28.161	12.169	9.609	63.319
%RSD		3.622	1.861	5.091	7.031	13.917	6.489	8.840	1.092	7.391	3.176	2.372	3.250

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:48:52	395.005	218482.720	3440.355	90.000	10.000	25.000	949042.440	49493.379	745.017	556.509	210.001	161276.550
2	13:49:14	400.005	216669.270	3920.461	90.000	10.000	65.000	960713.430	50371.002	780.018	689.014	275.002	163336.460
3	13:49:36	385.004	222160.860	3250.317	100.000	5.000	65.000	965456.040	52046.137	855.022	674.514	220.001	165750.110
x		393.338	219104.280	3537.044	93.334	8.333	51.667	958403.970	50636.839	793.352	640.012	235.002	163454.370
σ		7.638	2798.061	345.376	5.774	2.887	23.094	8447.000	1296.976	56.202	72.678	35.001	2239.114
%RSD		1.942	1.277	9.765	6.186	34.641	44.698	0.881	2.561	7.084	11.356	14.894	1.370

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:48:52	240.002	1590.076	2175.142	124070.090	0.000	38253.850	100.000
2	13:49:14	245.002	1985.118	2815.238	129007.360	0.000	32095.875	130.001
3	13:49:36	275.002	1550.072	2295.158	127042.350	0.000	26836.589	75.000
x		253.335	1708.422	2428.513	126706.600	0.000	32395.438	101.667
σ		18.930	240.459	340.247	2485.702	0.000	5714.523	27.538
%RSD		7.472	14.075	14.011	1.962	0.000	17.640	27.086

LCS 200-110229/2-A 10/18/2016 01:54:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:54:35	134157.780	1462.564	54142.801	T 7839968.500	281771.900	643138.940	T 7250965.300	241476.750	159873.120	110.000	116410.120	83719.743
2	13:54:57	135175.960	1402.559	54734.729	T 7667745.200	277094.450	634652.760	T 7219211.000	239955.010	158419.340	95.000	112911.180	85910.851
3	13:55:18	127274.110	1505.068	52407.266	T 7513224.200	269460.810	627343.700	T 7100508.700	241740.530	152635.740	50.000	110968.190	84192.114
x		132202.620	1456.730	53761.599	T 7673646.000	276109.050	635045.130	T 7190228.300	241057.430	156976.070	85.000	113429.830	84607.569
σ		4298.466	51.503	1209.652	T 163452.070	6214.418	7904.929	T 79305.034	963.793	3828.470	31.225	2757.791	1153.122
%RSD		3.251	3.536	2.250	T 2.130	2.251	1.245	T 1.103	0.400	2.439	36.735	2.431	1.363

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:54:35	14196.043	64931.236	T 6221249.300	25484.469	10913.572	33082.802	93793.174	8627.232	1404.059	1912.110	380.004	3380.343
2	13:54:57	14080.946	66893.975	T 6173905.600	26055.351	10698.433	33022.683	96573.988	8734.288	1477.065	1885.607	360.504	3210.309
3	13:55:18	13570.523	65975.324	T 6141495.600	26561.148	11118.708	33643.923	96508.611	8552.194	1362.056	1879.106	358.504	3325.332
x		13949.170	65933.512	T 6178883.500	26033.656	10910.237	33249.802	95625.258	8637.905	1414.393	1892.274	366.337	3305.328

σ		332.930	982.037	T 40109.203	538.667	210.157	342.640	1586.967	91.515	58.197	17.483	11.878	86.764
%RSD		2.387	1.489	T 0.649	2.069	1.926	1.031	1.660	1.059	4.115	0.924	3.242	2.625
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:54:35	220473.680	203555.500	152211.890	30422.741	495.007	6766.373	913084.850	43125.723	48179.538	36847.688	49322.875	156541.720
2	13:54:57	224593.130	205408.020	155088.230	30452.796	490.007	6786.381	903534.920	43807.497	48535.568	37431.486	49799.288	159469.280
3	13:55:18	223103.320	203707.340	154321.160	30447.787	565.010	7106.515	906984.940	44128.342	48585.714	37677.540	48726.123	157571.360
x		222723.380	204223.620	153873.760	30441.108	516.675	6886.423	907868.240	43687.187	48433.607	37318.905	49282.762	157860.790
σ		2085.845	1028.527	1489.446	16.102	41.934	190.867	4835.851	512.023	221.454	426.227	537.706	1485.085
%RSD		0.937	0.504	0.968	0.053	8.116	2.772	0.533	1.172	0.457	1.142	1.091	0.941

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:54:35	68073.738	169588.440	65106.919	122397.790	5.000	213382.270	131138.900
2	13:54:57	70071.994	172629.420	65187.232	120947.260	0.000	224937.740	134974.340
3	13:55:18	69911.321	172432.400	64655.166	121370.320	0.000	231790.680	133144.710
x		69352.351	171550.090	64983.106	121571.790	1.667	223370.230	133085.980
σ		1110.222	1701.690	286.829	745.958	2.887	9303.771	1918.393
%RSD		1.601	0.992	0.441	0.614	173.205	4.165	1.441

200-35680-A-7-B 10/18/2016 01:59:56 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	14:00:18	157046.440	475.007	4085.501	┬1336420.100	┬2233879.300	┬89489474.000	┬7274028.200	1172662.100	224532.320	11899.246	247108.400	175681.06
2	14:00:39	152655.930	622.512	4130.512	┬1339630.400	┬2279423.800	┬92390938.000	┬7479781.100	1211895.000	229347.220	11538.993	260352.750	177808.44
3	14:01:01	157218.040	605.011	4395.580	┬1348649.700	┬2290769.600	┬93681173.000	┬7585856.900	1233754.700	229864.270	11594.031	260576.200	180724.56
x		155640.140	567.510	4203.864	┬1341566.700	┬2268024.200	┬91853862.000	┬7446555.400	1206103.900	227914.610	11677.424	256012.450	178071.35
σ		2585.825	80.586	167.549	┬6340.574	┬30109.599	┬2146840.800	┬158547.260	30955.258	2940.529	194.065	7711.943	2532.00
%RSD		1.661	14.200	3.986	┬0.473	┬1.328	┬2.337	┬2.129	2.567	1.290	1.662	3.012	1.42

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	14:00:18	24232.604	┬12730857.000	┬308389420.000	129813.590	64168.290	┬2193154.500	632025.700	13077.128	1307.051	1474.565	471.007	4845.70
2	14:00:39	24883.562	┬13326746.000	┬326212070.000	136758.800	66000.423	┬2213242.100	653329.010	13544.501	1342.054	1508.568	514.008	4820.69
3	14:01:01	26596.204	┬13180996.000	┬324074170.000	137877.960	67862.880	┬2273803.600	659905.650	13698.627	1355.055	1551.572	528.508	5250.82
x		25237.456	┬13079533.000	┬319558550.000	134816.780	66010.531	┬2226733.400	648420.120	13440.086	1334.720	1511.569	504.508	4972.40
σ		1220.894	┬310631.420	┬9731641.000	4368.879	1847.316	┬41983.105	14573.803	323.639	24.828	38.591	29.905	241.44
%RSD		4.838	┬2.375	┬3.045	3.241	2.799	┬1.885	2.248	2.408	1.860	2.553	5.928	4.85

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159T
1	14:00:18	404976.110	570499.800	10373.227	8021.930	345.004	4700.663	1050931.000	63114.277	3270.321	2489.686	362637.730	210906.05
2	14:00:39	419683.320	598372.050	10243.147	8542.189	495.007	4810.694	1074451.900	65498.449	3490.365	2682.716	372905.600	210176.93
3	14:01:01	425256.960	595284.380	10478.293	8347.090	475.007	5035.761	1084406.600	67245.385	3210.309	2705.720	381082.470	220245.69
x		416638.800	588052.080	10364.889	8303.736	438.339	4849.039	1069929.800	65286.037	3323.665	2626.041	372208.600	213776.22
σ		10477.599	15278.916	117.795	262.825	81.447	170.808	17189.870	2073.729	147.452	118.645	9242.106	5614.57
%RSD		2.515	2.598	1.136	3.165	18.581	3.523	1.607	3.176	4.436	4.518	2.483	2.62

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:00:18	1405.059	5991.077	1273212.900	140408.960	0.000	230553.700	94622.844
2	14:00:39	1325.053	6126.126	1317158.800	142627.680	0.000	225459.720	97308.240
3	14:01:01	1325.053	5971.069	1344059.300	143595.940	0.000	220357.150	97408.825
x		1351.722	6029.424	1311477.000	142210.860	0.000	225456.860	96446.636
σ		46.192	84.342	35763.331	1633.865	0.000	5098.273	1580.251
%RSD		3.417	1.399	2.727	1.149	0.000	2.261	1.638

200-35680-A-14-D 10/18/2016 02:05:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	14:06:00	158924.110	565.010	4615.639	┬1567437.300	┬2755944.200	┬102949920.000	┬8882890.100	┬1782690.200	249392.040	12884.979	267250.640	200893.
2	14:06:22	159873.120	587.510	4320.560	┬1573399.200	┬2754845.200	┬103266660.000	┬8822837.600	┬1801347.200	250579.650	13025.088	271681.420	203798.
3	14:06:44	157147.380	512.508	4255.543	┬1559763.200	┬2755718.000	┬103845190.000	┬8933224.800	┬1804635.500	250001.060	14256.094	278604.310	207129.
x		158648.210	555.009	4397.247	┬1566866.500	┬2755502.500	┬103353920.000	┬8879650.800	┬1796224.300	249990.910	13388.720	272512.130	203940.
σ		1383.657	38.488	191.906	┬6835.893	┬580.334	┬453967.640	┬55264.881	┬11835.609	593.872	754.428	5722.235	3120.
%RSD		0.872	6.935	4.364	┬0.436	┬0.021	┬0.439	┬0.622	┬0.659	0.238	5.635	2.100	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:06:00	27793.154	┬21521322.000	┬432101300.000	167184.330	75018.454	1948958.500	617174.400	16974.640	1252.047	1305.051	548.509	6181.
2	14:06:22	28339.073	┬21790098.000	┬437534250.000	165103.750	74958.184	1961948.200	617999.130	17060.728	1214.044	1328.553	559.009	5941.
3	14:06:44	27788.146	┬21970332.000	┬437416880.000	163780.790	75500.624	1966820.400	627867.900	17335.010	1198.043	1323.053	546.009	5846.
x		27973.458	┬21760584.000	┬435684140.000	165356.290	75159.087	1959242.400	621013.810	17123.459	1221.378	1318.886	551.176	5989.
σ		316.642	┬225955.340	┬3103383.400	1715.768	297.311	9233.263	5950.121	188.197	27.739	12.293	6.898	172.

%RSD		1.132	T 1.038	T 0.712	1.038	0.396	0.471	0.958	1.099	2.271	0.932	1.252	2.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	14:06:00	586247.380	637763.170	12224.481	7666.763	355.004	3335.334	1148236.300	62070.367	2990.268	2366.168	479623.260	220884.
2	14:06:22	588743.080	649399.840	12479.671	7276.588	380.004	3255.318	1151093.600	62562.201	3240.315	2408.174	487054.160	229702.
3	14:06:44	597154.530	645658.610	12219.478	7606.735	435.006	3385.344	1150975.900	62446.769	3070.283	2467.683	496769.690	230938.
x		590715.000	644273.870	12307.877	7516.695	390.005	3325.332	1150101.900	62359.779	3100.289	2414.008	487815.710	227175.
σ		5714.705	5940.631	148.799	210.094	40.928	65.587	1616.780	257.198	127.695	51.008	8598.543	5483.
%RSD		0.967	0.922	1.209	2.795	10.494	1.972	0.141	0.412	4.119	2.113	1.763	2.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:06:00	1325.053	6571.295	1156740.200	150799.140	0.000	216066.520	119265.200
2	14:06:22	1310.052	6791.383	1166844.300	149941.450	0.000	220863.790	120781.060
3	14:06:44	1180.042	6766.373	1178455.100	154613.850	0.000	221578.180	121989.820
x		1271.715	6709.684	1167346.500	151784.810	0.000	219502.830	120678.690
σ		79.745	120.499	10866.157	2487.267	0.000	2997.291	1365.188
%RSD		6.271	1.796	0.931	1.639	0.000	1.365	1.131

200-35736-A-1-A 10/18/2016 02:11:21 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	14:11:43	170719.900	1367.556	3785.430	T 2022011.500	T 4511880.900	T 249686140.000	T 17244743.000	T 1620869.800	311656.910	14561.358	614570.790	417
2	14:12:05	168477.260	1332.553	3600.389	T 2050475.900	T 4491969.300	T 250589950.000	T 17390854.000	T 1637692.200	315691.790	14371.193	619757.650	416
3	14:12:26	168790.400	1342.554	3570.382	T 2013664.800	T 4506256.500	T 247476640.000	T 17220585.000	1568104.100	317566.910	14746.521	631927.070	426
x		169329.190	1347.555	3652.067	T 2028717.400	T 4503368.900	T 249250910.000	T 17285394.000	T 1608888.700	314971.870	14559.691	622085.170	420
σ		1214.531	18.029	116.466	T 19300.026	T 10265.063	T 1601641.900	T 92126.219	T 36308.178	3020.057	187.669	8909.157	5
%RSD		0.717	1.338	3.189	T 0.951	T 0.228	T 0.643	T 0.533	T 2.257	0.959	1.289	1.432	
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	14:11:43	54910.305	T 27514773.000	TM 984701370.000	345014.470	130957.480	96056.007	401672.600	54157.849	1167.041	947.027	641.512	6
2	14:12:05	53540.861	T 28097458.000	TM 1008235600.000	347556.470	132887.670	96981.343	408813.100	54689.582	1152.040	987.529	651.013	6
3	14:12:26	56435.387	T 28407567.000	TM 1017319600.000	349945.690	134429.960	99973.947	410954.810	55698.916	1229.045	939.526	675.514	7
x		54962.184	T 28006599.000	TM 1003418900.000	347505.540	132758.370	97670.432	407146.840	54848.782	1182.709	958.028	656.013	6
σ		1447.960	T 453278.990	TM 16834127.000	2466.007	1739.848	2047.852	4860.269	782.771	40.824	25.823	17.543	
%RSD		2.634	T 1.618	TM 1.678	0.710	1.311	2.097	1.194	1.427	3.452	2.695	2.674	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	14:11:43	685305.480	1035115.800	17829.532	3480.363	305.003	1630.080	1190888.900	48445.306	2380.170	1744.591	985149.810	268
2	14:12:05	694067.090	1038507.400	18840.643	3275.322	365.004	1775.094	1189644.600	48756.211	2385.171	1840.102	1004070.300	265
3	14:12:26	709350.810	1062330.700	19100.939	3445.356	235.002	1765.093	1202467.500	49608.721	2400.173	1923.111	1032383.900	274
x		696241.130	1045318.000	18590.371	3400.347	301.669	1723.423	1194333.600	48936.746	2388.505	1835.935	1007201.400	269
σ		12169.197	14830.744	671.637	109.681	65.065	80.992	7071.555	602.352	10.410	89.333	23772.222	4
%RSD		1.748	1.419	3.613	3.226	21.568	4.699	0.592	1.231	0.436	4.866	2.360	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:11:43	790.019	12504.689	1095065.800	157732.870	0.000	454226.440	142446.140
2	14:12:05	845.021	12054.358	1109633.600	159741.870	0.000	469444.530	145749.510
3	14:12:26	745.017	12249.500	1137234.000	162235.790	0.000	477827.780	145598.200
x		793.352	12269.516	1113977.800	159903.510	0.000	467166.250	144597.950
σ		50.086	225.832	21417.124	2255.805	0.000	11964.479	1865.060
%RSD		6.313	1.841	1.923	1.411	0.000	2.561	1.290

200-35736-A-2-A 10/18/2016 02:17:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:17:26	169477.320	1215.044	6001.080	T 1976333.900	T 4561401.300	T 249722250.000	T 20590100.000	1245254.500	301319.400	38890.321	596745.260	41374
2	14:17:47	169972.320	1297.551	6186.148	T 1950774.100	T 4684394.100	T 252008800.000	T 20864768.000	1289377.400	307123.920	39050.695	613170.610	41409
3	14:18:09	165841.010	1225.045	6116.122	T 1934294.700	T 4622267.400	T 255294290.000	T 20596464.000	T 1374625.800	309466.660	38659.785	612486.120	42154
x		168430.220	1245.880	6101.117	T 1953800.900	T 4622687.600	T 252341780.000	T 20683777.000	T 1303085.900	305969.990	38866.934	607467.330	41646
σ		2255.935	45.027	93.442	T 21182.443	T 61497.487	T 2800908.000	T 156774.590	T 65766.062	4194.415	196.501	9291.891	440
%RSD		1.339	3.614	1.532	T 1.084	T 1.330	T 1.110	T 0.758	T 5.047	1.371	0.506	1.530	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:17:26	56385.218	T 21002990.000	T 659429230.000	263913.090	121687.620	92048.488	364988.210	20817.994	1356.055	825.020	645.012	619
2	14:17:47	56039.053	T 21291502.000	T 670937440.000	267164.280	124402.550	93411.037	371627.530	20892.086	1370.056	847.022	619.011	594
3	14:18:09	58005.765	T 21790118.000	T 673166500.000	265467.490	124568.790	94386.510	371693.990	21078.320	1343.054	820.520	643.512	600
x		56810.012	T 21361537.000	T 667844390.000	265514.950	123552.990	93282.012	369436.570	20929.467	1356.389	830.854	635.845	604
σ		1049.917	T 398210.270	T 7372476.500	1626.113	1617.592	1174.339	3852.543	134.129	13.504	14.181	14.598	13
%RSD		1.848	T 1.864	T 1.104	0.612	1.309	1.259	1.043	0.641	0.996	1.707	2.296	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	14:17:26	576940.930	954861.070	7786.819	2685.216	230.002	1395.058	1180808.200	47793.428	1990.119	1535.571	861609.990	25844
2	14:17:47	579766.480	960194.780	7576.722	2675.215	275.002	1430.061	1191811.500	49709.019	2070.129	1609.578	878403.450	25807
3	14:18:09	591927.960	954427.250	8046.942	2730.224	300.003	1430.061	1209886.600	51208.549	2145.138	1662.083	872926.650	25799
x		582878.460	956494.360	7803.494	2696.885	268.336	1418.394	1194168.800	49570.332	2068.462	1602.410	870980.030	25817
σ		7963.420	3211.988	235.553	29.302	35.474	20.209	14681.865	1711.779	77.523	63.560	8564.291	24
%RSD		1.366	0.336	3.019	1.087	13.220	1.425	1.229	3.453	3.748	3.967	0.983	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:17:26	870.023	11263.805	949148.210	154603.760	0.000	448935.950	117402.050
2	14:17:47	800.019	11899.246	970793.060	153856.900	5.000	455058.680	119874.550
3	14:18:09	825.020	11754.143	975903.950	155027.670	0.000	457288.490	120065.920
x		831.687	11639.065	965281.740	154496.110	1.667	453761.040	119114.170
σ		35.475	332.985	14203.815	592.764	2.887	4324.824	1485.830
%RSD		4.265	2.861	1.471	0.384	173.205	0.953	1.247

200-35736-A-3-A 10/18/2016 02:22:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:23:09	167780.280	1220.045	6981.462	T 2059984.400	T 4515210.300	T 264046200.000	T 21728430.000	1458784.800	305738.800	40930.197	616007.390	42213
2	14:23:31	167972.200	1100.036	7066.498	T 2094685.900	T 4560528.500	T 266191400.000	T 22665661.000	T 1625265.800	316690.470	41792.332	625423.520	42299
3	14:23:52	165992.510	1257.547	7106.515	T 2093982.700	T 4573264.200	T 269157530.000	T 22437735.000	T 1619069.800	306645.220	42945.258	626928.510	43274
x		167248.330	1192.543	7051.492	T 2082884.300	T 4549667.600	T 266465040.000	T 22277275.000	T 1567706.800	309691.500	41889.262	622786.470	42595
σ		1091.795	82.278	63.863	T 19835.034	T 30512.829	T 2566627.500	T 488785.190	T 94380.076	6078.207	1011.021	5918.885	589
%RSD		0.653	6.899	0.906	T 0.952	T 0.671	T 0.963	T 2.194	T 6.020	1.963	2.414	0.950	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:23:09	58005.765	T 17978947.000	T 549142810.000	237708.150	121566.740	96679.597	383890.830	16682.345	1550.072	914.525	657.013	677
2	14:23:31	58954.083	T 18607854.000	T 557793280.000	243191.410	123118.070	96377.857	387375.070	16798.461	1507.068	870.523	668.513	694
3	14:23:52	59817.150	T 18603856.000	T 559493630.000	243998.070	123782.970	96297.394	391771.050	17423.102	1514.069	891.024	655.013	656
x		58925.666	T 18396886.000	T 555476570.000	241632.550	122822.590	96451.616	387678.980	16967.969	1523.736	892.024	660.180	676

σ		906.027	T 361950.820	T 5550698.000	3422.473	1137.273	201.495	3948.891	398.409	23.074	22.018	7.286	19(
%RSD		1.538	T 1.967	T 0.999	1.416	0.926	0.209	1.019	2.348	1.514	2.468	1.104	2
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	14:23:09	646515.900	1005577.200	6001.080	2920.256	265.002	2060.127	1160460.900	47407.328	1670.084	1399.559	863578.020	259839
2	14:23:31	656822.370	1015046.100	5871.034	2910.254	270.002	1870.105	1183177.700	49428.186	1890.107	1463.564	885873.670	264024
3	14:23:52	656219.300	1018847.900	6061.102	2855.245	255.002	1910.109	1201072.100	49578.632	1830.101	1470.065	896489.320	265193
x		653185.860	1013157.100	5977.739	2895.251	263.335	1946.781	1181570.200	48804.715	1796.764	1444.396	881980.340	263019
σ		5784.215	6834.043	97.160	35.006	7.638	100.178	20353.245	1212.508	113.737	38.966	16797.529	2814
%RSD		0.886	0.675	1.625	1.209	2.900	5.146	1.723	2.484	6.330	2.698	1.905	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:23:09	835.021	11058.668	984508.530	150203.800	0.000	440982.800	154149.580
2	14:23:31	1075.035	11343.859	1015837.200	158399.150	0.000	457586.500	157793.440
3	14:23:52	780.018	11559.007	1020026.800	154876.270	0.000	458131.160	158283.050
x		896.691	11320.511	1006790.900	154493.070	0.000	452233.490	156742.030
σ		156.879	250.985	19410.435	4111.091	0.000	9747.184	2258.430
%RSD		17.495	2.217	1.928	2.661	0.000	2.155	1.441

200-35736-A-4-A 10/18/2016 02:28:30 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:28:52	174741.260	1030.032	6681.339	T 1917356.700	T 4199534.100	T 222706930.000	T 20463185.000	T 1954133.400	310546.470	44278.740	563580.250	376
2	14:29:14	173195.250	1085.035	6861.412	T 1916439.500	T 4226169.100	T 224569000.000	T 20349376.000	T 2011454.200	314479.190	44178.475	567463.750	380
3	14:29:36	168406.550	1017.531	7106.515	T 1881585.100	T 4196818.900	T 223691930.000	T 20892005.000	T 2004462.100	315365.700	45241.320	570898.100	379
x		172114.350	1044.199	6883.089	T 1905127.100	T 4207507.300	T 223655950.000	T 20568189.000	T 1990016.500	313463.790	44566.178	567314.030	379
σ		3302.786	35.913	213.415	T 20393.110	T 16218.447	T 931560.760	T 286148.380	T 31271.778	2565.060	586.835	3661.217	2
%RSD		1.919	3.439	3.101	T 1.070	T 0.385	T 0.417	T 1.391	T 1.571	0.818	1.317	0.645	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:28:52	50671.912	TM 59904025.000	TM 1022281500.000	212141.580	112135.970	85714.846	329760.300	50366.990	1193.043	886.524	611.511	7
2	14:29:14	52021.059	TM 60907453.000	TM 1032502800.000	215924.700	113248.450	87117.088	334717.660	50878.540	1211.044	843.521	620.512	6
3	14:29:36	51479.381	TM 60998649.000	TM 1051092100.000	219916.390	114109.300	89062.329	339043.800	50933.709	1226.045	894.024	614.011	7
x		51390.784	TM 60603376.000	TM 1035292100.000	215994.220	113164.570	87298.088	334507.250	50726.413	1210.044	874.690	615.345	7
σ		678.923	TM 607369.540	TM 14606429.000	3887.868	989.333	1681.066	4645.325	312.489	16.524	27.252	4.646	
%RSD		1.321	TM 1.002	TM 1.411	1.800	0.874	1.926	1.389	0.616	1.366	3.116	0.755	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	14:28:52	769880.040	966345.430	7751.802	3185.304	235.002	1170.041	1216868.500	50727.080	1655.082	1259.548	953295.130	258
2	14:29:14	777355.310	970274.110	7791.821	3295.326	225.002	985.029	1206128.400	52041.122	1620.079	1346.054	961359.110	255
3	14:29:36	785651.030	969998.750	7546.708	3245.316	225.002	1050.033	1229657.900	53154.627	1990.119	1399.059	983231.350	260
x		777628.790	968872.760	7696.777	3241.982	228.335	1068.368	1217551.600	51974.276	1755.093	1334.887	965961.860	258
σ		7889.050	2193.060	131.495	55.086	5.774	93.859	11779.637	1215.154	204.289	70.423	15489.780	2
%RSD		1.015	0.226	1.708	1.699	2.529	8.785	0.967	2.338	11.640	5.276	1.604	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:28:52	910.025	10518.318	1014026.800	156652.760	0.000	380806.260	75440.352
2	14:29:14	935.026	10338.205	1030279.500	157854.010	0.000	386085.660	76374.592
3	14:29:36	870.023	10968.608	1041139.200	159933.700	0.000	388766.920	76389.661
x		905.025	10608.377	1028481.800	158146.820	0.000	385219.610	76068.202
σ		32.789	324.707	13645.290	1659.954	0.000	4050.375	543.786
%RSD		3.623	3.061	1.327	1.050	0.000	1.051	0.715

200-35736-A-5-A 10/18/2016 02:34:14 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	14:34:36	167689.370	1002.530	5901.045	T 1714284.200	T 3827323.200	T 229583670.000	T 19411906.000	1090473.900	298143.040	39411.543	546541.670	369501.
2	14:34:57	167568.160	1040.032	6231.165	T 1752868.600	T 3980991.500	T 234687200.000	T 19719457.000	1102753.700	298061.600	40378.854	563487.190	378801.
3	14:35:19	162861.850	1060.034	6381.221	T 1726146.900	T 3910848.400	T 231260160.000	T 19661697.000	1099616.200	303366.030	39501.756	567329.280	379747.
x		166039.790	1034.199	6171.144	T 1731099.900	T 3906387.700	T 231843680.000	T 19597687.000	1097614.600	299856.890	39764.051	559119.380	376016.
σ		2752.846	29.192	245.651	T 19763.295	T 76931.201	T 2601323.200	T 163462.440	6379.899	3039.276	534.342	11060.718	5662.
%RSD		1.658	2.823	3.981	T 1.142	T 1.969	T 1.122	T 0.834	0.581	1.014	1.344	1.978	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:34:36	52146.450	T 16284812.000	T 540939250.000	219262.860	107254.000	81006.384	322179.170	16983.649	1367.056	798.019	597.511	5615.
2	14:34:57	52216.669	T 16361874.000	T 548059250.000	223812.740	108617.790	83679.542	326558.170	17373.050	1404.059	837.021	643.512	5650.
3	14:35:19	53881.957	T 16679821.000	T 552151110.000	226326.340	108371.190	84302.670	330754.710	16754.417	1337.054	842.021	611.011	5495.
x		52748.359	T 16442169.000	T 547049870.000	223133.980	108080.990	82996.199	326497.350	17037.039	1369.390	825.687	617.345	5587.
σ		982.353	T 209388.520	T 5673675.500	3580.326	726.734	1751.170	4288.094	312.753	33.564	24.091	23.646	81.

%RSD		1.862	T 1.273	T 1.037	1.605	0.672	2.110	1.313	1.836	2.451	2.918	3.830	1.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	14:34:36	493309.150	861199.570	7076.502	2795.234	245.002	1555.073	1179821.900	47497.584	1880.106	1397.559	782005.440	246032.
2	14:34:57	510098.360	884103.280	7256.579	2620.206	265.002	1510.068	1188765.000	48816.387	1910.109	1396.059	795213.920	247494.
3	14:35:19	502147.290	880215.390	7156.536	2555.196	320.003	1590.076	1194407.800	49006.945	1845.102	1512.069	804698.270	248519.
x		501851.600	875172.750	7163.206	2656.879	276.669	1551.739	1187664.900	48440.305	1878.439	1435.228	793972.540	247348.
σ		8398.508	12256.272	90.224	124.150	38.838	40.108	7354.935	821.961	32.536	66.550	11397.230	1249.
%RSD		1.674	1.400	1.260	4.673	14.038	2.585	0.619	1.697	1.732	4.637	1.435	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:34:36	780.018	10278.168	956427.140	151253.230	0.000	374986.520	120710.550
2	14:34:57	855.022	10503.309	979548.720	151101.860	0.000	381916.230	122271.870
3	14:35:19	855.022	10528.324	971841.590	149850.640	0.000	386945.250	122820.890
x		830.021	10436.600	969272.480	150735.240	0.000	381282.670	121934.440
σ		43.303	137.775	11772.935	769.817	0.000	6004.489	1094.885
%RSD		5.217	1.320	1.215	0.511	0.000	1.575	0.898

200-35736-A-5-A SD@5 10/18/2016 02:39:58 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:40:19	152877.950	215.001	1625.079	602040.680	742509.200	T 47474532.000	T 3995088.400	220954.990	235045.790	8337.085	129213.950	79991.500
2	14:40:41	153422.920	232.502	1990.119	594155.140	753213.840	T 48055163.000	T 4031359.500	224005.300	239234.760	7991.916	128815.890	79629.774
3	14:41:03	152827.490	182.501	1960.115	584119.590	750495.230	T 47482670.000	T 3981640.700	225779.000	231871.790	7686.772	128815.890	79594.606
x		153042.790	210.001	1858.438	593438.470	748739.420	T 47670788.000	T 4002696.200	223579.760	235384.120	8005.257	128948.580	79738.627
σ		330.172	25.373	202.650	8982.015	5564.123	T 332903.440	T 25717.652	2439.995	3693.126	325.361	229.822	219.699
%RSD		0.216	12.082	10.904	1.514	0.743	T 0.698	T 0.643	1.091	1.569	4.064	0.178	0.276

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:40:19	16217.887	T 3264908.100	T 112362780.000	44830.211	22510.191	17914.623	77771.028	5977.072	938.026	639.012	525.508	3390.345
2	14:40:41	15637.332	T 3323798.200	T 112042600.000	46595.042	22575.279	17584.271	79132.413	6085.111	963.028	602.011	558.509	3340.335
3	14:41:03	15967.645	T 3315761.500	T 114214210.000	46895.884	22635.360	17799.500	77971.963	5910.048	935.026	593.511	575.510	3210.309
x		15940.955	T 3301489.300	T 112873200.000	46107.046	22573.610	17766.131	78291.801	5990.743	945.360	611.511	553.176	3313.663
σ		291.196	T 31934.047	T 1172332.800	1115.955	62.601	167.685	734.891	88.329	15.374	24.193	25.424	92.934
%RSD		1.827	T 0.967	T 1.039	2.420	0.277	0.944	0.939	1.474	1.626	3.956	4.596	2.805

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:40:19	102564.620	404397.310	1470.065	595.011	30.000	365.004	1186437.600	10733.455	440.006	370.004	158641.440	203778.200
2	14:40:41	103782.120	405319.300	1785.096	595.011	70.000	260.002	1193849.900	10453.277	515.008	404.005	162028.790	201419.790
3	14:41:03	103852.560	406927.790	1535.071	675.014	60.000	295.003	1191983.100	10128.076	570.010	413.505	161756.160	204375.440
x		103399.760	405548.140	1596.744	621.678	53.333	306.670	1190756.900	10438.270	508.341	395.838	160808.800	203191.140
σ		724.115	1280.668	166.324	46.190	20.817	53.464	3855.266	302.968	65.258	22.872	1881.931	1562.834
%RSD		0.700	0.316	10.416	7.430	39.031	17.434	0.324	2.902	12.837	5.778	1.170	0.769

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:40:19	200.001	2430.177	189946.250	143242.920	0.000	58818.606	23696.834
2	14:40:41	200.001	2540.194	192631.810	142224.250	0.000	62045.274	23221.165
3	14:41:03	225.002	2400.173	193056.690	144059.920	0.000	64785.671	23761.927
x		208.335	2456.848	191878.250	143175.700	0.000	61883.184	23559.975
σ		14.434	73.722	1686.592	919.677	0.000	2986.833	295.218
%RSD		6.928	3.001	0.879	0.642	0.000	4.827	1.253

CCV 10/18/2016 02:45:42 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:46:03	132796.950	90321.578	32857.356	┬15270093.000	┬4512559.700	┬42780056.000	┬15302563.000	┬1594597.800	170234.980	29551.175	┬3038257.800	8543
2	14:46:25	125601.500	88041.929	33122.881	┬15088575.000	┬4474029.500	┬42532027.000	┬14804965.000	┬1588644.100	171841.340	29335.795	┬2986685.200	8397
3	14:46:46	127082.660	87338.241	32481.621	┬14836737.000	┬4399231.800	┬41971039.000	┬14600992.000	┬1526408.200	168659.080	28148.751	┬2924885.000	8249
x		128493.700	88567.249	32820.619	┬15065135.000	┬4461940.300	┬42427707.000	┬14902840.000	┬1569883.400	170245.130	29011.907	┬2983276.000	8396
σ		3799.596	1559.502	322.205	┬217626.760	┬57623.058	┬414474.430	┬360881.310	┬37768.109	1591.154	755.233	┬56763.249	147
%RSD		2.957	1.761	0.982	┬1.445	┬1.291	┬0.977	┬2.422	┬2.406	0.935	2.603	┬1.903	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:46:03	108114.530	┬4465118.600	┬92779041.000	1337350.600	719940.700	874316.750	692972.950	93877.648	7874.860	10598.869	440.506	79
2	14:46:25	105271.420	┬4322772.700	┬90985864.000	1318833.800	713549.460	884767.160	685196.120	93027.903	7627.745	10383.734	454.006	77
3	14:46:46	104677.690	┬4332828.600	┬90285177.000	1283126.600	691081.800	847419.480	672936.470	90023.472	7493.684	10160.096	419.005	75
x		106021.210	┬4373573.300	┬91350027.000	1313103.600	708190.660	868834.460	683701.850	92309.674	7665.430	10380.900	437.839	77
σ		1837.010	┬79439.810	┬1286196.500	27562.391	15157.393	19267.951	10101.473	2024.983	193.362	219.400	17.652	2
%RSD		1.733	┬1.816	┬1.408	2.099	2.140	2.218	1.477	2.194	2.523	2.113	4.032	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	14:46:03	935455.700	231831.240	1886787.700	309278.210	9667.803	149401.640	1004197.700	931223.270	618512.660	484420.040	624997.990	1679
2	14:46:25	918537.560	224755.300	1922152.000	304669.480	10153.092	149139.300	982627.240	924921.490	621391.840	484346.960	623731.860	1638
3	14:46:46	907011.320	221552.850	1921346.600	297445.740	9472.691	146173.200	970507.100	912662.640	611360.920	477546.390	618844.650	1616
x		920334.860	226046.460	1910095.400	303797.810	9764.529	148238.050	985777.330	922935.800	617088.470	482104.460	622524.840	1644
σ		14307.107	5259.433	20189.106	5964.199	350.361	1793.015	17064.752	9438.299	5164.892	3947.579	3249.399	31
%RSD		1.555	2.327	1.057	1.963	3.588	1.210	1.731	1.023	0.837	0.819	0.522	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:46:03	37923.096	1628141.900	┬8578184.700	123999.570	0.000	196617.960	114582.530
2	14:46:25	38594.635	1655478.100	┬8540813.400	121521.410	0.000	212804.960	118993.270
3	14:46:46	38855.239	1637027.300	┬8474891.100	123616.740	0.000	221897.390	115896.560
x		38457.657	1640215.800	┬8531296.400	123045.910	0.000	210440.100	116490.790
σ		480.931	13944.241	┬52300.338	1334.053	0.000	12804.561	2264.618
%RSD		1.251	0.850	┬0.613	1.084	0.000	6.085	1.944

CCB 10/18/2016 02:51:26 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:51:48	137857.790	12.500	735.016	276677.610	760.017	6976.460	63179.523	700.015	180663.900	40.000	17759.457	1795.097
2	14:52:09	135317.100	2.500	770.018	277989.160	430.006	6436.243	61623.714	490.007	181866.880	25.000	18229.964	1940.113
3	14:52:31	137303.250	22.500	840.021	276850.440	700.015	7246.575	61121.871	700.015	180037.180	15.000	18239.975	1920.111
x		136826.050	12.500	781.685	277172.410	630.013	6886.426	61975.036	630.012	180855.990	26.667	18076.466	1885.107
σ		1335.878	10.000	53.466	712.593	175.790	412.601	1072.871	121.248	929.853	12.583	274.583	78.590
%RSD		0.976	80.000	6.840	0.257	27.903	5.992	1.731	19.245	0.514	47.187	1.519	4.169

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:51:48	5876.036	810.020	267916.200	115.000	55.000	225.002	710.015	1691.086	531.008	430.006	440.506	2295.158
2	14:52:09	6411.233	885.024	267585.960	165.001	50.000	210.001	615.011	1694.086	547.009	456.506	437.506	2375.169
3	14:52:31	5936.057	695.014	266513.990	80.000	80.000	280.002	595.011	1774.094	557.009	418.505	446.006	2315.161
x		6074.442	796.686	267338.720	120.000	61.667	238.335	640.012	1719.755	545.009	435.006	441.339	2328.496

σ		293.209	95.704	733.074	42.720	16.073	36.856	61.443	47.083	13.115	19.488	4.311	41.639
%RSD		4.827	12.013	0.274	35.600	26.064	15.464	9.600	2.738	2.406	4.480	0.977	1.788
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:51:48	70.000	233331.960	3540.376	45.000	0.000	5.000	1018019.500	3405.348	865.022	646.513	70.000	163467.740
2	14:52:09	90.000	231425.660	3350.337	55.000	0.000	10.000	1024424.700	3830.440	985.029	734.516	40.000	164386.710
3	14:52:31	130.001	234721.260	3370.341	55.000	0.000	10.000	1023245.400	4060.495	995.030	739.016	70.000	169588.440
x		96.667	233159.630	3420.351	51.667	0.000	8.333	1021896.500	3765.427	948.360	706.682	60.000	165814.300
σ		30.551	1654.549	104.425	5.774	0.000	2.887	3408.970	332.377	72.346	52.157	17.321	3300.643
%RSD		31.604	0.710	3.053	11.175	0.000	34.641	0.334	8.827	7.629	7.380	28.868	1.991

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:51:48	240.002	1670.084	700.015	127878.710	0.000	2085.130	10.000
2	14:52:09	250.002	1555.073	775.018	124563.750	0.000	2040.125	35.000
3	14:52:31	205.001	1585.075	985.029	126508.320	0.000	2060.127	45.000
x		231.668	1603.411	820.021	126316.930	0.000	2061.794	30.000
σ		23.629	59.658	147.740	1665.748	0.000	22.549	18.028
%RSD		10.200	3.721	18.017	1.319	0.000	1.094	60.093

CCVL 10/18/2016 02:57:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:57:32	143131.980	217.501	6676.337	T 1143559.300	32952.544	85559.048	826990.700	28945.113	184040.550	15.000	33102.841	12319.551
2	14:57:55	141881.350	207.501	6346.208	T 1128241.700	33233.100	83619.240	816344.640	28564.457	185698.790	15.000	32236.145	11398.897
3	14:58:18	136597.480	190.001	6531.279	T 1126407.300	33193.020	87046.722	811129.020	29235.619	184657.310	25.000	32286.242	11754.143
x		140536.940	205.001	6517.941	T 1132736.100	33126.222	85408.337	818154.790	28915.063	184798.880	18.333	32541.743	11824.197
σ		3468.499	13.920	165.468	T 9417.933	151.738	1718.704	8084.288	336.589	838.137	5.774	486.571	464.308
%RSD		2.468	6.790	2.539	T 0.831	0.458	2.012	0.988	1.164	0.454	31.492	1.495	3.927

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:57:32	8177.005	9102.485	912757.640	3460.359	1460.064	4405.582	13600.547	2882.249	756.017	693.014	480.007	2640.209
2	14:57:55	8337.085	9397.649	902923.060	3555.379	1610.078	4200.529	13995.874	2962.263	833.021	683.514	475.007	2515.190
3	14:58:18	8021.930	9557.740	891997.690	3270.321	1405.059	4395.580	13715.641	2849.244	769.018	633.012	461.006	2365.168
x		8178.673	9352.624	902559.460	3428.686	1491.734	4333.897	13770.687	2897.919	786.019	669.847	472.007	2506.856
σ		157.584	230.943	10384.749	145.145	106.115	115.608	203.331	58.116	41.221	32.252	9.849	137.710
%RSD		1.927	2.469	1.151	4.233	7.114	2.668	1.477	2.005	5.244	4.815	2.087	5.493

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:57:32	25274.149	238798.570	17604.292	3480.363	85.000	905.025	1044047.900	1590.076	5570.931	4478.101	5545.923	169234.870
2	14:57:55	25369.293	238950.730	17584.271	3805.434	60.000	970.028	1032415.800	1955.115	6021.087	4508.110	5485.903	167234.840
3	14:58:18	24758.376	236496.090	17924.634	3465.360	50.000	750.017	1047611.500	1950.114	6006.082	4566.626	5330.852	166962.120
x		25133.939	238081.800	17704.399	3583.719	65.000	875.023	1041358.400	1831.768	5866.033	4517.612	5454.226	167810.610
σ		328.708	1375.369	190.991	192.157	18.028	113.032	7946.816	209.327	255.676	45.021	110.979	1240.962
%RSD		1.308	0.578	1.079	5.362	27.735	12.918	0.763	11.428	4.359	0.997	2.035	0.740

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:57:32	3090.287	17749.446	8106.971	127808.180	0.000	10758.471	12304.540
2	14:57:55	3160.300	17369.046	8812.329	127798.100	0.000	10778.484	12899.990
3	14:58:18	3390.345	18780.575	8802.324	130075.620	0.000	11208.768	13220.241
x		3213.644	17966.356	8573.875	128560.630	0.000	10915.241	12808.257
σ		156.981	730.336	404.381	1312.026	0.000	254.399	464.692
%RSD		4.885	4.065	4.716	1.021	0.000	2.331	3.628

200-35736-A-5-A PDS 10/18/2016 03:02:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:03:20	168174.220	2580.200	65915.087	T 10411731.000	T 3979569.300	T 216308370.000	T 26994751.000	T 1364207.000	277165.620	35402.560	621588.990	4336
2	15:03:41	166699.510	2620.206	66698.193	T 10826009.000	T 4104533.800	T 221269480.000	T 27446087.000	1300288.100	282504.140	36154.171	648069.530	4542
3	15:04:03	165376.430	2582.700	67245.385	T 10612358.000	T 4118142.200	T 223407230.000	T 27686708.000	1330055.000	282036.310	36519.967	653022.330	4475
x		166750.050	2594.369	66619.555	T 10616699.000	T 4067415.100	T 220328360.000	T 27375849.000	T 1331516.700	280568.690	36025.566	640893.620	4451
σ		1399.578	22.411	668.627	T 207172.970	T 76380.417	T 3641802.000	T 351284.730	T 31984.470	2956.414	569.696	16900.709	105
%RSD		0.839	0.864	1.004	T 1.951	T 1.878	T 1.653	T 1.283	T 2.402	1.054	1.581	2.637	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:03:20	60359.099	T 14890155.000	T 504964680.000	234163.500	109815.600	111838.980	398364.610	24050.340	2523.191	2316.661	544.009	65
2	15:03:41	62532.088	T 15335642.000	T 508308370.000	233058.170	110409.500	115765.660	407896.030	24773.398	2674.215	2371.669	621.512	70
3	15:04:03	61924.827	T 15446316.000	T 521586840.000	236364.240	113188.050	117452.400	412533.090	25538.552	2593.202	2452.180	599.511	69
x		61605.338	T 15224038.000	T 511619960.000	234528.640	111137.710	115019.010	406264.580	24787.430	2596.869	2380.170	588.344	68
σ		1121.171	T 294398.030	T 8791987.900	1683.009	1800.299	2880.229	7223.762	744.205	75.579	68.158	39.940	2

%RSD		1.820	┬1.934	┬1.718	0.718	1.620	2.504	1.778	3.002	2.910	2.864	6.789	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	15:03:20	701540.430	781974.020	181821.390	35242.221	685.014	8507.171	1096863.400	43742.327	53696.360	41011.897	746088.860	2277(
2	15:03:41	722967.590	802978.220	186669.540	36068.987	810.020	8982.420	1101590.400	44760.023	54007.362	42275.549	777842.250	2308(
3	15:04:03	731330.870	814507.970	189182.640	36053.954	575.010	8982.420	1120949.400	46254.094	55482.195	42584.835	786672.560	2354(
x		718612.960	799820.070	185891.190	35788.388	690.015	8824.003	1106467.800	44918.815	54395.306	41957.427	770201.230	2313(
σ		15365.208	16495.301	3741.842	473.054	117.585	274.385	12762.245	1263.390	954.032	833.327	21343.574	39(
%RSD		2.138	2.062	2.013	1.322	17.041	3.110	1.153	2.813	1.754	1.986	2.771	
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	15:03:20	35703.201	182291.480	926807.030	140590.480	0.000	654384.220	248859.160					
2	15:03:41	36364.628	190001.880	957453.640	143858.190	0.000	656598.810	251807.960					
3	15:04:03	36760.495	193835.650	977991.120	146178.240	0.000	651572.200	259179.670					
x		36276.108	188709.670	954083.930	143542.300	0.000	654185.080	253282.260					
σ		534.177	5879.567	25757.892	2807.243	0.000	2519.216	5315.868					
%RSD		1.473	3.116	2.700	1.956	0.000	0.385	2.099					

200-35736-A-5-I MS 10/18/2016 03:08:42 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	
1	15:09:04	162579.110	2557.696	54493.942	┬10750644.000	┬3751135.600	┬196882560.000	┬24092825.000	1311140.900	276494.610	31124.034	615094.590	4229(
2	15:09:26	165719.820	2517.690	54172.898	┬10894311.000	┬3808510.700	┬199950580.000	┬24791591.000	┬1422600.800	281365.110	30337.586	616935.800	4276(
3	15:09:48	163356.660	2647.710	55356.779	┬11072038.000	┬3794999.200	┬199286700.000	┬24452251.000	1329352.100	283500.850	31640.004	632851.160	4393(
x		163885.190	2574.366	54674.540	┬10905664.000	┬3784881.800	┬198706610.000	┬24445556.000	┬1354364.600	280453.520	31033.875	621627.180	4299(
σ		1635.702	66.594	612.254	┬160997.450	┬29995.784	┬1614173.400	┬349431.000	┬59791.673	3590.972	655.873	9763.743	84(
%RSD		0.998	2.587	1.120	┬1.476	┬0.793	┬0.812	┬1.429	┬4.415	1.280	2.113	1.571	
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	
1	15:09:04	58447.303	┬15431370.000	┬507856450.000	231760.260	106126.810	111909.450	397468.590	26426.935	2714.221	2437.678	578.510	69(
2	15:09:26	59470.915	┬15824222.000	┬520904570.000	237337.930	109538.780	115941.880	405734.220	26644.281	2698.218	2427.677	583.510	685
3	15:09:48	60148.339	┬15829092.000	┬527007870.000	243830.650	110454.800	117517.860	410119.610	26750.450	2535.193	2403.673	579.010	679
x		59355.519	┬15694895.000	┬518589630.000	237642.950	108706.800	115123.060	404440.810	26607.222	2649.211	2423.010	580.343	685
σ		856.369	┬228231.670	┬9783323.400	6040.974	2280.792	2892.471	6423.922	164.911	99.066	17.476	2.754	(
%RSD		1.443	┬1.454	┬1.887	2.542	2.098	2.513	1.588	0.620	3.739	0.721	0.475	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	15:09:04	716345.660	774077.930	181558.550	38088.472	685.014	9197.537	1107546.400	49413.141	16207.877	12365.085	716491.740	2284(
2	15:09:26	721495.830	783890.990	188545.480	38303.965	690.014	9222.551	1137025.500	50676.928	16393.058	12869.467	729524.220	2331(
3	15:09:48	730605.050	789716.570	188580.880	38835.193	825.020	9227.554	1144202.500	50300.791	16353.019	12972.046	745696.890	2360(
x		722815.510	782561.830	186228.300	38409.210	733.350	9215.881	1129591.500	50130.287	16317.985	12735.533	730570.950	2325(
σ		7220.718	7903.591	4044.166	384.324	79.429	16.082	19425.939	648.917	97.435	324.891	14630.685	381
%RSD		0.999	1.010	2.172	1.001	10.831	0.174	1.720	1.294	0.597	2.551	2.003	
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	15:09:04	30583.034	150148.300	924435.620	142143.570	5.000	599993.820	248316.150					
2	15:09:26	31835.376	154164.720	946313.650	146833.970	0.000	598833.180	256371.740					
3	15:09:48	31710.137	152509.600	950364.680	144523.910	0.000	613466.190	263115.630					
x		31376.182	152274.210	940371.320	144500.480	1.667	604097.730	255934.510					
σ		689.735	2018.529	13948.568	2345.288	2.887	8134.054	7409.422					
%RSD		2.198	1.326	1.483	1.623	173.205	1.346	2.895					

200-35736-A-5-J MSD 10/18/2016 03:14:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:14:47	166992.420	2715.221	54955.454	┬11113466.000	┬4234864.200	┬227376100.000	┬27425624.000	┬1534819.400	290693.160	38564.565	683123.590	4685
2	15:15:09	163326.360	2705.220	56932.072	┬11201305.000	┬4335036.300	┬233220400.000	┬27599589.000	┬1570333.300	295435.460	39366.437	703078.240	4788
3	15:15:31	164073.650	2695.218	57413.720	┬11283029.000	┬4447491.500	┬236415990.000	┬27983446.000	┬1578259.900	291934.580	38083.461	700946.200	4851
x		164797.480	2705.220	56433.749	┬11199266.000	┬4339130.700	┬232337500.000	┬27669553.000	┬1561137.600	292687.730	38671.488	695716.010	4775
σ		1937.253	10.002	1302.694	┬84800.076	┬106372.750	┬4584160.500	┬285416.470	┬23134.231	2459.225	648.137	10957.334	83
%RSD		1.176	0.370	2.308	┬0.757	┬2.451	┬1.973	┬1.032	┬1.482	0.840	1.676	1.575	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:14:47	64188.367	┬16501745.000	┬551273120.000	255965.570	118867.380	123601.630	426841.710	27835.225	2633.208	2519.691	606.011	74
2	15:15:09	66135.959	┬17098505.000	┬562828400.000	262622.950	121682.580	126120.390	434480.330	27992.488	2716.221	2478.684	613.011	74
3	15:15:31	66386.954	┬17395806.000	┬573078470.000	260484.790	121813.540	125918.880	438878.330	27985.476	2763.229	2499.187	598.011	74
x		65570.427	┬16998686.000	┬562393330.000	259691.100	120787.830	125213.630	433400.120	27937.729	2704.220	2499.187	605.678	74
σ		1203.460	┬455312.220	┬10909184.000	3398.914	1664.451	1399.668	6090.584	88.841	65.836	20.503	7.506	
%RSD		1.835	┬2.679	┬1.940	1.309	1.378	1.118	1.405	0.318	2.435	0.820	1.239	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	15:14:47	770654.640	838421.080	180032.120	37447.021	675.014	9457.683	1130150.700	49944.722	15932.612	12301.038	812167.820	24006
2	15:15:09	783781.000	852593.600	183216.540	38158.632	760.017	9817.891	1132438.400	51168.426	16002.679	12429.133	828366.560	23967
3	15:15:31	792724.430	859221.290	185759.460	37707.608	785.018	9727.838	1156424.300	52723.261	16117.790	12473.666	834280.890	23818
x		782386.690	850078.660	183002.710	37771.087	740.016	9667.804	1139671.100	51278.803	16017.693	12401.279	824938.420	23930
σ		11100.768	10625.716	2869.650	360.028	57.665	187.458	14553.704	1392.554	93.498	89.621	11448.191	98
%RSD		1.419	1.250	1.568	0.953	7.792	1.939	1.277	2.716	0.584	0.723	1.388	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:14:47	28163.776	148781.120	1016591.200	146723.000	0.000	631579.250	260474.630
2	15:15:09	29631.317	149800.190	1031496.400	148549.070	0.000	643887.010	265482.730
3	15:15:31	29526.131	149759.830	1039554.700	149063.630	0.000	649171.180	273897.250
x		29107.075	149447.050	1029214.100	148111.900	0.000	641545.810	266618.200
σ		818.612	577.061	11650.665	1230.031	0.000	9026.624	6782.968
%RSD		2.812	0.386	1.132	0.830	0.000	1.407	2.544

200-35736-A-6-A 10/18/2016 03:20:08 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:20:29	169426.810	1307.551	7221.564	┬2144766.100	┬4952489.300	┬298015510.000	┬24147608.000	┬1749426.200	314662.600	30778.393	619783.590	45153
2	15:20:52	168992.430	1250.047	7201.556	┬2136939.200	┬5007213.900	┬292713660.000	┬23919956.000	┬1764794.800	316303.220	30658.172	622330.930	45586
3	15:21:13	165194.640	1432.562	7226.566	┬2181852.400	┬5047069.400	┬300901550.000	┬24389427.000	1681235.000	316333.790	30442.778	629674.160	46440
x		167871.290	1330.053	7216.562	┬2154519.200	┬5002257.500	┬297210240.000	┬24152330.000	┬1731818.700	315766.540	30626.447	623929.560	45726
σ		2328.202	93.315	13.234	┬23992.526	┬47484.411	┬4152917.800	┬234771.100	┬44475.589	956.160	170.042	5135.421	654
%RSD		1.387	7.016	0.183	┬1.114	┬0.949	┬1.397	┬0.972	┬2.568	0.303	0.555	0.823	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:20:29	62818.161	┬10926800.000	┬574807810.000	244946.840	129647.300	107223.800	410068.380	13737.659	1710.088	922.526	669.513	680
2	15:20:52	63681.428	┬11284516.000	┬591350130.000	244982.350	129012.400	107399.930	419057.880	13741.663	1608.078	889.024	705.015	702
3	15:21:13	63596.103	┬11473301.000	┬600227800.000	246930.790	131148.980	107883.040	418268.410	14056.925	1676.084	871.523	688.014	706
x		63365.231	┬11228206.000	┬588795250.000	245620.000	129936.230	107502.260	415798.220	13845.416	1664.750	894.357	687.514	696

σ		475.693	T 277567.630	T 12901147.000	1135.323	1097.202	341.321	4977.867	183.184	51.941	25.916	17.756	141
%RSD		0.751	T 2.472	T 2.191	0.462	0.844	0.318	1.197	1.323	3.120	2.898	2.583	2
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	15:20:29	691321.440	1101633.100	4930.729	2950.261	265.002	2040.125	1135314.500	45632.384	1175.041	1022.531	839188.280	260682
2	15:20:52	709382.100	1107791.900	4485.604	3045.278	210.001	2245.151	1137250.000	45898.112	1445.063	1000.030	848145.020	259900
3	15:21:13	706508.840	1112201.500	4695.661	2980.266	330.003	2085.130	1149777.300	47016.222	1430.061	1056.534	868341.180	260134
x		702404.130	1107208.900	4703.998	2991.935	268.336	2123.469	1140780.600	46182.240	1350.055	1026.365	851891.500	260239
σ		9704.811	5308.283	222.680	48.571	60.070	107.756	7851.193	734.369	151.752	28.446	14933.184	401
%RSD		1.382	0.479	4.734	1.623	22.386	5.075	0.688	1.590	11.240	2.772	1.753	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:20:29	825.020	12409.618	881769.390	147166.890	0.000	434490.590	183383.360
2	15:20:52	765.018	12659.806	906357.130	149679.110	0.000	444140.000	189212.980
3	15:21:13	845.021	11889.239	927514.820	149800.190	5.000	447338.860	189880.510
x		811.686	12319.555	905213.780	148882.060	1.667	441989.820	187492.290
σ		41.635	393.099	22894.139	1486.619	2.887	6688.571	3574.050
%RSD		5.129	3.191	2.529	0.999	173.205	1.513	1.906

200-35736-A-7-A 10/18/2016 03:25:50 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:26:12	166295.510	1087.536	6606.309	T 1786347.100	T 4024855.200	T 223230350.000	T 18699521.000	T 1438557.800	298764.010	30798.430	552705.010	370942
2	15:26:33	163760.590	1115.037	6341.206	T 1817135.100	T 4087596.100	T 224535600.000	T 18610109.000	T 1460676.200	300952.870	30357.622	557935.010	381113
3	15:26:55	168517.660	1125.038	6781.379	T 1808268.700	T 4054819.500	T 225259080.000	T 18732541.000	1352616.800	299975.480	31209.193	562360.060	382381
x		166191.250	1109.204	6576.298	T 1803917.000	T 4055756.900	T 224341680.000	T 18680724.000	T 1417283.600	299897.450	30788.415	557666.690	378145
σ		2380.247	19.420	221.616	T 15848.611	T 31380.944	T 1028173.700	T 63343.483	T 57084.619	1096.512	425.874	4833.116	6270
%RSD		1.432	1.751	3.370	T 0.879	T 0.774	T 0.458	T 0.339	T 4.028	0.366	1.383	0.867	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:26:12	51148.364	T 23603538.000	T 752310020.000	235279.050	108149.760	84704.701	366996.590	29140.453	1324.053	886.024	606.011	5921
2	15:26:33	51544.582	T 23936015.000	T 774488480.000	243181.260	110862.490	86398.361	370911.850	28985.182	1382.057	873.523	645.513	6041
3	15:26:55	50767.202	T 23796856.000	T 771401770.000	241649.220	107203.670	85046.435	369639.030	29313.756	1376.057	835.521	626.012	6321
x		51153.383	T 23778803.000	T 766066760.000	240036.510	108738.640	85383.166	369182.490	29146.464	1360.722	865.022	625.845	6094
σ		388.715	T 166971.980	T 12013231.000	4190.690	1899.165	895.635	1997.155	164.369	31.898	26.302	19.751	205
%RSD		0.760	T 0.702	T 1.568	1.746	1.747	1.049	0.541	0.564	2.344	3.041	3.156	3

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	15:26:12	565783.030	893283.910	8387.110	2680.215	205.001	1525.070	1175416.300	47913.773	1855.103	1356.055	765217.510	246590
2	15:26:33	572118.910	914573.220	8452.143	2795.234	240.002	1545.072	1160203.900	47116.505	1810.098	1466.565	760592.880	240675
3	15:26:55	583524.270	921151.040	8557.196	2505.188	295.003	1540.071	1188625.600	47472.513	1925.111	1454.564	775323.890	248823
x		573808.740	909669.390	8465.483	2660.213	246.669	1536.738	1174748.600	47500.930	1863.438	1425.728	767044.760	245363
σ		8990.526	14566.399	85.824	146.054	45.370	10.409	14222.582	399.393	57.958	60.636	7533.578	4210
%RSD		1.567	1.601	1.014	5.490	18.393	0.677	1.211	0.841	3.110	4.253	0.982	1

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:26:12	865.022	10333.202	1078032.400	147530.080	0.000	370676.700	83759.944
2	15:26:33	725.016	10463.283	1093412.400	149124.170	0.000	377635.330	87172.376
3	15:26:55	845.021	10318.193	1099899.000	149093.900	0.000	381747.430	87287.979
x		811.687	10371.560	1090447.900	148582.720	0.000	376686.490	86073.433
σ		75.722	79.789	11230.691	911.738	0.000	5596.024	2004.374
%RSD		9.329	0.769	1.030	0.614	0.000	1.486	2.329

200-35736-A-8-A 10/18/2016 03:31:32 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	15:31:54	167133.830	1372.556	5450.891	T 1587860.700	T 3210225.700	T 193905990.000	T 15335755.000	1219576.000	295069.050	26556.140	541000.210	33113
2	15:32:16	165972.310	1345.054	5976.071	T 1603239.400	T 3215462.200	T 192460390.000	T 15341298.000	1232722.300	291100.170	27092.001	547982.860	33798
3	15:32:37	161599.650	1397.559	5886.039	T 1595718.200	T 3229167.600	T 193192240.000	T 15274881.000	1240735.400	294376.980	27472.624	549517.150	34034
x		164901.930	1371.723	5771.001	T 1595606.100	T 3218285.200	T 193186210.000	T 15317311.000	1231011.300	293515.400	27040.255	546166.740	33648
σ		2918.229	26.262	280.854	T 7689.974	T 9781.380	T 722820.640	T 36850.117	10682.956	2120.081	460.428	4539.637	478
%RSD		1.770	1.915	4.867	T 0.482	T 0.304	T 0.374	T 0.241	0.868	0.722	1.703	0.831	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	15:31:54	43807.497	T 29496826.000	TM 1334529200.000	261500.510	99853.227	79700.109	387103.880	82851.420	1097.036	873.523	611.511	599
2	15:32:16	45030.751	T 30054056.000	TM 1353518100.000	265005.220	101467.930	81513.849	388521.290	83252.411	1055.033	855.022	642.512	564
3	15:32:37	45406.769	T 29977607.000	TM 1338913900.000	263212.140	101196.290	81026.481	392359.650	82683.590	1088.036	851.022	638.012	581
x		44748.339	T 29842830.000	TM 1342320400.000	263239.290	100839.150	80746.813	389328.270	82929.140	1080.035	859.856	630.679	581
σ		836.203	T 302075.900	TM 9942200.400	1752.512	864.571	938.656	2719.231	292.266	22.115	12.004	16.751	17

%RSD		1.869	T 1.012	TM 0.741	0.666	0.857	1.162	0.698	0.352	2.048	1.396	2.656	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	15:31:54	509052.090	897512.230	24192.546	2190.144	255.002	1695.086	1165890.900	49142.342	2325.162	1804.098	705945.710	24746
2	15:32:16	508407.860	907829.090	24357.786	2300.159	340.003	2105.133	1165676.700	49683.945	2560.197	1967.616	715093.570	25190
3	15:32:37	513191.160	896710.770	23987.249	2290.157	290.003	1970.116	1172951.400	49964.782	2605.204	1997.120	719972.010	24949
x		510217.040	900684.030	24179.194	2260.153	295.003	1923.445	1168173.000	49597.023	2496.854	1922.945	713670.430	24962
σ		2595.730	6200.765	185.629	60.836	42.721	208.969	4139.612	418.053	150.383	103.976	7120.620	222
%RSD		0.509	0.688	0.768	2.692	14.481	10.864	0.354	0.843	6.023	5.407	0.998	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:31:54	780.018	8497.165	1078352.100	149063.630	0.000	332447.910	101216.410
2	15:32:16	795.019	8542.189	1089034.200	144574.340	0.000	338957.060	104773.290
3	15:32:37	855.022	8607.222	1102663.000	149053.540	0.000	342268.720	105860.130
x		810.020	8548.859	1090016.400	147563.840	0.000	337891.230	103949.940
σ		39.688	55.331	12185.168	2588.983	0.000	4996.406	2428.878
%RSD		4.900	0.647	1.118	1.754	0.000	1.479	2.337

200-35736-A-9-A 10/18/2016 03:37:15 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**5**
1	15:37:37	161720.820	907.525	6221.161	T 1935578.800	T 4258945.600	T 216167550.000	T 17379870.000	T 1921873.100	288648.070	22445.103	529994.950	365003
2	15:37:58	161528.970	972.528	5906.046	T 1932521.400	T 4251834.300	T 217553080.000	T 17430923.000	T 1906193.000	288627.720	22720.476	534299.160	362683
3	15:38:20	159327.940	1007.531	5796.008	T 1936985.200	T 4188608.600	T 216150850.000	T 17116186.000	T 1927896.000	288200.430	22309.922	535579.280	367001
x		160859.240	962.528	5974.405	T 1935028.500	T 4233129.500	T 216623830.000	T 17308993.000	T 1918654.000	288492.070	22491.834	533291.130	364896
σ		1329.614	50.747	220.666	T 2282.222	T 38719.853	T 804800.110	T 168915.720	T 11203.873	252.780	209.228	2925.451	2160
%RSD		0.827	5.272	3.694	T 0.118	T 0.915	T 0.372	T 0.976	T 0.584	0.088	0.930	0.549	0

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**8**
1	15:37:37	49839.408	T 23317936.000	T 642016560.000	247367.190	112241.680	88861.260	410452.660	16103.776	1358.055	853.522	623.012	6456
2	15:37:58	51017.966	T 23998290.000	T 653527890.000	252559.190	116415.160	91636.225	417863.440	16504.168	1293.050	870.523	644.512	6946
3	15:38:20	49548.542	T 23509215.000	T 653908110.000	251275.000	115332.670	89172.918	418350.430	16211.881	1316.052	827.021	588.510	7136
x		50135.305	T 23608480.000	T 649817520.000	250400.460	114663.170	89890.134	415555.510	16273.275	1322.386	850.355	618.678	6846
σ		778.118	T 350871.270	T 6758506.000	2704.225	2165.794	1520.167	4425.900	207.136	32.962	21.923	28.251	350
%RSD		1.552	T 1.486	T 1.040	1.080	1.889	1.691	1.065	1.273	2.493	2.578	4.566	5

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	15:37:37	690691.100	848344.820	7361.625	2515.190	255.002	2440.179	1122712.300	47653.027	1950.114	1531.070	762381.900	230127
2	15:37:58	702478.740	852856.550	7806.828	2555.196	350.004	2385.171	1133411.300	48630.845	2000.120	1566.574	768969.410	234690
3	15:38:20	699497.190	851047.510	7551.711	2800.235	260.002	2355.166	1143218.300	49037.033	2265.154	1575.574	785111.470	235238
x		697555.670	850749.630	7573.388	2623.540	288.336	2393.505	1133114.000	48440.302	2071.796	1557.739	772154.260	233352
σ		6128.966	2270.572	223.391	154.324	53.464	43.115	10256.219	711.406	169.309	23.531	11694.694	2805
%RSD		0.879	0.267	2.950	5.882	18.542	1.801	0.905	1.469	8.172	1.511	1.515	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:37:37	805.019	9867.920	1171188.700	143303.440	0.000	352182.060	100929.680
2	15:37:58	950.027	10298.181	1185000.600	144322.170	0.000	362147.230	103983.370
3	15:38:20	775.018	10473.290	1207883.900	145794.910	5.000	367661.000	105382.110
x		843.355	10213.130	1188024.400	144473.510	1.667	360663.430	103431.720
σ		93.591	311.518	18533.537	1252.609	2.887	7845.419	2276.899
%RSD		11.097	3.050	1.560	0.867	173.205	2.175	2.201

200-35736-A-10-A 10/18/2016 03:42:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	15:43:19	161438.100	1137.539	5230.821	T 1801297.800	T 3914404.100	T 208304280.000	T 15374969.000	T 1757525.800	291812.470	22700.449	535517.330	35607
2	15:43:41	157742.970	1075.035	5160.799	T 1782769.900	T 3942429.000	T 208268890.000	T 15485151.000	T 1761783.400	293481.390	23616.721	533122.360	36098
3	15:44:03	157389.650	1047.533	5320.849	T 1785368.700	T 3954615.100	T 209477780.000	T 15635299.000	T 1780440.300	293359.270	22950.791	540390.910	36708
x		158856.910	1086.702	5237.490	T 1789812.200	T 3937149.400	T 208683650.000	T 15498473.000	T 1766583.200	292884.370	23089.320	536343.530	36138
σ		2242.348	46.123	80.233	T 10031.363	T 20618.870	T 687966.070	T 130675.590	T 12187.979	930.306	473.583	3704.041	551
%RSD		1.412	4.244	1.532	T 0.560	T 0.524	T 0.330	T 0.843	T 0.690	0.318	2.051	0.691	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	15:43:19	48605.772	T 27607928.000	T 705556360.000	247407.790	108008.850	84649.421	388592.930	21939.431	1271.049	824.020	589.510	6366
2	15:43:41	48851.489	T 28118243.000	T 716113290.000	247707.190	108421.510	85352.996	391417.890	21660.066	1331.053	890.524	650.013	6336
3	15:44:03	50531.487	T 28047516.000	T 723817690.000	252239.410	109241.840	86011.367	395000.950	22126.678	1331.053	823.520	609.511	6346
x		49329.583	T 27924562.000	T 715162450.000	249118.130	108557.400	85337.928	391670.590	21908.725	1311.052	846.021	616.345	6349
σ		1048.105	T 276484.210	T 9167724.900	2707.249	627.630	681.098	3211.477	234.817	34.644	38.541	30.825	15
%RSD		2.125	T 0.990	T 1.282	1.087	0.578	0.798	0.820	1.072	2.642	4.556	5.001	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	15:43:19	629518.440	861241.660	8362.097	2460.182	250.002	2135.137	1137207.300	46705.350	1850.103	1550.072	755974.720	23942
2	15:43:41	634377.570	860578.700	8627.232	2335.164	285.002	2025.123	1148161.400	45687.535	2080.130	1585.075	760420.260	23770
3	15:44:03	646973.140	880605.190	8632.235	2310.160	365.004	2005.121	1152313.800	47562.770	1985.118	1619.579	778166.890	24145
x		636956.380	867475.190	8540.522	2368.502	300.003	2055.127	1145894.100	46651.885	1971.784	1584.909	764853.960	23952
σ		9008.572	11375.750	154.540	80.375	58.950	70.009	7804.281	938.760	115.592	34.754	11741.651	187
%RSD		1.414	1.311	1.809	3.394	19.650	3.407	0.681	2.012	5.862	2.193	1.535	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:43:19	685.014	9342.618	1131855.800	143384.130	0.000	349853.790	97549.645
2	15:43:41	760.017	9467.688	1141795.600	142990.770	0.000	353938.690	98560.566
3	15:44:03	825.020	8907.380	1160498.400	146571.680	0.000	357600.630	99455.861
x		756.684	9239.229	1144716.600	144315.530	0.000	353797.700	98522.024
σ		70.063	294.115	14543.017	1963.758	0.000	3875.342	953.692
%RSD		9.259	3.183	1.270	1.361	0.000	1.095	0.968

200-35736-A-11-A 10/18/2016 03:48:41 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	15:49:03	149416.770	587.510	4665.653	T 1303430.800	T 2442239.800	T 93929664.000	T 8657564.600	T 3383207.000	233636.180	16007.684	255234.490	183191.
2	15:49:24	146319.470	545.009	4620.640	T 1315110.000	T 2442692.400	T 96255934.000	T 8905474.000	T 3448558.200	233301.540	16878.542	261160.230	187215.
3	15:49:46	143959.050	592.511	4740.674	T 1307955.700	T 2466773.700	T 96164111.000	T 8828996.800	T 3461296.200	232480.180	17404.082	260698.080	185354.
x		146565.100	575.010	4675.656	T 1308832.200	T 2450568.600	T 95449903.000	T 8797345.100	T 3431020.400	233139.300	16763.436	259030.930	185253.
σ		2737.138	26.102	60.639	T 5888.757	T 14035.851	T 1317365.900	T 126949.360	T 41894.629	594.831	705.280	3295.929	2014.
%RSD		1.868	4.539	1.297	T 0.450	T 0.573	T 1.380	T 1.443	T 1.221	0.255	4.207	1.272	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	15:49:03	25754.884	TM 31564553.000	T 386048710.000	166214.710	63972.539	1688392.100	478944.150	17848.552	1027.032	1076.535	512.008	7061.
2	15:49:24	25784.930	TM 31738531.000	T 389263460.000	164906.810	66130.939	1676750.200	485252.750	18018.735	1053.033	1108.537	528.508	7571.
3	15:49:46	25724.838	TM 31953643.000	T 395884310.000	166967.170	65950.225	1715623.700	487244.610	17859.564	1016.031	1104.537	519.508	6951.
x		25754.884	TM 31752242.000	T 390398830.000	166029.560	65351.235	1693588.700	483813.840	17908.950	1032.032	1096.536	520.008	7194.

σ		30.046	TM 194907.310	T 5015137.200	1042.584	1197.399	19950.934	4333.275	95.236	19.001	17.437	8.262	330.
%RSD		0.117	TM 0.614	T 1.285	0.628	1.832	1.178	0.896	0.532	1.841	1.590	1.589	4.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	15:49:03	767682.060	619306.330	9257.570	6406.231	295.003	2730.224	1058125.500	51940.810	2150.139	1741.091	447729.130	207989.
2	15:49:24	767373.320	618787.590	9787.873	6296.189	280.002	3015.273	1060329.100	52552.723	2275.155	1728.590	453394.230	205397.
3	15:49:46	778130.240	624754.100	10048.028	6481.260	305.003	2785.233	1065972.600	53264.979	2280.156	1771.594	455089.510	208212.
x		771061.870	620949.340	9697.824	6394.560	293.336	2843.576	1061475.700	52586.171	2235.150	1747.092	452070.960	207200.
σ		6123.333	3305.211	402.849	93.086	12.583	151.216	4047.265	662.718	73.664	22.121	3854.487	1564.
%RSD		0.794	0.532	4.154	1.456	4.290	5.318	0.381	1.260	3.296	1.266	0.853	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:49:03	1575.074	4895.719	1121542.400	133552.960	0.000	174448.210	72783.577
2	15:49:24	1515.069	4950.735	1131091.400	134147.700	0.000	178531.110	75701.532
3	15:49:46	1670.084	5000.750	1149680.900	136859.620	0.000	176327.840	75591.032
x		1586.742	4949.068	1134104.900	134853.430	0.000	176435.720	74692.047
σ		78.163	52.535	14309.280	1762.679	0.000	2043.584	1653.707
%RSD		4.926	1.062	1.262	1.307	0.000	1.158	2.214

200-35736-A-11-A SD@5 10/18/2016 03:54:24 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:54:46	135397.750	100.000	1230.045	469717.050	429011.360	T 17889101.000	T 1659230.800	585299.940	195388.630	3120.292	57830.156	35572.923
2	15:55:08	138805.610	120.000	1290.050	467824.930	435055.030	T 18300721.000	T 1704227.500	590094.640	196440.890	2990.268	57935.521	35948.728
3	15:55:30	134611.420	147.501	1265.048	469028.050	439335.140	T 18267469.000	T 1687666.000	592010.830	199506.990	3090.287	58668.077	36730.429
x		136271.600	122.500	1261.714	468856.670	434467.180	T 18152430.000	T 1683708.100	589135.130	197112.170	3066.949	58144.585	36084.026
σ		2229.465	23.849	30.141	957.628	5186.931	T 228655.450	T 22757.937	3456.805	2139.669	68.081	456.408	590.495
%RSD		1.636	19.468	2.389	0.204	1.194	T 1.260	T 1.352	0.587	1.086	2.220	0.785	1.636

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:54:46	7906.875	T 5916369.200	T 73167557.000	31274.315	12574.742	325059.290	102640.080	5037.761	637.012	650.513	465.507	3470.361
2	15:55:08	8312.072	T 5982068.800	T 73953284.000	31589.909	13100.146	333090.550	102529.400	4805.693	626.012	572.010	472.507	3225.312
3	15:55:30	8587.212	T 5970904.400	T 74660337.000	32166.010	12694.833	333819.920	104682.720	4944.733	614.011	594.511	498.007	3445.356
x		8268.720	T 5956447.500	T 73927059.000	31676.745	12789.907	330656.590	103284.070	4929.396	625.678	605.678	478.674	3380.343
σ		342.234	T 35154.830	T 746735.210	452.145	275.303	4861.099	1212.536	116.792	11.504	40.425	17.106	134.842
%RSD		4.139	T 0.590	T 1.010	1.427	2.153	1.470	1.174	2.369	1.839	6.674	3.574	3.989

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:54:46	142869.740	304852.790	1880.106	1310.052	60.000	640.012	1017329.200	10113.067	515.008	360.004	84569.015	171305.870
2	15:55:08	146410.270	313714.980	1770.094	1265.048	85.000	595.011	1046483.800	10503.309	560.009	424.505	85041.409	171720.100
3	15:55:30	145895.780	310108.420	1920.111	1430.061	80.000	595.011	1036285.200	10338.205	475.007	400.005	86438.569	174387.580
x		145058.600	309558.730	1856.770	1335.054	75.000	610.011	1033366.100	10318.194	516.675	394.838	85349.664	172471.180
σ		1912.981	4456.596	77.683	85.301	13.229	25.982	14794.886	195.889	42.526	32.560	972.149	1672.523
%RSD		1.319	1.440	4.184	6.389	17.638	4.259	1.432	1.898	8.231	8.246	1.139	0.970

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:54:46	410.005	1215.044	208055.560	124986.900	0.000	25564.591	13570.523
2	15:55:08	270.002	1170.041	212531.500	125641.800	0.000	26806.540	13485.454
3	15:55:30	375.004	1105.037	211098.460	124755.170	0.000	28574.474	14236.077
x		351.670	1163.374	210561.840	125127.960	0.000	26981.869	13764.018
σ		72.860	55.306	2285.715	459.835	0.000	1512.582	411.022
%RSD		20.718	4.754	1.086	0.367	0.000	5.606	2.986

CCV 10/18/2016 04:00:08 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	16:00:30	124463.000	88793.400	32311.290	T 15266882.000	T 4448978.400	T 41712616.000	T 14280198.000	1410328.600	164901.760	27808.180	T 2891486.800	81892
2	16:00:52	122347.420	87245.256	32882.406	T 14900820.000	T 4377865.600	T 41440943.000	T 14135387.000	1404647.600	165507.720	27888.313	T 2842593.300	80321
3	16:01:14	121632.220	86096.807	32100.884	T 14511307.000	T 4295698.000	T 40193158.000	T 13926966.000	1411599.800	163578.820	27758.096	T 2857943.800	80534
x		122814.220	87378.487	32431.527	T 14893003.000	T 4374180.700	T 41115572.000	T 14114184.000	1408858.700	164662.770	27818.196	T 2864007.900	80916
σ		1471.990	1353.224	404.396	T 377848.280	T 76706.616	T 810301.250	T 177568.250	3701.841	986.410	65.684	T 25004.485	851
%RSD		1.199	1.549	1.247	T 2.537	T 1.754	T 1.971	T 1.258	0.263	0.599	0.236	T 0.873	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	16:00:30	104104.120	T 4258181.600	T 86831265.000	1241235.700	674924.480	848428.940	662516.220	88424.949	7242.573	9930.458	413.505	705
2	16:00:52	99752.627	T 4212771.900	T 87334470.000	1248370.100	671729.200	823672.280	648885.370	86891.917	7146.532	9664.801	414.505	710
3	16:01:14	99294.906	T 4106314.400	T 85148650.000	1214440.600	652996.350	805558.360	640463.830	86566.229	7047.490	9426.665	405.005	708
x		101050.550	T 4192422.600	T 86438128.000	1234682.100	666550.010	825886.530	650621.810	87294.365	7145.532	9673.975	411.005	707
σ		2654.352	T 77951.805	T 1144713.800	17888.935	11846.048	21520.894	11128.266	992.564	97.546	252.021	5.220	2

%RSD		2.627	T 1.859	T 1.324	1.449	1.777	2.606	1.710	1.137	1.365	2.605	1.270	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	16:00:30	870510.050	213002.460	1774007.300	289278.870	9497.705	138205.660	936248.400	864446.350	575254.100	443843.250	585646.810	15174
2	16:00:52	853398.250	207291.120	1784598.500	282717.710	9072.469	138503.110	933278.590	865035.780	576589.060	443012.070	573614.000	15135
3	16:01:14	852840.780	207513.870	T 1962964.800	278990.690	8912.382	137867.880	917613.700	856759.270	576226.850	439438.820	575600.770	15114
x		858916.360	209269.150	T 1840523.500	283662.420	9160.852	138192.220	929046.900	862080.470	576023.340	442098.040	578287.190	15141
σ		10044.297	3235.059	T 106169.400	5208.743	302.505	317.830	10012.166	4617.702	690.358	2340.157	6450.564	30
%RSD		1.169	1.546	T 5.768	1.836	3.302	0.230	1.078	0.536	0.120	0.529	1.115	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:00:30	34726.139	1505164.200	T 7935828.200	114934.940	0.000	179228.530	106282.800
2	16:00:52	35322.391	1520163.100	T 7943417.000	112387.660	0.000	191589.910	105558.220
3	16:01:14	36535.000	1521398.600	T 7900146.500	114844.320	5.000	204314.710	107943.430
x		35527.843	1515575.300	T 7926463.900	114055.640	1.667	191711.050	106594.820
σ		921.766	9037.427	T 23105.232	1445.225	2.887	12543.525	1222.830
%RSD		2.594	0.596	T 0.291	1.267	173.205	6.543	1.147

CCB 10/18/2016 04:05:52 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	16:06:14	134530.770	17.500	655.013	281497.310	550.009	7621.742	61473.160	500.007	174923.150	25.000	17303.978	1710.088
2	16:06:35	128382.570	5.000	660.013	283205.900	620.012	8056.947	60409.280	540.009	175691.170	35.000	18630.407	1890.107
3	16:06:57	131375.750	12.500	585.010	281009.180	560.009	8592.214	61944.902	520.008	178763.580	25.000	17994.709	1915.110
x		131429.700	11.667	633.345	281904.130	576.677	8090.301	61275.781	520.008	176459.300	28.333	17976.365	1838.435
σ		3074.459	6.292	41.934	1153.479	37.861	486.095	786.608	20.001	2032.176	5.774	663.405	111.853
%RSD		2.339	53.927	6.621	0.409	6.565	6.008	1.284	3.846	1.152	20.377	3.690	6.084

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:06:14	5891.041	900.024	266646.080	105.000	85.000	285.002	630.012	1531.070	469.007	401.505	449.006	2270.155
2	16:06:35	6376.220	890.024	270969.980	105.000	40.000	285.002	610.011	1505.068	494.007	458.006	440.506	2230.149
3	16:06:57	6171.142	935.026	273978.570	60.000	30.000	225.002	640.012	1552.072	524.008	435.006	446.506	2345.165
x		6146.134	908.358	270531.540	90.000	51.667	265.002	626.678	1529.403	495.674	431.506	445.339	2281.823
σ		243.554	23.630	3685.856	25.981	29.297	34.642	15.276	23.546	27.539	28.413	4.369	58.389
%RSD		3.963	2.601	1.362	28.868	56.705	13.072	2.438	1.540	5.556	6.585	0.981	2.559

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:06:14	90.000	219161.540	3465.360	40.000	5.000	5.000	945065.750	3295.326	820.020	600.511	70.000	155017.580
2	16:06:35	105.000	216020.940	3605.390	45.000	0.000	10.000	967256.040	3785.430	805.019	682.514	60.000	154593.670
3	16:06:57	100.000	220752.330	3195.306	40.000	0.000	10.000	960988.630	3765.425	950.027	654.013	90.000	153594.490
x		98.334	218644.940	3422.019	41.667	1.667	8.333	957770.140	3615.394	858.356	645.679	73.333	154401.910
σ		7.638	2407.629	208.449	2.887	2.887	2.887	11439.900	277.367	79.743	41.632	15.275	730.664
%RSD		7.767	1.101	6.091	6.928	173.205	34.641	1.194	7.672	9.290	6.448	20.830	0.473

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:06:14	205.001	1575.074	715.015	116979.090	0.000	2500.188	50.000
2	16:06:35	205.001	1540.071	780.018	118882.480	0.000	2600.203	50.000
3	16:06:57	170.001	1545.072	730.016	120745.810	0.000	2220.148	65.000
x		193.334	1553.406	741.683	118869.130	0.000	2440.179	55.000
σ		20.207	18.931	34.036	1883.396	0.000	197.006	8.660
%RSD		10.452	1.219	4.589	1.584	0.000	8.073	15.746

CCVL 10/18/2016 04:11:36 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:11:59	135357.430	192.501	6136.129	1049813.800	32401.465	79770.444	800692.070	27372.459	181341.200	15.000	32782.209	11283.818
2	16:12:22	136446.250	227.502	6406.231	T 1122707.900	31088.969	79504.176	790397.750	28053.590	184060.770	15.000	33443.520	11784.165
3	16:12:46	131758.760	210.001	6391.225	T 1131421.400	32521.699	85066.537	813038.780	27182.148	175357.680	15.000	33117.871	12454.652
x		134520.810	210.001	6311.195	T 1101314.400	32004.044	81447.052	801376.200	27536.066	180253.220	15.000	33114.533	11840.878
σ		2453.178	17.500	151.797	T 44813.115	794.756	3137.392	11336.009	458.179	4452.383	0.000	330.669	587.473
%RSD		1.824	8.333	2.405	T 4.069	2.483	3.852	1.415	1.664	2.470	0.000	0.999	4.961

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:11:59	8277.055	8277.055	857390.520	3515.371	1330.053	4350.568	13945.832	2612.205	741.016	642.512	486.507	2495.187
2	16:12:22	8512.173	8302.067	876386.310	3165.300	1445.063	4300.555	13650.588	2686.217	748.017	653.513	461.006	2420.176
3	16:12:46	8167.001	8817.332	895772.270	3415.350	1535.071	4250.542	13825.732	2719.222	739.016	668.013	424.505	2545.194
x		8318.743	8465.485	876516.370	3365.340	1436.729	4300.555	13807.384	2672.548	742.683	654.680	457.340	2486.852
σ		176.322	304.965	19191.203	180.314	102.763	50.013	148.475	54.802	4.726	12.790	31.163	62.925
%RSD		2.120	3.602	2.189	5.358	7.153	1.163	1.075	2.051	0.636	1.954	6.814	2.530

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:11:59	23501.558	224947.870	16453.117	3245.316	40.000	895.024	967933.730	1490.067	5110.783	4116.008	5440.888	155996.650
2	16:12:22	23872.084	226539.210	16688.351	3180.303	75.000	765.018	973928.270	1670.084	5445.890	4188.026	5220.818	157329.080
3	16:12:46	24623.176	214916.800	17123.792	3310.329	95.000	790.019	931397.620	1910.109	5410.878	4371.573	5295.841	150385.430
x		23998.939	222134.630	16755.087	3245.316	70.000	816.687	957753.210	1690.087	5322.517	4225.203	5319.182	154570.390
σ		571.468	6301.258	340.282	65.013	27.839	68.984	23020.561	210.735	184.200	131.776	111.876	3685.006
%RSD		2.381	2.837	2.031	2.003	39.770	8.447	2.404	12.469	3.461	3.119	2.103	2.384

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:11:59	3355.338	15987.664	8021.930	121229.300	0.000	10138.082	11388.890
2	16:12:22	2860.245	16473.137	7821.835	116727.330	0.000	10678.420	11513.976
3	16:12:46	3280.323	17344.020	8126.981	112719.890	0.000	11398.897	12950.029
x		3165.302	16601.607	7990.249	116892.170	0.000	10738.466	11950.965
σ		266.836	687.243	155.020	4257.099	0.000	632.548	867.473
%RSD		8.430	4.140	1.940	3.642	0.000	5.890	7.259

200-35736-A-11-A PDS 10/18/2016 04:17:25 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	16:17:47	141175.390	2062.628	59736.863	T 9226285.400	T 2571051.000	T 87444741.000	T 15753112.000	T 3306640.800	212131.460	14676.459	343850.790	253554
2	16:18:09	141467.860	2007.621	58362.005	T 9252181.600	T 2602049.700	T 88860580.000	T 16002629.000	T 3359877.100	213316.440	15091.830	347837.240	259489
3	16:18:30	140519.890	2092.631	59852.276	T 9387563.300	T 2606542.700	T 89462753.000	T 16071784.000	T 3374726.500	215210.550	15947.626	348909.300	260718
x		141054.380	2054.293	59317.048	T 9288676.700	T 2593214.400	T 88589358.000	T 15942508.000	T 3347081.500	213552.820	15238.638	346865.770	257920
σ		485.432	43.114	829.102	T 86611.541	T 19325.166	T 1035984.600	T 167627.270	T 35801.023	1553.100	648.175	2665.510	3831
%RSD		0.344	2.099	1.398	T 0.932	T 0.745	T 1.169	T 1.051	T 1.070	0.727	4.253	0.768	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	16:17:47	34330.321	TM 28515074.000	T 354980510.000	171927.220	68646.078	1518282.800	525562.870	24174.520	1991.119	2634.208	483.007	7891
2	16:18:09	34575.827	TM 28689250.000	T 356753430.000	179683.390	70212.583	1556169.500	535543.140	24516.018	2114.134	2672.714	527.508	7686
3	16:18:30	34350.362	TM 29379600.000	T 363344920.000	177682.110	71593.439	1553469.200	540251.500	24493.985	2176.142	2638.709	509.008	7651
x		34418.837	TM 28861308.000	T 358359620.000	176430.910	70150.700	1542640.500	533785.840	24394.841	2093.798	2648.544	506.508	7743

σ		136.327	TM 457224.960	T 4407462.500	4026.621	1474.655	21137.571	7500.338	191.122	94.173	21.053	22.356	129
%RSD		0.396	TM 1.584	T 1.230	2.282	2.102	1.370	1.405	0.783	4.498	0.795	4.414	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	16:17:47	909580.830	559465.030	164967.410	35162.052	780.018	9027.444	943172.910	47552.741	49267.712	37243.566	444638.010	185526
2	16:18:09	922413.050	551568.260	165755.160	35197.126	725.016	9317.604	970761.280	48269.798	49724.064	38458.320	455890.970	190148
3	16:18:30	923960.320	556498.140	169861.200	36535.000	740.016	9147.510	958882.360	49057.092	50009.917	38815.146	457504.290	188641
x		918651.400	555843.810	166861.260	35631.393	748.350	9164.186	957605.520	48293.210	49667.231	38172.344	452677.760	188105
σ		7893.346	3988.842	2627.712	782.744	28.432	145.797	13838.436	752.449	374.352	823.895	7009.194	2356
%RSD		0.859	0.718	1.575	2.197	3.799	1.591	1.445	1.558	0.754	2.158	1.548	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:17:47	33157.951	162271.130	1076071.600	121390.470	0.000	433443.860	190441.860
2	16:18:09	32596.845	166305.610	1100902.100	125470.510	0.000	434331.520	194407.250
3	16:18:30	33719.075	168083.310	1100790.100	121974.710	0.000	428041.910	200088.900
x		33157.957	165553.350	1092587.900	122945.230	0.000	431939.100	194979.340
σ		561.115	2978.216	14303.689	2206.385	0.000	3404.122	4848.897
%RSD		1.692	1.799	1.309	1.795	0.000	0.788	2.487

200-35736-A-11-I MS 10/18/2016 04:23:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	16:23:31	141074.540	2150.139	52156.481	T 9665817.200	T 2824018.600	T 102760450.000	T 17047955.000	T 3973133.400	217702.610	21053.289	382821.650	2794
2	16:23:53	137726.720	2170.141	52241.748	T 9639156.700	T 2845093.800	T 104147090.000	T 17197625.000	T 4042846.000	215018.090	20407.486	388444.530	2895
3	16:24:14	135317.100	2062.628	51359.011	T 9448833.600	T 2795735.100	T 101407690.000	T 16837309.000	T 3984106.000	220073.440	21283.581	388142.620	2855
x		138039.450	2127.636	51919.080	T 9584602.500	T 2821615.800	T 102771740.000	T 17027630.000	T 4000028.500	217598.050	20914.785	386469.600	2848
σ		2891.434	57.180	486.904	T 118332.580	T 24766.942	T 1369732.300	T 181015.650	T 37484.725	2529.294	454.173	3162.820	50
%RSD		2.095	2.688	0.938	T 1.235	T 0.878	T 1.333	T 1.063	T 0.937	1.162	2.172	0.818	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	16:23:31	36725.418	TM 30377862.000	T 369730540.000	174716.000	76334.409	1780076.000	550219.770	25692.788	2158.140	2598.703	481.507	87
2	16:23:53	37336.774	TM 30770674.000	T 373508980.000	177085.810	77976.987	1820230.400	558374.360	26185.554	2154.139	2570.698	509.508	85
3	16:24:14	37361.830	TM 30615086.000	T 372599880.000	175271.790	75048.589	1795012.800	551547.600	25773.913	2182.143	2510.189	494.007	83
x		37141.341	TM 30587874.000	T 371946470.000	175691.200	76453.328	1798439.800	553380.570	25884.085	2164.807	2559.863	495.007	85
σ		360.417	TM 197814.720	T 1972142.400	1239.328	1467.816	20295.365	4375.406	264.212	15.146	45.241	14.027	2
%RSD		0.970	TM 0.647	T 0.530	0.705	1.920	1.128	0.791	1.021	0.700	1.767	2.834	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	16:23:31	1024839.000	593036.330	160064.950	36595.132	695.014	8932.393	948608.760	53806.715	13335.333	10368.224	461538.250	1926
2	16:23:53	1036258.700	604797.860	163084.010	35823.458	650.013	9002.431	963317.470	53922.087	13750.670	10556.342	470210.680	1911
3	16:24:14	1036104.500	601170.090	163477.840	36900.805	795.019	8947.401	960967.460	54799.943	13760.678	10535.829	463578.720	1905
x		1032400.700	599668.090	162208.930	36439.798	713.349	8960.742	957631.230	54176.248	13615.560	10486.798	465109.220	1914
σ		6549.100	6022.903	1867.155	555.216	74.221	36.875	7901.539	543.207	242.736	103.199	4534.264	11
%RSD		0.634	1.004	1.151	1.524	10.405	0.412	0.825	1.003	1.783	0.984	0.975	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:23:31	34711.108	137746.880	1037359.100	125389.910	0.000	413768.150	198135.770
2	16:23:53	35547.869	140529.970	1053463.600	124231.280	0.000	418693.900	199253.990
3	16:24:14	36099.052	138271.200	1065322.900	124886.150	0.000	418950.220	203626.360
x		35452.676	138849.350	1052048.500	124835.780	0.000	417137.420	200338.710
σ		698.851	1478.882	14035.549	580.954	0.000	2920.689	2901.567
%RSD		1.971	1.065	1.334	0.465	0.000	0.700	1.448

200-35736-A-11-J MSD 10/18/2016 04:28:54 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	16:29:15	144937.480	1890.107	50481.335	T 9629525.900	T 2894775.800	T 96127679.000	T 16643396.000	T 2889403.600	224461.380	16888.552	377302.930	279585.
2	16:29:37	140429.130	2017.622	51163.410	T 9652915.000	T 2956967.200	T 98949750.000	T 16680317.000	T 2900999.300	221248.850	17929.639	383123.470	284385.
3	16:29:59	143000.860	2105.133	52061.184	T 9887142.400	T 2996499.400	T 97722822.000	T 16960152.000	T 2988815.100	226478.390	17068.736	380535.180	283933.
x		142789.150	2004.287	51235.310	T 9723194.400	T 2949414.200	T 97600084.000	T 16761288.000	T 2926406.000	224062.870	17295.642	380320.520	282634.
σ		2261.618	108.131	792.375	T 142463.920	T 51280.702	T 1415033.400	T 173207.520	T 54357.901	2637.448	556.399	2916.204	2650.
%RSD		1.584	5.395	1.547	T 1.465	T 1.739	T 1.450	T 1.033	T 1.857	1.177	3.217	0.767	0.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	16:29:15	37356.819	T 27081876.000	T 360571520.000	176550.170	77760.981	1695386.500	578529.600	25144.954	2201.145	2706.220	519.508	6971.
2	16:29:37	37101.249	T 27757776.000	T 366144230.000	175964.020	77916.706	1721423.400	582137.000	26071.376	2194.144	2750.727	540.009	7501.
3	16:29:59	38078.449	T 27805027.000	T 373565530.000	179936.090	77776.051	1714700.500	589146.980	25390.325	2266.154	2702.219	528.008	7691.
x		37512.173	T 27548226.000	T 366760430.000	177483.430	77817.913	1710503.500	583271.190	25535.552	2220.481	2719.722	529.175	7388.
σ		506.785	T 404561.720	T 6518883.100	2144.194	85.889	13516.328	5398.795	479.982	39.708	26.926	10.300	373.

%RSD		1.351	T 1.469	T 1.777	1.208	0.110	0.790	0.926	1.880	1.788	0.990	1.946	5.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	16:29:15	820459.490	573407.060	162649.790	36950.916	815.020	10603.372	962205.940	53515.780	13115.158	10464.284	432233.010	191382.
2	16:29:37	827505.320	574069.280	166108.660	36750.473	805.019	10893.559	974299.020	55778.180	13655.592	10611.877	440418.160	191868.
3	16:29:59	833282.770	580993.110	166022.810	36820.628	715.015	10878.549	984524.430	55512.295	13560.514	10898.562	441819.530	191918.
x		827082.530	576156.480	164927.090	36840.672	778.352	10791.827	973676.460	54935.418	13443.755	10658.241	438156.900	191723.
σ		6422.086	4201.708	1972.660	101.713	55.078	163.379	11172.263	1236.609	288.516	220.820	5177.865	296.
%RSD		0.776	0.729	1.196	0.276	7.076	1.514	1.147	2.251	2.146	2.072	1.182	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:29:15	36489.902	141866.220	1084252.000	122992.140	0.000	388613.400	194159.390
2	16:29:37	37542.235	144216.260	1100966.100	125047.350	0.000	396337.120	197943.510
3	16:29:59	37366.842	146279.120	1108683.400	124956.680	10.000	403342.200	202396.510
x		37132.993	144120.540	1097967.200	124332.060	3.333	396097.570	198166.470
σ		563.795	2208.007	12488.703	1161.284	5.774	7367.320	4123.087
%RSD		1.518	1.532	1.137	0.934	173.205	1.860	2.081

200-35736-A-12-A 10/18/2016 04:34:38 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52**
1	16:35:00	129198.840	490.007	3780.429	T 1191254.800	T 2736646.800	T 76215045.000	T 6998641.800	T 3860464.800	204172.980	6926.439	205959.770	152110.9
2	16:35:22	129622.100	542.509	3810.436	T 1177404.700	T 2713696.800	T 76431498.000	T 7031046.200	T 3850946.000	203859.180	7066.498	209933.890	153115.1
3	16:35:43	130650.080	417.505	3810.436	T 1177618.800	T 2730537.600	T 77251798.000	T 7076487.700	T 3917024.100	203504.890	7116.519	208480.820	153740.8
x		129823.670	483.340	3800.433	T 1182092.800	T 2726960.400	T 76632780.000	T 7035391.900	T 3876144.900	203845.680	7036.485	208124.830	152988.9
σ		746.326	62.768	17.324	T 7935.254	T 11885.844	T 546900.420	T 39104.497	T 35720.860	334.253	98.530	2010.837	822.2
%RSD		0.575	12.986	0.456	T 0.671	T 0.436	T 0.714	T 0.556	T 0.922	0.164	1.400	0.966	0.5
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84**
1	16:35:00	20467.560	TM 30369806.000	T 332974560.000	128901.550	57202.997	1407417.300	431540.410	16008.685	758.017	1049.033	510.008	6786.3
2	16:35:22	20217.255	TM 30649826.000	T 344802350.000	130791.180	56696.270	1421560.300	438714.090	15883.565	815.020	995.030	522.508	7561.7
3	16:35:43	20527.634	TM 30661406.000	T 338215800.000	130776.070	57363.548	1419342.700	439227.350	16084.758	790.019	1024.532	500.508	7351.6
x		20404.149	TM 30560346.000	T 338664230.000	130156.270	57087.605	1416106.800	436493.950	15992.336	787.685	1022.865	511.008	7233.2
σ		164.619	TM 165114.090	T 5926632.900	1086.644	348.283	7606.560	4297.561	101.588	28.573	27.040	11.034	400.9
%RSD		0.807	TM 0.540	T 1.750	0.835	0.610	0.537	0.985	0.635	3.627	2.644	2.159	5.5
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	16:35:00	795544.130	513902.580	6226.163	4720.668	255.002	2465.182	934060.620	22690.435	1490.067	1209.044	384581.480	181058.1
2	16:35:22	804346.900	515315.210	5796.008	5185.807	275.002	2590.201	943817.930	22324.942	1465.064	1291.050	389908.120	182372.3
3	16:35:43	809487.010	521173.200	5831.020	4505.609	250.002	2525.191	937886.770	22234.822	1510.068	1287.050	393163.260	183615.9
x		803126.010	516797.000	5951.063	4804.028	260.002	2526.858	938588.440	22416.733	1488.400	1262.381	389217.620	182348.8
σ		7051.159	3855.158	238.885	347.676	13.229	62.526	4916.352	241.278	22.548	46.235	4332.360	1279.0
%RSD		0.878	0.746	4.014	7.237	5.088	2.474	0.524	1.076	1.515	3.663	1.113	0.7

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:35:00	1075.035	4955.737	822533.030	121299.810	0.000	138422.450	55331.696
2	16:35:22	1090.036	5040.762	832300.460	121249.440	0.000	140877.890	57202.997
3	16:35:43	1060.034	4785.687	843855.290	121279.660	0.000	141881.350	57589.324
x		1075.035	4927.395	832896.260	121276.310	0.000	140393.900	56708.006
σ		15.001	129.878	10673.608	25.350	0.000	1779.520	1207.470
%RSD		1.395	2.636	1.282	0.021	0.000	1.268	2.129

MB 200-110239/1-A 10/18/2016 04:40:22 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:40:44	140620.730	0.000	1200.043	570220.480	3260.319	107772.320	80745.121	4950.735	196137.340	30.000	13445.421	2415.175
2	16:41:05	136254.690	0.000	1065.034	561326.060	3010.272	94290.971	78494.407	4960.738	198677.160	15.000	13470.441	2300.159
3	16:41:27	136950.360	10.000	1085.035	565028.060	2860.245	92651.817	76485.097	4900.720	197796.780	35.000	13265.277	2330.163
x		137941.930	3.333	1116.704	565524.870	3043.612	98238.370	78574.875	4937.398	197537.100	26.667	13393.713	2348.499
σ		2345.844	5.774	72.863	4467.972	202.110	8297.222	2131.151	32.155	1289.669	10.408	111.930	59.660
%RSD		1.701	173.205	6.525	0.790	6.640	8.446	2.712	0.651	0.653	39.031	0.836	2.540

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:40:44	4295.554	29350.821	679838.270	220.001	150.001	2480.184	1640.081	1418.060	447.006	517.508	531.008	2750.227
2	16:41:05	4645.647	25995.257	636023.560	165.001	120.000	1985.118	1480.066	1458.064	458.006	492.007	529.008	2855.245
3	16:41:27	5020.756	25359.278	610728.350	230.002	165.001	2270.155	1345.054	1484.066	476.007	506.508	518.008	2625.207
x		4653.986	26901.785	642196.720	205.001	145.001	2245.152	1488.400	1453.397	460.340	505.341	526.008	2743.559
σ		362.673	2144.633	34966.073	35.000	22.913	248.478	147.690	33.249	14.641	12.790	7.000	115.164
%RSD		7.793	7.972	5.445	17.073	15.802	11.067	9.923	2.288	3.180	2.531	1.331	4.198

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:40:44	1500.068	236049.830	255.002	45.000	5.000	0.000	1002319.500	905.025	125.000	91.000	480.007	162488.230
2	16:41:05	1865.104	236323.670	325.003	50.000	0.000	5.000	1008209.300	815.020	100.000	98.000	505.008	164760.370
3	16:41:27	1480.066	239792.700	235.002	110.000	15.000	20.000	1005067.800	880.023	135.001	99.000	400.005	164134.240
x		1615.079	237388.730	271.669	68.334	6.667	8.333	1005198.900	866.689	120.000	96.000	461.673	163794.280
σ		216.759	2086.390	47.259	36.171	7.638	10.408	2947.087	46.460	18.028	4.359	54.850	1173.601
%RSD		13.421	0.879	17.396	52.933	114.564	124.900	0.293	5.361	15.023	4.541	11.881	0.717

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:40:44	140.001	450.006	1275.049	121732.950	0.000	6276.181	150.001
2	16:41:05	115.000	450.006	1390.058	123485.770	0.000	5776.001	195.001
3	16:41:27	145.001	435.006	1370.056	122710.080	0.000	5545.923	180.001
x		133.334	445.006	1345.054	122642.930	0.000	5866.035	175.001
σ		16.073	8.660	61.446	878.339	0.000	373.362	22.913
%RSD		12.055	1.946	4.568	0.716	0.000	6.365	13.093

LCS 200-110239/2-A 10/18/2016 04:46:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:46:26	129874.050	1545.072	53039.261	T 8419743.300	289736.720	658059.770	T 7652513.500	250884.180	177459.760	0.000	123324.590	89379.017
2	16:46:47	122689.930	1402.559	53997.330	T 8321509.000	286979.630	660103.250	T 7553623.500	243201.560	167133.830	20.000	117291.270	86720.025
3	16:47:11	121420.680	1445.063	53671.279	T 8100214.400	281080.370	648599.560	T 7399847.800	245636.880	164598.790	10.000	115992.230	87267.874
x		124661.560	1464.231	53569.290	T 8280488.900	285932.240	655587.530	T 7535328.300	246574.210	169730.790	10.000	118869.360	87788.972
σ		4558.547	73.164	487.109	T 163666.320	4422.204	6137.403	T 127322.530	3926.144	6812.435	10.000	3912.628	1404.000
%RSD		3.657	4.997	0.909	T 1.977	1.547	0.936	T 1.690	1.592	4.014	100.000	3.292	1.599

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:46:26	14606.398	67877.942	T 6598077.600	27467.615	11523.983	37632.438	109166.350	9848.909	1693.086	2233.150	432.506	3635.396
2	16:46:47	14065.933	67084.740	T 6505592.100	27552.756	11879.232	37316.729	106866.520	9608.769	1683.085	2168.641	428.005	3270.321
3	16:47:11	13395.381	67175.103	T 6339738.800	26556.140	11213.771	36900.805	103611.060	9497.705	1567.074	2248.652	414.505	3350.337
x		14022.571	67379.261	T 6481136.200	27192.170	11538.995	37283.324	106547.980	9651.795	1647.748	2216.814	425.005	3418.685

σ		606.672	434.227	T 130894.220	552.461	332.984	366.959	2791.311	179.512	70.045	42.433	9.368	191.895
%RSD		4.326	0.644	T 2.020	2.032	2.886	0.984	2.620	1.860	4.251	1.914	2.204	5.613
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:46:26	218801.860	206025.570	148069.830	29776.576	500.007	6486.262	897765.330	605.011	46845.743	34905.514	46675.266	150345.060
2	16:46:47	220412.880	206744.390	147005.470	28844.939	525.008	6746.365	883376.210	730.016	45762.741	34905.013	46514.818	149658.930
3	16:47:11	218487.780	202755.840	146016.840	28804.870	470.007	6831.400	878224.370	815.020	45351.619	34759.208	45702.576	146813.790
x		219234.170	205175.270	147030.710	29142.128	498.341	6688.009	886455.310	716.682	45986.701	34856.578	46297.553	148939.260
σ		1032.799	2125.888	1026.729	549.813	27.539	179.817	10127.828	105.637	771.829	84.325	521.473	1872.408
%RSD		0.471	1.036	0.698	1.887	5.526	2.689	1.143	14.740	1.678	0.242	1.126	1.257

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:46:26	60695.317	147873.100	56605.964	112790.360	0.000	144882.000	116636.700
2	16:46:47	61638.770	149885.960	56821.696	112448.060	0.000	152872.900	115841.180
3	16:47:11	62973.746	150814.280	56129.356	112880.970	0.000	160559.670	115272.260
x		61769.278	149524.440	56519.006	112706.470	0.000	152771.530	115916.710
σ		1144.808	1503.547	354.267	228.325	0.000	7839.330	685.350
%RSD		1.853	1.006	0.627	0.203	0.000	5.131	0.591

200-35680-A-13-A 10/18/2016 04:51:48 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:52:10	133512.640	2.500	1230.045	531006.390	1520.069	38795.099	69444.375	2930.258	182018.520	35.000	15387.100	2060.127
2	16:52:32	134772.720	5.000	1365.056	531759.850	1310.052	33994.634	68841.883	3000.270	182372.360	40.000	16217.887	1915.110
3	16:52:53	130619.850	10.000	1315.052	527136.410	1230.045	28779.827	67215.264	2570.198	183353.030	10.000	16373.038	2075.129
x		132968.400	5.833	1303.384	529967.550	1353.389	33856.520	68500.507	2833.575	182581.310	28.333	15992.675	2016.789
σ		2129.254	3.819	68.257	2480.616	149.790	5009.065	1153.099	230.762	691.355	16.073	530.150	88.375
%RSD		1.601	65.465	5.237	0.468	11.068	14.795	1.683	8.144	0.379	56.727	3.315	4.382

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:52:10	5280.837	10993.625	380115.770	115.000	80.000	1005.030	1890.107	1485.066	461.006	422.005	458.506	2490.186
2	16:52:32	5776.001	9462.685	356967.260	135.001	170.001	1055.033	1700.087	1475.065	448.006	432.006	447.506	2335.164
3	16:52:53	5806.011	8427.130	345162.480	80.000	120.000	860.022	1650.082	1430.061	478.007	462.506	463.506	2485.185
x		5620.949	9627.813	360748.510	110.000	123.334	973.362	1746.758	1463.398	462.340	438.839	456.506	2436.845
σ		294.928	1291.191	17780.786	27.839	45.093	101.289	126.636	29.300	15.045	21.098	8.186	88.094
%RSD		5.247	13.411	4.929	25.308	36.562	10.406	7.250	2.002	3.254	4.808	1.793	3.615

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:52:10	930.026	215889.250	455.006	60.000	0.000	5.000	936977.720	630.012	160.001	134.001	145.001	149891.000
2	16:52:32	875.023	215463.790	340.003	35.000	5.000	5.000	943162.340	755.017	170.001	137.001	95.000	153412.830
3	16:52:53	765.018	218280.090	385.004	45.000	5.000	10.000	936840.310	675.014	165.001	148.001	170.001	153029.330
x		856.689	216544.380	393.338	46.667	3.333	6.667	938993.460	686.681	165.001	139.667	136.667	152111.050
σ		84.018	1518.147	57.953	12.583	2.887	2.887	3611.011	63.314	5.000	7.371	38.188	1932.160
%RSD		9.807	0.701	14.734	26.964	86.603	43.301	0.385	9.220	3.030	5.278	27.943	1.270

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:52:10	275.002	550.009	780.018	114340.870	0.000	32155.990	220.001
2	16:52:32	280.002	600.011	775.018	117754.520	0.000	28975.165	180.001
3	16:52:53	270.002	485.007	665.013	117442.330	0.000	26295.728	110.000
x		275.002	545.009	740.017	116512.570	0.000	29142.294	170.001
σ		5.000	57.665	65.003	1887.214	0.000	2933.704	55.678
%RSD		1.818	10.581	8.784	1.620	0.000	10.067	32.752

200-35700-A-19-A 10/18/2016 04:57:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:57:53	141568.710	5.000	1095.036	566693.180	430.006	12594.757	64434.313	2360.167	191129.670	25.000	21443.786	2595.202
2	16:58:14	140509.800	0.000	905.025	562649.590	430.006	11844.207	66060.661	1810.098	191756.810	20.000	21593.980	2590.201
3	16:58:36	140731.660	2.500	1100.036	556146.700	510.008	12214.474	66060.661	2290.157	192232.240	30.000	21303.607	2780.232
x		140936.730	2.500	1033.366	561829.820	456.673	12217.813	65518.545	2153.474	191706.240	25.000	21447.124	2655.212
σ		558.442	2.500	111.175	5320.816	46.189	375.286	938.973	299.425	553.023	5.000	145.215	108.299
%RSD		0.396	100.000	10.759	0.947	10.114	3.072	1.433	13.904	0.288	20.000	0.677	4.079

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:57:53	7296.597	1480.066	274298.770	40.000	115.000	480.007	990.029	1876.106	584.010	455.006	444.006	2630.208
2	16:58:14	7661.761	1435.062	280760.030	20.000	90.000	645.012	1130.038	1896.108	620.012	459.506	488.507	2625.207
3	16:58:36	7706.781	1305.051	281792.240	40.000	90.000	525.008	1170.041	1810.098	590.010	509.508	483.007	2820.239
x		7555.046	1406.726	278950.350	33.333	98.334	550.009	1096.703	1860.771	598.011	474.673	471.840	2691.884
σ		224.953	90.883	4061.309	11.547	14.434	85.297	94.522	45.009	19.288	30.251	24.261	111.186

%RSD		2.978	6.461	1.456	34.641	14.678	15.508	8.619	2.419	3.225	6.373	5.142	4.130
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:57:53	355.004	230563.840	150.001	30.000	0.000	0.000	962936.360	665.013	60.000	70.500	30.000	158136.670
2	16:58:14	310.003	228799.770	135.001	40.000	0.000	0.000	981429.670	715.015	125.000	83.000	20.000	157995.340
3	16:58:36	370.004	225941.170	170.001	20.000	0.000	10.000	976301.240	655.013	130.001	80.500	25.000	158843.350
x		345.004	228434.930	151.667	30.000	0.000	3.333	973555.760	678.347	105.000	78.000	25.000	158325.120
σ		31.226	2332.829	17.560	10.000	0.000	5.774	9547.453	32.147	39.051	6.614	5.000	454.325
%RSD		9.051	1.021	11.578	33.333	0.000	173.205	0.981	4.739	37.192	8.480	20.000	0.287

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:57:53	160.001	330.003	445.006	118630.700	0.000	12074.372	25.000
2	16:58:14	130.001	340.003	405.005	119547.210	0.000	11789.168	15.000
3	16:58:36	135.001	335.003	420.005	121833.680	0.000	11348.863	25.000
x		141.667	335.003	423.339	120003.870	0.000	11737.468	21.667
σ		16.073	5.000	20.208	1649.597	0.000	365.507	5.774
%RSD		11.346	1.493	4.773	1.375	0.000	3.114	26.647

200-35736-A-14-A 10/18/2016 05:03:14 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	17:03:35	139481.220	2.500	880.023	570023.930	680.014	13185.213	65769.513	2160.140	195732.630	25.000	23075.964	2510.189
2	17:03:57	143101.720	2.500	925.026	571110.180	520.008	11138.721	67315.668	2080.130	195934.990	20.000	24112.430	2785.233
3	17:04:19	137716.640	2.500	905.025	566931.070	630.012	11513.976	63952.463	2300.159	193972.230	35.000	23616.721	2670.214
x		140099.860	2.500	903.358	569355.060	610.011	11945.970	65679.215	2180.143	195213.280	26.667	23601.705	2655.212
σ		2745.325	0.000	22.547	2168.357	81.856	1089.494	1683.420	111.370	1079.536	7.638	518.396	138.134
%RSD		1.960	0.000	2.496	0.381	13.419	9.120	2.563	5.108	0.553	28.641	2.196	5.202
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:03:35	8116.976	3835.441	309716.230	35.000	140.001	640.012	1535.071	1937.113	636.012	478.507	502.008	2565.197
2	17:03:57	8352.092	2940.259	299349.370	40.000	140.001	605.011	1600.077	2051.126	658.013	535.009	534.009	2650.211
3	17:04:19	8277.055	3395.346	302627.790	40.000	190.001	665.013	1615.078	1931.112	645.012	474.007	511.008	2725.223
x		8248.708	3390.349	303897.800	38.333	156.667	636.679	1583.409	1973.117	646.346	495.841	515.675	2646.877
σ		120.094	447.612	5298.833	2.887	28.868	30.140	42.529	67.625	11.061	33.995	16.503	80.065
%RSD		1.456	13.203	1.744	7.531	18.426	4.734	2.686	3.427	1.711	6.856	3.200	3.025
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:03:35	330.003	230310.370	60.000	15.000	0.000	5.000	967308.980	580.010	80.000	69.500	70.000	158934.210
2	17:03:57	385.004	230107.590	95.000	60.000	0.000	5.000	978695.730	650.013	135.001	93.000	55.000	162791.170
3	17:04:19	390.005	236891.650	150.001	25.000	0.000	5.000	994575.640	720.016	100.000	84.000	40.000	157571.360
x		368.337	232436.540	101.667	33.333	0.000	5.000	980193.450	650.013	105.000	82.167	55.000	159765.580
σ		33.292	3859.573	45.369	23.629	0.000	0.000	13694.891	70.003	27.839	11.857	15.000	2707.394
%RSD		9.039	1.660	44.625	70.887	0.000	0.000	1.397	10.769	26.513	14.430	27.273	1.695

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:03:35	110.000	270.002	595.011	117764.590	0.000	7006.472	50.000
2	17:03:57	100.000	320.003	595.011	122145.950	0.000	6391.225	40.000
3	17:04:19	145.001	220.001	535.009	120081.030	0.000	6336.204	35.000
x		118.334	270.002	575.010	119997.190	0.000	6577.967	41.667
σ		23.629	50.001	34.642	2191.885	0.000	372.115	7.638
%RSD		19.968	18.519	6.025	1.827	0.000	5.657	18.330

200-35736-A-14-A SD@5 10/18/2016 05:08:56 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:09:18	142052.800	2.500	545.009	355041.790	310.003	6421.237	62767.972	910.025	194215.030	15.000	24292.691	2345.165
2	17:09:40	139229.120	2.500	565.010	362407.800	240.002	6231.165	62416.657	910.025	195611.220	5.000	24347.771	2360.167
3	17:10:02	138896.360	2.500	680.014	355174.570	260.002	6136.129	63018.917	1010.031	195459.450	10.000	24863.532	2345.165
x		140059.430	2.500	596.677	357541.390	270.002	6262.844	62734.515	943.360	195095.230	10.000	24501.332	2350.166
σ		1734.310	0.000	72.861	4214.965	36.056	145.170	302.521	57.738	766.045	5.000	314.882	8.661
%RSD		1.238	0.000	12.211	1.179	13.354	2.318	0.482	6.120	0.393	50.000	1.285	0.369

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:09:18	8347.090	635.012	279687.220	25.000	50.000	260.002	855.022	2106.133	698.015	514.508	488.507	2650.211
2	17:09:40	8257.045	580.010	276204.870	15.000	40.000	245.002	960.028	2121.135	688.014	482.507	483.507	2940.259
3	17:10:02	8317.075	710.015	275015.440	20.000	35.000	290.003	915.025	2043.125	717.015	506.008	501.008	2645.210
x		8307.070	641.679	276969.170	20.000	41.667	265.002	910.025	2090.131	701.015	501.008	491.007	2745.227
σ		45.849	65.258	2427.863	5.000	7.638	22.913	52.681	41.394	14.732	16.576	9.014	168.922
%RSD		0.552	10.170	0.877	25.000	18.330	8.646	5.789	1.980	2.101	3.309	1.836	6.153

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:09:18	120.000	230401.610	40.000	30.000	0.000	5.000	959750.240	520.008	55.000	47.500	15.000	155936.090
2	17:09:40	100.000	228799.770	70.000	20.000	0.000	5.000	969098.590	475.007	65.000	60.000	25.000	159045.260
3	17:10:02	80.000	230107.590	50.000	30.000	0.000	0.000	990970.100	460.006	95.000	58.000	5.000	158722.200
x		100.000	229769.660	53.333	26.667	0.000	3.333	973272.980	485.007	71.667	55.167	15.000	157901.180
σ		20.000	852.715	15.275	5.774	0.000	2.887	16023.078	31.226	20.817	6.714	10.000	1709.472
%RSD		20.000	0.371	28.641	21.651	0.000	86.603	1.646	6.438	29.047	12.171	66.667	1.083

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:09:18	110.000	220.001	340.003	117633.670	0.000	950.027	0.000
2	17:09:40	105.000	285.002	235.002	118640.770	0.000	1115.037	0.000
3	17:10:02	75.000	260.002	240.002	119829.230	0.000	1085.035	5.000
x		96.667	255.002	271.669	118701.220	0.000	1050.033	1.667
σ		18.930	32.788	59.232	1099.026	0.000	87.897	2.887
%RSD		19.582	12.858	21.803	0.926	0.000	8.371	173.205

CCV 10/18/2016 05:14:40 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	17:15:02	123616.740	89147.784	32351.368	┬14977622.000	┬4316126.700	┬41136276.000	┬13882619.000	1371413.600	159237.080	26210.594	┬2801918.100	7830
2	17:15:23	119758.720	88574.741	32471.601	┬14684081.000	┬4263858.800	┬39869650.000	┬13613118.000	┬1459395.500	155602.990	26746.444	┬2800017.400	7818
3	17:15:45	116485.650	86740.130	32191.058	┬14418179.000	┬4143678.200	┬39415717.000	┬13394773.000	┬1448457.400	157611.740	26275.696	┬2749331.800	7686
x		119953.700	88154.218	32338.009	┬14693294.000	┬4241221.300	┬40140548.000	┬13630170.000	┬1426422.200	157483.940	26410.911	┬2783755.700	7778
σ		3569.541	1257.708	140.748	┬279835.290	┬88424.938	┬891694.740	┬244369.620	┬47951.716	1820.409	292.397	┬29827.176	79
%RSD		2.976	1.427	0.435	┬1.905	┬2.085	┬2.221	┬1.793	┬3.362	1.156	1.107	┬1.071	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	17:15:02	98444.886	┬4078878.500	┬84801909.000	1219576.000	658148.160	813306.370	631963.410	82294.672	6803.388	9137.504	396.505	70
2	17:15:23	98027.436	┬4044078.900	┬83728057.000	1203551.700	647201.770	798726.030	628734.670	82197.193	6631.319	9062.463	413.505	70
3	17:15:45	95105.580	┬3999678.700	┬83607586.000	1190964.000	639674.360	778669.570	614762.680	82144.936	6694.344	9027.944	407.505	66
x		97192.634	┬4040878.700	┬84045851.000	1204697.200	648341.430	796900.660	625153.580	82212.267	6709.684	9075.971	405.838	69

σ		1819.454	T 39696.761	T 657530.920	14340.387	9289.480	17390.398	9142.451	75.998	87.054	56.015	8.622	2
%RSD		1.872	T 0.982	T 0.782	1.190	1.433	2.182	1.462	0.092	1.297	0.617	2.124	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	17:15:02	796760.210	193142.680	1623725.700	263694.670	8652.245	124871.040	846515.220	788364.770	525299.760	400850.150	530696.760	1382
2	17:15:23	800671.100	190087.860	1666356.200	260764.100	8392.112	125314.350	836886.780	785865.810	524319.610	399224.830	529798.860	1359
3	17:15:45	794024.160	189137.130	1678101.600	260566.040	8392.112	123687.260	830372.790	790140.990	527435.650	401130.780	527368.580	1390
x		797151.820	190789.220	1656061.200	261674.940	8478.823	124624.210	837924.930	788123.860	525685.010	400401.920	529288.070	1377
σ		3340.729	2092.853	28612.511	1751.942	150.188	841.156	8121.133	2147.750	1593.342	1029.002	1721.882	16
%RSD		0.419	1.097	1.728	0.670	1.771	0.675	0.969	0.273	0.303	0.257	0.325	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:15:02	32241.155	1403056.600	T 7500946.700	107445.220	0.000	170492.590	104491.530
2	17:15:23	32581.816	1403013.200	T 7467069.100	105804.780	0.000	184465.200	103510.440
3	17:15:45	32436.533	1408731.700	T 7549858.700	105583.380	0.000	194553.950	102599.830
x		32419.835	1404933.800	T 7505958.200	106277.790	0.000	183170.580	103533.930
σ		170.944	3289.099	T 41621.680	1017.065	0.000	12082.807	946.068
%RSD		0.527	0.234	T 0.555	0.957	0.000	6.596	0.914

CCB 10/18/2016 05:20:23 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:20:45	134268.670	5.000	700.015	268444.600	630.012	7646.754	57298.324	570.010	165002.750	30.000	16923.588	1655.082
2	17:21:08	129037.590	7.500	715.015	267296.370	630.012	7266.584	57810.087	680.014	166760.120	40.000	17644.335	1620.079
3	17:21:29	125984.370	7.500	610.011	262683.900	750.017	7306.601	55131.032	690.014	165659.220	10.000	17604.292	1545.072
x		129763.550	6.667	675.014	266141.620	670.014	7406.646	56746.481	646.679	165807.360	26.667	17390.738	1606.744
σ		4189.591	1.443	56.791	3049.017	69.285	208.900	1422.227	66.586	887.998	15.275	405.059	56.204
%RSD		3.229	21.651	8.413	1.146	10.341	2.820	2.506	10.297	0.536	57.282	2.329	3.498

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:20:45	6036.093	845.021	248742.440	125.000	100.000	330.003	650.013	1400.059	435.006	398.005	432.506	2125.135
2	17:21:08	5986.075	860.022	248057.340	105.000	55.000	255.002	635.012	1284.050	483.007	421.505	424.505	2395.172
3	17:21:29	5550.924	835.021	243749.470	110.000	80.000	290.003	540.009	1329.053	458.006	434.506	455.506	2150.139
x		5857.697	846.688	246849.750	113.334	78.334	291.669	608.345	1337.720	458.673	418.005	437.506	2223.482
σ		266.848	12.584	2706.680	10.408	22.546	37.528	59.654	58.488	24.008	18.500	16.094	149.213
%RSD		4.556	1.486	1.096	9.184	28.783	12.867	9.806	4.372	5.234	4.426	3.679	6.711

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:20:45	120.000	197766.430	3410.349	45.000	0.000	10.000	858863.540	3125.293	740.016	568.510	45.000	138351.860
2	17:21:08	120.000	200589.870	3305.328	60.000	5.000	15.000	852614.640	3450.357	730.016	622.012	55.000	142062.890
3	17:21:29	125.000	200599.990	2785.233	55.000	0.000	10.000	858284.840	3505.369	825.020	658.513	45.000	143969.140
x		121.667	199652.090	3166.970	53.333	1.667	11.667	856587.670	3360.340	765.018	616.345	48.333	141461.300
σ		2.887	1633.045	334.738	7.638	2.887	2.887	3452.894	205.406	52.204	45.268	5.774	2856.550
%RSD		2.373	0.818	10.570	14.321	173.205	24.744	0.403	6.113	6.824	7.345	11.945	2.019

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:20:45	150.001	1550.072	745.017	111592.340	0.000	2500.188	35.000
2	17:21:08	200.001	1325.053	810.020	110303.800	0.000	2340.164	50.000
3	17:21:29	150.001	1290.050	820.020	108290.670	0.000	2405.173	35.000
x		166.668	1388.392	791.686	110062.270	0.000	2415.175	40.000
σ		28.868	141.109	40.725	1664.035	0.000	80.479	8.660
%RSD		17.321	10.163	5.144	1.512	0.000	3.332	21.651

CCVL 10/18/2016 05:26:07 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:26:29	132907.830	210.001	6046.096	T 1097423.200	29255.654	75661.350	758610.530	26591.196	170962.370	15.000	32441.543	11038.654
2	17:26:51	132807.030	180.001	5911.048	T 1096720.000	30457.805	77519.862	754813.840	25910.124	171608.960	20.000	32231.135	11123.711
3	17:27:12	129914.370	202.501	6096.115	998988.160	29526.131	76304.271	750997.090	26511.068	171305.870	20.000	32161.000	10568.350
x		131876.410	197.501	6017.753	T 1064377.100	29746.530	76495.161	754807.150	26337.463	171292.400	18.333	32277.893	10910.238
σ		1699.926	15.613	95.734	T 56629.567	630.653	943.846	3806.720	372.248	323.507	2.887	145.999	299.123
%RSD		1.289	7.905	1.591	T 5.320	2.120	1.234	0.504	1.413	0.189	15.746	0.452	2.742

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:26:29	8046.942	7796.823	805589.830	3275.322	1360.055	4170.522	12789.906	2422.176	632.012	613.511	440.506	2335.164
2	17:26:51	8692.266	8282.057	808343.460	3120.292	1290.050	3985.477	12024.336	2404.173	637.012	603.011	412.005	2470.183
3	17:27:12	7856.851	8282.057	814329.560	3080.285	1265.048	4045.491	12594.757	2465.182	674.014	601.011	439.506	2575.199
x		8198.687	8120.313	809420.950	3158.633	1305.051	4067.163	12469.666	2430.511	647.679	605.844	430.672	2460.182
σ		437.892	280.150	4468.387	103.016	49.248	94.407	397.819	31.347	22.943	6.715	16.174	120.330

%RSD		5.341	3.450	0.552	3.261	3.774	2.321	3.190	1.290	3.542	1.108	3.756	4.891
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:26:29	21619.012	204162.860	14846.610	3045.278	70.000	615.011	877350.080	1450.063	5100.780	3579.884	4665.653	143192.490
2	17:26:51	21438.780	199679.030	15512.216	2900.252	40.000	745.017	866356.810	1510.068	5180.805	3776.928	4610.638	142204.080
3	17:27:12	21418.754	201389.420	15797.483	2645.210	60.000	640.012	876517.970	1450.063	5035.761	3744.921	4550.621	143525.340
x		21492.182	201743.770	15385.436	2863.580	56.667	666.680	873408.290	1470.065	5105.782	3700.578	4608.971	142973.970
σ		110.294	2262.822	487.950	202.540	15.275	68.984	6120.914	34.644	72.651	105.741	57.534	687.198
%RSD		0.513	1.122	3.172	7.073	26.956	10.347	0.701	2.357	1.423	2.857	1.248	0.481

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:26:29	2685.216	15086.825	7231.569	110595.730	0.000	9317.604	11333.852
2	17:26:51	2890.251	15657.351	7106.515	112820.570	0.000	10003.001	10948.595
3	17:27:12	2985.267	15537.239	7621.742	112035.300	0.000	10303.184	11388.890
x		2853.578	15427.138	7319.942	111817.200	0.000	9874.596	11223.779
σ		153.350	300.777	268.742	1128.340	0.000	505.181	239.900
%RSD		5.374	1.950	3.671	1.009	0.000	5.116	2.137

CCVL 10/18/2016 05:30:57 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	17:31:19	138523.280	165.001	6211.157	1006712.800	30988.782	76515.235	744912.980	25779.923	175034.310	50.000	32987.613	10803.500
2	17:31:40	134661.830	190.001	6301.191	986050.820	30237.404	77238.560	745069.760	25369.293	173427.640	15.000	32897.435	10688.426
3	17:32:03	131516.860	220.001	5961.066	T 1082961.700	30878.578	77097.911	744296.320	25769.907	171154.320	15.000	30978.764	10833.520
x		134900.660	191.668	6157.805	T 1025241.800	30701.588	76950.569	744759.690	25639.708	173205.430	26.667	32287.937	10775.149
σ		3509.309	27.538	176.228	T 51043.309	405.754	383.513	408.868	234.239	1949.514	20.207	1134.674	76.589
%RSD		2.601	14.368	2.862	T 4.979	1.322	0.498	0.055	0.914	1.126	75.777	3.514	0.711
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:31:19	8407.120	7841.844	805301.370	2990.268	1425.061	4095.503	12364.585	2488.186	730.016	603.511	442.006	2460.182
2	17:31:40	8497.165	8036.937	807908.090	2920.256	1505.068	4120.509	12314.548	2520.191	631.012	589.010	424.505	2645.210
3	17:32:03	8096.966	8086.962	805380.040	2880.249	1370.056	4065.496	12179.449	2516.190	650.013	584.510	448.506	2245.151
x		8333.751	7988.581	806196.500	2930.258	1433.395	4093.836	12286.194	2508.189	670.347	592.344	438.339	2450.181
σ		209.946	129.516	1482.803	55.687	67.891	27.545	95.770	17.438	52.541	9.929	12.413	200.217
%RSD		2.519	1.621	0.184	1.900	4.736	0.673	0.779	0.695	7.838	1.676	2.832	8.172
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:31:19	21093.339	204851.230	14191.039	3060.281	45.000	665.013	864262.150	970.028	4770.683	3484.864	4520.613	142536.910
2	17:31:40	21398.728	202037.190	14986.735	3065.282	40.000	705.015	877866.220	1165.041	4625.642	3537.375	4735.673	146158.070
3	17:32:03	22159.722	206126.810	15392.104	2785.233	40.000	650.013	875812.280	1160.040	4770.683	3634.396	4205.530	144947.560
x		21550.597	204338.410	14856.626	2970.265	41.667	673.347	872646.890	1098.370	4722.336	3552.212	4487.272	144547.510
σ		549.173	2092.483	611.012	160.262	2.887	28.432	7333.655	111.175	83.739	75.862	266.639	1843.429
%RSD		2.548	1.024	4.113	5.396	6.928	4.223	0.840	10.122	1.773	2.136	5.942	1.275

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:31:19	2730.224	15777.464	7471.674	113837.450	0.000	11138.721	10733.455
2	17:31:40	2765.229	15191.921	7336.614	110968.190	0.000	11263.805	11138.721
3	17:32:03	2600.203	15912.593	7561.715	111421.200	0.000	11619.049	11178.748
x		2698.552	15627.326	7456.668	112075.610	0.000	11340.525	11016.975
σ		86.953	383.077	113.298	1542.513	0.000	249.185	246.349
%RSD		3.222	2.451	1.519	1.376	0.000	2.197	2.236

200-35736-A-14-A PDS 10/18/2016 05:36:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:37:08	130277.180	1557.573	53124.532	T 8307292.100	276392.950	633619.540	T 7359641.700	229742.610	165931.910	45.000	120539.320	83981.053
2	17:37:30	126568.770	1450.063	53540.861	T 8044508.600	270792.120	609566.970	T 7189886.200	231618.310	163548.530	10.000	118650.840	82428.330
3	17:37:52	127878.710	1552.572	54208.012	T 7976634.300	267499.590	614088.490	T 7170587.200	229732.470	161791.500	15.000	118394.030	83568.989
x		128241.560	1520.069	53624.468	T 8109478.300	271561.550	619091.670	T 7240038.300	230364.460	163757.310	23.333	119194.730	83326.124
σ		1880.643	60.679	546.557	T 174640.910	4496.327	12783.010	T 104028.010	1085.871	2078.086	18.930	1171.509	804.347
%RSD		1.466	3.992	1.019	T 2.154	1.656	2.065	T 1.437	0.471	1.269	81.127	0.983	0.965

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:37:08	15862.545	65021.587	T 6152625.900	24853.517	10923.579	34210.074	99450.831	9321.606	1667.083	1997.120	432.506	3595.388
2	17:37:30	15056.798	61985.050	T 6041283.000	24783.413	11243.791	34054.756	101266.720	9152.512	1753.092	1977.617	417.005	3275.322
3	17:37:52	14336.163	63279.903	T 6084022.500	24793.428	10773.481	32927.494	99586.639	8893.372	1541.071	1989.119	392.505	3310.329
x		15085.169	63428.847	T 6092643.800	24810.119	10980.284	33730.775	100101.400	9122.497	1653.749	1987.952	414.005	3393.679
σ		763.586	1523.738	T 56169.879	37.916	240.228	699.982	1011.480	215.689	106.638	9.803	20.169	175.559
%RSD		5.062	2.402	T 0.922	0.153	2.188	2.075	1.010	2.364	6.448	0.493	4.872	5.173

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:37:08	197285.780	197159.300	133870.490	26486.029	440.006	6061.102	842225.900	1025.032	41200.862	30885.591	41707.119	137827.550
2	17:37:30	200271.070	194113.860	136647.890	26696.364	400.005	5856.029	829374.900	1020.031	41396.346	31443.633	41962.760	140993.870
3	17:37:52	199157.850	189460.780	135211.250	26455.981	465.006	5971.069	836613.560	1050.033	42088.075	31827.861	41987.823	140913.190
x		198904.900	193577.980	135243.210	26546.124	435.006	5962.733	836071.450	1031.699	41561.761	31385.695	41885.901	139911.530
σ		1508.633	3877.136	1388.978	130.976	32.788	102.790	6442.628	16.074	466.163	473.799	155.335	1805.237
%RSD		0.758	2.003	1.027	0.493	7.537	1.724	0.771	1.558	1.122	1.510	0.371	1.290

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:37:08	26210.594	138745.110	51088.180	108703.340	0.000	162296.370	108190.020
2	17:37:30	27102.018	140076.180	52311.968	107012.450	0.000	170240.030	108965.040
3	17:37:52	28273.962	140459.380	53134.564	107777.360	0.000	176934.210	110842.360
x		27195.525	139760.220	52178.237	107831.050	0.000	169823.540	109332.470
σ		1034.858	899.750	1029.725	846.723	0.000	7327.801	1363.813
%RSD		3.805	0.644	1.973	0.785	0.000	4.315	1.247

200-35736-A-14-B MS 10/18/2016 05:42:30 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:42:52	131980.500	1560.073	56686.236	T 8472514.000	283765.290	629990.790	T 7404364.600	244997.580	167517.660	15.000	120075.990	85352.996
2	17:43:14	128725.190	1445.063	55161.132	T 8216854.200	277887.490	632550.040	T 7454630.800	244875.810	163760.590	25.000	117391.980	84131.810
3	17:43:35	127122.970	1590.076	55722.996	T 8231071.100	278162.010	630530.640	T 7415656.500	243404.490	163427.350	25.000	117457.430	86177.221
x		129276.220	1531.737	55856.788	T 8306813.100	279938.260	631023.830	T 7424884.000	244425.960	164901.860	21.667	118308.470	85220.676
σ		2475.206	76.547	771.305	T 143677.130	3317.143	1349.022	T 26372.963	886.711	2271.461	5.774	1531.073	1029.105
%RSD		1.915	4.997	1.381	T 1.730	1.185	0.214	T 0.355	0.363	1.377	26.647	1.294	1.208

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:42:52	15021.767	65081.822	T 6319480.100	25890.093	10863.539	34671.025	102876.530	9107.488	1581.075	2036.124	386.004	3025.275
2	17:43:14	14366.189	64173.309	T 6366023.100	26070.374	11023.644	35587.955	102690.390	8971.414	1572.074	2086.131	399.005	3125.293
3	17:43:35	14231.073	64529.681	T 6389765.100	26170.531	11178.748	34931.568	103595.970	8952.404	1635.080	2092.131	410.505	3275.322
x		14539.676	64594.937	T 6358422.800	26043.666	11021.977	35063.516	103054.290	9010.435	1596.076	2071.462	398.505	3141.963

σ		422.933	457.758	T 35753.570	142.114	157.611	472.491	478.245	84.586	34.077	30.750	12.258	125.854
%RSD		2.909	0.709	T 0.562	0.546	1.430	1.348	0.464	0.939	2.135	1.484	3.076	4.006
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:42:52	206116.690	193365.230	138906.450	26846.605	375.004	6246.170	833009.610	710.015	41476.545	32151.983	42559.269	139219.040
2	17:43:14	207154.440	187235.840	141518.280	27768.113	475.007	6311.195	813458.530	805.019	42253.493	32581.816	44123.329	141145.140
3	17:43:35	207473.370	188803.380	142178.870	27903.338	485.007	6321.199	824816.850	895.024	42980.348	32968.576	43657.103	138543.450
x		206914.830	189801.490	140867.870	27506.019	445.006	6292.855	823761.660	803.353	42236.795	32567.458	43446.567	139635.870
σ		709.367	3184.261	1730.453	575.058	60.829	40.738	9818.155	92.516	752.041	408.486	803.003	1350.006
%RSD		0.343	1.678	1.228	2.091	13.669	0.647	1.192	11.516	1.781	1.254	1.848	0.967

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:42:52	57744.861	144281.830	53671.279	105754.460	0.000	191574.730	109020.400
2	17:43:14	58838.677	146556.540	55416.978	106700.460	0.000	195676.980	112483.300
3	17:43:35	57875.312	147353.520	54047.492	106559.560	0.000	203768.070	113797.170
x		58152.950	146063.960	54378.583	106338.160	0.000	197006.600	111766.960
σ		597.428	1593.992	918.740	510.386	0.000	6204.458	2467.639
%RSD		1.027	1.091	1.690	0.480	0.000	3.149	2.208

200-35736-A-14-C MSD 10/18/2016 05:48:15 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:48:38	131708.360	1520.069	54669.516	T 8245165.700	275559.310	621101.310	T 7398581.700	239031.880	165154.240	30.000	117945.870	83780.045
2	17:49:00	128876.350	1630.080	54669.516	T 8336123.400	285199.460	628708.720	T 7463322.200	236252.680	165861.210	40.000	118434.310	85352.996
3	17:49:23	127344.650	1645.081	54935.388	T 8098074.200	274186.950	612828.360	T 7250452.000	240137.610	166992.420	5.000	115453.510	85368.073
x		129309.790	1598.410	54758.140	T 8226454.500	278315.240	620879.460	T 7370785.300	238474.060	166002.630	25.000	117277.890	84833.705
σ		2213.912	68.258	153.501	T 120122.580	6001.266	7942.503	T 109123.370	2001.638	927.214	18.028	1598.731	912.527
%RSD		1.712	4.270	0.280	T 1.460	2.156	1.279	T 1.480	0.839	0.559	72.111	1.363	1.076

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:48:38	13840.745	61954.939	T 6213642.300	25008.749	11609.042	34180.012	100653.020	8817.332	1568.074	2012.622	388.005	3350.337
2	17:49:00	14561.358	63857.098	T 6304306.100	25534.545	11193.758	35131.989	101870.380	8833.340	1536.071	2031.624	418.005	3165.300
3	17:49:23	14436.249	63796.868	T 6258323.600	26015.288	11373.880	35202.136	102931.870	8867.358	1585.075	1993.619	418.505	3290.325
x		14279.451	63202.968	T 6258757.300	25519.527	11392.226	34838.046	101818.420	8839.343	1563.073	2012.622	408.172	3268.654
σ		385.046	1081.245	T 45333.449	503.438	208.249	570.952	1140.315	25.548	24.882	19.002	17.467	94.402
%RSD		2.697	1.711	T 0.724	1.973	1.828	1.639	1.120	0.289	1.592	0.944	4.279	2.888

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:48:38	200615.170	190684.610	136068.180	27192.164	430.006	6041.095	825142.390	805.019	41601.857	31633.993	42885.103	140640.900
2	17:49:00	203955.340	189309.070	137978.790	27667.946	405.005	6006.082	833146.190	730.016	42032.936	31907.013	43185.878	139914.830
3	17:49:23	204390.630	191119.550	141730.070	26986.831	535.009	6201.153	831055.590	725.016	42253.493	32298.265	43461.594	139390.460
x		202987.050	190371.080	138592.350	27282.314	456.673	6082.777	829781.390	753.350	41962.762	31946.423	43177.525	139982.070
σ		2065.604	945.090	2880.381	349.392	68.983	104.001	4151.253	44.816	331.437	333.885	288.336	627.925
%RSD		1.018	0.496	2.078	1.281	15.105	1.710	0.500	5.949	0.790	1.045	0.668	0.449

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:48:38	56836.748	141175.390	51825.451	107163.420	0.000	195353.220	109669.640
2	17:49:00	58266.672	142521.780	54087.622	105804.780	0.000	199071.830	109714.940
3	17:49:23	58382.075	144897.130	54724.697	108340.990	0.000	205367.530	111924.560
x		57828.498	142864.770	53545.923	107103.060	0.000	199930.860	110436.380
σ		860.818	1884.426	1523.642	1269.184	0.000	5062.119	1288.999
%RSD		1.489	1.319	2.845	1.185	0.000	2.532	1.167

CCV 10/18/2016 05:54:01 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	17:54:23	127294.270	92895.669	33077.792	T 14816344.000	T 4341598.100	T 41051531.000	T 14250018.000	T 1492901.800	158045.820	26400.894	T 2793609.300	7915
2	17:54:44	125803.010	91847.383	33343.320	T 14805459.000	T 4324110.800	T 40576364.000	T 13822669.000	1359255.600	154028.470	26050.343	T 2794387.600	7823
3	17:55:06	124090.240	90567.910	33243.120	T 14829277.000	T 4251381.800	T 40044491.000	T 13790812.000	T 1485736.700	161115.000	26536.108	T 2766583.000	7659
x		125729.170	91770.320	33221.411	T 14817027.000	T 4305696.900	T 40557462.000	T 13954500.000	T 1445964.700	157729.760	26329.115	T 2784860.000	7799
σ		1603.289	1165.791	134.089	T 11923.246	T 47844.001	T 503785.970	T 256421.350	T 75177.685	3553.819	250.711	T 15833.118	129
%RSD		1.275	1.270	0.404	T 0.080	T 1.111	T 1.242	T 1.838	T 5.199	2.253	0.952	T 0.569	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	17:54:23	97298.181	T 4126525.100	T 84779649.000	1198270.800	651031.680	805962.200	624852.700	81396.276	6663.332	8929.892	431.006	67
2	17:54:44	99999.097	T 4099762.200	T 83931825.000	1178776.600	641933.790	790795.990	625620.720	81625.393	6603.308	8878.864	416.505	66
3	17:55:06	95915.200	T 4077473.100	T 84340343.000	1187767.500	644936.440	788516.710	616940.990	80335.147	6571.295	8896.874	394.505	65
x		97737.493	T 4101253.500	T 84350606.000	1188271.700	645967.310	795091.630	622471.470	81118.939	6612.645	8901.877	414.005	66
σ		2077.089	T 24559.982	T 424004.920	9756.869	4635.721	9482.913	4804.904	688.383	46.723	25.879	18.378	1

%RSD		2.125	T 0.599	T 0.503	0.821	0.718	1.193	0.772	0.849	0.707	0.291	4.439	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	17:54:23	784152.890	187549.340	1582696.500	255087.260	8287.060	119673.110	818611.880	769105.480	508474.860	388630.290	517975.810	1355
2	17:54:44	777611.870	185354.990	1623544.200	255107.570	8197.015	120569.540	819609.140	772627.920	511984.900	390869.750	521462.030	1354
3	17:55:06	778240.200	183656.340	1639047.100	256904.860	8412.122	121556.670	822191.800	779931.580	512129.230	391542.780	518924.650	1383
x		780001.650	185520.230	1615095.900	255699.900	8298.733	120599.770	820137.610	773888.330	510863.000	390347.610	519454.160	1364
σ		3608.779	1951.749	29109.734	1043.579	108.028	942.143	1847.542	5522.005	2069.446	1524.837	1802.421	16
%RSD		0.463	1.052	1.802	0.408	1.302	0.781	0.225	0.714	0.405	0.391	0.347	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:54:23	32010.711	1377669.300	T 7489749.600	106630.010	0.000	231821.100	100240.540
2	17:54:44	32827.297	1406265.900	T 7524114.000	105855.090	0.000	241202.830	100808.950
3	17:55:06	33248.130	1410067.900	T 7452693.300	105080.210	0.000	245459.300	101105.740
x		32695.379	1398001.000	T 7488852.300	105855.110	0.000	239494.410	100718.410
σ		629.169	17710.133	T 35718.793	774.898	0.000	6977.761	439.650
%RSD		1.924	1.267	T 0.477	0.732	0.000	2.914	0.437

CCB 10/18/2016 05:59:45 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	18:00:06	137817.460	5.000	1180.042	274298.770	870.023	7986.913	60088.123	780.018	168406.550	20.000	16838.502	1735.090
2	18:00:28	131194.330	15.000	1300.051	265792.610	770.018	7481.679	58372.040	740.016	168941.920	25.000	16593.256	1415.060
3	18:00:50	131516.860	25.000	1320.052	267113.470	890.024	8041.940	58131.201	570.010	163326.360	5.000	16373.038	1570.074
x		133509.550	15.000	1266.715	269068.280	843.355	7836.844	58863.788	696.681	166891.610	16.667	16601.599	1573.408
σ		3734.244	10.000	75.724	4577.628	64.294	308.810	1067.121	111.509	3099.177	10.408	232.844	160.041
%RSD		2.797	66.667	5.978	1.701	7.624	3.940	1.813	16.006	1.857	62.450	1.403	10.172

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	18:00:06	5851.027	1030.032	246357.400	160.001	80.000	270.002	725.016	1252.047	394.005	433.006	412.505	1890.107
2	18:00:28	5615.946	920.025	242785.560	120.000	65.000	270.002	715.015	1274.049	427.005	420.505	399.005	2145.138
3	18:00:50	5811.013	835.021	243790.060	120.000	60.000	265.002	550.009	1235.046	399.005	385.004	381.004	2160.140
x		5759.329	928.359	244311.010	133.334	68.333	268.335	663.347	1253.714	406.672	412.838	397.505	2065.128
σ		125.774	97.772	1842.024	23.094	10.408	2.887	98.281	19.555	17.786	24.902	15.804	151.758
%RSD		2.184	10.532	0.754	17.321	15.232	1.076	14.816	1.560	4.374	6.032	3.976	7.349

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	18:00:06	115.000	194488.190	3355.338	65.000	0.000	20.000	834028.720	2920.256	750.017	528.008	80.000	138694.700
2	18:00:28	180.001	195196.390	3270.321	30.000	0.000	15.000	831769.940	3270.321	725.016	626.012	50.000	139511.470
3	18:00:50	65.000	192242.360	3160.300	45.000	0.000	45.000	837569.840	3175.302	735.016	632.512	65.000	140540.060
x		120.001	193975.650	3261.986	46.667	0.000	26.667	834456.170	3121.960	736.683	595.511	65.000	139582.070
σ		57.663	1542.274	97.786	17.559	0.000	16.073	2923.483	181.026	12.584	58.549	15.000	924.705
%RSD		48.053	0.795	2.998	37.627	0.000	60.273	0.350	5.798	1.708	9.832	23.077	0.662

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	18:00:06	240.002	1775.094	765.018	108119.560	0.000	3720.415	70.000
2	18:00:28	190.001	1430.061	890.024	106619.950	0.000	3580.385	65.000
3	18:00:50	230.002	1390.058	820.020	109327.400	0.000	3495.367	35.000
x		220.001	1531.738	825.020	108022.300	0.000	3598.722	56.667
σ		26.458	211.700	62.653	1356.345	0.000	113.639	18.930
%RSD		12.026	13.821	7.594	1.256	0.000	3.158	33.405

CCVL 10/18/2016 06:05:29 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:05:50	138220.780	197.501	6206.155	T 1074890.100	28915.061	74847.689	723520.840	25148.960	173629.730	15.000	29996.970	10643.397
2	18:06:12	130488.830	182.501	6131.127	963963.250	28895.026	75113.882	721047.020	25108.899	171022.990	15.000	28459.277	10103.061
3	18:06:34	129652.340	187.501	6106.118	962587.030	29195.549	73928.600	717530.010	24618.168	169891.500	20.000	29125.426	10128.076
x		132787.320	189.168	6147.800	T 1000480.100	29001.879	74630.057	720699.290	24958.676	171514.740	16.667	29193.891	10291.512
σ		4724.071	7.638	52.061	T 64444.613	168.022	621.889	3010.515	295.568	1917.017	2.887	771.129	304.999
%RSD		3.558	4.038	0.847	T 6.441	0.579	0.833	0.418	1.184	1.118	17.321	2.641	2.964

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:05:50	7301.599	7711.784	771031.480	2950.261	1295.050	3975.474	11889.239	2337.164	618.011	575.010	418.005	2390.171
2	18:06:12	7271.586	7516.695	772910.580	2795.234	1365.056	4190.527	12594.757	2185.143	622.012	596.511	418.005	2150.139
3	18:06:34	7146.532	7651.756	771539.180	2710.220	1180.042	3725.416	11834.200	2237.150	612.011	595.511	424.005	2435.178
x		7239.906	7626.745	771827.080	2818.572	1280.049	3963.806	12106.065	2253.152	617.345	589.010	420.005	2325.163
σ		82.245	99.921	972.071	121.710	93.415	232.775	424.113	77.263	5.033	12.135	3.464	153.237
%RSD		1.136	1.310	0.126	4.318	7.298	5.873	3.503	3.429	0.815	2.060	0.825	6.590

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:05:50	20367.437	195742.750	14120.980	2780.232	55.000	625.012	850647.860	1300.051	4355.569	3389.845	4305.556	138503.110
2	18:06:12	20267.315	197392.030	14386.206	2630.208	60.000	650.013	840428.490	1500.068	4510.610	3439.855	4520.613	142688.190
3	18:06:34	20032.031	195469.570	14346.172	2680.215	25.000	645.012	849280.720	1390.058	4410.583	3484.864	4475.601	143858.190
x		20222.261	196201.450	14284.452	2696.885	46.667	640.012	846785.690	1396.725	4425.588	3438.188	4433.923	141683.160
σ		172.182	1040.080	142.980	76.389	18.930	13.229	5547.771	100.175	78.602	47.532	113.425	2815.452
%RSD		0.851	0.530	1.001	2.832	40.564	2.067	0.655	7.172	1.776	1.382	2.558	1.987

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:05:50	2550.195	14536.336	6976.460	110646.060	0.000	10643.397	10698.433
2	18:06:12	3015.273	15312.031	7416.650	111753.410	0.000	10738.458	10613.378
3	18:06:34	2920.256	14901.659	6851.408	109458.260	0.000	11123.711	10798.497
x		2828.575	14916.675	7081.506	110619.240	0.000	10835.189	10703.436
σ		245.720	388.065	296.902	1147.813	0.000	254.348	92.661
%RSD		8.687	2.602	4.193	1.038	0.000	2.347	0.866

Analyte ICPS

STD0 10/18/2016 12:40:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:40:42	98.553%	0.428	93.066	-3723.954	21.162	-643.035	1888.428	-2.075	97.833%	0.000	-64.695	51.723
2	12:41:04	98.850%	0.405	-153.743	2861.445	-12.890	-595.063	220.064	31.851	99.668%	0.000	1065.007	-21.719
3	12:41:25	102.597%	-4.746	30.724	-7323.712	-8.121	63.366	-473.192	-36.940	102.499%	14.642	1636.146	-142.834
x		100.000%	-1.304	-9.984	-2728.740	0.051	-391.577	545.100	-2.388	100.000%	4.881	878.819	-37.610
σ		2.254%	2.980	128.342	5164.997	18.438	394.722	1213.898	34.396	2.350%	8.453	865.572	98.247
%RSD		2.254	228.493	1285.425	189.281	36499.710	100.803	222.693	1440.427	2.350	173.205	98.493	261.226

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:40:42	5728.329	-58.438	3864.254	-6.885	2.395	-55.763	-223.182	-551.385	548.538	-49.202	378.065	1887.742
2	12:41:04	5532.114	-54.896	-2750.193	12.523	-8.202	-79.458	-188.418	-173.073	437.804	-8.231	343.005	1934.009
3	12:41:25	5329.126	32.832	-2125.101	-3.635	-13.635	-11.900	-116.490	-146.806	426.027	-27.937	385.641	1798.904
x		5529.857	-26.834	-337.013	0.668	-6.480	-49.040	-176.030	-290.421	470.790	-28.457	368.903	1873.552
σ		199.611	51.703	3651.804	10.395	8.153	34.278	54.414	226.382	67.589	20.490	22.747	68.661
%RSD		3.610	192.678	1083.579	1557.187	125.802	69.896	30.912	77.949	14.356	72.005	6.166	3.665

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:40:42	-1.641	98.845%	828.739	-17.529	-51.041	6.765	100.116%	4400.464	377.877	225.379	-6.805	98.341%
2	12:41:04	3.609	99.783%	526.344	2.660	-29.415	-9.393	99.271%	4684.809	251.649	249.351	3.353	101.683%
3	12:41:25	-1.764	101.372%	286.126	-2.645	-39.906	-4.194	100.613%	4289.272	417.539	179.901	3.085	99.976%
x		0.068	100.000%	547.070	-5.838	-40.120	-2.274	100.000%	4458.181	349.022	218.210	-0.123	100.000%
σ		3.067	1.278%	271.899	10.467	10.815	8.248	0.679%	203.987	86.628	35.275	5.789	1.671%
%RSD		4498.789	1.278	49.701	179.284	26.956	362.726	0.679	4.576	24.820	16.166	4725.152	1.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:40:42	223.594	2119.433	-954.296	98.272%	0.000	9897.949	1.404
2	12:41:04	124.722	1647.839	-859.186	101.051%	0.000	9906.123	-34.911
3	12:41:25	148.420	1532.132	-567.582	100.677%	0.000	9362.408	-49.718
x		165.579	1766.468	-793.688	100.000%	0.000	9722.160	-27.742
σ		51.621	311.104	201.506	1.508%	0.000	311.581	26.304
%RSD		31.176	17.612	25.389	1.508	0.000	3.205	94.819

STD1 10/18/2016 12:44:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:44:42	105.148%	185.405	5303.233	670821.440	29106.966	67594.543	658346.620	24605.465	103.950%	14.425	11196.384	8471.768
2	12:45:04	105.840%	146.352	4953.252	T 712240.390	27732.547	66463.690	650898.140	25337.134	105.981%	28.341	12024.826	8068.025
3	12:45:25	103.070%	162.606	5323.557	660163.890	27602.893	68409.207	665316.910	24501.943	104.061%	9.604	11537.789	7989.718
x		104.686%	164.788	5193.347	T 681075.240	28147.469	67489.147	658187.230	24814.847	104.664%	17.457	11586.333	8176.504
σ		1.442%	19.617	208.177	T 27510.832	833.474	977.032	7210.709	455.266	1.142%	9.729	416.349	258.687
%RSD		1.377	11.905	4.009	T 4.039	2.961	1.448	1.096	1.835	1.091	55.732	3.593	3.164

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:44:42	6069.740	6911.422	553671.590	2824.361	1366.694	3612.742	11182.623	784.193	443.325	175.920	374.022	1775.301
2	12:45:04	5991.264	6959.900	532359.850	2925.137	1222.007	3799.551	11405.554	728.784	480.279	149.075	372.268	1953.312
3	12:45:25	6097.771	7259.364	552926.100	2398.412	1317.158	3737.590	11156.149	507.496	523.483	141.997	371.000	2097.180

x		6052.925	7043.562	546319.180	2715.970	1301.953	3716.628	11248.109	673.491	482.362	155.664	372.430	1941.931
σ		55.209	188.455	12094.880	279.591	73.532	95.152	136.993	146.401	40.120	17.896	1.517	161.241
%RSD		0.912	2.676	2.214	10.294	5.648	2.560	1.218	21.738	8.317	11.496	0.407	8.303
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:44:42	22263.464	104.679%	13905.213	2759.625	-67.568	702.492	102.268%	2112.238	4094.053	3365.769	4956.203	101.335%
2	12:45:04	22358.756	103.265%	14050.417	3023.116	-25.581	839.237	102.615%	2548.552	4302.873	3408.723	5109.955	102.050%
3	12:45:25	22005.007	105.370%	14558.141	2885.414	-70.601	711.446	102.831%	2616.148	4286.625	3456.024	5113.782	102.249%
x		22209.076	104.438%	14171.257	2889.385	-54.584	751.058	102.571%	2425.646	4227.850	3410.172	5059.980	101.878%
σ		183.039	1.073%	342.827	131.791	25.163	76.496	0.284%	273.515	116.156	45.145	89.894	0.481%
%RSD		0.824	1.027	2.419	4.561	46.099	10.185	0.277	11.276	2.747	1.324	1.777	0.472

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:44:42	3056.637	17662.131	14010.599	98.630%	0.000	18259.945	12978.988
2	12:45:04	2926.774	18069.053	13666.957	100.043%	0.000	18775.026	12919.788
3	12:45:25	3375.741	18019.148	13622.907	100.848%	0.000	18472.874	12781.528
x		3119.718	17916.777	13766.821	99.840%	0.000	18502.615	12893.435
σ		231.035	221.937	212.264	1.123%	0.000	258.825	101.333
%RSD		7.406	1.239	1.542	1.125	0.000	1.399	0.786

STD2 10/18/2016 12:47:26 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:47:47	98.735%	803.087	25137.736	T 3615169.200	135805.910	306667.570	T 3556499.000	115470.960	97.801%	25.551	49646.050	40754.100
2	12:48:09	96.124%	835.497	27146.247	T 3518924.800	132098.370	301036.350	T 3410577.100	115856.110	98.569%	30.445	50693.009	40112.832
3	12:48:31	98.394%	772.865	26486.399	T 3579758.800	135152.370	310175.350	T 3571656.400	118595.000	97.111%	10.287	49596.778	41066.267
x		97.751%	803.816	26256.794	T 3571284.200	134352.220	305959.760	T 3512910.800	116640.690	97.827%	22.094	49978.612	40644.400
σ		1.419%	31.322	1023.752	T 48678.641	1979.055	4610.435	T 88947.064	1703.399	0.729%	10.514	619.176	486.092
%RSD		1.452	3.897	3.899	T 1.363	1.473	1.507	T 2.532	1.460	0.745	47.588	1.239	1.196
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:47:47	5923.845	31581.819	T 2903202.300	12497.625	5519.618	16768.573	53841.851	4174.842	388.515	941.241	370.941	1935.438
2	12:48:09	5471.483	30788.887	T 2880741.700	12709.625	5633.716	16103.990	52725.910	4290.002	297.121	891.557	413.010	2061.957
3	12:48:31	5686.524	31489.159	T 2944307.700	12633.037	5445.701	16124.449	53801.405	4143.531	361.879	916.794	376.856	1944.766
x		5693.951	31286.622	T 2909417.200	12613.429	5533.012	16332.337	53456.389	4202.792	349.172	916.530	386.936	1980.720
σ		226.272	433.534	T 32235.492	107.351	94.720	377.930	632.936	77.132	47.004	24.843	22.774	70.507
%RSD		3.974	1.386	T 1.108	0.851	1.712	2.314	1.184	1.835	13.462	2.711	5.886	3.560
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:47:47	107372.890	98.764%	71446.090	14724.398	-30.717	3564.002	97.995%	1643.018	23464.343	18529.296	24154.636	97.781%
2	12:48:09	106742.280	97.936%	73144.702	15098.879	-54.186	3773.760	98.183%	2149.190	23615.669	18189.259	23216.002	97.543%
3	12:48:31	108802.620	99.405%	71262.320	14603.240	7.830	3672.475	98.978%	2071.295	22891.391	18193.917	23833.670	98.592%
x		107639.260	98.702%	71951.038	14808.839	-25.691	3670.079	98.385%	1954.501	23323.801	18304.157	23734.769	97.972%
σ		1055.682	0.736%	1037.820	258.384	31.312	104.900	0.522%	272.549	382.046	194.990	477.069	0.550%
%RSD		0.981	0.746	1.442	1.745	121.877	2.858	0.530	13.945	1.638	1.065	2.010	0.562

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:47:47	15864.753	81393.337	57034.881	97.102%	0.000	66349.253	62746.609
2	12:48:09	15416.302	84999.706	59896.939	96.258%	0.000	69289.632	64439.588
3	12:48:31	15581.189	84959.228	58455.191	97.671%	0.000	72873.476	64698.341
x		15620.748	83784.090	58462.337	97.010%	0.000	69504.120	63961.513

σ		226.828	2070.552	1431.043	0.711%	0.000	3267.396	1060.062
%RSD		1.452	2.471	2.448	0.733	0.000	4.701	1.657

STD3 10/18/2016 12:50:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:51:01	100.176%	91038.669	32933.580	┬13840118.000	┬4211476.000	┬39118159.000	┬13576879.000	┬1440963.000	99.915%	26329.520	┬2668051.200	767392
2	12:51:23	96.617%	93440.350	33316.129	┬13585567.000	┬4204856.400	┬39144155.000	┬13538687.000	┬1458839.900	99.714%	25992.606	┬2688253.700	775531
3	12:51:45	95.925%	93622.131	33889.345	┬13849159.000	┬4281419.800	┬40034836.000	┬13740178.000	┬1488130.800	97.586%	27609.770	┬2746483.500	787015
x		97.573%	92700.383	33379.685	┬13758281.000	┬4232584.100	┬39432383.000	┬13618581.000	┬1462644.600	99.072%	26643.965	┬2700929.500	776646
σ		2.281%	1441.954	481.042	┬149643.480	┬42422.296	┬521901.490	┬107023.160	┬23812.945	1.290%	853.207	┬40723.620	9858
%RSD		2.338	1.555	1.441	┬1.088	┬1.002	┬1.324	┬0.786	┬1.628	1.302	3.202	┬1.508	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:51:01	6853.896	┬4000837.700	┬81406302.000	1177963.700	635064.100	821977.400	650621.550	87662.999	-725.154	9432.649	377.004	1747
2	12:51:23	8109.381	┬4004802.000	┬82086450.000	1178379.500	630918.590	799869.050	645275.610	86324.643	-445.044	9250.398	398.057	1113
3	12:51:45	8851.962	┬4102438.200	┬83974906.000	1202305.800	642300.800	807790.410	654267.950	88052.153	-784.455	9480.582	373.639	922
x		7938.413	┬4036026.000	┬82489220.000	1186216.300	636094.500	809878.960	650055.040	87346.598	-651.551	9387.876	382.900	1260
σ		1009.946	┬57548.856	┬1330826.700	13935.440	5760.641	11201.175	4522.862	906.176	181.282	121.448	13.234	432
%RSD		12.722	┬1.426	┬1.613	1.175	0.906	1.383	0.696	1.037	27.823	1.294	3.456	34

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	12:51:01	858451.030	97.745%	1712983.800	288325.690	364.988	142065.710	95.491%	887238.130	595459.970	469829.400	605864.660	97.5
2	12:51:23	849669.060	96.585%	1827742.400	286764.440	194.861	141732.880	96.470%	891826.600	600287.500	469131.400	606149.750	98.9
3	12:51:45	866840.210	97.861%	1826207.200	287793.960	-231.229	142347.570	96.351%	888292.500	597741.570	469698.620	602224.460	97.5
x		858320.100	97.397%	1788977.800	287628.030	109.540	142048.720	96.104%	889119.080	597829.680	469553.140	604746.290	98.0
σ		8586.324	0.706%	65817.209	793.739	307.129	307.697	0.534%	2403.319	2414.974	371.045	2188.617	0.8
%RSD		1.000	0.725	3.679	0.276	280.381	0.217	0.556	0.270	0.404	0.079	0.362	0

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:51:01	37628.405	1638080.200	┬15760673.000	97.898%	0.000	303746.500	120248.350
2	12:51:23	38372.062	1708467.300	┬16181675.000	95.502%	0.000	313833.250	121426.980
3	12:51:45	40009.933	1729662.700	┬16346891.000	95.047%	0.000	312895.890	125404.180
x		38670.133	1692070.100	┬16096413.000	96.149%	0.000	310158.550	122359.840
σ		1218.422	47942.569	┬302266.760	1.532%	0.000	5572.738	2701.539
%RSD		3.151	2.833	┬1.878	1.593	0.000	1.797	2.208

STD4 10/18/2016 12:54:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	12:54:31	103.595%	251779.300	91525.195	┬38551733.000	┬11808110.000	┬108999900.000	┬39183364.000	┬4256401.400	104.015%	75380.402	┬7694541.600
2	12:54:53	101.499%	253223.200	91146.724	┬38485983.000	┬11844997.000	┬109685830.000	┬39075267.000	┬4243877.900	104.588%	75490.338	┬7758916.900
3	12:55:15	100.407%	259977.280	96143.041	┬39415311.000	┬12223820.000	┬114274590.000	┬40678640.000	┬4366235.800	102.420%	77469.162	┬8046317.800
x		101.834%	254993.260	92938.320	┬38817676.000	┬11958976.000	┬110986770.000	┬39645757.000	┬4288838.400	103.674%	76113.301	┬7833258.800
σ		1.620%	4376.247	2781.814	┬518610.400	┬230102.460	┬2867911.500	┬896134.390	┬67320.010	1.123%	1175.496	┬187300.980
%RSD		1.591	1.716	2.993	┬1.336	┬1.924	┬2.584	┬2.260	┬1.570	1.083	1.544	┬2.391

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	12:54:31	-587.231	┬11436687.000	┬234072240.000	┬3679992.600	1752384.000	™2520150.700	1793284.700	246090.280	-2547.343	25783.554	406.303
2	12:54:53	-3583.240	┬11719273.000	┬235370760.000	┬3739074.100	1763288.700	™2491370.700	1762834.700	242876.940	-2835.305	25604.974	457.693

3	12:55:15	-1643.153	T 11976571.000	T 243155450.000	T 3831822.300	1801314.700	T 2472611.400	1774912.600	243978.520	-2742.109	25619.886	435.42
x		-1937.875	T 11710844.000	T 237532810.000	T 3750296.300	1772329.100	TM 2494710.900	1777010.700	244315.250	-2708.252	25669.471	433.14
σ		1519.593	T 270040.540	T 4912438.500	T 76534.436	25687.559	TM 23945.017	15333.021	1632.918	146.936	99.079	25.77
%RSD		78.415	T 2.306	T 2.068	T 2.041	1.449	TM 0.960	0.863	0.668	5.425	0.386	5.95

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	12:54:31	T 2706179.600	99.031%	T 5636523.300	799965.340	1019.094	391489.280	97.588%	T 2893318.600	1704835.300	1349750.300	T 1971348.10
2	12:54:53	T 2719537.900	100.848%	T 5760790.600	798882.160	2243.216	394900.420	100.178%	T 2897898.600	1695883.600	1335556.300	T 1951488.20
3	12:55:15	T 2740034.400	100.434%	T 5861044.300	799607.170	1630.528	396713.210	100.133%	T 2916556.800	1722806.600	1348154.900	T 1959705.10
x		T 2721917.300	100.104%	T 5752786.000	799484.890	1630.946	394367.640	99.300%	T 2902591.300	1707841.900	1344487.200	T 1960847.10
σ		T 17052.319	0.952%	T 112474.330	551.849	612.061	2652.404	1.482%	T 12309.339	13711.000	7775.392	T 9979.07
%RSD		T 0.626	0.951	T 1.955	0.069	37.528	0.673	1.493	T 0.424	0.803	0.578	T 0.50

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:54:31	110489.030	T 5575983.600	T 47140217.000	97.257%	0.000	789477.090	362948.810
2	12:54:53	114335.130	T 5611045.400	T 46902337.000	99.117%	0.000	790069.220	359551.540
3	12:55:15	114324.270	T 5588341.200	T 46588168.000	99.889%	5.006	783139.350	358102.330
x		113049.480	T 5591790.100	T 46876907.000	98.754%	1.669	787561.890	360200.890
σ		2217.415	T 17783.517	T 276902.010	1.353%	2.890	3841.456	2487.637
%RSD		1.961	T 0.318	T 0.591	1.370	173.205	0.488	0.691

STD5 10/18/2016 12:57:15 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	12:57:36	103.127%	423447.070	156658.200	T 66402084.000	TM 20731097.000	T 189430170.000	TM 69865125.000	TM 7477945.500	105.219%	134139.340	TM
2	12:57:58	100.950%	437291.460	162337.970	T 66589002.000	TM 21047379.000	TM 195544510.000	TM 71816019.000	TM 7765570.200	104.959%	139426.450	TM
3	12:58:20	97.483%	M 450982.640	M 167730.920	T 65567811.000	T 20505520.000	T 192367200.000	TM 70762505.000	TM 7827010.800	106.593%	137131.110	TM
x		100.520%	M 437240.390	M 162242.370	T 66186299.000	TM 20761332.000	TM 192447290.000	TM 70814550.000	TM 7690175.500	105.590%	136898.970	TM
σ		2.846%	M 13767.855	M 5536.979	T 543718.910	TM 272192.000	TM 3057961.300	TM 976488.010	TM 186346.200	0.878%	2651.184	
%RSD		2.831	M 3.149	M 3.413	T 0.821	TM 1.311	TM 1.589	TM 1.379	TM 2.423	0.831	1.937	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	
1	12:57:36	-16326.573	TM 20466608.000	T 411692950.000	TM 6499385.000	TM 3351814.000	TM 4260894.800	TM 3312901.600	411588.250	-4366.123	M 41663.110	
2	12:57:58	-13246.675	TM 20856990.000	TM 420041870.000	TM 6573851.200	TM 3420825.700	TM 4372888.600	TM 3374495.800	M 416935.220	-4673.603	M 42614.689	
3	12:58:20	-2839.824	TM 20901899.000	T 417774590.000	TM 6510710.500	TM 3322121.600	TM 4261768.400	TM 3323507.200	410381.930	-4401.521	M 41840.205	
x		-10804.357	TM 20741832.000	TM 416503140.000	TM 6527982.200	TM 3364920.400	TM 4298517.200	TM 3336968.200	M 412968.470	-4480.416	M 42039.335	
σ		7067.304	TM 239406.400	TM 4317241.400	TM 40125.274	TM 50640.514	TM 64408.989	TM 32929.607	M 3487.859	168.239	M 506.078	
%RSD		65.412	TM 1.154	TM 1.037	TM 0.615	TM 1.505	TM 1.498	TM 0.987	M 0.845	3.755	M 1.204	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	
1	12:57:36	TM 4687505.900	99.561%	TM 10186120.000	M 1358846.700	2167.434	675860.770	100.917%	T 5140369.300	TM 3316867.400	2325214.200	TI
2	12:57:58	TM 4785330.500	98.996%	TM 10456943.000	M 1368247.100	2612.042	684986.720	100.689%	T 5175560.900	TM 3372397.500	M 2394005.900	TI
3	12:58:20	TM 4731034.700	97.669%	TM 10701299.000	M 1363693.000	2607.142	676401.220	102.501%	T 5210581.800	TM 3356811.400	M 2379441.700	TI
x		TM 4734623.700	98.742%	TM 10448121.000	M 1363595.600	2462.206	679082.900	101.369%	T 5175504.000	TM 3348692.100	M 2366220.600	TI
σ		TM 49010.962	0.971%	TM 257702.770	M 4700.975	255.292	5119.993	0.987%	T 35106.289	TM 28641.553	M 36251.514	
%RSD		TM 1.035	0.984	TM 2.466	M 0.345	10.368	0.754	0.974	T 0.678	TM 0.855	M 1.532	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:57:36	M 240035.300	TM 10012792.000	TM 82502667.000	97.606%	0.000	M 1611299.000	M 765892.040
2	12:57:58	M 244147.730	TM 10175037.000	TM 84009494.000	98.028%	0.000	M 1631691.400	M 771626.020
3	12:58:20	M 242358.950	TM 10062705.000	TM 83250872.000	99.328%	0.000	M 1635189.400	M 781661.590
x		M 242180.660	TM 10083511.000	TM 83254345.000	98.321%	0.000	M 1626059.900	M 773059.880
σ		M 2062.006	TM 83099.424	TM 753419.750	0.898%	0.000	M 12902.416	M 7981.960
%RSD		M 0.851	TM 0.824	TM 0.905	0.913	0.000	M 0.793	M 1.033

ICV 10/18/2016 01:02:59 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:03:20	95.778%	46602.698	18309.579	T 7160854.200	T 2146002.500	T 20313958.000	T 7064989.100	699775.040	97.755%	13666.507	1279200.400	394554.220
2	13:03:42	91.250%	47957.298	18325.437	T 7203974.000	T 2156503.000	T 20714534.000	T 7090824.900	704354.720	98.165%	13701.433	1256740.100	391283.860
3	13:04:04	90.396%	48681.816	19883.402	T 7302393.400	T 2174521.900	T 20338269.000	T 6973032.900	703684.760	98.282%	12932.153	1289700.500	391075.880
x		92.475%	106.741%	114.916%	T 107.343%	T 104.234%	T 105.916%	T 103.798%	97.100%	98.068%	13433.364	96.710%	97.663%
σ		2.893%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.277%	434.413	n/a	n/a
%RSD		3.128	2.210	4.799	T 1.004	T 0.668	T 1.098	T 0.879	0.352	0.282	3.234	1.320	0.497

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:03:20	6558.412	T 2045317.900	T 42423545.000	610606.350	326858.430	404495.700	324226.280	43534.443	-58.641	4582.679	409.805	1693.183
2	13:03:42	6618.165	T 2067327.200	T 42818878.000	619000.740	331896.140	422406.500	333871.260	44651.068	-134.594	4695.311	380.854	1722.812
3	13:04:04	6478.551	T 2036605.900	T 42171917.000	608007.210	329005.760	407939.220	324679.960	43204.009	-88.401	4694.004	370.081	1708.338
x		6551.709	T 101.249%	T 101.355%	96.413%	102.936%	99.175%	102.404%	105.613%	-93.878	108.038%	386.913	1708.111
σ		70.048	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	38.272	n/a	20.544	14.816

%RSD		1.069	T 0.772	T 0.768	0.938	0.768	2.309	1.661	1.731	40.767	1.388	5.310	0.867
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:03:20	414292.330	98.668%	416293.470	138089.040	7.273	69245.368	97.853%	454584.720	298758.820	233619.560	296291.510	96.925%
2	13:03:42	424936.900	99.864%	421665.860	141692.810	67.916	71213.585	96.232%	467895.850	309114.700	242638.370	307070.760	96.590%
3	13:04:04	414149.390	99.112%	432767.800	138178.220	74.129	71163.818	98.763%	455753.470	298611.670	236901.650	298571.870	99.764%
x		417792.870	99.215%	91.505%	104.052%	49.773	100.374%	97.616%	459411.340	302161.730	101.397%	96.760%	97.760%
σ		6187.324	0.604%	n/a	n/a	36.936	n/a	1.282%	7370.994	6021.898	n/a	n/a	1.744%
%RSD		1.481	0.609	1.983	1.475	74.211	1.591	1.313	1.604	1.993	1.920	1.890	1.784

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:03:20	40989.221	843752.010	T 7830816.600	95.210%	0.000	209720.790	117749.790
2	13:03:42	40929.216	841692.370	T 7806852.900	96.916%	0.000	218396.040	118143.620
3	13:04:04	41337.392	842835.290	T 7774116.500	97.517%	0.000	228059.070	118421.730
x		110.708%	90.123%	T 97.797%	96.547%	0.000	86.877%	94.683%
σ		n/a	n/a	T n/a	1.197%	0.000	n/a	n/a
%RSD		0.536	0.122	T 0.365	1.239	0.000	4.194	0.286

ICVL 10/18/2016 01:08:43 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:09:05	95.546%	199.526	6479.224	658456.280	29100.836	67096.367	649859.020	24143.225	103.254%	14.521	11888.734	7862.400
2	13:09:27	94.354%	207.437	6582.064	664224.210	27625.088	68959.758	660309.320	24248.155	102.609%	24.340	11349.552	8030.074
3	13:09:50	97.374%	182.808	6457.582	648085.200	28031.201	69151.040	658157.120	24970.962	102.765%	34.049	11321.500	7966.514
x		95.758%	137.339%	124.021%	97.635%	102.299%	106.253%	96.697%	101.386%	102.876%	24.303	109.207%	98.994%
σ		1.521%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.336%	9.764	n/a	n/a
%RSD		1.588	6.396	1.022	1.245	2.698	1.659	0.841	1.843	0.327	40.174	2.775	1.064
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:09:05	4565.140	7009.257	550491.060	2843.698	1240.503	3317.273	11427.230	619.653	395.882	125.211	368.450	2111.396
2	13:09:27	4825.307	7314.233	553594.620	2822.832	1253.343	3546.986	11134.469	526.322	420.088	93.307	398.940	2102.591
3	13:09:50	4945.205	7429.054	538724.170	2813.611	1334.114	3426.434	11357.385	826.416	340.494	168.660	393.528	1969.494
x		4778.551	111.926%	98.011%	111.231%	124.662%	103.311%	110.448%	79.272%	385.488	74.846%	386.972	2061.160
σ		194.298	n/a	n/a	n/a	n/a	n/a	n/a	n/a	40.802	n/a	16.268	79.507
%RSD		4.066	2.992	1.433	0.545	3.977	3.350	1.352	23.359	10.585	29.307	4.204	3.857
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:09:05	20556.677	104.179%	16023.089	3094.636	-47.903	717.981	102.186%	4507.106	5109.049	4058.832	4759.505	99.416%
2	13:09:27	22144.774	104.891%	15717.013	2954.090	-77.617	732.172	103.651%	5437.439	5645.310	4238.724	4981.529	101.348%
3	13:09:50	21707.398	103.406%	16624.244	2959.724	-52.894	775.989	102.281%	5534.701	5655.513	4385.733	4940.881	99.249%
x		96.168%	104.159%	108.835%	112.134%	-59.471	105.587%	102.706%	5159.749	5469.958	112.707%	98.443%	100.004%
σ		n/a	0.742%	n/a	n/a	15.911	n/a	0.820%	567.294	312.597	n/a	n/a	1.167%
%RSD		3.821	0.713	2.863	2.650	26.755	4.075	0.798	10.995	5.715	3.873	2.415	1.167

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:09:05	3253.223	19427.654	14938.520	96.063%	0.000	19792.599	13363.864
2	13:09:27	3283.224	18994.135	14336.447	99.613%	0.000	18999.680	12247.526
3	13:09:50	3717.406	19239.008	15169.645	97.907%	0.000	19312.480	13310.376
x		92.100%	102.769%	116.035%	97.861%	0.000	76.930%	104.010%
σ		n/a	n/a	n/a	1.775%	0.000	n/a	n/a
%RSD		7.600	1.131	2.903	1.814	0.000	2.062	4.853

ICBIS 10/18/2016 01:19:56 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:20:18	101.127%	2.706	-34.838	3184.097	-5.077	-388.905	4855.415	-47.344	106.150%	9.416	1084.076	117.244
2	13:20:40	101.459%	12.530	74.560	-1512.163	-28.315	-403.546	1710.283	64.378	108.976%	13.759	1209.415	-4.789
3	13:21:01	100.799%	5.219	18.697	-1948.298	71.739	-324.244	1170.974	-19.282	109.341%	13.716	11.966	-188.996
x		101.128%	6.818	19.473	-92.121	12.782	-372.232	2578.891	-0.749	108.156%	12.297	768.485	-25.514
σ		0.330%	5.103	54.703	2845.656	52.363	42.198	1989.883	58.121	1.746%	2.495	658.156	154.169
%RSD		0.327	74.850	280.922	3089.028	409.653	11.337	77.160	7759.009	1.615	20.293	85.643	604.255

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:20:18	5614.006	-62.515	8139.976	-19.109	-18.848	-12.060	-292.684	-247.518	464.106	-35.056	384.005	1878.054
2	13:20:40	5444.675	-11.906	-2041.920	-10.543	-9.916	-57.415	-158.573	-114.697	434.414	-27.946	402.450	1979.372
3	13:21:01	5748.773	-26.956	3438.353	-19.796	-9.977	35.443	-248.896	-107.202	423.124	-31.851	384.540	1885.268
x		5602.485	-33.793	3178.803	-16.483	-12.914	-11.344	-233.384	-156.472	440.548	-31.618	390.332	1914.231
σ		152.376	25.988	5095.907	5.155	5.139	46.433	68.388	78.937	21.168	3.561	10.498	56.529
%RSD		2.720	76.904	160.309	31.277	39.797	409.310	29.303	50.448	4.805	11.263	2.690	2.953

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:20:18	5.931	107.415%	-267.655	5.370	-64.481	19.618	107.552%	1980.564	-636.406	-539.081	-12.145	103.531%
2	13:20:40	6.146	109.860%	-378.462	19.593	-68.322	42.139	106.847%	1946.833	-561.399	-470.495	15.964	101.754%
3	13:21:01	1.389	109.820%	-300.848	-13.190	-54.507	14.508	107.142%	2156.161	-624.189	-438.170	1.873	102.076%
x		4.488	109.032%	-315.655	3.924	-62.437	25.422	107.180%	2027.853	-607.331	-482.582	1.897	102.453%
σ		2.687	1.400%	56.868	16.439	7.131	14.702	0.354%	112.391	40.245	51.530	14.054	0.947%
%RSD		59.857	1.284	18.016	418.893	11.421	57.830	0.330	5.542	6.627	10.678	740.751	0.924

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:20:18	82.223	756.621	-766.750	100.726%	0.000	7801.362	-34.831
2	13:20:40	90.174	561.900	-885.644	101.238%	0.000	7911.474	-39.895
3	13:21:01	123.889	644.174	-846.064	100.198%	0.000	8174.660	-44.681
x		98.762	654.232	-832.819	100.720%	0.000	7962.498	-39.802
σ		22.121	97.749	60.543	0.520%	0.000	191.808	4.925
%RSD		22.398	14.941	7.270	0.516	0.000	2.409	12.375

ICSA 10/18/2016 01:25:39 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:26:00	96.815%	8.311	215.155	TM 132842910.000	T 13562579.000	T 125050330.000	TM 135540990.000	T 4963680.100	111.275%	266534.420	1063.232	2543.212
2	13:26:22	96.045%	21.450	112.300	TM 135474280.000	T 13998019.000	T 128648040.000	TM 138270470.000	T 5024374.100	110.226%	280424.420	1012.310	2797.385
3	13:26:44	93.865%	32.769	15.885	TM 131574810.000	T 13795713.000	T 127667570.000	TM 138521070.000	T 5105020.200	112.630%	276646.230	1353.612	2677.984
x		95.575%	1.#IO%	1.#IO%	TM 99.057%	T 99.832%	T 98.732%	TM 101.282%	T 104.293%	111.377%	274535.020	1.#IO%	1.#IO%
σ		1.530%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.205%	7181.636	n/a	n/a
%RSD		1.601	58.725	87.073	TM 1.492	T 1.581	T 1.463	TM 1.203	T 1.409	1.082	2.616	16.108	4.758

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:26:00	2417.210	1647.028	T 269237830.000	289.854	254.817	820.250	-692.025	-33.007	356.811	-19.880	419.365	1959.146
2	13:26:22	2583.764	2074.919	T 277676240.000	351.988	311.944	560.665	-600.251	-17.813	378.408	-9.404	460.553	1875.520
3	13:26:44	2468.997	2434.802	T 272269430.000	427.916	380.155	894.937	-562.953	-41.879	374.784	-26.314	455.243	2019.321
x		2489.990	1.#IO%	T 97.746%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	370.001	-1.#IO%	445.053	1951.329

σ		85.238	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	11.566	n/a	22.405	72.218
%RSD		3.423	19.217	T 1.565	19.391	19.881	23.128	10.741	39.387	3.126	46.056	5.034	3.701
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:26:00	3463.681	106.284%	T 3007026.700	429.174	365.067	206.514	105.160%	3533.094	-399.895	-318.051	140.110	106.140%
2	13:26:22	3303.218	107.521%	T 3090566.700	453.122	436.817	204.153	109.327%	4048.033	-243.972	-251.399	161.572	108.157%
3	13:26:44	3662.575	110.441%	T 3095014.800	542.512	432.781	220.323	108.845%	4819.551	-266.118	-182.685	254.237	110.554%
x		1.#IO%	108.082%	T 103.432%	1.#IO%	411.555	1.#IO%	107.777%	4133.559	-303.328	-1.#IO%	1.#IO%	108.284%
σ		n/a	2.134%	T n/a	n/a	40.310	n/a	2.279%	647.479	84.359	n/a	n/a	2.210%
%RSD		5.178	1.975	T 1.618	12.577	9.795	4.153	2.115	15.664	27.811	26.997	32.731	2.041

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:26:00	534.904	968.943	3636.755	98.613%	0.000	72450.339	-8.948
2	13:26:22	606.438	810.745	4502.718	101.798%	0.000	60096.001	18.936
3	13:26:44	509.889	1235.917	6936.713	104.058%	0.000	48410.924	65.280
x		1.#IO%	1.#IO%	1.#IO%	101.490%	0.000	1.#IO%	1.#IO%
σ		n/a	n/a	n/a	2.735%	0.000	n/a	n/a
%RSD		9.104	21.378	34.046	2.695	0.000	19.929	149.444

ICSAB 10/18/2016 01:31:21 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:31:43	89.414%	4220.805	61073.043	TM 133158070.000	T 13478034.000	T 123598460.000	TM 134081910.000	T 4962600.800	109.920%	271300.940	53865.228	9822
2	13:32:05	90.154%	3825.555	58297.294	TM 127549050.000	T 13181584.000	T 121444490.000	TM 130855110.000	T 4898168.600	111.874%	270133.030	51987.203	9574
3	13:32:26	89.485%	3820.673	59106.718	TM 129110900.000	T 13105697.000	T 122285020.000	TM 133099100.000	T 4935151.300	111.164%	271247.300	49515.077	9582
x		89.684%	110.538%	113.402%	TM 96.561%	T 95.991%	T 95.098%	TM 97.770%	T 102.239%	110.986%	270893.760	98.190%	96.
σ		0.408%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.989%	659.354	n/a	
%RSD		0.455	5.805	2.399	TM 2.228	T 1.484	T 0.887	TM 1.247	T 0.656	0.891	0.243	4.213	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:31:43	3237.310	79735.494	T 267841090.000	59718.184	13177.974	31204.971	22682.455	18265.000	-54.369	4732.771	437.065	184
2	13:32:05	2978.568	77913.394	T 267499850.000	56435.638	12374.766	29641.738	22195.235	17955.960	41.030	4871.302	427.059	159
3	13:32:26	3235.624	77075.302	T 272471060.000	57803.201	12093.855	29614.039	21998.385	17984.037	-39.147	4883.949	422.744	157
x		3150.501	96.620%	T 96.389%	91.269%	98.081%	90.816%	87.105%	96.824%	-17.495	89.623%	428.956	167
σ		148.900	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	51.253	n/a	7.347	15
%RSD		4.726	1.738	T 1.031	2.844	4.484	3.020	1.580	0.946	292.952	1.737	1.713	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	13:31:43	4358.479	106.279%	T 3040051.400	66451.737	386.758	16564.085	108.109%	4426.727	112489.730	88025.748	118009.150	109.
2	13:32:05	3583.098	107.840%	T 3078051.000	65834.455	580.967	16219.947	108.886%	4289.496	113172.360	89150.281	118309.950	111.
3	13:32:26	3237.861	108.567%	T 3095484.000	65776.222	393.220	16543.845	109.524%	3711.965	114245.040	89410.157	120638.700	112.
x		3726.480	107.562%	T 103.668%	98.616%	453.648	93.586%	108.840%	4142.730	113302.380	94.758%	95.736%	111.
σ		573.903	1.169%	T n/a	n/a	110.309	n/a	0.709%	379.310	884.844	n/a	n/a	1.
%RSD		15.401	1.087	T 0.923	0.567	24.316	1.174	0.651	9.156	0.781	0.828	1.210	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:31:43	34048.947	211948.940	309033.400	102.830%	0.000	246379.980	133420.200
2	13:32:05	34007.597	209994.930	300561.740	105.139%	0.000	249557.350	135405.380
3	13:32:26	34238.177	215956.670	302366.510	103.578%	0.000	262737.380	139301.310
x		91.881%	90.954%	95.237%	103.849%	0.000	100.448%	109.064%
σ		n/a	n/a	n/a	1.178%	0.000	n/a	n/a
%RSD		0.361	1.429	1.468	1.134	0.000	3.430	2.199

CCV 10/18/2016 01:37:05 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:37:27	84.830%	101249.580	35295.209	T 13518631.000	T 4086804.400	T 38525986.000	T 13553501.000	1354574.000	97.281%	25436.227	T 2667973.800	765661
2	13:37:49	86.663%	96193.602	35198.581	T 13412283.000	T 4103848.600	T 38156375.000	T 13333169.000	T 1434704.800	97.131%	26243.425	T 2649413.500	760322
3	13:38:10	85.381%	98382.794	36174.118	T 13547276.000	T 4201026.700	T 38872312.000	T 13373168.000	1389409.700	95.466%	26838.194	T 2712553.800	775513
x		85.625%	110.221%	108.441%	T 100.268%	T 99.709%	T 99.720%	T 98.891%	T 96.249%	96.626%	26172.615	T 101.496%	95.4
σ		0.941%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.007%	703.661	T n/a	
%RSD		1.099	2.571	1.512	T 0.527	T 1.492	T 0.930	T 0.875	T 2.885	1.042	2.689	T 1.212	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:37:27	9208.563	T 4024721.100	T 82394828.000	1152193.800	617649.380	742831.440	607158.080	82301.557	-794.148	9038.963	382.438	1014
2	13:37:49	7383.048	T 3973735.500	T 82295990.000	1160712.400	617112.380	741606.920	610432.830	83708.279	-721.266	9058.892	373.098	1468
3	13:38:10	8185.345	T 4032185.200	T 83082312.000	1187849.900	631171.050	758460.930	615398.210	82607.253	-633.026	8940.377	411.960	1193
x		8258.986	T 99.044%	T 98.549%	91.836%	97.226%	90.068%	95.498%	99.921%	-716.147	104.537%	389.165	1225
σ		914.983	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	80.683	n/a	20.286	228

%RSD		11.079	T 0.793	T 0.519	1.596	1.281	1.257	0.679	0.893	11.266	0.704	5.213	18
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	13:37:27	824768.780	101.231%	1688673.900	274593.500	185.469	138606.360	100.671%	852928.900	567986.290	448795.960	580759.010	101.2
2	13:37:49	844589.830	101.423%	1738025.100	279270.150	466.550	138421.470	98.769%	869963.510	580156.830	460761.060	592185.830	101.8
3	13:38:10	836642.540	100.505%	1765584.900	273999.060	180.044	138419.870	99.647%	868725.680	584756.580	458323.860	586708.690	101.0
x		835333.720	101.053%	93.474%	103.049%	277.354	98.525%	99.696%	863872.700	577633.230	97.242%	94.388%	101.3
σ		9975.131	0.484%	n/a	n/a	163.870	n/a	0.952%	9497.789	8665.276	n/a	n/a	0.3
%RSD		1.194	0.479	2.251	1.046	59.083	0.077	0.955	1.099	1.500	1.387	0.974	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:37:27	36734.495	1647120.200	T 15700554.000	98.816%	0.000	212736.700	119461.920
2	13:37:49	38116.638	1664123.300	T 15733503.000	99.661%	0.000	227201.620	119201.460
3	13:38:10	37962.805	1682039.900	T 15858054.000	98.743%	0.000	240265.560	120881.460
x		101.329%	88.995%	T 98.775%	99.074%	0.000	90.058%	96.081%
σ		n/a	n/a	T n/a	0.510%	0.000	n/a	n/a
%RSD		2.014	1.049	T 0.527	0.515	0.000	6.073	0.754

CCB 10/18/2016 01:42:49 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:43:10	89.310%	9.613	18.410	-3303.699	124.301	842.732	6668.855	87.647	100.696%	34.736	663.367	-446.643
2	13:43:32	88.323%	1.309	162.693	2764.482	122.286	1259.683	9617.771	98.628	98.172%	35.560	1415.811	-423.122
3	13:43:54	87.144%	7.162	-70.777	4283.297	488.611	2690.266	12071.633	172.187	99.694%	45.090	219.035	-443.499
x		88.259%	6.028	36.775	1248.027	245.066	1597.560	9452.753	119.487	99.521%	38.462	766.071	-437.755
σ		1.084%	4.266	117.814	4014.394	210.918	969.002	2705.167	45.968	1.271%	5.755	604.963	12.770
%RSD		1.229	70.778	320.360	321.659	86.066	60.655	28.618	38.471	1.277	14.962	78.970	2.917

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:43:10	4200.850	-123.084	7866.041	-17.833	-3.442	-54.980	-284.503	-376.945	401.335	-50.505	399.449	2004.463
2	13:43:32	4192.858	-54.560	8833.321	18.457	-12.990	-6.030	-230.436	-147.292	317.977	-24.206	352.417	1859.661
3	13:43:54	4374.649	25.259	10836.619	-2.537	-3.192	-68.877	-277.463	-296.569	376.967	-24.214	357.176	1871.477
x		4256.119	-50.795	9178.660	-0.638	-6.541	-43.296	-264.134	-273.602	365.426	-32.975	369.681	1911.867
σ		102.728	74.243	1515.100	18.220	5.586	33.013	29.395	116.536	42.860	15.181	25.890	80.408
%RSD		2.414	146.161	16.507	2856.900	85.396	76.249	11.129	42.593	11.729	46.039	7.003	4.206

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:43:10	2.652	102.119%	2573.736	16.494	-53.406	4.093	102.517%	3263.189	-170.829	-228.540	12.470	100.021%
2	13:43:32	-7.087	104.053%	2445.750	11.644	-55.693	25.864	102.437%	3617.275	-183.012	-150.860	7.612	98.701%
3	13:43:54	7.685	102.094%	2496.232	6.874	-66.633	26.882	102.052%	3777.939	-119.112	-102.830	17.503	100.949%
x		1.083	102.755%	2505.240	11.671	-58.577	18.946	102.335%	3552.801	-157.651	-160.743	12.528	99.890%
σ		7.510	1.124%	64.467	4.810	7.070	12.873	0.249%	263.362	33.927	63.435	4.946	1.129%
%RSD		693.337	1.093	2.573	41.218	12.069	67.945	0.243	7.413	21.520	39.464	39.478	1.131

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:43:10	118.318	1558.594	-863.183	98.321%	0.000	7286.264	-13.882
2	13:43:32	85.665	1385.491	-732.155	99.816%	0.000	7469.776	-39.614
3	13:43:54	121.342	1287.022	-488.962	99.986%	0.000	7130.738	-29.647
x		108.442	1410.369	-694.767	99.374%	0.000	7295.593	-27.714
σ		19.783	137.485	189.892	0.916%	0.000	169.711	12.974
%RSD		18.243	9.748	27.332	0.922	0.000	2.326	46.814

MB 200-110229/1-A 10/18/2016 01:48:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:48:52	96.415%	18.747	-74.416	145256.870	5406.681	54123.010	60216.886	2815.796	105.551%	203.407	1638.504	1141.762
2	13:49:14	97.367%	33.899	-19.071	152638.170	6868.593	69490.115	65302.751	3163.084	106.508%	178.278	1458.362	1496.038
3	13:49:36	96.913%	23.773	74.367	148004.010	6191.831	57489.151	60665.160	2942.553	106.046%	145.881	1544.770	1321.584
x		96.898%	25.473	-6.373	148633.020	6155.702	60367.426	62061.599	2973.811	106.035%	175.855	1547.212	1319.795
σ		0.477%	7.718	75.200	3730.633	731.626	8077.767	2815.854	175.742	0.479%	28.839	90.096	177.145
%RSD		0.492	30.297	1179.926	2.510	11.885	13.381	4.537	5.910	0.451	16.400	5.823	13.422

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:48:52	4284.024	3156.310	130804.340	563.692	308.064	255.164	19.880	-115.548	337.336	-32.863	373.960	1888.586
2	13:49:14	4544.976	3236.950	157745.770	567.633	361.377	314.486	84.812	-291.535	390.017	-31.407	387.121	1749.145
3	13:49:36	4397.635	3134.950	130339.520	494.852	268.775	270.097	154.961	-159.719	346.637	-32.074	374.101	1814.862
x		4408.878	3176.070	139629.880	542.059	312.739	279.916	86.551	-188.934	357.997	-32.115	378.394	1817.531
σ		130.839	53.794	15690.545	40.930	46.478	30.855	67.557	91.559	28.118	0.728	7.558	69.759
%RSD		2.968	1.694	11.237	7.551	14.862	11.023	78.055	48.461	7.854	2.268	1.997	3.838

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:48:52	345.934	108.926%	2206.517	62.360	-62.861	36.957	106.029%	46679.254	-463.604	-408.447	181.267	102.874%
2	13:49:14	346.068	108.021%	2677.407	61.329	-62.097	73.188	107.332%	46930.035	-439.475	-291.368	239.423	104.188%
3	13:49:36	330.338	110.759%	1982.648	70.190	-42.741	53.884	107.860%	48253.535	-374.302	-307.952	187.176	105.728%
x		340.780	109.235%	2288.857	64.626	-55.900	54.676	107.074%	47287.608	-425.794	-335.922	202.622	104.263%
σ		9.043	1.395%	354.623	4.846	11.402	18.129	0.943%	845.863	46.196	63.353	32.007	1.428%
%RSD		2.654	1.277	15.493	7.498	20.398	33.157	0.880	1.789	10.850	18.859	15.796	1.370

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:48:52	141.658	955.780	2453.506	100.060%	0.000	43386.446	40.290
2	13:49:14	143.515	1274.660	3251.449	104.041%	0.000	36004.515	65.300
3	13:49:36	168.466	879.556	2524.483	102.457%	0.000	31348.485	13.551
x		151.213	1036.665	2743.146	102.186%	0.000	36913.148	39.714
σ		14.970	209.603	441.632	2.005%	0.000	6070.201	25.879
%RSD		9.900	20.219	16.099	1.962	0.000	16.445	65.165

LCS 200-110229/2-A 10/18/2016 01:54:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:54:35	92.558%	1572.980	57254.908	T 7363600.600	273216.790	622746.270	T 6988587.600	233971.510	103.058%	106.811	100207.320	79477.778
2	13:54:57	93.233%	1497.170	57465.895	T 7264765.300	271145.530	620163.160	T 7022059.000	234631.600	102.121%	93.015	98779.789	82368.856
3	13:55:18	87.744%	1708.106	58485.947	T 7392227.900	273668.640	636283.170	T 7169282.800	245349.690	98.393%	50.745	101483.620	83809.720
x		91.179%	1592.752	57735.583	T 7340197.900	272676.980	626397.530	T 7059976.500	237984.270	101.191%	83.524	100156.910	81885.451
σ		2.993%	106.849	658.341	T 66876.318	1345.385	8658.084	T 96130.031	6387.176	2.468%	29.213	1352.620	2206.058
%RSD		3.283	6.708	1.140	T 0.911	0.493	1.382	T 1.362	2.684	2.439	34.976	1.351	2.694

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:54:35	4513.944	62593.311	T 5841888.100	24685.554	10561.441	32197.699	91147.240	7792.476	155.579	1478.014	372.486	1848.226
2	13:54:57	4198.063	65093.462	T 5850924.700	25471.504	10447.950	32481.472	94875.295	7791.854	214.551	1507.468	357.113	1671.693
3	13:55:18	4037.510	66641.870	T 6047064.800	26952.332	11272.049	32970.175	94447.652	7855.854	128.714	1470.158	353.781	1788.813
x		4249.839	64776.214	T 5913292.500	25703.130	10760.480	32549.782	93490.063	7813.395	166.282	1485.213	361.127	1769.577

σ		242.401	2042.839	T 115938.240	1151.004	446.651	390.742	2040.179	36.772	43.908	19.669	9.977	89.825
%RSD		5.704	3.154	T 1.961	4.478	4.151	1.200	2.182	0.471	26.406	1.324	2.763	5.076
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:54:35	216085.010	101.484%	149034.900	29798.305	30.826	6553.878	102.018%	42272.482	46196.636	35185.344	48330.230	99.854%
2	13:54:57	222453.740	102.407%	150490.930	30143.799	51.510	6623.607	100.950%	43395.394	46860.075	36146.049	49314.025	101.721%
3	13:55:18	220137.800	101.559%	150999.980	30024.179	-4.346	6968.818	101.335%	43547.046	46830.086	36247.905	48067.467	100.511%
x		219558.850	101.817%	150175.270	29988.761	25.997	6715.434	101.434%	43071.641	46628.932	35859.766	48570.574	100.695%
σ		3223.599	0.513%	1019.863	175.449	28.239	222.189	0.541%	696.233	374.680	586.283	657.115	0.947%
%RSD		1.468	0.504	0.679	0.585	108.626	3.309	0.534	1.616	0.804	1.635	1.353	0.941

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:54:35	68081.655	171169.870	120851.130	98.711%	5.065	221324.350	132791.890
2	13:54:57	68794.561	176347.970	123354.560	97.541%	0.000	235763.650	138317.320
3	13:55:18	69464.429	175529.780	121356.450	97.882%	0.000	241961.040	135965.770
x		68780.215	174349.210	121854.050	98.045%	1.688	233016.340	135691.660
σ		691.499	2783.610	1323.815	0.602%	2.924	10589.099	2772.894
%RSD		1.005	1.597	1.086	0.614	173.205	4.544	2.044

200-35680-A-7-B 10/18/2016 01:59:56 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:00:18	104.854%	445.834	2655.076	T 679613.760	T 1543188.600	T 61826764.000	T 4978405.100	809850.170	144.739%	8037.809	162878.540	119620.070
2	14:00:39	101.865%	603.932	2813.601	T 662400.850	T 1541593.000	T 62491281.000	T 5012067.600	819377.950	147.843%	7626.112	167596.980	118510.820
3	14:01:01	104.921%	569.451	2948.117	T 666449.550	T 1545781.800	T 63221455.000	T 5072275.000	832286.600	148.176%	7646.563	164535.820	120208.300
x		103.880%	539.739	2805.598	T 669488.050	T 1543521.100	T 62513167.000	T 5020915.900	820504.910	146.920%	7770.162	165003.780	119446.400
σ		1.746%	83.131	146.685	T 8999.745	T 2114.132	T 697602.910	T 47556.368	11260.589	1.896%	232.015	2393.778	861.961
%RSD		1.680	15.402	5.228	T 1.344	T 0.137	T 1.116	T 0.947	1.372	1.290	2.986	1.451	0.722

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:00:18	2905.199	T 8795309.000	T 212870800.000	89645.248	44305.455	T 1867892.900	537371.220	9754.008	159.263	871.850	401.202	1788.746
2	14:00:39	3120.471	T 9013707.500	T 220452830.000	92460.039	44613.959	T 1843757.000	543343.010	9960.766	147.366	901.761	428.251	1645.697
3	14:01:01	4044.913	T 8895068.400	T 218513710.000	93007.259	45770.461	T 1876851.400	543781.210	9884.514	162.590	863.006	436.297	1954.501
x		3356.861	T 8901361.600	T 217279110.000	91704.182	44896.625	T 1862833.800	541498.480	9866.429	156.406	878.872	421.917	1796.315
σ		605.514	T 109335.130	T 3938906.700	1803.959	772.325	T 17117.430	3581.022	104.559	8.004	20.310	18.385	154.541
%RSD		18.038	T 1.228	T 1.813	1.967	1.720	T 0.919	0.661	1.060	5.118	2.311	4.357	8.603

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:00:18	344931.020	284.425%	2695.155	6810.537	-206.698	4158.639	117.399%	53760.581	1568.102	1187.394	308877.100	134.532%
2	14:00:39	349637.270	298.321%	2481.669	7094.497	-174.516	4131.108	120.025%	54570.769	1697.328	1301.821	310673.700	134.066%
3	14:01:01	351033.680	296.782%	2578.711	6868.209	-174.361	4280.019	121.135%	55512.753	1431.233	1300.325	314576.350	140.489%
x		348533.990	293.176%	2585.178	6924.414	-185.192	4189.922	119.520%	54614.701	1565.554	1263.180	311375.720	136.362%
σ		3197.429	7.617%	106.890	150.092	18.625	79.231	1.919%	876.912	133.066	65.637	2913.755	3.581%
%RSD		0.917	2.598	4.135	2.168	10.057	1.891	1.605	1.606	8.500	5.196	0.936	2.626

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:00:18	952.770	4657.418	2116815.500	113.236%	0.000	208759.170	83502.542
2	14:00:39	896.716	4692.522	2161342.300	115.026%	0.000	201163.350	84537.250
3	14:01:01	851.533	4522.718	2187504.300	115.807%	0.000	195435.570	84053.673
x		900.340	4624.219	2155220.700	114.690%	0.000	201786.030	84031.155
σ		50.716	89.638	35739.796	1.318%	0.000	6683.591	517.721
%RSD		5.633	1.938	1.658	1.149	0.000	3.312	0.616

200-35680-A-14-D 10/18/2016 02:05:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:06:00	105.592%	527.903	3129.895	T 731274.270	T 1714081.400	T 64036443.000	T 5478203.400	T 1108544.100	160.764%	7834.878	157971.050	123203.840
2	14:06:22	106.325%	545.379	2822.252	T 730344.250	T 1705276.300	T 63929024.000	T 5414838.600	T 1114838.700	161.530%	7880.085	159565.130	124409.980
3	14:06:44	104.441%	483.531	2833.287	T 724137.260	T 1709764.900	T 64435966.000	T 5495976.400	T 1119460.100	161.157%	8645.492	165986.800	126768.710
x		105.453%	518.938	2928.478	T 728585.260	T 1709707.500	T 64133811.000	T 5463006.100	T 1114281.000	161.150%	8120.152	161174.330	124794.180
σ		0.950%	31.884	174.519	T 3880.049	T 4402.847	T 267129.150	T 42650.390	T 5479.330	0.383%	455.519	4243.256	1813.225
%RSD		0.900	6.144	5.959	T 0.533	T 0.258	T 0.417	T 0.781	T 0.492	0.238	5.610	2.633	1.453

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:06:00	3042.524	T 13386457.000	T 268584430.000	103950.700	46635.321	1519075.900	480105.590	11704.504	174.159	647.138	427.589	1719.986
2	14:06:22	3161.054	T 13489405.000	T 270673990.000	102169.780	46376.849	1525411.700	479553.480	11983.908	140.240	704.360	434.695	1515.870
3	14:06:44	2590.905	T 13632462.000	T 271228040.000	101585.420	46820.838	1529354.800	487277.400	12287.484	129.653	724.181	424.628	1397.764
x		2931.494	T 13502775.000	T 270162150.000	102568.630	46611.003	1524614.100	482312.150	11991.965	148.017	691.893	428.971	1544.540
σ		300.854	T 123546.260	T 1394149.000	1232.051	222.991	5185.696	4308.880	291.573	23.250	40.006	5.173	163.013

%RSD		10.263	T 0.915	T 0.516	1.201	0.478	0.340	0.893	2.431	15.708	5.782	1.206	10.554
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:06:00	456981.270	317.960%	2892.735	5954.085	-198.443	2746.572	128.279%	48386.821	1133.410	911.227	373872.490	140.896%
2	14:06:22	457789.410	323.761%	2902.662	5635.868	-150.126	2630.460	128.598%	48649.367	1308.515	939.321	378724.310	146.521%
3	14:06:44	464377.170	321.896%	2844.166	5893.193	-155.625	2737.236	128.585%	48564.508	1177.178	985.789	386318.250	147.310%
x		459715.950	321.206%	2879.854	5827.715	-168.065	2704.756	128.488%	48533.565	1206.368	945.446	379638.350	144.909%
σ		4056.909	2.962%	31.303	168.911	26.452	64.511	0.180%	133.980	91.129	37.657	6273.027	3.498%
%RSD		0.882	0.922	1.087	2.898	15.739	2.385	0.140	0.276	7.554	3.983	1.652	2.414

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:06:00	848.807	4769.971	1791015.700	121.616%	0.000	182818.470	98007.497
2	14:06:22	802.466	4982.884	1812686.400	120.924%	0.000	187801.900	99822.016
3	14:06:44	709.421	4793.105	1776870.000	124.692%	0.000	182855.280	97773.003
x		786.898	4848.653	1793524.000	122.411%	0.000	184491.880	98534.172
σ		70.985	116.821	18039.487	2.006%	0.000	2866.618	1121.451
%RSD		9.021	2.409	1.006	1.639	0.000	1.554	1.138

200-35736-A-1-A 10/18/2016 02:11:21 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:11:43	108.532%	1252.863	2246.546	T 762751.030	T 2245619.000	T 124281280.000	T 8536457.200	T 806457.080	200.902%	7046.983	295748.380	205861.080
2	14:12:05	106.964%	1238.619	2124.706	T 763874.520	T 2207130.700	T 123136950.000	T 8498546.700	T 804411.770	203.503%	6867.264	296498.410	202973.250
3	14:12:26	107.438%	1242.424	2081.907	T 739943.130	T 2201076.400	T 120889030.000	T 8364912.100	765666.800	204.712%	7002.870	298034.250	206495.600
x		107.645%	1244.635	2151.053	T 755522.890	T 2217942.000	T 122769090.000	T 8466638.700	T 792178.550	203.039%	6972.373	296760.340	205109.980
σ		0.805%	7.375	85.423	T 13504.161	T 24159.362	T 1725787.100	T 90113.933	T 22982.613	1.947%	93.660	1165.227	1877.463
%RSD		0.747	0.593	3.971	T 1.787	T 1.089	T 1.406	T 1.064	T 2.901	0.959	1.343	0.393	0.915

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:11:43	3663.367	T 13695212.000	TM 489945540.000	171690.110	65156.507	71954.269	300688.200	38678.733	151.984	332.105	482.088	1766.067
2	14:12:05	2970.313	T 13806495.000	TM 495245610.000	170744.300	65271.858	72726.187	306376.470	39276.708	138.556	380.432	489.741	1681.841
3	14:12:26	3827.368	T 13876456.000	TM 496757640.000	170902.980	65639.681	74175.727	304694.520	39344.776	156.794	343.240	502.756	1650.079
x		3487.016	T 13792721.000	TM 493982930.000	171112.460	65356.015	72952.061	303919.730	39100.072	149.111	351.926	491.528	1699.329
σ		454.929	T 91403.559	TM 3577278.500	506.507	252.341	1127.822	2922.211	366.474	9.452	25.308	10.449	59.939
%RSD		13.046	T 0.663	TM 0.724	0.296	0.386	1.546	0.962	0.937	6.339	7.191	2.126	3.527

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:11:43	514971.470	516.062%	2502.994	2592.924	-355.057	1525.298	133.070%	36406.013	565.163	377.724	740310.370	171.208%
2	14:12:05	522103.490	517.753%	2686.999	2441.423	-329.514	1610.593	132.930%	36678.133	572.791	450.950	755321.330	169.108%
3	14:12:26	527912.540	529.630%	2654.541	2541.706	-463.507	1720.496	134.362%	36921.627	560.471	497.974	768341.960	175.130%
x		521662.500	521.148%	2614.845	2525.351	-382.693	1618.795	133.454%	36668.591	566.142	442.216	754657.890	171.815%
σ		6481.795	7.394%	98.216	77.063	71.143	97.857	0.790%	257.940	6.218	60.599	14027.565	3.057%
%RSD		1.243	1.419	3.756	3.052	18.590	6.045	0.592	0.703	1.098	13.704	1.859	1.779

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:11:43	369.799	9196.782	1621252.700	127.208%	0.000	362229.860	111919.480
2	14:12:05	408.055	8723.592	1627640.100	128.828%	0.000	369551.820	113075.350
3	14:12:26	333.769	8728.902	1629928.300	130.839%	0.000	370357.550	111220.570
x		370.541	8883.092	1626273.700	128.958%	0.000	367379.740	112071.800
σ		37.149	271.676	4496.303	1.819%	0.000	4478.091	936.724
%RSD		10.025	3.058	0.276	1.411	0.000	1.219	0.836

200-35736-A-2-A 10/18/2016 02:17:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:17:26	107.418%	1123.951	4345.354	┬773764.110	┬2348161.800	┬128563690.000	┬10553238.000	640757.460	194.238%	19483.732	293768.340	211250.320
2	14:17:47	107.938%	1194.944	4489.915	┬741623.810	┬2365902.700	┬127288810.000	┬10491629.000	650927.580	197.980%	19199.296	297126.240	207403.170
3	14:18:09	105.159%	1157.768	4574.805	┬725903.780	┬2316848.000	┬127972140.000	┬10277353.000	┬688730.450	199.490%	18868.209	292834.910	209553.420
x		106.838%	1158.887	4470.025	┬747097.230	┬2343637.500	┬127941550.000	┬10440740.000	┬660138.490	197.236%	19183.746	294576.500	209402.300
σ		1.478%	35.510	116.012	┬24395.111	┬24838.343	┬637991.860	┬144811.680	┬25278.107	2.704%	308.056	2256.928	1928.021
%RSD		1.383	3.064	2.595	┬3.265	┬1.060	┬0.499	┬1.387	┬3.829	1.371	1.606	0.766	0.921

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:17:26	4746.015	┬10812600.000	┬339300520.000	135828.240	62620.411	69533.012	275451.020	13085.692	223.069	252.749	488.855	1731.417
2	14:17:47	4461.106	┬10753966.000	┬338697020.000	134902.520	62807.694	69913.281	277883.310	13134.665	211.523	308.588	464.826	1509.523
3	14:18:09	4987.568	┬10922499.000	┬337248900.000	133030.380	62415.340	69587.519	273770.270	13094.646	210.885	287.438	476.009	1470.390
x		4731.563	┬10829688.000	┬338415480.000	134587.050	62614.482	69677.937	275701.530	13105.001	215.159	282.925	476.563	1570.443
σ		263.528	┬85555.656	┬1054388.400	1425.358	196.244	205.628	2067.933	26.077	6.858	28.192	12.024	140.774
%RSD		5.570	┬0.790	┬0.312	1.059	0.313	0.295	0.750	0.199	3.187	9.964	2.523	8.964

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:17:26	437237.070	476.050%	683.784	2012.603	-334.702	1337.641	131.943%	36222.652	298.071	230.495	652997.640	164.858%
2	14:17:47	435329.310	478.709%	630.810	1986.338	-256.711	1277.595	133.171%	37327.298	344.822	275.344	659590.400	164.618%
3	14:18:09	437824.880	475.834%	739.195	1997.034	-272.186	1276.757	135.189%	37879.169	378.964	296.135	645690.550	164.566%
x		436797.090	476.865%	684.596	1998.658	-287.866	1297.331	133.434%	37143.039	340.619	267.325	652759.530	164.681%
σ		1304.663	1.601%	54.197	13.207	41.292	34.912	1.639%	843.490	40.610	33.547	6952.983	0.156%
%RSD		0.299	0.336	7.917	0.661	14.344	2.691	1.228	2.271	11.922	12.549	1.065	0.094

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:17:26	436.103	8400.518	1431603.000	124.684%	0.000	365213.790	94099.876
2	14:17:47	394.347	8956.485	1470117.600	124.082%	4.030	371896.040	96549.593
3	14:18:09	409.692	8768.004	1466905.600	125.026%	0.000	370909.870	95973.061
x		413.381	8708.336	1456208.700	124.597%	1.343	369339.900	95540.844
σ		21.121	282.746	21369.645	0.478%	2.326	3607.177	1280.776
%RSD		5.109	3.247	1.467	0.384	173.205	0.977	1.341

200-35736-A-3-A 10/18/2016 02:22:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:23:09	105.752%	1146.497	5360.412	┬801500.040	┬2290779.900	┬133973140.000	┬10977588.000	739833.710	197.087%	20195.239	298283.780	212429.110
2	14:23:31	105.914%	1031.430	5430.627	┬782353.090	┬2233753.200	┬130390910.000	┬11055430.000	┬795786.990	204.147%	19917.088	291347.270	205444.150
3	14:23:52	104.448%	1196.816	5562.615	┬815609.850	┬2313376.800	┬136162890.000	┬11303830.000	┬818732.460	197.671%	21122.932	302001.960	217161.910
x		105.371%	1124.915	5451.218	┬799821.000	┬2279303.300	┬133508980.000	┬11112282.000	┬784784.390	199.635%	20411.753	297211.000	211678.390
σ		0.804%	84.779	102.662	┬16691.836	┬41033.707	┬2913854.600	┬170389.640	┬40583.817	3.918%	631.406	5407.749	5894.838
%RSD		0.763	7.537	1.883	┬2.087	┬1.800	┬2.183	┬1.533	┬5.171	1.963	3.093	1.819	2.785

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:23:09	5014.274	┬9121930.400	┬278434930.000	120568.120	61653.504	74328.084	294875.590	9794.458	239.552	309.571	506.684	1845.465
2	14:23:31	5257.296	┬9114531.200	┬273036840.000	119083.150	60280.355	72669.286	291836.210	9668.589	239.184	254.553	505.661	1885.841
3	14:23:52	5304.100	┬9411100.400	┬282847700.000	123393.620	62592.342	71522.718	290754.540	10154.532	224.122	322.653	488.064	1577.517
x		5191.890	┬9215854.000	┬278106490.000	121014.960	61508.734	72840.030	292488.780	9872.526	234.286	295.593	500.136	1769.608

σ		155.590	T 169128.810	T 4913666.700	2189.699	1162.772	1410.456	2136.620	252.202	8.804	36.138	10.467	167.576
%RSD		2.997	T 1.835	T 1.767	1.809	1.890	1.936	0.730	2.555	3.758	12.226	2.093	9.470
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:23:09	498562.040	501.335%	245.091	2229.558	-350.175	1884.277	129.669%	36560.208	80.552	146.016	665968.680	165.745%
2	14:23:31	496791.350	506.056%	208.226	2178.782	-334.152	1694.327	132.206%	37387.293	218.579	173.720	670054.700	168.415%
3	14:23:52	488936.630	507.951%	241.316	2104.981	-326.749	1695.781	134.206%	36942.115	156.046	162.063	667976.860	169.160%
x		494763.340	505.114%	231.544	2171.107	-337.025	1758.128	132.027%	36963.205	151.726	160.600	668000.080	167.773%
σ		5123.154	3.407%	20.282	62.642	11.974	109.251	2.274%	413.946	69.115	13.910	2043.111	1.795%
%RSD		1.035	0.675	8.759	2.885	3.553	6.214	1.722	1.120	45.553	8.661	0.306	1.070

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:23:09	412.159	8495.804	1527155.200	121.136%	0.000	369195.590	127193.950
2	14:23:31	546.687	8246.725	1489978.300	127.745%	0.000	363358.180	123462.480
3	14:23:52	369.474	8620.965	1536454.700	124.904%	0.000	371942.070	126664.150
x		442.774	8454.498	1517862.700	124.595%	0.000	368165.280	125773.530
σ		92.488	190.509	24592.193	3.315%	0.000	4383.712	2018.882
%RSD		20.888	2.253	1.620	2.661	0.000	1.191	1.605

200-35736-A-4-A 10/18/2016 02:28:30 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	14:28:52	111.379%	917.615	4757.442	T 714071.170	T 2097621.300	T 111248620.000	T 10174875.000	T 975818.860	200.186%	21531.699	270762.240	186394.0
2	14:29:14	110.220%	977.245	4983.908	T 701641.120	T 2084525.800	T 110775930.000	T 9990902.500	T 991887.180	202.721%	21217.809	267991.220	186097.2
3	14:29:36	106.887%	944.785	5407.321	T 681838.740	T 2064228.100	T 110033090.000	T 10229605.000	T 985658.570	203.293%	21668.501	269594.890	185146.4
x		109.495%	946.548	5049.557	T 699183.680	T 2082125.000	T 110685880.000	T 10131794.000	T 984454.870	202.067%	21472.670	269449.450	185879.2
σ		2.332%	29.854	329.876	T 16256.129	T 16825.547	T 612748.600	T 125046.680	T 8101.509	1.654%	231.072	1391.223	651.7
%RSD		2.130	3.154	6.533	T 2.325	T 0.808	T 0.554	T 1.234	T 0.823	0.818	1.076	0.516	0.3

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	14:28:52	3863.113	TM 29923753.000	TM 510470750.000	105929.510	55987.586	62808.710	241399.840	35059.162	163.023	347.070	449.738	1398.6
2	14:29:14	4245.927	TM 30044516.000	TM 509126670.000	106470.440	55835.855	64411.840	247234.480	35730.419	164.404	357.756	460.430	1217.6
3	14:29:36	4015.724	TM 30004917.000	TM 516839030.000	108134.540	56102.266	64590.761	245641.010	34891.278	181.949	288.338	446.890	1681.2
x		4041.588	TM 29991062.000	TM 512145490.000	106844.830	55975.236	63937.104	244758.440	35226.953	169.792	331.055	452.353	1432.5
σ		192.713	TM 61562.057	TM 4119913.100	1149.203	133.634	981.304	3015.784	444.021	10.551	37.377	7.139	233.6
%RSD		4.768	TM 0.205	TM 0.804	1.076	0.239	1.535	1.232	1.260	6.214	11.290	1.578	16.3

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	14:28:52	566184.250	481.776%	657.077	2320.119	-366.749	1172.307	135.971%	37307.401	18.952	-6.975	701087.310	164.877
2	14:29:14	576784.600	483.735%	658.835	2422.666	-380.151	1055.866	134.768%	38615.421	4.822	65.482	713328.460	162.675
3	14:29:36	571785.730	483.597%	608.607	2339.482	-420.698	1129.009	137.397%	38686.988	245.064	84.949	715598.400	166.173
x		571584.860	483.036%	641.506	2360.756	-389.199	1119.061	136.045%	38203.270	89.613	47.818	710004.720	164.575
σ		5303.031	1.093%	28.505	54.483	28.090	58.854	1.316%	776.670	134.810	48.441	7805.662	1.768
%RSD		0.928	0.226	4.443	2.308	7.217	5.259	0.967	2.033	150.436	101.302	1.099	1.0

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:28:52	460.303	7692.276	1506928.500	126.337%	0.000	306577.170	59654.094
2	14:29:14	483.144	7487.438	1527282.400	127.305%	0.000	308430.410	59933.535
3	14:29:36	431.927	7870.590	1517731.500	128.983%	0.000	306565.570	59165.101
x		458.458	7683.435	1517314.200	127.542%	0.000	307191.050	59584.244
σ		25.659	191.729	10183.356	1.339%	0.000	1073.333	388.950
%RSD		5.597	2.495	0.671	1.050	0.000	0.349	0.653

200-35736-A-5-A 10/18/2016 02:34:14 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:34:36	107.308%	927.070	4257.862	T 648255.230	T 1991227.500	T 119454960.000	T 10053139.000	567052.650	192.191%	19992.101	269490.200	190500.060
2	14:34:57	107.225%	962.774	4570.023	T 668580.540	T 2071749.700	T 122143780.000	T 10215966.000	573598.790	192.138%	20477.200	279952.490	195393.030
3	14:35:19	104.076%	1011.334	4890.004	T 638964.450	T 1999653.000	T 118255590.000	T 10006976.000	561958.980	195.557%	19691.043	274613.810	192429.640
x		106.203%	967.059	4572.630	T 651933.410	T 2020876.700	T 119951440.000	T 10092027.000	567536.810	193.295%	20053.448	274685.500	192774.240
σ		1.842%	42.295	316.079	T 15146.775	T 44258.221	T 1991072.500	T 109788.150	5834.990	1.959%	396.653	5231.516	2464.618
%RSD		1.735	4.374	6.912	T 2.323	T 2.190	T 1.660	T 1.088	1.028	1.014	1.978	1.905	1.278

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:34:36	5215.310	T 8472852.100	T 281265100.000	114043.520	55777.800	61215.336	243272.420	10115.322	254.508	234.527	453.231	1722.860
2	14:34:57	4701.471	T 8515274.800	T 285047670.000	116442.710	56502.844	62766.208	244730.240	10349.531	246.138	274.026	484.458	1650.581
3	14:35:19	5415.668	T 8528961.100	T 282152540.000	115691.290	55388.284	62935.455	246717.440	10041.566	227.211	291.776	457.816	1566.998
x		5110.816	T 8505696.000	T 282821770.000	115392.510	55889.642	62305.666	244906.700	10168.806	242.619	266.776	465.168	1646.813
σ		368.386	T 29255.254	T 1978093.800	1227.189	565.635	948.038	1729.275	160.798	13.985	29.305	16.862	78.000

%RSD		7.208	T 0.344	T 0.699	1.063	1.012	1.522	0.706	1.581	5.764	10.985	3.625	4.736
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:34:36	374163.940	429.355%	696.241	2097.750	-323.602	1448.998	131.834%	36028.416	225.830	126.778	593159.000	156.938%
2	14:34:57	383992.560	440.774%	694.399	1950.056	-311.610	1394.481	132.831%	36750.615	237.713	117.686	598646.940	157.870%
3	14:35:19	376220.590	438.835%	678.873	1892.025	-247.047	1385.656	133.462%	36719.755	183.505	199.644	602924.760	158.524%
x		378125.700	436.321%	689.838	1979.944	-294.087	1409.711	132.709%	36499.595	215.683	148.036	598243.570	157.777%
σ		5183.869	6.110%	9.540	106.069	41.176	34.308	0.821%	408.345	28.493	44.924	4895.362	0.797%
%RSD		1.371	1.400	1.383	5.357	14.001	2.434	0.619	1.119	13.211	30.347	0.818	0.505

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:34:36	405.385	7792.617	1467782.700	121.982%	0.000	312566.530	98897.971
2	14:34:57	449.960	7985.810	1506714.900	121.860%	0.000	318561.100	100278.340
3	14:35:19	447.726	8078.478	1515499.700	120.851%	0.000	325339.310	101570.430
x		434.357	7952.302	1496665.800	121.564%	0.000	318822.310	100248.910
σ		25.115	145.847	25396.194	0.621%	0.000	6390.394	1336.473
%RSD		5.782	1.834	1.697	0.511	0.000	2.004	1.333

200-35736-A-5-A SD@5 10/18/2016 02:39:58 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	14:40:19	103.766%	200.015	324.805	153627.550	489858.300	T 31331610.000	T 2589531.000	145489.630	151.516%	5440.338	72010.483	51036.357
2	14:40:41	104.161%	216.032	669.331	141556.830	488218.850	T 31159478.000	T 2566881.600	144914.120	154.217%	5126.526	71574.227	49877.385
3	14:41:03	103.798%	168.640	647.097	147076.900	501909.300	T 31765958.000	T 2616627.300	150713.220	149.470%	5081.194	73133.937	51493.499
x		103.909%	194.896	547.077	147420.430	493328.820	T 31419015.000	T 2591013.300	147038.990	151.735%	5216.019	72239.549	50802.414
σ		0.219%	24.107	192.815	6042.688	7475.993	T 312544.780	T 24905.946	3194.963	2.381%	195.584	804.691	833.068
%RSD		0.211	12.369	35.244	4.099	1.515	T 0.995	T 0.961	2.173	1.569	3.750	1.114	1.640

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	14:40:19	4685.204	T 2154409.500	T 73964042.000	29545.021	14828.327	13276.567	57811.912	2294.167	428.269	48.213	396.219	2031.922
2	14:40:41	4253.453	T 2154865.400	T 72457916.000	30171.327	14610.396	12945.122	58467.348	2253.348	449.816	28.929	418.484	1975.642
3	14:41:03	4612.190	T 2217928.300	T 76217831.000	31332.028	15115.435	13127.229	57689.318	2225.711	427.000	42.524	431.896	1880.791
x		4516.949	T 2175734.400	T 74213263.000	30349.459	14851.386	13116.306	57989.526	2257.742	435.028	39.889	415.533	1962.785
σ		231.096	T 36541.690	T 1892306.400	906.723	253.308	165.992	418.321	34.439	12.822	9.908	18.021	76.381
%RSD		5.116	T 1.680	T 2.550	2.988	1.706	1.266	0.721	1.525	2.948	24.840	4.337	3.891
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:40:19	77304.259	201.614%	-222.781	426.098	-128.742	353.276	132.631%	8092.727	-836.524	-654.341	119594.440	129.985%
2	14:40:41	77736.083	202.074%	-68.541	423.311	-103.440	248.044	133.460%	7832.515	-781.269	-630.598	121389.430	128.481%
3	14:41:03	77910.444	202.876%	-195.273	484.047	-86.454	257.934	133.252%	7600.703	-740.137	-622.995	121374.530	130.366%
x		77650.262	202.188%	-162.199	444.485	-106.212	286.418	133.114%	7841.982	-785.977	-635.978	120786.130	129.610%
σ		312.072	0.638%	82.268	34.289	21.280	58.112	0.431%	246.148	48.366	16.351	1032.063	0.997%
%RSD		0.402	0.316	50.720	7.714	20.035	20.289	0.324	3.139	6.154	2.571	0.854	0.769

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:40:19	62.226	1470.300	308290.320	115.522%	0.000	56070.876	20453.190
2	14:40:41	64.028	1581.283	315481.880	114.700%	0.000	59248.680	20185.406
3	14:41:03	80.954	1432.544	312232.940	116.181%	0.000	60918.137	20392.884
x		69.069	1494.709	312001.710	115.468%	0.000	58745.897	20343.827
σ		10.332	77.316	3601.351	0.742%	0.000	2462.433	140.471
%RSD		14.958	5.173	1.154	0.642	0.000	4.192	0.690

CCV 10/18/2016 02:45:42 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	14:46:03	91.582%	98616.577	34636.250	┬13671357.000	┬4111935.900	┬38982582.000	┬13897458.000	┬1452758.800	109.738%	26867.079	┬2739908.500	776799
2	14:46:25	86.634%	101617.680	36991.723	┬13377416.000	┬4038713.100	┬38394257.000	┬13317900.000	┬1433800.800	110.773%	26469.002	┬2670991.400	756346
3	14:46:46	87.685%	99597.184	35802.177	┬13402784.000	┬4046121.900	┬38602720.000	┬13382463.000	┬1403616.900	108.722%	25872.134	┬2661450.300	757001
x		88.634%	111.714%	109.216%	┬100.202%	┬98.141%	┬100.087%	┬99.721%	┬98.817%	109.744%	26402.738	┬102.032%	95.0
σ		2.607%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.026%	500.771	┬n/a	
%RSD		2.941	1.531	3.289	┬1.208	┬0.991	┬0.772	┬2.347	┬1.733	0.935	1.897	┬1.591	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	14:46:03	9765.284	┬4068487.000	┬84351378.000	1218635.600	656027.170	788756.780	624093.620	85923.602	-426.898	9244.944	397.514	1470
2	14:46:25	8609.346	┬3901949.300	┬81942266.000	1190527.600	644124.760	815875.380	630764.230	87297.007	-517.753	9268.715	418.774	1419
3	14:46:46	9781.657	┬3984828.200	┬82847550.000	1180148.600	635613.390	791177.860	627204.780	85529.860	-508.874	9210.279	391.311	1267
x		9385.429	┬98.424%	┬99.093%	94.160%	100.865%	96.209%	98.054%	103.994%	-484.508	107.188%	402.533	1385
σ		672.158	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	50.089	n/a	14.403	105
%RSD		7.162	┬2.090	┬1.465	1.664	1.589	1.879	0.532	1.076	10.338	0.318	3.578	7

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	14:46:03	844132.790	115.581%	1631492.600	279071.520	176.887	134598.650	110.815%	840340.050	559613.420	436209.500	563984.190	107.1
2	14:46:25	847229.020	112.053%	1714447.000	281003.480	908.088	136625.450	108.413%	853144.150	574932.820	445826.530	575311.160	104.4
3	14:46:46	847034.870	110.456%	1738513.200	277763.240	225.996	136241.450	107.077%	852339.280	572775.480	445049.160	577924.690	103.1
x		846132.230	112.696%	91.533%	104.291%	436.991	96.632%	108.769%	848607.820	569107.240	94.342%	92.112%	104.9
σ		1734.284	2.622%	n/a	n/a	408.721	n/a	1.894%	7171.407	8292.345	n/a	n/a	2.0
%RSD		0.205	2.327	3.313	0.584	93.531	0.793	1.741	0.845	1.457	1.208	1.295	1

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:46:03	35315.261	1627465.400	┬15645781.000	100.003%	0.000	201768.100	114519.840
2	14:46:25	36844.240	1688559.700	┬15912806.000	98.004%	0.000	222294.230	121357.000
3	14:46:46	37590.739	1641420.100	┬15535634.000	99.694%	0.000	227734.030	116192.750
x		98.577%	88.356%	┬98.362%	99.234%	0.000	86.297%	94.083%
σ		n/a	n/a	┬n/a	1.076%	0.000	n/a	n/a
%RSD		3.171	1.937	┬1.235	1.084	0.000	6.303	3.037

CCB 10/18/2016 02:51:26 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:51:48	95.066%	5.966	-468.124	-6143.835	459.106	4682.964	7045.418	261.689	116.461%	34.348	1417.075	-216.194
2	14:52:09	93.329%	-4.504	-416.234	-6596.550	173.296	4182.545	5359.503	78.581	117.236%	21.340	468.073	-102.693
3	14:52:31	94.697%	16.578	-354.226	-5167.901	409.677	4936.562	5461.293	263.781	116.057%	12.920	1712.435	-103.110
x		94.364%	6.013	-412.861	-5969.429	347.360	4600.690	5955.404	201.350	116.584%	22.869	1199.194	-140.665
σ		0.915%	10.541	57.024	730.118	152.756	383.682	945.350	106.327	0.599%	10.796	650.164	65.410
%RSD		0.970	175.285	13.812	12.231	43.976	8.340	15.874	52.807	0.514	47.206	54.217	46.500

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:51:48	4869.800	284.449	35304.068	56.086	18.957	-32.866	-133.778	-231.871	481.822	-52.571	387.045	2016.194
2	14:52:09	5279.999	343.825	33500.695	98.082	14.380	-47.199	-220.639	-249.715	492.402	-43.402	382.007	2073.342
3	14:52:31	4926.189	187.776	34896.674	26.272	40.663	14.205	-237.496	-264.377	511.971	-65.942	389.879	2023.044
x		5025.329	272.017	34567.146	60.147	24.667	-21.953	-197.304	-248.654	495.398	-53.971	386.310	2037.527

σ		222.345	78.764	945.770	36.077	14.041	32.124	55.658	16.279	15.296	11.335	3.987	31.206
%RSD		4.424	28.955	2.736	59.982	56.922	146.327	28.209	6.547	3.088	21.002	1.032	1.532
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:51:48	34.893	116.329%	2091.495	17.015	-76.969	31.626	113.813%	2992.065	-399.678	-365.264	44.711	104.272%
2	14:52:09	51.972	115.378%	1951.855	25.500	-70.114	29.232	114.528%	3344.542	-298.310	-291.973	18.132	104.858%
3	14:52:31	87.029	117.021%	1928.179	25.555	-47.860	7.389	114.396%	3549.511	-292.568	-287.297	44.397	108.176%
x		57.965	116.243%	1990.509	22.690	-64.981	22.749	114.246%	3295.372	-330.185	-314.845	35.747	105.769%
σ		26.580	0.825%	88.254	4.915	15.218	13.356	0.381%	281.957	60.251	43.727	15.256	2.105%
%RSD		45.855	0.710	4.434	21.660	23.419	58.709	0.333	8.556	18.248	13.888	42.676	1.991

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:51:48	138.531	986.029	-446.948	103.131%	0.000	7177.178	-49.955
2	14:52:09	146.781	914.638	-345.856	100.458%	0.000	7186.184	-24.810
3	14:52:31	97.868	920.251	-157.684	102.026%	0.000	7174.573	-15.544
x		127.727	940.306	-316.829	101.872%	0.000	7179.311	-30.103
σ		26.185	39.697	146.800	1.343%	0.000	6.092	17.805
%RSD		20.501	4.222	46.334	1.319	0.000	0.085	59.147

CCVL 10/18/2016 02:57:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:57:32	98.719%	213.142	5521.714	T 720197.090	27582.404	70810.785	649871.040	24058.621	118.637%	12.642	11515.198	8626.652
2	14:57:55	97.865%	204.846	5243.385	T 698793.620	27568.743	68546.314	634752.840	23522.761	119.706%	12.533	10022.895	7764.828
3	14:58:18	94.234%	194.445	5689.628	T 702568.320	27691.653	71819.687	634217.520	24221.182	119.035%	21.011	11025.949	8116.974
x		96.939%	142.616%	104.552%	T 105.106%	99.989%	109.344%	94.266%	99.231%	119.126%	15.395	102.900%	101.689%
σ		2.381%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.540%	4.864	n/a	n/a
%RSD		2.456	4.589	4.109	T 1.616	0.244	2.381	1.389	1.527	0.454	31.593	7.009	5.304

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:57:32	5708.645	7261.456	574623.960	2874.097	1202.428	3543.747	10890.817	684.310	503.965	143.232	411.227	2115.090
2	14:57:55	5879.072	7439.516	559538.090	2927.429	1316.756	3408.641	11364.683	590.554	557.316	158.968	411.530	2030.060
3	14:58:18	5613.450	7618.285	554613.980	2704.705	1152.108	3522.386	10949.564	608.060	523.240	138.546	393.607	1876.061
x		5733.722	114.842%	100.753%	111.573%	119.560%	105.159%	108.123%	75.676%	528.174	85.202%	405.455	2007.070
σ		134.575	n/a	n/a	n/a	n/a	n/a	n/a	n/a	27.016	n/a	10.261	121.162
%RSD		2.347	2.398	1.852	4.101	6.894	2.080	2.334	7.943	5.115	7.282	2.531	6.037

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:57:32	21626.016	119.054%	13834.871	2959.140	-14.736	741.463	116.726%	1362.235	3656.354	2903.122	4734.456	107.951%
2	14:57:55	21952.517	119.130%	13808.649	3274.381	-27.074	818.637	115.424%	1693.848	4105.593	2972.365	4736.014	106.675%
3	14:58:18	21112.098	117.906%	14250.524	2936.202	-128.712	718.408	117.123%	1665.008	4028.510	2965.672	4534.690	106.501%
x		96.589%	118.697%	94.275%	114.141%	-56.841	108.071%	116.424%	1573.697	3930.152	78.565%	93.905%	107.042%
σ		n/a	0.686%	n/a	n/a	62.547	n/a	0.889%	183.698	240.228	n/a	n/a	0.792%
%RSD		1.965	0.578	1.775	6.183	110.040	6.911	0.763	11.673	6.112	1.296	2.480	0.740

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:57:32	2771.047	16586.716	13114.664	103.074%	0.000	15592.951	11877.905
2	14:57:55	2870.916	16218.990	13805.069	103.066%	0.000	15613.192	12456.582
3	14:58:18	3091.758	17269.478	13612.630	104.903%	0.000	15840.257	12542.716
x		78.446%	89.249%	105.821%	103.681%	0.000	62.289%	98.547%
σ		n/a	n/a	n/a	1.058%	0.000	n/a	n/a
%RSD		5.637	3.194	2.637	1.021	0.000	0.876	2.941

200-35736-A-5-A PDS 10/18/2016 03:02:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:03:20	107.870%	2384.770	59864.742	T 5583702.700	T 2227160.900	T 121065920.000	T 15061687.000	T 763203.660	178.668%	19327.278	330277.760	240946.070
2	15:03:41	106.954%	2442.664	61120.349	T 5701069.600	T 2253691.000	T 121502340.000	T 15024010.000	713675.740	182.109%	19361.562	338898.190	247695.770
3	15:04:03	106.144%	2426.020	62111.637	T 5593415.600	T 2264914.600	T 122879710.000	T 15181358.000	731232.820	181.808%	19583.345	341919.110	244420.010
x		106.989%	2417.818	61032.243	T 5626062.600	T 2248588.800	T 121815990.000	T 15089018.000	T 736037.410	180.862%	19424.062	337031.690	244353.950
σ		0.864%	29.806	1126.036	T 65139.253	T 19387.078	T 946702.830	T 82157.612	T 25111.089	1.906%	139.005	6040.953	3375.337
%RSD		0.807	1.233	1.845	T 1.158	T 0.862	T 0.777	T 0.544	T 3.412	1.054	0.716	1.792	1.381

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:03:20	6114.614	T 8333569.600	T 282432660.000	131018.030	61435.231	91018.506	323875.690	17049.170	241.050	1564.406	443.855	1501.137
2	15:03:41	5899.982	T 8420707.100	T 278927900.000	127934.400	60599.872	93817.956	330222.730	17176.195	272.847	1556.112	504.919	1722.101
3	15:04:03	5996.363	T 8495549.700	T 286694470.000	129965.130	62228.726	93541.200	328207.350	17909.108	227.301	1615.350	478.638	1583.207
x		6003.653	T 8416608.800	T 282685010.000	129639.190	61421.276	92792.554	327435.260	17378.158	247.066	1578.623	475.804	1602.148
σ		107.501	T 81067.743	T 3889429.000	1567.442	814.516	1542.590	3243.198	464.182	23.362	32.076	30.630	111.693

%RSD		1.791	┬0.963	┬1.376	1.209	1.326	1.662	0.990	2.671	9.456	2.032	6.438	6.971
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:03:20	572357.970	389.857%	45686.081	28731.491	-295.829	7183.126	122.565%	35689.223	41708.991	32528.161	608714.710	145.247%
2	15:03:41	587315.360	400.328%	45677.174	29280.076	-240.456	7485.133	123.091%	36363.235	41724.989	33411.523	631905.580	147.265%
3	15:04:03	583854.050	406.077%	45635.990	28762.268	-508.449	7622.339	125.253%	36928.389	42123.949	33065.608	628047.620	150.201%
x		581175.790	398.754%	45666.415	28924.612	-348.245	7430.199	123.636%	36326.949	41852.643	33001.764	622889.300	147.571%
σ		7830.112	8.224%	26.723	308.225	141.477	224.701	1.425%	620.379	235.094	445.128	12426.197	2.491%
%RSD		1.347	2.062	0.059	1.066	40.626	3.024	1.153	1.708	0.562	1.349	1.995	1.688

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:03:20	24489.359	160141.870	1531044.700	113.383%	0.000	582301.170	219426.120
2	15:03:41	24601.722	163135.750	1543420.900	116.018%	0.000	571100.270	216982.210
3	15:04:03	24382.497	163788.520	1552033.700	117.889%	0.000	557854.080	219790.540
x		24491.193	162355.380	1542166.400	115.763%	0.000	570418.510	218732.960
σ		109.624	1944.541	10550.539	2.264%	0.000	12237.800	1527.098
%RSD		0.448	1.198	0.684	1.956	0.000	2.145	0.698

200-35736-A-5-I MS 10/18/2016 03:08:42 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	15:09:04	104.824%	2432.812	50744.913	┬5787993.800	┬2104402.400	┬110460770.000	┬13470212.000	735283.650	178.235%	17035.561	328609.800	235514.660
2	15:09:26	107.050%	2344.691	49363.751	┬5762793.400	┬2099604.700	┬110240170.000	┬13621482.000	┬784002.520	181.375%	16319.375	323148.020	234037.000
3	15:09:48	105.509%	2502.279	51225.056	┬5814794.000	┬2076392.600	┬109046410.000	┬13332826.000	727068.980	182.752%	16891.818	330524.550	238664.750
x		105.794%	2426.594	50444.573	┬5788527.100	┬2093466.600	┬109915780.000	┬13474840.000	┬748785.050	180.787%	16748.918	327427.460	236072.140
σ		1.140%	78.978	966.316	┬26004.393	┬14979.764	┬760935.660	┬144383.500	┬30774.552	2.315%	378.874	3827.765	2363.702
%RSD		1.078	3.255	1.916	┬0.449	┬0.716	┬0.692	┬1.072	┬4.110	1.280	2.262	1.169	1.001
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	15:09:04	5743.156	┬8657446.700	┬284740990.000	129987.740	59514.781	90201.297	320063.070	18475.712	277.309	1609.293	467.483	1672.416
2	15:09:26	5908.329	┬8724173.200	┬287002680.000	130812.100	60365.244	91030.697	318250.070	18225.027	267.382	1575.940	459.298	1546.448
3	15:09:48	5504.433	┬8661111.600	┬288178760.000	133379.070	60411.507	91690.192	319670.440	18593.802	223.640	1567.283	452.893	1437.564
x		5718.640	┬8680910.500	┬286640810.000	131392.970	60097.177	90974.062	319327.860	18431.513	256.110	1584.172	459.891	1552.143
σ		203.061	┬37511.392	┬1747219.700	1768.706	504.900	746.062	953.819	188.319	28.555	22.182	7.313	117.530
%RSD		3.551	┬0.432	┬0.610	1.346	0.840	0.820	0.299	1.022	11.149	1.400	1.590	7.572
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:09:04	578838.410	385.920%	46093.710	30756.032	-263.497	7642.754	123.750%	39929.800	11658.878	9058.671	578966.270	145.726%
2	15:09:26	567883.950	390.812%	47292.572	30127.653	-313.068	7518.423	127.044%	39889.298	11478.126	9196.621	574213.150	148.701%
3	15:09:48	571442.000	393.717%	46945.673	30353.797	-254.041	7418.775	127.847%	39344.544	11359.050	9213.231	583256.430	150.544%
x		572721.450	390.150%	46777.319	30412.494	-276.869	7526.651	126.214%	39721.214	11498.684	9156.175	578811.950	148.324%
σ		5588.183	3.940%	616.907	318.275	31.704	112.216	2.171%	326.834	150.968	84.848	4523.614	2.431%
%RSD		0.976	1.010	1.319	1.047	11.451	1.491	1.720	0.823	1.313	0.927	0.782	1.639

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:09:04	20895.079	130345.710	1515872.900	114.635%	4.362	528548.710	216554.290
2	15:09:26	21317.396	129553.500	1498316.300	118.418%	0.000	510849.540	216437.540
3	15:09:48	20972.023	130214.360	1530434.600	116.555%	0.000	531487.120	225684.030
x		21061.499	130037.850	1514874.600	116.536%	1.454	523628.460	219558.620
σ		224.928	424.576	16082.419	1.891%	2.518	11163.963	5305.080
%RSD		1.068	0.327	1.062	1.623	173.205	2.132	2.416

200-35736-A-5-J MSD 10/18/2016 03:14:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:14:47	106.725%	2536.939	50251.146	T 5687002.800	T 2259748.500	T 121338310.000	T 14588524.000	T 818719.420	187.388%	20064.434	348041.350	248293.050
2	15:15:09	104.444%	2582.932	53268.373	T 5637926.500	T 2276071.100	T 122459340.000	T 14444939.000	T 824219.830	190.445%	20152.619	351707.240	249675.010
3	15:15:31	104.974%	2560.329	53452.024	T 5751886.100	T 2363124.800	T 125625960.000	T 14822704.000	T 838320.020	188.188%	19721.610	355543.470	256058.860
x		105.381%	2560.067	52323.847	T 5692271.800	T 2299648.100	T 123141200.000	T 14618722.000	T 827086.420	188.674%	19979.554	351764.020	251342.310
σ		1.194%	22.998	1797.360	T 57162.214	T 55574.900	T 2223667.900	T 190684.470	T 10109.840	1.585%	227.696	3751.382	4142.689
%RSD		1.133	0.898	3.435	T 1.004	T 2.417	T 1.806	T 1.304	T 1.222	0.840	1.140	1.066	1.648

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:14:47	5748.454	T 8805771.600	T 293993030.000	136553.780	63405.496	97651.218	336861.380	19539.228	224.894	1624.414	479.908	1723.682
2	15:15:09	6063.717	T 8977765.600	T 295338270.000	137856.830	63865.488	99445.478	342208.250	19350.719	247.224	1594.160	484.478	1693.375
3	15:15:31	5885.779	T 9243412.600	T 304329010.000	138374.340	64701.288	97222.650	338496.630	18887.365	250.433	1584.501	462.822	1619.075
x		5899.316	T 9008983.300	T 297886770.000	137594.980	63990.757	98106.449	339188.750	19259.104	240.850	1601.025	475.736	1678.711
σ		158.067	T 220484.240	T 5619543.000	938.106	656.916	1179.266	2739.806	335.450	13.911	20.823	11.415	53.823
%RSD		2.679	T 2.447	T 1.886	0.682	1.027	1.202	0.808	1.742	5.776	1.301	2.399	3.206

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:14:47	610265.090	417.999%	42118.101	29632.273	-381.775	7816.217	126.276%	39551.892	11146.459	8808.042	643149.750	153.132%
2	15:15:09	619414.730	425.064%	42151.317	30135.180	-313.828	8019.148	126.530%	40439.662	11181.011	8889.735	654661.620	152.880%
3	15:15:31	613491.740	428.369%	42412.464	29160.769	-333.174	7807.554	129.210%	40804.454	11050.645	8720.511	645663.610	151.935%
x		614390.520	423.811%	42227.294	29642.741	-342.925	7880.973	127.339%	40265.336	11126.038	8806.096	647824.990	152.649%
σ		4640.567	5.297%	161.220	487.290	35.007	119.742	1.625%	644.220	67.539	84.629	6052.642	0.631%
%RSD		0.755	1.250	0.382	1.644	10.208	1.519	1.276	1.600	0.607	0.961	0.934	0.413

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:14:47	18300.149	125102.260	1615572.600	118.329%	0.000	538905.870	220068.650
2	15:15:09	19290.439	124407.260	1608413.400	119.801%	0.000	542618.120	221543.020
3	15:15:31	19341.721	123942.050	1630617.000	120.216%	0.000	545158.370	227777.540
x		18977.436	124483.860	1618201.000	119.449%	0.000	542227.450	223129.740
σ		587.108	583.884	11332.707	0.992%	0.000	3144.505	4092.067
%RSD		3.094	0.469	0.700	0.830	0.000	0.580	1.834

200-35736-A-6-A 10/18/2016 03:20:08 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:20:29	105.405%	1233.321	5609.969	T 813655.260	T 2441387.000	T 146920530.000	T 11857582.000	T 862128.860	202.839%	14739.186	289521.890	220851.890
2	15:20:52	105.069%	1182.553	5612.810	T 804332.150	T 2455562.200	T 143558210.000	T 11684183.000	T 865192.800	203.897%	14605.368	288720.830	221816.090
3	15:21:13	102.327%	1392.805	5820.953	T 826256.130	T 2474869.800	T 147559650.000	T 11913276.000	824131.750	203.917%	14500.386	293875.990	225982.960
x		104.267%	1269.560	5681.244	T 814747.850	T 2457273.000	T 146012800.000	T 11818347.000	T 850484.470	203.551%	14614.980	290706.240	222883.650
σ		1.689%	109.710	121.000	T 11002.748	T 16806.836	T 2149617.800	T 119479.870	T 22873.483	0.616%	119.690	2774.154	2727.033
%RSD		1.620	8.642	2.130	T 1.350	T 0.684	T 1.472	T 1.011	T 2.689	0.303	0.819	0.954	1.224

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:20:29	5591.915	T 5386508.700	T 283185880.000	120716.290	63887.934	84290.453	322015.120	7430.133	238.208	367.835	527.756	1666.577
2	15:20:52	5744.747	T 5534006.700	T 289829100.000	120107.350	63245.028	84285.401	328541.270	7562.041	226.434	324.402	554.796	1744.516
3	15:21:13	5224.863	T 5626051.200	T 294154640.000	121051.250	64286.683	83741.224	324332.580	7501.417	242.000	298.404	535.522	1767.939
x		5520.508	T 5515522.200	T 289056540.000	120624.960	63806.549	84105.692	324962.990	7497.864	235.547	330.214	539.358	1726.344

σ		267.197	T 120836.320	T 5525042.000	478.529	525.575	315.649	3308.430	66.025	8.117	35.079	13.922	53.068
%RSD		4.840	T 2.191	T 1.911	0.397	0.824	0.375	1.018	0.881	3.446	10.623	2.581	3.074
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:20:29	544919.450	549.224%	-54.167	2303.071	-355.051	1908.472	126.861%	35970.515	-272.880	-127.286	661487.860	166.283%
2	15:20:52	558205.690	552.295%	-139.753	2373.890	-317.300	2030.009	127.077%	36118.488	-68.225	-146.363	667411.870	165.784%
3	15:21:13	549891.250	554.493%	-105.091	2297.195	-277.264	1846.903	128.475%	36595.523	-90.342	-110.951	675864.810	165.933%
x		551005.460	552.004%	-99.670	2324.719	-316.538	1928.461	127.471%	36228.175	-143.816	-128.200	668254.840	166.000%
σ		6712.835	2.646%	43.050	42.685	38.899	93.175	0.877%	326.623	112.319	17.724	7225.449	0.256%
%RSD		1.218	0.479	43.193	1.836	12.289	4.832	0.688	0.902	78.099	13.825	1.081	0.154

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:20:29	404.516	9822.443	1399824.700	118.687%	0.000	371237.820	154451.020
2	15:20:52	369.816	9854.211	1414513.500	120.713%	0.000	373087.170	156687.040
3	15:21:13	417.616	9207.902	1435127.800	120.810%	4.139	375437.620	157112.890
x		397.316	9628.185	1416488.600	120.070%	1.380	373254.200	156083.650
σ		24.700	364.323	17734.226	1.199%	2.389	2104.878	1429.842
%RSD		6.217	3.784	1.252	0.999	173.205	0.564	0.916

200-35736-A-7-A 10/18/2016 03:25:50 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:26:12	106.217%	1016.701	4978.362	T 683818.920	T 2089654.000	T 115907810.000	T 9662250.000	T 746610.850	192.591%	15579.475	273970.840	190848.940
2	15:26:33	104.425%	1060.609	4831.227	T 692942.840	T 2106794.700	T 115737590.000	T 9545544.300	T 752579.320	194.002%	15239.847	275879.700	194690.640
3	15:26:55	107.766%	1036.786	5051.424	T 691409.490	T 2096709.800	T 116488830.000	T 9640113.800	699150.810	193.372%	15715.160	280516.010	195986.740
x		106.136%	1038.032	4953.671	T 689390.420	T 2097719.500	T 116044740.000	T 9615969.400	T 732780.330	193.321%	15511.494	276788.850	193842.100
σ		1.672%	21.980	112.156	T 4885.589	T 8614.855	T 393898.400	T 61986.064	T 29276.507	0.707%	244.840	3365.970	2671.939
%RSD		1.575	2.117	2.264	T 0.709	T 0.411	T 0.339	T 0.645	T 3.995	0.366	1.578	1.216	1.378

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:26:12	4600.902	T 12255383.000	T 390431290.000	122122.560	56126.919	64261.900	278300.590	19755.732	212.681	331.303	461.405	1587.510
2	15:26:33	4174.023	T 12337624.000	T 399022320.000	125307.310	57116.802	66413.799	284973.320	19702.496	225.485	314.196	497.923	1667.782
3	15:26:55	3710.823	T 12305859.000	T 398726800.000	124923.450	55410.877	63801.751	277183.560	19336.725	236.623	246.554	471.331	1780.560
x		4161.916	T 12299622.000	T 396060140.000	124117.780	56218.199	64825.817	280152.490	19598.318	224.930	297.351	476.886	1678.617
σ		445.163	T 41473.642	T 4876961.700	1738.533	856.618	1394.346	4212.154	228.104	11.981	44.815	18.883	96.980
%RSD		10.696	T 0.337	T 1.231	1.401	1.524	2.151	1.504	1.164	5.326	15.071	3.960	5.777

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:26:12	430749.250	445.351%	931.330	2018.139	-430.311	1535.372	131.340%	36480.586	211.477	99.159	582604.480	157.294%
2	15:26:33	441283.820	455.965%	901.755	2133.613	-344.195	1481.457	129.641%	36343.853	197.442	197.937	586675.180	153.521%
3	15:26:55	439314.660	459.244%	911.393	1863.658	-366.006	1470.602	132.818%	35742.530	248.001	161.841	583732.330	158.718%
x		437115.910	453.520%	914.826	2005.137	-380.171	1495.811	131.266%	36188.990	218.974	152.979	584337.330	156.511%
σ		5600.911	7.262%	15.084	135.446	44.771	34.689	1.590%	392.643	26.100	49.982	2101.709	2.686%
%RSD		1.281	1.601	1.649	6.755	11.777	2.319	1.211	1.085	11.919	32.672	0.360	1.716

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:26:12	458.301	8051.514	1699402.200	118.979%	0.000	316702.210	70339.021
2	15:26:33	380.621	8066.837	1709824.400	120.265%	0.000	319157.940	72423.906
3	15:26:55	440.765	7947.937	1726947.600	120.241%	0.000	322641.590	72534.765
x		426.562	8022.096	1712058.100	119.828%	0.000	319500.580	71765.897
σ		40.741	64.679	13907.878	0.735%	0.000	2984.476	1236.954
%RSD		9.551	0.806	0.812	0.614	0.000	0.934	1.724

200-35736-A-8-A 10/18/2016 03:31:32 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:31:54	108.665%	1255.930	3774.961	T 591082.080	T 1687542.600	T 101942350.000	T 8015377.100	640837.470	190.209%	13597.052	275723.280	172330.990
2	15:32:16	107.599%	1242.885	4312.754	T 610659.190	T 1713343.800	T 102561880.000	T 8128257.000	656585.060	187.651%	14053.670	282472.010	178355.180
3	15:32:37	104.969%	1324.223	4366.136	T 597185.390	T 1701492.300	T 101805880.000	T 8002253.300	653495.300	189.763%	14098.966	279976.110	177595.180
x		107.077%	1274.346	4151.284	T 599642.220	T 1700792.900	T 102103370.000	T 8048629.100	650305.940	189.207%	13916.563	279390.470	176093.780
σ		1.902%	43.685	326.996	T 10017.125	T 12914.852	T 402903.370	T 69271.291	8344.198	1.367%	277.630	3412.263	3280.757
%RSD		1.777	3.428	7.877	T 1.671	T 0.759	T 0.395	T 0.861	1.283	0.722	1.995	1.221	1.863

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:31:54	3185.148	T 15507177.000	TM 701417310.000	137437.960	52468.317	60948.468	296092.740	61485.391	180.230	252.907	469.405	1953.355
2	15:32:16	3464.279	T 16015559.000	TM 721102410.000	141180.060	54044.546	62352.637	297236.880	62008.610	159.401	293.465	493.296	1684.430
3	15:32:37	3481.950	T 15796994.000	TM 705377390.000	138663.160	53299.495	61592.608	298316.150	61046.329	174.772	266.354	486.803	1782.808
x		3377.126	T 15773243.000	TM 709299040.000	139093.730	53270.786	61631.238	297215.260	61513.443	171.468	270.909	483.168	1806.864
σ		166.492	T 255021.930	TM 10412023.000	1907.844	788.507	702.881	1111.860	481.754	10.800	20.659	12.353	136.067

%RSD		4.930	T 1.617	TM 1.468	1.372	1.480	1.140	0.374	0.783	6.299	7.626	2.557	7.531
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:31:54	390729.600	447.459%	4454.725	1658.665	-367.435	1613.644	130.274%	37722.418	573.134	451.539	541877.990	157.851%
2	15:32:16	390309.390	452.602%	4429.791	1743.450	-375.109	1936.246	130.249%	38145.422	745.676	577.346	549004.550	160.687%
3	15:32:37	391538.010	447.059%	4413.635	1724.866	-360.801	1809.153	131.062%	38123.107	770.763	590.487	549321.530	159.146%
x		390859.000	449.040%	4432.717	1708.994	-367.781	1786.348	130.528%	37996.982	696.524	539.791	546734.690	159.228%
σ		624.450	3.091%	20.700	44.565	7.160	162.506	0.462%	238.041	107.593	76.710	4209.007	1.420%
%RSD		0.160	0.688	0.467	2.608	1.947	9.097	0.354	0.626	15.447	14.211	0.770	0.892

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:31:54	402.511	6434.886	1688519.800	120.216%	0.000	281697.010	84135.658
2	15:32:16	403.125	6692.982	1755963.000	116.596%	0.000	295866.780	89800.679
3	15:32:37	445.619	6526.919	1728326.700	120.208%	0.000	289885.570	88004.421
x		417.085	6551.596	1724269.800	119.007%	0.000	289149.790	87313.586
σ		24.713	130.805	33904.125	2.088%	0.000	7113.484	2895.005
%RSD		5.925	1.997	1.966	1.754	0.000	2.460	3.316

200-35736-A-9-A 10/18/2016 03:37:15 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	15:37:37	103.699%	867.969	4757.949	T 796527.200	T 2288702.500	T 116174170.000	T 9293303.200	T 1032537.800	186.070%	11755.932	272366.640	194407.210
2	15:37:58	103.575%	931.777	4460.896	T 794957.270	T 2285041.700	T 116927040.000	T 9321401.300	T 1024183.000	186.057%	11899.693	272336.740	193174.200
3	15:38:20	102.144%	979.204	4433.084	T 798899.980	T 2254397.600	T 116345630.000	T 9165878.900	T 1037384.000	185.781%	11702.146	276644.370	195787.450
x		103.139%	926.317	4550.643	T 796794.820	T 2276047.200	T 116482280.000	T 9260194.500	T 1031368.200	185.969%	11785.924	273782.580	194456.280
σ		0.865%	55.818	180.070	T 1984.930	T 18838.307	T 394599.360	T 82879.094	T 6677.762	0.163%	102.132	2478.424	1307.316
%RSD		0.838	6.026	3.957	T 0.249	T 0.828	T 0.339	T 0.895	T 0.647	0.088	0.867	0.905	0.672
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	15:37:37	4422.535	T 12531406.000	T 344845840.000	132900.520	60294.061	70604.350	326026.180	10277.970	226.048	372.406	496.628	1413.621
2	15:37:58	5198.426	T 12897960.000	T 351057170.000	135700.440	62541.437	72127.320	328791.990	10522.389	222.282	316.305	508.921	1724.249
3	15:38:20	4150.228	T 12653831.000	T 351782610.000	135210.460	62051.538	69578.198	326350.360	9973.927	244.738	245.912	460.714	1874.086
x		4590.396	T 12694399.000	T 349228540.000	134603.810	61629.012	70769.956	327056.180	10258.096	231.022	311.541	488.754	1670.652
σ		543.887	T 186613.910	T 3812820.400	1495.295	1181.766	1282.604	1511.969	274.771	12.026	63.382	25.049	234.865
%RSD		11.848	T 1.470	T 1.092	1.111	1.918	1.812	0.462	2.679	5.206	20.345	5.125	14.058
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:37:37	550551.250	422.946%	788.629	1982.436	-378.658	2268.656	125.448%	37986.159	354.511	287.164	607708.710	146.793%
2	15:37:58	554665.300	425.195%	884.127	1995.113	-308.717	2138.190	126.643%	38399.933	376.982	303.685	607177.550	149.703%
3	15:38:20	547572.730	424.294%	827.902	2169.633	-419.390	2207.225	127.739%	38388.499	568.132	300.120	614605.440	150.053%
x		550929.760	424.145%	833.553	2049.061	-368.922	2204.690	126.610%	38258.197	433.208	296.990	609830.560	148.850%
σ		3561.405	1.132%	47.999	104.611	55.975	65.270	1.146%	235.661	117.386	8.694	4143.684	1.790%
%RSD		0.646	0.267	5.758	5.105	15.173	2.961	0.905	0.616	27.097	2.927	0.679	1.202

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:37:37	456.767	7905.073	1904171.400	115.571%	0.000	309888.200	87271.853
2	15:37:58	542.968	8214.466	1918917.600	116.392%	0.000	316298.870	89279.017
3	15:38:20	424.859	8274.018	1917949.900	117.580%	4.252	317845.260	89566.180
x		474.865	8131.186	1913679.600	116.514%	1.417	314677.440	88705.683
σ		61.099	198.070	8248.575	1.010%	2.455	4219.058	1250.007
%RSD		12.867	2.436	0.431	0.867	173.205	1.341	1.409

200-35736-A-10-A 10/18/2016 03:42:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:43:19	103.666%	1090.132	3804.562	T 713862.470	T 2080722.000	T 110734220.000	T 8126200.700	T 933969.550	188.110%	11759.735	272709.760	187535.450
2	15:43:41	101.430%	1052.692	3846.730	T 698623.590	T 2083702.000	T 110085800.000	T 8137961.600	T 930906.920	189.186%	12166.440	270403.180	189051.070
3	15:44:03	101.279%	1027.119	4012.348	T 700390.120	T 2091013.600	T 110770890.000	T 8220767.800	T 941160.410	189.107%	11822.675	272773.230	192356.780
x		102.125%	1056.647	3887.880	T 704292.060	T 2085145.800	T 110530300.000	T 8161643.400	T 935345.630	188.801%	11916.283	271962.060	189647.770
σ		1.336%	31.692	109.835	T 8335.150	T 5295.538	T 385387.960	T 51539.847	T 5263.431	0.600%	218.916	1350.403	2465.430
%RSD		1.309	2.999	2.825	T 1.183	T 0.254	T 0.349	T 0.631	T 0.563	0.318	1.837	0.497	1.300

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:43:19	4259.651	T 14676092.000	T 374882300.000	131480.470	57389.738	66385.568	304680.000	14759.498	220.521	292.255	463.924	1651.116
2	15:43:41	4069.814	T 14862375.000	T 378329580.000	130890.810	57281.350	66297.228	303963.050	14410.176	219.614	351.068	506.648	1586.263
3	15:44:03	4592.098	T 14831162.000	T 382561250.000	133341.960	57738.999	66570.195	305650.880	14618.219	224.214	309.593	473.377	1522.025
x		4307.188	T 14789876.000	T 378591040.000	131904.410	57470.029	66417.664	304764.650	14595.964	221.450	317.639	481.316	1586.468
σ		264.367	T 99768.305	T 3846145.900	1279.386	239.156	139.286	847.095	175.721	2.437	30.221	22.441	64.546
%RSD		6.138	T 0.675	T 1.016	0.970	0.416	0.210	0.278	1.204	1.100	9.514	4.662	4.069

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:43:19	495382.340	429.376%	995.571	1913.553	-351.906	1977.498	127.070%	36755.474	253.435	286.538	594908.830	152.725%
2	15:43:41	494434.500	429.045%	1058.868	1797.603	-338.332	1862.359	128.297%	35610.826	418.147	302.162	592687.400	151.625%
3	15:44:03	502445.290	439.030%	1014.278	1771.663	-286.326	1790.099	128.758%	36939.641	338.082	324.532	604346.780	154.019%
x		497420.710	432.484%	1022.906	1827.607	-325.521	1876.652	128.042%	36435.313	336.555	304.411	597314.330	152.789%
σ		4377.144	5.671%	32.518	75.554	34.616	94.514	0.872%	719.941	82.366	19.097	6190.728	1.198%
%RSD		0.880	1.311	3.179	4.134	10.634	5.036	0.681	1.976	24.473	6.273	1.036	0.784

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:43:19	356.890	7445.995	1838802.600	115.636%	0.000	307703.260	84299.707
2	15:43:41	409.610	7576.677	1868738.100	115.319%	0.000	312077.820	85408.407
3	15:44:03	444.023	6902.089	1839362.100	118.207%	0.000	307677.290	84077.728
x		403.508	7308.254	1848967.600	116.387%	0.000	309152.790	84595.281
σ		43.886	357.766	17124.016	1.584%	0.000	2533.186	712.881
%RSD		10.876	4.895	0.926	1.361	0.000	0.819	0.843

200-35736-A-11-A 10/18/2016 03:48:41 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:49:03	99.703%	582.079	3438.265	T 621731.210	T 1621395.700	T 62365756.000	T 5701212.700	T 2246029.600	150.608%	10381.491	160619.160	119877.080
2	15:49:24	97.603%	551.210	3492.816	T 630738.450	T 1624022.500	T 64002016.000	T 5874300.100	T 2292705.600	150.392%	10961.823	165656.650	122727.450
3	15:49:46	95.983%	610.124	3697.772	T 629054.000	T 1645829.900	T 64166870.000	T 5844189.400	T 2309306.700	149.863%	11339.719	165621.010	121925.700
x		97.763%	581.137	3542.951	T 627174.550	T 1630416.000	T 63511547.000	T 5806567.400	T 2282680.700	150.287%	10894.345	163965.610	121510.080
σ		1.865%	29.468	136.825	T 4788.722	T 13413.254	T 995702.230	T 92473.609	T 32808.141	0.383%	482.665	2898.161	1469.938
%RSD		1.908	5.071	3.862	T 0.764	T 0.823	T 1.568	T 1.593	T 1.437	0.255	4.430	1.768	1.210

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:49:03	3234.281	TM 20957701.000	T 256132420.000	110319.950	42447.976	1427939.600	404120.920	13710.200	148.033	570.780	433.095	1570.463
2	15:49:24	2953.846	TM 21103446.000	T 258637660.000	109608.600	43944.084	1415153.700	408607.090	13601.882	175.628	508.710	446.126	1999.668
3	15:49:46	3065.720	TM 21321546.000	T 263970070.000	111370.830	43978.853	1440308.900	408114.640	13784.422	126.268	620.801	436.210	1407.039
x		3084.615	TM 21127565.000	T 259580050.000	110433.130	43456.971	1427800.700	406947.550	13698.834	149.977	566.764	438.477	1659.057

σ		141.169	TM 183117.500	T 4002911.100	886.551	873.988	12578.152	2460.283	91.799	24.737	56.153	6.805	306.087
%RSD		4.577	TM 0.867	T 1.542	0.803	2.011	0.881	0.605	0.670	16.494	9.908	1.552	18.449
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:49:03	649337.120	308.758%	2046.397	5396.353	-253.731	2510.243	118.221%	43935.478	622.553	539.433	378706.480	132.671%
2	15:49:24	647731.270	308.499%	2220.808	5292.238	-207.324	2700.504	118.466%	44360.991	726.238	525.829	382703.950	131.018%
3	15:49:46	653337.720	311.474%	2274.032	5419.527	-289.443	2574.528	119.096%	44724.438	718.406	554.222	382103.370	132.813%
x		650135.370	309.577%	2180.412	5369.373	-250.166	2595.092	118.594%	44340.302	689.066	539.828	381171.270	132.168%
σ		2887.210	1.648%	119.072	67.798	41.175	96.783	0.451%	394.887	57.734	14.200	2155.587	0.998%
%RSD		0.444	0.532	5.461	1.263	16.459	3.729	0.381	0.891	8.379	2.631	0.566	0.755

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	15:49:03	1095.562	3912.045	1960642.400	107.707%	0.000	167120.540	67515.736
2	15:49:24	1064.743	3942.746	1973364.300	108.187%	0.000	170176.390	69913.282
3	15:49:46	1165.827	3897.383	1963113.900	110.374%	0.000	164910.260	68426.633
x		1108.711	3917.391	1965706.800	108.756%	0.000	167402.390	68618.550
σ		51.809	23.149	6745.680	1.422%	0.000	2644.354	1210.240
%RSD		4.673	0.591	0.343	1.307	0.000	1.580	1.764

200-35736-A-11-A SD@5 10/18/2016 03:54:24 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:54:46	92.687%	100.707	85.800	129216.180	340420.230	T 14201750.000	T 1270142.600	464359.700	125.952%	2458.087	37600.909	26485.563
2	15:55:08	95.138%	118.950	114.682	125724.320	343368.360	T 14450725.000	T 1298619.800	465656.840	126.631%	2340.994	36616.448	26631.047
3	15:55:30	92.208%	152.783	130.658	120982.120	341416.410	T 14202766.000	T 1265059.100	459985.190	128.607%	2384.537	36198.114	26802.581
x		93.345%	124.147	110.380	125307.540	341735.000	T 14285080.000	T 1277940.500	463333.910	127.063%	2394.539	36805.157	26639.730
σ		1.572%	26.424	22.736	4132.821	1499.663	T 143453.560	T 18088.282	2971.715	1.379%	59.184	720.185	158.687
%RSD		1.684	21.284	20.598	3.298	0.439	T 1.004	T 1.415	0.641	1.086	2.472	1.957	0.596

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:54:46	3057.949	T 4696892.200	T 57896662.000	24787.593	9955.452	285598.740	89449.643	2819.050	342.838	104.317	409.327	2199.785
2	15:55:08	3327.720	T 4723613.300	T 58205974.000	24903.810	10316.883	284501.300	86841.142	2514.606	338.544	80.452	403.907	1908.510
3	15:55:30	3421.224	T 4642331.800	T 57858227.000	24968.377	9842.739	287932.850	89562.198	2643.187	346.797	61.670	429.895	2120.251
x		3268.964	T 4687612.400	T 57986954.000	24886.593	10038.358	286010.960	88617.661	2658.948	342.726	82.146	414.376	2076.182
σ		188.630	T 41427.762	T 190647.600	91.614	247.706	1752.524	1539.539	152.832	4.128	21.374	13.710	150.555
%RSD		5.770	T 0.884	T 0.329	0.368	2.468	0.613	1.737	5.748	1.204	26.020	3.309	7.252

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:54:46	125600.800	151.986%	285.099	1129.424	-175.118	686.387	113.725%	8892.565	-713.828	-616.757	74345.955	109.272%
2	15:55:08	125127.550	156.404%	179.815	1058.863	-114.547	572.760	116.984%	8978.419	-686.054	-570.439	72678.149	109.536%
3	15:55:30	125915.020	154.606%	290.009	1211.949	-94.784	558.358	115.844%	8924.250	-756.842	-588.018	74599.583	111.237%
x		125547.790	154.332%	251.641	1133.412	-128.150	605.835	115.518%	8931.745	-718.908	-591.738	73874.562	110.015%
σ		396.406	2.222%	62.251	76.621	41.859	70.131	1.654%	43.415	35.667	23.382	1043.856	1.067%
%RSD		0.316	1.440	24.738	6.760	32.664	11.576	1.432	0.486	4.961	3.951	1.413	0.970

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:54:46	283.578	572.064	388721.700	100.799%	0.000	30517.324	13403.314
2	15:55:08	154.858	521.367	393752.450	101.327%	0.000	31610.810	13249.185
3	15:55:30	245.482	464.965	395154.770	100.612%	0.000	33556.006	14089.827
x		227.973	519.465	392542.970	100.913%	0.000	31894.714	13580.775
σ		66.122	53.575	3382.782	0.371%	0.000	1539.106	447.537
%RSD		29.004	10.314	0.862	0.367	0.000	4.826	3.295

CCV 10/18/2016 04:00:08 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	16:00:30	85.869%	103397.880	36387.080	T 14118375.000	T 4185116.400	T 39239212.000	T 13386678.000	1326406.200	106.300%	26161.321	T 2690328.600	768630.
2	16:00:52	84.349%	103426.370	37742.424	T 13722685.000	T 4103139.600	T 38840907.000	T 13201764.000	1316223.900	106.690%	26177.875	T 2641966.100	751087.
3	16:01:14	83.906%	102603.600	37016.771	T 13517984.000	T 4073602.600	T 38115601.000	T 13160339.000	1338341.700	105.447%	26347.198	T 2689690.700	761989.
x		84.708%	115.289%	112.994%	T 102.450%	T 99.469%	T 100.274%	T 97.636%	91.695%	106.146%	26228.798	T 101.396%	94.67
σ		1.030%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.636%	102.871	T n/a	
%RSD		1.216	0.453	1.831	T 2.214	T 1.402	T 1.471	T 0.910	0.834	0.599	0.392	T 1.037	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	16:00:30	10110.137	T 4005409.600	T 81490469.000	1167631.200	634896.850	820914.820	639931.990	87391.981	-621.135	9363.344	400.208	1117.
2	16:00:52	7672.859	T 3948181.300	T 81663050.000	1170043.100	629577.330	799531.510	628777.060	85740.842	-495.880	9103.971	402.473	1277.
3	16:01:14	7098.509	T 3893784.400	T 80555400.000	1151663.900	619236.390	795372.950	631283.220	86609.840	-406.081	9028.701	400.000	1283.
x		8293.835	T 97.535%	T 96.932%	91.537%	98.153%	97.012%	98.988%	104.393%	-507.699	106.306%	400.893	1225.
σ		1598.964	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	108.013	n/a	1.372	94.

%RSD		19.279	T 1.413	T 0.734	0.859	1.268	1.702	0.924	0.954	21.275	1.915	0.342	7.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	16:00:30	842489.800	106.193%	1669592.900	279953.790	679.113	133046.040	103.323%	836647.700	560702.610	428636.940	566796.930	96.79
2	16:00:52	828598.530	103.346%	1725868.500	274488.240	488.303	133954.670	102.990%	839924.840	563775.850	429218.650	556945.890	96.54
3	16:01:14	842275.010	103.457%	T 1896421.200	275520.490	345.794	135776.230	101.251%	846171.700	571832.030	433075.050	568470.870	96.41
x		837787.780	104.332%	T 95.267%	103.310%	504.403	95.520%	102.521%	840914.750	565436.830	91.772%	90.771%	96.58
σ		7958.851	1.613%	T n/a	n/a	167.242	n/a	1.112%	4838.550	5747.623	n/a	n/a	0.19
%RSD		0.950	1.546	T 6.696	1.050	33.156	1.036	1.085	0.575	1.016	0.561	1.104	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:00:30	35783.964	1623196.300	T 15678337.000	92.692%	0.000	198514.060	114602.370
2	16:00:52	36494.838	1676548.800	T 16001929.000	90.638%	0.000	216534.750	116401.770
3	16:01:14	37803.901	1642005.700	T 15591507.000	92.619%	5.398	225751.930	116485.800
x		98.876%	88.077%	T 98.733%	91.983%	1.799	84.841%	92.860%
σ		n/a	n/a	T n/a	1.166%	3.117	n/a	n/a
%RSD		2.792	1.643	T 1.373	1.267	173.205	6.486	0.919

CCB 10/18/2016 04:05:52 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	16:06:14	92.799%	11.676	-535.451	5927.281	294.280	5451.824	7312.553	104.041	112.760%	22.203	960.076	-240.997
2	16:06:35	88.512%	-1.533	-495.613	6344.608	353.957	5806.547	6134.872	137.422	113.255%	30.976	881.747	-88.676
3	16:06:57	90.627%	6.610	-595.773	140.532	292.479	6148.777	6550.724	111.871	115.236%	21.741	881.760	-95.662
x		90.646%	5.584	-542.279	4137.473	313.572	5802.382	6666.050	117.778	113.750%	24.973	907.861	-141.778
σ		2.144%	6.664	50.428	3467.737	34.986	348.495	597.251	17.457	1.310%	5.204	45.219	85.997
%RSD		2.365	119.337	9.299	83.813	11.157	6.006	8.960	14.822	1.152	20.836	4.981	60.656

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:06:14	5051.522	387.095	41727.579	50.458	47.113	39.184	-161.343	-260.442	473.679	-77.166	424.968	2148.044
2	16:06:35	5439.714	374.776	44511.714	50.051	7.050	32.997	-193.517	-202.782	454.856	-16.087	407.361	2061.688
3	16:06:57	5165.785	400.322	43010.425	9.407	-2.235	-21.132	-161.913	-356.055	506.708	-59.221	415.602	2182.220
x		5219.007	387.398	43083.240	36.639	17.309	17.016	-172.257	-273.093	478.415	-50.825	415.977	2130.651
σ		199.494	12.776	1393.495	23.584	26.225	33.182	18.413	77.416	26.248	31.393	8.810	62.120
%RSD		3.822	3.298	3.234	64.370	151.510	195.002	10.689	28.348	5.486	61.767	2.118	2.916

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:06:14	58.571	109.264%	2219.620	15.335	-64.360	19.583	105.656%	3118.910	-385.829	-364.952	49.459	98.882%
2	16:06:35	70.488	107.698%	2395.749	19.091	-91.135	50.391	108.137%	3500.602	-414.949	-302.154	38.692	98.611%
3	16:06:57	66.468	110.057%	1951.388	14.708	-47.563	7.664	107.436%	3504.813	-273.284	-324.567	66.977	97.974%
x		65.175	109.006%	2188.919	16.378	-67.686	25.879	107.076%	3374.775	-358.021	-330.558	51.709	98.489%
σ		6.063	1.200%	223.766	2.370	21.976	22.049	1.279%	221.596	74.815	31.824	14.276	0.466%
%RSD		9.303	1.101	10.223	14.471	32.467	85.198	1.194	6.566	20.897	9.627	27.609	0.473

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:06:14	115.681	1036.208	-340.757	94.341%	0.000	7805.518	-6.652
2	16:06:35	116.250	972.968	-364.345	95.876%	0.000	7867.405	-7.500
3	16:06:57	81.878	953.315	-355.912	97.379%	0.000	7435.267	7.099
x		104.603	987.497	-353.671	95.865%	0.000	7702.730	-2.351
σ		19.683	43.314	11.953	1.519%	0.000	233.688	8.195
%RSD		18.816	4.386	3.380	1.584	0.000	3.034	348.588

CCVL 10/18/2016 04:11:36 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:11:59	93.310%	199.119	5334.748	654350.450	27524.439	66932.420	637750.090	23076.465	116.897%	12.856	10829.053	7895.205
2	16:12:22	94.075%	234.648	5568.414	T 702517.300	26008.707	65699.735	618953.430	23304.553	118.650%	12.671	10784.039	8174.279
3	16:12:46	90.894%	223.857	5790.214	T 757187.720	28576.589	73946.035	672044.390	23707.099	113.040%	13.303	12117.560	9260.344
x		92.760%	153.140%	106.068%	T 104.734%	99.104%	106.963%	94.752%	96.861%	116.196%	12.943	106.587%	105.097%
σ		1.660%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	2.870%	0.325	n/a	n/a
%RSD		1.790	8.309	4.093	T 7.302	4.716	6.460	4.187	1.367	2.470	2.508	6.735	8.542

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:11:59	5980.215	6669.549	538712.400	2964.574	1109.529	3789.706	12125.980	490.902	538.684	134.431	449.571	2158.506
2	16:12:22	6041.942	6586.011	543885.190	2625.097	1189.649	3719.040	11775.594	597.150	521.795	158.043	423.385	2074.029
3	16:12:46	5968.834	7389.105	597693.410	2978.704	1329.720	3851.382	12516.062	667.273	549.116	156.737	407.667	2283.915
x		5996.997	106.225%	100.247%	112.388%	118.180%	114.048%	118.583%	70.548%	536.532	86.838%	426.874	2172.150
σ		39.337	n/a	n/a	n/a	n/a	n/a	n/a	n/a	13.787	n/a	21.169	105.606
%RSD		0.656	6.416	5.831	7.010	9.213	1.749	3.051	15.177	2.570	8.863	4.959	4.862

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:11:59	21690.678	112.149%	13718.866	2976.404	-33.868	811.980	108.216%	1376.939	3609.911	2870.202	5011.015	99.506%
2	16:12:22	21897.350	112.942%	13824.089	2898.246	-21.628	675.475	108.886%	1533.794	3890.210	2912.941	4777.970	100.356%
3	16:12:46	23619.876	107.148%	15029.549	3156.500	-6.915	717.121	104.130%	1834.344	4087.622	3264.859	5068.986	95.927%
x		100.348%	110.746%	95.802%	112.416%	-20.804	104.564%	107.077%	1581.692	3862.581	80.403%	99.623%	98.596%
σ		n/a	3.142%	n/a	n/a	13.495	n/a	2.574%	232.434	240.051	n/a	n/a	2.351%
%RSD		4.728	2.837	5.132	4.399	64.871	9.520	2.404	14.695	6.215	7.181	3.110	2.384

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:11:59	3280.347	15719.223	13546.271	97.768%	0.000	15524.830	11589.183
2	16:12:22	2758.455	16865.617	13867.703	94.138%	0.000	16498.748	12171.333
3	16:12:46	3327.964	18445.749	14837.919	90.906%	0.000	17694.584	14185.887
x		84.132%	90.952%	110.310%	94.271%	0.000	65.826%	101.404%
σ		n/a	n/a	n/a	3.433%	0.000	n/a	n/a
%RSD		10.120	8.048	4.774	3.642	0.000	6.558	10.773

200-35736-A-11-A PDS 10/18/2016 04:17:25 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	16:17:47	94.214%	2182.129	62164.520	T 6503342.000	T 1879981.300	T 63945850.000	T 11472833.000	T 2417762.400	136.745%	10484.253	240370.070	183663.1
2	16:18:09	94.351%	2120.638	60614.952	T 6484694.200	T 1892079.900	T 64620253.000	T 11590294.000	T 2443044.500	137.509%	10725.971	242894.390	186949.4
3	16:18:30	93.671%	2226.849	62655.242	T 6523062.200	T 1878664.300	T 64485564.000	T 11537718.000	T 2432243.500	138.730%	11234.427	242340.850	186174.4
x		94.078%	2176.539	61811.572	T 6503699.500	T 1883575.200	T 64350556.000	T 11533615.000	T 2431016.800	137.662%	10814.884	241868.440	185595.6
σ		0.360%	53.326	1064.953	T 19186.513	T 7394.702	T 356897.170	T 58837.903	T 12685.613	1.001%	382.909	1326.812	1717.8
%RSD		0.382	2.450	1.723	T 0.295	T 0.393	T 0.555	T 0.510	T 0.522	0.727	3.541	0.549	0.9

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	16:17:47	3967.339	TM 20852277.000	T 259397710.000	125685.390	50171.680	1440601.100	497703.910	22375.675	46.551	2146.495	458.368	1636.9
2	16:18:09	3631.780	TM 20863105.000	T 259244970.000	130627.440	51032.018	1434571.900	492733.100	21924.807	62.952	2175.100	486.368	1321.0
3	16:18:30	3336.307	TM 21177101.000	T 261712890.000	128034.810	51577.978	1449855.300	503246.870	21939.187	92.018	2179.235	475.133	1294.9
x		3645.142	TM 20964161.000	T 260118520.000	128115.880	50927.226	1441676.100	497894.630	22079.889	67.174	2166.943	473.290	1417.6

σ		315.728	TM 184491.090	T 1382870.200	2472.023	708.981	7698.198	5259.482	256.259	23.025	17.829	14.091	190.3
%RSD		8.662	TM 0.880	T 0.532	1.930	1.392	0.534	1.056	1.161	34.277	0.823	2.977	13.4
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	16:17:47	863154.390	278.924%	58192.325	33345.831	-229.678	8744.126	105.375%	45126.966	44886.995	34410.371	421939.210	118.343
2	16:18:09	850446.640	274.987%	59325.561	32429.548	-142.603	8682.601	108.459%	44505.195	44015.764	34525.608	420318.850	121.291
3	16:18:30	862444.190	277.445%	60271.524	34081.075	-171.259	8658.568	107.129%	45792.345	44814.593	35298.686	427040.610	120.330
x		858681.740	277.118%	59263.137	33285.485	-181.180	8695.099	106.988%	45141.502	44572.451	34744.889	423099.550	119.988
σ		7140.640	1.989%	1041.004	827.415	44.377	44.127	1.547%	643.698	483.462	483.051	3507.893	1.503
%RSD		0.832	0.718	1.757	2.486	24.493	0.507	1.446	1.426	1.085	1.390	0.829	1.2

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:17:47	27926.908	165121.150	2073176.300	97.898%	0.000	447903.680	194470.310
2	16:18:09	26783.293	163718.220	2044955.100	101.189%	0.000	434383.630	192063.380
3	16:18:30	27930.615	170235.720	2116770.200	98.370%	0.000	440291.490	203345.460
x		27546.939	166358.370	2078300.500	99.152%	0.000	440859.600	196626.380
σ		661.339	3430.372	36180.735	1.779%	0.000	6777.905	5942.039
%RSD		2.401	2.062	1.741	1.795	0.000	1.537	3.022

200-35736-A-11-I MS 10/18/2016 04:23:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	16:23:31	93.575%	2290.586	54496.282	T 6643878.700	T 2012124.200	T 73222951.000	T 12100698.000	T 2830805.800	140.337%	14644.091	263217.600	197355.0
2	16:23:53	91.436%	2366.218	55893.518	T 6710635.900	T 2052453.200	T 75137577.000	T 12360347.000	T 2916448.200	138.606%	14362.103	271729.870	207113.3
3	16:24:14	89.673%	2292.986	56032.447	T 6416728.300	T 1970508.700	T 71480561.000	T 11821346.000	T 2808040.600	141.865%	14643.889	264276.890	199529.3
x		91.561%	2316.597	55474.082	T 6590414.300	T 2011695.400	T 73280363.000	T 12094130.000	T 2851764.900	140.269%	14550.028	266408.120	201332.5
σ		1.954%	42.990	849.644	T 154075.490	T 40973.927	T 1829184.200	T 269560.510	T 57162.184	1.630%	162.747	4639.106	5122.9
%RSD		2.134	1.856	1.532	T 2.338	T 2.037	T 2.496	T 2.229	T 2.004	1.162	1.119	1.741	2.5

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	16:23:31	3470.680	TM 21646015.000	T 263265030.000	124455.130	54365.523	1679507.900	518130.090	23046.150	116.858	2077.949	454.366	1739.9
2	16:23:53	3126.042	TM 22199673.000	T 269280360.000	127719.240	56229.701	1691155.100	517771.830	23244.603	103.665	2078.863	473.442	1422.9
3	16:24:14	3389.496	TM 21580037.000	T 262449380.000	123505.700	52873.174	1671826.000	512694.350	22792.277	118.815	2066.281	460.168	1236.3
x		3328.739	TM 21808575.000	T 264998260.000	125226.690	54489.466	1680829.700	516198.760	23027.677	113.113	2074.364	462.659	1466.4
σ		180.173	TM 340303.630	T 3730768.400	2210.194	1681.693	9732.089	3040.189	226.728	8.240	7.015	9.779	254.5
%RSD		5.413	TM 1.560	T 1.408	1.765	3.086	0.579	0.589	0.985	7.285	0.338	2.114	17.3

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	16:23:31	967045.290	295.661%	53186.083	34509.851	-236.260	8612.557	105.973%	50773.792	11178.045	8850.484	435505.930	122.917
2	16:23:53	962880.620	301.525%	53134.522	33265.176	-274.466	8586.369	107.618%	50105.219	11403.394	8875.799	436910.080	121.955
3	16:24:14	965105.980	299.716%	53592.309	34350.621	-214.873	8497.169	107.354%	51046.213	11445.022	8880.823	431807.340	121.536
x		965010.630	298.967%	53304.305	34041.883	-241.866	8565.365	106.982%	50641.741	11342.154	8869.036	434741.120	122.136
σ		2083.968	3.003%	250.748	677.343	30.189	60.493	0.883%	484.195	143.638	16.261	2635.942	0.708
%RSD		0.216	1.004	0.470	1.990	12.482	0.706	0.825	0.956	1.266	0.183	0.606	0.5

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:23:31	28147.864	135582.560	1934042.900	101.124%	0.000	414324.720	195873.960
2	16:23:53	29056.604	139630.790	1984616.800	100.190%	0.000	423057.220	198817.410
3	16:24:14	29610.699	136652.600	1989369.000	100.718%	0.000	421120.360	202115.780
x		28938.389	137288.650	1969342.900	100.677%	0.000	419500.770	198935.720
σ		738.548	2097.725	30662.922	0.469%	0.000	4586.005	3122.587
%RSD		2.552	1.528	1.557	0.465	0.000	1.093	1.570

200-35736-A-11-J MSD 10/18/2016 04:28:54 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	16:29:15	96.358%	1954.365	51148.081	T 6411404.300	T 2000432.600	T 66434077.000	T 11455314.000	T 1996573.900	144.693%	11410.184	250216.540	191468.49
2	16:29:37	93.348%	2154.217	53568.054	T 6524435.900	T 2073087.200	T 69377416.000	T 11648218.000	T 2033699.400	142.623%	12284.983	259630.750	197639.79
3	16:29:59	95.122%	2205.894	53489.407	T 6528591.200	T 2052291.800	T 66935015.000	T 11569838.000	T 2046882.400	145.994%	11428.090	249739.460	192725.54
x		94.943%	2104.825	52735.181	T 6488143.800	T 2041937.200	T 67582170.000	T 11557790.000	T 2025718.600	144.437%	11707.752	253195.580	193944.61
σ		1.513%	132.840	1375.031	T 66490.801	T 37417.721	T 1574775.100	T 97014.583	T 26086.503	1.700%	499.977	5578.122	3261.26
%RSD		1.594	6.311	2.607	T 1.025	T 1.832	T 2.330	T 0.839	T 1.288	1.177	4.270	2.203	1.68

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	16:29:15	3790.128	T 18716309.000	T 249002030.000	121974.000	53713.595	1576960.200	537114.660	22546.567	80.045	2230.526	483.290	1310.53
2	16:29:37	3282.281	T 19461983.000	T 256527670.000	123334.700	54603.113	1581341.200	533755.110	23011.198	92.744	2153.471	496.137	1737.55
3	16:29:59	3911.178	T 19044948.000	T 255683080.000	123206.550	53245.294	1558783.300	534574.100	21763.524	138.775	2058.883	480.068	1856.70
x		3661.196	T 19074414.000	T 253737590.000	122838.420	53854.001	1572361.600	535147.960	22440.430	103.855	2147.627	486.498	1634.93
σ		333.685	T 373709.510	T 4122803.400	751.343	689.712	11961.402	1751.746	630.572	30.901	85.970	8.502	287.18

%RSD		9.114	T 1.959	T 1.625	0.612	1.281	0.761	0.327	2.810	29.754	4.003	1.748	17.56
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	16:29:15	763233.630	285.875%	55943.562	34352.318	-168.819	9981.576	107.494%	49784.869	10832.964	8801.441	402082.620	122.078%
2	16:29:37	760250.640	286.205%	57086.457	33742.273	-189.331	10146.118	108.843%	51246.657	11187.737	8816.435	404620.980	122.388%
3	16:29:59	757598.050	289.657%	56365.162	33454.967	-212.774	10051.421	109.986%	50472.043	10989.412	8975.711	401687.630	122.420%
x		760360.770	287.245%	56465.060	33849.853	-190.308	10059.705	108.774%	50501.189	11003.371	8864.529	402797.070	122.295%
σ		2819.405	2.095%	577.959	458.247	21.993	82.583	1.247%	731.330	177.798	96.578	1591.844	0.189%
%RSD		0.371	0.729	1.024	1.354	11.557	0.821	1.147	1.448	1.616	1.089	0.395	0.15

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:29:15	29798.998	142391.100	2061905.100	99.190%	0.000	396941.480	195684.900
2	16:29:37	30583.193	142370.720	2058765.800	100.848%	0.000	398161.100	196220.060
3	16:29:59	30431.837	144521.490	2076647.000	100.775%	9.923	405397.530	200781.280
x		30271.343	143094.440	2065772.600	100.271%	3.308	400166.700	197562.080
σ		416.004	1235.911	9547.399	0.937%	5.729	4570.888	2800.718
%RSD		1.374	0.864	0.462	0.934	173.205	1.142	1.418

200-35736-A-12-A 10/18/2016 04:34:38 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	16:35:00	86.133%	561.712	3147.758	T 661389.230	T 2079087.100	T 57906224.000	T 5270303.100	T 2932808.400	131.615%	5146.430	150250.920	113815.030
2	16:35:22	86.578%	619.429	3159.862	T 652243.160	T 2064823.700	T 58160075.000	T 5303147.000	T 2930080.000	131.413%	5258.041	154350.330	114757.040
3	16:35:43	87.234%	471.422	3126.774	T 653966.110	T 2081256.300	T 58886634.000	T 5347101.100	T 2985552.100	131.184%	5302.847	152954.600	115436.870
x		86.648%	550.854	3144.798	T 655866.170	T 2075055.700	T 58317644.000	T 5306850.400	T 2949480.100	131.404%	5235.773	152518.610	114669.650
σ		0.554%	74.599	16.741	T 4860.073	T 8927.293	T 508843.530	T 38532.694	T 31268.987	0.215%	80.551	2084.190	814.441
%RSD		0.639	13.542	0.532	T 0.741	T 0.430	T 0.873	T 0.726	T 1.060	0.164	1.538	1.367	0.710

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:35:00	2375.798	TM 23074304.000	T 252796440.000	97895.620	43434.073	1347927.400	412304.150	14754.050	52.158	713.077	488.534	1333.957
2	16:35:22	2101.874	TM 23322908.000	T 262186360.000	99484.319	43115.377	1347385.400	414826.000	13831.659	137.457	516.461	495.329	1998.580
3	16:35:43	2287.756	TM 23372340.000	T 257622320.000	99646.066	43699.143	1353793.200	417944.360	14378.912	101.427	595.476	477.474	1777.549
x		2255.143	TM 23256518.000	T 257535040.000	99008.668	43416.198	1349702.000	415024.840	14321.540	97.014	608.338	487.112	1703.362
σ		139.844	TM 159725.150	T 4695569.900	967.314	292.294	3553.414	2825.356	463.864	42.820	98.937	9.012	338.465
%RSD		6.201	TM 0.687	T 1.823	0.977	0.673	0.263	0.681	3.239	44.138	16.264	1.850	19.870

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:35:00	762021.120	256.208%	1478.187	4499.381	-227.747	2536.682	104.396%	21735.054	239.439	224.823	368371.880	115.492%
2	16:35:22	762481.120	256.913%	1304.093	4893.537	-130.305	2535.077	105.487%	21163.681	202.015	290.580	369609.740	116.331%
3	16:35:43	772207.320	259.833%	1292.210	4275.735	-235.068	2591.467	104.824%	21211.562	250.758	294.505	375052.860	117.124%
x		765569.850	257.651%	1358.163	4556.218	-197.707	2554.409	104.902%	21370.099	230.737	269.969	371011.490	116.316%
σ		5752.811	1.922%	104.113	312.798	58.486	32.103	0.550%	316.966	25.510	39.147	3554.232	0.816%
%RSD		0.751	0.746	7.666	6.865	29.582	1.257	0.524	1.483	11.056	14.501	0.958	0.701

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:35:00	839.189	4432.552	1584482.800	97.825%	0.000	146654.900	56502.057
2	16:35:22	845.376	4521.608	1606650.800	97.785%	0.000	149224.750	58439.246
3	16:35:43	813.415	4259.534	1622090.000	97.809%	0.000	150214.790	58819.651
x		832.660	4404.565	1604407.900	97.806%	0.000	148698.150	57920.318
σ		16.952	133.259	18903.665	0.020%	0.000	1837.439	1242.890
%RSD		2.036	3.025	1.178	0.021	0.000	1.236	2.146

MB 200-110239/1-A 10/18/2016 04:40:22 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:40:44	96.941%	-7.182	-3.379	207282.720	2385.160	83931.798	16658.586	3576.247	126.435%	23.808	1950.111	152.638
2	16:41:05	93.967%	-7.182	-107.875	194572.470	2156.956	72315.773	14084.809	3534.002	128.072%	11.758	1093.688	38.413
3	16:41:27	94.419%	3.409	-92.122	199426.680	2049.755	71357.902	12781.733	3504.171	127.505%	27.533	45.256	69.938
x		95.109%	-3.652	-67.792	200427.290	2197.290	75868.491	14508.376	3538.140	127.337%	21.033	1029.685	86.996
σ		1.603%	6.115	56.337	6413.929	171.302	6999.434	1972.829	36.216	0.831%	8.245	954.039	58.992
%RSD		1.685	167.436	83.102	3.200	7.796	9.226	13.598	1.024	0.653	39.201	92.654	67.810

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:40:44	3179.673	22803.057	342952.540	131.343	90.370	1982.679	705.659	-249.185	406.958	-55.726	473.856	2445.142
2	16:41:05	3422.620	19886.242	301867.900	86.174	65.428	1530.546	555.196	-348.267	447.873	-96.627	469.312	2521.826
3	16:41:27	3729.363	19477.796	284239.660	137.726	101.139	1789.715	439.146	-238.260	415.067	-42.841	460.990	2327.316
x		3443.885	20722.365	309686.700	118.414	85.646	1767.647	566.667	-278.571	423.299	-65.065	468.053	2431.428
σ		275.461	1813.468	30127.245	28.103	18.318	226.873	133.626	60.606	21.664	28.083	6.525	97.977
%RSD		7.999	8.751	9.728	23.733	21.388	12.835	23.581	21.756	5.118	43.161	1.394	4.030

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:40:44	1312.002	117.684%	-735.245	17.633	-67.196	17.635	112.061%	807.616	-1056.416	-852.108	411.550	103.647%
2	16:41:05	1628.025	117.820%	-676.083	21.834	-74.477	29.221	112.720%	723.049	-1079.604	-846.373	431.226	105.096%
3	16:41:27	1290.541	119.550%	-755.357	75.369	-67.857	36.083	112.369%	783.158	-1047.856	-845.211	339.182	104.697%
x		1410.190	118.351%	-722.228	38.279	-69.843	27.646	112.383%	771.274	-1061.292	-847.897	393.986	104.480%
σ		188.956	1.040%	41.209	32.190	4.026	9.324	0.330%	43.518	16.426	3.693	48.471	0.749%
%RSD		13.399	0.879	5.706	84.092	5.765	33.727	0.293	5.642	1.548	0.436	12.303	0.717

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:40:44	43.436	-174.977	880.094	98.175%	0.000	11548.225	93.139
2	16:41:05	17.785	-181.484	816.751	99.588%	0.000	10955.232	136.156
3	16:41:27	46.857	-193.785	707.066	98.963%	0.000	10759.406	122.237
x		36.026	-183.415	801.304	98.909%	0.000	11087.621	117.177
σ		15.889	9.551	87.542	0.708%	0.000	410.736	21.951
%RSD		44.105	5.208	10.925	0.716	0.000	3.704	18.733

LCS 200-110239/2-A 10/18/2016 04:46:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:46:26	89.583%	1717.558	57965.633	T 7116517.600	253083.820	573944.490	T 6642344.800	218974.440	114.395%	0.000	97045.358	76374.316
2	16:46:47	84.598%	1650.728	62586.840	T 7480072.100	266172.840	611381.610	T 6963854.100	225393.380	107.739%	18.602	98050.254	78733.489
3	16:47:11	83.758%	1718.107	62837.916	T 7390466.000	264715.380	609976.000	T 6926905.400	231165.180	106.105%	9.446	100424.920	80489.488
x		85.980%	1695.464	61130.130	T 7329018.600	261324.010	598434.030	T 6844368.100	225177.670	109.413%	9.349	98506.843	78532.431
σ		3.149%	38.744	2743.408	T 189406.440	7173.329	21220.211	T 175929.990	6098.231	4.391%	9.301	1735.427	2064.940
%RSD		3.662	2.285	4.488	T 2.584	2.745	3.546	T 2.570	2.708	4.014	99.487	1.762	2.629

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:46:26	3861.347	58925.347	T 5573054.700	23968.531	10045.578	37262.324	107969.110	8918.188	223.311	1768.526	430.902	2143.940
2	16:46:47	3879.618	61855.065	T 5843560.700	25531.024	10997.696	37553.457	107411.980	8885.458	203.439	1809.704	433.365	1798.160
3	16:47:11	3248.535	62899.211	T 5780247.500	24985.616	10540.336	37351.556	104732.190	9352.423	43.410	1882.675	422.158	1903.497
x		3663.166	61226.541	T 5732287.600	24828.390	10527.870	37389.112	106704.430	9052.023	156.720	1820.302	428.808	1948.532

σ		359.198	2060.141	T 141486.690	793.023	476.182	149.156	1730.576	260.668	98.631	57.808	5.889	177.234
%RSD		9.806	3.365	T 2.468	3.194	4.523	0.399	1.622	2.880	62.934	3.176	1.373	9.096
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:46:26	217963.860	102.715%	143204.100	29643.631	-25.509	6438.907	100.372%	602.767	45799.388	33842.759	46485.386	95.901%
2	16:46:47	223146.330	103.073%	141670.270	29183.619	58.523	6725.024	98.763%	739.157	45384.883	34408.787	47080.494	95.464%
3	16:47:11	222495.180	101.085%	143497.860	29314.181	-15.738	6924.634	98.187%	830.068	45324.848	34467.665	46529.604	93.649%
x		221201.790	102.291%	142790.740	29380.477	5.759	6696.189	99.108%	723.998	45503.040	34239.737	46698.494	95.005%
σ		2822.965	1.060%	981.415	237.064	45.956	244.144	1.132%	114.406	258.395	345.051	331.559	1.194%
%RSD		1.276	1.036	0.687	0.807	798.037	3.646	1.143	15.802	0.568	1.008	0.710	1.257

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:46:26	63197.735	161931.190	113938.280	90.963%	0.000	164431.630	128165.110
2	16:46:47	64476.180	164645.630	114313.200	90.687%	0.000	173728.030	127678.210
3	16:47:11	67152.969	165031.490	114768.580	91.036%	0.000	181525.220	126563.380
x		64942.295	163869.440	114340.020	90.895%	0.000	173228.290	127468.900
σ		2018.394	1689.622	415.799	0.184%	0.000	8557.747	821.122
%RSD		3.108	1.031	0.364	0.203	0.000	4.940	0.644

200-35680-A-13-A 10/18/2016 04:51:48 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:52:10	92.086%	-4.468	94.460	208844.810	1102.019	31756.444	11981.023	2157.984	117.334%	29.952	1015.671	-1.787
2	16:52:32	92.948%	-1.803	227.333	208607.660	920.861	27608.940	11353.703	2212.692	117.562%	34.171	396.531	-128.548
3	16:52:53	90.059%	3.921	218.916	202276.650	847.210	23042.206	9664.275	1835.173	118.194%	8.494	500.705	-1.874
x		91.698%	-0.783	180.236	206576.370	956.697	27469.197	10999.667	2068.616	117.697%	24.205	637.636	-44.070
σ		1.483%	4.286	74.404	3725.559	131.130	4358.799	1198.264	204.010	0.446%	13.769	331.506	73.160
%RSD		1.617	547.421	41.281	1.803	13.707	15.868	10.894	9.862	0.379	56.885	51.990	166.011

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:52:10	4300.537	8958.451	129216.280	55.351	39.913	728.838	1046.554	-337.147	490.875	-99.648	437.689	2371.105
2	16:52:32	4727.450	7638.030	108897.250	72.173	116.337	769.968	854.553	-207.264	448.318	-59.852	424.387	2208.901
3	16:52:53	4712.122	6718.831	97285.574	25.025	73.259	590.535	817.703	-340.087	470.198	-60.239	442.527	2367.748
x		4580.037	7771.770	111799.700	50.850	76.503	696.447	906.270	-294.833	469.797	-73.246	434.868	2315.918
σ		242.175	1125.784	16162.014	23.894	38.315	94.000	122.879	75.851	21.282	22.865	9.393	92.695
%RSD		5.288	14.486	14.456	46.990	50.083	13.497	13.559	25.727	4.530	31.217	2.160	4.003

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:52:10	861.188	107.633%	-529.189	34.753	-55.749	11.167	104.756%	601.407	-1014.470	-805.397	121.623	95.612%
2	16:52:32	803.207	107.420%	-635.413	10.669	-57.564	12.919	105.448%	716.012	-1006.274	-803.391	73.299	97.858%
3	16:52:53	703.780	108.825%	-598.145	20.440	-54.468	14.684	104.741%	644.461	-1010.097	-792.012	145.513	97.613%
x		789.392	107.959%	-587.582	21.954	-55.927	12.923	104.982%	653.960	-1010.280	-800.267	113.478	97.028%
σ		79.609	0.757%	53.894	12.113	1.556	1.758	0.404%	57.890	4.101	7.219	36.789	1.232%
%RSD		10.085	0.701	9.172	55.176	2.782	13.607	0.384	8.852	0.406	0.902	32.420	1.270

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:52:10	195.986	-36.896	-214.579	92.213%	0.000	40026.725	178.928
2	16:52:32	194.492	-1.535	-218.829	94.966%	0.000	35666.391	129.891
3	16:52:53	184.965	-121.277	-599.967	94.714%	0.000	32918.532	56.488
x		191.814	-53.236	-344.459	93.965%	0.000	36203.882	121.769
σ		5.979	61.521	221.287	1.522%	0.000	3584.449	61.623
%RSD		3.117	115.562	64.242	1.620	0.000	9.901	50.606

200-35700-A-19-A 10/18/2016 04:57:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:57:53	97.655%	-2.062	-119.960	216236.160	155.520	8914.991	5093.284	1576.225	123.207%	20.357	1098.158	348.804
2	16:58:14	96.885%	-7.182	-307.171	211460.670	154.379	8274.373	6237.940	1124.961	123.611%	16.241	318.113	337.869
3	16:58:36	97.061%	-4.607	-107.941	205087.180	218.079	8549.476	6105.766	1508.741	123.918%	24.320	28.060	486.039
x		97.200%	-4.617	-178.357	210928.000	175.993	8579.613	5812.330	1403.309	123.579%	20.306	481.443	390.904
σ		0.403%	2.560	111.718	5593.546	36.452	321.371	626.209	243.406	0.356%	4.039	553.430	82.571
%RSD		0.415	55.447	62.637	2.652	20.712	3.746	10.774	17.345	0.288	19.893	114.952	21.123

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:57:53	5682.098	790.201	27887.548	-10.195	65.070	215.300	162.012	-317.307	563.973	-94.028	412.421	2440.868
2	16:58:14	5959.389	749.865	32386.507	-26.480	44.540	357.278	272.279	-386.242	595.985	-87.677	445.206	2390.596
3	16:58:36	5963.499	642.077	32657.738	-10.381	44.360	250.424	314.336	-355.991	569.323	-78.444	442.506	2581.457
x		5868.328	727.381	30977.265	-15.685	51.323	274.334	249.542	-353.180	576.427	-86.716	433.378	2470.973
σ		161.294	76.579	2679.208	9.349	11.905	73.948	78.666	34.553	17.148	7.836	18.199	98.928

%RSD		2.749	10.528	8.649	59.606	23.197	26.955	31.524	9.783	2.975	9.037	4.199	4.004
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:57:53	303.138	114.949%	-821.436	5.343	-71.198	21.565	107.658%	617.706	-1112.954	-867.829	11.072	100.871%
2	16:58:14	255.913	114.069%	-833.580	13.931	-63.203	13.714	109.726%	651.637	-1053.898	-857.671	1.434	100.781%
3	16:58:36	312.367	112.644%	-801.011	-4.200	-90.287	49.472	109.153%	600.089	-1048.843	-859.564	6.110	101.322%
x		290.473	113.887%	-818.675	5.024	-74.896	28.250	108.846%	623.144	-1071.898	-861.688	6.205	100.992%
σ		30.283	1.163%	16.459	9.070	13.915	18.793	1.067%	26.201	35.645	5.402	4.820	0.290%
%RSD		10.425	1.021	2.010	180.515	18.580	66.523	0.981	4.205	3.325	0.627	77.677	0.287

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	16:57:53	66.980	-288.421	-883.898	95.673%	0.000	17775.840	-33.520
2	16:58:14	37.354	-280.693	-942.892	96.412%	0.000	17383.266	-44.093
3	16:58:36	41.600	-292.400	-1045.753	98.256%	0.000	16705.662	-34.207
x		48.645	-287.171	-957.515	96.780%	0.000	17288.256	-37.273
σ		16.020	5.953	81.912	1.330%	0.000	541.378	5.916
%RSD		32.933	2.073	8.555	1.375	0.000	3.131	15.871

200-35736-A-14-A 10/18/2016 05:03:14 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	17:03:35	96.181%	-4.583	-326.320	208059.470	345.458	9142.564	4921.644	1372.644	126.174%	19.903	385.575	231.892
2	17:03:57	98.696%	-4.649	-304.041	208452.910	218.219	7511.489	6091.956	1307.529	126.305%	15.907	715.422	447.599
3	17:04:19	94.952%	-4.549	-288.152	209686.060	310.361	7900.834	3941.532	1500.161	125.039%	28.066	466.940	377.927
x		96.610%	-4.594	-306.171	208732.810	291.346	8184.962	4985.044	1393.445	125.839%	21.292	522.646	352.472
σ		1.908%	0.051	19.173	848.656	65.716	851.850	1076.613	97.986	0.696%	6.197	171.834	110.083
%RSD		1.975	1.106	6.262	0.407	22.556	10.407	21.597	7.032	0.553	29.106	32.878	31.232

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:03:35	6206.351	2628.716	50722.282	-14.921	82.689	361.235	661.800	-324.075	583.852	-59.786	464.188	2369.875
2	17:03:57	6361.266	1916.828	42260.950	-10.991	82.575	322.362	704.708	-189.606	575.620	-23.410	488.034	2419.658
3	17:04:19	6376.110	2304.338	47281.060	-10.670	123.684	367.495	694.841	-435.256	600.735	-91.926	459.557	2448.456
x		6314.576	2283.294	46754.764	-12.194	96.316	350.364	687.116	-316.312	586.736	-58.374	470.593	2412.663
σ		94.019	356.410	4255.147	2.367	23.702	24.452	22.472	123.009	12.804	34.280	15.281	39.754
%RSD		1.489	15.609	9.101	19.411	24.608	6.979	3.271	38.888	2.182	58.725	3.247	1.648

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:03:35	278.530	114.822%	-899.674	-8.653	-77.626	32.501	108.147%	536.314	-1094.551	-869.050	47.933	101.380%
2	17:03:57	325.246	114.721%	-869.120	32.311	-73.387	28.284	109.420%	594.051	-1044.916	-848.320	33.471	103.840%
3	17:04:19	324.125	118.103%	-824.921	-0.040	-49.238	4.497	111.196%	647.521	-1077.962	-857.771	19.179	100.511%
x		309.301	115.882%	-864.572	7.872	-66.750	21.761	109.588%	592.628	-1072.476	-858.381	33.528	101.910%
σ		26.654	1.924%	37.584	21.598	15.314	15.099	1.531%	55.617	25.268	10.378	14.377	1.727%
%RSD		8.617	1.660	4.347	274.352	22.942	69.386	1.397	9.385	2.356	1.209	42.881	1.695

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:03:35	16.864	-349.060	-792.819	94.974%	0.000	12532.583	-7.005
2	17:03:57	4.663	-308.499	-667.029	98.508%	0.000	11643.395	-19.045
3	17:04:19	52.625	-406.175	-740.240	96.842%	0.000	11698.149	-23.510
x		24.718	-354.578	-733.363	96.775%	0.000	11958.043	-16.520
σ		24.927	49.071	63.177	1.768%	0.000	498.319	8.537
%RSD		100.845	13.839	8.615	1.827	0.000	4.167	51.678

200-35736-A-14-A SD@5 10/18/2016 05:08:56 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:09:18	97.989%	-4.631	-685.095	39873.088	54.124	3821.507	2931.482	387.495	125.196%	12.030	746.988	115.625
2	17:09:40	96.048%	-4.580	-653.035	43690.555	-3.158	3634.163	2295.025	382.306	126.096%	3.984	1014.129	114.152
3	17:10:02	95.774%	-4.572	-531.272	38172.964	12.864	3562.574	2811.450	462.238	125.998%	7.972	1274.223	103.699
x		96.604%	-4.594	-623.134	40578.869	21.277	3672.748	2679.319	410.680	125.763%	7.995	1011.780	111.158
σ		1.207%	0.032	81.154	2825.694	29.553	133.709	338.176	44.726	0.494%	4.023	263.625	6.502
%RSD		1.250	0.699	13.023	6.963	138.898	3.641	12.622	10.891	0.393	50.316	26.056	5.849

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:09:18	6453.677	96.132	28654.753	-22.692	11.669	11.747	39.257	-304.266	624.514	-42.907	455.262	2469.093
2	17:09:40	6334.847	48.893	24298.554	-30.765	3.453	-4.435	128.475	-473.896	685.105	-126.641	446.255	2713.100
3	17:10:02	6388.767	152.430	23524.626	-26.787	-0.491	31.191	68.304	-428.070	647.231	-49.015	452.201	2387.034
x		6392.430	99.152	25492.645	-26.748	4.877	12.834	78.679	-402.077	652.283	-72.854	451.239	2523.075
σ		59.499	51.835	2765.671	4.037	6.203	17.838	45.505	87.751	30.610	46.680	4.580	169.603
%RSD		0.931	52.278	10.849	15.092	127.199	138.990	57.836	21.825	4.693	64.074	1.015	6.722

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:09:18	85.222	114.868%	-917.107	5.435	-64.631	19.776	107.302%	484.619	-1117.390	-889.047	-2.814	99.468%
2	17:09:40	65.684	114.069%	-890.563	-4.064	-47.163	2.578	108.348%	438.410	-1108.649	-877.937	6.280	101.451%
3	17:10:02	45.595	114.721%	-908.345	4.554	-56.005	6.646	110.793%	415.194	-1082.349	-880.964	-12.281	101.245%
x		65.501	114.553%	-905.338	1.975	-55.933	9.667	108.814%	446.074	-1102.796	-882.649	-2.938	100.721%
σ		19.814	0.425%	13.525	5.249	8.734	8.988	1.791%	35.341	18.239	5.743	9.281	1.090%
%RSD		30.250	0.371	1.494	265.752	15.615	92.980	1.646	7.923	1.654	0.651	315.861	1.083

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:09:18	18.951	-401.449	-1223.868	94.869%	0.000	6156.765	-59.651
2	17:09:40	11.860	-335.482	-1375.200	95.681%	0.000	6320.724	-59.651
3	17:10:02	-17.561	-364.306	-1322.641	96.639%	0.000	6278.120	-54.477
x		4.417	-367.079	-1307.237	95.730%	0.000	6251.870	-57.926
σ		19.360	33.071	76.833	0.886%	0.000	85.073	2.987
%RSD		438.340	9.009	5.878	0.926	0.000	1.361	5.157

CCV 10/18/2016 05:14:40 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	17:15:02	85.266%	104545.470	36700.443	┬14347493.000	┬4204580.100	┬40073680.000	┬13477252.000	1335692.700	102.648%	25610.919	┬2703396.500	761082
2	17:15:23	82.584%	107247.470	38078.387	┬14395622.000	┬4250673.200	┬39746859.000	┬13524434.000	┬1454609.300	100.306%	26735.689	┬2765486.200	777755
3	17:15:45	80.336%	107963.930	38829.024	┬13947332.000	┬4078209.000	┬38793491.000	┬13136560.000	┬1425300.400	101.601%	25952.760	┬2684602.500	754794
x		82.729%	119.138%	115.496%	┬105.748%	┬100.850%	┬102.361%	┬98.592%	┬97.099%	101.518%	26099.789	┬103.058%	95.1
σ		2.468%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.173%	576.619	┬n/a	
%RSD		2.983	1.691	2.851	┬1.729	┬2.137	┬1.682	┬1.582	┬4.409	1.156	2.209	┬1.557	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	17:15:02	8941.257	┬3973235.100	┬82419332.000	1188069.100	641140.110	870461.000	675239.040	89185.420	-393.438	9413.579	424.481	1712
2	17:15:23	8864.262	┬4031345.400	┬83278190.000	1199841.800	645201.450	864784.520	679604.380	90465.549	-508.318	9431.225	447.823	1784
3	17:15:45	7360.460	┬3936260.400	┬82095764.000	1172160.000	629569.260	849829.780	669821.880	91034.052	-479.187	9551.465	444.866	1395
x		8388.660	┬98.305%	┬98.557%	93.392%	99.830%	103.809%	105.484%	108.791%	-460.314	109.787%	439.057	1630

σ		891.278	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	59.720	n/a	12.709	207
%RSD		10.625	T 1.204	T 0.740	1.171	1.270	1.237	0.726	1.049	12.974	0.793	2.895	12
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	17:15:02	852951.330	96.292%	1685297.400	282277.890	698.503	132947.400	93.409%	843990.140	565727.800	428199.980	568124.820	88.1
2	17:15:23	867094.970	94.769%	1757379.900	282383.300	539.604	135136.380	92.337%	851087.540	571696.030	431424.570	573751.920	86.7
3	17:15:45	866796.070	94.295%	1778674.400	284433.000	468.176	134519.180	91.602%	862583.490	577183.520	436974.340	575702.520	88.7
x		862280.790	95.119%	93.998%	105.692%	568.761	95.479%	92.449%	852553.730	571535.780	92.175%	92.131%	87.8
σ		8080.934	1.043%	n/a	n/a	117.899	n/a	0.909%	9382.988	5729.543	n/a	n/a	1.0
%RSD		0.937	1.097	2.812	0.429	20.729	0.841	0.983	1.101	1.002	1.027	0.687	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:15:02	36465.763	1618552.700	T 15248023.000	86.652%	0.000	201910.940	120527.950
2	17:15:23	37487.805	1643606.400	T 15364872.000	85.329%	0.000	221336.510	121247.810
3	17:15:45	36473.960	1653769.900	T 15554478.000	85.150%	0.000	233637.960	120432.770
x		99.185%	87.616%	T 96.426%	85.710%	0.000	86.971%	96.793%
σ		n/a	n/a	T n/a	0.820%	0.000	n/a	n/a
%RSD		1.597	1.106	T 1.005	0.957	0.000	7.306	0.369

CCB 10/18/2016 05:20:23 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:20:45	92.628%	-1.784	-485.563	8664.851	398.821	5881.724	6665.239	196.514	106.365%	28.306	166.633	-201.530
2	17:21:08	88.979%	1.247	-437.716	4937.051	392.579	5452.309	6573.616	293.198	107.498%	37.337	976.325	-250.490
3	17:21:29	86.856%	1.453	-538.961	2270.214	508.851	5534.705	4422.243	306.767	106.788%	9.393	2155.486	-310.714
x		89.488%	0.305	-487.413	5290.705	433.417	5622.912	5887.033	265.493	106.884%	25.012	1099.481	-254.245
σ		2.920%	1.812	50.648	3211.954	65.402	227.892	1269.372	60.121	0.572%	14.260	1000.130	54.689
%RSD		3.263	594.339	10.391	60.709	15.090	4.053	21.562	22.645	0.536	57.013	90.964	21.510

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:20:45	5497.500	383.373	39112.647	74.860	65.747	113.125	-80.674	-225.495	468.945	-55.744	450.438	2212.399
2	17:21:08	5396.748	388.955	36010.883	55.016	22.895	36.962	-91.444	-588.301	535.900	-88.900	445.349	2511.923
3	17:21:29	5033.131	370.860	33510.355	60.348	46.646	71.671	-194.856	-291.028	459.708	-23.014	474.715	2239.927
x		5309.126	381.062	36211.295	63.408	45.096	73.919	-122.324	-368.274	488.184	-55.886	456.834	2321.416
σ		244.270	9.266	2806.518	10.270	21.468	38.131	63.044	193.345	41.581	32.943	15.693	165.556
%RSD		4.601	2.432	7.750	16.196	47.605	51.585	51.538	52.500	8.517	58.947	3.435	7.132

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:20:45	98.364	98.597%	2506.936	24.343	-68.424	29.256	96.019%	3254.872	-389.253	-341.233	30.072	88.251%
2	17:21:08	99.281	100.005%	2353.234	40.423	-59.851	26.159	95.320%	3619.771	-397.921	-280.761	40.907	90.618%
3	17:21:29	103.660	100.010%	1833.024	34.796	-68.471	29.309	95.954%	3653.191	-304.129	-247.031	30.104	91.834%
x		100.435	99.537%	2231.065	33.187	-65.582	28.241	95.764%	3509.278	-363.767	-289.675	33.694	90.235%
σ		2.830	0.814%	353.176	8.160	4.963	1.803	0.386%	220.955	51.830	47.729	6.246	1.822%
%RSD		2.818	0.818	15.830	24.588	7.568	6.385	0.403	6.296	14.248	16.477	18.538	2.019

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:20:45	78.332	1089.019	-41.840	89.997%	0.000	7933.446	-20.760
2	17:21:08	129.069	856.187	-111.068	88.957%	0.000	7786.011	-3.444
3	17:21:29	71.700	843.798	-56.506	87.334%	0.000	7909.353	-19.575
x		93.034	929.668	-69.805	88.763%	0.000	7876.270	-14.593
σ		31.383	138.141	36.480	1.342%	0.000	79.089	9.674
%RSD		33.733	14.859	52.260	1.512	0.000	1.004	66.288

CCVL 10/18/2016 05:26:07 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:26:29	91.657%	221.934	5355.131	T 752070.620	26352.682	67346.610	641148.290	23789.094	110.207%	13.662	11675.334	8258.750
2	17:26:51	91.597%	189.331	5212.002	T 747682.990	27339.365	68767.966	635122.610	23082.515	110.623%	18.171	9694.724	8297.898
3	17:27:12	89.645%	218.711	5559.025	660934.440	26544.386	67791.154	632873.540	23668.151	110.428%	18.193	11776.329	7812.773
x		90.966%	146.701%	102.464%	T 107.044%	96.843%	105.579%	93.789%	97.486%	110.419%	16.675	104.740%	101.112%
σ		1.145%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.209%	2.610	n/a	n/a
%RSD		1.259	8.555	3.244	T 7.136	1.956	1.070	0.672	1.607	0.189	15.650	10.623	3.318

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:26:29	6159.822	6663.646	536236.100	2929.321	1205.826	4021.238	12277.937	715.661	485.700	151.390	449.091	2231.239
2	17:26:51	6711.199	7075.626	535971.080	2777.981	1137.894	3884.150	11652.848	592.120	532.886	114.157	425.365	2400.214
3	17:27:12	6023.883	7088.872	542684.760	2746.742	1117.316	3897.686	12091.239	466.983	584.177	88.752	448.497	2479.689
x		6298.301	107.169%	96.345%	110.889%	112.713%	118.495%	117.295%	71.329%	534.254	68.491%	440.984	2370.380
σ		363.983	n/a	n/a	n/a	n/a	n/a	n/a	n/a	49.253	n/a	13.530	126.883

%RSD		5.779	3.482	0.706	3.465	4.015	1.920	2.672	21.018	9.219	26.676	3.068	5.353
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:26:29	22013.725	101.786%	13634.128	3082.103	-58.876	636.462	98.088%	1478.323	4083.365	2716.337	4739.786	91.339%
2	17:26:51	22107.348	99.551%	14630.269	2971.773	-86.828	806.088	96.859%	1559.034	4229.037	2966.086	4743.350	90.708%
3	17:27:12	21830.294	100.404%	14782.051	2676.798	-16.991	621.438	97.995%	1479.726	4018.878	2888.215	4626.917	91.551%
x		98.472%	100.580%	96.868%	108.676%	-54.231	97.896%	97.648%	1505.694	4110.426	76.161%	94.608%	91.199%
σ		n/a	1.128%	n/a	n/a	35.149	n/a	0.684%	46.199	107.661	n/a	n/a	0.438%
%RSD		0.641	1.122	4.346	7.200	64.814	14.905	0.701	3.068	2.619	4.473	1.408	0.481

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:26:29	2848.202	16281.500	13525.861	89.193%	0.000	15601.942	12647.490
2	17:26:51	3094.673	16574.978	13091.409	90.987%	0.000	16149.225	11973.483
3	17:27:12	3169.126	16562.658	13638.816	90.354%	0.000	16558.513	12545.126
x		81.844%	88.080%	105.100%	90.178%	0.000	63.962%	99.319%
σ		n/a	n/a	n/a	0.910%	0.000	n/a	n/a
%RSD		5.530	1.008	2.154	1.009	0.000	2.980	2.932

CCVL 10/18/2016 05:30:57 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	17:31:19	95.561%	165.483	5258.401	648510.470	27271.152	66506.244	612994.860	22508.764	112.832%	44.525	10866.277	7817.322
2	17:31:40	92.885%	197.374	5542.607	638294.340	26853.491	67781.487	619251.300	22353.131	111.796%	13.484	10595.925	7803.093
3	17:32:03	90.713%	235.341	5330.033	T 737846.360	27793.876	68571.666	627402.340	23017.643	110.330%	13.641	10134.877	8061.588
x		93.053%	139.301%	102.495%	T 100.305%	98.873%	105.037%	91.358%	93.809%	111.653%	23.883	99.845%	98.260%
σ		2.428%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.257%	17.876	n/a	n/a
%RSD		2.609	17.539	2.749	T 8.115	1.726	1.541	1.165	1.536	1.126	74.848	3.511	1.841

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:31:19	6359.498	6538.963	518975.160	2607.545	1234.730	4007.955	12034.989	386.040	608.855	116.611	457.440	2398.083
2	17:31:40	6510.693	6777.858	527918.870	2569.472	1317.996	3967.762	11785.852	590.718	560.853	61.836	432.522	2547.340
3	17:32:03	6219.450	6918.684	535226.140	2567.906	1213.507	3921.424	11677.320	730.000	506.495	141.510	458.048	2139.475
x		6363.214	104.120%	94.390%	101.587%	122.652%	119.439%	115.589%	68.596%	558.734	61.852%	449.337	2361.633
σ		145.657	n/a	n/a	n/a	n/a	n/a	n/a	n/a	51.213	n/a	14.565	206.361
%RSD		2.289	2.846	1.543	0.869	4.399	1.092	1.550	30.411	9.166	38.217	3.241	8.738
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:31:19	21803.297	102.130%	12943.212	3144.621	-70.530	709.145	96.626%	1003.901	3810.302	2673.240	4661.677	90.921%
2	17:31:40	21776.222	100.727%	13926.705	3100.645	-67.094	735.864	98.147%	1187.042	3577.670	2670.863	4808.310	93.230%
3	17:32:03	22604.535	102.765%	14025.969	2821.962	-70.979	685.191	97.917%	1184.719	3742.182	2778.400	4278.205	92.458%
x		98.819%	101.874%	92.029%	112.865%	-69.534	101.037%	97.563%	1125.221	3710.051	72.178%	92.182%	92.203%
σ		n/a	1.043%	n/a	n/a	2.125	n/a	0.820%	105.072	119.598	n/a	n/a	1.176%
%RSD		2.133	1.024	4.391	5.789	3.057	3.570	0.840	9.338	3.224	2.268	5.973	1.275

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:31:19	2911.226	16552.092	13230.722	91.807%	0.000	17288.091	11631.656
2	17:31:40	2874.375	16342.160	13418.524	89.493%	0.000	17741.571	12386.798
3	17:32:03	2720.658	17075.150	13618.229	89.859%	0.000	18085.736	12380.738
x		76.403%	89.060%	105.129%	90.386%	0.000	70.324%	97.269%
σ		n/a	n/a	n/a	1.244%	0.000	n/a	n/a
%RSD		3.565	2.266	1.444	1.376	0.000	2.260	3.579

200-35736-A-14-A PDS 10/18/2016 05:36:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:37:08	89.860%	1726.154	57878.057	T 7522727.700	258204.810	591060.120	T 6833285.800	214445.770	106.964%	42.239	95784.447	76755.872
2	17:37:30	87.304%	1653.746	60085.387	T 7386652.600	256657.960	576878.350	T 6772538.600	219354.950	105.428%	9.524	97191.000	76427.257
3	17:37:52	88.177%	1753.555	60234.797	T 7404437.700	256290.370	587492.660	T 6828095.400	219932.620	104.295%	14.450	100473.800	78370.016
x		88.447%	1711.152	59399.413	T 7437939.300	257051.050	585143.710	T 6811306.600	217911.110	105.562%	22.071	97816.415	77184.382
σ		1.299%	51.568	1319.650	T 73965.396	1015.956	7376.913	T 33674.255	3014.944	1.340%	17.639	2406.422	1039.853
%RSD		1.469	3.014	2.222	T 0.994	0.395	1.261	T 0.494	1.384	1.269	79.918	2.460	1.347

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:37:08	5879.277	60377.256	T 5557312.600	23192.762	10184.127	36100.498	104823.890	8349.002	420.435	1613.028	459.320	2397.771
2	17:37:30	5368.587	58382.909	T 5535526.200	23464.875	10636.680	36495.944	108418.940	8145.529	474.106	1691.872	449.721	2067.919
3	17:37:52	4611.250	60262.930	T 5638735.300	23729.765	10301.556	34973.005	105678.700	8511.428	258.821	1680.108	419.636	2095.524
x		5286.371	59674.365	T 5577191.400	23462.467	10374.121	35856.482	106307.180	8335.319	384.454	1661.670	442.893	2187.071
σ		637.999	1119.894	T 54400.402	268.510	234.841	790.249	1878.123	183.333	112.062	42.533	20.705	182.992
%RSD		12.069	1.877	T 0.975	1.144	2.264	2.204	1.767	2.199	29.148	2.560	4.675	8.367

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:37:08	209490.660	98.295%	135241.120	28105.609	-1.755	6390.255	94.162%	1088.582	43009.716	31867.148	44276.119	87.917%
2	17:37:30	215956.630	96.776%	140247.760	28768.290	-29.175	6295.759	92.725%	1100.057	43663.567	32977.214	45238.134	89.936%
3	17:37:52	212897.770	94.457%	142194.620	28262.194	56.182	6280.290	93.535%	1122.615	44077.181	33094.608	44873.384	89.885%
x		212781.690	96.509%	139227.830	28378.698	8.417	6322.102	93.474%	1103.752	43583.488	32646.323	44795.879	89.246%
σ		3234.545	1.933%	3587.194	346.362	43.578	59.527	0.720%	17.315	538.219	677.334	485.668	1.152%
%RSD		1.520	2.003	2.576	1.221	517.716	0.942	0.771	1.569	1.235	2.075	1.084	1.290

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:37:08	29721.358	157631.130	110151.430	87.667%	0.000	190284.410	123351.090
2	17:37:30	30043.015	161674.160	112160.910	86.303%	0.000	202413.990	126199.110
3	17:37:52	31364.095	160963.120	112667.010	86.920%	0.000	208715.590	127462.870
x		30376.156	160089.470	111659.780	86.963%	0.000	200471.330	125671.020
σ		870.565	2158.467	1330.558	0.683%	0.000	9367.901	2106.145
%RSD		2.866	1.348	1.192	0.785	0.000	4.673	1.676

200-35736-A-14-B MS 10/18/2016 05:42:30 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:42:52	91.058%	1706.100	61011.890	T 7602212.400	262585.900	582092.310	T 6809569.600	226539.360	107.986%	13.966	97270.932	77283.133
2	17:43:14	88.768%	1620.734	60899.760	T 7540032.800	263046.710	597901.250	T 7014497.200	231629.160	105.564%	23.823	98426.983	77939.700
3	17:43:35	87.642%	1807.098	62338.765	T 7569399.700	263844.070	597206.250	T 6991901.600	230705.560	105.349%	23.859	99752.636	80043.761
x		89.156%	1711.310	61416.805	T 7570548.300	263158.900	592399.940	T 6938656.100	229624.690	106.300%	20.550	98483.517	78422.198
σ		1.740%	93.291	800.407	T 31105.715	636.542	8933.432	T 112361.660	2711.587	1.464%	5.701	1241.818	1442.175
%RSD		1.952	5.451	1.303	T 0.411	0.242	1.508	T 1.619	1.181	1.377	27.743	1.261	1.839

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:42:52	4900.190	59857.606	T 5657377.300	23932.728	10031.856	36997.215	109669.400	8957.504	198.290	1810.403	414.470	1747.843
2	17:43:14	4523.467	60379.689	T 5835728.900	24653.559	10414.326	38900.251	112119.060	9145.423	167.972	1888.632	438.727	1892.094
3	17:43:35	4183.099	60841.924	T 5870562.100	24798.989	10582.847	37649.650	111546.970	8716.925	254.328	1836.272	445.157	2026.389
x		4535.585	60359.740	T 5787889.400	24461.759	10343.009	37849.039	111111.810	8939.951	206.864	1845.102	432.784	1888.775

σ		358.699	492.463	T 114360.800	463.889	282.333	967.059	1281.494	214.788	43.812	39.855	16.183	139.303
%RSD		7.909	0.816	T 1.976	1.896	2.730	2.555	1.153	2.403	21.179	2.160	3.739	7.375
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:42:52	221289.780	96.403%	143137.250	28803.835	-59.811	6717.166	93.132%	762.374	43661.779	33589.658	45680.931	88.804%
2	17:43:14	227750.500	93.347%	150652.160	30509.965	-15.507	6906.365	90.946%	885.161	45354.954	34892.092	48499.108	90.033%
3	17:43:35	224960.000	94.129%	150095.260	30236.191	27.217	6779.705	92.216%	970.575	45715.421	34818.205	47325.493	88.373%
x		224666.760	94.626%	147961.560	29849.997	-16.034	6801.079	92.098%	872.703	44910.718	34433.318	47168.511	89.070%
σ		3240.328	1.588%	4187.241	916.286	43.516	96.393	1.098%	104.658	1096.527	731.565	1415.632	0.861%
%RSD		1.442	1.678	2.830	3.070	271.405	1.417	1.192	11.992	2.442	2.125	3.001	0.967

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:42:52	64933.232	168535.970	116484.180	85.288%	0.000	229775.240	127765.920
2	17:43:14	65260.795	169679.560	117650.180	86.051%	0.000	232550.970	130656.850
3	17:43:35	65397.934	170832.150	117997.510	85.938%	0.000	242266.710	132358.550
x		65197.320	169682.560	117377.290	85.759%	0.000	234864.310	130260.440
σ		238.765	1148.095	792.708	0.412%	0.000	6559.184	2321.836
%RSD		0.366	0.677	0.675	0.480	0.000	2.793	1.782

200-35736-A-14-C MSD 10/18/2016 05:48:15 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:48:38	90.832%	1666.310	58946.106	T 7500942.700	258638.510	582091.080	T 6902260.500	224182.520	106.463%	28.332	99513.739	76936.764
2	17:49:00	88.862%	1827.216	60280.641	T 7553003.900	266551.630	586719.560	T 6933190.300	220626.140	106.918%	37.637	98008.574	78072.507
3	17:49:23	87.818%	1866.102	61314.643	T 7279051.100	254514.540	567984.070	T 6688157.600	222738.250	107.648%	4.672	94941.273	77545.741
x		89.171%	1786.543	60180.464	T 7444332.500	259901.560	578931.570	T 6841202.800	222515.640	107.010%	23.547	97487.862	77518.338
σ		1.531%	105.924	1187.442	T 145485.610	6117.136	9759.178	T 133440.230	1788.610	0.598%	16.996	2330.283	568.367
%RSD		1.717	5.929	1.973	T 1.954	2.354	1.686	T 1.951	0.804	0.559	72.176	2.390	0.733

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:48:38	4029.414	57782.999	T 5641710.000	23447.980	10876.068	36819.975	108312.850	8506.401	270.662	1722.589	420.590	2157.305
2	17:49:00	4518.511	59314.029	T 5701629.900	23839.627	10441.177	37486.000	108570.530	8714.365	185.877	1771.536	448.757	1913.616
3	17:49:23	4370.085	58853.498	T 5618971.900	24124.437	10537.582	37656.375	109989.550	8436.919	289.267	1708.449	450.424	2049.813
x		4306.003	58650.175	T 5654103.900	23804.015	10618.276	37320.783	108957.640	8552.561	248.602	1734.191	439.924	2040.245
σ		250.766	785.505	T 42700.037	339.632	228.399	442.000	902.896	144.368	55.112	33.105	16.764	122.126
%RSD		5.824	1.339	T 0.755	1.427	2.151	1.184	0.829	1.688	22.169	1.909	3.811	5.986

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:48:38	217436.720	95.067%	142177.280	29453.307	-71.981	6570.775	92.252%	872.627	44100.591	33357.381	46469.908	89.711%
2	17:49:00	218933.220	94.381%	145241.640	29680.885	-23.675	6422.832	93.147%	783.721	44224.710	33321.018	46346.162	89.248%
3	17:49:23	219952.500	95.284%	147793.710	29022.542	72.971	6554.095	92.914%	780.311	44585.734	33828.278	46759.533	88.914%
x		218774.150	94.910%	145070.880	29385.578	-7.562	6515.901	92.771%	812.220	44303.678	33502.226	46525.201	89.291%
σ		1265.409	0.471%	2812.105	334.356	73.807	81.030	0.464%	52.342	252.028	282.955	212.160	0.401%
%RSD		0.578	0.496	1.938	1.138	976.036	1.244	0.500	6.444	0.569	0.845	0.456	0.449

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:48:38	63263.576	162717.390	113592.620	86.425%	0.000	231193.980	126836.520
2	17:49:00	65194.542	166392.850	117749.030	85.329%	0.000	238454.520	128519.080
3	17:49:23	65569.931	165201.430	114733.710	87.374%	0.000	240198.510	128038.020
x		64676.016	164770.560	115358.450	86.376%	0.000	236615.670	127797.870
σ		1237.526	1875.232	2147.480	1.024%	0.000	4775.605	866.604
%RSD		1.913	1.138	1.862	1.185	0.000	2.018	0.678

CCV 10/18/2016 05:54:01 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	17:54:23	87.797%	105800.000	36433.965	T 14299172.000	T 4261274.400	T 40292561.000	T 13939810.000	T 1465008.900	101.880%	26019.055	T 2721940.200	775189
2	17:54:44	86.778%	105834.580	37182.404	T 14667516.000	T 4354809.200	T 40864939.000	T 13874216.000	1368626.900	99.291%	26325.168	T 2782175.500	786151
3	17:55:06	85.544%	105865.850	37619.606	T 14034588.000	T 4093230.800	T 38555355.000	T 13231219.000	T 1430195.700	103.859%	25705.992	T 2639589.000	735759
x		86.706%	118.297%	113.085%	T 106.518%	T 102.265%	T 103.309%	T 100.820%	T 98.210%	101.677%	26016.738	T 102.934%	95.3
σ		1.128%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	2.291%	309.595	T n/a	
%RSD		1.301	0.031	1.617	T 2.218	T 3.129	T 3.014	T 2.862	T 3.434	2.253	1.190	T 2.637	3

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	17:54:23	6930.502	T 4049953.300	T 83020180.000	1176112.500	638987.740	892113.200	690483.610	91215.399	-395.179	9533.337	477.200	1638
2	17:54:44	10891.914	T 4128640.300	T 84336699.000	1187155.300	646491.570	874295.300	690527.120	91471.370	-434.269	9483.841	460.605	1547
3	17:55:06	8274.612	T 3925566.000	T 81011984.000	1143594.100	620945.960	869108.610	678859.710	90017.151	-517.184	9509.202	434.941	1372
x		8699.009	T 99.649%	T 98.786%	91.997%	99.336%	105.835%	107.318%	109.602%	-448.877	110.290%	457.582	1519
σ		2014.518	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	62.301	n/a	21.291	135

%RSD		23.158	T 2.538	T 2.022	1.937	2.066	1.374	0.979	0.854	13.879	0.260	4.653	8
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	17:54:23	868170.360	93.504%	1691707.000	282404.530	859.937	131606.650	90.320%	851536.810	565249.310	429349.660	573474.720	86.4
2	17:54:44	859919.190	92.410%	1755948.700	282095.960	698.766	132600.960	90.426%	854434.160	568597.510	431321.930	576657.900	86.4
3	17:55:06	857982.710	91.563%	1789129.800	283214.920	780.773	133201.080	90.703%	859874.060	565602.540	430742.350	572097.300	88.2
x		862024.090	92.492%	94.276%	105.520%	779.825	94.247%	90.483%	855281.680	566483.120	91.806%	92.381%	87.0
σ		5410.174	0.973%	n/a	n/a	80.590	n/a	0.198%	4232.750	1839.615	n/a	n/a	1.0
%RSD		0.628	1.052	2.837	0.205	10.334	0.608	0.219	0.495	0.325	0.235	0.407	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	17:54:23	36941.720	1601409.700	T 15560611.000	85.995%	0.000	274731.930	116506.540
2	17:54:44	37892.085	1646634.900	T 15760327.000	85.370%	0.000	287694.920	118025.690
3	17:55:06	37588.311	1663268.600	T 15464736.000	84.745%	0.000	294801.120	119246.690
x		100.977%	87.534%	T 97.717%	85.370%	0.000	113.496%	94.540%
σ		n/a	n/a	T n/a	0.625%	0.000	n/a	n/a
%RSD		1.295	1.955	T 0.967	0.732	0.000	3.561	1.164

CCB 10/18/2016 05:59:45 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	18:00:06	95.040%	-1.921	0.343	8956.401	607.937	6049.758	8146.283	379.133	108.559%	18.523	649.980	-159.281
2	18:00:28	90.501%	9.392	195.218	344.999	513.569	5562.518	6395.105	340.125	108.904%	23.080	981.367	-458.210
3	18:00:50	90.698%	20.382	214.145	9990.979	651.863	6330.865	8009.233	202.015	105.284%	4.770	258.296	-266.301
x		92.079%	9.284	136.568	6430.793	591.123	5981.047	7516.874	307.091	107.583%	15.458	629.881	-294.597
σ		2.565%	11.152	118.354	5295.777	70.663	388.755	973.894	93.066	1.998%	9.532	361.954	151.460
%RSD		2.786	120.118	86.663	82.350	11.954	6.500	12.956	30.306	1.857	61.665	57.464	51.413

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	18:00:06	5207.509	537.739	32188.985	104.726	45.424	59.009	19.921	-22.713	365.017	31.954	442.400	2026.249
2	18:00:28	5008.647	433.720	28190.030	67.529	31.417	59.797	11.290	-284.964	451.389	-36.967	429.086	2305.547
3	18:00:50	5349.348	382.028	36809.164	71.317	28.720	52.446	-170.276	-337.712	462.024	-78.192	406.890	2306.431
x		5188.501	451.162	32396.060	81.190	35.187	57.084	-46.355	-215.130	426.143	-27.735	426.125	2212.742
σ		171.144	79.307	4313.297	20.470	8.968	4.036	107.406	168.712	53.203	55.650	17.939	161.509
%RSD		3.299	17.578	13.314	25.212	25.486	7.070	231.702	78.423	12.485	200.648	4.210	7.299

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	18:00:06	96.723	96.963%	2508.503	47.187	-58.718	30.759	93.243%	3131.889	-358.911	-367.040	69.004	88.470%
2	18:00:28	166.960	97.316%	2408.586	9.738	-47.102	14.034	92.990%	3516.870	-384.747	-260.107	36.976	88.991%
3	18:00:50	42.805	95.843%	2345.432	25.534	-58.470	57.124	93.638%	3391.036	-379.480	-257.828	52.623	89.647%
x		102.163	96.707%	2420.841	27.487	-54.763	33.972	93.290%	3346.598	-374.379	-294.992	52.868	89.036%
σ		62.256	0.769%	82.223	18.801	6.636	21.724	0.327%	196.299	13.652	62.406	16.016	0.590%
%RSD		60.938	0.795	3.396	68.399	12.117	63.945	0.350	5.866	3.647	21.155	30.294	0.662

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	18:00:06	179.642	1402.407	198.587	87.196%	0.000	9422.089	20.628
2	18:00:28	121.868	1029.775	145.489	85.986%	0.000	9319.249	15.943
3	18:00:50	164.925	943.217	-5.121	88.170%	0.000	9119.706	-19.955
x		155.479	1125.133	112.985	87.117%	0.000	9287.014	5.539
σ		30.023	243.995	105.672	1.094%	0.000	153.747	22.202
%RSD		19.310	21.686	93.528	1.256	0.000	1.656	400.852

CCVL 10/18/2016 06:05:29 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:05:50	95.342%	199.967	5268.040	T 716640.930	25640.568	65564.959	599222.810	22129.863	111.926%	13.491	11233.037	7751.734
2	18:06:12	90.004%	195.588	5570.781	630660.940	26016.160	66825.688	606831.790	22436.003	110.246%	13.680	9906.939	7406.556
3	18:06:34	89.415%	202.515	5587.678	635227.690	26465.126	66197.169	607976.290	22139.599	109.516%	18.365	10930.263	7490.431
x		91.587%	139.271%	104.372%	T 98.218%	94.291%	102.825%	89.117%	92.187%	110.563%	15.179	101.340%	93.972%
σ		3.266%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.236%	2.761	n/a	n/a
%RSD		3.566	1.758	3.285	T 7.320	1.585	0.952	0.787	0.783	1.118	18.189	6.501	2.385

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:05:50	5439.527	6478.984	494130.480	2593.240	1128.789	3949.606	11740.127	562.923	535.174	102.747	439.528	2368.037
2	18:06:12	5551.086	6407.044	506334.840	2492.797	1209.925	4229.327	12643.163	586.682	476.689	178.885	444.874	2142.102
3	18:06:34	5471.265	6575.778	509751.820	2432.057	1049.234	3692.985	11702.310	507.683	520.653	114.420	446.555	2421.648
x		5487.293	100.139%	90.100%	98.612%	110.333%	119.186%	117.502%	66.608%	510.839	76.562%	443.652	2310.596
σ		57.481	n/a	n/a	n/a	n/a	n/a	n/a	n/a	30.452	n/a	3.670	148.362
%RSD		1.048	1.305	1.631	3.248	7.115	6.779	4.428	7.337	5.961	31.061	0.827	6.421

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:05:50	21389.524	97.588%	13518.003	2900.860	-91.848	699.037	95.103%	1366.989	3458.367	2631.070	4510.451	88.348%
2	18:06:12	21543.458	98.411%	13666.612	2776.750	-48.798	691.363	93.960%	1596.490	3652.507	2727.650	4794.398	91.017%
3	18:06:34	21070.787	97.452%	13769.305	2800.235	-85.150	714.583	94.950%	1463.986	3497.943	2736.887	4696.834	91.763%
x		95.564%	97.817%	92.159%	105.529%	-75.265	99.841%	94.671%	1475.822	3536.272	71.939%	93.882%	90.376%
σ		n/a	0.519%	n/a	n/a	23.165	n/a	0.620%	115.207	102.589	n/a	n/a	1.796%
%RSD		1.130	0.530	0.926	2.333	30.778	1.686	0.655	7.806	2.901	2.172	3.091	1.987

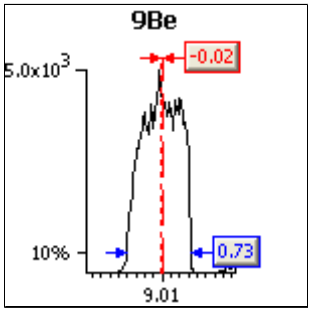
Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:05:50	2794.909	15656.897	12846.295	89.233%	0.000	17082.950	11929.622
2	18:06:12	3221.224	16356.152	13600.051	90.126%	0.000	17070.236	11716.449
3	18:06:34	3090.735	16247.517	12920.376	88.275%	0.000	17756.492	12173.080
x		81.797%	86.015%	102.778%	89.212%	0.000	68.728%	95.719%
σ		n/a	n/a	n/a	0.926%	0.000	n/a	n/a
%RSD		7.196	2.339	3.166	1.038	0.000	2.269	1.914

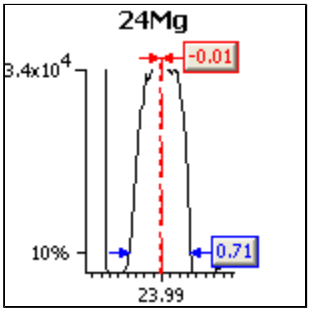
Performance Report

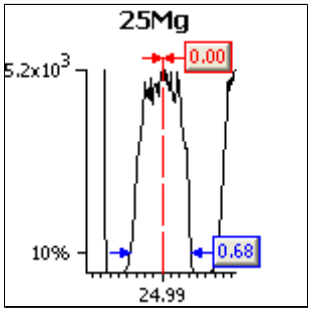
Sample details
Sample name : ITUNE
Acquired at : 10/19/2016 09:50:28 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

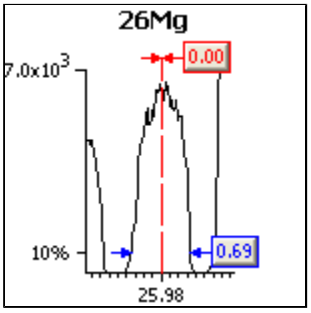
Mass Calibration verification

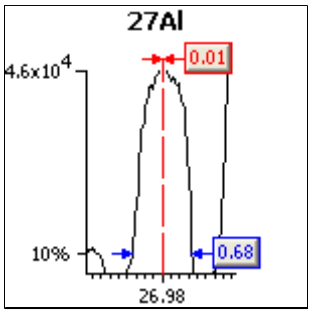
Acquisition parameters
Sweeps : 20
Dwell : 1.0 mSecs
Point spacing : 0.01 amu
Peak width measured at 10% of the peak maximum

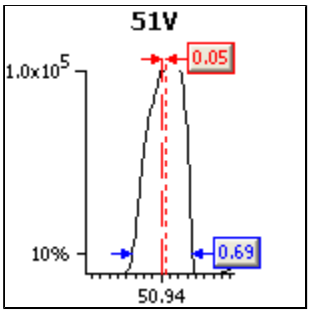


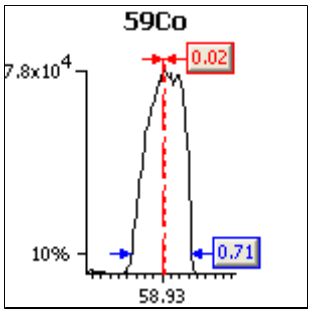


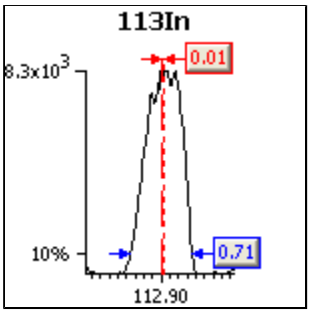


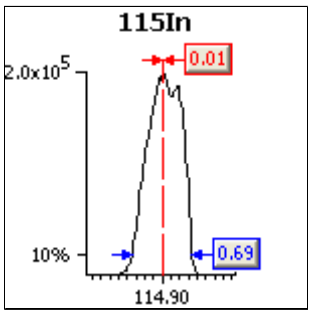


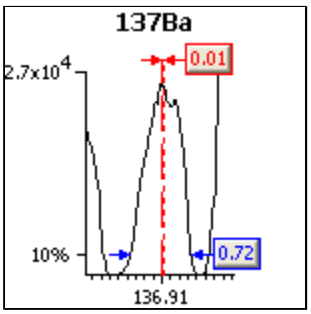


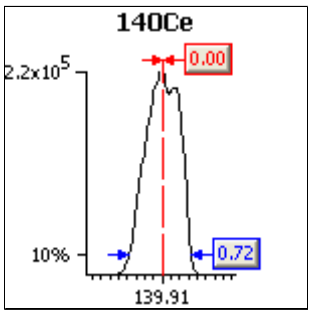


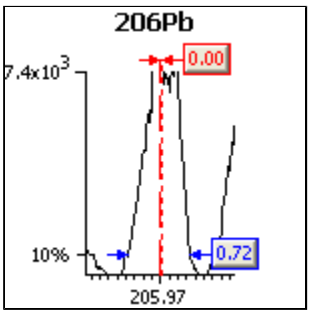


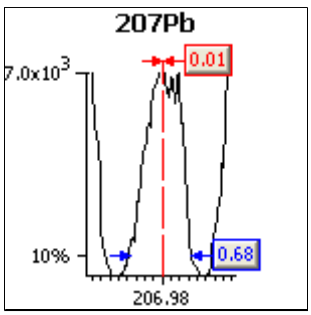


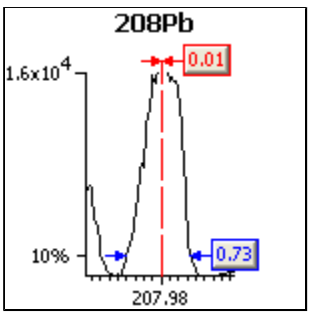


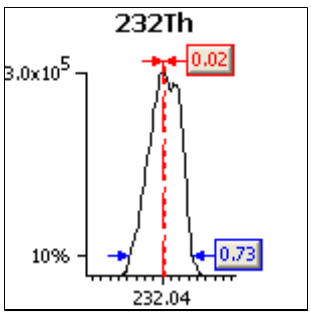


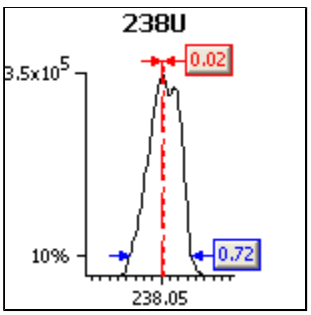












Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
9Be	0.90	0.65	0.10	0.73	-0.02
24Mg	0.90	0.65	0.10	0.71	-0.01

25Mg	0.90	0.65	0.10	0.68	0.00
26Mg	0.90	0.65	0.10	0.69	0.00
27Al	0.90	0.65	0.10	0.68	0.01
51V	0.90	0.65	0.10	0.69	0.05
59Co	0.90	0.65	0.10	0.71	0.02
113In	0.90	0.65	0.10	0.71	0.01
115In	0.90	0.65	0.10	0.69	0.01
137Ba	0.90	0.65	0.10	0.72	0.01
140Ce	0.90	0.65	0.10	0.72	0.00
206Pb	0.90	0.65	0.10	0.72	0.00
207Pb	0.90	0.65	0.10	0.68	0.01
208Pb	0.90	0.65	0.10	0.73	0.01
232Th	0.90	0.65	0.10	0.73	0.02
238U	0.90	0.65	0.10	0.72	0.02

Sample details
Sample name : ITUNE
Acquired at : 10/19/2016 09:50:28 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Tune conditions

Major	
Extraction	-110
Lens 1	-4.1
Focus	18.0
D1	-43.9
Pole Bias	1.0
Hexapole Bias	-3.0
Nebuliser	0.74
Sampling Depth	133

Minor	
Lens 2	-39.2
Lens 3	-177.3
Forward power	1404
Horizontal	70
Vertical	522
D2	-158
DA	-40.8
Cool	13.0
Auxiliary	0.90

Global	
Standard resolution	135
High resolution	115
Analogue Detector	2353
PC Detector	1196

Add. Gases	
CCT1	0.00
CCT2	0.00

Sensitivity and stability results

Acquisition parameters
Sweeps : 50

Run	Time	8Bkg	9Be	24Mg	25Mg	26Mg	27Al	51V	59Co	113In
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Countrate	-	>100	>100	>100	>100	>100	>100	>100	>100
1	09:51:24 AM	0.000	4174.523	35080.881	4916.725	5823.017	44689.835	103109.97	77318.931	8458.146
2	09:51:58 AM	0.200	4190.527	34555.786	4660.652	5939.058	43991.982	102586.75	77256.644	8089.963
3	09:52:32 AM	0.100	3996.479	34026.699	4718.668	5819.016	44158.422	101667.14	76358.519	8308.070
4	09:53:06 AM	0.000	4248.541	34136.924	4594.633	5598.940	43560.852	100606.74	75896.415	8155.995
5	09:53:39 AM	0.200	4254.543	34078.805	4638.645	5692.972	43562.857	99137.976	75134.977	8023.931
x		0.100	4172.923	34375.819	4705.865	5774.601	43992.790	101421.72	76393.097	8207.221
σ		0.10	104.67	446.28	126.06	131.23	470.30	1592.75	926.50	175.43
%RSD		100.000	2.508	1.298	2.679	2.272	1.069	1.570	1.213	2.138

Run	Time	115In	137Ba	140Ce	156Ce O	206Pb	207Pb	208Pb	220Bkg	232Th
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	5.0%	5.0%	5.0%	-	5.0%	5.0%	5.0%	-	5.0%
	Countrate	>100	>100	>100	-	>100	>100	>100	-	>100
1	09:51:24 AM	196189.96	24664.236	223547.21	1476.065	7879.862	7387.637	17381.058	0.000	304141.98
2	09:51:58 AM	194109.81	24912.605	223295.88	1434.062	8153.994	7485.681	17449.129	0.000	308044.68
3	09:52:32 AM	193106.26	24666.239	222973.61	1374.057	8137.986	7219.563	17210.882	0.200	306380.42
4	09:53:06 AM	192454.79	24568.094	220478.74	1384.057	8003.921	7367.628	17086.754	0.000	303960.72
5	09:53:39 AM	190925.35	24373.809	219171.67	1374.057	7595.730	7261.582	17296.971	0.000	305347.73
x		193357.23	24636.997	221893.42	1408.460	7954.299	7344.418	17284.959	0.040	305575.10
σ		1961.01	194.66	1954.35	45.25	229.23	105.84	142.39	0.09	1692.57
%RSD		1.014	0.790	0.881	3.212	2.882	1.441	0.824	223.607	0.554

Run	Time	238U
Dwell (mSecs)		0.0
Limits	%RSD	5.0%
	Countrate	>100
1	09:51:24 AM	334542.19
2	09:51:58 AM	335411.40
3	09:52:32 AM	333324.15
4	09:53:06 AM	329807.21
5	09:53:39 AM	330737.38
x		332764.47
σ		2415.28
%RSD		0.726

Ratio results

Run	Time	156Ce O/140Ce
	Ratio limits	<0.0200
1	09:51:24 AM	0.007
2	09:51:58 AM	0.006

3	09:52:32 AM	0.006
4	09:53:06 AM	0.006
5	09:53:39 AM	0.006
x		0.0063
σ		0.00
%RSD		2.6842

Result : The performance report passed.

Experiment Details

Description	PlasmaLab Template BlankExperiment
Template Filename	C:\Program Files\Thermo Fisher\PlasmaLab\TEMPLATES\6020A.tet
Created By User	user
Analyte Database	Default.tea
Creation Timestamp	8/29/2003 01:55:15 PM
Last Edited By	INORG-User
Last Edit Timestamp	10/19/2016 10:00:04 AM
Instrument Detector	Simultaneous
Database Version	3.51
Acquisition Mode	Unknown

Numerical Results report key (text indicates meaning)

Blue text indicates that cell is a statistic.
Underlining indicates that a data warning flag is set.

Column headings	Result cells	Data warning flags
No flag	Internal Standard	I - Invalid calibration
Semi Quant	Excluded	T - Tripped
Standard Addition	QC Warning	F - Interference correction failed
Multi Element	QC Failure	M - Result over max
	Transient TRA only:	V - Valley integration failed
	Peak Not Found	D - Different method used
	Manually Edited	
	Merged Peak	

Setup

Survey Scan Setup

Sweeps	10
Dwell Time	600
Channels Per Mass	10
Acquisition Duration	13247

Main Run Setup

Main Run	Peak Jumping
Sweeps	20
Dwell Time	10000
Channels Per Mass	1
Acquisition Duration	18211
Channel Spacing	0.02

Survey Scan Regions

Start AMU	End AMU	Channels	Dwell ms	Resolution

4.59	11.41	68	600	Standard
22.59	27.41	48	600	Standard
28.59	29.41	8	600	Standard
30.59	31.41	8	600	Standard
32.59	33.41	8	600	Standard
38.59	39.41	8	600	Standard
42.59	79.41	368	600	Standard
80.59	245.50	1649	600	Standard

Peak Jump Regions

Analyte	Channels	Dwell ms	Resolution
6Li	1	5000	Standard
7Li	1	5000	Standard
9Be	1	20000	Standard
11B	1	10000	Standard
23Na	1	5000	Standard
25Mg	1	5000	Standard
26Mg	1	5000	Standard
27Al	1	10000	Standard
39K	1	5000	Standard
43Ca	1	10000	Standard
44Ca	1	5000	Standard
45Sc	1	5000	Standard
47Ti	1	10000	Standard
51V	1	10000	Standard
52Cr	1	10000	Standard
53Cl O	1	10000	Standard
55Mn	1	10000	Standard
56Fe	1	10000	Standard
59Co	1	10000	Standard
60Ni	1	10000	Standard
65Cu	1	10000	Standard
66Zn	1	10000	Standard
75As	1	50000	Standard
77Ar Cl	1	50000	Standard
82Se	1	100000	Standard
83Kr	1	100000	Standard
84Kr	1	10000	Standard
88Sr	1	10000	Standard
89Y	1	5000	Standard
98Mo	1	10000	Standard
106Cd	1	10000	Standard
107Ag	1	10000	Standard
108Mo O	1	10000	Standard
111Cd	1	10000	Standard
115In	1	5000	Standard
118Sn	1	10000	Standard
121Sb	1	10000	Standard
123Sb	1	100000	Standard
135Ba	1	10000	Standard

159Tb	1	5000	Standard
182W	1	10000	Standard
205Tl	1	10000	Standard
206Pb	1	10000	Standard
207Pb	1	10000	Standard
208Pb	1	10000	Standard
209Bi	1	5000	Standard
220Bkg	1	10000	Standard
232Th	1	10000	Standard
238U	1	10000	Standard

Calibration Technique

Use External Drift Correction - No
Calibrate by - Isotope

Symbol	Interference Correction	RSF	Calibration Method	Line Fit	Weighting	Forcing	Use for Semi-Quant	Max Error	Minimum Correlation
6Li	Yes	1.00	None				No		
7Li	Yes	1.00	None				No		
9Be	Yes	0.75	Fully-Quantified	Linear	Absolute SD	None	Yes		
11B	Yes	0.58	Fully-Quantified	Linear	Absolute SD	None	Yes		
23Na	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
25Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
26Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
27Al	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
39K	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
43Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
44Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
45Sc	Yes	1.00	None				No		
47Ti	Yes	0.99	None				No		
51V	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
52Cr	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
55Mn	Yes	0.95	Fully-Quantified	Linear	Absolute SD	None	Yes		
56Fe	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
59Co	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
60Ni	No	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
65Cu	Yes	0.90	Fully-Quantified	Linear	Absolute SD	None	Yes		
66Zn	Yes	0.38	Fully-Quantified	Linear	Absolute SD	None	Yes		
75As	Yes	0.07	Fully-Quantified	Linear	Absolute SD	None	Yes		
82Se	Yes	0.10	Fully-Quantified	Linear	Absolute SD	None	Yes		
83Kr	Yes	0.01	None				No		
84Kr	Yes	0.01	None				No		
88Sr	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
89Y	Yes	0.98	None				No		
98Mo	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
107Ag	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
106Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
111Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
115In	Yes	0.99	None				No		
118Sn	Yes	0.96	None				No		

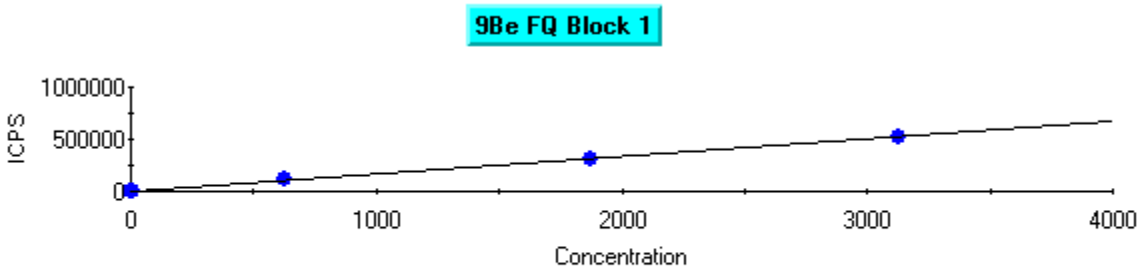
121Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
123Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
135Ba	Yes	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes
159Tb	Yes	0.99	None				No
182W	Yes	0.94	Fully-Quantified	Linear	Absolute SD	None	Yes
206Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
207Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
208Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	No
209Bi	Yes	0.92	None				No
232Th	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
238U	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
205Tl	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
220Bkg	Yes		Semi-Quantified				No
77Ar Cl	Yes		Semi-Quantified				No
53Cl O	Yes		Semi-Quantified				No
108Mo O	Yes		Semi-Quantified				No

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	STD0	Fully Quant Standard	1.000	0	1	2	144
2	STD1	Fully Quant Standard	1.000	0	1	3	144
3	STD2	Fully Quant Standard	1.000	0	1	4	144
4	STD3	Fully Quant Standard	1.000	0	1	5	144
5	STD4	Fully Quant Standard	1.000	1	1	1	144
6	STD5	Fully Quant Standard	1.000	1	1	2	144
7	ICV	QC Sample	1.000	0	1	6	144
8	ICVL	QC Sample	1.000	0	1	3	144
9	ICBIS	QC Sample	1.000	0	1	2	144
10	ICSA	QC Sample	1.000	1	1	3	144
11	ICSAB	QC Sample	1.000	1	1	4	144
12	CCV	QC Sample	1.000	0	1	5	144
13	CCB	QC Sample	1.000	0	1	2	144
14	200-35736-A-11-A	Unknown	1.000	1	2	1	144
15	200-35736-A-11-A SD@5	Unknown	1.000	1	2	2	144
16	200-35736-A-11-A PDS	Unknown	1.000	1	2	3	144
17	200-35736-A-11-I MS	Unknown	1.000	1	2	4	144
18	200-35736-A-11-J MSD	Unknown	1.000	1	2	5	144
19	200-35736-A-12-A	Unknown	1.000	1	2	6	144
20	MB 200-110239/1-A	Unknown	1.000	1	2	7	144
21	LCS 200-110239/2-A	Unknown	1.000	1	2	8	144
22	200-35680-A-13-A	Unknown	1.000	1	2	9	144
23	200-35700-A-19-A	Unknown	1.000	1	2	10	144
24	CCV	QC Sample	1.000	0	1	5	144
25	CCB	QC Sample	1.000	0	1	2	144
26	CCVL	QC Sample	1.000	0	1	3	144
27	200-35736-A-14-A	Unknown	1.000	1	2	11	144
28	200-35736-A-14-A SD@5	Unknown	1.000	1	2	12	144
29	200-35736-A-14-A PDS	Unknown	1.000	1	3	1	144
30	200-35736-A-14-B MS	Unknown	1.000	1	3	2	144
31	200-35736-A-14-C MSD	Unknown	1.000	1	3	3	144
32	CCV	QC Sample	1.000	0	1	5	144

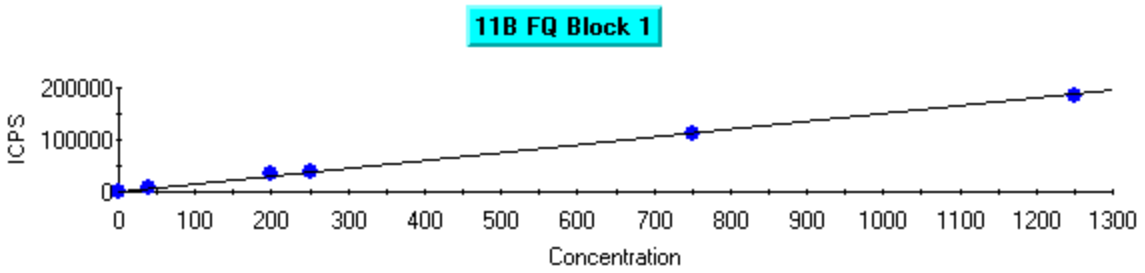
33	CCB	QC Sample	1.000	0	1	2	144
34	CCVL	QC Sample	1.000	0	1	3	144
35	MB 200-110288/1-B	Unknown	1.000	1	3	4	144
36	LCS 200-110288/2-B	Unknown	1.000	1	3	5	144
37	200-35715-A-2-B	Unknown	1.000	1	3	6	144
38	200-35730-A-2-B	Unknown	1.000	1	3	7	144
39	200-35745-A-5-B	Unknown	1.000	1	3	8	144
40	200-35754-A-2-B	Unknown	1.000	1	3	9	144
41	200-35754-A-2-B SD@5	Unknown	1.000	1	3	10	144
42	200-35754-A-2-B PDS	Unknown	1.000	1	3	11	144
43	200-35676-A-2-B	Unknown	1.000	1	3	12	144
44	CCV	QC Sample	1.000	0	1	5	144
45	CCB	QC Sample	1.000	0	1	2	144
46	CCVL	QC Sample	1.000	0	1	3	144

Fully Quant Calibration



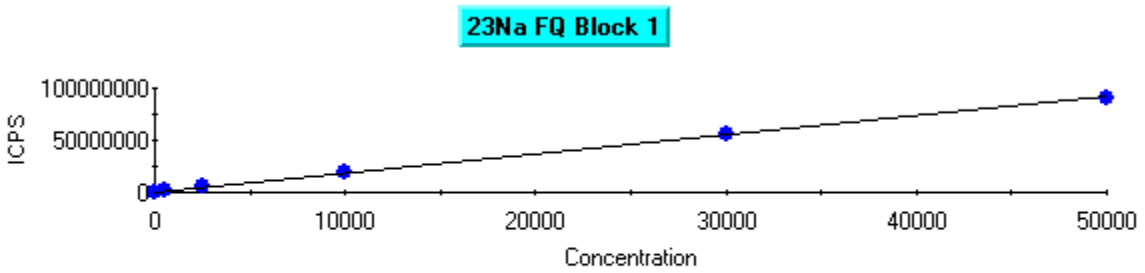
Intercept CPS=9.338365 Intercept Conc=0.055811
Sensitivity=167.321046 Correlation Coeff=0.999828

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.016	0.016	6.64	0.00
STD1	1.000	1.159	0.159	203.18	15.85
STD2	5.000	5.415	0.415	915.34	8.30
STD3	625.000	664.031	39.031	111115.64	6.24
STD4	1875.000	1869.642	5.358	312839.73	0.29
STD5	3125.000	3054.662	70.338	511118.62	2.25



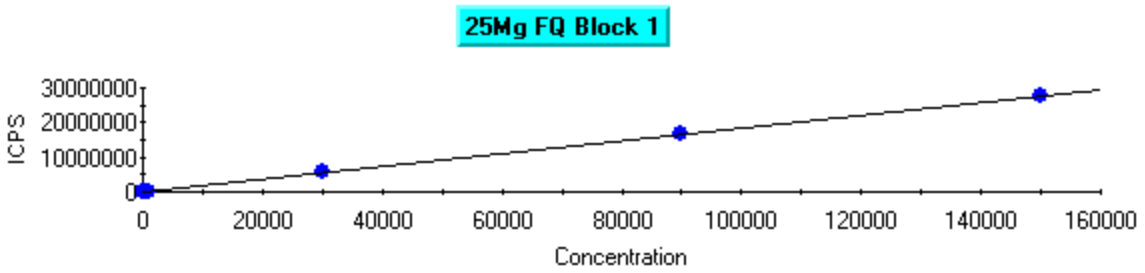
Intercept CPS=501.883406 Intercept Conc=3.315906
Sensitivity=151.356355 Correlation Coeff=0.999787

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.002	0.002	501.61	0.00
STD1	40.000	40.135	0.135	6576.51	0.34
STD2	200.000	216.129	16.129	33214.40	8.06
STD3	250.000	259.353	9.353	39756.63	3.74
STD4	750.000	740.635	9.365	112601.75	1.25
STD5	1250.000	1211.415	38.585	183857.28	3.09



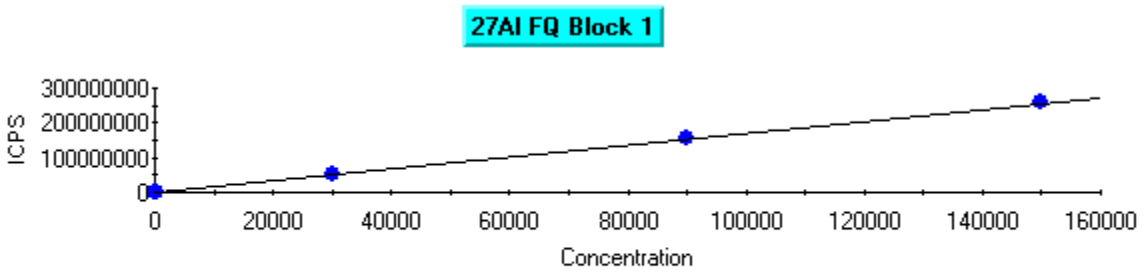
Intercept CPS=309699.266481 Intercept Conc=168.357582
Sensitivity=1839.532639 Correlation Coeff=0.999936

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.677	0.677	308453.35	0.00
STD1	500.000	505.653	5.653	1239865.08	1.13
STD2	2500.000	2593.034	93.034	5079670.34	3.72
STD3	10000.000	10204.001	204.001	19080292.33	2.04
STD4	30000.000	29632.522	367.478	54819691.39	1.22
STD5	50000.000	48635.094	1364.906	89775541.91	2.73



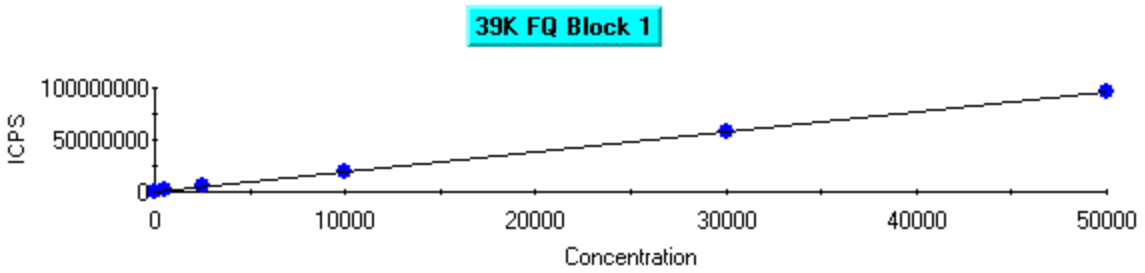
Intercept CPS=111.008221 Intercept Conc=0.607148
Sensitivity=182.835581 Correlation Coeff=0.999988

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.300	0.300	165.90	0.00
STD1	200.000	184.334	15.666	33813.90	7.83
STD2	1000.000	954.401	45.599	174609.44	4.56
STD3	30000.000	31015.455	1015.455	5670839.76	3.38
STD4	90000.000	91244.105	1244.105	16682780.00	1.38
STD5	150000.000	151455.456	1455.456	27691557.18	0.97



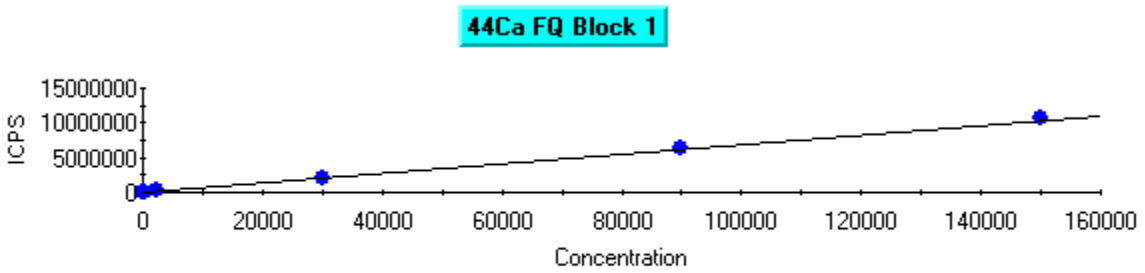
Intercept CPS=522.265924 Intercept Conc=0.307278
Sensitivity=1699.652305 Correlation Coeff=0.999975

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.006	0.006	532.50	0.00
STD1	50.000	49.536	0.464	84716.67	0.93
STD2	250.000	234.497	15.503	399085.50	6.20
STD3	30000.000	31389.132	1389.132	53351132.75	4.63
STD4	90000.000	91200.139	1200.139	155009048.09	1.33
STD5	150000.000	151461.231	1461.231	257431953.37	0.97



Intercept CPS=73232.604428 Intercept Conc=37.783712
Sensitivity=1938.205640 Correlation Coeff=0.999980

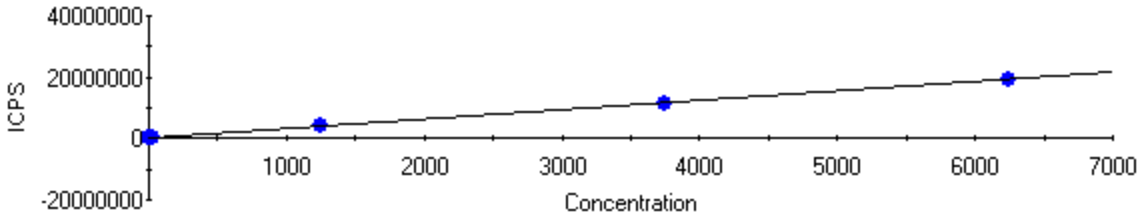
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.009	0.009	73215.41	0.00
STD1	500.000	494.260	5.740	1031209.21	1.15
STD2	2500.000	2582.011	82.011	5077699.92	3.28
STD3	10000.000	10175.088	175.088	19794646.16	1.75
STD4	30000.000	29661.443	338.557	57563208.53	1.13
STD5	50000.000	49760.178	239.822	96518690.79	0.48



Intercept CPS=1247.544985 Intercept Conc=18.406629
Sensitivity=67.776941 Correlation Coeff=0.999989

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	1.278	1.278	1334.16	0.00
STD1	500.000	491.502	8.498	34560.04	1.70
STD2	2500.000	2401.396	98.604	164006.84	3.94
STD3	30000.000	31195.496	1195.496	2115582.86	3.98
STD4	90000.000	93050.090	3050.090	6307897.98	3.39
STD5	150000.000	156414.699	6414.699	10602557.34	4.28

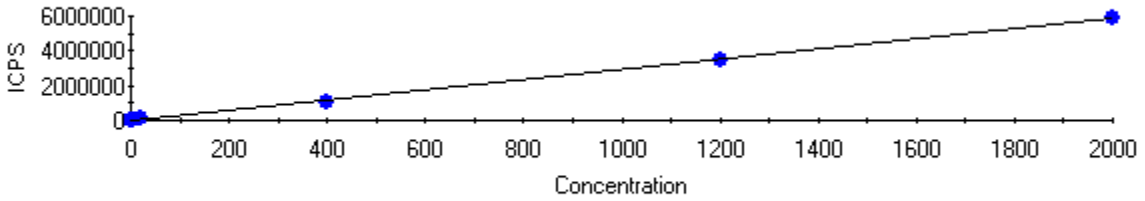
51V FQ Block 1



Intercept CPS=-789.698275 Intercept Conc=-0.256930
Sensitivity=3073.595192 Correlation Coeff=0.999999

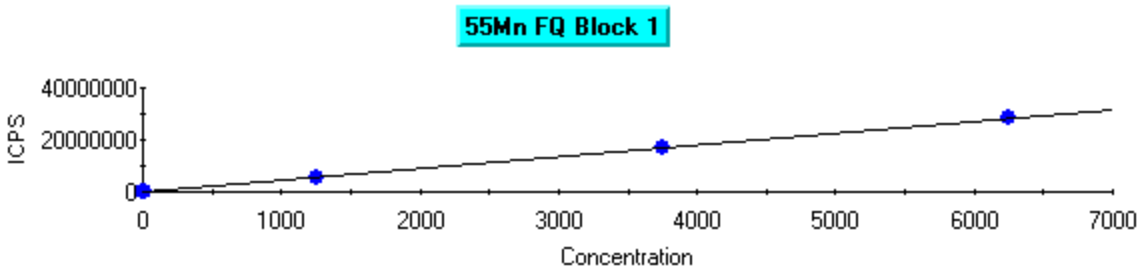
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.295	0.295	117.61	0.00
STD1	5.000	4.826	0.174	14043.26	3.48
STD2	25.000	23.281	1.719	70766.43	6.88
STD3	1250.000	1262.464	12.464	3879514.59	1.00
STD4	3750.000	3779.939	29.939	11617212.10	0.80
STD5	6250.000	6289.414	39.414	19330323.94	0.63

52Cr FQ Block 1



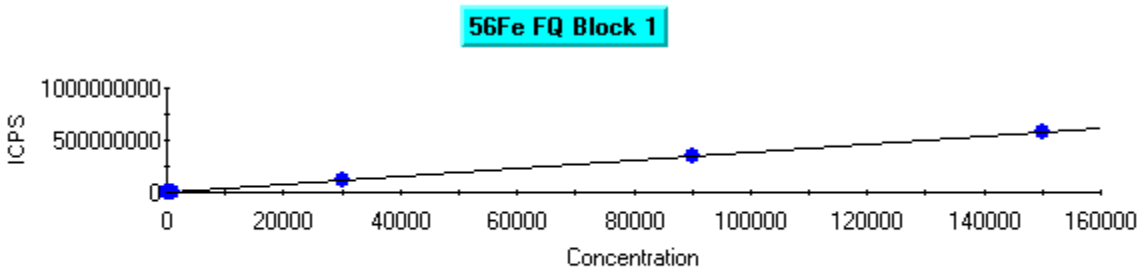
Intercept CPS=2582.828034 Intercept Conc=0.885982
Sensitivity=2915.214309 Correlation Coeff=0.999878

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.017	0.017	2631.61	0.00
STD1	4.000	3.998	0.002	14236.66	0.06
STD2	20.000	19.492	0.508	59406.73	2.54
STD3	400.000	370.107	29.893	1081523.63	7.47
STD4	1200.000	1205.787	5.787	3517711.55	0.48
STD5	2000.000	2013.437	13.437	5872183.95	0.67



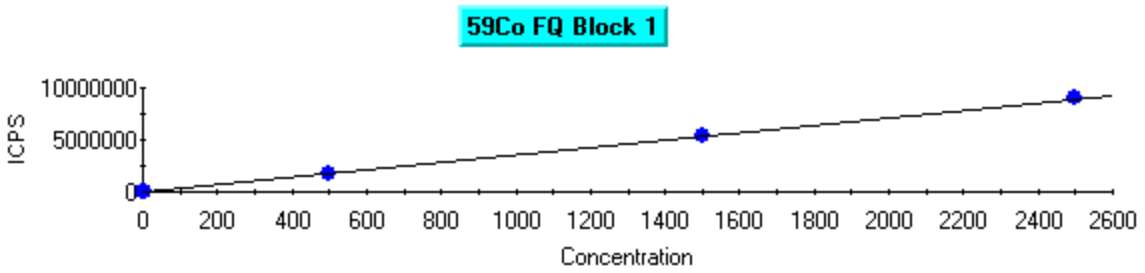
Intercept CPS=476.964906 Intercept Conc=0.106443
Sensitivity=4480.934539 Correlation Coeff=0.999948

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	476.60	0.00
STD1	2.000	2.037	0.037	9603.71	1.84
STD2	10.000	9.488	0.512	42992.71	5.12
STD3	1250.000	1268.208	18.208	5683235.86	1.46
STD4	3750.000	3729.559	20.441	16712385.94	0.55
STD5	6250.000	6331.686	81.686	28372349.01	1.31



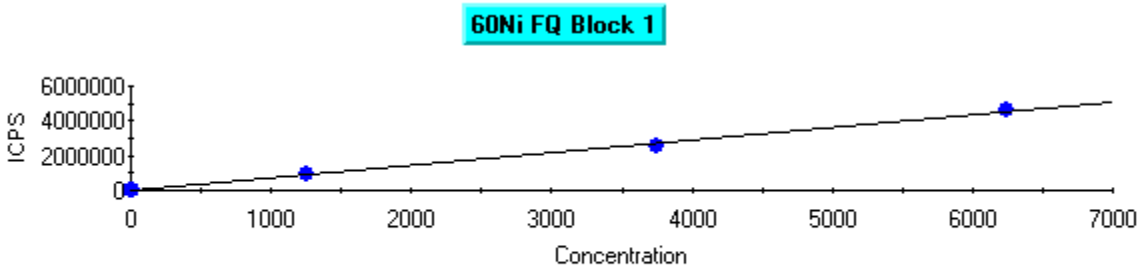
Intercept CPS=275754.767241 Intercept Conc=72.399872
Sensitivity=3808.774258 Correlation Coeff=0.999980

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.400	0.400	277277.74	0.00
STD1	200.000	188.923	11.077	995320.98	5.54
STD2	1000.000	1062.273	62.273	4321711.63	6.23
STD3	30000.000	30552.875	552.875	116644760.49	1.84
STD4	90000.000	89072.605	927.395	339533199.85	1.03
STD5	150000.000	149573.746	426.254	569968387.34	0.28



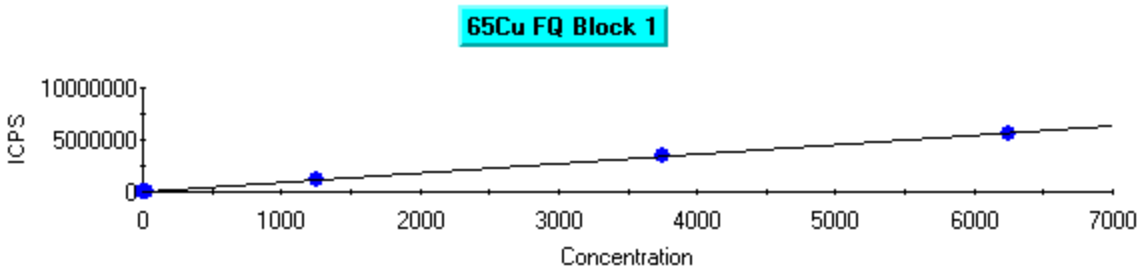
Intercept CPS=21.554480 Intercept Conc=0.006112
Sensitivity=3526.519991 Correlation Coeff=0.999838

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	19.96	0.00
STD1	1.000	1.004	0.004	3560.62	0.36
STD2	5.000	4.837	0.163	17079.65	3.26
STD3	500.000	463.872	36.128	1635876.16	7.23
STD4	1500.000	1506.491	6.491	5312691.64	0.43
STD5	2500.000	2547.754	47.754	8984726.27	1.91



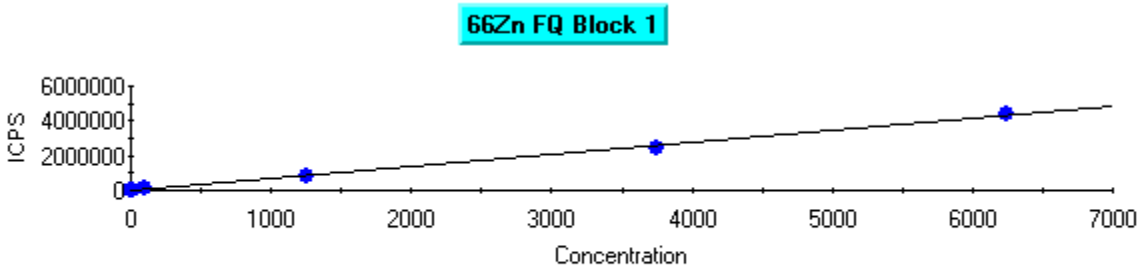
Intercept CPS=16.961394 Intercept Conc=0.023570
Sensitivity=719.621831 Correlation Coeff=0.998206

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	16.66	0.00
STD1	2.000	2.111	0.111	1536.16	5.56
STD2	10.000	10.152	0.152	7322.24	1.52
STD3	1250.000	1211.546	38.454	871872.07	3.08
STD4	3750.000	3461.067	288.933	2490676.66	7.70
STD5	6250.000	6464.880	214.880	4652285.95	3.44



Intercept CPS=258.795270 Intercept Conc=0.284972
Sensitivity=908.141241 Correlation Coeff=0.999880

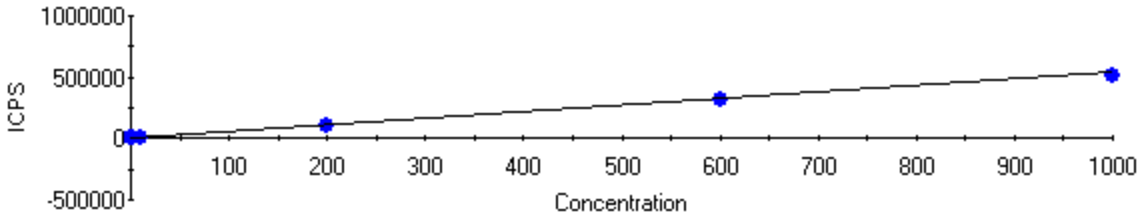
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.026	0.026	235.05	0.00
STD1	5.000	5.081	0.081	4872.63	1.61
STD2	25.000	24.525	0.475	22531.03	1.90
STD3	1250.000	1179.768	70.232	1071654.53	5.62
STD4	3750.000	3798.321	48.321	3449670.36	1.29
STD5	6250.000	6212.987	37.013	5642528.21	0.59



Intercept CPS=676.527633 Intercept Conc=0.984266
Sensitivity=687.342341 Correlation Coeff=0.998834

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.028	0.028	657.04	0.00
STD1	20.000	21.265	1.265	15292.62	6.32
STD2	100.000	105.183	5.183	72973.46	5.18
STD3	1250.000	1241.390	8.610	853936.49	0.69
STD4	3750.000	3484.137	265.863	2395471.19	7.09
STD5	6250.000	6354.757	104.757	4368569.96	1.68

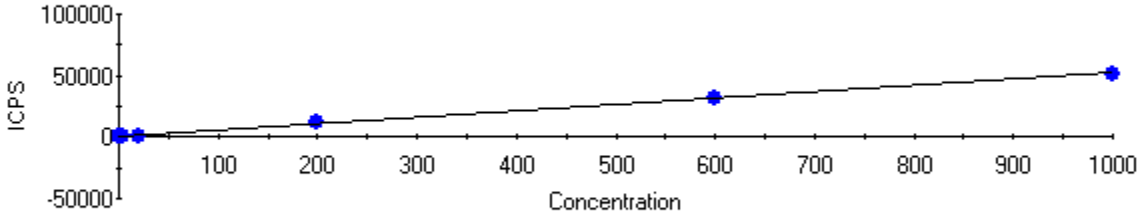
75As FQ Block 1



Intercept CPS=-17.760100 Intercept Conc=-0.033124
Sensitivity=536.171684 Correlation Coeff=0.999842

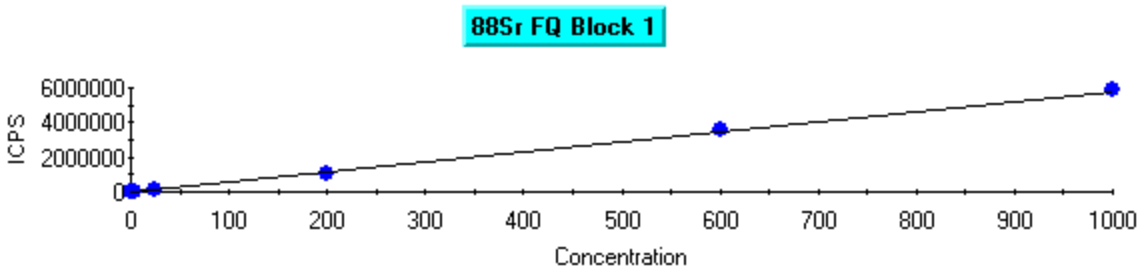
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.197	0.197	-123.59	0.00
STD1	2.000	1.986	0.014	1046.90	0.72
STD2	10.000	10.379	0.379	5547.34	3.79
STD3	200.000	203.196	3.196	108930.33	1.60
STD4	600.000	587.604	12.396	315038.84	2.07
STD5	1000.000	953.565	46.435	511256.59	4.64

82Se FQ Block 1



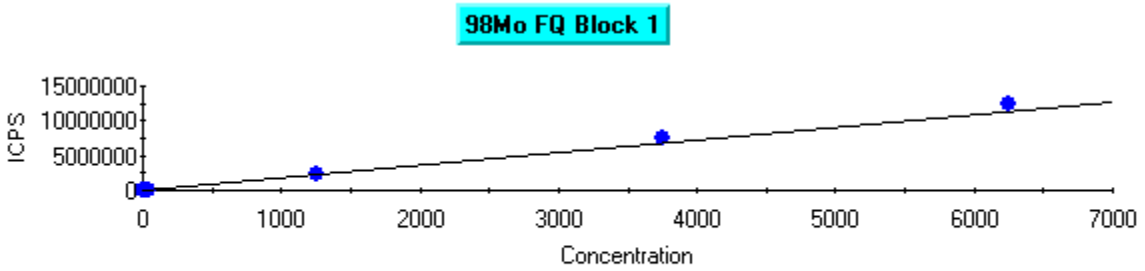
Intercept CPS=29.795038 Intercept Conc=0.565603
Sensitivity=52.678326 Correlation Coeff=0.999241

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-1.450	1.450	-46.57	0.00
STD1	4.000	3.186	0.814	197.65	20.34
STD2	20.000	21.864	1.864	1181.57	9.32
STD3	200.000	216.360	16.360	11427.27	8.18
STD4	600.000	608.120	8.120	32064.54	1.35
STD5	1000.000	955.010	44.990	50338.12	4.50



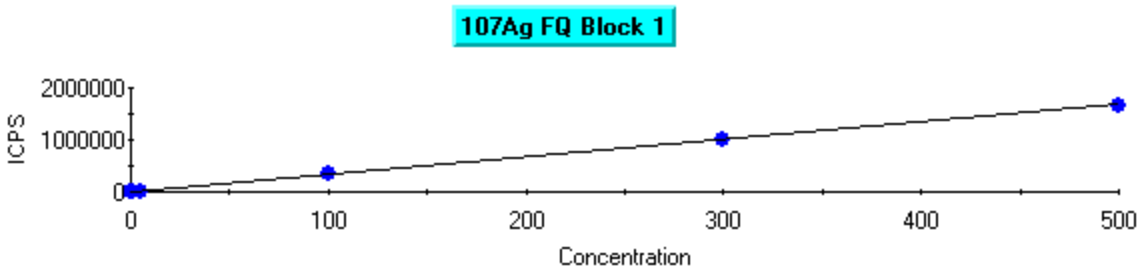
Intercept CPS=18.758929 Intercept Conc=0.003250
Sensitivity=5771.442451 Correlation Coeff=0.999808

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	20.11	0.00
STD1	5.000	4.647	0.353	26839.25	7.06
STD2	25.000	23.983	1.017	138437.30	4.07
STD3	200.000	184.202	15.798	1063131.30	7.90
STD4	600.000	614.487	14.487	3546496.92	2.41
STD5	1000.000	1011.806	11.806	5839596.28	1.18



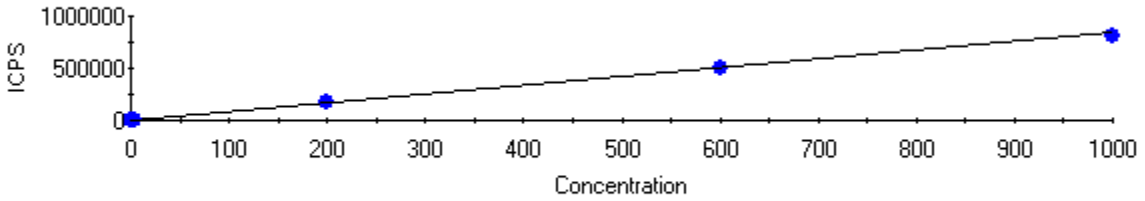
Intercept CPS=86.242709 Intercept Conc=0.047814
Sensitivity=1803.729423 Correlation Coeff=0.999947

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.004	0.004	93.34	0.00
STD1	10.000	9.686	0.314	17557.67	3.14
STD2	50.000	49.780	0.220	89876.06	0.44
STD3	1250.000	1314.951	64.951	2371902.02	5.20
STD4	3750.000	4162.275	412.275	7507704.71	10.99
STD5	6250.000	6952.003	702.003	12539618.50	11.23



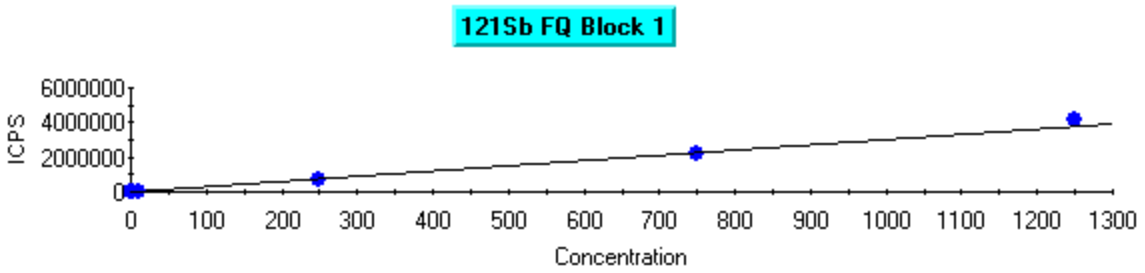
Intercept CPS=46.625155 Intercept Conc=0.013773
Sensitivity=3385.301045 Correlation Coeff=0.999790

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.004	0.004	31.73	0.00
STD1	1.000	1.100	0.100	3769.18	9.96
STD2	5.000	5.514	0.514	18713.99	10.28
STD3	100.000	103.195	3.195	349391.58	3.19
STD4	300.000	300.358	0.358	1016849.72	0.12
STD5	500.000	484.173	15.827	1639118.51	3.17



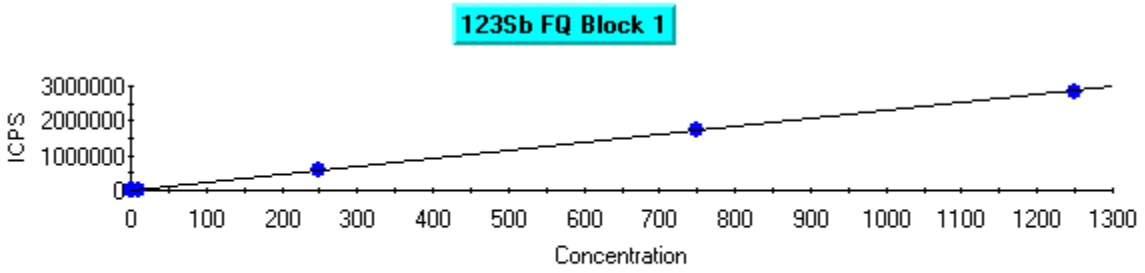
Intercept CPS=111.864190 Intercept Conc=0.133126
Sensitivity=840.288678 Correlation Coeff=0.999908

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.020	0.020	95.44	0.00
STD1	1.000	1.080	0.080	1019.75	8.04
STD2	5.000	5.365	0.365	4620.16	7.30
STD3	200.000	202.914	2.914	170618.33	1.46
STD4	600.000	594.692	5.308	499825.07	0.88
STD5	1000.000	970.071	29.929	815251.58	2.99



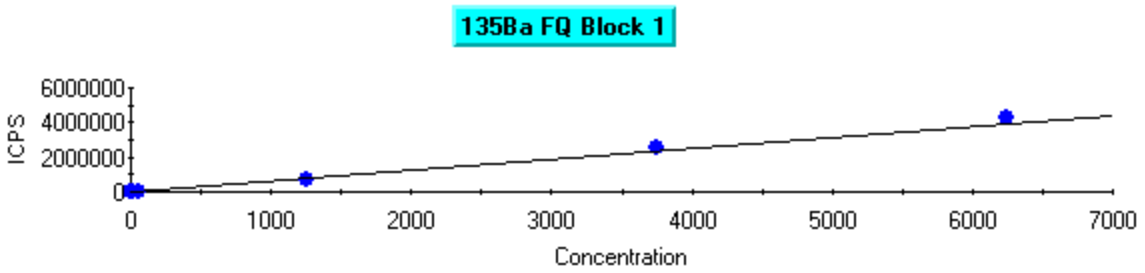
Intercept CPS=125.635052 Intercept Conc=0.042080
Sensitivity=2985.653339 Correlation Coeff=0.998004

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	125.11	0.00
STD1	2.000	1.964	0.036	5988.66	1.81
STD2	10.000	10.050	0.050	30131.21	0.50
STD3	250.000	244.960	5.040	731490.18	2.02
STD4	750.000	736.754	13.246	2199816.63	1.77
STD5	1250.000	1382.266	132.266	4127091.99	10.58



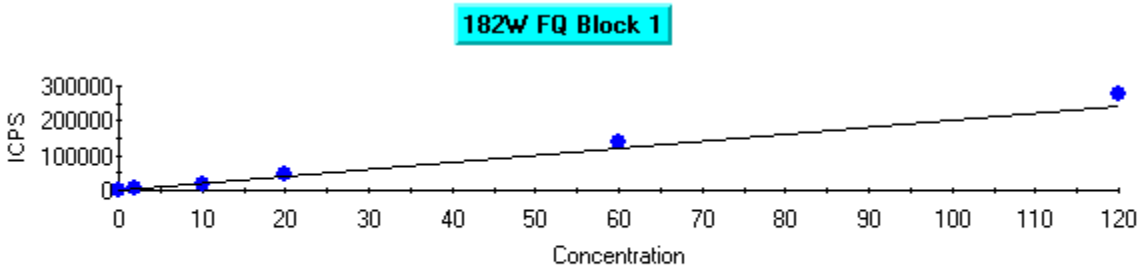
Intercept CPS=103.936491 Intercept Conc=0.045334
Sensitivity=2292.702233 Correlation Coeff=0.999992

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.001	0.001	102.57	0.00
STD1	2.000	2.022	0.022	4740.51	1.12
STD2	10.000	10.149	0.149	23373.25	1.49
STD3	250.000	248.262	1.738	569293.68	0.70
STD4	750.000	751.943	1.943	1724084.61	0.26
STD5	1250.000	1244.195	5.805	2852673.41	0.46



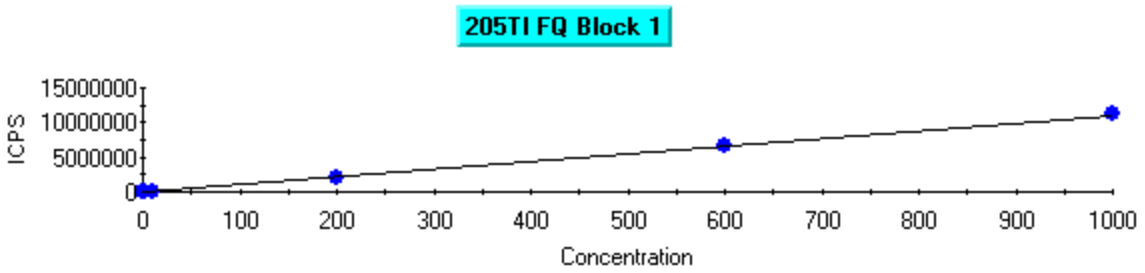
Intercept CPS=8.973608 Intercept Conc=0.014452
Sensitivity=620.930490 Correlation Coeff=0.999685

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.002	0.002	10.05	0.00
STD1	10.000	9.666	0.334	6010.73	3.34
STD2	50.000	49.346	0.654	30649.65	1.31
STD3	1250.000	1196.186	53.814	742757.26	4.31
STD4	3750.000	4122.924	372.924	2560058.29	9.94
STD5	6250.000	6785.628	535.628	4213412.41	8.57



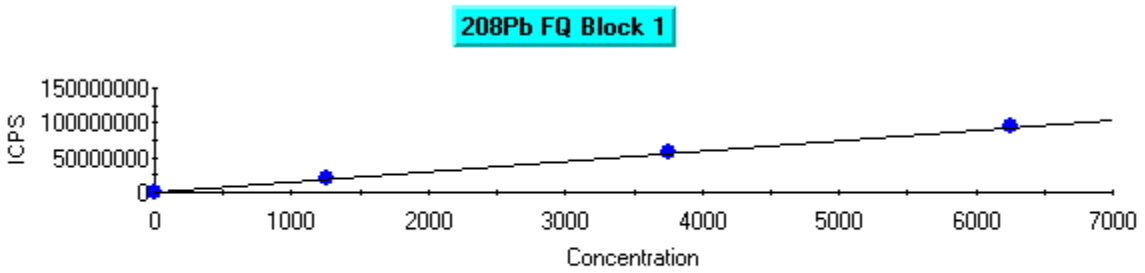
Intercept CPS=94.241526 Intercept Conc=0.047000
Sensitivity=2005.133392 Correlation Coeff=0.999873

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.005	0.005	105.03	0.00
STD1	2.000	1.806	0.194	3716.19	9.68
STD2	10.000	9.097	0.903	18334.97	9.03
STD3	20.000	22.252	2.252	44712.00	11.26
STD4	60.000	68.165	8.165	136774.28	13.61
STD5	120.000	138.436	18.436	277676.62	15.36



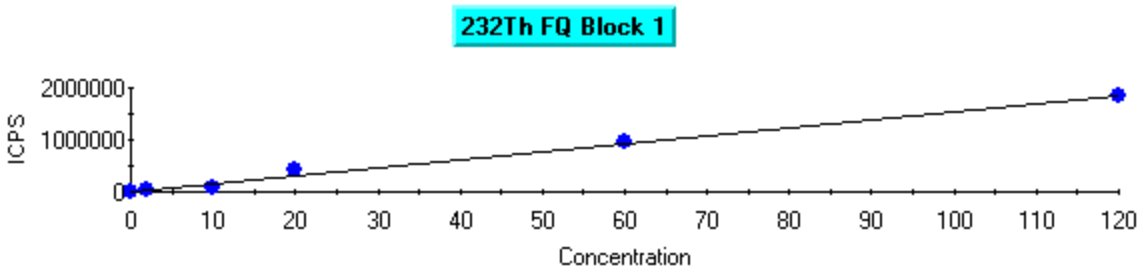
Intercept CPS=401.726763 Intercept Conc=0.037052
Sensitivity=10842.176161 Correlation Coeff=0.999600

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.002	0.002	424.78	0.00
STD1	2.000	1.685	0.315	18668.88	15.76
STD2	10.000	8.822	1.178	96047.66	11.78
STD3	200.000	178.304	21.696	1933608.87	10.85
STD4	600.000	622.198	22.198	6746386.01	3.70
STD5	1000.000	1047.681	47.681	11359544.81	4.77



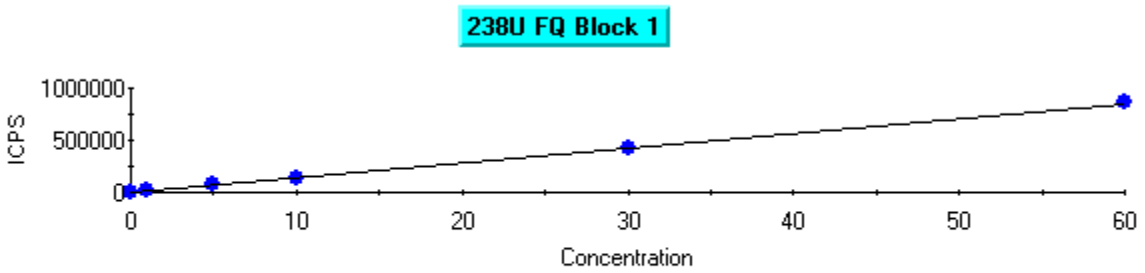
Intercept CPS=806.599560 Intercept Conc=0.054124
Sensitivity=14902.903562 Correlation Coeff=0.999999

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.002	0.002	836.08	0.00
STD1	1.000	1.016	0.016	15943.54	1.57
STD2	5.000	4.553	0.447	68657.59	8.94
STD3	1250.000	1269.286	19.286	18916847.77	1.54
STD4	3750.000	3810.796	60.796	56792734.86	1.62
STD5	6250.000	6334.224	84.224	94399140.69	1.35



Intercept CPS=3111.131963 Intercept Conc=0.202789
Sensitivity=15341.751480 Correlation Coeff=0.996731

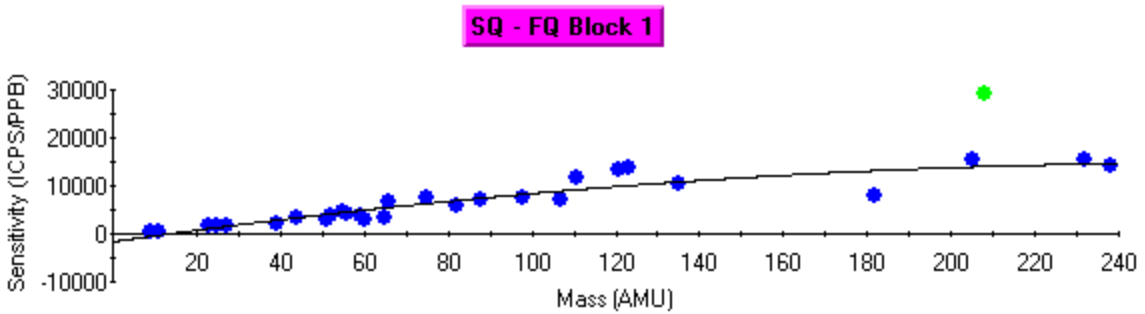
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.519	0.519	11077.33	0.00
STD1	2.000	1.558	0.442	27008.49	22.12
STD2	10.000	5.610	4.390	89176.33	43.90
STD3	20.000	27.095	7.095	418788.24	35.47
STD4	60.000	62.820	2.820	966882.01	4.70
STD5	120.000	119.781	0.219	1840768.23	0.18



Intercept CPS=207.712482 Intercept Conc=0.014567
Sensitivity=14259.094456 Correlation Coeff=0.999947

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	206.50	0.00
STD1	1.000	1.011	0.011	14629.64	1.14
STD2	5.000	5.196	0.196	74305.02	3.93
STD3	10.000	9.836	0.164	140458.14	1.64
STD4	30.000	29.928	0.072	426951.32	0.24
STD5	60.000	60.931	0.931	869032.53	1.55

Semi Quant Calibration



Coeff 0=-1613.323016 Coeff 1=123.301831 Coeff 2=-0.231175

Symbol	Mass	RSF	Available	Excluded	Sensitivity Measured	Corrected	Calculated	%Error
9Be	9.01	0.7500	1	1	167.32	223.09	-520.88	-333.5
11B	11.01	0.5800	1	1	151.36	322.09	-283.87	-188.1
23Na	22.99	1.0000	1	1	1839.53	1839.53	1099.17	-40.2
25Mg	24.99	0.9800	1	1	182.84	1845.37	1323.16	-28.3
27Al	26.98	0.9800	1	1	1699.65	1734.34	1545.25	-10.9
39K	38.96	1.0000	1	1	1938.21	2082.30	2840.01	36.4
44Ca	43.96	0.9900	1	1	67.78	3214.16	3359.83	4.5
51V	50.94	0.9900	1	1	3073.60	3112.11	4068.20	30.7
52Cr	51.94	0.9800	1	1	2915.21	3551.47	4167.37	17.3
55Mn	54.94	0.9500	1	1	4480.93	4716.77	4462.91	-5.4
56Fe	55.93	0.9600	1	1	3808.77	4335.09	4560.28	5.2
59Co	58.93	0.9300	1	1	3526.52	3791.96	4850.35	27.9
60Ni	59.93	0.9100	1	1	719.62	3022.91	4945.94	63.6
65Cu	64.93	0.9000	1	1	908.14	3264.46	5417.85	66.0
66Zn	65.93	0.3750	1	1	687.34	6590.84	5510.74	-16.4
75As	74.92	0.0700	1	1	536.17	7659.60	6327.01	-17.4
82Se	81.92	0.1000	1	1	52.68	5959.09	6935.89	16.4
88Sr	87.91	0.9600	1	1	5771.44	7281.88	7439.22	2.2
98Mo	97.91	0.9800	1	1	1803.73	7668.92	8242.67	7.5
107Ag	106.91	0.9300	1	1	3385.30	7088.82	8926.24	25.9
111Cd	110.90	0.5660	1	1	840.29	11544.39	9217.98	-20.2
121Sb	120.90	0.3900	1	1	2985.65	13372.09	9915.09	-25.9
123Sb	122.90	0.3900	1	1	2292.70	13751.40	10048.99	-26.9
135Ba	134.91	0.9100	1	1	620.93	10354.19	10813.52	4.4
182W	181.95	0.9400	1	1	2005.13	8107.64	13168.15	62.4
205Tl	204.97	1.0000	1	1	10842.18	15378.97	13947.63	-9.3
208Pb	207.98	0.9700	0	1	14902.90	29331.46	14031.28	-52.2
232Th	232.04	1.0000	1	1	15341.75	15341.75	14550.56	-5.2
238U	238.05	1.0000	1	1	14259.09	14362.50	14638.52	1.9

Dilution Corrected Concentrations

STD0 10/19/2016 10:04:01 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:04:23	98.484%	-0.056	0.005	1.827	0.115	0.022	0.522	0.786	98.403%	0.000	0.190	0.031
2	10:04:45	99.508%	0.019	-0.062	0.525	0.108	0.036	-0.452	3.125	99.362%	0.000	0.291	0.048
3	10:05:07	102.008%	-0.012	0.052	-4.384	0.677	-0.040	-0.097	-0.078	102.235%	0.000	0.405	-0.029
x		100.000%	-0.016	-0.002	-0.677	0.300	0.006	-0.009	1.278	100.000%	0.000	0.295	0.017
σ		1.813%	0.038	0.058	3.275	0.326	0.040	0.493	1.657	1.994%	0.000	0.108	0.040
%RSD		1.813	233.700	3184.000	483.500	108.600	668.000	5560.000	129.700	1.994	0.000	36.490	240.300

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:04:23	12.370	-0.003	-0.445	-0.000	-0.009	0.006	0.006	-0.394	0.479	-1.894	0.000	0.000
2	10:04:45	12.430	0.002	1.556	-0.002	0.011	-0.063	-0.018	-0.170	0.456	-1.751	0.000	0.000
3	10:05:07	11.780	0.001	0.088	0.001	-0.003	-0.021	-0.073	-0.028	0.428	-0.703	0.000	0.000
x		12.200	-0.000	0.400	-0.000	-0.000	-0.026	-0.028	-0.197	0.455	-1.450	0.000	0.000
σ		0.358	0.003	1.036	0.001	0.011	0.035	0.041	0.184	0.025	0.650	0.000	0.000
%RSD		2.938	3606.000	259.200	293.800	2596.000	133.600	144.300	93.420	5.588	44.850	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:04:23	0.002	99.582%	0.011	-0.000	-0.930	-0.042	98.721%	0.000	0.000	-0.006	0.010	101.230%
2	10:04:45	0.001	100.077%	-0.009	-0.008	-1.514	-0.008	99.921%	0.000	0.008	0.001	0.002	99.643%
3	10:05:07	-0.002	100.341%	0.010	-0.005	-1.492	-0.009	101.358%	0.000	-0.009	0.004	-0.007	99.128%
x		0.000	100.000%	0.004	-0.004	-1.312	-0.020	100.000%	0.000	-0.000	-0.001	0.002	100.000%
σ		0.002	0.385%	0.011	0.004	0.331	0.019	1.320%	0.000	0.009	0.005	0.008	1.096%
%RSD		990.300	0.385	285.400	86.730	25.220	97.740	1.320	0.000	4885.000	865.200	478.800	1.096

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:04:23	0.005	0.005	-0.002	99.485%	0.000	0.540	-0.002
2	10:04:45	-0.002	0.004	0.008	101.435%	0.000	0.513	0.002
3	10:05:07	0.013	-0.003	0.000	99.080%	0.000	0.504	-0.000
x		0.005	0.002	0.002	100.000%	0.000	0.519	-0.000
σ		0.008	0.004	0.005	1.259%	0.000	0.019	0.002
%RSD		142.800	193.000	256.300	1.259	0.000	3.633	1911.000

STD1 10/19/2016 10:09:44 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:10:06	99.600%	1.189	40.470	T 499.000	182.400	49.030	T 508.300	487.400	99.487%	0.000	4.892	3.966
2	10:10:27	98.145%	1.010	39.340	T 522.800	187.000	49.220	T 506.400	496.200	98.305%	0.000	4.441	3.923
3	10:10:49	94.214%	1.276	40.590	T 495.200	183.600	50.360	468.000	491.000	98.818%	0.000	5.145	4.104
x		97.319%	1.159	40.130	T 505.700	184.300	49.540	T 494.300	491.500	98.870%	0.000	4.826	3.998
σ		2.786%	0.136	0.692	T 14.930	2.396	0.722	T 22.760	4.419	0.593%	0.000	0.356	0.095

%RSD		2.863	11.730	1.725	T 2.953	1.300	1.457	T 4.605	0.899	0.599	0.000	7.383	2.376
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:10:06	14.310	1.984	183.900	1.004	2.037	5.029	20.180	1.836	0.506	3.517	0.000	0.000
2	10:10:27	14.510	2.074	191.400	1.006	2.337	5.143	21.610	1.988	0.490	3.679	0.000	0.000
3	10:10:49	13.670	2.053	191.500	1.000	1.959	5.070	22.000	2.132	0.479	2.362	0.000	0.000
x		14.160	2.037	188.900	1.004	2.111	5.081	21.260	1.986	0.492	3.186	0.000	0.000
σ		0.440	0.047	4.355	0.003	0.200	0.058	0.960	0.148	0.013	0.718	0.000	0.000
%RSD		3.103	2.313	2.305	0.342	9.456	1.139	4.514	7.454	2.739	22.540	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:10:06	4.529	100.042%	9.572	1.107	-1.412	1.142	99.241%	0.000	1.860	1.952	9.740	98.476%
2	10:10:27	4.664	100.537%	9.762	1.114	-1.162	0.969	97.807%	0.000	1.899	2.028	9.727	96.900%
3	10:10:49	4.748	99.389%	9.725	1.077	-1.166	1.131	97.462%	0.000	2.132	2.087	9.530	97.493%
x		4.647	99.990%	9.686	1.100	-1.247	1.080	98.170%	0.000	1.964	2.022	9.666	97.623%
σ		0.110	0.576%	0.101	0.020	0.143	0.097	0.943%	0.000	0.147	0.067	0.118	0.796%
%RSD		2.377	0.576	1.039	1.777	11.460	8.981	0.961	0.000	7.480	3.323	1.218	0.815
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	10:10:06	1.733	1.620	0.992	99.547%	0.000	1.538	0.986					
2	10:10:27	1.886	1.716	1.050	97.899%	0.000	1.566	1.012					
3	10:10:49	1.800	1.719	1.005	99.080%	0.000	1.569	1.036					
x		1.806	1.685	1.016	98.842%	0.000	1.558	1.011					
σ		0.076	0.057	0.031	0.849%	0.000	0.017	0.025					
%RSD		4.233	3.357	3.025	0.859	0.000	1.079	2.475					

STD2 10/19/2016 10:13:18 AM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:13:40	93.834%	5.279	206.100	T 2654.000	969.900	237.100	T 2626.000	2461.000	89.775%	0.000	23.370	19.730
2	10:14:01	88.714%	5.081	222.200	T 2560.000	930.700	233.700	T 2538.000	2384.000	91.325%	0.000	22.980	19.270
3	10:14:23	88.538%	5.885	220.100	T 2565.000	962.600	232.700	T 2581.000	2359.000	91.610%	0.000	23.490	19.480
x		90.362%	5.415	216.100	T 2593.000	954.400	234.500	T 2582.000	2401.000	90.903%	0.000	23.280	19.490
σ		3.008%	0.419	8.749	T 53.070	20.860	2.333	T 43.830	53.310	0.988%	0.000	0.267	0.228
%RSD		3.329	7.731	4.048	T 2.046	2.185	0.995	T 1.697	2.220	1.087	0.000	1.145	1.170
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:13:40	16.800	9.772	T 1080.000	4.846	10.470	24.980	105.800	10.220	0.551	22.070	0.000	0.000
2	10:14:01	16.460	9.456	T 1062.000	4.891	10.300	24.120	104.900	10.710	0.475	22.520	0.000	0.000
3	10:14:23	16.730	9.237	T 1045.000	4.774	9.694	24.480	104.800	10.210	0.550	21.000	0.000	0.000
x		16.670	9.488	T 1062.000	4.837	10.150	24.530	105.200	10.380	0.525	21.860	0.000	0.000
σ		0.182	0.269	T 17.140	0.059	0.405	0.434	0.569	0.285	0.044	0.779	0.000	0.000
%RSD		1.094	2.834	T 1.613	1.225	3.993	1.768	0.541	2.749	8.365	3.561	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	10:13:40	23.710	94.392%	48.810	5.393	-1.937	5.463	91.288%	0.000	10.160	10.040	50.270	91.522%
2	10:14:01	23.900	92.813%	49.980	5.611	-0.676	5.353	91.035%	0.000	9.983	10.200	49.000	92.283%
3	10:14:23	24.340	92.923%	50.550	5.539	-1.478	5.280	91.467%	0.000	10.000	10.210	48.760	93.003%
x		23.980	93.376%	49.780	5.514	-1.364	5.365	91.263%	0.000	10.050	10.150	49.350	92.269%
σ		0.322	0.881%	0.885	0.111	0.638	0.092	0.217%	0.000	0.100	0.091	0.811	0.740%
%RSD		1.343	0.944	1.777	2.015	46.780	1.722	0.238	0.000	0.993	0.892	1.644	0.802

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:13:40	9.009	8.647	4.540	93.162%	0.000	5.360	5.159
2	10:14:01	9.061	8.762	4.491	94.068%	0.000	5.550	5.132
3	10:14:23	9.221	9.055	4.628	92.070%	0.000	5.920	5.298
x		9.097	8.822	4.553	93.100%	0.000	5.610	5.196
σ		0.111	0.210	0.069	1.000%	0.000	0.285	0.089
%RSD		1.219	2.382	1.517	1.074	0.000	5.077	1.718

STD3 10/19/2016 10:17:18 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:17:40	90.768%	654.300	250.300	T 10070.000	T 30590.000	T 31090.000	T 10050.000	T 30560.000	87.254%	0.000	T 1238.000	363.500
2	10:18:02	86.150%	670.900	267.000	T 10190.000	T 31180.000	T 31410.000	T 10180.000	T 31140.000	84.845%	0.000	T 1266.000	368.600
3	10:18:23	87.341%	666.900	260.800	T 10350.000	T 31280.000	T 31670.000	T 10290.000	T 31880.000	83.568%	0.000	T 1284.000	378.200
x		88.086%	664.000	259.400	T 10200.000	T 31020.000	T 31390.000	T 10180.000	T 31200.000	85.222%	0.000	T 1262.000	370.100
σ		2.397%	8.623	8.406	T 142.300	T 372.400	T 292.600	T 120.500	T 661.000	1.872%	0.000	T 23.050	7.501
%RSD		2.722	1.299	3.241	T 1.395	T 1.201	T 0.932	T 1.184	T 2.119	2.196	0.000	T 1.826	2.027

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:17:40	19.430	T 1240.000	T 29810.000	454.100	1178.000	1154.000	1220.000	203.800	-0.441	216.900	0.000	0.000
2	10:18:02	16.360	T 1266.000	T 30680.000	468.600	1229.000	1188.000	1242.000	201.900	-0.417	218.700	0.000	0.000
3	10:18:23	20.480	T 1299.000	T 31170.000	468.900	1228.000	1197.000	1262.000	203.900	-0.439	213.500	0.000	0.000
x		18.760	T 1268.000	T 30550.000	463.900	1212.000	1180.000	1241.000	203.200	-0.432	216.400	0.000	0.000
σ		2.142	T 29.440	T 687.300	8.442	29.380	22.700	21.410	1.083	0.013	2.628	0.000	0.000
%RSD		11.420	T 2.322	T 2.249	1.820	2.425	1.924	1.725	0.533	3.029	1.215	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:17:40	182.600	89.465%	1200.000	103.000	16.930	204.000	88.376%	0.000	242.800	247.200	1184.000	91.060%
2	10:18:02	185.700	89.814%	T 1362.000	105.400	15.460	202.600	87.284%	0.000	247.200	249.900	1209.000	88.283%
3	10:18:23	184.400	88.935%	T 1383.000	101.300	13.780	202.200	88.407%	0.000	244.900	247.700	1195.000	89.847%
x		184.200	89.405%	T 1315.000	103.200	15.390	202.900	88.022%	0.000	245.000	248.300	1196.000	89.730%
σ		1.563	0.443%	T 100.200	2.068	1.574	0.946	0.639%	0.000	2.177	1.432	12.300	1.392%
%RSD		0.848	0.495	T 7.617	2.004	10.230	0.466	0.726	0.000	0.889	0.577	1.028	1.551

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:17:40	21.680	178.100	T 1257.000	90.115%	0.000	27.340	9.959
2	10:18:02	22.950	175.400	T 1253.000	91.542%	0.000	26.920	9.657
3	10:18:23	22.130	181.400	T 1298.000	88.989%	0.000	27.020	9.891

x	22.250	178.300	┬1269.000	90.215%	0.000	27.090	9.836
σ	0.642	2.992	┬24.730	1.279%	0.000	0.217	0.159
%RSD	2.887	1.678	┬1.948	1.418	0.000	0.800	1.611

STD4 10/19/2016 10:21:49 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:22:10	85.410%	1858.000	719.300	┬29470.000	┬90530.000	┬90510.000	┬29460.000	┬91340.000	80.244%	0.000	┬3720.000	┬1188.000
2	10:22:32	85.511%	1877.000	743.700	┬29420.000	┬91230.000	┬91080.000	┬29630.000	┬92340.000	81.049%	0.000	┬3736.000	┬1205.000
3	10:22:53	84.824%	1874.000	758.800	┬30010.000	┬91970.000	┬92010.000	┬29900.000	┬95470.000	80.146%	0.000	┬3884.000	┬1225.000
x		85.248%	1870.000	740.600	┬29630.000	┬91240.000	┬91200.000	┬29660.000	┬93050.000	80.480%	0.000	┬3780.000	┬1206.000
σ		0.371%	10.220	19.930	┬323.800	┬720.900	┬756.200	┬221.300	┬2158.000	0.496%	0.000	┬90.370	┬18.470
%RSD		0.435	0.547	2.691	┬1.093	┬0.790	┬0.829	┬0.746	┬2.319	0.616	0.000	┬2.391	┬1.532

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:22:10	-21.250	┬3715.000	┬88960.000	┬1506.000	3423.000	┬3764.000	3461.000	583.600	-1.802	601.500	0.000	0.000
2	10:22:32	-18.390	┬3713.000	┬88290.000	┬1491.000	3457.000	┬3813.000	3482.000	587.900	-1.688	610.000	0.000	0.000
3	10:22:53	-25.310	┬3760.000	┬89970.000	┬1522.000	3503.000	┬3817.000	3509.000	591.300	-2.048	612.900	0.000	0.000
x		-21.650	┬3730.000	┬89070.000	┬1506.000	3461.000	┬3798.000	3484.000	587.600	-1.846	608.100	0.000	0.000
σ		3.475	┬26.550	┬845.600	┬15.530	40.510	┬29.410	24.080	3.846	0.184	5.943	0.000	0.000
%RSD		16.050	┬0.712	┬0.949	┬1.031	1.171	┬0.774	0.691	0.654	9.969	0.977	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:22:10	┬606.000	83.640%	┬4076.000	301.400	18.420	590.700	82.244%	┬0.000	727.600	745.000	┬4065.000	85.502%
2	10:22:32	┬615.400	83.910%	┬4173.000	301.200	18.940	598.200	82.705%	┬0.000	736.400	754.200	┬4151.000	86.084%
3	10:22:53	┬622.000	83.134%	┬4238.000	298.500	17.640	595.200	82.885%	┬0.000	746.300	756.700	┬4153.000	86.530%
x		┬614.500	83.561%	┬4162.000	300.400	18.330	594.700	82.611%	┬0.000	736.800	751.900	┬4123.000	86.039%
σ		┬8.030	0.394%	┬81.830	1.615	0.653	3.759	0.331%	┬0.000	9.371	6.145	┬50.500	0.516%
%RSD		┬1.307	0.472	┬1.966	0.538	3.561	0.632	0.401	┬0.000	1.272	0.817	┬1.225	0.599

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:22:10	67.130	┬620.900	┬3811.000	85.443%	0.000	63.370	29.810
2	10:22:32	68.270	┬618.500	┬3780.000	87.165%	0.000	62.380	29.940
3	10:22:53	69.090	┬627.200	┬3841.000	86.780%	0.000	62.710	30.030
x		68.170	┬622.200	┬3811.000	86.463%	0.000	62.820	29.930
σ		0.983	┬4.492	┬30.530	0.904%	0.000	0.504	0.111
%RSD		1.443	┬0.722	┬0.801	1.045	0.000	0.802	0.371

STD5 10/19/2016 10:27:30 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:27:52	80.776%	3074.000	1206.000	T 49330.000	TM 152500.000	TM 151300.000	T 49840.000	TM 156100.000	75.552%	0.000	TM 6273.000	TM 2006.000
2	10:28:14	81.785%	3021.000	1188.000	T 48910.000	TM 151400.000	TM 153200.000	TM 50630.000	TM 159000.000	75.450%	0.000	TM 6313.000	TM 2022.000
3	10:28:35	78.973%	3070.000	1240.000	T 47670.000	TM 150500.000	T 149900.000	T 48810.000	TM 154200.000	77.553%	0.000	TM 6283.000	TM 2013.000
x		80.511%	3055.000	1211.000	T 48640.000	TM 151500.000	TM 151500.000	TM 49760.000	TM 156400.000	76.185%	0.000	TM 6289.000	TM 2013.000
σ		1.424%	29.510	26.480	T 866.800	TM 1007.000	TM 1646.000	TM 915.000	TM 2428.000	1.186%	0.000	TM 20.820	TM 8.318
%RSD		1.769	0.966	2.186	T 1.782	TM 0.665	TM 1.087	TM 1.839	TM 1.552	1.556	0.000	TM 0.331	TM 0.413
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:27:52	-45.940	TM 6297.000	T 148300.000	TM 2550.000	TM 6446.000	T 6201.000	TM 6328.000	927.100	-3.306	947.400	0.000	0.000
2	10:28:14	-21.900	TM 6407.000	TM 152100.000	TM 2576.000	TM 6515.000	TM 6267.000	TM 6441.000	969.600	-3.284	954.000	0.000	0.000
3	10:28:35	-36.010	TM 6291.000	T 148300.000	TM 2518.000	TM 6433.000	T 6171.000	TM 6296.000	963.900	-3.434	963.700	0.000	0.000
x		-34.620	TM 6332.000	TM 149600.000	TM 2548.000	TM 6465.000	TM 6213.000	TM 6355.000	953.600	-3.341	955.000	0.000	0.000
σ		12.080	TM 65.190	TM 2166.000	TM 28.980	TM 43.770	TM 49.020	TM 76.120	23.060	0.081	8.213	0.000	0.000
%RSD		34.890	TM 1.030	TM 1.448	TM 1.138	TM 0.677	TM 0.789	TM 1.198	2.419	2.423	0.860	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:27:52	TM 1010.000	81.758%	TM 6693.000	479.900	38.000	964.800	80.460%	T 0.000	TM 1357.000	1222.000	TM 6633.000	82.355%
2	10:28:14	TM 1010.000	78.713%	TM 7045.000	486.400	22.620	967.700	80.282%	T 0.000	TM 1389.000	M 1251.000	TM 6843.000	83.697%
3	10:28:35	TM 1015.000	79.610%	TM 7118.000	486.200	33.990	977.700	80.289%	T 0.000	TM 1400.000	M 1260.000	TM 6881.000	82.092%
x		TM 1012.000	80.027%	TM 6952.000	484.200	31.540	970.100	80.344%	T 0.000	TM 1382.000	M 1244.000	TM 6786.000	82.715%
σ		TM 2.761	1.565%	TM 227.300	3.678	7.977	6.796	0.100%	T 0.000	TM 22.310	M 19.800	TM 133.700	0.861%
%RSD		TM 0.273	1.955	TM 3.270	0.760	25.290	0.701	0.125	T 0.000	TM 1.614	M 1.591	TM 1.971	1.041
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	10:27:52	M 134.900	TM 1033.000	TM 6283.000	83.536%	0.000	117.900	M 60.090					
2	10:28:14	M 138.500	TM 1058.000	TM 6326.000	83.509%	0.000	M 120.200	M 61.200					
3	10:28:35	M 141.900	TM 1052.000	TM 6394.000	83.694%	0.000	M 121.200	M 61.510					
x		M 138.400	TM 1048.000	TM 6334.000	83.580%	0.000	M 119.800	M 60.930					
σ		M 3.456	TM 12.860	TM 56.010	0.100%	0.000	M 1.732	M 0.749					
%RSD		M 2.496	TM 1.228	TM 0.884	0.120	0.000	M 1.446	M 1.229					

ICV 10/19/2016 10:33:14 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:36	75.893%	330.600	149.500	T 5524.000	T 15970.000	T 16470.000	T 5088.000	14400.000	71.699%	0.000	586.400	188.600
2	10:33:57	75.053%	346.700	152.100	T 5558.000	T 16310.000	T 16410.000	T 5097.000	14390.000	70.890%	0.000	582.800	190.900
3	10:34:20	73.406%	349.100	150.800	T 5440.000	T 15970.000	T 16350.000	T 5060.000	14590.000	71.872%	0.000	593.200	192.000
x		74.784%	109.477%	120.653%	T 110.147%	T 107.218%	T 109.389%	T 101.636%	96.393%	71.487%	0.000	93.997%	95.269%
σ		1.265%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.524%	0.000	n/a	n/a
%RSD		1.692	2.928	0.860	T 1.105	T 1.208	T 0.364	T 0.376	0.769	0.733	0.000	0.901	0.910
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:33:36	12.300	┬633.400	┬15440.000	240.100	630.100	614.100	647.500	102.200	-0.147	109.800	0.000	0.000
2	10:33:57	17.060	┬655.500	┬15900.000	245.500	647.100	631.300	671.600	101.400	0.022	104.600	0.000	0.000
3	10:34:20	14.780	┬645.300	┬15780.000	241.700	636.100	629.500	658.600	102.600	-0.013	106.600	0.000	0.000
x		14.710	┬103.159%	┬104.718%	96.969%	102.045%	99.993%	105.475%	102.063%	-0.046	106.980%	0.000	0.000
σ		2.383	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.089	n/a	0.000	0.000
%RSD		16.190	┬1.716	┬1.519	1.137	1.354	1.515	1.826	0.597	194.300	2.480	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:33:36	91.300	79.164%	285.800	51.030	-5.144	103.900	77.373%	0.000	127.400	128.700	595.800	77.300%
2	10:33:57	91.490	78.325%	298.700	51.220	0.802	104.000	77.715%	0.000	129.600	130.600	607.400	80.231%
3	10:34:20	90.420	77.922%	303.400	51.260	6.783	104.300	78.181%	0.000	127.800	129.900	611.800	80.126%
x		91.070	78.470%	94.715%	102.341%	0.814	104.064%	77.756%	0.000	128.300	103.774%	96.799%	79.219%
σ		0.570	0.634%	n/a	n/a	5.964	n/a	0.405%	0.000	1.178	n/a	n/a	1.663%
%RSD		0.626	0.807	3.077	0.235	733.000	0.201	0.521	0.000	0.919	0.725	1.365	2.099
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	10:33:36	24.110	89.430	┬609.000	81.239%	0.000	16.060	9.561					
2	10:33:57	24.020	90.760	┬614.100	80.903%	0.000	17.190	9.814					
3	10:34:20	24.290	89.920	┬606.400	81.932%	0.000	17.750	9.794					
x		120.708%	90.039%	┬97.577%	81.358%	0.000	84.996%	97.230%					
σ		n/a	n/a	┬n/a	0.524%	0.000	n/a	n/a					
%RSD		0.566	0.747	┬0.645	0.645	0.000	5.071	1.442					

ICVL 10/19/2016 10:38:58 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:39:20	77.342%	1.200	48.420	502.400	206.600	55.260	468.600	486.200	73.303%	0.000	4.675	3.615
2	10:39:41	76.979%	1.128	52.780	505.700	203.700	56.660	471.200	500.000	72.863%	0.000	4.331	3.682
3	10:40:03	75.761%	1.325	51.850	503.400	205.700	56.110	467.600	495.400	72.161%	0.000	4.886	3.817
x		76.694%	121.759%	127.545%	100.767%	102.679%	112.020%	93.830%	98.768%	72.776%	0.000	92.615%	92.612%
σ		0.828%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.576%	0.000	n/a	n/a
%RSD		1.080	8.168	4.507	0.345	0.719	1.261	0.392	1.423	0.792	0.000	6.054	2.777
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:39:20	10.640	2.107	195.900	1.066	2.394	5.169	21.350	2.051	0.321	3.504	0.000	0.000
2	10:39:41	11.720	2.228	200.200	1.187	2.504	5.345	23.090	2.220	0.300	4.193	0.000	0.000
3	10:40:03	10.650	2.237	202.000	1.138	2.143	5.385	22.230	2.326	0.296	3.707	0.000	0.000
x		11.000	109.535%	99.678%	112.995%	117.333%	105.988%	111.110%	109.944%	0.305	95.035%	0.000	0.000
σ		0.619	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.013	n/a	0.000	0.000
%RSD		5.626	3.301	1.557	5.399	7.875	2.171	3.922	6.306	4.387	9.323	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:39:20	4.799	78.341%	11.940	1.037	-1.870	1.195	78.121%	0.000	2.525	2.554	9.820	79.056%
2	10:39:41	4.752	79.869%	11.780	1.138	-1.675	1.108	78.361%	0.000	2.621	2.666	10.230	79.297%

3	10:40:03	4.887	78.607%	11.880	1.079	-0.600	0.994	77.150%	0.000	2.697	2.769	9.976	77.248%
x		96.253%	78.939%	118.655%	108.497%	-1.382	109.900%	77.877%	0.000	2.614	133.157%	100.094%	78.534%
σ		n/a	0.816%	n/a	n/a	0.684	n/a	0.642%	0.000	0.087	n/a	n/a	1.120%
%RSD		1.427	1.034	0.650	4.651	49.530	9.177	0.824	0.000	3.314	4.035	2.078	1.427

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:39:20	1.956	2.040	1.146	79.045%	0.000	0.956	1.077
2	10:39:41	1.959	2.062	1.175	80.238%	0.000	0.975	1.093
3	10:40:03	1.993	2.014	1.130	81.362%	0.000	0.965	1.056
x		98.482%	101.942%	115.045%	80.215%	0.000	48.275%	107.529%
σ		n/a	n/a	n/a	1.159%	0.000	n/a	n/a
%RSD		1.045	1.185	1.968	1.445	0.000	0.983	1.698

ICBIS 10/19/2016 10:44:40 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:45:02	76.397%	0.120	6.716	17.680	3.296	2.274	1.483	-3.335	71.463%	0.000	0.125	-0.144
2	10:45:24	76.740%	0.042	5.380	21.230	3.208	1.950	1.123	-4.614	71.672%	0.000	0.042	-0.156
3	10:45:45	73.821%	0.005	6.082	17.150	2.400	1.714	0.833	-5.023	72.761%	0.000	-0.242	-0.162
x		75.653%	0.056	6.059	18.690	2.968	1.980	1.146	-4.324	71.966%	0.000	-0.025	-0.154
σ		1.596%	0.059	0.668	2.219	0.494	0.281	0.326	0.881	0.697%	0.000	0.193	0.009
%RSD		2.110	106.000	11.030	11.880	16.650	14.190	28.430	20.370	0.968	0.000	774.100	5.907

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:45:02	11.290	0.101	3.421	0.057	0.103	0.100	0.176	0.006	0.324	-0.255	0.000	0.000
2	10:45:24	11.320	0.069	2.160	0.045	0.035	0.076	0.081	0.031	0.340	-1.274	0.000	0.000
3	10:45:45	11.490	0.062	-0.439	0.039	0.043	0.033	0.215	0.140	0.313	-0.223	0.000	0.000
x		11.370	0.078	1.714	0.047	0.060	0.070	0.158	0.059	0.326	-0.584	0.000	0.000
σ		0.105	0.021	1.968	0.009	0.037	0.034	0.069	0.071	0.013	0.598	0.000	0.000
%RSD		0.923	26.700	114.800	20.080	61.660	48.980	43.710	121.100	4.105	102.300	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:45:02	0.019	78.717%	0.618	0.001	-1.152	-0.012	77.961%	0.000	0.214	0.217	0.089	76.750%
2	10:45:24	0.015	79.203%	0.782	-0.006	-1.157	-0.012	79.360%	0.000	0.266	0.247	0.097	79.051%
3	10:45:45	0.014	78.552%	0.669	-0.001	-0.928	-0.052	79.378%	0.000	0.287	0.269	0.117	78.511%
x		0.016	78.824%	0.689	-0.002	-1.079	-0.025	78.899%	0.000	0.256	0.244	0.101	78.104%
σ		0.002	0.338%	0.084	0.004	0.131	0.024	0.813%	0.000	0.038	0.026	0.015	1.203%
%RSD		15.430	0.429	12.170	209.900	12.160	93.070	1.030	0.000	14.760	10.710	14.540	1.541

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:45:02	0.067	0.111	0.087	79.964%	0.000	-0.075	-0.011
2	10:45:24	0.041	0.095	0.084	80.588%	0.000	-0.078	-0.012
3	10:45:45	0.045	0.104	0.066	82.288%	0.000	-0.064	-0.013
x		0.051	0.103	0.079	80.947%	0.000	-0.072	-0.012
σ		0.014	0.008	0.011	1.203%	0.000	0.008	0.001

%RSD	26.830	8.060	14.450	1.486	0.000	10.460	9.548	

ICSA 10/19/2016 10:50:23 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:45	75.451%	0.063	6.229	TM 101500.000	T 103900.000	T 102500.000	TM 97930.000	T 103600.000	78.336%	0.000	0.832	1.271
2	10:51:06	75.945%	0.102	4.644	TM 102800.000	T 103300.000	T 103200.000	TM 99900.000	T 106200.000	78.812%	0.000	0.309	1.323
3	10:51:28	73.567%	0.168	6.249	TM 100900.000	T 103600.000	T 101900.000	TM 97870.000	T 107100.000	79.065%	0.000	0.519	1.219
x		74.988%	1.#IO%	1.#IO%	TM 101.728%	T 103.615%	T 102.542%	TM 98.566%	T 105.623%	78.738%	0.000	1.#IO%	1.#IO%
σ		1.255%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.370%	0.000	n/a	n/a
%RSD		1.674	47.770	16.130	TM 0.923	T 0.275	T 0.617	TM 1.173	T 1.736	0.470	0.000	47.590	4.120

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:45	4.340	0.502	T 101100.000	0.122	0.819	1.191	-0.872	-0.334	0.351	-0.711	0.000	0.000
2	10:51:06	4.777	0.539	T 100500.000	0.120	0.594	1.070	-0.698	-0.361	0.360	-1.487	0.000	0.000
3	10:51:28	4.618	0.578	T 102600.000	0.180	0.838	1.296	-0.863	-0.049	0.317	-1.053	0.000	0.000
x		4.578	1.#IO%	T 101.417%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	0.343	-1.#IO%	0.000	0.000
σ		0.221	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.022	n/a	0.000	0.000
%RSD		4.825	7.065	T 1.090	24.310	18.110	9.515	12.110	69.570	6.560	35.910	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:45	0.737	81.930%	T 2150.000	0.154	7.816	0.125	82.939%	0.000	0.313	0.284	0.354	84.138%
2	10:51:06	0.740	83.565%	T 2190.000	0.184	8.173	0.103	83.668%	0.000	0.413	0.336	0.255	88.530%
3	10:51:28	0.731	85.404%	T 2197.000	0.165	7.663	0.037	84.486%	0.000	0.427	0.370	0.462	88.220%
x		1.#IO%	83.633%	T 108.961%	1.#IO%	7.884	1.#IO%	83.698%	0.000	0.384	1.#IO%	1.#IO%	86.963%
σ		n/a	1.738%	T n/a	n/a	0.262	n/a	0.774%	0.000	0.062	n/a	n/a	2.451%
%RSD		0.643	2.078	T 1.154	9.174	3.321	52.210	0.925	0.000	16.230	13.060	28.990	2.819

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:45	0.264	0.112	0.381	85.223%	0.000	6.087	-0.010
2	10:51:06	0.378	0.119	0.393	85.827%	0.000	5.089	-0.007
3	10:51:28	0.343	0.139	0.470	86.554%	0.000	3.951	-0.007
x		1.#IO%	1.#IO%	1.#IO%	85.868%	0.000	1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	0.666%	0.000	n/a	n/a
%RSD		17.790	11.340	11.630	0.776	0.000	21.200	22.290

ICSAB 10/19/2016 10:56:06 AM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:56:28	68.503%	27.320	448.600	TM 103200.000	T 104500.000	T 105200.000	TM 100400.000	T 105800.000	72.828%	0.000	22.690	48.140
2	10:56:49	67.487%	27.310	466.400	TM 102300.000	T 104800.000	T 105100.000	TM 101400.000	T 106100.000	73.872%	0.000	23.280	47.990
3	10:57:11	66.708%	28.460	462.300	TM 99110.000	T 102200.000	T 102900.000	TM 99200.000	T 105800.000	75.112%	0.000	22.390	47.310
x		67.566%	110.788%	114.778%	TM 101.551%	T 103.835%	T 104.378%	TM 100.336%	T 105.904%	73.937%	0.000	91.147%	95.624%
σ		0.900%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.144%	0.000	n/a	n/a
%RSD		1.332	2.385	2.032	TM 2.134	T 1.390	T 1.217	TM 1.105	T 0.183	1.547	0.000	1.984	0.924

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:56:28	6.313	23.960	T 103000.000	23.330	23.010	45.490	44.750	43.770	-0.049	114.700	0.000	0.000
2	10:56:49	6.040	23.670	T 102800.000	23.680	23.770	46.850	46.420	45.120	0.049	113.400	0.000	0.000
3	10:57:11	6.372	23.950	T 103000.000	23.420	23.260	47.000	45.770	45.660	-0.030	116.400	0.000	0.000
x		6.242	95.439%	T 102.951%	93.892%	93.383%	92.892%	91.292%	99.666%	-0.010	91.861%	0.000	0.000
σ		0.177	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.052	n/a	0.000	0.000
%RSD		2.836	0.688	T 0.133	0.779	1.672	1.781	1.838	2.172	517.900	1.319	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:56:28	0.593	80.841%	T 2158.000	25.070	8.918	24.120	81.674%	0.000	48.580	50.190	240.000	85.864%
2	10:56:49	0.611	79.818%	T 2242.000	24.940	6.669	23.940	82.130%	0.000	50.640	50.950	243.400	85.250%
3	10:57:11	0.623	79.806%	T 2241.000	25.070	7.504	24.020	82.362%	0.000	50.470	51.720	245.200	87.480%
x		0.609	80.155%	T 110.693%	100.117%	7.697	96.098%	82.055%	0.000	49.890	101.911%	97.157%	86.198%
σ		0.015	0.594%	T n/a	n/a	1.137	n/a	0.350%	0.000	1.145	n/a	n/a	1.152%
%RSD		2.458	0.741	T 2.199	0.298	14.770	0.388	0.427	0.000	2.294	1.495	1.088	1.336

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:56:28	20.330	22.340	22.820	83.989%	0.000	18.760	11.390
2	10:56:49	21.090	22.920	23.340	84.208%	0.000	19.870	11.630
3	10:57:11	21.150	22.930	23.410	84.860%	0.000	20.380	11.690
x		104.276%	90.924%	92.755%	84.352%	0.000	98.352%	115.699%
σ		n/a	n/a	n/a	0.453%	0.000	n/a	n/a
%RSD		2.187	1.495	1.397	0.537	0.000	4.227	1.343

CCV 10/19/2016 11:01:49 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:02:11	63.208%	693.200	276.100	T 10570.000	T 31880.000	T 32390.000	T 10000.000	28950.000	62.307%	0.000	T 1263.000	379.700
2	11:02:33	60.115%	724.800	287.900	T 10740.000	T 32820.000	T 32650.000	T 10170.000	29270.000	60.337%	0.000	T 1280.000	384.000
3	11:02:55	60.848%	708.000	294.300	T 10560.000	T 31740.000	T 32260.000	T 9834.000	28970.000	61.366%	0.000	T 1280.000	387.400
x		61.391%	113.391%	114.442%	T 106.248%	T 107.154%	T 108.112%	T 100.008%	96.872%	61.337%	0.000	T 101.933%	95.924%
σ		1.616%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.985%	0.000	T n/a	n/a
%RSD		2.632	2.227	3.231	T 0.953	T 1.841	T 0.617	T 1.670	0.622	1.606	0.000	T 0.761	0.996

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:02:11	22.960	ᵀ1294.000	ᵀ31020.000	475.200	1261.000	1216.000	1308.000	199.600	-0.490	207.600	0.000	0.000
2	11:02:33	18.690	ᵀ1326.000	ᵀ32060.000	485.700	1257.000	1262.000	1346.000	198.900	-0.536	210.000	0.000	0.000
3	11:02:55	18.440	ᵀ1303.000	ᵀ31430.000	474.600	1269.000	1228.000	1331.000	201.700	-0.643	215.300	0.000	0.000
x		20.030	ᵀ104.626%	ᵀ105.016%	95.705%	100.964%	98.814%	106.301%	100.033%	-0.556	105.480%	0.000	0.000
σ		2.540	ᵀn/a	ᵀn/a	n/a	n/a	n/a	n/a	n/a	0.078	n/a	0.000	0.000
%RSD		12.680	ᵀ1.290	ᵀ1.669	1.308	0.489	1.942	1.443	0.719	14.100	1.881	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:02:11	178.300	71.747%	1221.000	101.900	10.580	203.800	74.308%	0.000	246.300	248.400	1190.000	75.120%
2	11:02:33	181.500	71.500%	1248.000	104.000	12.810	208.300	72.338%	0.000	250.800	254.100	1203.000	74.522%
3	11:02:55	183.100	70.886%	1261.000	103.300	16.360	208.500	71.721%	0.000	251.800	258.000	1215.000	75.508%
x		181.000	71.378%	99.483%	103.040%	13.250	103.429%	72.789%	0.000	249.600	101.406%	96.217%	75.050%
σ		2.415	0.443%	n/a	n/a	2.916	n/a	1.351%	0.000	2.906	n/a	n/a	0.496%
%RSD		1.334	0.621	1.668	1.016	22.000	1.280	1.856	0.000	1.164	1.897	1.056	0.661

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:02:11	22.560	179.000	ᵀ1278.000	77.057%	0.000	16.510	10.250
2	11:02:33	23.020	179.300	ᵀ1268.000	77.229%	0.000	17.630	10.230
3	11:02:55	23.050	178.300	ᵀ1259.000	78.435%	0.000	18.250	10.070
x		114.386%	89.433%	ᵀ101.493%	77.574%	0.000	87.317%	101.852%
σ		n/a	n/a	ᵀn/a	0.751%	0.000	n/a	n/a
%RSD		1.207	0.296	ᵀ0.742	0.968	0.000	5.070	0.964

CCB 10/19/2016 11:07:32 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:54	66.511%	0.124	4.730	26.210	9.515	8.364	11.510	4.502	63.763%	0.000	-0.172	-0.240
2	11:08:16	64.028%	0.038	5.662	31.870	15.020	13.630	12.940	5.715	63.004%	0.000	0.112	-0.276
3	11:08:37	66.913%	0.011	5.522	32.240	17.650	17.620	12.950	9.674	64.105%	0.000	0.451	-0.198
x		65.817%	0.058	5.305	30.110	14.060	13.200	12.470	6.630	63.624%	0.000	0.130	-0.238
σ		1.562%	0.059	0.502	3.375	4.152	4.644	0.830	2.705	0.563%	0.000	0.312	0.039
%RSD		2.374	102.500	9.465	11.210	29.530	35.170	6.654	40.790	0.886	0.000	239.300	16.350

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:54	9.924	0.081	8.775	0.036	0.085	0.112	0.213	-0.010	0.269	-0.039	0.000	0.000
2	11:08:16	9.938	0.104	14.960	0.057	0.109	0.073	0.147	-0.098	0.303	-1.115	0.000	0.000
3	11:08:37	9.183	0.073	14.750	0.038	0.074	0.084	0.184	-0.107	0.286	-1.176	0.000	0.000
x		9.682	0.086	12.830	0.044	0.089	0.090	0.181	-0.072	0.286	-0.777	0.000	0.000
σ		0.432	0.016	3.510	0.011	0.018	0.020	0.033	0.053	0.017	0.640	0.000	0.000
%RSD		4.461	19.030	27.360	26.210	19.840	22.290	18.400	74.450	6.029	82.360	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:54	0.006	73.966%	2.407	-0.012	-1.515	0.018	74.910%	0.000	0.284	0.301	0.029	75.597%
2	11:08:16	0.014	72.306%	2.839	0.012	-0.865	-0.049	74.925%	0.000	0.367	0.351	0.050	75.062%

3	11:08:37	0.024	73.947%	2.704	0.002	-1.581	0.008	75.177%	0.000	0.390	0.367	0.136	74.968%
x		0.015	73.406%	2.650	0.001	-1.320	-0.008	75.004%	0.000	0.347	0.340	0.071	75.209%
σ		0.009	0.953%	0.221	0.012	0.396	0.036	0.150%	0.000	0.056	0.034	0.057	0.339%
%RSD		62.190	1.298	8.341	1784.000	29.950	467.300	0.200	0.000	16.100	10.100	79.290	0.451

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:07:54	0.098	0.169	0.081	78.236%	0.000	-0.107	-0.014
2	11:08:16	0.079	0.162	0.078	79.073%	0.000	-0.113	-0.010
3	11:08:37	0.106	0.152	0.107	78.195%	0.000	-0.099	-0.011
x		0.094	0.161	0.089	78.501%	0.000	-0.106	-0.012
σ		0.014	0.008	0.016	0.495%	0.000	0.007	0.002
%RSD		14.560	5.139	18.150	0.631	0.000	6.958	15.930

200-35736-A-11-A 10/19/2016 11:13:14 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:36	75.350%	3.970	30.230	T 600.400	T 13300.000	T 55030.000	T 4401.000	T 48570.000	84.004%	0.000	76.430	60.320
2	11:13:58	74.184%	4.174	31.470	T 570.800	T 12650.000	T 52230.000	T 4296.000	T 48460.000	88.100%	0.000	76.430	58.980
3	11:14:20	71.806%	4.064	34.230	T 552.600	T 13190.000	T 54300.000	T 4386.000	T 49300.000	87.570%	0.000	76.380	61.350
x		73.780%	4.069	31.970	T 574.600	T 13050.000	T 53850.000	T 4361.000	T 48770.000	86.558%	0.000	76.410	60.220
σ		1.806%	0.102	2.049	T 24.120	T 346.000	T 1451.000	T 56.790	T 456.500	2.228%	0.000	0.029	1.184
%RSD		2.448	2.512	6.408	T 4.199	T 2.652	T 2.693	T 1.302	T 0.936	2.574	0.000	0.038	1.966

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:36	7.197	TM 6915.000	T 98310.000	44.290	86.590	1758.000	694.300	12.690	0.075	14.510	0.000	0.000
2	11:13:58	6.199	TM 6869.000	T 97730.000	44.090	83.520	1735.000	676.800	12.720	0.077	13.830	0.000	0.000
3	11:14:20	6.431	TM 7031.000	T 100400.000	44.940	87.140	1779.000	694.800	12.530	0.100	12.070	0.000	0.000
x		6.609	TM 6938.000	T 98830.000	44.440	85.750	1757.000	688.600	12.640	0.084	13.470	0.000	0.000
σ		0.522	TM 83.160	T 1430.000	0.449	1.953	21.800	10.260	0.104	0.014	1.260	0.000	0.000
%RSD		7.901	TM 1.199	T 1.447	1.010	2.277	1.241	1.490	0.822	16.570	9.352	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:36	138.600	204.758%	3.721	2.059	-7.006	3.935	80.757%	0.000	0.964	1.075	789.300	97.714%
2	11:13:58	137.000	206.041%	3.600	1.926	-4.332	3.727	82.542%	0.000	1.042	1.031	795.300	97.704%
3	11:14:20	139.600	211.064%	3.426	2.057	-5.230	3.865	83.660%	0.000	0.996	1.054	800.300	100.962%
x		138.400	207.288%	3.582	2.014	-5.523	3.842	82.320%	0.000	1.001	1.053	795.000	98.793%
σ		1.311	3.333%	0.148	0.076	1.361	0.106	1.464%	0.000	0.039	0.022	5.494	1.878%
%RSD		0.947	1.608	4.143	3.781	24.650	2.753	1.779	0.000	3.923	2.067	0.691	1.901

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:13:36	0.887	0.600	158.000	84.942%	0.000	17.470	6.214
2	11:13:58	0.816	0.581	155.500	89.408%	0.000	15.620	5.918
3	11:14:20	0.748	0.580	157.900	88.441%	0.000	15.380	6.094
x		0.817	0.587	157.100	87.597%	0.000	16.160	6.075
σ		0.069	0.011	1.439	2.349%	0.000	1.140	0.149

%RSD		8.491	1.913	0.916	2.682	0.000	7.058	2.449

200-35736-A-11-A SD@5 10/19/2016 11:18:56 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:19:18	71.901%	1.066	8.125	120.900	2605.000	T 11830.000	T 932.900	9653.000	79.439%	0.000	16.620	12.950
2	11:19:40	73.215%	0.699	7.288	118.800	2661.000	T 11720.000	T 925.300	9773.000	78.834%	0.000	16.680	13.340
3	11:20:02	71.042%	0.638	8.217	120.600	2633.000	T 11830.000	T 930.200	9982.000	78.251%	0.000	17.660	13.340
x		72.053%	0.801	7.876	120.100	2633.000	T 11790.000	T 929.500	9803.000	78.842%	0.000	16.990	13.210
σ		1.095%	0.232	0.512	1.121	27.740	T 61.860	T 3.886	166.200	0.594%	0.000	0.582	0.225
%RSD		1.519	28.900	6.499	0.933	1.054	T 0.525	T 0.418	1.696	0.753	0.000	3.427	1.704

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:19:18	6.545	T 1478.000	T 21290.000	9.359	18.830	388.700	161.500	5.084	0.200	2.649	0.000	0.000
2	11:19:40	6.327	T 1508.000	T 21700.000	9.977	18.540	395.500	163.900	5.194	0.199	3.016	0.000	0.000
3	11:20:02	5.888	T 1507.000	T 21990.000	10.170	18.590	399.900	168.100	5.019	0.208	1.429	0.000	0.000
x		6.253	T 1498.000	T 21660.000	9.834	18.660	394.700	164.500	5.099	0.202	2.364	0.000	0.000
σ		0.335	T 16.840	T 353.500	0.422	0.154	5.624	3.339	0.089	0.005	0.831	0.000	0.000
%RSD		5.354	T 1.124	T 1.632	4.289	0.824	1.425	2.030	1.737	2.563	35.140	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:19:18	26.580	109.195%	0.955	0.387	-1.445	0.778	84.367%	0.000	0.192	0.195	149.700	86.058%
2	11:19:40	26.810	108.503%	1.038	0.368	-0.657	0.822	84.998%	0.000	0.224	0.239	150.000	85.780%
3	11:20:02	26.540	109.916%	1.143	0.389	-1.686	0.759	85.453%	0.000	0.224	0.247	152.800	85.775%
x		26.640	109.205%	1.045	0.382	-1.263	0.786	84.939%	0.000	0.213	0.227	150.800	85.871%
σ		0.144	0.707%	0.094	0.011	0.538	0.032	0.546%	0.000	0.019	0.028	1.747	0.162%
%RSD		0.542	0.647	8.996	2.964	42.610	4.100	0.642	0.000	8.784	12.450	1.158	0.189

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:19:18	0.133	0.118	30.490	84.894%	0.000	1.894	1.074
2	11:19:40	0.168	0.127	30.470	86.822%	0.000	1.981	1.133
3	11:20:02	0.183	0.122	31.120	85.086%	0.000	2.086	1.222
x		0.161	0.122	30.690	85.601%	0.000	1.987	1.143
σ		0.026	0.004	0.368	1.062%	0.000	0.096	0.074
%RSD		15.960	3.366	1.198	1.240	0.000	4.832	6.504

200-35736-A-11-A PDS 10/19/2016 11:24:39 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:25:01	74.536%	14.360	460.500	T 4995.000	T 14330.000	T 51510.000	T 8411.000	T 50620.000	90.937%	0.000	107.900	89.380
2	11:25:22	74.846%	13.920	445.500	T 4778.000	T 14000.000	T 51370.000	T 8248.000	T 50920.000	92.394%	0.000	110.300	87.960
3	11:25:44	73.646%	13.860	461.400	T 4800.000	T 14230.000	T 51850.000	T 8479.000	T 53030.000	91.708%	0.000	113.000	90.580
x		74.343%	14.050	455.800	T 4858.000	T 14190.000	T 51580.000	T 8379.000	T 51520.000	91.680%	0.000	110.400	89.310
σ		0.623%	0.271	8.929	T 119.500	T 171.400	T 246.900	T 118.600	T 1319.000	0.729%	0.000	2.548	1.312
%RSD		0.838	1.931	1.959	T 2.460	T 1.208	T 0.479	T 1.416	T 2.559	0.795	0.000	2.307	1.469

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:25:01	8.814	TM 6612.000	T 96630.000	50.030	97.690	1711.000	809.700	19.580	0.070	46.420	0.000	0.000
2	11:25:22	6.246	TM 6544.000	T 96110.000	50.240	98.100	1718.000	800.900	20.570	0.021	48.420	0.000	0.000
3	11:25:44	7.785	TM 6728.000	T 97170.000	50.500	99.090	1730.000	822.200	20.430	0.022	48.010	0.000	0.000
x		7.615	TM 6628.000	T 96640.000	50.260	98.300	1720.000	810.900	20.190	0.038	47.620	0.000	0.000
σ		1.292	TM 92.880	T 528.200	0.235	0.720	9.883	10.700	0.534	0.028	1.053	0.000	0.000
%RSD		16.970	TM 1.401	T 0.547	0.467	0.732	0.575	1.319	2.645	74.320	2.212	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:25:01	177.100	212.112%	41.680	11.750	-0.405	12.630	86.179%	0.000	18.720	19.260	831.500	101.046%
2	11:25:22	179.100	209.262%	42.890	12.300	-2.961	13.510	85.775%	0.000	19.060	19.830	852.100	101.782%
3	11:25:44	176.800	211.172%	43.490	12.070	-4.069	13.530	87.207%	0.000	18.870	19.660	851.700	102.239%
x		177.700	210.849%	42.690	12.040	-2.478	13.230	86.387%	0.000	18.880	19.580	845.100	101.689%
σ		1.217	1.453%	0.923	0.277	1.879	0.513	0.738%	0.000	0.170	0.293	11.800	0.602%
%RSD		0.685	0.689	2.163	2.296	75.830	3.878	0.854	0.000	0.901	1.496	1.397	0.592

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:25:01	16.260	17.250	158.500	88.166%	0.000	30.350	15.850
2	11:25:22	16.490	17.380	158.800	89.902%	0.000	30.270	16.180
3	11:25:44	17.360	17.410	157.500	91.473%	0.000	30.620	15.860
x		16.700	17.350	158.300	89.847%	0.000	30.410	15.970
σ		0.582	0.086	0.644	1.654%	0.000	0.182	0.187
%RSD		3.482	0.494	0.407	1.841	0.000	0.599	1.174

200-35736-A-11-I MS 10/19/2016 11:30:21 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:43	73.782%	14.750	395.100	T 4858.000	T 15070.000	T 58510.000	T 8660.000	T 59440.000	93.254%	0.000	121.500	97.430
2	11:31:05	71.677%	15.350	410.400	T 4801.000	T 14900.000	T 57760.000	T 8475.000	T 59270.000	94.030%	0.000	122.800	96.880
3	11:31:26	71.988%	16.050	413.800	T 4835.000	T 14850.000	T 57130.000	T 8669.000	T 59870.000	94.074%	0.000	122.600	97.250
x		72.482%	15.380	406.400	T 4831.000	T 14940.000	T 57800.000	T 8601.000	T 59530.000	93.786%	0.000	122.300	97.190
σ		1.136%	0.652	9.942	T 28.670	T 111.800	T 691.400	T 109.400	T 305.200	0.461%	0.000	0.700	0.279
%RSD		1.567	4.239	2.446	T 0.594	T 0.748	T 1.196	T 1.272	T 0.513	0.492	0.000	0.572	0.287

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:43	6.739	TM 6830.000	T 97110.000	49.460	106.500	1947.000	822.800	19.900	0.032	50.490	0.000	0.000
2	11:31:05	7.655	TM 6846.000	T 97670.000	49.910	106.700	1954.000	815.900	20.030	0.041	47.840	0.000	0.000
3	11:31:26	6.327	TM 6876.000	T 97970.000	49.740	105.800	1985.000	828.400	19.760	0.072	46.850	0.000	0.000
x		6.907	TM 6851.000	T 97580.000	49.710	106.400	1962.000	822.400	19.900	0.049	48.390	0.000	0.000
σ		0.680	TM 23.390	T 434.200	0.226	0.496	20.530	6.242	0.135	0.021	1.883	0.000	0.000
%RSD		9.841	TM 0.341	T 0.445	0.454	0.467	1.046	0.759	0.678	42.780	3.891	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:43	202.000	226.235%	37.750	12.270	-5.363	13.120	84.441%	0.000	5.448	5.429	877.000	100.384%
2	11:31:05	205.400	227.506%	38.370	12.400	-6.437	12.930	84.180%	0.000	5.283	5.574	889.000	102.623%
3	11:31:26	204.800	230.392%	38.560	12.290	-5.471	12.680	85.986%	0.000	5.275	5.471	883.000	104.379%
x		204.100	228.045%	38.230	12.320	-5.757	12.910	84.869%	0.000	5.335	5.491	883.000	102.462%
σ		1.787	2.130%	0.420	0.069	0.591	0.219	0.976%	0.000	0.097	0.075	5.986	2.002%
%RSD		0.876	0.934	1.100	0.562	10.270	1.695	1.150	0.000	1.824	1.364	0.678	1.954

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:30:43	17.350	14.570	151.600	88.989%	0.000	31.500	16.180
2	11:31:05	17.510	15.240	156.700	87.144%	0.000	32.280	16.870
3	11:31:26	17.540	14.680	150.800	91.563%	0.000	31.120	16.310
x		17.470	14.830	153.000	89.232%	0.000	31.640	16.460
σ		0.099	0.362	3.231	2.219%	0.000	0.594	0.369
%RSD		0.564	2.443	2.111	2.487	0.000	1.878	2.240

200-35736-A-11-J MSD 10/19/2016 11:36:04 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:36:26	74.948%	14.020	385.800	T 5023.000	T 15760.000	T 56540.000	T 8587.000	T 43130.000	92.216%	0.000	120.300	98.140
2	11:36:48	73.198%	15.070	401.300	T 4830.000	T 15420.000	T 54990.000	T 8518.000	T 42560.000	95.224%	0.000	121.300	96.850
3	11:37:09	71.458%	15.420	410.000	T 4770.000	T 15260.000	T 54900.000	T 8411.000	T 42900.000	95.697%	0.000	119.300	95.090
x		73.202%	14.840	399.000	T 4874.000	T 15480.000	T 55480.000	T 8506.000	T 42860.000	94.379%	0.000	120.300	96.690
σ		1.745%	0.728	12.250	T 132.500	T 256.000	T 922.400	T 88.390	T 286.100	1.888%	0.000	1.000	1.532
%RSD		2.384	4.908	3.071	T 2.718	T 1.654	T 1.663	T 1.039	T 0.668	2.001	0.000	0.831	1.585

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:36:26	7.943	T 6220.000	T 96700.000	50.220	105.300	1863.000	858.600	19.950	0.086	47.030	0.000	0.000
2	11:36:48	5.942	T 6179.000	T 94470.000	48.990	104.800	1850.000	841.600	19.800	0.101	47.500	0.000	0.000
3	11:37:09	7.406	T 6143.000	T 95240.000	48.500	103.800	1839.000	848.500	20.790	0.065	46.800	0.000	0.000
x		7.097	T 6181.000	T 95470.000	49.240	104.700	1851.000	849.600	20.180	0.084	47.110	0.000	0.000
σ		1.036	T 38.440	T 1134.000	0.889	0.790	12.070	8.526	0.533	0.018	0.353	0.000	0.000
%RSD		14.590	T 0.622	T 1.188	1.806	0.754	0.652	1.004	2.643	21.890	0.749	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:36:26	156.700	218.842%	40.170	12.130	-3.428	14.530	87.792%	0.000	5.175	5.256	802.400	103.285%
2	11:36:48	163.400	220.747%	41.070	12.450	-3.154	14.270	85.902%	0.000	5.153	5.521	830.300	104.184%

3	11:37:09	160.900	216.632%	41.250	12.150	-2.714	14.820	87.015%	0.000	5.311	5.439	820.600	104.153%
x		160.300	218.740%	40.830	12.240	-3.099	14.540	86.903%	0.000	5.213	5.405	817.800	103.874%
σ		3.383	2.059%	0.581	0.181	0.360	0.275	0.950%	0.000	0.086	0.136	14.120	0.510%
%RSD		2.110	0.941	1.423	1.480	11.620	1.894	1.093	0.000	1.640	2.507	1.726	0.491

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:36:26	17.470	14.820	158.700	87.974%	0.000	30.050	16.110
2	11:36:48	18.470	15.180	158.100	90.327%	0.000	29.830	16.000
3	11:37:09	18.010	14.710	153.400	93.004%	0.000	29.120	15.990
x		17.980	14.910	156.700	90.435%	0.000	29.660	16.040
σ		0.497	0.246	2.887	2.517%	0.000	0.485	0.063
%RSD		2.764	1.647	1.842	2.783	0.000	1.635	0.395

200-35736-A-12-A 10/19/2016 11:41:47 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:42:09	67.604%	4.453	30.700	446.600	T 15110.000	T 45520.000	T 3786.000	T 61700.000	88.750%	0.000	69.460	54.470
2	11:42:30	67.495%	3.641	31.980	T 505.000	T 15360.000	T 45940.000	T 3837.000	T 61890.000	87.828%	0.000	70.820	56.270
3	11:42:52	68.974%	3.280	26.520	T 502.700	T 15350.000	T 46020.000	T 3815.000	T 62640.000	88.055%	0.000	70.730	55.190
x		68.024%	3.791	29.730	T 484.700	T 15270.000	T 45830.000	T 3812.000	T 62080.000	88.211%	0.000	70.340	55.310
σ		0.824%	0.601	2.851	T 33.040	T 143.200	T 269.500	T 25.690	T 497.200	0.480%	0.000	0.763	0.902
%RSD		1.212	15.840	9.588	T 6.816	T 0.937	T 0.588	T 0.674	T 0.801	0.544	0.000	1.085	1.631

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:42:09	5.387	TM 7231.000	T 94510.000	39.390	84.260	1636.000	674.100	13.870	0.064	14.040	0.000	0.000
2	11:42:30	4.506	TM 7427.000	T 96780.000	39.070	82.240	1667.000	686.400	14.270	0.047	14.740	0.000	0.000
3	11:42:52	4.691	TM 7328.000	T 95870.000	39.410	83.190	1639.000	689.300	13.870	0.051	14.820	0.000	0.000
x		4.862	TM 7329.000	T 95720.000	39.290	83.230	1648.000	683.300	14.000	0.054	14.530	0.000	0.000
σ		0.465	TM 98.260	T 1146.000	0.192	1.011	17.200	8.042	0.229	0.009	0.429	0.000	0.000
%RSD		9.561	TM 1.341	T 1.197	0.488	1.214	1.044	1.177	1.633	16.280	2.954	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:42:09	161.300	198.438%	1.711	1.722	-4.720	4.056	83.254%	0.000	0.558	0.632	749.700	97.231%
2	11:42:30	161.400	196.300%	1.663	1.588	-1.607	3.497	83.920%	0.000	0.643	0.623	749.700	97.163%
3	11:42:52	159.700	197.868%	1.709	1.642	-3.698	3.795	84.770%	0.000	0.566	0.612	746.200	96.180%
x		160.800	197.535%	1.694	1.650	-3.342	3.783	83.981%	0.000	0.589	0.622	748.600	96.858%
σ		0.985	1.107%	0.028	0.067	1.587	0.280	0.760%	0.000	0.047	0.010	2.021	0.588%
%RSD		0.613	0.561	1.626	4.070	47.480	7.403	0.905	0.000	8.027	1.614	0.270	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:42:09	0.563	0.464	122.300	86.719%	0.000	10.550	4.865
2	11:42:30	0.507	0.472	123.900	86.094%	0.000	10.670	4.858
3	11:42:52	0.498	0.501	123.700	87.377%	0.000	10.830	4.755
x		0.523	0.479	123.300	86.730%	0.000	10.680	4.826
σ		0.036	0.020	0.848	0.641%	0.000	0.141	0.062

%RSD		6.802	4.114	0.688	0.740	0.000	1.320	1.279

MB 200-110239/1-A 10/19/2016 11:47:30 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:52	71.966%	-0.056	6.370	173.400	6.099	21.630	4.587	32.180	79.928%	0.000	0.227	-0.124
2	11:48:13	71.729%	-0.056	6.770	169.400	9.251	27.070	4.938	37.880	81.005%	0.000	0.233	-0.107
3	11:48:35	69.738%	-0.013	6.300	164.800	11.230	29.600	3.459	37.830	81.334%	0.000	0.394	-0.106
x		71.144%	-0.042	6.480	169.200	8.860	26.100	4.328	35.960	80.756%	0.000	0.285	-0.112
σ		1.224%	0.025	0.254	4.320	2.587	4.076	0.772	3.280	0.735%	0.000	0.095	0.010
%RSD		1.720	59.570	3.914	2.553	29.200	15.620	17.850	9.120	0.910	0.000	33.380	9.241

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:52	6.575	2.353	44.350	0.026	0.211	0.927	0.872	-0.084	0.275	-0.422	0.000	0.000
2	11:48:13	6.857	3.132	54.040	0.031	0.122	1.224	0.812	-0.117	0.313	-0.508	0.000	0.000
3	11:48:35	6.615	3.485	57.000	0.027	0.250	1.143	0.724	-0.123	0.289	-0.679	0.000	0.000
x		6.682	2.990	51.790	0.028	0.194	1.098	0.802	-0.108	0.292	-0.536	0.000	0.000
σ		0.152	0.580	6.616	0.003	0.065	0.153	0.075	0.021	0.019	0.131	0.000	0.000
%RSD		2.278	19.380	12.770	9.037	33.640	13.960	9.302	19.670	6.626	24.450	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:52	0.165	88.794%	0.052	-0.004	-1.249	-0.034	86.492%	0.000	-0.009	-0.000	0.283	82.475%
2	11:48:13	0.192	89.210%	0.120	0.013	-1.097	-0.040	86.798%	0.000	0.010	0.012	0.310	84.558%
3	11:48:35	0.201	90.477%	0.075	0.010	-1.738	0.018	87.021%	0.000	0.020	0.018	0.235	81.767%
x		0.186	89.494%	0.082	0.007	-1.362	-0.019	86.771%	0.000	0.007	0.010	0.276	82.933%
σ		0.019	0.877%	0.035	0.009	0.335	0.032	0.265%	0.000	0.015	0.009	0.038	1.451%
%RSD		10.060	0.980	42.020	135.200	24.600	169.300	0.306	0.000	207.600	95.690	13.730	1.749

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:47:52	0.023	0.007	0.058	83.241%	0.000	0.264	-0.009
2	11:48:13	0.033	0.003	0.065	84.400%	0.000	0.244	-0.009
3	11:48:35	0.014	0.007	0.080	84.002%	0.000	0.198	-0.011
x		0.023	0.006	0.068	83.881%	0.000	0.235	-0.009
σ		0.009	0.003	0.011	0.589%	0.000	0.034	0.001
%RSD		40.460	44.580	16.980	0.702	0.000	14.270	12.890

LCS 200-110239/2-A 10/19/2016 11:53:13 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:35	69.147%	11.420	438.000	T 5500.000	1982.000	486.400	T 5042.000	4651.000	72.583%	0.000	45.290	38.290
2	11:53:57	65.950%	11.700	458.200	T 5438.000	1967.000	472.300	T 4863.000	4615.000	71.983%	0.000	46.210	39.000
3	11:54:18	64.390%	10.710	470.900	T 5455.000	1944.000	483.400	T 4942.000	4605.000	70.726%	0.000	46.340	38.740
x		66.496%	11.280	455.700	T 5464.000	1964.000	480.700	T 4949.000	4624.000	71.764%	0.000	45.950	38.680
σ		2.425%	0.510	16.580	T 31.970	18.860	7.398	T 89.750	24.290	0.948%	0.000	0.570	0.358
%RSD		3.647	4.527	3.638	T 0.585	0.960	1.539	T 1.814	0.525	1.321	0.000	1.240	0.925

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:35	9.194	19.960	T 2121.000	9.631	21.260	51.040	194.600	19.930	0.169	39.130	0.000	0.000
2	11:53:57	6.210	19.470	T 2101.000	9.666	20.180	50.660	196.200	19.160	0.207	38.570	0.000	0.000
3	11:54:18	7.078	20.350	T 2144.000	9.995	21.620	51.180	202.600	20.200	0.132	38.810	0.000	0.000
x		7.494	19.920	T 2122.000	9.764	21.020	50.960	197.800	19.770	0.169	38.840	0.000	0.000
σ		1.535	0.443	T 21.540	0.201	0.751	0.267	4.239	0.539	0.037	0.284	0.000	0.000
%RSD		20.480	2.225	T 1.015	2.054	3.572	0.524	2.143	2.728	22.080	0.730	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:35	45.760	79.019%	97.810	10.490	-0.962	9.775	79.117%	0.000	18.790	18.890	91.380	77.342%
2	11:53:57	45.980	79.124%	100.700	10.560	-1.979	10.030	78.402%	0.000	19.200	19.300	94.250	77.138%
3	11:54:18	46.160	77.671%	101.800	10.440	0.453	9.720	78.121%	0.000	19.800	19.190	94.880	77.200%
x		45.960	78.605%	100.100	10.500	-0.829	9.841	78.547%	0.000	19.260	19.130	93.500	77.227%
σ		0.203	0.810%	2.053	0.056	1.221	0.165	0.513%	0.000	0.509	0.215	1.864	0.105%
%RSD		0.441	1.031	2.051	0.537	147.300	1.671	0.653	0.000	2.642	1.123	1.994	0.136

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:53:35	38.200	17.430	8.857	77.318%	0.000	12.150	10.460
2	11:53:57	38.520	17.090	8.703	79.971%	0.000	12.350	10.240
3	11:54:18	38.840	17.720	8.964	77.263%	0.000	13.530	10.630
x		38.520	17.410	8.841	78.184%	0.000	12.680	10.440
σ		0.319	0.315	0.131	1.548%	0.000	0.748	0.192
%RSD		0.827	1.811	1.486	1.980	0.000	5.904	1.836

200-35680-A-13-A 10/19/2016 11:58:57 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:59:19	70.024%	0.051	8.667	175.700	4.560	9.415	5.041	24.590	75.161%	0.000	0.453	-0.195
2	11:59:40	71.482%	0.007	8.007	179.000	5.746	11.650	5.378	26.310	74.899%	0.000	0.119	-0.117
3	12:00:02	70.395%	0.008	6.633	186.400	8.646	18.030	7.479	29.910	73.299%	0.000	0.120	-0.041
x		70.634%	0.022	7.769	180.400	6.317	13.030	5.966	26.940	74.453%	0.000	0.231	-0.117
σ		0.757%	0.025	1.038	5.451	2.102	4.469	1.321	2.714	1.008%	0.000	0.193	0.077
%RSD		1.072	114.800	13.360	3.022	33.280	34.300	22.140	10.080	1.354	0.000	83.530	65.280

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:59:19	8.406	1.193	18.590	0.024	0.198	0.667	1.910	0.224	0.279	0.127	0.000	0.000
2	11:59:40	8.799	1.404	22.630	0.022	0.190	0.693	1.764	-0.045	0.324	-0.821	0.000	0.000
3	12:00:02	9.138	2.037	35.620	0.036	0.213	0.977	2.142	-0.235	0.333	-0.633	0.000	0.000
x		8.781	1.545	25.610	0.028	0.201	0.779	1.938	-0.019	0.312	-0.442	0.000	0.000
σ		0.366	0.440	8.897	0.008	0.012	0.172	0.190	0.230	0.029	0.502	0.000	0.000
%RSD		4.168	28.450	34.730	27.940	5.966	22.070	9.823	1244.000	9.280	113.600	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:59:19	0.140	80.939%	0.168	-0.005	-1.325	-0.021	81.541%	0.000	0.024	0.015	0.213	77.809%
2	11:59:40	0.145	80.994%	0.250	-0.005	-1.137	-0.029	80.796%	0.000	0.048	0.037	0.225	76.802%
3	12:00:02	0.180	79.947%	0.264	0.003	-0.884	-0.056	79.489%	0.000	0.066	0.049	0.381	76.168%
x		0.155	80.627%	0.227	-0.002	-1.115	-0.035	80.609%	0.000	0.046	0.034	0.273	76.926%
σ		0.022	0.589%	0.052	0.004	0.222	0.018	1.039%	0.000	0.021	0.017	0.094	0.827%
%RSD		14.010	0.730	22.850	206.400	19.870	51.800	1.288	0.000	45.780	50.520	34.350	1.075

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:59:19	0.123	0.042	0.031	79.073%	0.000	2.368	-0.007
2	11:59:40	0.138	0.032	0.044	78.620%	0.000	2.178	-0.002
3	12:00:02	0.166	0.037	0.060	80.855%	0.000	1.934	-0.003
x		0.142	0.037	0.045	79.516%	0.000	2.160	-0.004
σ		0.022	0.005	0.015	1.182%	0.000	0.218	0.002
%RSD		15.310	13.810	32.480	1.486	0.000	10.080	62.710

200-35700-A-19-A 10/19/2016 12:04:41 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:02	73.422%	0.046	4.918	183.700	11.380	32.490	7.862	44.150	76.655%	0.000	0.243	0.208
2	12:05:24	74.478%	-0.036	4.979	179.800	7.495	24.460	4.742	33.980	78.309%	0.000	0.232	0.043
3	12:05:46	72.183%	0.006	5.746	180.000	7.174	20.010	3.755	34.070	77.326%	0.000	0.224	0.066
x		73.361%	0.005	5.214	181.200	8.683	25.650	5.453	37.400	77.430%	0.000	0.233	0.106
σ		1.148%	0.041	0.461	2.217	2.342	6.326	2.144	5.850	0.832%	0.000	0.009	0.090
%RSD		1.565	743.800	8.849	1.224	26.970	24.660	39.320	15.640	1.074	0.000	4.058	84.980

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:02	11.540	2.911	52.910	0.023	0.149	1.137	1.179	-0.115	0.400	-0.733	0.000	0.000
2	12:05:24	11.380	2.237	38.890	0.039	0.154	1.065	0.920	0.028	0.376	-1.288	0.000	0.000
3	12:05:46	11.310	1.696	31.490	0.027	0.174	0.961	1.010	-0.597	0.441	-1.213	0.000	0.000
x		11.410	2.281	41.100	0.030	0.159	1.054	1.036	-0.228	0.405	-1.078	0.000	0.000
σ		0.117	0.608	10.880	0.008	0.013	0.089	0.132	0.328	0.033	0.301	0.000	0.000
%RSD		1.025	26.670	26.470	27.620	8.463	8.396	12.700	143.500	8.121	27.950	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:02	0.142	85.714%	0.146	0.015	-1.031	-0.052	81.881%	0.000	0.018	0.007	0.418	78.579%
2	12:05:24	0.149	84.796%	0.129	0.006	-1.509	0.015	82.347%	0.000	0.033	0.006	0.269	81.001%

3	12:05:46	0.114	84.620%	0.109	-0.008	-1.033	-0.044	83.651%	0.000	0.012	0.011	0.226	80.220%
x		0.135	85.044%	0.128	0.004	-1.191	-0.027	82.626%	0.000	0.021	0.008	0.304	79.934%
σ		0.019	0.587%	0.018	0.012	0.275	0.037	0.917%	0.000	0.011	0.003	0.101	1.236%
%RSD		13.860	0.691	14.370	283.600	23.100	135.000	1.110	0.000	51.980	37.570	33.100	1.547

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:05:02	0.058	0.017	0.078	80.889%	0.000	0.774	-0.006
2	12:05:24	0.061	0.008	0.071	79.367%	0.000	0.738	-0.010
3	12:05:46	0.059	0.001	0.066	81.472%	0.000	0.672	-0.009
x		0.059	0.009	0.072	80.576%	0.000	0.728	-0.008
σ		0.002	0.008	0.006	1.087%	0.000	0.051	0.002
%RSD		2.617	87.890	8.423	1.349	0.000	7.062	26.330

CCV 10/19/2016 12:10:25 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:47	63.364%	743.700	294.000	┬10710.000	┬32180.000	┬32230.000	┬9795.000	28690.000	66.085%	0.000	┬1250.000	374.200
2	12:11:08	63.997%	709.500	283.100	┬10880.000	┬32570.000	┬33130.000	┬10080.000	28700.000	64.029%	0.000	┬1304.000	388.900
3	12:11:31	64.377%	701.200	282.700	┬10750.000	┬32080.000	┬32810.000	┬10100.000	┬30800.000	64.131%	0.000	┬1281.000	383.500
x		63.913%	114.903%	114.639%	┬107.830%	┬107.579%	┬109.086%	┬99.900%	┬97.993%	64.748%	0.000	┬102.271%	95.548%
σ		0.512%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.158%	0.000	┬n/a	n/a
%RSD		0.801	3.133	2.223	┬0.823	┬0.801	┬1.392	┬1.689	┬4.126	1.789	0.000	┬2.120	1.942

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:47	22.250	┬1282.000	┬31060.000	477.600	1271.000	1243.000	1288.000	206.100	-0.527	221.200	0.000	0.000
2	12:11:08	19.450	┬1321.000	┬31680.000	489.600	1289.000	1278.000	1318.000	206.600	-0.497	217.400	0.000	0.000
3	12:11:31	15.060	┬1300.000	┬31700.000	487.600	1296.000	1267.000	1325.000	201.000	-0.432	216.800	0.000	0.000
x		18.920	┬104.105%	┬104.927%	96.984%	102.842%	101.006%	104.821%	102.271%	-0.485	109.221%	0.000	0.000
σ		3.624	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.048	n/a	0.000	0.000
%RSD		19.150	┬1.511	┬1.164	1.319	1.004	1.434	1.496	1.524	9.991	1.104	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:47	187.700	72.318%	1216.000	106.000	-1.755	206.000	71.242%	0.000	250.400	246.600	1193.000	70.054%
2	12:11:08	185.200	71.465%	1258.000	104.500	7.793	207.600	71.533%	0.000	248.600	247.600	1180.000	70.714%
3	12:11:31	186.600	72.518%	1254.000	105.400	-0.091	203.900	70.865%	0.000	251.500	248.500	1193.000	71.468%
x		186.500	72.100%	99.441%	105.267%	1.982	102.920%	71.213%	0.000	250.200	99.014%	95.096%	70.745%
σ		1.276	0.559%	n/a	n/a	5.101	n/a	0.335%	0.000	1.450	n/a	n/a	0.708%
%RSD		0.684	0.776	1.866	0.708	257.400	0.913	0.470	0.000	0.580	0.377	0.601	1.000

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:10:47	22.970	175.100	┬1211.000	73.446%	0.000	15.600	9.831
2	12:11:08	23.720	179.000	┬1267.000	73.323%	0.000	16.990	10.060
3	12:11:31	23.160	174.500	┬1203.000	74.316%	0.000	17.820	9.898
x		116.430%	88.092%	┬98.151%	73.695%	0.000	84.009%	99.305%
σ		n/a	n/a	┬n/a	0.542%	0.000	n/a	n/a

%RSD		1.665	1.389	T 2.885	0.735	0.000	6.670	1.195

CCB 10/19/2016 12:16:12 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:34	68.759%	0.053	3.843	22.470	2.623	3.315	3.529	-5.119	67.737%	0.000	0.314	-0.235
2	12:16:56	67.913%	0.032	4.127	18.250	4.397	4.611	1.061	-6.407	68.856%	0.000	0.094	-0.228
3	12:17:17	67.290%	0.055	3.017	19.430	4.480	5.283	1.761	-5.556	67.741%	0.000	0.343	-0.218
x		67.987%	0.047	3.662	20.050	3.833	4.403	2.117	-5.694	68.111%	0.000	0.250	-0.227
σ		0.738%	0.013	0.576	2.175	1.049	1.000	1.272	0.655	0.645%	0.000	0.137	0.009
%RSD		1.085	27.080	15.740	10.850	27.370	22.720	60.080	11.500	0.947	0.000	54.500	3.927

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:34	10.410	0.154	9.938	0.040	0.069	0.113	0.208	-0.340	0.316	-1.328	0.000	0.000
2	12:16:56	10.330	0.198	9.642	0.025	0.118	0.091	0.231	-0.008	0.296	-1.369	0.000	0.000
3	12:17:17	10.260	0.312	12.550	0.061	0.089	0.219	0.358	-0.262	0.322	-0.733	0.000	0.000
x		10.330	0.221	10.710	0.042	0.092	0.141	0.265	-0.203	0.311	-1.143	0.000	0.000
σ		0.072	0.082	1.600	0.018	0.025	0.068	0.081	0.174	0.014	0.356	0.000	0.000
%RSD		0.693	36.850	14.940	43.290	26.750	48.500	30.520	85.480	4.425	31.150	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:34	0.008	75.266%	2.173	0.002	-1.744	0.021	74.362%	0.000	0.240	0.265	0.126	72.400%
2	12:16:56	0.022	75.258%	2.173	0.004	-1.162	-0.009	74.378%	0.000	0.330	0.261	0.094	73.495%
3	12:17:17	0.023	75.528%	1.890	0.004	-1.578	0.015	75.310%	0.000	0.342	0.271	0.082	72.683%
x		0.018	75.351%	2.079	0.003	-1.495	0.009	74.683%	0.000	0.304	0.265	0.101	72.860%
σ		0.008	0.154%	0.164	0.001	0.300	0.016	0.543%	0.000	0.056	0.005	0.023	0.568%
%RSD		46.230	0.204	7.863	32.290	20.040	181.500	0.727	0.000	18.270	1.910	22.900	0.780

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:16:34	0.070	0.133	0.050	76.413%	0.000	-0.115	-0.013
2	12:16:56	0.082	0.129	0.085	76.694%	0.000	-0.118	-0.011
3	12:17:17	0.056	0.116	0.106	75.913%	0.000	-0.105	-0.009
x		0.069	0.126	0.080	76.340%	0.000	-0.113	-0.011
σ		0.013	0.009	0.028	0.396%	0.000	0.007	0.002
%RSD		18.780	7.068	35.210	0.518	0.000	5.855	19.530

CCVL 10/19/2016 12:21:55 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:22:17	69.102%	1.415	47.940	497.900	201.100	52.790	436.500	464.000	70.819%	0.000	4.852	3.494
2	12:22:39	68.691%	1.206	49.110	502.600	203.200	54.660	443.000	492.300	71.957%	0.000	4.495	3.432
3	12:23:01	67.342%	1.409	51.340	499.900	196.500	57.250	445.700	472.400	70.935%	0.000	4.365	3.719
x		68.378%	134.295%	123.661%	100.023%	100.142%	109.803%	88.346%	95.250%	71.237%	0.000	91.411%	88.707%
σ		0.921%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.626%	0.000	n/a	n/a
%RSD		1.347	8.848	3.492	0.479	1.697	4.076	1.076	3.053	0.879	0.000	5.528	4.259

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:22:17	12.100	2.128	194.500	1.031	2.488	5.686	22.670	2.423	0.339	3.723	0.000	0.000
2	12:22:39	12.180	2.183	194.200	1.105	2.448	5.271	22.440	2.012	0.354	4.260	0.000	0.000
3	12:23:01	12.890	2.450	201.100	1.017	2.543	5.219	22.110	2.475	0.303	3.744	0.000	0.000
x		12.390	112.692%	98.296%	105.122%	124.657%	107.838%	112.043%	115.175%	0.332	97.722%	0.000	0.000
σ		0.434	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.026	n/a	0.000	0.000
%RSD		3.506	7.648	1.991	4.501	1.901	4.755	1.261	11.010	7.879	7.776	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:22:17	4.399	76.300%	9.933	1.121	-0.704	1.186	75.336%	0.000	1.936	1.931	9.938	74.811%
2	12:22:39	4.647	77.044%	10.200	1.047	-1.525	1.124	75.877%	0.000	2.080	2.002	9.602	74.056%
3	12:23:01	4.601	76.649%	10.240	1.065	-1.767	1.071	76.555%	0.000	2.163	2.034	9.275	73.904%
x		90.976%	76.664%	101.261%	107.781%	-1.332	112.730%	75.923%	0.000	2.060	99.453%	96.048%	74.257%
σ		n/a	0.372%	n/a	n/a	0.557	n/a	0.611%	0.000	0.115	n/a	n/a	0.485%
%RSD		2.896	0.486	1.665	3.601	41.810	5.105	0.804	0.000	5.570	2.645	3.454	0.654

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:22:17	1.760	1.705	1.048	77.051%	0.000	0.621	0.993
2	12:22:39	1.751	1.775	1.077	78.072%	0.000	0.654	1.020
3	12:23:01	1.907	1.802	1.106	77.839%	0.000	0.732	1.007
x		90.296%	88.050%	107.721%	77.654%	0.000	33.438%	100.670%
σ		n/a	n/a	n/a	0.535%	0.000	n/a	n/a
%RSD		4.843	2.838	2.704	0.689	0.000	8.519	1.355

200-35736-A-14-A 10/19/2016 12:27:39 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:01	70.524%	-0.013	3.429	188.700	1.730	3.549	0.801	18.610	72.552%	0.000	-0.396	0.034
2	12:28:23	70.593%	-0.035	2.206	188.100	1.644	3.718	0.999	12.980	72.877%	0.000	-0.254	0.023
3	12:28:44	71.496%	-0.035	3.384	192.100	1.897	4.105	1.587	16.600	72.077%	0.000	0.120	0.190
x		70.871%	-0.028	3.007	189.600	1.757	3.791	1.129	16.060	72.502%	0.000	-0.177	0.082
σ		0.542%	0.012	0.694	2.163	0.129	0.285	0.409	2.854	0.402%	0.000	0.267	0.093
%RSD		0.765	44.540	23.070	1.140	7.314	7.523	36.220	17.770	0.555	0.000	151.000	114.000

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:01	14.340	0.438	6.976	0.008	0.264	0.330	1.723	-0.140	0.438	-1.170	0.000	0.000
2	12:28:23	14.130	0.408	6.787	0.002	0.167	0.289	1.581	-0.290	0.447	-1.533	0.000	0.000
3	12:28:44	14.190	0.449	9.227	0.014	0.160	0.296	1.660	-0.089	0.429	-1.094	0.000	0.000
x		14.220	0.432	7.664	0.008	0.197	0.305	1.655	-0.173	0.438	-1.265	0.000	0.000
σ		0.106	0.021	1.358	0.006	0.058	0.022	0.071	0.104	0.009	0.235	0.000	0.000
%RSD		0.745	4.944	17.710	78.230	29.510	7.146	4.294	60.290	1.943	18.570	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:01	0.054	77.072%	0.258	-0.002	-1.495	-0.007	75.909%	0.000	0.031	0.035	0.017	74.161%
2	12:28:23	0.067	77.103%	0.355	0.011	-1.066	-0.049	75.993%	0.000	0.031	0.045	0.060	75.654%
3	12:28:44	0.057	78.423%	0.362	-0.006	-1.246	-0.035	78.074%	0.000	0.068	0.052	0.006	76.430%
x		0.059	77.532%	0.325	0.001	-1.269	-0.030	76.659%	0.000	0.043	0.044	0.028	75.415%
σ		0.007	0.771%	0.058	0.009	0.215	0.021	1.226%	0.000	0.021	0.009	0.028	1.153%
%RSD		12.110	0.995	17.910	871.400	16.950	69.820	1.600	0.000	49.320	20.440	101.800	1.529

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:28:01	0.057	0.017	0.019	77.434%	0.000	1.409	-0.011
2	12:28:23	0.052	0.024	0.014	76.022%	0.000	1.309	-0.013
3	12:28:44	0.002	0.016	0.028	76.927%	0.000	1.165	-0.014
x		0.037	0.019	0.020	76.795%	0.000	1.294	-0.012
σ		0.030	0.004	0.007	0.715%	0.000	0.123	0.001
%RSD		82.380	23.660	34.960	0.931	0.000	9.504	11.070

200-35736-A-14-A SD@5 10/19/2016 12:33:24 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:46	70.957%	-0.056	1.153	60.780	1.360	4.064	0.390	-1.466	72.290%	0.000	0.216	-0.013
2	12:34:07	71.634%	-0.014	1.157	57.610	2.011	4.207	-0.558	-2.266	73.130%	0.000	-0.305	-0.023
3	12:34:29	71.608%	-0.056	1.667	59.040	1.295	4.191	-0.954	1.505	71.877%	0.000	-0.475	0.007
x		71.400%	-0.042	1.326	59.140	1.555	4.154	-0.374	-0.742	72.432%	0.000	-0.188	-0.010
σ		0.383%	0.024	0.295	1.591	0.396	0.078	0.690	1.987	0.639%	0.000	0.360	0.015
%RSD		0.537	57.470	22.260	2.690	25.440	1.888	184.500	267.700	0.882	0.000	191.500	153.600

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:46	14.390	0.087	8.236	0.012	0.063	0.103	0.505	0.098	0.422	-0.299	0.000	0.000
2	12:34:07	15.030	0.130	8.441	0.002	0.071	0.152	0.587	-0.377	0.472	-0.770	0.000	0.000
3	12:34:29	15.700	0.067	9.493	-0.000	0.015	2.557	0.554	-0.333	0.478	-0.724	0.000	0.000
x		15.040	0.095	8.723	0.004	0.050	0.937	0.549	-0.204	0.458	-0.598	0.000	0.000
σ		0.652	0.032	0.675	0.006	0.030	1.403	0.041	0.262	0.031	0.260	0.000	0.000
%RSD		4.336	33.910	7.734	145.800	60.960	149.700	7.548	128.500	6.695	43.490	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:46	0.025	79.246%	0.078	-0.000	-0.846	-0.051	76.629%	0.000	-0.014	0.002	0.017	75.151%
2	12:34:07	0.017	78.325%	0.090	-0.010	-1.673	-0.001	77.484%	0.000	0.016	0.009	0.027	75.780%

3	12:34:29	0.017	78.725%	0.104	-0.006	-0.838	-0.036	77.374%	0.000	0.027	0.017	0.027	76.257%
x		0.020	78.765%	0.091	-0.005	-1.119	-0.029	77.162%	0.000	0.010	0.010	0.024	75.729%
σ		0.005	0.462%	0.013	0.005	0.480	0.026	0.465%	0.000	0.021	0.007	0.006	0.555%
%RSD		23.930	0.586	14.060	89.300	42.900	87.260	0.603	0.000	210.600	76.460	24.450	0.732

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:33:46	-0.001	-0.004	-0.004	75.981%	0.000	-0.034	-0.014
2	12:34:07	0.009	0.007	-0.006	76.208%	0.000	-0.012	-0.014
3	12:34:29	-0.001	0.004	-0.009	76.735%	0.000	-0.018	-0.013
x		0.002	0.002	-0.006	76.308%	0.000	-0.021	-0.014
σ		0.006	0.005	0.003	0.387%	0.000	0.011	0.001
%RSD		237.600	237.600	43.400	0.507	0.000	53.420	3.807

200-35736-A-14-A PDS 10/19/2016 12:39:07 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:39:29	71.097%	11.080	453.900	T 5583.000	1960.000	472.100	T 4950.000	4723.000	71.472%	0.000	45.760	38.180
2	12:39:51	69.046%	11.390	457.500	T 5565.000	1966.000	481.900	T 4964.000	4721.000	70.619%	0.000	45.520	37.930
3	12:40:13	68.449%	11.470	466.200	T 5611.000	1969.000	480.700	T 5031.000	4728.000	69.544%	0.000	46.510	39.230
x		69.531%	11.310	459.200	T 5586.000	1965.000	478.200	T 4982.000	4724.000	70.545%	0.000	45.930	38.450
σ		1.389%	0.205	6.332	T 23.100	4.674	5.349	T 43.750	3.241	0.966%	0.000	0.518	0.693
%RSD		1.998	1.810	1.379	T 0.414	0.238	1.119	T 0.878	0.069	1.370	0.000	1.127	1.803

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:39:29	12.940	18.560	T 2085.000	9.415	21.160	51.310	194.900	20.010	0.324	40.890	0.000	0.000
2	12:39:51	12.520	19.060	T 2106.000	9.775	20.020	50.020	195.400	20.630	0.229	40.650	0.000	0.000
3	12:40:13	11.890	19.410	T 2153.000	9.907	21.500	51.990	202.100	21.230	0.180	40.300	0.000	0.000
x		12.450	19.010	T 2114.000	9.699	20.890	51.110	197.400	20.620	0.244	40.610	0.000	0.000
σ		0.529	0.427	T 34.950	0.255	0.774	1.000	4.045	0.609	0.073	0.294	0.000	0.000
%RSD		4.252	2.245	T 1.653	2.624	3.703	1.956	2.049	2.954	29.780	0.723	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:39:29	46.920	75.219%	99.640	10.920	-1.902	9.871	73.743%	0.000	19.690	19.020	93.040	72.872%
2	12:39:51	47.330	75.297%	101.400	10.610	1.839	9.551	74.475%	0.000	19.400	18.720	94.280	72.799%
3	12:40:13	47.550	75.203%	102.500	10.610	2.345	9.476	74.190%	0.000	19.610	19.220	92.880	73.286%
x		47.270	75.240%	101.200	10.710	0.761	9.633	74.136%	0.000	19.560	18.980	93.400	72.985%
σ		0.321	0.050%	1.453	0.176	2.320	0.210	0.369%	0.000	0.148	0.252	0.767	0.263%
%RSD		0.679	0.067	1.436	1.642	304.900	2.177	0.498	0.000	0.756	1.329	0.821	0.360

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:39:29	18.440	17.430	8.784	74.392%	0.000	12.820	10.620
2	12:39:51	18.730	18.010	9.150	73.357%	0.000	13.610	10.880
3	12:40:13	19.170	18.070	9.176	73.556%	0.000	14.610	10.950
x		18.780	17.840	9.037	73.768%	0.000	13.680	10.810
σ		0.366	0.355	0.219	0.549%	0.000	0.898	0.174

%RSD	1.951	1.992	2.425	0.744	0.000	6.562	1.612	

200-35736-A-14-B MS 10/19/2016 12:44:26 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:48	68.499%	11.440	467.900	T 5756.000	2032.000	488.900	T 5180.000	4847.000	68.762%	0.000	46.770	39.120
2	12:45:10	68.504%	11.000	457.300	T 5624.000	1981.000	477.400	T 5005.000	4824.000	70.442%	0.000	47.280	39.120
3	12:45:32	68.448%	11.620	455.000	T 5607.000	2025.000	486.900	T 5101.000	4844.000	69.811%	0.000	47.790	38.630
x		68.484%	11.360	460.100	T 5662.000	2013.000	484.400	T 5096.000	4838.000	69.672%	0.000	47.280	38.960
σ		0.031%	0.319	6.897	T 81.810	27.520	6.152	T 87.710	12.610	0.848%	0.000	0.510	0.281
%RSD		0.045	2.806	1.499	T 1.445	1.367	1.270	T 1.721	0.261	1.217	0.000	1.079	0.721

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:48	10.770	19.240	T 2178.000	9.766	21.840	52.310	202.500	19.940	0.245	39.910	0.000	0.000
2	12:45:10	9.670	19.260	T 2146.000	10.070	21.530	51.580	201.800	20.330	0.222	41.740	0.000	0.000
3	12:45:32	7.828	19.490	T 2158.000	9.922	20.890	51.240	205.000	20.230	0.177	42.720	0.000	0.000
x		9.424	19.330	T 2161.000	9.919	21.420	51.710	203.100	20.170	0.215	41.460	0.000	0.000
σ		1.488	0.138	T 16.210	0.152	0.482	0.545	1.670	0.201	0.034	1.426	0.000	0.000
%RSD		15.790	0.712	T 0.750	1.529	2.249	1.054	0.822	0.995	16.050	3.439	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:48	48.400	73.911%	103.300	10.930	-0.855	9.515	71.435%	0.000	19.810	19.800	94.050	71.285%
2	12:45:10	48.630	72.565%	105.200	11.370	0.214	9.940	72.080%	0.000	19.800	19.970	96.570	72.013%
3	12:45:32	48.950	74.589%	105.000	11.030	-2.629	10.230	72.230%	0.000	20.200	20.140	96.850	71.332%
x		48.660	73.688%	104.500	11.110	-1.090	9.893	71.915%	0.000	19.930	19.970	95.820	71.543%
σ		0.274	1.030%	1.032	0.232	1.436	0.357	0.422%	0.000	0.227	0.166	1.541	0.407%
%RSD		0.564	1.398	0.988	2.088	131.700	3.613	0.587	0.000	1.140	0.831	1.609	0.570

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:44:48	39.880	17.870	9.112	73.926%	0.000	17.030	10.550
2	12:45:10	40.450	18.300	9.359	73.398%	0.000	17.710	10.970
3	12:45:32	41.180	18.210	9.416	73.987%	0.000	17.950	11.170
x		40.500	18.130	9.295	73.770%	0.000	17.560	10.900
σ		0.650	0.228	0.162	0.324%	0.000	0.478	0.317
%RSD		1.604	1.258	1.740	0.439	0.000	2.720	2.910

200-35736-A-14-C MSD 10/19/2016 12:49:46 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:08	69.084%	10.870	447.700	T 5520.000	1941.000	473.300	T 4975.000	4612.000	69.820%	0.000	46.100	37.940
2	12:50:30	68.521%	12.050	441.200	T 5468.000	1938.000	473.400	T 4971.000	4714.000	70.495%	0.000	45.310	37.750
3	12:50:52	67.230%	12.170	464.800	T 5672.000	1993.000	486.900	T 5074.000	4740.000	68.345%	0.000	46.620	39.050
x		68.278%	11.690	451.300	T 5553.000	1957.000	477.900	T 5007.000	4689.000	69.553%	0.000	46.010	38.250
σ		0.950%	0.719	12.200	T 106.000	30.740	7.804	T 58.390	67.710	1.099%	0.000	0.663	0.704
%RSD		1.392	6.148	2.703	T 1.909	1.571	1.633	T 1.166	1.444	1.581	0.000	1.440	1.840

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:08	9.024	18.630	T 2093.000	9.555	19.970	49.630	193.600	20.590	0.101	41.560	0.000	0.000
2	12:50:30	9.499	19.140	T 2115.000	9.766	21.480	49.430	196.700	20.820	0.107	41.610	0.000	0.000
3	12:50:52	8.350	19.060	T 2155.000	10.030	20.820	51.590	201.800	19.660	0.204	39.350	0.000	0.000
x		8.958	18.940	T 2121.000	9.782	20.760	50.220	197.400	20.350	0.137	40.840	0.000	0.000
σ		0.577	0.275	T 31.470	0.235	0.760	1.193	4.108	0.613	0.058	1.292	0.000	0.000
%RSD		6.446	1.449	T 1.484	2.407	3.660	2.376	2.081	3.011	42.010	3.163	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:08	46.300	73.148%	100.500	10.600	-0.902	9.612	72.775%	0.000	18.940	18.820	93.300	71.898%
2	12:50:30	46.770	73.528%	101.300	10.960	-2.324	10.070	72.433%	0.000	19.320	19.150	95.240	71.520%
3	12:50:52	47.180	73.238%	102.200	10.790	-1.937	10.180	72.833%	0.000	19.240	19.180	94.460	71.740%
x		46.750	73.305%	101.400	10.780	-1.721	9.955	72.680%	0.000	19.170	19.050	94.330	71.719%
σ		0.441	0.198%	0.833	0.178	0.735	0.301	0.216%	0.000	0.201	0.200	0.974	0.189%
%RSD		0.944	0.271	0.822	1.654	42.710	3.021	0.298	0.000	1.050	1.051	1.032	0.264

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:50:08	38.850	17.400	8.779	74.344%	0.000	16.860	10.300
2	12:50:30	40.850	17.510	9.027	74.741%	0.000	17.420	10.480
3	12:50:52	40.620	17.570	8.898	75.056%	0.000	17.830	10.630
x		40.100	17.490	8.901	74.714%	0.000	17.370	10.470
σ		1.090	0.089	0.124	0.357%	0.000	0.487	0.165
%RSD		2.719	0.510	1.392	0.478	0.000	2.803	1.577

CCV 10/19/2016 12:55:04 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	64.735%	720.100	287.900	T 11030.000	T 32500.000	T 32760.000	T 10060.000	28700.000	64.154%	0.000	T 1286.000	379.100
2	12:55:48	64.969%	711.300	282.000	T 10880.000	T 32670.000	T 32760.000	T 9886.000	28420.000	63.315%	0.000	T 1283.000	381.900
3	12:56:10	62.746%	728.500	295.500	T 10900.000	T 33250.000	T 33140.000	T 9972.000	28850.000	62.556%	0.000	T 1313.000	386.900
x		64.150%	115.190%	115.385%	T 109.351%	T 109.350%	T 109.632%	T 99.723%	95.526%	63.341%	0.000	T 103.528%	95.661%
σ		1.222%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.799%	0.000	T n/a	n/a
%RSD		1.904	1.196	2.344	T 0.771	T 1.199	T 0.672	T 0.871	0.766	1.262	0.000	T 1.288	1.029

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	17.970	T 1285.000	T 31320.000	478.700	1259.000	1231.000	1285.000	207.200	-0.313	217.800	0.000	0.000
2	12:55:48	20.510	T 1301.000	T 31720.000	485.200	1287.000	1249.000	1299.000	206.600	-0.496	220.700	0.000	0.000
3	12:56:10	16.610	T 1324.000	T 31970.000	483.500	1272.000	1265.000	1320.000	212.200	-0.517	218.700	0.000	0.000
x		18.360	T 104.270%	T 105.562%	96.500%	101.808%	99.848%	104.134%	104.348%	-0.442	109.547%	0.000	0.000
σ		1.983	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.112	n/a	0.000	0.000
%RSD		10.800	T 1.477	T 1.037	0.696	1.092	1.352	1.355	1.476	25.420	0.677	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	187.100	69.055%	1218.000	105.500	14.240	199.600	68.814%	0.000	242.800	240.700	1167.000	68.682%
2	12:55:48	186.400	69.426%	1248.000	105.500	3.673	203.900	68.403%	0.000	247.100	242.300	1178.000	68.163%
3	12:56:10	188.200	67.169%	1292.000	104.700	5.830	202.100	68.076%	0.000	246.300	244.100	1192.000	69.342%
x		187.200	68.550%	100.210%	105.244%	7.913	100.942%	68.431%	0.000	245.400	96.947%	94.327%	68.729%
σ		0.913	1.210%	n/a	n/a	5.582	n/a	0.370%	0.000	2.284	n/a	n/a	0.591%
%RSD		0.488	1.765	2.987	0.413	70.540	1.071	0.541	0.000	0.931	0.691	1.083	0.859

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	22.220	177.600	T 1227.000	70.555%	0.000	21.330	10.120
2	12:55:48	23.310	175.100	T 1240.000	71.576%	0.000	21.840	9.846
3	12:56:10	23.220	181.700	T 1238.000	69.767%	0.000	22.400	10.180
x		114.591%	89.070%	T 98.799%	70.633%	0.000	109.277%	100.503%
σ		n/a	n/a	T n/a	0.907%	0.000	n/a	n/a
%RSD		2.636	1.861	T 0.565	1.284	0.000	2.456	1.788

CCB 10/19/2016 01:00:48 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:10	67.537%	0.121	6.565	19.510	4.471	2.776	2.650	-6.447	67.852%	0.000	-0.030	-0.231
2	13:01:32	67.425%	0.166	5.993	21.230	3.374	2.721	3.624	-7.667	67.319%	0.000	0.075	-0.262
3	13:01:54	67.165%	0.011	6.816	24.880	4.570	2.557	1.887	-6.215	66.560%	0.000	0.003	-0.304
x		67.376%	0.099	6.458	21.870	4.138	2.685	2.720	-6.776	67.244%	0.000	0.016	-0.266
σ		0.191%	0.080	0.422	2.743	0.664	0.114	0.870	0.780	0.649%	0.000	0.054	0.036
%RSD		0.283	80.280	6.531	12.540	16.040	4.241	31.990	11.520	0.966	0.000	342.700	13.680

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:10	10.480	0.066	6.340	0.021	0.110	0.088	0.152	-0.222	0.327	-0.815	0.000	0.000
2	13:01:32	10.510	0.048	6.679	0.028	0.018	0.018	0.388	-0.233	0.331	-0.852	0.000	0.000
3	13:01:54	10.670	0.061	8.142	0.024	0.102	0.120	0.174	-0.254	0.352	-1.246	0.000	0.000
x		10.550	0.058	7.054	0.024	0.076	0.075	0.238	-0.236	0.337	-0.971	0.000	0.000
σ		0.101	0.010	0.958	0.003	0.051	0.053	0.130	0.017	0.013	0.239	0.000	0.000
%RSD		0.960	16.410	13.580	13.620	66.700	69.670	54.740	7.045	3.977	24.620	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:10	0.021	71.422%	2.192	0.001	-1.519	-0.005	71.123%	0.000	0.256	0.248	0.065	69.488%
2	13:01:32	0.030	71.892%	2.247	-0.003	-1.767	0.006	70.340%	0.000	0.325	0.291	0.066	69.404%

3	13:01:54	0.023	73.813%	2.007	-0.001	-1.052	-0.034	71.931%	0.000	0.272	0.296	0.097	71.782%
x		0.025	72.376%	2.148	-0.001	-1.446	-0.011	71.132%	0.000	0.284	0.279	0.076	70.225%
σ		0.005	1.267%	0.126	0.002	0.363	0.021	0.795%	0.000	0.036	0.026	0.019	1.349%
%RSD		18.730	1.751	5.855	153.100	25.120	192.900	1.118	0.000	12.790	9.457	24.510	1.921

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:10	0.118	0.137	0.061	72.610%	0.000	-0.067	-0.011
2	13:01:32	0.086	0.145	0.051	72.637%	0.000	-0.050	-0.008
3	13:01:54	0.092	0.149	0.048	72.850%	0.000	-0.058	-0.008
x		0.099	0.144	0.053	72.699%	0.000	-0.058	-0.009
σ		0.017	0.006	0.007	0.131%	0.000	0.008	0.002
%RSD		17.320	4.292	13.350	0.181	0.000	14.160	20.030

CCVL 10/19/2016 01:06:06 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:27	68.163%	1.237	51.990	528.100	205.000	55.610	464.200	500.500	68.825%	0.000	4.850	3.678
2	13:06:49	69.120%	1.198	49.030	T 578.200	201.400	55.400	458.400	486.200	68.092%	0.000	4.688	3.632
3	13:07:11	69.581%	1.662	48.960	535.100	206.400	56.650	463.100	509.200	66.626%	0.000	4.507	3.865
x		68.955%	136.583%	124.985%	T 109.428%	102.132%	111.771%	92.386%	99.730%	67.848%	0.000	93.632%	93.122%
σ		0.724%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.119%	0.000	n/a	n/a
%RSD		1.049	18.840	3.461	T 4.960	1.265	1.200	0.667	2.337	1.650	0.000	3.668	3.314

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:27	12.490	2.253	194.200	1.059	2.329	5.763	21.590	2.142	0.350	3.126	0.000	0.000
2	13:06:49	12.770	2.070	198.600	1.085	2.252	5.505	23.190	2.270	0.338	4.334	0.000	0.000
3	13:07:11	13.230	2.195	207.700	1.211	2.751	5.756	23.360	1.895	0.379	3.888	0.000	0.000
x		12.830	108.640%	100.093%	111.844%	122.187%	113.500%	113.585%	105.115%	0.356	94.562%	0.000	0.000
σ		0.373	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.021	n/a	0.000	0.000
%RSD		2.904	4.300	3.431	7.279	10.980	2.594	4.303	9.077	5.953	16.150	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:27	4.590	71.739%	10.560	1.194	-1.617	1.089	70.668%	0.000	1.962	2.034	8.533	68.530%
2	13:06:49	4.795	71.586%	11.100	1.117	-0.458	0.846	70.021%	0.000	2.078	2.079	10.220	69.237%
3	13:07:11	4.847	71.230%	11.160	1.126	-0.913	1.047	70.359%	0.000	2.079	2.122	9.497	69.274%
x		94.885%	71.518%	109.381%	114.582%	-0.996	99.411%	70.349%	0.000	2.040	103.923%	94.173%	69.013%
σ		n/a	0.261%	n/a	n/a	0.584	n/a	0.324%	0.000	0.067	n/a	n/a	0.419%
%RSD		2.862	0.365	3.042	3.691	58.650	13.050	0.460	0.000	3.295	2.136	9.000	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:27	1.867	1.852	1.085	72.302%	0.000	0.808	1.071
2	13:06:49	2.082	1.819	1.034	72.542%	0.000	0.858	1.087
3	13:07:11	2.023	1.796	1.091	73.754%	0.000	0.857	1.036
x		99.530%	91.116%	106.988%	72.866%	0.000	42.039%	106.488%
σ		n/a	n/a	n/a	0.779%	0.000	n/a	n/a

%RSD		5.571	1.528	2.893	1.069	0.000	3.408	2.468

MB 200-110288/1-B 10/19/2016 01:11:51 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:13	71.184%	-0.035	5.363	309.000	98.610	14.800	22.770	460.300	69.704%	0.000	0.566	2.614
2	13:12:35	70.655%	-0.014	7.158	310.600	97.580	14.680	24.870	444.200	69.380%	0.000	0.242	2.581
3	13:12:57	71.198%	-0.056	6.753	317.400	101.500	15.750	25.120	454.500	68.740%	0.000	0.480	2.793
x		71.012%	-0.035	6.424	312.300	99.230	15.080	24.250	453.000	69.275%	0.000	0.429	2.662
σ		0.310%	0.021	0.942	4.476	2.042	0.588	1.291	8.145	0.490%	0.000	0.168	0.114
%RSD		0.436	60.910	14.660	1.433	2.058	3.900	5.321	1.798	0.708	0.000	39.110	4.283

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:13	7.779	0.590	22.600	0.037	0.285	0.616	1.256	-0.079	0.236	-0.178	0.000	0.000
2	13:12:35	8.302	0.571	22.010	0.016	0.327	0.501	1.204	-0.118	0.246	-0.402	0.000	0.000
3	13:12:57	7.853	0.684	20.400	0.023	0.300	0.668	1.447	-0.029	0.242	-1.139	0.000	0.000
x		7.978	0.615	21.670	0.025	0.304	0.595	1.302	-0.075	0.241	-0.573	0.000	0.000
σ		0.283	0.061	1.139	0.010	0.021	0.086	0.128	0.044	0.005	0.503	0.000	0.000
%RSD		3.548	9.872	5.254	40.970	6.929	14.400	9.804	58.850	2.115	87.680	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:13	1.423	72.968%	0.522	0.005	-1.645	0.013	72.248%	0.000	0.067	0.050	0.799	71.054%
2	13:12:35	1.381	73.583%	0.532	-0.003	-1.055	-0.008	71.670%	0.000	0.068	0.063	0.851	70.515%
3	13:12:57	1.331	73.692%	0.520	-0.004	-0.597	-0.070	72.395%	0.000	0.064	0.083	0.875	71.882%
x		1.378	73.414%	0.525	-0.001	-1.099	-0.022	72.104%	0.000	0.067	0.066	0.842	71.150%
σ		0.046	0.390%	0.007	0.005	0.525	0.043	0.383%	0.000	0.002	0.016	0.039	0.689%
%RSD		3.323	0.532	1.248	584.300	47.800	199.500	0.531	0.000	2.784	25.080	4.619	0.968

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:13	0.062	0.033	0.014	72.747%	0.000	6.795	-0.005
2	13:12:35	0.087	0.036	0.023	73.939%	0.000	5.088	-0.010
3	13:12:57	0.085	0.022	0.033	73.727%	0.000	3.915	-0.003
x		0.078	0.030	0.023	73.471%	0.000	5.266	-0.006
σ		0.014	0.007	0.010	0.636%	0.000	1.448	0.004
%RSD		18.070	23.330	41.590	0.866	0.000	27.500	63.020

LCS 200-110288/2-B 10/19/2016 01:17:34 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:56	69.293%	11.290	477.200	T 5839.000	2044.000	487.800	T 5003.000	5075.000	69.309%	0.000	46.350	41.110
2	13:18:17	67.512%	11.410	484.200	T 5862.000	2115.000	496.500	T 5121.000	5148.000	67.110%	0.000	47.480	43.230
3	13:18:39	69.119%	11.830	462.600	T 5797.000	2038.000	489.600	T 5073.000	5156.000	68.452%	0.000	45.080	41.820
x		68.641%	11.510	474.700	T 5833.000	2066.000	491.300	T 5066.000	5126.000	68.290%	0.000	46.300	42.060
σ		0.982%	0.287	11.040	T 32.910	42.790	4.617	T 59.540	44.540	1.108%	0.000	1.201	1.078
%RSD		1.431	2.496	2.325	T 0.564	2.071	0.940	T 1.175	0.869	1.623	0.000	2.594	2.564

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:56	5.806	18.900	T 2112.000	9.753	20.710	50.130	190.300	20.540	0.026	40.570	0.000	0.000
2	13:18:17	6.849	19.330	T 2157.000	10.010	21.570	51.880	197.100	20.620	0.009	40.280	0.000	0.000
3	13:18:39	7.011	19.360	T 2137.000	9.738	20.510	50.250	196.400	20.150	0.024	39.320	0.000	0.000
x		6.555	19.190	T 2136.000	9.834	20.930	50.750	194.600	20.440	0.020	40.060	0.000	0.000
σ		0.654	0.258	T 22.770	0.155	0.563	0.981	3.757	0.249	0.009	0.658	0.000	0.000
%RSD		9.972	1.344	T 1.066	1.574	2.692	1.934	1.931	1.217	45.630	1.642	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:56	49.770	72.721%	102.900	10.960	-0.159	10.100	69.507%	0.000	19.000	19.020	91.430	68.844%
2	13:18:17	48.780	70.960%	102.900	10.750	-1.527	9.710	69.473%	0.000	19.600	19.070	94.300	68.582%
3	13:18:39	49.300	71.892%	105.000	10.480	0.444	9.946	70.198%	0.000	19.280	19.000	92.860	70.090%
x		49.280	71.858%	103.600	10.730	-0.414	9.920	69.726%	0.000	19.290	19.030	92.860	69.172%
σ		0.494	0.881%	1.218	0.236	1.010	0.198	0.409%	0.000	0.300	0.038	1.434	0.806%
%RSD		1.003	1.226	1.176	2.197	244.000	1.992	0.587	0.000	1.553	0.201	1.544	1.165

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:17:56	40.410	17.700	8.896	72.562%	0.000	18.220	10.580
2	13:18:17	40.360	18.570	9.142	70.507%	0.000	19.370	11.140
3	13:18:39	41.540	18.160	9.219	71.754%	0.000	19.380	11.020
x		40.770	18.150	9.085	71.608%	0.000	18.990	10.920
σ		0.666	0.432	0.169	1.035%	0.000	0.664	0.293
%RSD		1.634	2.382	1.859	1.446	0.000	3.497	2.689

200-35715-A-2-B 10/19/2016 01:23:27 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:23:49	68.955%	0.031	5.212	234.800	126.300	9.866	35.490	534.400	67.657%	0.000	0.595	2.053
2	13:24:10	67.038%	-0.011	5.899	221.600	125.500	9.291	30.780	547.300	69.535%	0.000	0.441	2.119
3	13:24:32	68.382%	-0.056	4.220	236.500	129.300	9.626	30.430	524.900	67.812%	0.000	0.361	2.142
x		68.125%	-0.012	5.110	231.000	127.000	9.595	32.230	535.500	68.335%	0.000	0.466	2.105
σ		0.984%	0.043	0.844	8.143	2.026	0.289	2.825	11.270	1.043%	0.000	0.118	0.046
%RSD		1.445	359.300	16.510	3.525	1.595	3.012	8.764	2.104	1.526	0.000	25.450	2.204

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:23:49	6.901	0.776	16.760	0.025	0.387	1.855	1.571	-0.208	0.202	-0.647	0.000	0.000
2	13:24:10	6.942	0.744	14.030	0.037	0.436	1.505	1.491	-0.226	0.217	-0.832	0.000	0.000
3	13:24:32	7.111	0.685	15.490	0.040	0.386	1.875	1.522	0.179	0.183	-0.841	0.000	0.000
x		6.985	0.735	15.430	0.034	0.403	1.745	1.528	-0.085	0.201	-0.773	0.000	0.000
σ		0.111	0.046	1.364	0.008	0.028	0.208	0.040	0.229	0.017	0.110	0.000	0.000
%RSD		1.591	6.274	8.844	22.540	7.064	11.940	2.622	269.200	8.521	14.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:23:49	1.782	72.013%	0.302	0.020	-1.946	0.029	69.394%	0.000	0.117	0.097	1.517	70.101%
2	13:24:10	1.806	71.997%	0.203	0.009	-0.923	-0.060	70.252%	0.000	0.087	0.076	1.510	68.975%
3	13:24:32	1.812	73.199%	0.198	0.011	-0.553	-0.073	70.941%	0.000	0.104	0.076	1.734	71.138%
x		1.800	72.403%	0.234	0.014	-1.141	-0.035	70.196%	0.000	0.103	0.083	1.587	70.071%
σ		0.016	0.689%	0.059	0.006	0.722	0.056	0.775%	0.000	0.015	0.012	0.127	1.082%
%RSD		0.870	0.952	25.160	42.950	63.280	160.500	1.104	0.000	14.660	14.240	8.006	1.544

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:23:49	0.056	0.039	0.124	71.432%	0.000	1.494	0.010
2	13:24:10	0.069	0.021	0.129	73.720%	0.000	1.267	-0.004
3	13:24:32	0.023	0.011	0.119	72.178%	0.000	1.073	-0.003
x		0.049	0.024	0.124	72.443%	0.000	1.278	0.001
σ		0.024	0.014	0.005	1.167%	0.000	0.211	0.008
%RSD		47.750	61.140	4.034	1.611	0.000	16.480	790.000

200-35730-A-2-B 10/19/2016 01:29:10 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:31	69.015%	0.009	4.343	252.300	121.600	14.550	30.340	519.800	70.508%	0.000	0.312	3.881
2	13:29:53	70.546%	-0.056	4.364	248.500	125.500	14.220	31.080	537.300	69.904%	0.000	0.268	4.153
3	13:30:15	69.407%	0.030	3.919	250.300	123.500	14.670	28.720	524.100	69.953%	0.000	0.552	4.353
x		69.656%	-0.005	4.208	250.400	123.500	14.480	30.050	527.100	70.122%	0.000	0.378	4.129
σ		0.795%	0.045	0.251	1.870	1.939	0.230	1.204	9.150	0.336%	0.000	0.153	0.237
%RSD		1.142	822.000	5.967	0.747	1.570	1.590	4.008	1.736	0.479	0.000	40.540	5.739

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:31	8.232	0.653	21.810	0.026	0.420	3.253	1.529	-0.323	0.260	-0.945	0.000	0.000
2	13:29:53	8.600	0.711	23.140	0.026	0.513	3.031	1.790	0.162	0.205	-0.154	0.000	0.000
3	13:30:15	7.875	0.733	23.030	0.024	0.533	2.871	1.653	0.083	0.212	-1.005	0.000	0.000
x		8.236	0.699	22.660	0.026	0.489	3.052	1.658	-0.026	0.226	-0.702	0.000	0.000
σ		0.362	0.041	0.740	0.001	0.060	0.192	0.131	0.260	0.030	0.475	0.000	0.000
%RSD		4.401	5.872	3.265	4.349	12.340	6.274	7.873	995.000	13.160	67.710	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:31	1.782	72.623%	0.189	0.005	-0.304	-0.109	71.075%	0.000	0.078	0.070	3.521	69.499%
2	13:29:53	1.840	71.801%	0.277	0.005	-1.294	-0.023	70.981%	0.000	0.071	0.080	3.389	70.567%

3	13:30:15	1.861	72.447%	0.239	0.001	-1.144	-0.034	70.809%	0.000	0.052	0.066	3.522	71.133%
x		1.827	72.291%	0.235	0.004	-0.914	-0.055	70.955%	0.000	0.067	0.072	3.477	70.400%
σ		0.041	0.433%	0.044	0.002	0.534	0.047	0.135%	0.000	0.013	0.007	0.076	0.830%
%RSD		2.242	0.599	18.730	66.520	58.370	84.790	0.190	0.000	19.910	9.700	2.199	1.179

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:31	0.050	-0.003	0.286	73.042%	0.000	0.381	-0.009
2	13:29:53	0.045	-0.004	0.322	71.603%	0.000	0.404	-0.009
3	13:30:15	0.034	0.001	0.335	72.542%	0.000	0.349	-0.008
x		0.043	-0.002	0.314	72.395%	0.000	0.378	-0.008
σ		0.008	0.003	0.025	0.730%	0.000	0.027	0.001
%RSD		19.450	139.800	7.998	1.009	0.000	7.193	6.531

200-35745-A-5-B 10/19/2016 01:34:53 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:15	71.259%	-0.035	2.479	268.100	113.000	9.159	31.920	478.600	71.126%	0.000	0.593	2.066
2	13:35:36	70.945%	0.007	3.389	280.100	123.000	9.488	31.020	478.300	70.148%	0.000	-0.180	1.826
3	13:35:58	68.754%	-0.034	2.642	265.200	113.000	8.833	30.070	475.200	71.406%	0.000	0.314	1.764
x		70.319%	-0.021	2.837	271.200	116.300	9.160	31.010	477.300	70.893%	0.000	0.242	1.885
σ		1.365%	0.024	0.485	7.909	5.798	0.327	0.925	1.896	0.660%	0.000	0.392	0.160
%RSD		1.941	117.700	17.110	2.917	4.984	3.574	2.984	0.397	0.931	0.000	161.800	8.468

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:15	9.389	0.951	23.150	0.034	0.270	1.372	1.661	-0.021	0.252	-0.588	0.000	0.000
2	13:35:36	10.510	0.963	23.460	0.036	0.234	1.819	1.812	0.214	0.249	-0.585	0.000	0.000
3	13:35:58	9.178	1.044	20.680	0.036	0.346	1.859	2.048	0.130	0.228	0.138	0.000	0.000
x		9.694	0.986	22.430	0.035	0.283	1.683	1.840	0.108	0.243	-0.345	0.000	0.000
σ		0.717	0.051	1.524	0.001	0.057	0.270	0.195	0.119	0.013	0.418	0.000	0.000
%RSD		7.400	5.128	6.795	3.763	20.250	16.060	10.600	110.500	5.431	121.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:15	1.651	73.183%	0.161	0.030	-1.672	0.016	71.082%	0.000	0.048	0.059	1.028	69.598%
2	13:35:36	1.685	72.882%	0.112	0.019	-1.049	-0.042	72.120%	0.000	0.060	0.066	1.091	73.019%
3	13:35:58	1.691	74.287%	0.098	0.038	-1.026	-0.044	71.739%	0.000	0.077	0.050	1.276	72.484%
x		1.676	73.451%	0.123	0.029	-1.249	-0.023	71.647%	0.000	0.061	0.058	1.132	71.700%
σ		0.022	0.740%	0.033	0.009	0.366	0.034	0.525%	0.000	0.015	0.008	0.129	1.840%
%RSD		1.295	1.007	26.690	32.550	29.340	144.500	0.733	0.000	23.770	14.110	11.420	2.566

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:15	0.035	0.004	0.107	72.644%	0.000	0.203	-0.007
2	13:35:36	0.038	0.000	0.103	73.802%	0.000	0.159	-0.008
3	13:35:58	0.046	0.004	0.090	73.754%	0.000	0.190	-0.006
x		0.040	0.003	0.100	73.400%	0.000	0.184	-0.007
σ		0.005	0.002	0.009	0.655%	0.000	0.023	0.001

%RSD		13.540	71.580	8.656	0.893	0.000	12.520	17.910

200-35754-A-2-B 10/19/2016 01:40:37 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:40:59	75.217%	-0.036	2.613	223.700	134.100	14.860	31.790	555.800	72.885%	0.000	-0.183	2.689
2	13:41:20	74.953%	-0.036	2.458	231.800	133.500	15.370	29.990	575.500	73.152%	0.000	0.372	2.679
3	13:41:42	72.385%	-0.056	2.708	227.700	138.600	15.060	31.930	581.700	72.943%	0.000	0.267	2.651
x		74.185%	-0.043	2.593	227.700	135.400	15.100	31.240	571.000	72.994%	0.000	0.152	2.673
σ		1.564%	0.011	0.126	4.064	2.760	0.257	1.079	13.520	0.140%	0.000	0.295	0.020
%RSD		2.109	27.000	4.876	1.785	2.038	1.700	3.455	2.368	0.192	0.000	193.900	0.736

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:40:59	15.370	0.964	23.840	0.103	0.377	2.465	2.505	-0.068	0.404	-0.296	0.000	0.000
2	13:41:20	14.530	0.913	24.290	0.091	0.356	2.500	1.428	0.033	0.394	-0.875	0.000	0.000
3	13:41:42	14.420	0.851	24.070	0.079	0.396	2.712	1.405	-0.097	0.394	-0.353	0.000	0.000
x		14.780	0.909	24.070	0.091	0.376	2.559	1.779	-0.044	0.398	-0.508	0.000	0.000
σ		0.522	0.056	0.229	0.012	0.020	0.134	0.629	0.068	0.006	0.319	0.000	0.000
%RSD		3.535	6.197	0.950	12.860	5.210	5.220	35.330	154.600	1.473	62.840	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:40:59	1.849	74.287%	0.187	0.011	-1.040	-0.043	72.758%	0.000	0.071	0.107	1.391	70.400%
2	13:41:20	1.814	75.536%	0.194	0.000	-1.398	-0.023	73.424%	0.000	0.106	0.102	1.433	72.510%
3	13:41:42	1.978	76.688%	0.198	0.008	-1.476	-0.008	73.218%	0.000	0.120	0.110	1.151	73.495%
x		1.880	75.504%	0.193	0.006	-1.304	-0.025	73.133%	0.000	0.099	0.106	1.325	72.135%
σ		0.086	1.201%	0.005	0.005	0.233	0.017	0.341%	0.000	0.025	0.004	0.152	1.582%
%RSD		4.591	1.590	2.822	84.160	17.840	69.950	0.467	0.000	25.450	3.464	11.470	2.193

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:40:59	0.059	0.013	0.142	74.063%	0.000	0.461	-0.005
2	13:41:20	0.084	0.003	0.152	73.042%	0.000	0.439	-0.006
3	13:41:42	0.058	-0.004	0.143	74.563%	0.000	0.367	-0.009
x		0.067	0.004	0.146	73.889%	0.000	0.423	-0.007
σ		0.014	0.009	0.005	0.775%	0.000	0.049	0.002
%RSD		21.510	225.400	3.641	1.049	0.000	11.650	31.610

200-35754-A-2-B SD@5 10/19/2016 01:46:21 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:43	69.385%	-0.013	0.683	66.390	27.120	3.102	5.222	100.600	71.028%	0.000	-0.374	0.573
2	13:47:05	69.938%	-0.034	0.557	57.430	28.440	3.136	4.790	112.300	71.943%	0.000	-0.343	0.456
3	13:47:26	69.080%	-0.013	2.136	67.410	28.190	3.108	5.416	109.000	70.291%	0.000	-0.534	0.537
x		69.468%	-0.020	1.125	63.740	27.910	3.115	5.143	107.300	71.087%	0.000	-0.417	0.522
σ		0.435%	0.013	0.877	5.490	0.701	0.018	0.320	5.996	0.828%	0.000	0.102	0.060
%RSD		0.626	63.200	77.940	8.613	2.512	0.586	6.226	5.587	1.165	0.000	24.540	11.410

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:43	17.220	0.148	10.510	0.006	0.153	0.444	0.213	-0.110	0.440	-1.108	0.000	0.000
2	13:47:05	16.720	0.137	7.404	0.012	0.150	0.457	0.299	0.037	0.431	-1.267	0.000	0.000
3	13:47:26	17.660	0.160	10.510	-0.002	0.095	0.475	0.412	0.083	0.425	-0.664	0.000	0.000
x		17.200	0.148	9.473	0.005	0.133	0.459	0.308	0.003	0.432	-1.013	0.000	0.000
σ		0.469	0.012	1.792	0.007	0.033	0.016	0.100	0.100	0.008	0.312	0.000	0.000
%RSD		2.725	7.813	18.920	133.900	24.540	3.404	32.370	3051.000	1.745	30.830	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:43	0.411	74.765%	0.008	0.003	-0.919	-0.061	70.534%	0.000	0.096	0.098	0.248	70.080%
2	13:47:05	0.398	74.397%	0.049	-0.006	-1.269	-0.033	72.355%	0.000	0.104	0.071	0.175	70.557%
3	13:47:26	0.382	75.113%	0.044	0.003	-1.592	-0.007	71.278%	0.000	0.085	0.072	0.189	70.509%
x		0.397	74.758%	0.034	0.000	-1.260	-0.034	71.389%	0.000	0.095	0.080	0.204	70.382%
σ		0.014	0.358%	0.023	0.005	0.336	0.027	0.916%	0.000	0.010	0.015	0.039	0.263%
%RSD		3.614	0.479	66.950	8370.000	26.700	78.960	1.283	0.000	10.160	18.690	19.090	0.373

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:43	0.006	-0.016	0.016	72.473%	0.000	-0.169	-0.013
2	13:47:05	0.024	-0.007	0.017	74.206%	0.000	-0.174	-0.012
3	13:47:26	0.013	-0.012	0.007	73.144%	0.000	-0.159	-0.014
x		0.014	-0.012	0.013	73.275%	0.000	-0.167	-0.013
σ		0.009	0.004	0.005	0.874%	0.000	0.008	0.001
%RSD		60.620	37.740	41.560	1.193	0.000	4.714	7.610

200-35754-A-2-B PDS 10/19/2016 01:52:06 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:27	68.841%	10.510	476.600	T 5593.000	2107.000	483.000	T 4977.000	5032.000	69.011%	0.000	44.890	39.310
2	13:52:49	70.463%	10.360	452.900	T 5654.000	2119.000	490.500	T 4980.000	5197.000	67.701%	0.000	45.670	40.230
3	13:53:11	69.285%	10.920	458.800	T 5561.000	2063.000	486.000	T 4953.000	5071.000	69.042%	0.000	45.410	39.650
x		69.530%	10.600	462.800	T 5603.000	2096.000	486.500	T 4970.000	5100.000	68.585%	0.000	45.320	39.730
σ		0.838%	0.292	12.280	T 47.390	29.820	3.776	T 14.910	86.420	0.766%	0.000	0.398	0.466
%RSD		1.206	2.751	2.655	T 0.846	1.423	0.776	T 0.300	1.694	1.116	0.000	0.878	1.172

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:27	12.210	18.930	T 2092.000	9.692	21.000	51.340	175.600	18.130	0.249	33.370	0.000	0.000
2	13:52:49	10.970	19.400	T 2145.000	9.737	21.220	51.250	179.800	18.540	0.207	34.010	0.000	0.000
3	13:53:11	8.588	19.320	T 2080.000	9.628	20.720	50.390	176.100	18.190	0.168	34.040	0.000	0.000
x		10.590	19.220	T 2106.000	9.685	20.980	50.990	177.200	18.290	0.208	33.800	0.000	0.000
σ		1.842	0.254	T 34.880	0.055	0.247	0.521	2.327	0.222	0.040	0.380	0.000	0.000
%RSD		17.400	1.322	T 1.657	0.566	1.177	1.022	1.313	1.216	19.460	1.123	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:27	48.310	72.459%	98.130	10.060	-0.700	8.002	70.337%	0.000	17.530	17.530	89.670	70.049%
2	13:52:49	48.400	72.447%	98.910	10.680	-0.854	9.204	69.595%	0.000	18.410	17.980	92.600	69.745%
3	13:53:11	49.030	73.281%	99.930	10.310	-0.464	9.291	69.927%	0.000	18.390	18.220	91.630	70.300%
x		48.580	72.729%	98.990	10.350	-0.672	8.832	69.953%	0.000	18.110	17.910	91.300	70.031%
σ		0.392	0.478%	0.902	0.312	0.197	0.720	0.371%	0.000	0.505	0.348	1.491	0.278%
%RSD		0.808	0.657	0.912	3.015	29.240	8.153	0.531	0.000	2.790	1.942	1.633	0.397

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:27	18.100	16.380	8.598	73.213%	0.000	15.340	10.080
2	13:52:49	18.650	17.000	8.781	72.309%	0.000	16.320	10.240
3	13:53:11	18.900	17.570	8.911	70.856%	0.000	17.410	10.850
x		18.550	16.980	8.763	72.126%	0.000	16.360	10.390
σ		0.412	0.597	0.157	1.189%	0.000	1.034	0.403
%RSD		2.222	3.517	1.792	1.648	0.000	6.323	3.880

200-35676-A-2-B 10/19/2016 01:57:50 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:12	71.604%	-0.056	3.789	251.800	140.200	11.810	36.460	580.700	68.789%	0.000	0.428	2.122
2	13:58:33	68.677%	-0.034	2.889	250.300	132.400	11.380	34.470	546.900	69.589%	0.000	0.610	2.430
3	13:58:55	70.889%	-0.035	3.441	241.800	133.600	10.990	31.750	557.200	69.909%	0.000	-0.179	2.348
x		70.390%	-0.042	3.373	248.000	135.400	11.390	34.230	561.600	69.429%	0.000	0.286	2.300
σ		1.526%	0.012	0.454	5.413	4.193	0.413	2.367	17.350	0.577%	0.000	0.413	0.160
%RSD		2.168	29.780	13.450	2.183	3.096	3.625	6.915	3.090	0.830	0.000	144.300	6.944

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:12	9.495	1.501	22.860	0.078	0.512	0.972	1.285	-0.089	0.272	-0.996	0.000	0.000
2	13:58:33	8.800	1.290	19.340	0.053	0.486	1.021	1.228	0.098	0.251	-1.004	0.000	0.000
3	13:58:55	10.070	1.418	20.380	0.089	0.394	1.456	1.551	-0.177	0.271	-0.669	0.000	0.000
x		9.455	1.403	20.860	0.074	0.464	1.149	1.355	-0.056	0.265	-0.890	0.000	0.000
σ		0.637	0.106	1.806	0.019	0.062	0.266	0.172	0.141	0.012	0.191	0.000	0.000
%RSD		6.732	7.572	8.657	25.300	13.350	23.180	12.720	251.700	4.521	21.450	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:12	1.820	72.608%	0.155	0.014	-0.821	-0.051	69.976%	0.000	0.087	0.058	1.274	69.556%
2	13:58:33	1.856	72.878%	0.089	0.020	-1.465	-0.009	70.064%	0.000	0.061	0.068	1.123	69.300%

3	13:58:55	1.849	72.839%	0.120	0.014	-2.073	0.031	70.352%	0.000	0.072	0.071	1.313	70.572%
x		1.841	72.775%	0.121	0.016	-1.453	-0.010	70.131%	0.000	0.073	0.066	1.237	69.809%
σ		0.019	0.146%	0.033	0.004	0.626	0.041	0.196%	0.000	0.013	0.007	0.100	0.673%
%RSD		1.045	0.201	27.030	23.380	43.110	413.700	0.280	0.000	18.050	10.920	8.111	0.964

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:12	0.082	0.018	0.163	70.589%	0.000	2.147	-0.004
2	13:58:33	0.050	0.010	0.155	72.295%	0.000	1.650	-0.001
3	13:58:55	0.063	0.010	0.146	72.973%	0.000	1.313	-0.002
x		0.065	0.013	0.154	71.952%	0.000	1.703	-0.002
σ		0.016	0.005	0.008	1.228%	0.000	0.419	0.001
%RSD		24.780	36.310	5.422	1.707	0.000	24.630	67.060

CCV 10/19/2016 02:03:34 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:56	63.072%	724.800	279.500	↓10790.000	↓32060.000	↓31890.000	↓9772.000	↓29960.000	63.261%	0.000	↓1240.000	364.700
2	14:04:18	62.431%	733.800	274.600	↓11040.000	↓33060.000	↓32810.000	↓9997.000	28000.000	61.748%	0.000	↓1292.000	377.700
3	14:04:40	60.379%	742.200	293.100	↓10770.000	↓32020.000	↓32240.000	↓9696.000	↓30050.000	62.844%	0.000	↓1249.000	367.900
x		61.961%	117.378%	112.975%	↓108.676%	↓107.939%	↓107.705%	↓98.216%	↓97.790%	62.618%	0.000	↓100.842%	92.523%
σ		1.407%	n/a	n/a	↓n/a	↓n/a	↓n/a	↓n/a	↓n/a	0.782%	0.000	↓n/a	n/a
%RSD		2.271	1.181	3.392	↓1.378	↓1.820	↓1.434	↓1.593	↓3.961	1.248	0.000	↓2.201	1.840

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:56	21.150	↓1250.000	↓30240.000	466.200	1242.000	1221.000	1251.000	201.000	-0.255	219.200	0.000	0.000
2	14:04:18	15.120	↓1286.000	↓31380.000	478.900	1269.000	1241.000	1269.000	206.200	-0.401	219.200	0.000	0.000
3	14:04:40	22.240	↓1255.000	↓30390.000	460.500	1225.000	1194.000	1254.000	205.900	-0.333	218.800	0.000	0.000
x		19.500	↓101.085%	↓102.240%	93.702%	99.634%	97.498%	100.655%	102.180%	-0.330	109.531%	0.000	0.000
σ		3.837	↓n/a	↓n/a	n/a	n/a	n/a	n/a	n/a	0.073	n/a	0.000	0.000
%RSD		19.680	↓1.533	↓2.012	2.013	1.750	1.960	0.782	1.431	22.140	0.086	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:56	188.100	67.885%	1178.000	105.000	8.214	197.200	65.321%	0.000	237.700	235.600	1144.000	65.368%
2	14:04:18	189.000	66.520%	1223.000	106.100	20.910	201.400	64.918%	0.000	240.500	238.000	1176.000	64.902%
3	14:04:40	186.700	65.347%	1269.000	104.100	13.060	196.000	65.670%	0.000	239.900	237.800	1155.000	65.017%
x		187.900	66.584%	97.884%	105.064%	14.060	99.098%	65.303%	0.000	239.300	94.867%	92.650%	65.096%
σ		1.142	1.270%	n/a	n/a	6.407	n/a	0.376%	0.000	1.476	n/a	n/a	0.243%
%RSD		0.608	1.908	3.725	0.977	45.560	1.413	0.576	0.000	0.617	0.562	1.397	0.373

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:03:56	21.650	175.200	↓1209.000	67.281%	0.000	13.610	9.848
2	14:04:18	23.340	179.700	↓1230.000	66.850%	0.000	15.400	10.240
3	14:04:40	23.350	174.400	↓1204.000	68.438%	0.000	16.110	9.843
x		113.899%	88.216%	↓97.136%	67.523%	0.000	75.193%	99.776%
σ		n/a	n/a	↓n/a	0.822%	0.000	n/a	n/a

%RSD		4.278	1.625	T 1.124	1.217	0.000	8.588	2.289

CCB 10/19/2016 02:09:18 PM QC Status: PASS (Initial: UNKNOWN)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:09:39	68.263%	-0.012	2.927	25.490	2.594	2.659	1.224	-3.573	66.644%	0.000	-0.017	-0.230
2	14:10:01	68.447%	-0.012	2.234	18.330	2.609	2.621	-0.139	-6.911	68.025%	0.000	0.325	-0.258
3	14:10:23	68.666%	-0.012	1.880	25.680	3.190	2.818	2.633	-4.379	66.267%	0.000	0.241	-0.221
x		68.459%	-0.012	2.347	23.170	2.797	2.699	1.239	-4.955	66.979%	0.000	0.183	-0.236
σ		0.202%	0.000	0.532	4.188	0.340	0.105	1.386	1.742	0.926%	0.000	0.178	0.020
%RSD		0.294	1.057	22.690	18.080	12.140	3.880	111.800	35.150	1.382	0.000	97.290	8.263

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:09:39	10.930	0.051	6.352	0.024	0.091	0.062	0.107	0.327	0.291	-0.609	0.000	0.000
2	14:10:01	10.300	0.061	4.468	0.019	0.109	0.103	0.032	0.146	0.320	-0.945	0.000	0.000
3	14:10:23	10.750	0.062	7.756	0.039	0.050	0.114	0.124	-0.173	0.355	-0.767	0.000	0.000
x		10.660	0.058	6.192	0.027	0.083	0.093	0.088	0.100	0.322	-0.774	0.000	0.000
σ		0.326	0.006	1.650	0.010	0.030	0.027	0.049	0.253	0.033	0.168	0.000	0.000
%RSD		3.059	10.470	26.650	38.340	36.500	29.460	56.340	253.400	10.090	21.760	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:09:39	0.024	69.156%	2.478	0.024	-1.206	-0.029	67.177%	0.000	0.255	0.264	0.045	66.132%
2	14:10:01	0.017	69.563%	2.307	0.006	-1.642	0.014	67.890%	0.000	0.300	0.315	0.033	66.090%
3	14:10:23	0.021	68.980%	2.263	0.002	-1.333	-0.010	67.427%	0.000	0.306	0.306	0.033	66.383%
x		0.021	69.233%	2.349	0.010	-1.394	-0.008	67.498%	0.000	0.287	0.295	0.037	66.202%
σ		0.003	0.299%	0.113	0.012	0.224	0.022	0.362%	0.000	0.028	0.027	0.007	0.159%
%RSD		16.190	0.432	4.822	113.300	16.070	256.200	0.536	0.000	9.680	9.271	19.110	0.240

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:09:39	0.077	0.111	0.060	69.260%	0.000	-0.096	-0.014
2	14:10:01	0.059	0.101	0.069	70.781%	0.000	-0.114	-0.009
3	14:10:23	0.039	0.094	0.055	71.445%	0.000	-0.109	-0.011
x		0.058	0.102	0.061	70.496%	0.000	-0.107	-0.011
σ		0.019	0.009	0.007	1.120%	0.000	0.009	0.002
%RSD		32.510	8.591	11.000	1.589	0.000	8.663	22.210

CCVL 10/19/2016 02:15:00 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:22	66.907%	1.239	45.130	535.000	206.000	55.500	457.100	473.200	66.431%	0.000	4.196	3.806
2	14:15:44	68.071%	1.042	46.430	T 609.100	208.300	55.190	463.100	486.800	66.014%	0.000	4.950	3.691
3	14:16:05	66.299%	1.229	48.310	T 610.200	217.300	57.180	467.100	499.300	65.676%	0.000	4.884	3.921
x		67.093%	116.995%	116.561%	T 116.956%	105.258%	111.918%	92.487%	97.290%	66.040%	0.000	93.536%	95.147%
σ		0.900%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.378%	0.000	n/a	n/a
%RSD		1.342	9.506	3.434	T 7.370	2.859	1.913	1.098	2.686	0.573	0.000	8.923	3.021

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:22	13.300	2.150	195.000	1.087	2.790	5.235	23.000	2.059	0.361	3.668	0.000	0.000
2	14:15:44	12.990	2.220	198.300	1.079	2.345	5.462	22.640	1.861	0.376	3.749	0.000	0.000
3	14:16:05	13.130	2.103	202.200	1.069	2.209	5.886	24.300	1.458	0.424	3.552	0.000	0.000
x		13.140	107.874%	99.246%	107.813%	122.391%	110.554%	116.575%	89.629%	0.387	91.414%	0.000	0.000
σ		0.154	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.033	n/a	0.000	0.000
%RSD		1.172	2.734	1.819	0.820	12.420	5.972	3.754	17.090	8.474	2.714	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:22	4.808	68.460%	10.670	1.091	-1.729	1.100	67.261%	0.000	1.890	2.016	9.385	67.378%
2	14:15:44	4.843	69.508%	10.580	1.180	-0.868	0.959	68.045%	0.000	2.097	2.003	9.785	66.881%
3	14:16:05	4.990	71.261%	10.840	1.044	-1.073	1.032	68.821%	0.000	2.004	2.015	8.540	67.116%
x		97.600%	69.743%	106.946%	110.511%	-1.223	103.043%	68.042%	0.000	1.997	100.580%	92.365%	67.125%
σ		n/a	1.415%	n/a	n/a	0.450	n/a	0.780%	0.000	0.104	n/a	n/a	0.249%
%RSD		1.980	2.029	1.256	6.245	36.750	6.883	1.146	0.000	5.199	0.351	6.885	0.371

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:15:22	1.611	1.741	1.127	69.808%	0.000	0.675	1.025
2	14:15:44	1.862	1.831	1.099	68.404%	0.000	0.733	1.040
3	14:16:05	1.985	1.776	1.074	71.336%	0.000	0.703	1.054
x		90.978%	89.149%	109.997%	69.849%	0.000	35.197%	103.989%
σ		n/a	n/a	n/a	1.466%	0.000	n/a	n/a
%RSD		10.480	2.539	2.412	2.099	0.000	4.125	1.413

Mass Uncorrected ICPS

STD0 10/19/2016 10:04:01 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:04:23	162609.400	0.000	495.007	308060.980	130.001	550.009	73059.782	1280.049	223630.320	10.000	22465.130	2630.208
2	10:04:45	164235.230	12.500	490.007	308682.310	130.001	580.010	71894.732	1450.063	225809.400	5.000	23111.012	2705.220
3	10:05:07	168446.950	7.500	520.008	308376.740	240.002	465.006	74676.925	1270.048	232338.220	5.000	22900.722	2555.196
x		165097.190	6.667	501.674	308373.340	166.668	531.675	73210.480	1333.387	227259.310	6.667	22825.622	2630.208
σ		3012.720	6.292	16.073	310.683	63.509	59.654	1397.205	101.168	4531.400	2.887	329.425	75.012
%RSD		1.825	94.373	3.204	0.101	38.105	11.220	1.908	7.587	1.994	43.301	1.443	2.852

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:04:23	7741.798	455.006	269684.380	20.000	10.000	260.002	670.013	2144.138	704.015	579.010	634.512	3190.305
2	10:04:45	7861.854	485.007	279885.510	15.000	25.000	200.001	660.013	2162.140	677.014	573.510	584.010	3130.294
3	10:05:07	7656.758	490.007	282260.050	25.000	15.000	245.002	640.012	2104.133	679.014	592.011	599.511	2950.261
x		7753.470	476.673	277276.650	20.000	16.667	235.002	656.680	2136.804	686.681	581.510	606.011	3090.287
σ		103.045	18.930	6681.431	5.000	7.638	31.225	15.276	29.691	15.045	9.500	25.871	124.923
%RSD		1.329	3.971	2.410	25.000	45.826	13.287	2.326	1.390	2.191	1.634	4.269	4.042

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:04:23	30.000	257280.590	105.000	45.000	0.000	15.000	1129701.700	565.010	125.000	88.500	15.000	194852.400
2	10:04:45	25.000	258560.160	70.000	20.000	0.000	5.000	1143443.000	635.012	150.001	105.000	10.000	191797.270
3	10:05:07	5.000	259240.610	105.000	30.000	0.000	5.000	1159882.700	685.014	100.000	114.500	5.000	190805.990
x		20.000	258360.450	93.334	31.667	0.000	8.333	1144342.500	628.345	125.000	102.667	10.000	192485.220
σ		13.229	995.156	20.207	12.583	0.000	5.774	15110.564	60.279	25.000	13.156	5.000	2109.104
%RSD		66.144	0.385	21.651	39.736	0.000	69.282	1.320	9.593	20.000	12.814	50.000	1.096

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:04:23	105.000	450.006	430.006	146137.890	0.000	11343.859	185.001
2	10:04:45	90.000	455.006	560.009	149003.090	0.000	11138.721	235.002
3	10:05:07	120.000	370.004	450.006	145542.720	0.000	10748.465	200.001
x		105.000	425.005	480.007	146894.570	0.000	11077.015	206.668
σ		15.000	47.698	70.002	1850.127	0.000	302.456	25.658
%RSD		14.286	11.223	14.584	1.259	0.000	2.730	12.415

STD1 10/19/2016 10:09:44 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:10:06	164467.500	207.501	6601.307	T 1221339.600	33293.220	83418.237	T 1053058.900	34104.859	226093.210	35.000	40684.597	14070.937
2	10:10:27	162074.230	175.001	6336.204	T 1249773.400	33724.085	82754.943	T 1036942.300	34285.228	223407.360	0.000	39211.071	13780.695
3	10:10:49	155592.900	210.001	6261.176	T 1206205.400	33273.180	85101.716	968727.940	34114.879	224572.860	10.000	40002.950	14376.198
x		160711.540	197.501	6399.562	T 1225772.800	33430.162	83758.298	T 1019576.400	34168.322	224691.140	15.000	39966.206	14075.943
σ		4591.549	19.526	178.698	T 22119.713	254.742	1209.780	T 44767.289	101.368	1346.829	18.028	737.450	297.783
%RSD		2.857	9.886	2.792	T 1.805	0.762	1.444	T 4.391	0.297	0.599	120.185	1.845	2.116

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:10:06	10308.187	9317.604	971163.740	3545.377	1475.065	4800.691	14476.284	3485.364	981.029	806.520	603.511	3095.287
2	10:10:27	10293.178	9602.766	987561.440	3510.370	1670.084	4845.704	15271.994	3502.368	963.028	827.521	592.011	3175.302
3	10:10:49	9897.938	9562.743	993318.920	3505.369	1410.060	4805.693	15617.314	3488.365	882.023	752.517	586.010	3145.297

x		10166.434	9494.371	984014.700	3520.372	1518.403	4817.363	15121.864	3492.032	942.027	795.519	593.844	3138.629
σ		232.645	154.387	11495.541	21.799	135.321	24.672	585.142	9.076	52.738	38.693	8.893	40.422
%RSD		2.288	1.626	1.168	0.619	8.912	0.512	3.870	0.260	5.598	4.864	1.498	1.288

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:10:06	25960.202	258468.760	17359.035	3765.425	55.000	970.028	1135656.700	715.015	5630.951	4545.620	6011.084	189551.800
2	10:10:27	26345.807	259748.430	17789.489	3735.419	40.000	830.021	1119250.800	830.021	5660.961	4649.148	5916.050	186517.860
3	10:10:49	26726.412	256783.000	17519.203	3600.389	40.000	960.028	1115298.600	785.018	6326.200	4763.681	5776.001	187660.580
x		26344.140	258333.400	17555.909	3700.411	45.000	920.026	1123402.000	776.685	5872.704	4652.816	5901.045	187910.080
σ		383.108	1487.339	217.562	87.911	8.660	78.107	10795.281	57.954	393.026	109.077	118.258	1532.282
%RSD		1.454	0.576	1.239	2.376	19.245	8.490	0.961	7.462	6.692	2.344	2.004	0.815

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:10:06	3515.371	17879.585	8337.085	146228.680	0.000	26591.196	14206.052
2	10:10:27	3755.423	18605.379	8487.160	143807.750	0.000	26561.148	14326.155
3	10:10:49	3610.391	18865.671	8447.140	145542.720	0.000	26931.742	14846.610
x		3627.062	18450.212	8423.795	145193.050	0.000	26694.695	14459.605
σ		120.891	511.027	77.714	1247.767	0.000	205.838	340.493
%RSD		3.333	2.770	0.923	0.859	0.000	0.771	2.355

STD2 10/19/2016 10:13:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:13:40	154967.110	837.521	29741.513	T 4661342.600	159297.650	362295.400	T 4635204.500	150879.860	204021.140	20.000	91862.466	53947.168
2	10:14:01	146480.880	762.517	30277.477	T 4583592.900	155502.060	363184.440	T 4560096.000	148690.320	207544.240	25.000	91776.997	53666.263
3	10:14:23	146178.240	880.023	29941.871	T 4605912.000	161337.130	362785.900	T 4650739.500	147620.880	208192.250	25.000	93974.190	54383.583
x		149208.750	826.687	29986.954	T 4616949.200	158712.280	362755.250	T 4615346.700	149063.690	206585.880	23.333	92537.884	53999.005
σ		4989.185	59.497	270.811	T 40032.716	2961.251	445.311	T 48474.846	1661.266	2244.634	2.887	1244.611	361.458
%RSD		3.344	7.197	0.903	T 0.867	1.866	0.123	T 1.050	1.114	1.087	12.372	1.345	0.669

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:13:40	15372.086	39737.315	T 3938940.200	15362.077	6776.377	20597.720	65935.166	7739.797	1716.088	1646.081	543.009	3590.387
2	10:14:01	15307.026	39130.883	T 3945666.400	15772.460	6781.379	20237.279	66482.333	7502.688	1604.077	1648.082	541.509	3515.371
3	10:14:23	15572.271	38354.080	T 3899904.100	15442.150	6406.231	20602.726	66637.953	7614.739	1662.083	1620.079	565.510	3730.417
x		15417.128	39074.093	T 3928170.200	15525.562	6654.663	20479.242	66351.817	7619.075	1660.749	1638.081	550.009	3612.058
σ		138.240	693.364	T 24709.123	217.536	215.163	209.561	369.125	118.614	56.017	15.622	13.445	109.149
%RSD		0.897	1.774	T 0.629	1.401	3.233	1.023	0.556	1.557	3.373	0.954	2.444	3.022

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:13:40	124936.530	243871.240	83187.086	16708.371	220.001	4175.523	1044643.600	625.012	27828.213	21118.371	28504.354	176166.140
2	10:14:01	125596.460	239792.700	83754.919	17334.009	265.002	4155.518	1041750.700	640.012	27297.336	21376.700	27708.013	177631.570
3	10:14:23	128498.450	240076.740	84800.185	17193.864	270.002	4070.497	1046696.600	685.014	27492.657	21498.356	27703.005	179016.270
x		126343.810	241246.890	83914.063	17078.748	251.669	4133.846	1044363.600	650.013	27539.402	21331.143	27971.791	177604.660
σ		1894.924	2277.183	818.240	328.321	27.538	55.766	2484.809	31.226	268.508	194.046	461.220	1425.255
%RSD		1.500	0.944	0.975	1.922	10.942	1.349	0.238	4.804	0.975	0.910	1.649	0.802

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:13:40	16618.281	87720.239	34195.043	136849.540	0.000	79504.176	68726.408
2	10:14:01	16853.517	89745.981	33959.562	138180.450	0.000	83021.262	69032.670
3	10:14:23	17283.957	90761.458	34650.983	135246.530	0.000	86483.803	69750.650
x		16918.585	89409.226	34268.530	136758.840	0.000	83003.080	69169.909

σ		337.575	1548.324	351.519	1469.061	0.000	3489.849	525.732
%RSD		1.995	1.732	1.026	1.074	0.000	4.204	0.760

STD3 10/19/2016 10:17:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:17:40	149880.910	99385.443	34846.390	┬16432883.000	┬4879986.600	┬46104065.000	┬17064482.000	┬1808616.100	198292.620	31740.194	┬3350698.300	9268(
2	10:18:02	142254.510	96709.772	35242.221	┬16165238.000	┬4837125.000	┬45292484.000	┬16801449.000	┬1791724.500	192818.960	31905.510	┬3326387.300	91388
3	10:18:23	144170.870	97469.176	34911.526	┬16174471.000	┬4778877.100	┬44986312.000	┬16733834.000	┬1806885.400	189915.910	32236.145	┬3328215.600	9236-
x		145435.430	97854.797	35000.046	┬16257531.000	┬4831996.200	┬45460954.000	┬16866588.000	┬1802408.700	193675.830	31960.616	┬3335100.400	9214-
σ		3967.346	1378.888	212.244	┬151929.520	┬50749.476	┬577606.950	┬174683.990	┬9293.155	4253.586	252.526	┬13539.066	673
%RSD		2.728	1.409	0.606	┬0.935	┬1.050	┬1.271	┬1.036	┬0.516	2.196	0.790	┬0.406	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:17:40	116022.440	┬4848330.000	┬99306293.000	1397372.600	739442.270	914641.840	732610.260	95763.330	7623.743	10479.794	536.509	805
2	10:18:02	112669.550	┬4813490.800	┬99392113.000	1402171.600	750338.400	915977.260	725561.750	95370.085	7617.740	10396.742	512.008	790
3	10:18:23	115760.620	┬4863552.300	┬99425984.000	1381801.200	738569.830	908488.610	726266.470	95263.478	7502.688	10327.199	537.509	814
x		114817.540	┬4841791.000	┬99374797.000	1393781.800	742783.500	913035.900	728146.160	95465.631	7581.391	10401.245	528.675	803
σ		1864.811	┬25663.363	┬61695.572	10649.341	6557.262	3994.276	3882.048	263.268	68.224	76.397	14.443	12
%RSD		1.624	┬0.530	┬0.062	0.764	0.883	0.437	0.533	0.276	0.900	0.735	2.732	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	10:17:40	931154.590	231141.760	1936342.200	308096.630	10453.277	152575.190	1024700.900	956146.720	643388.300	500988.180	649945.500	17527
2	10:18:02	935313.010	232044.170	┬2207180.700	311381.840	10343.208	149552.990	1012094.500	948106.350	645227.380	500165.520	655215.960	16993
3	10:18:23	940815.090	229773.030	┬2217903.700	303065.640	10313.190	151117.000	1024987.700	951480.730	647929.230	502119.470	656125.720	17294
x		935760.900	230986.320	┬2120475.500	307514.700	10369.892	151081.730	1020594.400	951911.270	645514.970	501091.060	653762.390	17271
σ		4845.799	1143.522	┬159554.230	4188.530	73.757	1511.413	7362.504	4037.439	2284.085	981.031	3336.678	267
%RSD		0.518	0.495	┬7.524	1.362	0.711	1.000	0.721	0.424	0.354	0.196	0.510	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:17:40	39672.160	1740434.000	┬9223548.100	132373.600	0.000	380755.120	128160.870
2	10:18:02	40704.645	1741452.600	┬9373720.600	134470.290	0.000	380944.370	126246.340
3	10:18:23	39947.818	1750528.600	┬9402300.300	130720.630	0.000	371709.320	125692.180
x		40108.208	1744138.400	┬9333189.700	132521.510	0.000	377802.930	126699.790
σ		534.603	5557.458	┬96021.605	1879.198	0.000	5278.072	1295.310
%RSD		1.333	0.319	┬1.029	1.418	0.000	1.397	1.022

STD4 10/19/2016 10:21:49 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	10:22:10	141024.120	265538.600	93421.093	┬43746013.000	┬13282223.000	┬123442180.000	┬45878228.000	┬4968458.900	182362.250	87705.160	┬9143392.60(
2	10:22:32	141215.730	268609.730	96684.626	┬44120758.000	┬13519222.000	┬125474570.000	┬46598278.000	┬5073616.300	184192.210	89409.178	┬9277329.30(
3	10:22:53	140066.090	265919.610	97851.406	┬44485995.000	┬13477266.000	┬125333770.000	┬46502946.000	┬5187150.200	182139.840	89906.845	┬9529146.20(
x		140768.650	266689.310	95985.709	┬44117589.000	┬13426237.000	┬124750170.000	┬46326484.000	┬5076408.500	182898.100	89007.061	┬9316622.70(
σ		615.928	1674.005	2296.363	┬370001.440	┬126471.950	┬1134940.100	┬391116.300	┬109372.360	1126.236	1154.611	┬195855.67(
%RSD		0.438	0.628	2.392	┬0.839	┬0.942	┬0.910	┬0.844	┬2.155	0.616	1.297	┬2.10

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	10:22:10	306594.300	┬13359744.000	┬272119380.000	┬4262243.200	1976389.300	┬2743471.400	1911265.200	254218.130	18854.659	25779.923	499.00
2	10:22:32	315615.360	┬13485522.000	┬272765470.000	┬4261965.900	2016482.500	┬2806928.900	1941756.100	257433.930	19424.313	26196.572	505.50

3	10:22:53	314061.420	┬13504347.000	┬274855810.000	┬4302249.200	2020559.800	┬2778567.200	1935373.800	255088.280	19115.956	26331.284	519.508
x		312090.360	┬13449871.000	┬273246890.000	┬4275486.100	2004477.200	┬2776322.500	1929465.100	255580.110	19131.643	26102.593	508.008
σ		4822.726	┬78617.449	┬1430324.600	┬23177.925	24410.111	┬31788.219	16081.306	1663.360	285.151	287.443	10.476
%RSD		1.545	┬0.585	┬0.523	┬0.542	1.218	┬1.145	0.833	0.651	1.490	1.101	2.062

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	10:22:10	┬2876587.300	216091.850	┬6148699.500	839256.600	27492.657	409335.690	984015.670	┬3062330.500	1795979.100	1404858.300	┬2075711.500
2	10:22:32	┬2937691.500	216790.840	┬6315895.400	843208.770	27282.311	416853.620	990132.450	┬3122389.300	1828256.800	1430087.500	┬2131937.400
3	10:22:53	┬2975452.100	214785.120	┬6355363.600	837606.620	26831.581	415577.340	992836.400	┬3167845.100	1857612.100	1438016.100	┬2137247.800
x		┬2929910.300	215889.270	┬6273319.500	840024.000	27202.183	413922.220	988994.840	┬3117521.600	1827282.700	1424320.600	┬2114965.600
σ		┬49889.567	1018.089	┬109713.490	2878.837	337.744	4022.982	4519.068	┬52925.412	30828.070	17314.795	┬34098.538
%RSD		┬1.703	0.472	┬1.749	0.343	1.242	0.972	0.457	┬1.698	1.687	1.216	┬1.612

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:22:10	115176.600	┬5752542.800	┬26501167.000	125510.820	0.000	833351.060	363368.380
2	10:22:32	117920.690	┬5845294.700	┬26747388.000	128039.940	5.000	836923.560	372327.900
3	10:22:53	119960.170	┬5901485.400	┬27134159.000	127475.640	0.000	837559.330	371786.000
x		117685.820	┬5833107.600	┬26794238.000	127008.800	1.667	835944.650	369160.760
σ		2400.416	┬75215.489	┬319086.190	1327.622	2.887	2268.500	5023.660
%RSD		2.040	┬1.289	┬1.191	1.045	173.205	0.271	1.361

STD5 10/19/2016 10:27:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	10:27:52	133371.510	415418.450	147883.190	T 68798654.000	TM 21065131.000	TM 194346880.000	T 73045233.000	TM 7994587.900	171699.890	139188.790	TM
2	10:28:14	135034.830	413363.290	147454.410	T 68112268.000	TM 20883987.000	TM 196414300.000	TM 74095897.000	TM 8130967.100	171467.520	139007.280	TM
3	10:28:35	130438.440	405636.890	148624.740	T 68240098.000	TM 21338010.000	T 197557680.000	T 73419236.000	TM 8103968.100	176246.990	142930.260	TM
x		132948.260	411472.880	147987.440	T 68383673.000	TM 21095709.000	TM 196106290.000	TM 73520122.000	TM 8076507.700	173138.130	140375.440	TM
σ		2327.242	5157.514	592.088	T 365023.260	TM 228550.830	TM 1627409.800	TM 532547.690	TM 72217.558	2694.853	2214.393	
%RSD		1.750	1.253	0.400	T 0.534	TM 1.083	TM 0.830	TM 0.724	TM 0.894	1.556	1.577	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	
1	10:27:52	482576.710	TM 21318582.000	T 427061450.000	TM 6793434.900	TM 3504888.600	T 4254958.300	TM 3288982.900	392967.730	28437.240	39108.330	
2	10:28:14	497166.260	TM 21661213.000	TM 437229380.000	TM 6853347.800	TM 3537290.200	TM 4294191.200	TM 3343200.100	396349.410	28781.830	39405.028	
3	10:28:35	501869.100	TM 21862885.000	T 438299150.000	TM 6886120.700	TM 3590400.900	T 4346363.700	TM 3359167.700	397849.520	28882.003	39758.867	
x		493870.690	TM 21614226.000	TM 434196660.000	TM 6844301.100	TM 3544193.200	TM 4298504.400	TM 3330450.200	395722.220	28700.358	39424.075	
σ		10059.556	TM 275176.820	TM 6202383.400	TM 47000.469	TM 43172.099	TM 45855.085	TM 36788.483	2500.598	233.307	325.686	
%RSD		2.037	TM 1.273	TM 1.428	TM 0.687	TM 1.218	TM 1.067	TM 1.105	0.632	0.813	0.826	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	
1	10:27:52	TM 4690994.900	211230.120	TM 9869988.900	1307268.800	42413.900	654394.620	990376.320	T 4974916.600	TM 3270907.300	2254022.100	TI
2	10:28:14	TM 4680901.000	203363.170	TM 10002992.000	1322022.100	42223.417	654113.910	990121.850	T 5101770.000	TM 3348747.600	M 2303125.700	TI
3	10:28:35	TM 4703336.800	205681.360	TM 10220724.000	1321470.900	43316.216	661538.510	990090.040	T 5093829.400	TM 3366754.000	M 2318596.100	TI
x		TM 4691744.200	206758.220	TM 10031235.000	1316920.600	42651.177	656682.340	990196.070	T 5056838.700	TM 3328803.000	M 2291914.700	TI
σ		TM 11236.678	4042.513	TM 177064.840	8363.250	583.762	4207.900	156.910	T 71057.611	TM 50941.056	M 33715.225	
%RSD		TM 0.239	1.955	TM 1.765	0.635	1.369	0.641	0.016	T 1.405	TM 1.530	M 1.471	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:27:52	M 222915.840	TM 9358790.900	TM 42729440.000	122710.080	0.000	1513216.700	M 715886.550
2	10:28:14	M 232525.810	TM 9579535.900	TM 42866525.000	122669.780	0.000	M 1542907.500	M 728887.240
3	10:28:35	M 233580.400	TM 9544495.600	TM 43429328.000	122941.770	5.000	M 1559429.100	M 734239.660
x		M 229674.020	TM 9494274.100	TM 43008431.000	122773.880	1.667	M 1538517.700	M 726337.820
σ		M 5876.459	TM 118632.790	TM 370896.020	146.792	2.887	M 23416.858	M 9438.424
%RSD		M 2.559	TM 1.250	TM 0.862	0.120	173.205	M 1.522	M 1.299

ICV 10/19/2016 10:33:14 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:33:36	125299.230	41992.835	17559.245	T 7508424.100	T 2093916.400	T 20068208.000	T 7122716.200	700570.900	162942.630	13770.687	1308041.000	396152.810
2	10:33:57	123898.820	43539.296	17659.351	T 7467240.900	T 2113666.400	T 19772054.000	T 7055512.100	692358.170	161104.900	13450.425	1291891.400	396393.440
3	10:34:20	121199.080	42880.090	17118.787	T 7414592.500	T 2098506.400	T 19970846.000	T 7101980.100	711489.130	163336.460	13730.654	1329719.800	404243.650
x		123465.710	42804.074	17445.794	T 7463419.100	T 2102029.700	T 19937036.000	T 7093402.800	701472.730	162461.330	13650.588	1309884.000	398929.970
σ		2084.107	776.028	287.586	T 47032.403	T 10335.646	T 150944.180	T 34413.329	9597.308	1191.095	174.498	18981.433	4603.356
%RSD		1.688	1.813	1.648	T 0.630	T 0.492	T 0.757	T 0.485	1.368	0.733	1.278	1.449	1.154

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:33:36	50551.548	T 2035361.500	T 42367694.000	607073.390	325125.570	400023.640	319839.760	42806.902	3481.364	4863.209	454.506	4555.623
2	10:33:57	52582.818	T 2082612.200	T 43136765.000	613663.250	330142.760	406584.570	327950.100	42648.497	3535.375	4750.677	452.006	4980.744
3	10:34:20	52577.802	T 2078574.000	T 43386956.000	612672.790	329005.600	411082.910	326084.020	42783.843	3579.384	4816.696	415.005	4760.680
x		51904.056	T 2065515.900	T 42963805.000	611136.480	328091.310	405897.040	324624.630	42746.414	3532.041	4810.194	440.506	4765.682
σ		1171.309	T 26192.401	T 531187.400	3553.418	2630.590	5561.601	4247.564	85.579	49.095	56.547	22.120	212.605

%RSD		2.257	T 1.268	T 1.236	0.581	0.802	1.370	1.308	0.200	1.390	1.176	5.021	4.461
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:33:36	407726.970	204527.290	408188.050	133709.200	4345.566	67370.890	891544.370	438103.340	294351.530	228406.430	286252.280	148791.210
2	10:33:57	410375.810	202361.090	422098.170	134787.840	4415.585	68043.615	895561.380	445978.120	302088.130	232734.190	293099.760	154432.180
3	10:34:20	408013.870	201318.580	426503.210	135700.200	4680.657	68957.359	900918.850	447595.620	299323.920	232860.940	297002.950	154230.320
x		408705.550	202735.650	418929.810	134732.410	4480.603	68123.955	896008.200	443892.360	298587.860	231333.850	292118.330	152484.570
σ		1453.581	1636.821	9559.815	996.654	176.754	796.280	4703.184	5078.251	3920.468	2536.013	5442.117	3200.134
%RSD		0.356	0.807	2.282	0.740	3.945	1.169	0.525	1.144	1.313	1.096	1.863	2.099

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:33:36	37447.021	788045.180	T 4217428.300	119335.710	0.000	202654.620	110927.930
2	10:33:57	38719.925	796450.940	T 4216340.100	118842.200	0.000	215904.440	113379.340
3	10:34:20	39100.812	799140.190	T 4210927.700	120352.980	0.000	225642.160	114587.560
x		38422.586	794545.440	T 4214898.700	119510.300	0.000	214733.740	112964.940
σ		866.062	5787.747	T 3481.762	770.375	0.000	11538.399	1864.678
%RSD		2.254	0.728	T 0.083	0.645	0.000	5.373	1.651

ICVL 10/19/2016 10:38:58 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	10:39:20	127657.020	162.501	6056.100	904421.100	27773.121	69228.479	719471.060	25068.839	166588.410	20.000	24482.969	9617.774
2	10:39:41	127112.890	152.501	6536.281	903534.920	27222.213	70548.999	718803.140	25599.645	165588.520	25.000	25023.772	9702.824
3	10:40:03	125087.650	175.001	6326.200	891702.510	27222.213	69198.355	706899.910	25128.930	163992.860	10.000	24578.109	9892.935
x		126619.190	163.334	6306.194	899886.170	27405.849	69658.611	715058.040	25265.805	165389.930	18.333	24694.950	9737.844
σ		1353.966	11.273	240.715	7101.102	318.067	771.246	7073.035	290.671	1309.122	7.638	288.714	140.884
%RSD		1.069	6.902	3.817	0.789	1.161	1.107	0.989	1.150	0.792	41.660	1.169	1.447

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	10:39:20	5866.032	7271.586	749136.090	2770.230	1275.049	3630.395	11253.798	2097.132	537.009	641.512	453.506	2480.184
2	10:39:41	6326.200	7621.742	756508.130	3065.282	1325.053	3725.416	12059.361	2128.136	542.009	658.513	463.006	2420.176
3	10:40:03	5826.018	7576.722	754050.420	2910.254	1125.038	3715.414	11518.979	2122.135	512.008	646.513	470.507	2475.184
x		6006.083	7490.017	753231.550	2915.255	1241.713	3690.409	11610.713	2115.801	530.342	648.846	462.340	2458.515
σ		277.950	190.501	3753.620	147.589	104.091	52.213	410.541	16.444	16.073	8.737	8.520	33.297
%RSD		4.628	2.543	0.498	5.063	8.383	1.415	3.536	0.777	3.031	1.347	1.843	1.354

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:39:20	21654.058	202401.570	16933.598	2780.232	40.000	775.018	894021.940	3730.417	5996.078	4656.150	4770.683	152171.530
2	10:39:41	21503.864	206349.540	17043.710	3055.280	50.000	730.016	896774.050	4230.537	6241.168	4871.212	4985.746	152635.740
3	10:40:03	21774.214	203089.870	16908.573	2855.245	60.000	700.015	882912.590	4560.624	6311.195	4978.243	4785.687	148690.320
x		21644.045	203947.000	16961.960	2896.919	50.000	735.016	891236.190	4173.859	6182.814	4835.202	4847.372	151165.860
σ		135.453	2108.937	71.895	142.181	10.000	37.751	7338.617	417.995	165.465	164.038	120.070	2156.413
%RSD		0.626	1.034	0.424	4.908	20.000	5.136	0.823	10.015	2.676	3.393	2.477	1.427

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:39:20	3175.302	17799.500	7471.674	116113.060	0.000	14055.925	12299.537
2	10:39:41	3190.305	18265.003	7741.798	117865.300	0.000	14501.306	12669.814
3	10:40:03	3160.300	18094.817	7531.701	119517.000	0.000	14576.371	12424.629
x		3175.302	18053.107	7581.725	117831.790	0.000	14377.867	12464.660
σ		15.003	235.538	141.839	1702.215	0.000	281.325	188.356
%RSD		0.472	1.305	1.871	1.445	0.000	1.957	1.511

ICBIS 10/19/2016 10:44:40 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:45:02	126145.580	22.500	1160.040	244561.240	510.008	3135.295	54388.599	730.016	162407.450	5.000	14741.516	1545.072
2	10:45:24	126709.840	12.500	1010.031	249960.460	500.007	2750.227	54047.492	670.013	162882.050	10.000	14641.428	1525.070
3	10:45:45	121884.050	7.500	1050.033	248295.850	400.005	2500.188	54458.828	660.013	165356.230	10.000	14451.262	1535.071
x		124913.160	14.167	1073.368	247605.850	470.007	2795.236	54298.306	686.681	163548.580	8.333	14611.402	1535.071
σ		2638.412	7.638	77.680	2764.953	60.829	319.937	220.031	37.861	1583.359	2.887	147.438	10.001
%RSD		2.112	53.913	7.237	1.117	12.942	11.446	0.405	5.514	0.968	34.641	1.009	0.651

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:45:02	5110.783	665.013	206374.860	160.001	65.000	250.002	570.010	1257.047	417.005	486.007	477.507	2330.163
2	10:45:24	5135.791	565.010	203535.260	130.001	30.000	235.002	525.008	1338.054	405.005	433.506	461.506	2280.156
3	10:45:45	5285.838	550.009	199426.030	115.000	35.000	210.001	600.011	1269.048	404.005	481.507	447.006	2300.159
x		5177.471	593.344	203112.050	135.001	43.333	231.668	565.010	1288.050	408.672	467.007	462.006	2303.492
σ		94.678	62.519	3493.692	22.913	18.930	20.208	37.750	43.718	7.234	29.100	15.257	25.170
%RSD		1.829	10.537	1.720	16.973	43.684	8.723	6.681	3.394	1.770	6.231	3.302	1.093

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:45:02	100.000	203373.300	945.027	40.000	5.000	20.000	892155.830	1835.101	595.011	469.007	50.000	147731.850
2	10:45:24	85.000	204628.520	1185.042	20.000	0.000	20.000	908166.760	1955.115	730.016	531.508	55.000	152161.440
3	10:45:45	80.000	202948.160	1015.031	35.000	5.000	5.000	908377.810	2255.153	780.018	572.510	65.000	151122.040
x		88.334	203649.990	1048.367	31.667	3.333	15.000	902900.130	2015.123	701.682	524.342	56.667	150338.440
σ		10.408	873.683	123.431	10.408	2.887	8.660	9305.441	216.360	95.703	52.122	7.638	2316.425
%RSD		11.783	0.429	11.774	32.868	86.603	57.735	1.031	10.737	13.639	9.941	13.478	1.541

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:45:02	175.001	1285.050	890.024	117462.470	0.000	1570.074	45.000
2	10:45:24	140.001	1150.040	900.024	118378.920	0.000	1540.071	30.000
3	10:45:45	145.001	1255.047	730.016	120876.750	0.000	1755.092	20.000
x		153.334	1230.045	840.021	118906.050	0.000	1621.746	31.667
σ		18.930	70.892	95.399	1767.124	0.000	116.452	12.583
%RSD		12.346	5.763	11.357	1.486	0.000	7.181	39.736

ICSA 10/19/2016 10:50:23 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:50:45	124654.420	15.000	1090.036	TM 146482050.000	T 14882067.000	T 136448540.000	TM 148738800.000	T 5500510.700	178025.740	302902.710	7716.786	4
2	10:51:06	125420.140	20.000	915.025	TM 149230040.000	T 14890277.000	T 138243150.000	TM 152659160.000	T 5671503.900	179107.240	304893.520	7136.528	5
3	10:51:28	121481.120	27.500	1065.034	TM 147049990.000	T 14976938.000	T 136992880.000	TM 150039670.000	T 5741908.800	179683.390	310714.560	7436.659	4
x		123851.890	20.833	1023.365	TM 147587360.000	T 14916427.000	T 137228190.000	TM 150479210.000	T 5637974.500	178938.790	306170.270	7429.991	4
σ		2088.540	6.292	94.654	TM 1450668.000	T 52564.201	T 920150.170	TM 1996796.400	T 124142.740	841.563	4059.406	290.187	
%RSD		1.686	30.199	9.249	TM 0.983	T 0.352	T 0.671	TM 1.327	T 2.202	0.470	1.326	3.906	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:50:45	2640.209	2135.137	T 301912510.000	355.004	475.007	1050.033	1840.102	1268.048	453.006	483.507	562.509	2
2	10:51:06	2880.249	2280.156	T 301869970.000	350.004	350.004	970.028	1940.113	1318.052	446.006	503.008	544.509	2
3	10:51:28	2785.233	2425.176	T 309314530.000	520.008	490.007	1135.039	1855.103	1309.051	414.005	462.006	553.009	2
x		2768.564	2280.156	T 304365670.000	408.339	438.339	1051.700	1878.439	1298.384	437.672	482.840	553.343	2

σ		120.885	145.020	T 4285891.400	96.741	76.868	82.518	53.935	26.654	20.793	20.509	9.005	
%RSD		4.366	6.360	T 1.408	23.691	17.536	7.846	2.871	2.053	4.751	4.248	1.627	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	10:50:45	3545.377	211675.720	T 3178037.100	470.007	500.007	610.011	949148.210	3350.337	880.023	627.012	190.001	1619
2	10:51:06	3590.387	215899.380	T 3301006.300	560.009	535.009	620.012	957506.550	4480.602	1145.039	731.516	140.001	1704
3	10:51:28	3580.385	220651.000	T 3384765.800	510.008	525.008	550.009	966864.260	4260.545	1190.043	804.519	250.002	1698
x		3572.049	216075.360	T 3287936.400	513.341	520.008	593.344	957839.670	4030.494	1071.702	721.016	193.335	167
σ		23.634	4490.230	T 103982.250	45.094	18.028	37.861	8862.720	599.222	167.517	89.218	55.076	47
%RSD		0.662	2.078	T 3.163	8.784	3.467	6.381	0.925	14.867	15.631	12.374	28.488	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:50:45	525.008	1380.057	2905.253	125188.400	0.000	82242.415	50.000
2	10:51:06	755.017	1455.064	3010.272	126075.050	0.000	69685.378	90.000
3	10:51:28	690.014	1655.082	3635.396	127143.120	0.000	55156.115	90.000
x		656.680	1496.734	3183.641	126135.520	0.000	69027.969	76.667
σ		118.572	142.169	394.740	978.759	0.000	13555.112	23.094
%RSD		18.056	9.499	12.399	0.776	0.000	19.637	30.123

ICSAB 10/19/2016 10:56:06 AM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:56:28	113162.880	3137.795	46855.771	TM 138530090.000	T 13918423.000	T 130170480.000	TM 141756590.000	T 5225087.100	165507.720	287188.180	58768.429	10
2	10:56:49	111441.330	3090.287	47978.960	TM 139258390.000	T 14155035.000	T 131911760.000	TM 145262390.000	T 5314287.400	167881.290	292392.500	60584.916	10
3	10:57:11	110162.880	3182.804	47016.222	TM 137170070.000	T 14031978.000	T 131382420.000	TM 144476510.000	T 5384623.100	170699.700	293888.470	60017.870	10
x		111589.030	3136.962	47283.651	TM 138319520.000	T 14035145.000	T 131154890.000	TM 143831830.000	T 5307999.200	168029.570	291156.380	59790.405	10
σ		1505.443	46.264	607.476	TM 1059968.300	T 118337.640	T 892659.340	TM 1839667.200	T 79953.637	2599.161	3517.026	929.361	
%RSD		1.349	1.475	1.285	TM 0.766	T 0.843	T 0.681	TM 1.279	T 1.506	1.547	1.208	1.554	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:56:28	14676.459	78549.666	T 285974540.000	59922.528	12069.369	30277.477	24578.109	18760.553	3979.475	5431.885	563.510	
2	10:56:49	14726.503	78705.398	T 289422310.000	61698.992	12649.799	31619.966	25764.900	19487.386	4079.499	5450.391	512.508	
3	10:57:11	14956.708	80951.116	T 294975160.000	62040.255	12584.749	32251.174	25845.023	19406.292	4097.504	5562.928	531.008	
x		14786.557	79402.060	T 290124000.000	61220.592	12434.639	31382.872	25396.011	19218.077	4052.159	5481.735	535.675	
σ		149.465	1343.780	T 4541152.100	1137.032	318.001	1007.983	709.456	398.297	63.587	70.922	25.819	
%RSD		1.011	1.692	T 1.565	1.857	2.557	3.212	2.794	2.073	1.569	1.294	4.820	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	10:56:28	2810.237	208860.530	T 3146234.300	69359.021	1525.070	17128.797	934652.460	2340.164	119350.810	94076.263	121737.990	16
2	10:56:49	2910.254	206217.930	T 3228572.700	69389.146	1465.064	16973.639	939884.740	2860.245	124901.260	96030.360	124130.540	16
3	10:57:11	2975.266	206187.560	T 3226634.800	69946.468	1560.073	17123.792	942538.490	3045.278	125203.520	97746.795	125430.210	16
x		2898.586	207088.670	T 3200480.600	69564.878	1516.736	17075.409	939025.230	2748.563	123151.860	95951.139	123766.250	16
σ		83.131	1534.550	T 46988.652	330.810	48.049	88.172	4012.660	365.583	3295.274	1836.548	1872.876	
%RSD		2.868	0.741	T 1.468	0.476	3.168	0.516	0.427	13.301	2.676	1.914	1.513	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:56:28	35081.883	203757.950	151954.560	123374.960	0.000	244302.480	136632.770
2	10:56:49	36129.117	209640.230	156006.740	123697.330	0.000	259337.100	139773.650
3	10:57:11	37176.416	211311.130	158020.580	124654.420	0.000	268007.660	141619.130
x		36129.139	208236.440	155327.290	123908.910	0.000	257215.750	139341.850
σ		1047.267	3967.444	3089.560	665.456	0.000	11994.119	2521.071
%RSD		2.899	1.905	1.989	0.537	0.000	4.663	1.809

CCV 10/19/2016 11:01:49 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:02:11	104375.810	73323.436	26731.420	T 12306708.000	T 3631278.200	T 34301466.000	T 12122034.000	1223305.000	141598.960	24177.524	T 2444801.800	691352
2	11:02:33	99244.608	72909.124	26496.044	T 12109230.000	T 3621225.400	T 33485354.000	T 11935512.000	1197745.000	137121.760	23691.827	T 2393899.000	676990
3	11:02:55	100492.050	72093.086	27412.525	T 12115100.000	T 3561102.800	T 33646809.000	T 11741736.000	1205516.400	139461.050	24067.365	T 2434393.200	694556
x		101370.820	72775.215	26879.996	T 12177013.000	T 3604535.400	T 33811209.000	T 11933094.000	1208855.500	139393.920	23978.905	T 2424364.700	687633
σ		2676.096	626.010	475.963	T 112357.430	T 37948.160	T 432180.890	T 190160.960	13103.078	2239.356	254.645	T 26892.426	9355
%RSD		2.640	0.860	1.771	T 0.923	T 1.053	T 1.278	T 1.594	1.084	1.606	1.062	T 1.109	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:02:11	87559.397	T 3611934.300	T 73781205.000	1044149.000	565317.630	687982.450	561196.820	75033.522	6079.109	8372.603	406.005	6296
2	11:02:33	84071.507	T 3586596.700	T 73849227.000	1033579.800	545632.600	691628.810	559242.760	74331.386	5929.054	8310.071	403.005	6546
3	11:02:55	86096.807	T 3584399.400	T 73640314.000	1027171.200	560302.470	684529.550	562442.780	74369.556	5921.052	8417.125	432.506	6421
x		85909.237	T 3594310.100	T 73756915.000	1034966.700	557084.240	688046.940	560960.790	74578.154	5976.405	8366.600	413.838	6421
σ		1751.494	T 15302.448	T 106553.450	8573.442	10229.510	3550.069	1613.017	394.821	89.034	53.779	16.236	125

%RSD		2.039	T 0.426	T 0.144	0.828	1.836	0.516	0.288	0.529	1.490	0.643	3.923	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	11:02:11	764846.030	185365.110	1579909.800	256361.590	8812.329	127858.560	861652.080	809009.650	547414.630	423308.290	549088.360	144594
2	11:02:33	757606.360	184728.090	1610093.500	254599.890	8527.181	127294.270	839009.620	801709.260	543938.560	421556.210	540199.860	143444
3	11:02:55	757894.010	183140.720	1612885.000	250767.440	8577.207	126513.350	832022.070	806549.610	542972.820	424289.780	541289.370	145340
x		760115.470	184411.310	1600962.800	253909.640	8638.906	127222.060	844227.920	805756.170	544775.340	423051.420	543525.870	144460
σ		4099.313	1145.531	18285.778	2860.237	152.258	675.504	15488.947	3714.303	2336.144	1384.768	4847.966	955
%RSD		0.539	0.621	1.142	1.126	1.762	0.531	1.835	0.461	0.429	0.327	0.892	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:02:11	34049.746	1495821.700	T 8039408.200	113193.080	0.000	197528.630	112775.260
2	11:02:33	34475.620	1501750.900	T 7997311.800	113444.780	0.000	211306.070	112860.840
3	11:02:55	34966.642	1516424.500	T 8058079.500	115216.880	0.000	222079.790	112810.500
x		34497.336	1504665.700	T 8031599.800	113951.580	0.000	210304.830	112815.530
σ		458.833	10606.178	T 31127.264	1102.983	0.000	12306.166	43.010
%RSD		1.330	0.705	T 0.388	0.968	0.000	5.852	0.038

CCB 10/19/2016 11:07:32 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:07:54	109810.560	20.000	810.020	228221.930	1180.042	9397.649	60921.138	990.029	144907.220	30.000	10943.592	1200.043
2	11:08:16	105694.080	10.000	870.023	232054.310	1800.097	14921.677	61944.902	1030.032	143182.410	45.000	11378.883	1120.038
3	11:08:37	110444.730	7.500	895.024	236546.800	2140.137	19536.443	63038.992	1220.045	145683.940	45.000	11343.859	1285.050
x		108649.790	12.500	858.355	232274.350	1706.759	14618.590	61968.344	1080.035	144591.190	40.000	11222.111	1201.710
σ		2579.287	6.614	43.687	4166.796	486.806	5076.188	1059.122	122.890	1280.363	8.660	241.840	82.519
%RSD		2.374	52.915	5.090	1.794	28.522	34.724	1.709	11.378	0.886	21.651	2.155	6.867
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:07:54	4005.481	535.009	197139.060	95.000	50.000	230.002	525.008	972.028	334.003	454.506	438.006	2135.137
2	11:08:16	3955.469	595.011	209625.040	140.001	60.000	205.001	490.007	1040.032	332.003	414.005	409.005	2145.138
3	11:08:37	3745.421	515.008	212774.580	100.000	45.000	215.001	515.008	995.030	317.003	381.004	399.005	1995.119
x		3902.124	548.342	206512.890	111.667	51.667	216.668	510.008	1002.364	327.670	416.505	415.339	2091.798
σ		137.993	41.635	8269.308	24.665	7.638	12.583	18.028	34.590	9.292	36.815	20.257	83.875
%RSD		3.536	7.593	4.004	22.088	14.783	5.808	3.535	3.451	2.836	8.839	4.877	4.010
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:07:54	40.000	191099.320	3275.322	5.000	0.000	20.000	857264.270	2775.231	730.016	595.511	20.000	145512.460
2	11:08:16	75.000	186811.120	3765.425	65.000	0.000	10.000	857432.610	3130.294	915.025	681.514	30.000	144483.560
3	11:08:37	120.000	191048.750	3670.404	40.000	0.000	10.000	860315.630	3135.295	970.028	711.015	70.000	144302.000
x		78.334	189653.060	3570.384	36.667	0.000	13.333	858337.500	3013.607	871.690	662.680	40.000	144766.010
σ		40.104	2461.327	259.910	30.139	0.000	5.774	1715.172	206.454	125.738	60.011	26.458	652.788
%RSD		51.197	1.298	7.280	82.196	0.000	43.301	0.200	6.851	14.425	9.056	66.144	0.451

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:07:54	220.001	1745.091	830.021	114924.870	0.000	1155.040	10.000
2	11:08:16	190.001	1710.088	800.019	116153.340	0.000	1085.035	50.000
3	11:08:37	230.002	1605.077	995.030	114864.460	0.000	1250.047	40.000
x		213.335	1686.752	875.023	115314.220	0.000	1163.374	33.333
σ		20.817	72.866	105.006	727.326	0.000	82.821	20.817
%RSD		9.758	4.320	12.000	0.631	0.000	7.119	62.450

200-35736-A-11-A 10/19/2016 11:13:14 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	11:13:36	128553.880	507.508	3825.439	T 1187922.200	T 2042133.300	T 78571729.000	T 7227354.900	T 2766143.200	190907.140	14146.001	207934.060	149885.
2	11:13:58	126669.530	525.008	3905.458	T 1197858.700	T 2037866.600	T 78214542.000	T 7400292.600	T 2894457.300	200215.410	14506.310	216426.140	153766.
3	11:14:20	122770.520	495.007	4080.499	T 1161353.400	T 2112082.500	T 80818434.000	T 7508250.400	T 2926890.600	199011.110	14065.933	215372.630	158868.
x		125997.980	509.174	3937.132	T 1182378.100	T 2064027.500	T 79201568.000	T 7378632.600	T 2862497.000	196711.220	14239.415	213244.280	154173.
σ		2949.585	15.070	130.447	T 18873.604	T 41671.508	T 1411590.000	T 141694.900	T 85006.039	5062.419	234.580	4628.855	4505.
%RSD		2.341	2.960	3.313	T 1.596	T 2.019	T 1.782	T 1.920	T 2.970	2.574	1.647	2.171	2.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	11:13:36	20782.950	TM 26028089.000	T 314763490.000	131209.450	52357.109	1341678.500	401687.960	14653.439	767.018	657.513	165.501	4460.
2	11:13:58	20868.056	TM 27118992.000	T 328194300.000	136985.650	52964.022	1388516.400	410647.370	14805.573	763.017	663.513	179.001	4610.
3	11:14:20	21553.928	TM 27588390.000	T 335268500.000	138810.650	54930.371	1414816.100	419032.240	15186.916	790.019	670.513	176.001	5130.
x		21068.311	TM 26911824.000	T 326075430.000	135668.590	53417.168	1381670.300	410455.860	14881.976	773.351	663.847	173.501	4734.
σ		422.704	TM 800514.780	T 10415424.000	3968.068	1345.149	37046.289	8673.728	274.823	14.572	6.507	7.089	351.
%RSD		2.006	TM 2.975	T 3.194	2.925	2.518	2.681	2.113	1.847	1.884	0.980	4.086	7.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	11:13:36	646183.370	529014.530	13920.811	5665.963	220.001	2385.171	924815.870	49177.446	2485.185	2073.629	395804.690	188085.
2	11:13:58	652850.810	532327.550	13555.510	5420.881	295.003	2440.179	945256.100	49894.572	2730.224	2037.124	407645.000	188065.
3	11:14:20	674242.700	545307.210	13225.245	5866.032	230.002	2520.191	958067.450	51559.629	2655.211	2108.633	415731.100	194336.
x		657758.960	535549.760	13567.189	5650.959	248.335	2448.513	942713.140	50210.549	2623.540	2073.129	406393.600	190162.
σ		14659.434	8611.031	347.930	222.954	40.723	67.895	16771.013	1222.121	125.552	35.757	10021.975	3614.
%RSD		2.229	1.608	2.564	3.945	16.399	2.773	1.779	2.434	4.786	1.725	2.466	1.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:13:36	1830.101	5866.032	1059855.300	124775.320	0.000	230264.740	75435.329
2	11:13:58	1690.086	5986.075	1105694.300	131335.440	0.000	217099.820	75631.214
3	11:14:20	1610.078	5921.052	1099077.400	129914.370	0.000	211447.850	77032.610
x		1710.088	5924.386	1088209.000	128675.040	0.000	219604.140	76033.051
σ		111.367	60.091	24776.862	3451.191	0.000	9655.183	871.167
%RSD		6.512	1.014	2.277	2.682	0.000	4.397	1.146

200-35736-A-11-A SD@5 10/19/2016 11:18:56 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:19:18	119466.640	135.001	1245.046	422651.940	378489.380	T 15970434.000	T 1494608.000	520729.660	180532.490	2730.224	49638.810	32040.769
2	11:19:40	121642.290	92.500	1175.041	416469.190	383604.340	T 15706317.000	T 1471510.900	523174.460	179157.780	2805.236	49092.195	32692.032
3	11:20:02	118046.570	82.500	1240.046	416007.880	376852.910	T 15733774.000	T 1468123.300	530366.490	177833.710	2615.205	50436.199	32451.562
x		119718.500	103.334	1220.045	418376.340	379648.880	T 15803508.000	T 1478080.700	524756.870	179174.660	2716.888	49722.401	32394.788
σ		1811.041	27.876	39.054	3709.959	3521.900	T 145211.960	T 14412.929	5009.509	1349.470	95.715	675.890	329.323
%RSD		1.513	26.977	3.201	0.887	0.928	T 0.919	T 0.975	0.955	0.753	3.523	1.359	1.017

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:19:18	6831.400	T 5262342.400	T 64638255.000	26235.633	10778.484	280622.750	88765.753	4044.491	465.006	247.002	114.500	1390.058
2	11:19:40	6776.377	T 5326359.400	T 65376457.000	27753.088	10533.327	283373.710	89394.098	4073.498	474.007	255.502	157.501	1360.055
3	11:20:02	6516.274	T 5284869.100	T 65769561.000	28068.616	10483.296	284355.220	90987.687	4076.499	438.006	233.502	128.500	1595.076
x		6708.017	T 5291190.300	T 65261424.000	27352.445	10598.369	282783.890	89715.846	4064.829	459.006	245.335	133.501	1448.397

σ		168.318	T 32473.270	T 574358.310	979.970	157.977	1934.876	1145.377	17.677	18.736	11.094	21.932	127.911
%RSD		2.509	T 0.614	T 0.880	3.583	1.491	0.684	1.277	0.435	4.082	4.522	16.428	8.831
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:19:18	129415.510	282117.670	1975.117	1145.039	60.000	565.010	965572.510	9742.847	590.010	464.006	78419.053	165649.120
2	11:19:40	131521.900	280327.850	2125.135	1100.036	90.000	645.012	972805.460	10103.061	675.014	553.509	79162.556	165113.850
3	11:20:02	130917.170	283978.880	2360.167	1165.041	45.000	545.009	978017.610	10613.378	680.014	573.010	81106.871	165103.750
x		130618.190	282141.470	2153.473	1136.706	65.000	585.010	972131.860	10153.095	648.346	530.175	79562.827	165288.900
σ		1084.556	1825.633	194.083	33.294	22.913	52.917	6249.835	437.417	50.582	58.127	1387.895	311.996
%RSD		0.830	0.647	9.013	2.929	35.251	9.045	0.643	4.308	7.802	10.964	1.744	0.189

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:19:18	310.003	1430.061	205175.180	124704.800	0.000	27312.361	13175.206
2	11:19:40	370.004	1540.071	209351.640	127536.100	0.000	29085.357	14206.052
3	11:20:02	395.005	1470.065	210713.640	124986.900	0.000	29876.755	14996.744
x		358.337	1480.066	208413.490	125742.600	0.000	28758.157	14126.000
σ		43.685	55.683	2885.954	1559.610	0.000	1313.135	913.404
%RSD		12.191	3.762	1.385	1.240	0.000	4.566	6.466

200-35736-A-11-A PDS 10/19/2016 11:24:39 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	11:25:01	127173.350	1797.597	52327.015	T 8637338.400	T 2382989.900	T 79614841.000	T 14890784.000	T 3120798.200	206663.400	14125.984	315905.790	23930
2	11:25:22	127667.100	1750.092	50842.430	T 8406290.700	T 2364694.500	T 80670605.000	T 14838259.000	T 3189576.300	209974.400	13865.765	323275.090	23930
3	11:25:44	125742.550	1715.088	51795.358	T 8382106.700	T 2386157.700	T 80819716.000	T 15138625.000	T 3297606.600	208415.010	13820.728	331178.000	24453
x		126861.000	1754.259	51654.934	T 8475245.300	T 2377947.400	T 80368387.000	T 14955889.000	T 3202660.300	208350.930	13937.492	323452.960	24104
σ		999.571	41.412	752.188	T 140896.630	T 11586.069	T 656835.090	T 160417.930	T 89127.380	1656.430	164.784	7637.658	301
%RSD		0.788	2.361	1.456	T 1.662	T 0.487	T 0.817	T 1.073	T 2.783	0.795	1.182	2.361	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	11:25:01	32181.039	TM 26944241.000	T 334935850.000	160458.710	63947.443	1413245.900	507000.960	22972.822	1976.117	2125.635	164.001	5936
2	11:25:22	30808.449	TM 27094624.000	T 338474280.000	163730.300	65242.448	1441634.500	509536.560	23256.214	1873.105	2224.648	173.001	6066
3	11:25:44	32241.155	TM 27648290.000	T 339650410.000	163336.460	65413.115	1441449.500	519177.340	23328.315	1894.108	2248.152	169.501	6116
x		31743.547	TM 27229052.000	T 337686840.000	162508.490	64867.669	1432110.000	511904.950	23185.784	1914.443	2199.479	168.834	6039
σ		810.377	TM 370775.270	T 2453935.900	1786.050	801.494	16337.055	6424.406	187.921	54.434	65.021	4.537	92
%RSD		2.553	TM 1.362	T 0.727	1.099	1.236	1.141	1.255	0.811	2.843	2.956	2.687	1

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	11:25:01	881000.270	548013.850	159640.910	34330.321	805.019	9222.551	986845.860	47848.586	49252.667	38138.086	444930.670	194498
2	11:25:22	886448.040	540649.080	162079.280	35768.340	730.016	9667.803	982224.510	47973.946	49979.827	39076.756	453825.740	195914
3	11:25:44	889931.510	545586.120	165835.960	35683.158	775.018	9777.867	998616.870	48776.269	50245.625	39408.536	461209.330	196795
x		885793.270	544749.680	162518.720	35260.606	770.018	9556.074	989229.080	48199.600	49826.040	38874.459	453321.910	195736
σ		4501.477	3752.954	3120.816	806.776	37.751	294.035	8452.051	503.328	514.032	658.942	8151.017	1158
%RSD		0.508	0.689	1.920	2.288	4.903	3.077	0.854	1.044	1.032	1.695	1.798	0

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:25:01	33032.702	165240.090	1107834.600	129511.250	0.000	413224.920	199491.810
2	11:25:22	33759.156	169810.690	1125276.900	132061.140	0.000	420334.420	207625.240
3	11:25:44	35688.168	173013.370	1142806.500	134369.480	0.000	432540.850	207068.380
x		34160.009	169354.720	1125306.000	131980.620	0.000	422033.400	204728.480
σ		1372.366	3906.650	17485.946	2430.117	0.000	9769.399	4543.627
%RSD		4.017	2.307	1.554	1.841	0.000	2.315	2.219

200-35736-A-11-I MS 10/19/2016 11:30:21 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:30:43	126447.860	1827.600	44494.313	T 8622479.500	T 2569014.500	T 92744056.000	T 15720673.000	T 3758284.300	211928.900	19886.858	359250.540	26726
2	11:31:05	122901.480	1847.602	44880.346	T 8595635.500	T 2562323.500	T 92314280.000	T 15514578.000	T 3778637.300	213691.190	20012.007	367630.330	26799
3	11:31:26	123395.110	1940.113	45446.878	T 8658801.400	T 2554792.000	T 91351467.000	T 15875407.000	T 3818235.700	213792.480	20167.194	364814.460	26913
x		124248.150	1871.772	44940.512	T 8625638.800	T 2562043.300	T 92136601.000	T 15703553.000	T 3785052.400	213137.520	20022.020	363898.450	26813
σ		1920.928	60.024	479.124	T 31701.233	T 7115.417	T 713094.130	T 181022.620	T 30486.217	1047.921	140.436	4264.332	94
%RSD		1.546	3.207	1.066	T 0.368	T 0.278	T 0.774	T 1.153	T 0.805	0.492	0.701	1.172	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:30:43	34310.280	TM 28539105.000	T 345189590.000	162685.140	71518.117	1648868.600	528348.910	24469.950	1968.116	2236.650	168.501	650
2	11:31:05	34951.610	TM 28846105.000	T 350061010.000	165517.820	72231.182	1668958.300	528286.990	24858.525	1899.108	2153.639	170.501	680
3	11:31:26	34320.300	TM 28984670.000	T 351289020.000	165048.200	71633.611	1696430.100	536591.050	25194.028	2015.122	2146.138	163.501	688
x		34527.397	TM 28789960.000	T 348846540.000	164417.050	71794.303	1671419.000	531075.650	24840.834	1960.782	2178.809	167.501	672
σ		367.414	TM 228027.200	T 3225985.700	1518.153	382.730	23876.067	4776.578	362.363	58.354	50.232	3.606	19

%RSD		1.064	TM 0.792	T 0.925	0.923	0.533	1.428	0.899	1.459	2.976	2.305	2.153	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	11:30:43	984667.520	584502.680	154255.560	35121.968	665.013	9102.485	967033.680	53741.505	14146.001	10597.368	459837.190	19322
2	11:31:05	998033.430	587785.140	157662.210	35382.518	645.012	8877.364	964069.120	54564.171	13720.645	10845.528	464678.730	19753
3	11:31:26	1016118.600	595242.940	160423.370	35828.469	675.014	8947.401	984757.620	56400.269	13985.866	10874.046	471465.390	20091
x		999606.520	589176.920	157447.050	35444.318	661.680	8975.750	971953.470	54901.982	13950.837	10772.314	465327.100	19722
σ		15784.448	5503.736	3089.533	357.282	15.276	115.207	11187.352	1361.192	214.830	152.177	5841.150	385
%RSD		1.579	0.934	1.962	1.008	2.309	1.284	1.151	2.479	1.540	1.413	1.255	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:30:43	35026.768	140898.060	1066462.500	130720.630	0.000	432874.340	205499.130
2	11:31:05	36124.106	144377.650	1082674.300	128009.710	0.000	434326.390	209868.070
3	11:31:26	36805.595	146127.800	1094025.700	134500.530	0.000	439971.600	213184.770
x		35985.489	143801.170	1081054.200	131076.960	0.000	435724.110	209517.320
σ		897.478	2662.104	13852.866	3260.046	0.000	3749.397	3854.803
%RSD		2.494	1.851	1.281	2.487	0.000	0.860	1.840

200-35736-A-11-J MSD 10/19/2016 11:36:04 AM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**5**
1	11:36:26	128201.180	1765.093	44143.382	T 8806749.000	T 2657420.700	T 88622108.000	T 15415072.000	T 2696569.100	209569.350	15492.197	353795.700	266214.
2	11:36:48	125127.950	1852.603	44825.198	T 8754712.000	T 2685510.200	T 89000083.000	T 15791778.000	T 2747832.400	216405.880	16388.053	364686.710	271325.
3	11:37:09	122286.980	1850.103	44704.875	T 8692983.100	T 2669800.800	T 89301452.000	T 15671673.000	T 2783484.800	217479.730	16498.162	363225.310	267748.
x		125205.370	1822.600	44557.818	T 8751481.400	T 2670910.600	T 88974548.000	T 15626174.000	T 2742628.800	214484.990	16126.137	360569.240	268429.
σ		2957.857	49.818	363.920	T 56951.692	T 14077.625	T 340391.010	T 192430.330	T 43690.908	4290.793	551.762	5911.392	2622.
%RSD		2.362	2.733	0.817	T 0.651	T 0.527	T 0.383	T 1.231	T 1.593	2.001	3.422	1.639	0.

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**8**
1	11:36:26	34826.348	T 25702145.000	T 339906720.000	163346.560	69911.321	1560804.300	545152.260	24306.712	2094.132	2256.653	153.501	5655.
2	11:36:48	34390.445	T 26364248.000	T 342901370.000	164533.150	71864.602	1599794.000	551836.940	24510.009	2129.136	2199.145	166.001	5610.
3	11:37:09	34856.411	T 26342968.000	T 347396830.000	163684.850	71487.988	1598805.600	559087.680	24807.449	1993.119	2180.643	160.001	5525.
x		34691.068	T 26136454.000	T 343401640.000	163854.850	71087.970	1586468.000	552025.630	24541.390	2072.129	2212.147	159.834	5597.
σ		260.781	T 376273.000	T 3770027.700	611.287	1036.261	22230.870	6969.626	251.839	70.627	39.638	6.252	66.
%RSD		0.752	T 1.440	T 1.098	0.373	1.458	1.401	1.263	1.026	3.408	1.792	3.911	1.

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	11:36:26	793924.580	565400.370	158737.340	36079.009	680.014	10618.381	1005386.200	53746.521	13960.845	10670.915	437441.290	198808.
2	11:36:48	809959.130	570323.930	163730.300	36244.367	755.017	10218.131	983761.290	54373.550	13650.588	10962.104	442856.510	200539.
3	11:37:09	808275.270	559692.480	161367.420	35823.458	815.020	10778.484	996505.980	54925.355	14226.069	10942.091	443359.630	200478.
x		804053.000	565138.930	161278.350	36048.945	750.017	10538.332	995217.820	54348.475	13945.834	10858.370	441219.140	199942.
σ		8811.776	5320.545	2497.668	212.059	67.642	288.626	10869.853	589.817	288.034	162.649	3281.376	982.
%RSD		1.096	0.941	1.549	0.588	9.019	2.739	1.092	1.085	2.065	1.498	0.744	0.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:36:26	36284.454	141750.240	1111379.300	129229.070	0.000	408270.030	202254.810
2	11:36:48	38674.820	149058.590	1125341.100	132686.070	0.000	416161.650	206319.170
3	11:37:09	37707.608	148740.770	1124737.300	136617.650	0.000	418376.060	212303.630
x		37555.627	146516.530	1120485.900	132844.260	0.000	414269.250	206959.200
σ		1202.409	4130.786	7892.288	3696.827	0.000	5312.145	5054.890
%RSD		3.202	2.819	0.704	2.783	0.000	1.282	2.442

200-35736-A-12-A 10/19/2016 11:41:47 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	11:42:09	115287.360	510.008	3480.363	1003996.000	T 2451516.800	T 68660647.000	T 6576836.500	T 3712663.000	201693.060	7096.511	197670.300	143227.7
2	11:42:30	115106.110	417.505	3605.390	T 1087822.900	T 2467161.600	T 68580108.000	T 6595759.000	T 3685041.100	199598.070	6826.398	197857.500	146329.5
3	11:42:52	117472.540	385.004	3115.291	T 1086905.700	T 2470814.200	T 68872159.000	T 6574749.200	T 3739592.700	200114.200	6981.462	198434.290	143948.9
x		115955.340	437.506	3400.348	T 1059574.900	T 2463164.200	T 68704305.000	T 6582448.200	T 3712432.300	200468.440	6968.123	197987.360	144502.1
σ		1317.056	64.857	254.659	T 48134.877	T 10250.956	T 150840.720	T 11574.640	T 27276.564	1091.498	135.549	398.211	1623.1
%RSD		1.136	14.824	7.489	T 4.543	T 0.416	T 0.220	T 0.176	T 0.735	0.544	1.945	0.201	1.1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	11:42:09	19251.112	TM 28756830.000	T 319704770.000	123304.440	53831.796	1318974.200	412128.260	15348.064	724.016	672.014	155.501	5410.8
2	11:42:30	19100.939	TM 29231514.000	T 323999100.000	121032.880	51995.981	1330157.700	415285.190	15441.150	699.015	709.015	155.001	5460.8
3	11:42:52	18935.751	TM 28915329.000	T 321769940.000	122412.900	52728.276	1311070.700	418053.110	15183.913	720.016	659.513	145.501	5160.7
x		19095.934	TM 28967891.000	T 321824610.000	122250.070	52852.018	1320067.600	415155.520	15324.376	714.349	680.181	152.001	5344.1
σ		157.740	TM 241667.840	T 2147686.100	1144.500	924.142	9590.375	2964.552	130.244	13.429	25.742	5.635	160.7
%RSD		0.826	TM 0.834	T 0.667	0.936	1.749	0.727	0.714	0.850	1.880	3.785	3.707	3.0

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	11:42:09	775172.060	512685.960	6296.189	4890.717	220.001	2670.214	953009.470	21578.961	1520.069	1293.550	387589.980	187154.9
2	11:42:30	781811.660	507160.720	6056.100	4550.621	325.003	2470.183	960639.330	22465.130	1750.092	1285.050	390670.670	187023.4
3	11:42:52	781167.490	511211.700	6271.180	4750.677	270.002	2590.201	970380.010	23356.354	1565.074	1278.049	392794.720	185132.5
x		779383.740	510352.790	6207.823	4730.672	271.669	2576.866	961342.940	22466.815	1611.745	1285.550	390351.790	186436.9
σ		3661.609	2861.010	131.989	170.928	52.521	100.680	8706.620	888.698	121.907	7.763	2616.983	1131.5
%RSD		0.470	0.561	2.126	3.613	19.333	3.907	0.906	3.956	7.564	0.604	0.670	0.6

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:42:09	1190.043	4710.666	844733.130	127384.950	0.000	143026.070	60334.008
2	11:42:30	1080.035	4750.677	843660.810	126468.010	0.000	143631.240	59817.150
3	11:42:52	1050.033	5100.780	857863.980	128352.330	0.000	147883.190	59420.736
x		1106.704	4854.041	848752.640	127401.770	0.000	144846.830	59857.298
σ		73.716	214.617	7908.847	942.274	0.000	2646.910	457.958
%RSD		6.661	4.421	0.932	0.740	0.000	1.827	0.765

MB 200-110239/1-A 10/19/2016 11:47:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:47:52	118882.480	0.000	1055.033	502543.980	980.029	29796.611	65639.000	2740.225	181644.480	30.000	9712.829	1775.094
2	11:48:13	118429.280	0.000	1095.036	503244.660	1460.064	37697.585	67074.699	3090.287	184091.100	15.000	10283.171	1840.102
3	11:48:35	115196.740	5.000	1015.031	498464.170	1760.093	41346.222	65016.568	3100.288	184839.310	25.000	10363.221	1850.103
x		117502.830	1.667	1055.033	501417.600	1400.062	36280.139	65910.089	2976.933	183524.960	23.333	10119.741	1821.766
σ		2009.951	2.887	40.003	2581.629	393.478	5903.833	1055.506	205.056	1670.967	7.638	354.661	40.727
%RSD		1.711	173.205	3.792	0.515	28.104	16.273	1.601	6.888	0.910	32.733	3.505	2.236

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:47:52	3415.350	8807.326	355414.610	90.000	135.001	880.023	1020.031	1157.040	394.005	140.501	136.001	665.013
2	11:48:13	3605.390	11754.143	390102.590	105.000	85.000	1110.037	1000.030	1316.052	447.006	144.501	145.001	705.015
3	11:48:35	3500.367	13090.139	400848.100	95.000	160.001	1055.033	955.027	1223.045	412.005	130.501	144.501	675.014
x		3507.036	11217.203	382121.760	96.667	126.667	1015.031	991.696	1232.046	417.672	138.501	141.834	681.681

σ		95.195	2191.312	23744.909	7.638	38.188	120.111	33.294	79.887	26.951	7.211	5.058	20.818
%RSD		2.714	19.535	6.214	7.901	30.149	11.833	3.357	6.484	6.453	5.207	3.566	3.054
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:47:52	840.021	229408.050	160.001	30.000	0.000	0.000	989771.950	760.017	85.000	89.000	160.001	158752.490
2	11:48:13	980.029	230482.720	270.002	80.000	5.000	5.000	993271.200	940.027	135.001	113.500	175.001	162760.870
3	11:48:35	1025.032	233757.870	200.001	70.000	0.000	10.000	995827.150	1025.032	160.001	125.500	135.001	157389.650
x		948.361	231216.210	210.001	60.000	1.667	5.000	992956.770	908.358	126.667	109.334	156.667	159634.340
σ		96.485	2265.774	55.678	26.458	2.887	5.000	3039.820	135.315	38.188	18.603	20.207	2792.086
%RSD		10.174	0.980	26.513	44.096	173.205	100.000	0.306	14.897	30.149	17.015	12.898	1.749

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:47:52	115.000	400.005	685.014	122276.910	0.000	5961.066	70.000
2	11:48:13	135.001	365.004	755.017	123979.420	0.000	5786.004	70.000
3	11:48:35	100.000	405.005	870.023	123395.110	0.000	5170.802	45.000
x		116.667	390.005	770.018	123217.140	0.000	5639.291	61.667
σ		17.560	21.795	93.412	865.093	0.000	415.058	14.434
%RSD		15.051	5.588	12.131	0.702	0.000	7.360	23.406

LCS 200-110239/2-A 10/19/2016 11:53:13 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:53:35	114179.780	1327.553	46188.914	T 7568104.500	263049.600	600372.080	T 7146497.700	229732.470	164952.260	45.000	112901.110	82900.664
2	11:53:57	108904.650	1297.551	46073.595	T 7423611.800	258895.310	578234.620	T 6837577.600	226062.800	163588.920	5.000	109991.750	83699.642
3	11:54:18	106348.220	1160.040	46213.983	T 7316021.900	251472.950	581438.240	T 6826285.700	221644.050	160731.320	10.000	109498.520	81704.780
x		109810.880	1261.715	46158.831	T 7435912.700	257805.950	586681.650	T 6936787.000	225813.110	163090.830	20.000	110797.130	82768.362
σ		3993.653	89.321	74.873	T 126490.700	5864.699	11963.980	T 181702.550	4049.990	2154.102	21.795	1838.716	1003.990
%RSD		3.637	7.079	0.162	T 1.701	2.275	2.039	T 2.619	1.794	1.321	108.973	1.660	1.213

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:53:35	13530.490	65257.507	T 6064144.100	24668.242	11118.708	33829.298	97594.909	9094.481	1561.073	1739.591	127.000	1835.101
2	11:53:57	12274.518	63129.333	T 5958026.100	24553.072	10463.283	33303.240	97584.850	8929.391	1578.075	1737.091	115.000	2005.121
3	11:54:18	12374.592	64830.846	T 5969957.100	24943.652	11013.638	33052.742	98993.119	8909.381	1484.066	1715.588	106.500	1880.106
x		12726.533	64405.895	T 5997375.800	24721.655	10865.210	33395.093	98057.626	8977.751	1541.071	1730.757	116.167	1906.776
σ		698.042	1125.930	T 58130.016	200.693	352.020	396.343	810.176	101.585	50.095	13.195	10.300	88.092
%RSD		5.485	1.748	T 0.969	0.812	3.240	1.187	0.826	1.132	3.251	0.762	8.866	4.620

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:53:35	208946.600	204152.740	139481.220	28123.708	445.006	6536.281	905370.620	860.022	44333.886	34340.341	44900.400	148871.930
2	11:53:57	208050.500	204426.060	143812.800	28053.590	450.006	6591.303	897195.860	855.022	44940.508	34774.741	45888.085	148478.440
3	11:54:18	208141.620	200670.830	142657.940	27657.930	440.006	6491.264	893979.770	805.019	46198.942	34457.082	46033.485	148599.510
x		208379.570	203083.210	141983.980	27945.076	445.006	6539.616	898848.750	840.021	45157.779	34524.055	45607.323	148649.960
σ		493.170	2093.644	2243.057	251.135	5.000	50.103	5872.558	30.415	951.322	224.810	616.515	201.536
%RSD		0.237	1.031	1.580	0.899	1.124	0.766	0.653	3.621	2.107	0.651	1.352	0.136

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:53:35	59320.380	146445.570	54388.599	113575.670	0.000	146541.410	115433.370
2	11:53:57	59646.541	148473.400	55231.364	117472.540	0.000	153957.820	116979.090
3	11:54:18	60198.520	148720.590	55095.917	113495.120	0.000	162826.510	117235.880
x		59721.813	147879.850	54905.293	114847.780	0.000	154441.910	116549.450
σ		443.883	1248.255	452.566	2273.468	0.000	8153.333	975.044
%RSD		0.743	0.844	0.824	1.980	0.000	5.279	0.837

200-35680-A-13-A 10/19/2016 11:58:57 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:59:19	115599.510	12.500	1270.048	475765.010	710.015	12419.626	62386.544	2190.144	170810.830	5.000	12219.478	1515.069
2	11:59:40	118086.860	7.500	1225.045	478614.890	870.023	15216.943	62657.558	2270.155	170214.780	10.000	11954.286	1680.085
3	12:00:02	116243.970	7.500	1060.034	478326.790	1240.046	22840.640	64303.811	2400.173	166578.310	50.000	12164.438	1805.098
x		116643.450	9.167	1185.042	477568.900	940.028	16825.736	63115.971	2286.824	169201.300	21.667	12112.734	1666.750
σ		1290.895	2.887	110.574	1568.838	271.862	5393.565	1037.586	106.002	2291.046	24.664	139.952	145.474
%RSD		1.107	31.492	9.331	0.329	28.921	32.055	1.644	4.635	1.354	113.836	1.155	8.728

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:59:19	4035.488	4375.574	260479.710	80.000	120.000	650.013	1495.067	1205.044	384.004	135.501	113.000	525.008
2	11:59:40	4220.534	5070.771	271102.100	75.000	115.000	665.013	1415.060	1270.048	409.005	106.000	121.000	580.010
3	12:00:02	4300.555	7041.487	301563.760	110.000	125.000	840.021	1575.074	1209.044	422.005	122.000	118.500	620.012
x		4185.526	5495.944	277715.190	88.334	120.000	718.349	1495.067	1228.045	405.005	121.167	117.500	575.010
σ		135.957	1382.878	21325.444	18.930	5.000	105.638	80.007	36.431	19.314	14.768	4.093	47.699

%RSD		3.248	25.162	7.679	21.430	4.167	14.706	5.351	2.967	4.769	12.188	3.483	8.295
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:59:19	675.014	209113.680	315.003	25.000	0.000	5.000	933109.500	580.010	160.001	113.500	115.000	149769.920
2	11:59:40	690.014	209255.440	435.006	25.000	0.000	10.000	924583.490	590.010	215.001	152.001	120.000	147832.740
3	12:00:02	840.021	206552.030	450.006	45.000	0.000	5.000	909633.600	780.018	255.002	172.001	195.001	146612.030
x		735.016	208307.050	400.005	31.667	0.000	6.667	922442.200	650.013	210.001	145.834	143.334	148071.560
σ		91.246	1521.543	73.995	11.547	0.000	2.887	11883.535	112.699	47.698	29.734	44.815	1592.435
%RSD		12.414	0.730	18.499	36.464	0.000	43.301	1.288	17.338	22.713	20.389	31.266	1.075

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:59:19	265.002	675.014	525.008	116153.340	0.000	31189.156	90.000
2	11:59:40	285.002	585.010	650.013	115488.750	0.000	28714.715	140.001
3	12:00:02	325.003	645.012	840.021	118771.700	0.000	26506.060	135.001
x		291.669	635.012	671.681	116804.600	0.000	28803.310	121.667
σ		30.551	45.827	158.620	1735.667	0.000	2342.804	27.538
%RSD		10.475	7.217	23.615	1.486	0.000	8.134	22.634

200-35700-A-19-A 10/19/2016 12:04:41 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:05:02	121279.660	12.500	915.025	496476.130	1680.085	42734.718	67817.697	3250.317	174205.700	40.000	16438.102	2445.179
2	12:05:24	122992.140	2.500	935.026	501462.120	1160.040	32962.564	64544.739	2780.232	177965.100	30.000	16538.201	2120.135
3	12:05:46	119144.340	7.500	990.029	495580.050	1100.036	26706.380	62256.058	2750.227	175731.590	30.000	16207.877	2145.138
x		121138.720	7.500	946.694	497839.430	1313.387	34134.554	64872.831	2926.925	175967.460	33.333	16394.727	2236.817
σ		1927.768	5.000	38.839	3169.168	318.983	8078.185	2795.298	280.467	1890.770	5.774	169.380	180.879
%RSD		1.591	66.667	4.103	0.637	24.287	23.666	4.309	9.582	1.074	17.321	1.033	8.086
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:05:02	5685.970	10363.221	365862.050	80.000	95.000	990.029	1140.039	1635.080	540.009	130.001	121.500	680.014
2	12:05:24	5690.971	8222.028	331922.590	125.000	100.000	960.028	1025.032	1581.075	482.007	117.000	115.000	735.016
3	12:05:46	5590.938	6246.170	305978.130	90.000	110.000	875.023	1060.034	1568.074	571.010	119.000	129.500	730.016
x		5655.960	8277.140	334587.590	98.334	101.667	941.693	1075.035	1594.743	531.009	122.000	122.000	715.015
σ		56.366	2059.079	30030.780	23.629	7.638	59.655	58.953	35.533	45.179	7.000	7.263	30.415
%RSD		0.997	24.877	8.975	24.030	7.512	6.335	5.484	2.228	8.508	5.738	5.953	4.254
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:05:02	685.014	221451.510	300.003	80.000	5.000	0.000	936998.860	685.014	145.001	97.500	220.001	151253.230
2	12:05:24	725.016	219080.490	270.002	55.000	0.000	20.000	942337.590	805.019	185.001	96.000	145.001	155915.900
3	12:05:46	565.010	218624.560	240.002	15.000	0.000	5.000	957252.570	660.013	135.001	108.000	125.000	154411.990
x		658.346	219718.850	270.002	50.000	1.667	8.333	945529.670	716.682	155.001	100.500	163.334	153860.370
σ		83.270	1517.746	30.000	32.787	2.887	10.408	10497.390	77.517	26.458	6.538	50.084	2379.778
%RSD		12.648	0.691	11.111	65.574	173.205	124.900	1.110	10.816	17.069	6.506	30.663	1.547

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:05:02	165.001	475.007	880.023	118822.060	0.000	12119.405	100.000
2	12:05:24	175.001	390.005	760.017	116586.350	0.000	11448.931	50.000
3	12:05:46	170.001	340.003	805.019	119678.150	0.000	10938.588	65.000
x		170.001	401.672	815.020	118362.180	0.000	11502.308	71.667
σ		5.000	68.254	60.625	1596.376	0.000	592.215	25.658
%RSD		2.941	16.992	7.438	1.349	0.000	5.149	35.802

CCV 10/19/2016 12:10:25 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:10:47	104657.570	78851.085	28509.363	┬13226496.000	┬3887801.400	┬36206302.000	┬12594996.000	1286011.700	150183.620	24312.720	┬2566030.900	7225
2	12:11:08	105684.010	75982.808	27743.071	┬13016024.000	┬3812615.800	┬36059259.000	┬12552942.000	1246373.700	145512.460	24973.697	┬2589165.300	7274
3	12:11:31	106287.840	75538.294	27873.288	┬12886177.000	┬3761349.900	┬35762251.000	┬12597733.000	┬1339492.600	145744.470	24082.386	┬2542444.000	7186
x		105543.140	76790.729	28041.907	┬13042899.000	┬3820589.100	┬36009271.000	┬12581890.000	┬1290626.000	147146.850	24456.268	┬2565880.100	7229
σ		824.213	1798.110	410.030	┬171743.910	┬63601.685	┬226206.960	┬25107.409	┬46730.622	2632.478	462.669	┬23360.996	44
%RSD		0.781	2.342	1.462	┬1.317	┬1.665	┬0.628	┬0.200	┬3.621	1.789	1.892	┬0.910	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:10:47	91364.741	┬3797156.100	┬78348305.000	1113114.600	604533.530	746005.240	585941.910	78002.104	6176.144	8244.038	114.500	48
2	12:11:08	90545.287	┬3791732.200	┬77440406.000	1105454.100	594030.830	743454.990	580987.930	77382.224	6127.126	8210.022	120.500	51
3	12:11:31	87835.846	┬3736939.700	┬77600654.000	1102705.700	598206.260	737880.270	584839.180	76564.460	6113.121	8101.969	115.500	51
x		89915.291	┬3775276.000	┬77796455.000	1107091.400	598923.540	742446.840	583923.010	77316.263	6138.797	8185.343	116.834	50
σ		1846.875	┬33310.800	┬484586.080	5394.164	5287.962	4155.245	2600.962	721.088	33.093	74.180	3.215	1
%RSD		2.054	┬0.882	┬0.623	0.487	0.883	0.560	0.445	0.933	0.539	0.906	2.751	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	12:10:47	771968.390	186841.450	1586657.900	255594.950	7856.851	123299.400	826203.040	782775.350	531553.420	402842.840	527611.080	1348
2	12:11:08	764615.820	184637.090	1621955.100	253046.500	8212.023	125263.970	829532.460	782942.950	530289.090	406090.230	524329.930	1361
3	12:11:31	763381.110	187357.200	1640968.000	252777.470	7801.826	121491.200	821908.320	783749.570	532859.140	403742.210	524933.490	1375
x		766655.110	186278.580	1616527.000	253806.310	7956.900	123351.520	825881.270	783155.960	531567.220	404225.090	525624.830	1361
σ		4642.666	1444.770	27558.932	1554.841	222.649	1886.927	3822.241	520.868	1285.081	1676.686	1746.410	13
%RSD		0.606	0.776	1.705	0.613	2.798	1.530	0.463	0.067	0.242	0.415	0.332	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:10:47	32336.339	1394729.400	┬7536256.100	107888.070	0.000	178045.960	103112.980
2	12:11:08	33699.034	1423174.700	┬7559394.800	107706.900	0.000	193420.870	105351.920
3	12:11:31	33263.160	1405967.200	┬7640351.600	109166.350	0.000	205433.330	105044.990
x		33099.511	1407957.100	┬7578667.500	108253.770	0.000	192300.050	104503.300
σ		695.931	14326.711	┬54658.446	795.490	0.000	13728.045	1213.789
%RSD		2.103	1.018	┬0.721	0.735	0.000	7.139	1.161

CCB 10/19/2016 12:16:12 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:16:34	113535.400	12.500	745.017	237774.080	400.005	4170.522	54238.110	610.011	153937.640	40.000	13245.261	1285.050
2	12:16:56	112156.100	10.000	765.018	236364.240	630.012	5755.994	51840.498	560.009	156481.160	15.000	12904.994	1320.052
3	12:17:17	111129.260	12.500	645.012	234001.250	630.012	6436.243	51920.747	590.010	153947.730	10.000	13125.166	1320.052
x		112273.590	11.667	718.349	236046.520	553.343	5454.253	52666.452	586.677	154788.840	21.667	13091.807	1308.385
σ		1207.362	1.443	64.294	1906.379	132.795	1162.609	1361.687	25.167	1465.599	16.073	172.569	20.209
%RSD		1.075	12.372	8.950	0.808	23.999	21.316	2.585	4.290	0.947	74.182	1.318	1.545

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:16:34	4455.596	790.019	212425.160	110.000	45.000	245.002	555.009	1033.032	355.004	95.000	106.000	615.011
2	12:16:56	4500.608	940.027	215159.910	75.000	70.000	235.002	575.010	1090.036	329.003	104.500	106.500	670.013
3	12:17:17	4400.581	1270.048	219176.740	160.001	55.000	310.003	625.012	1089.036	382.004	108.000	118.500	565.010
x		4452.261	1000.031	215587.270	115.000	56.667	263.335	585.010	1070.701	355.337	102.500	110.334	616.678

σ		50.097	245.576	3396.017	42.720	12.583	40.723	36.057	32.626	26.502	6.727	7.077	52.522
%RSD		1.125	24.557	1.575	37.148	22.205	15.464	6.163	3.047	7.458	6.563	6.414	8.517
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:16:34	50.000	194457.840	3015.273	40.000	0.000	10.000	850984.410	2740.225	625.012	529.008	65.000	139360.210
2	12:16:56	110.000	194437.600	3015.273	45.000	0.000	20.000	851173.710	3060.281	825.020	521.508	50.000	141467.860
3	12:17:17	115.000	195135.690	2640.209	45.000	0.000	15.000	861841.510	2980.266	860.022	545.509	45.000	139904.750
x		91.667	194677.040	2890.251	43.333	0.000	15.000	854666.540	2926.924	770.018	532.008	53.333	140244.270
σ		36.171	397.329	216.543	2.887	0.000	5.000	6214.423	166.562	126.793	12.278	10.408	1094.075
%RSD		39.459	0.204	7.492	6.662	0.000	33.333	0.727	5.691	16.466	2.308	19.516	0.780

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:16:34	170.001	1410.060	640.012	112246.710	0.000	1025.032	20.000
2	12:16:56	190.001	1380.057	830.021	112659.480	0.000	1000.030	35.000
3	12:17:17	150.001	1260.048	1010.031	111511.800	0.000	1135.039	65.000
x		170.001	1350.055	826.688	112139.330	0.000	1053.367	40.000
σ		20.000	79.379	185.032	581.326	0.000	71.826	22.913
%RSD		11.765	5.880	22.382	0.518	0.000	6.819	57.282

CCVL 10/19/2016 12:21:55 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:22:17	114109.300	170.001	5360.862	867904.290	26120.452	63917.328	650979.710	23156.075	160943.350	0.000	25965.210	9042.452
2	12:22:39	113434.710	145.001	5450.891	888160.700	26811.548	67225.304	670511.620	24908.599	163528.330	30.000	25694.791	9057.460
3	12:23:01	111199.730	165.001	5570.931	871936.800	25569.599	69394.166	664768.280	23596.692	161205.870	10.000	25985.241	9522.720
x		112914.580	160.001	5460.895	876000.600	26167.200	66845.600	662086.540	23887.122	161892.520	13.333	25881.748	9207.544
σ		1522.925	13.229	105.391	10722.239	622.293	2758.092	10038.309	911.645	1422.724	15.275	162.218	273.053
%RSD		1.349	8.268	1.930	1.224	2.378	4.126	1.516	3.816	0.879	114.564	0.627	2.966

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:22:17	6271.180	7091.508	719956.350	2590.201	1280.049	3840.442	11518.979	2264.154	551.009	283.002	110.000	685.014
2	12:22:39	6391.225	7381.634	730537.170	2820.239	1280.049	3630.395	11589.028	2174.142	592.011	305.003	118.000	690.014
3	12:23:01	6676.337	8126.981	738945.960	2560.197	1310.052	3545.377	11263.805	2159.140	512.008	289.003	105.500	705.015
x		6446.247	7533.374	729813.160	2656.879	1290.050	3672.072	11457.271	2199.145	551.676	292.336	111.167	693.348
σ		208.107	534.153	9515.486	142.267	17.322	151.883	171.168	56.797	40.005	11.373	6.331	10.409
%RSD		3.228	7.090	1.304	5.355	1.343	4.136	1.494	2.583	7.252	3.890	5.695	1.501

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:22:17	19140.985	197128.940	13735.658	2895.251	70.000	800.019	862115.130	1375.057	4445.593	3413.850	4655.650	143999.400
2	12:22:39	20362.431	199051.590	14246.086	2725.223	35.000	725.016	868304.340	1525.070	4790.688	3561.881	4530.616	142546.990
3	12:23:01	20342.407	198029.520	14226.069	2795.234	40.000	685.014	876065.060	1440.062	5015.755	3649.400	4415.585	142254.510
x		19948.608	198070.020	14069.271	2805.236	48.333	736.683	868828.180	1446.730	4750.679	3541.710	4533.950	142933.630
σ		699.493	961.964	289.091	85.454	18.930	58.384	6989.704	75.228	287.179	119.063	120.067	934.493
%RSD		3.506	0.486	2.055	3.046	39.165	7.925	0.804	5.200	6.045	3.362	2.648	0.654

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:22:17	2710.220	14556.354	6746.365	113183.010	0.000	9732.841	11068.674
2	12:22:39	2670.214	15342.058	7071.500	114683.210	0.000	10263.159	11518.979
3	12:23:01	2895.251	15522.225	6951.449	114340.870	0.000	11158.734	11338.856
x		2758.562	15140.212	6923.105	114069.030	0.000	10384.911	11308.836
σ		120.055	513.598	164.410	786.178	0.000	720.701	226.648
%RSD		4.352	3.392	2.375	0.689	0.000	6.940	2.004

200-35736-A-14-A 10/19/2016 12:27:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:28:01	116445.370	5.000	720.016	476516.020	310.003	4755.678	54258.175	1820.099	164881.560	30.000	17914.623	1945.113
2	12:28:23	116546.070	2.500	590.010	477894.660	300.003	4985.746	54779.877	1550.072	165618.820	15.000	18034.752	1930.112
3	12:28:44	118056.650	2.500	725.016	477946.100	330.003	5405.877	55000.602	1710.088	163800.990	15.000	18745.536	2260.153
x		117016.030	3.333	678.347	477452.260	313.336	5049.100	54679.552	1693.420	164767.120	20.000	18231.637	2045.126
σ		902.606	1.443	76.543	811.218	15.276	329.696	381.246	135.783	914.304	8.660	449.084	186.370
%RSD		0.771	43.301	11.284	0.170	4.875	6.530	0.697	8.018	0.555	43.301	2.463	9.113

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:28:01	6581.299	1770.094	219343.920	35.000	150.001	405.005	1350.055	1606.077	518.008	103.500	114.500	630.012
2	12:28:23	6516.274	1680.085	219799.860	20.000	100.000	380.004	1285.050	1578.075	517.008	100.000	130.001	685.014
3	12:28:44	6511.272	1795.097	224086.380	50.000	95.000	380.004	1310.052	1623.079	519.008	112.000	100.500	660.013
x		6536.282	1748.425	221076.720	35.000	115.000	388.338	1315.052	1602.410	518.008	105.167	115.000	658.346
σ		39.067	60.490	2616.393	15.000	30.414	14.434	32.790	22.725	1.000	6.171	14.756	27.539

%RSD		0.598	3.460	1.183	42.857	26.447	3.717	2.493	1.418	0.193	5.868	12.832	4.183
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:28:01	250.002	199122.430	425.005	30.000	0.000	5.000	868672.810	1120.038	165.001	139.001	15.000	142748.710
2	12:28:23	310.003	199203.390	560.009	65.000	0.000	0.000	869630.890	1300.051	165.001	157.501	35.000	145623.420
3	12:28:44	270.002	202614.130	580.010	20.000	0.000	0.000	893442.050	1270.048	255.002	175.001	10.000	147116.440
x		276.669	200313.320	521.675	38.333	0.000	1.667	877248.580	1230.046	195.001	157.167	20.000	145162.860
σ		30.551	1992.977	84.313	23.629	0.000	2.887	14032.135	96.443	51.962	18.002	13.229	2219.992
%RSD		11.042	0.995	16.162	61.641	0.000	173.205	1.600	7.841	26.647	11.454	66.144	1.529

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:28:01	155.001	450.006	395.005	113746.830	0.000	19150.997	40.000
2	12:28:23	150.001	505.008	445.006	111672.880	0.000	17634.324	20.000
3	12:28:44	75.000	445.006	500.007	113001.790	0.000	16137.809	10.000
x		126.667	466.673	446.673	112807.160	0.000	17641.043	23.333
σ		44.815	33.293	52.521	1050.586	0.000	1506.605	15.275
%RSD		35.380	7.134	11.758	0.931	0.000	8.540	65.465

200-35736-A-14-A SD@5 10/19/2016 12:33:24 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:33:46	117200.640	0.000	480.007	304710.220	260.002	5370.865	53485.684	830.021	164285.720	15.000	19286.152	1840.102
2	12:34:07	118278.210	5.000	485.007	303977.010	350.004	5610.944	52763.387	800.019	166194.510	15.000	19211.066	1840.102
3	12:34:29	118207.710	0.000	540.009	300667.790	250.002	5495.906	51308.857	970.028	163346.560	15.000	19396.280	1870.105
x		117895.520	1.667	501.674	303118.340	286.669	5492.572	52519.309	866.689	164608.930	15.000	19297.833	1850.103
σ		602.817	2.887	33.293	2153.670	55.077	120.074	1108.749	90.743	1451.223	0.000	93.158	17.322
%RSD		0.511	173.205	6.636	0.711	19.213	2.186	2.111	10.470	0.882	0.000	0.483	0.936
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:33:46	6571.295	625.012	222018.990	45.000	45.000	255.002	740.016	1691.086	542.009	132.501	108.000	600.011
2	12:34:07	6931.441	775.018	225170.850	20.000	50.000	290.003	790.019	1668.084	583.010	118.500	129.000	625.012
3	12:34:29	7111.517	560.009	224192.800	15.000	20.000	1855.103	760.017	1715.088	594.011	126.500	125.500	655.013
x		6871.418	653.346	223794.210	26.667	38.333	800.036	763.351	1691.419	573.010	125.834	120.834	626.678
σ		275.067	110.269	1613.293	16.073	16.073	913.883	25.167	23.504	27.405	7.024	11.251	27.539
%RSD		4.003	16.878	0.721	60.273	41.929	114.230	3.297	1.390	4.783	5.582	9.311	4.394
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:33:46	125.000	204739.880	180.001	35.000	0.000	10.000	876897.150	815.020	65.000	84.000	15.000	144655.040
2	12:34:07	90.000	202361.090	195.001	10.000	0.000	0.000	886685.170	790.019	135.001	97.000	20.000	145865.520
3	12:34:29	90.000	203393.540	215.001	20.000	0.000	20.000	885431.060	885.024	160.001	111.000	20.000	146783.530
x		101.667	203498.170	196.668	21.667	0.000	10.000	883004.460	830.021	120.000	97.334	18.333	145768.030
σ		20.207	1192.841	17.560	12.583	0.000	10.000	5326.123	49.247	49.245	13.503	2.887	1067.588
%RSD		19.876	0.586	8.929	58.076	0.000	100.000	0.603	5.933	41.037	13.873	15.746	0.732

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:33:46	70.000	275.002	260.002	111612.470	0.000	1970.116	5.000
2	12:34:07	85.000	360.004	225.002	111944.690	0.000	2230.149	5.000
3	12:34:29	70.000	340.003	275.002	112719.890	0.000	2180.143	15.000
x		75.000	325.003	253.335	112092.350	0.000	2126.803	8.333
σ		8.660	44.442	25.658	568.282	0.000	137.979	5.774
%RSD		11.547	13.674	10.128	0.507	0.000	6.488	69.282

200-35736-A-14-A PDS 10/19/2016 12:39:07 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:39:29	117412.120	1325.053	49197.505	T 7561684.000	256234.660	573846.810	T 6908922.200	229671.640	162427.640	20.000	117170.420	81393.262
2	12:39:51	114008.610	1322.553	48154.465	T 7447673.500	253970.400	578788.350	T 6845618.900	226863.580	160489.000	30.000	114713.420	79906.091
3	12:40:13	113031.990	1320.052	48640.875	T 7393007.200	250488.290	568508.460	T 6832787.100	223701.260	158045.820	20.000	114260.320	81337.993
x		114817.570	1322.553	48664.282	T 7467454.900	253564.450	573714.540	T 6862442.700	226745.490	160320.820	23.333	115381.390	80879.115
σ		2299.389	2.500	521.914	T 86060.673	2894.613	5141.223	T 40760.494	2986.943	2195.749	5.774	1565.825	843.116
%RSD		2.003	0.189	1.072	T 1.152	1.142	0.896	T 0.594	1.317	1.370	24.744	1.357	1.042

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:39:29	14931.686	59777.007	T 5872006.600	23746.905	10893.559	33488.611	96252.134	9267.576	1700.087	1681.585	98.000	1705.087
2	12:39:51	14516.319	60645.135	T 5858474.100	24357.786	10188.113	32261.193	95331.867	9171.523	1592.076	1686.085	110.000	1720.089
3	12:40:13	14326.155	60810.736	T 5894367.300	24312.720	10773.481	33012.663	97112.101	9222.551	1518.069	1692.586	121.500	1850.103
x		14591.386	60410.959	T 5874949.300	24139.137	10618.384	32920.822	96232.034	9220.550	1603.411	1686.752	109.834	1758.426
σ		309.666	555.228	T 18126.627	340.429	377.432	618.841	890.287	48.058	91.537	5.531	11.751	79.748
%RSD		2.122	0.919	T 0.309	1.410	3.555	1.880	0.925	0.521	5.709	0.328	10.699	4.535

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:39:29	199699.270	194336.430	135251.570	27287.320	325.003	6106.118	843876.320	820.020	43366.346	32235.143	42609.397	140267.780
2	12:39:51	203434.030	194538.770	137847.710	26791.516	505.008	6151.135	852257.020	915.025	43095.645	32035.759	43606.973	140126.600
3	12:40:13	203621.300	194295.960	139123.240	26686.348	530.008	6106.118	848996.790	985.029	43451.567	32764.674	42794.872	141064.460
x		202251.530	194390.390	137407.510	26921.728	453.340	6121.124	848376.710	906.691	43304.519	32345.192	43003.747	140486.280
σ		2212.307	130.086	1973.017	320.949	111.844	25.990	4224.621	82.820	185.841	376.713	530.576	505.671
%RSD		1.094	0.067	1.436	1.192	24.671	0.425	0.498	9.134	0.429	1.165	1.234	0.360

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:39:29	27016.880	140862.760	52432.345	109277.070	0.000	148614.650	112780.300
2	12:39:51	27407.517	143500.120	53254.947	107757.230	0.000	155451.590	113912.960
3	12:40:13	28238.903	144438.170	53927.103	108049.110	0.000	167159.080	114995.350
x		27554.433	142933.690	53204.798	108361.140	0.000	157075.110	113896.200
σ		624.118	1853.785	748.640	806.539	0.000	9378.212	1107.624
%RSD		2.265	1.297	1.407	0.744	0.000	5.971	0.972

200-35736-A-14-B MS 10/19/2016 12:44:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:44:48	113112.540	1317.552	48856.504	T 7494146.000	255544.180	571720.580	T 6954500.500	226741.940	156269.180	20.000	112090.670	80192.462
2	12:45:10	113172.940	1267.548	47763.342	T 7505703.000	255249.720	571886.120	T 6885174.900	231172.180	160085.140	40.000	114486.870	82156.995
3	12:45:32	112961.520	1337.554	47477.527	T 7416396.300	258560.160	578032.800	T 6953166.000	230056.900	158651.530	20.000	112161.140	80428.596
x		113082.330	1307.551	48032.458	T 7472081.800	256451.350	573879.830	T 6930947.100	229323.670	158335.290	26.667	112912.890	80926.018
σ		108.902	36.058	727.813	T 48569.975	1832.207	3597.527	T 39645.571	2304.338	1927.536	11.547	1363.562	1072.576
%RSD		0.096	2.758	1.515	T 0.650	0.714	0.627	T 0.572	1.005	1.217	43.301	1.208	1.325

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:44:48	13670.604	59621.451	T 5894827.700	23696.834	10818.510	32842.327	96211.903	8790.317	1530.070	1642.581	110.000	1940.113
2	12:45:10	13530.490	61121.871	T 5952821.300	25028.779	10923.579	33177.991	98213.527	8697.269	1566.074	1692.586	102.000	1795.097
3	12:45:32	12509.693	61297.515	T 5930780.900	24442.911	10508.312	32666.983	98862.346	8735.289	1553.072	1719.589	90.000	1740.091
x		13236.929	60680.279	T 5926143.300	24389.508	10750.133	32895.767	97762.592	8740.958	1549.739	1684.919	100.667	1825.100

σ		633.689	921.168	T 29273.621	667.576	215.912	259.662	1381.564	46.783	18.232	39.072	10.067	103.331
%RSD		4.787	1.518	T 0.494	2.737	2.008	0.789	1.413	0.535	1.176	2.319	10.000	5.662
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:44:48	199557.590	190957.710	137797.300	26460.989	415.005	5750.992	817467.720	700.015	42323.671	32510.176	41722.157	137212.500
2	12:45:10	202300.360	187478.550	137711.590	27783.138	390.005	6111.120	824848.360	775.018	42694.615	33073.283	43225.982	138614.030
3	12:45:32	204051.510	192707.680	141367.010	27011.872	390.005	6161.139	826560.110	845.021	43571.881	33421.476	43441.541	137303.250
x		201969.820	190381.320	138958.630	27085.333	398.338	6007.750	822958.730	773.351	42863.389	33001.645	42796.560	137709.930
σ		2265.122	2661.793	2086.153	664.129	14.434	223.761	4831.757	72.518	640.992	459.854	936.682	784.290
%RSD		1.122	1.398	1.501	2.452	3.624	3.725	0.587	9.377	1.495	1.393	2.189	0.570

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:44:48	57072.551	143515.250	53345.235	108592.620	0.000	195449.330	111370.860
2	12:45:10	58477.409	145915.960	54764.828	107817.610	0.000	201682.940	115015.490
3	12:45:32	58964.119	146410.270	55592.562	108683.210	0.000	206081.260	118011.330
x		58171.360	145280.490	54567.542	108364.480	0.000	201071.180	114799.230
σ		982.220	1548.595	1136.579	475.762	0.000	5342.297	3325.509
%RSD		1.688	1.066	2.083	0.439	0.000	2.657	2.897

200-35736-A-14-C MSD 10/19/2016 12:49:46 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:50:08	114079.090	1262.548	47161.632	T 7305687.900	247839.130	562044.680	T 6783547.400	219121.010	158671.720	20.000	110102.480	79016.867
2	12:50:30	113142.740	1387.558	46103.678	T 7308898.100	249838.650	567598.210	T 6844010.600	226093.210	160206.300	15.000	110082.350	79398.675
3	12:50:52	110998.390	1375.057	47637.984	T 7342468.400	249057.080	565933.000	T 6771673.800	220438.210	155320.380	15.000	108028.980	79569.487
x		112740.070	1341.721	46967.765	T 7319018.100	248911.620	565191.960	T 6799743.900	221884.150	158066.130	16.667	109404.600	79328.343
σ		1579.328	68.850	785.310	T 20371.853	1007.667	2849.958	T 38793.047	3704.178	2498.623	2.887	1191.368	282.944
%RSD		1.401	5.131	1.672	T 0.278	0.405	0.504	T 0.571	1.669	1.581	17.321	1.089	0.357

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:50:08	12859.959	58622.918	T 5758761.900	23541.614	10043.025	31650.023	93426.121	8430.131	1434.062	1670.084	101.000	1590.076
2	12:50:30	13145.182	60810.736	T 5873287.800	24292.691	10908.569	31825.357	95824.681	8584.210	1437.062	1660.083	104.500	1575.074
3	12:50:52	12559.731	58688.147	T 5798658.800	24177.524	10253.153	32196.068	95276.552	8449.141	1486.066	1663.583	114.000	1995.119
x		12854.957	59373.934	T 5810236.200	24003.943	10401.582	31890.482	94842.452	8487.828	1452.397	1664.583	106.500	1720.090
σ		292.758	1244.735	T 58134.056	404.508	451.459	278.787	1256.824	84.009	29.197	5.075	6.727	238.301
%RSD		2.277	2.096	T 1.001	1.685	4.340	0.874	1.325	0.990	2.010	0.305	6.316	13.854

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:50:08	194473.010	188985.420	132726.390	26155.507	390.005	5916.050	832799.490	640.012	41170.788	31476.695	42168.278	138392.200
2	12:50:30	195545.450	189966.480	134465.250	26906.702	390.005	6101.117	828881.230	750.017	41792.332	31870.443	42839.987	137666.220
3	12:50:52	198333.100	189218.040	135090.270	26641.276	350.004	6216.159	833461.370	845.021	41852.483	32109.902	42724.692	138089.700
x		196117.190	189389.980	134093.970	26567.828	376.671	6077.775	831714.030	745.017	41605.201	31819.013	42577.652	138049.370
σ		1992.545	512.632	1224.894	380.945	23.095	151.410	2475.499	102.596	377.413	319.721	359.185	364.664
%RSD		1.016	0.271	0.913	1.434	6.131	2.491	0.298	13.771	0.907	1.005	0.844	0.264

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:50:08	56079.188	140529.970	51880.622	109206.610	0.000	194629.830	109352.570
2	12:50:30	58642.989	142153.660	53766.586	109790.430	0.000	202087.800	111803.750
3	12:50:52	58492.461	143318.570	53972.249	110253.470	0.000	207665.740	113933.100
x		57738.213	142000.730	53206.486	109750.170	0.000	201461.120	111696.470
σ		1438.728	1400.573	1152.827	524.589	0.000	6540.514	2292.148
%RSD		2.492	0.986	2.167	0.478	0.000	3.247	2.052

CCV 10/19/2016 12:55:04 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:55:26	106851.420	78004.615	28529.397	T 13217477.000	T 3811743.100	T 35721767.000	T 12554995.000	1248924.400	145794.910	24923.622	T 2557142.800	710738
2	12:55:48	107254.000	77323.955	28058.599	T 12863277.000	T 3782101.900	T 35258431.000	T 12177673.000	1220317.500	143888.450	24152.488	T 2520160.400	706482
3	12:56:10	103621.120	76485.097	28379.141	T 12734010.000	T 3802757.000	T 35240959.000	T 12136269.000	1223971.400	142163.740	24202.560	T 2543837.900	707197
x		105908.850	77271.222	28322.379	T 12938254.000	T 3798867.300	T 35407053.000	T 12289646.000	1231071.100	143949.030	24426.223	T 2540380.400	708139
σ		1991.427	761.130	240.477	T 250302.290	T 15198.549	T 272690.780	T 230729.730	15569.002	1816.341	431.487	T 18732.054	2278
%RSD		1.880	0.985	0.849	T 1.935	T 0.400	T 0.770	T 1.877	1.265	1.262	1.766	T 0.737	0

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:55:26	88072.088	T 3695568.100	T 76700182.000	1083127.300	581293.310	717321.310	567665.440	75639.250	6108.119	7879.862	112.500	4855
2	12:55:48	88479.236	T 3691153.900	T 76665650.000	1083436.500	586345.750	718135.260	566320.840	75191.230	5950.062	7913.378	114.000	4690
3	12:56:10	86971.330	T 3710810.300	T 76341471.000	1066670.100	572532.760	718620.520	568601.560	74695.006	5855.028	7816.332	113.000	4780
x		87840.884	T 3699177.400	T 76569101.000	1077744.600	580057.270	718025.690	567529.280	75175.162	5971.070	7869.858	113.167	4775
σ		780.087	T 10313.296	T 197888.350	9592.042	6988.956	656.498	1146.438	472.327	127.847	49.290	0.764	82

%RSD		0.888	T 0.279	T 0.258	0.890	1.205	0.091	0.202	0.628	2.141	0.626	0.675	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	12:55:26	743261.650	178409.820	1517096.700	245809.400	7861.854	116163.410	797787.650	737159.400	498850.480	379872.310	498531.130	132202
2	12:55:48	735843.110	179370.040	1562398.800	244302.480	7756.805	117467.500	793112.250	739745.280	504553.340	380057.970	500488.500	131204
3	12:56:10	739473.610	173538.790	1565736.300	241420.950	7701.779	115931.810	789433.630	743893.940	501930.920	381023.650	503960.820	133472
x		739526.120	177106.220	1548410.600	243844.280	7773.479	116520.910	793444.510	740266.210	501778.250	380317.980	500993.480	132292
σ		3709.551	3126.564	27169.918	2229.818	81.330	827.915	4186.911	3397.358	2854.498	618.140	2749.841	1136
%RSD		0.502	1.765	1.755	0.914	1.046	0.711	0.528	0.459	0.569	0.163	0.549	0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:55:26	30668.190	1359239.400	T 7368300.100	103641.250	0.000	233068.310	101965.960
2	12:55:48	31920.538	1359120.200	T 7400488.100	105140.590	0.000	241999.250	100637.930
3	12:56:10	32356.378	1374508.600	T 7353437.500	102484.120	0.000	241948.520	101457.870
x		31648.369	1364289.400	T 7374075.200	103755.320	0.000	239005.360	101353.920
σ		876.385	8850.301	T 24051.063	1331.904	0.000	5141.697	670.093
%RSD		2.769	0.649	T 0.326	1.284	0.000	2.151	0.661

CCB 10/19/2016 01:00:48 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:01:10	111501.740	20.000	1010.031	234488.020	630.012	3555.379	53174.691	550.009	154200.040	20.000	12644.795	1295.050
2	13:01:32	111350.730	25.000	950.027	234771.970	490.007	3465.360	54027.427	490.007	152988.960	5.000	12799.913	1225.045
3	13:01:54	110927.930	7.500	1030.032	236597.520	630.012	3240.315	51178.457	550.009	151263.320	20.000	12704.841	1130.038
x		111260.130	17.500	996.697	235285.830	583.344	3420.352	52793.525	530.008	152817.440	15.000	12716.516	1216.711
σ		297.440	9.014	41.636	1144.787	80.832	162.283	1462.233	34.642	1475.858	8.660	78.216	82.821
%RSD		0.267	51.508	4.177	0.487	13.857	4.745	2.770	6.536	0.966	57.735	0.615	6.807

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:01:10	4495.606	525.008	203489.700	65.000	65.000	230.002	530.008	1065.034	365.004	117.500	102.500	625.012
2	13:01:32	4465.598	465.006	202760.900	80.000	20.000	185.001	635.012	1079.035	370.004	105.000	107.500	570.010
3	13:01:54	4470.600	500.007	204183.110	70.000	60.000	245.002	530.008	1178.042	393.005	99.000	100.500	615.011
x		4477.268	496.674	203477.900	71.667	48.333	220.001	565.010	1107.370	376.004	107.167	103.500	603.344
σ		16.077	30.139	711.176	7.638	24.664	31.225	60.624	61.602	14.934	9.438	3.606	29.298
%RSD		0.359	6.068	0.350	10.657	51.030	14.193	10.730	5.563	3.972	8.807	3.484	4.856

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:01:10	100.000	184525.870	2885.250	35.000	0.000	5.000	813920.280	2215.147	630.012	479.007	35.000	133754.560
2	13:01:32	135.001	185739.240	2975.266	25.000	0.000	0.000	804970.970	2985.267	770.018	543.009	35.000	133593.280
3	13:01:54	110.000	190704.840	2735.224	30.000	0.000	10.000	823168.270	2585.200	675.014	563.510	50.000	138170.370
x		115.000	186989.980	2865.247	30.000	0.000	5.000	814019.840	2595.205	691.681	528.508	40.000	135172.740
σ		18.028	3273.867	121.264	5.000	0.000	5.000	9099.058	385.158	71.476	44.078	8.660	2597.277
%RSD		15.676	1.751	4.232	16.667	0.000	100.000	1.118	14.841	10.334	8.340	21.651	1.921

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:01:10	230.002	1370.056	645.012	106660.200	0.000	1515.069	35.000
2	13:01:32	185.001	1435.062	625.012	106700.460	0.000	1700.087	70.000
3	13:01:54	200.001	1470.065	580.010	107012.450	0.000	1615.078	65.000
x		205.001	1425.061	616.678	106791.040	0.000	1610.078	56.667
σ		22.913	50.749	33.293	192.803	0.000	92.610	18.930
%RSD		11.177	3.561	5.399	0.181	0.000	5.752	33.405

CCVL 10/19/2016 01:06:06 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:06:27	112568.870	147.501	5705.977	881795.730	25870.062	65408.095	669679.130	24207.567	156410.500	5.000	25729.845	9157.515
2	13:06:49	114099.230	145.001	5475.899	T 935136.360	25148.960	64469.449	654888.460	23286.256	154745.060	15.000	25459.431	8967.412
3	13:07:11	114864.460	200.001	5505.909	862125.650	25219.066	64499.565	646843.240	23827.020	151414.680	0.000	25118.915	9227.554
x		113844.190	164.167	5562.595	T 893019.250	25412.696	64792.370	657136.940	23773.614	154190.080	6.667	25436.064	9117.494
σ		1168.850	31.058	125.075	T 37777.196	397.639	533.447	11582.797	462.972	2543.728	7.638	306.135	134.610
%RSD		1.027	18.919	2.249	T 4.230	1.565	0.823	1.763	1.947	1.650	114.564	1.204	1.476

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:06:27	6301.191	7276.588	698960.350	2585.200	1165.041	3780.429	10683.423	2059.127	512.008	265.002	101.000	755.017
2	13:06:49	6336.204	6641.323	702869.720	2620.206	1115.037	3580.385	11318.842	2062.128	533.009	282.002	110.500	630.012
3	13:07:11	6441.244	6871.416	710805.880	2860.245	1330.053	3655.401	11153.731	2054.127	565.010	271.002	107.500	655.013
x		6359.547	6929.776	704211.980	2688.551	1203.377	3672.071	11051.999	2058.460	536.675	272.669	106.334	680.014
σ		72.886	321.628	6035.760	149.719	112.518	101.059	329.699	4.042	26.690	8.622	4.856	66.147
%RSD		1.146	4.641	0.857	5.569	9.350	2.752	2.983	0.196	4.973	3.162	4.567	9.727

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:06:27	18735.525	185344.880	13720.645	2890.251	25.000	650.013	808694.910	1270.048	4210.532	3368.340	3750.422	131909.950
2	13:06:49	19391.274	184950.540	14391.211	2680.215	55.000	555.009	801289.800	1465.064	4425.587	3410.849	4450.594	133270.710
3	13:07:11	19696.632	184030.440	14401.219	2715.221	15.000	655.013	805170.260	1645.081	4445.593	3496.867	4155.518	133341.270
x		19274.477	184775.290	14171.025	2761.896	31.667	620.012	805051.660	1460.065	4360.571	3425.352	4118.845	132840.640
σ		491.083	674.520	390.072	112.528	20.817	56.349	3703.981	187.566	130.322	65.479	351.524	806.777
%RSD		2.548	0.365	2.753	4.074	65.737	9.088	0.460	12.846	2.989	1.912	8.535	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:06:27	2630.208	14806.574	6416.235	106207.330	0.000	11208.768	11193.758
2	13:06:49	2955.262	14596.389	6236.167	106559.560	0.000	11804.179	11398.897
3	13:07:11	2875.248	14661.446	6636.321	108340.990	0.000	11989.311	11048.661
x		2820.239	14688.136	6429.574	107035.960	0.000	11667.419	11213.772
σ		169.365	107.605	200.410	1143.831	0.000	407.847	175.974
%RSD		6.005	0.733	3.117	1.069	0.000	3.496	1.569

MB 200-110288/1-B 10/19/2016 01:11:51 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:12:13	117532.960	2.500	935.026	612076.470	12644.795	17899.607	81810.296	22615.333	158409.240	85.000	10758.471	7111.517
2	13:12:35	116676.980	5.000	1120.038	611257.210	12454.652	17674.367	84252.417	21754.188	157672.310	70.000	10693.429	7011.475
3	13:12:57	117583.320	0.000	1085.035	614264.810	12834.940	18765.558	83810.196	22034.556	156218.710	55.000	10523.321	7371.630
x		117264.420	2.500	1046.700	612532.830	12644.796	18113.177	83290.970	22134.692	157433.420	70.000	10658.407	7164.874
σ		509.360	2.500	98.283	1554.868	190.144	576.094	1301.225	439.219	1114.632	15.000	121.424	185.912
%RSD		0.434	100.000	9.390	0.254	1.504	3.181	1.562	1.984	0.708	21.429	1.139	2.595

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:12:13	4125.511	2175.142	252214.030	105.000	155.001	570.010	1075.035	811.020	286.002	100.000	109.000	460.006
2	13:12:35	4320.560	2105.133	249488.460	55.000	175.001	495.007	1045.033	839.021	293.003	109.000	115.000	545.009
3	13:12:57	4140.514	2435.178	242968.190	70.000	160.001	595.011	1150.040	864.022	267.002	102.500	97.500	650.013
x		4195.528	2238.484	248223.560	76.667	163.334	553.343	1090.036	838.021	282.002	103.834	107.167	551.676

σ		108.540	173.901	4750.932	25.658	10.408	52.043	54.087	26.515	13.454	4.646	8.893	95.178
%RSD		2.587	7.769	1.914	33.467	6.372	9.405	4.962	3.164	4.771	4.474	8.298	17.253
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:12:13	5946.060	188520.200	750.017	45.000	0.000	10.000	827106.230	24993.727	235.002	158.501	365.004	136768.880
2	13:12:35	5725.983	190108.080	770.018	25.000	0.000	25.000	820511.980	25885.086	235.002	178.501	385.004	135730.440
3	13:12:57	5575.933	190391.290	755.017	25.000	0.000	10.000	828797.200	25835.008	230.002	213.001	400.005	138361.950
x		5749.325	189673.190	758.351	31.667	0.000	15.000	825471.800	25571.273	233.335	183.334	383.338	136953.760
σ		186.165	1008.510	10.409	11.547	0.000	8.660	4377.754	500.797	2.887	27.570	17.560	1325.458
%RSD		3.238	0.532	1.373	36.464	0.000	57.735	0.530	1.958	1.237	15.038	4.581	0.968

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:12:13	155.001	550.009	445.006	106861.490	0.000	78102.573	95.000
2	13:12:35	190.001	585.010	465.006	108612.750	0.000	60017.870	45.000
3	13:12:57	190.001	475.007	540.009	108300.730	0.000	46580.000	125.000
x		178.334	536.675	483.340	107924.990	0.000	61566.814	88.334
σ		20.207	56.201	50.085	934.141	0.000	15818.267	40.415
%RSD		11.331	10.472	10.362	0.866	0.000	25.693	45.752

LCS 200-110288/2-B 10/19/2016 01:17:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:17:56	114441.560	1315.052	50391.063	T 7658725.900	259149.210	574985.050	T 6770955.200	239265.200	157510.790	55.000	105678.980	84860.490
2	13:18:17	111491.670	1295.050	49819.348	T 7444524.400	259636.710	566724.210	T 6710081.400	234974.800	152514.640	35.000	105965.800	86312.920
3	13:18:39	114159.640	1375.057	48741.167	T 7511512.000	255198.950	569982.550	T 6781117.900	240066.600	155562.620	65.000	103238.760	85227.355
x		113364.290	1328.386	49650.526	T 7538254.100	257994.950	570563.940	T 6754051.500	238102.200	155196.020	51.667	104961.180	85466.922
σ		1627.852	41.637	837.803	T 109576.080	2433.648	4160.994	T 38416.788	2737.886	2518.167	15.275	1498.536	755.270
%RSD		1.436	3.134	1.687	T 1.454	0.943	0.729	T 0.569	1.150	1.623	29.565	1.428	0.884

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:17:56	12134.416	59019.314	T 5766449.000	23852.055	10343.208	31730.175	91143.535	8088.962	1258.047	1571.574	103.000	1675.084
2	13:18:17	12649.799	58452.321	T 5699707.400	23711.856	10428.261	31795.299	91409.988	7865.856	1229.045	1585.075	100.500	1770.094
3	13:18:39	12649.799	59696.720	T 5760943.900	23521.586	10113.067	31414.578	92888.127	7839.843	1229.045	1547.072	116.500	1710.088
x		12478.004	59056.118	T 5742366.800	23695.166	10294.846	31646.684	91813.883	7931.554	1238.713	1567.907	106.667	1718.422
σ		297.557	623.015	T 37046.542	165.866	163.068	203.630	939.813	136.939	16.744	19.265	8.607	48.050
%RSD		2.385	1.055	T 0.645	0.700	1.584	0.643	1.024	1.727	1.352	1.229	8.069	2.796

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:17:56	199653.730	187883.070	135060.030	25809.969	405.005	5971.069	795890.080	35908.641	39461.661	30383.169	39466.673	132514.720
2	13:18:17	195596.040	183332.810	131768.840	25304.194	370.004	5675.966	795512.680	36314.519	40664.548	30447.787	40684.597	132010.740
3	13:18:39	199744.810	185739.240	136244.610	24948.659	470.007	5966.068	803817.240	37191.450	40489.121	30644.647	40484.109	134913.850
x		198331.530	185651.700	134357.830	25354.274	415.005	5871.034	798406.670	36471.537	40205.110	30491.867	40211.793	133146.440
σ		2369.439	2276.389	2319.040	432.833	50.746	168.952	4689.493	655.660	649.793	136.199	653.032	1551.229
%RSD		1.195	1.226	1.726	1.707	12.228	2.878	0.587	1.798	1.616	0.447	1.624	1.165

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:17:56	55843.398	139582.060	51830.467	106589.750	0.000	205139.750	109664.610
2	13:18:17	55567.478	142234.340	51308.857	103570.810	0.000	211736.480	112171.210
3	13:18:39	58442.286	141583.840	52698.181	105402.240	0.000	215554.960	112906.140
x		56617.721	141133.410	51945.835	105187.600	0.000	210810.400	111580.650
σ		1586.131	1382.321	701.811	1520.874	0.000	5269.003	1699.545
%RSD		2.801	0.979	1.351	1.446	0.000	2.499	1.523

200-35715-A-2-B 10/19/2016 01:23:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:23:49	113837.450	10.000	890.024	501719.700	15697.389	11699.105	96086.181	25349.263	153755.970	75.000	9397.649	5796.008
2	13:24:10	110726.590	5.000	935.026	498855.630	16027.703	11343.859	92405.455	26661.308	158025.630	35.000	9382.640	6091.113
3	13:24:32	112921.240	0.000	780.018	505089.210	16107.780	11448.931	89660.523	24968.689	154109.210	35.000	9197.537	5986.075
x		112495.090	5.000	868.356	501888.180	15944.291	11497.298	92717.386	25659.753	155296.940	48.333	9325.942	5957.732
σ		1598.610	5.000	79.743	3120.207	217.540	182.495	3224.166	887.999	2369.708	23.094	111.455	149.580
%RSD		1.421	100.000	9.183	0.622	1.364	1.587	3.477	3.461	1.526	47.781	1.195	2.511

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:23:49	3515.371	2675.215	229752.750	75.000	200.001	1315.052	1190.043	629.012	229.002	104.000	95.500	575.010
2	13:24:10	3645.399	2650.211	228911.290	105.000	230.002	1130.038	1185.042	677.014	241.002	107.000	92.500	625.012
3	13:24:32	3630.395	2405.173	226995.350	110.000	200.001	1330.053	1170.041	723.016	205.001	110.500	94.500	645.012
x		3597.055	2576.866	228553.130	96.667	210.001	1258.381	1181.709	676.347	225.002	107.167	94.167	615.011
σ		71.137	149.215	1413.160	18.930	17.321	111.401	10.409	47.005	18.331	3.253	1.528	36.057

%RSD		1.978	5.791	0.618	19.582	8.248	8.853	0.881	6.950	8.147	3.036	1.622	5.863
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:23:49	7151.534	186052.700	455.006	80.000	0.000	5.000	794611.170	36259.399	330.003	226.002	660.013	134934.010
2	13:24:10	7336.614	186012.260	325.003	55.000	0.000	0.000	804436.050	37196.461	270.002	196.001	665.013	132766.710
3	13:24:32	7431.657	189116.900	325.003	60.000	10.000	10.000	812314.720	36991.005	310.003	197.501	770.018	136930.200
x		7306.602	187060.620	368.338	65.000	3.333	5.000	803787.320	36815.622	303.336	206.501	698.348	134876.970
σ		142.453	1780.907	75.057	13.229	5.774	5.000	8869.588	492.535	30.551	16.904	62.118	2082.327
%RSD		1.950	0.952	20.377	20.352	173.205	100.000	1.103	1.338	10.072	8.186	8.895	1.544

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:23:49	145.001	590.010	1010.031	104929.270	0.000	18590.362	250.002
2	13:24:10	160.001	460.006	1105.037	108290.670	0.000	16628.291	115.000
3	13:24:32	100.000	375.004	975.029	106026.180	0.000	14125.984	115.000
x		135.001	475.007	1030.032	106415.370	0.000	16448.212	160.001
σ		31.225	108.285	67.272	1714.163	0.000	2237.631	77.943
%RSD		23.130	22.797	6.531	1.611	0.000	13.604	48.714

200-35730-A-2-B 10/19/2016 01:29:10 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:29:31	113968.340	7.500	800.019	545555.130	15757.445	17804.505	93099.300	25719.830	160236.590	90.000	10928.582	9797.879
2	13:29:53	116455.440	0.000	820.020	536074.830	16117.790	17263.937	93300.420	26330.783	158863.540	60.000	11218.775	10268.162
3	13:30:15	114602.660	10.000	760.017	538687.060	15867.550	17804.505	90173.278	25719.830	158974.590	65.000	10893.559	10683.423
x		115008.810	5.833	793.352	540105.670	15914.262	17624.316	92191.000	25923.481	159358.240	71.667	11013.638	10249.821
σ		1292.339	5.204	30.552	4896.770	184.658	312.097	1750.289	352.734	762.697	16.073	178.514	443.057
%RSD		1.124	89.214	3.851	0.907	1.160	1.771	1.899	1.361	0.479	22.427	1.621	4.323
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:29:31	4665.653	2400.173	252990.660	80.000	225.002	2265.154	1220.045	799.019	289.003	91.500	97.000	570.010
2	13:29:53	4845.704	2560.197	254361.290	80.000	270.002	2105.133	1335.054	781.018	247.002	102.500	106.500	480.007
3	13:30:15	4585.631	2630.208	254269.910	75.000	280.002	2005.121	1270.048	785.018	232.002	95.000	101.500	600.011
x		4698.996	2530.192	253873.960	78.334	258.335	2125.136	1275.049	788.352	256.002	96.334	101.667	550.009
σ		133.204	117.916	766.316	2.887	29.298	131.166	57.667	9.452	29.547	5.620	4.752	62.452
%RSD		2.835	4.660	0.302	3.685	11.341	6.172	4.523	1.199	11.542	5.834	4.674	11.355
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:29:31	7321.608	187630.240	310.003	45.000	0.000	0.000	813825.830	35337.422	255.002	188.001	1560.073	133774.720
2	13:29:53	7551.711	185506.670	420.005	45.000	0.000	5.000	812765.940	35788.383	240.002	203.501	1500.068	135831.260
3	13:30:15	7616.740	187175.170	375.004	35.000	0.000	5.000	810803.750	36915.838	200.001	181.001	1555.073	136920.110
x		7496.686	186770.690	368.337	41.667	0.000	3.333	812465.170	36013.881	231.668	190.834	1538.404	135508.700
σ		155.069	1118.075	55.303	5.774	0.000	2.887	1533.325	813.011	28.432	11.515	33.295	1597.310
%RSD		2.069	0.599	15.014	13.856	0.000	86.603	0.189	2.257	12.273	6.034	2.164	1.179

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:29:31	135.001	270.002	2045.126	107294.250	0.000	6541.283	60.000
2	13:29:53	130.001	260.002	2060.127	105180.850	0.000	6661.331	60.000
3	13:30:15	115.000	300.003	2185.143	106559.560	0.000	6146.133	70.000
x		126.667	276.669	2096.799	106344.890	0.000	6449.583	63.333
σ		10.408	20.817	76.875	1072.934	0.000	269.563	5.774
%RSD		8.217	7.524	3.666	1.009	0.000	4.180	9.116

200-35745-A-5-B 10/19/2016 01:34:53 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:35:15	117684.020	2.500	625.012	571099.830	14776.547	11443.928	96096.238	23957.206	161640.040	70.000	13170.202	6121.124
2	13:35:36	117160.350	7.500	720.016	578736.600	15857.540	11679.091	93551.823	23616.721	159418.800	65.000	12789.906	5545.923
3	13:35:58	113555.530	2.500	620.012	569506.690	14826.592	11093.691	93913.851	23887.106	162276.180	100.000	12329.559	5515.913
x		116133.300	4.167	655.013	573114.370	15153.560	11405.570	94520.638	23820.344	161111.670	78.334	12763.222	5727.653
σ		2247.718	2.887	56.349	4933.722	610.178	294.579	1376.464	179.793	1500.177	18.930	420.956	341.086
%RSD		1.935	69.282	8.603	0.861	4.027	2.583	1.456	0.755	0.931	24.166	3.298	5.955

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:35:15	4780.686	3370.341	258854.680	100.000	150.001	1070.034	1295.050	895.024	293.003	97.500	102.000	530.008
2	13:35:36	5140.793	3360.339	256117.890	105.000	130.001	1340.054	1350.055	971.028	288.002	112.500	97.500	605.011
3	13:35:58	4635.645	3680.406	253148.030	105.000	190.001	1390.058	1490.067	879.023	291.003	118.500	115.500	500.007
x		4852.374	3470.362	256040.200	103.334	156.667	1266.715	1378.391	915.025	290.669	109.500	105.000	545.009
σ		260.093	181.973	2854.121	2.887	30.551	172.156	100.549	49.156	2.517	10.817	9.368	54.085
%RSD		5.360	5.244	1.115	2.794	19.500	13.591	7.295	5.372	0.866	9.878	8.921	9.924

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:35:15	6786.381	189076.450	275.002	105.000	0.000	10.000	813909.780	35177.084	190.001	170.001	460.006	133966.250
2	13:35:36	7026.481	188297.710	210.001	80.000	0.000	5.000	825793.470	35953.738	220.001	184.501	495.007	140550.140
3	13:35:58	7016.477	191928.770	195.001	125.000	5.000	5.000	821446.360	36319.530	255.002	156.501	575.010	139521.550
x		6943.113	189767.640	226.668	103.334	1.667	6.667	820383.210	35816.784	221.668	170.334	510.008	138012.650
σ		135.826	1911.668	42.525	22.546	2.887	2.887	6012.757	583.407	32.532	14.003	58.951	3541.820
%RSD		1.956	1.007	18.761	21.819	173.205	43.301	0.733	1.629	14.676	8.221	11.559	2.566

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:35:15	115.000	320.003	1015.031	106710.520	0.000	4525.614	75.000
2	13:35:36	125.000	300.003	950.027	108411.450	0.000	4090.502	70.000
3	13:35:58	135.001	325.003	820.020	108340.990	0.000	4445.593	95.000
x		125.000	315.003	928.359	107820.990	0.000	4353.903	80.000
σ		10.000	13.229	99.295	962.335	0.000	231.594	13.229
%RSD		8.000	4.200	10.696	0.893	0.000	5.319	16.536

200-35754-A-2-B 10/19/2016 01:40:37 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:40:59	124180.910	2.500	675.014	525609.300	17949.661	18790.587	98278.911	28364.115	165639.020	105.000	19881.852	7596.731
2	13:41:20	123767.850	2.500	655.013	538470.220	17939.650	19491.391	96096.238	29445.989	166245.010	110.000	20057.061	7601.733
3	13:41:42	119577.430	0.000	660.013	531377.960	18560.329	19045.876	98560.566	29666.379	165770.310	130.001	19606.526	7521.697
x		122508.730	1.667	663.347	531819.160	18149.880	19109.285	97645.238	29158.828	165884.780	115.000	19848.480	7573.387
σ		2546.969	1.443	10.409	6441.805	355.495	354.679	1348.845	697.007	318.798	13.229	227.114	44.835
%RSD		2.079	86.603	1.569	1.211	1.959	1.856	1.381	2.390	0.192	11.503	1.144	0.592

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:40:59	7716.786	3495.367	267154.120	280.002	210.001	1820.099	1750.092	1453.063	487.007	119.500	109.500	590.010
2	13:41:20	7366.628	3340.335	269404.910	250.002	200.001	1850.103	1215.044	1481.066	465.006	110.500	93.500	655.013
3	13:41:42	7286.592	3130.294	268022.900	220.001	220.001	1985.118	1200.043	1448.063	488.007	114.500	114.500	580.010
x		7456.669	3321.998	268193.980	250.002	210.001	1885.107	1388.393	1460.731	480.007	114.834	105.834	608.344

σ		228.795	183.226	1135.109	30.000	10.000	87.902	313.330	17.787	13.000	4.509	10.970	40.724
%RSD		3.068	5.516	0.423	12.000	4.762	4.663	22.568	1.218	2.708	3.927	10.365	6.694
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:40:59	7776.814	191928.770	315.003	60.000	0.000	5.000	833125.170	38113.529	245.002	254.002	635.012	135508.650
2	13:41:20	7701.779	195155.920	330.003	35.000	0.000	0.000	840775.340	39652.113	325.003	248.502	660.013	139571.970
3	13:41:42	8372.102	198130.710	340.003	55.000	0.000	5.000	838421.080	40464.061	355.004	260.002	530.008	141467.860
x		7950.232	195071.800	328.337	50.000	0.000	3.333	837440.530	39409.901	308.336	254.169	608.345	138849.490
σ		367.272	3101.827	12.583	13.229	0.000	2.887	3918.211	1193.838	56.863	5.752	68.983	3044.590
%RSD		4.620	1.590	3.832	26.458	0.000	86.603	0.468	3.029	18.442	2.263	11.339	2.193

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:40:59	150.001	405.005	1055.033	108793.930	0.000	7546.708	100.000
2	13:41:20	190.001	315.003	1265.048	107294.250	0.000	7196.553	85.000
3	13:41:42	155.001	265.002	1140.039	109528.720	0.000	6521.276	55.000
x		165.001	328.337	1153.373	108538.970	0.000	7088.179	80.000
σ		21.795	70.947	105.640	1138.842	0.000	521.236	22.913
%RSD		13.209	21.608	9.159	1.049	0.000	7.354	28.641

200-35754-A-2-B SD@5 10/19/2016 01:46:21 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:46:43	114632.870	5.000	420.005	306716.520	3600.389	4115.508	59204.970	5730.985	161417.910	25.000	21398.728	3020.274
2	13:47:05	115488.750	2.500	410.005	298814.910	3820.438	4210.532	59365.540	6371.217	163498.030	20.000	21078.320	2815.238
3	13:47:26	114099.230	5.000	570.010	304852.790	3700.411	4080.499	58853.730	6071.105	159741.870	25.000	21408.741	2915.255
x		114740.280	4.167	466.673	303461.410	3707.079	4135.513	59141.413	6057.769	161552.600	23.333	21295.263	2916.922
σ		700.960	1.443	89.632	4130.474	110.176	67.285	261.758	320.324	1881.700	2.887	187.945	102.528
%RSD		0.611	34.641	19.206	1.361	2.972	1.627	0.443	5.288	1.165	12.372	0.883	3.515

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:46:43	7821.835	810.020	224284.010	30.000	90.000	470.007	585.010	1579.075	508.008	104.500	108.000	625.012
2	13:47:05	7676.768	785.018	218675.220	45.000	90.000	485.007	635.012	1595.076	489.007	101.000	97.000	640.012
3	13:47:26	7921.882	840.021	221968.320	10.000	60.000	485.007	675.014	1608.078	506.008	115.000	114.000	595.011
x		7806.828	811.686	221642.520	28.333	80.000	480.007	631.679	1594.076	501.008	106.834	106.334	620.012
σ		123.244	27.539	2818.557	17.559	17.321	8.661	45.094	14.527	10.441	7.286	8.622	22.914
%RSD		1.579	3.393	1.272	61.974	21.651	1.804	7.139	0.911	2.084	6.820	8.108	3.696

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:46:43	1685.085	193162.910	75.000	40.000	0.000	0.000	807247.200	7701.779	290.003	231.002	115.000	134893.690
2	13:47:05	1675.084	192212.010	130.001	20.000	0.000	0.000	828093.480	8096.966	315.003	192.501	85.000	135811.090
3	13:47:26	1585.075	194063.280	125.000	40.000	0.000	0.000	815767.380	8192.013	270.002	192.501	90.000	135720.360
x		1648.415	193146.060	110.000	33.333	0.000	0.000	817036.020	7996.919	291.669	205.335	96.667	135475.050
σ		55.081	925.749	30.414	11.547	0.000	0.000	10480.887	259.979	22.547	22.228	16.073	505.511
%RSD		3.341	0.479	27.649	34.641	0.000	0.000	1.283	3.251	7.730	10.825	16.627	0.373

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:46:43	75.000	165.001	420.005	106458.920	0.000	380.004	20.000
2	13:47:05	100.000	240.002	345.004	109005.300	0.000	325.003	25.000
3	13:47:26	85.000	200.001	330.003	107445.220	0.000	495.007	5.000
x		86.667	201.668	365.004	107636.480	0.000	400.005	16.667
σ		12.583	37.528	48.219	1283.919	0.000	86.749	10.408
%RSD		14.519	18.609	13.211	1.193	0.000	21.687	62.450

200-35754-A-2-B PDS 10/19/2016 01:52:06 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:52:27	113696.490	1217.545	49999.887	T 7313667.700	265884.050	566936.240	T 6708233.600	236232.390	156834.460	115.000	110359.170	80860.679
2	13:52:49	116334.600	1227.545	48660.933	T 7251113.300	262429.950	564795.370	T 6583988.000	239326.060	153856.900	95.000	108320.860	81142.041
3	13:53:11	114371.080	1272.549	48465.364	T 7276336.800	260449.240	570634.290	T 6678395.500	238139.240	156905.120	145.001	106856.450	81579.167
x		114800.720	1239.213	49042.062	T 7280372.600	262921.080	567455.300	T 6656872.400	237899.230	155865.490	118.334	108512.160	81193.962
σ		1370.530	29.300	835.245	T 31471.875	2750.490	2953.865	T 64858.872	1560.737	1739.852	25.166	1759.176	362.047
%RSD		1.194	2.364	1.703	T 0.432	1.046	0.521	T 0.974	0.656	1.116	21.267	1.621	0.446

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:52:27	14371.193	58858.747	T 5687976.500	23601.699	10438.268	32351.368	83780.045	7927.885	1312.052	1366.056	92.000	1865.104
2	13:52:49	13790.703	59189.917	T 5718424.700	23261.221	10348.212	31685.090	84177.038	7935.889	1272.049	1342.054	93.500	1685.085
3	13:53:11	12925.010	60088.123	T 5659690.400	23456.495	10308.187	31775.261	84071.507	7746.800	1235.046	1347.555	102.500	1700.087
x		13695.635	59378.929	T 5688697.200	23439.805	10364.889	31937.240	84009.530	7870.191	1273.049	1351.888	96.000	1750.092
σ		727.764	636.109	T 29373.771	170.852	66.625	361.468	205.625	106.935	38.513	12.574	5.679	99.886

%RSD		5.314	1.071	T 0.516	0.729	0.643	1.132	0.245	1.359	3.025	0.930	5.916	5.707
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:52:27	196112.050	187205.510	128312.030	23987.249	350.004	4775.684	805390.530	36038.922	36870.738	28346.085	39170.977	134833.200
2	13:52:49	194432.540	187175.170	129314.730	25194.028	365.004	5420.881	796917.460	36710.385	38349.069	28764.801	40022.998	134248.510
3	13:53:11	197887.850	189329.290	132146.810	24427.889	365.004	5515.913	800734.020	37983.233	38514.450	29278.695	39792.447	135317.100
x		196144.150	187903.320	129924.520	24536.389	360.004	5237.493	801014.010	36910.847	37911.419	28796.527	39662.140	134799.600
σ		1727.879	1235.021	1988.791	610.662	8.660	402.751	4243.467	987.535	905.041	467.114	440.703	535.086
%RSD		0.881	0.657	1.531	2.489	2.406	7.690	0.530	2.675	2.387	1.622	1.111	0.397

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:52:27	25484.469	130287.260	49653.855	107545.870	0.000	174630.100	105422.370
2	13:52:49	26150.499	133532.800	50376.017	106217.390	0.000	183347.980	105759.490
3	13:53:11	26711.388	135266.690	50516.441	104083.990	0.000	191488.760	109750.170
x		26115.452	133028.920	50182.105	105949.080	0.000	183155.610	106977.340
σ		614.210	2527.669	462.834	1746.464	0.000	8430.972	2407.247
%RSD		2.352	1.900	0.922	1.648	0.000	4.603	2.250

200-35676-A-2-B 10/19/2016 01:57:50 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:58:12	118268.140	0.000	770.018	531718.570	17709.404	14171.022	98993.119	27933.389	156329.750	70.000	12524.704	6031.091
2	13:58:33	113424.650	2.500	645.012	535868.350	16928.593	13825.732	97454.088	26661.308	158146.770	70.000	12159.434	6726.357
3	13:58:55	117059.650	2.500	725.016	527425.340	17148.818	13420.401	94215.547	27272.295	158873.630	70.000	12174.445	6591.303
x		116250.810	1.667	713.349	531670.750	17262.272	13805.718	96887.585	27288.997	157783.380	70.000	12286.194	6449.584
σ		2521.015	1.443	63.314	4221.710	402.579	375.710	2438.646	636.205	1310.296	0.000	206.692	368.662
%RSD		2.169	86.603	8.876	0.794	2.332	2.721	2.517	2.331	0.830	0.000	1.682	5.716
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:58:12	4680.657	4955.737	249574.740	205.001	265.002	785.018	1075.035	935.026	302.003	102.000	98.500	630.012
2	13:58:33	4510.610	4355.569	243160.970	145.001	255.002	825.020	1060.034	934.026	278.002	104.500	100.000	645.012
3	13:58:55	5055.767	4775.684	247037.360	235.002	210.001	1105.037	1220.045	898.024	311.003	95.500	99.500	540.009
x		4749.011	4695.663	246591.020	195.001	243.335	905.025	1118.371	922.359	297.003	100.667	99.334	605.011
σ		278.932	307.982	3230.095	45.826	29.298	174.366	88.371	21.080	17.059	4.646	0.764	56.791
%RSD		5.873	6.559	1.310	23.501	12.040	19.266	7.902	2.285	5.744	4.615	0.769	9.387
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:58:12	7361.625	187589.790	265.002	65.000	5.000	10.000	801279.310	37246.573	270.002	165.001	560.009	133885.610
2	13:58:33	7516.695	188287.590	180.001	80.000	0.000	5.000	802296.540	37777.766	215.001	182.001	495.007	133391.670
3	13:58:55	7521.697	188186.460	220.001	65.000	0.000	0.000	805579.340	37301.696	240.002	188.001	580.010	135841.340
x		7466.672	188021.280	221.668	70.000	1.667	5.000	803051.730	37442.012	241.668	178.334	545.009	134372.870
σ		91.008	377.088	42.525	8.660	2.887	5.000	2247.285	292.075	27.538	11.930	44.442	1295.487
%RSD		1.219	0.201	19.184	12.372	173.205	100.000	0.280	0.780	11.395	6.690	8.154	0.964

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:58:12	180.001	420.005	1185.042	103691.560	0.000	25444.408	110.000
2	13:58:33	135.001	370.004	1215.044	106197.260	0.000	20552.665	140.001
3	13:58:55	155.001	370.004	1265.048	107193.610	0.000	16968.634	135.001
x		156.667	386.671	1221.711	105694.140	0.000	20988.569	128.334
σ		22.546	28.868	40.417	1804.421	0.000	4254.667	16.073
%RSD		14.391	7.466	3.308	1.707	0.000	20.271	12.524

CCV 10/19/2016 02:03:34 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:03:56	104184.620	76500.166	27001.855	T 12755626.000	T 3708080.000	T 34286370.000	T 12028517.000	T 1285564.000	143767.410	23501.558	T 2436293.900	6741
2	14:04:18	103077.770	76663.414	26265.680	T 12731350.000	T 3732678.500	T 34430028.000	T 12009389.000	1172426.400	140328.280	23246.200	T 2469293.800	6815
3	14:04:40	99777.777	74983.296	27092.001	T 12645162.000	T 3679764.200	T 34438097.000	T 11856024.000	T 1280752.600	142819.310	23461.502	T 2437995.500	6755
x		102346.720	76048.959	26786.512	T 12710712.000	T 3706840.900	T 34384831.000	T 11964643.000	T 1246247.600	142305.000	23403.087	T 2447861.100	6770
σ		2292.572	926.493	453.300	T 58051.653	T 26478.947	T 85365.613	T 94552.045	T 63976.359	1776.311	137.336	T 18580.810	39
%RSD		2.240	1.218	1.692	T 0.457	T 0.714	T 0.248	T 0.790	T 5.134	1.248	0.587	T 0.759	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:03:56	85036.384	T 3543027.900	T 73044804.000	1040022.600	565467.590	701884.470	544764.900	72283.408	5887.039	7556.212	83.000	47
2	14:04:18	83403.162	T 3557715.800	T 73969358.000	1042819.500	563756.050	696140.960	539606.090	72201.052	5698.974	7494.685	101.500	47
3	14:04:40	85559.048	T 3534951.500	T 72923312.000	1020504.800	554224.230	681368.910	542683.630	71050.121	5839.023	7576.722	120.500	47
x		84666.198	T 3545231.700	T 73312491.000	1034449.000	561149.290	693131.450	542351.540	71844.860	5808.346	7542.540	101.667	47
σ		1124.607	T 11541.034	T 572097.740	12156.701	6058.030	10583.711	2595.391	689.495	97.714	42.693	18.751	
%RSD		1.328	T 0.326	T 0.780	1.175	1.080	1.527	0.479	0.960	1.682	0.566	18.443	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	14:03:56	709131.780	175388.000	1442820.900	232155.700	7496.686	108658.050	757177.520	691602.760	463655.820	352958.740	463846.010	1258
2	14:04:18	707984.520	171861.550	1467371.700	233276.190	7616.740	110817.190	752628.260	696323.340	466138.660	354362.050	473867.080	1249
3	14:04:40	707609.070	168830.810	1496318.400	231430.730	7421.652	108824.120	761361.820	705507.740	469814.740	358144.110	471069.420	1251
x		708241.790	172026.780	1468837.000	232287.540	7511.693	109433.120	757055.860	697811.280	466536.410	355154.960	469594.170	1252
σ		793.287	3281.718	26778.835	929.767	98.406	1201.514	4368.051	7070.898	3098.665	2682.083	5170.854	4
%RSD		0.112	1.908	1.823	0.400	1.310	1.098	0.577	1.013	0.664	0.755	1.101	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:03:56	28444.252	1277966.900	T 6968584.900	98832.168	5.000	142531.870	94622.844
2	14:04:18	30432.759	1302836.000	T 7036196.800	98198.438	0.000	159989.230	97760.877
3	14:04:40	30497.878	1294562.100	T 7054553.100	100532.290	0.000	171310.920	96196.816
x		29791.630	1291788.400	T 7019778.300	99187.632	1.667	157944.000	96193.512
σ		1167.318	12664.488	T 45274.855	1206.848	2.887	14498.128	1569.019
%RSD		3.918	0.980	T 0.645	1.217	173.205	9.179	1.631

CCB 10/19/2016 02:09:18 PM QC Status: PASS (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:09:39	112689.690	5.000	645.012	237642.220	390.005	3360.339	50386.048	670.013	151455.050	15.000	13010.076	1275.049
2	14:10:01	113031.990	5.000	575.010	233615.900	400.005	3385.344	49633.796	530.008	154593.670	10.000	13190.217	1245.046
3	14:10:23	113384.370	5.000	540.009	236536.660	460.006	3520.372	51910.716	630.012	150597.330	10.000	13230.249	1285.050
x		113035.350	5.000	586.677	235931.590	416.672	3422.018	50643.520	610.011	152215.350	11.667	13143.514	1268.382
σ		347.356	0.000	53.465	2080.241	37.860	86.089	1160.091	72.114	2103.860	2.887	117.282	20.818
%RSD		0.307	0.000	9.113	0.882	9.086	2.516	2.291	11.822	1.382	24.744	0.892	1.641

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:09:39	4600.635	470.007	199896.610	70.000	55.000	210.001	500.007	1108.037	319.003	106.000	90.000	530.008
2	14:10:01	4425.587	510.008	199157.850	60.000	65.000	240.002	475.007	1150.040	344.004	95.000	93.000	535.009
3	14:10:23	4500.608	500.007	202310.480	105.000	35.000	240.002	505.008	1143.039	385.004	106.500	103.500	560.009
x		4508.943	493.341	200454.980	78.334	51.667	230.002	493.341	1133.705	349.337	102.500	95.500	541.675

σ		87.821	20.817	1648.818	23.629	15.275	17.321	16.073	22.503	33.322	6.500	7.089	16.073
%RSD		1.948	4.220	0.823	30.165	29.565	7.531	3.258	1.985	9.539	6.341	7.423	2.967
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:09:39	105.000	178672.610	3150.298	85.000	0.000	5.000	768760.080	2565.197	595.011	476.007	25.000	127294.270
2	14:10:01	80.000	179723.820	2955.262	45.000	5.000	10.000	776925.970	2790.233	690.014	560.509	20.000	127213.650
3	14:10:23	95.000	178217.780	2875.248	35.000	5.000	10.000	771628.160	2790.233	700.015	543.509	20.000	127777.950
x		93.334	178871.400	2993.603	55.000	3.333	8.333	772438.070	2715.222	661.680	526.675	21.667	127428.620
σ		12.583	772.451	141.476	26.458	2.887	2.887	4142.749	129.925	57.953	44.696	2.887	305.197
%RSD		13.482	0.432	4.726	48.105	86.603	34.641	0.536	4.785	8.759	8.486	13.323	0.240

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:09:39	165.001	1115.037	595.011	101739.580	0.000	1130.038	10.000
2	14:10:01	140.001	1060.034	650.013	103973.300	0.000	960.028	60.000
3	14:10:23	115.000	1015.031	640.012	104949.390	0.000	1025.032	35.000
x		140.001	1063.367	628.345	103554.090	0.000	1038.366	35.000
σ		25.000	50.086	29.298	1645.456	0.000	85.786	25.000
%RSD		17.857	4.710	4.663	1.589	0.000	8.262	71.429

CCVL 10/19/2016 02:15:00 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:15:22	110555.460	145.001	4905.722	859536.950	25088.869	63013.898	637140.010	22134.689	150970.680	20.000	24492.984	9087.477
2	14:15:44	112427.930	125.000	5125.788	T 944094.550	25209.050	62271.114	640879.360	22605.320	150022.170	15.000	25489.477	8807.326
3	14:16:05	109468.320	142.501	5180.805	T 940639.680	26170.531	64173.309	642738.950	23045.922	149255.340	0.000	25399.339	9202.540
x		110817.240	137.501	5070.772	T 914757.060	25489.484	63152.774	640252.770	22595.310	150082.730	11.667	25127.267	9032.448
σ		1497.066	10.897	145.560	T 47853.205	592.857	958.672	2851.578	455.699	859.275	10.408	551.151	203.272
%RSD		1.351	7.925	2.871	T 5.231	2.326	1.518	0.445	2.017	0.573	89.214	2.193	2.250

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:15:22	6436.243	6716.353	676475.500	2560.197	1345.054	3330.333	10953.598	1972.117	516.008	266.502	102.000	700.015
2	14:15:44	6246.170	6881.420	680718.110	2525.191	1125.038	3445.356	10723.449	1982.118	543.009	259.502	83.000	645.012
3	14:16:05	6321.199	6501.268	686841.820	2490.186	1055.033	3680.406	11418.910	2046.126	603.011	253.002	98.500	645.012
x		6334.537	6699.680	681345.140	2525.191	1175.042	3485.365	11031.986	2000.120	554.009	259.669	94.500	663.347
σ		95.736	190.624	5211.527	35.005	151.338	178.433	354.295	40.155	44.532	6.752	10.112	31.756
%RSD		1.511	2.845	0.765	1.386	12.879	5.119	3.212	2.008	8.038	2.600	10.700	4.787

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:15:22	18675.457	176873.570	13230.249	2515.190	20.000	620.012	769702.100	1075.035	3880.452	3179.303	3925.462	129692.650
2	14:15:44	19030.859	179582.310	13320.321	2750.227	55.000	585.010	778685.280	1410.060	4335.564	3196.307	4140.514	128735.270
3	14:16:05	19831.792	184111.320	13995.874	2465.182	45.000	625.012	787557.940	1330.053	4190.527	3250.817	3655.401	129188.760
x		19179.369	180189.070	13515.481	2576.866	40.000	610.011	778648.440	1271.716	4135.514	3208.809	3907.126	129205.560
σ		592.300	3656.825	418.463	152.203	18.028	21.795	8927.977	174.965	232.490	37.360	243.076	478.911
%RSD		3.088	2.029	3.096	5.906	45.069	3.573	1.147	13.758	5.622	1.164	6.221	0.371

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:15:22	2240.151	13460.433	6476.258	102544.490	0.000	9402.651	10348.212
2	14:15:44	2560.197	13855.757	6186.148	100481.990	0.000	9822.894	10288.174
3	14:16:05	2735.224	14025.899	6251.172	104788.390	0.000	9917.950	10873.546
x		2511.857	13780.697	6304.526	102604.960	0.000	9714.498	10503.311
σ		251.052	290.109	152.237	2153.835	0.000	274.218	322.035
%RSD		9.995	2.105	2.415	2.099	0.000	2.823	3.066

Analyte ICPS

STD0 10/19/2016 10:04:01 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:04:23	98.484%	-9.338	0.745	3360.819	21.102	36.669	1012.767	53.276	98.403%	10.157	583.341	90.062
2	10:04:45	99.508%	3.223	-9.454	965.081	19.827	61.468	-876.240	211.829	99.362%	5.030	893.538	139.762
3	10:05:07	102.008%	-1.986	7.887	-8063.639	123.747	-67.424	-188.115	-5.260	102.235%	4.895	1245.035	-83.489
x		100.000%	-2.700	-0.274	-1245.913	54.892	10.237	-17.196	86.615	100.000%	6.694	907.305	48.778
σ		1.813%	6.311	8.715	6024.610	59.634	68.391	956.032	112.319	1.994%	3.000	331.062	117.211
%RSD		1.813	233.724	3183.968	483.550	108.638	668.043	5559.587	129.676	1.994	44.810	36.488	240.294

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:04:23	7562.720	-14.575	-1694.041	-1.230	-6.799	5.426	4.338	-211.270	763.515	-99.781	642.735	3231.443
2	10:04:45	7601.959	11.156	5927.872	-6.458	8.199	-57.510	-12.292	-90.985	727.313	-92.250	584.470	3132.587
3	10:05:07	7204.457	2.331	335.088	2.899	-2.289	-19.149	-50.520	-15.227	682.685	-37.054	591.479	2910.702
x		7456.379	-0.363	1522.973	-1.596	-0.296	-23.744	-19.491	-105.827	724.504	-76.362	606.228	3091.577
σ		219.051	13.075	3947.365	4.689	7.695	31.719	28.129	98.861	40.488	34.249	31.810	164.256
%RSD		2.938	3605.681	259.188	293.755	2596.058	133.584	144.316	93.417	5.588	44.851	5.247	5.313

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:04:23	11.630	99.582%	19.198	-1.042	-62.854	-34.947	98.721%	572.332	0.558	-14.289	6.221	101.230%
2	10:04:45	6.261	100.077%	-16.297	-26.609	-102.281	-6.420	99.921%	635.512	24.541	1.146	1.034	99.643%
3	10:05:07	-13.826	100.341%	18.401	-17.027	-100.831	-7.915	101.358%	675.837	-26.672	9.030	-4.041	99.128%
x		1.355	100.000%	7.101	-14.893	-88.655	-16.427	100.000%	627.893	-0.525	-1.371	1.071	100.000%
σ		13.418	0.385%	20.267	12.917	22.356	16.056	1.320%	52.171	25.624	11.862	5.131	1.096%
%RSD		990.347	0.385	285.410	86.731	25.217	97.737	1.320	8.309	4885.265	865.177	478.849	1.096

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:04:23	9.483	50.609	-27.579	99.485%	0.000	8291.464	-21.754
2	10:04:45	-3.918	46.841	115.181	101.435%	0.000	7869.966	23.964
3	10:05:07	26.815	-28.286	0.839	99.080%	0.000	7737.168	-5.854
x		10.793	23.055	29.480	100.000%	0.000	7966.199	-1.214
σ		15.409	44.502	75.567	1.259%	0.000	289.407	23.209
%RSD		142.761	193.029	256.331	1.259	0.000	3.633	1911.011

STD1 10/19/2016 10:09:44 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:10:06	99.600%	198.997	6125.957	T 917939.510	33353.925	83326.210	T 985257.620	33033.213	99.487%	35.172	15034.700	11560.682
2	10:10:27	98.145%	168.971	5954.094	T 961622.540	34194.543	83659.525	T 981588.480	33628.824	98.305%	0.000	13651.008	11435.472
3	10:10:49	94.214%	213.561	6143.841	T 910935.400	33560.202	85597.478	907083.730	33275.433	98.818%	10.117	15813.170	11965.345
x		97.319%	193.843	6074.631	T 930165.820	33702.890	84194.405	T 957976.610	33312.490	98.870%	15.096	14832.959	11653.833
σ		2.786%	22.738	104.770	T 27466.500	438.097	1226.473	T 44112.688	299.530	0.593%	18.107	1095.107	276.946
%RSD		2.863	11.730	1.725	T 2.953	1.300	1.457	T 4.605	0.899	0.599	119.943	7.383	2.376

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:10:06	8748.992	8888.695	700417.860	3542.108	1465.712	4566.656	13870.301	984.642	806.738	185.277	608.127	2941.608
2	10:10:27	8872.565	9291.370	728834.060	3549.340	1681.918	4670.458	14854.527	1066.000	780.581	193.824	605.284	3063.867
3	10:10:49	8357.851	9200.172	729446.720	3525.747	1409.966	4604.386	15123.436	1143.349	764.168	124.452	601.272	3041.287

x		8659.802	9126.746	719566.210	3539.065	1519.199	4613.833	14616.088	1064.664	783.829	167.851	604.895	3015.587
σ		268.698	211.140	16585.787	12.087	143.649	52.542	659.717	79.362	21.470	37.827	3.444	65.055
%RSD		3.103	2.313	2.305	0.342	9.456	1.139	4.514	7.454	2.739	22.536	0.569	2.157

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:10:06	26140.022	100.042%	17265.519	3747.603	-95.375	959.242	99.241%	720.485	5554.396	4476.454	6048.091	98.476%
2	10:10:27	26917.748	100.537%	17608.188	3772.545	-78.522	813.875	97.807%	848.631	5669.637	4649.451	6039.720	96.900%
3	10:10:49	27403.704	99.389%	17540.583	3647.531	-78.801	950.548	97.462%	805.463	6365.034	4783.807	5917.455	97.493%
x		26820.492	99.990%	17471.430	3722.560	-84.233	907.889	98.170%	791.526	5863.022	4636.571	6001.755	97.623%
σ		637.430	0.576%	181.500	66.163	9.650	81.534	0.943%	65.200	438.557	154.081	73.126	0.796%
%RSD		2.377	0.576	1.039	1.777	11.457	8.981	0.961	8.237	7.480	3.323	1.218	0.815

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:10:06	3475.532	17559.277	14776.901	99.547%	0.000	23601.153	14063.030
2	10:10:27	3781.331	18603.014	15652.298	97.899%	0.000	24020.147	14425.951
3	10:10:49	3608.970	18639.175	14981.619	99.080%	0.000	24070.761	14776.798
x		3621.944	18267.156	15136.939	98.842%	0.000	23897.354	14421.926
σ		153.312	613.307	457.901	0.849%	0.000	257.763	356.901
%RSD		4.233	3.357	3.025	0.859	0.000	1.079	2.475

STD2 10/19/2016 10:13:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:13:40	93.834%	883.220	31194.081	T 4882574.000	177330.770	403038.870	T 5089925.400	166817.660	89.775%	22.229	71825.294	57508.966
2	10:14:01	88.714%	850.185	33627.434	T 4709299.000	170162.520	397161.840	T 4920036.700	161567.190	91.325%	27.355	70636.054	56181.308
3	10:14:23	88.538%	984.606	33316.044	T 4718040.200	176002.010	395488.990	T 5003439.900	159893.030	91.610%	27.272	72207.039	56781.417
x		90.362%	906.004	32712.519	T 4769971.100	174498.440	398563.230	T 5004467.300	162759.290	90.903%	25.619	71556.129	56823.897
σ		3.008%	70.047	1324.191	T 97614.908	3813.332	3965.237	T 84949.032	3612.956	0.988%	2.936	819.351	664.847
%RSD		3.329	7.731	4.048	T 2.046	2.185	0.995	T 1.697	2.220	1.087	11.461	1.145	1.170

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:13:40	10272.514	43786.462	T 4111833.800	17090.275	7531.251	22685.022	72747.211	5478.053	877.997	1162.863	594.833	3005.136
2	10:14:01	10061.962	42371.044	T 4044718.900	17249.165	7408.596	21900.866	72100.260	5741.716	756.309	1186.112	594.837	2926.164
3	10:14:23	10230.917	41389.733	T 3981317.900	16834.849	6975.977	22230.810	72043.323	5475.525	877.210	1106.358	618.267	3125.936
x		10188.464	42515.747	T 4045956.900	17058.096	7305.275	22272.233	72296.931	5565.098	837.172	1151.778	602.646	3019.079
σ		111.511	1204.899	T 65266.791	209.024	291.699	393.715	390.991	152.961	70.031	41.017	13.528	100.613
%RSD		1.094	2.834	T 1.613	1.225	3.993	1.768	0.541	2.749	8.365	3.561	2.245	3.333

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:13:40	136841.570	94.392%	88043.270	18256.375	-130.854	4590.665	91.288%	684.662	30347.836	23029.949	31215.806	91.522%
2	10:14:01	137946.590	92.813%	90154.033	18994.458	-45.699	4497.770	91.035%	703.041	29804.686	23377.966	30427.757	92.283%
3	10:14:23	140467.470	92.923%	91172.137	18751.275	-99.876	4436.452	91.467%	748.920	29864.199	23400.027	30278.477	93.003%
x		138418.540	93.376%	89789.813	18667.369	-92.143	4508.296	91.263%	712.208	30005.574	23269.314	30640.680	92.269%
σ		1858.450	0.881%	1595.915	376.127	43.101	77.643	0.217%	33.095	297.898	207.589	503.635	0.740%
%RSD		1.343	0.944	1.777	2.015	46.776	1.722	0.238	4.647	0.993	0.892	1.644	0.802

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:13:40	18063.467	93757.354	67653.040	93.162%	0.000	82228.811	73563.352
2	10:14:01	18168.576	95003.934	66934.835	94.068%	0.000	85145.726	73178.386
3	10:14:23	18490.139	98176.514	68965.094	92.070%	0.000	90821.043	75550.175
x		18240.727	95645.934	67850.990	93.100%	0.000	86065.193	74097.305

σ	222.298	2278.457	1029.503	1.000%	0.000	4369.288	1272.861
%RSD	1.219	2.382	1.517	1.074	0.000	5.077	1.718

STD3 10/19/2016 10:17:18 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:17:40	90.768%	109484.540	37888.714	₸18523708.000	₸5592746.600	₸52838449.000	₸19484038.000	₸2071572.200	87.254%	36335.995	₸3804771.000	1059
2	10:18:02	86.150%	112247.470	40405.869	₸18742893.000	₸5700997.000	₸53381878.000	₸19729206.000	₸2110505.800	84.845%	37509.838	₸3890850.700	1074
3	10:18:23	87.341%	111586.870	39469.667	₸19045179.000	₸5718442.700	₸53831504.000	₸19950996.000	₸2160928.000	83.568%	38469.062	₸3945291.200	1102
x		88.086%	111106.300	39254.750	₸18770593.000	₸5670728.800	₸53350610.000	₸19721414.000	₸2114335.300	85.222%	37438.298	₸3880304.300	1078
σ		2.397%	1442.796	1272.265	₸261836.690	₸68095.515	₸497265.250	₸233576.270	₸44800.842	1.872%	1068.332	₸70851.303	21
%RSD		2.722	1.299	3.241	₸1.395	₸1.201	₸0.932	₸1.184	₸2.119	2.196	2.854	₸1.826	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:17:40	11880.768	₸5556099.600	₸113537250.000	1601480.000	847443.420	1047994.400	838282.200	109250.030	-702.591	11427.563	607.076	1
2	10:18:02	10002.935	₸5672775.400	₸116869280.000	1652598.900	884343.120	1079325.700	853799.690	108278.520	-664.964	11518.384	586.599	1
3	10:18:23	12523.069	₸5819401.700	₸118700480.000	1653485.000	883778.780	1086867.100	867697.990	109315.710	-699.416	11246.477	607.996	1
x		11468.924	₸5682758.900	₸116369010.000	1635854.600	871855.100	1071395.700	853259.960	108948.090	-688.990	11397.475	600.557	1
σ		1309.573	₸131934.660	₸2617716.700	29772.614	21143.022	20613.941	14715.321	580.792	20.868	138.428	12.096	
%RSD		11.418	₸2.322	₸2.249	1.820	2.425	1.924	1.725	0.533	3.029	1.215	2.014	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	10:17:40	1053611.100	89.465%	2164275.000	348574.130	1143.654	171408.570	88.376%	1081909.300	724963.200	566779.520	735424.240	9
2	10:18:02	1071554.800	89.814%	₸2457412.300	356698.690	1044.411	170203.050	87.284%	1086230.700	737961.180	572927.900	750661.740	8
3	10:18:23	1064171.700	88.935%	₸2493760.000	342762.030	931.084	169907.790	88.407%	1076254.800	731169.260	567861.820	742158.900	8
x		1063112.500	89.405%	₸2371815.800	349344.950	1039.716	170506.470	88.022%	1081464.900	731364.550	569189.750	742748.290	8
σ		9018.585	0.443%	₸180652.080	7000.232	106.363	795.065	0.639%	5002.779	6501.188	3282.257	7635.827	
%RSD		0.848	0.495	₸7.617	2.004	10.230	0.466	0.726	0.463	0.889	0.577	1.028	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:17:40	43472.865	1930952.300	₸18728460.000	90.115%	0.000	419411.610	142012.000
2	10:18:02	46012.712	1901951.100	₸18679074.000	91.542%	0.000	413030.300	137703.060
3	10:18:23	44367.693	1966718.000	₸19340590.000	88.989%	0.000	414589.410	141036.230
x		44617.757	1933207.100	₸18916041.000	90.215%	0.000	415677.110	140250.430
σ		1288.257	32442.301	₸368498.260	1.279%	0.000	3326.799	2259.390
%RSD		2.887	1.678	₸1.948	1.418	0.000	0.800	1.611

STD4 10/19/2016 10:21:49 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51
1	10:22:10	85.410%	310889.000	108877.550	₸54206457.000	₸16552157.000	₸153832770.000	₸57100084.000	₸6190431.700	80.244%	109096.420	₸11434840.0
2	10:22:32	85.511%	314115.260	112565.570	₸54127203.000	₸16680123.000	₸154812020.000	₸57420473.000	₸6258661.900	81.049%	110143.690	₸11481555.0
3	10:22:53	84.824%	313486.900	114856.470	₸55196317.000	₸16815728.000	₸156380790.000	₸57949371.000	₸6470857.600	80.146%	111995.390	₸11937610.0
x		85.248%	312830.390	112099.870	₸54509992.000	₸16682669.000	₸155008530.000	₸57489976.000	₸6306650.400	80.480%	110411.830	₸11618002.0
σ		0.371%	1710.395	3016.543	₸595694.110	₸131803.920	₸1285323.300	₸428888.350	₸146242.420	0.496%	1467.972	₸277773.0
%RSD		0.435	0.547	2.691	₸1.093	₸0.790	₸0.829	₸0.746	₸2.319	0.616	1.330	₸2.3

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83K
1	10:22:10	-12994.357	₸16648398.000	₸338838630.000	₸5311573.800	2462953.800	₸3418647.400	2379145.700	312923.980	-2872.372	31683.654	606.7
2	10:22:32	-11243.212	₸16638177.000	₸336266680.000	₸5258460.600	2487951.600	₸3462975.300	2393113.000	315205.610	-2689.422	32135.769	611.2

3	10:22:53	-15471.172	┬16849152.000	┬342667020.000	┬5367975.900	2521073.700	┬3466612.000	2412125.300	317040.210	-3263.521	32284.798	626.7
x		-13236.247	┬16711909.000	┬339257450.000	┬5312670.100	2490659.700	┬3449411.600	2394794.700	315056.600	-2941.772	32034.740	614.9
σ		2124.334	┬118965.390	┬3220659.400	┬54765.921	29154.442	┬26704.491	16554.020	2062.156	293.274	313.048	10.5
%RSD		16.049	┬0.712	┬0.949	┬1.031	1.171	┬0.774	0.691	0.655	9.969	0.977	1.7

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135B
1	10:22:10	┬3497617.200	83.640%	┬7351328.500	1020403.500	1244.222	496376.640	82.244%	┬3723480.700	2172259.500	1708060.100	┬2523843.9
2	10:22:32	┬3552001.400	83.910%	┬7526881.400	1019493.500	1279.284	502657.720	82.705%	┬3775341.700	2198627.000	1729042.800	┬2577758.2
3	10:22:53	┬3589815.900	83.134%	┬7644645.600	1010512.200	1191.658	500105.240	82.885%	┬3821953.700	2228186.500	1734839.200	┬2578545.8
x		┬3546478.200	83.561%	┬7507618.500	1016803.100	1238.388	499713.200	82.611%	┬3773592.000	2199691.000	1723980.700	┬2560049.3
σ		┬46346.833	0.394%	┬147604.280	5467.056	44.104	3158.838	0.331%	┬49259.811	27978.679	14088.945	┬31357.2
%RSD		┬1.307	0.472	┬1.966	0.538	3.561	0.632	0.401	┬1.305	1.272	0.817	┬1.2

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:22:10	134612.180	┬6732223.500	┬56795212.000	85.443%	0.000	972221.090	425069.110
2	10:22:32	136888.510	┬6705646.500	┬56335347.000	87.165%	5.736	957054.270	426947.630
3	10:22:53	138539.410	┬6800082.800	┬57245225.000	86.780%	0.000	962037.290	428214.080
x		136680.030	┬6745984.300	┬56791928.000	86.463%	1.912	963770.880	426743.610
σ		1971.897	┬48698.824	┬454948.010	0.904%	3.312	7730.599	1582.380
%RSD		1.443	┬0.722	┬0.801	1.045	173.205	0.802	0.371

STD5 10/19/2016 10:27:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	
1	10:27:52	80.776%	514277.790	182577.180	T 90751132.000	TM 27881369.000	TM 257234000.000	T 96608304.000	TM 10580265.000	75.552%	183593.120	TI
2	10:28:14	81.785%	505419.340	179793.970	T 89964817.000	TM 27679070.000	TM 260322720.000	TM 98131855.000	TM 10775359.000	75.450%	183890.410	TI
3	10:28:35	78.973%	513630.710	187695.050	T 87681579.000	TM 27513899.000	T 254737580.000	T 94596216.000	TM 10448305.000	77.553%	184083.250	TI
x		80.511%	511109.280	183355.400	T 89465843.000	TM 27691446.000	TM 257431430.000	TM 96445458.000	TM 10601310.000	76.185%	183855.600	TI
σ		1.424%	4938.246	4007.613	T 1594449.700	TM 184047.130	TM 2797796.600	TM 1773435.900	TM 164539.310	1.186%	246.912	
%RSD		1.769	0.966	2.186	T 1.782	TM 0.665	TM 1.087	TM 1.839	TM 1.552	1.556	0.134	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se
1	10:27:52	-28087.394	TM 28216467.000	T 564976150.000	TM 8991663.500	TM 4638999.200	T 5631538.000	TM 4349264.800	497104.170	-5268.738	49905.424
2	10:28:14	-13391.383	TM 28708823.000	TM 579218540.000	TM 9083256.300	TM 4688230.500	TM 5691168.600	TM 4426977.400	519881.640	-5232.769	50253.977
3	10:28:35	-22015.396	TM 28190326.000	T 564883200.000	TM 8879194.300	TM 4629577.300	T 5604101.600	TM 4327438.100	516837.240	-5472.044	50765.579
x		-21164.724	TM 28371872.000	TM 569692630.000	TM 8984704.700	TM 4652269.000	TM 5642269.400	TM 4367893.400	511274.350	-5324.517	50308.327
σ		7384.843	TM 292100.730	TM 8249812.100	TM 102208.810	TM 31497.836	TM 44514.490	TM 52319.133	12365.785	129.022	432.645
%RSD		34.892	TM 1.030	TM 1.448	TM 1.138	TM 0.677	TM 0.789	TM 1.198	2.419	2.423	0.860

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb
1	10:27:52	TM 5830222.600	81.758%	TM 12072126.000	1624703.000	2567.381	810686.650	80.460%	T 6183115.600	TM 4052399.800	2801325.900
2	10:28:14	TM 5830534.900	78.713%	TM 12708102.000	1646670.700	1528.373	813154.840	80.282%	T 6354790.300	TM 4147894.500	M 2868681.000
3	10:28:35	TM 5857975.100	79.610%	TM 12838368.000	1645841.900	2296.327	821577.640	80.289%	T 6344351.300	TM 4180604.700	M 2887701.600
x		TM 5839577.500	80.027%	TM 12539532.000	1639071.900	2130.694	815139.710	80.344%	T 6294085.700	TM 4126966.400	M 2852569.500
σ		TM 15933.528	1.565%	TM 409992.290	12450.693	538.943	5710.360	0.100%	T 96244.567	TM 66615.410	M 45385.863
%RSD		TM 0.273	1.955	TM 3.270	0.760	25.294	0.701	0.125	T 1.529	TM 1.614	M 1.591

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:27:52	M 270584.070	TM 11202880.000	TM 93635617.000	83.536%	0.000	1808340.000	M 856770.370
2	10:28:14	M 277723.400	TM 11470898.000	TM 94269272.000	83.509%	0.000	M 1844489.200	M 872619.930
3	10:28:35	M 284439.660	TM 11403652.000	TM 95290114.000	83.694%	5.974	M 1860142.100	M 877084.150
x		M 277582.380	TM 11359143.000	TM 94398334.000	83.580%	1.991	M 1837657.100	M 868824.820
σ		M 6928.871	TM 139442.250	TM 834765.020	0.100%	3.449	M 26568.263	M 10675.421
%RSD		M 2.496	TM 1.228	TM 0.884	0.120	173.205	M 1.446	M 1.229

ICV 10/19/2016 10:33:14 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:33:36	75.893%	55322.121	22634.888	T 10162448.000	T 2920315.600	T 27989004.000	T 9860960.600	975852.540	71.699%	19124.008	1802241.300	549939.340
2	10:33:57	75.053%	58002.272	23027.375	T 10223811.000	T 2981489.000	T 27890519.000	T 9879480.500	975413.280	70.890%	18891.779	1791399.500	556581.430
3	10:34:20	73.406%	58405.516	22818.764	T 10006645.000	T 2919660.400	T 27786053.000	T 9808156.500	988687.770	71.872%	19036.888	1823382.300	559864.360
x		74.784%	109.477%	120.653%	T 110.147%	T 107.218%	T 109.389%	T 101.636%	96.393%	71.487%	19017.558	93.997%	95.269%
σ		1.265%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.524%	117.315	n/a	n/a
%RSD		1.692	2.928	0.860	T 1.105	T 1.208	T 0.364	T 0.376	0.769	0.733	0.617	0.901	0.910

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:33:36	7517.716	T 2838282.000	T 58815306.000	846675.700	453442.100	557662.090	445058.770	54823.132	-234.411	5785.249	587.418	2315.048
2	10:33:57	10430.147	T 2937317.100	T 60574236.000	865629.900	465692.140	573281.370	461587.000	54358.536	35.204	5508.462	581.621	2828.796
3	10:34:20	9035.508	T 2891561.300	T 60090986.000	852424.970	457747.260	571704.260	452677.970	54988.133	-20.544	5612.905	530.826	2550.931
x		8994.457	T 103.159%	T 104.718%	96.969%	102.045%	99.993%	105.475%	102.063%	-73.250	106.980%	566.622	2564.925
σ		1456.649	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	142.325	n/a	31.136	257.160

%RSD		16.195	T 1.716	T 1.519	1.137	1.354	1.515	1.826	0.597	194.300	2.480	5.495	10.026
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:33:36	526940.740	79.164%	515540.070	172763.460	-347.546	87301.740	77.373%	566218.900	380353.040	295095.910	369952.710	77.300%
2	10:33:57	528034.220	78.325%	538819.120	173392.250	54.171	87390.378	77.715%	573864.410	386926.390	299367.860	377138.510	80.231%
3	10:34:20	521864.320	77.922%	547262.960	173525.010	458.282	87640.200	78.181%	572511.370	381467.620	297744.230	379882.070	80.126%
x		525613.090	78.470%	94.715%	102.341%	54.969	104.064%	77.756%	570864.890	382915.680	103.774%	96.799%	79.219%
σ		3292.251	0.634%	n/a	n/a	402.914	n/a	0.405%	4080.029	3517.796	n/a	n/a	1.663%
%RSD		0.626	0.807	3.077	0.235	732.987	0.201	0.521	0.715	0.919	0.725	1.365	2.099

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:33:36	48349.467	969631.130	T 9075839.000	81.239%	0.000	246343.650	136337.420
2	10:33:57	48166.512	984049.230	T 9152544.100	80.903%	0.000	263756.950	139934.500
3	10:34:20	48705.038	974973.800	T 9037424.100	81.932%	0.000	272292.160	139649.980
x		120.708%	90.039%	T 97.577%	81.358%	0.000	84.996%	97.230%
σ		n/a	n/a	T n/a	0.524%	0.000	n/a	n/a
%RSD		0.566	0.747	T 0.645	0.645	0.000	5.071	1.442

ICVL 10/19/2016 10:38:58 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	10:39:20	77.342%	200.768	7328.371	924108.760	37776.984	93918.978	908267.240	32951.276	73.303%	27.204	14369.932	10537.705
2	10:39:41	76.979%	188.768	7989.094	930342.770	37249.683	96301.579	913277.260	33886.278	72.863%	34.174	13310.980	10733.657
3	10:40:03	75.761%	221.651	7848.286	926011.240	37613.205	95371.974	906380.710	33575.821	72.161%	13.806	15018.026	11126.682
x		76.694%	121.759%	127.545%	100.767%	102.679%	112.020%	93.830%	98.768%	72.776%	25.062	92.615%	92.612%
σ		0.828%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.576%	10.352	n/a	n/a
%RSD		1.080	8.168	4.507	0.345	0.719	1.261	0.392	1.423	0.792	41.305	6.054	2.777

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	10:39:20	6506.679	9442.907	746214.000	3757.584	1722.456	4693.777	14671.333	1099.565	511.260	184.570	580.514	2986.851
2	10:39:41	7164.213	9983.373	762502.700	4185.342	1801.586	4854.093	15869.388	1190.434	478.161	220.903	590.861	2902.427
3	10:40:03	6510.741	10022.764	769199.160	4011.440	1542.103	4889.980	15281.645	1246.934	471.313	195.283	609.863	3016.937
x		6727.211	109.535%	99.678%	112.995%	117.333%	105.988%	111.110%	109.944%	486.911	95.035%	593.746	2968.738
σ		378.460	n/a	n/a	n/a	n/a	n/a	n/a	n/a	21.362	n/a	14.885	59.365
%RSD		5.626	3.301	1.557	5.399	7.875	2.171	3.922	6.306	4.387	9.323	2.507	2.000

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:39:20	27699.705	78.341%	21529.064	3512.235	-126.343	1004.273	78.121%	4775.153	7537.327	5856.209	6097.780	79.056%
2	10:39:41	27423.182	79.869%	21253.377	3852.340	-113.195	930.895	78.361%	5398.757	7826.155	6112.412	6353.536	79.297%
3	10:40:03	28204.611	78.607%	21423.971	3654.295	-40.506	835.260	77.150%	5911.404	8053.414	6348.779	6194.153	77.248%
x		96.253%	78.939%	118.655%	108.497%	-93.348	109.900%	77.877%	5361.771	7805.632	133.157%	100.094%	78.534%
σ		n/a	0.816%	n/a	n/a	46.232	n/a	0.642%	569.028	258.655	n/a	n/a	1.120%
%RSD		1.427	1.034	0.650	4.651	49.527	9.177	0.824	10.613	3.314	4.035	2.078	1.427

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:39:20	3922.271	22116.410	17078.544	79.045%	0.000	14671.010	15352.424
2	10:39:41	3928.975	22361.798	17510.810	80.238%	0.000	14961.728	15582.574
3	10:40:03	3996.885	21838.042	16845.777	81.362%	0.000	14804.226	15063.007
x		98.482%	101.942%	115.045%	80.215%	0.000	48.275%	107.529%
σ		n/a	n/a	n/a	1.159%	0.000	n/a	n/a
%RSD		1.045	1.185	1.968	1.445	0.000	0.982	1.698

ICBIS 10/19/2016 10:44:40 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:45:02	76.397%	20.113	1016.551	32519.145	602.654	3865.002	2874.223	-226.022	71.463%	6.967	384.718	-420.785
2	10:45:24	76.740%	6.950	814.281	39055.203	586.622	3314.957	2176.541	-312.716	71.672%	13.892	130.280	-454.992
3	10:45:45	73.821%	0.821	920.529	31549.104	438.743	2913.897	1613.537	-340.448	72.761%	13.698	-744.579	-473.085
x		75.653%	9.295	917.121	34374.484	542.673	3364.618	2221.434	-293.062	71.966%	11.519	-76.527	-449.621
σ		1.596%	9.857	101.178	4082.535	90.362	477.493	631.541	59.691	0.697%	3.943	592.372	26.561
%RSD		2.110	106.049	11.032	11.877	16.651	14.192	28.429	20.368	0.968	34.231	774.069	5.907

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:45:02	6905.127	453.599	13028.835	202.337	73.994	91.036	121.022	3.035	516.554	-13.442	612.497	2988.026
2	10:45:24	6923.081	311.358	8225.472	159.827	24.896	69.088	55.920	16.670	541.825	-67.111	581.538	2872.466
3	10:45:45	7024.144	278.947	-1671.223	136.498	31.141	29.823	148.025	74.993	499.459	-11.759	563.138	2897.054
x		6950.784	347.968	6527.695	166.221	43.344	63.316	108.322	31.566	519.279	-30.771	585.724	2919.182
σ		64.163	92.903	7495.650	33.382	26.727	31.012	47.347	38.222	21.314	31.483	24.945	60.875
%RSD		0.923	26.699	114.828	20.083	61.663	48.981	43.710	121.085	4.105	102.315	4.259	2.085

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:45:02	109.511	78.717%	1114.296	4.683	-77.860	-9.752	77.961%	2353.881	639.225	497.657	55.161	76.750%
2	10:45:24	88.349	79.203%	1409.971	-21.423	-78.189	-9.881	79.360%	2463.613	794.737	565.810	60.331	79.051%
3	10:45:45	82.025	78.552%	1205.929	-2.532	-62.675	-44.018	79.378%	2841.039	858.510	617.311	72.913	78.511%
x		93.295	78.824%	1243.399	-6.424	-72.908	-21.217	78.899%	2552.844	764.157	560.259	62.802	78.104%
σ		14.395	0.338%	151.357	13.481	8.863	19.746	0.813%	255.544	112.795	60.020	9.130	1.203%
%RSD		15.430	0.429	12.173	209.850	12.157	93.069	1.030	10.010	14.761	10.713	14.538	1.541

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:45:02	133.774	1205.313	1294.393	79.964%	0.000	-1147.651	-151.437
2	10:45:24	82.860	1025.340	1247.105	80.588%	0.000	-1200.082	-170.486
3	10:45:45	90.447	1123.460	979.836	82.288%	0.000	-978.269	-183.408
x		102.360	1118.037	1173.778	80.947%	0.000	-1108.667	-168.443
σ		27.468	90.109	169.614	1.203%	0.000	115.931	16.083
%RSD		26.835	8.060	14.450	1.486	0.000	10.457	9.548

ICSA 10/19/2016 10:50:23 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:50:45	75.451%	10.542	942.811	TM 186682420.000	T 18997637.000	T 174183290.000	TM 189799750.000	T 7020446.500	78.336%	385901.030	2557.901	3705.125
2	10:51:06	75.945%	16.996	702.966	TM 189040090.000	T 18893342.000	T 175408590.000	TM 193627570.000	T 7195011.500	78.812%	385863.300	949.346	3857.541
3	10:51:28	73.567%	28.043	945.830	TM 185675670.000	T 18942366.000	T 173264840.000	TM 189693400.000	T 7260983.200	79.065%	391659.850	1595.637	3552.230
x		74.988%	1.#IO%	1.#IO%	TM 101.728%	T 103.615%	T 102.542%	TM 98.566%	T 105.623%	78.738%	387808.060	1.#IO%	1.#IO%
σ		1.255%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.370%	3335.801	n/a	n/a
%RSD		1.674	47.769	16.131	TM 0.923	T 0.275	T 0.617	TM 1.173	T 1.736	0.470	0.860	47.587	4.120

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:50:45	2653.541	2248.651	T 385131600.000	431.627	589.410	1081.628	-599.601	-179.301	559.223	-37.439	678.219	2907.117
2	10:51:06	2920.387	2416.200	T 382750430.000	422.546	427.139	972.020	-479.581	-193.792	573.342	-78.348	650.795	3198.198
3	10:51:28	2823.300	2590.341	T 390937970.000	636.140	602.788	1176.775	-593.179	-26.518	505.464	-55.476	654.555	2818.090
x		2799.076	1.#IO%	T 101.417%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	546.010	-1.#IO%	661.190	2974.468

σ		135.063	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	35.816	n/a	14.867	198.803
%RSD		4.825	7.065	T 1.090	24.313	18.114	9.515	12.112	69.575	6.560	35.913	2.249	6.684
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:50:45	4255.911	81.930%	T 3878861.800	520.063	528.046	105.086	82.939%	4039.509	933.351	652.053	220.111	84.138%
2	10:51:06	4272.459	83.565%	T 3950131.200	622.696	552.191	86.920	83.668%	5355.201	1232.669	770.369	158.355	88.530%
3	10:51:28	4219.072	85.404%	T 3963139.100	557.033	517.727	30.732	84.486%	5042.885	1274.803	848.312	286.935	88.220%
x		1.#IO%	83.633%	T 108.961%	1.#IO%	532.655	1.#IO%	83.698%	4812.532	1146.941	1.#IO%	1.#IO%	86.963%
σ		n/a	1.738%	T n/a	n/a	17.688	n/a	0.774%	687.429	186.170	n/a	n/a	2.451%
%RSD		0.643	2.078	T 1.154	9.174	3.321	52.209	0.925	14.284	16.232	13.056	28.993	2.819

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:50:45	529.744	1217.616	5682.655	85.223%	0.000	93391.128	-149.043
2	10:51:06	758.598	1293.620	5852.597	85.827%	0.000	78081.803	-102.850
3	10:51:28	687.909	1510.469	7004.182	86.554%	0.000	60613.384	-103.731
x		1.#IO%	1.#IO%	1.#IO%	85.868%	0.000	1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	0.666%	0.000	n/a	n/a
%RSD		17.788	11.336	11.634	0.776	0.000	21.200	22.287

ICSAB 10/19/2016 10:56:06 AM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	10:56:28	68.503%	4571.197	67897.899	TM 189906520.000	T 19111332.000	T 178737090.000	TM 194573300.000	T 7173340.400	72.828%	392564.190	69728.412	1403
2	10:56:49	67.487%	4569.721	70591.374	TM 188203080.000	T 19161427.000	T 178567190.000	TM 196567100.000	T 7192653.200	73.872%	394470.020	71555.045	1398
3	10:57:11	66.708%	4761.922	69978.936	TM 182310280.000	T 18681220.000	T 174914130.000	TM 192274100.000	T 7167515.900	75.112%	390220.390	68828.435	1379
x		67.566%	110.788%	114.778%	TM 101.551%	T 103.835%	T 104.378%	TM 100.336%	T 105.904%	73.937%	392418.200	91.147%	95
σ		0.900%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.144%	2128.572	n/a	
%RSD		1.332	2.385	2.032	TM 2.134	T 1.390	T 1.217	TM 1.105	T 0.183	1.547	0.542	1.984	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	10:56:28	3859.636	107379.890	T 392397030.000	82258.307	16555.537	41315.329	30759.590	23468.449	-78.169	6043.553	689.952	28
2	10:56:49	3692.673	106065.790	T 391512490.000	83499.789	17106.952	42544.855	31903.182	24189.393	77.939	5971.876	624.018	31
3	10:57:11	3895.419	107296.480	T 392436440.000	82575.111	16737.617	42678.479	31460.163	24483.391	-47.707	6131.212	644.725	29
x		3815.910	95.439%	T 102.951%	93.892%	93.383%	92.892%	91.292%	99.666%	-15.979	91.861%	652.898	29
σ		108.215	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	82.749	n/a	33.718	1
%RSD		2.836	0.688	T 0.133	0.779	1.672	1.781	1.838	2.172	517.855	1.319	5.164	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	10:56:28	3422.051	80.841%	T 3891805.200	84875.469	602.490	20268.721	81.674%	2865.260	145033.650	115081.560	149045.100	85
2	10:56:49	3524.701	79.818%	T 4044836.000	84440.030	450.522	20112.442	82.130%	3482.570	151192.780	116820.460	151129.560	85
3	10:57:11	3593.667	79.806%	T 4043003.600	84879.051	506.993	20181.163	82.362%	3697.432	150678.320	118575.580	152282.430	87
x		3513.473	80.155%	T 110.693%	100.117%	520.002	96.098%	82.055%	3348.421	148968.250	101.911%	97.157%	86
σ		86.357	0.594%	T n/a	n/a	76.815	n/a	0.350%	432.001	3417.159	n/a	n/a	1
%RSD		2.458	0.741	T 2.199	0.298	14.772	0.388	0.427	12.902	2.294	1.495	1.088	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:56:28	40763.277	242199.660	340030.600	83.989%	0.000	287764.010	162472.070
2	10:56:49	42285.904	248552.800	347883.750	84.208%	0.000	304860.020	165778.000
3	10:57:11	42402.737	248610.350	348821.980	84.860%	0.000	312712.950	166678.310
x		104.276%	90.924%	92.755%	84.352%	0.000	98.352%	115.699%
σ		n/a	n/a	n/a	0.453%	0.000	n/a	n/a
%RSD		2.187	1.495	1.397	0.537	0.000	4.227	1.343

CCV 10/19/2016 11:01:49 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:02:11	63.208%	115993.880	41789.243	T 19441956.000	T 5827910.400	T 55051629.000	T 19382032.000	1962096.300	62.307%	38571.886	T 3881822.900	11070
2	11:02:33	60.115%	121272.510	43573.385	T 19759583.000	T 6001541.800	T 55496567.000	T 19708138.000	1983840.000	60.337%	38987.355	T 3933522.300	11194
3	11:02:55	60.848%	118470.450	44548.625	T 19432511.000	T 5802898.300	T 54828770.000	T 19060560.000	1963206.500	61.366%	38979.898	T 3933429.900	11292
x		61.391%	113.391%	114.442%	T 106.248%	T 107.154%	T 108.112%	T 100.008%	96.872%	61.337%	38846.380	T 101.933%	95
σ		1.616%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.985%	237.747	T n/a	
%RSD		2.632	2.227	3.231	T 0.953	T 1.841	T 0.617	T 1.670	0.622	1.606	0.612	T 0.761	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:02:11	14035.595	T 5796498.400	T 118139420.000	1675785.800	907289.800	1103918.900	899314.790	107037.120	-781.479	10934.084	546.385	14
2	11:02:33	11426.719	T 5943783.800	T 122118570.000	1712986.100	904289.480	1146015.100	925474.830	106640.390	-853.480	11062.158	557.115	19
3	11:02:55	11272.151	T 5840495.500	T 119725110.000	1673809.400	913026.180	1115219.100	915151.130	108130.190	-1024.916	11342.746	603.037	17
x		12244.822	T 104.626%	T 105.016%	95.705%	100.964%	98.814%	106.301%	100.033%	-886.625	105.480%	568.846	17
σ		1552.780	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	125.057	n/a	30.093	2

%RSD		12.681	T 1.290	T 1.669	1.308	0.489	1.942	1.443	0.719	14.105	1.881	5.290	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	11:02:11	1029279.600	71.747%	2201979.800	344954.250	715.018	171252.780	74.308%	1088731.900	735476.730	569566.930	738931.550	75
2	11:02:33	1047298.800	71.500%	2251788.300	351913.110	865.407	175010.320	72.338%	1108285.500	748812.420	582656.760	746765.100	74
3	11:02:55	1056703.000	70.886%	2275244.600	349595.150	1105.554	175198.400	71.721%	1124561.600	751760.100	591477.770	754703.740	75
x		1044427.100	71.378%	99.483%	103.040%	895.326	103.429%	72.789%	1107193.000	745349.750	101.406%	96.217%	75
σ		13935.421	0.443%	n/a	n/a	196.980	n/a	1.351%	17939.833	8676.384	n/a	n/a	0
%RSD		1.334	0.621	1.668	1.016	22.001	1.280	1.856	1.620	1.164	1.897	1.056	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:02:11	45233.016	1940777.700	T 19050658.000	77.057%	0.000	253228.590	146144.640
2	11:02:33	46167.837	1944148.300	T 18899691.000	77.229%	0.000	270499.630	145930.730
3	11:02:55	46214.530	1932948.000	T 18770184.000	78.435%	0.000	280027.210	143618.870
x		114.386%	89.433%	T 101.493%	77.574%	0.000	87.317%	101.852%
σ		n/a	n/a	T n/a	0.751%	0.000	n/a	n/a
%RSD		1.207	0.296	T 0.742	0.968	0.000	5.070	0.964

CCB 10/19/2016 11:07:32 AM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:07:54	66.511%	20.732	715.982	48223.279	1739.662	14216.153	22310.575	305.127	63.763%	46.755	-528.303	-700.789
2	11:08:16	64.028%	6.280	856.929	58617.655	2746.109	23161.440	25086.430	387.323	63.004%	71.007	344.409	-805.103
3	11:08:37	66.913%	1.870	835.717	59301.345	3227.494	29953.562	25104.919	655.661	64.105%	69.773	1384.870	-578.218
x		65.817%	9.627	802.876	55380.760	2571.088	22443.718	24167.308	449.370	63.624%	62.512	400.325	-694.703
σ		1.562%	9.866	75.996	6207.979	759.200	7893.216	1608.005	183.319	0.563%	13.660	957.812	113.565
%RSD		2.374	102.482	9.465	11.210	29.528	35.169	6.654	40.795	0.886	21.852	239.258	16.347

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:07:54	6067.280	362.094	33420.225	127.435	61.454	101.918	146.650	-5.501	428.658	-2.046	584.706	2849.890
2	11:08:16	6075.466	467.437	56962.391	200.655	78.271	66.583	100.882	-52.761	483.618	-58.754	545.888	2862.379
3	11:08:37	5614.135	326.421	56162.416	134.441	53.236	76.596	126.483	-57.227	455.318	-61.931	530.756	2652.826
x		5918.960	385.317	48848.344	154.177	64.320	81.699	124.672	-38.496	455.865	-40.911	553.783	2788.365
σ		264.019	73.320	13367.129	40.403	12.761	18.212	22.938	28.662	27.484	33.695	27.828	117.546
%RSD		4.461	19.029	27.365	26.206	19.840	22.292	18.398	74.454	6.029	82.363	5.025	4.216

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:07:54	34.638	73.966%	4341.892	-39.951	-102.323	15.315	74.910%	3704.732	847.678	691.027	17.725	75.597%
2	11:08:16	81.342	72.306%	5121.354	40.129	-58.459	-41.111	74.925%	4177.919	1095.320	805.662	31.067	75.062%
3	11:08:37	140.866	73.947%	4877.345	6.583	-106.815	6.331	75.177%	4170.570	1165.187	841.856	84.141	74.968%
x		85.615	73.406%	4780.197	2.254	-89.199	-6.488	75.004%	4017.740	1036.061	779.515	44.311	75.209%
σ		53.243	0.953%	398.708	40.215	26.716	30.319	0.150%	271.098	166.843	78.741	35.133	0.339%
%RSD		62.188	1.298	8.341	1784.373	29.951	467.272	0.200	6.748	16.104	10.101	79.287	0.451

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:07:54	196.778	1828.813	1200.179	78.236%	0.000	-1634.784	-194.931
2	11:08:16	158.883	1760.954	1166.306	79.073%	0.000	-1738.930	-144.479
3	11:08:37	212.559	1650.929	1597.694	78.195%	0.000	-1512.508	-156.558
x		189.407	1746.898	1321.393	78.501%	0.000	-1628.741	-165.323
σ		27.587	89.771	239.882	0.495%	0.000	113.332	26.343
%RSD		14.565	5.139	18.154	0.631	0.000	6.958	15.934

200-35736-A-11-A 10/19/2016 11:13:14 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:13:36	75.350%	664.195	4575.010	T 1104424.800	T 2430881.500	T 93532686.000	T 8530341.400	T 3291619.400	84.004%	16388.669	234916.590	175844.130
2	11:13:58	74.184%	698.373	4762.677	T 1049959.100	T 2313018.500	T 88778776.000	T 8326647.600	T 3284175.900	88.100%	16037.719	234905.970	171953.040
3	11:14:20	71.806%	680.034	5180.824	T 1016499.900	T 2411766.500	T 92289510.000	T 8500760.300	T 3341094.200	87.570%	15635.701	234757.260	178836.020
x		73.780%	680.867	4839.503	T 1056961.300	T 2385222.100	T 91533657.000	T 8452583.100	T 3305629.800	86.558%	16020.697	234859.940	175544.400
σ		1.806%	17.104	310.128	T 44378.702	T 63256.402	T 2465441.200	T 110061.670	T 30937.766	2.228%	376.772	89.085	3451.263
%RSD		2.448	2.512	6.408	T 4.199	T 2.652	T 2.693	T 1.302	T 0.936	2.574	2.352	0.038	1.966

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:13:36	4399.727	TM 30983831.000	T 374424400.000	156172.550	62309.889	1596899.600	477207.190	6801.959	119.313	764.401	204.937	98.411
2	11:13:58	3789.700	TM 30781587.000	T 372249080.000	155467.300	60101.126	1575810.100	465160.890	6820.751	122.680	728.689	216.860	223.291
3	11:14:20	3931.606	TM 31503888.000	T 382581710.000	158492.280	62710.383	1615380.300	477543.840	6716.207	159.277	635.832	210.377	668.690
x		4040.344	TM 31089769.000	T 376418390.000	156710.710	61707.133	1596030.000	473303.980	6779.639	133.757	709.640	210.725	330.131
σ		319.220	TM 372621.490	T 5447274.900	1582.667	1405.184	19799.426	7054.130	55.732	22.165	66.367	5.969	299.776
%RSD		7.901	TM 1.199	T 1.447	1.010	2.277	1.241	1.490	0.822	16.571	9.352	2.833	90.805

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:13:36	800140.830	204.758%	6712.412	6969.455	-473.351	3306.489	80.757%	60895.725	2878.946	2463.809	490110.290	97.714%
2	11:13:58	790911.490	206.041%	6492.804	6520.785	-292.650	3131.800	82.542%	60447.389	3112.079	2364.045	493853.880	97.704%
3	11:14:20	805916.540	211.064%	6179.730	6965.156	-353.348	3247.556	83.660%	61630.218	2974.058	2416.554	496922.430	100.962%
x		798989.620	207.288%	6461.649	6818.466	-373.116	3228.615	82.320%	60991.111	2988.361	2414.802	493628.870	98.793%
σ		7568.479	3.333%	267.704	257.808	91.959	88.872	1.464%	597.156	117.223	49.905	3411.639	1.878%
%RSD		0.947	1.608	4.143	3.781	24.646	2.753	1.779	0.979	3.923	2.067	0.691	1.901

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:13:36	1778.671	6504.192	2355376.300	84.942%	0.000	267973.230	88600.232
2	11:13:58	1635.566	6293.510	2316880.400	89.408%	0.000	239708.210	84383.427
3	11:14:20	1500.499	6293.224	2352482.800	88.441%	0.000	235973.590	86893.293
x		1638.245	6363.642	2341579.800	87.597%	0.000	247885.010	86625.651
σ		139.105	121.720	21439.179	2.349%	0.000	17496.839	2121.104
%RSD		8.491	1.913	0.916	2.682	0.000	7.058	2.449

200-35736-A-11-A SD@5 10/19/2016 11:18:56 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:19:18	71.901%	178.421	1229.730	222346.730	476341.930	T 20103503.000	T 1808221.500	654261.400	79.439%	3394.350	51087.838	37750.981
2	11:19:40	73.215%	117.002	1103.028	218586.490	486486.120	T 19922737.000	T 1793359.800	662392.460	78.834%	3514.220	51279.872	38886.590
3	11:20:02	71.042%	106.791	1243.639	221930.340	481481.230	T 20106164.000	T 1802928.500	676524.550	78.251%	3298.332	54279.109	38888.048
x		72.053%	134.071	1192.132	220954.520	481436.430	T 20044135.000	T 1801503.300	664392.800	78.842%	3402.301	52215.606	38508.540
σ		1.095%	38.746	77.479	2061.315	5072.245	T 105141.580	T 7532.636	11265.563	0.594%	108.163	1789.623	656.065
%RSD		1.519	28.899	6.499	0.933	1.054	T 0.525	T 0.418	1.696	0.753	3.179	3.427	1.704

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:19:18	4001.501	T 6623905.800	T 81092676.000	33004.589	13551.294	352996.920	111006.790	2725.685	319.224	139.535	135.718	607.611
2	11:19:40	3868.233	T 6755940.800	T 82653432.000	35182.877	13344.428	359197.080	112660.600	2784.833	316.414	158.861	185.299	550.996
3	11:20:02	3599.672	T 6753224.200	T 83773244.000	35848.216	13379.974	363127.720	115541.910	2690.897	331.926	75.262	150.375	827.890
x		3823.135	T 6711023.600	T 82506451.000	34678.561	13425.232	358440.570	113069.760	2733.805	322.521	124.553	157.131	662.165

σ		204.676	T 75458.467	T 1346315.000	1487.382	110.610	5107.595	2295.080	47.491	8.265	43.767	25.471	146.287
%RSD		5.354	T 1.124	T 1.632	4.289	0.824	1.425	2.030	1.737	2.563	35.139	16.210	22.092
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:19:18	153377.740	109.195%	1722.549	1310.593	-97.611	653.696	84.367%	11548.219	571.832	446.051	92941.313	86.058%
2	11:19:40	154716.010	108.503%	1872.360	1247.561	-44.413	690.603	84.998%	11886.194	667.528	547.264	93125.322	85.780%
3	11:20:02	153184.710	109.916%	2061.008	1316.743	-113.923	637.795	85.453%	12420.115	669.732	566.618	94904.886	85.775%
x		153759.490	109.205%	1885.306	1291.632	-85.316	660.698	84.939%	11951.509	636.364	519.978	93657.174	85.871%
σ		833.976	0.707%	169.600	38.290	36.349	27.091	0.546%	439.603	55.897	64.749	1084.460	0.162%
%RSD		0.542	0.647	8.996	2.964	42.606	4.100	0.642	3.678	8.784	12.452	1.158	0.189

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:19:18	265.984	1282.797	454403.300	84.894%	0.000	29061.145	15311.868
2	11:19:40	337.099	1372.109	454063.900	86.822%	0.000	30389.036	16154.649
3	11:20:02	366.272	1326.011	463718.530	85.086%	0.000	32002.411	17417.656
x		323.118	1326.972	457395.240	85.601%	0.000	30484.198	16294.724
σ		51.585	44.664	5478.758	1.062%	0.000	1472.940	1059.860
%RSD		15.965	3.366	1.198	1.240	0.000	4.832	6.504

200-35736-A-11-A PDS 10/19/2016 11:24:39 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	11:25:01	74.536%	2402.394	69702.256	T 9188429.700	T 2620365.900	T 87548673.000	T 16301555.000	T 3430567.100	90.937%	15130.779	331764.960	260571.
2	11:25:22	74.846%	2328.910	67427.242	T 8788590.300	T 2559243.200	T 87310819.000	T 15986500.000	T 3450892.000	92.394%	14626.580	339045.050	256416.
3	11:25:44	73.646%	2319.495	69828.464	T 8830294.300	T 2601796.400	T 88126688.000	T 16434185.000	T 3594519.400	91.708%	14683.196	347415.110	264057.
x		74.343%	2350.266	68985.987	T 8935771.400	T 2593801.800	T 87662060.000	T 16240747.000	T 3491992.800	91.680%	14813.519	339408.370	260348.
σ		0.623%	45.389	1351.388	T 219799.850	T 31335.765	T 419586.810	T 229953.790	T 89370.333	0.729%	276.210	7831.403	3825.
%RSD		0.838	1.931	1.959	T 2.460	T 1.208	T 0.479	T 1.416	T 2.559	0.795	1.865	2.307	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	11:25:01	5388.529	TM 29629007.000	T 368039550.000	176428.350	70303.435	1553830.100	556537.990	10498.811	112.005	2445.491	190.302	-43.
2	11:25:22	3818.605	TM 29324554.000	T 366061440.000	177186.880	70596.190	1560049.900	550499.500	11027.924	33.110	2550.529	201.691	65.
3	11:25:44	4759.283	TM 30147695.000	T 370084900.000	178083.340	71310.626	1571522.600	565130.260	10953.248	35.755	2528.974	194.367	94.
x		4655.472	TM 29700419.000	T 368061960.000	177232.860	70736.750	1561800.900	557389.250	10826.661	60.290	2508.331	195.454	38.
σ		790.094	TM 416191.090	T 2011821.300	828.452	518.099	8975.277	7352.434	286.371	44.806	55.478	5.772	72.
%RSD		16.971	TM 1.401	T 0.547	0.467	0.732	0.575	1.319	2.645	74.317	2.212	2.953	186.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	11:25:01	1022271.700	212.112%	75176.269	39789.411	-27.337	10616.596	86.179%	55522.289	55879.850	44150.533	516277.320	101.04
2	11:25:22	1033437.900	209.262%	77366.725	41653.539	-200.020	11355.668	85.775%	55929.948	56893.894	45453.312	529079.260	101.78
3	11:25:44	1020468.200	211.172%	78444.815	40871.350	-274.893	11370.388	87.207%	55931.882	56336.524	45085.940	528861.040	102.23
x		1025392.600	210.849%	76995.936	40771.433	-167.417	11114.217	86.387%	55794.707	56370.089	44896.595	524739.210	101.68
σ		7025.557	1.453%	1665.521	936.072	126.957	431.016	0.738%	235.922	507.855	671.712	7329.019	0.60
%RSD		0.685	0.689	2.163	2.296	75.833	3.878	0.854	0.423	0.901	1.496	1.397	0.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:25:01	32596.568	187017.300	2361565.900	88.166%	0.000	465577.860	226060.380
2	11:25:22	33073.954	188482.510	2366040.600	89.902%	0.000	464436.280	230738.500
3	11:25:44	34812.357	188738.880	2347636.200	91.473%	0.000	469748.490	226162.290
x		33494.293	188079.560	2358414.200	89.847%	0.000	466587.540	227653.720
σ		1166.166	928.836	9598.432	1.654%	0.000	2796.334	2671.981
%RSD		3.482	0.494	0.407	1.841	0.000	0.599	1.174

200-35736-A-11-I MS 10/19/2016 11:30:21 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	11:30:43	73.782%	2467.696	59803.391	T 8936509.000	T 2754739.700	T 99452409.000	T 16784635.000	T 4028901.700	93.254%	20756.182	373478.360	284016.
2	11:31:05	71.677%	2568.330	62112.588	T 8831708.100	T 2724904.800	T 98175167.000	T 16426429.000	T 4017310.800	94.030%	20715.621	377507.460	282425.
3	11:31:26	71.988%	2685.713	62629.322	T 8894522.000	T 2715607.900	T 97105195.000	T 16802170.000	T 4057499.700	94.074%	20861.521	376801.820	283505.
x		72.482%	2573.913	61515.100	T 8887579.700	T 2731750.800	T 98244257.000	T 16671078.000	T 4034570.700	93.786%	20777.774	375929.220	283315.
σ		1.136%	109.116	1504.731	T 52744.224	T 20444.428	T 1175131.400	T 212053.410	T 20685.510	0.461%	75.309	2151.627	812.
%RSD		1.567	4.239	2.446	T 0.593	T 0.748	T 1.196	T 1.272	T 0.513	0.492	0.362	0.572	0.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	11:30:43	4119.887	TM 30603076.000	T 369883990.000	174431.820	76674.598	1767884.900	565561.160	10672.367	51.776	2659.840	199.550	-201.
2	11:31:05	4679.879	TM 30677185.000	T 372012050.000	176005.670	76800.472	1774668.400	560827.050	10739.086	65.775	2520.186	202.542	41.
3	11:31:26	3868.051	TM 30809944.000	T 373141040.000	175423.070	76128.867	1803029.900	569392.650	10594.544	114.898	2467.976	190.148	-9.
x		4222.606	TM 30696735.000	T 371679030.000	175286.850	76534.646	1781861.000	565260.290	10668.666	77.483	2549.334	197.413	-56.
σ		415.547	TM 104810.780	T 1653867.200	795.716	357.006	18643.851	4290.724	72.342	33.150	99.198	6.467	127.

%RSD		9.841	TM 0.341	T 0.445	0.454	0.466	1.046	0.759	0.678	42.784	3.891	3.276	227.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	11:30:43	1166089.100	226.235%	68097.423	41547.112	-362.297	11023.671	84.441%	63644.214	16264.347	12446.162	544560.370	100.38
2	11:31:05	1185569.400	227.506%	69214.047	41985.127	-434.875	10860.819	84.180%	64818.105	15774.228	12779.729	551994.170	102.62
3	11:31:26	1181705.400	230.392%	69544.243	41621.115	-369.626	10656.744	85.986%	65592.301	15748.987	12542.346	548295.140	104.37
x		1177787.900	228.045%	68951.904	41717.785	-388.933	10847.078	84.869%	64684.873	15929.187	12589.412	548283.230	102.46
σ		10314.081	2.130%	758.196	234.464	39.956	183.849	0.976%	980.854	290.531	171.692	3716.914	2.00
%RSD		0.876	0.934	1.100	0.562	10.273	1.695	1.150	1.516	1.824	1.364	0.678	1.9

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:30:43	34798.675	157929.510	2258851.400	88.989%	0.000	483322.320	230717.620
2	11:31:05	35106.623	165275.490	2335938.500	87.144%	0.000	495290.010	240621.510
3	11:31:26	35167.325	159191.550	2247408.000	91.563%	0.000	477403.240	232621.740
x		35024.208	160798.850	2280732.600	89.232%	0.000	485338.520	234653.620
σ		197.661	3927.899	48150.884	2.219%	0.000	9112.243	5255.297
%RSD		0.564	2.443	2.111	2.487	0.000	1.878	2.240

200-35736-A-11-J MSD 10/19/2016 11:36:04 AM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52C**
1	11:36:26	74.948%	2345.743	58396.559	T 9240436.600	T 2881625.300	T 96102270.000	T 16643042.000	T 2922941.700	92.216%	16358.473	369658.570	286102.85
2	11:36:48	73.198%	2521.593	60735.995	T 8884088.900	T 2820086.000	T 93463194.000	T 16510553.000	T 2884397.200	95.224%	16765.561	372701.050	282350.70
3	11:37:09	71.458%	2579.724	62058.815	T 8774188.400	T 2789744.900	T 93316621.000	T 16303161.000	T 2907404.500	95.697%	16802.990	366556.400	277205.78
x		73.202%	2482.353	60397.123	T 8966238.000	T 2830485.400	T 94294028.000	T 16485585.000	T 2904914.500	94.379%	16642.342	369638.670	281886.44
σ		1.745%	121.826	1854.496	T 243737.960	T 46814.686	T 1567697.400	T 171310.320	T 19392.512	1.888%	246.549	3072.373	4466.66
%RSD		2.384	4.908	3.071	T 2.718	T 1.654	T 1.663	T 1.039	T 0.668	2.001	1.481	0.831	1.58

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84K**
1	11:36:26	4855.909	T 27871213.000	T 368322850.000	177113.260	75795.647	1692294.600	590146.630	10696.772	137.171	2477.448	174.846	311.13
2	11:36:48	3632.811	T 27686020.000	T 359823190.000	172763.440	75451.875	1679769.900	578496.530	10616.934	161.545	2502.038	193.245	139.02
3	11:37:09	4527.926	T 27527077.000	T 362742750.000	171023.850	74685.685	1670441.600	583213.630	11147.300	103.161	2465.575	183.878	52.64
x		4338.882	T 27694770.000	T 363629600.000	173633.520	75311.069	1680835.400	583952.260	10820.335	133.959	2481.687	183.990	167.60
σ		633.085	T 172234.490	T 4318671.000	3136.558	568.220	10965.420	5860.066	285.960	29.324	18.597	9.200	131.59
%RSD		14.591	T 0.622	T 1.188	1.806	0.754	0.652	1.004	2.643	21.890	0.749	5.000	78.51
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tl**
1	11:36:26	904305.460	218.842%	72448.999	41049.371	-231.591	12210.484	87.792%	61220.274	15451.425	12050.829	498260.960	103.285%
2	11:36:48	942873.870	220.747%	74084.648	42146.301	-213.115	11992.584	85.902%	63297.538	15385.261	12657.308	515530.790	104.184%
3	11:37:09	928877.710	216.632%	74402.805	41122.869	-183.382	12455.205	87.015%	63122.021	15856.766	12471.073	509514.460	104.153%
x		925352.340	218.740%	73645.484	41439.514	-209.363	12219.424	86.903%	62546.611	15564.484	12393.070	507768.740	103.874%
σ		19524.386	2.059%	1048.327	613.198	24.322	231.440	0.950%	1151.989	255.277	310.673	8766.266	0.510%
%RSD		2.110	0.941	1.423	1.480	11.617	1.894	1.093	1.842	1.640	2.507	1.726	0.49

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:36:26	35036.115	160725.650	2364566.600	87.974%	0.000	460969.040	229695.150
2	11:36:48	37027.324	164618.580	2356572.800	90.327%	0.000	457614.580	228204.850
3	11:37:09	36109.919	159527.910	2286375.700	93.004%	0.000	446736.840	228066.240
x		36057.786	161624.050	2335838.300	90.435%	0.000	455106.820	228655.410
σ		996.627	2661.592	43021.985	2.517%	0.000	7440.129	903.102
%RSD		2.764	1.647	1.842	2.783	0.000	1.635	0.395

200-35736-A-12-A 10/19/2016 11:41:47 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:42:09	67.604%	745.069	4646.299	821561.520	T 2762155.700	T 77363426.000	T 7337271.900	T 4182026.000	88.750%	7795.337	213483.790	158800.260
2	11:42:30	67.495%	609.231	4839.809	T 928879.310	T 2808961.600	T 78083743.000	T 7436598.000	T 4194484.000	87.828%	7577.393	217676.540	164025.780
3	11:42:52	68.974%	548.846	4014.707	T 924643.140	T 2805864.500	T 78214015.000	T 7393368.900	T 4245613.800	88.055%	7728.666	217404.820	160892.540
x		68.024%	634.382	4500.272	T 891694.650	T 2792327.300	T 77887061.000	T 7389079.600	T 4207374.600	88.211%	7700.465	216188.390	161239.530
σ		0.824%	100.500	431.499	T 60774.001	T 26175.193	T 458135.470	T 49801.777	T 33696.884	0.480%	111.675	2346.184	2629.982
%RSD		1.212	15.842	9.588	T 6.816	T 0.937	T 0.588	T 0.674	T 0.801	0.544	1.450	1.085	1.631

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:42:09	3293.676	TM 32401517.000	T 359954220.000	138912.730	60638.456	1485906.300	463360.730	7434.551	101.807	739.511	186.778	186.431
2	11:42:30	2754.657	TM 33282079.000	T 368624680.000	137784.630	59184.869	1514238.500	471822.240	7649.124	75.239	776.290	184.701	190.910
3	11:42:52	2868.157	TM 32837161.000	T 365141670.000	138996.430	59863.806	1488656.200	473752.560	7439.127	80.900	780.685	171.641	-159.864
x		2972.163	TM 32840252.000	T 364573520.000	138564.600	59895.711	1496267.000	469645.170	7507.601	85.982	765.495	181.040	72.492
σ		284.163	TM 440288.970	T 4363060.200	676.763	727.318	15624.418	5527.410	122.585	13.994	22.610	8.205	201.239
%RSD		9.561	TM 1.341	T 1.197	0.488	1.214	1.044	1.177	1.633	16.276	2.954	4.532	277.600

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:42:09	931070.390	198.438%	3086.628	5827.805	-318.852	3408.546	83.254%	25919.324	1664.408	1449.797	465540.340	97.231%
2	11:42:30	931596.650	196.300%	2998.887	5375.945	-108.560	2938.240	83.920%	26769.697	1921.055	1427.343	465518.510	97.163%
3	11:42:52	921494.010	197.868%	3083.139	5557.563	-249.861	3189.058	84.770%	27552.579	1690.769	1403.728	463355.620	96.180%
x		928053.690	197.535%	3056.218	5587.104	-225.758	3178.615	83.981%	26747.200	1758.744	1426.956	464804.820	96.858%
σ		5686.933	1.107%	49.680	227.374	107.198	235.327	0.760%	816.860	141.182	23.037	1255.094	0.588%
%RSD		0.613	0.561	1.626	4.070	47.484	7.403	0.905	3.054	8.027	1.614	0.270	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:42:09	1129.694	5030.400	1823308.000	86.719%	0.000	161820.060	69366.737
2	11:42:30	1017.334	5116.259	1846170.500	86.094%	0.000	163718.800	69270.841
3	11:42:52	997.494	5435.931	1844092.900	87.377%	0.000	166135.780	67797.154
x		1048.174	5194.196	1837857.100	86.730%	0.000	163891.550	68811.577
σ		71.292	213.704	12642.666	0.641%	0.000	2163.039	879.824
%RSD		6.802	4.114	0.688	0.740	0.000	1.320	1.279

MB 200-110239/1-A 10/19/2016 11:47:30 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:47:52	71.966%	-9.338	964.126	319044.330	1115.127	36756.916	8889.762	2180.810	79.928%	37.363	697.196	-361.969
2	11:48:13	71.729%	-9.338	1024.742	311553.120	1691.432	46015.167	9570.693	2567.394	81.005%	18.440	715.774	-311.234
3	11:48:35	69.738%	-2.169	953.615	303160.750	2053.020	50312.774	6705.046	2564.249	81.334%	30.596	1212.078	-308.133
x		71.144%	-6.948	980.827	311252.730	1619.860	44361.619	8388.500	2437.484	80.756%	28.800	875.016	-327.112
σ		1.224%	4.139	38.392	7946.048	473.025	6927.553	1497.140	222.292	0.735%	9.589	292.052	30.227
%RSD		1.720	59.574	3.914	2.553	29.202	15.616	17.848	9.120	0.910	33.294	33.377	9.241

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:47:52	4019.840	10542.071	168912.100	91.047	151.941	842.221	599.483	-44.846	437.715	-22.218	157.240	762.284
2	11:48:13	4191.870	14033.452	205824.440	108.068	87.971	1111.538	557.775	-62.887	498.680	-26.777	167.055	804.593
3	11:48:35	4044.375	15617.316	217086.620	95.248	179.759	1038.365	497.431	-65.899	460.073	-35.797	166.052	767.703
x		4085.361	13397.613	197274.380	98.121	139.890	997.375	551.563	-57.877	465.489	-28.264	163.449	778.193

σ		93.051	2596.680	25199.677	8.867	47.066	139.259	51.309	11.386	30.841	6.911	5.401	23.023
%RSD		2.278	19.382	12.774	9.037	33.645	13.963	9.302	19.673	6.626	24.451	3.304	2.958
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:47:52	952.449	88.794%	93.951	-11.940	-84.401	-28.983	86.492%	878.710	-26.708	-1.037	176.015	82.475%
2	11:48:13	1110.333	89.210%	216.417	45.543	-74.138	-33.300	86.798%	1083.006	30.461	26.827	192.645	84.558%
3	11:48:35	1159.151	90.477%	134.808	33.815	-117.443	14.956	87.021%	1177.910	59.839	40.282	146.162	81.767%
x		1073.978	89.494%	148.392	22.473	-91.994	-15.775	86.771%	1046.542	21.197	22.024	171.607	82.933%
σ		108.040	0.877%	62.353	30.374	22.629	26.702	0.265%	152.897	44.011	21.074	23.553	1.451%
%RSD		10.060	0.980	42.019	135.158	24.599	169.263	0.306	14.610	207.623	95.686	13.725	1.749

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:47:52	45.195	78.810	857.264	83.241%	0.000	4050.058	-123.619
2	11:48:13	65.414	30.741	970.676	84.400%	0.000	3744.301	-124.774
3	11:48:35	28.057	80.408	1193.380	84.002%	0.000	3044.402	-154.143
x		46.222	63.319	1007.107	83.881%	0.000	3612.920	-134.179
σ		18.699	28.225	170.994	0.589%	0.000	515.540	17.299
%RSD		40.455	44.576	16.979	0.702	0.000	14.269	12.892

LCS 200-110239/2-A 10/19/2016 11:53:13 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:53:35	69.147%	1910.557	66296.113	T 10117089.000	362299.740	826627.050	T 9772696.100	315261.270	72.583%	61.769	139215.520	111631.720
2	11:53:57	65.950%	1958.123	69358.991	T 10003254.000	359548.860	802766.880	T 9425596.600	312801.100	71.983%	6.918	142027.550	113693.530
3	11:54:18	64.390%	1792.239	71269.822	T 10034483.000	355448.640	821577.970	T 9578508.100	312136.770	70.726%	14.082	142430.780	112940.220
x		66.496%	1886.973	68974.975	T 10051609.000	359099.080	816990.640	T 9592267.000	313399.710	71.764%	27.589	141224.620	112755.160
σ		2.425%	85.420	2508.993	T 58817.827	3447.625	12574.166	T 173958.320	1646.020	0.948%	29.816	1751.574	1043.286
%RSD		3.647	4.527	3.638	T 0.585	0.960	1.539	T 1.814	0.525	1.321	108.071	1.240	0.925

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:53:35	5620.874	89430.117	T 8078985.300	33964.569	15301.591	46348.769	133738.940	10687.655	269.039	2061.522	160.523	528.894
2	11:53:57	3796.375	87222.918	T 8001192.900	34087.812	14518.733	46006.389	134846.720	10274.698	329.591	2031.757	146.680	758.317
3	11:54:18	4326.908	91187.895	T 8165216.000	35246.477	15555.310	46474.745	139247.790	10831.669	210.505	2044.319	136.327	600.228
x		4581.386	89280.310	T 8081798.100	34432.953	15125.212	46276.634	135944.480	10598.007	269.711	2045.866	147.843	629.146
σ		938.492	1986.729	T 82047.743	707.222	540.329	242.367	2913.878	289.105	59.546	14.942	12.140	117.414
%RSD		20.485	2.225	T 1.015	2.054	3.572	0.524	2.143	2.728	22.078	0.730	8.211	18.662

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:53:35	264080.610	79.019%	176430.770	35500.512	-64.973	8213.513	79.117%	1087.030	56085.706	43300.754	56743.169	77.342%
2	11:53:57	265343.990	79.124%	181669.160	35734.967	-133.678	8426.435	78.402%	1090.557	57322.852	44250.300	58520.031	77.138%
3	11:54:18	266415.090	77.671%	183583.540	35357.195	30.592	8167.304	78.121%	1030.474	59107.941	44003.209	58916.667	77.200%
x		265279.900	78.605%	180561.160	35530.891	-56.020	8269.084	78.547%	1069.354	57505.500	43851.421	58059.956	77.227%
σ		1168.559	0.810%	3702.878	190.709	82.500	138.215	0.513%	33.717	1519.374	492.635	1157.487	0.105%
%RSD		0.441	1.031	2.051	0.537	147.270	1.671	0.653	3.153	2.642	1.123	1.994	0.136

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:53:35	76604.546	189005.560	132000.610	77.318%	0.000	186420.110	149089.530
2	11:53:57	77230.638	185258.140	129694.650	79.971%	0.000	189406.780	146069.810
3	11:54:18	77882.632	192084.490	133587.200	77.263%	0.000	207632.100	151528.450
x		77239.272	188782.730	131760.820	78.184%	0.000	194486.330	148895.930
σ		639.087	3418.626	1957.324	1.548%	0.000	11482.099	2734.463
%RSD		0.827	1.811	1.486	1.980	0.000	5.904	1.836

200-35680-A-13-A 10/19/2016 11:58:57 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:59:19	70.024%	8.513	1311.846	323293.570	833.648	16001.719	9771.052	1666.384	75.161%	6.631	1393.039	-567.069
2	11:59:40	71.482%	1.154	1211.909	329315.120	1050.588	19794.373	10423.551	1783.413	74.899%	13.306	365.042	-339.692
3	12:00:02	70.395%	1.316	1003.951	342872.000	1580.761	30638.743	14495.743	2026.961	73.299%	67.956	369.169	-120.171
x		70.634%	3.661	1175.902	331826.900	1154.999	22144.945	11563.449	1825.586	74.453%	29.298	709.084	-342.311
σ		0.757%	4.203	157.074	10027.984	384.344	7596.348	2560.313	183.951	1.008%	33.645	592.327	223.460
%RSD		1.072	114.802	13.358	3.022	33.277	34.303	22.141	10.076	1.354	114.840	83.534	65.280

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:59:19	5139.315	5344.622	70806.633	84.884	142.696	606.029	1312.520	119.872	444.462	6.714	138.581	638.245
2	11:59:40	5379.256	6293.188	86202.516	78.581	136.579	629.086	1212.611	-23.877	515.936	-43.266	149.761	712.080
3	12:00:02	5586.414	9129.589	135662.380	128.517	153.574	887.228	1472.103	-125.763	530.713	-33.323	149.077	772.829
x		5368.328	6922.466	97557.177	97.327	144.283	707.448	1332.411	-9.923	497.037	-23.292	145.806	707.718
σ		223.750	1969.388	33886.033	27.194	8.608	156.121	130.885	123.411	46.127	26.457	6.267	67.398

%RSD		4.168	28.449	34.735	27.941	5.966	22.068	9.823	1243.719	9.280	113.589	4.298	9.523
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:59:19	809.062	80.939%	302.944	-15.966	-89.526	-17.818	81.541%	711.311	71.869	35.258	132.060	77.809%
2	11:59:40	835.262	80.994%	450.844	-15.683	-76.799	-24.071	80.796%	730.248	142.355	84.193	139.549	76.802%
3	12:00:02	1038.014	79.947%	476.636	9.986	-59.694	-46.955	79.489%	981.287	197.072	112.446	236.344	76.168%
x		894.113	80.627%	410.141	-7.221	-75.339	-29.615	80.609%	807.615	137.099	77.299	169.318	76.926%
σ		125.309	0.589%	93.727	14.902	14.969	15.339	1.039%	150.702	62.767	39.053	58.167	0.827%
%RSD		14.015	0.730	22.852	206.383	19.869	51.796	1.288	18.660	45.782	50.522	34.354	1.075

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:59:19	246.341	451.937	458.076	79.073%	0.000	36332.568	-93.893
2	11:59:40	276.845	342.370	662.511	78.620%	0.000	33412.215	-29.640
3	12:00:02	332.451	396.012	894.006	80.855%	0.000	29671.057	-40.746
x		285.212	396.773	671.531	79.516%	0.000	33138.613	-54.760
σ		43.661	54.787	218.105	1.182%	0.000	3339.173	34.342
%RSD		15.308	13.808	32.479	1.486	0.000	10.076	62.714

200-35700-A-19-A 10/19/2016 12:04:41 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:05:02	73.422%	7.687	744.377	337976.610	2080.739	55227.132	15238.690	2992.642	76.655%	51.931	747.578	607.021
2	12:05:24	74.478%	-5.982	753.564	330661.890	1370.350	41570.535	9190.258	2302.778	78.309%	38.177	712.704	124.559
3	12:05:46	72.183%	1.052	869.667	331193.940	1311.579	34014.914	7278.071	2309.099	77.326%	38.645	689.820	191.304
x		73.361%	0.919	789.203	333277.480	1587.556	43604.194	10569.007	2534.840	77.430%	42.918	716.700	307.628
σ		1.148%	6.835	69.836	4078.250	428.119	10751.343	4155.547	396.481	0.832%	7.810	29.086	261.421
%RSD		1.565	743.804	8.849	1.224	26.967	24.657	39.318	15.641	1.074	18.197	4.058	84.980
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:05:02	7053.965	13042.332	201529.050	82.809	106.971	1032.744	810.465	-61.660	636.864	-38.598	148.387	824.821
2	12:05:24	6958.661	10022.466	148106.430	138.070	110.738	967.149	632.227	14.877	598.537	-67.837	139.653	886.613
3	12:05:46	6914.052	7600.697	119941.760	94.835	125.293	872.800	694.158	-320.253	702.273	-63.903	154.811	868.116
x		6975.559	10221.832	156525.750	105.238	114.334	957.564	712.284	-122.345	645.891	-56.779	147.617	859.850
σ		71.471	2726.290	41440.139	29.062	9.676	80.401	90.491	175.613	52.453	15.868	7.608	31.715
%RSD		1.025	26.671	26.475	27.615	8.463	8.396	12.704	143.539	8.121	27.947	5.154	3.688
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:05:02	817.840	85.714%	263.761	51.078	-69.675	-43.444	81.881%	836.599	52.467	15.139	259.712	78.579%
2	12:05:24	861.679	84.796%	232.169	20.165	-101.947	12.535	82.347%	977.592	99.534	12.643	167.111	81.001%
3	12:05:46	656.680	84.620%	197.380	-28.693	-69.814	-37.329	83.651%	789.011	36.692	25.172	140.458	80.220%
x		778.733	85.044%	231.104	14.183	-80.479	-22.746	82.626%	867.734	62.897	17.652	189.093	79.934%
σ		107.950	0.587%	33.203	40.221	18.592	30.707	0.917%	98.070	32.694	6.631	62.592	1.236%
%RSD		13.862	0.691	14.367	283.578	23.102	134.999	1.110	11.302	51.979	37.568	33.101	1.547

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:05:02	115.739	185.504	1159.087	80.889%	0.000	11871.564	-84.086
2	12:05:24	121.805	89.665	1064.478	79.367%	0.000	11314.105	-144.714
3	12:05:46	117.676	15.598	979.319	81.472%	0.000	10315.038	-127.930
x		118.407	96.922	1067.628	80.576%	0.000	11166.903	-118.910
σ		3.098	85.185	89.925	1.087%	0.000	788.635	31.304
%RSD		2.617	87.890	8.423	1.349	0.000	7.062	26.326

CCV 10/19/2016 12:10:25 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:10:47	63.364%	124433.100	44491.468	↓19704763.000	↓5882948.000	↓54787207.000	↓18985637.000	1944757.900	66.085%	36646.239	↓3842299.000	1090
2	12:11:08	63.997%	118718.680	42848.448	↓20018545.000	↓5954378.900	↓56316324.000	↓19531776.000	1945321.400	64.029%	38819.280	↓4008298.800	1133
3	12:11:31	64.377%	117328.660	42795.306	↓19783713.000	↓5864961.000	↓55763546.000	↓19570409.000	↓2087422.900	64.131%	37354.448	↓3937176.500	1118
x		63.913%	114.903%	114.639%	↓107.830%	↓107.579%	↓109.086%	↓99.900%	↓97.993%	64.748%	37606.656	↓102.271%	
σ		0.512%	n/a	n/a	↓n/a	↓n/a	↓n/a	↓n/a	↓n/a	1.158%	1108.257	↓n/a	
%RSD		0.801	3.133	2.223	↓0.823	↓0.802	↓1.392	↓1.689	↓4.126	1.789	2.947	↓2.120	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:10:47	13602.658	↓5745416.600	↓118281660.000	1684354.300	914769.060	1128603.600	885270.650	110496.330	-839.389	11652.828	160.721	
2	12:11:08	11888.696	↓5921397.300	↓120669590.000	1726461.100	927732.060	1160858.800	905980.180	110766.250	-791.178	11449.880	168.455	
3	12:11:31	9207.321	↓5826532.100	↓120726930.000	1719427.100	932765.900	1150317.700	910553.940	107745.300	-688.218	11418.864	162.986	
x		11566.225	↓104.105%	↓104.927%	96.984%	102.842%	101.006%	104.821%	102.271%	-772.928	109.221%	164.054	
σ		2215.342	↓n/a	↓n/a	n/a	n/a	n/a	n/a	n/a	77.220	n/a	3.976	
%RSD		19.154	↓1.511	↓1.164	1.319	1.004	1.434	1.496	1.524	9.991	1.104	2.424	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	12:10:47	1083570.000	72.318%	2193911.100	358724.290	-118.595	173076.250	71.242%	1098758.100	747724.410	565354.400	740582.770	
2	12:11:08	1068887.100	71.465%	2269496.000	353703.440	526.474	174485.740	71.533%	1094526.600	742369.710	567595.850	732985.720	
3	12:11:31	1077209.200	72.518%	2262763.800	356654.550	-6.178	171333.740	70.865%	1105970.400	750942.160	569627.710	740738.990	
x		1076555.400	72.100%	99.441%	105.267%	133.900	102.920%	71.213%	1099751.700	747012.090	99.014%	95.096%	
σ		7363.226	0.559%	n/a	n/a	344.594	n/a	0.335%	5786.255	4330.392	n/a	n/a	
%RSD		0.684	0.776	1.866	0.708	257.351	0.913	0.470	0.526	0.580	0.377	0.600	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:10:47	46065.027	1898586.400	↓18042169.000	73.446%	0.000	239306.630	140185.360
2	12:11:08	47561.310	1940575.400	↓18889218.000	73.323%	0.000	260683.250	143475.050
3	12:11:31	46448.472	1891472.000	↓17921039.000	74.316%	0.000	273320.570	141141.140
x		116.430%	88.092%	↓98.151%	73.695%	0.000	84.009%	99.305%
σ		n/a	n/a	↓n/a	0.542%	0.000	n/a	n/a
%RSD		1.665	1.389	↓2.885	0.735	0.000	6.670	1.195

CCB 10/19/2016 12:16:12 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:16:34	68.759%	8.841	581.628	41328.438	479.522	5634.707	6839.534	-346.981	67.737%	58.784	966.476	-685.700
2	12:16:56	67.913%	5.386	624.591	33575.131	803.965	7837.227	2055.923	-434.237	68.856%	21.701	287.959	-665.702
3	12:17:17	67.290%	9.238	456.676	35735.923	819.022	8978.985	3413.368	-376.565	67.741%	14.693	1054.497	-634.152
x		67.987%	7.822	554.299	36879.830	700.836	7483.640	4102.942	-385.928	68.111%	31.726	769.644	-661.851
σ		0.738%	2.118	87.230	4001.229	191.812	1699.946	2465.231	44.375	0.645%	23.694	419.466	25.988
%RSD		1.085	27.083	15.737	10.849	27.369	22.715	60.084	11.498	0.947	74.682	54.501	3.927

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:16:34	6361.557	689.346	37850.130	140.840	49.473	102.903	142.725	-182.263	504.016	-69.972	142.547	826.598
2	12:16:56	6317.730	888.246	36724.341	87.369	84.701	82.500	158.431	-4.127	471.244	-72.103	143.188	899.821
3	12:17:17	6274.036	1397.894	47796.323	214.640	64.230	198.834	246.020	-140.688	512.928	-38.597	157.350	749.208
x		6317.774	991.829	40790.265	147.616	66.134	128.079	182.392	-109.026	496.063	-60.224	147.695	825.209

σ		43.760	365.455	6093.480	63.906	17.691	62.119	55.660	93.194	21.951	18.760	8.367	75.316
%RSD		0.693	36.847	14.939	43.292	26.750	48.501	30.517	85.478	4.425	31.151	5.665	9.127
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:16:34	48.480	75.266%	3919.907	7.166	-117.803	17.266	74.362%	3684.995	717.970	607.462	78.437	72.400%
2	12:16:56	129.135	75.258%	3920.324	13.877	-78.518	-7.870	74.378%	4114.505	985.409	597.224	58.251	73.495%
3	12:17:17	133.943	75.528%	3409.405	13.128	-106.626	12.760	75.310%	3957.322	1021.963	620.413	50.779	72.683%
x		103.853	75.351%	3749.879	11.390	-100.982	7.386	74.683%	3918.941	908.447	608.366	62.489	72.860%
σ		48.014	0.154%	294.859	3.677	20.241	13.402	0.543%	217.312	165.968	11.621	14.308	0.568%
%RSD		46.233	0.204	7.863	32.285	20.044	181.463	0.727	5.545	18.269	1.910	22.896	0.780

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:16:34	140.565	1443.584	744.204	76.413%	0.000	-1769.698	-181.539
2	12:16:56	164.279	1397.704	1266.610	76.694%	0.000	-1807.212	-162.077
3	12:17:17	112.134	1258.135	1577.768	75.913%	0.000	-1615.945	-122.088
x		138.993	1366.474	1196.194	76.340%	0.000	-1730.951	-155.234
σ		26.108	96.589	421.220	0.396%	0.000	101.350	30.310
%RSD		18.784	7.068	35.213	0.518	0.000	5.855	19.526

CCVL 10/19/2016 12:21:55 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:22:17	69.102%	236.677	7256.043	915820.980	36772.256	89731.903	845980.300	31449.884	70.819%	0.000	14914.578	10185.525
2	12:22:39	68.691%	201.754	7433.533	924599.360	37149.656	92902.382	858593.770	33368.544	71.957%	41.567	13814.568	10004.546
3	12:23:01	67.342%	235.682	7770.759	919510.080	35935.630	97305.877	863921.770	32017.796	70.935%	14.050	13415.138	10841.787
x		68.378%	134.295%	123.661%	100.023%	100.142%	109.803%	88.346%	95.250%	71.237%	18.539	91.411%	88.707%
σ		0.921%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.626%	21.144	n/a	n/a
%RSD		1.347	8.848	3.492	0.479	1.697	4.076	1.076	3.053	0.879	114.052	5.528	4.259

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:22:17	7399.598	9536.567	740856.280	3635.927	1790.526	5164.084	15584.475	1299.268	540.362	196.126	146.013	737.015
2	12:22:39	7447.081	9781.473	739490.590	3897.800	1761.954	4786.454	15424.619	1078.829	564.383	224.390	155.516	727.439
3	12:23:01	7881.533	10980.013	765971.290	3587.672	1829.878	4739.286	15198.075	1327.104	483.202	197.221	137.810	740.766
x		7576.071	112.692%	98.296%	105.122%	124.657%	107.838%	112.043%	115.175%	529.316	97.722%	146.446	735.073
σ		265.601	n/a	n/a	n/a	n/a	n/a	n/a	n/a	41.702	n/a	8.861	6.872
%RSD		3.506	7.648	1.991	4.501	1.901	4.755	1.261	11.013	7.879	7.776	6.051	0.935

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:22:17	25388.709	76.300%	17915.938	3796.490	-47.587	996.800	75.336%	1825.230	5781.030	4427.558	6170.869	74.811%
2	12:22:39	26817.441	77.044%	18404.568	3545.020	-102.997	944.796	75.877%	2009.931	6209.299	4590.362	5962.048	74.056%
3	12:23:01	26553.510	76.649%	18473.887	3604.650	-119.392	900.179	76.555%	1881.081	6458.225	4663.092	5758.884	73.904%
x		90.976%	76.664%	101.261%	107.781%	-89.992	112.730%	75.923%	1905.414	6149.518	99.453%	96.048%	74.257%
σ		n/a	0.372%	n/a	n/a	37.627	n/a	0.611%	94.724	342.533	n/a	n/a	0.485%
%RSD		2.896	0.486	1.665	3.601	41.812	5.105	0.804	4.971	5.570	2.645	3.454	0.654

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:22:17	3528.533	18490.237	15620.144	77.051%	0.000	9520.636	14157.766
2	12:22:39	3511.423	19249.493	16052.316	78.072%	0.000	10034.665	14546.630
3	12:23:01	3823.336	19539.790	16488.241	77.839%	0.000	11224.577	14359.399
x		90.296%	88.050%	107.721%	77.654%	0.000	33.438%	100.670%
σ		n/a	n/a	n/a	0.535%	0.000	n/a	n/a
%RSD		4.843	2.838	2.704	0.689	0.000	8.519	1.355

200-35736-A-14-A 10/19/2016 12:27:39 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:28:01	70.524%	-2.249	519.064	347091.590	316.274	6032.574	1552.444	1261.132	72.552%	41.239	-1217.940	98.158
2	12:28:23	70.593%	-5.797	333.914	346059.620	300.650	6319.089	1935.407	879.437	72.877%	20.532	-779.527	65.638
3	12:28:44	71.496%	-5.842	512.185	353408.480	346.842	6977.908	3075.844	1125.050	72.077%	20.735	369.350	552.934
x		70.871%	-4.629	455.054	348853.230	321.256	6443.190	2187.898	1088.540	72.502%	27.502	-542.706	238.910
σ		0.542%	2.062	104.967	3978.565	23.495	484.732	792.465	193.449	0.402%	11.898	819.717	272.438
%RSD		0.765	44.537	23.067	1.140	7.314	7.523	36.220	17.771	0.555	43.261	151.043	114.034

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:28:01	8765.494	1962.788	26571.018	26.687	189.787	299.431	1184.217	-75.027	697.649	-61.607	150.838	827.719
2	12:28:23	8639.594	1828.419	25850.852	5.889	120.257	262.640	1086.745	-155.384	711.492	-80.774	171.069	898.652
3	12:28:44	8676.334	2013.572	35145.176	47.816	114.843	268.427	1140.983	-47.840	684.374	-57.610	128.725	843.027
x		8693.807	1934.926	29189.015	26.797	141.629	276.833	1137.315	-92.750	697.838	-66.664	150.211	856.466
σ		64.743	95.670	5170.739	20.964	41.794	19.783	48.840	55.919	13.560	12.382	21.179	37.328

%RSD		0.745	4.944	17.715	78.231	29.509	7.146	4.294	60.290	1.943	18.574	14.100	4.358
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:28:01	310.583	77.072%	465.200	-7.104	-100.976	-6.119	75.909%	1475.492	92.429	79.177	10.787	74.161%
2	12:28:23	389.178	77.103%	640.072	38.909	-72.046	-41.115	75.993%	1710.752	91.624	103.321	37.083	75.654%
3	12:28:44	327.071	78.423%	653.349	-21.008	-84.151	-29.227	78.074%	1626.729	201.939	120.212	3.835	76.430%
x		342.277	77.532%	586.207	3.599	-85.725	-25.487	76.659%	1604.324	128.664	100.903	17.235	75.415%
σ		41.445	0.771%	105.005	31.360	14.529	17.795	1.226%	119.220	63.459	20.624	17.537	1.153%
%RSD		12.109	0.995	17.913	871.384	16.948	69.820	1.600	7.431	49.322	20.439	101.753	1.529

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:28:01	114.765	179.419	284.658	77.434%	0.000	21620.787	-156.056
2	12:28:23	104.030	262.561	206.269	76.022%	0.000	20085.069	-181.404
3	12:28:44	3.888	176.750	415.349	76.927%	0.000	17866.912	-194.713
x		74.227	206.243	302.092	76.795%	0.000	19857.589	-177.391
σ		61.152	48.791	105.625	0.715%	0.000	1887.248	19.639
%RSD		82.385	23.657	34.965	0.931	0.000	9.504	11.071

200-35736-A-14-A SD@5 10/19/2016 12:33:24 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:33:46	70.957%	-9.338	174.589	111811.710	248.657	6907.346	755.078	-99.363	72.290%	20.667	663.749	-37.383
2	12:34:07	71.634%	-2.358	175.182	105967.940	367.597	7150.306	-1082.379	-153.575	73.130%	20.450	-937.556	-66.618
3	12:34:29	71.608%	-9.338	252.239	108611.080	236.812	7124.028	-1848.085	102.027	71.877%	20.787	-1458.620	18.995
x		71.400%	-7.012	200.670	108796.910	284.355	7060.560	-725.129	-50.304	72.432%	20.634	-577.476	-28.336
σ		0.383%	4.030	44.661	2926.312	72.332	133.336	1337.847	134.678	0.639%	0.171	1106.054	43.518
%RSD		0.537	57.474	22.256	2.690	25.437	1.888	184.498	267.731	0.882	0.828	191.533	153.579

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:33:46	8800.007	387.625	31367.983	40.695	45.288	93.953	347.114	52.356	672.878	-15.734	140.940	781.907
2	12:34:07	9191.411	582.818	32150.554	5.794	51.410	137.763	403.714	-202.027	753.038	-40.575	166.487	805.847
3	12:34:29	9597.439	302.160	36158.148	-0.685	10.864	2322.156	380.822	-178.647	761.217	-38.129	162.199	845.764
x		9196.286	424.201	33225.562	15.268	35.854	851.291	377.217	-109.439	729.044	-31.479	156.542	811.172
σ		398.738	143.860	2569.660	22.257	21.857	1273.995	28.472	140.605	48.813	13.690	13.681	32.260
%RSD		4.336	33.913	7.734	145.780	60.962	149.655	7.548	128.478	6.695	43.490	8.739	3.977
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:33:46	144.366	79.246%	140.900	-0.950	-57.159	-42.684	76.629%	1063.599	-40.583	5.684	10.601	75.151%
2	12:34:07	97.395	78.325%	162.721	-33.719	-113.056	-0.843	77.484%	1019.591	49.129	21.251	16.838	75.780%
3	12:34:29	97.559	78.725%	186.863	-20.777	-56.608	-30.427	77.374%	1143.823	81.566	39.523	16.875	76.257%
x		113.107	78.765%	163.494	-18.482	-75.608	-24.651	77.162%	1075.671	30.038	22.152	14.771	75.729%
σ		27.072	0.462%	22.991	16.505	32.432	21.510	0.465%	62.990	63.273	16.938	3.611	0.555%
%RSD		23.935	0.586	14.062	89.301	42.896	87.258	0.603	5.856	210.646	76.459	24.449	0.732

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:33:46	-1.096	-39.793	-56.411	75.981%	0.000	-518.237	-201.132
2	12:34:07	17.925	70.673	-84.882	76.208%	0.000	-184.715	-201.151
3	12:34:29	-2.447	41.360	-135.457	76.735%	0.000	-270.009	-188.165
x		4.794	24.080	-92.250	76.308%	0.000	-324.320	-196.816
σ		11.392	57.224	40.035	0.387%	0.000	173.267	7.492
%RSD		237.610	237.643	43.398	0.507	0.000	53.425	3.807

200-35736-A-14-A PDS 10/19/2016 12:39:07 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:39:29	71.097%	1854.386	68695.792	T 10270169.000	358397.630	802370.820	T 9593329.500	320095.660	71.472%	27.920	140636.490	111297.890
2	12:39:51	69.046%	1906.132	69240.887	T 10236526.000	359521.980	819066.900	T 9620457.700	320001.020	70.619%	42.361	139906.890	110567.630
3	12:40:13	68.449%	1919.189	70559.877	T 10320951.000	360074.400	816954.870	T 9751858.200	320419.900	69.544%	28.660	142953.810	114375.760
x		69.531%	1893.236	69498.852	T 10275882.000	359331.340	812797.530	T 9655215.100	320172.190	70.545%	32.980	141165.730	112080.430
σ		1.389%	34.273	958.443	T 42501.090	854.488	9091.333	T 84787.355	219.679	0.966%	8.133	1590.915	2021.076
%RSD		1.998	1.810	1.379	T 0.414	0.238	1.119	T 0.878	0.069	1.370	24.659	1.127	1.803

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:39:29	7909.144	83159.547	T 7940015.400	33203.735	15224.673	46596.522	133950.990	10730.263	515.471	2153.805	132.895	476.149
2	12:39:51	7656.579	85399.150	T 8020096.100	34470.117	14409.844	45424.440	134274.350	11061.384	364.349	2141.194	147.701	457.610
3	12:40:13	7266.772	86964.806	T 8199951.000	34938.511	15474.583	47211.205	138920.440	11383.616	287.696	2123.040	163.769	632.901
x		7610.832	85174.501	T 8053354.200	34204.121	15036.367	46410.722	135715.260	11058.421	389.172	2139.346	148.121	522.220
σ		323.620	1912.551	T 133121.040	897.456	556.787	907.758	2780.475	326.687	115.899	15.465	15.441	96.300
%RSD		4.252	2.245	T 1.653	2.624	3.703	1.956	2.049	2.954	29.781	0.723	10.425	18.440

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:39:29	270785.980	75.219%	179723.880	36956.692	-128.492	8294.595	73.743%	1111.999	58777.645	43608.940	57772.042	72.872%
2	12:39:51	273138.170	75.297%	182984.710	35927.141	124.271	8025.414	74.475%	1228.632	57921.802	42911.431	58543.406	72.799%
3	12:40:13	274439.860	75.203%	184909.600	35923.572	158.446	7962.903	74.190%	1327.709	58540.694	44059.162	57673.704	73.286%
x		272788.000	75.240%	182539.390	36269.135	51.408	8094.304	74.136%	1222.780	58413.380	43526.511	57996.384	72.985%
σ		1851.940	0.050%	2621.381	595.445	156.733	176.251	0.369%	107.974	441.897	578.289	476.280	0.263%
%RSD		0.679	0.067	1.436	1.642	304.880	2.177	0.498	8.830	0.757	1.329	0.821	0.360

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:39:29	36980.204	188951.580	130906.700	74.392%	0.000	196662.560	151396.020
2	12:39:51	37554.157	195217.530	136363.570	73.357%	0.000	208800.360	155078.350
3	12:40:13	38438.295	195964.380	136743.370	73.556%	0.000	224144.440	156130.390
x		37657.552	193377.830	134671.220	73.768%	0.000	209869.120	154201.590
σ		734.524	3851.393	3265.691	0.549%	0.000	13772.075	2485.979
%RSD		1.951	1.992	2.425	0.744	0.000	6.562	1.612

200-35736-A-14-B MS 10/19/2016 12:44:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:44:48	68.499%	1914.115	70822.215	T 10588895.000	371522.050	830920.150	T 10040566.000	328498.960	68.762%	28.994	143740.230	114039.550
2	12:45:10	68.504%	1841.002	69222.051	T 10345511.000	362245.390	811336.000	T 9701066.800	326928.010	70.442%	56.709	145308.690	114048.500
3	12:45:32	68.448%	1944.771	68860.770	T 10313867.000	370261.750	827476.910	T 9886783.100	328295.910	69.811%	28.566	146877.360	112626.570
x		68.484%	1899.963	69635.012	T 10416091.000	368009.730	823244.350	T 9876138.600	327907.620	69.672%	38.089	145308.760	113571.540
σ		0.031%	53.312	1043.896	T 150486.690	5031.680	10455.649	T 169999.640	854.428	0.848%	16.127	1568.568	818.380
%RSD		0.045	2.806	1.499	T 1.445	1.367	1.270	T 1.721	0.261	1.217	42.339	1.079	0.721

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:44:48	6585.950	86229.383	T 8296981.500	34440.303	15716.193	47503.179	139197.770	10692.647	390.438	2102.629	153.986	821.880
2	12:45:10	5912.119	86292.577	T 8174961.200	35509.683	15490.318	46841.187	138704.890	10899.423	353.805	2199.040	141.510	587.541
3	12:45:32	4785.554	87328.245	T 8219752.200	34991.527	15035.599	46534.803	140892.960	10847.879	282.423	2250.622	124.603	493.733
x		5761.208	86616.735	T 8230565.000	34980.504	15414.036	46959.723	139598.540	10813.316	342.222	2184.097	140.033	634.385

σ		909.636	616.996	T 61724.576	534.775	346.650	494.950	1147.769	107.634	54.931	75.119	14.747	169.015
%RSD		15.789	0.712	T 0.750	1.529	2.249	1.054	0.822	0.995	16.051	3.439	10.531	26.642
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:44:48	279335.640	73.911%	186349.650	36995.282	-57.749	7995.479	71.435%	979.929	59139.000	45406.038	58396.563	71.285%
2	12:45:10	280641.500	72.565%	189691.360	38498.155	14.426	8352.197	72.080%	1075.217	59114.048	45780.096	59960.349	72.013%
3	12:45:32	282485.020	74.589%	189442.500	37350.578	-177.637	8592.504	72.230%	1169.909	60301.937	46167.191	60134.662	71.332%
x		280820.720	73.688%	188494.500	37614.671	-73.653	8313.393	71.915%	1075.018	59518.328	45784.442	59497.191	71.543%
σ		1582.322	1.030%	1861.658	785.472	97.014	300.398	0.422%	94.990	678.740	380.595	957.148	0.407%
%RSD		0.563	1.398	0.988	2.088	131.718	3.613	0.587	8.836	1.140	0.831	1.609	0.570

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:44:48	79968.599	193733.110	135789.390	73.926%	0.000	261275.570	150445.020
2	12:45:10	81109.928	198399.390	139476.270	73.398%	0.000	271668.910	156493.500
3	12:45:32	82567.472	197484.160	140323.640	73.987%	0.000	275425.150	159294.600
x		81215.333	196538.880	138529.770	73.770%	0.000	269456.540	155411.040
σ		1302.639	2472.589	2410.760	0.324%	0.000	7329.636	4523.002
%RSD		1.604	1.258	1.740	0.439	0.000	2.720	2.910

200-35736-A-14-C MSD 10/19/2016 12:49:46 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:50:08	69.084%	1818.208	67764.885	T 10153952.000	354859.300	804472.390	T 9642577.500	312590.930	69.820%	28.586	141680.030	110589.950
2	12:50:30	68.521%	2015.683	66782.461	T 10058277.000	354295.530	804639.460	T 9635281.800	319475.100	70.495%	21.238	139257.580	110047.500
3	12:50:52	67.230%	2035.955	70356.039	T 10433542.000	364300.560	827531.000	T 9834842.400	321289.900	68.345%	21.881	143304.970	113840.450
x		68.278%	1956.615	68301.128	T 10215257.000	357818.460	812214.290	T 9704233.900	317785.310	69.553%	23.902	141414.190	111492.630
σ		0.950%	120.292	1846.153	T 194999.170	5620.733	13264.928	T 113169.090	4589.072	1.099%	4.069	2036.752	2051.278
%RSD		1.392	6.148	2.703	T 1.909	1.571	1.633	T 1.166	1.444	1.581	17.026	1.440	1.840

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:50:08	5517.122	83486.352	T 7972295.100	33696.181	14367.271	45072.297	133091.880	11039.620	161.187	2189.253	138.784	373.134
2	12:50:30	5807.131	85785.600	T 8055748.800	34438.641	15457.298	44886.800	135212.140	11160.582	170.505	2192.187	144.272	344.149
3	12:50:52	5104.703	85393.469	T 8208639.000	35354.149	14985.091	46849.359	138685.010	10540.670	324.886	2072.891	156.524	893.034
x		5476.318	84888.474	T 8078894.300	34496.323	14936.554	45602.819	135663.010	10913.624	218.859	2151.444	146.527	536.772
σ		352.987	1230.000	T 119859.870	830.488	546.632	1083.513	2823.691	328.602	91.940	68.045	9.082	308.872
%RSD		6.446	1.449	T 1.484	2.407	3.660	2.376	2.081	3.011	42.008	3.163	6.198	57.542

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:50:08	267205.720	73.148%	181362.940	35893.538	-60.946	8077.201	72.775%	879.438	56541.073	43148.047	57934.264	71.898%
2	12:50:30	269950.050	73.528%	182790.770	37100.596	-156.982	8465.454	72.433%	1035.468	57672.895	43896.194	59135.641	71.520%
3	12:50:52	272294.360	73.238%	184367.540	36532.084	-130.854	8551.476	72.833%	1160.222	57457.449	43983.245	58652.410	71.740%
x		269816.710	73.305%	182840.420	36508.740	-116.260	8364.711	72.680%	1025.043	57223.806	43675.829	58574.105	71.719%
σ		2546.939	0.198%	1502.916	603.868	49.653	252.678	0.216%	140.682	600.997	459.140	604.504	0.189%
%RSD		0.944	0.271	0.822	1.654	42.709	3.021	0.298	13.725	1.050	1.051	1.032	0.264

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:50:08	77904.484	188626.110	130835.490	74.344%	0.000	258686.790	146883.180
2	12:50:30	81900.518	189793.350	134527.910	74.741%	0.000	267273.090	149380.580
3	12:50:52	81439.241	190546.630	132605.810	75.056%	0.000	273569.220	151589.350
x		80414.748	189655.360	132656.400	74.714%	0.000	266509.700	149284.370
σ		2186.153	967.668	1846.728	0.357%	0.000	7470.527	2354.560
%RSD		2.719	0.510	1.392	0.478	0.000	2.803	1.577

CCV 10/19/2016 12:55:04 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:55:26	64.735%	120488.280	43568.898	T 20293178.000	T 5941482.700	T 55681150.000	T 19496995.000	1945526.200	64.154%	38724.737	T 3953298.900	11052
2	12:55:48	64.969%	119007.610	42685.881	T 20006730.000	T 5973390.800	T 55687110.000	T 19160345.000	1926138.000	63.315%	37994.262	T 3942964.900	11132
3	12:56:10	62.746%	121887.490	44726.893	T 20046563.000	T 6078878.900	T 56334772.000	T 19327496.000	1955361.700	62.556%	38568.915	T 4036379.800	11279
x		64.150%	115.190%	115.385%	T 109.351%	T 109.350%	T 109.632%	T 99.723%	95.526%	63.341%	38429.305	T 103.528%	9
σ		1.222%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.799%	384.730	T n/a	
%RSD		1.904	1.196	2.344	T 0.771	T 1.199	T 0.672	T 0.871	0.766	1.262	1.001	T 1.288	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:55:26	10986.059	T 5760027.900	T 119281440.000	1688314.300	906079.970	1117873.200	883461.780	111109.080	-498.691	11475.287	163.484	-2
2	12:55:48	12540.857	T 5829380.200	T 120810990.000	1711172.300	926065.260	1133973.500	893065.710	110787.500	-790.395	11627.618	166.661	-4
3	12:56:10	10152.318	T 5931529.300	T 121761760.000	1705130.000	915219.240	1148509.600	907549.890	113794.560	-824.563	11521.460	165.991	-3
x		11226.411	T 104.270%	T 105.562%	96.500%	101.808%	99.848%	104.134%	104.348%	-704.550	109.547%	165.378	-3
σ		1212.273	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	179.095	n/a	1.675	

%RSD		10.798	T 1.477	T 1.037	0.696	1.092	1.352	1.355	1.476	25.420	0.677	1.013	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	12:55:26	1080075.900	69.055%	2196865.700	357159.230	961.896	167750.160	68.814%	1071227.000	724985.950	551919.760	724447.610	68
2	12:55:48	1075731.800	69.426%	2250356.800	357106.340	248.147	171373.640	68.403%	1081455.300	737848.770	555513.950	731669.840	68
3	12:56:10	1086224.900	67.169%	2330945.000	354586.680	393.836	169798.460	68.076%	1092736.800	735347.820	559597.590	740280.090	69
x		1080677.500	68.550%	100.210%	105.244%	534.627	100.942%	68.431%	1081806.400	732727.510	96.947%	94.327%	68
σ		5272.322	1.210%	n/a	n/a	377.128	n/a	0.370%	10759.242	6820.007	n/a	n/a	0
%RSD		0.488	1.765	2.987	0.413	70.541	1.071	0.541	0.995	0.931	0.691	1.083	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:55:26	44558.352	1926098.500	T 18286416.000	70.555%	0.000	327225.190	144312.410
2	12:55:48	46735.219	1898459.300	T 18480427.000	71.576%	0.000	334992.100	140396.060
3	12:56:10	46568.054	1969736.100	T 18447968.000	69.767%	0.000	343683.290	145215.890
x		114.591%	89.070%	T 98.799%	70.633%	0.000	109.277%	100.503%
σ		n/a	n/a	T n/a	0.907%	0.000	n/a	n/a
%RSD		2.636	1.861	T 0.565	1.284	0.000	2.456	1.788

CCB 10/19/2016 01:00:48 PM QC Status: PASS (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:01:10	67.537%	20.275	993.649	35888.089	817.500	4717.636	5136.010	-436.944	67.852%	29.409	-93.287	-674.189
2	13:01:32	67.425%	27.740	907.125	39045.617	616.879	4625.396	7023.095	-519.658	67.319%	7.406	229.814	-763.070
3	13:01:54	67.165%	1.828	1031.698	45766.885	835.527	4346.011	3658.351	-421.207	66.560%	29.914	8.135	-885.049
x		67.376%	16.614	977.491	40233.530	756.635	4563.014	5272.485	-459.270	67.244%	22.243	48.221	-774.103
σ		0.191%	13.338	63.839	5045.395	121.368	193.506	1686.519	52.886	0.649%	12.852	165.238	105.862
%RSD		0.283	80.280	6.531	12.540	16.040	4.241	31.987	11.515	0.966	57.779	342.669	13.675

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:01:10	6408.019	296.790	24147.419	74.242	78.835	80.180	104.520	-118.789	521.711	-42.926	144.116	877.817
2	13:01:32	6426.025	213.785	25438.884	97.283	12.748	16.017	266.667	-124.641	526.706	-44.889	152.829	809.057
3	13:01:54	6523.121	274.251	31011.698	83.614	73.183	109.298	119.661	-136.306	560.909	-65.654	139.717	853.963
x		6452.388	261.608	26866.000	85.047	54.922	68.498	163.616	-126.579	536.442	-51.156	145.554	846.946
σ		61.914	42.922	3647.886	11.587	36.633	47.725	89.565	8.918	21.336	12.594	6.673	34.913
%RSD		0.960	16.407	13.578	13.624	66.700	69.673	54.741	7.045	3.977	24.618	4.584	4.122

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:01:10	121.842	71.422%	3953.486	2.585	-102.639	-4.043	71.123%	3114.512	763.007	569.550	40.237	69.488%
2	13:01:32	173.166	71.892%	4052.306	-11.084	-119.349	5.336	70.340%	4244.028	971.079	668.036	40.784	69.404%
3	13:01:54	134.166	73.813%	3619.347	-4.919	-71.040	-28.200	71.931%	3593.994	813.047	679.465	60.537	71.782%
x		143.058	72.376%	3875.046	-4.472	-97.676	-8.969	71.132%	3650.845	849.044	639.017	47.186	70.225%
σ		26.792	1.267%	226.888	6.845	24.534	17.302	0.795%	566.900	108.606	60.431	11.566	1.349%
%RSD		18.728	1.751	5.855	153.058	25.117	192.913	1.118	15.528	12.792	9.457	24.511	1.921

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:01:10	236.752	1485.142	914.951	72.610%	0.000	-1024.549	-159.510
2	13:01:32	172.314	1573.923	762.861	72.637%	0.000	-770.622	-111.343
3	13:01:54	184.380	1616.212	710.239	72.850%	0.000	-894.136	-118.488
x		197.815	1558.426	796.017	72.699%	0.000	-896.435	-129.780
σ		34.256	66.895	106.307	0.131%	0.000	126.979	25.993
%RSD		17.317	4.292	13.355	0.181	0.000	14.165	20.029

CCVL 10/19/2016 01:06:06 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:06:27	68.163%	207.057	7869.244	971520.940	37477.342	94513.546	899789.160	33925.255	68.825%	7.251	14907.177	10722.740
2	13:06:49	69.120%	200.442	7420.391	T 1063646.300	36822.871	94157.865	888539.620	32950.759	68.092%	21.980	14408.411	10586.754
3	13:07:11	69.581%	278.097	7411.048	984270.920	37740.457	96285.565	897618.770	34514.589	66.626%	0.000	13852.235	11266.869
x		68.955%	136.583%	124.985%	T 109.428%	102.132%	111.771%	92.386%	99.730%	67.848%	9.744	93.632%	93.122%
σ		0.724%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	1.119%	11.200	n/a	n/a
%RSD		1.049	18.839	3.461	T 4.960	1.265	1.200	0.667	2.337	1.650	114.945	3.668	3.314

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:06:27	7638.588	10095.678	739811.650	3734.657	1675.805	5234.043	14841.568	1148.379	557.593	164.663	142.922	888.649
2	13:06:49	7804.046	9276.513	756482.960	3826.492	1620.588	4999.374	15941.833	1217.256	538.822	228.299	157.811	711.989
3	13:07:11	8088.842	9836.390	791098.560	4271.407	1979.324	5227.620	16059.582	1015.951	604.359	204.801	152.787	741.151
x		7843.825	108.640%	100.093%	111.844%	122.187%	113.500%	113.585%	105.115%	566.925	94.562%	151.174	780.596
σ		227.747	n/a	n/a	n/a	n/a	n/a	n/a	n/a	33.750	n/a	7.574	94.706
%RSD		2.904	4.300	3.431	7.279	10.984	2.594	4.303	9.077	5.953	16.149	5.010	12.132

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:06:27	26493.295	71.739%	19039.574	4043.278	-109.244	915.226	70.668%	1797.206	5857.892	4662.496	5298.131	68.530%
2	13:06:49	27674.912	71.586%	20017.076	3781.128	-30.920	711.136	70.021%	2092.333	6204.524	4767.271	6347.148	69.237%
3	13:07:11	27975.523	71.230%	20131.639	3812.444	-61.683	879.661	70.359%	2338.109	6206.264	4866.064	5897.150	69.274%
x		94.885%	71.518%	109.381%	114.582%	-67.282	99.411%	70.349%	2075.883	6089.560	103.923%	94.173%	69.013%
σ		n/a	0.261%	n/a	n/a	39.461	n/a	0.324%	270.827	200.632	n/a	n/a	0.419%
%RSD		2.862	0.365	3.042	3.691	58.650	13.052	0.460	13.046	3.295	2.136	9.000	0.607

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:06:27	3743.802	20077.137	16166.366	72.302%	0.000	12391.632	15274.291
2	13:06:49	4174.095	19719.698	15413.941	72.542%	0.000	13161.173	15505.903
3	13:07:11	4056.332	19477.053	16252.554	73.754%	0.000	13144.623	14772.659
x		99.530%	91.116%	106.988%	72.866%	0.000	42.039%	106.488%
σ		n/a	n/a	n/a	0.779%	0.000	n/a	n/a
%RSD		5.571	1.528	2.893	1.069	0.000	3.408	2.468

MB 200-110288/1-B 10/19/2016 01:11:51 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:12:13	71.184%	-5.826	811.650	568406.560	18029.647	25157.121	44135.242	31197.185	69.704%	121.697	1738.849	7619.597
2	13:12:35	70.655%	-2.262	1083.348	571329.870	17840.373	24952.496	48203.728	30107.625	69.380%	100.632	743.138	7523.087
3	13:12:57	71.198%	-9.338	1022.077	583903.030	18560.633	26776.947	48690.354	30807.245	68.740%	79.767	1474.986	8141.057
x		71.012%	-5.809	972.358	574546.480	18143.551	25628.855	47009.775	30704.018	69.275%	100.699	1318.991	7761.247
σ		0.310%	3.538	142.509	8233.778	373.395	999.527	2501.281	552.066	0.490%	20.965	515.860	332.446
%RSD		0.436	60.914	14.656	1.433	2.058	3.900	5.321	1.798	0.708	20.819	39.110	4.283

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:12:13	4755.522	2643.568	86080.093	129.083	205.408	558.960	863.614	-42.318	375.498	-9.399	150.870	580.906
2	13:12:35	5075.319	2557.246	83842.796	57.719	235.274	454.678	827.646	-63.067	391.369	-21.195	160.457	706.269
3	13:12:57	4800.894	3065.612	77703.427	80.278	215.800	606.797	994.428	-15.690	386.515	-60.013	134.679	845.654
x		4877.245	2755.476	82542.106	89.027	218.827	540.145	895.229	-40.358	384.461	-30.202	148.669	710.943

σ		173.031	272.032	4337.163	36.477	15.162	77.785	87.771	23.749	8.133	26.482	13.029	132.436
%RSD		3.548	9.872	5.254	40.973	6.929	14.401	9.804	58.845	2.115	87.681	8.764	18.628
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:12:13	8211.329	72.968%	941.630	15.661	-111.146	11.122	72.248%	34594.429	200.381	115.448	496.237	71.054%
2	13:12:35	7970.559	73.583%	960.226	-11.743	-71.299	-6.967	71.670%	36116.795	202.989	145.121	528.213	70.515%
3	13:12:57	7683.382	73.692%	938.313	-12.092	-40.335	-58.442	72.395%	35686.386	192.379	190.286	543.561	71.882%
x		7955.090	73.414%	946.723	-2.725	-74.260	-18.096	72.104%	35465.870	198.583	150.285	522.670	71.150%
σ		264.313	0.390%	11.811	15.923	35.498	36.093	0.383%	784.774	5.529	37.685	24.144	0.689%
%RSD		3.323	0.532	1.248	584.348	47.803	199.454	0.531	2.213	2.784	25.076	4.619	0.968

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:12:13	123.903	354.330	203.760	72.747%	0.000	104250.690	-77.123
2	13:12:35	175.207	389.477	336.242	73.939%	0.000	78060.728	-146.852
3	13:12:57	170.083	242.552	488.738	73.727%	0.000	60068.025	-38.167
x		156.398	328.787	342.913	73.471%	0.000	80793.147	-87.380
σ		28.258	76.721	142.606	0.636%	0.000	22217.707	55.064
%RSD		18.068	23.334	41.587	0.866	0.000	27.499	63.016

LCS 200-110288/2-B 10/19/2016 01:17:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:17:56	69.293%	1888.479	72219.998	T 10740444.000	373793.990	829076.200	T 9696019.700	343968.450	69.309%	79.186	142452.510	119855.370
2	13:18:17	67.512%	1908.925	73291.867	T 10783252.000	386768.960	843943.240	T 9925338.400	348884.160	67.110%	52.024	145932.850	126030.500
3	13:18:39	69.119%	1980.064	70015.789	T 10663766.000	372705.670	832157.480	T 9833210.300	349462.480	68.452%	94.751	138554.440	121924.660
x		68.641%	1925.823	71842.551	T 10729154.000	377756.200	835058.970	T 9818189.500	347438.360	68.290%	75.321	142313.270	122603.510
σ		0.982%	48.074	1670.336	T 60537.556	7824.219	7846.736	T 115394.930	3018.911	1.108%	21.624	3691.172	3143.036
%RSD		1.431	2.496	2.325	T 0.564	2.071	0.940	T 1.175	0.869	1.623	28.710	2.594	2.564

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:17:56	3549.792	84677.131	T 8044178.500	34392.607	14906.400	45522.055	130781.430	11010.418	41.853	2137.297	148.188	462.448
2	13:18:17	4187.318	86621.782	T 8217276.200	35311.053	15522.003	47118.806	135486.230	11055.542	15.102	2121.946	144.661	639.028
3	13:18:39	4286.066	86733.161	T 8140329.900	34340.811	14757.081	45634.335	134977.510	10805.268	37.691	2071.104	165.960	506.879
x		4007.725	86010.691	T 8133928.200	34681.490	15061.828	46091.732	133748.390	10957.076	31.549	2110.116	152.936	536.119
σ		399.643	1156.239	T 86726.225	545.832	405.456	891.242	2582.021	133.392	14.394	34.646	11.416	91.850
%RSD		9.972	1.344	T 1.066	1.574	2.692	1.934	1.931	1.217	45.625	1.642	7.465	17.132

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:17:56	287225.540	72.721%	185636.560	37086.498	-10.721	8489.316	69.507%	51662.208	56722.811	43608.706	56772.219	68.844%
2	13:18:17	281523.290	70.960%	185608.050	36376.376	-103.139	8159.436	69.473%	52271.325	58510.772	43722.780	58552.665	68.582%
3	13:18:39	284527.100	71.892%	189427.940	35493.911	29.984	8357.635	70.198%	52980.966	57565.049	43550.802	57662.541	70.090%
x		284425.310	71.858%	186890.850	36318.928	-27.959	8335.462	69.726%	52304.833	57599.544	43627.429	57662.475	69.172%
σ		2852.488	0.881%	2197.229	797.846	68.215	166.054	0.409%	660.017	894.479	87.505	890.223	0.806%
%RSD		1.003	1.226	1.176	2.197	243.985	1.992	0.587	1.262	1.553	0.201	1.544	1.165

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:17:56	81021.494	191960.530	132570.070	72.562%	0.000	279598.160	150924.400
2	13:18:17	80928.849	201329.360	136236.330	70.507%	0.000	297194.900	158884.800
3	13:18:39	83286.940	196917.580	137389.240	71.754%	0.000	297298.550	157144.720
x		81745.761	196735.820	135398.550	71.608%	0.000	291363.870	155651.310
σ		1335.504	4687.056	2516.449	1.035%	0.000	10189.533	4185.058
%RSD		1.634	2.382	1.859	1.446	0.000	3.497	2.689

200-35715-A-2-B 10/19/2016 01:23:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:23:49	68.955%	5.164	788.841	431868.520	23090.548	16769.619	68787.763	36219.983	67.657%	110.550	1827.968	5983.972
2	13:24:10	67.038%	-1.880	892.887	407713.400	22938.701	15791.529	59657.235	37094.530	69.535%	50.256	1356.113	6176.904
3	13:24:32	68.382%	-9.338	638.790	435137.650	23642.556	16361.061	58986.547	35572.883	67.812%	51.441	1111.148	6244.621
x		68.125%	-2.018	773.506	424906.520	23223.935	16307.403	62477.182	36295.799	68.335%	70.749	1431.743	6135.166
σ		0.984%	7.252	127.741	14979.131	370.401	491.248	5475.403	763.651	1.043%	34.474	364.346	135.244
%RSD		1.445	359.339	16.514	3.525	1.595	3.012	8.764	2.104	1.526	48.727	25.448	2.204

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:23:49	4219.285	3477.141	63831.735	89.300	278.651	1684.920	1079.643	-111.411	321.360	-34.072	137.620	758.739
2	13:24:10	4243.900	3334.348	53446.409	129.448	313.808	1366.332	1025.054	-121.152	345.912	-43.846	131.670	818.868
3	13:24:32	4347.284	3069.858	58987.119	140.659	277.973	1702.586	1046.053	95.919	291.533	-44.320	133.210	838.203
x		4270.156	3293.782	58755.088	119.802	290.144	1584.613	1050.250	-45.548	319.602	-40.746	134.167	805.270
σ		67.919	206.650	5196.550	27.004	20.496	189.243	27.535	122.611	27.232	5.785	3.088	41.440

%RSD		1.591	6.274	8.844	22.541	7.064	11.943	2.622	269.189	8.521	14.197	2.302	5.146
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:23:49	10286.876	72.013%	545.598	68.658	-131.495	24.469	69.394%	52251.186	349.259	221.740	942.131	70.101%
2	13:24:10	10424.549	71.997%	365.168	31.665	-62.347	-50.639	70.252%	52947.322	259.669	175.061	937.640	68.975%
3	13:24:32	10457.131	73.199%	357.758	37.953	-37.355	-61.085	70.941%	52143.651	311.189	174.467	1076.467	71.138%
x		10389.519	72.403%	422.841	46.092	-77.066	-29.085	70.196%	52447.386	306.706	190.423	985.412	70.071%
σ		90.372	0.689%	106.375	19.794	48.765	46.673	0.775%	436.283	44.963	27.123	78.888	1.082%
%RSD		0.870	0.952	25.157	42.945	63.277	160.470	1.104	0.832	14.660	14.244	8.006	1.544

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:23:49	112.604	424.252	1853.344	71.432%	0.000	22914.240	142.275
2	13:24:10	137.728	222.265	1926.783	73.720%	0.000	19444.880	-51.716
3	13:24:32	46.331	117.825	1777.332	72.178%	0.000	16459.792	-48.385
x		98.887	254.780	1852.486	72.443%	0.000	19606.304	14.058
σ		47.217	155.780	74.729	1.167%	0.000	3230.250	111.052
%RSD		47.748	61.143	4.034	1.611	0.000	16.476	789.951

200-35730-A-2-B 10/19/2016 01:29:10 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:29:31	69.015%	1.529	657.307	464047.140	22237.360	24729.392	58807.671	35230.210	70.508%	127.476	958.838	11313.245
2	13:29:53	70.546%	-9.338	660.504	457172.730	22946.000	24174.341	60236.597	36419.473	69.904%	85.729	824.484	12106.103
3	13:30:15	69.407%	5.069	593.127	460371.310	22572.167	24929.849	55673.012	35519.784	69.953%	92.775	1698.141	12689.470
x		69.656%	-0.913	636.979	460530.390	22585.176	24611.194	58239.093	35723.155	70.122%	101.993	1160.488	12036.273
σ		0.795%	7.508	38.011	3439.965	354.499	391.377	2334.317	620.167	0.336%	22.348	470.442	690.765
%RSD		1.142	821.964	5.967	0.747	1.570	1.590	4.008	1.736	0.479	21.911	40.538	5.739

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:29:31	5033.020	2927.137	83055.201	91.908	302.152	2953.813	1051.208	-173.393	413.902	-49.799	136.477	732.145
2	13:29:53	5257.395	3185.477	88117.103	92.888	369.285	2752.664	1230.536	86.688	326.545	-8.122	150.040	604.110
3	13:30:15	4814.265	3283.002	87732.293	85.661	383.311	2607.590	1136.288	44.614	338.692	-52.965	143.345	774.439
x		5034.894	3131.872	86301.532	90.152	351.583	2771.355	1139.344	-14.030	359.713	-36.962	143.287	703.564
σ		221.571	183.889	2817.982	3.921	43.379	173.867	89.703	139.606	47.321	25.027	6.782	88.688
%RSD		4.401	5.872	3.265	4.349	12.338	6.274	7.873	995.029	13.155	67.709	4.733	12.606
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:29:31	10282.534	72.623%	340.621	16.689	-20.542	-91.692	71.075%	49718.745	234.254	160.576	2186.005	69.499%
2	13:29:53	10620.229	71.801%	498.711	16.772	-87.417	-18.976	70.981%	50419.329	212.754	182.760	2104.349	70.567%
3	13:30:15	10738.038	72.447%	431.381	2.804	-77.321	-28.873	70.809%	52134.663	156.643	151.683	2187.189	71.133%
x		10546.934	72.291%	423.571	12.088	-61.760	-46.514	70.955%	50757.579	201.217	165.006	2159.181	70.400%
σ		236.432	0.433%	79.334	8.040	36.051	39.437	0.135%	1242.970	40.071	16.005	47.490	0.830%
%RSD		2.242	0.599	18.730	66.515	58.373	84.786	0.190	2.449	19.915	9.700	2.199	1.179

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:29:31	100.007	-32.072	4266.076	73.042%	0.000	5844.417	-125.567
2	13:29:53	89.981	-38.610	4793.987	71.603%	0.000	6192.019	-123.917
3	13:30:15	67.428	11.833	4990.364	72.542%	0.000	5361.440	-111.216
x		85.806	-19.616	4683.475	72.395%	0.000	5799.292	-120.233
σ		16.686	27.432	374.577	0.730%	0.000	417.124	7.853
%RSD		19.446	139.841	7.998	1.009	0.000	7.193	6.531

200-35745-A-5-B 10/19/2016 01:34:53 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:35:15	71.259%	-5.830	375.218	493243.830	20664.216	15567.430	61874.791	32435.311	71.126%	98.292	1821.331	6023.223
2	13:35:36	70.945%	1.233	513.015	515318.120	22494.693	16126.850	60130.105	32419.248	70.148%	92.503	-554.824	5323.156
3	13:35:58	68.754%	-5.702	399.900	487865.110	20652.859	15013.869	58288.839	32205.099	71.406%	139.799	964.408	5141.920
x		70.319%	-3.433	429.377	498809.020	21270.589	15569.383	60097.912	32353.219	70.893%	110.198	743.638	5496.100
σ		1.365%	4.042	73.476	14548.042	1060.120	556.493	1793.193	128.527	0.660%	25.798	1203.363	465.409
%RSD		1.941	117.728	17.112	2.917	4.984	3.574	2.984	0.397	0.931	23.411	161.821	8.468

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:35:15	5740.359	4261.597	88184.370	119.042	193.933	1245.629	1141.724	-11.278	401.291	-30.961	143.496	680.897
2	13:35:36	6427.170	4313.363	89353.831	128.129	168.361	1651.517	1245.324	114.617	395.986	-30.814	135.192	772.842
3	13:35:58	5611.357	4677.252	78765.824	125.493	249.125	1687.908	1407.732	69.844	362.562	7.261	161.000	630.666
x		5926.295	4417.404	85434.675	124.221	203.806	1528.352	1264.927	57.728	386.613	-18.171	146.563	694.802
σ		438.539	226.519	5804.919	4.675	41.278	245.520	134.083	63.816	20.997	22.025	13.174	72.101
%RSD		7.400	5.128	6.795	3.763	20.253	16.064	10.600	110.546	5.431	121.207	8.989	10.377

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:35:15	9528.474	73.183%	289.530	101.092	-112.968	13.139	71.082%	49487.908	142.440	135.225	638.174	69.598%
2	13:35:36	9724.043	72.882%	201.897	64.302	-70.855	-35.352	72.120%	49852.860	178.903	151.890	677.395	73.019%
3	13:35:58	9761.750	74.287%	176.254	127.617	-69.348	-36.794	71.739%	50627.047	229.323	114.215	792.553	72.484%
x		9671.423	73.451%	222.560	97.670	-84.390	-19.669	71.647%	49989.272	183.555	133.776	702.707	71.700%
σ		125.224	0.740%	59.398	31.796	24.761	28.422	0.525%	581.692	43.628	18.879	80.242	1.840%
%RSD		1.295	1.007	26.688	32.555	29.341	144.499	0.733	1.164	23.768	14.112	11.419	2.566

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:35:15	70.993	38.780	1588.687	72.644%	0.000	3118.696	-104.469
2	13:35:36	76.948	4.769	1530.778	73.802%	0.000	2431.387	-112.864
3	13:35:58	92.006	38.930	1342.468	73.754%	0.000	2916.443	-78.906
x		79.983	27.493	1487.311	73.400%	0.000	2822.175	-98.747
σ		10.830	19.680	128.736	0.655%	0.000	353.218	17.688
%RSD		13.541	71.582	8.656	0.893	0.000	12.516	17.912

200-35754-A-2-B 10/19/2016 01:40:37 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:40:59	75.217%	-6.015	395.536	411444.880	24516.206	25258.712	61607.592	37668.463	72.885%	143.939	-562.505	7840.005
2	13:41:20	74.953%	-6.003	372.019	426397.270	24412.751	26122.745	58132.334	39005.545	73.152%	150.157	1142.347	7808.850
3	13:41:42	72.385%	-9.338	409.927	418782.130	25333.883	25588.276	61886.924	39422.952	72.943%	177.826	821.818	7728.884
x		74.185%	-7.119	392.494	418874.760	24754.280	25656.578	60542.283	38698.987	72.994%	157.307	467.220	7792.580
σ		1.564%	1.922	19.137	7476.625	504.609	436.047	2091.745	916.538	0.140%	18.040	906.054	57.320
%RSD		2.109	27.004	4.876	1.785	2.038	1.700	3.455	2.368	0.192	11.468	193.925	0.736

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:40:59	9399.348	4318.732	90784.842	362.613	271.164	2238.409	1721.756	-36.208	644.223	-15.575	150.500	738.455
2	13:41:20	8885.635	4089.321	92525.621	320.202	256.443	2270.322	981.339	17.528	628.515	-46.089	127.342	820.973
3	13:41:42	8813.865	3814.445	91685.569	280.052	284.645	2462.661	965.632	-52.231	627.645	-18.599	156.384	714.646
x		9032.949	4074.166	91665.344	320.956	270.751	2323.797	1222.909	-23.637	633.461	-26.754	144.742	758.025

σ		319.333	252.485	870.566	41.286	14.105	121.313	432.086	36.539	9.331	16.812	15.353	55.800
%RSD		3.535	6.197	0.950	12.863	5.210	5.220	35.333	154.586	1.473	62.839	10.607	7.361
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:40:59	10669.879	74.287%	337.791	35.840	-70.233	-36.023	72.758%	52384.141	212.639	245.170	863.802	70.400%
2	13:41:20	10470.640	75.536%	350.638	1.043	-94.451	-19.113	73.424%	54003.994	317.762	234.509	889.928	72.510%
3	13:41:42	11415.777	76.688%	357.118	28.493	-99.703	-7.127	73.218%	55265.422	358.976	251.172	714.907	73.495%
x		10852.099	75.504%	348.516	21.792	-88.129	-20.754	73.133%	53884.519	296.459	243.617	822.879	72.135%
σ		498.221	1.201%	9.837	18.341	15.719	14.518	0.341%	1444.351	75.459	8.439	94.415	1.582%
%RSD		4.591	1.590	2.822	84.163	17.837	69.951	0.467	2.680	25.453	3.464	11.474	2.193

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:40:59	118.829	145.115	2123.425	74.063%	0.000	7078.503	-72.691
2	13:41:20	167.791	29.538	2267.074	73.042%	0.000	6741.536	-91.340
3	13:41:42	116.657	-46.319	2137.302	74.563%	0.000	5634.884	-133.949
x		134.426	42.778	2175.934	73.889%	0.000	6484.974	-99.327
σ		28.916	96.401	79.234	0.775%	0.000	755.233	31.400
%RSD		21.511	225.353	3.641	1.049	0.000	11.646	31.613

200-35754-A-2-B SD@5 10/19/2016 01:46:21 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:46:43	69.385%	-2.132	103.440	122125.110	4957.958	5271.934	10121.723	6821.075	71.028%	35.117	-1150.111	1669.397
2	13:47:05	69.938%	-5.764	84.354	105648.060	5199.331	5330.297	9284.424	7608.332	71.943%	27.758	-1055.557	1330.302
3	13:47:26	69.080%	-2.100	323.257	124004.400	5153.440	5282.922	10496.590	7389.610	70.291%	35.463	-1641.648	1564.606
x		69.468%	-3.332	170.351	117259.190	5103.576	5295.051	9967.579	7273.006	71.087%	32.779	-1282.439	1521.435
σ		0.435%	2.106	132.765	10099.338	128.180	31.015	620.610	406.375	0.828%	4.352	314.656	173.621
%RSD		0.626	63.201	77.936	8.613	2.512	0.586	6.226	5.587	1.165	13.277	24.536	11.412

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:46:43	10527.562	663.457	40013.369	20.682	109.749	402.924	146.502	-58.696	701.445	-58.371	153.119	869.922
2	13:47:05	10224.472	614.197	28199.833	40.995	108.137	415.356	205.515	19.692	686.564	-66.720	134.062	868.851
3	13:47:26	10797.384	718.105	40031.992	-7.328	68.399	431.208	283.152	44.292	677.672	-34.984	159.939	819.703
x		10516.472	665.253	36081.731	18.116	95.428	416.496	211.723	1.763	688.560	-53.359	149.040	852.825
σ		286.617	51.977	6825.930	24.263	23.422	14.176	68.536	53.784	12.012	16.451	13.412	28.690
%RSD		2.725	7.813	18.918	133.930	24.544	3.404	32.371	3051.264	1.745	30.832	8.999	3.364

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:46:43	2370.295	74.765%	14.072	10.085	-62.098	-50.884	70.534%	10919.310	285.883	223.569	154.070	70.080%
2	13:47:05	2296.339	74.397%	88.497	-18.984	-85.758	-27.650	72.355%	11190.644	311.236	162.115	108.503	70.557%
3	13:47:26	2205.049	75.113%	80.173	9.494	-107.538	-6.262	71.278%	11493.122	253.731	166.136	117.294	70.509%
x		2290.561	74.758%	60.914	0.199	-85.131	-28.265	71.389%	11201.026	283.617	183.940	126.622	70.382%
σ		82.774	0.358%	40.779	16.615	22.726	22.317	0.916%	287.047	28.819	34.379	24.173	0.263%
%RSD		3.614	0.479	66.946	8369.890	26.696	78.956	1.283	2.563	10.161	18.690	19.091	0.373

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:46:43	12.779	-174.055	235.177	72.473%	0.000	-2586.793	-180.116
2	13:47:05	47.489	-78.303	251.268	74.206%	0.000	-2673.161	-174.023
3	13:47:26	26.310	-128.294	102.567	73.144%	0.000	-2434.379	-200.877
x		28.859	-126.884	196.338	73.275%	0.000	-2564.777	-185.005
σ		17.495	47.892	81.605	0.874%	0.000	120.904	14.079
%RSD		60.621	37.745	41.564	1.193	0.000	4.714	7.610

200-35754-A-2-B PDS 10/19/2016 01:52:06 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:52:27	68.841%	1759.299	72129.291	T 10288094.000	385165.470	820990.720	T 9647262.500	341062.510	69.011%	166.280	137959.970	114587.490
2	13:52:49	70.463%	1732.771	68556.790	T 10400793.000	387519.650	833727.040	T 9651860.300	352256.770	67.701%	139.906	140359.910	117270.650
3	13:53:11	69.285%	1827.350	69448.887	T 10229252.000	377120.250	825976.960	T 9599667.900	343670.210	69.042%	209.465	139566.530	115575.370
x		69.530%	1773.140	70044.989	T 10306046.000	383268.460	826898.240	T 9632930.300	345663.160	68.585%	171.884	139295.470	115811.170
σ		0.838%	48.785	1859.353	T 87168.163	5453.058	6417.944	T 28897.617	5857.196	0.766%	35.117	1222.711	1357.037
%RSD		1.206	2.751	2.655	T 0.846	1.423	0.776	T 0.300	1.694	1.116	20.431	0.878	1.172

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:52:27	7467.010	84811.682	T 7966347.600	34178.239	15108.500	46619.613	120678.570	9721.549	396.604	1757.710	130.800	761.288
2	13:52:49	6706.708	86951.421	T 8170829.700	34337.186	15268.200	46542.694	123614.110	9942.448	329.913	1791.487	134.348	527.093
3	13:53:11	5250.380	86553.884	T 7921666.600	33952.525	14913.281	45764.077	121046.130	9754.064	267.644	1793.155	146.581	512.542
x		6474.700	86105.662	T 8019614.600	34155.983	15096.661	46308.794	121779.600	9806.021	331.387	1780.784	137.243	600.308
σ		1126.381	1138.111	T 132848.010	193.294	177.755	473.305	1599.327	119.263	64.493	20.000	8.279	139.603

%RSD		17.397	1.322	T 1.657	0.566	1.177	1.022	1.313	1.216	19.462	1.123	6.033	23.255
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:52:27	278800.380	72.459%	176995.910	34056.859	-47.276	6724.313	70.337%	51237.756	52324.123	40196.652	55681.731	70.049%
2	13:52:49	279356.830	72.447%	178408.660	36154.086	-57.695	7733.930	69.595%	52748.297	54961.156	41227.536	57499.139	69.745%
3	13:53:11	282971.860	73.281%	180242.490	34886.612	-31.321	7806.955	69.927%	54318.132	54912.375	41766.223	56896.435	70.300%
x		280376.360	72.729%	178549.020	35032.519	-45.431	7421.733	69.953%	52768.062	54065.885	41063.470	56692.435	70.031%
σ		2264.926	0.478%	1627.835	1056.199	13.283	605.086	0.371%	1540.283	1508.607	797.544	925.719	0.278%
%RSD		0.808	0.657	0.912	3.015	29.238	8.153	0.531	2.919	2.790	1.942	1.633	0.397

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:52:27	36286.884	177554.820	128137.680	73.213%	0.000	235412.340	143786.410
2	13:52:49	37400.287	184269.000	130859.860	72.309%	0.000	250452.080	146053.600
3	13:53:11	37902.046	190501.240	132795.980	70.856%	0.000	267138.470	154683.570
x		37196.406	184108.350	130597.840	72.126%	0.000	251000.960	148174.530
σ		826.658	6474.704	2340.181	1.189%	0.000	15870.189	5749.851
%RSD		2.222	3.517	1.792	1.648	0.000	6.323	3.880

200-35676-A-2-B 10/19/2016 01:57:50 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:58:12	71.604%	-9.338	573.495	463269.400	25633.465	20078.399	70675.440	39359.715	68.789%	101.517	1315.483	6184.676
2	13:58:33	68.677%	-5.698	437.319	460351.710	24215.638	19345.522	66810.404	37065.160	69.589%	100.385	1875.797	7083.049
3	13:58:55	70.889%	-5.812	520.862	444751.410	24419.359	18674.822	61537.150	37763.857	69.909%	99.948	-550.095	6845.640
x		70.390%	-6.949	510.559	456124.170	24756.154	19366.248	66340.998	38062.911	69.429%	100.617	880.395	6704.455
σ		1.526%	2.070	68.670	9956.557	766.571	702.018	4587.194	1176.147	0.577%	0.810	1270.124	465.531
%RSD		2.168	29.782	13.450	2.183	3.096	3.625	6.915	3.090	0.830	0.805	144.268	6.944

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:58:12	5804.859	6727.277	87056.439	276.459	368.277	882.400	883.351	-47.705	433.731	-52.450	140.763	829.000
2	13:58:33	5379.906	5782.054	73671.250	186.814	349.480	926.772	844.041	52.749	399.565	-52.898	142.727	847.865
3	13:58:55	6157.129	6354.368	77617.525	314.601	283.433	1321.894	1065.935	-94.938	431.279	-35.264	141.433	695.097
x		5780.631	6287.900	79448.405	259.292	333.730	1043.689	931.109	-29.965	421.525	-46.870	141.641	790.654
σ		389.178	476.104	6877.856	65.601	44.561	241.952	118.405	75.425	19.058	10.054	0.998	83.291
%RSD		6.732	7.572	8.657	25.300	13.352	23.182	12.717	251.713	4.521	21.451	0.705	10.534

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:58:12	10501.470	72.608%	278.735	46.264	-55.448	-43.124	69.976%	53227.710	260.532	131.860	791.315	69.556%
2	13:58:33	10709.545	72.878%	160.747	67.556	-98.981	-7.529	70.064%	53918.825	181.690	155.827	697.532	69.300%
3	13:58:55	10672.819	72.839%	215.796	45.768	-140.083	25.697	70.352%	53021.811	215.366	163.294	815.471	70.572%
x		10627.945	72.775%	218.426	53.196	-98.170	-8.318	70.131%	53389.449	219.196	150.327	768.106	69.809%
σ		111.059	0.146%	59.038	12.439	42.323	34.417	0.196%	469.870	39.561	16.423	62.301	0.673%
%RSD		1.045	0.201	27.029	23.383	43.112	413.745	0.280	0.880	18.048	10.925	8.111	0.964

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:58:12	164.543	193.273	2423.446	70.589%	0.000	32934.669	-51.881
2	13:58:33	100.565	110.072	2305.737	72.295%	0.000	25317.801	-14.060
3	13:58:55	125.392	105.315	2174.032	72.973%	0.000	20142.121	-22.712
x		130.167	136.220	2301.072	71.952%	0.000	26131.530	-29.551
σ		32.255	49.467	124.773	1.228%	0.000	6434.978	19.816
%RSD		24.780	36.314	5.422	1.707	0.000	24.625	67.056

CCV 10/19/2016 02:03:34 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	14:03:56	63.072%	121280.220	42309.044	┬19853666.000	┬5861410.200	┬54197414.000	┬18940760.000	┬2030898.600	63.261%	37035.018	┬3812550.000	1063
2	14:04:18	62.431%	122787.770	41569.677	┬20308509.000	┬6044899.600	┬55758333.000	┬19375772.000	1897477.400	61.748%	37524.190	┬3971620.800	1101
3	14:04:40	60.379%	124178.150	44367.946	┬19811745.000	┬5855264.400	┬54798638.000	┬18792506.000	┬2036732.900	62.844%	37267.868	┬3838807.800	1072
x		61.961%	117.378%	112.975%	┬108.676%	┬107.939%	┬107.705%	┬98.216%	┬97.790%	62.618%	37275.692	┬100.842%	9
σ		1.407%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	0.782%	244.680	┬n/a	
%RSD		2.271	1.181	3.392	┬1.378	┬1.820	┬1.434	┬1.593	┬3.961	1.248	0.656	┬2.201	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	14:03:56	12933.029	┬5600139.300	┬115189300.000	1643986.800	893841.930	1109240.100	859757.080	107764.460	-406.249	11546.413	127.064	
2	14:04:18	9241.309	┬5761184.300	┬119516390.000	1688807.200	912976.560	1127129.900	872487.200	110550.630	-638.658	11544.599	156.351	
3	14:04:40	13594.716	┬5624467.300	┬115762490.000	1623843.100	881884.920	1083960.400	862161.200	110402.370	-531.142	11528.464	183.494	
x		11923.018	┬101.085%	┬102.240%	93.702%	99.634%	97.498%	100.655%	102.180%	-525.350	109.531%	155.636	
σ		2345.875	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	116.313	n/a	28.221	
%RSD		19.675	┬1.533	┬2.012	2.013	1.750	1.960	0.782	1.431	22.140	0.086	18.133	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	14:03:56	1085584.900	67.885%	2125303.600	355358.510	554.940	165686.840	65.321%	1058768.600	709612.520	540237.500	710088.810	6
2	14:04:18	1090562.200	66.520%	2205822.100	359292.560	1412.774	169203.850	64.918%	1072618.100	717939.960	545756.180	729936.970	6
3	14:04:40	1077502.700	65.347%	2289718.100	352367.690	882.638	164734.820	65.670%	1074321.600	716270.660	545264.930	717318.460	6
x		1084549.900	66.584%	97.884%	105.064%	950.117	99.098%	65.303%	1068569.400	714607.720	94.867%	92.650%	6
σ		6591.011	1.270%	n/a	n/a	432.880	n/a	0.376%	8530.399	4405.748	n/a	n/a	
%RSD		0.608	1.908	3.725	0.976	45.561	1.413	0.576	0.798	0.617	0.562	1.397	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:03:56	43419.991	1899044.500	┬18022646.000	67.281%	7.432	208734.440	140430.520
2	14:04:18	46796.200	1948504.400	┬18324872.000	66.850%	0.000	236215.980	146032.310
3	14:04:40	46813.308	1891171.100	┬17938068.000	68.438%	0.000	247202.910	140352.000
x		113.899%	88.216%	┬97.136%	67.523%	2.477	75.193%	99.776%
σ		n/a	n/a	┬n/a	0.822%	4.291	n/a	n/a
%RSD		4.278	1.625	┬1.124	1.217	173.205	8.588	2.289

CCB 10/19/2016 02:09:18 PM QC Status: PASS (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:09:39	68.263%	-2.014	443.005	46884.483	474.196	4519.945	2371.999	-242.185	66.644%	22.470	-51.643	-669.609
2	14:10:01	68.447%	-2.033	338.200	33726.113	477.016	4454.334	-268.798	-468.410	68.025%	14.686	998.757	-752.556
3	14:10:23	68.666%	-2.057	284.546	47247.039	583.166	4790.161	5103.406	-296.824	66.267%	15.064	740.841	-643.620
x		68.459%	-2.035	355.250	42619.212	511.459	4588.147	2402.202	-335.806	66.979%	17.407	562.652	-688.595
σ		0.202%	0.021	80.594	7703.783	62.116	177.998	2686.229	118.043	0.926%	4.390	547.402	56.896
%RSD		0.294	1.057	22.687	18.076	12.145	3.880	111.824	35.152	1.382	25.218	97.290	8.263

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:09:39	6685.177	228.283	24191.444	83.481	65.567	56.313	73.659	175.161	463.083	-32.075	133.976	787.918
2	14:10:01	6297.152	272.768	17015.804	66.648	78.592	94.018	21.656	78.442	510.432	-49.801	136.987	787.254
3	14:10:23	6570.585	277.573	29542.423	136.897	35.856	103.380	85.473	-92.896	566.573	-40.385	153.500	829.587
x		6517.638	259.541	23583.224	95.675	60.005	84.570	60.262	53.569	513.363	-40.753	141.488	801.587

σ		199.357	27.177	6285.419	36.677	21.904	24.915	33.952	135.749	51.807	8.869	10.511	24.252
%RSD		3.059	10.471	26.652	38.335	36.504	29.461	56.341	253.408	10.092	21.762	7.429	3.025
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:09:39	137.546	69.156%	4469.085	79.907	-81.502	-24.386	67.177%	3818.589	762.013	604.654	28.242	66.132%
2	14:10:01	99.079	69.563%	4162.069	19.659	-110.915	11.784	67.890%	4109.940	894.510	721.679	20.486	66.090%
3	14:10:23	122.135	68.980%	4081.974	5.283	-90.024	-8.630	67.427%	4138.159	914.772	702.134	20.688	66.383%
x		119.587	69.233%	4237.709	34.950	-94.147	-7.077	67.498%	4022.229	857.098	676.156	23.139	66.202%
σ		19.360	0.299%	204.340	39.592	15.134	18.135	0.362%	176.921	82.967	62.689	4.421	0.159%
%RSD		16.189	0.432	4.822	113.284	16.075	256.243	0.536	4.399	9.680	9.271	19.105	0.240

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:09:39	155.261	1208.197	897.142	69.260%	0.000	-1479.550	-193.274
2	14:10:01	117.591	1095.900	1023.017	70.781%	0.000	-1754.795	-122.944
3	14:10:23	78.996	1018.982	824.040	71.445%	0.000	-1676.426	-158.724
x		117.283	1107.693	914.733	70.496%	0.000	-1636.923	-158.314
σ		38.134	95.157	100.648	1.120%	0.000	141.811	35.167
%RSD		32.514	8.591	11.003	1.589	0.000	8.663	22.213

CCVL 10/19/2016 02:15:00 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:15:22	66.907%	207.381	6830.261	984179.630	37655.790	94333.868	885867.530	32072.263	66.431%	30.066	12898.139	11096.740
2	14:15:44	68.071%	174.293	7028.149	T 1120451.200	38076.623	93808.393	897595.900	32995.856	66.014%	22.671	15213.886	10758.846
3	14:16:05	66.299%	205.597	7312.372	T 1122538.500	39736.793	97189.365	905415.240	33842.661	65.676%	0.000	15011.733	11429.153
x		67.093%	116.995%	116.561%	T 116.956%	105.258%	111.918%	92.487%	97.290%	66.040%	17.579	93.536%	95.147%
σ		0.900%	n/a	n/a	T n/a	n/a	n/a	n/a	n/a	0.378%	15.666	n/a	n/a
%RSD		1.342	9.506	3.434	T 7.370	2.859	1.913	1.098	2.686	0.573	89.120	8.923	3.021

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:15:22	8129.139	9633.301	742557.910	3832.363	2007.777	4754.424	15807.596	1103.971	575.152	193.234	151.649	852.496
2	14:15:44	7940.986	9947.273	755423.000	3803.702	1687.289	4960.362	15563.049	997.839	599.854	197.516	121.978	758.293
3	14:16:05	8027.424	9422.002	770045.040	3770.055	1589.455	5345.069	16705.497	781.589	675.470	187.113	143.126	741.859
x		8032.516	107.874%	99.246%	107.813%	122.391%	110.554%	116.575%	89.629%	616.825	91.414%	138.918	784.216
σ		94.180	n/a	n/a	n/a	n/a	n/a	n/a	n/a	52.268	n/a	15.277	59.701
%RSD		1.172	2.734	1.819	0.820	12.422	5.972	3.754	17.094	8.474	2.714	10.997	7.613

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:15:22	27747.012	68.460%	19239.274	3692.838	-116.785	924.622	67.261%	1598.310	5642.265	4622.899	5827.215	67.378%
2	14:15:44	27949.157	69.508%	19077.361	3995.132	-58.638	805.454	68.045%	2072.236	6261.071	4593.383	6075.962	66.881%
3	14:16:05	28797.818	71.261%	19553.942	3535.407	-72.508	867.511	68.821%	1932.633	5984.486	4619.662	5302.505	67.116%
x		97.600%	69.743%	106.946%	110.511%	-82.643	103.043%	68.042%	1867.726	5962.607	100.580%	92.365%	67.125%
σ		n/a	1.415%	n/a	n/a	30.370	n/a	0.780%	243.539	309.982	n/a	n/a	0.249%
%RSD		1.980	2.029	1.256	6.245	36.748	6.883	1.146	13.039	5.199	0.351	6.885	0.371

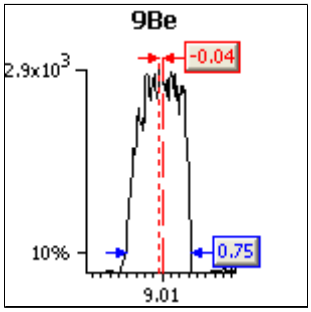
Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:15:22	3230.510	18880.289	16794.141	69.808%	0.000	10358.128	14616.058
2	14:15:44	3733.769	19853.997	16380.387	68.404%	0.000	11248.952	14832.564
3	14:16:05	3981.115	19260.074	16003.573	71.336%	0.000	10792.060	15035.053
x		90.978%	89.149%	109.997%	69.849%	0.000	35.197%	103.989%
σ		n/a	n/a	n/a	1.466%	0.000	n/a	n/a
%RSD		10.484	2.539	2.412	2.099	0.000	4.125	1.413

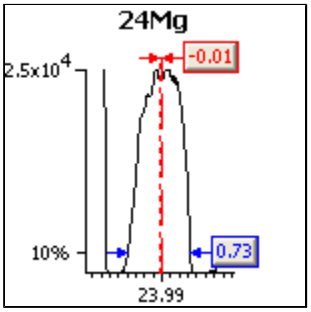
Performance Report

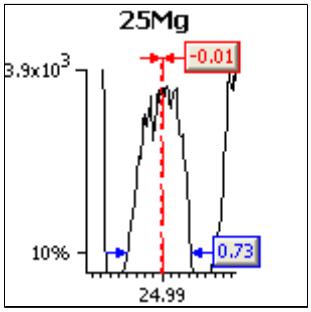
Sample details
Sample name : ITUNE
Acquired at : 11/1/2016 10:39:15 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

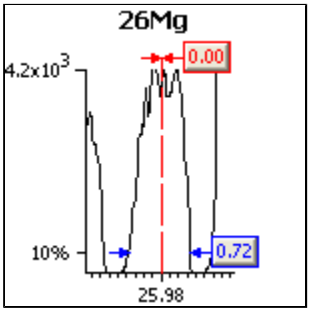
Mass Calibration verification

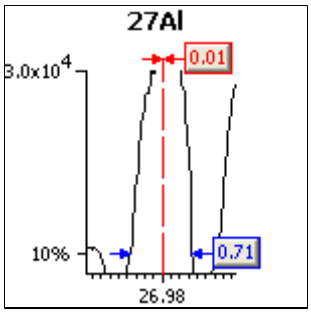
Acquisition parameters
Sweeps : 20
Dwell : 1.0 mSecs
Point spacing : 0.01 amu
Peak width measured at 10% of the peak maximum

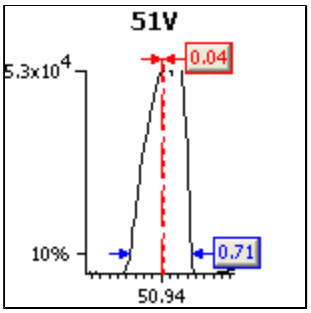


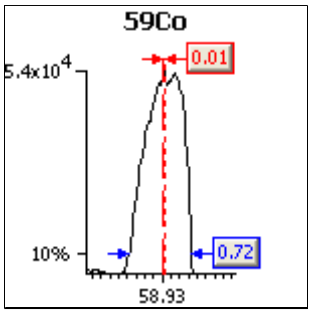


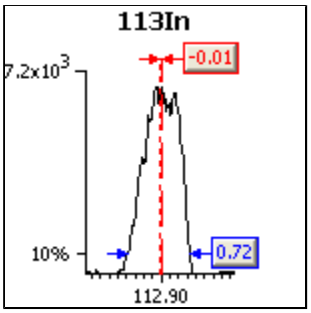


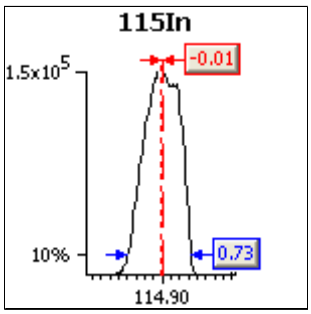


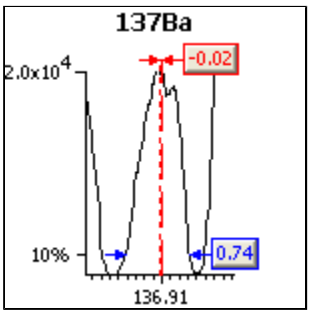


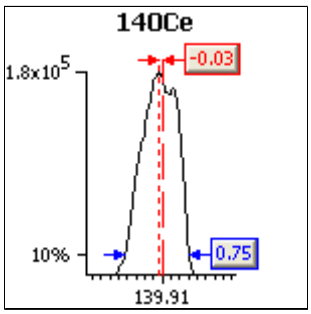


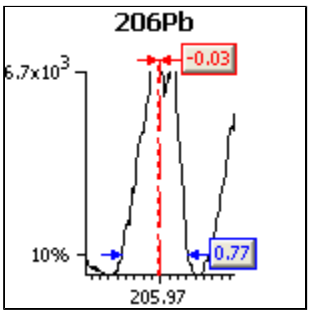


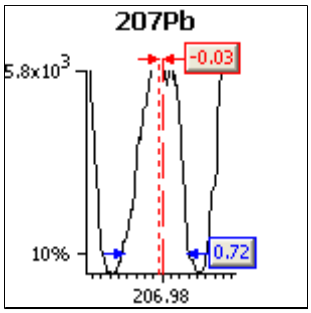


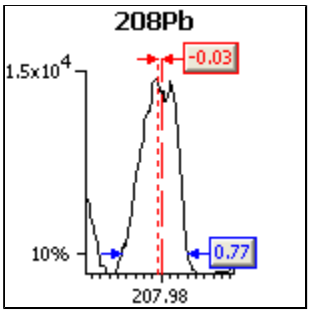


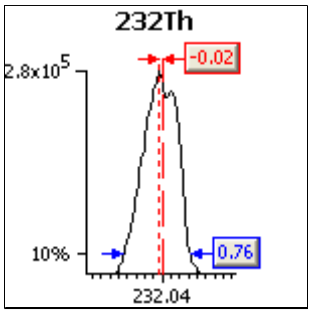


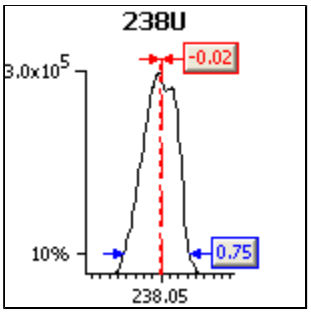












Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
9Be	0.90	0.65	0.10	0.75	-0.04
24Mg	0.90	0.65	0.10	0.73	-0.01

25Mg	0.90	0.65	0.10	0.73	-0.01
26Mg	0.90	0.65	0.10	0.72	0.00
27Al	0.90	0.65	0.10	0.71	0.01
51V	0.90	0.65	0.10	0.71	0.04
59Co	0.90	0.65	0.10	0.72	0.01
113In	0.90	0.65	0.10	0.72	-0.01
115In	0.90	0.65	0.10	0.73	-0.01
137Ba	0.90	0.65	0.10	0.74	-0.02
140Ce	0.90	0.65	0.10	0.75	-0.03
206Pb	0.90	0.65	0.10	0.77	-0.03
207Pb	0.90	0.65	0.10	0.72	-0.03
208Pb	0.90	0.65	0.10	0.77	-0.03
232Th	0.90	0.65	0.10	0.76	-0.02
238U	0.90	0.65	0.10	0.75	-0.02

Sample details
Sample name : ITUNE
Acquired at : 11/1/2016 10:39:15 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 01:54:48 PM]

Tune conditions

Major	
Extraction	-114
Lens 1	-5.0
Focus	18.0
D1	-43.9
Pole Bias	1.0
Hexapole Bias	-3.0
Nebuliser	0.74
Sampling Depth	83

Minor	
Lens 2	-39.2
Lens 3	-177.3
Forward power	1404
Horizontal	70
Vertical	492
D2	-158
DA	-40.8
Cool	13.0
Auxiliary	0.90

Global	
Standard resolution	135
High resolution	115
Analogue Detector	2353
PC Detector	1196

Add. Gases	
CCT1	0.00
CCT2	0.00

Sensitivity and stability results

Acquisition parameters
Sweeps : 50

Run	Time	8Bkg	9Be	24Mg	25Mg	26Mg	27Al	51V	59Co	113In
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Countrate	-	>100	>100	>100	>100	>100	>100	>100	>100
1	10:40:11 AM	0.200	2758.228	24988.719	3466.360	4206.531	31742.198	54175.908	51732.162	6617.313
2	10:40:45 AM	0.100	2824.239	24714.310	3508.369	4216.533	31573.879	54212.025	51617.808	6587.302
3	10:41:18 AM	0.200	2852.244	24483.971	3496.367	4148.516	31473.690	53822.767	51726.143	6501.268
4	10:41:52 AM	0.100	2786.233	24538.050	3574.383	4148.516	30914.645	54296.299	51381.079	6579.298
5	10:42:26 AM	0.100	2808.237	24580.112	3330.333	3974.474	31395.543	54035.453	51545.585	6463.253
x		0.140	2805.836	24661.032	3475.162	4138.914	31419.991	54108.490	51600.556	6549.687
σ		0.05	35.88	202.02	90.07	97.24	310.79	185.41	145.42	64.58
%RSD		39.123	1.279	0.819	2.592	2.349	0.989	0.343	0.282	0.986

Run	Time	115In	137Ba	140Ce	156Ce O	206Pb	207Pb	208Pb	220Bkg	232Th
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	5.0%	5.0%	5.0%	-	5.0%	5.0%	5.0%	-	5.0%
	Countrate	>100	>100	>100	-	>100	>100	>100	-	>100
1	10:40:11 AM	152409.69	19603.522	174064.23	1074.035	6831.400	6115.122	14308.139	0.100	270046.17
2	10:40:45 AM	151683.11	19495.395	173152.81	968.028	6733.360	5917.050	14406.223	0.100	269657.96
3	10:41:18 AM	151909.15	19231.089	174381.52	1010.031	6643.324	6095.114	14510.314	0.100	271729.19
4	10:41:52 AM	151206.81	18944.761	174545.22	1016.031	6613.312	6007.082	14129.987	0.000	268192.60
5	10:42:26 AM	150258.29	18880.688	171334.16	984.029	6565.293	6125.125	14294.127	0.100	270783.99
x		151493.41	19231.091	173495.59	1010.431	6677.338	6051.899	14329.758	0.080	270081.98
σ		814.87	321.45	1322.80	40.53	105.69	88.63	141.50	0.04	1318.80
%RSD		0.538	1.672	0.762	4.012	1.583	1.464	0.987	55.902	0.488

Run	Time	238U
Dwell (mSecs)		0.0
Limits	%RSD	5.0%
	Countrate	>100
1	10:40:11 AM	290892.59
2	10:40:45 AM	290982.14
3	10:41:18 AM	290815.26
4	10:41:52 AM	287327.55
5	10:42:26 AM	292931.85
x		290589.88
σ		2026.32
%RSD		0.697

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0200
1	10:40:11 AM	0.006
2	10:40:45 AM	0.006

3	10:41:18 AM	0.006
4	10:41:52 AM	0.006
5	10:42:26 AM	0.006
x		0.0058
σ		0.00
%RSD		3.6625

Result : The performance report passed.

Experiment Details

Description	PlasmaLab Template BlankExperiment
Template Filename	C:\Program Files\Thermo Fisher\PlasmaLab\TEMPLATES\6020A.tet
Created By User	user
Analyte Database	Default.tea
Creation Timestamp	8/29/2003 01:55:15 PM
Last Edited By	INORG-User
Last Edit Timestamp	11/1/2016 10:46:10 AM
Instrument Detector	Simultaneous
Database Version	3.51
Acquisition Mode	Unknown

Numerical Results report key (text indicates meaning)

Blue text indicates that cell is a statistic.
Underlining indicates that a data warning flag is set.

Column headings	Result cells	Data warning flags
No flag	Internal Standard	I - Invalid calibration
Semi Quant	Excluded	T - Tripped
Standard Addition	QC Warning	F - Interference correction failed
Multi Element	QC Failure	M - Result over max
	Transient TRA only:	V - Valley integration failed
	Peak Not Found	D - Different method used
	Manually Edited	
	Merged Peak	

Setup

Survey Scan Setup

Sweeps	10
Dwell Time	600
Channels Per Mass	10
Acquisition Duration	13247

Main Run Setup

Main Run	Peak Jumping
Sweeps	20
Dwell Time	10000
Channels Per Mass	1
Acquisition Duration	18211
Channel Spacing	0.02

Survey Scan Regions

Start AMU	End AMU	Channels	Dwell ms	Resolution

4.59	11.41	68	600	Standard
22.59	27.41	48	600	Standard
28.59	29.41	8	600	Standard
30.59	31.41	8	600	Standard
32.59	33.41	8	600	Standard
38.59	39.41	8	600	Standard
42.59	79.41	368	600	Standard
80.59	245.50	1649	600	Standard

Peak Jump Regions

Analyte	Channels	Dwell ms	Resolution
6Li	1	5000	Standard
7Li	1	5000	Standard
9Be	1	20000	Standard
11B	1	10000	Standard
23Na	1	5000	Standard
25Mg	1	5000	Standard
26Mg	1	5000	Standard
27Al	1	10000	Standard
39K	1	5000	Standard
43Ca	1	10000	Standard
44Ca	1	5000	Standard
45Sc	1	5000	Standard
47Ti	1	10000	Standard
51V	1	10000	Standard
52Cr	1	10000	Standard
53Cl O	1	10000	Standard
55Mn	1	10000	Standard
56Fe	1	10000	Standard
59Co	1	10000	Standard
60Ni	1	10000	Standard
65Cu	1	10000	Standard
66Zn	1	10000	Standard
75As	1	50000	Standard
77Ar Cl	1	50000	Standard
82Se	1	100000	Standard
83Kr	1	100000	Standard
84Kr	1	10000	Standard
88Sr	1	10000	Standard
89Y	1	5000	Standard
98Mo	1	10000	Standard
106Cd	1	10000	Standard
107Ag	1	10000	Standard
108Mo O	1	10000	Standard
111Cd	1	10000	Standard
115In	1	5000	Standard
118Sn	1	10000	Standard
121Sb	1	10000	Standard
123Sb	1	100000	Standard
135Ba	1	10000	Standard

159Tb	1	5000	Standard
182W	1	10000	Standard
205Tl	1	10000	Standard
206Pb	1	10000	Standard
207Pb	1	10000	Standard
208Pb	1	10000	Standard
209Bi	1	5000	Standard
220Bkg	1	10000	Standard
232Th	1	10000	Standard
238U	1	10000	Standard

Calibration Technique

Use External Drift Correction - No
Calibrate by - Isotope

Symbol	Interference Correction	RSF	Calibration Method	Line Fit	Weighting	Forcing	Use for Semi-Quant	Max Error	Minimum Correlation
6Li	Yes	1.00	None				No		
7Li	Yes	1.00	None				No		
9Be	Yes	0.75	Fully-Quantified	Linear	Absolute SD	None	Yes		
11B	Yes	0.58	Fully-Quantified	Linear	Absolute SD	None	Yes		
23Na	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
25Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
26Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
27Al	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
39K	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
43Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
44Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
45Sc	Yes	1.00	None				No		
47Ti	Yes	0.99	None				No		
51V	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
52Cr	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
55Mn	Yes	0.95	Fully-Quantified	Linear	Absolute SD	None	Yes		
56Fe	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
59Co	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
60Ni	No	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
65Cu	Yes	0.90	Fully-Quantified	Linear	Absolute SD	None	Yes		
66Zn	Yes	0.38	Fully-Quantified	Linear	Absolute SD	None	Yes		
75As	Yes	0.07	Fully-Quantified	Linear	Absolute SD	None	Yes		
82Se	Yes	0.10	Fully-Quantified	Linear	Absolute SD	None	Yes		
83Kr	Yes	0.01	None				No		
84Kr	Yes	0.01	None				No		
88Sr	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
89Y	Yes	0.98	None				No		
98Mo	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
107Ag	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
106Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
111Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
115In	Yes	0.99	None				No		
118Sn	Yes	0.96	None				No		

121Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
123Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes
135Ba	Yes	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes
159Tb	Yes	0.99	None				No
182W	Yes	0.94	Fully-Quantified	Linear	Absolute SD	None	Yes
206Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
207Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes
208Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	No
209Bi	Yes	0.92	None				No
232Th	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
238U	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
205Tl	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
220Bkg	Yes		Semi-Quantified				No
77Ar Cl	Yes		Semi-Quantified				No
53Cl O	Yes		Semi-Quantified				No
108Mo O	Yes		Semi-Quantified				No

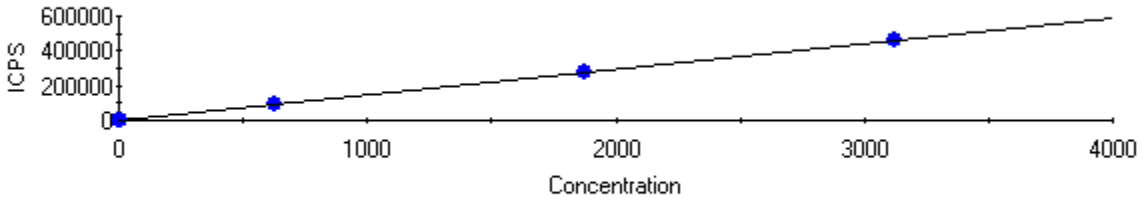
Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	STD0	Fully Quant Standard	1.000	0	1	2	144
2	STD1	Fully Quant Standard	1.000	0	1	3	144
3	STD2	Fully Quant Standard	1.000	0	1	4	144
4	STD3	Fully Quant Standard	1.000	0	1	5	144
5	STD4	Fully Quant Standard	1.000	1	1	1	144
6	STD5	Fully Quant Standard	1.000	1	1	2	144
7	ICV	QC Sample	1.000	0	1	6	144
8	ICVL	QC Sample	1.000	0	1	3	144
9	ICBIS	QC Sample	1.000	0	1	2	144
10	ICSA	QC Sample	1.000	1	1	3	144
11	ICSAB	QC Sample	1.000	1	1	4	144
12	CCV	QC Sample	1.000	0	1	5	144
13	CCB	QC Sample	1.000	0	1	2	144
14	MB 200-110769/1-A	Unknown	1.000	1	2	1	144
15	LCS 200-110769/2-A	Unknown	1.000	1	2	2	144
16	200-35700-A-11-A	Unknown	1.000	1	2	3	144
17	200-35700-A-12-A	Unknown	1.000	1	2	4	144
18	200-35700-A-12-A SD@5	Unknown	1.000	1	2	5	144
19	200-35700-A-12-A PDS	Unknown	1.000	1	2	6	144
20	200-35700-A-12-G MS	Unknown	1.000	1	2	7	144
21	200-35700-A-12-H MSD	Unknown	1.000	1	2	8	144
22	200-35700-A-13-A	Unknown	1.000	1	2	9	144
23	200-35700-A-14-A	Unknown	1.000	1	2	10	144
24	CCV	QC Sample	1.000	0	1	5	144
25	CCB	QC Sample	1.000	0	1	2	144
26	CCVL	QC Sample	1.000	0	1	3	144
27	200-35700-A-15-A	Unknown	1.000	1	2	11	144
28	200-35700-A-16-A	Unknown	1.000	1	2	12	144
29	200-35700-A-17-A	Unknown	1.000	1	3	1	144
30	200-35700-A-18-A	Unknown	1.000	1	3	2	144
31	200-35736-A-13-A	Unknown	1.000	1	3	3	144
32	200-35700-A-16-A @2	Unknown	1.000	1	3	4	144

33	CCV	QC Sample	1.000	0	1	5	144
34	CCB	QC Sample	1.000	0	1	2	144
35	CCVL	QC Sample	1.000	0	1	3	144

Fully Quant Calibration

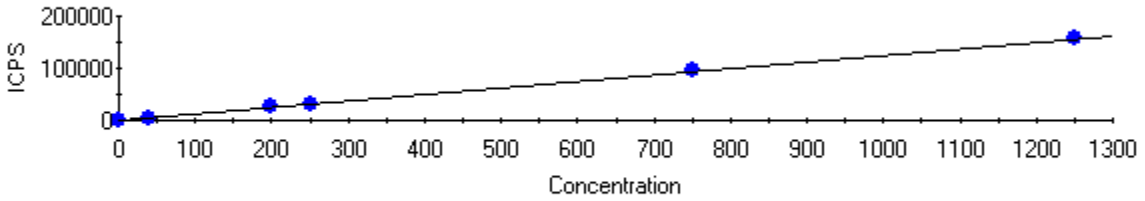
9Be FQ Block 1



Intercept CPS=6.429802 Intercept Conc=0.043447
Sensitivity=147.991948 Correlation Coeff=0.999971

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.010	0.010	4.98	0.00
STD1	1.000	1.063	0.063	163.69	6.27
STD2	5.000	5.050	0.050	753.72	0.99
STD3	625.000	614.459	10.541	90941.47	1.69
STD4	1875.000	1883.310	8.310	278721.12	0.44
STD5	3125.000	3098.876	26.124	458615.07	0.84

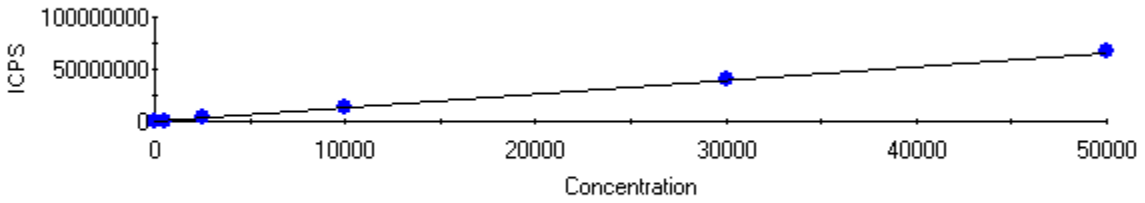
11B FQ Block 1



Intercept CPS=195.624832 Intercept Conc=1.559986
Sensitivity=125.401643 Correlation Coeff=0.999982

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.009	0.009	196.74	0.00
STD1	40.000	38.898	1.102	5073.49	2.76
STD2	200.000	198.820	1.180	25127.93	0.59
STD3	250.000	244.400	5.600	30843.74	2.24
STD4	750.000	757.264	7.264	95157.75	0.97
STD5	1250.000	1258.914	8.914	158065.45	0.71

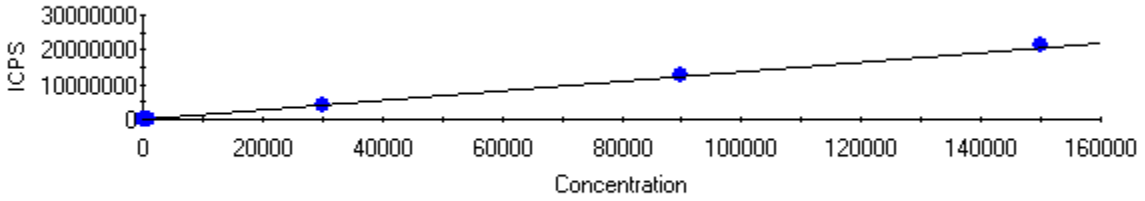
23Na FQ Block 1



Intercept CPS=177847.378623 Intercept Conc=138.029007
Sensitivity=1288.478284 Correlation Coeff=0.999927

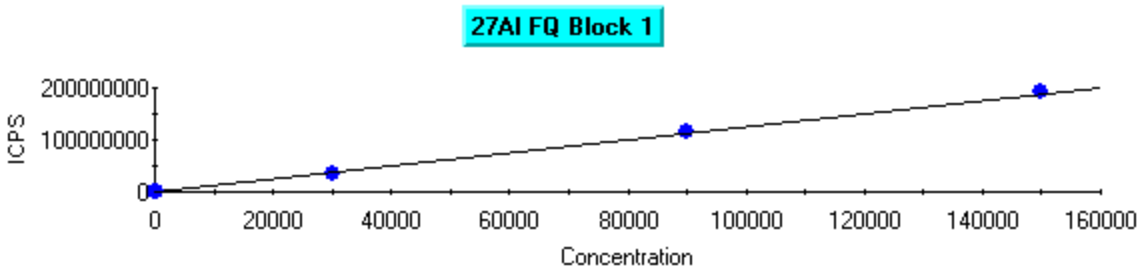
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.533	0.533	178534.40	0.00
STD1	500.000	474.574	25.426	789325.57	5.09
STD2	2500.000	2407.910	92.090	3280386.62	3.68
STD3	10000.000	9766.259	233.741	12761459.86	2.34
STD4	30000.000	31223.766	1223.766	40408991.25	4.08
STD5	50000.000	52265.661	2265.661	67521016.34	4.53

25Mg FQ Block 1



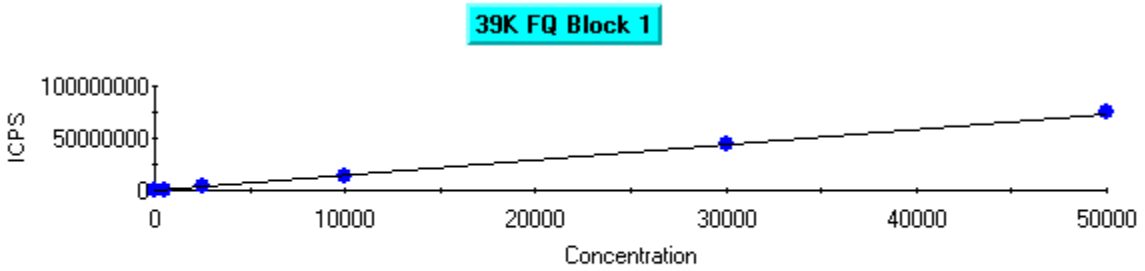
Intercept CPS=109.801456 Intercept Conc=0.803832
Sensitivity=136.597446 Correlation Coeff=0.999866

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.029	0.029	113.82	0.00
STD1	200.000	184.364	15.636	25293.48	7.82
STD2	1000.000	929.402	70.598	127063.71	7.06
STD3	30000.000	28364.356	1635.644	3874608.36	5.45
STD4	90000.000	91687.706	1687.706	12524416.27	1.88
STD5	150000.000	154710.486	4710.486	21133167.10	3.14



Intercept CPS=360.548580 Intercept Conc=0.289495
Sensitivity=1245.440207 Correlation Coeff=0.999894

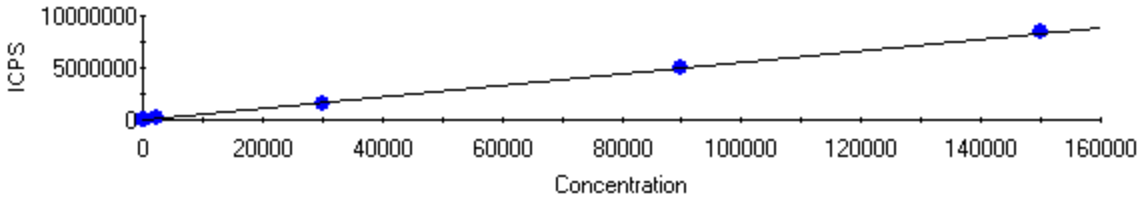
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.008	0.008	370.64	0.00
STD1	50.000	49.320	0.680	61785.92	1.36
STD2	250.000	235.210	14.790	293300.56	5.92
STD3	30000.000	28712.378	1287.622	35759910.91	4.29
STD4	90000.000	92943.651	2943.651	115756119.84	3.27
STD5	150000.000	155330.495	5330.495	193455204.73	3.55



Intercept CPS=53987.385889 Intercept Conc=37.181587
Sensitivity=1451.992528 Correlation Coeff=0.999876

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.698	0.698	55001.30	0.00
STD1	500.000	472.164	27.836	739565.57	5.57
STD2	2500.000	2368.961	131.039	3493701.27	5.24
STD3	10000.000	9479.542	520.458	13818211.84	5.20
STD4	30000.000	30882.712	882.712	44895453.85	2.94
STD5	50000.000	51810.430	1810.430	75282343.95	3.62

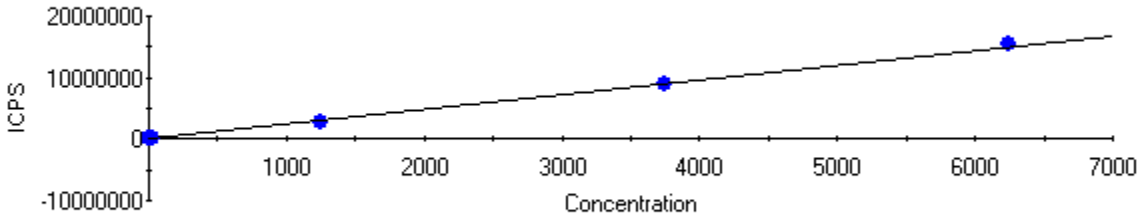
44Ca FQ Block 1



Intercept CPS=428.223066 Intercept Conc=7.757634
Sensitivity=55.200213 Correlation Coeff=0.999741

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	1.736	1.736	524.05	0.00
STD1	500.000	453.139	46.861	25441.60	9.37
STD2	2500.000	2301.742	198.258	127484.88	7.93
STD3	30000.000	27300.114	2699.886	1507400.33	9.00
STD4	90000.000	91207.724	1207.724	5035114.00	1.34
STD5	150000.000	154583.359	4583.359	8533462.52	3.06

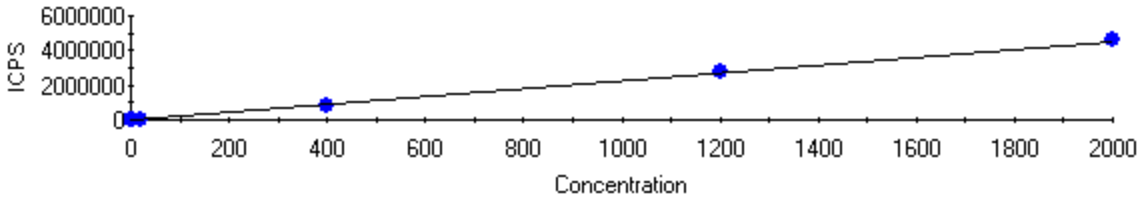
51V FQ Block 1



Intercept CPS=-1188.176418 Intercept Conc=-0.499799
Sensitivity=2377.307654 Correlation Coeff=0.999795

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.478	0.478	-51.56	0.00
STD1	5.000	5.043	0.043	10801.25	0.87
STD2	25.000	23.968	1.032	55790.48	4.13
STD3	1250.000	1167.238	82.762	2773695.63	6.62
STD4	3750.000	3806.677	56.677	9048455.32	1.51
STD5	6250.000	6469.025	219.025	15377675.41	3.50

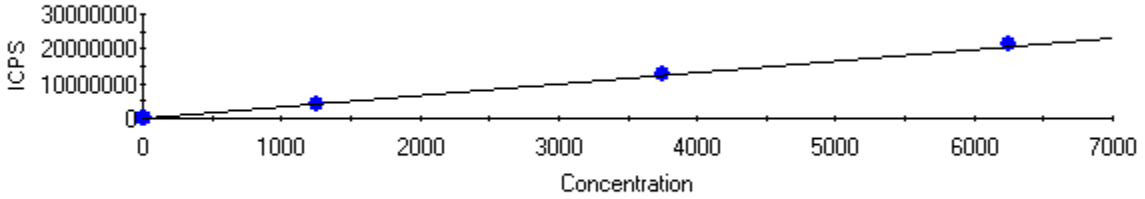
52Cr FQ Block 1



Intercept CPS=1140.289967 Intercept Conc=0.511343
Sensitivity=2229.991814 Correlation Coeff=0.999898

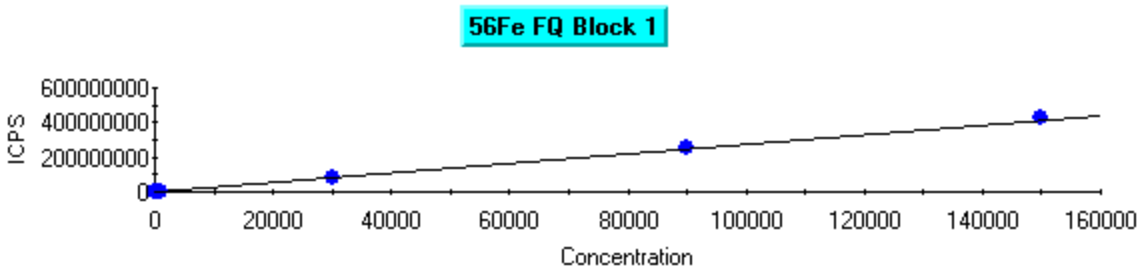
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	1139.73	0.00
STD1	4.000	4.099	0.099	10281.55	2.48
STD2	20.000	19.682	0.318	45030.47	1.59
STD3	400.000	381.513	18.487	851911.87	4.62
STD4	1200.000	1225.237	25.237	2733409.44	2.10
STD5	2000.000	2058.957	58.957	4592598.49	2.95

55Mn FQ Block 1



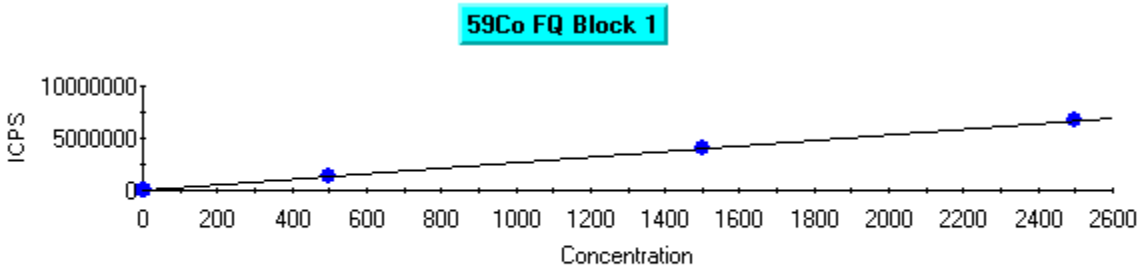
Intercept CPS=356.622768 Intercept Conc=0.107453
Sensitivity=3318.870436 Correlation Coeff=0.999847

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.001	0.001	353.14	0.00
STD1	2.000	2.105	0.105	7341.32	5.23
STD2	10.000	9.611	0.389	32254.25	3.89
STD3	1250.000	1157.639	92.361	3842410.34	7.39
STD4	3750.000	3791.679	41.679	12584448.76	1.11
STD5	6250.000	6366.226	116.226	21129035.34	1.86



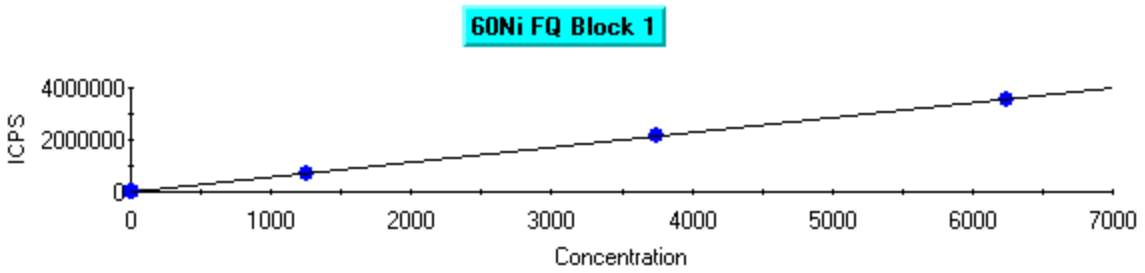
Intercept CPS=196810.517968 Intercept Conc=71.274682
Sensitivity=2761.296320 Correlation Coeff=0.999897

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.369	0.369	197829.80	0.00
STD1	200.000	199.131	0.869	746670.33	0.43
STD2	1000.000	965.333	34.667	2862379.63	3.47
STD3	30000.000	28274.952	1725.048	78272332.46	5.75
STD4	90000.000	91162.158	1162.158	251922542.32	1.29
STD5	150000.000	152786.878	2786.878	422086653.64	1.86



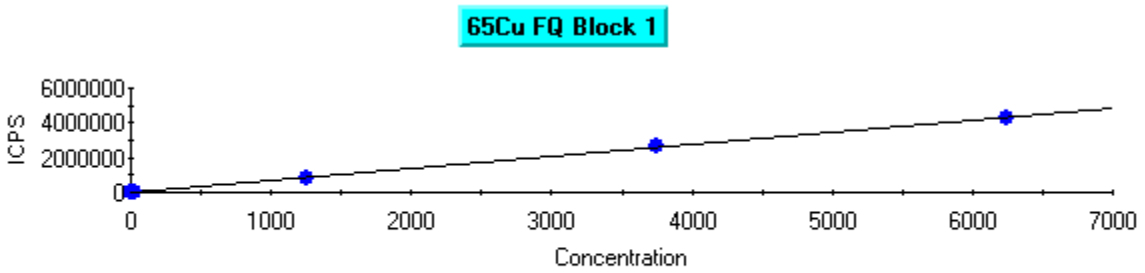
Intercept CPS=41.529330 Intercept Conc=0.015612
Sensitivity=2660.032155 Correlation Coeff=0.999942

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.001	0.001	45.30	0.00
STD1	1.000	1.022	0.022	2760.47	2.21
STD2	5.000	4.855	0.145	12955.72	2.90
STD3	500.000	478.055	21.945	1271683.82	4.39
STD4	1500.000	1507.373	7.373	4009702.54	0.49
STD5	2500.000	2529.574	29.574	6728789.64	1.18



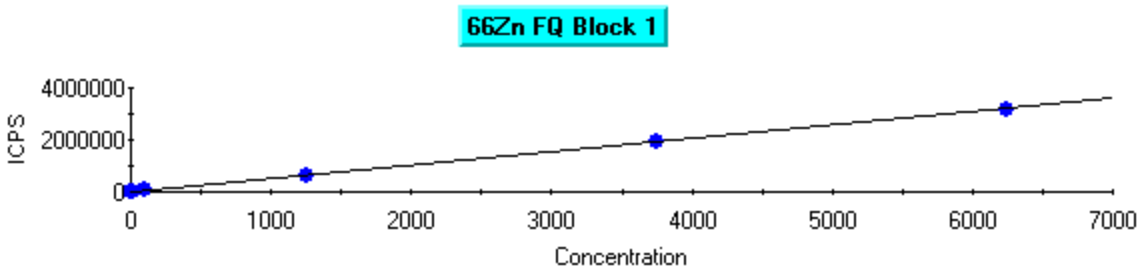
Intercept CPS=24.275682 Intercept Conc=0.042792
Sensitivity=567.289751 Correlation Coeff=0.999956

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.005	0.005	21.51	0.00
STD1	2.000	2.082	0.082	1205.36	4.10
STD2	10.000	10.113	0.113	5761.21	1.13
STD3	1250.000	1210.255	39.745	686589.37	3.18
STD4	3750.000	3806.690	56.690	2159520.68	1.51
STD5	6250.000	6294.065	44.065	3570582.99	0.71



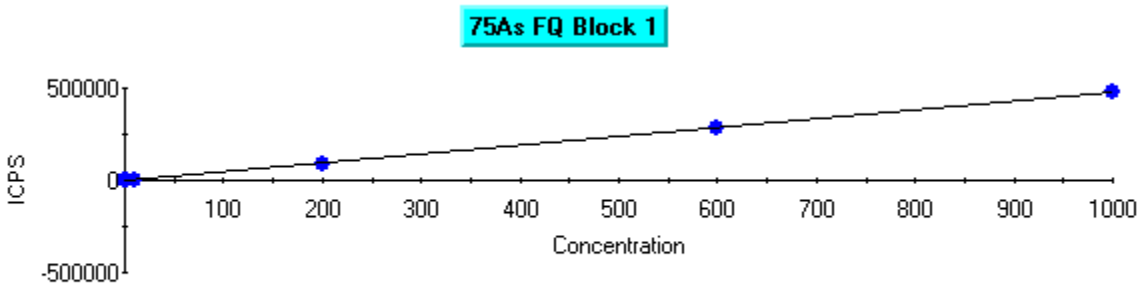
Intercept CPS=298.802673 Intercept Conc=0.430372
Sensitivity=694.289828 Correlation Coeff=0.999993

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.005	0.005	294.99	0.00
STD1	5.000	5.723	0.723	4272.00	14.45
STD2	25.000	27.330	2.330	19273.58	9.32
STD3	1250.000	1240.262	9.738	861400.05	0.78
STD4	3750.000	3759.985	9.985	2610818.05	0.27
STD5	6250.000	6225.586	24.414	4322659.69	0.39



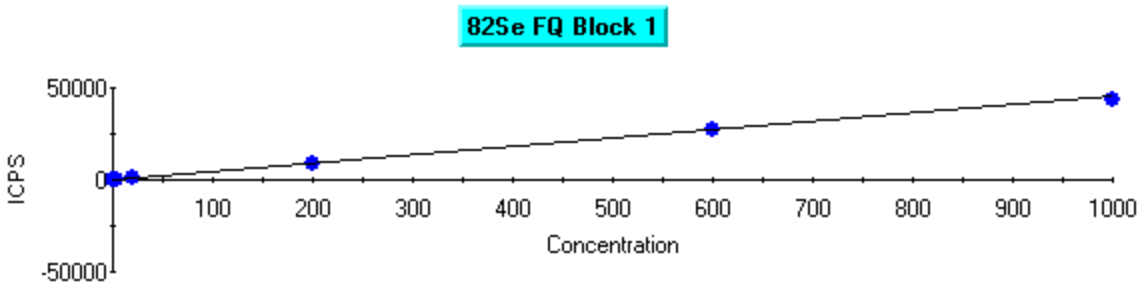
Intercept CPS=404.283502 Intercept Conc=0.777028
Sensitivity=520.294342 Correlation Coeff=0.999887

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.002	0.002	405.15	0.00
STD1	20.000	19.813	0.187	10713.07	0.93
STD2	100.000	102.771	2.771	53875.63	2.77
STD3	1250.000	1246.705	3.295	649057.86	0.26
STD4	3750.000	3766.943	16.943	1960323.18	0.45
STD5	6250.000	6109.286	140.714	3179031.26	2.25



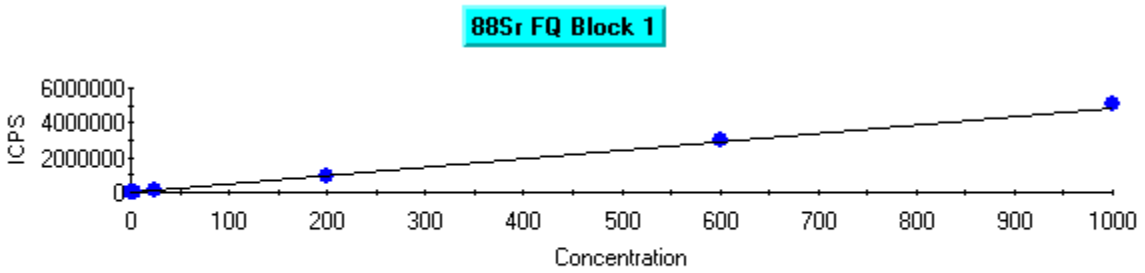
Intercept CPS=-220.855024 Intercept Conc=-0.464986
Sensitivity=474.971389 Correlation Coeff=0.999963

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.140	0.140	-287.29	0.00
STD1	2.000	2.093	0.093	773.42	4.67
STD2	10.000	10.010	0.010	4533.76	0.10
STD3	200.000	192.807	7.193	91356.72	3.60
STD4	600.000	603.111	3.111	286239.47	0.52
STD5	1000.000	1008.965	8.965	479008.71	0.90



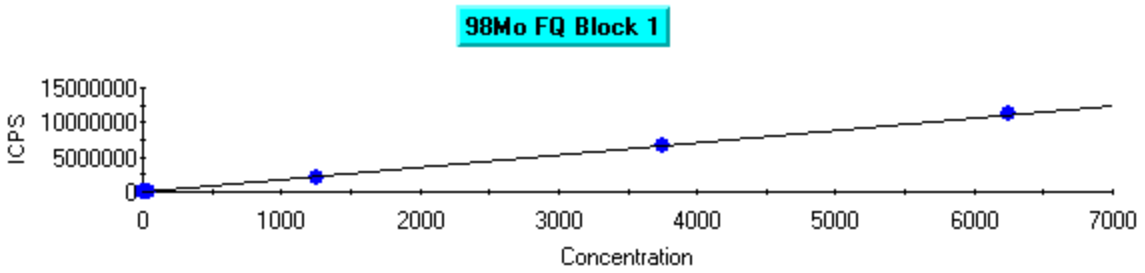
Intercept CPS=-56.712408 Intercept Conc=-1.249714
Sensitivity=45.380322 Correlation Coeff=0.999757

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.822	0.822	-94.00	0.00
STD1	4.000	4.238	0.238	135.63	5.96
STD2	20.000	18.739	1.261	793.69	6.30
STD3	200.000	200.729	0.729	9052.42	0.36
STD4	600.000	600.206	0.206	27180.85	0.03
STD5	1000.000	962.677	37.323	43629.87	3.73



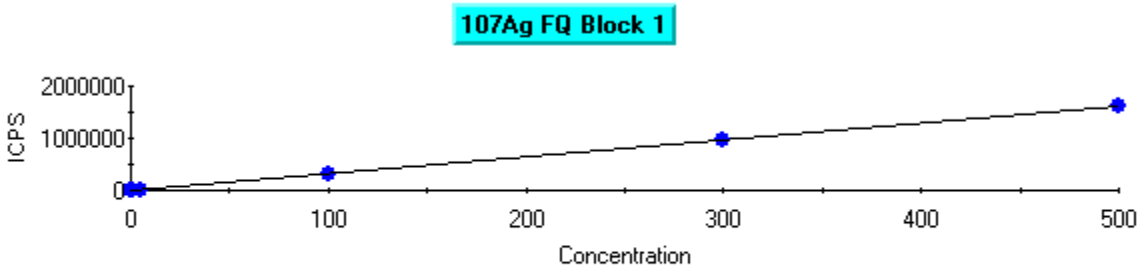
Intercept CPS=24.394564 Intercept Conc=0.005013
Sensitivity=4866.330983 Correlation Coeff=0.999900

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	25.09	0.00
STD1	5.000	4.839	0.161	23570.36	3.23
STD2	25.000	24.540	0.460	119442.26	1.84
STD3	200.000	193.406	6.594	941203.86	3.30
STD4	600.000	608.695	8.695	2962137.72	1.45
STD5	1000.000	1032.444	32.444	5024236.99	3.24



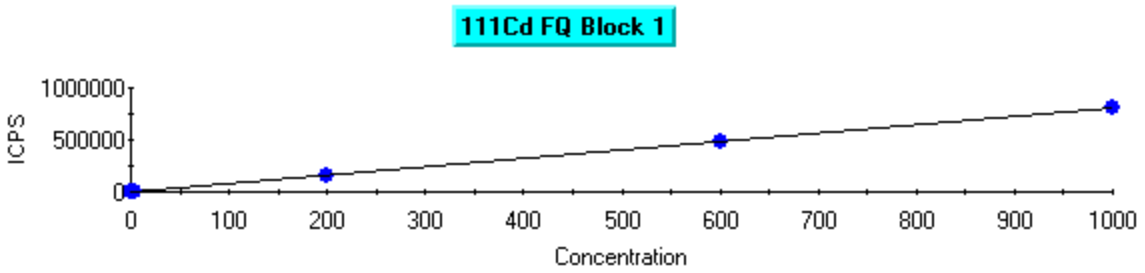
Intercept CPS=43.230187 Intercept Conc=0.024439
Sensitivity=1768.888660 Correlation Coeff=0.999628

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.006	0.006	53.26	0.00
STD1	10.000	9.193	0.807	16305.32	8.07
STD2	50.000	45.766	4.234	80998.52	8.47
STD3	1250.000	1124.557	125.443	1989258.81	10.04
STD4	3750.000	3699.084	50.916	6543311.38	1.36
STD5	6250.000	6382.710	132.710	11290346.94	2.12



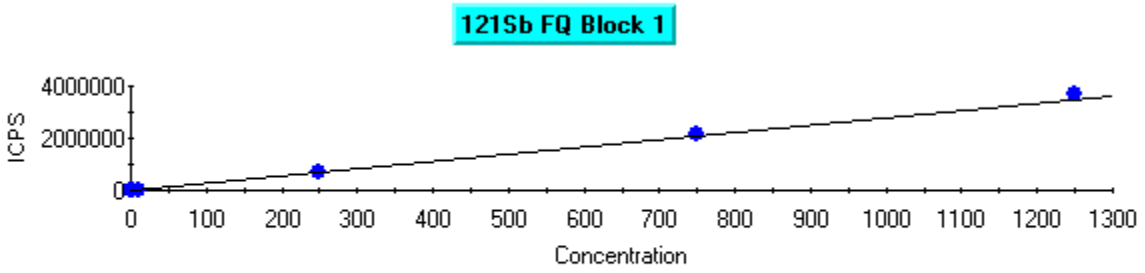
Intercept CPS=37.343841 Intercept Conc=0.011649
Sensitivity=3205.668712 Correlation Coeff=0.999964

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.001	0.001	34.94	0.00
STD1	1.000	1.010	0.010	3273.88	0.96
STD2	5.000	5.116	0.116	16437.87	2.32
STD3	100.000	97.465	2.535	312479.02	2.53
STD4	300.000	304.231	4.231	975299.65	1.41
STD5	500.000	509.337	9.337	1632801.53	1.87



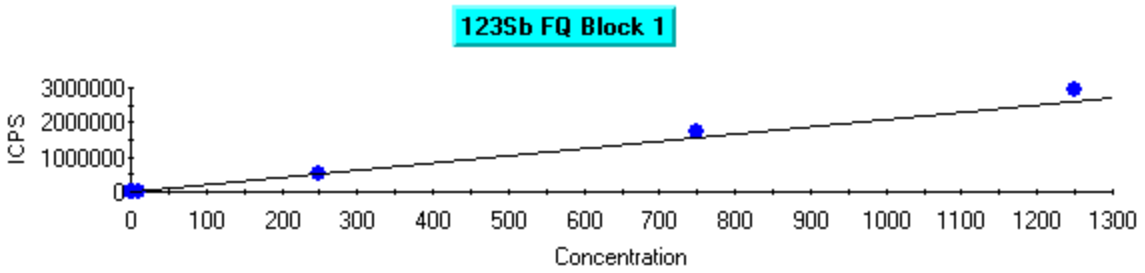
Intercept CPS=41.008483 Intercept Conc=0.050764
Sensitivity=807.828991 Correlation Coeff=0.999938

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.019	0.019	56.69	0.00
STD1	1.000	0.887	0.113	757.52	11.30
STD2	5.000	4.615	0.385	3768.90	7.71
STD3	200.000	190.447	9.553	153889.84	4.78
STD4	600.000	600.469	0.469	485117.33	0.08
STD5	1000.000	1009.292	9.292	815375.99	0.93



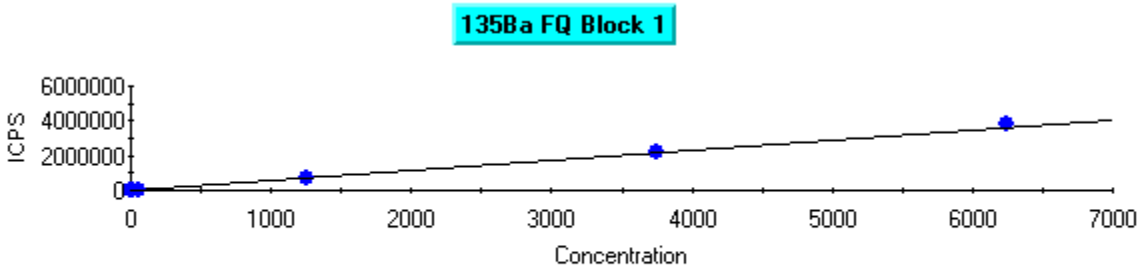
Intercept CPS=101.379373 Intercept Conc=0.036691
Sensitivity=2763.094545 Correlation Coeff=0.999849

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.001	0.001	103.26	0.00
STD1	2.000	1.905	0.095	5364.04	4.77
STD2	10.000	9.649	0.351	26763.77	3.51
STD3	250.000	243.225	6.775	672153.81	2.71
STD4	750.000	788.232	38.232	2178061.30	5.10
STD5	1250.000	1332.526	82.526	3681995.71	6.60



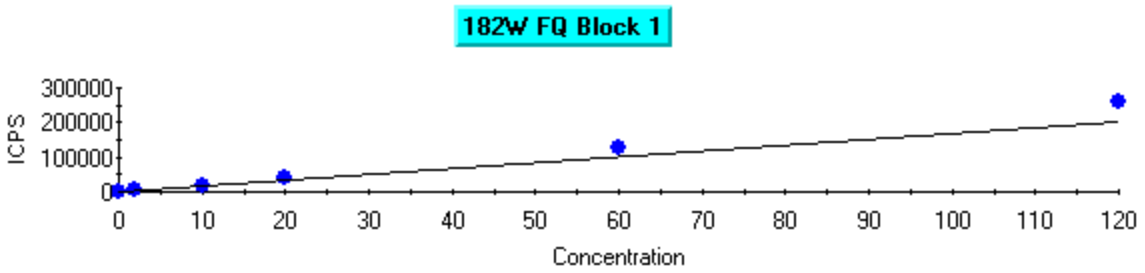
Intercept CPS=78.035435 Intercept Conc=0.037452
Sensitivity=2083.595934 Correlation Coeff=0.999673

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.001	0.001	79.68	0.00
STD1	2.000	1.964	0.036	4169.88	1.81
STD2	10.000	9.965	0.035	20842.07	0.35
STD3	250.000	252.691	2.691	526584.62	1.08
STD4	750.000	825.384	75.384	1719845.56	10.05
STD5	1250.000	1421.588	171.588	2962093.67	13.73



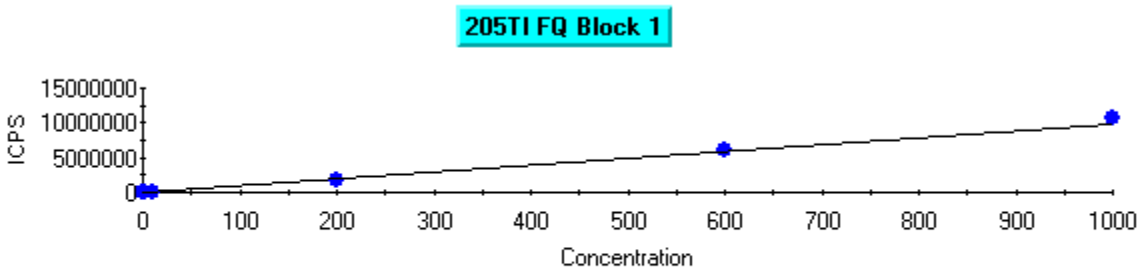
Intercept CPS=7.959232 Intercept Conc=0.013845
Sensitivity=574.866850 Correlation Coeff=0.999706

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.001	0.001	8.37	0.00
STD1	10.000	9.321	0.679	5366.10	6.79
STD2	50.000	47.412	2.588	27263.68	5.18
STD3	1250.000	1190.321	59.679	684284.28	4.77
STD4	3750.000	3822.775	72.775	2197594.48	1.94
STD5	6250.000	6594.028	344.028	3790696.31	5.50



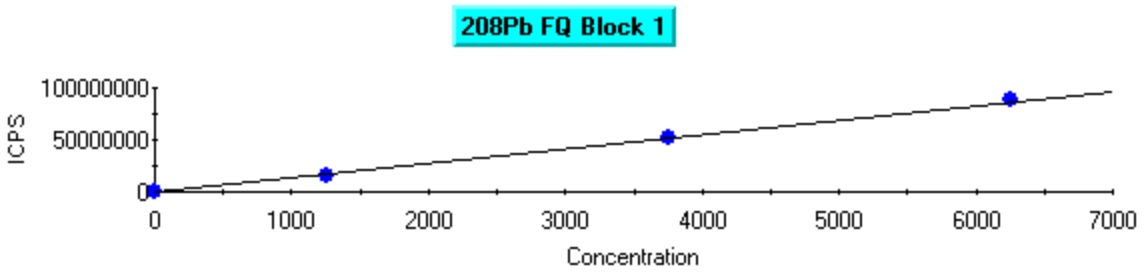
Intercept CPS=31.094435 Intercept Conc=0.018399
Sensitivity=1690.047717 Correlation Coeff=0.999687

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.005	0.005	39.97	0.00
STD1	2.000	1.838	0.162	3137.95	8.08
STD2	10.000	9.139	0.861	15477.02	8.61
STD3	20.000	22.739	2.739	38460.32	13.69
STD4	60.000	74.094	14.094	125254.00	23.49
STD5	120.000	153.175	33.175	258904.84	27.65



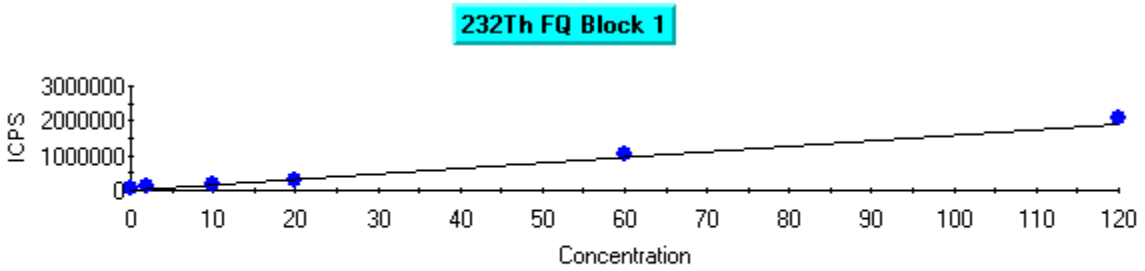
Intercept CPS=46.552517 Intercept Conc=0.004776
Sensitivity=9747.541891 Correlation Coeff=0.999585

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.000	0.000	46.67	0.00
STD1	2.000	1.876	0.124	18335.26	6.19
STD2	10.000	9.643	0.357	94039.91	3.57
STD3	200.000	189.696	10.304	1849116.04	5.15
STD4	600.000	623.888	23.888	6081421.12	3.98
STD5	1000.000	1080.488	80.488	10532148.00	8.05



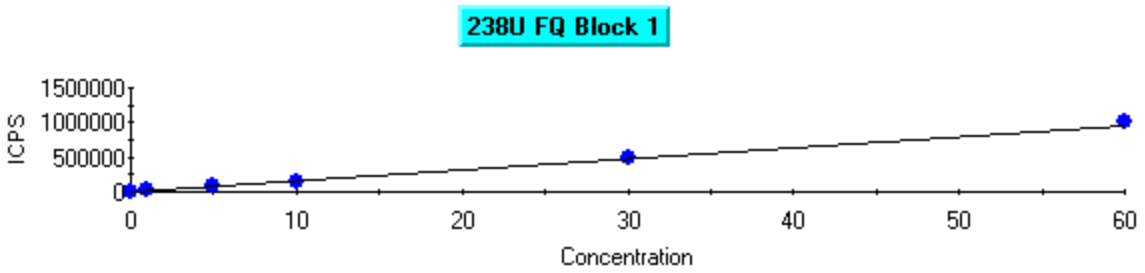
Intercept CPS=525.491865 Intercept Conc=0.038608
Sensitivity=13610.867443 Correlation Coeff=0.999719

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	-0.000	0.000	520.00	0.00
STD1	1.000	1.045	0.045	14755.38	4.55
STD2	5.000	4.794	0.206	65779.69	4.11
STD3	1250.000	1148.521	101.479	15632897.75	8.12
STD4	3750.000	3792.749	42.749	51623131.94	1.14
STD5	6250.000	6473.812	223.812	88114720.04	3.58



Intercept CPS=26646.201479 Intercept Conc=1.704136
Sensitivity=15636.193272 Correlation Coeff=0.998279

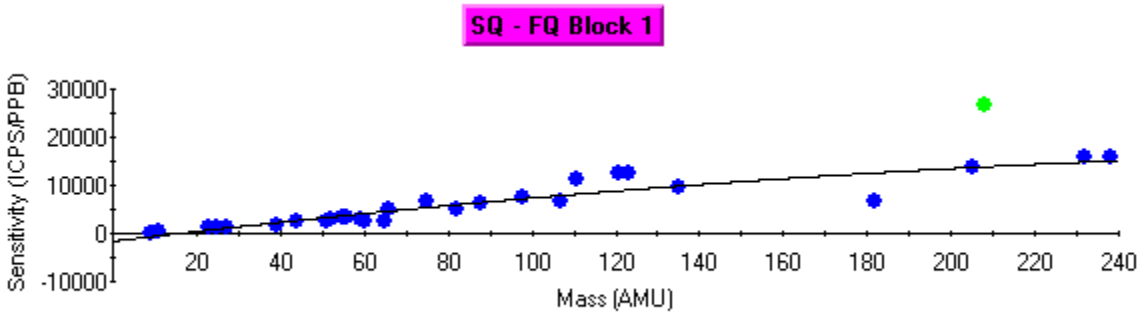
Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.207	0.207	29876.16	0.00
STD1	2.000	5.777	3.777	116972.86	188.84
STD2	10.000	7.781	2.219	148309.10	22.19
STD3	20.000	16.993	3.007	292345.25	15.04
STD4	60.000	63.799	3.799	1024214.31	6.33
STD5	120.000	132.058	12.058	2091536.54	10.05



Intercept CPS=187.383712 Intercept Conc=0.011899
Sensitivity=15748.206179 Correlation Coeff=0.999551

Label	Defined	Measured	Error	Mean CPS	% Error
STD0	0.000	0.010	0.010	349.99	0.00
STD1	1.000	0.950	0.050	15141.90	5.04
STD2	5.000	5.002	0.002	78959.96	0.04
STD3	10.000	8.983	1.017	141656.25	10.17
STD4	30.000	30.633	0.633	482602.74	2.11
STD5	60.000	64.022	4.022	1008421.58	6.70

Semi Quant Calibration



Coeff 0=-1602.791607 Coeff 1=103.999149 Coeff 2=-0.142558

Symbol	Mass	RSF	Available	Excluded	Sensitivity Measured	Corrected	Calculated	%Error
9Be	9.01	0.7500	1	1	147.99	197.32	-677.11	-443.1
11B	11.01	0.5800	1	1	125.40	266.86	-475.11	-278.0
23Na	22.99	1.0000	1	1	1288.48	1288.48	712.78	-44.7
25Mg	24.99	0.9800	1	1	136.60	1378.69	906.72	-34.2
27Al	26.98	0.9800	1	1	1245.44	1270.86	1099.48	-13.5
39K	38.96	1.0000	1	1	1451.99	1559.94	2232.97	43.1
44Ca	43.96	0.9900	1	1	55.20	2617.74	2693.11	2.9
51V	50.94	0.9900	1	1	2377.31	2407.10	3325.36	38.1

52Cr	51.94	0.9800	1	1	2229.99	2716.69	3414.38	25.7
55Mn	54.94	0.9500	1	1	3318.87	3493.55	3680.45	5.3
56Fe	55.93	0.9600	1	1	2761.30	3142.87	3768.37	19.9
59Co	58.93	0.9300	1	1	2660.03	2860.25	4031.09	40.9
60Ni	59.93	0.9100	1	1	567.29	2383.01	4117.93	72.8
65Cu	64.93	0.9000	1	1	694.29	2495.74	4548.67	82.3
66Zn	65.93	0.3750	1	1	520.29	4989.04	4633.87	-7.1
75As	74.92	0.0700	1	1	474.97	6785.31	5388.78	-20.6
82Se	81.92	0.1000	1	1	45.38	5133.52	5959.86	16.1
88Sr	87.91	0.9600	1	1	4866.33	6139.89	6437.72	4.9
98Mo	97.91	0.9800	1	1	1768.89	7520.79	7212.80	-4.1
107Ag	106.91	0.9300	1	1	3205.67	6712.67	7885.99	17.5
111Cd	110.90	0.5660	1	1	807.83	11098.44	8177.72	-26.3
121Sb	120.90	0.3900	1	1	2763.09	12375.30	8887.23	-28.2
123Sb	122.90	0.3900	1	1	2083.60	12497.20	9025.74	-27.8
135Ba	134.91	0.9100	1	1	574.87	9586.07	9832.79	2.6
182W	181.95	0.9400	1	1	1690.05	6833.61	12600.27	84.4
205Tl	204.97	1.0000	1	1	9747.54	13826.30	13724.76	-0.7
208Pb	207.98	0.9700	0	1	13610.87	26788.51	13860.36	-48.3
232Th	232.04	1.0000	1	1	15636.19	15636.19	14853.41	-5.0
238U	238.05	1.0000	1	1	15748.21	15862.42	15075.79	-5.0

Dilution Corrected Concentrations

STD0 11/1/2016 10:50:03 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:25	98.250%	-0.009	0.144	-0.150	0.250	0.020	1.061	2.671	97.280%	0.000	0.442	-0.013
2	10:50:47	99.305%	-0.026	-0.115	2.105	-0.001	0.051	1.177	1.275	100.282%	0.000	0.293	0.012
3	10:51:08	102.444%	0.006	-0.003	-0.356	-0.161	-0.047	-0.143	1.262	102.439%	0.000	0.699	0.001
x		100.000%	-0.010	0.009	0.533	0.029	0.008	0.698	1.736	100.000%	0.000	0.478	-0.000
σ		2.182%	0.016	0.130	1.365	0.207	0.050	0.731	0.810	2.591%	0.000	0.205	0.013
%RSD		2.182	165.300	1457.000	256.100	702.900	613.700	104.700	46.660	2.591	0.000	42.900	5028.000

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:25	4.836	-0.008	1.654	0.010	-0.016	0.008	0.071	0.060	0.200	-0.851	0.000	0.000
2	10:50:47	5.108	0.008	0.655	-0.002	-0.016	-0.025	-0.052	-0.423	0.256	-1.396	0.000	0.000
3	10:51:08	4.505	-0.003	-1.202	-0.003	0.017	0.001	-0.013	-0.057	0.227	-0.218	0.000	0.000
x		4.817	-0.001	0.369	0.001	-0.005	-0.005	0.002	-0.140	0.228	-0.822	0.000	0.000
σ		0.302	0.008	1.449	0.007	0.019	0.017	0.063	0.252	0.028	0.590	0.000	0.000
%RSD		6.275	806.600	392.600	495.000	396.900	312.100	3751.000	180.300	12.150	71.760	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:25	0.003	98.969%	-0.002	-0.004	-1.053	0.032	98.635%	0.000	0.000	-0.000	0.004	97.753%
2	10:50:47	-0.002	100.475%	0.001	0.001	-0.860	0.012	99.449%	0.000	-0.002	0.003	0.004	100.761%
3	10:51:08	-0.001	100.556%	0.018	0.001	-0.899	0.015	101.916%	0.000	0.004	-0.000	-0.005	101.485%
x		0.000	100.000%	0.006	-0.001	-0.937	0.019	100.000%	0.000	0.001	0.001	0.001	100.000%
σ		0.003	0.894%	0.011	0.003	0.102	0.011	1.708%	0.000	0.003	0.002	0.005	1.979%
%RSD		1962.000	0.894	185.300	346.000	10.880	56.600	1.708	0.000	474.300	225.700	735.800	1.979

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:50:25	0.003	-0.000	-0.003	99.972%	0.000	0.280	0.016
2	10:50:47	0.011	0.000	0.001	99.804%	0.000	0.211	0.006
3	10:51:08	0.002	-0.000	0.001	100.224%	0.000	0.129	0.009
x		0.005	0.000	-0.000	100.000%	0.000	0.207	0.010
σ		0.005	0.000	0.003	0.211%	0.000	0.075	0.005
%RSD		94.440	2525.000	628.900	0.211	0.000	36.520	52.430

STD1 11/1/2016 10:55:00 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	10:55:21	106.984%	1.109	37.090	464.500	178.700	49.050	467.300	450.600	109.685%	0.000	5.497	4.167
2	10:55:43	102.651%	1.010	40.160	T 485.400	192.800	49.000	472.300	458.100	107.919%	0.000	4.760	3.936
3	10:56:05	101.746%	1.069	39.440	473.900	181.500	49.920	476.900	450.700	107.296%	0.000	4.873	4.194
x		103.794%	1.063	38.900	T 474.600	184.400	49.320	472.200	453.100	108.300%	0.000	5.043	4.099
σ		2.800%	0.050	1.604	T 10.470	7.460	0.516	4.805	4.313	1.239%	0.000	0.397	0.142

%RSD		2.697	4.708	4.124	T 2.207	4.047	1.047	1.018	0.952	1.144	0.000	7.871	3.460
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:55:21	6.458	2.107	195.900	0.973	2.006	5.666	20.080	1.902	0.284	3.892	0.000	0.000
2	10:55:43	6.793	2.032	200.600	1.030	2.073	5.948	19.580	2.126	0.244	4.329	0.000	0.000
3	10:56:05	7.402	2.175	200.900	1.064	2.167	5.554	19.780	2.252	0.237	4.494	0.000	0.000
x		6.884	2.105	199.100	1.022	2.082	5.723	19.810	2.093	0.255	4.238	0.000	0.000
σ		0.479	0.072	2.784	0.046	0.081	0.203	0.248	0.177	0.025	0.311	0.000	0.000
%RSD		6.954	3.401	1.398	4.464	3.877	3.542	1.254	8.474	9.968	7.337	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:55:21	4.632	105.539%	9.285	0.940	-1.025	0.919	104.433%	0.000	1.936	1.928	8.874	100.226%
2	10:55:43	4.936	107.179%	9.045	1.041	-0.640	0.864	103.331%	0.000	1.853	1.965	9.617	103.371%
3	10:56:05	4.948	105.132%	9.251	1.049	-0.143	0.878	104.468%	0.000	1.924	1.999	9.471	101.184%
x		4.839	105.950%	9.193	1.010	-0.603	0.887	104.077%	0.000	1.905	1.964	9.321	101.593%
σ		0.179	1.084%	0.130	0.061	0.442	0.028	0.646%	0.000	0.045	0.035	0.394	1.612%
%RSD		3.695	1.023	1.414	6.001	73.320	3.187	0.621	0.000	2.364	1.803	4.223	1.587

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	10:55:21	1.791	1.857	1.043	100.997%	0.000	6.766	0.941
2	10:55:43	1.874	1.918	1.025	101.080%	0.000	5.710	0.944
3	10:56:05	1.850	1.854	1.068	101.583%	0.000	4.854	0.963
x		1.838	1.876	1.045	101.220%	0.000	5.777	0.950
σ		0.042	0.036	0.021	0.317%	0.000	0.958	0.012
%RSD		2.308	1.910	2.040	0.314	0.000	16.580	1.270

STD2 11/1/2016 11:00:43 AM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	11:01:05	105.302%	5.122	198.600	T 2406.000	924.100	233.100	T 2354.000	2282.000	111.228%	0.000	23.930	19.300
2	11:01:27	101.691%	5.007	206.200	T 2369.000	919.600	232.200	T 2346.000	2276.000	110.612%	0.000	23.680	19.670
3	11:01:48	102.766%	5.020	191.600	T 2450.000	944.500	240.400	T 2408.000	2348.000	106.547%	0.000	24.290	20.080
x		103.253%	5.050	198.800	T 2408.000	929.400	235.200	T 2369.000	2302.000	109.462%	0.000	23.970	19.680
σ		1.854%	0.063	7.267	T 40.510	13.240	4.513	T 33.810	39.880	2.543%	0.000	0.305	0.389
%RSD		1.796	1.254	3.655	T 1.682	1.425	1.919	T 1.427	1.733	2.324	0.000	1.273	1.977
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	11:01:05	6.734	9.354	T 946.300	4.923	10.430	26.880	103.700	10.500	0.156	20.480	0.000	0.000
2	11:01:27	6.391	9.596	T 956.000	4.806	9.720	28.890	101.700	9.766	0.222	18.900	0.000	0.000
3	11:01:48	7.227	9.883	T 993.700	4.836	10.180	26.220	102.900	9.768	0.255	16.840	0.000	0.000
x		6.784	9.611	T 965.300	4.855	10.110	27.330	102.800	10.010	0.211	18.740	0.000	0.000
σ		0.420	0.265	T 25.000	0.061	0.363	1.388	1.007	0.422	0.050	1.823	0.000	0.000
%RSD		6.194	2.755	T 2.590	1.251	3.586	5.078	0.980	4.213	23.950	9.728	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	11:01:05	24.850	107.005%	44.600	5.108	-2.214	4.647	103.972%	0.000	9.497	9.961	47.450	102.828%
2	11:01:27	24.490	106.383%	45.880	5.090	-0.436	4.767	103.731%	0.000	9.653	9.956	47.050	100.249%
3	11:01:48	24.280	105.016%	46.830	5.151	0.275	4.431	103.690%	0.000	9.798	9.980	47.740	102.413%
x		24.540	106.134%	45.770	5.116	-0.792	4.615	103.798%	0.000	9.649	9.965	47.410	101.830%
σ		0.290	1.018%	1.119	0.031	1.282	0.170	0.152%	0.000	0.150	0.012	0.347	1.385%
%RSD		1.180	0.959	2.445	0.609	162.000	3.693	0.147	0.000	1.559	0.125	0.732	1.360

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:01:05	9.106	9.528	4.754	98.976%	0.000	7.568	5.057
2	11:01:27	9.223	9.674	4.748	98.724%	0.000	7.744	4.938
3	11:01:48	9.088	9.727	4.880	98.678%	0.000	8.031	5.011
x		9.139	9.643	4.794	98.792%	0.000	7.781	5.002
σ		0.073	0.103	0.074	0.160%	0.000	0.234	0.060
%RSD		0.799	1.067	1.550	0.162	0.000	3.001	1.195

STD3 11/1/2016 11:06:27 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:06:49	98.850%	619.900	241.300	┬9791.000	┬28480.000	┬28790.000	┬9485.000	┬27170.000	97.450%	0.000	┬1166.000	382.400
2	11:07:10	95.233%	618.800	251.700	┬9572.000	┬27910.000	┬28010.000	┬9219.000	27030.000	98.317%	0.000	┬1158.000	377.900
3	11:07:32	96.332%	604.700	240.200	┬9937.000	┬28710.000	┬29330.000	┬9735.000	┬27700.000	94.330%	0.000	┬1178.000	384.200
x		96.805%	614.500	244.400	┬9766.000	┬28360.000	┬28710.000	┬9480.000	┬27300.000	96.699%	0.000	┬1167.000	381.500
σ		1.854%	8.496	6.326	┬183.700	┬411.600	┬662.400	┬257.800	┬356.900	2.097%	0.000	┬10.150	3.280
%RSD		1.916	1.383	2.588	┬1.881	┬1.451	┬2.307	┬2.720	┬1.307	2.168	0.000	┬0.870	0.860

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:06:49	16.900	┬1168.000	┬28250.000	476.700	1211.000	1242.000	1245.000	190.300	-0.600	199.500	0.000	0.000
2	11:07:10	14.470	┬1136.000	┬27900.000	470.500	1201.000	1249.000	1252.000	192.600	-0.555	200.400	0.000	0.000
3	11:07:32	14.190	┬1169.000	┬28670.000	487.000	1219.000	1230.000	1242.000	195.500	-0.640	202.400	0.000	0.000
x		15.190	┬1158.000	┬28270.000	478.100	1210.000	1240.000	1247.000	192.800	-0.598	200.700	0.000	0.000
σ		1.492	┬18.420	┬382.600	8.329	8.776	9.925	5.079	2.593	0.043	1.475	0.000	0.000
%RSD		9.826	┬1.592	┬1.353	1.742	0.725	0.800	0.407	1.345	7.140	0.735	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:06:49	193.500	98.911%	┬1094.000	97.510	4.819	190.100	95.718%	0.000	243.400	251.500	1178.000	93.608%
2	11:07:10	194.100	96.418%	1135.000	97.880	7.198	189.700	94.989%	0.000	244.400	253.500	1192.000	94.052%
3	11:07:32	192.600	94.605%	1145.000	97.000	3.869	191.600	94.790%	0.000	241.900	253.100	1200.000	95.635%
x		193.400	96.645%	┬1125.000	97.470	5.295	190.400	95.166%	0.000	243.200	252.700	1190.000	94.432%
σ		0.745	2.162%	┬27.030	0.440	1.715	1.000	0.488%	0.000	1.265	1.040	11.110	1.066%
%RSD		0.385	2.237	┬2.404	0.451	32.390	0.525	0.513	0.000	0.520	0.412	0.933	1.128

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:06:49	22.500	192.700	┬1164.000	94.841%	0.000	16.390	9.015
2	11:07:10	22.580	185.900	┬1120.000	98.035%	0.000	16.880	8.753
3	11:07:32	23.140	190.400	┬1161.000	95.214%	0.000	17.710	9.182

x	22.740	189.700	┬1149.000	96.030%	0.000	16.990	8.983
σ	0.348	3.441	┬24.400	1.746%	0.000	0.665	0.217
%RSD	1.529	1.814	┬2.124	1.819	0.000	3.914	2.411

STD4 11/1/2016 11:12:11 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:12:32	96.427%	1878.000	746.900	┬31510.000	┬92290.000	┬94070.000	┬31290.000	┬91050.000	92.678%	0.000	┬3810.000	┬1229.000
2	11:12:54	94.618%	1911.000	771.900	┬31470.000	┬92560.000	┬93210.000	┬30800.000	┬90960.000	92.671%	0.000	┬3828.000	┬1233.000
3	11:13:16	93.880%	1861.000	753.000	┬30690.000	┬90210.000	┬91550.000	┬30550.000	┬91610.000	92.730%	0.000	┬3782.000	┬1214.000
x		94.975%	1883.000	757.300	┬31220.000	┬91690.000	┬92940.000	┬30880.000	┬91210.000	92.693%	0.000	┬3807.000	┬1225.000
σ		1.310%	25.150	13.070	┬459.000	┬1290.000	┬1279.000	┬375.800	┬350.200	0.032%	0.000	┬23.190	┬10.180
%RSD		1.380	1.336	1.726	┬1.470	┬1.407	┬1.376	┬1.217	┬0.384	0.035	0.000	┬0.609	┬0.831

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:12:32	42.000	┬3805.000	┬90940.000	┬1503.000	3815.000	┬3725.000	3757.000	609.200	-2.196	603.100	0.000	0.000
2	11:12:54	39.250	┬3824.000	┬92050.000	┬1521.000	┬3834.000	┬3799.000	3813.000	597.800	-2.166	597.500	0.000	0.000
3	11:13:16	40.850	┬3746.000	┬90500.000	┬1498.000	3771.000	┬3756.000	3731.000	602.200	-2.259	600.000	0.000	0.000
x		40.700	┬3792.000	┬91160.000	┬1507.000	┬3807.000	┬3760.000	3767.000	603.100	-2.207	600.200	0.000	0.000
σ		1.383	┬40.560	┬800.200	┬12.370	┬32.060	┬37.390	41.740	5.751	0.048	2.779	0.000	0.000
%RSD		3.397	┬1.070	┬0.878	┬0.821	┬0.842	┬0.994	1.108	0.954	2.155	0.463	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:12:32	┬609.000	91.881%	┬3695.000	302.800	9.729	600.900	92.858%	┬0.000	779.900	817.000	┬3803.000	92.538%
2	11:12:54	┬610.000	92.479%	┬3690.000	305.500	23.120	600.300	92.279%	┬0.000	791.700	830.900	┬3860.000	93.645%
3	11:13:16	┬607.100	91.672%	┬3712.000	304.400	35.960	600.200	92.113%	┬0.000	793.100	828.300	┬3805.000	91.370%
x		┬608.700	92.011%	┬3699.000	304.200	22.940	600.500	92.417%	┬0.000	788.200	825.400	┬3823.000	92.518%
σ		┬1.459	0.419%	┬11.170	1.388	13.120	0.380	0.391%	┬0.000	7.288	7.410	┬32.230	1.138%
%RSD		┬0.240	0.455	┬0.302	0.456	57.190	0.063	0.423	┬0.000	0.925	0.898	┬0.843	1.230

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:12:32	73.130	┬615.400	┬3755.000	93.994%	0.000	62.820	30.370
2	11:12:54	73.510	┬627.100	┬3821.000	93.007%	0.000	64.220	30.770
3	11:13:16	75.650	┬629.100	┬3803.000	93.100%	0.000	64.350	30.760
x		74.090	┬623.900	┬3793.000	93.367%	0.000	63.800	30.630
σ		1.362	┬7.399	┬33.920	0.545%	0.000	0.848	0.229
%RSD		1.838	┬1.186	┬0.894	0.584	0.000	1.329	0.748

STD5 11/1/2016 11:17:53 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:14	93.034%	3110.000	M 1251.000	TM 53200.000	TM 155400.000	TM 157500.000	TM 52200.000	TM 154400.000	90.019%	0.000	TM 6438.000	TM 2040.000
2	11:18:36	91.096%	M 3156.000	M 1283.000	TM 52110.000	TM 155300.000	TM 154400.000	TM 51600.000	TM 154000.000	89.715%	0.000	TM 6513.000	TM 2067.000
3	11:18:58	91.631%	3030.000	1242.000	TM 51490.000	TM 153500.000	TM 154200.000	TM 51630.000	TM 155400.000	89.322%	0.000	TM 6455.000	TM 2070.000
x		91.920%	M 3099.000	M 1259.000	TM 52270.000	TM 154700.000	TM 155300.000	TM 51810.000	TM 154600.000	89.685%	0.000	TM 6469.000	TM 2059.000
σ		1.001%	M 63.720	M 21.240	TM 865.600	TM 1037.000	TM 1844.000	TM 340.600	TM 721.600	0.349%	0.000	TM 39.350	TM 16.810
%RSD		1.089	M 2.056	M 1.687	TM 1.656	TM 0.670	TM 1.187	TM 0.657	TM 0.467	0.389	0.000	TM 0.608	TM 0.816

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:14	69.910	TM 6335.000	TM 151400.000	TM 2511.000	TM 6266.000	TM 6322.000	T 6224.000	M 1005.000	-3.299	983.400	0.000	0.000
2	11:18:36	79.700	TM 6336.000	TM 153300.000	TM 2541.000	TM 6318.000	T 6188.000	T 6057.000	M 1018.000	-3.562	963.000	0.000	0.000
3	11:18:58	78.780	TM 6427.000	TM 153700.000	TM 2537.000	TM 6298.000	T 6167.000	T 6047.000	M 1004.000	-3.628	941.600	0.000	0.000
x		76.130	TM 6366.000	TM 152800.000	TM 2530.000	TM 6294.000	TM 6226.000	T 6109.000	M 1009.000	-3.496	962.700	0.000	0.000
σ		5.410	TM 52.880	TM 1249.000	TM 16.490	TM 26.100	TM 84.390	T 99.120	M 7.706	0.174	20.920	0.000	0.000
%RSD		7.106	TM 0.831	TM 0.817	TM 0.652	TM 0.415	TM 1.356	T 1.623	M 0.764	4.977	2.173	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:14	TM 1053.000	88.850%	TM 6369.000	M 520.200	38.640	M 1014.000	88.478%	T 0.000	TM 1343.000	M 1439.000	TM 6638.000	90.420%
2	11:18:36	TM 1029.000	87.387%	TM 6376.000	M 506.100	5.442	M 1013.000	89.605%	T 0.000	TM 1335.000	TM 1403.000	TM 6576.000	89.938%
3	11:18:58	TM 1015.000	87.660%	TM 6404.000	M 501.800	44.420	M 1001.000	90.221%	T 0.000	TM 1320.000	M 1423.000	TM 6568.000	91.890%
x		TM 1032.000	87.965%	TM 6383.000	M 509.300	29.500	M 1009.000	89.435%	T 0.000	TM 1333.000	TM 1422.000	TM 6594.000	90.749%
σ		TM 19.010	0.778%	TM 18.630	M 9.649	21.040	M 7.496	0.884%	T 0.000	TM 11.600	TM 18.170	TM 38.360	1.016%
%RSD		TM 1.841	0.884	TM 0.292	M 1.894	71.300	M 0.743	0.988	T 0.000	TM 0.870	TM 1.278	TM 0.582	1.120

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:18:14	M 151.300	TM 1076.000	TM 6412.000	91.844%	0.000	M 130.200	M 63.300
2	11:18:36	M 155.500	TM 1070.000	TM 6428.000	91.769%	0.000	M 131.000	M 63.480
3	11:18:58	M 152.700	TM 1096.000	TM 6581.000	89.768%	0.000	M 135.000	M 65.290
x		M 153.200	TM 1080.000	TM 6474.000	91.127%	0.000	M 132.100	M 64.020
σ		M 2.123	TM 13.490	TM 93.490	1.177%	0.000	M 2.577	M 1.102
%RSD		M 1.386	TM 1.249	TM 1.444	1.292	0.000	M 1.952	M 1.721

ICV 11/1/2016 11:23:36 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:23:58	95.462%	314.700	136.200	T 5434.000	T 15250.000	T 15590.000	T 4936.000	14680.000	89.352%	0.000	622.500	200.500
2	11:24:20	90.124%	327.500	141.300	T 5489.000	T 15470.000	T 15990.000	T 5043.000	14540.000	87.093%	0.000	638.000	206.000
3	11:24:42	89.775%	323.700	141.700	T 5433.000	T 15220.000	T 15650.000	T 5033.000	14780.000	87.723%	0.000	630.500	203.500
x		91.787%	103.031%	111.783%	T 109.035%	T 102.065%	T 104.946%	T 100.078%	97.772%	88.056%	0.000	100.849%	101.671%
σ		3.187%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	1.166%	0.000	n/a	n/a
%RSD		3.472	2.056	2.183	T 0.588	T 0.900	T 1.389	T 1.184	0.800	1.324	0.000	1.230	1.363

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:23:58	12.450	T 608.500	T 14930.000	252.900	646.400	670.700	662.500	100.900	-0.091	105.200	0.000	0.000
2	11:24:20	9.809	T 620.700	T 15310.000	261.000	664.300	657.100	663.800	103.900	-0.249	104.100	0.000	0.000
3	11:24:42	9.546	T 613.200	T 15080.000	261.200	659.100	657.800	659.800	101.800	-0.203	105.300	0.000	0.000
x		10.600	T 98.259%	T 100.711%	103.342%	105.059%	105.896%	105.927%	102.208%	-0.181	104.871%	0.000	0.000
σ		1.605	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.081	n/a	0.000	0.000
%RSD		15.140	T 1.005	T 1.282	1.823	1.400	1.154	0.309	1.515	44.910	0.677	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:23:58	102.200	90.180%	288.800	51.190	5.779	101.000	87.539%	0.000	132.900	137.600	635.500	87.460%
2	11:24:20	99.950	88.803%	293.900	50.530	0.576	100.600	88.455%	0.000	131.500	136.000	638.800	87.648%
3	11:24:42	100.700	88.751%	291.200	50.330	1.048	101.600	87.581%	0.000	131.200	137.200	642.300	90.518%
x		100.900	89.245%	93.219%	101.368%	2.468	101.062%	87.858%	0.000	131.900	109.553%	102.220%	88.542%
σ		1.117	0.810%	n/a	n/a	2.878	n/a	0.517%	0.000	0.865	n/a	n/a	1.714%
%RSD		1.106	0.908	0.878	0.880	116.600	0.532	0.589	0.000	0.656	0.616	0.536	1.936

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:23:58	25.720	103.200	T 627.800	87.665%	0.000	17.660	9.776
2	11:24:20	25.920	102.500	T 622.600	88.688%	0.000	18.160	9.666
3	11:24:42	25.220	101.300	T 609.000	90.029%	0.000	17.920	9.529
x		128.090%	102.329%	T 99.167%	88.794%	0.000	89.575%	96.570%
σ		n/a	n/a	T n/a	1.185%	0.000	n/a	n/a
%RSD		1.411	0.914	T 1.567	1.335	0.000	1.389	1.278

ICVL 11/1/2016 11:29:20 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:29:42	100.998%	1.144	46.610	542.100	209.100	58.990	498.900	495.100	89.989%	0.000	5.402	4.172
2	11:30:04	94.752%	0.955	49.580	519.500	210.100	62.670	491.100	478.600	92.634%	0.000	5.728	4.166
3	11:30:26	97.355%	1.379	48.330	518.900	206.900	65.960	490.800	476.400	91.071%	0.000	5.674	4.185
x		97.702%	115.949%	120.435%	105.365%	104.356%	125.079%	98.724%	96.670%	91.231%	0.000	112.024%	104.359%
σ		3.138%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.330%	0.000	n/a	n/a
%RSD		3.211	18.340	3.091	2.514	0.787	5.577	0.928	2.117	1.457	0.000	3.118	0.231

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:29:42	6.838	2.503	215.700	1.108	2.230	5.580	19.990	2.140	0.267	4.230	0.000	0.000
2	11:30:04	6.470	2.520	211.900	1.224	2.545	5.594	19.970	1.576	0.321	3.438	0.000	0.000
3	11:30:26	6.929	2.628	221.100	1.402	2.474	5.691	20.390	2.258	0.240	4.495	0.000	0.000
x		6.746	127.509%	108.109%	124.501%	120.808%	112.434%	100.590%	99.561%	0.276	101.357%	0.000	0.000
σ		0.243	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.041	n/a	0.000	0.000
%RSD		3.605	2.653	2.140	11.900	6.851	1.071	1.167	18.310	15.020	13.560	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:29:42	4.917	93.914%	10.510	1.003	-0.466	1.083	92.865%	0.000	2.374	2.462	9.728	90.300%
2	11:30:04	4.842	94.332%	10.800	1.013	-0.682	0.877	92.298%	0.000	2.510	2.608	10.420	90.835%

3	11:30:26	5.081	94.977%	11.020	1.027	-1.133	1.197	91.896%	0.000	2.461	2.631	10.460	91.400%
x		98.936%	94.408%	107.751%	101.421%	-0.760	105.228%	92.353%	0.000	2.448	128.347%	102.013%	90.845%
σ		n/a	0.536%	n/a	n/a	0.340	n/a	0.487%	0.000	0.069	n/a	n/a	0.550%
%RSD		2.475	0.567	2.380	1.206	44.770	15.390	0.527	0.000	2.823	3.580	4.020	0.606

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:29:42	1.957	2.142	1.306	90.773%	0.000	1.365	0.983
2	11:30:04	2.053	2.155	1.446	91.955%	0.000	1.181	1.001
3	11:30:26	1.960	2.226	1.523	91.099%	0.000	1.080	0.970
x		99.503%	108.728%	142.513%	91.276%	0.000	60.436%	98.470%
σ		n/a	n/a	n/a	0.611%	0.000	n/a	n/a
%RSD		2.751	2.083	7.695	0.669	0.000	11.980	1.611

ICBIS 11/1/2016 11:35:03 AM QC Status: WARNING (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:25	92.367%	-0.025	6.383	6.950	0.486	0.122	0.467	1.816	90.833%	0.000	1.003	-0.025
2	11:35:47	91.881%	-0.025	6.599	7.961	0.672	0.412	0.599	0.762	89.308%	0.000	0.241	-0.049
3	11:36:09	94.631%	-0.008	5.140	7.266	0.338	0.869	1.512	-0.292	89.789%	0.000	0.488	-0.027
x		92.960%	-0.019	6.040	7.392	0.498	0.467	0.859	0.762	89.977%	0.000	0.577	-0.034
σ		1.467%	0.010	0.787	0.517	0.167	0.377	0.569	1.054	0.780%	0.000	0.389	0.014
%RSD		1.579	51.890	13.040	6.997	33.590	80.590	66.250	138.400	0.867	0.000	67.350	40.120

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:25	4.611	-0.001	0.896	-0.014	-0.014	-0.180	-0.035	0.075	0.222	-0.169	0.000	0.000
2	11:35:47	5.610	-0.023	1.353	-0.007	-0.013	-0.045	-0.210	-0.264	0.267	-0.534	0.000	0.000
3	11:36:09	5.157	0.032	0.623	0.001	-0.004	-0.188	0.131	0.585	0.181	1.814	0.000	0.000
x		5.126	0.002	0.957	-0.007	-0.010	-0.137	-0.038	0.132	0.224	0.370	0.000	0.000
σ		0.500	0.028	0.369	0.007	0.006	0.080	0.171	0.427	0.043	1.263	0.000	0.000
%RSD		9.756	1121.000	38.520	112.700	56.500	58.400	452.400	323.700	19.280	341.400	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:25	-0.001	94.361%	0.356	-0.003	-0.931	0.024	91.894%	0.000	0.164	0.146	0.005	87.791%
2	11:35:47	0.005	93.618%	0.389	-0.005	-1.068	0.054	91.538%	0.000	0.180	0.166	0.015	89.042%
3	11:36:09	0.012	92.061%	0.421	0.002	-0.639	-0.004	92.025%	0.000	0.198	0.196	0.024	89.931%
x		0.005	93.347%	0.389	-0.002	-0.879	0.024	91.819%	0.000	0.180	0.169	0.015	88.921%
σ		0.006	1.174%	0.032	0.004	0.219	0.029	0.252%	0.000	0.017	0.025	0.009	1.075%
%RSD		113.200	1.257	8.334	173.100	24.890	119.400	0.275	0.000	9.595	14.980	64.790	1.209

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:35:25	0.056	0.113	0.020	88.707%	0.000	-1.651	-0.012
2	11:35:47	0.035	0.110	0.014	90.447%	0.000	-1.634	-0.011
3	11:36:09	0.054	0.096	0.030	90.857%	0.000	-1.659	-0.009
x		0.048	0.106	0.022	90.004%	0.000	-1.648	-0.011
σ		0.012	0.009	0.008	1.142%	0.000	0.013	0.001

%RSD	24.160	8.810	37.420	1.268	0.000	0.759	10.020	

ICSA 11/1/2016 11:40:46 AM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:07	98.893%	0.042	6.988	TM 96510.000	T 94080.000	T 93060.000	TM 93230.000	T 91380.000	106.844%	0.000	0.778	1.512
2	11:41:29	97.344%	-0.009	5.690	TM 94460.000	T 92290.000	T 91390.000	TM 93950.000	T 93030.000	106.873%	0.000	0.929	1.562
3	11:41:51	94.808%	0.010	6.136	TM 92820.000	T 91350.000	T 91490.000	TM 93940.000	T 92890.000	107.244%	0.000	0.541	1.565
x		97.015%	1.#IO%	1.#IO%	TM 94.596%	T 92.575%	T 91.978%	TM 93.709%	T 92.434%	106.987%	0.000	1.#IO%	1.#IO%
σ		2.062%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.223%	0.000	n/a	n/a
%RSD		2.126	177.900	10.510	TM 1.952	T 1.498	T 1.018	TM 0.438	T 0.989	0.209	0.000	26.080	1.924

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:07	2.490	0.263	T 92400.000	0.053	0.361	1.000	-0.580	-0.026	0.318	-0.076	0.000	0.000
2	11:41:29	2.203	0.253	T 93140.000	0.062	0.493	1.003	-0.629	0.251	0.281	1.045	0.000	0.000
3	11:41:51	2.728	0.306	T 92560.000	0.044	0.352	1.011	-0.795	-0.171	0.337	-1.039	0.000	0.000
x		2.474	1.#IO%	T 92.698%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	1.#IO%	0.312	-1.#IO%	0.000	0.000
σ		0.263	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.028	n/a	0.000	0.000
%RSD		10.640	10.100	T 0.418	16.810	19.660	0.565	16.940	1206.000	9.052	4440.000	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:07	0.690	105.196%	T 1724.000	0.088	5.759	0.244	103.249%	0.000	0.196	0.202	0.231	103.785%
2	11:41:29	0.701	105.469%	T 1764.000	0.079	6.937	0.088	105.019%	0.000	0.201	0.217	0.094	105.686%
3	11:41:51	0.665	104.498%	T 1789.000	0.085	5.846	0.147	104.455%	0.000	0.217	0.236	0.261	106.365%
x		1.#IO%	105.055%	T 87.960%	1.#IO%	6.181	1.#IO%	104.241%	0.000	0.205	1.#IO%	1.#IO%	105.279%
σ		n/a	0.501%	T n/a	n/a	0.656	n/a	0.904%	0.000	0.011	n/a	n/a	1.337%
%RSD		2.720	0.477	T 1.881	5.568	10.620	49.510	0.868	0.000	5.414	7.918	45.620	1.270

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:41:07	0.275	0.104	0.266	97.811%	0.000	-0.197	-0.010
2	11:41:29	0.323	0.087	0.258	99.302%	0.000	-0.484	-0.010
3	11:41:51	0.346	0.098	0.262	99.506%	0.000	-0.674	-0.007
x		1.#IO%	1.#IO%	1.#IO%	98.873%	0.000	-1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	0.925%	0.000	n/a	n/a
%RSD		11.470	9.274	1.509	0.936	0.000	53.210	16.940

ICSAB 11/1/2016 11:46:28 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:46:50	91.866%	24.080	426.400	TM 96880.000	T 93520.000	T 91500.000	TM 94040.000	T 93630.000	101.735%	0.000	23.180	48.610
2	11:47:12	90.999%	26.080	435.100	TM 97140.000	T 94410.000	T 93400.000	TM 95050.000	T 95510.000	100.978%	0.000	24.770	50.060
3	11:47:33	88.916%	25.080	439.000	TM 94140.000	T 91230.000	T 90910.000	TM 92070.000	T 93840.000	102.142%	0.000	23.960	49.740
x		90.593%	100.318%	108.376%	TM 96.054%	T 93.051%	T 91.937%	TM 93.721%	T 94.328%	101.618%	0.000	95.885%	98.942%
σ		1.516%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.591%	0.000	n/a	n/a
%RSD		1.674	3.975	1.489	TM 1.732	T 1.761	T 1.414	TM 1.620	T 1.093	0.581	0.000	3.310	1.546
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:46:50	4.793	24.090	T 92830.000	23.150	23.150	48.210	46.760	44.980	-0.190	114.400	0.000	0.000
2	11:47:12	4.001	25.120	T 95350.000	23.670	23.690	47.000	45.770	42.740	-0.049	111.000	0.000	0.000
3	11:47:33	3.389	24.180	T 92950.000	23.500	23.200	46.480	45.950	42.990	-0.066	112.800	0.000	0.000
x		4.061	97.844%	T 93.707%	93.771%	93.382%	94.457%	92.317%	96.828%	-0.102	90.200%	0.000	0.000
σ		0.704	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.077	n/a	0.000	0.000
%RSD		17.330	2.333	T 1.517	1.132	1.284	1.878	1.146	2.819	75.820	1.536	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:46:50	0.672	101.004%	T 1784.000	23.950	7.373	22.020	100.253%	0.000	48.750	51.060	244.800	101.289%
2	11:47:12	0.725	101.847%	T 1789.000	23.360	7.236	22.350	101.713%	0.000	49.090	51.220	249.900	105.045%
3	11:47:33	0.730	101.597%	T 1785.000	23.580	8.620	22.340	100.809%	0.000	49.540	52.110	252.700	105.136%
x		0.709	101.482%	T 89.294%	94.526%	7.743	88.957%	100.925%	0.000	49.120	102.926%	99.654%	103.823%
σ		0.032	0.433%	T n/a	n/a	0.763	n/a	0.737%	0.000	0.396	n/a	n/a	2.195%
%RSD		4.502	0.427	T 0.167	1.249	9.849	0.845	0.730	0.000	0.806	1.094	1.606	2.114
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	11:46:50	23.000	24.460	24.140	97.811%	0.000	16.740	10.380					
2	11:47:12	22.570	24.530	24.290	98.985%	0.000	17.680	10.590					
3	11:47:33	22.750	24.850	24.270	99.665%	0.000	17.800	10.450					
x		113.860%	98.447%	96.919%	98.820%	0.000	87.041%	104.751%					
σ		n/a	n/a	n/a	0.937%	0.000	n/a	n/a					
%RSD		0.955	0.843	0.341	0.949	0.000	3.336	1.022					

CCV 11/1/2016 11:52:12 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:52:34	81.491%	624.100	255.200	T 10510.000	T 30260.000	T 30330.000	T 9578.000	28580.000	76.116%	0.000	T 1207.000	395.900
2	11:52:56	79.844%	629.300	251.900	T 10250.000	T 29300.000	T 29100.000	T 9396.000	27830.000	78.018%	0.000	T 1168.000	385.100
3	11:53:17	79.870%	616.900	247.400	T 10630.000	T 30780.000	T 30440.000	T 9775.000	29170.000	73.623%	0.000	T 1201.000	394.000
x		80.402%	99.749%	100.602%	T 104.629%	T 100.372%	T 99.861%	T 95.831%	95.082%	75.919%	0.000	T 95.352%	97.916%
σ		0.944%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	2.204%	0.000	T n/a	n/a
%RSD		1.174	0.998	1.564	T 1.857	T 2.507	T 2.474	T 1.978	2.342	2.903	0.000	T 1.737	1.465
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:52:34	13.010	T 1186.000	T 29370.000	496.200	1261.000	1176.000	1214.000	191.300	-0.543	201.200	0.000	0.000
2	11:52:56	11.260	T 1151.000	T 28270.000	482.900	1215.000	1163.000	1188.000	192.200	-0.623	198.900	0.000	0.000
3	11:53:17	14.900	T 1194.000	T 29490.000	501.200	1267.000	1158.000	1197.000	192.100	-0.593	200.700	0.000	0.000
x		13.060	T 94.174%	T 96.811%	98.687%	99.823%	93.265%	95.951%	95.947%	-0.587	100.127%	0.000	0.000
σ		1.820	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.041	n/a	0.000	0.000
%RSD		13.940	T 1.980	T 2.308	1.924	2.295	0.790	1.100	0.256	6.906	0.604	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:52:34	194.800	82.274%	1133.000	98.150	-7.852	198.400	81.609%	0.000	252.300	265.300	1232.000	87.249%
2	11:52:56	190.700	81.282%	1168.000	97.010	-3.177	194.700	82.318%	0.000	247.700	261.500	1225.000	86.722%
3	11:53:17	192.000	79.559%	1170.000	97.180	11.810	194.900	80.681%	0.000	251.800	264.400	1238.000	82.474%
x		192.500	81.038%	92.577%	97.448%	0.260	97.990%	81.536%	0.000	250.600	105.505%	98.542%	85.482%
σ		2.074	1.374%	n/a	n/a	10.270	n/a	0.821%	0.000	2.504	n/a	n/a	2.618%
%RSD		1.077	1.695	1.780	0.634	3954.000	1.054	1.007	0.000	0.999	0.749	0.512	3.062

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:52:34	22.100	194.700	T 1159.000	87.032%	0.000	15.710	9.470
2	11:52:56	22.550	196.700	T 1171.000	86.418%	0.000	16.770	9.493
3	11:53:17	24.310	193.500	T 1162.000	87.023%	0.000	16.890	9.440
x		114.936%	97.505%	T 93.120%	86.824%	0.000	82.273%	94.678%
σ		n/a	n/a	T n/a	0.352%	0.000	n/a	n/a
%RSD		5.091	0.830	T 0.507	0.405	0.000	3.940	0.281

CCB 11/1/2016 11:57:56 AM QC Status: WARNING (Initial: PASS)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:17	82.527%	0.059	4.963	16.360	1.858	1.707	4.734	4.947	77.004%	0.000	0.612	-0.005
2	11:58:39	81.892%	0.039	4.721	16.880	3.271	3.448	5.111	2.092	77.248%	0.000	0.487	-0.044
3	11:59:01	82.859%	0.018	5.081	20.400	6.987	5.941	5.241	4.381	76.116%	0.000	0.301	0.010
x		82.426%	0.039	4.921	17.880	4.039	3.699	5.029	3.806	76.790%	0.000	0.467	-0.013
σ		0.491%	0.021	0.183	2.199	2.649	2.128	0.263	1.511	0.596%	0.000	0.156	0.028
%RSD		0.596	53.420	3.727	12.300	65.590	57.530	5.237	39.710	0.776	0.000	33.490	217.000

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:17	4.697	0.018	4.749	0.011	0.049	-0.023	-0.026	0.068	0.225	-0.093	0.000	0.000
2	11:58:39	4.985	0.025	5.434	0.023	0.117	0.005	0.082	-0.127	0.241	-0.637	0.000	0.000
3	11:59:01	5.284	0.019	8.089	0.041	-0.008	-0.085	0.064	0.358	0.199	1.121	0.000	0.000
x		4.989	0.021	6.091	0.025	0.053	-0.034	0.040	0.100	0.222	0.130	0.000	0.000
σ		0.293	0.004	1.764	0.015	0.063	0.046	0.058	0.244	0.021	0.900	0.000	0.000
%RSD		5.882	18.940	28.960	59.670	119.100	133.200	144.400	244.300	9.437	691.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:17	0.011	81.607%	1.749	-0.006	-0.881	0.013	83.158%	0.000	0.240	0.252	0.049	82.956%
2	11:58:39	0.004	84.479%	1.602	0.005	-0.443	0.019	82.732%	0.000	0.271	0.293	0.007	84.470%

3	11:59:01	0.007	81.868%	1.557	0.003	-0.366	-0.017	83.387%	0.000	0.254	0.265	0.049	84.334%
x		0.007	82.651%	1.636	0.001	-0.564	0.005	83.093%	0.000	0.255	0.270	0.035	83.920%
σ		0.004	1.588%	0.101	0.006	0.278	0.019	0.332%	0.000	0.016	0.021	0.024	0.837%
%RSD		50.160	1.922	6.144	695.600	49.320	373.900	0.400	0.000	6.113	7.876	68.810	0.998

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	11:58:17	0.067	0.211	0.033	87.106%	0.000	-1.544	-0.008
2	11:58:39	0.055	0.199	0.056	84.808%	0.000	-1.543	-0.010
3	11:59:01	0.048	0.172	0.069	86.343%	0.000	-1.543	-0.009
x		0.057	0.194	0.053	86.086%	0.000	-1.543	-0.009
σ		0.010	0.020	0.018	1.171%	0.000	0.001	0.001
%RSD		16.860	10.470	34.810	1.360	0.000	0.059	8.059

MB 200-110769/1-A 11/1/2016 12:03:38 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:03:59	91.254%	0.160	4.601	124.100	56.770	63.680	52.190	55.600	84.065%	0.000	0.624	0.777
2	12:04:21	89.555%	0.032	5.386	95.520	33.490	36.370	37.780	36.600	84.961%	0.000	0.662	0.637
3	12:04:43	89.498%	0.051	3.786	93.350	18.180	22.210	29.830	24.070	83.680%	0.000	0.691	0.646
x		90.102%	0.081	4.591	104.300	36.150	40.750	39.930	38.760	84.235%	0.000	0.659	0.687
σ		0.998%	0.069	0.800	17.150	19.430	21.080	11.330	15.880	0.657%	0.000	0.034	0.078
%RSD		1.108	85.380	17.420	16.440	53.750	51.730	28.380	40.970	0.780	0.000	5.145	11.410

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:03:59	4.857	0.574	72.420	0.157	0.366	0.295	1.169	0.373	0.209	0.992	0.000	0.000
2	12:04:21	4.671	0.460	43.800	0.133	0.268	0.240	1.097	0.639	0.156	1.578	0.000	0.000
3	12:04:43	4.591	0.346	28.600	0.124	0.273	0.165	1.080	0.302	0.197	-0.242	0.000	0.000
x		4.706	0.460	48.270	0.138	0.303	0.234	1.115	0.438	0.187	0.776	0.000	0.000
σ		0.136	0.114	22.250	0.017	0.055	0.066	0.048	0.178	0.028	0.929	0.000	0.000
%RSD		2.897	24.710	46.090	12.360	18.200	28.070	4.262	40.610	14.890	119.700	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:03:59	0.055	88.484%	1.944	0.023	-0.591	0.041	89.287%	0.000	0.181	0.171	0.405	86.255%
2	12:04:21	0.043	90.180%	1.540	0.009	-0.454	0.010	89.159%	0.000	0.169	0.170	0.201	87.475%
3	12:04:43	0.025	88.525%	1.176	0.009	-0.341	0.029	89.518%	0.000	0.177	0.169	0.268	89.946%
x		0.041	89.063%	1.553	0.014	-0.462	0.027	89.321%	0.000	0.176	0.170	0.291	87.892%
σ		0.015	0.967%	0.384	0.008	0.125	0.016	0.182%	0.000	0.006	0.001	0.104	1.880%
%RSD		36.910	1.086	24.710	57.830	27.010	58.130	0.204	0.000	3.606	0.505	35.750	2.140

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:03:59	0.150	0.124	0.246	85.562%	0.000	0.603	-0.000
2	12:04:21	0.114	0.115	0.155	88.167%	0.000	0.122	-0.006
3	12:04:43	0.103	0.089	0.095	90.717%	0.000	-0.299	-0.008
x		0.122	0.109	0.165	88.149%	0.000	0.142	-0.005
σ		0.024	0.018	0.076	2.578%	0.000	0.452	0.004

%RSD		19.950	16.750	46.120	2.924	0.000	318.200	82.920

LCS 200-110769/2-A 11/1/2016 12:09:20 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:09:41	92.606%	9.826	408.400	T 5431.000	2083.000	523.300	T 4960.000	4717.000	88.352%	0.000	47.630	41.400
2	12:10:03	90.110%	9.293	420.500	T 5550.000	2100.000	525.500	T 4921.000	4829.000	87.826%	0.000	49.260	41.490
3	12:10:25	90.735%	10.100	415.300	T 5515.000	2097.000	532.500	T 5144.000	4890.000	85.783%	0.000	50.610	42.000
x		91.151%	9.741	414.700	T 5499.000	2093.000	527.100	T 5008.000	4812.000	87.320%	0.000	49.170	41.630
σ		1.299%	0.412	6.056	T 61.620	8.736	4.830	T 118.800	88.020	1.357%	0.000	1.495	0.322
%RSD		1.425	4.230	1.460	T 1.121	0.417	0.916	T 2.373	1.829	1.555	0.000	3.040	0.774

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:09:41	5.119	20.720	T 1987.000	9.988	20.540	50.170	176.300	17.510	0.089	33.260	0.000	0.000
2	12:10:03	4.461	20.930	T 2029.000	10.470	20.760	50.650	181.800	17.380	0.062	32.650	0.000	0.000
3	12:10:25	4.549	21.200	T 2071.000	10.550	21.760	50.170	177.600	17.860	0.027	32.300	0.000	0.000
x		4.710	20.950	T 2029.000	10.340	21.020	50.330	178.600	17.580	0.059	32.730	0.000	0.000
σ		0.357	0.241	T 42.010	0.306	0.647	0.274	2.917	0.250	0.031	0.487	0.000	0.000
%RSD		7.584	1.149	T 2.071	2.961	3.081	0.545	1.634	1.419	51.830	1.488	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:09:41	50.290	91.986%	96.700	10.300	-0.594	8.840	91.238%	0.000	19.700	20.090	97.120	90.496%
2	12:10:03	51.540	92.717%	97.130	10.630	-1.173	9.635	90.338%	0.000	19.740	20.610	100.300	92.266%
3	12:10:25	50.990	91.236%	97.320	10.490	1.082	9.209	90.494%	0.000	19.800	20.750	102.900	89.644%
x		50.940	91.980%	97.050	10.470	-0.228	9.228	90.690%	0.000	19.750	20.490	100.100	90.802%
σ		0.629	0.741%	0.317	0.166	1.171	0.398	0.481%	0.000	0.051	0.349	2.883	1.338%
%RSD		1.236	0.805	0.327	1.585	513.300	4.311	0.530	0.000	0.258	1.702	2.880	1.473

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:09:41	44.690	19.980	9.907	89.954%	0.000	16.920	10.370
2	12:10:03	44.700	20.450	10.110	90.345%	0.000	17.930	10.590
3	12:10:25	46.780	20.640	10.200	89.545%	0.000	18.400	10.720
x		45.390	20.360	10.070	89.948%	0.000	17.750	10.560
σ		1.207	0.335	0.151	0.400%	0.000	0.757	0.175
%RSD		2.659	1.647	1.496	0.445	0.000	4.266	1.657

200-35700-A-11-A 11/1/2016 12:15:02 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:15:23	102.612%	6.739	42.780	┬564.300	┬15210.000	┬74700.000	┬6556.000	┬15420.000	167.441%	0.000	98.120	92.330
2	12:15:45	99.241%	7.293	44.170	┬538.200	┬15020.000	┬73770.000	┬6448.000	15350.000	171.952%	0.000	99.100	91.460
3	12:16:07	102.649%	6.737	43.350	┬551.200	┬15010.000	┬73320.000	┬6392.000	┬15310.000	174.838%	0.000	98.440	92.560
x		101.501%	6.923	43.430	┬551.200	┬15080.000	┬73930.000	┬6465.000	┬15360.000	171.410%	0.000	98.550	92.120
σ		1.957%	0.320	0.697	┬13.070	┬111.000	┬707.800	┬83.240	┬54.660	3.728%	0.000	0.498	0.577
%RSD		1.928	4.629	1.604	┬2.371	┬0.736	┬0.957	┬1.288	┬0.356	2.175	0.000	0.506	0.627

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:15:23	5.767	┬4764.000	┬105400.000	45.910	117.400	1536.000	896.900	4.593	0.064	13.960	0.000	0.000
2	12:15:45	5.049	┬4689.000	┬103300.000	44.850	116.700	1534.000	886.500	4.615	0.069	11.440	0.000	0.000
3	12:16:07	3.558	┬4710.000	┬103600.000	44.330	115.900	1526.000	886.900	4.627	0.062	13.870	0.000	0.000
x		4.791	┬4721.000	┬104100.000	45.030	116.700	1532.000	890.100	4.612	0.065	13.090	0.000	0.000
σ		1.127	┬38.430	┬1125.000	0.805	0.738	5.282	5.896	0.017	0.003	1.434	0.000	0.000
%RSD		23.520	┬0.814	┬1.081	1.788	0.633	0.345	0.662	0.370	5.274	10.950	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:15:23	126.700	563.776%	0.828	1.965	-6.393	3.608	108.518%	0.000	0.925	1.056	1457.000	165.201%
2	12:15:45	127.300	572.765%	0.773	1.929	-7.123	3.741	111.150%	0.000	0.979	1.075	1459.000	167.353%
3	12:16:07	127.000	581.854%	0.792	1.855	-6.842	3.302	113.149%	0.000	0.958	1.073	1459.000	170.811%
x		127.000	572.799%	0.798	1.917	-6.786	3.550	110.939%	0.000	0.954	1.068	1458.000	167.788%
σ		0.315	9.039%	0.028	0.056	0.368	0.225	2.323%	0.000	0.027	0.010	1.161	2.830%
%RSD		0.248	1.578	3.463	2.925	5.422	6.345	2.094	0.000	2.870	0.967	0.080	1.687

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:15:23	0.424	1.108	173.700	116.428%	0.000	28.000	10.760
2	12:15:45	0.409	1.139	177.000	117.967%	0.000	27.900	10.650
3	12:16:07	0.385	1.085	174.500	120.578%	0.000	27.600	10.670
x		0.406	1.110	175.000	118.324%	0.000	27.830	10.700
σ		0.020	0.027	1.709	2.098%	0.000	0.209	0.059
%RSD		4.823	2.447	0.976	1.773	0.000	0.753	0.548

200-35700-A-12-A 11/1/2016 12:20:44 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:06	101.150%	8.291	35.260	┬677.600	┬16860.000	┬81340.000	┬6477.000	┬16440.000	182.499%	0.000	117.800	99.420
2	12:21:28	98.291%	7.691	37.510	┬663.200	┬16200.000	┬78510.000	┬6240.000	┬16140.000	186.978%	0.000	117.000	98.240
3	12:21:50	100.180%	7.629	37.410	┬648.700	┬16490.000	┬78140.000	┬6329.000	┬16340.000	187.836%	0.000	116.900	97.380
x		99.873%	7.870	36.730	┬663.100	┬16510.000	┬79330.000	┬6348.000	┬16310.000	185.771%	0.000	117.300	98.350
σ		1.454%	0.365	1.270	┬14.470	┬331.300	┬1749.000	┬119.700	┬150.900	2.866%	0.000	0.494	1.024
%RSD		1.456	4.642	3.458	┬2.183	┬2.006	┬2.205	┬1.886	┬0.925	1.543	0.000	0.422	1.042

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:06	5.868	T 6146.000	T 139400.000	55.200	130.500	1293.000	942.800	8.491	0.055	15.230	0.000	0.000
2	12:21:28	6.331	T 6085.000	T 136000.000	53.220	130.100	1298.000	946.800	8.461	0.065	13.190	0.000	0.000
3	12:21:50	5.691	T 6037.000	T 136600.000	53.700	129.900	1305.000	939.900	8.664	0.053	13.880	0.000	0.000
x		5.963	T 6089.000	T 137400.000	54.040	130.200	1299.000	943.100	8.538	0.057	14.100	0.000	0.000
σ		0.330	T 54.870	T 1800.000	1.033	0.290	6.164	3.445	0.110	0.006	1.040	0.000	0.000
%RSD		5.540	T 0.901	T 1.310	1.911	0.223	0.475	0.365	1.283	10.990	7.376	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:06	140.700	627.395%	1.430	1.831	-6.303	3.496	117.037%	0.000	0.852	0.959	1623.000	175.717%
2	12:21:28	139.400	621.176%	1.492	1.815	-4.947	3.142	118.186%	0.000	0.824	0.962	1646.000	178.927%
3	12:21:50	140.300	627.518%	1.439	1.847	-5.391	3.405	118.186%	0.000	0.889	0.944	1651.000	177.212%
x		140.100	625.363%	1.453	1.831	-5.547	3.347	117.803%	0.000	0.855	0.955	1640.000	177.285%
σ		0.657	3.627%	0.033	0.016	0.691	0.184	0.664%	0.000	0.033	0.010	15.220	1.606%
%RSD		0.469	0.580	2.300	0.866	12.460	5.487	0.563	0.000	3.820	1.052	0.928	0.906

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:21:06	0.460	1.122	178.600	122.117%	0.000	26.360	15.270
2	12:21:28	0.425	1.120	177.200	125.195%	0.000	25.880	14.970
3	12:21:50	0.464	1.091	178.400	124.803%	0.000	26.200	15.020
x		0.450	1.111	178.100	124.038%	0.000	26.150	15.090
σ		0.022	0.018	0.773	1.676%	0.000	0.245	0.161
%RSD		4.801	1.587	0.434	1.351	0.000	0.937	1.068

200-35700-A-12-A SD@5 11/1/2016 12:26:27 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:26:49	91.909%	1.831	9.676	202.200	4976.000	T 23760.000	T 1858.000	4770.000	115.495%	0.000	34.800	28.870
2	12:27:10	90.789%	1.650	9.508	205.400	4954.000	T 23580.000	T 1818.000	4737.000	114.924%	0.000	33.970	28.700
3	12:27:32	88.830%	1.706	9.033	196.000	4834.000	T 23580.000	T 1838.000	4700.000	114.011%	0.000	33.950	28.970
x		90.509%	1.729	9.406	201.200	4921.000	T 23640.000	T 1838.000	4736.000	114.810%	0.000	34.240	28.850
σ		1.559%	0.093	0.333	4.789	76.620	T 106.100	T 19.720	35.090	0.749%	0.000	0.483	0.133
%RSD		1.722	5.374	3.544	2.380	1.557	T 0.449	T 1.073	0.741	0.652	0.000	1.411	0.462

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:26:49	5.100	T 1747.000	T 40370.000	16.160	39.500	275.300	215.200	5.724	0.131	4.156	0.000	0.000
2	12:27:10	5.353	T 1738.000	T 40190.000	16.040	39.320	279.600	216.900	5.349	0.153	3.438	0.000	0.000
3	12:27:32	5.092	T 1766.000	T 40330.000	15.760	38.820	271.400	219.600	5.390	0.151	4.423	0.000	0.000
x		5.182	T 1750.000	T 40290.000	15.990	39.210	275.400	217.200	5.488	0.145	4.006	0.000	0.000
σ		0.148	T 14.630	T 93.700	0.207	0.354	4.079	2.195	0.205	0.012	0.509	0.000	0.000
%RSD		2.865	T 0.836	T 0.233	1.296	0.903	1.481	1.011	3.743	8.509	12.720	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:26:49	29.020	200.674%	0.811	0.410	-1.881	0.803	106.121%	0.000	0.220	0.210	342.800	115.074%
2	12:27:10	29.580	203.089%	0.826	0.400	-1.740	0.785	104.688%	0.000	0.225	0.207	342.500	114.206%

3	12:27:32	30.330	202.319%	0.775	0.405	-2.378	0.754	104.780%	0.000	0.192	0.211	343.100	113.655%
x		29.640	202.027%	0.804	0.405	-2.000	0.781	105.196%	0.000	0.212	0.209	342.800	114.311%
σ		0.656	1.233%	0.026	0.005	0.335	0.025	0.802%	0.000	0.018	0.002	0.299	0.715%
%RSD		2.212	0.610	3.276	1.311	16.750	3.190	0.763	0.000	8.244	1.008	0.087	0.626

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:26:49	0.108	0.247	40.030	103.363%	0.000	3.477	3.331
2	12:27:10	0.109	0.247	39.620	105.421%	0.000	3.553	3.345
3	12:27:32	0.114	0.253	40.120	103.176%	0.000	3.723	3.322
x		0.110	0.249	39.930	103.987%	0.000	3.585	3.333
σ		0.004	0.003	0.267	1.246%	0.000	0.126	0.012
%RSD		3.331	1.326	0.668	1.198	0.000	3.511	0.347

200-35700-A-12-A PDS 11/1/2016 12:32:10 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:32	92.983%	17.960	444.500	┬3753.000	┬17180.000	┬77190.000	┬9278.000	┬18590.000	171.803%	0.000	145.700	121.800
2	12:32:54	95.391%	17.440	451.600	┬3920.000	┬17840.000	┬79420.000	┬9444.000	┬19160.000	166.972%	0.000	148.500	124.600
3	12:33:15	94.840%	18.070	441.800	┬3839.000	┬17640.000	┬79050.000	┬9493.000	┬19200.000	166.800%	0.000	148.900	125.900
x		94.405%	17.820	446.000	┬3838.000	┬17550.000	┬78550.000	┬9405.000	┬18980.000	168.525%	0.000	147.700	124.100
σ		1.262%	0.340	5.021	┬83.420	┬338.000	┬1195.000	┬112.400	┬341.800	2.840%	0.000	1.740	2.083
%RSD		1.336	1.906	1.126	┬2.174	┬1.925	┬1.521	┬1.195	┬1.801	1.685	0.000	1.178	1.679

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:32	5.261	┬5846.000	┬133400.000	58.790	138.900	1278.000	1079.000	11.850	0.037	44.670	0.000	0.000
2	12:32:54	5.670	┬6116.000	┬138800.000	60.610	143.000	1281.000	1076.000	11.710	0.039	44.620	0.000	0.000
3	12:33:15	7.133	┬6066.000	┬137800.000	60.330	142.700	1262.000	1061.000	11.620	0.047	45.040	0.000	0.000
x		6.021	┬6009.000	┬136700.000	59.910	141.500	1274.000	1072.000	11.730	0.041	44.780	0.000	0.000
σ		0.984	┬143.500	┬2857.000	0.978	2.288	9.997	9.612	0.119	0.005	0.229	0.000	0.000
%RSD		16.350	┬2.387	┬2.090	1.632	1.617	0.785	0.896	1.011	12.160	0.512	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:32	183.600	568.953%	19.650	11.620	-3.546	11.920	111.251%	0.000	18.690	20.550	1687.000	164.602%
2	12:32:54	183.500	572.686%	19.400	11.370	-4.743	12.280	110.747%	0.000	18.610	20.780	1696.000	166.451%
3	12:33:15	182.000	573.083%	19.360	11.470	-4.451	11.970	111.496%	0.000	18.690	20.600	1679.000	166.376%
x		183.000	571.574%	19.470	11.490	-4.247	12.060	111.164%	0.000	18.660	20.640	1687.000	165.810%
σ		0.905	2.279%	0.157	0.128	0.624	0.195	0.382%	0.000	0.048	0.125	8.526	1.047%
%RSD		0.494	0.399	0.808	1.115	14.700	1.618	0.344	0.000	0.257	0.607	0.505	0.631

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:32:32	12.410	18.460	179.400	118.843%	0.000	42.180	23.330
2	12:32:54	12.620	18.540	181.800	119.076%	0.000	42.580	23.620
3	12:33:15	12.660	18.830	180.500	119.477%	0.000	42.430	23.850
x		12.560	18.610	180.600	119.132%	0.000	42.400	23.600
σ		0.134	0.194	1.208	0.321%	0.000	0.201	0.260

%RSD	1.070	1.043	0.669	0.269	0.000	0.473	1.100	

200-35700-A-12-G MS 11/1/2016 12:37:53 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:15	89.816%	14.160	365.300	T 4441.000	T 14980.000	T 61310.000	T 7618.000	T 19250.000	135.886%	0.000	126.900	109.900
2	12:38:37	92.541%	15.670	367.500	T 4423.000	T 14600.000	T 60570.000	T 7439.000	19140.000	139.150%	0.000	122.500	105.300
3	12:38:58	89.050%	14.790	366.900	T 4382.000	T 14820.000	T 60130.000	T 7398.000	T 19130.000	138.414%	0.000	127.000	109.000
x		90.469%	14.870	366.500	T 4415.000	T 14800.000	T 60670.000	T 7485.000	T 19170.000	137.817%	0.000	125.500	108.100
σ		1.835%	0.762	1.141	T 30.290	T 191.600	T 595.400	T 116.900	T 68.350	1.712%	0.000	2.566	2.386
%RSD		2.028	5.122	0.311	T 0.686	T 1.295	T 0.981	T 1.562	T 0.356	1.242	0.000	2.045	2.208

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:15	6.748	T 5869.000	T 104500.000	53.220	121.600	1423.000	984.000	11.850	0.047	44.630	0.000	0.000
2	12:38:37	5.747	T 5750.000	T 104000.000	53.380	119.700	1431.000	983.800	11.950	0.049	43.320	0.000	0.000
3	12:38:58	4.929	T 5774.000	T 103900.000	53.270	121.200	1428.000	986.000	11.850	0.039	44.730	0.000	0.000
x		5.808	T 5798.000	T 104100.000	53.290	120.800	1427.000	984.600	11.880	0.045	44.230	0.000	0.000
σ		0.911	T 62.810	T 330.700	0.082	1.016	3.837	1.236	0.057	0.005	0.784	0.000	0.000
%RSD		15.680	T 1.083	T 0.318	0.154	0.841	0.269	0.126	0.476	11.300	1.773	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:15	154.300	395.024%	25.720	11.550	-4.749	12.190	103.541%	0.000	6.635	7.235	1203.000	137.401%
2	12:38:37	153.200	392.891%	26.250	11.520	-1.401	12.090	104.349%	0.000	6.621	7.227	1213.000	139.443%
3	12:38:58	152.900	393.352%	26.010	11.780	-3.078	12.340	103.746%	0.000	6.711	7.232	1218.000	140.751%
x		153.500	393.756%	25.990	11.610	-3.076	12.210	103.879%	0.000	6.656	7.231	1211.000	139.198%
σ		0.749	1.122%	0.264	0.142	1.674	0.126	0.420%	0.000	0.049	0.004	7.520	1.689%
%RSD		0.488	0.285	1.015	1.219	54.420	1.035	0.404	0.000	0.729	0.058	0.621	1.213

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:38:15	17.420	19.160	159.700	109.503%	0.000	35.230	20.600
2	12:38:37	17.330	19.790	163.000	107.490%	0.000	36.300	21.050
3	12:38:58	17.250	19.740	161.200	109.428%	0.000	36.070	21.070
x		17.340	19.560	161.300	108.807%	0.000	35.870	20.910
σ		0.086	0.353	1.640	1.141%	0.000	0.560	0.263
%RSD		0.494	1.803	1.017	1.049	0.000	1.561	1.259

200-35700-A-12-H MSD 11/1/2016 12:43:37 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:58	92.337%	16.130	383.300	T 4336.000	T 16940.000	T 75060.000	T 9073.000	T 19710.000	146.634%	0.000	140.900	122.600
2	12:44:20	90.001%	16.510	385.900	T 4185.000	T 16360.000	T 72510.000	T 8727.000	T 18970.000	151.717%	0.000	139.300	117.200
3	12:44:42	88.765%	16.670	389.200	T 4261.000	T 16880.000	T 75540.000	T 9036.000	T 19540.000	147.742%	0.000	142.300	120.600
x		90.368%	16.440	386.100	T 4260.000	T 16730.000	T 74370.000	T 8945.000	T 19400.000	148.698%	0.000	140.900	120.100
σ		1.814%	0.276	2.999	T 75.660	T 317.900	T 1627.000	T 189.700	T 388.500	2.673%	0.000	1.539	2.748
%RSD		2.007	1.681	0.777	T 1.776	T 1.901	T 2.188	T 2.121	T 2.002	1.798	0.000	1.092	2.288

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:58	6.543	TM 6252.000	T 118200.000	56.360	134.600	1432.000	1051.000	11.990	0.051	42.950	0.000	0.000
2	12:44:20	7.122	T 6051.000	T 114900.000	55.390	131.900	1470.000	1066.000	12.130	0.043	44.700	0.000	0.000
3	12:44:42	6.495	TM 6271.000	T 119700.000	56.980	133.300	1439.000	1045.000	11.940	0.037	46.260	0.000	0.000
x		6.720	TM 6191.000	T 117600.000	56.240	133.300	1447.000	1054.000	12.020	0.044	44.640	0.000	0.000
σ		0.349	TM 122.100	T 2469.000	0.801	1.329	19.870	11.040	0.100	0.007	1.655	0.000	0.000
%RSD		5.189	TM 1.971	T 2.099	1.423	0.997	1.373	1.047	0.828	15.080	3.709	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:58	168.400	450.445%	23.400	11.750	-3.241	12.660	106.614%	0.000	6.967	7.404	1405.000	146.630%
2	12:44:20	170.600	454.742%	23.260	11.940	-1.918	12.030	105.887%	0.000	6.903	7.580	1434.000	148.023%
3	12:44:42	170.400	460.140%	22.910	11.800	-2.207	12.230	107.072%	0.000	6.762	7.445	1418.000	150.483%
x		169.800	455.109%	23.190	11.830	-2.455	12.310	106.524%	0.000	6.877	7.476	1419.000	148.379%
σ		1.233	4.858%	0.252	0.097	0.696	0.325	0.598%	0.000	0.105	0.092	14.130	1.951%
%RSD		0.726	1.067	1.087	0.820	28.340	2.643	0.561	0.000	1.523	1.236	0.996	1.315

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:43:58	14.370	19.460	175.800	111.422%	0.000	39.200	22.050
2	12:44:20	13.930	19.900	178.000	111.255%	0.000	39.870	22.360
3	12:44:42	14.240	19.590	175.100	112.727%	0.000	39.370	22.000
x		14.180	19.650	176.300	111.802%	0.000	39.480	22.140
σ		0.229	0.225	1.516	0.806%	0.000	0.350	0.194
%RSD		1.612	1.142	0.860	0.721	0.000	0.886	0.874

200-35700-A-13-A 11/1/2016 12:49:20 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:49:42	90.288%	11.560	49.680	T 601.500	T 26530.000	T 86590.000	T 6264.000	T 17880.000	208.362%	0.000	140.700	126.900
2	12:50:04	90.742%	9.768	49.240	T 586.000	T 26370.000	T 86230.000	T 6239.000	T 18090.000	208.250%	0.000	141.900	126.000
3	12:50:26	88.396%	10.660	48.610	T 574.200	T 25890.000	T 84780.000	T 6077.000	T 17670.000	211.967%	0.000	141.500	125.900
x		89.809%	10.660	49.170	T 587.200	T 26260.000	T 85860.000	T 6193.000	T 17880.000	209.527%	0.000	141.400	126.300
σ		1.245%	0.895	0.538	T 13.710	T 334.100	T 957.700	T 101.400	T 212.600	2.115%	0.000	0.629	0.535
%RSD		1.386	8.393	1.094	T 2.335	T 1.272	T 1.115	T 1.638	T 1.189	1.009	0.000	0.445	0.424

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:49:42	5.089	TM 13390.000	TM 216600.000	92.650	246.000	360.700	838.700	33.180	0.052	10.260	0.000	0.000
2	12:50:04	5.104	TM 13270.000	TM 215200.000	94.500	247.800	358.500	834.500	33.130	0.043	10.600	0.000	0.000
3	12:50:26	5.757	TM 13270.000	TM 217100.000	93.130	242.400	354.900	830.700	33.270	0.056	7.958	0.000	0.000
x		5.317	TM 13310.000	TM 216300.000	93.430	245.400	358.000	834.600	33.190	0.050	9.605	0.000	0.000
σ		0.382	TM 68.910	TM 961.500	0.960	2.759	2.899	3.963	0.071	0.007	1.436	0.000	0.000
%RSD		7.175	TM 0.518	TM 0.445	1.028	1.124	0.810	0.475	0.215	14.000	14.950	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:49:42	244.500	T 701.374%	3.974	0.549	-9.613	2.998	109.040%	0.000	1.706	1.877	1586.000	181.044%
2	12:50:04	244.100	696.114%	4.074	0.565	-12.220	3.205	109.790%	0.000	1.794	1.894	1586.000	183.214%
3	12:50:26	241.400	696.268%	4.075	0.635	-11.090	3.006	110.525%	0.000	1.744	1.910	1593.000	185.416%
x		243.300	T 697.918%	4.041	0.583	-10.980	3.070	109.785%	0.000	1.748	1.894	1589.000	183.224%
σ		1.702	T 2.993%	0.058	0.046	1.308	0.117	0.743%	0.000	0.044	0.017	4.009	2.186%
%RSD		0.700	T 0.429	1.438	7.806	11.920	3.818	0.677	0.000	2.543	0.880	0.252	1.193

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:49:42	0.183	1.563	171.600	126.557%	0.000	47.760	8.058
2	12:50:04	0.187	1.578	174.700	125.381%	0.000	48.250	8.279
3	12:50:26	0.197	1.559	172.600	126.753%	0.000	48.210	8.183
x		0.189	1.567	173.000	126.230%	0.000	48.070	8.173
σ		0.007	0.010	1.614	0.742%	0.000	0.268	0.111
%RSD		3.934	0.640	0.933	0.588	0.000	0.557	1.361

200-35700-A-14-A 11/1/2016 12:55:04 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	86.925%	3.532	33.580	T 783.300	T 11230.000	T 49790.000	T 3868.000	18250.000	119.660%	0.000	82.430	63.680
2	12:55:48	88.114%	3.101	34.690	T 759.400	T 11170.000	T 50350.000	T 3966.000	18330.000	118.539%	0.000	83.670	63.390
3	12:56:10	84.293%	3.263	35.100	T 733.800	T 11060.000	T 49590.000	T 3851.000	18170.000	120.217%	0.000	83.240	63.940
x		86.444%	3.299	34.460	T 758.800	T 11160.000	T 49910.000	T 3895.000	18250.000	119.472%	0.000	83.110	63.670
σ		1.955%	0.218	0.788	T 24.790	T 84.950	T 395.900	T 62.350	76.590	0.855%	0.000	0.630	0.276
%RSD		2.262	6.609	2.286	T 3.267	T 0.761	T 0.793	T 1.601	0.420	0.715	0.000	0.758	0.433
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	4.347	TM 7226.000	T 81340.000	38.610	87.590	1909.000	836.000	7.474	0.055	17.410	0.000	0.000
2	12:55:48	4.222	TM 7383.000	T 83940.000	38.560	88.970	1927.000	844.000	7.486	0.071	14.860	0.000	0.000
3	12:56:10	4.577	TM 7321.000	T 82560.000	38.320	88.030	1921.000	840.300	7.305	0.076	16.110	0.000	0.000
x		4.382	TM 7310.000	T 82610.000	38.490	88.200	1919.000	840.100	7.422	0.067	16.130	0.000	0.000
σ		0.180	TM 79.250	T 1299.000	0.155	0.705	9.015	4.040	0.101	0.011	1.274	0.000	0.000
%RSD		4.109	TM 1.084	T 1.573	0.404	0.800	0.470	0.481	1.363	16.720	7.902	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	95.820	299.186%	1.313	2.114	-4.411	3.809	100.556%	0.000	1.241	1.243	847.800	121.658%
2	12:55:48	96.830	299.607%	1.279	2.035	-4.127	3.592	101.460%	0.000	1.175	1.273	851.600	122.784%

3	12:56:10	95.600	299.981%	1.362	2.064	-4.212	3.599	101.085%	0.000	1.205	1.305	866.200	125.941%
x		96.080	299.591%	1.318	2.071	-4.250	3.667	101.034%	0.000	1.207	1.274	855.200	123.461%
σ		0.657	0.398%	0.042	0.040	0.145	0.123	0.454%	0.000	0.033	0.031	9.744	2.221%
%RSD		0.684	0.133	3.175	1.927	3.424	3.366	0.450	0.000	2.712	2.440	1.139	1.799

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	12:55:26	0.570	0.655	161.600	100.978%	0.000	12.980	6.712
2	12:55:48	0.603	0.692	159.300	103.577%	0.000	12.870	6.726
3	12:56:10	0.536	0.688	159.300	104.536%	0.000	12.800	6.624
x		0.570	0.678	160.100	103.030%	0.000	12.880	6.687
σ		0.034	0.020	1.283	1.841%	0.000	0.088	0.055
%RSD		5.903	2.967	0.801	1.787	0.000	0.680	0.829

CCV 11/1/2016 01:00:50 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:11	73.857%	650.300	249.600	T 10770.000	T 31180.000	T 31200.000	T 9828.000	28880.000	72.802%	0.000	T 1216.000	400.900
2	13:01:33	75.907%	631.300	250.700	T 11070.000	T 32370.000	T 32200.000	T 10080.000	29350.000	69.289%	0.000	T 1220.000	412.000
3	13:01:55	73.181%	639.800	259.200	T 10750.000	T 31210.000	T 31450.000	T 9831.000	28640.000	69.977%	0.000	T 1199.000	396.400
x		74.315%	102.472%	101.269%	T 108.676%	T 105.287%	T 105.386%	T 99.135%	96.524%	70.690%	0.000	T 96.959%	100.780%
σ		1.419%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	1.862%	0.000	T n/a	n/a
%RSD		1.910	1.484	2.062	T 1.655	T 2.140	T 1.633	T 1.466	1.235	2.634	0.000	T 0.917	1.991

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:11	13.230	T 1201.000	T 29340.000	498.400	1276.000	1169.000	1172.000	189.100	-0.519	199.600	0.000	0.000
2	13:01:33	19.550	T 1266.000	T 30640.000	515.700	1312.000	1189.000	1212.000	187.100	-0.423	203.200	0.000	0.000
3	13:01:55	20.620	T 1212.000	T 29540.000	498.000	1270.000	1161.000	1190.000	185.000	-0.481	198.600	0.000	0.000
x		17.800	T 98.111%	T 99.460%	100.812%	102.865%	93.849%	95.314%	93.532%	-0.474	100.218%	0.000	0.000
σ		3.997	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.048	n/a	0.000	0.000
%RSD		22.450	T 2.851	T 2.340	2.004	1.776	1.219	1.697	1.090	10.210	1.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:11	192.300	81.514%	1135.000	98.070	4.889	195.500	81.078%	0.000	246.500	258.900	1223.000	83.242%
2	13:01:33	197.500	79.675%	1146.000	100.800	-2.430	198.800	77.828%	0.000	252.700	268.100	1241.000	81.481%
3	13:01:55	196.100	79.449%	1155.000	99.270	-1.548	197.200	77.696%	0.000	252.000	266.000	1232.000	78.966%
x		195.300	80.213%	91.640%	99.379%	0.304	98.598%	78.867%	0.000	250.400	105.730%	98.579%	81.230%
σ		2.734	1.133%	n/a	n/a	3.996	n/a	1.916%	0.000	3.402	n/a	n/a	2.149%
%RSD		1.400	1.412	0.881	1.378	1315.000	0.840	2.429	0.000	1.359	1.825	0.728	2.646

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:01:11	22.480	200.100	T 1189.000	82.408%	0.000	15.290	9.456
2	13:01:33	22.830	194.400	T 1167.000	83.301%	0.000	15.970	9.450
3	13:01:55	23.540	192.200	T 1151.000	84.194%	0.000	16.060	9.212
x		114.761%	97.778%	T 93.527%	83.301%	0.000	78.875%	93.725%
σ		n/a	n/a	T n/a	0.893%	0.000	n/a	n/a

%RSD		2.345	2.077	T 1.662	1.072	0.000	2.686	1.485

CCB 11/1/2016 01:06:33 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:55	76.417%	0.001	4.440	19.200	15.490	53.040	8.315	13.240	75.058%	0.000	0.678	0.146
2	13:07:17	77.198%	0.000	3.398	19.120	14.690	53.040	6.592	14.050	75.599%	0.000	0.724	0.138
3	13:07:38	78.015%	-0.043	3.755	13.870	13.070	49.970	6.157	10.360	76.005%	0.000	0.485	0.064
x		77.210%	-0.014	3.865	17.400	14.410	52.020	7.021	12.550	75.554%	0.000	0.629	0.116
σ		0.799%	0.025	0.530	3.051	1.233	1.776	1.141	1.941	0.475%	0.000	0.127	0.045
%RSD		1.035	179.900	13.700	17.540	8.552	3.414	16.250	15.470	0.629	0.000	20.190	39.020

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:55	5.161	5.210	106.700	0.075	0.157	0.300	0.596	0.198	0.270	0.532	0.000	0.000
2	13:07:17	5.283	5.138	105.600	0.064	0.132	0.318	0.489	0.228	0.271	0.610	0.000	0.000
3	13:07:38	5.789	5.070	99.440	0.078	0.212	0.352	0.325	0.076	0.271	-0.214	0.000	0.000
x		5.411	5.139	103.900	0.072	0.167	0.323	0.470	0.167	0.271	0.309	0.000	0.000
σ		0.333	0.070	3.932	0.007	0.041	0.026	0.137	0.080	0.001	0.455	0.000	0.000
%RSD		6.154	1.359	3.783	10.330	24.590	8.135	29.070	48.110	0.336	147.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:55	0.072	84.723%	1.510	-0.004	-0.970	0.027	81.853%	0.000	0.198	0.231	0.645	80.449%
2	13:07:17	0.078	84.293%	1.585	0.005	-0.591	0.030	82.727%	0.000	0.252	0.256	0.501	83.988%
3	13:07:38	0.074	84.073%	1.320	0.005	-1.118	0.030	81.949%	0.000	0.208	0.237	0.464	82.354%
x		0.075	84.363%	1.472	0.002	-0.893	0.029	82.176%	0.000	0.219	0.242	0.537	82.264%
σ		0.003	0.331%	0.137	0.005	0.272	0.002	0.479%	0.000	0.028	0.013	0.096	1.771%
%RSD		4.508	0.392	9.272	241.100	30.460	5.645	0.583	0.000	12.900	5.326	17.820	2.153

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:06:55	0.077	0.106	0.113	82.650%	0.000	-1.528	-0.001
2	13:07:17	0.045	0.110	0.139	84.799%	0.000	-1.515	-0.004
3	13:07:38	0.071	0.106	0.150	85.543%	0.000	-1.537	-0.005
x		0.065	0.107	0.134	84.330%	0.000	-1.527	-0.003
σ		0.017	0.002	0.019	1.503%	0.000	0.011	0.002
%RSD		26.600	1.965	14.490	1.782	0.000	0.729	58.800

CCVL 11/1/2016 01:12:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:38	87.144%	1.023	45.070	561.300	216.500	79.850	502.400	486.700	81.430%	0.000	5.659	4.463
2	13:13:00	86.740%	1.067	42.850	533.800	220.500	93.470	483.300	467.700	83.576%	0.000	5.301	4.271
3	13:13:22	83.772%	1.045	43.900	547.800	220.700	102.600	491.100	468.200	82.266%	0.000	5.724	4.489
x		85.885%	104.495%	109.851%	109.524%	109.600%	183.953%	98.450%	94.839%	82.424%	0.000	111.224%	110.184%
σ		1.842%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.082%	0.000	n/a	n/a
%RSD		2.144	2.102	2.527	2.509	1.080	12.450	1.955	2.282	1.313	0.000	4.096	2.702

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:38	7.548	4.529	254.200	1.074	2.479	5.443	19.010	1.731	0.376	2.648	0.000	0.000
2	13:13:00	7.149	6.055	284.000	1.140	2.066	5.392	18.910	2.021	0.354	4.049	0.000	0.000
3	13:13:22	7.360	6.494	290.400	1.147	2.111	5.607	19.440	2.071	0.330	3.674	0.000	0.000
x		7.352	284.637%	138.085%	112.066%	110.941%	109.618%	95.605%	97.044%	0.353	86.421%	0.000	0.000
σ		0.200	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.023	n/a	0.000	0.000
%RSD		2.719	18.120	6.994	3.619	10.210	2.051	1.486	9.450	6.514	20.980	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:38	4.897	88.856%	9.590	1.021	-1.086	0.795	88.782%	0.000	1.993	2.096	9.667	87.573%
2	13:13:00	5.141	87.787%	10.340	1.010	-0.967	0.962	88.689%	0.000	2.072	2.141	9.922	87.143%
3	13:13:22	5.016	89.274%	9.840	1.045	0.430	0.906	87.678%	0.000	2.090	2.194	10.130	87.407%
x		100.361%	88.639%	99.219%	102.560%	-0.541	88.764%	88.383%	0.000	2.052	107.181%	99.049%	87.374%
σ		n/a	0.766%	n/a	n/a	0.843	n/a	0.612%	0.000	0.052	n/a	n/a	0.217%
%RSD		2.432	0.865	3.824	1.738	155.900	9.562	0.693	0.000	2.512	2.295	2.323	0.248

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:12:38	2.005	1.962	1.164	88.679%	0.000	0.747	1.003
2	13:13:00	1.998	2.021	1.254	88.204%	0.000	0.614	0.984
3	13:13:22	1.952	2.052	1.291	88.121%	0.000	0.623	1.007
x		99.258%	100.588%	123.626%	88.335%	0.000	33.051%	99.802%
σ		n/a	n/a	n/a	0.301%	0.000	n/a	n/a
%RSD		1.471	2.287	5.287	0.341	0.000	11.260	1.217

200-35700-A-15-A 11/1/2016 01:18:00 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:22	90.078%	3.032	31.950	T 747.300	T 10670.000	T 47930.000	T 3658.000	16960.000	115.644%	0.000	76.960	60.010
2	13:18:44	91.315%	3.675	28.830	T 721.800	T 10590.000	T 47990.000	T 3596.000	17120.000	118.205%	0.000	75.990	58.520
3	13:19:06	93.914%	3.248	30.410	T 719.800	T 10500.000	T 47400.000	T 3670.000	16940.000	120.484%	0.000	76.490	59.440
x		91.769%	3.319	30.400	T 729.600	T 10580.000	T 47770.000	T 3641.000	17010.000	118.111%	0.000	76.480	59.320
σ		1.958%	0.327	1.559	T 15.330	T 87.050	T 327.800	T 39.400	98.670	2.422%	0.000	0.484	0.750
%RSD		2.133	9.857	5.129	T 2.101	T 0.822	T 0.686	T 1.082	0.580	2.050	0.000	0.633	1.264

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:18:22	4.549	TM 6548.000	T 77870.000	36.280	83.860	1852.000	799.800	6.711	0.107	13.640	0.000	0.000
2	13:18:44	5.146	TM 6514.000	T 78520.000	36.980	83.920	1826.000	794.700	6.954	0.094	13.600	0.000	0.000
3	13:19:06	4.074	TM 6475.000	T 78010.000	36.260	82.200	1791.000	776.600	7.392	0.052	16.130	0.000	0.000
x		4.589	TM 6512.000	T 78130.000	36.510	83.330	1823.000	790.400	7.019	0.084	14.460	0.000	0.000
σ		0.537	TM 36.530	T 342.700	0.409	0.972	30.910	12.150	0.345	0.029	1.448	0.000	0.000
%RSD		11.700	TM 0.561	T 0.439	1.122	1.167	1.695	1.537	4.912	34.090	10.020	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:18:22	90.990	284.144%	1.411	1.888	-2.948	3.504	95.979%	0.000	1.186	1.290	825.600	118.584%
2	13:18:44	90.840	293.195%	1.381	1.840	-3.359	3.327	99.343%	0.000	1.216	1.254	816.200	119.710%
3	13:19:06	89.700	290.533%	1.347	1.764	-1.762	3.019	101.408%	0.000	1.230	1.266	802.400	121.175%
x		90.510	289.290%	1.380	1.831	-2.690	3.284	98.910%	0.000	1.211	1.270	814.800	119.823%
σ		0.706	4.651%	0.032	0.063	0.829	0.245	2.740%	0.000	0.022	0.018	11.670	1.299%
%RSD		0.780	1.608	2.345	3.436	30.830	7.471	2.770	0.000	1.841	1.441	1.432	1.084

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:18:22	0.518	0.653	155.000	98.808%	0.000	12.610	6.560
2	13:18:44	0.582	0.631	153.800	102.627%	0.000	12.210	6.353
3	13:19:06	0.524	0.665	154.500	102.720%	0.000	12.130	6.388
x		0.541	0.650	154.400	101.385%	0.000	12.320	6.434
σ		0.036	0.017	0.574	2.232%	0.000	0.260	0.111
%RSD		6.564	2.674	0.372	2.202	0.000	2.114	1.725

200-35700-A-16-A 11/1/2016 01:23:44 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:24:06	96.278%	5.747	30.870	T 683.100	T 13940.000	T 65050.000	T 4609.000	16350.000	146.812%	0.000	114.500	82.080
2	13:24:28	95.563%	5.808	31.150	T 683.400	T 13890.000	T 65440.000	T 4660.000	T 16580.000	145.131%	0.000	113.300	81.300
3	13:24:50	93.969%	5.907	31.160	T 667.000	T 13620.000	T 62810.000	T 4516.000	16330.000	144.915%	0.000	113.000	82.440
x		95.270%	5.821	31.060	T 677.800	T 13820.000	T 64430.000	T 4595.000	T 16420.000	145.619%	0.000	113.600	81.940
σ		1.182%	0.081	0.165	T 9.411	T 172.800	T 1419.000	T 73.000	T 141.600	1.039%	0.000	0.799	0.581
%RSD		1.241	1.390	0.531	T 1.388	T 1.251	T 2.202	T 1.589	T 0.862	0.713	0.000	0.703	0.709
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:24:06	5.166	TM 8139.000	T 122100.000	60.220	122.100	T 4260.000	1413.000	11.160	0.059	17.800	0.000	0.000
2	13:24:28	5.223	TM 8347.000	T 126300.000	60.720	119.400	T 4294.000	1414.000	11.030	0.060	18.600	0.000	0.000
3	13:24:50	4.014	TM 8373.000	T 125800.000	61.250	119.600	T 4215.000	1411.000	10.930	0.061	17.910	0.000	0.000
x		4.801	TM 8286.000	T 124700.000	60.730	120.400	T 4257.000	1413.000	11.040	0.060	18.100	0.000	0.000
σ		0.682	TM 128.500	T 2305.000	0.513	1.501	T 39.630	1.421	0.116	0.001	0.432	0.000	0.000
%RSD		14.210	TM 1.551	T 1.848	0.844	1.246	T 0.931	0.101	1.053	1.510	2.388	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	13:24:06	106.600	432.510%	1.809	2.112	-4.478	6.682	109.558%	0.000	1.455	1.505	1107.000	144.519%
2	13:24:28	108.800	431.391%	1.802	2.122	-2.137	6.471	106.669%	0.000	1.454	1.528	1156.000	147.387%

3	13:24:50	106.800	434.026%	1.786	1.979	-4.681	6.440	107.187%	0.000	1.388	1.558	1125.000	143.172%
x		107.400	432.642%	1.799	2.071	-3.765	6.531	107.805%	0.000	1.433	1.530	1129.000	145.026%
σ		1.204	1.322%	0.012	0.080	1.414	0.132	1.541%	0.000	0.038	0.026	24.450	2.153%
%RSD		1.121	0.306	0.646	3.840	37.540	2.017	1.429	0.000	2.669	1.729	2.165	1.484

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:24:06	0.667	0.838	240.100	111.106%	0.000	19.210	8.149
2	13:24:28	0.680	0.892	239.100	112.224%	0.000	19.280	8.018
3	13:24:50	0.622	0.840	242.500	111.003%	0.000	19.260	8.101
x		0.657	0.857	240.600	111.444%	0.000	19.250	8.089
σ		0.030	0.030	1.766	0.677%	0.000	0.036	0.066
%RSD		4.639	3.555	0.734	0.608	0.000	0.189	0.821

200-35700-A-17-A 11/1/2016 01:29:27 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:49	95.718%	6.398	30.560	┬572.800	┬14460.000	┬65460.000	┬4779.000	17510.000	142.467%	0.000	115.600	83.140
2	13:30:11	91.794%	6.563	32.630	┬558.700	┬14080.000	┬63210.000	┬4658.000	17490.000	144.893%	0.000	112.800	82.180
3	13:30:33	93.855%	6.760	29.070	┬547.200	┬14260.000	┬64940.000	┬4828.000	┬17370.000	143.799%	0.000	115.500	84.710
x		93.789%	6.574	30.750	┬559.600	┬14270.000	┬64540.000	┬4755.000	┬17460.000	143.720%	0.000	114.600	83.340
σ		1.963%	0.181	1.786	┬12.810	┬190.900	┬1179.000	┬87.360	┬74.820	1.215%	0.000	1.572	1.280
%RSD		2.093	2.756	5.806	┬2.289	┬1.338	┬1.826	┬1.837	┬0.429	0.845	0.000	1.372	1.536

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:49	5.287	┬4462.000	┬131000.000	59.930	119.600	┬3268.000	1236.000	9.146	0.071	14.790	0.000	0.000
2	13:30:11	5.358	┬4486.000	┬130200.000	58.960	115.200	┬3179.000	1242.000	9.411	0.064	15.280	0.000	0.000
3	13:30:33	4.322	┬4453.000	┬130100.000	58.870	117.100	┬3239.000	1247.000	9.322	0.070	13.730	0.000	0.000
x		4.989	┬4467.000	┬130400.000	59.260	117.300	┬3229.000	1242.000	9.293	0.068	14.600	0.000	0.000
σ		0.579	┬17.000	┬489.900	0.588	2.225	┬45.370	5.638	0.135	0.004	0.795	0.000	0.000
%RSD		11.610	┬0.381	┬0.376	0.992	1.897	┬1.405	0.454	1.453	5.612	5.443	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:49	105.500	458.306%	1.693	1.601	-3.703	5.012	106.147%	0.000	1.405	1.440	1005.000	146.782%
2	13:30:11	104.600	459.645%	1.663	1.482	-4.008	5.381	106.077%	0.000	1.411	1.475	1020.000	145.192%
3	13:30:33	104.300	455.273%	1.728	1.526	-4.625	5.315	105.338%	0.000	1.335	1.502	1017.000	147.554%
x		104.800	457.741%	1.695	1.536	-4.112	5.236	105.854%	0.000	1.384	1.472	1014.000	146.509%
σ		0.639	2.240%	0.032	0.060	0.469	0.197	0.448%	0.000	0.042	0.031	8.116	1.204%
%RSD		0.609	0.489	1.911	3.890	11.420	3.764	0.424	0.000	3.051	2.103	0.800	0.822

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:29:49	0.489	0.849	213.900	108.468%	0.000	24.840	8.283
2	13:30:11	0.515	0.856	212.000	110.714%	0.000	24.680	8.209
3	13:30:33	0.487	0.847	214.700	109.847%	0.000	24.750	8.268
x		0.497	0.851	213.500	109.677%	0.000	24.750	8.254
σ		0.016	0.005	1.392	1.133%	0.000	0.082	0.039

%RSD		3.177	0.534	0.652	1.033	0.000	0.330	0.471

200-35700-A-18-A 11/1/2016 01:35:09 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:31	88.437%	7.578	22.380	T 308.300	T 21360.000	T 81300.000	T 5516.000	14330.000	171.072%	0.000	103.700	107.700
2	13:35:53	87.754%	8.196	23.390	309.800	T 21460.000	T 80900.000	T 5501.000	14540.000	171.288%	0.000	105.100	108.600
3	13:36:14	87.238%	8.690	24.950	306.800	T 20980.000	T 78690.000	T 5362.000	14030.000	176.426%	0.000	101.900	106.700
x		87.810%	8.155	23.570	T 308.300	T 21270.000	T 80300.000	T 5460.000	14300.000	172.929%	0.000	103.600	107.700
σ		0.601%	0.557	1.295	T 1.528	T 253.100	T 1403.000	T 85.200	254.300	3.031%	0.000	1.564	0.947
%RSD		0.685	6.830	5.492	T 0.496	T 1.190	T 1.747	T 1.561	1.779	1.753	0.000	1.510	0.880

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:31	6.091	TM 7638.000	T 117000.000	63.770	148.600	133.700	737.600	3.215	0.044	10.840	0.000	0.000
2	13:35:53	5.489	TM 7782.000	T 119100.000	64.330	149.300	136.600	740.300	3.158	0.054	8.430	0.000	0.000
3	13:36:14	5.285	TM 7569.000	T 115000.000	61.910	142.500	135.000	745.600	3.210	0.052	8.617	0.000	0.000
x		5.622	TM 7663.000	T 117000.000	63.340	146.800	135.100	741.200	3.195	0.050	9.297	0.000	0.000
σ		0.419	TM 108.900	T 2015.000	1.267	3.714	1.457	4.089	0.032	0.005	1.342	0.000	0.000
%RSD		7.457	TM 1.421	T 1.722	2.000	2.529	1.078	0.552	0.993	10.570	14.440	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:31	196.700	658.537%	3.464	0.862	-8.764	3.038	102.996%	0.000	0.304	0.327	2350.000	169.180%
2	13:35:53	195.100	656.063%	3.440	0.832	-6.947	2.781	103.748%	0.000	0.323	0.330	2357.000	173.958%
3	13:36:14	192.600	651.757%	3.538	0.747	-7.793	3.023	103.426%	0.000	0.337	0.345	2381.000	173.533%
x		194.800	655.453%	3.481	0.814	-7.835	2.947	103.390%	0.000	0.321	0.334	2363.000	172.224%
σ		2.089	3.431%	0.051	0.060	0.909	0.144	0.377%	0.000	0.016	0.009	16.230	2.644%
%RSD		1.073	0.523	1.467	7.341	11.610	4.899	0.365	0.000	5.098	2.816	0.687	1.535

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:35:31	0.254	0.886	131.300	110.565%	0.000	40.440	7.192
2	13:35:53	0.215	0.912	129.000	112.774%	0.000	41.010	7.155
3	13:36:14	0.236	0.891	131.900	110.556%	0.000	41.580	7.374
x		0.235	0.896	130.700	111.298%	0.000	41.010	7.240
σ		0.020	0.014	1.528	1.278%	0.000	0.571	0.117
%RSD		8.478	1.580	1.169	1.148	0.000	1.391	1.618

200-35736-A-13-A 11/1/2016 01:40:52 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:13	92.971%	9.896	25.680	T 478.400	T 15770.000	T 94590.000	T 5629.000	14590.000	164.744%	0.000	145.000	105.400
2	13:41:35	91.549%	9.607	26.230	T 470.900	T 15680.000	T 92990.000	T 5547.000	14250.000	168.120%	0.000	146.000	105.800
3	13:41:56	91.163%	9.500	28.180	T 475.800	T 15840.000	T 95220.000	T 5671.000	14650.000	166.383%	0.000	145.500	106.700
x		91.894%	9.668	26.700	T 475.000	T 15760.000	T 94270.000	T 5616.000	14500.000	166.415%	0.000	145.500	106.000
σ		0.952%	0.205	1.318	T 3.806	T 82.770	T 1149.000	T 62.780	216.500	1.688%	0.000	0.504	0.672
%RSD		1.036	2.118	4.936	T 0.801	T 0.525	T 1.219	T 1.118	1.493	1.015	0.000	0.347	0.634

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:13	5.418	T 3276.000	T 137500.000	57.550	126.100	134.800	633.500	8.382	0.072	9.136	0.000	0.000
2	13:41:35	4.844	T 3191.000	T 133500.000	55.600	123.400	130.900	621.600	8.582	0.061	10.110	0.000	0.000
3	13:41:56	5.725	T 3281.000	T 136200.000	56.420	122.500	130.000	623.400	8.398	0.071	9.768	0.000	0.000
x		5.329	T 3250.000	T 135700.000	56.520	124.000	131.900	626.100	8.454	0.068	9.670	0.000	0.000
σ		0.447	T 50.340	T 2059.000	0.978	1.885	2.592	6.390	0.111	0.006	0.493	0.000	0.000
%RSD		8.391	T 1.549	T 1.517	1.731	1.520	1.965	1.021	1.311	8.811	5.100	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:13	116.800	538.407%	1.436	1.126	-8.276	3.408	103.545%	0.000	0.706	0.749	1782.000	155.882%
2	13:41:35	115.100	534.845%	1.462	0.965	-7.562	3.165	105.869%	0.000	0.684	0.735	1728.000	157.230%
3	13:41:56	116.700	538.705%	1.480	1.056	-7.557	3.059	104.912%	0.000	0.721	0.749	1759.000	157.692%
x		116.200	537.319%	1.460	1.049	-7.798	3.210	104.776%	0.000	0.703	0.744	1757.000	156.935%
σ		0.960	2.148%	0.022	0.080	0.414	0.179	1.168%	0.000	0.019	0.008	27.270	0.941%
%RSD		0.826	0.400	1.511	7.674	5.303	5.575	1.115	0.000	2.646	1.139	1.552	0.599

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:41:13	0.306	1.351	169.000	113.687%	0.000	28.240	10.820
2	13:41:35	0.303	1.379	171.500	113.986%	0.000	28.720	11.010
3	13:41:56	0.291	1.395	172.500	112.923%	0.000	29.320	11.030
x		0.300	1.375	171.000	113.532%	0.000	28.760	10.950
σ		0.008	0.022	1.810	0.548%	0.000	0.542	0.113
%RSD		2.654	1.626	1.058	0.483	0.000	1.886	1.034

200-35700-A-16-A @2 11/1/2016 01:46:34 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:56	88.113%	3.906	18.170	T 438.700	T 8811.000	T 40920.000	T 2905.000	10500.000	118.665%	0.000	72.580	52.000
2	13:47:17	88.678%	3.786	18.490	442.500	8901.000	T 41140.000	T 2914.000	10390.000	118.865%	0.000	70.370	51.510
3	13:47:39	89.730%	3.647	16.930	422.300	T 8511.000	T 39390.000	T 2790.000	10210.000	119.623%	0.000	71.050	51.480
x		88.840%	3.779	17.860	T 434.500	T 8741.000	T 40490.000	T 2870.000	10370.000	119.051%	0.000	71.330	51.660
σ		0.821%	0.130	0.828	T 10.750	T 204.400	T 953.800	T 69.540	147.800	0.505%	0.000	1.129	0.294
%RSD		0.924	3.435	4.635	T 2.473	T 2.338	T 2.356	T 2.423	1.425	0.424	0.000	1.582	0.569

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr

		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:56	5.110	┬5270.000	┬80050.000	39.310	77.790	┬2358.000	822.400	9.379	0.105	11.100	0.000	0.000
2	13:47:17	4.903	┬5243.000	┬79580.000	38.310	75.150	2389.000	840.300	9.655	0.099	11.470	0.000	0.000
3	13:47:39	3.628	┬5187.000	┬78480.000	37.420	76.000	2392.000	825.200	9.708	0.113	9.591	0.000	0.000
x		4.547	┬5233.000	┬79370.000	38.350	76.310	┬2380.000	829.300	9.581	0.106	10.720	0.000	0.000
σ		0.802	┬42.620	┬805.500	0.946	1.350	┬19.050	9.618	0.177	0.007	0.997	0.000	0.000
%RSD		17.640	┬0.814	┬1.015	2.467	1.769	┬0.800	1.160	1.843	6.481	9.298	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:56	59.050	274.137%	1.491	1.201	-3.041	3.519	101.467%	0.000	0.820	0.861	617.600	118.335%
2	13:47:17	60.120	268.972%	1.470	1.192	-3.920	4.113	99.888%	0.000	0.813	0.850	627.500	119.611%
3	13:47:39	59.040	267.138%	1.486	1.109	-1.384	3.558	100.039%	0.000	0.817	0.847	626.800	118.645%
x		59.400	270.082%	1.482	1.168	-2.782	3.730	100.465%	0.000	0.817	0.853	624.000	118.864%
σ		0.619	3.629%	0.011	0.051	1.288	0.332	0.871%	0.000	0.003	0.008	5.527	0.666%
%RSD		1.042	1.344	0.717	4.337	46.300	8.908	0.867	0.000	0.421	0.894	0.886	0.560

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:46:56	0.419	0.470	135.400	102.394%	0.000	9.841	4.548
2	13:47:17	0.367	0.472	134.100	103.540%	0.000	9.745	4.495
3	13:47:39	0.401	0.507	136.500	102.245%	0.000	9.817	4.471
x		0.396	0.483	135.300	102.726%	0.000	9.801	4.505
σ		0.026	0.021	1.190	0.708%	0.000	0.050	0.039
%RSD		6.613	4.276	0.880	0.690	0.000	0.515	0.876

CCV 11/1/2016 01:52:18 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:39	78.165%	647.100	254.300	┬10550.000	┬30460.000	┬30670.000	┬9636.000	28290.000	77.197%	0.000	┬1188.000	387.700
2	13:53:01	74.570%	663.400	259.300	┬10910.000	┬31130.000	┬31550.000	┬9925.000	28980.000	72.906%	0.000	┬1229.000	408.700
3	13:53:23	75.867%	642.900	262.000	┬10910.000	┬31650.000	┬31420.000	┬10080.000	29420.000	71.427%	0.000	┬1224.000	403.800
x		76.201%	104.184%	103.424%	┬107.912%	┬103.603%	┬104.042%	┬98.821%	96.319%	73.843%	0.000	┬97.105%	100.016%
σ		1.820%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	n/a	2.997%	0.000	┬n/a	n/a
%RSD		2.389	1.667	1.508	┬1.923	┬1.934	┬1.526	┬2.301	1.967	4.059	0.000	┬1.879	2.751

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:39	20.300	┬1193.000	┬29160.000	491.800	1240.000	1194.000	1215.000	193.600	-0.454	205.800	0.000	0.000
2	13:53:01	17.310	┬1231.000	┬30030.000	504.100	1273.000	1186.000	1225.000	197.700	-0.734	207.500	0.000	0.000
3	13:53:23	19.060	┬1228.000	┬30500.000	509.800	1282.000	1192.000	1225.000	195.800	-0.552	201.400	0.000	0.000
x		18.890	┬97.408%	┬99.657%	100.379%	101.209%	95.265%	97.757%	97.848%	-0.580	102.452%	0.000	0.000
σ		1.503	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	0.142	n/a	0.000	0.000
%RSD		7.957	┬1.736	┬2.273	1.830	1.719	0.340	0.481	1.036	24.520	1.523	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:39	196.700	81.717%	1149.000	100.800	9.642	199.700	80.794%	0.000	251.100	263.300	1222.000	82.392%
2	13:53:01	196.000	79.953%	1171.000	98.800	12.430	196.800	79.738%	0.000	252.400	265.400	1225.000	80.660%

3	13:53:23	195.200	77.610%	1193.000	100.500	16.650	197.100	78.200%	0.000	253.600	267.300	1238.000	79.666%
x		196.000	79.760%	93.682%	100.040%	12.910	98.937%	79.577%	0.000	252.400	106.127%	98.259%	80.906%
σ		0.756	2.060%	n/a	n/a	3.527	n/a	1.304%	0.000	1.262	n/a	n/a	1.379%
%RSD		0.386	2.583	1.865	1.092	27.320	0.800	1.639	0.000	0.500	0.760	0.730	1.705

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:52:39	22.570	196.800	T 1198.000	82.324%	0.000	15.690	9.427
2	13:53:01	23.670	194.700	T 1177.000	83.217%	0.000	16.280	9.454
3	13:53:23	23.530	199.000	T 1193.000	81.422%	0.000	16.770	9.326
x		116.278%	98.407%	T 95.152%	82.321%	0.000	81.240%	94.025%
σ		n/a	n/a	T n/a	0.898%	0.000	n/a	n/a
%RSD		2.566	1.080	T 0.925	1.091	0.000	3.336	0.717

CCB 11/1/2016 01:58:01 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:23	82.352%	-0.002	2.604	18.690	2.399	4.629	5.577	1.800	77.715%	0.000	0.387	0.063
2	13:58:45	80.096%	-0.022	3.617	15.510	3.311	4.355	1.965	3.331	80.053%	0.000	0.362	0.077
3	13:59:06	78.601%	0.021	2.803	19.410	3.106	5.119	5.200	3.335	76.760%	0.000	0.182	0.012
x		80.350%	-0.001	3.008	17.870	2.939	4.701	4.247	2.822	78.176%	0.000	0.310	0.050
σ		1.888%	0.022	0.537	2.076	0.479	0.387	1.986	0.885	1.694%	0.000	0.112	0.034
%RSD		2.350	1738.000	17.850	11.620	16.290	8.236	46.760	31.370	2.167	0.000	36.130	68.230

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:23	5.861	0.220	13.570	0.023	0.071	0.007	0.299	0.185	0.288	-0.475	0.000	0.000
2	13:58:45	5.761	0.171	7.607	0.015	0.012	0.033	-0.021	0.545	0.240	1.306	0.000	0.000
3	13:59:06	5.782	0.248	11.870	0.051	0.084	-0.052	0.231	0.220	0.259	0.681	0.000	0.000
x		5.801	0.213	11.020	0.029	0.055	-0.004	0.170	0.317	0.262	0.504	0.000	0.000
σ		0.053	0.039	3.073	0.019	0.038	0.044	0.169	0.199	0.024	0.903	0.000	0.000
%RSD		0.908	18.240	27.900	63.190	68.460	1109.000	99.290	62.640	9.284	179.200	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:23	0.017	85.762%	1.436	-0.004	-0.655	0.056	83.930%	0.000	0.199	0.200	0.131	81.563%
2	13:58:45	0.022	85.785%	1.435	-0.002	-0.510	-0.006	83.867%	0.000	0.190	0.222	0.121	83.227%
3	13:59:06	0.016	84.845%	1.455	-0.008	-0.437	0.003	83.848%	0.000	0.194	0.241	0.183	83.694%
x		0.018	85.464%	1.442	-0.005	-0.534	0.018	83.882%	0.000	0.195	0.221	0.145	82.828%
σ		0.003	0.536%	0.011	0.003	0.111	0.033	0.043%	0.000	0.005	0.020	0.033	1.120%
%RSD		17.760	0.627	0.773	58.770	20.780	191.000	0.051	0.000	2.354	9.195	23.000	1.352

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	13:58:23	0.054	0.111	0.091	82.091%	0.000	-1.532	-0.010
2	13:58:45	0.042	0.101	0.089	85.031%	0.000	-1.556	-0.009
3	13:59:06	0.052	0.098	0.093	82.622%	0.000	-1.548	-0.010
x		0.049	0.103	0.091	83.248%	0.000	-1.545	-0.009
σ		0.007	0.007	0.002	1.567%	0.000	0.012	0.001

%RSD		13.190	6.995	2.292	1.882	0.000	0.779	9.593

CCVL 11/1/2016 02:03:44 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:06	87.284%	1.060	42.350	568.200	216.900	62.400	506.000	464.300	83.673%	0.000	4.929	4.268
2	14:04:28	87.231%	1.312	41.000	560.200	213.900	67.770	507.800	503.100	84.309%	0.000	5.347	4.338
3	14:04:50	84.774%	1.152	44.540	588.300	230.300	74.770	516.800	495.300	81.333%	0.000	5.661	4.684
x		86.430%	117.468%	106.571%	114.448%	110.187%	136.626%	102.040%	97.518%	83.105%	0.000	106.248%	110.748%
σ		1.434%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.567%	0.000	n/a	n/a
%RSD		1.660	10.870	4.191	2.535	3.972	9.077	1.130	4.210	1.886	0.000	6.920	5.027

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:06	8.258	2.729	227.000	1.180	2.180	5.667	19.600	2.321	0.383	5.361	0.000	0.000
2	14:04:28	7.575	2.985	239.500	1.240	2.069	5.304	19.830	2.238	0.333	4.208	0.000	0.000
3	14:04:50	7.558	3.620	252.700	1.142	2.580	5.233	19.410	2.109	0.371	4.471	0.000	0.000
x		7.797	155.571%	119.858%	118.721%	113.811%	108.034%	98.075%	111.141%	0.362	117.004%	0.000	0.000
σ		0.399	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.026	n/a	0.000	0.000
%RSD		5.122	14.750	5.365	4.139	11.800	4.311	1.063	4.802	7.295	12.910	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:06	5.109	86.975%	10.010	1.076	-0.250	0.998	87.050%	0.000	2.033	2.161	10.290	85.539%
2	14:04:28	4.982	91.730%	9.591	1.086	-0.428	1.009	88.415%	0.000	2.027	2.152	9.884	87.791%
3	14:04:50	5.169	87.398%	10.510	1.087	-0.654	1.173	86.857%	0.000	2.160	2.260	10.460	86.586%
x		101.737%	88.701%	100.373%	108.308%	-0.444	106.012%	87.441%	0.000	2.073	109.548%	102.118%	86.639%
σ		n/a	2.632%	n/a	n/a	0.203	n/a	0.849%	0.000	0.076	n/a	n/a	1.127%
%RSD		1.873	2.967	4.572	0.568	45.630	9.201	0.971	0.000	3.645	2.730	2.906	1.301

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:04:06	1.798	2.015	1.268	85.962%	0.000	0.792	1.025
2	14:04:28	1.903	2.044	1.283	87.264%	0.000	0.734	0.981
3	14:04:50	2.032	2.058	1.260	86.734%	0.000	0.650	1.035
x		95.534%	101.952%	127.043%	86.653%	0.000	36.263%	101.394%
σ		n/a	n/a	n/a	0.655%	0.000	n/a	n/a
%RSD		6.143	1.077	0.914	0.756	0.000	9.869	2.820

Mass Uncorrected ICPS

STD0 11/1/2016 10:50:03 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:50:25	109246.880	5.000	210.001	172821.400	140.001	375.004	54017.395	560.009	132303.050	5.000	7061.496	1080.035
2	10:50:47	110464.870	2.500	180.001	181068.260	110.000	425.005	55853.432	500.007	136385.760	0.000	7341.617	1170.041
3	10:51:08	113867.650	7.500	200.001	181715.240	90.000	310.003	55090.900	510.008	139319.880	15.000	7541.706	1170.041
x		111193.130	5.000	196.668	178534.960	113.334	370.004	54987.242	523.342	136002.890	6.667	7314.939	1140.039
σ		2394.925	2.500	15.275	4958.659	25.166	57.664	922.397	32.147	3524.048	7.638	241.214	51.965
%RSD		2.154	50.000	7.767	2.777	22.205	15.585	1.677	6.143	2.591	114.564	3.298	4.558

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:50:25	2485.185	320.003	195899.570	65.000	15.000	300.003	435.006	651.013	193.001	710.515	751.017	3960.470
2	10:50:47	2705.220	385.004	199178.090	35.000	15.000	280.002	375.004	666.013	252.002	705.515	754.517	4060.495
3	10:51:08	2450.180	355.004	198211.670	35.000	35.000	305.003	405.005	719.016	255.002	756.017	765.018	4055.493
x		2546.862	353.337	197763.110	45.000	21.667	295.003	405.005	678.681	233.335	724.016	756.851	4025.486
σ		138.254	32.533	1684.657	17.321	11.547	13.229	30.001	35.727	34.962	27.827	7.286	56.361
%RSD		5.428	9.207	0.852	38.490	53.294	4.484	7.407	5.264	14.984	3.843	0.963	1.400

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:50:25	40.000	172043.410	40.000	25.000	0.000	5.000	785871.050	365.004	100.000	76.500	10.000	130690.400
2	10:50:47	15.000	174660.420	45.000	40.000	0.000	0.000	792357.590	400.005	95.000	83.500	10.000	134712.230
3	10:51:08	20.000	174801.890	75.000	40.000	0.000	0.000	812010.420	365.004	115.000	79.000	5.000	135680.030
x		25.000	173835.240	53.333	35.000	0.000	1.667	796746.350	376.671	103.334	79.667	8.333	133694.220
σ		13.229	1553.382	18.930	8.660	0.000	2.887	13611.121	20.208	10.408	3.547	2.887	2646.011
%RSD		52.915	0.894	35.493	24.744	0.000	173.205	1.708	5.365	10.073	4.453	34.641	1.979

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:50:25	35.000	45.000	240.002	108039.040	0.000	31013.829	445.006
2	10:50:47	50.000	50.000	290.003	107857.870	0.000	29881.764	280.002
3	10:51:08	35.000	45.000	305.003	108310.800	0.000	28729.741	325.003
x		40.000	46.667	278.336	108069.240	0.000	29875.111	350.004
σ		8.660	2.887	34.035	227.966	0.000	1142.059	85.295
%RSD		21.651	6.186	12.228	0.211	0.000	3.823	24.370

STD1 11/1/2016 10:55:00 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:55:21	118983.200	182.501	5185.807	851478.720	26901.694	67395.992	803450.160	27753.088	149174.620	25.000	23862.070	11443.928
2	10:55:43	114179.780	160.001	5370.865	T866851.110	28544.423	66246.396	798311.880	27753.088	146773.440	10.000	22139.695	10703.436
3	10:56:05	113162.880	167.501	5230.821	845968.480	26721.404	67089.760	800922.770	27152.099	145926.050	15.000	23301.277	11258.802
x		115441.950	170.001	5262.498	T854766.100	27389.173	66910.716	800894.940	27552.758	147291.370	16.667	23101.014	11135.388
σ		3108.675	11.457	96.510	T10822.487	1004.528	595.344	2569.257	346.981	1685.078	7.638	878.477	385.364
%RSD		2.693	6.739	1.834	T1.266	3.668	0.890	0.321	1.259	1.144	45.826	3.803	3.461

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:55:21	4860.709	8061.949	809261.440	2885.250	1275.049	4420.586	11333.852	1993.119	510.008	906.525	749.517	4005.481
2	10:55:43	4900.720	7661.761	810174.220	3000.270	1295.050	4575.628	10948.595	1957.115	474.007	960.528	781.018	4185.525
3	10:56:05	5270.833	8126.981	806313.600	3080.285	1345.054	4340.565	11178.748	1949.114	464.006	943.027	783.018	4055.493

x		5010.754	7950.230	808583.080	2988.602	1305.051	4445.593	11153.732	1966.449	482.674	936.693	771.185	4082.167
σ		226.122	251.929	2017.728	98.040	36.058	119.510	193.843	23.441	24.194	27.553	18.791	92.939
%RSD		4.513	3.169	0.250	3.280	2.763	2.688	1.738	1.192	5.013	2.942	2.437	2.277
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:55:21	23566.650	183464.250	17379.056	3185.304	20.000	755.017	832074.590	920.025	5660.961	4276.549	5335.854	133996.500
2	10:55:43	24843.502	186315.620	17193.864	3485.364	70.000	725.016	823294.270	925.026	5395.873	4311.057	5720.982	138200.620
3	10:56:05	25179.005	182756.530	17248.921	3550.378	75.000	775.018	832347.740	830.021	5635.953	4432.089	5695.973	135276.780
x		24529.719	184178.800	17273.947	3407.016	55.000	751.684	829238.870	891.691	5564.262	4339.898	5584.270	135824.630
σ		850.745	1884.066	95.099	194.740	30.414	25.167	5149.982	53.466	146.364	81.683	215.497	2154.940
%RSD		3.468	1.023	0.551	5.716	55.298	3.348	0.621	5.996	2.630	1.882	3.859	1.587

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:55:21	3065.282	18330.074	8011.925	109146.220	0.000	133764.640	15156.889
2	10:55:43	3305.328	18940.756	7631.747	109236.810	0.000	117175.460	15221.948
3	10:56:05	3195.306	18405.157	7826.837	109780.370	0.000	104174.560	15602.300
x		3188.639	18558.663	7823.503	109387.800	0.000	118371.550	15327.045
σ		120.162	333.026	190.111	342.976	0.000	14831.261	240.586
%RSD		3.768	1.794	2.430	0.314	0.000	12.529	1.570

STD2 11/1/2016 11:00:43 AM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:01:05	117089.860	805.019	26435.949	T 3645355.800	140529.970	323249.600	T 3861039.300	140560.230	151273.410	5.000	73406.299	49142.342
2	11:01:27	113092.400	760.017	26491.037	T 3572513.500	139067.780	320247.470	T 3826987.000	139440.880	150435.880	15.000	71774.214	49769.198
3	11:01:48	114340.870	770.018	24898.584	T 3552311.200	137575.480	319386.180	T 3782425.200	138533.360	144907.220	15.000	72035.337	48921.695
x		114841.040	778.352	25941.857	T 3590060.100	139057.740	320961.090	T 3823483.800	139511.490	148872.170	11.667	72405.283	49277.745
σ		2045.129	23.630	903.920	T 48941.156	1477.274	2028.160	T 39424.000	1015.275	3459.190	5.774	876.682	439.677
%RSD		1.781	3.036	3.484	T 1.363	1.062	0.632	T 1.031	0.728	2.324	49.487	1.211	0.892
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:01:05	9362.629	34926.558	T 3125369.800	14611.402	6611.311	19716.656	56530.709	5806.011	966.028	1696.086	782.518	4735.673
2	11:01:27	9222.551	35623.029	T 3137714.600	14186.035	6126.126	21113.365	55321.662	5700.975	998.030	1621.579	777.518	4730.671
3	11:01:48	9442.674	35327.401	T 3133110.000	13750.670	6181.146	19186.037	55963.801	5776.001	962.028	1562.573	812.020	4910.723
x		9342.618	35292.329	T 3132064.800	14182.702	6306.194	20005.352	55938.724	5760.996	975.362	1626.746	790.685	4792.356
σ		111.418	349.558	T 6238.419	430.376	265.667	995.569	604.913	54.102	19.733	66.906	18.644	102.540
%RSD		1.193	0.990	T 0.199	3.035	4.213	4.977	1.081	0.939	2.023	4.113	2.358	2.140
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:01:05	125757.670	186012.260	84458.456	17063.731	180.001	3810.436	828398.070	820.020	27347.418	21659.565	28369.124	137474.650
2	11:01:27	123657.040	184930.320	86373.232	16963.629	265.002	4010.483	826476.090	775.018	27642.905	21599.487	28063.607	134026.740
3	11:01:48	122523.710	182554.340	87031.643	17158.828	320.003	3770.426	826150.530	740.016	28128.717	21641.542	28464.286	136920.110
x		123979.470	184498.970	85954.444	17062.062	255.002	3863.782	827008.230	778.352	27706.347	21633.531	28299.006	136140.500
σ		1640.911	1768.854	1336.735	97.611	70.535	128.612	1214.594	40.106	394.494	30.830	209.340	1851.452
%RSD		1.324	0.959	1.555	0.572	27.660	3.329	0.147	5.153	1.424	0.143	0.740	1.360

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:01:05	15857.540	91968.045	34635.952	106962.130	0.000	143500.120	79006.820
2	11:01:27	15657.351	93139.524	33999.644	106690.400	0.000	145840.300	76962.286
3	11:01:48	15762.450	93602.105	35026.768	106640.080	0.000	150203.800	78052.338
x		15759.114	92903.225	34554.121	106764.200	0.000	146514.740	78007.148

σ	100.136	842.268	518.428	173.248	0.000	3402.349	1023.015
%RSD	0.635	0.907	1.500	0.162	0.000	2.322	1.311

STD3 11/1/2016 11:06:27 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:06:49	109911.220	90693.590	30107.169	┬12466608.000	┬3790718.700	┬34943000.000	┬13473213.000	┬1462003.000	132534.880	29050.296	┬2726291.700	8321
2	11:07:10	105875.220	87217.612	30242.413	┬12300124.000	┬3748162.900	┬34303362.000	┬13213955.000	1467153.700	133714.240	28369.124	┬2726039.100	8295
3	11:07:32	107143.290	86209.889	29205.567	┬12244923.000	┬3699254.100	┬34460622.000	┬13384280.000	┬1442947.700	128291.870	28764.801	┬2660512.700	8093
x		107643.240	88040.364	29851.716	┬12337218.000	┬3746045.200	┬34568994.000	┬13357149.000	┬1457368.100	131513.660	28728.073	┬2704281.200	8237
σ		2063.927	2352.357	563.653	┬115403.970	┬45769.044	┬333305.710	┬131740.980	┬12751.264	2851.786	342.068	┬37904.808	125
%RSD		1.917	2.672	1.888	┬0.935	┬1.222	┬0.964	┬0.986	┬0.875	2.168	1.191	┬1.402	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:06:49	103138.140	┬3776503.200	┬76218488.000	1235749.700	669497.030	825677.960	621049.430	86678.812	6210.157	9222.051	744.017	912
2	11:07:10	101714.430	┬3708383.600	┬75946848.000	1230485.800	669944.480	824129.050	619762.840	85714.846	6267.178	9147.510	705.015	886
3	11:07:32	98983.059	┬3660063.200	┬74857996.000	1221972.400	652143.920	809492.250	613590.650	85067.542	6226.163	9148.010	704.015	847
x		101278.540	┬3714983.300	┬75674444.000	1229402.600	663861.810	819766.420	618134.310	85820.400	6234.499	9172.523	717.682	881
σ		2111.557	┬58499.843	┬719991.190	6952.221	10150.453	8931.331	3987.159	810.805	29.411	42.893	22.812	32
%RSD		2.085	┬1.575	┬0.951	0.565	1.529	1.089	0.645	0.945	0.472	0.468	3.179	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	11:06:49	901309.130	171942.370	┬1913997.700	299237.390	9637.786	147282.900	776035.900	958152.110	641938.990	501684.150	648360.520	12514
2	11:07:10	897264.410	167608.560	1935306.700	298087.050	9507.711	145996.660	770309.210	963523.900	640624.850	501762.970	651182.400	12574
3	11:07:32	888550.690	164457.400	1916235.300	294799.340	9252.568	146955.030	768456.550	944452.400	634351.610	499919.300	654009.950	12785
x		895708.070	168002.780	┬1921846.600	297374.590	9466.022	146744.870	771600.550	955376.140	638971.820	501122.140	651184.290	12624
σ		6520.053	3758.025	┬11710.362	2303.206	195.964	668.380	3951.243	9834.127	4054.806	1042.440	2824.713	142
%RSD		0.728	2.237	┬0.609	0.775	2.070	0.455	0.512	1.029	0.635	0.208	0.434	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:06:49	35628.040	1781479.800	┬8083165.800	102494.190	0.000	268373.470	134818.080
2	11:07:10	35913.652	1776891.600	┬8049422.300	105945.670	0.000	284823.110	135312.060
3	11:07:32	37426.976	1767602.400	┬8117925.100	102896.650	0.000	289004.160	137862.840
x		36322.889	1775324.600	┬8083504.400	103778.840	0.000	280733.580	135997.660
σ		966.773	7070.175	┬34252.693	1887.291	0.000	10906.399	1634.065
%RSD		2.662	0.398	┬0.424	1.819	0.000	3.885	1.202

STD4 11/1/2016 11:12:11 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	11:12:32	107274.120	267961.930	90500.042	┬37789416.000	┬11684029.000	┬108581310.000	┬42158669.000	┬4658500.100	126044.820	89886.737	┬8452937.400
2	11:12:54	105211.040	267568.180	91776.997	┬37740390.000	┬11717284.000	┬107575740.000	┬41498610.000	┬4653506.300	126034.750	88826.073	┬8487814.100
3	11:13:16	104395.930	258623.640	88831.100	┬36838569.000	┬11426293.000	┬105735010.000	┬41187124.000	┬4689580.000	126115.350	89449.393	┬8394096.700
x		105627.030	264717.920	90369.380	┬37456125.000	┬11609202.000	┬107297350.000	┬41614801.000	┬4667195.400	126064.980	89387.401	┬8444949.400
σ		1483.504	5281.470	1477.289	┬535380.780	┬159274.000	┬1443429.200	┬496084.760	┬19545.710	43.919	533.042	┬47366.583
%RSD		1.404	1.995	1.635	┬1.429	┬1.372	┬1.345	┬1.192	┬0.419	0.035	0.596	┬0.561

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	11:12:32	309313.860	┬11704497.000	┬232897760.000	┬3705013.200	2005745.400	┬2401611.200	1817111.000	257109.990	17922.631	25549.568	679.014
2	11:12:54	308784.180	┬11760808.000	┬235733070.000	┬3750303.200	┬2015498.600	┬2434348.300	1832324.200	253896.280	17625.315	25154.969	704.515

3	11:13:16	305234.680	┬11529266.000	┬231910680.000	┬3694791.900	1983909.000	┬2402413.100	1789771.600	253228.230	17580.267	25113.907	701.01
x		307777.570	┬11664857.000	┬233513840.000	┬3716702.800	┬2001717.700	┬2412790.900	1813068.900	254744.830	17709.404	25272.815	694.84
σ		2218.075	┬120753.540	┬1984272.600	┬29544.232	┬16175.381	┬18673.564	21562.347	2075.340	186.029	240.553	13.82
%RSD		0.721	┬1.035	┬0.850	┬0.795	┬0.808	┬0.774	1.189	0.815	1.050	0.952	1.98

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	11:12:32	┬2751780.200	159721.680	┬6005771.100	901266.930	28494.337	451329.310	782225.410	┬3027554.000	2000075.900	1580705.700	┬2030099.20
2	11:12:54	┬2739319.700	160761.610	┬6036939.900	903803.930	29551.175	448771.620	777554.270	┬3023360.100	2022787.300	1597599.200	┬2047651.80
3	11:13:16	┬2721466.200	159358.230	┬6018807.100	898925.420	29626.308	448617.550	776255.800	┬3025207.100	2016510.600	1589866.100	┬2015044.80
x		┬2737522.000	159947.170	┬6020506.000	901332.100	29223.940	449572.830	778678.490	┬3025373.700	2013124.600	1589390.300	┬2030931.90
σ		┬15236.751	728.357	┬15653.684	2439.908	632.971	1523.108	3139.583	┬2101.903	11728.209	8456.792	┬16319.45
%RSD		┬0.557	0.455	┬0.260	0.271	2.166	0.339	0.403	┬0.069	0.583	0.532	┬0.80

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:12:32	114391.220	┬5638595.800	┬25784358.000	101578.610	0.000	948349.620	449701.170
2	11:12:54	116364.810	┬5685555.000	┬25973491.000	100512.170	0.000	958760.650	450805.410
3	11:13:16	116848.170	┬5709233.700	┬25801304.000	100612.770	5.000	961586.690	451231.720
x		115868.070	┬5677794.800	┬25853051.000	100901.180	1.667	956232.320	450579.440
σ		1301.623	┬35952.663	┬104647.280	588.818	2.887	6971.322	789.899
%RSD		1.123	┬0.633	┬0.405	0.584	173.205	0.729	0.175

STD5 11/1/2016 11:17:53 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti
1	11:18:14	103480.250	428216.300	M 146183.290	TM 61862524.000	TM 19103268.000	TM 176529050.000	TM 68281833.000	TM 7670226.300	122428.010	150430.830
2	11:18:36	101337.140	M 425508.250	M 146728.040	TM 60399448.000	TM 19027002.000	TM 172491080.000	TM 67265120.000	TM 7627187.500	122015.000	150375.340
3	11:18:58	101920.680	410929.190	142940.340	TM 59415053.000	TM 18730723.000	TM 171496740.000	TM 67007587.000	TM 7662177.000	121481.120	147772.210
x		102246.030	M 421551.250	M 145283.890	TM 60559009.000	TM 18953664.000	TM 173505620.000	TM 67518180.000	TM 7653196.900	121974.710	149526.130
σ		1107.977	M 9298.089	M 2047.769	TM 1231512.500	TM 196802.920	TM 2665145.100	TM 673762.180	TM 22881.539	474.729	1519.191
%RSD		1.084	M 2.206	M 1.409	TM 2.034	TM 1.038	TM 1.536	TM 0.998	TM 0.299	0.389	1.016

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se
1	11:18:14	498469.320	TM 18926859.000	TM 376432140.000	TM 6011926.800	TM 3199942.600	TM 3883972.200	T 2867655.800	M 411407.780	28151.756	39147.422
2	11:18:36	507459.610	TM 18867015.000	TM 379868390.000	TM 6064253.600	TM 3215462.200	T 3849898.500	T 2826681.400	M 409066.200	27637.897	39062.723
3	11:18:58	505527.200	TM 19053983.000	TM 379327490.000	TM 6027811.700	TM 3191410.700	T 3862976.900	T 2841084.400	M 404417.800	27049.933	38303.464
x		503818.710	TM 18949286.000	TM 378542670.000	TM 6034664.000	TM 3202271.800	TM 3865615.800	T 2845140.500	M 408297.260	27613.195	38837.870
σ		4732.390	TM 95480.024	TM 1847675.400	TM 26827.909	TM 12193.776	TM 17189.467	T 20786.135	M 3557.869	551.326	464.742
%RSD		0.939	TM 0.504	TM 0.488	TM 0.445	TM 0.381	TM 0.445	T 0.731	M 0.871	1.997	1.197

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb
1	11:18:14	TM 4533258.900	154452.370	TM 10009429.000	M 1475477.600	48380.117	M 726611.010	774988.830	T 5003571.500	TM 3292300.400	M 2653165.100
2	11:18:36	TM 4487875.500	151909.150	TM 9855271.000	M 1453638.000	46188.914	M 733952.420	784289.080	T 5026170.700	TM 3306946.600	TM 2619225.700
3	11:18:58	TM 4457444.700	152383.450	TM 9929860.400	M 1451209.400	46910.926	M 731680.730	789517.460	T 5049508.700	TM 3298626.800	M 2674618.800
x		TM 4492859.700	152914.990	TM 9931520.200	M 1460108.300	47159.986	M 730748.050	782931.790	T 5026417.000	TM 3299291.300	TM 2649003.200
σ		TM 38152.079	1352.362	TM 77092.397	M 13365.480	1116.632	M 3758.521	7358.800	T 22969.600	TM 7345.679	TM 27930.088
%RSD		TM 0.849	0.884	TM 0.776	M 0.915	2.368	M 0.514	0.940	T 0.457	TM 0.223	TM 1.054

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:18:14	M 231258.360	TM 9633915.200	TM 43105032.000	99254.667	5.000	M 1893962.100	M 915681.660
2	11:18:36	M 236369.310	TM 9568997.900	TM 43098441.000	99174.190	0.000	M 1904184.400	M 917576.740
3	11:18:58	M 237206.070	TM 9586955.900	TM 43168827.000	97011.518	0.000	M 1918768.400	M 923162.900
x		M 234944.580	TM 9596623.000	TM 43124100.000	98480.125	1.667	M 1905638.300	M 918807.100
σ		M 3219.662	TM 33520.909	TM 38874.733	1272.488	2.887	M 12466.896	M 3889.417
%RSD		M 1.370	TM 0.349	TM 0.090	1.292	173.205	M 0.654	M 0.423

ICV 11/1/2016 11:23:36 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:23:58	106157.010	44459.220	16493.157	T 6414442.100	T 1860934.700	T 17346902.000	T 6451793.600	724366.400	121521.410	14135.992	1338172.800	400520.360
2	11:24:20	100220.420	43692.195	16142.814	T 6314255.600	T 1840264.800	T 17347011.000	T 6424289.800	699518.030	118449.420	13865.765	1332915.500	401150.240
3	11:24:42	99838.137	43015.438	16127.799	T 6296784.800	T 1823303.300	T 17093745.000	T 6458022.600	715891.770	119305.490	13700.629	1326632.700	399076.330
x		102071.850	43722.284	16254.590	T 6341827.500	T 1841500.900	T 17262553.000	T 6444702.000	713258.740	119758.770	13900.796	1332573.700	400248.980
σ		3543.005	722.361	206.741	T 63489.903	T 18846.173	T 146191.610	T 17949.771	12631.707	1585.368	219.785	5777.616	1063.253
%RSD		3.471	1.652	1.272	T 1.001	T 1.023	T 0.847	T 0.279	1.771	1.324	1.581	0.434	0.266

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:23:58	51243.656	T 1804747.700	T 37000056.000	601175.270	327690.060	407870.420	302307.050	42677.571	3255.318	4667.654	660.513	5590.938
2	11:24:20	50019.947	T 1794473.500	T 36991474.000	604663.100	328240.740	403798.040	306095.250	42699.628	3062.281	4721.669	623.012	5846.025
3	11:24:42	49698.989	T 1785519.400	T 36711198.000	609447.730	328016.390	400254.070	301237.950	41943.712	3125.293	4723.169	601.511	5801.009
x		50320.864	T 1794913.500	T 36900910.000	605095.370	327982.400	403974.180	303213.410	42440.304	3147.631	4704.164	628.345	5745.991
σ		815.115	T 9621.691	T 164350.720	4153.133	276.908	3811.226	2552.349	430.202	98.438	31.628	29.861	136.153

%RSD		1.620	T 0.536	T 0.445	0.686	0.084	0.943	0.842	1.014	3.127	0.672	4.752	2.37(
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:23:58	435188.450	156763.800	460715.960	143671.590	4770.683	71759.149	704240.810	484686.630	321394.230	251074.010	319798.990	116928.74(
2	11:24:20	430257.880	154371.620	461718.130	143318.570	4480.602	71919.840	711645.600	492021.930	321068.040	250715.670	324845.180	117180.49(
3	11:24:42	429360.170	154280.790	457231.970	141346.840	4665.653	71990.142	704595.330	486107.110	319116.080	250457.330	323402.530	121017.77(
x		431602.170	155138.730	459888.690	142779.000	4638.979	71889.711	706827.250	487605.220	320526.120	250749.000	322682.230	118375.67(
σ		3138.076	1408.076	2354.721	1252.785	146.868	118.407	4176.577	3890.361	1231.971	309.686	2599.064	2291.588
%RSD		0.727	0.908	0.512	0.877	3.166	0.165	0.591	0.798	0.384	0.124	0.805	1.936

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:23:58	38043.369	881553.400	T 3985256.900	94738.498	0.000	265462.410	135125.560
2	11:24:20	38419.230	886237.260	T 3980301.900	95844.797	0.000	275462.730	135165.880
3	11:24:42	38604.658	889151.490	T 3957063.000	97293.152	0.000	276291.280	135276.780
x		38355.752	885647.380	T 3974207.300	95958.816	0.000	272405.470	135189.400
σ		285.978	3833.237	T 15052.683	1281.138	0.000	6027.127	78.306
%RSD		0.746	0.433	T 0.379	1.335	0.000	2.213	0.058

ICVL 11/1/2016 11:29:20 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:29:42	112317.180	177.501	6101.117	788616.260	25799.954	66437.153	700477.080	24978.704	122387.720	40.000	19896.869	9397.649
2	11:30:04	105372.050	140.001	6076.107	784791.940	26691.356	72632.922	710581.610	24868.539	125984.370	45.000	20677.819	9662.800
3	11:30:26	108240.340	205.001	6091.113	770822.120	25840.016	75144.018	698215.070	24337.757	123858.520	60.000	20853.037	9537.728
x		108643.190	174.168	6089.446	781410.110	26110.442	71404.698	703091.250	24728.333	124076.870	48.333	20475.909	9532.726
σ		3490.049	32.628	12.588	9366.721	503.485	4481.492	6584.702	342.705	1808.239	10.408	509.058	132.647
%RSD		3.212	18.734	0.207	1.199	1.928	6.276	0.937	1.386	1.457	21.535	2.486	1.391
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:29:42	4160.519	7796.823	713147.810	2690.217	1160.040	3875.450	10038.022	1813.099	444.006	802.019	605.011	3480.363
2	11:30:04	4110.507	8076.957	724225.470	3055.280	1360.055	3860.447	9967.980	1784.095	487.007	753.517	628.512	3405.348
3	11:30:26	4255.543	8267.050	735179.780	3435.354	1300.051	3905.458	10123.073	1775.094	420.005	776.518	632.012	3310.329
x		4175.523	8046.943	724184.350	3060.284	1273.382	3880.452	10043.025	1790.763	450.339	777.351	621.845	3398.680
σ		73.673	236.546	11016.041	372.594	102.640	22.918	77.668	19.860	33.947	24.262	14.683	85.213
%RSD		1.764	2.940	1.521	12.175	8.060	0.591	0.773	1.109	7.538	3.121	2.361	2.507
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:29:42	22244.835	163255.680	17494.177	3020.274	80.000	825.020	739949.030	4120.509	6161.139	4835.701	5200.811	120725.660
2	11:30:04	21769.208	163982.760	18064.785	3030.276	50.000	655.013	735435.700	4520.613	6481.260	5086.776	5535.919	121440.830
3	11:30:26	22745.510	165103.750	18550.318	3060.281	40.000	865.022	732239.490	4995.749	6336.204	5110.283	5530.918	122196.320
x		22253.184	164114.060	18036.426	3036.943	56.667	781.685	735874.740	4545.624	6326.201	5010.920	5422.549	121454.270
σ		488.205	931.006	528.641	20.820	20.817	111.510	3873.477	438.155	160.295	152.199	192.047	735.422
%RSD		2.194	0.567	2.931	0.686	36.735	14.265	0.526	9.639	2.534	3.037	3.542	0.606

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:29:42	3015.273	18995.819	8817.332	98097.849	0.000	43566.868	14226.069
2	11:30:04	3180.303	19361.239	10283.171	99375.383	0.000	41481.557	14671.455
3	11:30:26	3055.280	19811.768	10208.125	98449.915	0.000	39657.125	14080.946
x		3083.619	19389.609	9769.543	98641.049	0.000	41568.517	14326.156
σ		86.088	408.714	825.492	659.866	0.000	1956.322	307.715
%RSD		2.792	2.108	8.450	0.669	0.000	4.706	2.148

ICBIS 11/1/2016 11:35:03 AM QC Status: WARNING (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:35:25	102775.910	2.500	920.025	169679.360	160.001	465.006	49653.855	480.007	123536.140	5.000	7491.683	985.029
2	11:35:47	102232.590	2.500	940.027	167992.400	180.001	780.018	48991.901	420.005	121460.980	0.000	7111.517	920.025
3	11:36:09	105221.100	5.000	795.019	168093.410	140.001	1295.050	50446.229	370.004	122115.730	0.000	7056.493	970.028
x		103409.870	3.333	885.024	168588.390	160.001	846.692	49697.328	423.339	122370.950	1.667	7219.898	958.361
σ		1591.925	1.443	78.585	946.157	20.000	419.019	728.138	55.077	1060.864	2.887	236.976	34.036
%RSD		1.539	43.301	8.879	0.561	12.500	49.489	1.465	13.010	0.867	173.205	3.282	3.552

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:35:25	2215.147	320.003	181017.710	5.000	15.000	160.001	355.004	715.015	237.002	625.512	642.512	3370.341
2	11:35:47	2620.206	250.002	179102.180	20.000	15.000	245.002	270.002	738.016	280.002	607.511	632.512	3355.338
3	11:36:09	2435.178	415.005	178258.210	40.000	20.000	155.001	435.006	760.017	246.002	635.012	614.511	3010.272
x		2423.510	328.337	179459.370	21.667	16.667	186.668	353.337	737.683	254.335	622.678	629.845	3245.317
σ		202.781	82.817	1414.002	17.559	2.887	50.581	82.514	22.503	22.679	13.968	14.190	203.693
%RSD		8.367	25.223	0.788	81.044	17.321	27.097	23.353	3.050	8.917	2.243	2.253	6.277

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:35:25	20.000	164033.250	635.012	25.000	0.000	5.000	732176.820	1135.039	505.008	350.504	10.000	117371.830
2	11:35:47	45.000	162740.680	685.014	20.000	0.000	20.000	729336.260	1195.043	545.009	387.505	15.000	119043.630
3	11:36:09	75.000	160034.660	725.016	40.000	5.000	0.000	733221.270	1365.056	595.011	447.506	20.000	120232.110
x		46.667	162269.530	681.681	28.333	1.667	8.333	731578.120	1231.713	548.342	395.171	15.000	118882.530
σ		27.538	2040.507	45.094	10.408	2.887	10.408	2010.514	119.313	45.094	48.954	5.000	1436.929
%RSD		59.010	1.257	6.615	36.735	173.205	124.900	0.275	9.687	8.224	12.388	33.333	1.209

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:35:25	110.000	1020.031	370.004	95864.912	0.000	740.016	5.000
2	11:35:47	80.000	1015.031	340.003	97745.789	0.000	985.029	15.000
3	11:36:09	110.000	890.024	455.006	98188.379	0.000	640.012	35.000
x		100.000	975.029	388.338	97266.360	0.000	788.353	18.333
σ		17.321	73.659	59.653	1233.699	0.000	177.515	15.275
%RSD		17.321	7.555	15.361	1.268	0.000	22.517	83.320

ICSA 11/1/2016 11:40:46 AM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:41:07	110021.950	12.500	1060.034	TM 133048200.000	T 13731115.000	T 123829930.000	TM 144699130.000	T 5389928.700	145310.710	323076.290	4775.684	48
2	11:41:29	108270.540	5.000	885.024	TM 130261440.000	T 13472923.000	T 121646260.000	TM 145853430.000	T 5488622.100	145351.060	327853.220	4690.660	49
3	11:41:51	105523.000	7.500	915.025	TM 128455440.000	T 13382796.000	T 122194280.000	TM 146337280.000	T 5499529.600	145855.430	330953.600	4580.629	49
x		107938.500	8.333	953.361	TM 130588360.000	T 13528945.000	T 122556830.000	TM 145629950.000	T 5459360.100	145505.730	327294.370	4682.324	49
σ		2267.781	3.819	93.591	TM 2313767.000	T 180791.010	T 1136082.800	TM 841631.290	T 60376.225	303.522	3968.282	97.794	
%RSD		2.101	45.826	9.817	TM 1.772	T 1.336	T 0.927	TM 0.578	T 1.106	0.209	1.212	2.089	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:41:07	1885.107	1315.052	T 272821100.000	195.001	245.002	1025.032	1745.091	1173.041	404.005	695.014	741.016	37
2	11:41:29	1745.091	1280.049	T 275066250.000	220.001	325.003	1045.033	1685.085	1153.040	396.005	736.016	730.516	36
3	11:41:51	2035.124	1470.065	T 274302430.000	170.001	240.002	1045.033	1595.076	1180.042	391.005	697.515	762.517	39
x		1888.441	1355.055	T 274063260.000	195.001	270.002	1038.366	1675.084	1168.708	397.005	709.515	744.683	38

σ		145.045	101.127	T 1141520.200	25.000	47.698	11.548	75.506	14.013	6.558	22.985	16.313	
%RSD		7.681	7.463	T 0.417	12.821	17.666	1.112	4.508	1.199	1.652	3.239	2.191	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	11:41:07	3490.365	182867.740	T 3207776.100	330.003	410.005	595.011	822653.780	2170.141	665.013	515.008	145.001	1387
2	11:41:29	3610.391	183342.920	T 3291618.100	305.003	490.007	545.009	836760.680	2425.176	690.014	556.009	65.000	1412
3	11:41:51	3405.348	181654.590	T 3307731.800	325.003	405.005	525.008	832274.200	2715.221	735.016	596.011	165.001	1422
x		3502.035	182621.750	T 3269042.000	320.003	435.006	555.009	830562.890	2436.846	696.681	555.676	125.001	1407
σ		103.018	870.635	T 53666.063	13.229	47.698	36.057	7207.468	272.727	35.474	40.502	52.915	17
%RSD		2.942	0.477	T 1.642	4.134	10.965	6.497	0.868	11.192	5.092	7.289	42.332	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:41:07	515.008	1040.032	2180.143	105704.140	0.000	23050.929	25.000
2	11:41:29	610.011	885.024	2030.124	107314.380	0.000	18950.768	30.000
3	11:41:51	655.013	995.030	2155.139	107535.800	0.000	16022.698	70.000
x		593.344	973.362	2121.802	106851.440	0.000	19341.465	41.667
σ		71.475	79.744	80.374	999.741	0.000	3530.367	24.664
%RSD		12.046	8.193	3.788	0.936	0.000	18.253	59.195

ICSAB 11/1/2016 11:46:28 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:46:50	102202.400	3280.323	49302.815	TM 127179340.000	T 12996177.000	T 115940000.000	TM 138970170.000	T 5258479.800	138361.950	310312.160	62321.301	1
2	11:47:12	101246.590	3517.871	49824.363	TM 126565730.000	T 13021801.000	T 117460320.000	TM 139421700.000	T 5324319.200	137333.490	318147.830	64444.352	1
3	11:47:33	98922.702	3305.328	49127.298	TM 124076460.000	T 12728835.000	T 115648140.000	TM 136602030.000	T 5291530.900	138916.530	314861.300	62256.058	1
x		100790.570	3367.841	49418.159	TM 125940510.000	T 12915604.000	T 116349490.000	TM 138331300.000	T 5291443.300	138203.990	314440.430	63007.237	1
σ		1686.736	130.530	362.564	TM 1643210.700	T 162253.610	T 973016.380	TM 1514510.900	T 32919.795	803.253	3934.752	1245.006	
%RSD		1.674	3.876	0.734	TM 1.305	T 1.256	T 0.836	TM 1.095	T 0.622	0.581	1.251	1.976	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:46:50	15151.884	81694.731	T 260968920.000	62697.709	13385.373	33854.349	26355.822	20541.651	3935.465	5850.026	716.515	
2	11:47:12	15011.758	84538.862	T 266053640.000	63631.237	13595.543	33493.621	26190.562	20240.283	4060.495	5806.511	733.016	
3	11:47:33	14786.556	82322.810	T 262353060.000	63897.251	13465.437	32832.307	26050.343	20236.278	4068.497	5787.505	735.516	
x		14983.399	82852.135	T 263125200.000	63408.732	13482.118	33393.426	26198.909	20339.404	4021.485	5814.681	728.349	
σ		184.308	1494.124	T 2628830.200	629.966	106.073	518.335	152.911	175.163	74.603	32.052	10.324	
%RSD		1.230	1.803	T 0.999	0.993	0.787	1.552	0.584	0.861	1.855	0.551	1.418	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	11:46:50	3305.328	175580.000	T 3186722.500	77002.471	1595.076	18310.052	798783.700	1755.092	135327.180	106734.680	141099.760	13
2	11:47:12	3615.392	177045.380	T 3223497.700	76218.882	1615.078	18840.643	810415.540	1955.115	138659.400	108635.900	146112.670	14
3	11:47:33	3605.390	176610.810	T 3207540.900	76243.996	1720.089	18745.536	803219.430	2230.149	138866.110	109525.700	146460.710	14
x		3508.703	176412.070	T 3205920.400	76488.450	1643.414	18632.077	804139.550	1980.119	137617.570	108298.760	144557.710	1
σ		176.199	752.635	T 18441.093	445.333	67.151	282.907	5870.256	238.513	1986.222	1425.727	2999.729	
%RSD		5.022	0.427	T 0.575	0.582	4.086	1.518	0.730	12.045	1.443	1.316	2.075	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:46:50	39401.519	233225.490	172275.790	105704.140	0.000	282107.500	160095.240
2	11:47:12	40093.166	236729.370	175190.940	106972.190	5.000	300006.020	165295.630
3	11:47:33	40459.049	241436.170	177085.810	107706.900	0.000	304007.560	164235.230
x		39984.578	237130.340	174850.850	106794.410	1.667	295373.700	163208.700
σ		537.062	4120.001	2422.978	1013.147	2.887	11661.774	2747.972
%RSD		1.343	1.737	1.386	0.949	173.205	3.948	1.684

CCV 11/1/2016 11:52:12 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:52:34	90645.831	75277.116	26240.641	T 10446858.000	T 3145846.300	T 28753674.000	T 10626683.000	1200997.000	103520.500	23151.068	T 2197601.000	672780
2	11:52:56	88805.966	74360.515	25379.309	T 10440655.000	T 3122075.900	T 28280313.000	T 10686194.000	1198957.700	106106.690	24027.307	T 2179244.900	670927
3	11:53:17	88826.073	72921.679	24933.637	T 10211600.000	T 3095964.800	T 27910628.000	T 10489355.000	1185611.900	100129.880	22745.510	T 2117760.200	647731
x		89425.957	74186.437	25517.862	T 10366371.000	T 3121295.700	T 28314872.000	T 10600744.000	1195188.800	103252.360	23307.962	T 2164868.700	663813
σ		1056.490	1187.328	664.427	T 134071.310	T 24949.889	T 422584.250	T 100950.460	8356.346	2997.413	655.143	T 41816.797	13957
%RSD		1.181	1.600	2.604	T 1.293	T 0.799	T 1.492	T 0.952	0.699	2.903	2.811	T 1.932	2

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:52:34	81669.609	T 2997561.400	T 61870554.000	1004712.300	544563.480	666640.890	516073.130	72690.171	5426.883	7865.355	521.008	7511
2	11:52:56	80895.849	T 2979670.800	T 61061548.000	1002117.900	537731.950	664877.510	509433.480	71887.702	5327.851	7857.852	573.010	7516
3	11:53:17	79348.437	T 2918721.800	T 60100624.000	981657.520	529334.450	649129.610	503017.970	70415.436	5308.845	7753.803	542.509	7336
x		80637.965	T 2965318.000	T 61010909.000	996162.590	537209.960	660216.000	509508.190	71664.436	5354.527	7825.670	545.509	7455
σ		1181.879	T 41333.053	T 886051.390	12628.558	7627.920	9641.499	6527.902	1153.685	63.379	62.352	26.130	102

%RSD		1.466	T 1.394	T 1.452	1.268	1.420	1.460	1.281	1.610	1.184	0.797	4.790	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	11:52:34	773507.330	143021.030	1649601.000	256813.470	8036.937	130428.360	662001.350	842031.430	573996.850	451246.100	578089.720	116646
2	11:52:56	763930.440	141296.410	1679271.000	256021.420	7996.918	129329.850	667712.540	846394.300	567463.750	448664.800	579823.410	115941
3	11:53:17	753992.910	138301.450	1646913.800	251376.520	8452.143	127631.830	654555.760	838258.190	563114.920	444545.080	574136.540	110263
x		763810.230	140872.960	1658595.300	254737.130	8161.999	129130.010	661423.220	842227.970	568191.840	448151.990	577349.890	114284
σ		9757.768	2388.115	17956.073	2937.202	252.067	1408.932	6597.414	4071.619	5477.381	3379.812	2914.731	3499
%RSD		1.278	1.695	1.083	1.153	3.088	1.091	0.997	0.483	0.964	0.754	0.505	3

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:52:34	32611.875	1652062.900	T 7413125.900	94054.642	0.000	236972.790	129954.680
2	11:52:56	33077.792	1657373.300	T 7412308.400	93390.925	0.000	249564.590	129360.080
3	11:53:17	33914.471	1641826.700	T 7433218.500	94044.585	0.000	253000.820	129536.440
x		33201.379	1650421.000	T 7419550.900	93830.050	0.000	246512.730	129617.070
σ		660.034	7902.293	T 11843.495	380.327	0.000	8438.589	305.389
%RSD		1.988	0.479	T 0.160	0.405	0.000	3.423	0.236

CCB 11/1/2016 11:57:56 AM QC Status: WARNING (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:58:17	91771.969	12.500	675.014	153180.710	280.002	1915.110	46865.800	540.009	104728.010	15.000	5735.987	870.023
2	11:58:39	91098.288	10.000	645.012	154189.950	430.006	3595.388	47437.413	420.005	105060.090	35.000	5866.032	805.019
3	11:59:01	92174.180	7.500	690.014	155380.940	810.020	5906.046	46885.856	510.008	103520.500	15.000	5791.006	885.024
x		91681.479	10.000	670.013	154250.530	506.676	3805.515	47063.023	490.007	104436.200	21.667	5797.675	853.355
σ		543.624	2.500	22.914	1101.364	273.200	2003.748	324.387	62.452	810.215	11.547	65.279	42.527
%RSD		0.593	25.000	3.420	0.714	53.920	52.654	0.689	12.745	0.776	53.294	1.126	4.983

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:58:17	1915.110	320.003	161650.140	55.000	40.000	235.002	325.003	624.012	208.001	573.010	543.009	3070.283
2	11:58:39	2025.123	340.003	163624.260	80.000	70.000	250.002	370.004	626.012	219.001	530.508	539.509	2960.263
3	11:59:01	2120.135	320.003	166805.570	115.000	15.000	200.001	365.004	651.013	218.001	568.010	555.009	2820.239
x		2020.123	326.670	164026.660	83.334	41.667	228.335	353.337	633.679	215.001	557.176	545.842	2950.261
σ		102.604	11.547	2601.163	30.139	27.538	25.658	24.665	15.045	6.083	23.230	8.129	125.322
%RSD		5.079	3.535	1.586	36.166	66.091	11.237	6.981	2.374	2.829	4.169	1.489	4.248

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:58:17	65.000	141861.180	2560.197	15.000	0.000	0.000	662583.830	1925.111	635.012	501.508	30.000	110907.790
2	11:58:39	35.000	146854.150	2430.177	45.000	0.000	25.000	659193.270	2105.133	705.015	570.510	10.000	112931.310
3	11:59:01	50.000	142315.020	2290.157	40.000	0.000	5.000	664414.590	2425.176	670.013	525.008	30.000	112750.090
x		50.000	143676.780	2426.844	33.333	0.000	10.000	662063.900	2151.807	670.013	532.342	23.333	112196.400
σ		15.000	2761.018	135.051	16.073	0.000	13.229	2649.203	253.279	35.001	35.081	11.547	1119.639
%RSD		30.000	1.922	5.565	48.218	0.000	132.288	0.400	11.771	5.224	6.590	49.487	0.998

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:58:17	120.000	1835.101	410.005	94135.094	0.000	2175.142	50.000
2	11:58:39	105.000	1685.085	600.011	91651.308	0.000	2140.137	30.000
3	11:59:01	95.000	1485.066	680.014	93310.476	0.000	2175.142	35.000
x		106.667	1668.418	563.343	93032.293	0.000	2163.474	38.333
σ		12.583	175.612	138.689	1265.045	0.000	20.210	10.408
%RSD		11.797	10.526	24.619	1.360	0.000	0.934	27.152

MB 200-110769/1-A 11/1/2016 12:03:38 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:03:59	101528.300	27.500	705.015	283897.510	6611.311	66979.317	109085.830	2940.259	114330.810	245.002	6491.264	2415.175
2	12:04:21	99646.998	10.000	780.018	255666.030	3980.475	38790.088	92475.844	2080.130	115549.160	145.001	6396.227	2175.142
3	12:04:43	99556.459	12.500	600.011	249473.240	2170.141	23446.481	81418.384	1470.065	113807.240	95.000	6256.174	2160.140
x		100243.920	16.667	695.015	263012.260	4253.976	43071.962	94326.685	2163.485	114562.400	161.668	6381.222	2250.152
σ		1113.228	9.465	90.419	18350.288	2233.181	22080.032	13926.272	738.633	893.758	76.377	118.261	143.111
%RSD		1.111	56.789	13.010	6.977	52.496	51.263	14.764	34.141	0.780	47.243	1.853	6.360

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:03:59	2325.162	1900.108	333544.490	385.004	195.001	450.006	905.025	746.017	243.002	584.510	595.511	2930.258
2	12:04:21	2240.151	1600.077	269963.850	335.003	150.001	415.005	870.023	671.014	202.001	589.010	591.510	2835.241
3	12:04:43	2175.142	1260.048	230766.610	310.003	150.001	370.004	865.022	672.014	188.001	565.010	616.011	3080.285
x		2246.818	1586.744	278091.650	343.337	165.001	411.672	880.023	696.348	211.001	579.510	601.011	2948.594
σ		75.232	320.239	51868.767	38.189	25.981	40.105	21.796	43.017	28.584	12.758	13.144	123.547
%RSD		3.348	20.182	18.652	11.123	15.746	9.742	2.477	6.178	13.547	2.201	2.187	4.190

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:03:59	260.002	153816.530	3080.285	100.000	5.000	35.000	712135.890	53465.620	535.009	387.505	215.001	115317.570
2	12:04:21	210.001	156763.800	2495.187	60.000	5.000	20.000	711071.870	50345.927	505.008	384.504	110.000	116948.880
3	12:04:43	130.001	153887.170	1880.106	60.000	0.000	40.000	713971.990	53199.771	530.008	385.504	145.001	120252.260
x		200.001	154822.500	2485.193	73.334	3.333	31.667	712393.250	52337.106	523.342	385.838	156.667	117506.230
σ		65.575	1681.584	600.152	23.094	2.887	10.408	1467.089	1729.527	16.073	1.528	53.464	2514.116
%RSD		32.787	1.086	24.149	31.492	86.603	32.868	0.206	3.305	3.071	0.396	34.126	2.140

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:03:59	245.002	1070.034	1890.107	92465.788	0.000	30868.560	155.001
2	12:04:21	195.001	1030.032	1260.048	95281.581	0.000	25173.998	85.000
3	12:04:43	185.001	825.020	870.023	98037.495	0.000	19926.905	55.000
x		208.335	975.029	1340.059	95261.621	0.000	25323.154	98.334
σ		32.146	131.442	514.728	2785.907	0.000	5472.352	51.316
%RSD		15.430	13.481	38.411	2.924	0.000	21.610	52.186

LCS 200-110769/2-A 11/1/2016 12:09:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:09:41	103017.400	1352.555	47607.898	T 6339352.000	251544.010	576149.240	T 6410202.500	230411.750	120161.610	55.000	105905.410	82574.049
2	12:10:03	100290.840	1245.046	47688.127	T 6437233.800	252031.290	575067.830	T 6323059.200	234467.730	119446.500	95.000	107797.490	82252.464
3	12:10:25	100934.710	1362.556	47437.413	T 6248754.500	245768.810	569253.250	T 6452847.700	231932.630	116666.910	85.000	108164.850	81312.871
x		101414.320	1320.052	47577.813	T 6341780.100	249781.370	573490.110	T 6395369.800	232270.710	118758.340	78.334	107289.250	82046.461
σ		1425.146	65.149	128.036	T 94263.105	3483.514	3708.853	T 66153.366	2049.016	1846.185	20.817	1212.434	655.340
%RSD		1.405	4.935	0.269	T 1.486	1.395	0.647	T 1.034	0.882	1.555	26.575	1.130	0.799

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:09:41	11684.094	61086.743	T 5021095.900	23511.572	10318.193	32055.798	84071.507	7793.822	1191.043	1840.602	597.511	4050.492
2	12:10:03	11343.859	61312.570	T 5093229.800	24508.006	10363.221	32035.759	85865.619	7691.775	1127.038	1872.105	593.011	4415.585
3	12:10:25	11228.781	60675.244	T 5074076.500	24117.437	10608.375	31790.290	84006.179	7644.753	1073.035	1858.604	561.509	4395.580
x		11418.912	61024.852	T 5062800.700	24045.672	10429.930	31960.616	84647.768	7710.116	1130.372	1857.103	584.010	4287.219

σ		236.753	323.139	T 37365.491	502.078	156.170	147.846	1055.195	76.208	59.075	15.805	19.616	205.255
%RSD		2.073	0.530	T 0.738	2.088	1.497	0.463	1.247	0.988	5.226	0.851	3.359	4.788
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:09:41	223285.740	159903.410	157379.560	30157.259	475.007	6521.276	727655.110	51875.607	49709.019	38266.379	50947.751	120987.550
2	12:10:03	226605.090	161175.580	159338.030	30818.467	455.006	7006.472	720483.410	51444.273	49518.453	38866.265	52106.325	123354.810
3	12:10:25	224577.930	158601.060	157096.910	30457.805	460.006	6826.398	721735.890	52096.294	49548.542	39204.556	53525.813	119849.370
x		224822.920	159893.350	157938.170	30477.844	463.340	6784.715	723291.470	51805.391	49592.005	38779.067	52193.296	121397.240
σ		1673.182	1287.290	1220.530	331.059	10.409	245.269	3830.562	331.633	102.448	475.128	1291.229	1788.270
%RSD		0.744	0.805	0.773	1.086	2.246	3.615	0.530	0.640	0.207	1.225	2.474	1.473

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:09:41	68374.967	175271.790	65649.040	97212.685	0.000	261972.840	147136.620
2	12:10:03	69725.545	180112.990	66391.974	97635.143	0.000	277318.120	150874.820
3	12:10:25	70905.508	180158.480	66487.353	96770.120	0.000	281553.250	151349.090
x		69668.673	178514.420	66176.122	97205.983	0.000	273614.740	149786.840
σ		1266.228	2808.294	458.951	432.550	0.000	10302.156	2307.378
%RSD		1.818	1.573	0.694	0.445	0.000	3.765	1.540

200-35700-A-11-A 11/1/2016 12:15:02 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:15:23	126901.290	1030.032	5705.977	┬1515232.400	┬3478663.100	┬155786420.000	┬16028956.000	┬1425995.000	227725.210	30027.024	403357.560	34667
2	12:15:45	122941.770	1077.535	5690.971	┬1498131.600	┬3527815.000	┬157986210.000	┬16191072.000	1457259.700	233859.270	32416.494	416330.790	35268
3	12:16:07	127042.350	1030.032	5781.002	┬1552734.800	┬3585782.100	┬159644020.000	┬16321340.000	┬1478725.700	237784.230	29741.513	416597.330	36286
x		125628.470	1045.866	5725.984	┬1522032.900	┬3530753.400	┬157805550.000	┬16180456.000	┬1453993.500	233122.900	30728.344	412095.230	35407
σ		2327.817	27.426	48.235	┬27929.612	┬53619.932	┬1935135.100	┬146480.520	┬26516.635	5069.778	1468.934	7568.215	818
%RSD		1.853	2.622	0.842	┬1.835	┬1.519	┬1.226	┬0.905	┬1.824	2.175	4.780	1.837	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:15:23	44368.980	┬26473551.000	┬487525820.000	204552.600	111552.070	1157735.900	507253.480	12576.743	998.030	1246.047	806.520	758
2	12:15:45	44564.500	┬26761707.000	┬490680250.000	205230.860	113857.580	1184491.200	513552.020	12963.039	955.027	1250.047	815.520	829
3	12:16:07	44489.300	┬27331011.000	┬500620800.000	206238.180	115015.490	1199381.600	522993.920	13043.102	1022.031	1348.055	852.522	818
x		44474.260	┬26855423.000	┬492942290.000	205340.550	113475.050	1180536.200	514599.810	12860.961	991.696	1281.383	824.854	802
σ		98.624	┬436344.460	┬6834269.600	848.127	1763.114	21102.703	7922.361	249.374	33.948	57.774	24.380	38
%RSD		0.222	┬1.625	┬1.386	0.413	1.554	1.788	1.540	1.939	3.423	4.509	2.956	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	12:15:23	668903.910	980041.450	8497.165	6876.418	425.005	2800.235	865546.280	67340.769	3025.275	2473.184	908863.230	22086
2	12:15:45	688524.150	995668.060	8081.959	6916.435	330.003	2940.259	886569.240	70779.976	3270.321	2577.199	932005.220	22374
3	12:16:07	699434.640	1011468.100	8402.117	6771.375	450.006	2610.204	902511.650	71824.430	3260.319	2617.706	949095.320	22836
x		685620.900	995725.880	8327.081	6854.743	401.672	2783.566	884875.720	69981.725	3185.305	2556.029	929987.920	22432
σ		15471.037	15713.423	217.536	74.920	63.313	165.658	18540.782	2345.998	138.680	74.551	20191.767	378
%RSD		2.257	1.578	2.612	1.093	15.762	5.951	2.095	3.352	4.354	2.917	2.171	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:15:23	1235.046	12624.780	1469878.900	125823.160	0.000	540829.810	197564.050
2	12:15:45	1210.044	13150.186	1517900.200	127485.720	0.000	546009.660	198130.710
3	12:16:07	1165.041	12804.917	1526740.500	130307.420	0.000	552482.820	202897.550
x		1203.377	12859.961	1504839.800	127872.100	0.000	546440.760	199530.770
σ		35.476	266.993	30598.050	2266.961	0.000	5838.454	2929.451
%RSD		2.948	2.076	2.033	1.773	0.000	1.068	1.468

200-35700-A-12-A 11/1/2016 12:20:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:21:06	125571.270	1247.547	4670.654	┬1917941.900	┬4203145.200	┬184881650.000	┬17261547.000	┬1656564.400	248204.500	31234.240	525423.580	4066
2	12:21:28	121853.830	1125.038	4815.696	┬1930234.000	┬4137578.800	┬182837480.000	┬17041741.000	┬1666716.300	254295.300	33879.399	536033.530	4117
3	12:21:50	124412.630	1137.539	4895.719	┬1903971.000	┬4229924.900	┬182804140.000	┬17361628.000	┬1695200.700	255462.950	33162.961	536281.320	4100
x		123945.910	1170.041	4794.023	┬1917382.300	┬4190216.300	┬183507760.000	┬17221639.000	┬1672827.100	252654.250	32758.867	532579.480	4095
σ		1902.160	67.412	114.087	┬13140.461	┬47511.224	┬1189939.500	┬163635.220	┬20029.923	3897.567	1368.096	6198.430	25
%RSD		1.535	5.762	2.380	┬0.685	┬1.134	┬0.648	┬0.950	┬1.197	1.543	4.176	1.164	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:21:06	51740.187	┬37227674.000	┬702888600.000	268027.980	135140.680	1050835.200	575057.490	25388.322	1077.035	1397.559	897.524	86
2	12:21:28	52883.768	┬37763016.000	┬702706930.000	264756.310	138064.500	1065440.100	583156.740	25294.179	1068.034	1445.063	929.026	93
3	12:21:50	52111.341	┬37633716.000	┬709077490.000	268373.470	138482.950	1071229.100	578938.430	25837.011	1001.030	1389.058	860.522	89
x		52245.098	┬37541468.000	┬704891010.000	267052.590	137229.370	1062501.400	579050.890	25506.504	1048.700	1410.560	895.691	90
σ		583.406	┬279338.270	┬3626741.200	1996.125	1820.923	10509.709	4050.797	290.072	41.528	30.181	34.289	3

%RSD		1.117	T 0.744	T 0.515	0.747	1.327	0.989	0.700	1.137	3.960	2.140	3.828	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**1**
1	12:21:06	801473.310	1090633.900	16137.809	6911.433	355.004	2920.256	933257.450	55597.578	3010.272	2429.677	1091956.400	23492
2	12:21:28	801887.540	1079822.900	16658.321	6921.437	315.003	2705.220	942443.330	57574.272	2945.260	2462.182	1118641.900	23921
3	12:21:50	806665.000	1090847.200	16242.911	7041.487	280.002	2925.257	942422.180	56325.015	3165.300	2415.675	1122044.500	23692
x		803341.950	1087101.300	16346.347	6958.119	316.670	2850.244	939374.320	56498.955	3040.278	2435.845	1110880.900	23702
σ		2885.289	6304.212	275.241	72.372	37.528	125.620	5297.373	999.761	113.047	23.859	16477.187	214
%RSD		0.359	0.580	1.684	1.040	11.851	4.407	0.564	1.770	3.718	0.979	1.483	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:21:06	1420.061	13410.393	1582455.100	131970.430	0.000	535858.020	293908.820
2	12:21:28	1340.054	13730.654	1618727.800	135296.940	0.000	539941.700	295415.100
3	12:21:50	1445.063	13325.325	1615418.700	134873.530	0.000	544506.670	295404.930
x		1401.726	13488.790	1605533.900	134046.960	0.000	540102.130	294909.620
σ		54.853	213.735	20055.163	1810.753	0.000	4326.552	866.729
%RSD		3.913	1.585	1.249	1.351	0.000	0.801	0.294

200-35700-A-12-A SD@5 11/1/2016 12:26:27 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:26:49	104567.000	255.002	1295.050	506315.600	785190.050	T 34184422.000	T 3177948.800	304608.380	157076.720	5180.805	103173.360	75676.418
2	12:27:10	103319.260	227.502	1260.048	508541.860	777847.490	T 33754282.000	T 3096395.800	301024.140	156299.470	5530.918	100849.200	74872.801
3	12:27:32	101065.500	230.002	1180.042	490667.870	752931.500	T 33482215.000	T 3104062.400	296280.260	155057.950	5560.928	99541.369	74948.139
x		102983.920	237.502	1245.047	501841.780	771989.680	T 33806973.000	T 3126135.700	300637.590	156144.710	5424.217	101187.970	75165.786
σ		1774.673	15.207	58.953	9740.695	16908.249	T 354056.490	T 45034.957	4177.495	1018.244	211.334	1839.541	443.822
%RSD		1.723	6.403	4.735	1.941	2.190	T 1.047	T 1.441	1.390	0.652	3.896	1.818	0.590

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:26:49	11584.024	T 6697044.300	T 128973030.000	49709.019	25910.124	203165.790	119340.740	6126.126	471.007	860.022	722.016	4560.624
2	12:27:10	11624.052	T 6628247.000	T 127764050.000	49082.166	25659.737	203504.890	118665.950	6032.091	508.008	830.021	756.517	4595.633
3	12:27:32	11458.938	T 6684130.400	T 127175650.000	47843.572	25133.937	197751.250	120206.930	6028.090	538.009	874.523	692.514	4610.638
x		11555.671	T 6669807.200	T 127970910.000	48878.252	25567.933	201473.970	119404.540	6062.102	505.674	854.855	723.682	4588.965
σ		86.131	T 36566.803	T 916372.130	949.294	396.154	3228.431	772.470	55.482	33.562	22.697	32.034	25.665
%RSD		0.745	T 0.548	T 0.716	1.942	1.549	1.602	0.647	0.915	6.637	2.655	4.427	0.559

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:26:49	149901.090	348842.930	2965.264	1435.062	45.000	615.011	845663.580	10833.520	760.017	547.009	209144.060	153846.800
2	12:27:10	150703.280	353039.930	3055.280	1380.057	70.000	600.011	834238.860	10633.391	765.018	533.509	206131.880	152686.200
3	12:27:32	154669.360	351702.090	2860.245	1400.059	30.000	535.009	834974.350	10643.397	670.013	543.009	206673.520	151949.520
x		151757.910	351194.980	2960.263	1405.059	48.333	583.344	838292.260	10703.436	731.683	541.175	207316.480	152827.510
σ		2553.095	2143.960	97.613	27.841	20.207	42.526	6394.329	112.767	53.466	6.934	1605.726	956.504
%RSD		1.682	0.610	3.297	1.981	41.808	7.290	0.763	1.054	7.307	1.281	0.775	0.626

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:26:49	245.002	2540.194	300851.050	111703.080	0.000	83744.869	54418.697
2	12:27:10	245.002	2585.200	303554.410	113928.060	0.000	86664.739	55728.013
3	12:27:32	255.002	2590.201	300560.890	111501.740	0.000	87559.397	54167.882
x		248.335	2571.865	301655.450	112377.620	0.000	85989.668	54771.531
σ		5.774	27.542	1650.936	1346.486	0.000	1994.855	837.777
%RSD		2.325	1.071	0.547	1.198	0.000	2.320	1.530

200-35700-A-12-A PDS 11/1/2016 12:32:10 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:32:32	114995.350	2477.684	52016.044	┬8614277.800	┬4032010.100	┬165166760.000	┬23237886.000	┬1763569.900	233656.460	37001.027	606752.000	46858
2	12:32:54	117553.110	2467.683	54202.996	┬8730967.600	┬4068608.100	┬165165960.000	┬22986902.000	┬1766231.000	227086.580	29721.477	601807.480	46603
3	12:33:15	117250.990	2542.694	52733.292	┬8547268.600	┬4020489.600	┬164211180.000	┬23080466.000	┬1768793.700	226853.440	29936.862	606539.470	47002
x		116599.820	2496.020	52984.111	┬8630838.000	┬4040369.200	┬164847970.000	┬23101752.000	┬1766198.200	229198.830	32219.789	605032.980	46821
σ		1397.692	40.729	1114.842	┬92962.432	┬25124.752	┬551475.650	┬126838.650	┬2612.048	3862.183	4142.074	2795.384	202
%RSD		1.199	1.632	2.104	┬1.077	┬0.622	┬0.335	┬0.549	┬0.148	1.685	12.856	0.462	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:32:32	57955.591	┬33335248.000	┬633405460.000	268759.620	135382.630	987259.300	625776.400	31674.069	2075.129	2743.226	820.520	945
2	12:32:54	57880.330	┬33891780.000	┬640411060.000	269267.720	135468.320	985531.410	620655.140	31537.811	2082.130	2739.225	871.023	945
3	12:33:15	59556.219	┬33582201.000	┬635023040.000	267748.540	135034.830	977625.580	616551.980	31493.728	2170.141	2789.233	846.021	951
x		58464.046	┬33603077.000	┬636279850.000	268591.960	135295.260	983472.100	620994.510	31568.536	2109.133	2757.228	845.855	947
σ		946.597	┬278852.760	┬3668009.300	773.344	229.576	5136.410	4621.563	94.015	52.950	27.789	25.252	3
%RSD		1.619	┬0.830	┬0.576	0.288	0.170	0.522	0.744	0.298	2.511	1.008	2.985	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	12:32:32	994204.450	989040.390	197989.050	41491.582	790.019	10528.324	887106.730	51770.280	60238.665	47711.695	1078719.800	22006
2	12:32:54	988823.040	995530.180	196795.030	40398.903	825.020	10723.449	883070.640	50461.275	59782.025	48044.148	1079806.900	22253
3	12:33:15	987481.930	996219.600	196456.070	41045.480	835.021	10533.327	889035.540	50310.821	60404.262	47933.329	1076199.400	22243
x		990169.810	993596.720	197080.050	40978.655	816.687	10595.033	886404.310	50847.459	60141.651	47896.390	1078242.000	22167
σ		3557.864	3960.929	805.254	549.396	23.630	111.239	3043.858	802.720	322.263	169.277	1850.585	139
%RSD		0.359	0.399	0.409	1.341	2.893	1.050	0.343	1.579	0.536	0.353	0.172	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:32:32	34570.817	213954.540	1552937.900	128432.950	0.000	815478.750	436917.820
2	12:32:54	35547.869	215301.720	1577359.400	128684.880	0.000	824449.320	443133.740
3	12:33:15	35648.083	219394.580	1558180.000	129118.220	0.000	824554.330	449002.720
x		35255.590	216216.950	1562825.800	128745.350	0.000	821494.140	443018.090
σ		595.144	2833.149	12856.470	346.611	0.000	5209.737	6043.278
%RSD		1.688	1.310	0.823	0.269	0.000	0.634	1.364

200-35700-A-12-G MS 11/1/2016 12:37:53 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:38:15	106479.050	1887.607	41316.147	┬8017625.900	┬2779927.200	┬103755900.000	┬15103890.000	┬1444754.600	184808.980	24197.553	422298.140	33444
2	12:38:37	109558.920	2152.639	42824.949	┬8177082.100	┬2774334.200	┬104977320.000	┬15105775.000	1470533.000	189248.380	27107.026	415848.990	32848
3	12:38:58	105704.140	1955.115	41145.727	┬8061188.900	┬2802846.600	┬103653510.000	┬14942700.000	┬1462430.100	188247.140	25379.309	426764.780	33787
x		107247.370	1998.454	41762.274	┬8085298.900	┬2785702.700	┬104128910.000	┬15050788.000	┬1459239.200	187434.830	25561.296	421637.300	33359
σ		2039.008	137.729	924.240	┬82416.874	┬15108.135	┬736526.350	┬93611.565	┬13182.053	2328.508	1463.249	5487.818	475
%RSD		1.901	6.892	2.213	┬1.019	┬0.542	┬0.707	┬0.622	┬0.903	1.242	5.724	1.302	1

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:38:15	42729.705	┬26467504.000	┬392424140.000	192409.270	93747.921	1023511.000	530861.900	22139.695	1913.110	2636.709	696.015	8217
2	12:38:37	41461.508	┬26553407.000	┬399956940.000	197624.760	94497.134	1036976.300	534866.940	22235.823	1883.106	2530.192	753.017	7921
3	12:38:58	41942.709	┬26527258.000	┬397322730.000	196172.760	95226.266	1029041.400	532998.490	21926.414	1877.106	2609.204	729.016	8001
x		42044.641	┬26516056.000	┬396567940.000	195402.260	94490.440	1029842.900	532909.110	22100.644	1891.107	2592.035	726.016	8046

σ		640.214	T 44033.379	T 3822706.900	2691.765	739.196	6768.331	2004.017	158.358	19.289	55.295	28.619	152
%RSD		1.523	T 0.166	T 0.964	1.378	0.782	0.657	0.376	0.717	1.020	2.133	3.942	1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	12:38:15	777611.870	686690.780	179885.550	38369.115	710.015	9952.971	825866.990	64986.451	19751.697	15688.881	716079.580	183696
2	12:38:37	777946.980	682983.000	182574.560	38559.554	785.018	10148.089	832316.220	66166.078	19876.846	15793.479	727623.790	186426
3	12:38:58	771984.090	683784.900	181154.180	39201.048	740.016	10198.119	827515.830	66457.233	20062.067	15714.405	726287.350	188176
x		775847.640	684486.230	181204.760	38709.905	745.017	10099.726	828566.340	65869.921	19896.870	15732.255	723330.240	186099
σ		3350.128	1950.850	1345.215	435.869	37.751	129.532	3350.500	778.834	156.151	54.536	6314.709	2257
%RSD		0.432	0.285	0.742	1.126	5.067	1.283	0.404	1.182	0.785	0.347	0.873	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:38:15	40504.158	204537.410	1271941.100	118338.630	0.000	632456.590	355496.320
2	12:38:37	40880.074	207402.490	1269990.400	116163.410	0.000	638723.940	356502.470
3	12:38:58	41085.578	210657.940	1274845.900	118258.070	0.000	646292.480	363276.410
x		40823.270	207532.620	1272259.100	117586.700	0.000	639157.670	358425.070
σ		294.843	3062.339	2443.326	1233.265	0.000	6928.134	4231.397
%RSD		0.722	1.476	0.192	1.049	0.000	1.084	1.181

200-35700-A-12-H MSD 11/1/2016 12:43:37 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:43:58	112266.850	2210.146	44559.487	T 8452687.500	T 3393004.300	T 137075110.000	T 19395534.000	T 1595850.200	199426.030	29916.826	504249.350	40254
2	12:44:20	109397.860	2205.146	43727.287	T 8449927.500	T 3391271.700	T 137017300.000	T 19307529.000	T 1589016.600	206339.420	35698.190	517057.960	39813
3	12:44:42	107918.260	2195.145	43501.698	T 8373813.000	T 3407655.700	T 139002320.000	T 19464757.000	T 1593879.000	200933.980	32651.953	512892.160	39915
x		109860.990	2203.479	43929.491	T 8425476.000	T 3397310.600	T 137698250.000	T 19389273.000	T 1592915.200	202233.140	32755.657	511399.820	39994
σ		2210.975	7.639	557.130	T 44762.730	T 9000.917	T 1129733.900	T 78800.953	T 3517.271	3635.193	2892.077	6533.408	230
%RSD		2.013	0.347	1.268	T 0.531	T 0.265	T 0.820	T 0.406	T 0.221	1.798	8.829	1.278	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:43:58	50707.019	TM 30428459.000	T 478824280.000	219891.060	112000.060	1060499.400	583570.860	25621.679	1954.115	2611.705	733.516	884
2	12:44:20	50812.339	T 30468147.000	T 481675630.000	223604.980	113595.810	1080792.800	588168.310	26021.297	1966.116	2640.209	774.018	867
3	12:44:42	50320.851	TM 30748776.000	T 488783460.000	223990.100	111728.240	1070371.500	582856.510	25807.966	2017.122	2642.209	771.518	826
x		50613.403	TM 30548461.000	T 483094460.000	222495.380	112441.370	1070554.600	584865.230	25816.981	1979.118	2631.374	759.684	859
σ		258.772	TM 174609.510	T 5128950.800	2263.615	1008.966	10147.939	2882.767	199.962	33.455	17.064	22.696	30
%RSD		0.511	TM 0.572	T 1.062	1.017	0.897	0.948	0.493	0.775	1.690	0.648	2.988	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	1
1	12:43:58	873569.030	783031.990	186639.210	40198.419	790.019	10748.465	850279.770	60354.081	21428.767	16530.193	861362.680	19603
2	12:44:20	878919.620	790502.540	187296.520	40564.304	835.021	10213.128	844507.090	61377.809	21123.377	16806.970	872658.120	19789
3	12:44:42	888129.080	799884.660	186674.600	40559.292	910.025	10483.296	853929.450	59917.510	20938.144	16692.355	872679.180	20118
x		880205.910	791139.730	186870.110	40440.672	845.021	10481.630	849572.110	60549.800	21163.429	16676.506	868900.000	19837
σ		7364.759	8444.381	369.706	209.812	60.625	267.672	4750.873	749.565	247.752	139.067	6527.514	260
%RSD		0.837	1.067	0.198	0.519	7.174	2.554	0.559	1.238	1.171	0.834	0.751	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:43:58	35663.115	211402.280	1424039.100	120413.420	0.000	712589.680	387078.290
2	12:44:20	34886.474	215818.340	1434344.000	120232.110	0.000	723233.770	391960.420
3	12:44:42	36254.389	215281.460	1430357.300	121823.610	0.000	723969.710	390854.910
x		35601.326	214167.360	1429580.100	120823.050	0.000	719931.060	389964.540
σ		686.047	2409.629	5196.227	871.241	0.000	6368.457	2559.955
%RSD		1.927	1.125	0.363	0.721	0.000	0.885	0.656

200-35700-A-13-A 11/1/2016 12:49:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	12:49:42	114441.560	1550.072	5801.009	T 1985463.200	T 7551101.200	T 224694390.000	T 19063029.000	T 2057416.000	283378.800	51353.995	710534.680	5
2	12:50:04	114371.080	1317.552	5781.002	T 1942782.200	T 7500915.700	T 223648180.000	T 18976812.000	T 2080939.500	283226.240	54393.615	716277.840	5
3	12:50:26	111753.410	1400.059	5560.928	T 1945143.900	T 7495717.800	T 223808920.000	T 18817667.000	T 2068323.600	288281.810	55888.549	729294.490	5
x		113522.020	1422.561	5714.313	T 1957796.400	T 7515911.600	T 224050490.000	T 18952503.000	T 2068893.000	284962.280	53878.720	718702.330	5
σ		1532.063	117.882	133.212	T 23989.208	T 30585.701	T 563387.470	T 124474.180	T 11772.067	2875.810	2310.710	9612.038	
%RSD		1.350	8.287	2.331	T 1.225	T 0.407	T 0.251	T 0.657	T 0.569	1.009	4.289	1.337	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	12:49:42	72808.687	TM 92586355.000	TM 1246503400.000	513588.110	290881.400	273368.680	477148.740	110517.210	855.022	981.529	845.021	
2	12:50:04	72306.507	TM 91736369.000	TM 1238035300.000	523571.640	292753.760	273597.380	478048.990	109244.860	783.018	942.527	860.022	
3	12:50:26	74270.114	TM 93325378.000	TM 1271014200.000	525212.060	291486.840	272687.660	479077.910	110145.760	809.020	956.527	847.522	
x		73128.436	TM 92549367.000	TM 1251851000.000	520790.600	291707.330	273217.910	478091.880	109969.280	815.687	960.194	850.855	
σ		1020.106	TM 795150.050	TM 17127413.000	6291.240	955.455	473.234	965.302	654.276	36.462	19.758	8.037	

%RSD		1.395	TM 0.859	TM 1.368	1.208	0.328	0.173	0.202	0.595	4.470	2.058	0.945	
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	
1	12:49:42	1297416.800	T 1219234.800	49603.706	1960.115	560.009	2070.129	869441.370	48400.175	5550.924	4349.568	994310.500	2
2	12:50:04	1304169.500	1210090.700	50461.275	2030.124	600.011	2100.132	875422.590	48691.021	5876.036	4417.585	1001247.900	2
3	12:50:26	1298253.300	1210359.200	50491.366	2290.157	545.009	2010.121	881290.000	49247.653	5755.994	4485.604	1012317.400	2
x		1299946.600	T 1213228.200	50185.449	2093.465	568.343	2060.127	875384.660	48779.616	5727.651	4417.586	1002625.300	2
σ		3681.037	T 5203.593	504.029	173.900	28.432	45.831	5924.406	430.629	164.398	68.018	9082.150	
%RSD		0.283	T 0.429	1.004	8.307	5.003	2.225	0.677	0.883	2.870	1.540	0.906	

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:49:42	615.011	19336.210	1575297.300	136768.880	0.000	978912.950	160827.240
2	12:50:04	635.012	19346.222	1593123.200	135498.570	0.000	979252.020	163715.150
3	12:50:26	675.014	19326.199	1598267.400	136980.610	0.000	989236.530	163578.820
x		641.679	19336.210	1588896.000	136416.020	0.000	982467.160	162707.070
σ		30.552	10.012	12054.387	801.558	0.000	5864.891	1629.409
%RSD		4.761	0.052	0.759	0.588	0.000	0.597	1.001

200-35700-A-14-A 11/1/2016 12:55:04 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52**
1	12:55:26	101216.410	460.006	3830.440	T 1420537.500	T 1836161.200	T 74197518.000	T 6785225.000	1205881.400	162740.680	22765.537	241020.210	171300.8
2	12:55:48	102655.170	410.005	4005.481	T 1370629.200	T 1808803.900	T 74333504.000	T 6890672.200	1199666.000	161215.960	22715.469	242034.760	168916.6
3	12:56:10	98248.733	412.505	3875.450	T 1350369.900	T 1817102.300	T 74242241.000	T 6786343.100	1206482.700	163498.030	21308.613	244880.880	172786.0
x		100706.770	427.505	3903.791	T 1380512.200	T 1820689.100	T 74257755.000	T 6820746.800	1204010.000	162484.890	22263.207	242645.280	171001.1
σ		2246.992	28.174	90.897	T 36112.704	T 14026.923	T 69307.726	T 60559.767	3774.015	1162.338	827.081	2001.436	1952.0
%RSD		2.231	6.590	2.328	T 2.616	T 0.770	T 0.093	T 0.888	0.313	0.715	3.715	0.825	1.1
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84**
1	12:55:26	22139.695	TM 28696415.000	T 268993350.000	122936.740	59485.968	1333396.800	437995.560	10653.404	823.020	1239.546	655.513	5650.9
2	12:55:48	21769.208	TM 29046324.000	T 274973790.000	121627.180	59857.294	1357852.900	446193.770	10893.559	800.019	1235.046	684.014	6236.1
3	12:56:10	22460.124	TM 29211280.000	T 274313120.000	122579.120	60063.032	1348729.900	442558.760	10714.443	866.023	1276.549	672.514	6116.1
x		22123.009	TM 28984673.000	T 272760090.000	122381.010	59802.098	1346659.900	442249.360	10753.802	829.687	1250.380	670.680	6001.0
σ		345.760	TM 262910.810	T 3278774.500	676.881	292.465	12358.754	4107.854	124.822	33.503	22.774	14.339	309.1
%RSD		1.563	TM 0.907	T 1.202	0.553	0.489	0.918	0.929	1.161	4.038	1.821	2.138	5.1
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	12:55:26	468899.500	520090.140	7076.502	6851.408	465.006	2875.248	801919.000	53470.636	3635.396	2683.216	490091.280	162649.7
2	12:55:48	478105.580	520822.490	6906.431	6656.329	290.003	2740.225	809125.050	53515.780	3480.363	2770.230	496697.590	164154.4
3	12:56:10	470272.380	521472.340	7356.623	6726.357	315.003	2730.224	806156.250	54875.190	3565.381	2828.240	503388.920	168376.2
x		472425.820	520794.990	7113.185	6744.698	356.671	2781.899	805733.430	53953.869	3560.380	2760.562	496725.930	165060.1
σ		4966.481	691.509	227.327	98.824	94.651	80.997	3621.583	798.207	77.637	72.994	6648.866	2968.7
%RSD		1.051	0.133	3.196	1.465	26.537	2.912	0.449	1.479	2.181	2.644	1.339	1.7

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:55:26	1210.044	6496.266	1187579.800	109126.090	0.000	231790.680	106921.870
2	12:55:48	1290.050	7031.483	1200540.800	111934.620	0.000	236075.190	109901.160
3	12:56:10	1180.042	7061.496	1210751.200	112971.580	0.000	237109.720	109236.810
x		1226.712	6863.082	1199623.900	111344.100	0.000	234991.860	108686.610
σ		56.867	318.026	11612.846	1989.597	0.000	2820.150	1563.993
%RSD		4.636	4.634	0.968	1.787	0.000	1.200	1.439

CCV 11/1/2016 01:00:50 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	13:01:11	82162.020	71081.254	23266.228	┬10235757.000	┬3101223.500	┬28294088.000	┬10428822.000	1160921.400	99013.238	23391.403	┬2118838.000	651686
2	13:01:33	84433.329	70923.082	24012.285	┬10010743.000	┬3063500.900	┬27783518.000	┬10180042.000	1122755.100	94235.660	22134.689	┬2030105.400	637430
3	13:01:55	81358.091	69293.750	23927.163	┬9820613.600	┬2983131.200	┬27406898.000	┬10026359.000	1106756.400	95170.952	21183.454	┬2016498.300	619436
x		82651.147	70432.695	23735.225	┬10022371.000	┬3049285.200	┬27828168.000	┬10211741.000	1130144.300	96139.950	22236.515	┬2055147.300	636184
σ		1594.900	989.521	408.387	┬207816.070	┬60315.954	┬445277.410	┬203095.130	27828.259	2531.903	1107.491	┬55575.842	16161
%RSD		1.930	1.405	1.721	┬2.074	┬1.978	┬1.600	┬1.989	2.462	2.634	4.981	┬2.704	2

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	13:01:11	79127.389	┬2902258.300	┬59115332.000	965297.230	526976.470	658506.930	494992.980	71234.908	5370.865	7684.771	532.008	7051
2	13:01:33	79469.009	┬2912211.300	┬58750219.000	950560.380	515696.740	642655.840	491517.360	69187.309	5352.859	7452.666	524.508	6656
3	13:01:55	77861.448	┬2814696.400	┬57223709.000	927039.440	504002.030	626539.270	481882.040	68022.529	5150.796	7315.105	475.007	6786
x		78819.282	┬2876388.700	┬58363087.000	947632.350	515558.410	642567.340	489464.130	69481.582	5291.507	7484.181	510.508	6831
σ		846.912	┬53658.316	┬1003475.600	19296.236	11487.841	15984.010	6792.354	1626.281	122.191	186.837	30.973	201
%RSD		1.074	┬1.865	┬1.719	2.036	2.228	2.488	1.388	2.341	2.309	2.496	6.067	2

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	13:01:11	758552.990	141699.820	1636631.100	254919.730	8222.028	128322.100	657602.240	830094.430	554213.890	437416.650	570184.270	111290
2	13:01:33	748179.520	138503.110	1615583.600	251518.640	7791.821	124926.450	631615.590	823562.030	546768.950	434815.910	555350.810	108934
3	13:01:55	741443.290	138109.870	1623456.200	247270.780	8011.925	123762.820	630400.870	811811.050	542296.320	430657.000	550338.600	105573
x		749391.930	139437.600	1625223.600	251236.380	8008.591	125670.460	639872.900	821822.500	547759.720	434296.520	558624.560	108599
σ		8619.047	1968.979	10634.460	3832.278	215.123	2368.951	15366.065	9264.983	6020.243	3409.628	10319.921	2873
%RSD		1.150	1.412	0.654	1.525	2.686	1.885	2.401	1.127	1.099	0.785	1.847	2

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:01:11	31655.033	1607192.600	┬7182520.300	89057.302	0.000	218958.900	122871.260
2	13:01:33	31469.682	1578302.700	┬7132127.900	90022.467	0.000	230224.190	124120.460
3	13:01:55	31439.626	1577529.400	┬7091273.900	90987.687	0.000	233925.190	122297.060
x		31521.447	1587674.900	┬7135307.400	90022.485	0.000	227702.760	123096.260
σ		116.661	16907.234	┬45706.178	965.192	0.000	7795.231	932.293
%RSD		0.370	1.065	┬0.641	1.072	0.000	3.423	0.757

CCB 11/1/2016 01:06:33 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:06:55	85026.332	5.000	575.010	152060.520	1670.084	49854.453	49583.647	870.023	102081.670	15.000	6241.168	1100.036
2	13:07:17	85890.748	5.000	480.007	153069.700	1600.077	50215.534	48049.162	910.025	102816.160	15.000	6511.272	1095.036
3	13:07:38	86795.416	0.000	520.008	148760.940	1440.062	47572.798	47828.529	760.017	103369.570	20.000	6701.347	975.029
x		85904.166	3.333	525.008	151297.050	1570.074	49214.262	48487.112	846.688	102755.800	16.667	6484.596	1056.700
σ		884.618	2.887	47.698	2253.552	117.909	1432.968	956.013	77.678	646.069	2.887	231.246	70.774
%RSD		1.030	86.603	9.085	1.489	7.510	2.912	1.972	9.174	0.629	17.321	3.566	6.698

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:06:55	2070.129	13245.261	368954.110	180.001	85.000	415.005	585.010	862.022	289.003	522.508	540.509	2705.220
2	13:07:17	2130.136	13160.194	369250.560	160.001	75.000	430.006	545.009	874.023	291.003	518.008	531.008	2670.214
3	13:07:38	2320.162	13060.115	358279.990	190.001	110.000	445.006	470.007	813.020	266.002	545.509	521.008	2955.262
x		2173.475	13155.190	365494.890	176.668	90.000	430.006	533.342	849.688	282.002	528.675	530.842	2776.898

σ		130.529	92.674	6250.045	15.275	18.028	15.000	58.383	32.318	13.893	14.751	9.751	155.456
%RSD		6.006	0.704	1.710	8.646	20.031	3.488	10.947	3.803	4.926	2.790	1.837	5.598
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:06:55	305.003	147277.860	2300.159	20.000	0.000	5.000	652185.510	1845.102	530.008	458.506	310.003	107555.930
2	13:07:17	335.003	146531.320	2400.173	45.000	0.000	25.000	659151.680	2055.127	660.013	506.008	245.002	112286.980
3	13:07:38	315.003	146147.980	2000.120	45.000	0.000	0.000	652944.370	1860.104	555.009	469.507	225.002	110102.480
x		318.336	146652.390	2233.484	36.667	0.000	10.000	654760.520	1920.111	581.677	478.007	260.002	109981.800
σ		15.276	574.587	208.194	14.434	0.000	13.229	3821.738	117.167	68.983	24.865	44.442	2367.832
%RSD		4.799	0.392	9.321	39.365	0.000	132.288	0.584	6.102	11.859	5.202	17.093	2.153

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:06:55	130.001	890.024	855.022	89318.695	0.000	2280.156	140.001
2	13:07:17	90.000	945.027	1125.038	91641.253	0.000	2505.188	110.000
3	13:07:38	125.000	925.026	1190.043	92445.677	0.000	2230.149	95.000
x		115.000	920.025	1056.701	91135.208	0.000	2338.498	115.000
σ		21.795	27.840	177.657	1623.750	0.000	146.508	22.913
%RSD		18.952	3.026	16.812	1.782	0.000	6.265	19.924

CCVL 11/1/2016 01:12:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:12:38	96900.877	137.501	5095.779	733722.620	24167.509	81277.700	637991.680	22224.808	110746.730	40.000	19386.268	9032.447
2	13:13:00	96498.553	142.501	4830.700	723479.080	25259.126	97589.879	631584.440	21934.424	113666.280	25.000	18675.457	8912.382
3	13:13:22	93219.972	135.001	4775.684	726934.680	24888.569	105427.400	630992.640	21614.006	111884.290	25.000	19476.373	9172.523
x		95539.800	138.334	4900.721	728045.460	24771.735	94764.992	633522.920	21924.413	112099.100	30.000	19179.366	9039.118
σ		2019.076	3.819	171.150	5211.326	555.108	12320.185	3881.351	305.524	1471.585	8.660	438.717	130.199
%RSD		2.113	2.761	3.492	0.716	2.241	13.001	0.613	1.394	1.313	28.868	2.287	1.440

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:12:38	4115.508	12529.708	731785.170	2360.167	1165.041	3620.393	9142.507	1951.114	500.007	657.013	589.010	3100.288
2	13:13:00	4015.484	17093.761	819798.110	2570.198	1000.030	3585.386	9087.477	1969.116	515.008	718.015	582.510	3130.294
3	13:13:22	4085.501	18024.741	821530.350	2545.194	1005.030	3675.405	9227.554	1930.112	479.007	742.517	564.010	3325.332
x		4072.164	15882.737	791037.880	2491.853	1056.700	3627.061	9152.513	1950.114	498.007	705.848	578.510	3185.305
σ		51.329	2940.881	51321.656	114.727	93.859	45.379	70.572	19.522	18.084	44.031	12.972	122.192
%RSD		1.260	18.516	6.488	4.604	8.882	1.251	0.771	1.001	3.631	6.238	2.242	3.836

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:12:38	21178.447	154462.460	15111.848	2940.259	30.000	550.009	707379.630	1405.059	4970.741	3945.967	4940.732	117079.790
2	13:13:00	22209.788	152605.470	16087.761	2905.253	40.000	675.014	706649.620	1760.093	5155.797	4025.986	5065.770	116505.790
3	13:13:22	21423.760	155189.160	15577.276	2970.265	70.000	700.015	698590.310	1755.092	5150.796	4076.499	5110.783	116858.240
x		21603.999	154085.700	15592.295	2938.592	46.667	641.679	704206.520	1640.082	5092.445	4016.151	5039.095	116814.610
σ		538.777	1332.415	488.130	32.538	20.817	80.367	4877.457	203.551	105.428	65.819	88.108	289.478
%RSD		2.494	0.865	3.131	1.107	44.607	12.524	0.693	12.411	2.070	1.639	1.748	0.248

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:12:38	2995.269	16998.664	7796.823	95834.739	0.000	33984.613	14176.026
2	13:13:00	2970.265	17419.098	8352.092	95321.810	0.000	31965.625	13835.740
3	13:13:22	2910.254	17669.361	8477.155	95231.295	0.000	32060.807	14135.992
x		2958.596	17362.374	8208.690	95462.615	0.000	32670.348	14049.253
σ		43.692	338.927	362.127	325.431	0.000	1139.181	185.988
%RSD		1.477	1.952	4.412	0.341	0.000	3.487	1.324

200-35700-A-15-A 11/1/2016 01:18:00 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	13:18:22	104607.250	410.005	3785.430	T 1319155.900	T 1685604.800	T 69032387.000	T 6204163.700	1083287.200	157278.610	21228.511	218239.560	156067.3
2	13:18:44	106006.050	502.508	3480.363	T 1309595.300	T 1709770.500	T 70654439.000	T 6235916.000	1117680.500	160761.610	21313.619	221431.250	155608.0
3	13:19:06	109065.700	457.506	3765.425	T 1331647.200	T 1727522.300	T 71121272.000	T 6484568.100	1127232.700	163861.580	24192.546	225165.780	161084.7
x		106559.670	456.673	3677.073	T 1320132.800	T 1707632.500	T 70269366.000	T 6308215.900	1109400.100	160633.930	22244.892	221612.200	157586.6
σ		2280.197	46.257	170.649	T 11058.336	T 21040.353	T 1096390.100	T 153548.430	23113.283	3293.340	1687.254	3466.655	3038.0
%RSD		2.140	10.129	4.641	T 0.838	T 1.232	T 1.560	T 2.434	2.083	2.050	7.585	1.564	1.9

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	13:18:22	20432.517	TM 25131530.000	T 248876090.000	111652.740	55040.735	1234555.900	399972.430	9715.831	852.022	1143.039	646.013	5851.0
2	13:18:44	20792.962	TM 25554838.000	T 256519440.000	116319.500	56299.930	1259815.000	411359.620	10211.127	830.021	1180.042	690.014	6046.0
3	13:19:06	20828.006	TM 25891494.000	T 259780200.000	116254.040	56214.643	1261026.700	410391.180	10198.119	763.017	1291.050	701.515	5986.0
x		20684.495	TM 25525954.000	T 255058580.000	114742.090	55851.769	1251799.200	407241.080	10041.692	815.020	1204.710	679.181	5961.0
σ		218.922	TM 380804.070	T 5596917.900	2675.657	703.670	14945.439	6313.426	282.279	46.360	77.027	29.294	99.9

%RSD		1.058	TM 1.492	T 2.194	2.332	1.260	1.194	1.550	2.811	5.688	6.394	4.313	1.6
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	13:18:22	424995.420	493942.500	7216.562	5846.025	185.001	2590.201	765390.180	48941.754	3330.333	2654.211	455557.020	158540.4
2	13:18:44	439186.290	509675.720	7286.592	5896.043	235.002	2515.190	792221.340	51078.150	3520.372	2672.714	466128.380	160044.7
3	13:19:06	442671.700	505047.990	7046.489	5770.999	240.002	2410.174	808684.420	52056.169	3630.395	2754.228	467794.080	162003.5
x		435617.800	502888.740	7183.215	5837.689	220.001	2505.188	788765.310	50692.024	3493.700	2693.718	463159.830	160196.2
σ		9362.869	8085.810	123.476	62.937	30.414	90.429	21853.053	1592.707	151.799	53.213	6636.686	1736.4
%RSD		2.149	1.608	1.719	1.078	13.825	3.610	2.771	3.142	4.345	1.975	1.433	1.0

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:18:22	1075.035	6331.202	1110050.000	106780.970	0.000	221213.380	102267.800
2	13:18:44	1215.044	6361.214	1148851.600	110907.790	0.000	223341.480	102871.500
3	13:19:06	1110.037	6711.351	1153277.100	111008.460	0.000	222120.330	103525.530
x		1133.372	6467.922	1137392.900	109565.740	0.000	222225.060	102888.280
σ		72.863	211.349	23782.814	2412.206	0.000	1067.909	629.032
%RSD		6.429	3.268	2.091	2.202	0.000	0.481	0.611

200-35700-A-16-A 11/1/2016 01:23:44 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**5**
1	13:24:06	114280.460	825.020	3915.460	T 1553360.800	T 2795460.100	T 118933520.000	T 9903310.800	1325297.500	199668.910	27617.863	409581.620	270380
2	13:24:28	113374.300	827.521	3920.461	T 1536032.300	T 2754758.500	T 118291000.000	T 9898263.700	T 1329207.100	197381.910	29871.746	400842.980	264771
3	13:24:50	111612.470	827.521	3855.446	T 1503082.500	T 2696213.900	T 113365300.000	T 9580452.800	1307101.400	197088.470	26165.523	396536.790	268053
x		113089.080	826.687	3897.122	T 1530825.200	T 2748810.800	T 116863270.000	T 9794009.100	T 1320535.300	198046.430	27885.044	402320.460	267735
σ		1356.671	1.443	36.179	T 25540.362	T 49889.713	T 3046322.300	T 184962.390	T 11797.238	1412.749	1867.501	6646.742	2817
%RSD		1.200	0.175	0.928	T 1.668	T 1.815	T 2.607	T 1.889	T 0.893	0.713	6.697	1.652	1

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**8**
1	13:24:06	34630.942	TM 39655985.000	T 495245140.000	235238.480	101754.680	T 3241054.400	806156.250	23052.932	1017.031	1447.563	811.520	6926
2	13:24:28	33989.624	TM 40203510.000	T 506494220.000	234472.800	98379.501	T 3180494.900	785687.700	22757.527	1038.032	1480.566	770.018	6981
3	13:24:50	33478.591	TM 40272557.000	T 503706620.000	236151.250	98379.501	T 3137188.100	787908.960	22686.430	1018.031	1440.062	765.518	6876
x		34033.052	TM 40044017.000	T 501815330.000	235287.510	99504.559	T 3186245.800	793250.970	22832.296	1024.365	1456.064	782.352	6928
σ		577.402	TM 337814.330	T 5858174.000	840.298	1948.658	T 52171.388	11231.350	194.355	11.847	21.548	25.360	52
%RSD		1.697	TM 0.844	T 1.167	0.357	1.958	T 1.637	1.416	0.851	1.157	1.480	3.242	0

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	13:24:06	568156.770	751854.480	14025.899	7456.668	415.005	5670.965	873895.500	71482.966	4670.654	3521.372	697495.880	193213
2	13:24:28	564557.510	749909.740	13935.824	7296.597	550.009	5485.903	850879.240	71924.861	4565.625	3478.363	708714.590	197047
3	13:24:50	557102.850	754489.650	13900.795	6841.404	485.007	5325.851	855012.930	72140.792	4370.573	3562.881	693176.140	191412
x		563272.380	752084.620	13954.173	7198.223	483.340	5494.239	859929.220	71849.540	4535.618	3520.872	699795.530	193891
σ		5637.902	2298.611	64.539	319.211	67.517	172.708	12270.472	335.319	152.275	42.261	8020.421	2878
%RSD		1.001	0.306	0.463	4.435	13.969	3.143	1.427	0.467	3.357	1.200	1.146	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:24:06	1675.084	9127.499	1931937.300	120070.960	5.000	363281.520	142794.100
2	13:24:28	1740.091	9807.885	1954157.700	121279.660	0.000	368177.210	141911.610
3	13:24:50	1550.072	9142.507	1961129.800	119960.170	0.000	363812.920	141825.880
x		1655.082	9359.297	1949074.900	120436.930	1.667	365090.550	142177.190
σ		96.576	388.561	15245.525	731.929	2.887	2686.296	535.969
%RSD		5.835	4.152	0.782	0.608	173.205	0.736	0.377

200-35700-A-17-A 11/1/2016 01:29:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:29:49	113555.530	912.525	3855.446	T 1304843.500	T 2814823.000	T 116154540.000	T 9963461.400	1377853.600	193759.780	25559.584	401221.930	26577
2	13:30:11	108884.520	897.524	3935.465	T 1300774.600	T 2787192.100	T 114065520.000	T 9878841.700	1399424.500	197058.110	26425.933	398763.990	26717
3	13:30:33	111441.330	945.027	3605.390	T 1269645.900	T 2801934.700	T 116294850.000	T 10158639.000	T 1379638.000	195570.740	25819.985	402722.480	27329
x		111293.790	918.359	3798.767	T 1291754.700	T 2801316.600	T 115504970.000	T 10000314.000	T 1385638.700	195462.880	25935.167	400902.800	26874
σ		2339.000	24.283	172.182	T 19254.530	T 13825.802	T 1248575.400	T 143493.040	T 11972.126	1651.811	444.512	1998.449	399
%RSD		2.102	2.644	4.533	T 1.491	T 0.494	T 1.081	T 1.435	T 0.864	0.845	1.714	0.498	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:29:49	34079.807	T 21099762.000	T 515515720.000	227187.950	96709.772	T 2408664.400	683269.390	20286.339	977.029	1262.048	767.018	669
2	13:30:11	34355.372	T 21574387.000	T 521030910.000	227309.590	94708.328	T 2341627.400	686310.600	20780.947	951.027	1298.051	721.016	672
3	13:30:33	34275.207	T 21254748.000	T 516845230.000	225262.070	95568.215	T 2369429.300	684222.310	20496.596	917.025	1248.047	745.017	683
x		34236.796	T 21309632.000	T 517797290.000	226586.540	95662.105	T 2373240.400	684600.760	20521.294	948.360	1269.382	744.350	675
σ		141.741	T 242025.590	T 2878219.200	1148.632	1004.020	T 33680.611	1555.525	248.228	30.090	25.796	23.008	7
%RSD		0.414	T 1.136	T 0.556	0.507	1.050	T 1.419	0.227	1.210	3.173	2.032	3.091	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	13:29:49	544992.150	796697.310	13920.811	5485.903	455.006	4110.507	846515.220	56876.884	4395.580	3267.320	613061.710	19623
2	13:30:11	540039.800	799024.850	13720.645	5080.774	330.003	4405.582	845947.450	56039.053	4405.582	3343.335	621827.650	19411
3	13:30:33	534490.140	791424.800	14110.971	5190.808	355.004	4280.550	840071.130	56997.294	4155.518	3377.842	616147.430	19727
x		539840.700	795715.650	13917.476	5252.495	380.004	4265.546	844177.940	56637.744	4318.893	3329.499	617012.260	19587
σ		5253.838	3893.959	195.184	209.490	66.145	148.109	3567.907	521.965	141.575	56.545	4446.504	160
%RSD		0.973	0.489	1.402	3.988	17.406	3.472	0.423	0.922	3.278	1.698	0.721	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:29:49	1260.048	9027.444	1686692.300	117220.780	0.000	450204.490	141694.770
2	13:30:11	1310.052	9287.587	1706482.800	119647.930	0.000	456707.890	143343.780
3	13:30:33	1260.048	9122.496	1712937.300	118711.270	0.000	454318.910	143232.840
x		1276.716	9145.842	1702037.500	118526.660	0.000	453743.760	142757.130
σ		28.870	131.633	13675.583	1224.064	0.000	3289.624	921.700
%RSD		2.261	1.439	0.803	1.033	0.000	0.725	0.646

200-35700-A-18-A 11/1/2016 01:35:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:35:31	112689.690	997.530	2655.211	T 983882.410	T 4991400.200	T 173223560.000	T 13793515.000	1353894.500	232662.700	41165.776	435829.890	41285
2	13:35:53	111773.550	1070.034	2745.226	988457.270	T 5021645.200	T 172574350.000	T 13774892.000	1375338.000	232956.770	40298.661	440120.450	41676
3	13:36:14	111401.070	1127.538	2900.252	1011160.300	T 5056480.200	T 172915020.000	T 13829995.000	1367305.800	239944.860	40022.998	439704.690	42182
x		111954.770	1065.034	2766.897	T 994499.990	T 5023175.200	T 172904310.000	T 13799467.000	1365512.800	235188.110	40495.811	438551.680	41714
σ		663.148	65.148	123.949	T 14608.432	T 32566.954	T 324741.720	T 28029.769	10833.615	4122.091	596.353	2366.289	449
%RSD		0.592	6.117	4.480	T 1.469	T 0.648	T 0.188	T 0.203	0.793	1.753	1.473	0.540	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:35:31	52296.921	TM 43367901.000	T 552966440.000	290281.070	144261.650	95925.258	396280.800	9824.895	757.017	904.025	757.517	892
2	13:35:53	52231.717	TM 44241967.000	T 563459850.000	293181.170	145098.870	98721.515	400612.530	9884.931	754.017	874.523	792.019	931
3	13:36:14	52768.403	TM 44318791.000	T 560728960.000	290627.020	142703.320	97273.035	402251.300	9927.956	740.016	854.022	770.518	907
x		52432.347	TM 43976220.000	T 559051750.000	291363.090	144021.280	97306.603	399714.880	9879.261	750.350	877.523	773.351	910

σ		292.854	TM 528218.210	T 5444052.500	1583.982	1215.729	1398.431	3084.810	51.764	9.074	25.136	17.424	197
%RSD		0.559	TM 1.201	T 0.974	0.544	0.844	1.437	0.772	0.524	1.209	2.864	2.253	2
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	13:35:31	985923.610	1144769.600	40639.487	2885.250	490.007	2040.125	821036.910	30282.486	1025.032	783.018	1391690.400	226184
2	13:35:53	984810.620	1140469.200	40203.431	2805.236	460.006	1950.114	827032.710	30768.375	1090.036	793.519	1405684.800	232571
3	13:36:14	969151.540	1132983.700	41070.541	2515.190	420.005	2095.132	824470.320	31119.025	1130.038	823.520	1415788.700	232003
x		979961.920	1139407.500	40637.820	2735.225	456.673	2028.457	824179.980	30723.295	1081.702	800.019	1404388.000	230253
σ		9378.595	5964.250	433.558	194.711	35.120	73.210	3008.428	420.087	52.997	21.019	12101.375	3535
%RSD		0.957	0.523	1.067	7.119	7.690	3.609	0.365	1.367	4.899	2.627	0.862	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:35:31	780.018	9597.763	1059621.100	119486.780	0.000	728594.860	125430.210
2	13:35:53	685.014	10083.049	1058790.800	121873.970	0.000	753224.300	127284.190
3	13:36:14	745.017	9652.795	1057151.500	119476.710	0.000	748263.150	128589.150
x		736.683	9777.869	1058521.100	120279.160	0.000	743360.770	127101.180
σ		48.047	265.722	1256.720	1381.162	0.000	13026.024	1587.400
%RSD		6.522	2.718	0.119	1.148	0.000	1.752	1.249

200-35736-A-13-A 11/1/2016 01:40:52 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	13:41:13	114562.390	1367.556	3175.302	T 1308485.600	T 3549062.500	T 194083240.000	T 13553743.000	1327622.000	224055.980	16588.251	579512.890	389171
2	13:41:35	112830.630	1307.551	3190.305	T 1319070.500	T 3600494.300	T 194707690.000	T 13632421.000	1323016.600	228647.710	17394.072	593942.770	398682
3	13:41:56	112256.780	1287.550	3400.347	T 1315969.000	T 3600828.600	T 197312390.000	T 13789841.000	1346132.000	226285.800	15407.118	587945.660	397919
x		113216.600	1320.886	3255.318	T 1314508.400	T 3583461.800	T 195367770.000	T 13658669.000	1332256.900	226329.830	16463.147	587133.770	395257
σ		1200.286	41.637	125.822	T 5441.513	T 29791.112	T 1712787.300	T 120217.590	12234.874	2296.182	999.367	7249.119	5284
%RSD		1.060	3.152	3.865	T 0.414	T 0.831	T 0.877	T 0.880	0.918	1.015	6.070	1.235	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	13:41:13	48846.475	T 17913075.000	T 625765790.000	252249.560	117890.480	97252.918	342115.620	21891.368	829.021	1015.531	780.018	7166
2	13:41:35	49538.513	T 17808051.000	T 619902130.000	248706.910	117704.170	96553.872	343268.970	22008.522	792.019	1069.534	807.520	7191
3	13:41:56	50145.323	T 18118557.000	T 626184030.000	249767.600	115649.860	94969.809	341125.640	21925.412	852.022	1011.031	798.519	7021
x		49510.104	T 17946561.000	T 623950650.000	250241.360	117081.500	96258.866	342170.080	21941.767	824.354	1032.032	795.352	7126
σ		649.890	T 157938.450	T 3512351.400	1818.220	1243.332	1169.794	1072.706	60.265	30.272	32.556	14.021	91
%RSD		1.313	T 0.880	T 0.563	0.727	1.062	1.215	0.314	0.275	3.672	3.155	1.763	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	13:41:13	588763.790	935941.880	13910.803	3775.428	375.004	2390.171	825478.430	35016.747	2225.148	1697.586	1060935.900	208404
2	13:41:35	593176.180	929749.310	14065.933	3315.330	405.005	2280.156	844002.470	35708.211	2205.146	1703.087	1051681.100	210207
3	13:41:56	596056.250	936459.790	14336.163	3590.387	260.002	2170.141	836371.870	35096.915	2300.159	1719.589	1061069.000	210825
x		592665.410	934050.330	14104.300	3560.381	346.670	2280.156	835284.260	35273.958	2243.484	1706.754	1057895.400	209812
σ		3672.962	3733.785	215.260	231.512	76.541	110.015	9309.792	378.205	50.090	11.450	5382.095	1257
%RSD		0.620	0.400	1.526	6.502	22.079	4.825	1.115	1.072	2.233	0.671	0.509	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:41:13	855.022	15021.767	1398773.100	122861.180	0.000	532327.550	193962.110
2	13:41:35	855.022	15372.086	1422364.800	123183.550	0.000	542198.210	197832.200
3	13:41:56	825.020	15407.118	1417163.500	122035.150	5.000	547858.880	196284.060
x		845.021	15266.990	1412767.100	122693.290	1.667	540794.880	196026.120
σ		17.321	213.091	12395.092	592.323	2.887	7860.187	1947.896
%RSD		2.050	1.396	0.877	0.483	173.205	1.453	0.994

200-35700-A-16-A @2 11/1/2016 01:46:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:46:56	101588.670	515.008	2180.143	T 881817.910	T 1428385.400	T 60481577.000	T 5069928.100	688409.550	161387.610	14201.048	212602.400	138961.910
2	13:47:17	102222.520	502.508	2230.149	889130.410	1445368.100	T 60905472.000	T 5093694.400	682535.210	161660.240	14701.481	206359.670	137888.040
3	13:47:39	103339.380	490.007	2080.130	863630.650	T 1390814.700	T 58686423.000	T 4909697.000	674674.670	162690.190	14411.228	207270.870	138689.650
x		102383.520	502.508	2163.474	T 878192.990	T 1421522.700	T 60024491.000	T 5024439.800	681873.140	161912.680	14437.919	208744.310	138513.200
σ		886.392	12.500	76.386	T 13130.671	T 27916.634	T 1178023.700	T 100078.220	6891.337	687.000	251.282	3372.120	558.254
%RSD		0.866	2.488	3.531	T 1.495	T 1.964	T 1.963	T 1.992	1.011	0.424	1.740	1.615	0.403

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:46:56	18885.694	T 20755490.000	T 262548570.000	124125.500	52397.235	T 1661284.000	434742.020	12827.935	761.017	1080.035	684.514	5060.768
2	13:47:17	18645.424	T 20684962.000	T 261426270.000	121183.970	50702.004	1657323.700	437277.060	12870.968	740.016	1088.036	686.014	5055.767
3	13:47:39	17989.704	T 20591621.000	T 259478130.000	119109.090	51604.768	1661682.300	430093.730	13005.072	718.015	1052.533	700.515	5265.832
x		18506.940	T 20677358.000	T 261150990.000	121472.850	51568.002	T 1660096.700	434037.600	12901.325	739.683	1073.535	690.348	5127.456
σ		463.770	T 82198.505	T 1553617.600	2520.649	848.213	T 2409.707	3643.106	92.388	21.503	18.622	8.837	119.863

%RSD		2.506	T 0.398	T 0.595	2.075	1.645	T 0.145	0.839	0.716	2.907	1.735	1.280	2.338
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:46:56	291603.860	476546.880	7346.619	3945.467	250.002	2745.226	808946.700	36705.374	2450.180	1899.608	360251.810	158207.340
2	13:47:17	292250.030	467567.870	7111.517	3855.446	215.001	3130.294	796361.830	36399.705	2400.173	1846.602	360328.440	159913.510
3	13:47:39	287447.590	464380.590	7136.528	3595.388	275.002	2835.241	797567.480	36975.971	2410.174	1842.602	360476.590	158621.250
x		290433.830	469498.450	7198.221	3798.767	246.669	2903.587	800958.670	36693.683	2420.176	1862.938	360352.280	158914.030
σ		2606.261	6308.725	129.123	181.792	30.139	201.427	6944.052	288.311	26.461	31.821	114.272	889.968
%RSD		0.897	1.344	1.794	4.786	12.218	6.937	0.867	0.786	1.093	1.708	0.032	0.560

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:46:56	875.023	4740.674	1003444.300	110656.130	0.000	184849.430	73531.851
2	13:47:17	780.018	4815.696	1004712.300	111894.350	0.000	185349.940	73481.630
3	13:47:39	840.021	5100.780	1014159.500	110495.060	0.000	184197.270	72185.987
x		831.687	4885.717	1007438.700	111015.180	0.000	184798.880	73066.489
σ		48.047	189.990	5854.838	765.632	0.000	577.997	762.951
%RSD		5.777	3.889	0.581	0.690	0.000	0.313	1.044

CCV 11/1/2016 01:52:18 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**5**
1	13:52:39	86946.199	74862.756	25083.862	T 10632492.000	T 3211564.600	T 29484794.000	T 10842720.000	1205795.500	104989.650	24012.285	T 2202619.500	66826
2	13:53:01	82986.088	73220.485	24392.837	T 10381442.000	T 3100524.400	T 28644362.000	T 10546280.000	1166694.300	99154.071	23030.902	T 2149302.500	66535
3	13:53:23	84413.228	72185.987	25078.854	T 10166415.000	T 3088487.200	T 27954146.000	T 10497565.000	1160086.100	97142.276	23040.916	T 2098966.200	64394
x		84781.838	73423.076	24851.851	T 10393449.000	T 3133525.400	T 28694434.000	T 10628855.000	1177525.300	100428.660	23361.367	T 2150296.100	65918
σ		2005.624	1349.836	397.526	T 233270.160	T 67851.417	T 766551.570	T 186807.340	24704.657	4075.997	563.734	T 51833.781	1328
%RSD		2.366	1.838	1.600	T 2.244	T 2.165	T 2.671	T 1.758	2.098	4.059	2.413	T 2.411	2
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**8**
1	13:52:39	84051.406	T 3057458.000	T 62310703.000	1009928.900	543262.020	670199.430	511531.280	73401.277	5608.944	7880.363	493.507	711
2	13:53:01	82187.143	T 2979456.800	T 60602246.000	977673.260	526594.680	657045.930	509093.320	72405.938	5282.837	7808.829	514.008	686
3	13:53:23	80242.703	T 2911979.400	T 60294073.000	968563.800	519337.200	647248.530	499216.180	70174.423	5206.813	7530.201	482.007	713
x		82160.417	T 2982964.700	T 61069008.000	985388.650	529731.300	658164.630	506613.590	71993.879	5366.198	7739.797	496.507	703
σ		1904.492	T 72802.699	T 1086323.600	21735.057	12266.948	11516.274	6521.287	1652.420	213.633	185.006	16.210	14
%RSD		2.318	T 2.441	T 1.779	2.206	2.316	1.750	1.287	2.295	3.981	2.390	3.265	2
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**15**
1	13:52:39	773528.270	142052.800	1661263.500	261221.180	8487.160	130826.460	655397.910	834223.100	562122.240	443249.250	567437.890	110152
2	13:53:01	760582.410	138987.120	1655979.400	252569.350	8632.235	127395.030	646905.590	828497.850	557154.540	440995.120	561320.900	107837
3	13:53:23	742937.680	134913.850	1637737.200	251909.470	8467.150	125314.350	634533.340	820060.560	549465.490	435584.600	556751.400	106509
x		759016.120	138651.260	1651660.000	255233.330	8528.849	127845.280	645612.280	827593.840	556247.420	439942.990	561836.730	108166
σ		15355.329	3581.306	12343.606	5196.112	90.093	2783.503	10492.239	7124.419	6376.947	3939.157	5361.888	1843
%RSD		2.023	2.583	0.747	2.036	1.056	2.177	1.625	0.861	1.146	0.895	0.954	1

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:52:39	31454.654	1579235.100	T 7240221.200	88966.821	0.000	223883.680	122372.610
2	13:53:01	32286.242	1579361.300	T 7185666.700	89931.980	0.000	234067.160	124054.980
3	13:53:23	31705.128	1579026.700	T 7097442.900	87991.664	0.000	235208.060	119738.580
x		31815.341	1579207.700	T 7174443.600	88963.488	0.000	231052.970	122055.390
σ		426.609	168.969	T 72047.766	970.162	0.000	6234.931	2175.613
%RSD		1.341	0.011	T 1.004	1.091	0.000	2.698	1.782

CCB 11/1/2016 01:58:01 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:58:23	91601.033	5.000	430.006	156925.300	340.003	4760.680	48249.740	410.005	105694.080	15.000	6756.369	995.030
2	13:58:45	89077.409	2.500	520.008	158368.860	450.006	4630.643	45502.028	490.007	108874.450	30.000	6791.383	1050.033
3	13:59:06	87428.714	7.500	430.006	155714.020	410.005	5170.802	47236.845	470.007	104395.930	10.000	6206.155	895.024
x		89369.052	5.000	460.006	157002.730	400.005	4854.042	46996.204	456.673	106321.490	18.333	6584.636	980.029
σ		2101.393	2.500	51.963	1329.112	55.679	281.922	1389.572	41.634	2304.238	10.408	328.241	78.586
%RSD		2.351	50.000	11.296	0.847	13.920	5.808	2.957	9.117	2.167	56.773	4.985	8.019

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:58:23	2400.173	845.021	182079.180	80.000	50.000	255.002	470.007	936.026	283.002	529.508	546.509	2930.258
2	13:58:45	2435.178	740.016	174367.370	65.000	25.000	270.002	330.003	907.025	282.002	546.509	536.509	2680.215
3	13:59:06	2330.163	905.025	176226.780	135.001	55.000	220.001	440.006	833.021	281.002	569.510	544.509	2910.254
x		2388.505	830.021	177557.780	93.334	43.333	248.335	413.339	892.024	282.002	548.509	542.509	2840.242
σ		53.471	83.521	4024.509	36.856	16.073	25.658	73.713	53.116	1.000	20.076	5.292	138.948
%RSD		2.239	10.062	2.267	39.488	37.091	10.332	17.834	5.955	0.355	3.660	0.975	4.892

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:58:23	90.000	149083.810	2215.147	20.000	0.000	40.000	668732.220	1935.112	545.009	415.505	70.000	109045.560
2	13:58:45	110.000	149124.170	2215.147	25.000	0.000	5.000	668232.780	1940.113	525.008	452.506	65.000	111270.200
3	13:59:06	85.000	147489.720	2220.148	10.000	0.000	15.000	668076.710	1810.098	535.009	486.007	95.000	111894.350
x		95.000	148565.900	2216.814	18.333	0.000	20.000	668347.240	1895.108	535.009	451.339	76.667	110736.700
σ		13.229	932.217	2.887	7.638	0.000	18.028	342.420	73.663	10.000	35.265	16.073	1497.451
%RSD		13.925	0.627	0.130	41.660	0.000	90.139	0.051	3.887	1.869	7.814	20.965	1.352

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:58:23	100.000	930.026	725.016	88715.486	0.000	2205.146	20.000
2	13:58:45	85.000	875.023	805.019	91892.631	0.000	1970.116	45.000
3	13:59:06	100.000	825.020	775.018	89288.534	0.000	2015.122	30.000
x		95.000	876.690	768.351	89965.551	0.000	2063.461	31.667
σ		8.660	52.523	40.416	1693.318	0.000	124.749	12.583
%RSD		9.116	5.991	5.260	1.882	0.000	6.046	39.736

CCVL 11/1/2016 02:03:44 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:04:06	97132.218	142.501	4805.693	761351.360	24878.554	65327.781	659942.050	21804.253	113797.170	15.000	19376.257	8917.385
2	14:04:28	97011.518	175.001	4655.650	758495.460	24728.331	71467.902	667150.700	23776.948	114663.080	20.000	19481.379	9117.493
3	14:04:50	94336.226	150.001	4900.720	761215.350	25679.768	76028.013	654202.280	22585.293	110615.860	45.000	19381.262	9422.663
x		96159.987	155.834	4787.354	760354.060	25095.551	70941.232	660431.680	22722.165	113025.370	26.667	19412.966	9152.514
σ		1580.576	17.017	123.560	1611.026	511.492	5369.523	6488.079	993.444	2131.137	16.073	59.300	254.453
%RSD		1.644	10.920	2.581	0.212	2.038	7.569	0.982	4.372	1.886	60.273	0.305	2.780

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:04:06	4485.604	7876.861	689055.440	2660.212	1055.033	3685.407	9232.557	2182.143	586.010	736.016	558.509	2970.265
2	14:04:28	4245.541	8652.245	723515.620	2815.238	1010.031	3520.372	9482.697	2068.128	512.008	720.016	555.009	3105.289
3	14:04:50	4160.519	10063.037	727555.920	2505.188	1210.044	3415.350	9127.499	2060.127	545.009	714.515	581.010	3040.277
x		4297.221	8864.048	713375.660	2660.213	1091.703	3540.376	9280.917	2103.466	547.676	723.516	564.843	3038.610

σ		168.592	1108.371	21158.588	155.025	104.928	136.136	182.471	68.253	37.073	11.170	14.110	67.528
%RSD		3.923	12.504	2.966	5.828	9.611	3.845	1.966	3.245	6.769	1.544	2.498	2.222
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:04:06	21664.071	151192.680	15442.150	3035.276	60.000	725.016	693587.750	1685.085	4965.740	3986.977	5155.797	114361.010
2	14:04:28	21458.806	159459.190	15602.300	3110.290	65.000	735.016	704459.780	1545.072	5035.761	4033.988	5030.759	117371.830
3	14:04:50	21869.339	151929.330	16282.950	3060.281	50.000	825.020	692045.580	1670.084	5270.833	4157.519	5230.821	115760.620
x		21664.072	154193.730	15775.800	3068.616	58.333	761.684	696697.700	1633.414	5090.778	4059.494	5139.126	115831.160
σ		205.267	4574.867	446.445	38.195	7.638	55.078	6766.236	76.873	159.815	88.085	101.067	1506.650
%RSD		0.947	2.967	2.830	1.245	13.093	7.231	0.971	4.706	3.139	2.170	1.967	1.301

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:04:06	2625.207	16923.588	8111.974	92898.183	0.000	33548.732	14040.912
2	14:04:28	2850.244	17429.108	8757.300	94306.056	0.000	33273.180	13650.588
3	14:04:50	3000.270	17439.119	8242.037	93732.836	0.000	31920.538	14301.133
x		2825.240	17263.938	8370.437	93645.692	0.000	32914.150	13997.544
σ		188.778	294.795	341.286	707.971	0.000	871.453	327.434
%RSD		6.682	1.708	4.077	0.756	0.000	2.648	2.339

Analyte ICPS

STD0 11/1/2016 10:50:03 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:50:25	98.250%	-1.341	18.117	-193.043	34.114	24.943	1540.602	147.447	97.280%	5.136	1051.104	-30.052
2	10:50:47	99.305%	-3.912	-14.365	2712.581	-0.110	63.264	1709.253	70.381	100.282%	0.000	697.366	26.467
3	10:51:08	102.444%	0.891	-0.396	-458.486	-21.944	-57.926	-208.112	69.642	102.439%	14.655	1661.382	1.894
x		100.000%	-1.454	1.119	687.018	4.020	10.093	1013.915	95.823	100.000%	6.597	1136.618	-0.564
σ		2.182%	2.404	16.294	1759.203	28.256	61.945	1061.660	44.709	2.591%	7.436	487.664	28.339
%RSD		2.182	165.329	1456.562	256.064	702.873	613.718	104.709	46.658	2.591	112.719	42.905	5027.618

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:50:25	2428.116	-27.671	4567.375	25.289	-8.856	5.352	36.727	28.600	272.451	-38.628	761.410	4015.002
2	10:50:47	2564.615	27.301	1808.434	-6.628	-9.318	-17.249	-27.214	-200.972	347.658	-63.343	758.697	4082.885
3	10:51:08	2261.636	-10.071	-3317.951	-7.363	9.891	0.467	-6.900	-26.936	308.599	-9.881	750.637	3979.124
x		2418.122	-3.480	1019.286	3.766	-2.761	-3.810	0.871	-66.436	309.570	-37.284	756.914	4025.670
σ		151.736	28.072	4001.457	18.643	10.959	11.892	32.671	119.775	37.613	26.756	5.603	52.696
%RSD		6.275	806.597	392.575	495.006	396.940	312.096	3751.146	180.287	12.150	71.764	0.740	1.309

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	10:50:25	16.159	98.969%	-2.814	-11.998	-62.909	25.837	98.635%	370.055	0.129	-0.477	2.179	97.753%
2	10:50:47	-9.311	100.475%	1.557	2.878	-51.383	9.450	99.449%	402.221	-6.022	5.927	2.096	100.761%
3	10:51:08	-4.771	100.556%	31.355	1.904	-53.721	11.745	101.916%	358.143	11.524	-0.520	-3.053	101.485%
x		0.692	100.000%	10.033	-2.405	-56.004	15.677	100.000%	376.806	1.877	1.643	0.407	100.000%
σ		13.586	0.894%	18.594	8.322	6.093	8.873	1.708%	22.801	8.903	3.710	2.997	1.979%
%RSD		1962.256	0.894	185.333	345.977	10.879	56.598	1.708	6.051	474.285	225.742	735.763	1.979

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	10:50:25	4.710	-1.540	-45.355	99.972%	0.000	4376.296	257.747
2	10:50:47	18.528	3.546	15.570	99.804%	0.000	3294.120	93.167
3	10:51:08	3.393	-1.653	13.307	100.224%	0.000	2019.465	136.895
x		8.877	0.118	-5.493	100.000%	0.000	3229.960	162.603
σ		8.384	2.969	34.540	0.211%	0.000	1179.725	85.248
%RSD		94.442	2524.510	628.858	0.211	0.000	36.524	52.427

STD1 11/1/2016 10:55:00 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	10:55:21	106.984%	164.157	4651.643	598448.020	24416.544	61084.556	678520.260	24874.341	109.685%	22.833	13067.832	9293.169
2	10:55:43	102.651%	149.439	5036.529	T 625392.360	26339.971	61024.547	685742.670	25288.284	107.919%	9.269	11315.002	8777.705
3	10:56:05	101.746%	158.196	4945.425	610594.190	24794.514	62167.024	692471.640	24877.499	107.296%	13.993	11585.433	9352.899
x		103.794%	157.264	4877.865	T 611478.190	25183.676	61425.375	685578.190	25013.375	108.300%	15.365	11989.422	9141.258
σ		2.800%	7.403	201.141	T 13493.903	1019.058	642.987	6977.144	238.084	1.239%	6.885	943.667	316.259
%RSD		2.697	4.708	4.124	T 2.207	4.047	1.047	1.018	0.952	1.144	44.812	7.871	3.460

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	10:55:21	3242.107	6993.478	540995.280	2588.961	1138.190	3934.132	10445.167	903.384	386.533	176.629	717.700	3682.451
2	10:55:43	3410.444	6742.902	553911.400	2738.575	1175.741	4129.320	10188.105	1009.659	332.440	196.473	755.841	3887.587
3	10:56:05	3716.186	7217.713	554672.740	2829.292	1229.313	3856.137	10293.083	1069.772	322.132	203.930	749.532	3718.646

x		3456.246	6984.698	549859.810	2718.942	1181.081	3973.196	10308.785	994.272	347.035	192.344	741.024	3762.895
σ		240.336	237.528	7686.340	121.363	45.796	140.719	129.248	84.254	34.592	14.111	20.444	109.493
%RSD		6.954	3.401	1.398	4.464	3.877	3.542	1.254	8.474	9.968	7.337	2.759	2.910
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	10:55:21	22541.862	105.539%	16423.697	3012.746	-61.236	742.092	104.433%	880.971	5350.289	4016.976	5101.390	100.226%
2	10:55:43	24018.224	107.179%	15998.901	3335.662	-38.227	698.174	103.331%	895.205	5120.274	4094.046	5528.594	103.371%
3	10:56:05	24077.825	105.132%	16363.681	3361.202	-8.567	709.279	104.468%	794.525	5317.415	4164.515	5444.424	101.184%
x		23545.970	105.950%	16262.093	3236.537	-36.010	716.515	104.077%	856.900	5262.659	4091.845	5358.136	101.593%
σ		870.094	1.084%	229.898	194.229	26.404	22.836	0.646%	54.486	124.400	73.794	226.296	1.612%
%RSD		3.695	1.023	1.414	6.001	73.324	3.187	0.621	6.358	2.364	1.803	4.223	1.587

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	10:55:21	3027.273	18102.653	14200.387	100.997%	0.000	105798.540	14819.947
2	10:55:43	3166.454	18691.756	13955.539	101.080%	0.000	89276.833	14871.865
3	10:56:05	3126.831	18071.726	14533.741	101.583%	0.000	75904.604	15171.725
x		3106.853	18288.712	14229.889	101.220%	0.000	90326.659	14954.513
σ		71.709	349.389	290.228	0.317%	0.000	14974.594	189.895
%RSD		2.308	1.910	2.040	0.314	0.000	16.578	1.270

STD2 11/1/2016 11:00:43 AM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:01:05	105.302%	758.057	24909.279	T 3099522.600	126234.170	290258.150	T 3417293.700	125942.950	111.228%	4.503	56886.445	43041.307
2	11:01:27	101.691%	740.948	25854.841	T 3051915.200	125615.670	289162.030	T 3405834.300	125634.550	110.612%	13.585	56303.566	43853.997
3	11:01:48	102.766%	742.862	24032.790	T 3156179.800	129011.880	299399.850	T 3496013.600	129592.480	106.547%	14.088	57745.966	44775.243
x		103.253%	747.289	24932.303	T 3102539.200	126953.900	292940.010	T 3439713.900	127056.660	109.462%	10.725	56978.659	43890.182
σ		1.854%	9.374	911.243	T 52197.702	1808.888	5621.167	T 49092.532	2201.493	2.543%	5.394	725.608	867.534
%RSD		1.796	1.254	3.655	T 1.682	1.425	1.919	T 1.427	1.733	2.324	50.295	1.273	1.977

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:01:05	3380.803	31044.223	T 2613064.300	13094.903	5919.647	18664.649	53950.459	4985.920	211.815	929.265	752.625	3734.698
2	11:01:27	3208.381	31848.694	T 2639868.300	12783.482	5514.103	20055.211	52911.740	4638.630	301.655	857.655	749.554	3752.289
3	11:01:48	3628.066	32799.965	T 2743774.700	12864.184	5777.048	18204.478	53551.854	4639.308	346.691	764.282	783.123	3934.821
x		3405.750	31897.627	T 2665569.100	12914.190	5736.933	18974.780	53471.351	4754.619	286.721	850.401	761.768	3807.269
σ		210.952	878.893	T 69041.307	161.621	205.727	963.555	524.018	200.313	68.667	82.730	18.558	110.812
%RSD		6.194	2.755	T 2.590	1.251	3.586	5.078	0.980	4.213	23.949	9.728	2.436	2.911
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:01:05	120929.160	107.005%	78886.278	16374.529	-132.298	3753.780	103.972%	788.694	26241.221	20754.104	27277.425	102.828%
2	11:01:27	119185.270	106.383%	81147.954	16316.181	-26.030	3850.797	103.731%	747.144	26673.493	20744.617	27046.329	100.249%
3	11:01:48	118139.180	105.016%	82831.637	16510.869	16.443	3579.097	103.690%	713.682	27072.451	20793.368	27443.394	102.413%
x		119417.870	106.134%	80955.290	16400.526	-47.295	3727.891	103.798%	749.840	26662.388	20764.030	27255.716	101.830%
σ		1409.457	1.018%	1979.724	99.914	76.617	137.688	0.152%	37.579	415.726	25.847	199.421	1.385%
%RSD		1.180	0.959	2.445	0.609	161.996	3.693	0.147	5.012	1.559	0.124	0.732	1.360

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:01:05	15390.378	92873.406	64712.219	98.976%	0.000	118339.210	79637.194
2	11:01:27	15587.411	94296.685	64629.259	98.724%	0.000	121078.910	77769.545
3	11:01:48	15359.986	94809.983	66421.102	98.678%	0.000	125570.590	78910.991
x		15445.925	93993.358	65254.194	98.792%	0.000	121662.900	78772.577

σ		123.469	1003.289	1011.423	0.160%	0.000	3650.889	941.486
%RSD		0.799	1.067	1.550	0.162	0.000	3.001	1.195

STD3 11/1/2016 11:06:27 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:06:49	98.850%	91742.054	30261.732	┬12614972.000	┬3889799.900	┬35856986.000	┬13771776.000	┬1499830.700	97.450%	29790.452	┬2772973.500	852825
2	11:07:10	95.233%	91576.721	31560.524	┬12332805.000	┬3812206.600	┬34890137.000	┬13386138.000	1491837.300	98.317%	28880.499	┬2751761.900	842649
3	11:07:32	96.332%	89486.361	30122.099	┬12803060.000	┬3921489.100	┬36531528.000	┬14134759.000	┬1529248.300	94.330%	30489.692	┬2799916.000	856839
x		96.805%	90935.045	30648.119	┬12583612.000	┬3874498.600	┬35759550.000	┬13764224.000	┬1506972.100	96.699%	29720.215	┬2774883.800	850771
σ		1.854%	1257.318	793.245	┬236690.900	┬56225.138	┬825021.770	┬374368.030	┬19701.384	2.097%	806.892	┬24133.826	7314
%RSD		1.916	1.383	2.588	┬1.881	┬1.451	┬2.307	┬2.720	┬1.307	2.168	2.715	┬0.870	0

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	11:06:49	8484.822	┬3874965.600	┬78016073.000	1268043.800	686991.360	862319.560	647953.550	90399.966	-816.050	9052.139	777.304	3146
2	11:07:10	7263.372	┬3771499.700	┬77049944.000	1251505.200	681386.970	867301.920	651575.470	91475.513	-754.967	9092.399	742.203	2925
3	11:07:32	7122.724	┬3879695.800	┬79160549.000	1295377.900	691316.960	853682.270	646431.710	92857.244	-871.170	9182.866	742.707	2582
x		7623.639	┬3842053.700	┬78075522.000	1271642.300	686565.100	861101.250	648653.580	91577.574	-814.062	9109.134	754.071	2884
σ		749.114	┬61147.326	┬1056557.900	22156.575	4978.701	6891.077	2642.364	1231.814	58.127	66.951	20.121	284
%RSD		9.826	┬1.592	┬1.353	1.742	0.725	0.800	0.407	1.345	7.140	0.735	2.668	9

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	11:06:49	941608.840	98.911%	┬1935025.100	312587.770	287.915	153548.530	95.718%	1001019.300	672617.980	524051.210	677359.880	93.6
2	11:07:10	944569.480	96.418%	2007160.300	313773.390	430.058	153234.460	94.989%	1014348.500	675231.390	528152.250	685523.420	94.0
3	11:07:32	937360.080	94.605%	2025461.300	310963.850	231.158	154763.510	94.790%	996358.490	668307.940	527316.290	689945.670	95.6
x		941179.470	96.645%	┬1989215.600	312441.670	316.377	153848.830	95.166%	1003908.800	672052.440	526506.580	684276.330	94.4
σ		3623.829	2.162%	┬47814.063	1410.454	102.459	807.552	0.488%	9336.562	3496.204	2167.105	6384.902	1.0
%RSD		0.385	2.237	┬2.404	0.451	32.385	0.525	0.513	0.930	0.520	0.412	0.933	1

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:06:49	38029.914	1878334.800	┬15847968.000	94.841%	0.000	256325.130	141963.970
2	11:07:10	38153.654	1812461.000	┬15249952.000	98.035%	0.000	263885.890	137836.860
3	11:07:32	39104.106	1856412.700	┬15799197.000	95.214%	0.000	276886.110	144605.780
x		38429.225	1849069.500	┬15632372.000	96.030%	0.000	265699.040	141468.870
σ		587.730	33545.204	┬332082.520	1.746%	0.000	10399.718	3411.507
%RSD		1.529	1.814	┬2.124	1.819	0.000	3.914	2.411

STD4 11/1/2016 11:12:11 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V
1	11:12:32	96.427%	277885.900	93658.258	┬40597091.000	┬12607007.000	┬117159330.000	┬45435394.000	┬5026112.900	92.678%	97026.371	┬9057714.900
2	11:12:54	94.618%	282781.580	96801.836	┬40547447.000	┬12643899.000	┬116083600.000	┬44726767.000	┬5021126.000	92.671%	95860.374	┬9100289.600
3	11:13:16	93.880%	275476.580	94426.272	┬39548893.000	┬12322013.000	┬114024350.000	┬44362239.000	┬5056818.400	92.730%	96512.846	┬8990926.000
x		94.975%	278714.690	94962.122	┬40231144.000	┬12524306.000	┬115755760.000	┬44841466.000	┬5034685.800	92.693%	96466.530	┬9049643.500
σ		1.310%	3722.351	1638.863	┬591367.590	┬176159.370	┬1592994.600	┬545694.310	┬19328.911	0.032%	584.376	┬55126.750
%RSD		1.380	1.336	1.726	┬1.470	┬1.407	┬1.376	┬1.217	┬0.384	0.035	0.606	┬0.609

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr
1	11:12:32	21086.098	┬12628845.000	┬251100850.000	┬3997683.200	2164183.400	┬2586021.400	1954937.600	289375.820	-2989.055	27367.964	731.237
2	11:12:54	19703.815	┬12690619.000	┬254180500.000	┬4046874.900	┬2174881.100	┬2637722.700	1983692.900	283959.900	-2947.159	27116.231	763.459

3	11:13:16	20506.392	┬12432813.000	┬249895840.000	┬3984424.900	2139424.700	┬2607813.600	1941126.200	286045.250	-3074.187	27228.478	761.03
x		20432.102	┬12584092.000	┬251725730.000	┬4009661.000	┬2159496.400	┬2610519.200	1959918.900	286460.320	-3003.467	27237.558	751.91
σ		694.130	┬134603.640	┬2209621.900	┬32902.911	┬18186.932	┬25956.622	21716.187	2731.712	64.729	126.112	17.94
%RSD		3.397	┬1.070	┬0.878	┬0.821	┬0.842	┬0.994	1.108	0.954	2.155	0.463	2.38

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba
1	11:12:32	┬2963396.500	91.881%	┬6536418.500	970546.460	581.272	485429.440	92.858%	┬3260404.600	2154818.300	1702200.500	┬2186227.10
2	11:12:54	┬2968484.500	92.479%	┬6527839.300	979384.650	1381.300	484921.300	92.279%	┬3276313.900	2187567.000	1731186.600	┬2218963.60
3	11:13:16	┬2954459.000	91.672%	┬6565546.700	975855.810	2148.480	484878.240	92.113%	┬3284231.200	2191494.400	1725915.400	┬2187568.90
x		┬2962113.300	92.011%	┬6543268.200	975262.310	1370.351	485076.330	92.417%	┬3273649.900	2177959.900	1719767.500	┬2197586.50
σ		┬7100.249	0.419%	┬19764.899	4448.885	783.661	306.566	0.391%	┬12134.635	20137.164	15440.089	┬18525.24
%RSD		┬0.240	0.455	┬0.302	0.456	57.187	0.063	0.423	┬0.371	0.925	0.898	┬0.84

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:12:32	123584.780	┬5998842.100	┬51108400.000	93.994%	0.000	982300.710	478248.630
2	11:12:54	124230.020	┬6112980.300	┬52001783.000	93.007%	0.000	1004199.400	484512.100
3	11:13:16	127853.920	┬6132301.300	┬51757636.000	93.100%	5.371	1006204.200	484485.350
x		125222.910	┬6081374.600	┬51622606.000	93.367%	1.790	997568.110	482415.360
σ		2301.252	┬72125.132	┬461744.460	0.545%	3.101	13259.894	3608.520
%RSD		1.838	┬1.186	┬0.894	0.584	173.205	1.329	0.748

STD5 11/1/2016 11:17:53 AM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti
1	11:18:14	93.034%	460274.680	M 156933.860	TM 68544025.000	TM 21221339.000	TM 196102320.000	TM 75798971.000	TM 8520276.700	90.019%	167210.510
2	11:18:36	91.096%	M 467094.730	M 160874.900	TM 67145840.000	TM 21208162.000	TM 192265230.000	TM 74922457.000	TM 8501145.900	89.715%	167817.270
3	11:18:58	91.631%	448456.510	155800.700	TM 66339642.000	TM 20969671.000	TM 191996980.000	TM 74963642.000	TM 8577680.300	89.322%	165579.300
x		91.920%	M 458608.640	M 157869.820	TM 67343169.000	TM 21133057.000	TM 193454840.000	TM 75228357.000	TM 8533034.300	89.685%	166869.030
σ		1.001%	M 9430.143	M 2663.437	TM 1115361.400	TM 141650.140	TM 2296698.800	TM 494595.220	TM 39830.216	0.349%	1157.403
%RSD		1.089	M 2.056	M 1.687	TM 1.656	TM 0.670	TM 1.187	TM 0.657	TM 0.467	0.389	0.694

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se
1	11:18:14	35096.277	TM 21025122.000	TM 417974320.000	TM 6678490.900	TM 3554729.600	TM 4389472.400	T 3238094.800	M 477263.590	-4488.996	44628.191
2	11:18:36	40014.129	TM 21029588.000	TM 423219980.000	TM 6759422.700	TM 3584061.000	T 4296206.000	T 3151641.700	M 483452.700	-4846.899	43702.012
3	11:18:58	39553.518	TM 21331327.000	TM 424475230.000	TM 6748330.800	TM 3572885.500	T 4281404.200	T 3146144.400	M 476972.410	-4936.483	42729.554
x		38221.308	TM 21128679.000	TM 421889840.000	TM 6728748.100	TM 3570558.700	TM 4322360.900	T 3178627.000	M 479229.570	-4757.459	43686.586
σ		2716.138	TM 175512.370	TM 3448539.200	TM 43875.978	TM 14803.515	TM 58589.610	T 51573.932	M 3660.236	236.772	949.413
%RSD		7.106	TM 0.831	TM 0.817	TM 0.652	TM 0.415	TM 1.356	T 1.623	M 0.764	4.977	2.173

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb
1	11:18:14	TM 5123588.400	88.850%	TM 11265511.000	M 1667587.700	2308.937	M 818927.180	88.478%	T 5655172.900	TM 3710050.300	M 2998601.400
2	11:18:36	TM 5008465.800	87.387%	TM 11277707.000	M 1622229.400	325.153	M 818734.040	89.605%	T 5609230.200	TM 3688605.000	TM 2922990.200
3	11:18:58	TM 4940583.600	87.660%	TM 11327694.000	M 1608475.400	2654.090	M 808343.720	90.221%	T 5596848.700	TM 3647027.700	M 2964455.300
x		TM 5024212.600	87.965%	TM 11290304.000	M 1632764.200	1762.727	M 815334.980	89.435%	T 5620417.300	TM 3681894.300	TM 2962015.600
σ		TM 92513.014	0.778%	TM 32949.873	M 30932.183	1256.879	M 6055.382	0.884%	T 30729.339	TM 32042.695	TM 37864.606
%RSD		TM 1.841	0.884	TM 0.292	M 1.894	71.303	M 0.743	0.988	T 0.547	TM 0.870	TM 1.278

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:18:14	M 255728.010	TM 10489434.000	TM 87276848.000	91.844%	5.444	M 2035514.100	M 996813.790
2	11:18:36	M 262781.920	TM 10427206.000	TM 87487295.000	91.769%	0.000	M 2048326.600	M 999687.870
3	11:18:58	M 258111.310	TM 10679665.000	TM 89578440.000	89.768%	0.000	M 2110830.300	M 1028200.900
x		M 258873.750	TM 10532101.000	TM 88114195.000	91.127%	1.815	M 2064890.300	M 1008234.200
σ		M 3588.227	TM 131526.790	TM 1272432.300	1.177%	3.143	M 40297.602	M 17351.308
%RSD		M 1.386	TM 1.249	TM 1.444	1.292	173.205	M 1.952	M 1.721

ICV 11/1/2016 11:23:36 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:23:58	95.462%	46566.405	17081.625	T 7000991.800	T 2082589.000	T 19413739.000	T 7166654.400	810259.570	89.352%	15813.960	1479791.600	447109.330
2	11:24:20	90.124%	48473.413	17716.066	T 7072142.100	T 2112870.900	T 19917371.000	T 7322342.700	802754.090	87.093%	15906.664	1516633.900	459457.950
3	11:24:42	89.775%	47908.249	17769.049	T 7000204.100	T 2078373.900	T 19485740.000	T 7307868.000	815656.190	87.723%	15609.882	1498891.300	453788.780
x		91.787%	103.031%	111.783%	T 109.035%	T 102.065%	T 104.946%	T 100.078%	97.772%	88.056%	15776.835	100.849%	101.671%
σ		3.187%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	1.166%	151.834	n/a	n/a
%RSD		3.472	2.056	2.183	T 0.588	T 0.900	T 1.389	T 1.184	0.800	1.324	0.962	1.230	1.363

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:23:58	6249.810	T 2019459.400	T 41212473.000	672774.670	366716.000	465633.800	344682.840	47932.229	-123.799	4776.051	754.540	3016.227
2	11:24:20	4924.397	T 2060046.900	T 42276573.000	694228.930	376859.730	456202.310	345389.330	49361.451	-338.871	4721.953	704.326	3311.149
3	11:24:42	4792.699	T 2035055.200	T 41652305.000	694701.470	373899.650	456713.960	343296.660	48344.102	-276.713	4779.279	686.809	3299.761
x		5322.302	T 98.259%	T 100.711%	103.342%	105.059%	105.896%	105.927%	102.208%	-246.461	104.871%	715.225	3209.046
σ		805.940	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	110.681	n/a	35.156	167.083

%RSD		15.143	T 1.005	T 1.282	1.823	1.400	1.154	0.309	1.515	44.908	0.677	4.915	5.207
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:23:58	497115.080	90.180%	510844.310	164086.540	345.291	81594.303	87.539%	553683.940	367089.780	286737.480	365315.850	87.460%
2	11:24:20	486390.060	88.803%	519889.650	161986.930	34.411	81231.901	88.455%	556239.840	363327.360	283360.640	367235.490	87.648%
3	11:24:42	490221.910	88.751%	515141.000	161353.420	62.605	82096.338	87.581%	555040.330	362655.680	285895.810	369255.200	90.518%
x		491242.350	89.245%	93.219%	101.368%	147.436	101.062%	87.858%	554988.040	364357.610	109.553%	102.220%	88.542%
σ		5434.843	0.810%	n/a	n/a	171.926	n/a	0.517%	1278.749	2389.847	n/a	n/a	1.714%
%RSD		1.106	0.908	0.878	0.880	116.611	0.532	0.589	0.230	0.656	0.616	0.536	1.936

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:23:58	43467.012	1005551.000	T 8544622.400	87.665%	0.000	276169.660	153951.810
2	11:24:20	43802.387	999225.070	T 8474413.900	88.688%	0.000	283950.190	152218.110
3	11:24:42	42617.350	987586.400	T 8288786.500	90.029%	0.000	280246.800	150072.500
x		128.090%	102.329%	T 99.167%	88.794%	0.000	89.575%	96.570%
σ		n/a	n/a	T n/a	1.185%	0.000	n/a	n/a
%RSD		1.411	0.914	T 1.567	1.335	0.000	1.389	1.278

ICVL 11/1/2016 11:29:20 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:29:42	100.998%	169.317	5845.191	698499.490	28560.300	73467.489	724415.150	27329.268	89.989%	44.366	12842.044	9302.812
2	11:30:04	94.752%	141.325	6217.030	669352.760	28704.103	78048.287	713101.080	26417.912	92.634%	48.539	13616.243	9290.915
3	11:30:26	97.355%	204.142	6061.003	668554.110	28263.836	82151.365	712687.910	26295.859	91.071%	65.760	13489.164	9332.616
x		97.702%	115.949%	120.435%	105.365%	104.356%	125.079%	98.724%	96.670%	91.231%	52.888	112.024%	104.359%
σ		3.138%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.330%	11.341	n/a	n/a
%RSD		3.211	18.340	3.091	2.514	0.787	5.577	0.928	2.117	1.457	21.443	3.118	0.231
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:29:42	3432.848	8307.568	595672.310	2947.964	1264.815	3874.419	10401.580	1016.422	363.791	191.951	651.497	3585.370
2	11:30:04	3248.225	8362.629	585006.790	3256.713	1443.934	3883.808	10392.102	748.497	437.066	156.035	680.963	3529.620
3	11:30:26	3478.889	8721.014	610453.880	3730.662	1403.245	3951.085	10608.180	1072.402	326.097	203.969	687.750	3434.458
x		3386.654	127.509%	108.109%	124.501%	120.808%	112.434%	100.590%	99.561%	375.651	101.357%	673.403	3516.483
σ		122.073	n/a	n/a	n/a	n/a	n/a	n/a	n/a	56.427	n/a	19.273	76.309
%RSD		3.605	2.653	2.140	11.904	6.851	1.071	1.167	18.305	15.021	13.556	2.862	2.170
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:29:42	23929.628	93.914%	18584.633	3214.993	-27.836	874.738	92.865%	4437.110	6558.836	5129.218	5592.458	90.300%
2	11:30:04	23561.508	94.332%	19106.930	3245.816	-40.738	708.672	92.298%	4897.869	6936.171	5433.245	5989.946	90.835%
3	11:30:26	24727.089	94.977%	19488.119	3292.829	-67.686	966.770	91.896%	5436.334	6798.724	5482.934	6010.741	91.400%
x		98.936%	94.408%	107.751%	101.421%	-45.420	105.228%	92.353%	4923.771	6764.577	128.347%	102.013%	90.845%
σ		n/a	0.536%	n/a	n/a	20.333	n/a	0.487%	500.115	190.971	n/a	n/a	0.550%
%RSD		2.475	0.567	2.380	1.206	44.767	15.388	0.527	10.157	2.823	3.580	4.020	0.606

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:29:42	3308.084	20880.142	17781.956	90.773%	0.000	21349.124	15484.728
2	11:30:04	3470.102	21008.504	19684.554	91.955%	0.000	18464.369	15767.603
3	11:30:26	3311.668	21700.979	20725.452	91.099%	0.000	16885.733	15269.380
x		99.503%	108.728%	142.513%	91.276%	0.000	60.436%	98.470%
σ		n/a	n/a	n/a	0.611%	0.000	n/a	n/a
%RSD		2.751	2.083	7.695	0.669	0.000	11.975	1.611

ICBIS 11/1/2016 11:35:03 AM QC Status: WARNING (Initial: PASS)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:35:25	92.367%	-3.723	800.425	8955.308	66.346	151.384	677.328	100.224	90.833%	5.495	2384.201	-55.856
2	11:35:47	91.881%	-3.709	827.465	10257.913	91.750	512.857	870.071	42.067	89.308%	0.000	572.152	-110.115
3	11:36:09	94.631%	-1.146	644.503	9361.830	46.120	1081.776	2195.654	-16.142	89.789%	0.000	1161.200	-59.949
x		92.960%	-2.859	757.465	9525.017	68.072	582.006	1247.684	42.050	89.977%	1.832	1372.517	-75.306
σ		1.467%	1.484	98.757	666.459	22.864	469.035	826.603	58.183	0.780%	3.173	924.322	30.214
%RSD		1.579	51.891	13.038	6.997	33.588	80.589	66.251	138.366	0.867	173.205	67.345	40.122

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:35:25	2315.065	-4.326	2474.743	-36.025	-7.762	-124.689	-17.983	35.492	302.277	-7.687	699.185	3667.474
2	11:35:47	2816.470	-76.689	3734.680	-19.135	-7.480	-31.152	-109.344	-125.239	363.597	-24.235	690.984	3665.187
3	11:36:09	2588.951	105.577	1719.445	3.020	-2.001	-130.370	68.391	277.742	246.369	82.302	667.765	3270.588
x		2573.495	8.187	2642.956	-17.380	-5.748	-95.404	-19.645	62.665	304.081	16.793	685.978	3534.416
σ		251.060	91.775	1018.093	19.581	3.248	55.716	88.879	202.860	58.635	57.332	16.298	228.485
%RSD		9.756	1120.963	38.521	112.665	56.502	58.400	452.421	323.721	19.283	341.396	2.376	6.465

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	11:35:25	-2.630	94.361%	629.728	-10.139	-55.607	19.039	91.894%	1235.155	451.673	303.384	2.923	87.791%
2	11:35:47	24.766	93.618%	688.484	-15.495	-63.799	43.491	91.538%	1305.518	496.287	345.292	8.427	89.042%
3	11:36:09	57.105	92.061%	744.307	6.123	-38.196	-3.500	92.025%	1483.351	547.247	408.251	13.774	89.931%
x		26.413	93.347%	687.506	-6.504	-52.534	19.677	91.819%	1341.341	498.403	352.309	8.375	88.921%
σ		29.902	1.174%	57.296	11.258	13.075	23.502	0.252%	127.917	47.822	52.784	5.426	1.075%
%RSD		113.207	1.257	8.334	173.100	24.889	119.440	0.275	9.537	9.595	14.982	64.787	1.209

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:35:25	94.203	1103.336	274.903	88.707%	0.000	-25811.975	-181.747
2	11:35:47	58.751	1075.681	193.163	90.447%	0.000	-25557.138	-170.799
3	11:36:09	91.222	933.036	410.055	90.857%	0.000	-25941.784	-148.862
x		81.392	1037.351	292.707	90.004%	0.000	-25770.299	-167.136
σ		19.664	91.392	109.536	1.142%	0.000	195.680	16.746
%RSD		24.160	8.810	37.422	1.268	0.000	0.759	10.019

ICSA 11/1/2016 11:40:46 AM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	11:41:07	98.893%	6.210	876.273	TM 124348010.000	T 12851465.000	T 115897700.000	TM 135376510.000	T 5044251.000	106.844%	302596.880	1850.459	3371.619
2	11:41:29	97.344%	-1.293	713.548	TM 121705910.000	T 12606311.000	T 113822300.000	TM 136418970.000	T 5135196.600	106.873%	306953.020	2208.777	3482.682
3	11:41:51	94.808%	1.481	769.505	TM 119600420.000	T 12478678.000	T 113939690.000	TM 136398210.000	T 5127608.000	107.244%	308965.970	1286.983	3490.014
x		97.015%	1.#IO%	1.#IO%	TM 94.596%	T 92.575%	T 91.978%	TM 93.709%	T 92.434%	106.987%	306171.950	1.#IO%	1.#IO%
σ		2.062%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.223%	3255.589	n/a	n/a
%RSD		2.126	177.907	10.512	TM 1.952	T 1.498	T 1.018	TM 0.438	T 0.989	0.209	1.063	26.076	1.924

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	11:41:07	1249.999	874.194	T 255148860.000	140.981	205.033	693.978	-301.541	-12.420	432.172	-3.447	717.702	3609.502
2	11:41:29	1105.838	841.101	T 257178720.000	164.323	279.825	696.290	-327.187	119.083	383.019	47.409	695.606	3495.504
3	11:41:51	1369.797	1014.139	T 255576480.000	116.988	199.514	701.659	-413.858	-81.339	458.795	-47.160	729.996	3798.179
x		1241.878	1.#IO%	T 92.698%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	1.#IO%	424.662	-1.#IO%	714.435	3634.395

σ		132.167	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	38.442	n/a	17.426	152.865
%RSD		10.642	10.096	T 0.418	16.814	19.665	0.565	16.936	1206.283	9.052	4440.064	2.439	4.206
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:41:07	3356.153	105.196%	T 3049289.100	282.276	344.077	197.397	103.249%	2101.862	542.256	420.769	132.479	103.785%
2	11:41:29	3413.462	105.469%	T 3120880.200	253.083	414.457	70.959	105.019%	2309.282	555.095	451.403	53.935	105.686%
3	11:41:51	3235.714	104.498%	T 3165306.800	273.798	349.294	118.602	104.455%	2599.416	600.566	492.555	150.004	106.365%
x		1.#IO%	105.055%	T 87.960%	1.#IO%	369.276	1.#IO%	104.241%	2336.853	565.972	1.#IO%	1.#IO%	105.279%
σ		n/a	0.501%	T n/a	n/a	39.215	n/a	0.904%	249.920	30.639	n/a	n/a	1.337%
%RSD		2.720	0.477	T 1.881	5.568	10.619	49.506	0.868	10.695	5.414	7.918	45.624	1.270

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:41:07	465.129	1016.750	3615.325	97.811%	0.000	-3079.515	-161.824
2	11:41:29	546.096	844.696	3507.863	99.302%	0.000	-7562.133	-157.173
3	11:41:51	584.721	953.413	3564.893	99.506%	0.000	-10544.022	-117.036
x		1.#IO%	1.#IO%	1.#IO%	98.873%	0.000	-1.#IO%	-1.#IO%
σ		n/a	n/a	n/a	0.925%	0.000	n/a	n/a
%RSD		11.473	9.274	1.509	0.936	0.000	53.205	16.943

ICSAB 11/1/2016 11:46:28 AM QC Status: PASS (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	
1	11:46:50	91.866%	3564.356	53472.815	TM 124833100.000	T 12774484.000	T 113962880.000	TM 136546760.000	T 5168395.200	101.735%	305121.610	55116.996	1083
2	11:47:12	90.999%	3859.406	54557.035	TM 125161610.000	T 12895526.000	T 116321910.000	TM 138016880.000	T 5272304.700	100.978%	314943.380	58889.043	1116
3	11:47:33	88.916%	3710.943	55055.927	TM 121296230.000	T 12461750.000	T 113222170.000	TM 133682950.000	T 5180118.100	102.142%	308332.580	56955.793	1109
x		90.593%	100.318%	108.376%	TM 96.054%	T 93.051%	T 91.937%	TM 93.721%	T 94.328%	101.618%	309465.860	95.885%	98
σ		1.516%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.591%	5007.993	n/a	
%RSD		1.674	3.975	1.489	TM 1.732	T 1.761	T 1.414	TM 1.620	T 1.093	0.581	1.618	3.310	

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	
1	11:46:50	2406.405	79945.224	T 256322620.000	61587.192	13132.878	33470.014	24329.003	21365.878	-258.813	5193.243	714.705	34
2	11:47:12	2008.896	83363.158	T 263279080.000	62973.196	13439.543	32630.779	23812.158	20300.357	-66.094	5036.216	720.672	35
3	11:47:33	1701.471	80239.548	T 256653650.000	62515.540	13158.737	32269.962	23906.980	20421.135	-90.394	5120.442	729.612	33
x		2038.924	97.844%	T 93.707%	93.771%	93.382%	94.457%	92.317%	96.828%	-138.434	90.200%	721.663	34
σ		353.425	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	104.958	n/a	7.503	1
%RSD		17.334	2.333	T 1.517	1.132	1.284	1.878	1.146	2.819	75.818	1.536	1.040	

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	
1	11:46:50	3272.582	101.004%	T 3155012.300	76770.583	440.506	17790.207	100.253%	1750.658	134695.730	106386.980	140735.310	101
2	11:47:12	3530.114	101.847%	T 3165006.800	74897.998	432.316	18057.820	101.713%	1922.190	135633.570	106728.420	143644.150	105
3	11:47:33	3552.055	101.597%	T 3157088.700	75594.648	515.012	18048.317	100.809%	2212.248	136877.460	108568.510	145277.120	105
x		3451.584	101.482%	T 89.294%	94.526%	462.611	88.957%	100.925%	1961.699	135735.590	102.926%	99.654%	103
σ		155.407	0.433%	T n/a	n/a	45.565	n/a	0.737%	233.317	1094.440	n/a	n/a	2
%RSD		4.502	0.427	T 0.167	1.249	9.849	0.845	0.730	11.894	0.806	1.094	1.606	

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	11:46:50	38868.895	238397.280	328501.260	97.811%	0.000	261773.370	163489.940
2	11:47:12	38136.483	239110.570	330585.580	98.985%	5.051	276436.510	166803.430
3	11:47:33	38451.634	242201.830	330279.110	99.665%	0.000	278384.070	164600.350
x		113.860%	98.447%	96.919%	98.820%	1.684	87.041%	104.751%
σ		n/a	n/a	n/a	0.937%	2.916	n/a	n/a
%RSD		0.955	0.843	0.341	0.949	173.205	3.336	1.022

CCV 11/1/2016 11:52:12 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	11:52:34	81.491%	92367.968	32004.910	T 13546998.000	T 4132832.000	T 37775567.000	T 13907108.000	1577414.400	76.116%	30311.978	T 2868447.400	882743.
2	11:52:56	79.844%	93126.336	31590.669	T 13204526.000	T 4001630.000	T 36248103.000	T 13643108.000	1536343.100	78.018%	30740.989	T 2777230.700	858825.
3	11:53:17	79.870%	91294.257	31022.227	T 13692210.000	T 4205030.400	T 37909664.000	T 14193335.000	1609946.700	73.623%	30789.756	T 2854883.400	878651.
x		80.402%	99.749%	100.602%	T 104.629%	T 100.372%	T 99.861%	T 95.831%	95.082%	75.919%	30614.241	T 95.352%	97.91
σ		0.944%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	2.204%	262.901	T n/a	
%RSD		1.174	0.998	1.564	T 1.857	T 2.507	T 2.474	T 1.978	2.342	2.903	0.859	T 1.737	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	11:52:34	6532.953	T 3937771.800	T 81087326.000	1319926.800	715410.920	816572.370	631508.200	90877.842	-738.959	9130.127	638.419	2778.
2	11:52:56	5652.635	T 3818854.700	T 78069202.000	1284429.200	689216.940	807393.060	618001.460	91309.315	-848.046	9025.587	696.091	2839.
3	11:53:17	7479.984	T 3964040.600	T 81435753.000	1333309.400	718952.100	804262.520	622598.950	91246.496	-807.169	9106.983	672.411	2757.
x		6555.191	T 94.174%	T 96.811%	98.687%	99.823%	93.265%	95.951%	95.947%	-798.058	100.127%	668.974	2791.
σ		913.878	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	55.112	n/a	28.989	42.

%RSD		13.941	T 1.980	T 2.308	1.924	2.295	0.790	1.100	0.256	6.906	0.604	4.333	1.
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	11:52:34	947796.020	82.274%	2004968.100	314650.100	-469.158	160240.630	81.609%	1031786.700	697051.310	552858.240	708356.680	87.24
2	11:52:56	927996.770	81.282%	2065943.300	310976.960	-189.828	157255.040	82.318%	1028198.100	684481.630	544959.060	704360.360	86.72
3	11:53:17	934509.360	79.559%	2070012.100	311530.360	705.542	157458.960	80.681%	1038976.000	695780.980	550911.740	711603.470	82.47
x		936767.380	81.038%	92.577%	97.448%	15.519	97.990%	81.536%	1032986.900	692437.970	105.505%	98.542%	85.48
σ		10090.913	1.374%	n/a	n/a	613.682	n/a	0.821%	5488.299	6919.606	n/a	n/a	2.61
%RSD		1.077	1.695	1.780	0.634	3954.414	1.054	1.007	0.531	0.999	0.749	0.512	3.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:52:34	37346.873	1898181.700	T 15777186.000	87.032%	0.000	245636.680	149131.170
2	11:52:56	38111.375	1917817.200	T 15932502.000	86.418%	0.000	262142.620	149504.300
3	11:53:17	41090.103	1886622.000	T 15819659.000	87.023%	0.000	264084.050	148666.530
x		114.936%	97.505%	T 93.120%	86.824%	0.000	82.273%	94.678%
σ		n/a	n/a	T n/a	0.352%	0.000	n/a	n/a
%RSD		5.091	0.830	T 0.507	0.405	0.000	3.940	0.282

CCB 11/1/2016 11:57:56 AM QC Status: WARNING (Initial: PASS)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	11:58:17	82.527%	8.717	622.310	21077.629	253.818	2126.470	6873.930	273.048	77.004%	19.430	1453.969	-10.453
2	11:58:39	81.892%	5.781	592.009	21755.345	446.851	4293.770	7421.524	115.484	77.248%	45.132	1158.461	-98.172
3	11:59:01	82.859%	2.622	637.134	26288.586	954.384	7398.682	7610.193	241.814	76.116%	19.644	715.735	22.434
x		82.426%	5.707	617.151	23040.520	551.684	4606.307	7301.882	210.115	76.790%	28.069	1109.388	-28.730
σ		0.491%	3.048	23.001	2833.245	361.857	2649.965	382.435	83.428	0.596%	14.778	371.556	62.346
%RSD		0.596	53.416	3.727	12.297	65.591	57.529	5.237	39.706	0.776	52.650	33.492	217.004

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	11:58:17	2358.217	58.943	13113.143	29.895	27.670	-16.207	-13.499	32.428	305.476	-4.207	652.982	3691.561
2	11:58:39	2502.771	83.520	15005.156	62.033	66.341	3.378	42.871	-60.199	327.590	-28.925	652.112	3577.827
3	11:59:01	2652.835	63.790	22334.868	109.556	-4.569	-58.956	33.326	170.086	271.144	50.859	665.580	3381.691
x		2504.608	68.751	16817.722	67.161	29.814	-23.929	20.900	47.439	301.403	5.909	656.891	3550.360
σ		147.317	13.018	4870.739	40.077	35.504	31.877	30.170	115.874	28.442	40.843	7.537	156.751
%RSD		5.882	18.935	28.962	59.673	119.084	133.216	144.356	244.260	9.437	691.204	1.147	4.415

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	11:58:17	53.770	81.607%	3094.009	-19.306	-52.671	10.714	83.158%	2314.994	662.492	525.040	28.117	82.956%
2	11:58:39	17.911	84.479%	2833.436	17.048	-26.471	15.204	82.732%	2544.506	748.394	611.548	4.128	84.470%
3	11:59:01	35.567	81.868%	2754.156	10.625	-21.886	-13.520	83.387%	2908.329	700.887	551.567	28.018	84.334%
x		35.749	82.651%	2893.867	2.789	-33.676	4.132	83.093%	2589.276	703.924	562.718	20.087	83.920%
σ		17.930	1.588%	177.803	19.403	16.609	15.452	0.332%	299.191	43.031	44.319	13.821	0.837%
%RSD		50.156	1.922	6.144	695.633	49.320	373.911	0.400	11.555	6.113	7.876	68.806	0.998

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	11:58:17	113.561	2060.185	450.337	87.106%	0.000	-24149.089	-129.982
2	11:58:39	93.211	1940.390	759.782	84.808%	0.000	-24122.691	-152.010
3	11:59:01	81.553	1673.404	945.404	86.343%	0.000	-24127.021	-146.848
x		96.108	1891.326	718.508	86.086%	0.000	-24132.934	-142.947
σ		16.199	198.003	250.101	1.171%	0.000	14.157	11.520
%RSD		16.855	10.469	34.808	1.360	0.000	0.059	8.059

MB 200-110769/1-A 11/1/2016 12:03:38 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:03:59	91.254%	23.706	576.956	159864.610	7754.723	79315.099	75776.313	3069.380	84.065%	290.782	1482.562	1732.696
2	12:04:21	89.555%	4.737	675.373	123074.920	4575.271	45295.897	54857.905	2020.117	84.961%	170.219	1574.276	1419.881
3	12:04:43	89.498%	7.537	474.791	120280.250	2483.579	27658.664	43309.902	1328.546	83.680%	113.246	1643.228	1441.139
x		90.102%	11.993	575.707	134406.590	4937.858	50756.553	57981.373	2139.348	84.235%	191.416	1566.689	1531.238
σ		0.998%	10.240	100.297	22091.528	2654.212	26257.587	16457.035	876.520	0.657%	90.646	80.602	174.791
%RSD		1.108	85.380	17.422	16.436	53.752	51.732	28.383	40.971	0.780	47.356	5.145	11.415

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:03:59	2438.390	1903.662	199959.330	416.455	207.689	205.196	608.442	177.115	284.246	45.017	666.961	3279.862
2	12:04:21	2344.827	1526.689	120940.500	352.774	152.277	166.663	571.017	303.544	211.986	71.621	663.433	3178.383
3	12:04:43	2305.074	1149.170	78962.157	328.933	154.979	114.526	561.702	143.308	268.164	-10.986	688.142	3439.980
x		2362.764	1526.507	133287.330	366.054	171.649	162.129	580.387	207.989	254.799	35.217	672.845	3299.408
σ		68.444	377.246	61436.243	45.247	31.241	45.505	24.739	84.462	37.939	42.166	13.364	131.889
%RSD		2.897	24.713	46.093	12.361	18.201	28.067	4.262	40.609	14.890	119.731	1.986	3.997

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:03:59	266.803	88.484%	3437.943	74.655	-35.279	32.835	89.287%	59880.534	500.692	355.963	232.838	86.255%
2	12:04:21	211.141	90.180%	2723.680	29.952	-27.143	8.077	89.159%	56467.525	466.519	353.221	115.416	87.475%
3	12:04:43	120.828	88.525%	2080.590	29.682	-20.387	23.695	89.518%	59429.090	490.306	352.609	154.020	89.946%
x		199.591	89.063%	2747.405	44.763	-27.603	21.536	89.321%	58592.383	485.839	353.931	167.425	87.892%
σ		73.670	0.967%	678.988	25.888	7.457	12.519	0.182%	1853.973	17.519	1.786	59.848	1.880%
%RSD		36.910	1.086	24.714	57.833	27.015	58.133	0.204	3.164	3.606	0.505	35.746	2.140

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:03:59	252.950	1204.048	3349.070	85.562%	0.000	9431.377	-6.227
2	12:04:21	191.828	1121.719	2111.618	88.167%	0.000	1906.376	-90.976
3	12:04:43	174.586	862.889	1287.869	90.717%	0.000	-4680.264	-126.756
x		206.455	1062.885	2249.519	88.149%	0.000	2219.163	-74.653
σ		41.179	178.027	1037.497	2.578%	0.000	7061.018	61.900
%RSD		19.946	16.749	46.121	2.924	0.000	318.184	82.917

LCS 200-110769/2-A 11/1/2016 12:09:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:09:41	92.606%	1454.114	51213.312	T 6997241.500	284596.060	651744.270	T 7201292.400	260359.440	88.352%	62.139	113227.220	92319.757
2	12:10:03	90.110%	1375.259	52726.230	T 7151647.100	286855.380	654417.050	T 7145506.900	266538.930	87.826%	107.909	117105.170	92513.133
3	12:10:25	90.735%	1495.253	52085.504	T 7106554.800	286391.900	663238.820	T 7468333.700	269944.150	85.783%	98.819	120323.420	93649.104
x		91.151%	1441.542	52008.348	T 7085147.800	285947.780	656466.710	T 7271711.000	265614.170	87.320%	89.622	116885.270	92827.331
σ		1.299%	60.977	759.404	T 79397.494	1193.344	6015.152	T 172549.640	4858.808	1.357%	24.231	3553.210	718.214
%RSD		1.425	4.230	1.460	T 1.121	0.417	0.916	T 2.373	1.829	1.555	27.037	3.040	0.774

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:09:41	2570.000	68783.379	T 5486232.400	26569.648	11654.197	34835.544	91707.838	8317.390	120.620	1509.250	654.894	2780.224
2	12:10:03	2239.734	69454.441	T 5602388.400	27863.515	11775.384	35163.146	94611.081	8254.319	84.124	1481.540	656.432	3187.130
3	12:10:25	2283.811	70374.733	T 5718226.400	28073.051	12342.296	34830.739	92392.902	8483.777	37.223	1465.569	620.490	3174.715
x		2364.515	69537.518	T 5602282.400	27502.071	11923.959	34943.143	92903.940	8351.829	80.656	1485.453	643.939	3047.356

σ		179.315	798.923	T 115997.050	814.270	367.322	190.543	1517.589	118.542	41.807	22.102	20.322	231.426
%RSD		7.584	1.149	T 2.071	2.961	3.081	0.545	1.634	1.419	51.833	1.488	3.156	7.594
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:09:41	244705.090	91.986%	171048.260	33016.135	-35.461	7141.375	91.238%	56857.596	54442.446	41863.340	55832.672	90.496%
2	12:10:03	250815.870	92.717%	171810.130	34077.125	-70.075	7783.612	90.338%	56946.182	54556.907	42944.934	57671.080	92.266%
3	12:10:25	248143.210	91.236%	172143.380	33619.749	64.645	7438.953	90.494%	57568.489	54722.508	43244.567	59140.205	89.644%
x		247888.050	91.980%	171667.260	33571.003	-13.631	7454.647	90.690%	57124.089	54573.954	42684.280	57547.986	90.802%
σ		3063.368	0.741%	561.368	532.172	69.963	321.406	0.481%	387.402	140.807	726.569	1657.199	1.338%
%RSD		1.236	0.805	0.327	1.585	513.278	4.311	0.530	0.678	0.258	1.702	2.880	1.473

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:09:41	75524.926	194799.300	134839.510	89.954%	0.000	264583.330	163381.210
2	12:10:03	75538.739	199314.790	137593.160	90.345%	0.000	280308.420	166811.160
3	12:10:25	79065.328	201147.670	138850.300	89.545%	0.000	287781.900	168833.600
x		76709.664	198420.590	137094.320	89.948%	0.000	277557.880	166341.990
σ		2040.076	3267.287	2051.400	0.400%	0.000	11841.344	2756.305
%RSD		2.659	1.647	1.496	0.445	0.000	4.266	1.657

200-35700-A-11-A 11/1/2016 12:15:02 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:15:23	102.612%	997.382	5365.103	┬727085.350	┬2077430.300	┬93038982.000	┬9518885.400	┬851209.820	167.441%	17360.353	233264.340	205904.310
2	12:15:45	99.241%	1079.342	5538.851	┬693404.050	┬2051521.700	┬91877894.000	┬9362071.300	847053.800	171.952%	18253.000	235587.850	203965.270
3	12:16:07	102.649%	997.024	5436.212	┬710253.690	┬2050811.500	┬91309516.000	┬9281154.200	┬845342.650	174.838%	16470.559	234024.080	206402.310
x		101.501%	1024.583	5446.722	┬710247.700	┬2059921.200	┬92075464.000	┬9387370.300	┬847868.760	171.410%	17361.304	234292.090	205423.960
σ		1.957%	47.423	87.350	┬16840.650	┬15167.492	┬881498.100	┬120867.920	┬3017.288	3.728%	891.221	1184.716	1287.569
%RSD		1.928	4.629	1.604	┬2.371	┬0.736	┬0.957	┬1.288	┬0.356	2.175	5.133	0.506	0.627

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:15:23	2895.122	┬15810276.000	┬290965170.000	122122.130	66597.267	1066566.800	466649.370	2181.725	86.517	633.663	743.216	2812.042
2	12:15:45	2534.838	┬15563147.000	┬285162550.000	119312.260	66190.591	1065369.600	461246.430	2191.976	93.627	518.990	733.711	3260.338
3	12:16:07	1786.212	┬15631869.000	┬286137900.000	117918.310	65759.902	1059701.300	461430.080	2197.742	84.858	629.584	753.449	3044.514
x		2405.391	┬15668430.000	┬287421870.000	119784.230	66182.587	1063879.200	463108.630	2190.481	88.334	594.079	743.459	3038.965
σ		565.675	┬127556.730	┬3107093.700	2141.285	418.740	3667.336	3067.752	8.112	4.658	65.061	9.872	224.200
%RSD		23.517	┬0.814	┬1.081	1.788	0.633	0.345	0.662	0.370	5.274	10.952	1.328	7.377

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:15:23	616377.480	563.776%	1463.958	6299.347	-381.988	2914.549	108.518%	62055.215	2556.069	2201.029	837518.910	165.201%
2	12:15:45	619430.100	572.765%	1367.812	6185.265	-425.572	3022.209	111.150%	63679.647	2706.201	2240.631	838502.680	167.353%
3	12:16:07	618128.170	581.854%	1400.794	5947.122	-408.777	2667.280	113.149%	63477.633	2647.479	2235.464	838791.940	170.811%
x		617978.580	572.799%	1410.854	6143.912	-405.446	2868.013	110.939%	63070.832	2636.583	2225.708	838271.180	167.788%
σ		1531.800	9.039%	48.856	179.717	21.982	181.983	2.323%	885.330	75.657	21.528	667.345	2.830%
%RSD		0.248	1.578	3.463	2.925	5.422	6.345	2.094	1.404	2.870	0.967	0.080	1.687

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:15:23	716.509	10796.843	2364067.700	116.428%	0.000	437871.350	169499.950
2	12:15:45	691.953	11100.818	2408542.700	117.967%	0.000	436204.440	167767.390
3	12:16:07	650.972	10573.086	2374487.400	120.578%	0.000	431550.260	168083.800
x		686.478	10823.582	2382365.900	118.324%	0.000	435208.680	168450.380
σ		33.110	264.880	23260.710	2.098%	0.000	3276.080	922.618
%RSD		4.823	2.447	0.976	1.773	0.000	0.753	0.548

200-35700-A-12-A 11/1/2016 12:20:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:21:06	101.150%	1226.939	4421.949	┬873082.970	┬2302990.700	┬101304970.000	┬9404424.300	┬907281.130	182.499%	16563.573	280118.450	221708.230
2	12:21:28	98.291%	1138.172	4703.814	┬854485.560	┬2212761.300	┬97785274.000	┬9060322.200	┬890969.460	186.978%	17544.312	278190.130	219080.670
3	12:21:50	100.180%	1129.063	4691.290	┬835785.170	┬2251809.800	┬97320571.000	┬9188964.100	┬902059.600	187.836%	17093.471	277990.250	217157.520
x		99.873%	1164.725	4605.684	┬854451.230	┬2255853.900	┬98803604.000	┬9217903.600	┬900103.400	185.771%	17067.119	278766.270	219315.470
σ		1.454%	54.071	159.243	┬18648.921	┬45250.441	┬2178669.800	┬173866.860	┬8329.929	2.866%	490.900	1175.275	2284.422
%RSD		1.456	4.642	3.458	┬2.183	┬2.006	┬2.205	┬1.886	┬0.925	1.543	2.876	0.422	1.042

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:21:06	2946.145	┬20398433.000	┬384948840.000	146823.580	74025.643	897569.670	490515.140	4032.897	75.187	691.318	766.874	2754.059
2	12:21:28	3178.249	┬20196161.000	┬375626800.000	141556.150	73815.749	901194.690	492592.450	4018.532	87.918	598.549	786.070	3351.368
3	12:21:50	2856.989	┬20035012.000	┬377300560.000	142834.650	73701.020	906096.390	489023.160	4114.950	71.551	629.830	728.111	2964.172
x		2993.795	┬20209868.000	┬379292060.000	143738.120	73847.471	901620.250	490710.250	4055.460	78.219	639.899	760.352	3023.200
σ		165.846	┬182097.980	┬4969876.000	2747.481	164.620	4279.258	1792.623	52.019	8.595	47.197	29.525	302.998

%RSD		5.540	T 0.901	T 1.310	1.911	0.223	0.475	0.365	1.283	10.988	7.376	3.883	10.022
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:21:06	684781.000	627.395%	2528.962	5868.014	-376.568	2823.945	117.037%	47504.416	2353.626	1997.961	932995.850	175.717%
2	12:21:28	678471.190	621.176%	2638.509	5819.044	-295.564	2538.184	118.186%	48714.923	2275.370	2005.274	946500.780	178.927%
3	12:21:50	682516.160	627.518%	2545.208	5920.644	-322.091	2750.422	118.186%	47658.082	2455.278	1965.931	949383.560	177.212%
x		681922.790	625.363%	2570.893	5869.234	-331.408	2704.183	117.803%	47959.140	2361.425	1989.722	942960.060	177.285%
σ		3196.482	3.627%	59.118	50.811	41.298	148.386	0.664%	659.021	90.208	20.925	8748.817	1.606%
%RSD		0.469	0.580	2.300	0.866	12.461	5.487	0.563	1.374	3.820	1.052	0.928	0.906

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:21:06	777.055	10935.082	2431132.500	122.117%	0.000	412162.480	240491.560
2	12:21:28	717.846	10920.889	2411475.600	125.195%	0.000	404635.460	235777.200
3	12:21:50	784.349	10630.544	2427790.700	124.803%	0.000	409647.130	236509.810
x		759.750	10828.838	2423466.300	124.038%	0.000	408815.020	237592.850
σ		36.473	171.874	10517.828	1.676%	0.000	3831.882	2536.936
%RSD		4.801	1.587	0.434	1.351	0.000	0.937	1.068

200-35700-A-12-A SD@5 11/1/2016 12:26:27 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	12:26:49	91.909%	271.020	1213.430	260539.580	679737.080	T 29597790.000	T 2697599.500	263313.090	115.495%	4399.269	82721.138	64383.181
2	12:27:10	90.789%	244.153	1192.264	264656.790	676728.790	T 29370693.000	T 2640319.900	261505.840	114.924%	4717.811	80755.332	64009.758
3	12:27:32	88.830%	252.494	1132.804	252522.370	660294.030	T 29367229.000	T 2668617.100	259442.190	114.011%	4780.866	80709.378	64597.480
x		90.509%	255.889	1179.499	259239.580	672253.300	T 29445237.000	T 2668845.500	261420.370	114.810%	4632.649	81395.283	64330.139
σ		1.559%	13.751	41.801	6170.779	10465.686	T 132125.580	T 28640.452	1936.869	0.749%	204.557	1148.454	297.429
%RSD		1.722	5.374	3.544	2.380	1.557	T 0.449	T 1.073	0.741	0.652	4.416	1.411	0.462

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	12:26:49	2560.205	T 5798194.600	T 111472860.000	42998.397	22409.678	191147.970	111964.340	2718.673	177.868	188.602	680.368	3339.852
2	12:27:10	2687.483	T 5767166.500	T 110976190.000	42666.976	22303.367	194093.540	112858.640	2540.747	208.424	156.012	722.642	3413.835
3	12:27:32	2556.644	T 5862361.700	T 111350240.000	41922.551	22020.955	188431.140	114231.760	2560.296	205.145	200.701	660.922	3399.484
x		2601.444	T 5809240.900	T 111266430.000	42529.308	22244.666	191224.220	113018.250	2606.572	197.146	181.772	687.977	3384.390
σ		74.533	T 48549.410	T 258725.650	550.977	200.900	2831.966	1142.108	97.573	16.775	23.114	31.556	39.233
%RSD		2.865	T 0.836	T 0.233	1.296	0.903	1.481	1.011	3.743	8.509	12.716	4.587	1.159

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	12:26:49	141230.100	200.674%	1434.419	1314.941	-112.372	648.877	106.121%	10208.621	607.205	437.421	197072.250	115.074%
2	12:27:10	143930.690	203.089%	1461.176	1280.917	-103.977	634.240	104.688%	10157.249	621.082	431.584	196893.740	114.206%
3	12:27:32	147589.040	202.319%	1370.499	1298.845	-142.061	609.097	104.780%	10157.852	531.263	440.202	197237.230	113.655%
x		144249.940	202.027%	1422.031	1298.234	-119.470	630.738	105.196%	10174.574	586.517	436.402	197067.740	114.311%
σ		3191.468	1.233%	46.590	17.020	20.009	20.120	0.802%	29.487	48.351	4.398	171.793	0.715%
%RSD		2.212	0.610	3.276	1.311	16.748	3.190	0.763	0.290	8.244	1.008	0.087	0.626

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:26:49	181.814	2411.005	544901.960	103.363%	0.000	54374.343	52461.006
2	12:27:10	183.433	2405.702	539295.110	105.421%	0.000	55561.747	52674.780
3	12:27:32	193.271	2463.911	546094.830	103.176%	0.000	58217.744	52312.980
x		186.173	2426.873	543430.630	103.987%	0.000	56051.278	52482.922
σ		6.201	32.186	3630.794	1.246%	0.000	1967.909	181.893
%RSD		3.331	1.326	0.668	1.198	0.000	3.511	0.347

200-35700-A-12-A PDS 11/1/2016 12:32:10 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	12:32:32	92.983%	2658.234	55745.840	┬4836209.200	┬2346776.000	┬96137182.000	┬13471938.000	┬1026081.400	171.803%	20854.243	346311.730	271603.44
2	12:32:54	95.391%	2580.492	56626.475	┬5051157.600	┬2436592.800	┬98918074.000	┬13712943.000	┬1057373.300	166.972%	17227.626	352942.250	277967.02
3	12:33:15	94.840%	2674.597	55406.583	┬4946400.600	┬2410249.200	┬98447324.000	┬13783185.000	┬1059996.800	166.800%	17369.896	353911.920	280648.86
x		94.405%	2637.775	55926.299	┬4944589.100	┬2397872.700	┬97834193.000	┬13656022.000	┬1047817.200	168.525%	18483.922	351055.300	276739.77
σ		1.262%	50.278	629.649	┬107485.650	┬46169.759	┬1488384.200	┬163244.510	┬18869.363	2.840%	2053.991	4136.562	4645.91
%RSD		1.336	1.906	1.126	┬2.174	┬1.925	┬1.521	┬1.195	┬1.801	1.685	11.112	1.178	1.67

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	12:32:32	2641.048	┬19402874.000	┬368485380.000	156393.630	78777.010	887117.780	561653.550	5629.766	50.696	2027.268	737.540	2437.70
2	12:32:54	2846.485	┬20297541.000	┬383347460.000	161223.790	81108.144	889598.330	559584.050	5561.380	53.357	2025.017	786.500	2486.27
3	12:33:15	3581.108	┬20132803.000	┬380511420.000	160478.750	80931.636	876530.100	552144.500	5518.034	63.563	2044.052	758.794	2531.57
x		3022.880	┬19944406.000	┬377448090.000	159365.390	80272.263	884415.400	557794.030	5569.726	55.872	2032.112	760.945	2485.18
σ		494.231	┬476158.940	┬7890396.900	2600.437	1297.931	6940.592	5000.866	56.332	6.792	10.401	24.551	46.94
%RSD		16.350	┬2.387	┬2.090	1.632	1.617	0.785	0.897	1.011	12.157	0.512	3.226	1.88

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159T
1	12:32:32	893634.960	568.953%	34755.625	37258.145	-211.840	9630.601	111.251%	46534.690	51653.272	42808.518	969619.600	164.602%
2	12:32:54	892844.960	572.686%	34320.279	36441.319	-283.379	9920.133	110.747%	45564.599	51417.280	43303.991	975016.350	166.451%
3	12:33:15	885644.630	573.083%	34237.351	36776.201	-265.958	9667.466	111.496%	45123.596	51639.328	42913.197	965231.470	166.376%
x		890708.180	571.574%	34437.752	36825.222	-253.726	9739.400	111.164%	45740.962	51569.960	43008.568	969955.810	165.810%
σ		4402.922	2.279%	278.391	410.614	37.305	157.601	0.382%	721.889	132.408	261.142	4901.093	1.047%
%RSD		0.494	0.399	0.808	1.115	14.703	1.618	0.344	1.578	0.257	0.607	0.505	0.63

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:32:32	20971.582	179984.380	2442229.800	118.843%	0.000	659534.150	367454.840
2	12:32:54	21325.219	180763.280	2475031.900	119.076%	0.000	665724.240	371955.200
3	12:33:15	21395.183	183582.110	2456553.100	119.477%	0.000	663488.470	375618.470
x		21230.661	181443.260	2457938.300	119.132%	0.000	662915.620	371676.170
σ		227.080	1892.797	16444.892	0.321%	0.000	3134.555	4088.962
%RSD		1.070	1.043	0.669	0.269	0.000	0.473	1.100

200-35700-A-12-G MS 11/1/2016 12:37:53 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52C
1	12:38:15	89.816%	2095.216	45805.427	┬5722408.700	┬2045668.200	┬76354711.000	┬11061126.000	┬1062782.100	135.886%	17276.751	301643.200	244979.29
2	12:38:37	92.541%	2319.728	46081.331	┬5698592.900	┬1993658.800	┬75441338.000	┬10801741.000	1056366.700	139.150%	18909.071	291248.770	234921.35
3	12:38:58	89.050%	2189.093	46009.539	┬5646119.100	┬2024862.500	┬74886181.000	┬10741664.000	┬1056133.500	138.414%	17796.124	301974.600	242960.85
x		90.469%	2201.346	45965.432	┬5689040.200	┬2021396.500	┬75560743.000	┬10868177.000	┬1058427.400	137.817%	17993.982	298288.860	240953.83
σ		1.835%	112.756	143.143	┬39031.633	┬26177.379	┬741510.710	┬169777.010	┬3773.026	1.712%	833.953	6099.143	5320.86
%RSD		2.028	5.122	0.311	┬0.686	┬1.295	┬0.981	┬1.562	┬0.356	1.242	4.635	2.045	2.20

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84K
1	12:38:15	3387.612	┬19477361.000	┬288592280.000	141554.490	68965.816	988204.950	511981.770	5626.638	63.738	2025.431	672.209	2844.09
2	12:38:37	2885.185	┬19082185.000	┬287231280.000	141981.030	67885.862	993460.710	511849.510	5674.446	66.009	1966.026	721.634	2537.06
3	12:38:58	2474.815	┬19164789.000	┬286856910.000	141687.390	68773.836	991588.510	513023.560	5629.406	53.106	2029.693	702.694	2667.93
x		2915.871	┬19241445.000	┬287560160.000	141740.970	68541.838	991084.720	512284.950	5643.497	60.951	2007.050	698.846	2683.03

σ		457.171	T 208441.980	T 913235.880	218.257	576.145	2663.850	643.064	26.839	6.888	35.592	24.937	154.06
%RSD		15.679	T 1.083	T 0.318	0.154	0.841	0.269	0.126	0.476	11.301	1.773	3.568	5.74
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159T**
1	12:38:15	750990.730	395.024%	45494.658	37019.428	-283.728	9850.161	103.541%	62763.712	18334.038	15074.237	691579.480	137.401%
2	12:38:37	745501.040	392.891%	46426.289	36915.211	-83.722	9766.365	104.349%	63408.556	18293.684	15057.239	697291.550	139.443%
3	12:38:58	744086.760	393.352%	46010.698	37748.327	-183.881	9969.473	103.746%	64057.756	18543.386	15068.992	700056.370	140.751%
x		746859.510	393.756%	45977.215	37227.655	-183.777	9862.000	103.879%	63410.008	18390.370	15066.822	696309.130	139.198%
σ		3646.956	1.122%	466.717	453.916	100.003	102.070	0.420%	647.023	134.043	8.704	4322.992	1.689%
%RSD		0.488	0.285	1.015	1.219	54.415	1.035	0.404	1.020	0.729	0.058	0.621	1.21

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	12:38:15	29447.765	186741.150	2173465.500	109.503%	0.000	550925.970	324459.060
2	12:38:37	29285.657	192904.300	2218062.200	107.490%	0.000	567571.960	331474.280
3	12:38:58	29159.101	192461.610	2193988.500	109.428%	0.000	563963.290	331790.010
x		29297.508	190702.360	2195172.000	108.807%	0.000	560820.400	329241.120
σ		144.696	3437.634	22321.881	1.141%	0.000	8756.741	4144.393
%RSD		0.494	1.803	1.017	1.049	0.000	1.561	1.259

200-35700-A-12-H MSD 11/1/2016 12:43:37 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	12:43:58	92.337%	2387.140	48061.915	T 5586645.800	T 2313822.900	T 93480978.000	T 13173217.000	T 1087896.400	146.634%	19777.523	335065.460	273382.7
2	12:44:20	90.001%	2443.697	48389.548	T 5391687.500	T 2235152.700	T 90310786.000	T 12672033.000	T 1046927.900	151.717%	22817.445	331101.950	261282.1
3	12:44:42	88.765%	2466.553	48812.063	T 5489998.500	T 2306374.400	T 94083868.000	T 13120804.000	T 1078394.600	147.742%	21419.211	338409.100	269027.9
x		90.368%	2432.463	48421.176	T 5489443.900	T 2285116.700	T 92625211.000	T 12988685.000	T 1071072.900	148.698%	21338.060	334858.840	267897.6
σ		1.814%	40.881	376.073	T 97480.344	T 43430.051	T 2026892.100	T 275477.540	T 21443.148	2.673%	1521.585	3657.956	6128.9
%RSD		2.007	1.681	0.777	T 1.776	T 1.901	T 2.188	T 2.121	T 2.002	1.798	7.131	1.092	2.2

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	12:43:58	3285.119	TM 20750990.000	T 326347770.000	149917.930	76356.589	994413.740	546582.630	5694.349	68.778	1949.109	688.013	2743.1
2	12:44:20	3575.380	T 20081875.000	T 317286290.000	147341.480	74849.242	1020402.100	554674.040	5761.649	58.145	2028.604	730.983	2567.0
3	12:44:42	3260.670	TM 20812065.000	T 330638060.000	151566.990	75599.394	999371.040	543571.600	5670.443	51.006	2099.275	720.556	2092.5
x		3373.723	TM 20548310.000	T 324757370.000	149608.800	75601.742	1004729.000	548276.090	5708.814	59.310	2025.663	713.184	2467.5
σ		175.067	TM 405096.750	T 6816482.500	2129.648	753.676	13797.781	5741.680	47.292	8.943	75.126	22.413	336.5
%RSD		5.189	TM 1.971	T 2.099	1.423	0.997	1.373	1.047	0.828	15.079	3.709	3.143	13.6

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	12:43:58	819353.760	450.445%	41391.183	37667.411	-193.664	10230.865	106.614%	56610.083	19250.454	15426.726	807921.050	146.630
2	12:44:20	830027.390	454.742%	41144.158	38271.589	-114.571	9716.780	105.887%	57965.210	19073.575	15794.469	824130.470	148.023
3	12:44:42	829440.750	460.140%	40525.899	37842.869	-131.892	9879.349	107.072%	55959.755	18684.865	15511.733	815027.810	150.483
x		826273.970	455.109%	41020.413	37927.290	-146.709	9942.331	106.524%	56845.016	19002.964	15577.643	815693.110	148.379
σ		6000.249	4.858%	445.717	310.810	41.576	262.766	0.598%	1023.160	289.330	192.527	8125.161	1.951
%RSD		0.726	1.067	1.087	0.819	28.339	2.643	0.561	1.800	1.523	1.236	0.996	1.3

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:43:58	24290.705	189683.830	2392593.800	111.422%	0.000	612892.360	347209.590
2	12:44:20	23537.211	193939.250	2422441.200	111.255%	0.000	623424.060	352121.680
3	12:44:42	24060.930	190928.770	2382851.800	112.727%	0.000	615584.450	346538.450
x		23962.949	191517.280	2399295.600	111.802%	0.000	617300.290	348623.240
σ		386.185	2187.902	20628.014	0.806%	0.000	5471.496	3048.268
%RSD		1.612	1.142	0.860	0.721	0.000	0.886	0.874

200-35700-A-13-A 11/1/2016 12:49:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52
1	12:49:42	90.288%	1710.381	6229.389	T 775042.340	T 3623914.400	T 107837940.000	T 9094993.300	T 986994.050	208.362%	23859.746	334415.800	282970.4
2	12:50:04	90.742%	1445.540	6175.161	T 755060.550	T 3601767.800	T 107393640.000	T 9058520.800	T 998821.700	208.250%	25288.078	337332.950	280950.1
3	12:50:26	88.396%	1577.422	6095.316	T 739814.390	T 3536149.700	T 105586110.000	T 8823635.400	T 975346.100	211.967%	25533.736	336443.930	280860.7
x		89.809%	1577.781	6166.622	T 756639.090	T 3587277.300	T 106939230.000	T 8992383.200	T 987053.950	209.527%	24893.854	336064.220	281593.7
σ		1.245%	132.421	67.443	T 17666.946	T 45641.410	T 1192704.400	T 147273.230	T 11737.915	2.115%	903.947	1495.183	1193.0
%RSD		1.386	8.393	1.094	T 2.335	T 1.272	T 1.115	T 1.638	T 1.189	1.009	3.631	0.445	0.4

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84
1	12:49:42	2554.682	TM 44434909.000	TM 598041580.000	246446.460	139579.370	250406.930	436351.470	15759.344	70.115	465.470	774.967	2418.7
2	12:50:04	2562.677	TM 44050688.000	TM 594297500.000	251373.240	140553.650	248902.160	434198.920	15733.600	57.947	480.991	783.335	2137.2
3	12:50:26	2890.339	TM 44027816.000	TM 599430350.000	247738.100	137490.660	246420.850	432229.020	15800.660	76.809	361.142	766.812	2761.4
x		2669.233	TM 44171138.000	TM 597256480.000	248519.260	139207.890	248576.640	434259.810	15764.535	68.290	435.868	775.038	2439.1
σ		191.525	TM 228718.980	TM 2654964.100	2554.596	1564.924	2012.877	2061.902	33.830	9.562	65.178	8.262	312.5

%RSD		7.175	TM 0.518	TM 0.445	1.028	1.124	0.810	0.475	0.215	14.002	14.954	1.066	12.8

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159
1	12:49:42	1189833.300	T 701.374%	7029.133	1760.273	-574.377	2421.539	109.040%	44387.680	4713.405	3910.942	911871.710	181.044
2	12:50:04	1187853.500	696.114%	7205.770	1811.756	-730.186	2588.899	109.790%	44349.288	4958.357	3945.638	911959.590	183.214
3	12:50:26	1174596.500	696.268%	7208.484	2034.722	-662.797	2428.556	110.525%	44557.806	4819.777	3980.405	915906.650	185.416
x		1184094.400	T 697.918%	7147.796	1868.917	-655.786	2479.665	109.785%	44431.591	4830.513	3945.662	913245.980	183.224
σ		8284.835	T 2.993%	102.774	145.881	78.141	94.665	0.743%	110.978	122.828	34.731	2304.625	2.186
%RSD		0.700	T 0.429	1.438	7.806	11.916	3.818	0.677	0.250	2.543	0.880	0.252	1.1

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:49:42	308.609	15232.139	2335522.200	126.557%	0.000	746851.230	126891.800
2	12:50:04	315.501	15383.363	2378415.000	125.381%	0.000	754373.280	130386.480
3	12:50:26	332.960	15200.624	2348723.700	126.753%	0.000	753800.310	128866.200
x		319.023	15272.042	2354220.300	126.230%	0.000	751674.940	128714.830
σ		12.552	97.686	21968.329	0.742%	0.000	4187.270	1752.254
%RSD		3.934	0.640	0.933	0.588	0.000	0.557	1.361

200-35700-A-14-A 11/1/2016 12:55:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	12:55:26	86.925%	522.767	4210.956	T 1009300.300	T 1534375.900	T 62006738.000	T 5616446.500	1007330.700	119.660%	18506.806	195962.070	142016.340
2	12:55:48	88.114%	458.882	4350.165	T 978424.800	T 1525809.600	T 62707894.000	T 5759031.000	1011618.300	118.539%	18637.003	198913.640	141358.970
3	12:56:10	84.293%	482.940	4401.964	T 945433.520	T 1511414.000	T 61756711.000	T 5591109.900	1003162.700	120.217%	17242.827	197888.370	142588.660
x		86.444%	488.196	4321.028	T 977719.530	T 1523866.500	T 62157114.000	T 5655529.100	1007370.500	119.472%	18128.879	197588.030	141987.990
σ		1.955%	32.265	98.781	T 31939.215	T 11603.611	T 493099.420	T 90526.025	4227.950	0.855%	770.100	1498.533	615.333
%RSD		2.262	6.609	2.286	T 3.267	T 0.761	T 0.793	T 1.601	0.420	0.715	4.248	0.758	0.433

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	12:55:26	2182.357	TM 23981328.000	T 224601780.000	102697.090	49688.335	1325726.300	434951.030	3550.081	74.222	790.007	651.889	2458.154
2	12:55:48	2119.737	TM 24503321.000	T 231772970.000	102564.000	50471.748	1338010.900	439151.810	3555.548	96.557	674.354	674.169	2951.510
3	12:56:10	2297.949	TM 24298521.000	T 227985620.000	101923.700	49938.076	1333950.700	437186.400	3469.742	103.469	731.155	665.293	2896.243
x		2200.014	TM 24261057.000	T 228120120.000	102394.930	50032.720	1332562.600	437096.410	3525.124	91.416	731.839	663.784	2768.635
σ		90.409	TM 263005.670	T 3587487.200	413.485	400.190	6258.850	2101.834	48.040	15.286	57.830	11.217	270.301
%RSD		4.109	TM 1.084	T 1.573	0.404	0.800	0.470	0.481	1.363	16.721	7.902	1.690	9.763

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	12:55:26	466282.760	299.186%	2322.024	6776.186	-263.550	3077.150	100.556%	53175.019	3428.449	2590.346	487373.810	121.658%
2	12:55:48	471199.930	299.607%	2261.933	6523.182	-246.608	2901.947	101.460%	52745.541	3247.698	2652.324	489540.790	122.784%
3	12:56:10	465198.980	299.981%	2409.135	6616.797	-251.679	2907.051	101.085%	54286.031	3330.845	2719.840	497976.400	125.941%
x		467560.560	299.591%	2331.031	6638.721	-253.946	2962.049	101.034%	53402.197	3335.664	2654.170	491630.330	123.461%
σ		3198.034	0.398%	74.013	127.919	8.696	99.713	0.454%	794.975	90.472	64.766	5601.643	2.221%
%RSD		0.684	0.133	3.175	1.927	3.424	3.366	0.450	1.489	2.712	2.440	1.139	1.799

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	12:55:26	963.533	6386.799	2199020.200	100.978%	0.000	202899.660	105698.980
2	12:55:48	1019.576	6742.116	2168726.300	103.577%	0.000	201276.710	105918.610
3	12:56:10	905.883	6708.513	2168816.400	104.536%	0.000	200174.260	104309.150
x		962.997	6612.476	2178854.300	103.030%	0.000	201450.210	105308.910
σ		56.848	196.163	17464.223	1.841%	0.000	1370.958	872.758
%RSD		5.903	2.967	0.802	1.787	0.000	0.681	0.829

CCV 11/1/2016 01:00:50 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	5
1	13:01:11	73.857%	96235.187	31306.062	┬13881814.000	┬4259677.900	┬38863917.000	┬14270864.000	1594193.600	72.802%	31974.097	┬2891358.100	894005.
2	13:01:33	75.907%	93428.058	31438.302	┬14269869.000	┬4421199.300	┬40097399.000	┬14638064.000	1619955.600	69.289%	31756.155	┬2901177.700	918813.
3	13:01:55	73.181%	94681.292	32500.088	┬13856181.000	┬4262897.600	┬39165135.000	┬14274059.000	1581168.600	69.977%	30108.070	┬2851301.000	884057.
x		74.315%	102.472%	101.269%	┬108.676%	┬105.287%	┬105.386%	┬99.135%	96.524%	70.690%	31279.441	┬96.959%	100.78
σ		1.419%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	n/a	1.862%	1020.273	┬n/a	
%RSD		1.910	1.484	2.062	┬1.655	┬2.140	┬1.633	┬1.466	1.235	2.634	3.262	┬0.917	1.

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	8
1	13:01:11	6641.443	┬3986135.800	┬81003001.000	1325874.300	723821.610	811891.630	609653.300	89816.318	-706.901	9056.748	656.170	2353.
2	13:01:33	9816.640	┬4202608.200	┬84592747.000	1371827.300	744240.150	825442.360	630675.760	88854.639	-575.898	9219.159	673.935	2034.
3	13:01:55	10354.439	┬4021951.200	┬81578036.000	1324732.900	720213.720	806100.130	619352.570	87879.915	-654.135	9011.705	611.366	2264.
x		8937.507	┬98.111%	┬99.460%	100.812%	102.865%	93.849%	95.314%	93.532%	-645.645	100.218%	647.157	2217.
σ		2006.550	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	65.913	n/a	32.243	164.
%RSD		22.451	┬2.851	┬2.340	2.004	1.776	1.219	1.697	1.090	10.209	1.200	4.982	7.

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	15
1	13:01:11	935561.040	81.514%	2007751.500	314376.000	292.136	157942.250	81.078%	1023823.300	681033.340	539423.690	703246.930	83.24
2	13:01:33	961302.960	79.675%	2027675.500	323136.090	-145.187	160618.140	77.828%	1058185.500	698143.140	558611.980	713555.980	81.48
3	13:01:55	954263.860	79.449%	2043358.200	318217.070	-92.488	159341.030	77.696%	1044856.400	696340.770	554206.990	708315.490	78.96
x		950375.950	80.213%	91.640%	99.379%	18.154	98.598%	78.867%	1042288.400	691839.080	105.730%	98.579%	81.23
σ		13304.079	1.133%	n/a	n/a	238.735	n/a	1.916%	17324.410	9401.338	n/a	n/a	2.14
%RSD		1.400	1.412	0.881	1.378	1315.077	0.840	2.429	1.662	1.359	1.825	0.728	2.

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:01:11	37996.423	1950249.200	┬16189924.000	82.408%	0.000	239056.010	148914.410
2	13:01:33	38591.209	1894657.900	┬15883840.000	83.301%	0.000	249730.950	148815.460
3	13:01:55	39782.908	1873639.900	┬15663166.000	84.194%	0.000	251194.880	145069.080
x		114.761%	97.778%	┬93.527%	83.301%	0.000	78.875%	93.725%
σ		n/a	n/a	┬n/a	0.893%	0.000	n/a	n/a
%RSD		2.345	2.077	┬1.662	1.072	0.000	2.686	1.485

CCB 11/1/2016 01:06:33 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:06:55	76.417%	0.113	556.842	24742.097	2115.243	66060.290	12072.659	730.904	75.058%	19.881	1611.230	325.283
2	13:07:17	77.198%	0.047	426.165	24629.760	2006.744	66063.426	9570.960	775.537	75.599%	19.749	1721.417	308.199
3	13:07:38	78.015%	-6.430	470.924	17876.756	1784.882	62230.777	8940.403	571.728	76.005%	26.199	1152.268	142.551
x		77.210%	-2.090	484.643	22416.204	1968.956	64784.831	10194.674	692.723	75.554%	21.943	1494.972	258.678
σ		0.799%	3.759	66.410	3931.679	168.391	2211.876	1656.660	107.135	0.475%	3.687	301.860	100.931
%RSD		1.035	179.857	13.703	17.539	8.552	3.414	16.250	15.466	0.629	16.801	20.192	39.018

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:06:55	2590.947	17289.972	294745.200	198.285	88.970	208.208	310.181	94.009	366.766	24.137	660.338	3302.430
2	13:07:17	2652.568	17051.384	291625.790	170.116	74.933	220.984	254.276	108.200	368.442	27.688	641.878	3224.982
3	13:07:38	2906.383	16826.514	274576.920	208.454	120.451	244.228	169.028	36.065	369.177	-9.729	635.774	3603.631
x		2716.633	17055.957	286982.630	192.285	94.785	224.473	244.495	79.425	368.128	14.032	645.996	3377.015

σ		167.192	231.763	10856.292	19.861	23.310	18.262	71.083	38.215	1.236	20.654	12.789	200.040
%RSD		6.154	1.359	3.783	10.329	24.592	8.135	29.073	48.115	0.336	147.196	1.980	5.924
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:06:55	348.226	84.723%	2671.697	-12.910	-57.970	22.026	81.853%	2254.155	547.670	482.120	370.770	80.449%
2	13:07:17	380.554	84.293%	2804.179	17.052	-35.297	23.873	82.727%	2484.216	694.806	533.622	288.196	83.988%
3	13:07:38	359.996	84.073%	2335.806	17.569	-66.810	24.599	81.949%	2269.842	575.431	494.893	266.605	82.354%
x		362.926	84.363%	2603.894	7.237	-53.359	23.499	82.176%	2336.071	605.969	503.545	308.524	82.264%
σ		16.362	0.331%	241.436	17.450	16.255	1.327	0.479%	128.537	78.177	26.819	54.977	1.771%
%RSD		4.508	0.392	9.272	241.120	30.463	5.645	0.583	5.502	12.901	5.326	17.819	2.153

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:06:55	130.499	1030.313	1531.426	82.650%	0.000	-23887.376	-17.993
2	13:07:17	76.064	1067.884	1892.059	84.799%	0.000	-23691.923	-57.664
3	13:07:38	120.690	1034.805	2046.382	85.543%	0.000	-24039.151	-76.328
x		109.084	1044.334	1823.289	84.330%	0.000	-23872.817	-50.662
σ		29.014	20.518	264.276	1.503%	0.000	174.071	29.791
%RSD		26.598	1.965	14.494	1.782	0.000	0.729	58.804

CCVL 11/1/2016 01:12:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:12:38	87.144%	151.355	5651.886	723203.180	29569.191	99452.807	729500.460	26865.028	81.430%	48.936	13452.615	9952.037
2	13:13:00	86.740%	157.854	5373.530	687802.890	30113.007	116406.760	701709.980	25816.544	83.576%	29.848	12601.768	9523.468
3	13:13:22	83.772%	154.723	5505.213	705790.730	30143.933	127793.560	713026.720	25845.058	82.266%	30.281	13607.680	10009.531
x		85.885%	104.495%	109.851%	109.524%	109.600%	183.953%	98.450%	94.839%	82.424%	36.355	111.224%	110.184%
σ		1.842%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.082%	10.898	n/a	n/a
%RSD		2.144	2.102	2.527	2.509	1.080	12.450	1.955	2.282	1.313	29.976	4.096	2.702

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:12:38	3789.538	15030.528	701860.750	2856.882	1406.457	3779.059	9890.279	822.198	511.052	120.160	663.437	3330.303
2	13:13:00	3588.900	20096.241	784086.470	3033.740	1172.271	3743.828	9838.709	959.863	482.065	183.737	656.798	3359.715
3	13:13:22	3695.122	21553.666	801815.020	3052.326	1197.406	3893.138	10116.609	983.530	448.507	166.719	643.275	3627.002
x		3691.187	284.637%	138.085%	112.066%	110.941%	109.618%	95.605%	97.044%	480.541	86.421%	654.503	3439.007
σ		100.377	n/a	n/a	n/a	n/a	n/a	n/a	n/a	31.300	n/a	10.275	163.471
%RSD		2.719	18.122	6.994	3.619	10.214	2.051	1.486	9.450	6.514	20.980	1.570	4.753

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:12:38	23830.135	88.856%	16963.955	3274.443	-64.879	642.210	88.782%	1582.601	5507.992	4366.539	5557.078	87.573%
2	13:13:00	25017.815	87.787%	18282.586	3238.417	-57.786	776.836	88.689%	1984.558	5725.994	4461.386	5703.850	87.143%
3	13:13:22	24410.228	89.274%	17405.666	3350.357	25.719	732.129	87.678%	2001.750	5775.782	4571.368	5821.086	87.407%
x		100.361%	88.639%	99.219%	102.560%	-32.315	88.764%	88.383%	1856.303	5669.923	107.181%	99.049%	87.374%
σ		n/a	0.766%	n/a	n/a	50.384	n/a	0.612%	237.189	142.428	n/a	n/a	0.217%
%RSD		2.432	0.865	3.824	1.738	155.915	9.562	0.693	12.777	2.512	2.295	2.323	0.248

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:12:38	3389.224	19122.203	15839.710	88.679%	0.000	11676.971	15798.389
2	13:13:00	3377.382	19702.009	17073.253	88.204%	0.000	9594.200	15498.616
3	13:13:22	3298.445	20004.780	17566.745	88.121%	0.000	9736.660	15854.254
x		99.258%	100.588%	123.626%	88.335%	0.000	33.051%	99.802%
σ		n/a	n/a	n/a	0.301%	0.000	n/a	n/a
%RSD		1.471	2.287	5.287	0.341	0.000	11.257	1.217

200-35700-A-15-A 11/1/2016 01:18:00 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:18:22	90.078%	448.737	4006.767	T 962860.930	T 1457476.400	T 59693734.000	T 5310913.800	936318.330	115.644%	17862.499	182949.720	133815.160
2	13:18:44	91.315%	543.871	3615.755	T 930058.670	T 1446340.800	T 59772668.000	T 5221542.300	945119.530	118.205%	17542.424	180648.140	130502.730
3	13:19:06	93.914%	480.726	3813.829	T 927401.790	T 1433710.400	T 59029334.000	T 5328116.500	935159.660	120.484%	19545.782	181842.510	132557.840
x		91.769%	491.111	3812.117	T 940107.130	T 1445842.500	T 59498579.000	T 5286857.500	938865.840	118.111%	18316.902	181813.460	132291.910
σ		1.958%	48.410	195.512	T 19750.096	T 11890.865	T 408290.030	T 57214.903	5446.753	2.422%	1076.207	1151.064	1672.147
%RSD		2.133	9.857	5.129	T 2.101	T 0.822	T 0.686	T 1.082	0.580	2.050	5.875	0.633	1.264

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:18:22	2283.606	TM 21731529.000	T 215012800.000	96507.492	47570.875	1285976.800	416114.880	3187.654	145.043	619.068	673.076	3093.963
2	13:18:44	2583.357	TM 21618810.000	T 216816360.000	98363.732	47604.966	1267848.300	413468.240	3303.088	128.359	617.057	694.578	3088.707
3	13:19:06	2045.377	TM 21489233.000	T 215417240.000	96447.753	46633.118	1243224.600	404085.950	3510.838	70.565	731.875	691.778	2943.332
x		2304.113	TM 21613191.000	T 215748800.000	97106.325	47269.653	1265683.300	411223.030	3333.860	114.655	656.000	686.477	3042.001
σ		269.576	TM 121245.900	T 946395.150	1089.356	551.519	21458.154	6320.959	163.775	39.084	65.718	11.690	85.490

%RSD		11.700	TM 0.561	T 0.439	1.122	1.167	1.695	1.537	4.912	34.088	10.018	1.703	2.810
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:18:22	442775.520	284.144%	2496.525	6053.591	-176.136	2830.671	95.979%	50992.090	3278.320	2687.370	474633.890	118.584%
2	13:18:44	442066.570	293.195%	2442.010	5897.694	-200.675	2687.879	99.343%	51415.968	3360.103	2612.356	469203.280	119.710%
3	13:19:06	436502.950	290.533%	2382.140	5653.553	-105.271	2439.089	101.408%	51333.621	3399.028	2637.963	461293.070	121.175%
x		440448.350	289.290%	2440.225	5868.279	-160.694	2652.546	98.910%	51247.226	3345.817	2645.896	468376.750	119.823%
σ		3435.151	4.651%	57.213	201.635	49.541	198.168	2.740%	224.758	61.609	38.131	6708.710	1.299%
%RSD		0.780	1.608	2.345	3.436	30.829	7.471	2.770	0.439	1.841	1.441	1.432	1.084

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:18:22	875.462	6361.033	2109338.500	98.808%	0.000	197236.020	103314.230
2	13:18:44	983.899	6151.853	2093764.000	102.627%	0.000	190979.120	100051.240
3	13:19:06	884.969	6487.099	2102647.300	102.720%	0.000	189592.940	100597.050
x		914.777	6333.328	2101916.600	101.385%	0.000	192602.690	101320.840
σ		60.050	169.331	7812.932	2.232%	0.000	4071.997	1747.765
%RSD		6.564	2.674	0.372	2.202	0.000	2.114	1.725

200-35700-A-16-A 11/1/2016 01:23:44 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	13:24:06	96.278%	850.486	3871.206	T 880211.990	T 1903995.700	T 81010263.000	T 6691574.300	902287.680	146.812%	18247.392	272271.680	183027.260
2	13:24:28	95.563%	859.512	3906.862	T 880531.460	T 1898013.200	T 81506190.000	T 6766255.200	T 915441.010	145.131%	19962.414	269395.390	181296.370
3	13:24:50	93.969%	874.202	3907.267	T 859369.970	T 1860439.900	T 78228512.000	T 6557101.200	901550.330	144.915%	17509.606	268683.730	183832.660
x		95.270%	861.400	3895.112	T 873371.140	T 1887482.900	T 80248322.000	T 6671643.600	T 906426.340	145.619%	18573.137	270116.930	182718.770
σ		1.182%	11.970	20.704	T 12126.422	T 23610.173	T 1766694.300	T 105991.880	T 7815.632	1.039%	1258.431	1899.690	1295.983
%RSD		1.241	1.390	0.532	T 1.388	T 1.251	T 2.202	T 1.589	T 0.862	0.713	6.776	0.703	0.709
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	13:24:06	2593.491	TM 27011003.000	T 337135490.000	160189.300	69285.115	T 2957997.400	735112.370	5301.080	80.068	807.894	740.721	2806.123
2	13:24:28	2622.235	TM 27701238.000	T 348795050.000	161518.260	67762.570	T 2981362.000	735851.120	5240.530	81.957	844.055	721.879	2956.599
3	13:24:50	2015.324	TM 27790130.000	T 347391050.000	162917.040	67863.497	T 2926537.200	734372.550	5190.814	82.378	812.789	714.189	2891.452
x		2410.350	TM 27500790.000	T 344440530.000	161541.530	68303.727	T 2955298.900	735112.010	5244.141	81.468	821.580	725.596	2884.725
σ		342.404	TM 426490.240	T 6365180.300	1364.019	851.403	T 27511.824	739.285	55.222	1.230	19.618	13.651	75.463
%RSD		14.206	TM 1.551	T 1.848	0.844	1.246	T 0.931	0.101	1.053	1.510	2.388	1.881	2.616
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:24:06	518564.870	432.510%	3199.679	6768.784	-267.543	5397.934	109.558%	65246.603	4021.231	3136.123	636636.520	144.519%
2	13:24:28	529238.840	431.391%	3187.208	6803.094	-127.695	5227.330	106.669%	67428.357	4017.650	3182.872	664400.130	147.387%
3	13:24:50	519724.070	434.026%	3159.528	6345.336	-279.668	5202.372	107.187%	67303.668	3836.459	3245.950	646689.920	143.172%
x		522509.260	432.642%	3182.138	6639.071	-224.969	5275.879	107.805%	66659.543	3958.447	3188.315	649242.190	145.026%
σ		5856.740	1.322%	20.550	254.960	84.460	106.437	1.541%	1225.229	105.660	55.116	14056.673	2.153%
%RSD		1.121	0.306	0.646	3.840	37.543	2.017	1.429	1.838	2.669	1.729	2.165	1.484

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:24:06	1127.981	8168.605	3268577.100	111.106%	4.500	300323.430	128333.690
2	13:24:28	1149.532	8693.005	3253909.200	112.224%	0.000	301427.190	126266.460
3	13:24:50	1051.569	8189.713	3300887.300	111.003%	0.000	301104.140	127580.150
x		1109.694	8350.441	3274457.900	111.444%	1.500	300951.590	127393.430
σ		51.478	296.857	24034.826	0.677%	2.598	567.474	1046.191
%RSD		4.639	3.555	0.734	0.608	173.205	0.189	0.821

200-35700-A-17-A 11/1/2016 01:29:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:29:49	95.718%	946.917	3832.293	T 738041.870	T 1975656.700	T 81530256.000	T 6939515.600	966707.910	142.467%	17379.197	274726.330	185409.260
2	13:30:11	91.794%	971.333	4091.669	T 719903.600	T 1923516.700	T 78723831.000	T 6764057.600	965407.590	144.893%	17671.140	268208.220	183254.540
3	13:30:33	93.855%	1000.474	3645.833	T 705083.870	T 1948398.500	T 80872861.000	T 7010486.100	T 958993.210	143.799%	17397.760	274638.950	188911.460
x		93.789%	972.908	3856.598	T 721009.780	T 1949190.600	T 80375649.000	T 6904686.400	T 963702.900	143.720%	17482.699	272524.500	185858.420
σ		1.963%	26.813	223.910	T 16506.824	T 26079.040	T 1467794.300	T 126852.480	T 4130.208	1.215%	163.458	3738.263	2855.084
%RSD		2.093	2.756	5.806	T 2.289	T 1.338	T 1.826	T 1.837	T 0.429	0.845	0.935	1.372	1.536

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:29:49	2654.479	T 14809883.000	T 361651410.000	159425.100	67857.764	T 2268873.400	642978.110	4344.015	97.184	671.240	722.598	2827.485
2	13:30:11	2689.914	T 14889561.000	T 359401240.000	156839.920	65340.233	T 2207170.000	646270.200	4470.030	87.151	693.406	679.707	2889.291
3	13:30:33	2169.605	T 14780521.000	T 359225290.000	156609.170	66435.326	T 2249054.200	648829.170	4427.563	94.660	622.888	707.261	3045.006
x		2504.666	T 14826655.000	T 360092640.000	157624.730	66544.441	T 2241699.200	646025.830	4413.869	92.998	662.511	703.188	2920.594
σ		290.712	T 56421.787	T 1352791.800	1563.430	1262.307	T 31502.358	2933.173	64.114	5.219	36.060	21.734	112.088
%RSD		11.607	T 0.381	T 0.376	0.992	1.897	T 1.405	0.454	1.453	5.612	5.443	3.091	3.838

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:29:49	513405.790	458.306%	2994.219	5130.855	-221.262	4048.727	106.147%	53582.990	3883.393	3000.066	577549.700	146.782%
2	13:30:11	509074.960	459.645%	2941.823	4752.338	-239.458	4347.313	106.077%	52828.414	3899.297	3073.751	586193.390	145.192%
3	13:30:33	507379.230	455.273%	3056.223	4890.408	-276.313	4293.954	105.338%	54108.826	3689.718	3128.627	584914.790	147.554%
x		509953.330	457.741%	2997.422	4924.534	-245.678	4229.998	105.854%	53506.743	3824.136	3067.481	582885.960	146.509%
σ		3107.815	2.240%	57.267	191.552	28.048	159.236	0.448%	643.602	116.681	64.510	4665.349	1.204%
%RSD		0.609	0.489	1.911	3.890	11.416	3.764	0.424	1.203	3.051	2.103	0.800	0.822

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:29:49	827.356	8276.110	2911646.000	108.468%	0.000	388410.390	130445.140
2	13:30:11	871.192	8342.246	2885032.800	110.714%	0.000	385864.670	129284.590
3	13:30:33	822.865	8258.145	2921690.600	109.847%	0.000	386944.670	130205.150
x		840.471	8292.167	2906123.100	109.677%	0.000	387073.240	129978.290
σ		26.700	44.290	18942.659	1.133%	0.000	1277.722	612.635
%RSD		3.177	0.534	0.652	1.033	0.000	0.330	0.471

200-35700-A-18-A 11/1/2016 01:35:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:35:31	88.437%	1121.526	2806.752	T 397280.710	T 2917611.300	T 101257410.000	T 8009006.600	790990.310	171.072%	23254.547	246637.770	240194.490
2	13:35:53	87.754%	1212.932	2932.709	399225.580	T 2931585.600	T 100750570.000	T 7987956.000	802510.270	171.288%	22737.376	249741.530	242172.870
3	13:36:14	87.238%	1286.051	3128.893	395287.310	T 2865948.400	T 98009421.000	T 7784977.500	774572.940	176.426%	21934.071	242335.370	237951.790
x		87.810%	1206.836	2956.118	T 397264.530	T 2905048.400	T 100005800.000	T 7927313.400	789357.840	172.929%	22641.998	246238.220	240106.390
σ		0.601%	82.432	162.341	T 1969.182	T 34574.991	T 1747387.800	T 123715.010	14040.023	3.031%	665.385	3719.211	2111.920
%RSD		0.685	6.830	5.492	T 0.496	T 1.190	T 1.747	T 1.561	1.779	1.753	2.939	1.510	0.880

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:35:31	3057.980	TM 25350333.000	T 323039510.000	169642.160	84303.819	92835.961	383758.370	1527.254	59.464	492.041	735.481	2177.584
2	13:35:53	2755.788	TM 25828623.000	T 328757660.000	171121.080	84686.149	94856.412	385156.820	1500.003	72.935	382.561	763.407	2545.197
3	13:36:14	2653.106	TM 25119931.000	T 317629380.000	164688.470	80861.244	93752.367	387937.560	1524.774	70.302	391.052	744.997	2418.763
x		2822.291	TM 25432962.000	T 323142190.000	168483.900	83283.737	93814.913	385617.590	1517.343	67.567	421.884	747.962	2380.515

σ		210.470	TM 361499.490	T 5564852.000	3369.095	2106.632	1011.677	2127.357	15.069	7.139	60.905	14.197	186.767
%RSD		7.457	TM 1.421	T 1.722	2.000	2.529	1.078	0.552	0.993	10.566	14.436	1.898	7.846
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:35:31	957218.410	658.537%	6127.946	2763.973	-523.647	2453.990	102.996%	29401.559	840.769	682.205	1351197.800	169.180%
2	13:35:53	949210.090	656.063%	6084.750	2666.554	-415.070	2246.257	103.748%	29656.872	891.483	686.818	1354896.700	173.958%
3	13:36:14	937027.020	651.757%	6258.279	2394.538	-465.627	2441.974	103.426%	30088.304	931.067	718.208	1368887.100	173.533%
x		947818.510	655.453%	6156.992	2608.355	-468.115	2380.740	103.390%	29715.578	887.773	695.744	1358327.200	172.224%
σ		10167.371	3.431%	90.337	191.470	54.331	116.621	0.377%	347.116	45.263	19.591	9330.316	2.644%
%RSD		1.073	0.523	1.467	7.341	11.606	4.899	0.365	1.168	5.098	2.816	0.687	1.535

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:35:31	429.963	8634.097	1786836.500	110.565%	0.000	632327.870	113257.360
2	13:35:53	362.687	8894.384	1756150.100	112.774%	0.000	641259.940	112679.250
3	13:36:14	398.228	8684.606	1795825.300	110.556%	0.000	650173.810	116124.250
x		396.959	8737.696	1779604.000	111.298%	0.000	641253.870	114020.290
σ		33.656	138.026	20802.916	1.278%	0.000	8922.972	1844.870
%RSD		8.478	1.580	1.169	1.148	0.000	1.391	1.618

200-35736-A-13-A 11/1/2016 01:40:52 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:41:13	92.971%	1464.526	3219.760	┬616408.760	┬2154185.700	┬117808960.000	┬8173190.300	805443.780	164.744%	9751.791	344669.870	235088.210
2	13:41:35	91.549%	1421.831	3289.200	┬606754.450	┬2141515.200	┬115814530.000	┬8054769.900	786520.750	168.120%	10024.085	347065.720	236001.450
3	13:41:56	91.163%	1405.926	3534.328	┬613079.840	┬2164069.800	┬118588860.000	┬8234019.900	808627.620	166.383%	8969.391	345801.370	238018.140
x		91.894%	1430.761	3347.762	┬612081.020	┬2153256.900	┬117404120.000	┬8153993.300	800197.380	166.415%	9581.756	345845.650	236369.270
σ		0.952%	30.304	165.258	┬4904.045	┬11305.973	┬1430785.300	┬91153.873	11950.810	1.688%	547.521	1198.537	1499.194
%RSD		1.036	2.118	4.936	┬0.801	┬0.525	┬1.219	┬1.118	1.493	1.015	5.714	0.347	0.634

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:41:13	2719.960	┬10872953.000	┬379645580.000	153074.980	71535.725	93624.233	329583.510	3981.403	97.885	414.579	753.311	3066.021
2	13:41:35	2432.051	┬10592124.000	┬368529750.000	147892.860	69987.829	90902.386	323424.320	4076.087	83.238	458.675	762.753	2994.091
3	13:41:56	2874.415	┬10889307.000	┬376153980.000	150074.460	69483.911	90224.121	324333.690	3988.849	96.803	443.292	761.129	2840.671
x		2675.475	┬10784795.000	┬374776440.000	150347.430	70335.821	91583.580	325780.510	4015.446	92.642	438.849	759.064	2966.928
σ		224.512	┬167057.890	┬5684508.400	2601.823	1069.257	1799.502	3324.736	52.648	8.162	22.381	5.048	115.105
%RSD		8.391	┬1.549	┬1.517	1.731	1.520	1.965	1.021	1.311	8.811	5.100	0.665	3.880

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:41:13	568580.470	538.407%	2540.464	3608.815	-494.448	2752.873	103.545%	33817.794	1949.244	1561.427	1024602.200	155.882%
2	13:41:35	560267.720	534.845%	2586.677	3094.193	-451.810	2556.419	105.869%	33728.646	1888.783	1530.637	993370.850	157.230%
3	13:41:56	568122.000	538.705%	2617.995	3384.926	-451.491	2470.882	104.912%	33453.530	1991.060	1561.035	1011377.400	157.692%
x		565656.730	537.319%	2581.712	3362.645	-465.916	2593.391	104.776%	33666.656	1943.029	1551.033	1009783.500	156.935%
σ		4672.644	2.148%	39.003	258.034	24.710	144.586	1.168%	189.879	51.421	17.664	15676.545	0.941%
%RSD		0.826	0.400	1.511	7.674	5.303	5.575	1.115	0.564	2.646	1.139	1.552	0.599

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:41:13	517.412	13166.659	2300524.800	113.687%	0.000	441591.460	170422.540
2	13:41:35	512.709	13439.417	2334626.800	113.986%	0.000	449025.650	173371.300
3	13:41:56	492.090	13597.349	2348371.700	112.923%	4.428	458514.770	173633.590
x		507.404	13401.142	2327841.100	113.532%	1.476	449710.630	172475.810
σ		13.469	217.881	24634.661	0.548%	2.556	8482.427	1783.014
%RSD		2.654	1.626	1.058	0.483	173.205	1.886	1.034

200-35700-A-16-A @2 11/1/2016 01:46:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:46:56	88.113%	578.054	2278.625	┬565269.060	┬1203604.300	┬50968046.000	┬4218489.800	579701.130	118.665%	11659.145	172536.550	115964.250
2	13:47:17	88.678%	560.238	2319.268	570167.790	1215861.700	┬51238711.000	┬4231279.000	573780.780	118.865%	12054.737	167297.640	114863.330
3	13:47:39	89.730%	539.659	2122.576	544115.450	┬1162559.200	┬49059288.000	┬4050335.100	563574.500	119.623%	11745.140	168910.160	114799.060
x		88.840%	559.317	2240.157	┬559850.760	┬1194008.400	┬50422015.000	┬4166701.300	572352.130	119.051%	11819.674	169581.450	115208.880
σ		0.821%	19.214	103.835	┬13845.557	┬27916.866	┬1187890.100	┬100978.730	8157.685	0.505%	208.062	2683.187	654.956
%RSD		0.924	3.435	4.635	┬2.473	┬2.338	┬2.356	┬2.423	1.425	0.424	1.760	1.582	0.568

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:46:56	2565.239	┬17490494.000	┬221055390.000	104560.220	44131.378	┬1636959.400	427881.170	4454.814	142.765	503.705	674.614	3039.097
2	13:47:17	2461.767	┬17401664.000	┬219738090.000	101909.150	42630.736	1658875.900	437190.940	4585.846	134.697	520.688	686.780	3077.745
3	13:47:39	1821.632	┬17213467.000	┬216717180.000	99529.206	43115.375	1660739.900	429354.710	4610.989	153.255	435.230	700.243	3315.652
x		2282.879	┬17368542.000	┬219170220.000	101999.530	43292.496	┬1652191.700	431475.610	4550.550	143.573	486.541	687.213	3144.165
σ		402.788	┬141452.830	┬2224160.400	2516.726	765.840	┬13224.486	5004.161	83.857	9.305	45.241	12.820	149.764

%RSD		17.644	┬0.814	┬1.015	2.467	1.769	┬0.800	1.160	1.843	6.481	9.298	1.865	4.763
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	13:46:56	287362.220	274.137%	2636.677	3851.063	-181.690	2842.935	101.467%	36174.532	2266.452	1794.100	355033.810	118.335%
2	13:47:17	292552.040	268.972%	2600.733	3822.408	-234.218	3322.784	99.888%	36440.358	2247.472	1770.629	360722.920	119.611%
3	13:47:39	287311.850	267.138%	2628.242	3556.651	-82.671	2874.317	100.039%	36961.649	2256.366	1763.853	360329.010	118.645%
x		289075.370	270.082%	2621.884	3743.374	-166.193	3013.345	100.465%	36525.513	2256.763	1776.194	358695.240	118.864%
σ		3010.986	3.629%	18.796	162.340	76.953	268.441	0.871%	400.408	9.496	15.873	3177.007	0.666%
%RSD		1.042	1.344	0.717	4.337	46.303	8.908	0.867	1.096	0.421	0.894	0.886	0.560

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:46:56	708.350	4583.295	1843018.400	102.394%	0.000	153881.860	71625.459
2	13:47:17	621.033	4604.518	1825068.400	103.540%	0.000	152367.540	70782.272
3	13:47:39	676.919	4942.244	1857406.600	102.245%	0.000	153507.170	70413.820
x		668.767	4710.019	1841831.200	102.726%	0.000	153252.190	70940.517
σ		44.226	201.393	16201.763	0.708%	0.000	788.705	621.127
%RSD		6.613	4.276	0.880	0.690	0.000	0.515	0.876

CCV 11/1/2016 01:52:18 PM QC Status: FAIL (Initial: UNKNOWN)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**5**
1	13:52:39	78.165%	95769.340	31895.448	┬13595412.000	┬4160129.800	┬38194047.000	┬13991600.000	1561551.300	77.197%	31027.218	┬2823396.500	864524.
2	13:53:01	74.570%	98183.724	32515.664	┬14061670.000	┬4252668.600	┬39289163.000	┬14411627.000	1599847.000	72.906%	31463.472	┬2922766.100	911483.
3	13:53:23	75.867%	95141.240	32860.577	┬14055522.000	┬4323890.100	┬39136511.000	┬14643004.000	1623736.600	71.427%	32141.446	┬2910681.300	900406.
x		76.201%	104.184%	103.424%	┬107.912%	┬103.603%	┬104.042%	┬98.821%	96.319%	73.843%	31544.045	┬97.105%	100.01
σ		1.820%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	n/a	2.997%	561.467	┬n/a	
%RSD		2.389	1.667	1.508	┬1.923	┬1.934	┬1.526	┬2.301	1.967	4.059	1.780	┬1.879	2.

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**8**
1	13:52:39	10193.853	┬3960254.300	┬80520063.000	1308213.700	703713.760	829217.800	632252.200	91970.616	-617.281	9340.900	610.822	2310.
2	13:53:01	8691.419	┬4086361.600	┬82927167.000	1340966.400	722269.820	823705.640	637582.910	93896.180	-998.432	9414.207	644.620	2144.
3	13:53:23	9566.557	┬4076525.700	┬84217194.000	1355984.800	727067.630	827383.460	637511.130	92982.410	-750.790	9140.694	616.376	2684.
x		9483.943	┬97.408%	┬99.657%	100.379%	101.209%	95.265%	97.757%	97.848%	-788.835	102.452%	623.939	2379.
σ		754.616	┬n/a	┬n/a	n/a	n/a	n/a	n/a	n/a	193.402	n/a	18.124	276.
%RSD		7.957	┬1.736	┬2.273	1.830	1.719	0.340	0.481	1.036	24.517	1.523	2.905	11.

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159**
1	13:52:39	957383.980	81.717%	2032906.000	323280.300	576.116	161319.260	80.794%	1032531.300	693807.570	548538.680	702319.030	82.39
2	13:53:01	953825.650	79.953%	2071138.500	316711.080	742.780	158996.300	79.738%	1039023.100	697540.390	552976.060	703947.260	80.66
3	13:53:23	950022.310	77.610%	2110165.900	322097.030	994.655	159230.520	78.200%	1048669.200	700776.330	556934.650	711949.240	79.66
x		953743.980	79.760%	93.682%	100.040%	771.184	98.937%	79.577%	1040074.500	697374.760	106.127%	98.259%	80.90
σ		3681.511	2.060%	n/a	n/a	210.710	n/a	1.304%	8120.130	3487.327	n/a	n/a	1.37
%RSD		0.386	2.583	1.865	1.092	27.323	0.800	1.639	0.781	0.500	0.760	0.730	1.

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	13:52:39	38145.920	1918272.400	┬16303501.000	82.324%	0.000	245308.430	148460.330
2	13:53:01	39996.485	1897836.400	┬16019383.000	83.217%	0.000	254627.040	148886.690
3	13:53:23	39766.319	1939275.900	┬16243321.000	81.422%	0.000	262230.650	146872.650
x		116.278%	98.407%	┬95.152%	82.321%	0.000	81.240%	94.025%
σ		n/a	n/a	┬n/a	0.898%	0.000	n/a	n/a
%RSD		2.566	1.080	┬0.925	1.091	0.000	3.336	0.717

CCB 11/1/2016 01:58:01 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	13:58:23	82.352%	-0.358	326.529	24077.801	327.701	5765.303	8098.442	99.355	77.715%	19.219	919.193	140.074
2	13:58:45	80.096%	-3.309	453.603	19982.538	452.333	5423.920	2852.465	183.880	80.053%	37.361	861.455	171.382
3	13:59:06	78.601%	3.112	351.449	25010.692	424.337	6375.768	7550.907	184.083	76.760%	12.971	431.625	25.712
x		80.350%	-0.185	377.194	23023.677	401.457	5854.997	6167.271	155.773	78.176%	23.184	737.424	112.389
σ		1.888%	3.214	67.335	2674.690	65.390	482.221	2883.731	48.859	1.694%	12.669	266.399	76.680
%RSD		2.350	1737.783	17.852	11.617	16.288	8.236	46.759	31.366	2.167	54.647	36.126	68.227

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	13:58:23	2942.484	730.717	37481.660	61.412	40.062	5.024	155.641	87.988	392.403	-21.542	651.148	3490.583
2	13:58:45	2892.425	567.785	21004.286	39.667	6.954	23.137	-10.885	258.902	326.692	59.273	639.711	3194.890
3	13:59:06	2902.720	822.407	32770.756	134.344	47.376	-36.421	120.410	104.545	351.965	30.927	649.400	3470.182
x		2912.543	706.970	30418.901	78.474	31.464	-2.753	88.389	150.478	357.020	22.886	646.753	3385.218
σ		26.436	128.962	8486.718	49.591	21.539	30.531	87.759	94.262	33.146	41.003	6.161	165.144
%RSD		0.908	18.241	27.899	63.194	68.457	1108.841	99.288	62.642	9.284	179.161	0.953	4.878

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	13:58:23	82.838	85.762%	2539.684	-13.514	-39.140	45.086	83.930%	2305.625	550.550	417.026	75.444	81.563%
2	13:58:45	106.765	85.785%	2538.985	-7.535	-30.465	-5.130	83.867%	2313.311	525.275	461.514	69.544	83.227%
3	13:59:06	76.980	84.845%	2573.494	-25.417	-26.119	2.530	83.848%	2158.786	536.850	501.593	105.341	83.694%
x		88.861	85.464%	2550.721	-15.489	-31.908	14.162	83.882%	2259.241	537.558	460.045	83.443	82.828%
σ		15.780	0.536%	19.725	9.103	6.629	27.053	0.043%	87.082	12.652	42.303	19.192	1.120%
%RSD		17.758	0.627	0.773	58.773	20.777	191.033	0.051	3.854	2.354	9.195	23.001	1.352

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	13:58:23	91.510	1086.363	1240.862	82.091%	0.000	-23959.991	-163.021
2	13:58:45	71.036	982.508	1209.195	85.031%	0.000	-24329.269	-134.462
3	13:59:06	88.388	952.000	1265.838	82.622%	0.000	-24207.225	-151.074
x		83.645	1006.957	1238.632	83.248%	0.000	-24165.495	-149.519
σ		11.031	70.439	28.387	1.567%	0.000	188.142	14.343
%RSD		13.188	6.995	2.292	1.882	0.000	0.779	9.593

CCVL 11/1/2016 02:03:44 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:04:06	87.284%	156.831	5310.187	732069.680	29623.410	77714.918	734731.940	25630.786	83.673%	17.896	11716.851	9517.182
2	14:04:28	87.231%	194.187	5141.509	721810.830	29220.692	84408.165	737325.990	27773.827	84.309%	23.635	12711.766	9674.050
3	14:04:50	84.774%	170.513	5585.315	758071.660	31463.634	93116.369	750358.410	27340.535	81.333%	55.153	13458.998	10444.933
x		86.430%	117.468%	106.571%	114.448%	110.187%	136.626%	102.040%	97.518%	83.105%	32.228	106.248%	110.748%
σ		1.434%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.567%	20.060	n/a	n/a
%RSD		1.660	10.872	4.191	2.535	3.972	9.077	1.130	4.210	1.886	62.244	6.920	5.027

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:04:06	4145.947	9057.283	626703.220	3137.781	1236.631	3934.858	10198.379	1102.476	521.577	243.292	641.595	3243.398
2	14:04:28	3802.839	9905.882	661357.790	3297.649	1173.731	3682.845	10317.511	1063.001	452.703	190.969	627.732	3347.623
3	14:04:50	3794.669	12015.944	697724.040	3038.615	1463.481	3633.368	10100.963	1001.846	505.185	202.903	668.930	3329.630
x		3914.485	155.571%	119.858%	118.721%	113.811%	108.034%	98.075%	111.141%	493.155	117.004%	646.086	3306.883

σ		200.493	n/a	n/a	n/a	n/a	n/a	n/a	n/a	35.978	n/a	20.963	55.711
%RSD		5.122	14.753	5.365	4.139	11.803	4.311	1.063	4.802	7.295	12.911	3.245	1.685
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	14:04:06	24862.496	86.975%	17711.531	3449.470	-14.934	806.528	87.050%	1935.764	5616.813	4502.057	5914.832	85.539%
2	14:04:28	24246.170	91.730%	16965.696	3480.489	-25.562	815.419	88.415%	1747.523	5599.735	4484.528	5681.983	87.791%
3	14:04:50	25154.278	87.398%	18587.474	3486.028	-39.088	947.241	86.857%	1922.806	5969.636	4708.611	6014.405	86.586%
x		101.737%	88.701%	100.373%	108.308%	-26.528	106.012%	87.441%	1868.698	5728.728	109.548%	102.118%	86.639%
σ		n/a	2.632%	n/a	n/a	12.106	n/a	0.849%	105.140	208.807	n/a	n/a	1.127%
%RSD		1.873	2.967	4.572	0.567	45.634	9.201	0.971	5.626	3.645	2.730	2.906	1.301

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
1	14:04:06	3037.914	19640.800	17258.877	85.962%	0.000	12381.320	16146.527
2	14:04:28	3215.520	19926.189	17463.532	87.264%	0.000	11482.921	15455.393
3	14:04:50	3433.976	20059.873	17152.447	86.734%	0.000	10156.571	16301.102
x		95.534%	101.952%	127.043%	86.653%	0.000	36.263%	101.394%
σ		n/a	n/a	n/a	0.655%	0.000	n/a	n/a
%RSD		6.143	1.077	0.914	0.756	0.000	9.869	2.820

Mercury Calibration Curve Worksheet

Instrument ID: MEPCV3II

Analyst: MDK

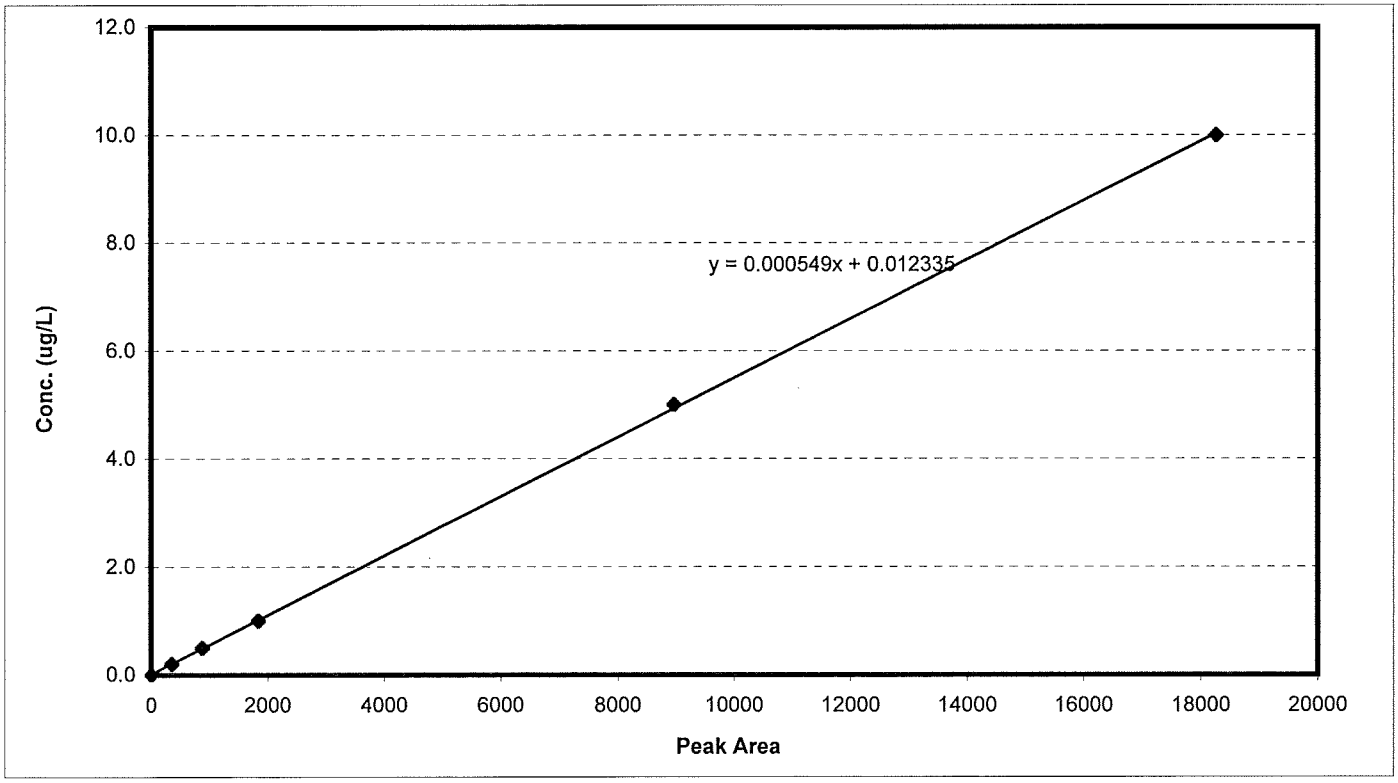
Run ID: 101716CC

Date: 10/17/2016

TALS Batch: 110261

	ICAL Conc. (ug/L)	ICAL Peak Area	Calculated Result	% Difference
Std 0	0.0	13	0.0195	
Std 1	0.2	356	0.2076	3.8
Std 2	0.5	874	0.4918	1.6
Std 3	1.0	1832	1.0174	1.7
Std 4	5.0	8967	4.9317	1.4
Std 5	10	18264	10.0320	0.3

N =	6
r =	0.999959263
Intercept =	0.012335458
Slope =	0.000548604



MEPCV3II * 7470A *
Folder: 081216L 101716CC* Page 307
Protocol: 081216L Analyst:MDK*
POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Standard: 1 Rep: 1				Seq: 1247	16:09:14 17 Oct 16				HG
Hg	.000	ppb	13	S01 *					=
*** Standard: 2 Rep: 1				Seq: 1248	16:11:00 17 Oct 16				HG
Hg	.200	ppb	356	S02 *					=
*** Standard: 3 Rep: 1				Seq: 1249	16:12:38 17 Oct 16				HG
Hg	.500	ppb	874	S03*					=
*** Standard: 4 Rep: 1				Seq: 1250	16:14:25 17 Oct 16				HG
Hg	1.00	ppb	1832	S04*					=
*** Standard: 5 Rep: 1				Seq: 1251	16:16:04 17 Oct 16				HG
Hg	5.00	ppb	8967	S05*					=
*** Standard: 6 Rep: 1				Seq: 1252	16:17:41 17 Oct 16				HG
Hg	10.0	ppb	18264	S06*					=
*** Sample ID:				Seq: 1253	16:19:19 17 Oct 16				HG
Hg	2.76	ppb	5000	ICV*					=
*** Sample ID:				Seq: 1254	16:20:56 17 Oct 16				HG
Hg	-.124	ppb	-248	ICB*					=
*** Sample ID:				Seq: 1255	16:22:42 17 Oct 16				HG
Hg	5.03	ppb	9154	CCV*					=
*** Sample ID: CCB				Seq: 1256	16:24:18 17 Oct 16				HG
Hg	-.124	ppb	-249						=
*** Sample ID: MB 110242				Seq: 1257	16:26:05 17 Oct 16				HG
Hg	-.051	ppb	-116						=

* MDK 10/7/16

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: LCS 110242				Seq: 1258	16:27:41 17 Oct 16				HG
Hg	2.57	ppb	4666						=
*** Sample ID: 35680A13B				Seq: 1259	16:29:17 17 Oct 16				HG
Hg	-.083	ppb	-174						=
*** Sample ID: 35680A13C MS				Seq: 1260	16:30:57 17 Oct 16				HG
Hg	2.46	ppb	4469						=
*** Sample ID: 35680A13D MSD				Seq: 1261	16:32:44 17 Oct 16				HG
Hg	2.50	ppb	4533						=
*** Sample ID: 35700A19B				Seq: 1262	16:34:21 17 Oct 16				HG
Hg	-.091	ppb	-189						=
*** Sample ID: 35736A14D				Seq: 1263	16:35:59 17 Oct 16				HG
Hg	-.062	ppb	-136						=
*** Sample ID: CCV				Seq: 1264	16:37:35 17 Oct 16				HG
Hg	5.24	ppb	9538						=
*** Sample ID: CCB				Seq: 1265	16:39:11 17 Oct 16				HG
Hg	-.030	ppb	-78						=

Mercury Calibration Curve Worksheet

Instrument ID: MEPCV3II

Analyst: MDK

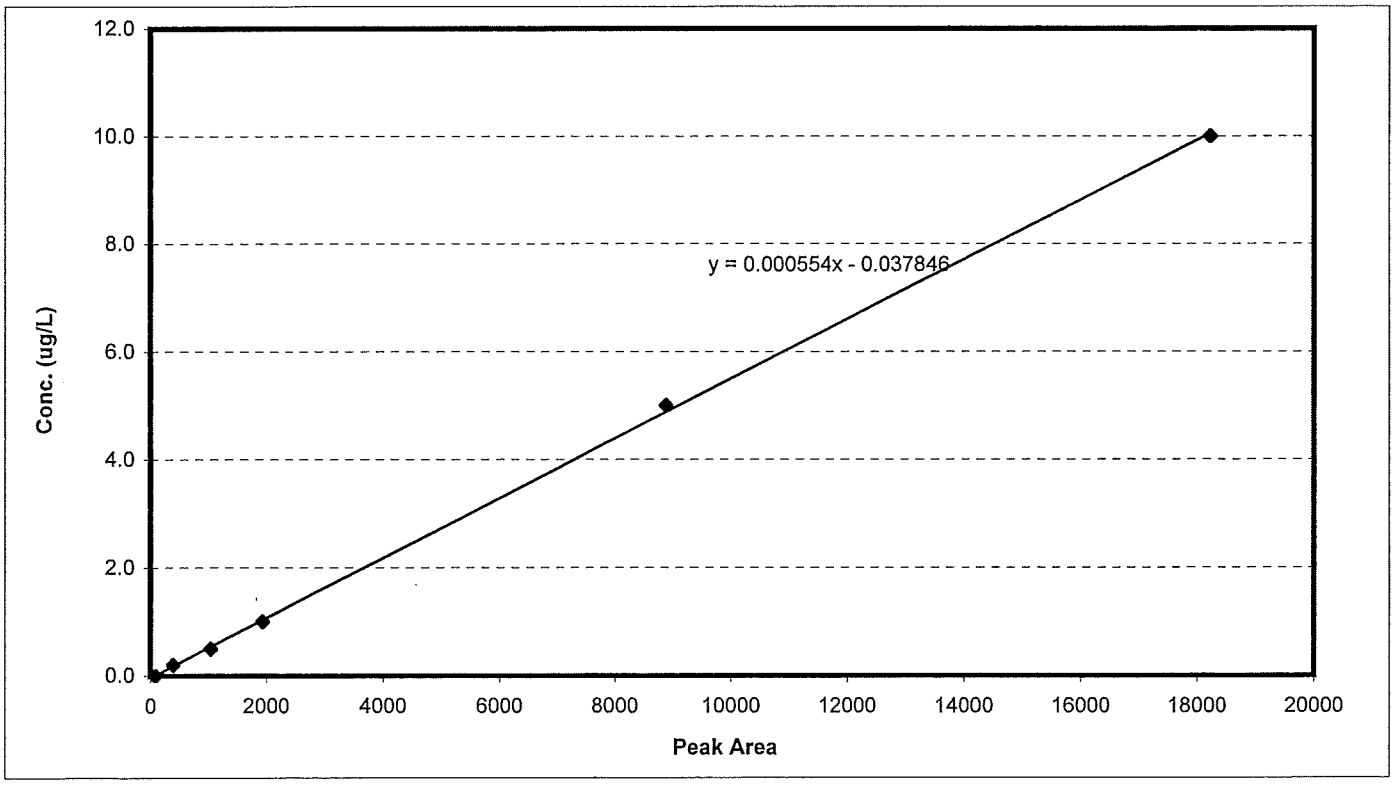
Run ID: 101716AA

Date: 10/17/2016

TALS Batch: 110260

	ICAL Conc. (ug/L)	ICAL Peak Area	Calculated Result	% Difference
Std 0	0.0	88	0.0109	
Std 1	0.2	396	0.1814	9.3
Std 2	0.5	1046	0.5414	8.3
Std 3	1.0	1933	1.0326	3.3
Std 4	5.0	8883	4.8813	2.4
Std 5	10	18221	10.0524	0.5

N =	6
r =	0.999874219
Intercept =	-0.037845846
Slope =	0.00055377



MEPCV3II *
Folder: 081216L
Protocol: 081216L
POST-RUN REPORT

7471B*
101716AA*
Analyst MDK*

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1				Seq: 1178	14:14:03 17 Oct 16			HG
Hg	.000	ppb	88	S01*				
*** Standard: 2 Rep: 1				Seq: 1179	14:15:40 17 Oct 16			HG
Hg	.200	ppb	396	S02*				
*** Standard: 3 Rep: 1				Seq: 1180	14:17:17 17 Oct 16			HG
Hg	.500	ppb	1046	S03*				
*** Standard: 4 Rep: 1				Seq: 1181	14:18:57 17 Oct 16			HG
Hg	1.00	ppb	1933	S04*				
*** Standard: 5 Rep: 1				Seq: 1182	14:20:38 17 Oct 16			HG
Hg	5.00	ppb	8883	S05*				
*** Standard: 6 Rep: 1				Seq: 1183	14:22:15 17 Oct 16			HG
Hg	10.0	ppb	18221	S06*				
*** Sample ID: ICV				Seq: 1184	14:23:53 17 Oct 16			HG
Hg	2.77	ppb	5074					
*** Sample ID: ICB				Seq: 1185	14:25:31 17 Oct 16			HG
Hg	-.038	ppb	0					
*** Sample ID: CCV				Seq: 1186	14:27:11 17 Oct 16			HG
Hg	5.00	ppb	9098					
*** Sample ID: CCB				Seq: 1187	14:29:01 17 Oct 16			HG
Hg	-.035	ppb	6					
*** Sample ID: MB 110231				Seq: 1188	14:30:37 17 Oct 16			HG
Hg	-.008	ppb	53					

* MDK
10/17/16

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: LCS 110231				Seq: 1189	14:32:13 17 Oct 16		HG	
Hg	2.46	ppb	4505					
*** Sample ID: 35680A1C				Seq: 1190	14:33:52 17 Oct 16		HG	
Hg	3.99	ppb	7271					
*** Sample ID: 35680A2C				Seq: 1191	14:35:49 17 Oct 16		HG	
Hg	6.27	ppb	11383					
*** Sample ID: 35680A3C				Seq: 1192	14:37:30 17 Oct 16		HG	
Hg	.308	ppb	625					
*** Sample ID: 35680A4C				Seq: 1193	14:39:08 17 Oct 16		HG	
Hg	5.99	ppb	10889					
*** Sample ID: 35680A5C				Seq: 1194	14:40:59 17 Oct 16		HG	
Hg	7.53	ppb	13670					
*** Sample ID: 35680A6E				Seq: 1195	14:42:36 17 Oct 16		HG	
Hg	8.91	ppb	16158					
*** Sample ID: 35680A7C				Seq: 1196	14:44:14 17 Oct 16		HG	
Hg	7.19	ppb	13052					
*** Sample ID: 35680A14E				Seq: 1197	14:45:52 17 Oct 16		HG	
Hg	8.64	ppb	15678					
*** Sample ID: CCV				Seq: 1198	14:47:54 17 Oct 16		HG	
Hg	4.87	ppb	8857					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: CCB				Seq: 1199	14:49:32 17 Oct 16	HG		
Hg	-.047	ppb	-16					
*** Sample ID: 35680A14F				Seq: 1200	14:51:10 17 Oct 16	HG		
			MS					
Hg	10.9	ppb	19728					
*** Sample ID: 35680A14G				Seq: 1201	14:52:57 17 Oct 16	HG		
			MSD					
Hg	11.2	ppb	20344					
*** Sample ID: 35700A1C				Seq: 1202	14:54:37 17 Oct 16	HG		
Hg	25.9	ppb	46820					
*** Sample ID: 35700A2C				Seq: 1203	14:56:19 17 Oct 16	HG		
Hg	37.0	ppb	66837					
*** Sample ID: 35700A3C				Seq: 1204	14:58:08 17 Oct 16	HG		
Hg	23.9	ppb	43280					
*** Sample ID: 35700A4C				Seq: 1205	14:59:51 17 Oct 16	HG		
Hg	5.48	ppb	9966					
*** Sample ID: 35700A5C				Seq: 1206	15:01:30 17 Oct 16	HG		
Hg	16.2	ppb	29292					
*** Sample ID: 35700A6C				Seq: 1207	15:03:18 17 Oct 16	HG		
Hg	13.6	ppb	24563					
*** Sample ID: 35700A7C				Seq: 1208	15:04:56 17 Oct 16	HG		
Hg	.195	ppb	421					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 35700A8C				Seq: 1209	15:06:32 17 Oct 16		HG	
Hg	17.2	ppb	31216					
*** Sample ID: CCV				Seq: 1210	15:08:10 17 Oct 16		HG	
Hg	4.91	ppb	8937					
*** Sample ID: CCB				Seq: 1211	15:09:51 17 Oct 16		HG	
Hg	-.077	ppb	-70					
*** Sample ID: MB 110232				Seq: 1212	15:11:29 17 Oct 16		HG	
Hg	-.046	ppb	-15					
*** Sample ID: LCS 110232				Seq: 1213	15:13:08 17 Oct 16		HG	
Hg	2.44	ppb	4479					
*** Sample ID: 35736A1B				Seq: 1214	15:14:46 17 Oct 16		HG	
Hg	.171	ppb	378					
*** Sample ID: 35736A2B				Seq: 1215	15:16:25 17 Oct 16		HG	
Hg	.123	ppb	291					
*** Sample ID: 35736A3B				Seq: 1216	15:18:22 17 Oct 16		HG	
Hg	.132	ppb	307					
*** Sample ID: 35736A4B				Seq: 1217	15:20:00 17 Oct 16		HG	
Hg	.173	ppb	381					
*** Sample ID: 35736A5D				Seq: 1218	15:21:38 17 Oct 16		HG	
Hg	.150	ppb	339					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 35736A5G				Seq: 1219	15:23:16 17 Oct 16		HG	
			MS					
Hg	2.70	ppb	4940					
*** Sample ID: 35736A5H				Seq: 1220	15:25:02 17 Oct 16		HG	
			MSD					
Hg	2.57	ppb	4709					
*** Sample ID: 35736A6B				Seq: 1221	15:26:39 17 Oct 16		HG	
Hg	.093	ppb	237					
*** Sample ID: CCV				Seq: 1222	15:28:16 17 Oct 16		HG	
Hg	4.93	ppb	8971					
*** Sample ID: CCB				Seq: 1223	15:29:56 17 Oct 16		HG	
Hg	-.071	ppb	-60					
*** Sample ID: 35736A7B				Seq: 1224	15:31:43 17 Oct 16		HG	
Hg	.147	ppb	333					
*** Sample ID: 35736A8B				Seq: 1225	15:33:30 17 Oct 16		HG	
Hg	.162	ppb	360					
*** Sample ID: 35736A9B				Seq: 1226	15:35:10 17 Oct 16		HG	
Hg	.153	ppb	344					
*** Sample ID: 35736A10B				Seq: 1227	15:36:47 17 Oct 16		HG	
Hg	.144	ppb	328					
*** Sample ID: 35736A11D				Seq: 1228	15:38:45 17 Oct 16		HG	
Hg	13.3	ppb	24011					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 35736A11G				Seq: 1229	15:40:25 17 Oct 16		HG	
			MS					
Hg	10.3	ppb	18673					
*** Sample ID: 35736A11H				Seq: 1230	15:42:03 17 Oct 16		HG	
			MSD					
Hg	11.3	ppb	20524					
*** Sample ID: 35736A12				Seq: 1231	15:43:41 17 Oct 16		HG	
Hg	6.98	ppb	12664					
*** Sample ID: CCV				Seq: 1232	15:45:23 17 Oct 16		HG	
Hg	4.95	ppb	9006					
*** Sample ID: CCB				Seq: 1233	15:47:02 17 Oct 16		HG	
Hg	-.102	ppb	-115					
*** Sample ID: 35700A1C				Seq: 1234	15:48:55 17 Oct 16		HG	
			@4					
~~Hg 3.91 ppb 7127~~ Sipper sent to wrong cup 10/17/16 MDK								
*** Sample ID: 35700A1C				Seq: 1235	15:51:08 17 Oct 16		HG	
			@4					
Hg	6.33	ppb	11507					
*** Sample ID: 35700A2C				Seq: 1236	15:52:46 17 Oct 16		HG	
			@4					
Hg	9.48	ppb	17194					
*** Sample ID: 35700A3C				Seq: 1237	15:54:23 17 Oct 16		HG	
			@4					
Hg	5.59	ppb	10168					
*** Sample ID: 35700A5C				Seq: 1238	15:56:02 17 Oct 16		HG	
			@2					
Hg	8.31	ppb	15071					

POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: 35700A6C @2				Seq: 1239	15:57:40 17 Oct 16				HG
Hg	6.80	ppb	12342						
*** Sample ID: 35700A8C @2				Seq: 1240	15:59:18 17 Oct 16				HG
Hg	8.60	ppb	15603						
*** Sample ID: ~~CCV~~ 35736A11D @2 (*)				Seq: 1241	16:01:06 17 Oct 16				HG
Hg	6.63	ppb	12038						
*** Sample ID: ~~CCB~~ 35736A11G @2 MS (*)				Seq: 1242	16:02:43 17 Oct 16				HG
Hg	5.20	ppb	9466						
*** Sample ID: 35736A11H @2 MSD (*)				Seq: 1243	16:04:21 17 Oct 16				HG
Hg	5.75	ppb	10445						
*** Sample ID: CCV (*)				Seq: 1244	16:06:02 17 Oct 16				HG
Hg	4.95	ppb	9009						
*** Sample ID: CCB (*)				Seq: 1245	16:07:38 17 Oct 16				HG
Hg	-.093	ppb	-99						

(*) instrument did not recognize changes to worklist during analysis. 10/19/16 MDK

Mercury Calibration Curve Worksheet

Instrument ID: MEPCV3II

Analyst: MDK

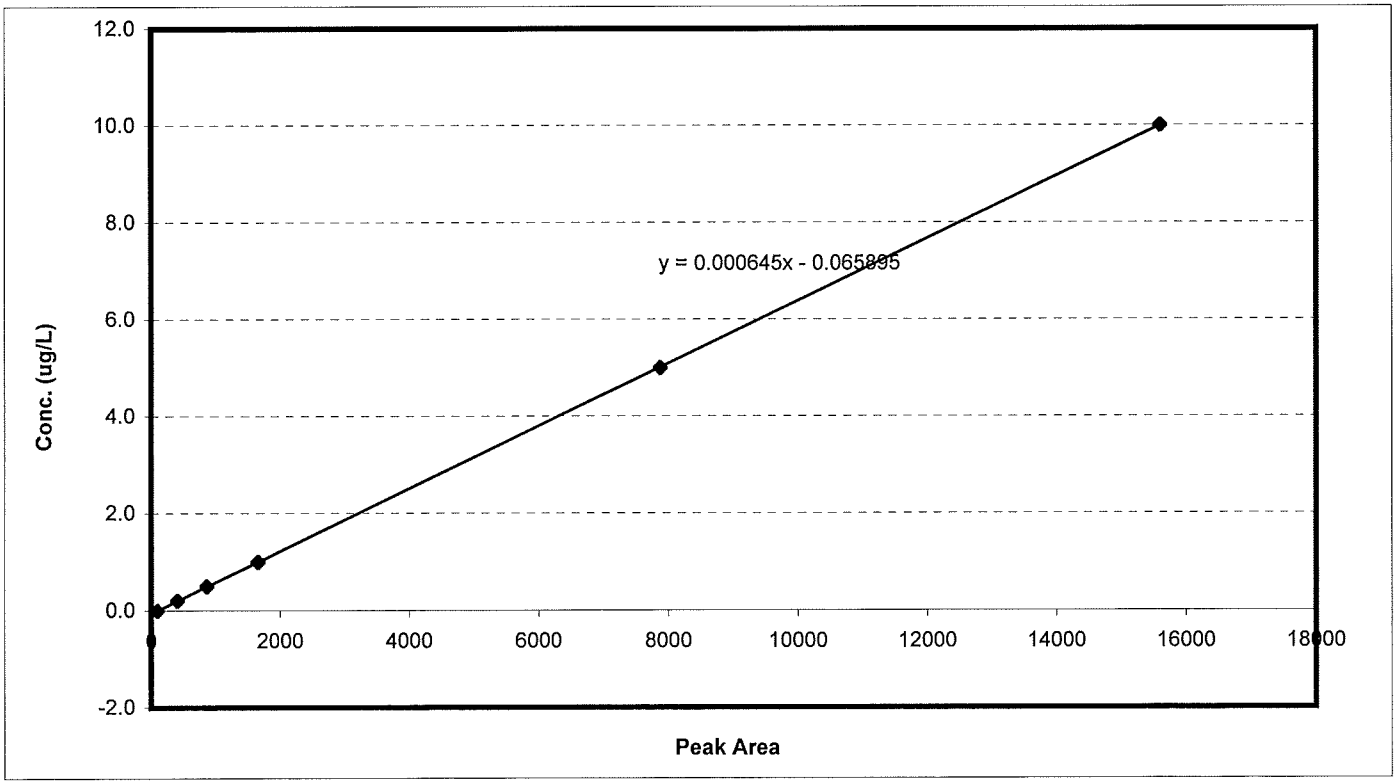
Run ID: 103116AA

Date: 10/31/2016

TALS Batch: 110792

	ICAL Conc. (ug/L)	ICAL Peak Area	Calculated Result	% Difference
Std 0	0.0	97	-0.0034	
Std 1	0.2	412	0.1998	0.1
Std 2	0.5	871	0.4957	0.9
Std 3	1.0	1655	1.0012	0.1
Std 4	5.0	7877	5.0131	0.3
Std 5	10	15601	9.9935	0.1

N =	6
r =	0.99999846
Intercept =	-0.065895056
Slope =	0.000644792



MEPCV3 II * 7471B *
Folder: 081216L 103116AA * Page 328
Protocol: 081216L Analyst MDK *
POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1				Seq: 1467	13:52:10 31 Oct 16		HG	
Hg	.000	ppb	97	S01*				
*** Standard: 2 Rep: 1				Seq: 1468	13:53:49 31 Oct 16		HG	
Hg	.200	ppb	412	S02*				
*** Standard: 3 Rep: 1				Seq: 1469	13:55:25 31 Oct 16		HG	
Hg	.500	ppb	871	S03*				
*** Standard: 4 Rep: 1				Seq: 1470	13:57:02 31 Oct 16		HG	
Hg	1.00	ppb	1655	S04*				
*** Standard: 5 Rep: 1				Seq: 1471	13:58:38 31 Oct 16		HG	
Hg	5.00	ppb	7877	S05*				
*** Standard: 6 Rep: 1				Seq: 1472	14:00:17 31 Oct 16		HG	
Hg	10.0	ppb	15601	S06*				
*** Sample ID: ICV			103116AA	Seq: 1473	14:01:53 31 Oct 16		HG	
Hg	2.92	ppb	4630					
*** Sample ID: ICB			103116AA	Seq: 1474	14:03:29 31 Oct 16		HG	
Hg	-.094	ppb	-44					
*** Sample ID: CCV			103116AA	Seq: 1475	14:05:06 31 Oct 16		HG	
Hg	5.05	ppb	7936					
*** Sample ID: CCB			103116AA	Seq: 1476	14:06:45 31 Oct 16		HG	
Hg	-.112	ppb	-72					
*** Sample ID: MB 110770			103116AA	Seq: 1477	14:08:24 31 Oct 16		HG	
Hg	-.059	ppb	11					

* 10/31/16 MDK

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: LCS 110770 103116AA			Seq: 1478	14:10:00 31 Oct 16					HG
Hg	2.47	ppb	3939						
*** Sample ID: 35700A11B 103116AA			Seq: 1479	14:11:38 31 Oct 16					HG
Hg	4.06	ppb	6404						
*** Sample ID: 35700A12D 103116AA			Seq: 1480	14:13:18 31 Oct 16					HG
Hg	4.81	ppb	7566						
*** Sample ID: 35700A12E 103116AA MS			Seq: 1481	14:14:58 31 Oct 16					HG
Hg	8.23	ppb	12870						
*** Sample ID: 35700A12F 103116AA MSD			Seq: 1482	14:16:35 31 Oct 16					HG
Hg	6.75	ppb	10570						
*** Sample ID: 35700A13B 103116AA			Seq: 1483	14:18:13 31 Oct 16					HG
Hg	.043	ppb	169						
*** Sample ID: 35700A14B 103116AA			Seq: 1484	14:19:50 31 Oct 16					HG
Hg	5.47	ppb	8593						
*** Sample ID: 35700A15B 103116AA			Seq: 1485	14:21:25 31 Oct 16					HG
Hg	5.65	ppb	8870						
*** Sample ID: 35700A16B 103116AA			Seq: 1486	14:23:02 31 Oct 16					HG
Hg	8.16	ppb	12752						
*** Sample ID: CCV 103116AA			Seq: 1487	14:24:38 31 Oct 16					HG
Hg	5.02	ppb	7887						

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: CCB			103116AA	Seq: 1488		14:26:15 31 Oct 16			HG
Hg	-.089	ppb	-36						=
*** Sample ID: 35700A17B			103116AA	Seq: 1489		14:27:51 31 Oct 16			HG
Hg	5.37	ppb	8423						=
*** Sample ID: 35700A18B			103116AA	Seq: 1490		14:29:31 31 Oct 16			HG
Hg	.160	ppb	351						=
*** Sample ID: 35736A13B			103116AA	Seq: 1491		14:31:10 31 Oct 16			HG
Hg	.136	ppb	313						=
*** Sample ID: CCV			103116AA	Seq: 1492		14:32:47 31 Oct 16			HG
Hg	5.08	ppb	7978						=
*** Sample ID: CCB			103116AA	Seq: 1493		14:34:30 31 Oct 16			HG
Hg	-.090	ppb	-38						=

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35736-1

SDG No.: 200-35736-1

Project: Port Ewen DNS Sediment

Client Sample ID	Lab Sample ID
PE1016-P1SCD-REF1-A-0006IN	200-35736-1
PE1016-P1SCD-REF1-B-0006IN	200-35736-2
PE1016-P1SCD-REF2-A-0006IN	200-35736-3
PE1016-P1SCD-REF2-B-0006IN	200-35736-4
PE1016-P1SCD-REF3-A-0006IN	200-35736-5
PE1016-P1SCD-REF3-B-0006IN	200-35736-6
PE1016-P1SCD-REF4-A-0006IN	200-35736-7
PE1016-P1SCD-REF4-B-0006IN	200-35736-8
PE1016-P1SCD-REF5-A-0003IN	200-35736-9
PE1016-P1SCD-REF5-B-0003IN	200-35736-10
PE1016-P1SCD-05-A-0006IN	200-35736-11
PE1016-P1SCD-05-B-0006IN	200-35736-12
PE1016-P1SCD-REF3-A-0006IN-D	200-35736-13

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-REF1-A-0006IN
Lab Sample ID: 200-35736-1
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 11:05
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	28400	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-REF1-B-0006IN
Lab Sample ID: 200-35736-2
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 11:10
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	35200	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-REF2-A-0006IN
Lab Sample ID: 200-35736-3
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:50
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	33700	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-REF2-B-0006IN
Lab Sample ID: 200-35736-4
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:55
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	48700	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN
Lab Sample ID: 200-35736-5
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:40
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	30600	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-REF3-B-0006IN
Lab Sample ID: 200-35736-6
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:45
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	55700	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-REF4-A-0006IN
Lab Sample ID: 200-35736-7
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:30
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	36500	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-REF4-B-0006IN
Lab Sample ID: 200-35736-8
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:35
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	56500	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-REF5-A-0003IN
Lab Sample ID: 200-35736-9
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:15
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	62900	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-REF5-B-0003IN
Lab Sample ID: 200-35736-10
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:20
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	44100	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-05-A-0006IN
Lab Sample ID: 200-35736-11
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 12:25
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	46600	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-05-B-0006IN
Lab Sample ID: 200-35736-12
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 12:30
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	44400	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN-D
Lab Sample ID: 200-35736-13
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 14:41
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	38500	1000	380	mg/Kg		H	1	Lloyd Kahn

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Analyst: KSH Batch Start Date: 10/19/2016

Reporting Units: mg/Kg Analytical Batch No.: 110362

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	ICV	10:28	Total Organic Carbon	9020	9260	97	75-125		WCLKLCSs_00018
2	ICB	10:34	Total Organic Carbon	1000				U	
3	CCV	10:41	Total Organic Carbon	34330	35000	98	75-125		WCTOCCALs_00014
4	CCB	10:47	Total Organic Carbon	1000				U	
21	CCV	13:06	Total Organic Carbon	36560	35000	104	75-125		WCTOCCALs_00014
22	CCB	13:12	Total Organic Carbon	1000				U	
31	CCV	14:20	Total Organic Carbon	37850	35000	108	75-125		WCTOCCALs_00014
32	CCB	14:27	Total Organic Carbon	1000				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Analyst: KSH Batch Start Date: 10/29/2016

Reporting Units: mg/Kg Analytical Batch No.: 110752

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
2	ICB	18:05	Total Organic Carbon	1000				U	
3	CCV	18:11	Total Organic Carbon	33780	35000	97	75-125		WCTOCCALs_00014
4	CCB	18:18	Total Organic Carbon	1000				U	
21	CCV	20:37	Total Organic Carbon	34420	35000	98	75-125		WCTOCCALs_00014
22	CCB	20:44	Total Organic Carbon	1000				U	
27	CCV	21:18	Total Organic Carbon	34790	35000	99	75-125		WCTOCCALs_00014
28	CCB	21:25	Total Organic Carbon	1000				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 110362 Date: 10/19/2016 10:54							
Lloyd Kahn	MB 200-110362/5	Total Organic Carbon	1000	U	mg/Kg	1000	1
Batch ID: 110752 Date: 10/29/2016 18:24							
Lloyd Kahn	MB 200-110752/5	Total Organic Carbon	1000	U	mg/Kg	1000	1

FORM III-IN

6-IN
DUPLICATE
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Matrix: Sediment

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
Batch ID: 110362 Date: 10/19/2016 12:59								
Lloyd Kahn	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Total Organic Carbon	30600	mg/Kg			
Lloyd Kahn	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Total Organic Carbon	49120	mg/Kg	46	20	F3
Batch ID: 110362 Date: 10/19/2016 14:06								
Lloyd Kahn	PE1016-P1SCD-05-A-0006IN	200-35736-11	Total Organic Carbon	46600	mg/Kg			
Lloyd Kahn	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Total Organic Carbon	45180	mg/Kg	3	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Matrix: Sediment

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 110362 Date: 10/19/2016 11:07											
						LCS Source: WCLKLCSs_00018					
Lloyd Kahn	LCS 200-110362/6	Total Organic Carbon	9330		mg/Kg	9260	101	75-125			
Batch ID: 110752 Date: 10/29/2016 18:37											
						LCS Source: WCLKLCSs_00018					
Lloyd Kahn	LCS 200-110752/6	Total Organic Carbon	8408		mg/Kg	9260	91	75-125			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35736-1

SDG Number: 200-35736-1

Matrix: Sediment Instrument ID: WCCH1

Method: Lloyd Kahn MDL Date: 07/26/2016 16:22

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Total Organic Carbon		1000	380

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35736-1

SDG Number: 200-35736-1

Matrix: Sediment Instrument ID: WCCH1

Method: Lloyd Kahn XMDL Date: 07/26/2016 16:23

Analyte	Wavelength/ Mass	XRL (mg/Kg)	XMDL (mg/Kg)
Total Organic Carbon		1000	380

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-35736-1

SDG Number: 200-35736-1

Matrix: Sediment Instrument ID: NOEQUIP

Method: Moisture RL Date: 04/01/2009 07:55

Analyte	Wavelength/ Mass	RL (%)	
Percent Solids		0.1	

11-IN
LINEAR RANGES
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: WCCH1 Date: 01/01/2014 16:02

Analyte	Integ. Time (Sec.)	Concentration (mg/Kg)	Method
Total Organic Carbon		75000	Lloyd Kahn

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: WCCH1 Analysis Method: Lloyd Kahn

Start Date: 10/19/2016 10:28 End Date: 10/19/2016 14:27

Lab Sample Id	D/F	Type	Time	Analytes																								
				TOC																								
ICV 200-110362/1	1		10:28	X																								
ICB 200-110362/2	1		10:34	X																								
CCV 200-110362/3	1		10:41	X																								
CCB 200-110362/4	1		10:47	X																								
MB 200-110362/5	1	T	10:54	X																								
LCS 200-110362/6	1	T	11:07	X																								
ZZZZZZ			11:33																									
ZZZZZZ			11:39																									
ZZZZZZ			11:46																									
ZZZZZZ			11:53																									
ZZZZZZ			11:59																									
ZZZZZZ			12:06																									
ZZZZZZ			12:12																									
ZZZZZZ			12:19																									
200-35736-1	1	T	12:26	X																								
200-35736-2	1	T	12:32	X																								
200-35736-3	1	T	12:39	X																								
200-35736-4	1	T	12:45	X																								
200-35736-5	1	T	12:52	X																								
200-35736-5 DU	1	T	12:59	X																								
CCV 200-110362/21	1		13:06	X																								
CCB 200-110362/22	1		13:12	X																								
200-35736-6	1	T	13:26	X																								
200-35736-7	1	T	13:33	X																								
200-35736-8	1	T	13:39	X																								
200-35736-9	1	T	13:46	X																								
200-35736-10	1	T	13:53	X																								
200-35736-11	1	T	14:00	X																								
200-35736-11 DU	1	T	14:06	X																								
200-35736-12	1	T	14:13	X																								
CCV 200-110362/31	1		14:20	X																								
CCB 200-110362/32	1		14:27	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: WCCH1 Analysis Method: Lloyd Kahn

Start Date: 10/29/2016 17:58 End Date: 10/29/2016 21:25

Lab Sample Id	D/F	Type	Time	Analytes																								
				TOC																								
ICV 200-110752/1			17:58																									
ICB 200-110752/2	1		18:05	X																								
CCV 200-110752/3	1		18:11	X																								
CCB 200-110752/4	1		18:18	X																								
MB 200-110752/5	1	T	18:24	X																								
LCS 200-110752/6	1	T	18:37	X																								
ZZZZZZ			19:04																									
ZZZZZZ			19:10																									
ZZZZZZ			19:17																									
ZZZZZZ			19:24																									
ZZZZZZ			19:30																									
ZZZZZZ			19:37																									
ZZZZZZ			19:44																									
ZZZZZZ			19:50																									
ZZZZZZ			19:57																									
ZZZZZZ			20:04																									
ZZZZZZ			20:10																									
ZZZZZZ			20:17																									
ZZZZZZ			20:24																									
ZZZZZZ			20:31																									
CCV 200-110752/21	1		20:37	X																								
CCB 200-110752/22	1		20:44	X																								
ZZZZZZ			20:51																									
ZZZZZZ			20:58																									
ZZZZZZ			21:04																									
200-35736-13	1	T	21:11	X																								
CCV 200-110752/27	1		21:18	X																								
CCB 200-110752/28	1		21:25	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: NOEQUIP Analysis Method: Moisture

Start Date: 10/18/2016 14:19 End Date: 10/18/2016 14:19

Lab Sample Id	D/F	Type	Time	Analytes																									
				% Sol																									
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
ZZZZZZ			14:19																										
200-35736-1	1	T	14:19	X																									
200-35736-2	1	T	14:19	X																									
200-35736-3	1	T	14:19	X																									
200-35736-4	1	T	14:19	X																									
200-35736-5	1	T	14:19	X																									
200-35736-5 DU	1	T	14:19	X																									
200-35736-6	1	T	14:19	X																									
200-35736-7	1	T	14:19	X																									
200-35736-8	1	T	14:19	X																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: NOEQUIP Analysis Method: Moisture

Start Date: 10/18/2016 14:19 End Date: 10/18/2016 14:19

Lab Sample Id	D/F	Type	Time	Analytes																								
				% Sol																								
200-35736-9	1	T	14:19	X																								
200-35736-10	1	T	14:19	X																								
200-35736-11	1	T	14:19	X																								
200-35736-11 DU	1	T	14:19	X																								
200-35736-12	1	T	14:19	X																								
ZZZZZZ			14:19																									
ZZZZZZ			14:19																									

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Instrument ID: NOEQUIP Analysis Method: Moisture

Start Date: 10/31/2016 13:56 End Date: 10/31/2016 13:56

Lab Sample Id	D/F	Type	Time	Analytes
				% Sol
200-35736-13	1	T	13:56	X
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	
ZZZZZZ			13:56	

Prep Types:
T = Total/NA

FORM XIII-IN

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110362 Batch Start Date: 10/19/16 10:28 Batch Analyst: Henry, Kayla S

Batch Method: Lloyd Kahn Batch End Date: 10/19/16 14:27

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	WCLKLCSs 00018	WCTOCCALs 00014			
ICV 200-110362/1		Lloyd Kahn			10.7 mg				
CCV 200-110362/3		Lloyd Kahn		10 mg		35 uL			
LCS 200-110362/6		Lloyd Kahn			9.475 mg				
CCV 200-110362/21		Lloyd Kahn		10 mg		35 uL			
CCV 200-110362/31		Lloyd Kahn		10 mg		35 uL			

Batch Notes	
Phosphoric Acid ID	977837

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110752 Batch Start Date: 10/29/16 17:58 Batch Analyst: Henry, Kayla S

Batch Method: Lloyd Kahn Batch End Date: 10/29/16 21:25

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	WCLKLCSs 00018	WCTOCCALs 00014			
CCV 200-110752/3		Lloyd Kahn		10 mg		35 uL			
LCS 200-110752/6		Lloyd Kahn			9.6 mg				
CCV 200-110752/21		Lloyd Kahn		10 mg		35 uL			
CCV 200-110752/27		Lloyd Kahn		10 mg		35 uL			

Batch Notes	
Phosphoric Acid ID	977837

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110312 Batch Start Date: 10/18/16 14:19 Batch Analyst: Henry, Kayla S

Batch Method: Moisture Batch End Date: 10/19/16 13:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
200-35736-A-1	PE1016-P1SCD-REF 1-A-0006IN	Moisture	T	32	1.00 g	8.10 g	4.76 g		
200-35736-A-2	PE1016-P1SCD-REF 1-B-0006IN	Moisture	T	33	0.99 g	8.20 g	4.75 g		
200-35736-A-3	PE1016-P1SCD-REF 2-A-0006IN	Moisture	T	34	1.05 g	9.05 g	4.87 g		
200-35736-A-4	PE1016-P1SCD-REF 2-B-0006IN	Moisture	T	35	0.99 g	8.80 g	4.48 g		
200-35736-A-5	PE1016-P1SCD-REF 3-A-0006IN	Moisture	T	36	1.00 g	8.62 g	4.45 g		
200-35736-A-5 DU	PE1016-P1SCD-REF 3-A-0006IN	Moisture	T	37	1.02 g	8.58 g	4.48 g		
200-35736-A-6	PE1016-P1SCD-REF 3-B-0006IN	Moisture	T	38	1.00 g	8.89 g	4.67 g		
200-35736-A-7	PE1016-P1SCD-REF 4-A-0006IN	Moisture	T	39	0.97 g	8.09 g	4.79 g		
200-35736-A-8	PE1016-P1SCD-REF 4-B-0006IN	Moisture	T	40	0.98 g	8.12 g	4.08 g		
200-35736-A-9	PE1016-P1SCD-REF 5-A-0003IN	Moisture	T	41	0.98 g	8.68 g	4.54 g		
200-35736-A-10	PE1016-P1SCD-REF 5-B-0003IN	Moisture	T	42	1.00 g	8.67 g	5.20 g		
200-35736-A-11	PE1016-P1SCD-05-A-0006IN	Moisture	T	43	0.94 g	9.28 g	3.96 g		
200-35736-A-11 DU	PE1016-P1SCD-05-A-0006IN	Moisture	T	44	0.98 g	9.35 g	3.90 g		
200-35736-A-12	PE1016-P1SCD-05-B-0006IN	Moisture	T	45	0.98 g	8.71 g	3.77 g		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110312 Batch Start Date: 10/18/16 14:19 Batch Analyst: Henry, Kayla S

Batch Method: Moisture Batch End Date: 10/19/16 13:30

Batch Notes	
Balance ID	M78711 No Unit
Date and Time Samples in Desiccator	10/19/16 1315
Date and Time Samples out of Desiccator	10/19/16 1330
Date samples were placed in the oven	10/18/16
Oven Temp In	103 Degrees C
Time samples were place in the oven	1419
Date samples were removed from oven	10/19/16
Oven Temp Out	106 Degrees C
Time Samples were removed from oven	1315
Oven ID	2
Thermometer ID	204
Uncorrected In Temperature	103 Celsius
Uncorrected Out Temperature	106 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110789 Batch Start Date: 10/31/16 13:56 Batch Analyst: Henry, Kayla S

Batch Method: Moisture Batch End Date: 11/01/16 13:40

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
200-35736-B-13	PE1016-P1SCD-REF 3-A-0006IN-D	Moisture	T	1	0.95 g	8.33 g	3.90 g		

Batch Notes	
Balance ID	M78711 No Unit
Date and Time Samples in Desiccator	11/01/16 1315
Date and Time Samples out of Desiccator	11/01/16 1340
Date samples were placed in the oven	10/31/16
Oven Temp In	107 Degrees C
Time samples were place in the oven	1356
Date samples were removed from oven	11/01/16
Oven Temp Out	108 Degrees C
Time Samples were removed from oven	1315
Oven ID	2
Thermometer ID	204
Uncorrected In Temperature	107 Celsius
Uncorrected Out Temperature	108 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LLOYD KAHN TOC
Channel 1
CALIBRATION
Carbon - 2.029 min.

Peak Type : Ordnr

Left Window : 0.3 min

Right Window : 0.6 min

Response Base : Area

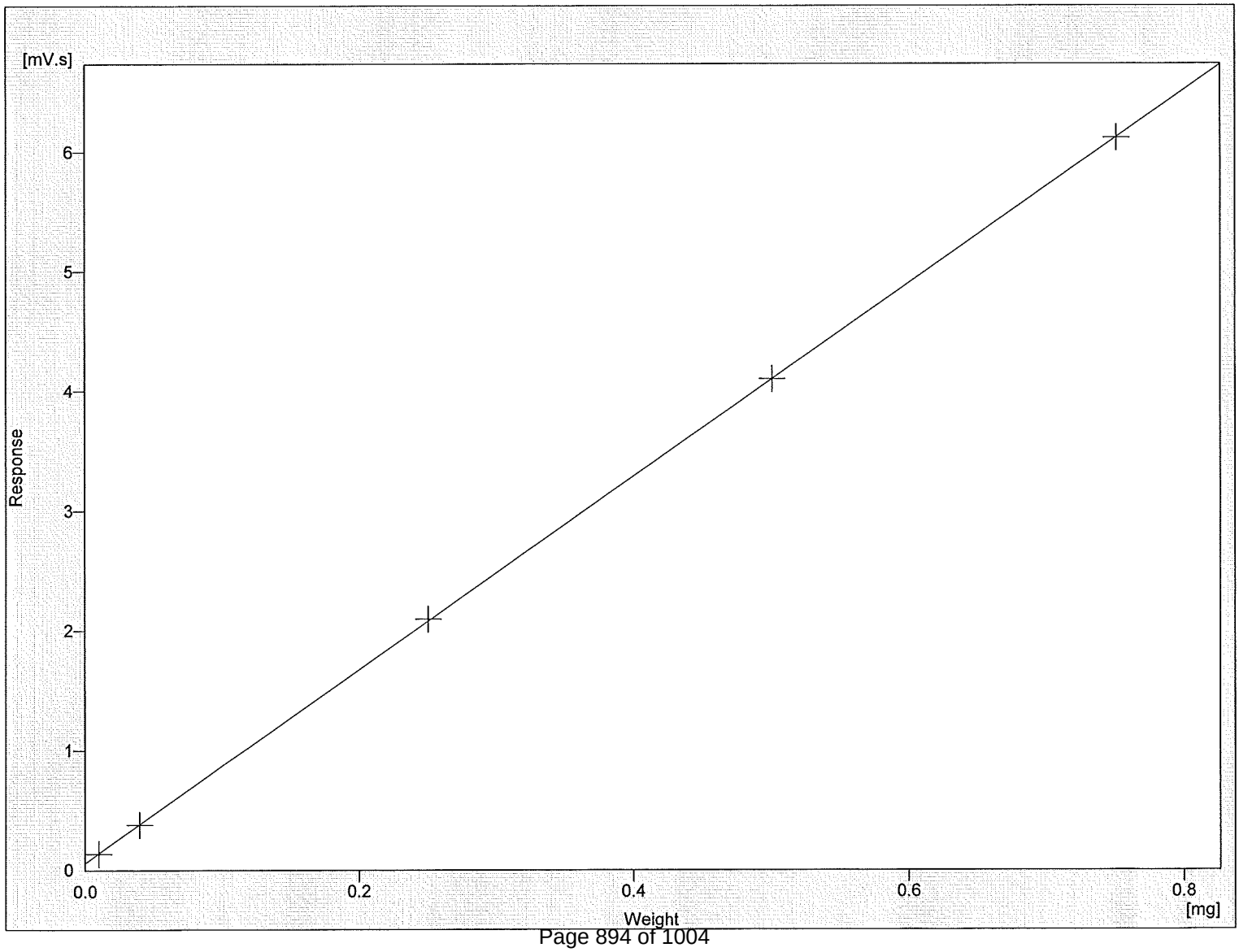
Curve Fit Type : Linear

Zero Type : Zero not used

Subst. Equation : Y = 8071.9467*X + 59.6917

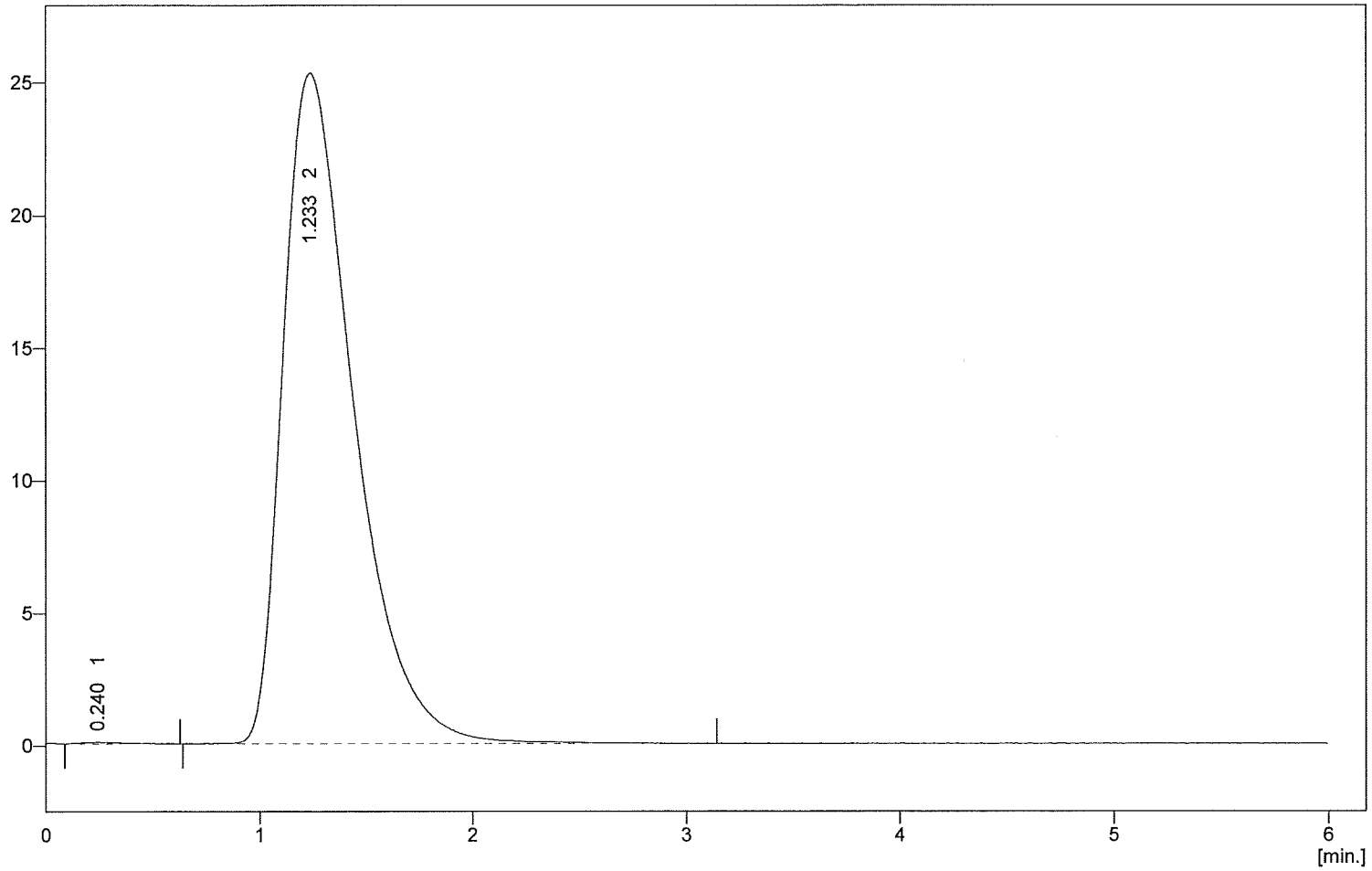
Correlation Coef. : 0.999994

	Response	Weight	Resp. Factor	Used
1	0.000	0.000	0.0000	Yes
2	135.604	0.010	0.0001	Yes
3	377.368	0.040	0.0001	Yes
4	2095.400	0.250	0.0001	Yes
5	4100.518	0.501	0.0001	Yes
6	6116.400	0.751	0.0001	Yes
7	0.000	0.000	0.0000	Yes
8	0.000	0.000	0.0000	Yes
9	0.000	0.000	0.0000	Yes
10	0.000	0.000	0.0000	Yes
11	0.000	0.000	0.0000	Yes
12	0.000	0.000	0.0000	Yes
13	0.000	0.000	0.0000	Yes
14	0.000	0.000	0.0000	Yes
15	0.000	0.000	0.0000	Yes
16	0.000	0.000	0.0000	Yes
17	0.000	0.000	0.0000	Yes
18	0.000	0.000	0.0000	Yes
19	0.000	0.000	0.0000	Yes
20	0.000	0.000	0.0000	Yes



Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 12:21:13 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 0 mg		
Sample	: STD 1	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101716Z001
Calibration	: 101716Z		

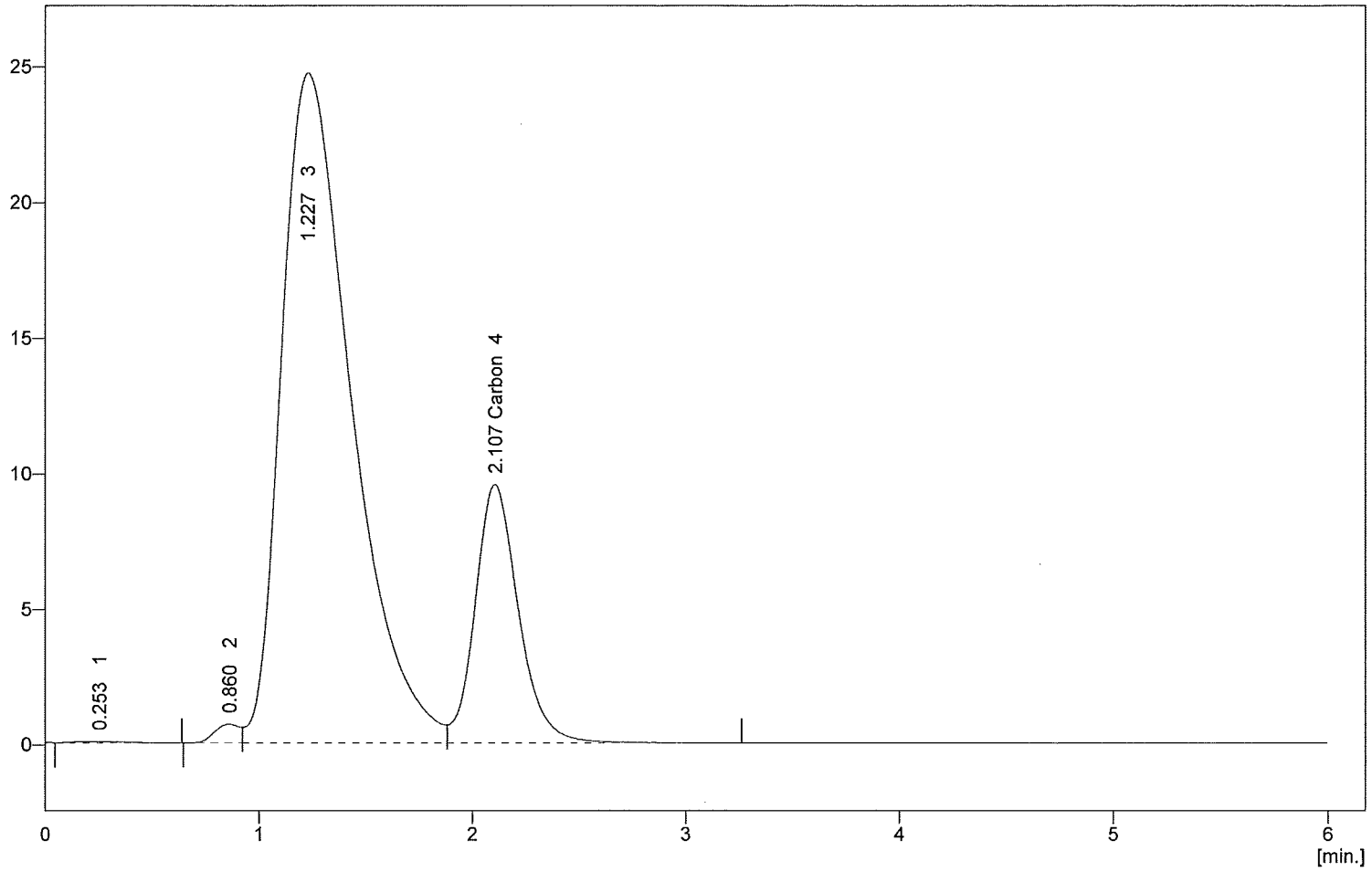


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.033						Ordnr
	Total	585.344	100.0	0.000	100.0000		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 12:27:41 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 0.0213 mg		
Sample	: STD 2	Chromatogram	: 101716Z002
Calibration	: 101716Z		

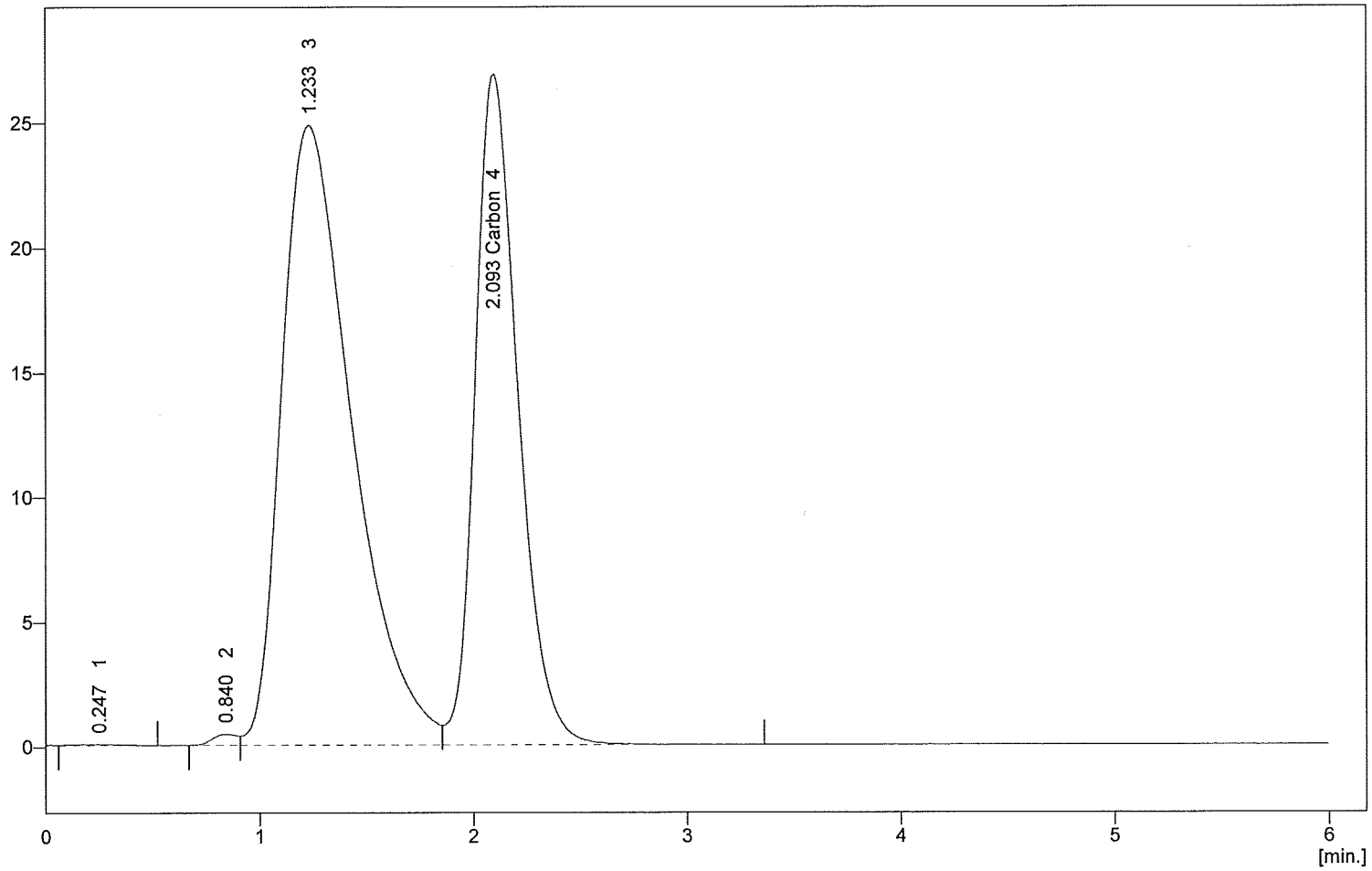


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.107	135.604	19.3	0.010	47.0500	1.0000	Ordnr
	Total	703.728	100.0	0.021	47.0500		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 12:34:08 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 0.0851 mg		
Sample	: STD 3	Chromatogram	: 101716Z003
Calibration	: 101716Z		



Result Table - Calculation Method ESTD

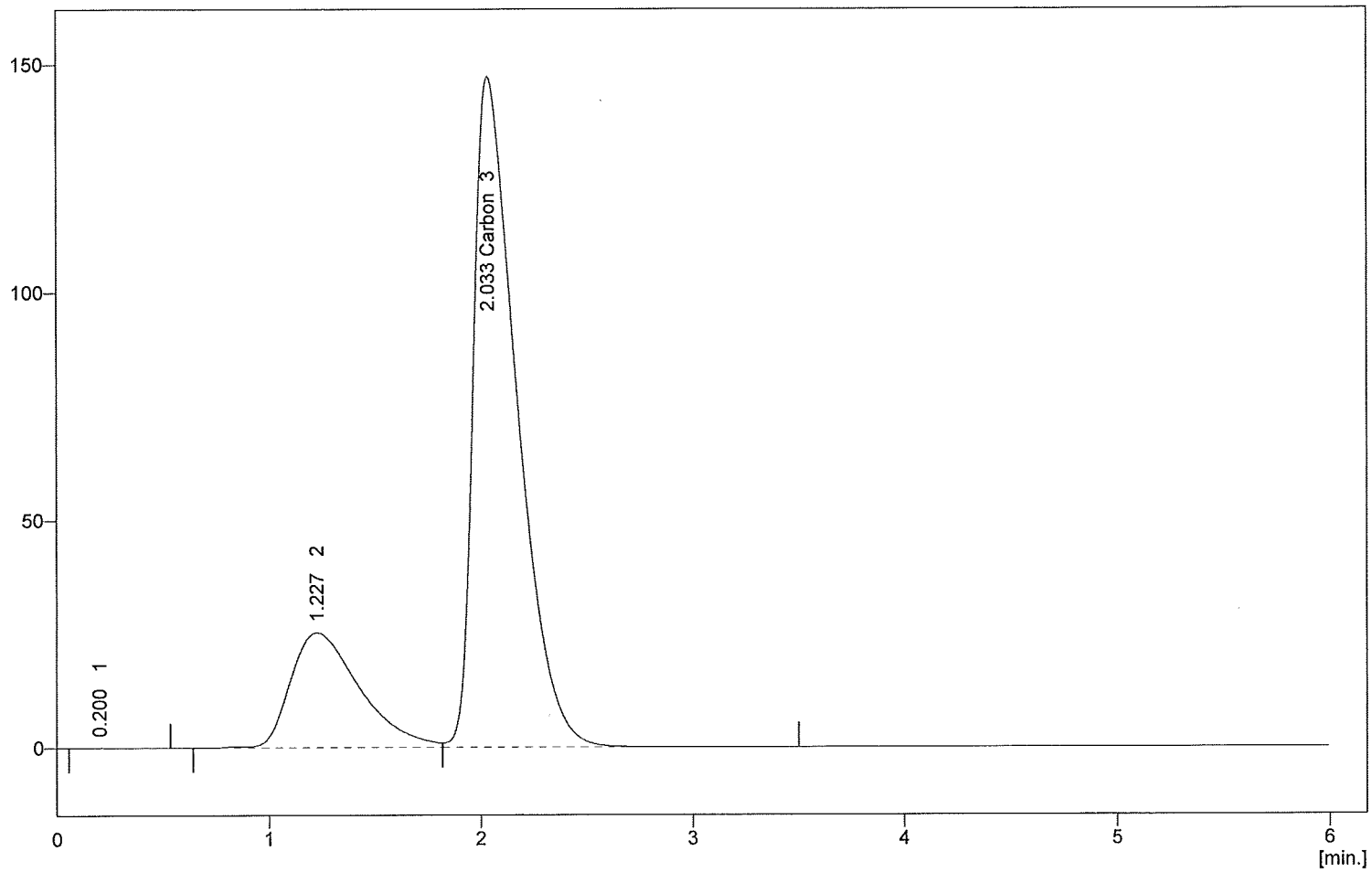
Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.093	377.368	39.7	0.040	47.0500	1.0000	Ordnr
	Total	951.373	100.0	0.085	47.0500		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 12:40:37 PM
Project : WORK1
Weight : 0.532 mg
Sample : STD 4
Calibration : 101716Z

By : None
Style : Sequence

Chromatogram : 101716Z004



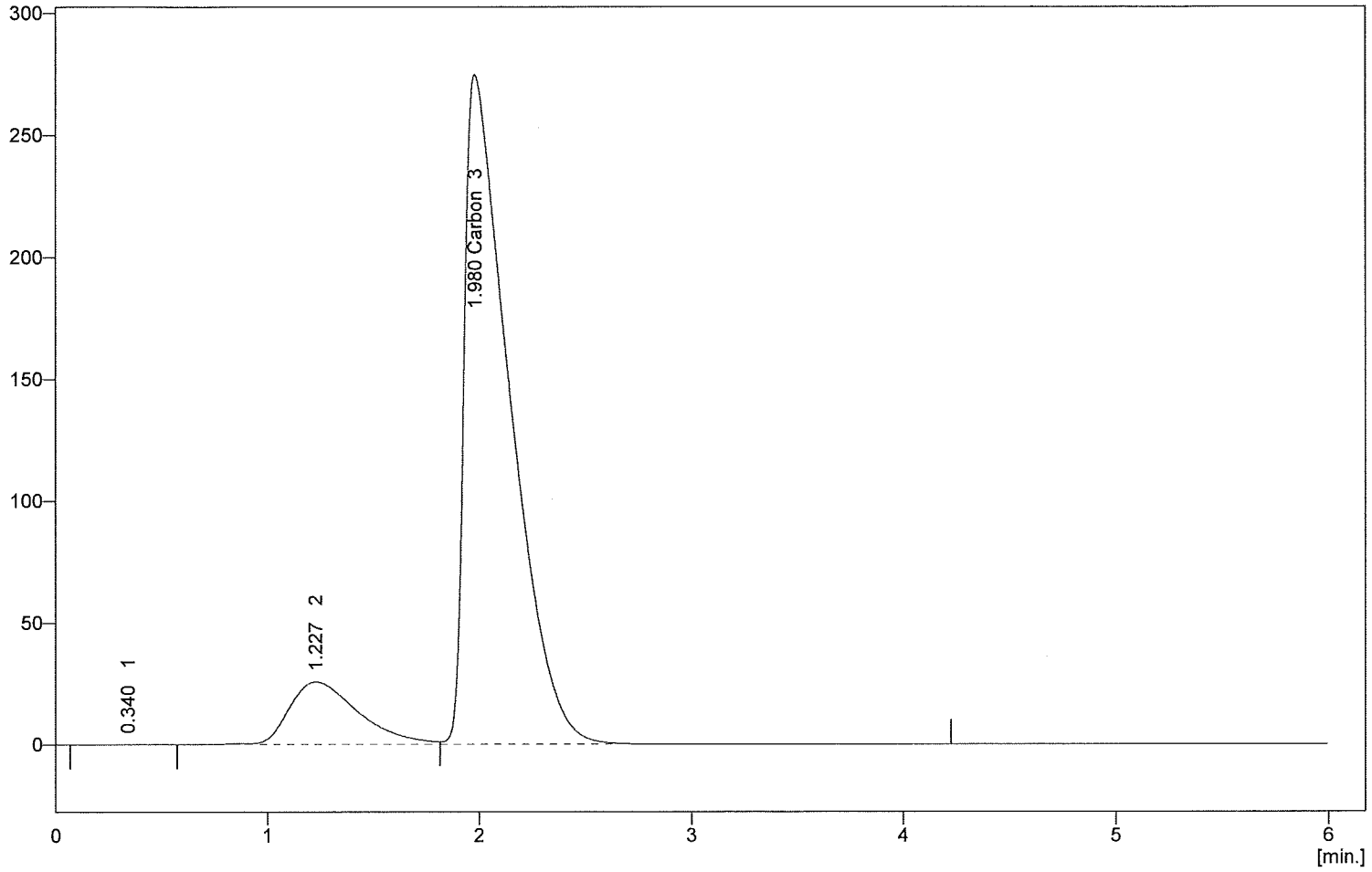
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.033	2095.400	78.4	0.250	47.0552	1.0000	Ordnr
	Total	2672.788	100.0	0.532	47.0552		

Lloyd Kahn TOC
Instrument #1

Created : 10/17/2016 12:47:07 PM
Project : WORK1
Weight : 1.064 mg
Sample : STD 5
Calibration : 101716Z

By : None
Style : Sequence
Chromatogram : 101716Z005

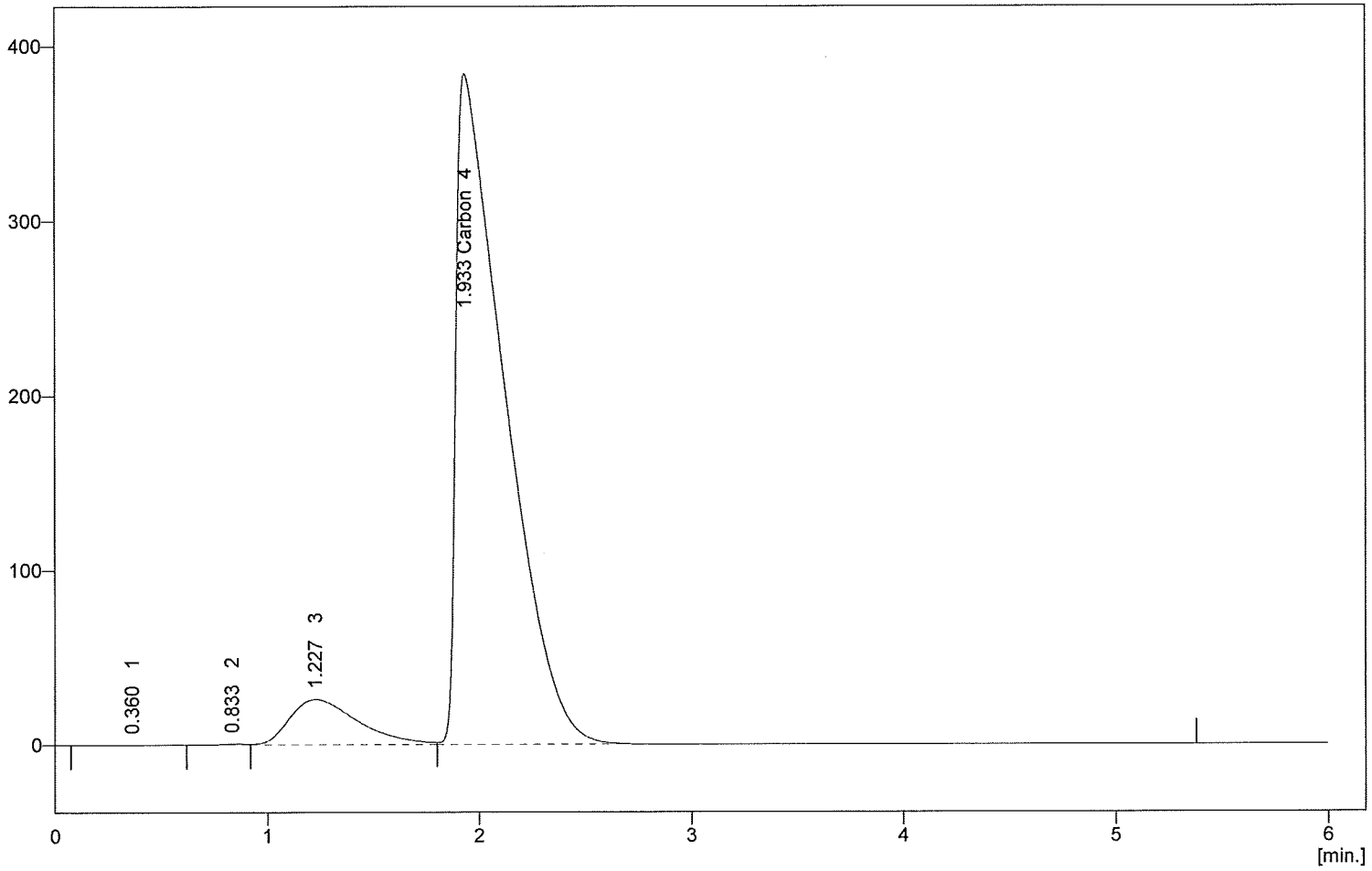


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	1.980	4100.518	87.5	0.500	46.9775	1.0000	Ordnr
	Total	4686.987	100.0	1.064	46.9775		

Lloyd Kahn TOC
Instrument #1

Created	: 10/17/2016 12:53:35 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 1.596 mg		
Sample	: STD 6	Chromatogram	: 101716Z006
Calibration	: 101716Z		



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	1.933	6116.400	91.1	0.750	47.0138	1.0000	Ordnr
	Total	6710.782	100.0	1.596	47.0138		

Total Organic Carbon
by Lloyd Kahn

File:	101916A			Default Mass:	10 mg
Instrument ID:	1			TALS Batch:	110362

STANDARD CURVE			Reagent	Concentration	Amount	
Lab ID	Type	ICAL conc / ug/L	ID	ug/L	uL	
CAL Level 1	CAL	0	NA	0	0	
CAL Level 2	CAL	1000	941210	100	100	Date Analyzed: 10/17/16
CAL Level 3	CAL	4000	941209	1001	40	Correlation Coefficient (r) : 0.999994
CAL Level 4	CAL	25000	889816	10012	25	Criteria: (r) ≥ *0.995*
CAL Level 5	CAL	50000	889816	10012	50	Raw DataFile: 101716Z
CAL Level 6	CAL	750000	889816	10012	75	

STANDARD & REAGENT TRACEABILITY:			
ICAL/CCV Container ID:	889816	LCS Container ID:	895118
ICV Container ID:	895118	1:19 Phosphoric Acid Container ID:	977837
Matrix Spike Container ID:	NA		

PREPARATION INFORMATION:					
Date:	10/19/16	Start Time:	10:28	Balance ID:	1123452701
Analyst:	KSH	Stop Time:	14:27	Oven ID:	2

Drop	Weight	Sample ID	Carbon (%)	Carbon (mg/Kg)	Average Carbon (mg/Kg)	Sample RPD or RSD	RL (mg/Kg)
1	10.7	ICV	0.9018	9018.00			
2	10	ICB	0	0.00			
3	10	CCV	3.433	34330.00			
4	10	CCB	0	0.00			
5	10	MB	0.0148	148.00	154.00	8	U1000
6	10	MB	0.016	160.00			
7	9.8	LCS	0.8843	8843.00	9329.75	6	1060
8	9.6	LCS	0.8855	8855.00			
9	9.4	LCS	0.9559	9559.00			
10	9.1	LCS	1.0062	10062.00			
11	3.6	240-70847-B-16	2.9186	29186.00			
12	4.4	240-70847-B-17	3.0813	30813.00			
13	3	240-70847-B-18	1.4624	14624.00			
14	3.5	240-70847-B-19	1.0062	10062.00			
15	4.3	240-70847-B-20	0.4476	4476.00			
16	10.7	240-70847-B-21	0.0012	12.00			
17	9.8	240-70847-B-22	0.1222	1222.00			
18	10.1	240-70847-B-23	0.0906	906.00			
19	3.2	200-35736-A-1	2.8352	28352.00			
20	3.3	200-35736-A-2	3.51777	35177.70			
21	3.3	200-35736-A-3	3.3676	33676.00			
22	3	200-35736-A-4	4.8667	48667.00			
23	3.1	200-35736-A-5	3.0589	30589.00			
24	3.3	200-35736-A-5 DU	4.9117	49117.00			
25	10	CCV	3.6564	36564.00			
26	10	CCB	0	0.00			
27	3.1	200-35736-A-6	5.5663	55663.00			
28	3.2	200-35736-A-7	3.652	36520.00			
29	3.3	200-35736-A-8	5.6541	56541.00			
30	3.2	200-35736-A-9	6.2884	62884.00			
31	3.3	200-35736-A-10	4.4141	44141.00			
32	3.9	200-35736-A-11	4.6586	46586.00			
33	3.3	200-35736-A-11 DU	4.5178	45178.00			

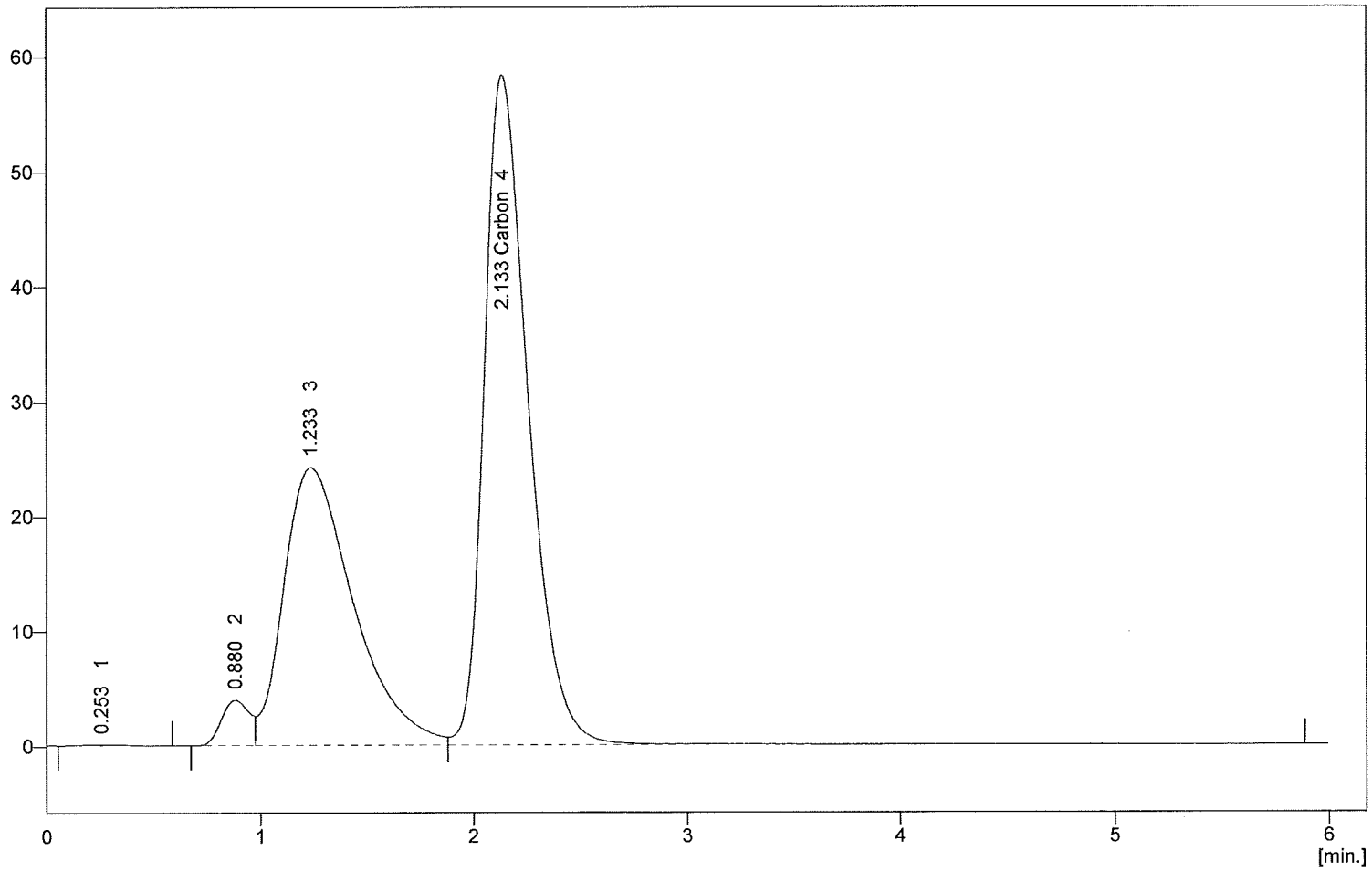
Date:	10/19/16	Start Time:	10:28	Balance ID:	1123452701
Analyst:	KSH	Stop Time:	14:27	Oven ID:	2

Drop	Weight	Sample ID	Carbon (%)	Carbon (mg/Kg)	Average Carbon (mg/Kg)	Sample RPD or RSD	RL (mg/Kg)
34	3	200-35736-A-12	4.4349	44349.00			
35	10	CCV	3.7853	37853.00			
36	10	CCB	0	0.00			

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 10:28:12 AM
Project : WORK1
Weight : 10.7 mg
Sample : ICV
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A001



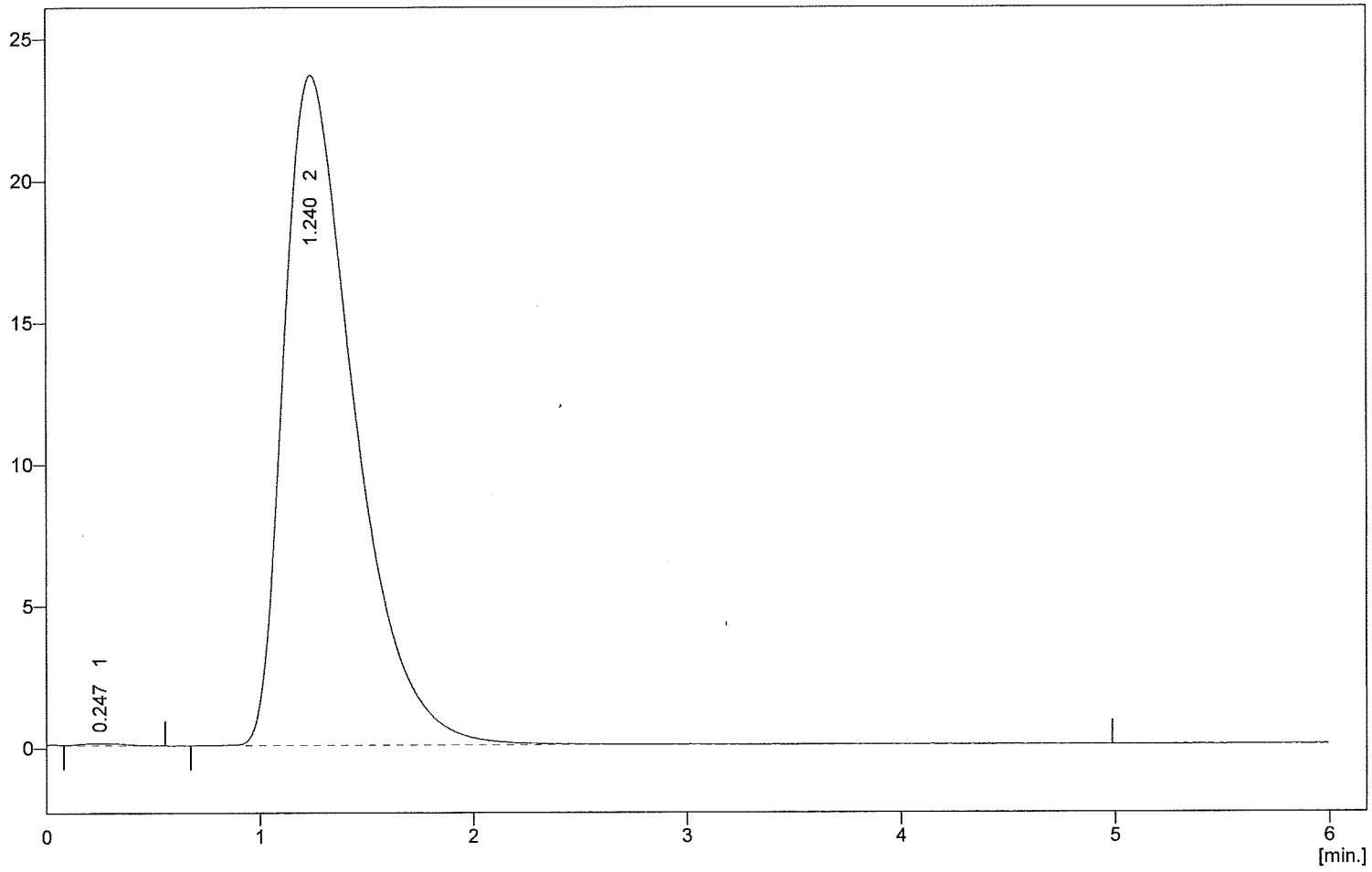
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	838.578	58.7	0.096	0.9018	1.0000	Ordnr
	Total	1427.811	100.0	10.700	0.9018		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 10:34:43 AM
Project : WORK1
Weight : 10 mg
Sample : ICB
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A002



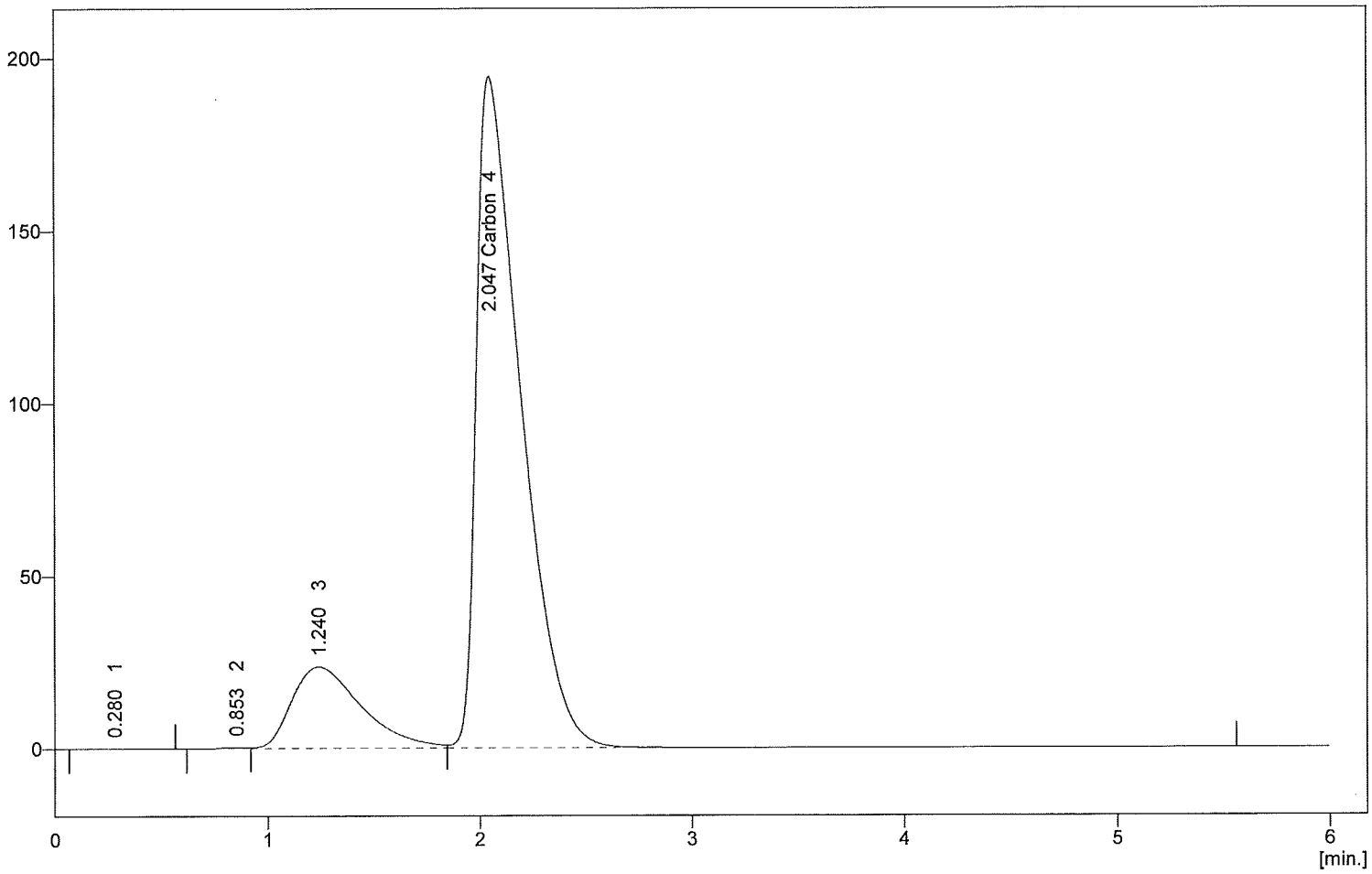
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.029						Ordnr
	Total	549.888	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 10:41:12 AM
Project : WORK1
Weight : 10 mg
Sample : CCV
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A003



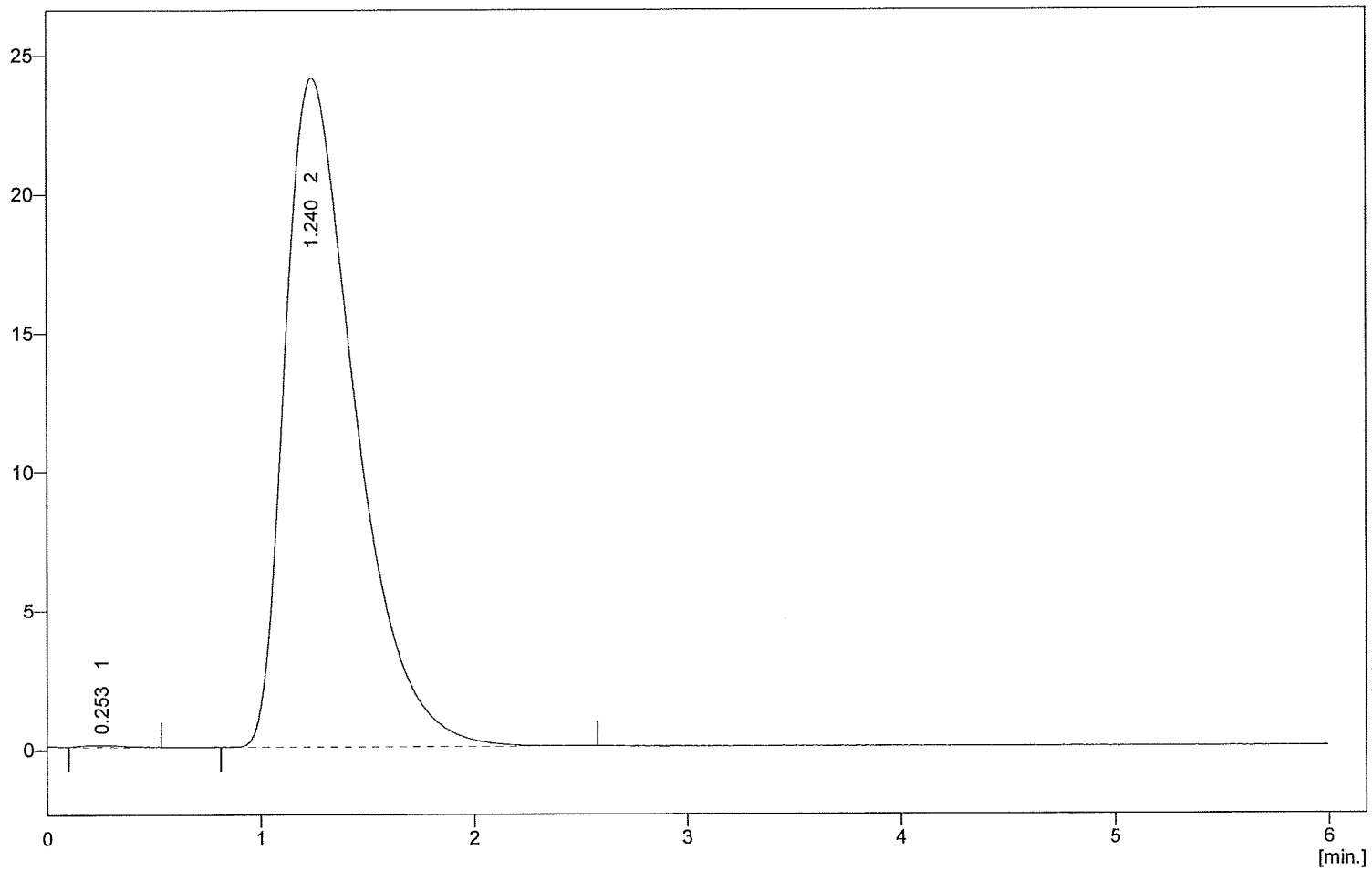
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.047	2830.795	83.9	0.343	3.4330	1.0000	Ordnr
	Total	3375.047	100.0	10.000	3.4330		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 10:47:41 AM
Project : WORK1
Weight : 10 mg
Sample : CCB
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A004



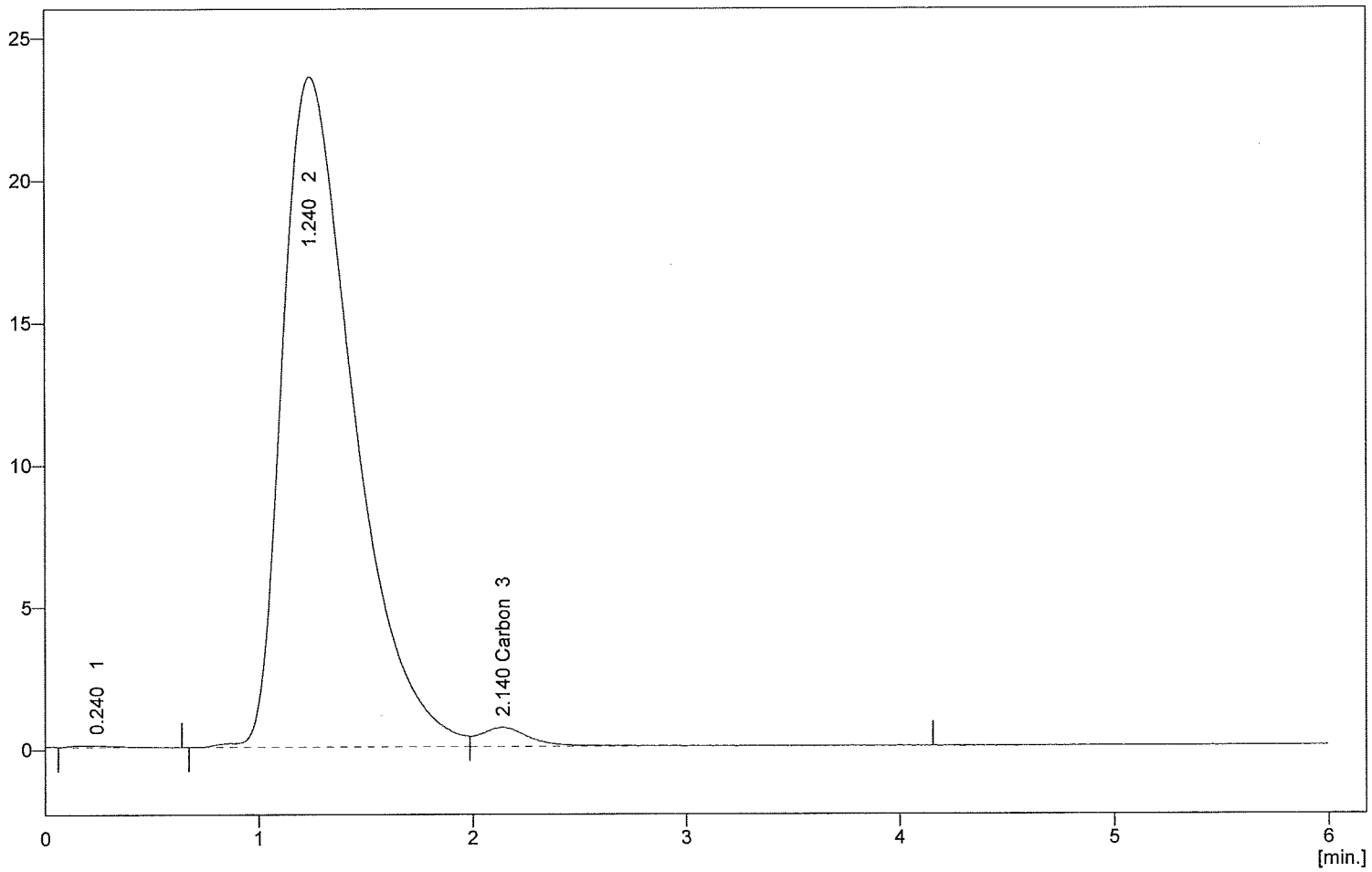
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.029						Ordnr
	Total	555.493	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 10:54:11 AM
Project : WORK1
Weight : 10 mg
Sample : MB
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A005



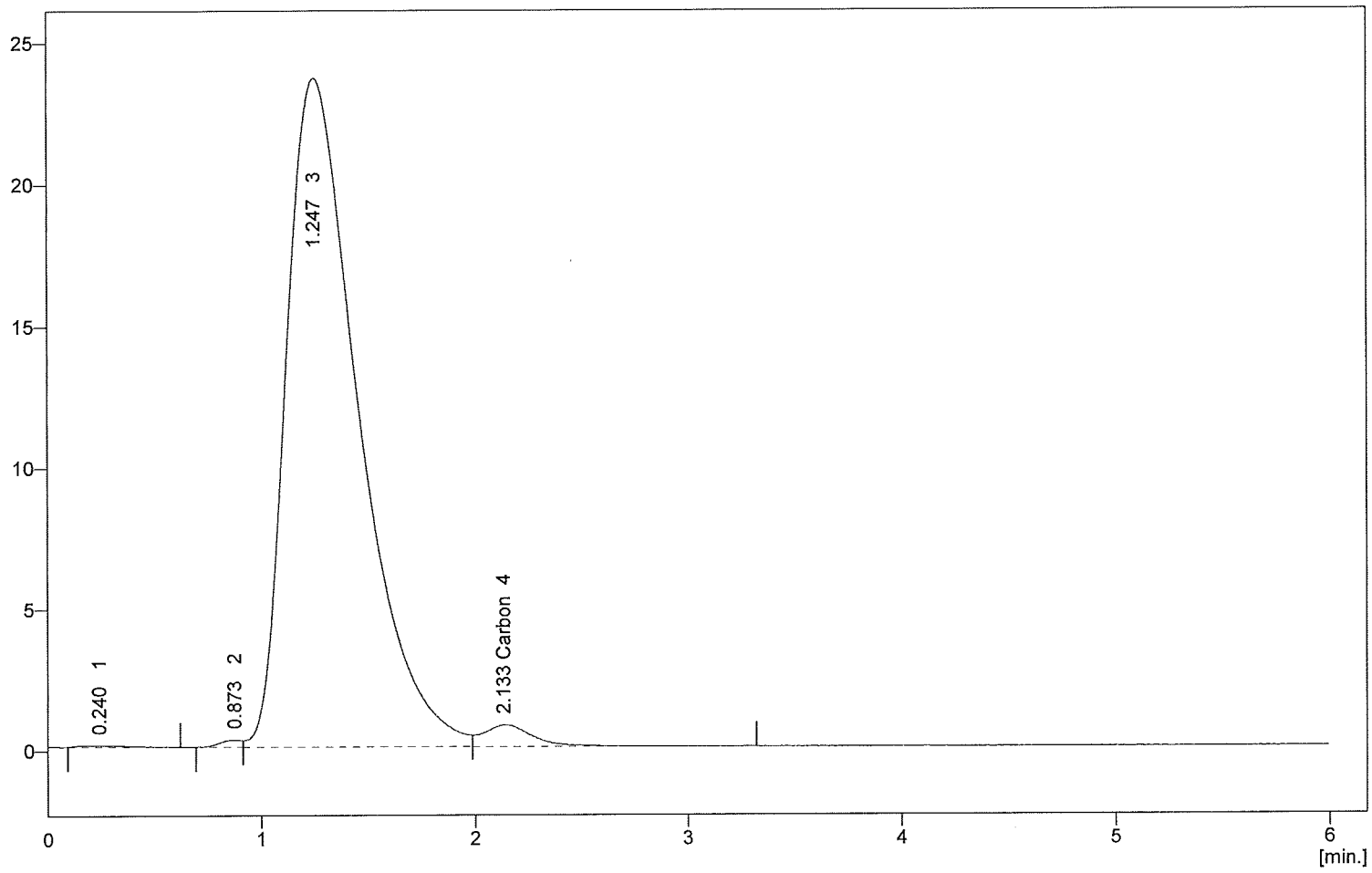
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.140	12.095	2.2	0.001	0.0148	1.0000	Free
	Total	558.846	100.0	10.000	0.0148		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 11:00:40 AM
Project : WORK1
Weight : 10 mg
Sample : MB
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A006



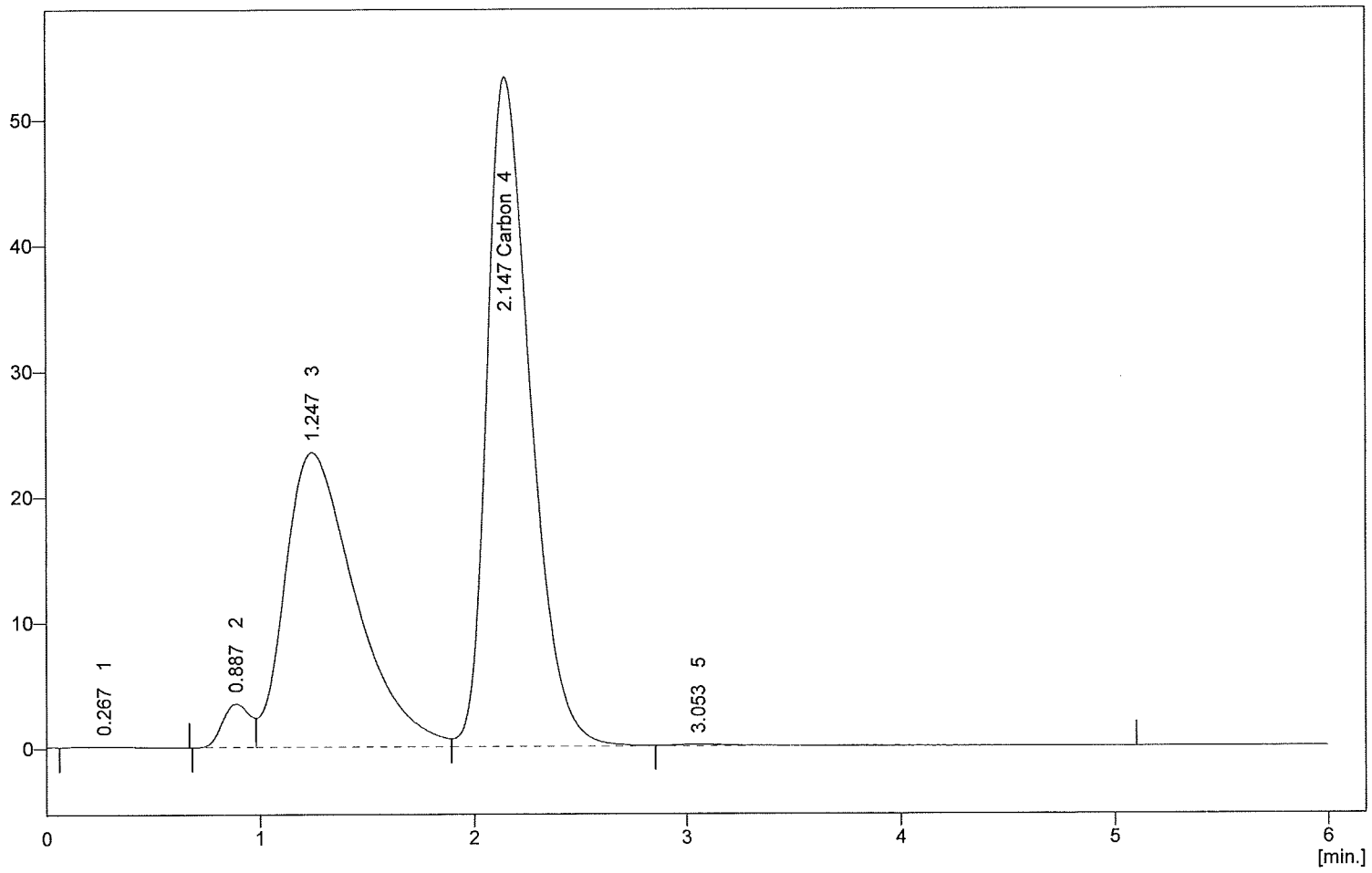
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.133	13.098	2.3	0.002	0.0160	1.0000	Free
	Total	567.698	100.0	10.000	0.0160		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 11:07:12 AM
Project : WORK1
Weight : 9.8 mg
Sample : LCS
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A007



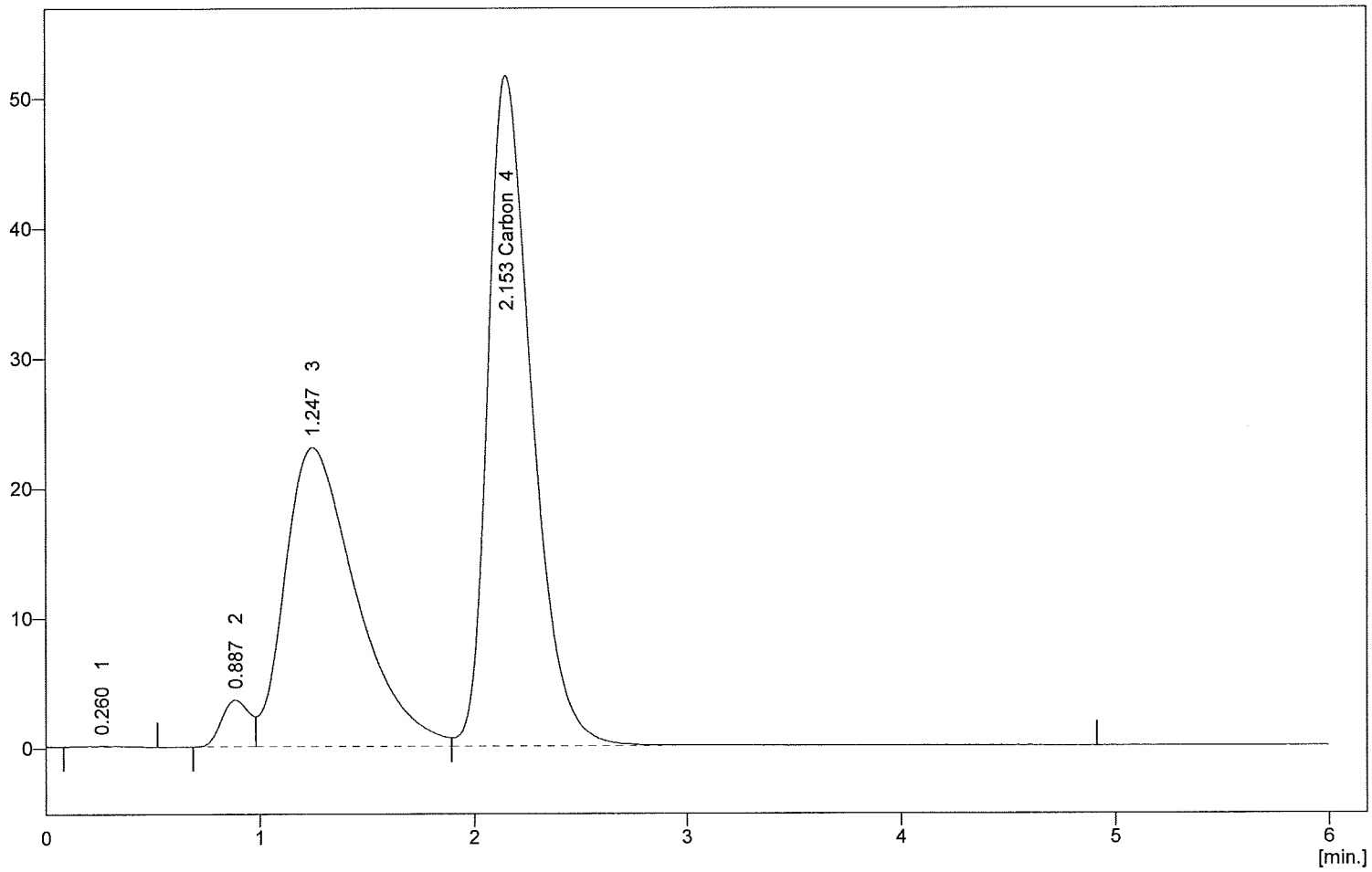
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.147	759.247	56.9	0.087	0.8843	1.0000	Ordnr
	Total	1334.202	100.0	9.800	0.8843		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 11:13:44 AM
Project : WORK1
Weight : 9.6 mg
Sample : LCS
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A008



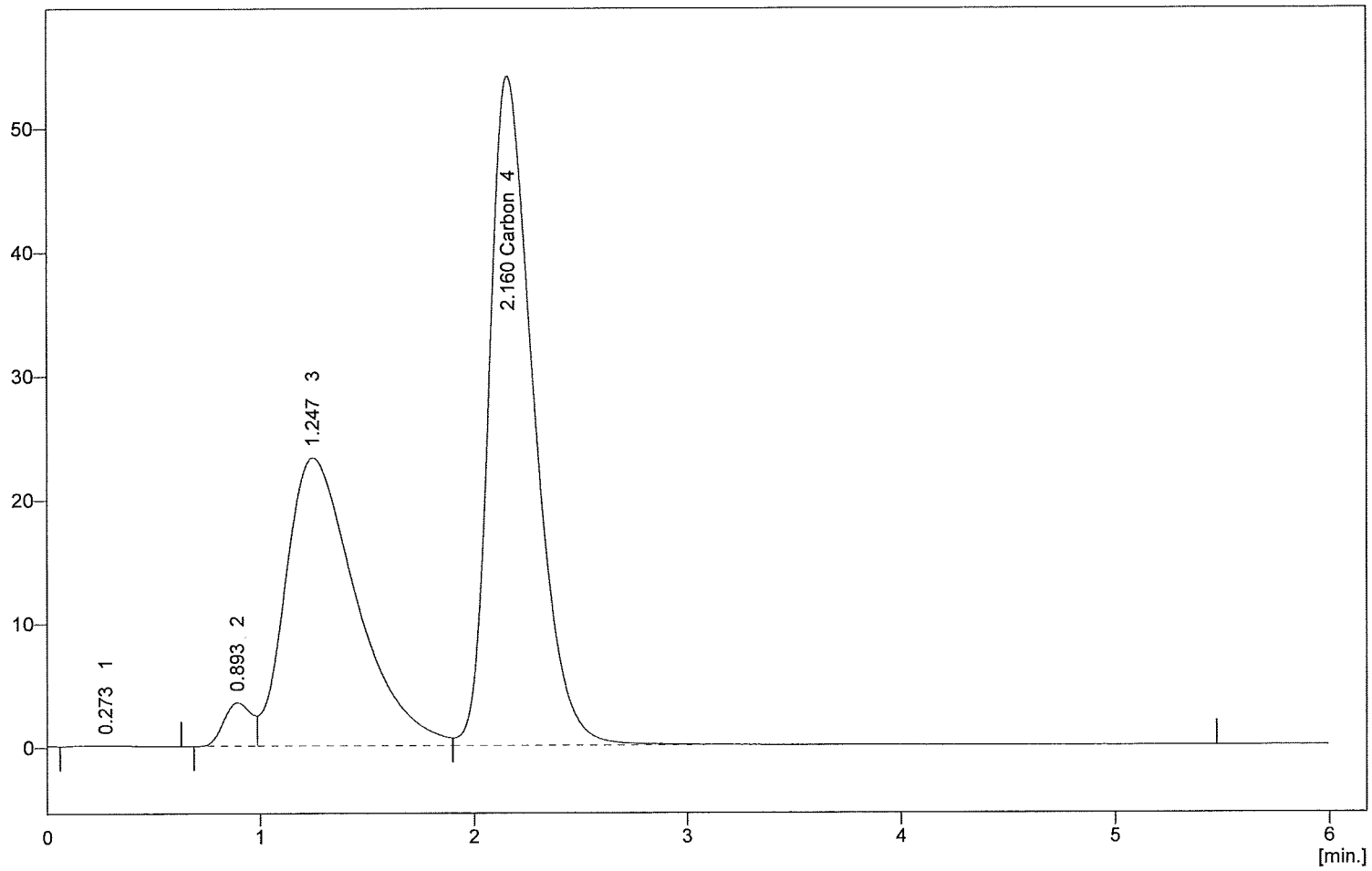
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.153	745.885	56.9	0.085	0.8855	1.0000	Ordnr
	Total	1310.374	100.0	9.600	0.8855		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 11:20:15 AM
Project : WORK1
Weight : 9.4 mg
Sample : LCS
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A009



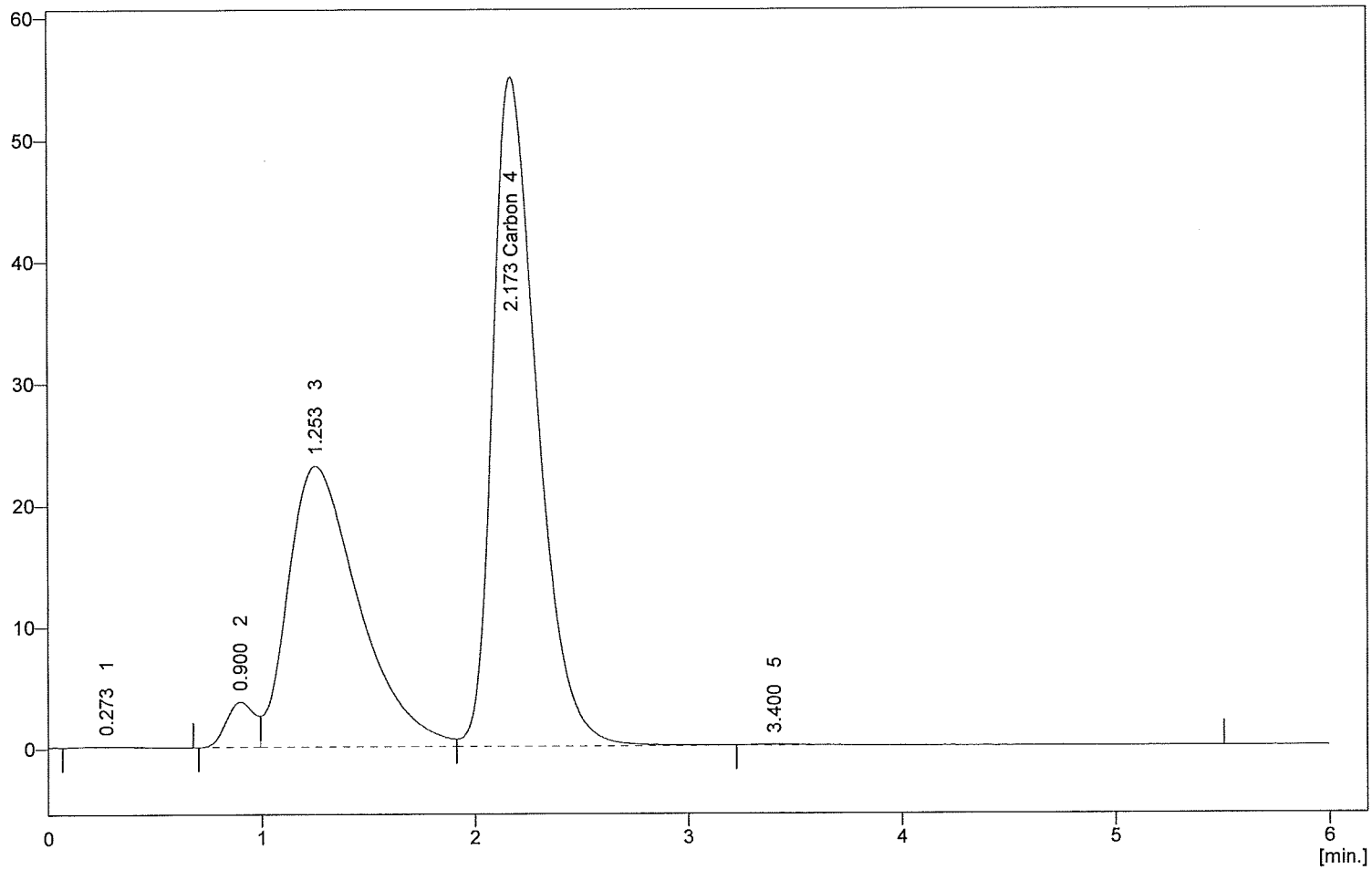
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.160	785.007	58.0	0.090	0.9559	1.0000	Ordnr
	Total	1353.584	100.0	9.400	0.9559		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 11:26:49 AM
Project : WORK1
Weight : 9.1 mg
Sample : LCS
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A010



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.173	798.801	58.3	0.092	1.0062	1.0000	Ordnr
	Total	1371.140	100.0	9.100	1.0062		

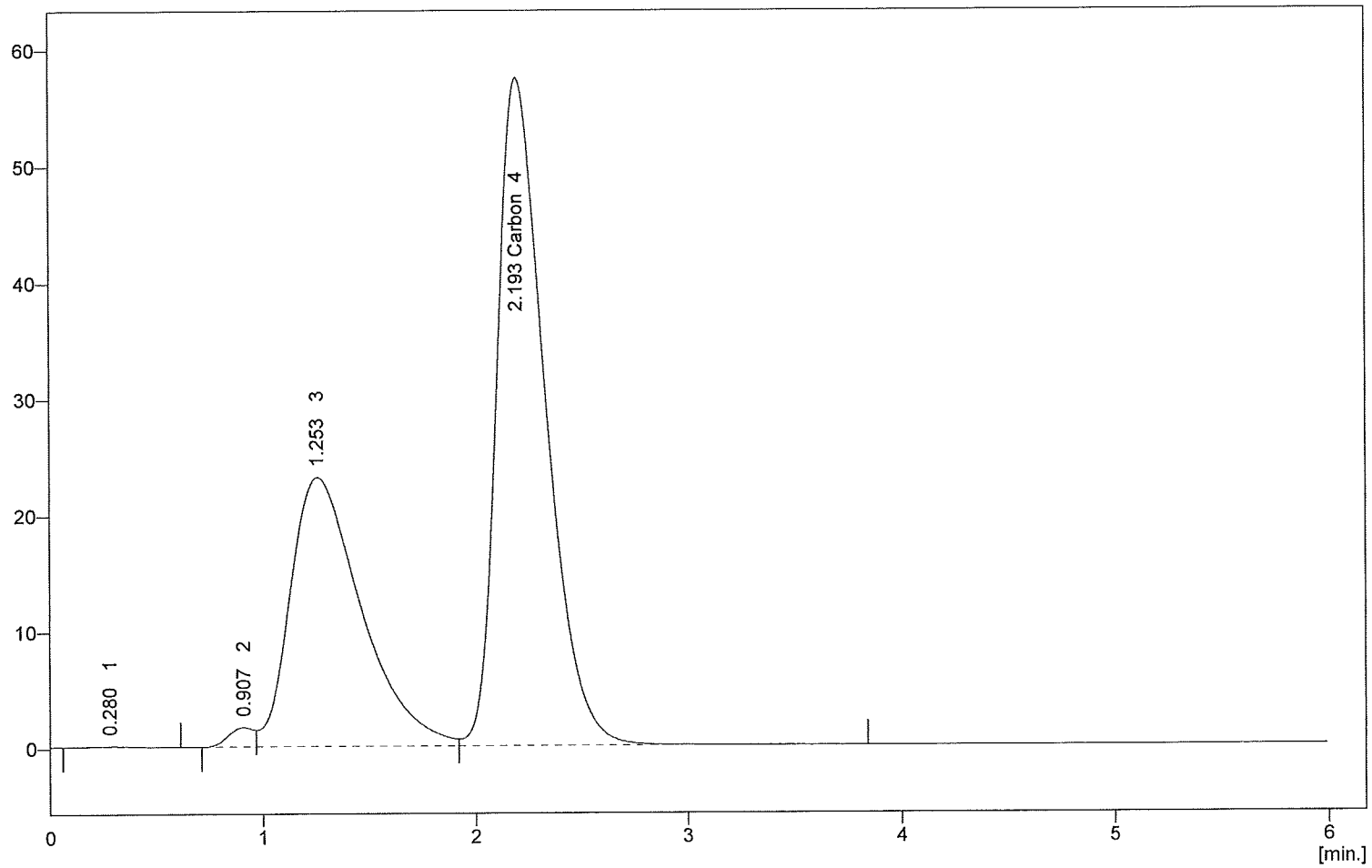
Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 11:33:21 AM
Project : WORK1
Weight : 3.6 mg
Sample : 240-70847-B-16

Calibration : 101916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A011



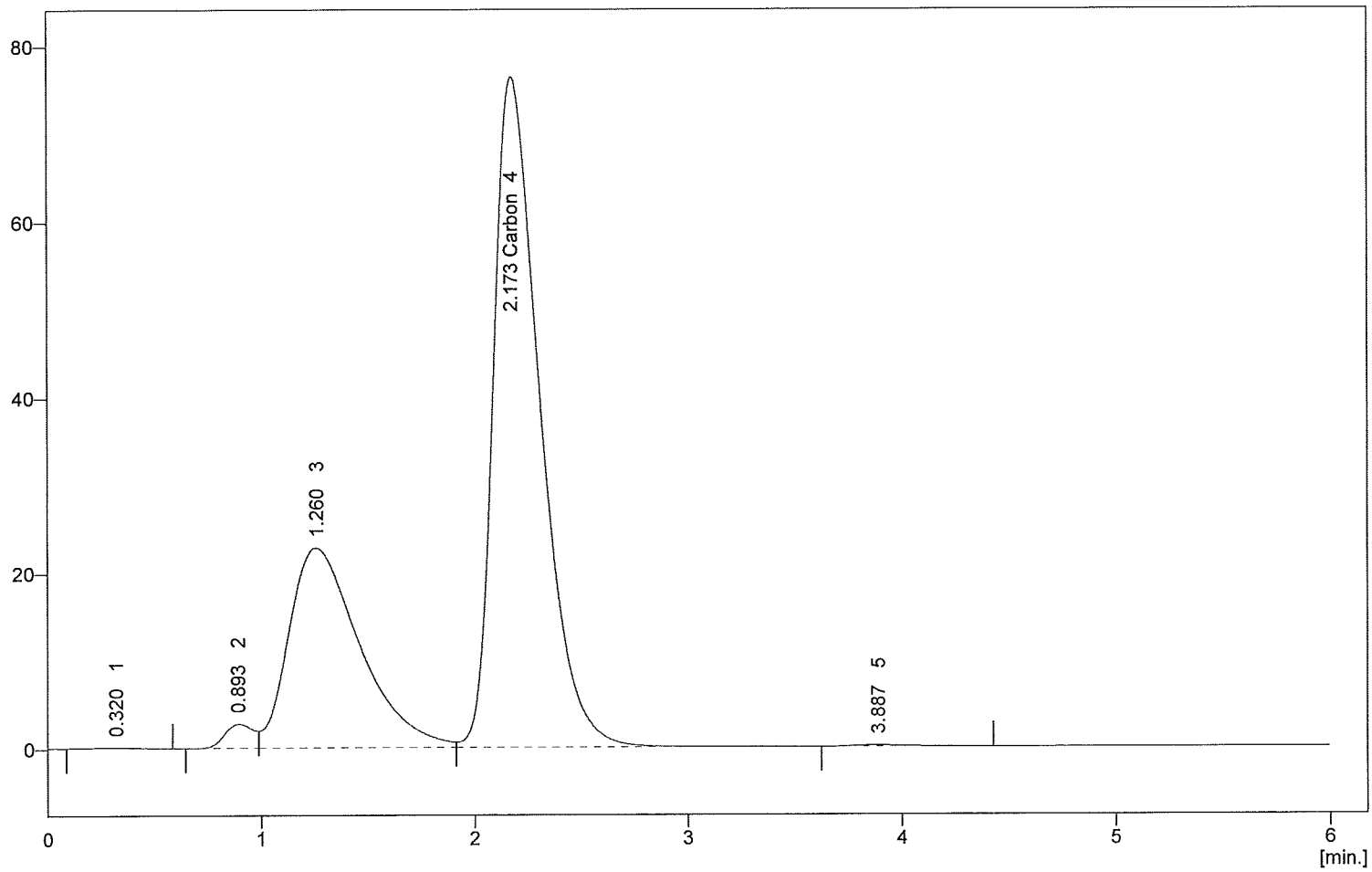
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.193	907.806	62.2	0.105	2.9186	1.0000	Ordnr
	Total	1459.196	100.0	3.600	2.9186		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 11:39:54 AM
Project : WORK1
Weight : 4.4 mg
Sample : 240-70847-B-17
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A012



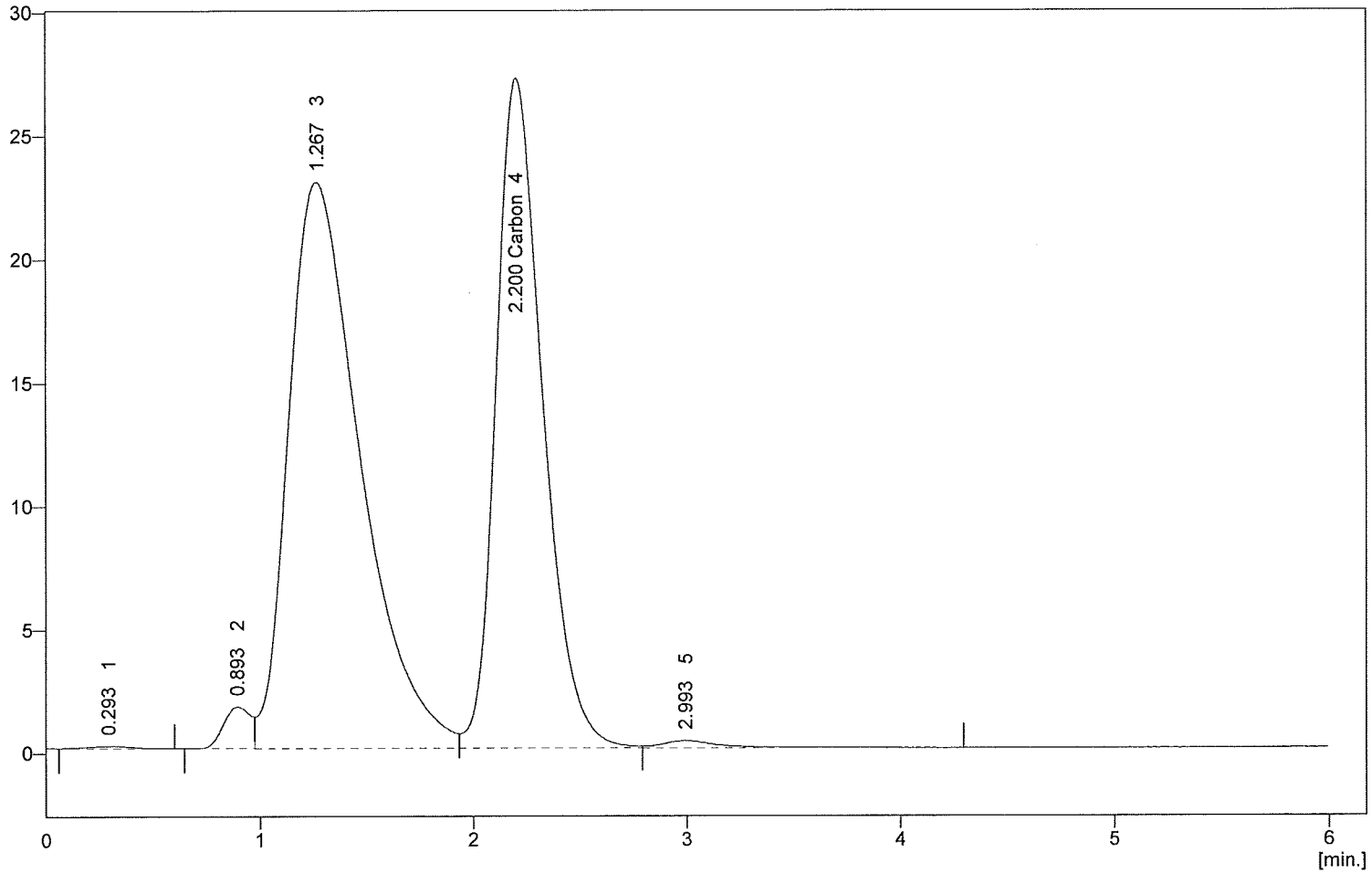
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.173	1154.072	67.4	0.136	3.0813	1.0000	Ordnr
	Total	1711.037	100.0	4.400	3.0813		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 11:46:27 AM
Project : WORK1
Weight : 3 mg
Sample : 240-70847-B-18
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A013



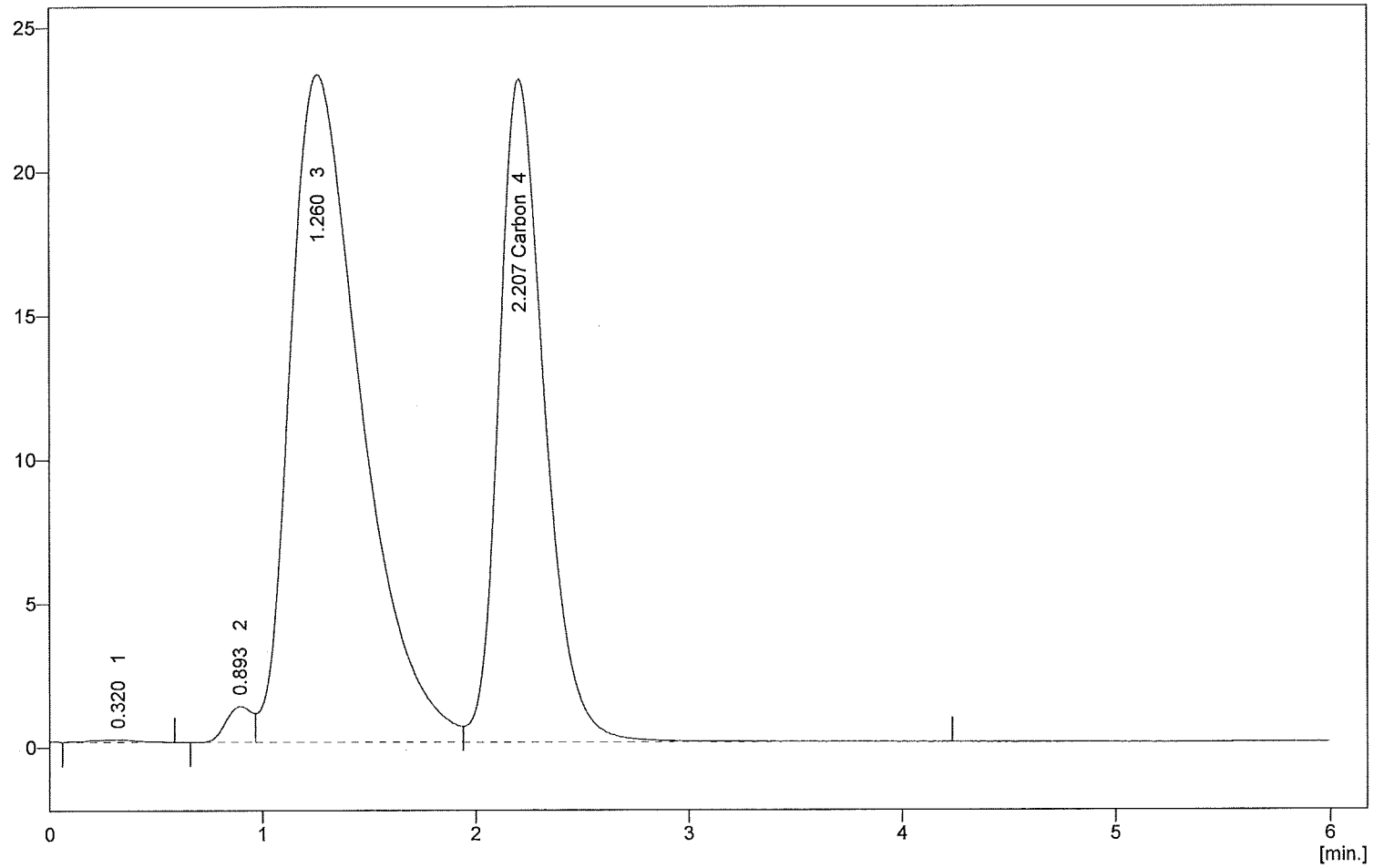
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.200	413.813	42.6	0.044	1.4624	1.0000	Ordnr
	Total	972.401	100.0	3.000	1.4624		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 11:53:01 AM
Project : WORK1
Weight : 3.5 mg
Sample : 240-70847-B-19
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A014



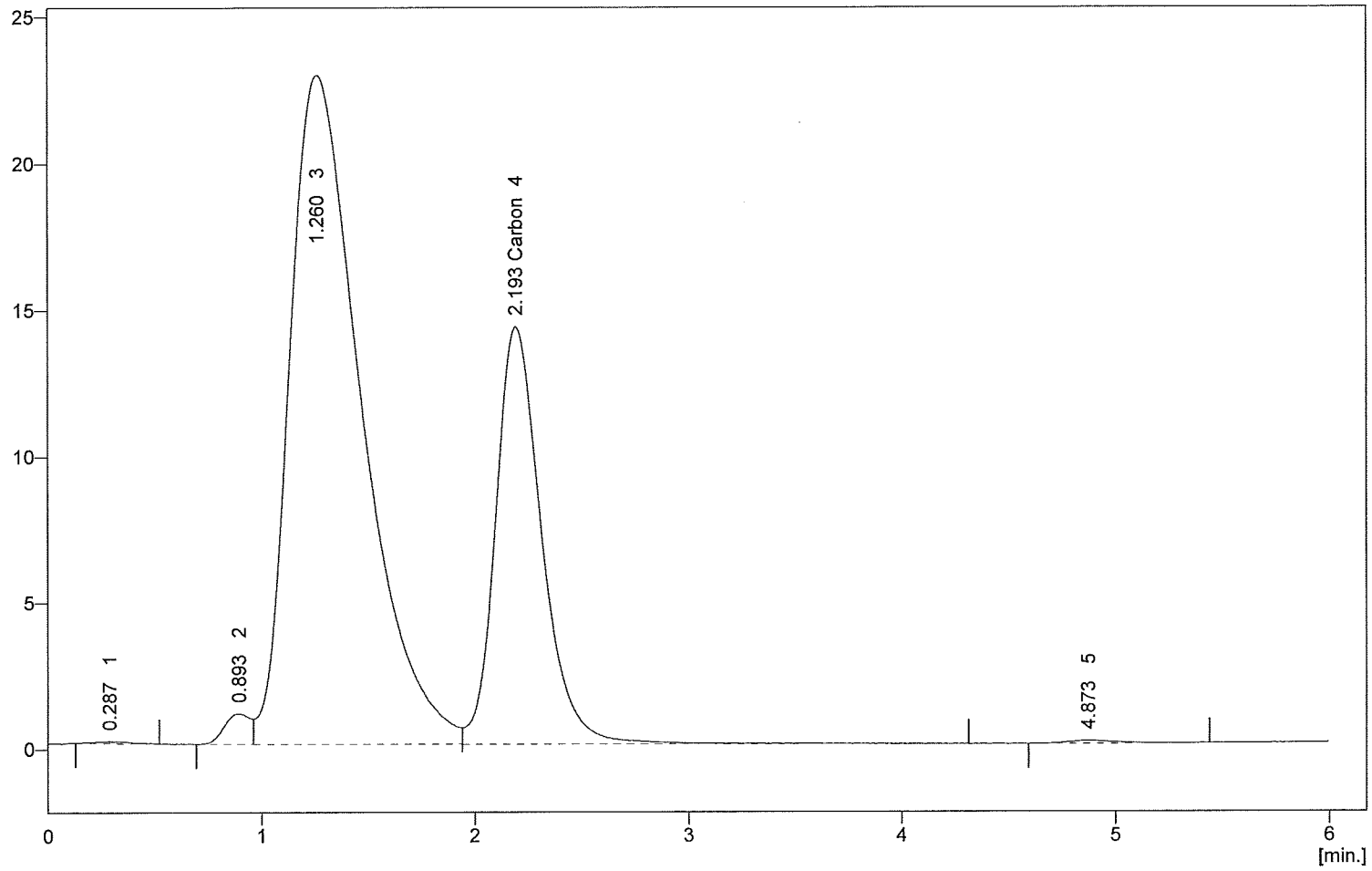
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.207	343.971	38.6	0.035	1.0062	1.0000	Ordnr
	Total	891.282	100.0	3.500	1.0062		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 11:59:38 AM
Project : WORK1
Weight : 4.3 mg
Sample : 240-70847-B-20
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A015



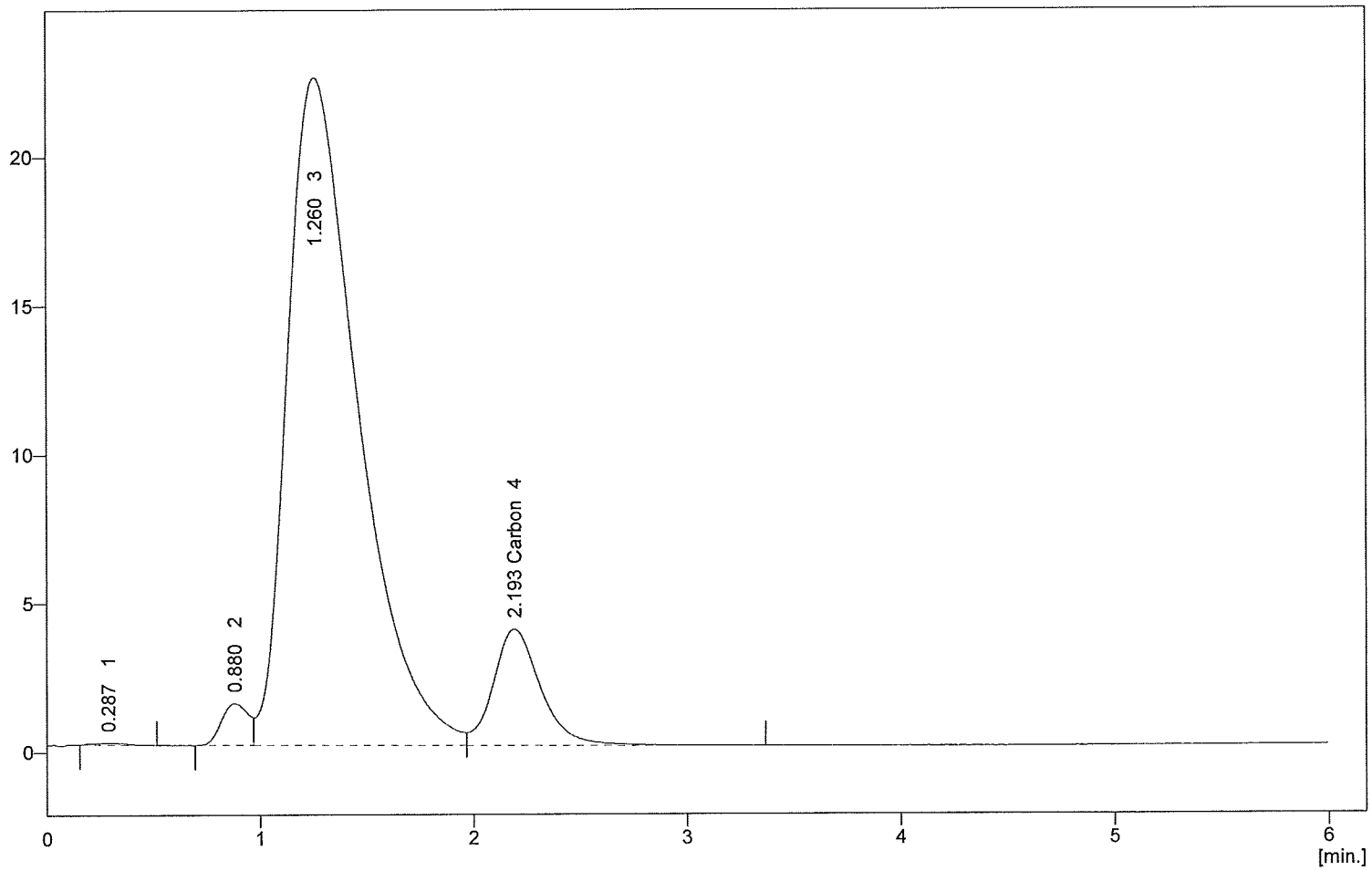
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.193	215.058	28.4	0.019	0.4476	1.0000	Ordnr
	Total	757.201	100.0	4.300	0.4476		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 12:06:12 PM
Project : WORK1
Weight : 10.7 mg
Sample : 240-70847-B-21
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A016

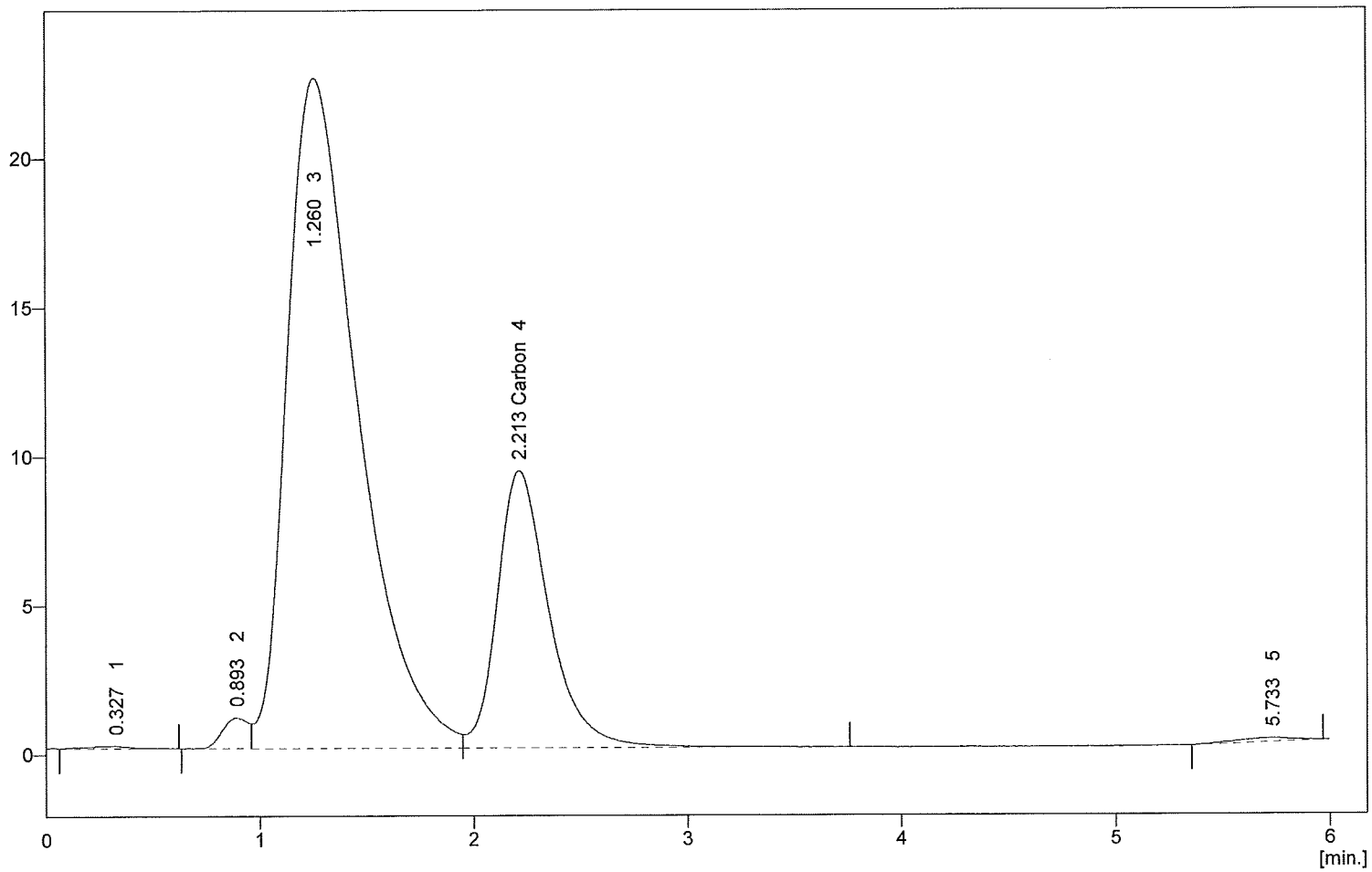


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.193	60.714	10.3	1.266e-04	0.0012	1.0000	Ordnr
	Total	588.029	100.0	10.700	0.0012		

Lloyd Kahn TOC
Instrument #1

Created	: 10/19/2016 12:12:48 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 9.8 mg		
Sample	: 240-70847-B-22	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A017
Calibration	: 101916A		



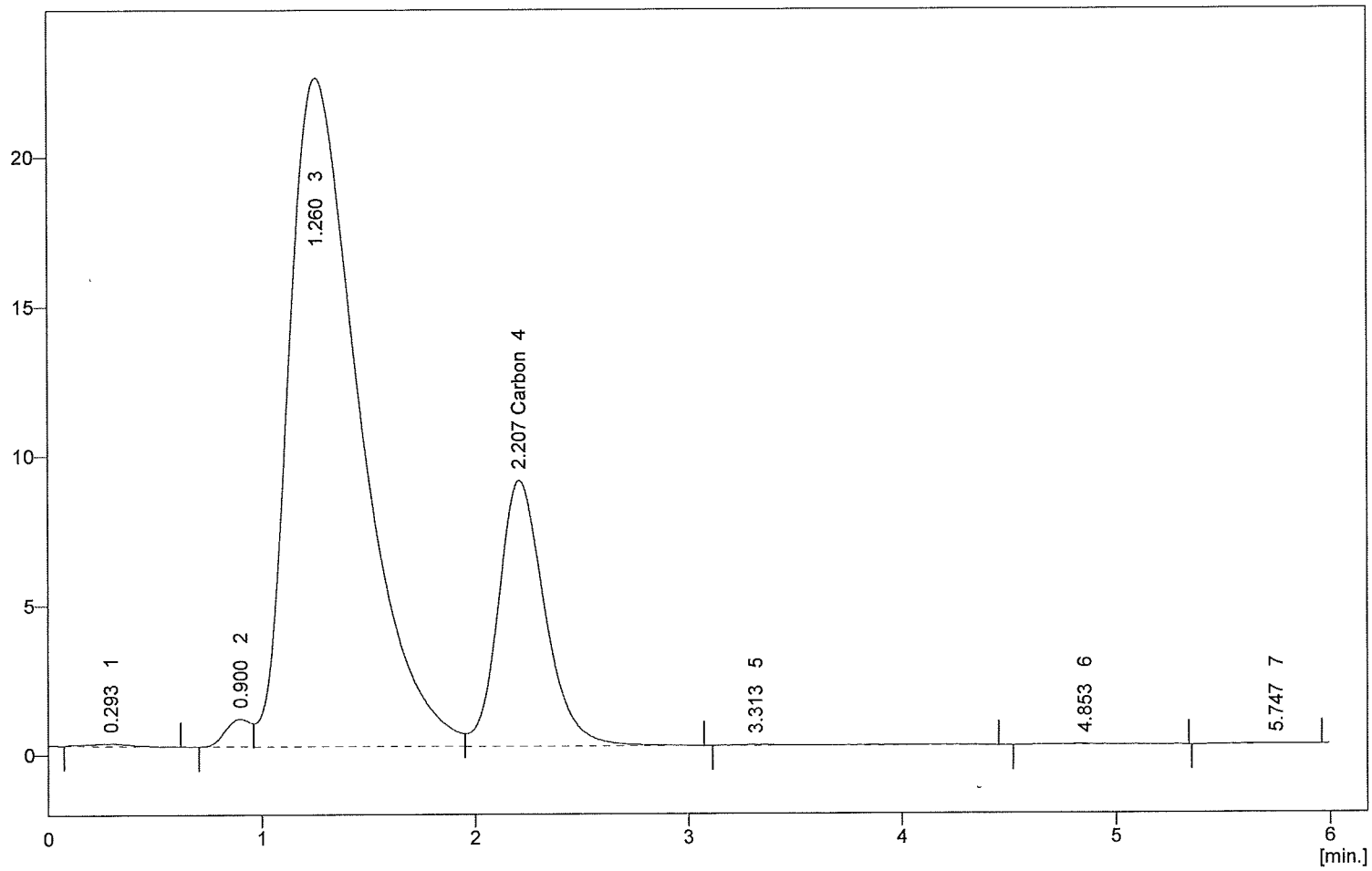
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.213	156.380	22.8	0.012	0.1222	1.0000	Ordnr
	Total	685.951	100.0	9.800	0.1222		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 12:19:24 PM
Project : WORK1
Weight : 10.1 mg
Sample : 240-70847-B-23
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A018



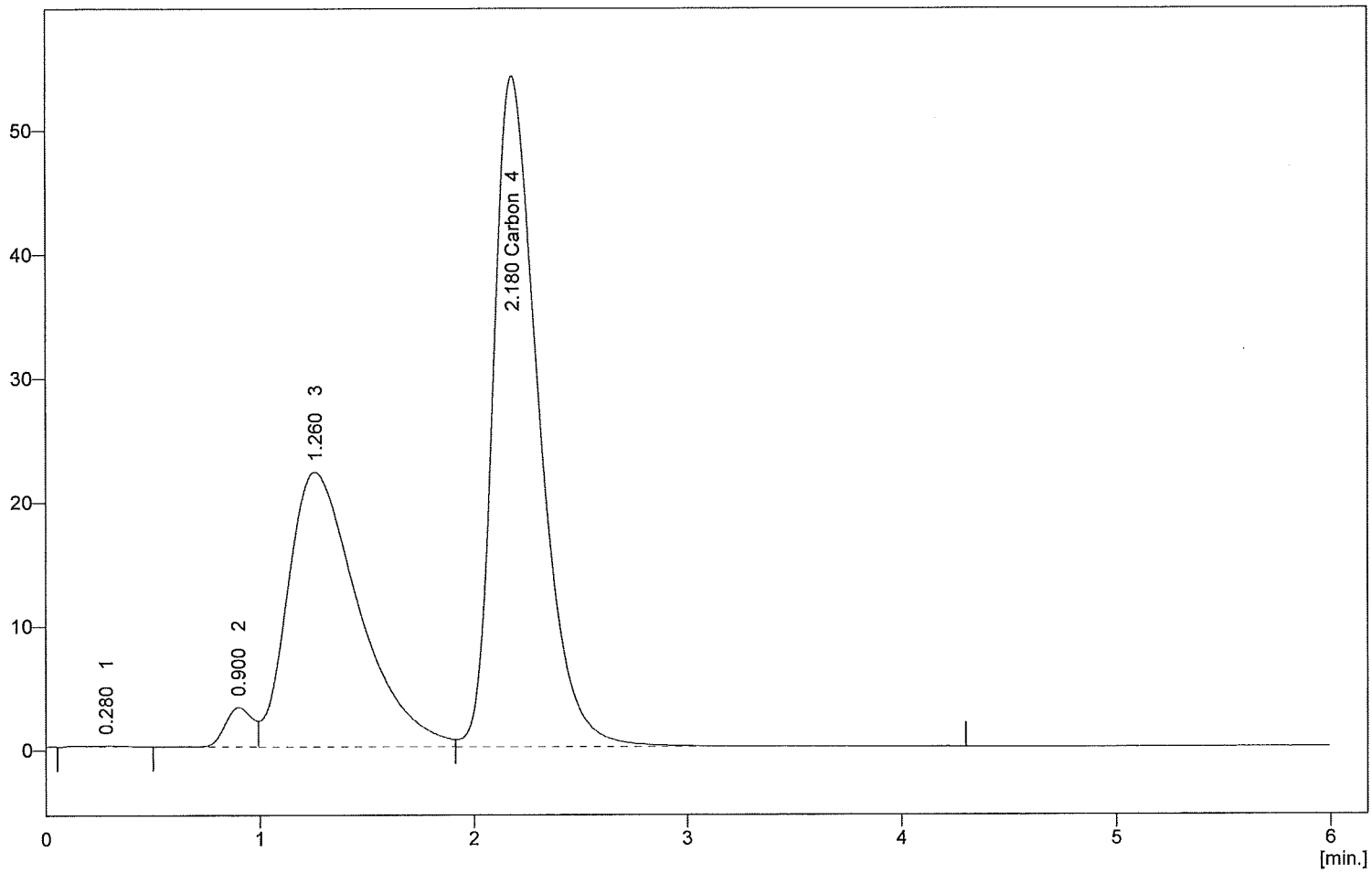
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.207	133.543	20.3	0.009	0.0906	1.0000	Ordnr
	Total	657.893	100.0	10.100	0.0906		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 12:26:03 PM
Project : WORK1
Weight : 3.2 mg
Sample : 200-35736-A-1
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A019



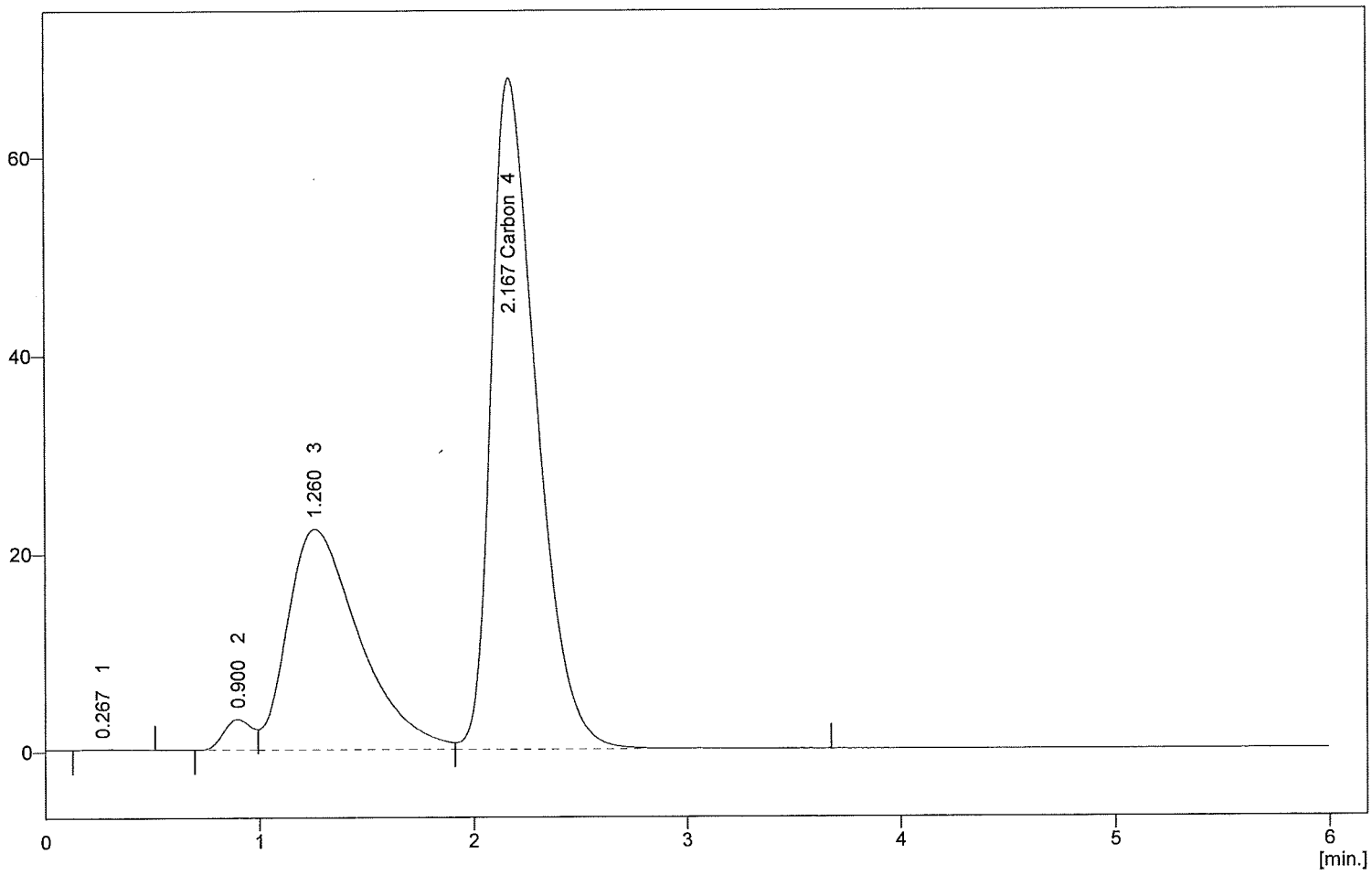
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.180	792.039	59.4	0.091	2.8352	1.0000	Ordnr
	Total	1333.121	100.0	3.200	2.8352		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 12:32:40 PM
Project : WORK1
Weight : 3.3 mg
Sample : 200-35736-A-2
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A020



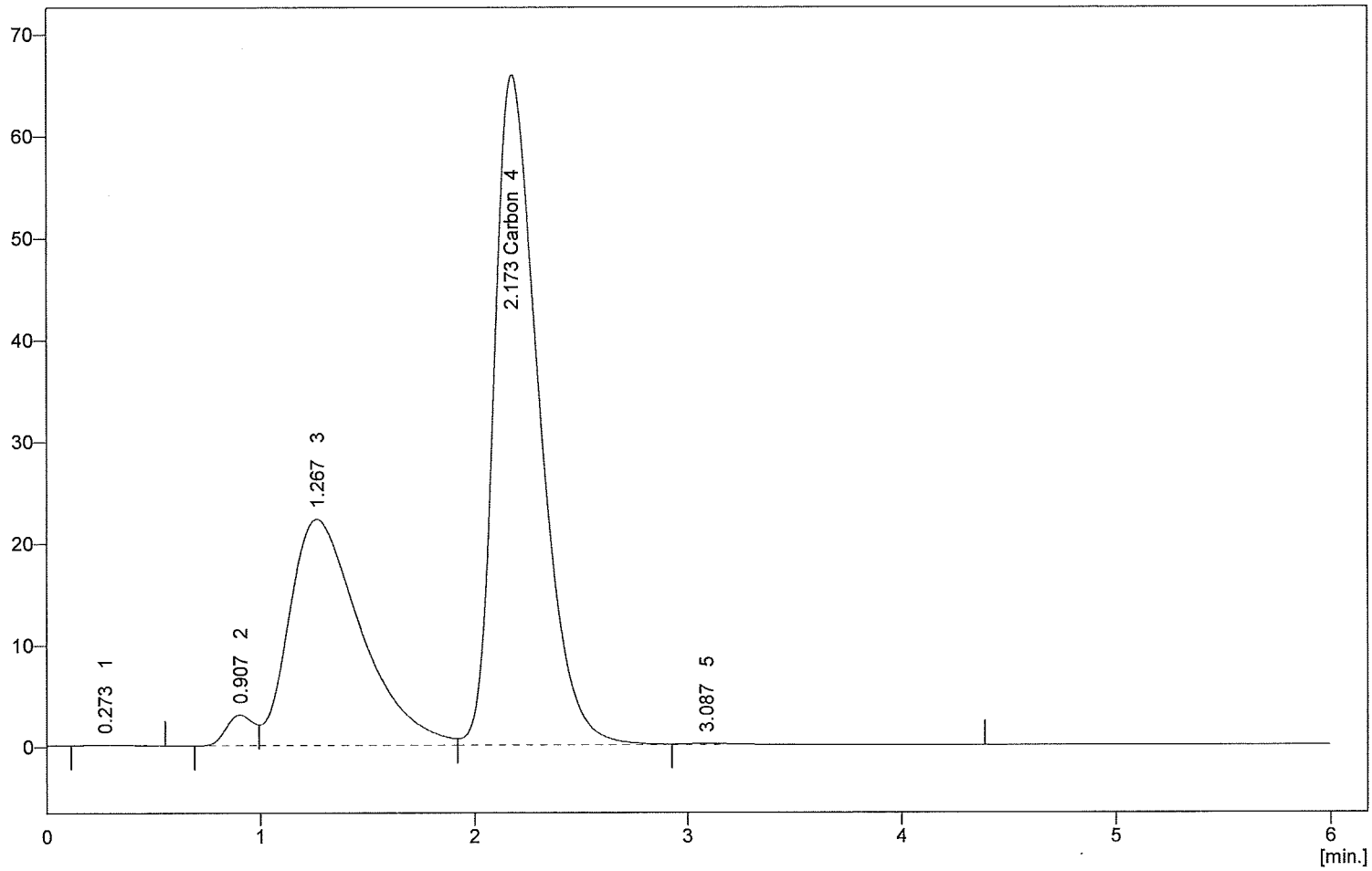
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.167	996.706	64.5	0.116	3.5177	1.0000	Ordnr
	Total	1545.942	100.0	3.300	3.5177		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 12:39:17 PM
Project : WORK1
Weight : 3.3 mg
Sample : 200-35736-A-3
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A021



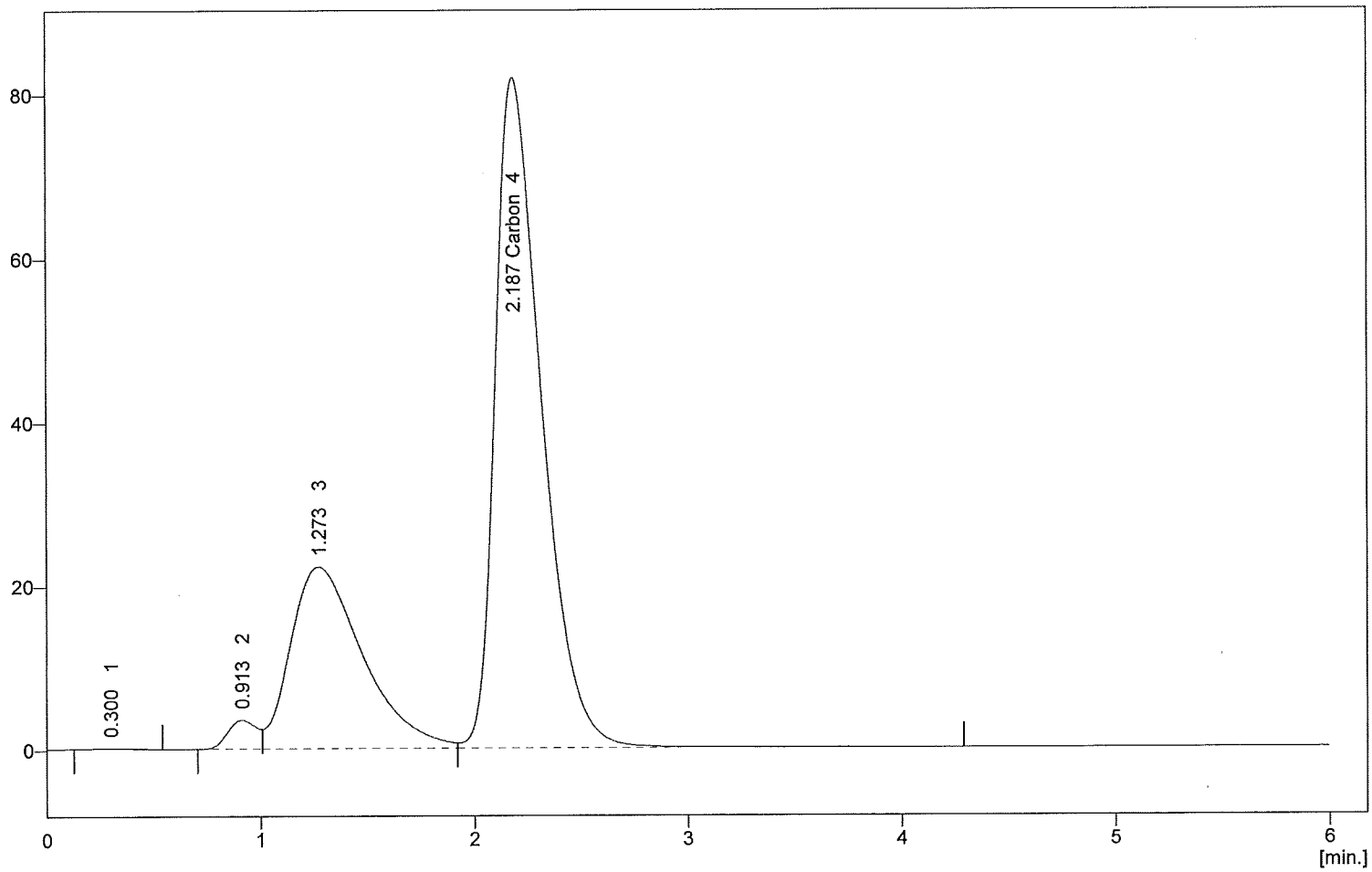
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.173	956.738	63.5	0.111	3.3676	1.0000	Ordnr
	Total	1506.786	100.0	3.300	3.3676		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 12:45:59 PM
Project : WORK1
Weight : 3 mg
Sample : 200-35736-A-4
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A022



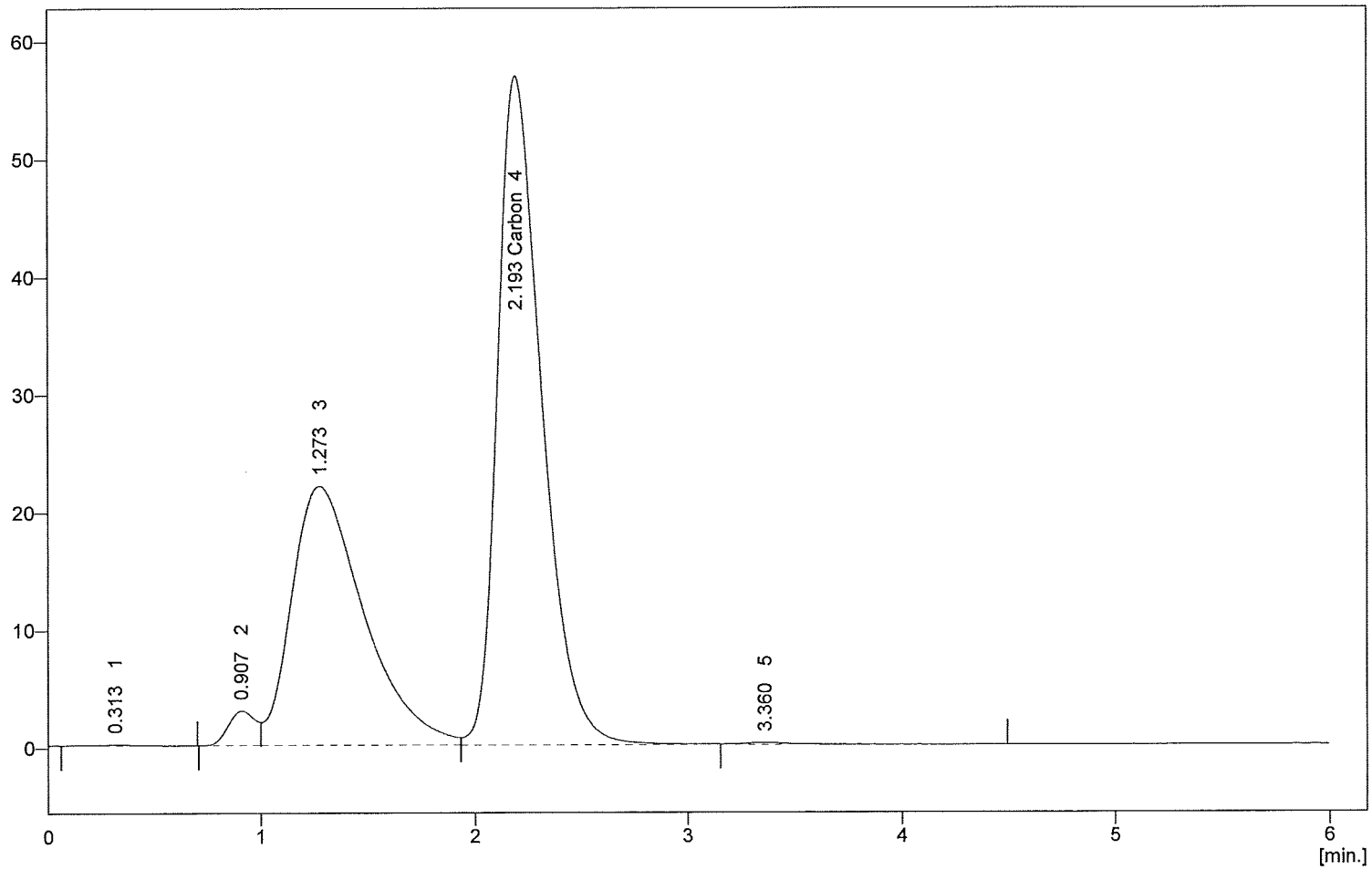
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.187	1238.196	69.1	0.146	4.8667	1.0000	Ordnr
	Total	1792.391	100.0	3.000	4.8667		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 12:52:37 PM
Project : WORK1
Weight : 3.1 mg
Sample : 200-35736-A-5
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A023

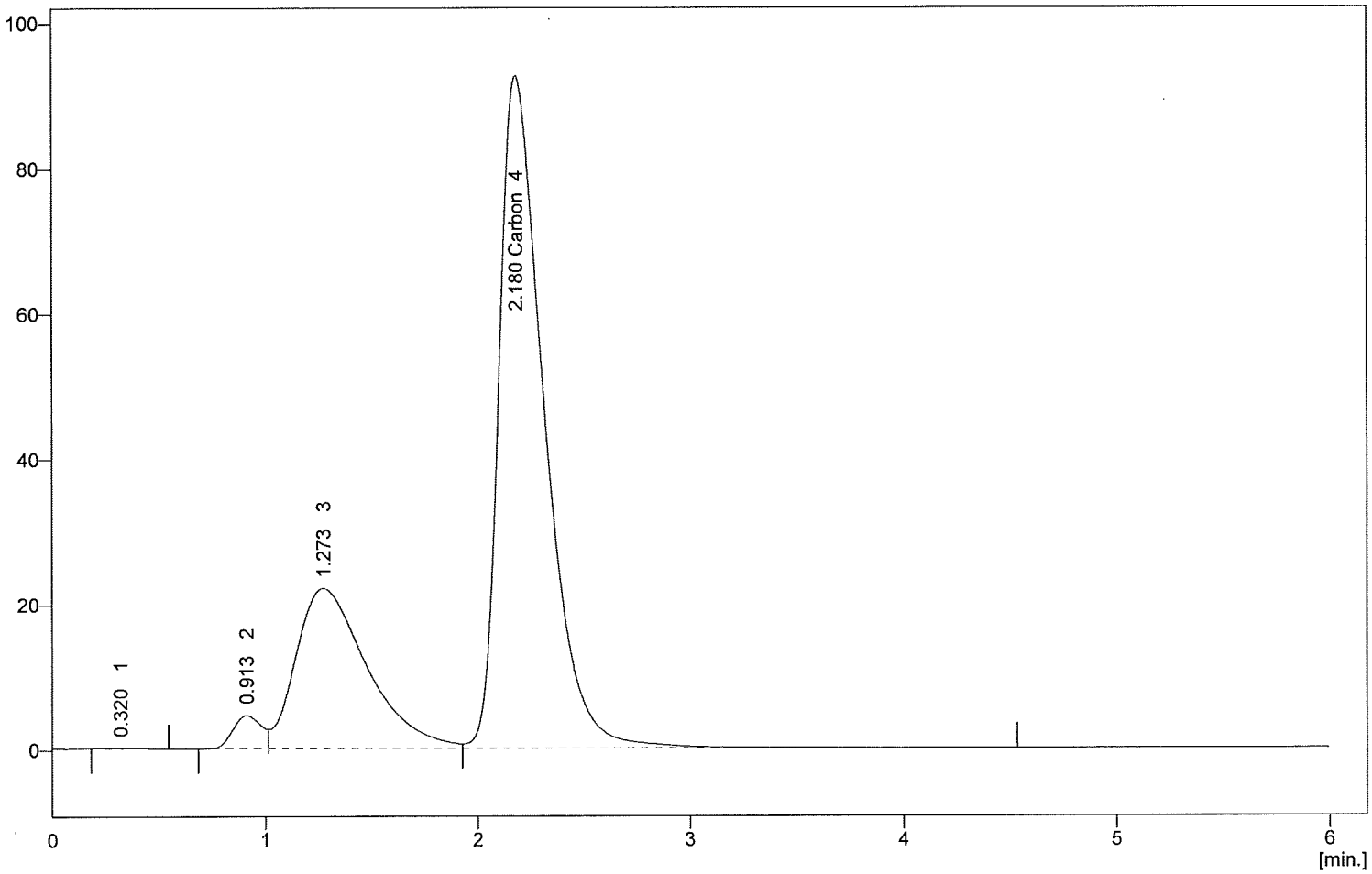


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.193	825.131	60.1	0.095	3.0589	1.0000	Ordnr
	Total	1372.905	100.0	3.100	3.0589		

Lloyd Kahn TOC
Instrument #1

Created	: 10/19/2016 12:59:20 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 3.3 mg		
Sample	: 200-35736-A-5 DU	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A024
Calibration	: 101916A		



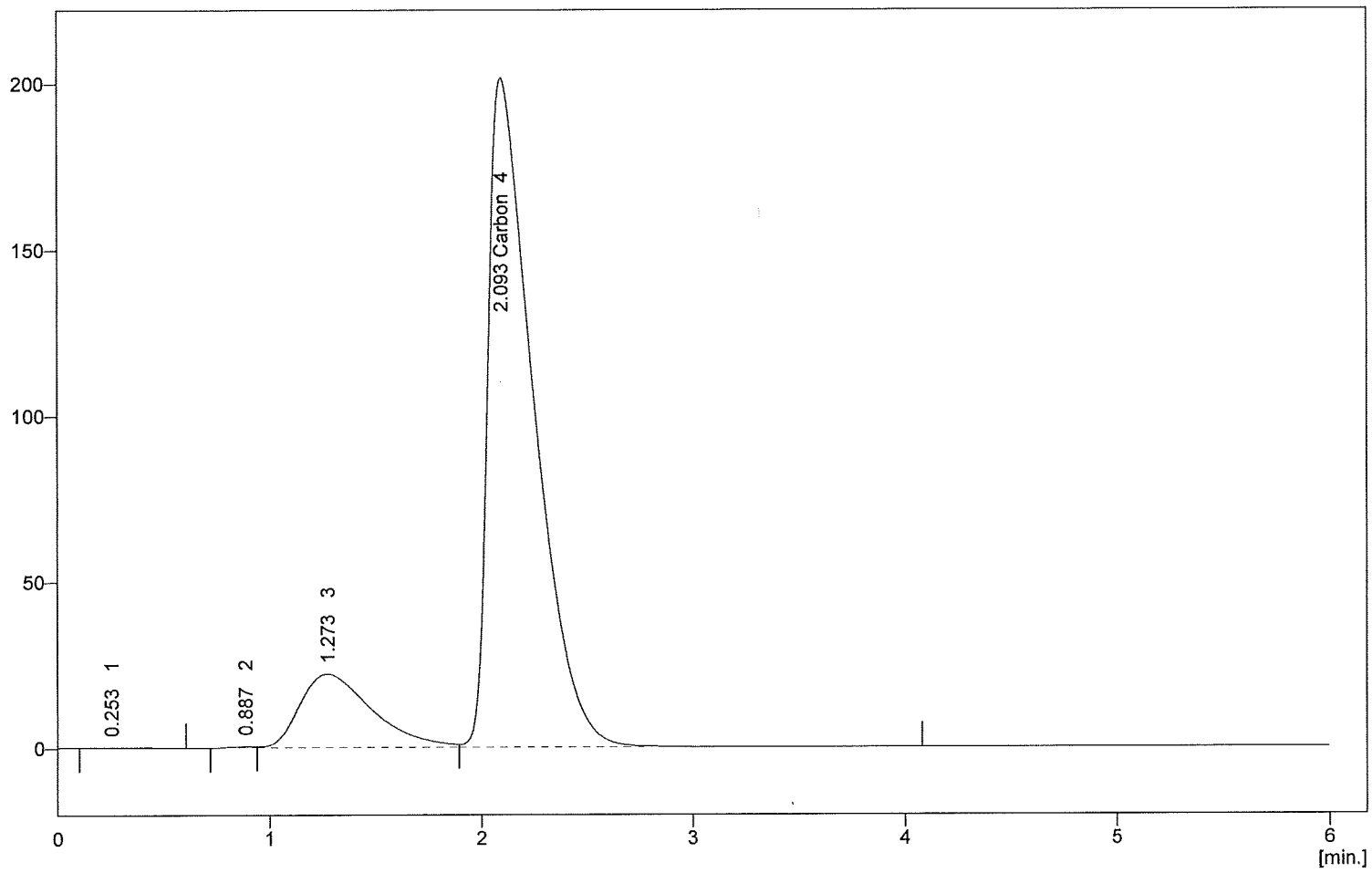
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.180	1368.055	71.2	0.162	4.9117	1.0000	Ordnr
	Total	1921.656	100.0	3.300	4.9117		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 1:06:04 PM
Project : WORK1
Weight : 10 mg
Sample : CCV
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A025



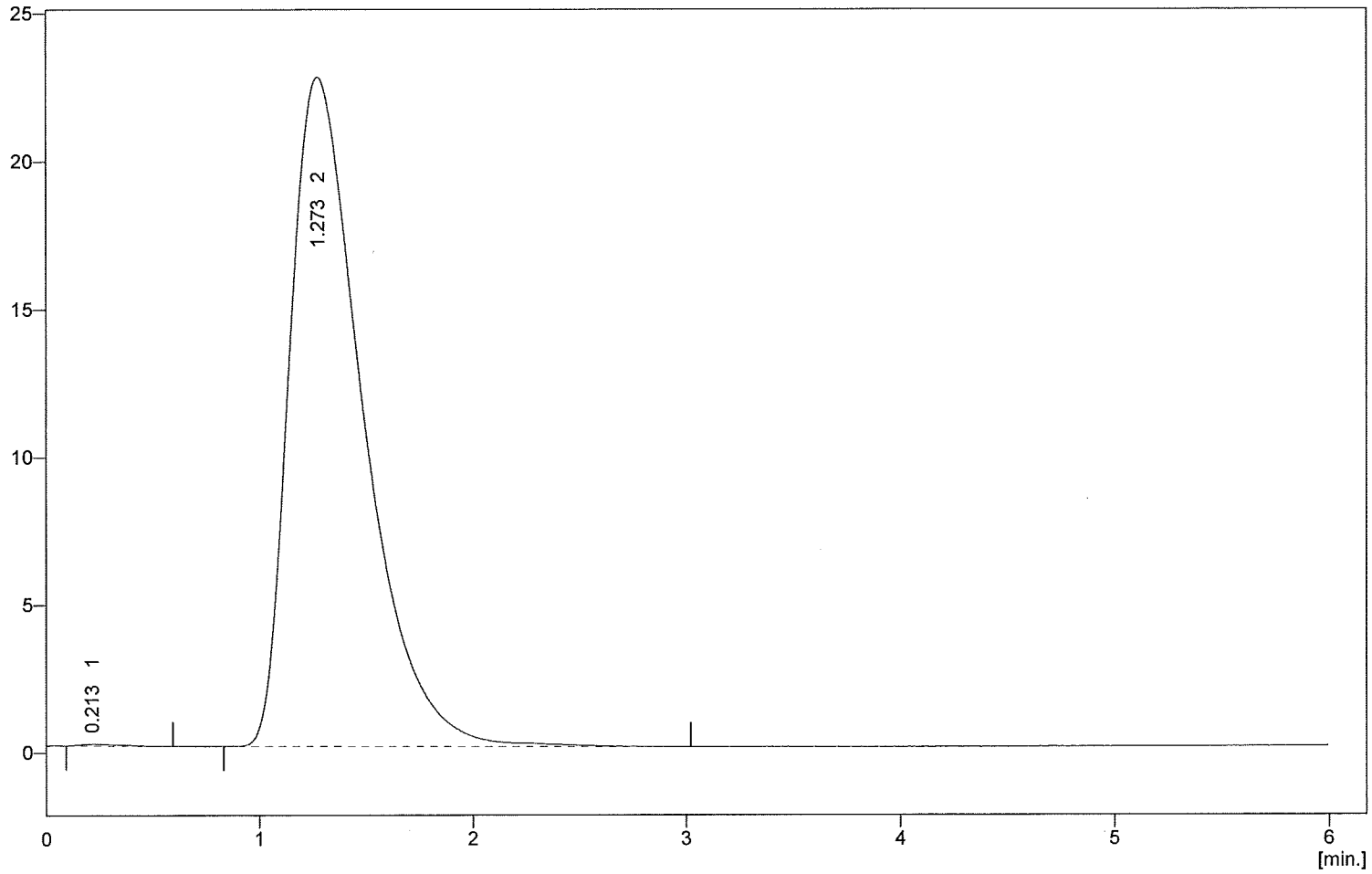
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.093	3011.146	85.1	0.366	3.6564	1.0000	Ordnr
	Total	3536.904	100.0	10.000	3.6564		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 1:12:48 PM
Project : WORK1
Weight : 10 mg
Sample : CCB
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A026



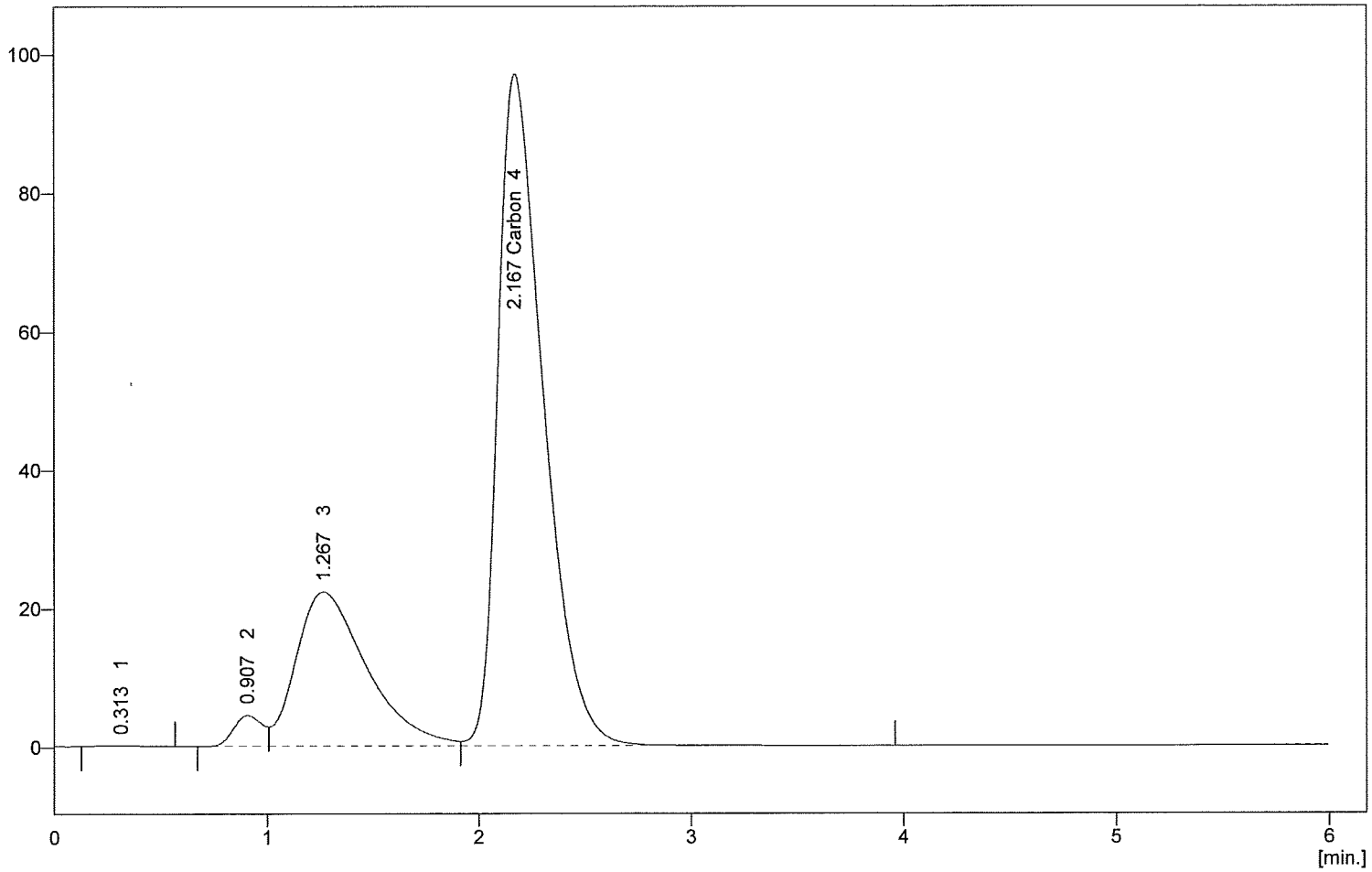
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.029						Ordnr
	Total	541.259	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 1:26:26 PM
Project : WORK1
Weight : 3.1 mg
Sample : 200-35736-A-6
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A027



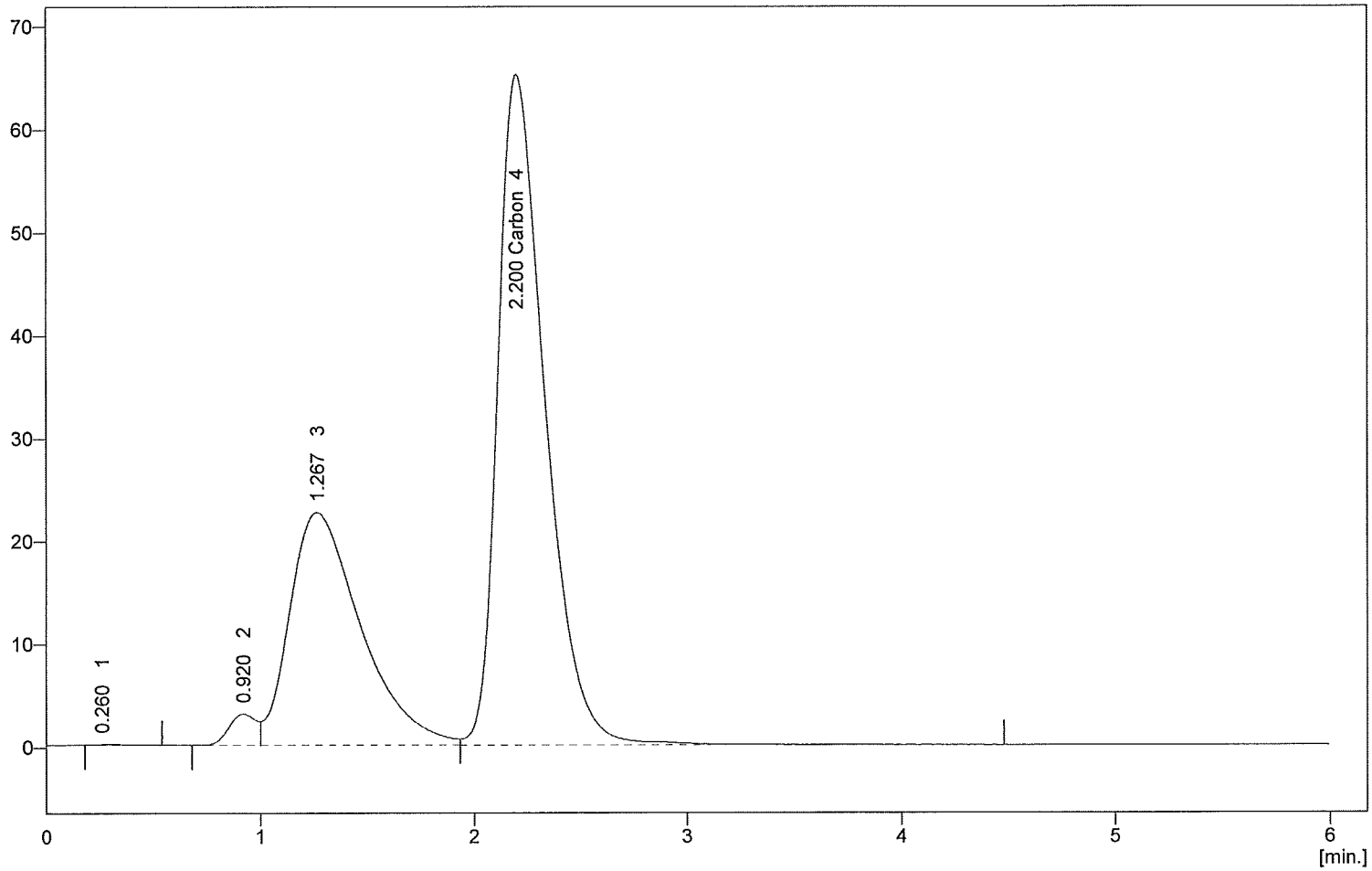
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.167	1452.538	72.2	0.173	5.5663	1.0000	Ordnr
	Total	2012.327	100.0	3.100	5.5663		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 1:33:07 PM
Project : WORK1
Weight : 3.2 mg
Sample : 200-35736-A-7
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A028



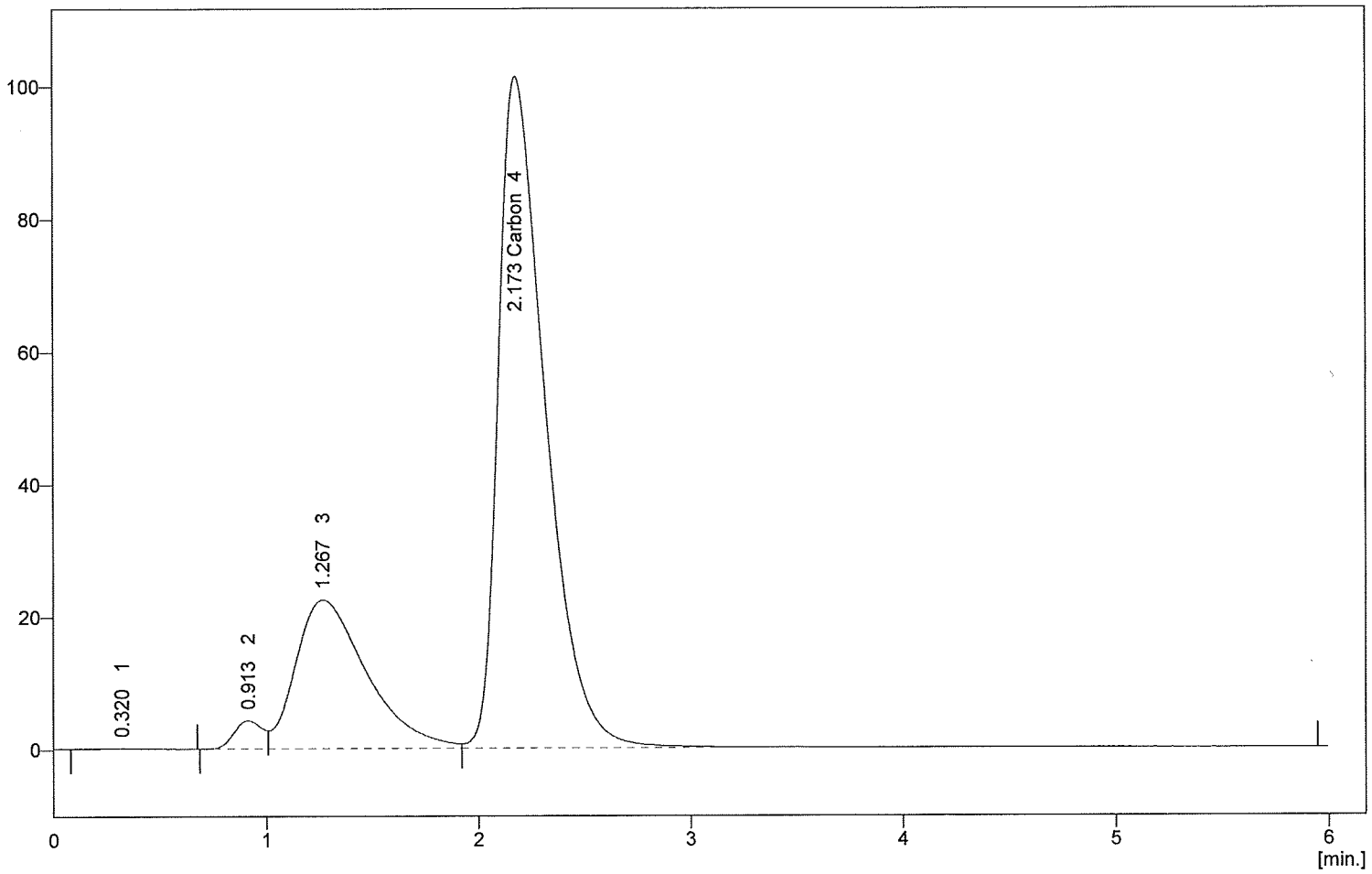
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.200	1003.023	64.5	0.117	3.6520	1.0000	Ordnr
	Total	1555.497	100.0	3.200	3.6520		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 1:39:53 PM
Project : WORK1
Weight : 3.3 mg
Sample : 200-35736-A-8
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A029



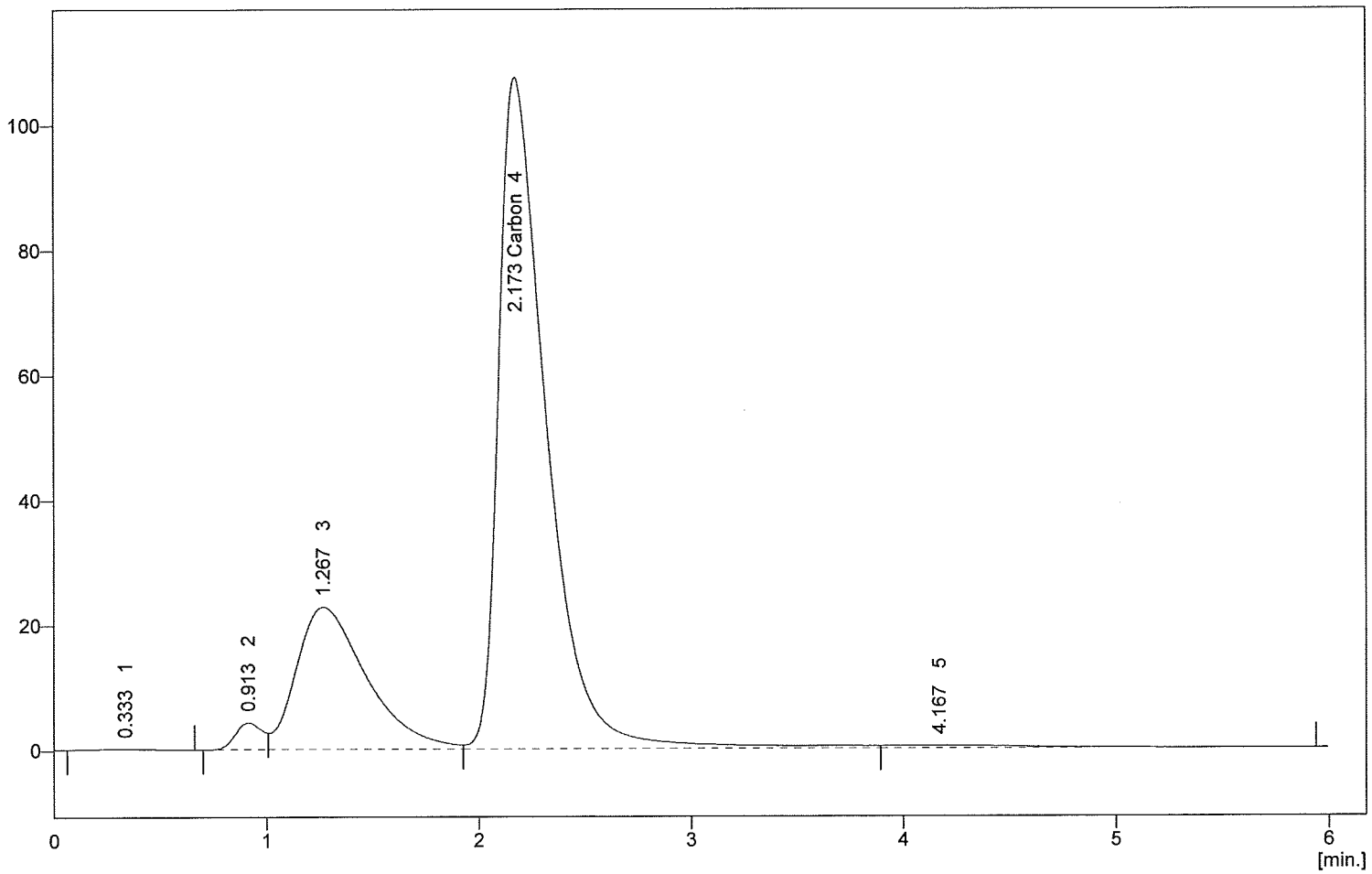
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.173	1565.800	73.6	0.187	5.6541	1.0000	Ordnr
	Total	2127.711	100.0	3.300	5.6541		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 1:46:40 PM
Project : WORK1
Weight : 3.2 mg
Sample : 200-35736-A-9
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A030

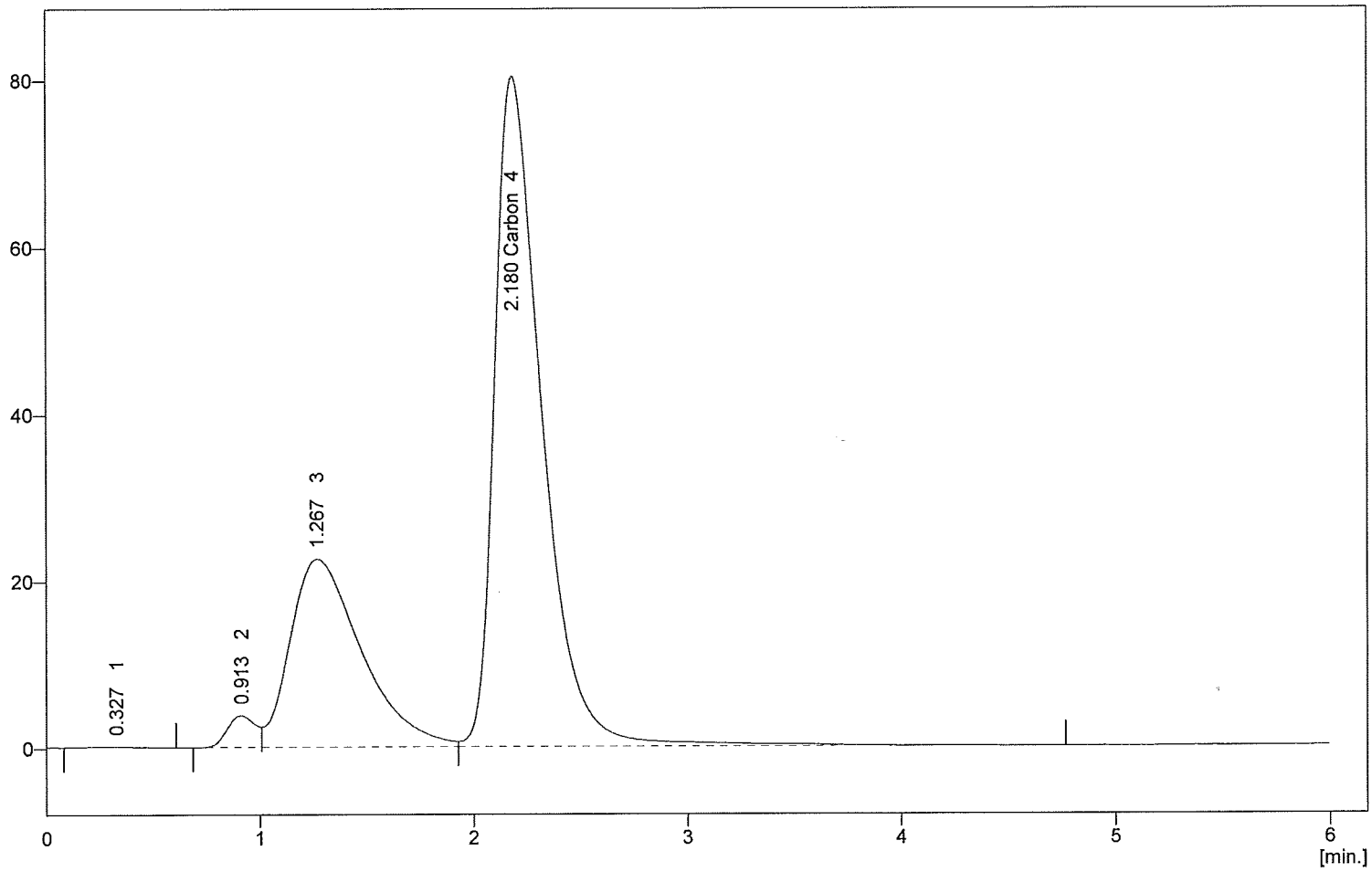


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.173	1684.011	74.2	0.201	6.2884	1.0000	Ordnr
	Total	2269.833	100.0	3.200	6.2884		

Lloyd Kahn TOC
Instrument #1

Created	: 10/19/2016 1:53:22 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 3.3 mg		
Sample	: 200-35736-A-10	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A031
Calibration	: 101916A		



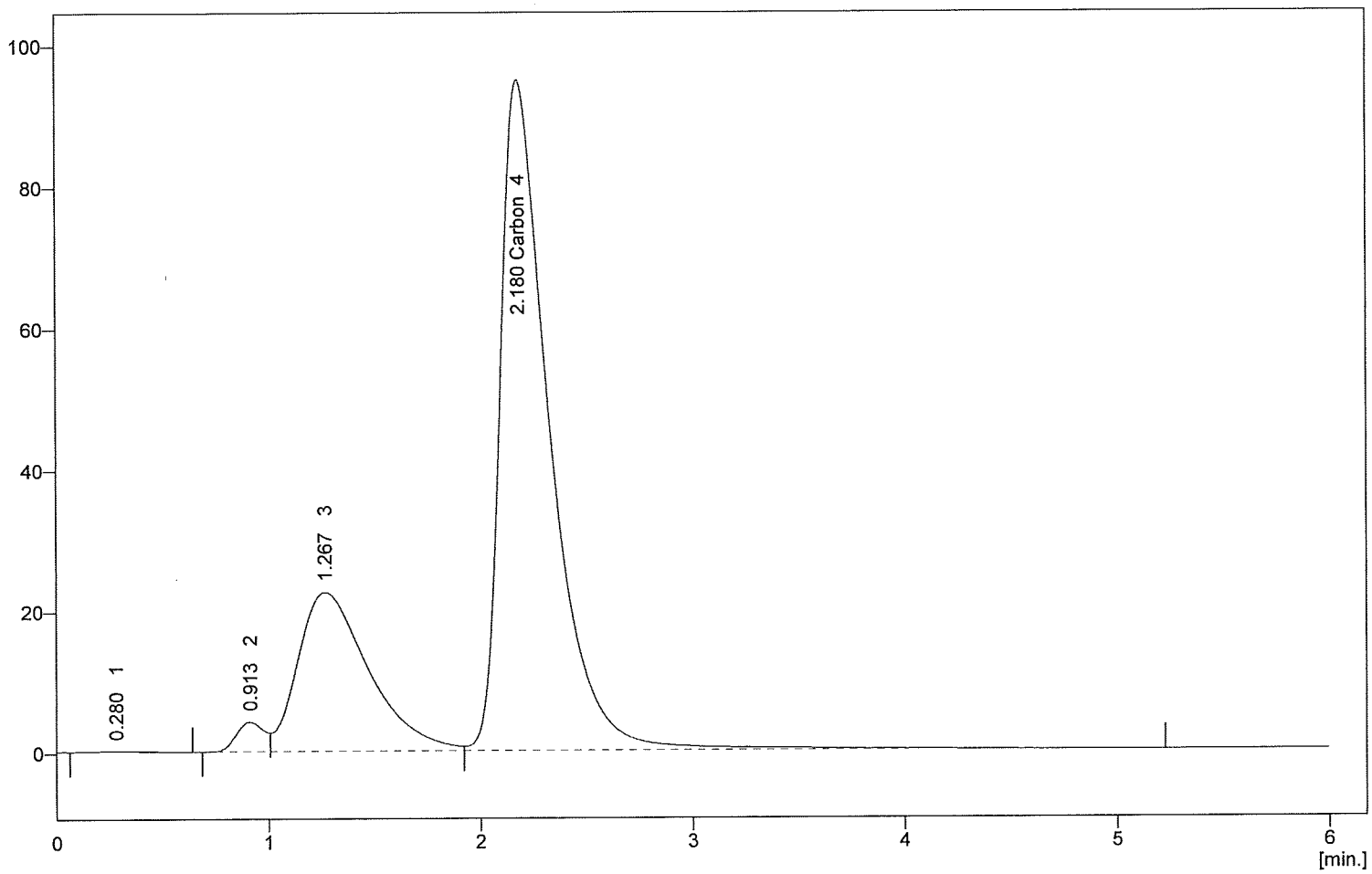
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.180	1235.485	68.9	0.146	4.4141	1.0000	Ordnr
	Total	1794.321	100.0	3.300	4.4141		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 2:00:05 PM
Project : WORK1
Weight : 3.9 mg
Sample : 200-35736-A-11
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A032



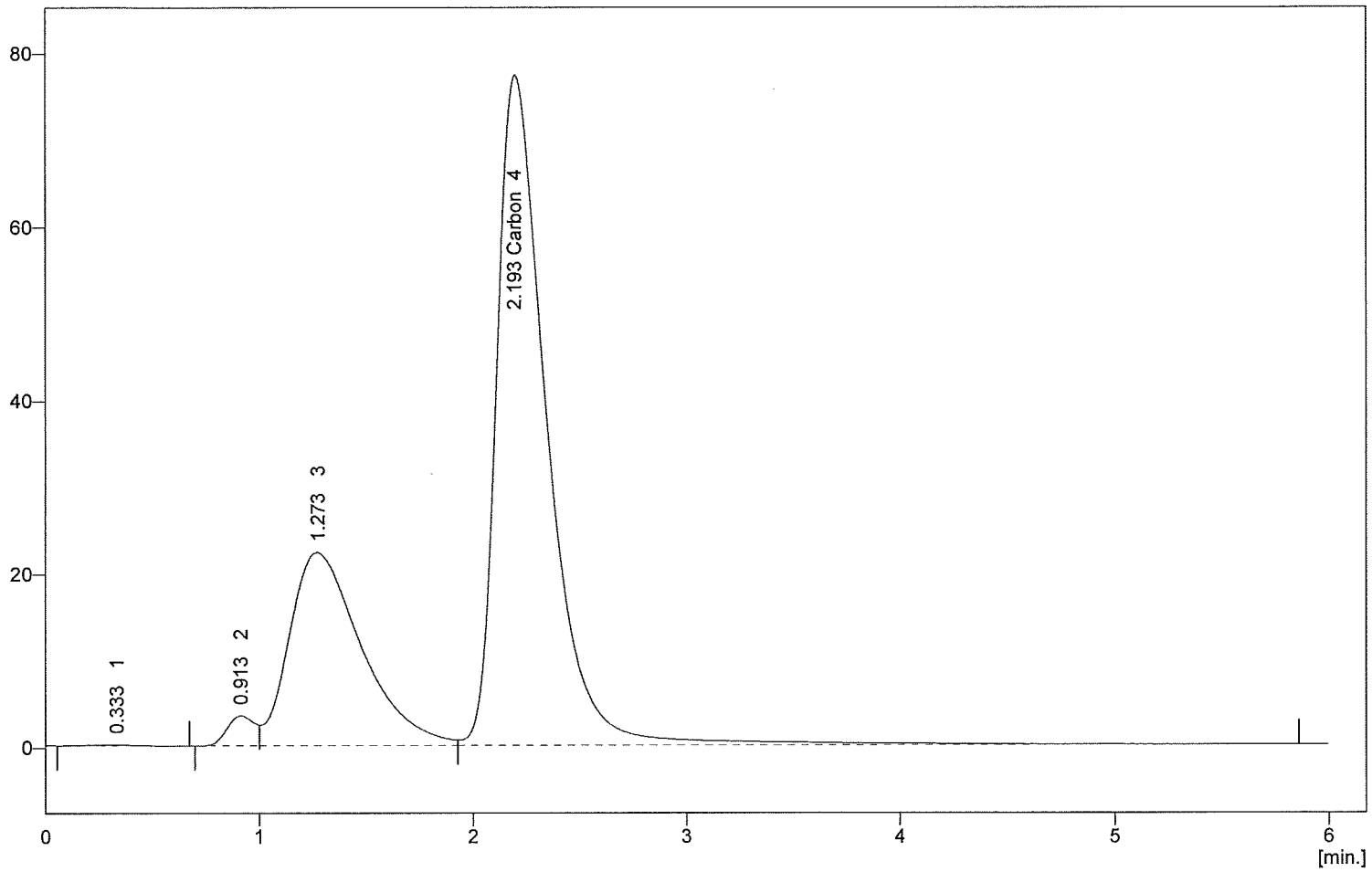
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.180	1526.256	73.1	0.182	4.6586	1.0000	Ordnr
	Total	2088.921	100.0	3.900	4.6586		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 2:06:48 PM
Project : WORK1
Weight : 3.3 mg
Sample : 200-35736-A-11 DU
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A033



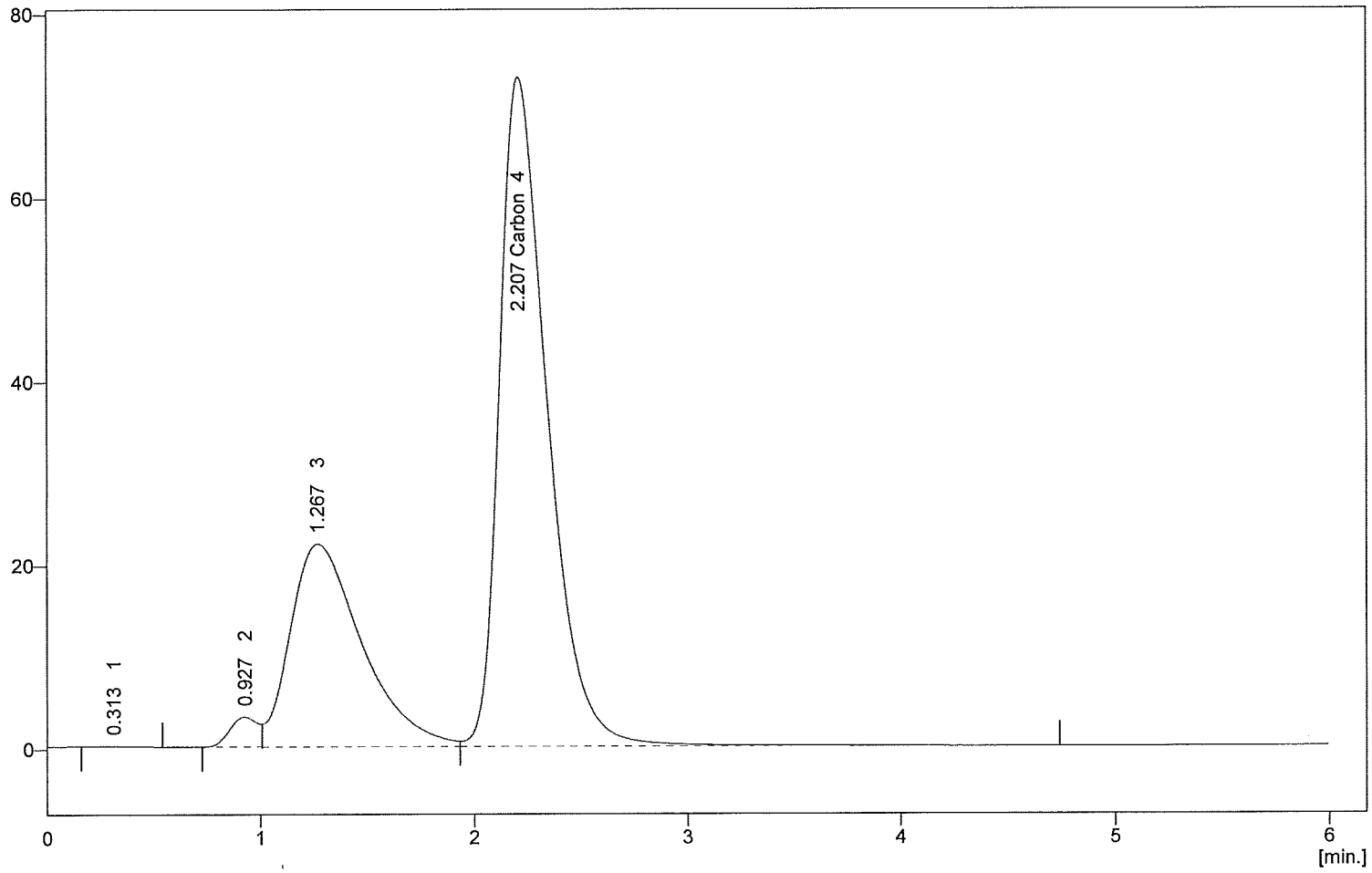
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.193	1263.108	69.5	0.149	4.5178	1.0000	Ordnr
	Total	1816.194	100.0	3.300	4.5178		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 2:13:38 PM
Project : WORK1
Weight : 3 mg
Sample : 200-35736-A-12
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A034



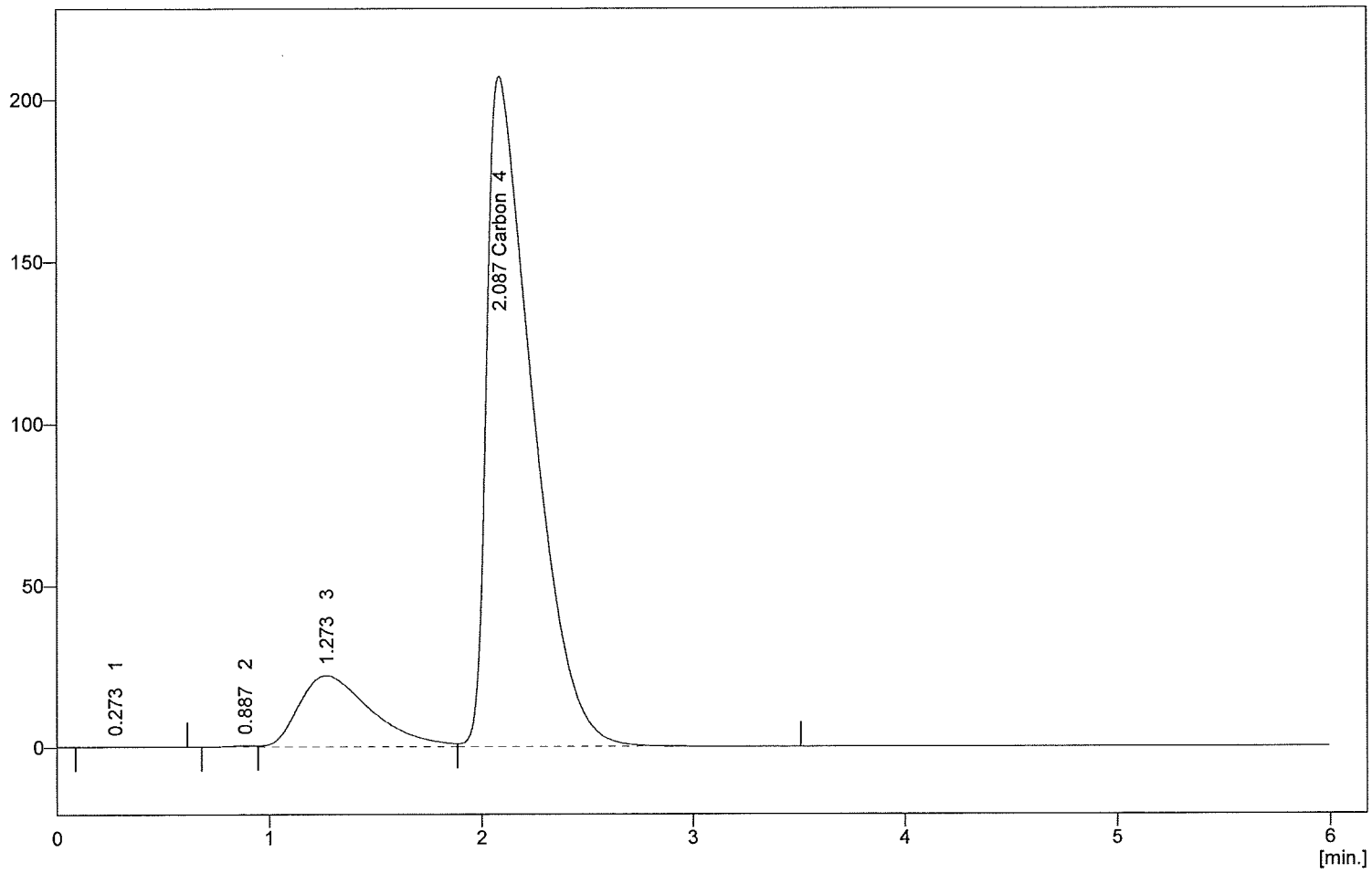
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.207	1133.640	67.5	0.133	4.4349	1.0000	Ordnr
	Total	1678.878	100.0	3.000	4.4349		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 2:20:29 PM
Project : WORK1
Weight : 10 mg
Sample : CCV
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A035



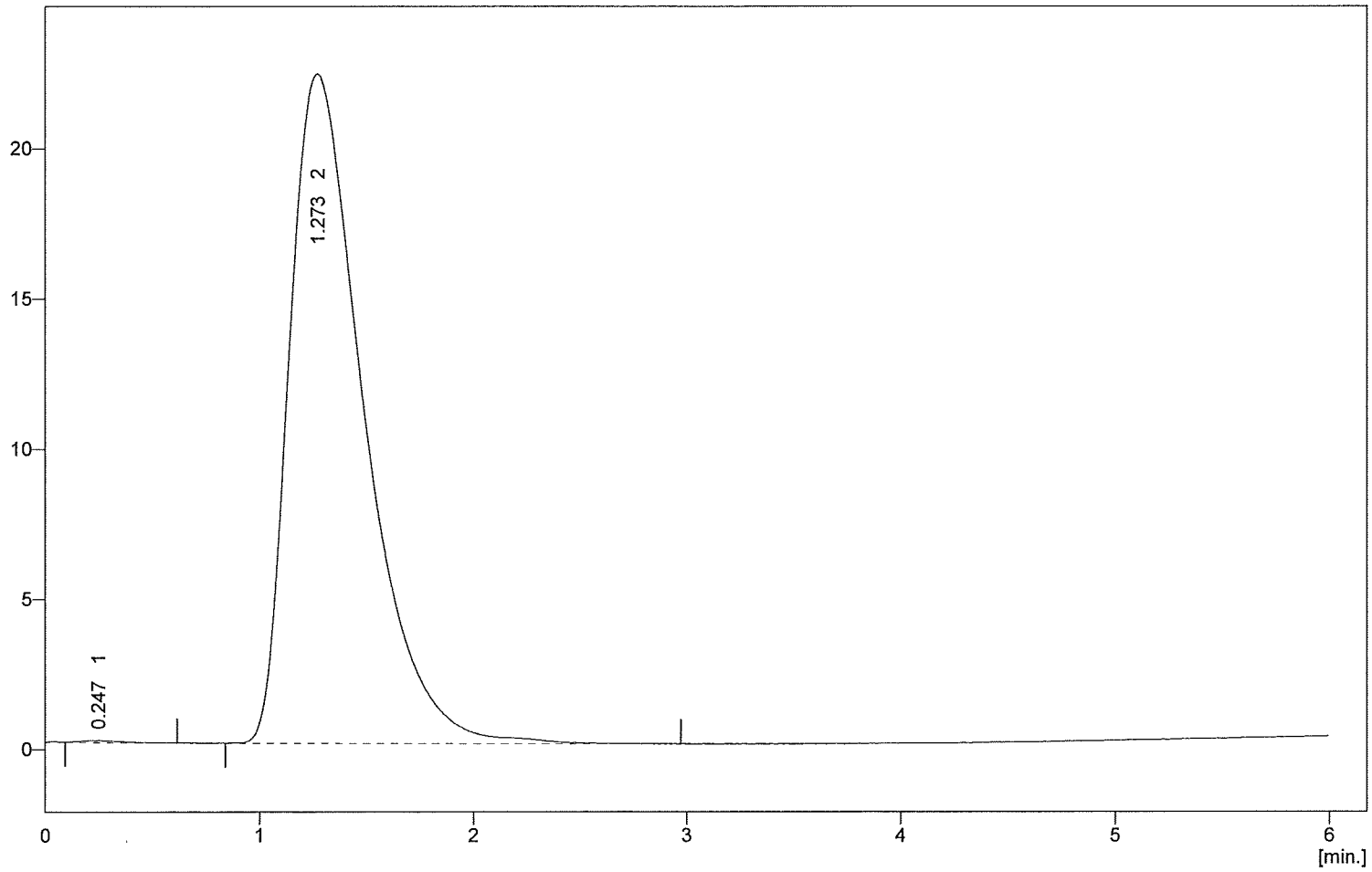
Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.087	3115.147	85.6	0.379	3.7853	1.0000	Ordnr
	Total	3638.039	100.0	10.000	3.7853		

Lloyd Kahn TOC
Instrument #1

Created : 10/19/2016 2:27:14 PM
Project : WORK1
Weight : 10 mg
Sample : CCB
Calibration : 101916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\101916A036



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.029						Ordnr
	Total	537.982	100.0	10.000	0.0000		

LLOYD KAHN TOC
Channel 1
CALIBRATION
Carbon - 2.061 min.

Peak Type : Ordnr

Left Window : 0.3 min

Right Window : 0.6 min

Response Base : Area

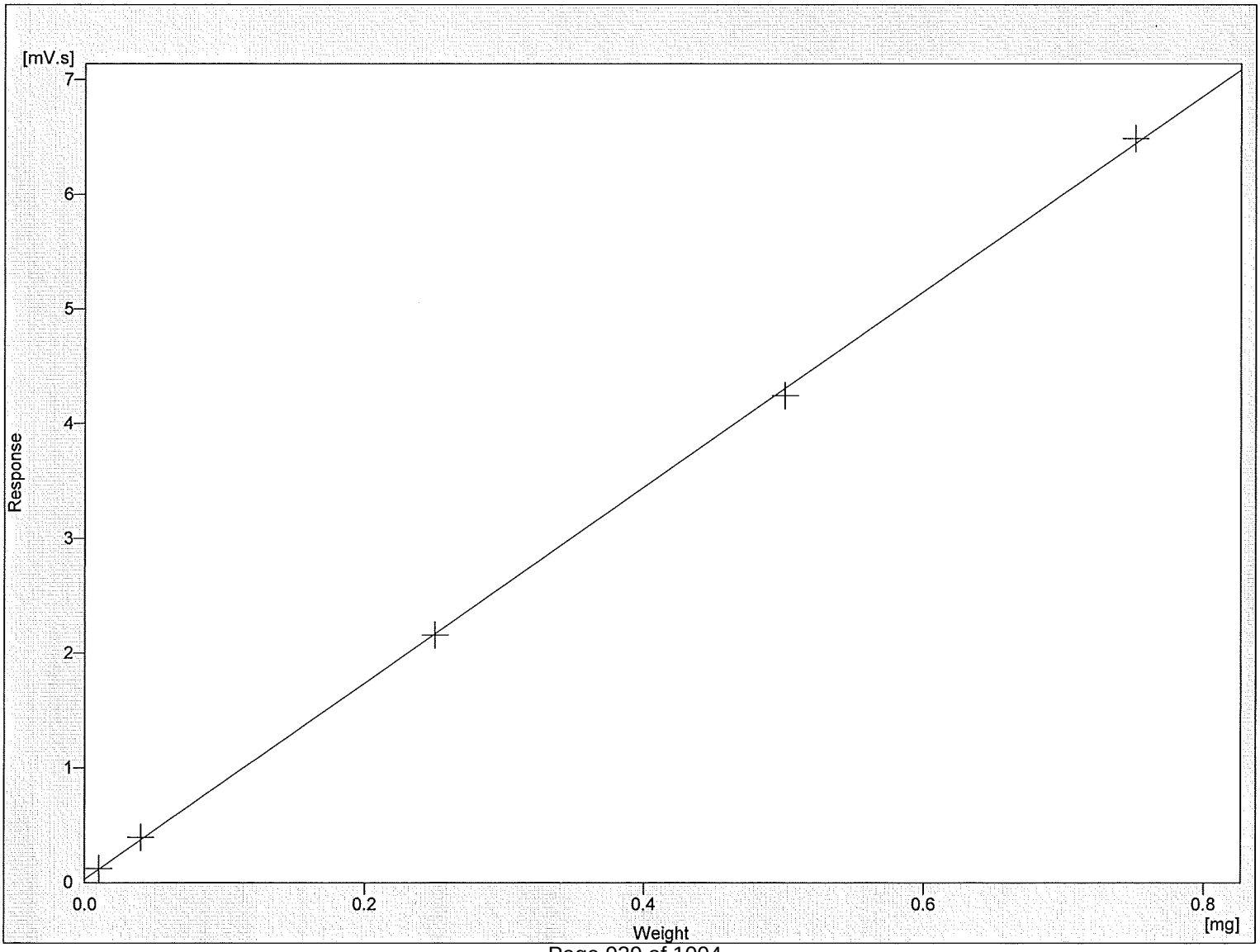
Curve Fit Type : Linear

Zero Type : Zero not used

Subst. Equation : Y = 8541.2091*X + 29.9368

Correlation Coef. : 0.999887

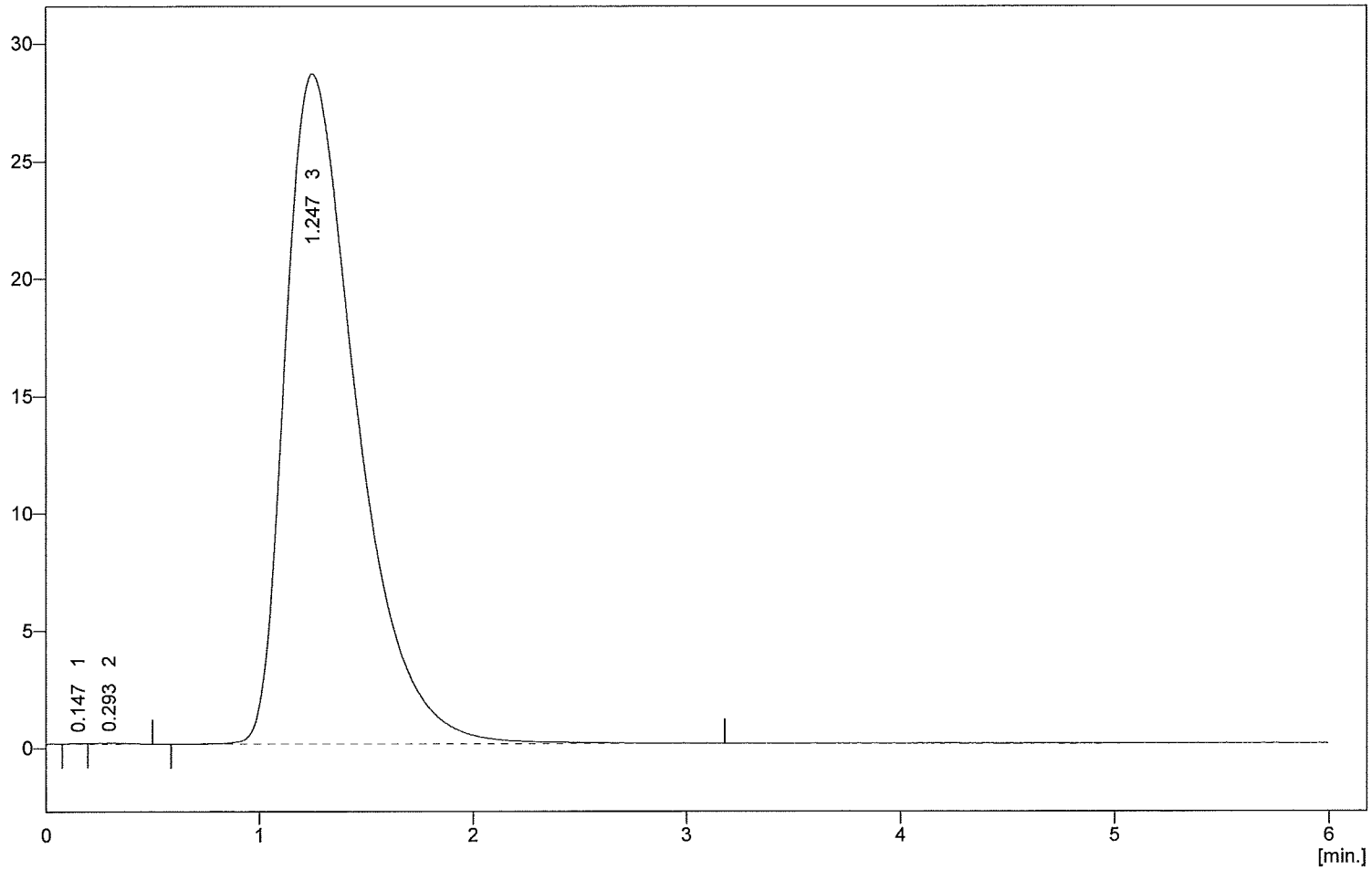
	Response	Weight	Resp. Factor	Used
1	0.000	0.000	0.0000	Yes
2	122.001	0.010	0.0001	Yes
3	394.333	0.040	0.0001	Yes
4	2157.994	0.250	0.0001	Yes
5	4242.688	0.501	0.0001	Yes
6	6487.746	0.751	0.0001	Yes
7	0.000	0.000	0.0000	Yes
8	0.000	0.000	0.0000	Yes
9	0.000	0.000	0.0000	Yes
10	0.000	0.000	0.0000	Yes
11	0.000	0.000	0.0000	Yes
12	0.000	0.000	0.0000	Yes
13	0.000	0.000	0.0000	Yes
14	0.000	0.000	0.0000	Yes
15	0.000	0.000	0.0000	Yes
16	0.000	0.000	0.0000	Yes
17	0.000	0.000	0.0000	Yes
18	0.000	0.000	0.0000	Yes
19	0.000	0.000	0.0000	Yes
20	0.000	0.000	0.0000	Yes



Lloyd Kahn TOC
Instrument #1

Created : 10/28/2016 8:24:45 AM
Project : WORK1
Weight : 0 mg
Sample : STD 1
Calibration : 102816Z

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102816Z001

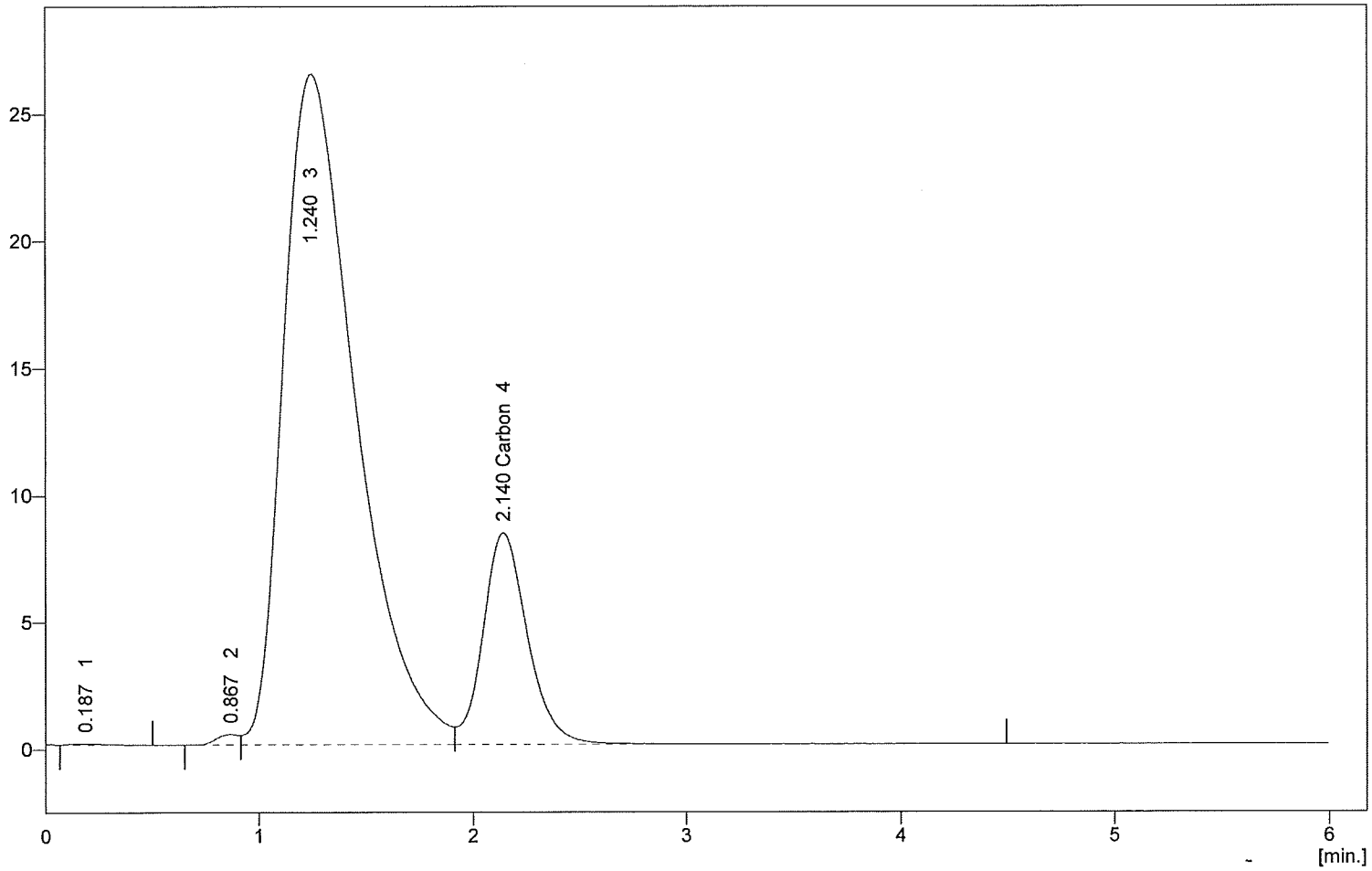


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.060						Ordnr
	Total	665.989	100.0	0.000	100.0000		

Lloyd Kahn TOC
Instrument #1

Created	: 10/28/2016 8:31:17 AM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 0.0213 mg		
Sample	: STD 2	Chromatogram	: 102816Z002
Calibration	: 102816Z		

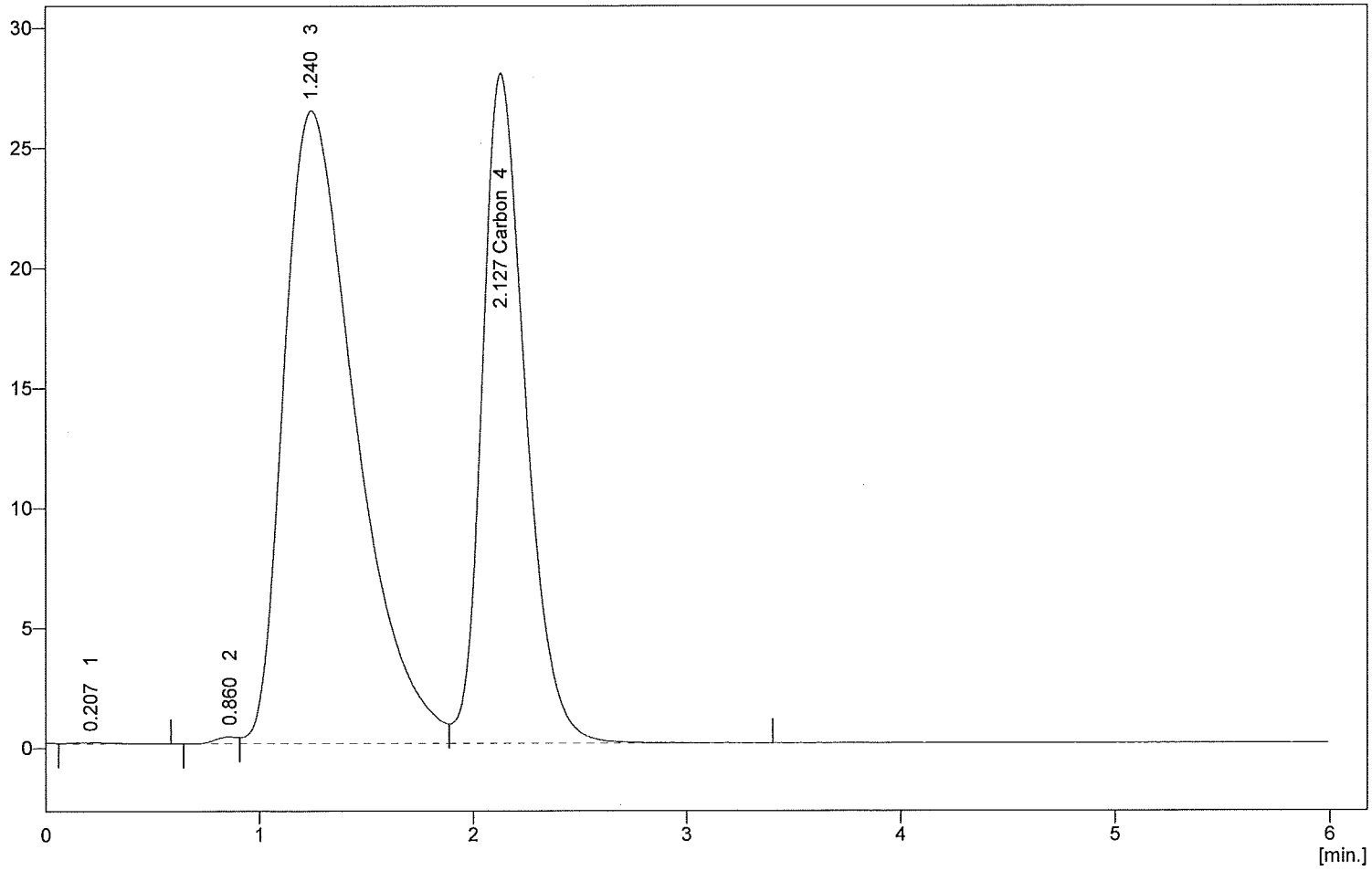


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.140	122.001	16.4	0.010	47.0500	1.0000	Ordnr
	Total	743.420	100.0	0.021	47.0500		

Lloyd Kahn TOC
Instrument #1

Created	: 10/28/2016 8:37:49 AM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 0.0851 mg		
Sample	: STD 3	Chromatogram	: 102816Z003
Calibration	: 102816Z		



Result Table - Calculation Method ESTD

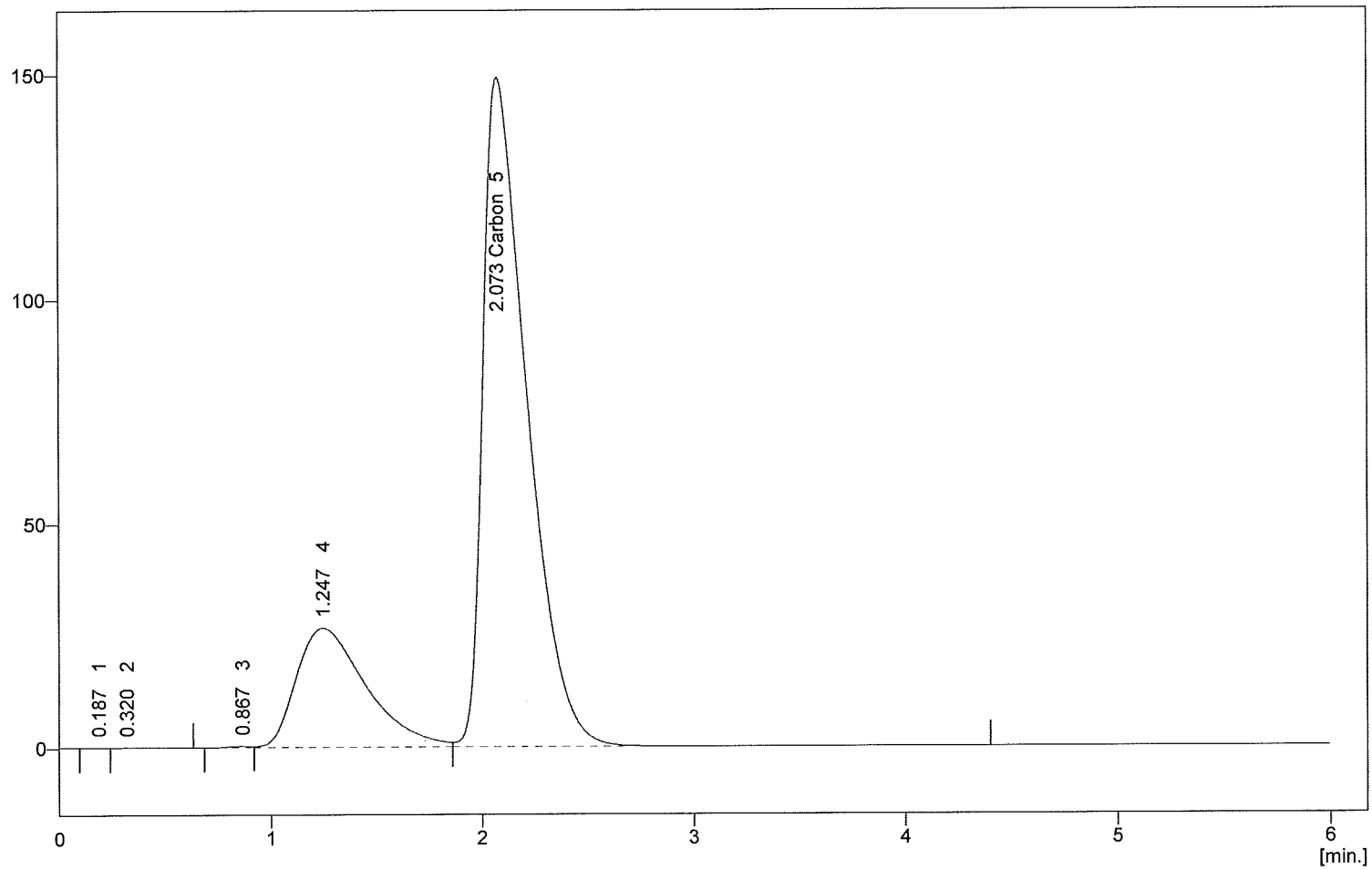
Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.127	394.333	39.0	0.040	47.0500	1.0000	Ordnr.
	Total	1010.829	100.0	0.085	47.0500		

Lloyd Kahn TOC
Instrument #1

Created : 10/28/2016 8:44:21 AM
Project : WORK1
Weight : 0.532 mg
Sample : STD 4
Calibration : 102816Z

By : None
Style : Sequence

Chromatogram : 102816Z004

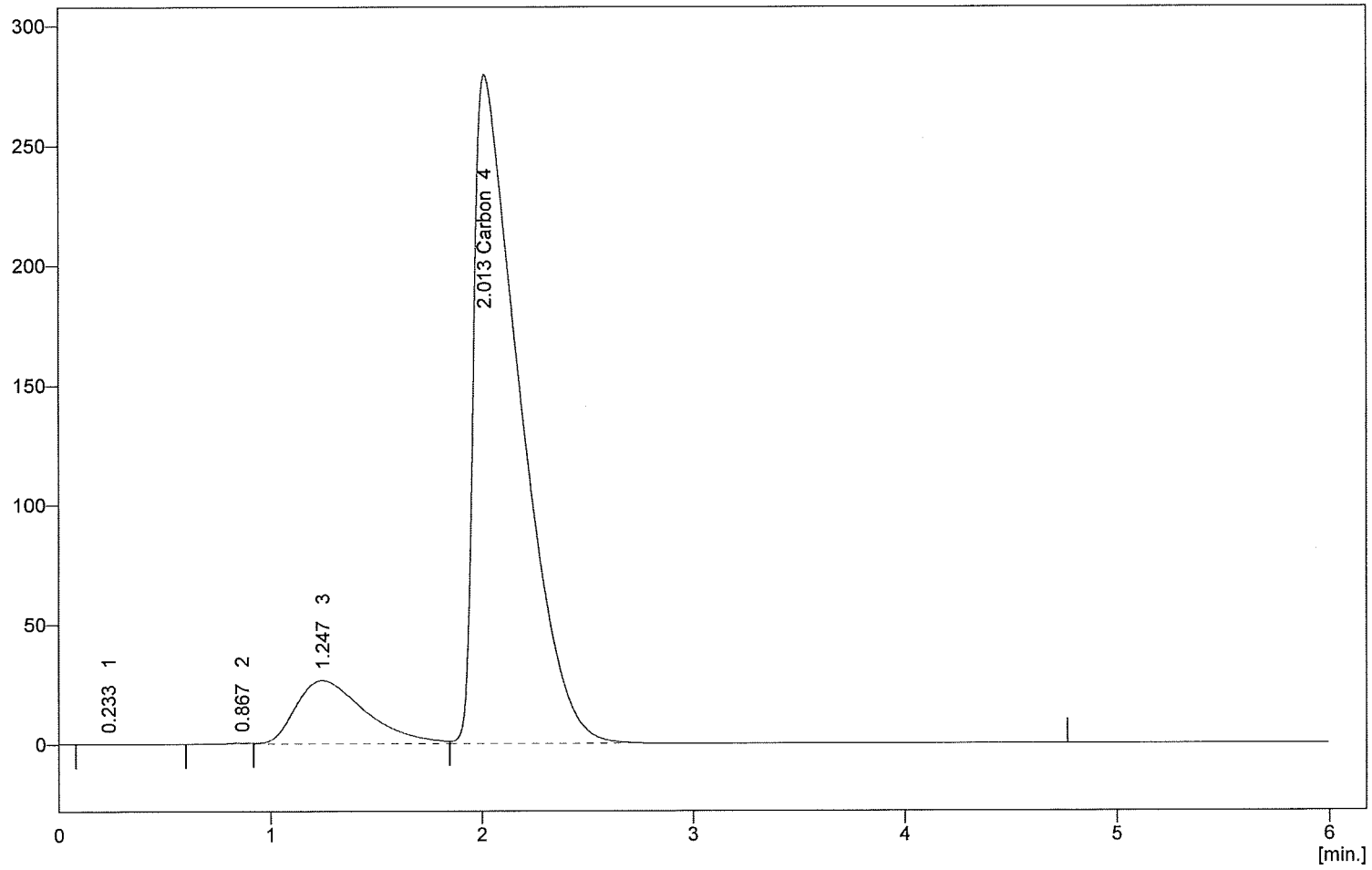


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.073	2157.994	77.7	0.250	47.0221	1.0000	Ordnr
	Total	2775.717	100.0	0.532	47.0221		

Lloyd Kahn TOC
Instrument #1

Created	: 10/28/2016 8:50:54 AM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 1.064 mg		
Sample	: STD 5	Chromatogram	: 102816Z005
Calibration	: 102816Z		

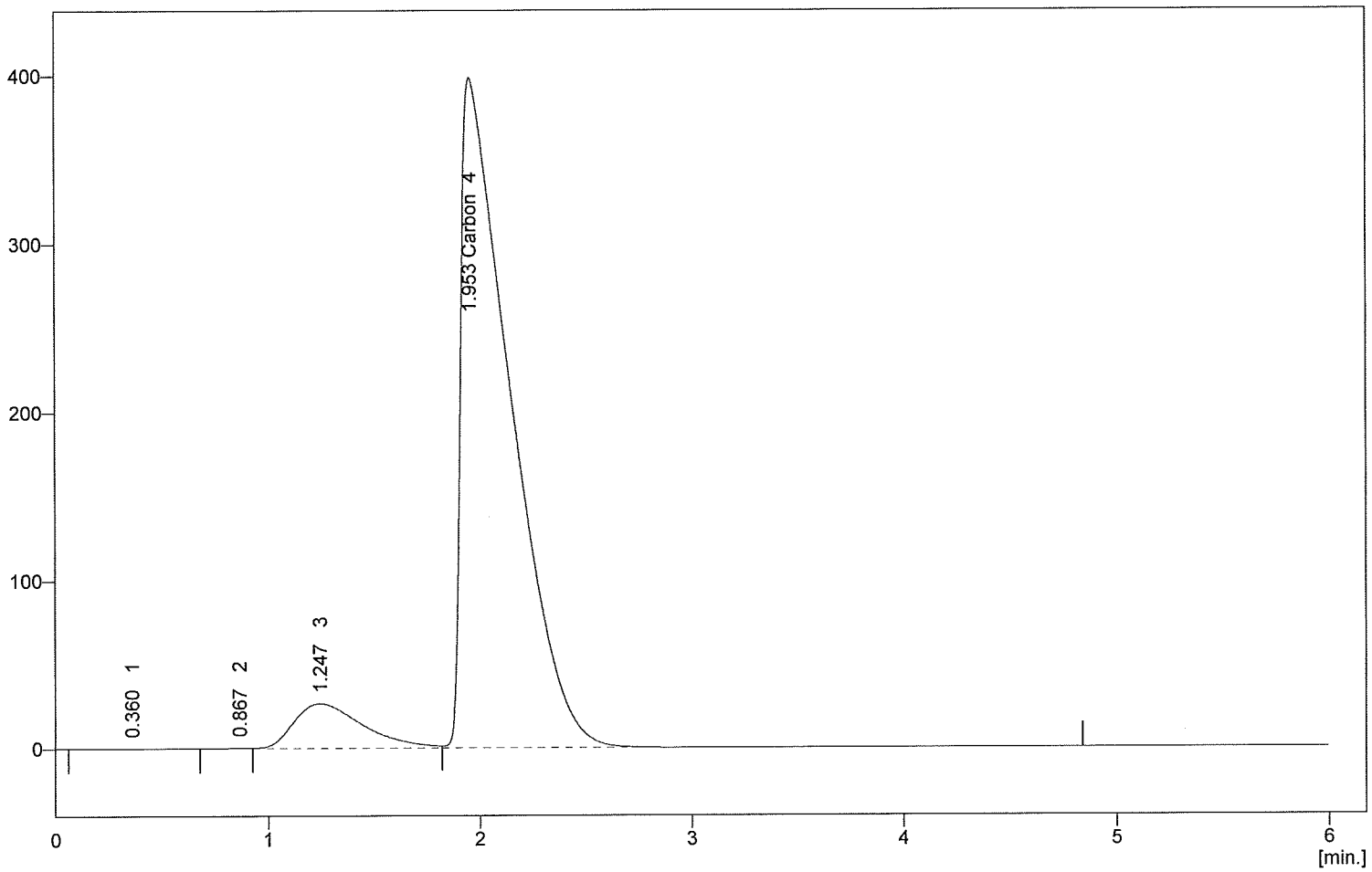


Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	2.013	4242.688	87.4	0.500	46.9949	1.0000	Ordnr
	Total	4856.889	100.0	1.064	46.9949		

Lloyd Kahn TOC
Instrument #1

Created	: 10/28/2016 8:57:29 AM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 1.596 mg		
Sample	: STD 6	Chromatogram	: 102816Z006
Calibration	: 102816Z		



Result Table - Calculation Method ESTD

Compound Name	Reten. Time [min]	Area [mV.s]	Area [%]	Weight [mg]	Weight [%]	Carbon Ratio	Peak Type
Carbon	1.953	6487.746	91.3	0.756	47.3732	1.0000	Ordnr
	Total	7102.953	100.0	1.596	47.3732		

Total Organic Carbon
by Lloyd Kahn

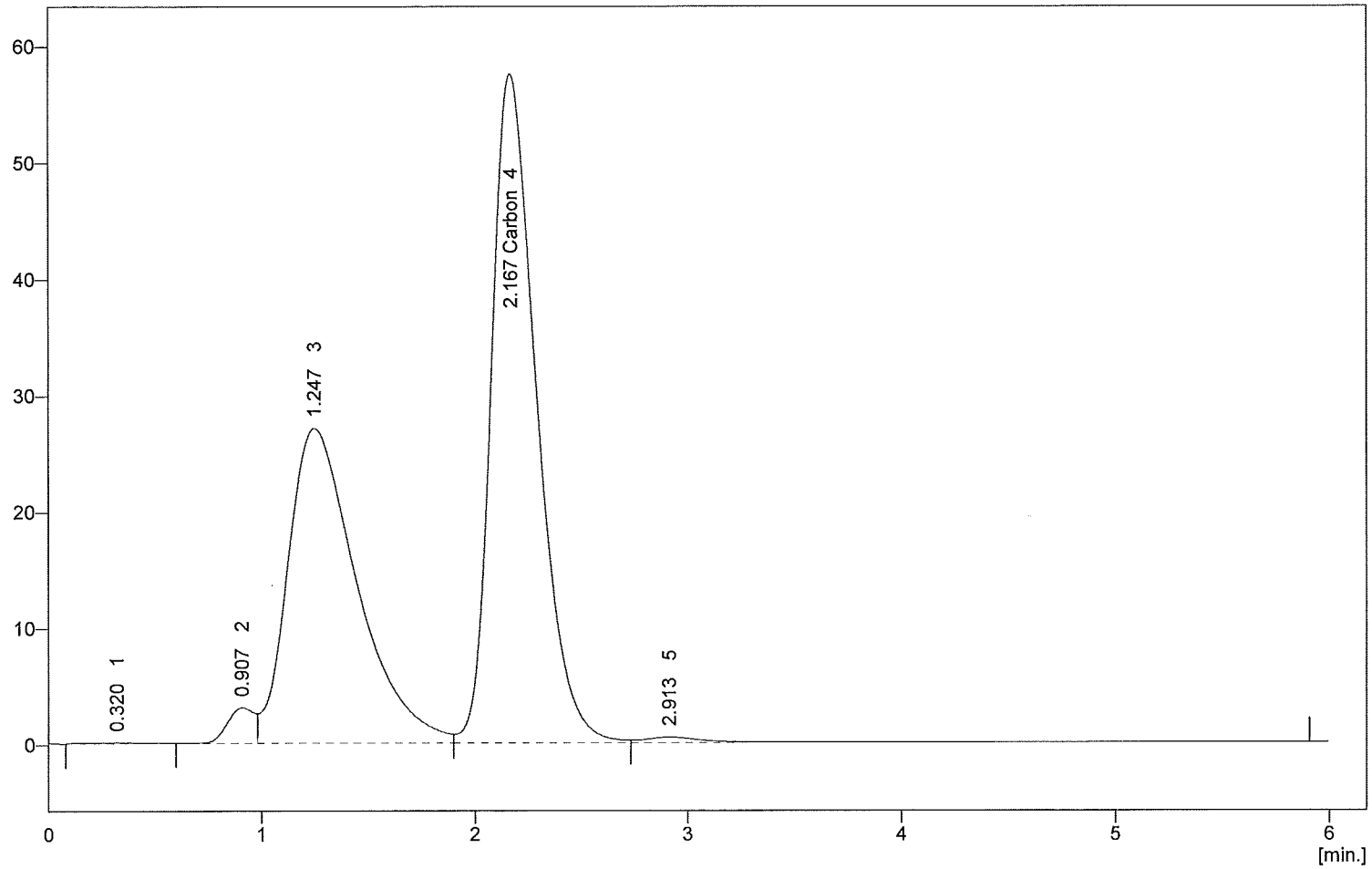
File:	102916A			Default Mass:	10	mg
Instrument ID:	1			TALS Batch:	110752	
STANDARD CURVE			**Reagent ID**	**Concentration ug/L**	**Amount uL**	
Lab ID	**Type**	**ICAL conc / ug/L**				
CAL Level 1	CAL	0	NA	0	0	
CAL Level 2	CAL	1000	941210	100	100	Date Analyzed: 10/28/16
CAL Level 3	CAL	4000	941209	1001	40	Correlation Coefficient (r) : 0.999887
CAL Level 4	CAL	25000	889816	10012	25	Criteria: (r) ≥ *0.995*
CAL Level 5	CAL	50000	889816	10012	50	Raw DataFile: 102816Z
CAL Level 6	CAL	750000	889816	10012	75	
STANDARD & REAGENT TRACEABILITY:						
ICAL/CCV Container ID:	889816			LCS Container ID:	895118	
ICV Container ID:	895118			1:19 Phosphoric Acid Container ID:	977837	
Matrix Spike Container ID:	NA					
PREPARATION INFORMATION:						
Date:	10/29/16	Start Time:	17:58	Balance ID:	1123452701	
Analyst:	KSH	Stop Time:	21:25	Oven ID:	2	

Drop	Weight	Sample ID	Carbon (%)	Carbon (mg/Kg)	Average Carbon (mg/Kg)	Sample RPD or RSD	RL (mg/Kg)
1	10.2	ICV	0.9364	9364.00			
2	10	ICB	0	0.00			
3	10	CCV	3.3779	33779.00			
4	10	CCB	0	0.00			
5	10	MB	0.0131	131.00	147.50	22	U1000
6	10	MB	0.0164	164.00			
7	9	LCS	0.8751	8751.00	8409.00	4	1050
8	10.6	LCS	0.8013	8013.00			
9	9.3	LCS	0.8534	8534.00			
10	9.5	LCS	0.8338	8338.00			
11	10	240-71037-A-27	0.2619	2619.00			
12	9.9	480-108283-C-1	6.1598	61598.00			
13	9.5	480-108283-C-2	3.5415	35415.00			
14	10.4	480-108283-C-3	3.8722	38722.00			
15	10.1	480-108283-C-4	6.0645	60645.00			
16	9.3	480-108283-C-5	3.2327	32327.00			
17	10.3	480-108283-C-6	3.5252	35252.00			
18	9.5	480-108283-C-7	4.6382	46382.00			
19	9.6	480-108283-C-8	5.0969	50969.00			
20	9.8	480-108283-C-9	4.5174	45174.00			
21	9.2	480-108283-C-10	3.4306	34306.00			
22	9.1	480-108283-C-11	3.7952	37952.00			
23	9.9	480-108283-C-12	4.363	43630.00			
24	9.4	480-108283-C-13	2.5209	25209.00			
25	10	CCV	3.4417	34417.00			
26	10	CCB	0	0.00			
27	9.6	480-108283-C-14	2.7349	27349.00			
28	9.3	480-108283-C-15	2.0058	20058.00			
29	9	480-108283-C-16	4.5248	45248.00			
30	9.6	200-35736-A-13	3.849	38490.00			
31	10	CCV	3.4788	34788.00			
32	10	CCB	0	0.00			

Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 5:58:32 PM
Project : WORK1
Weight : 10.2 mg
Sample : ICV
Calibration : 102916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A001



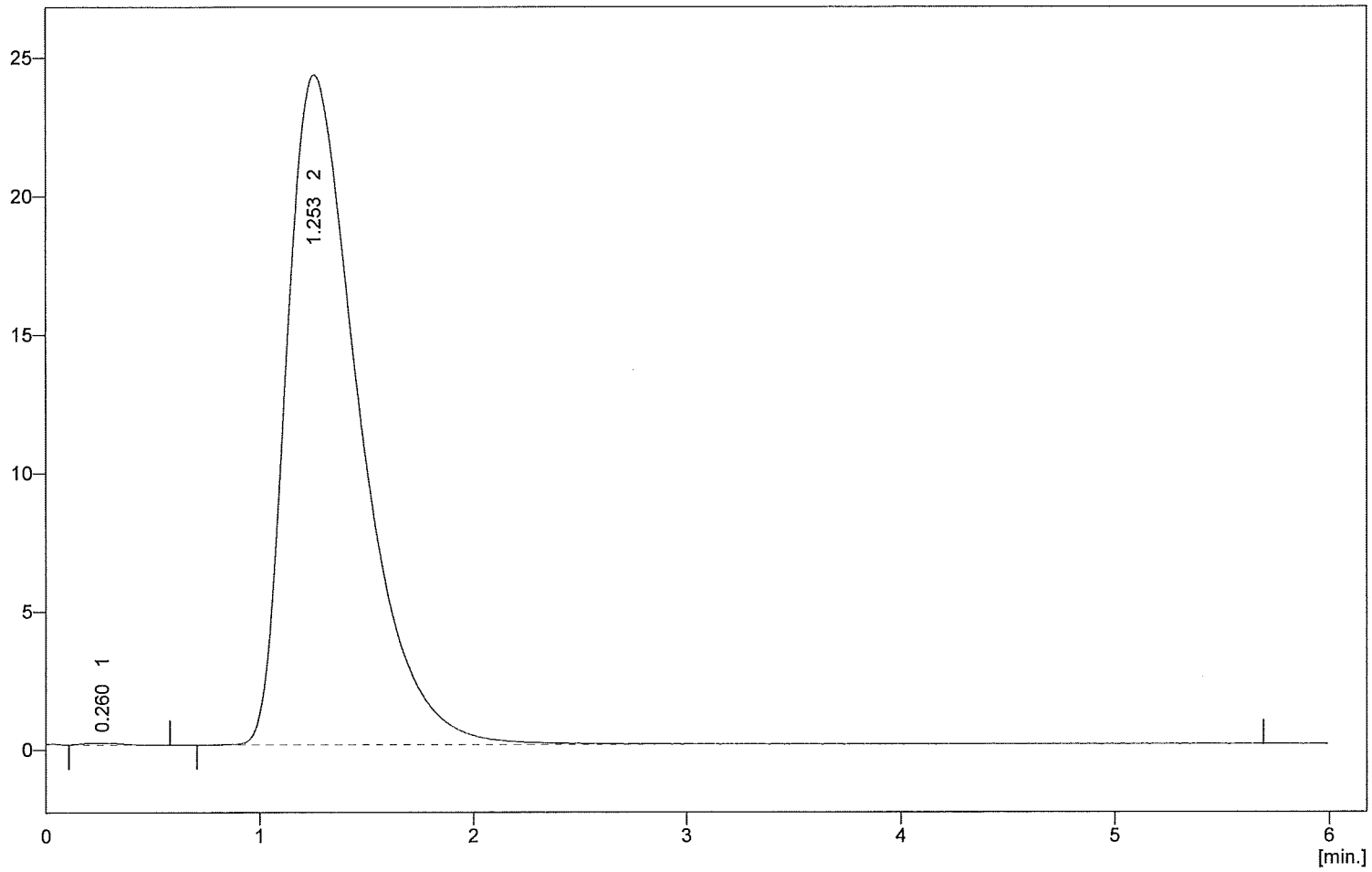
Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.167	845.737	56.4	0.096	0.9364	1.0000	Ordnr
	Total	1498.857	100.0	10.200	0.9364		

Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 6:05:12 PM
Project : WORK1
Weight : 10 mg
Sample : ICB
Calibration : 102916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A002

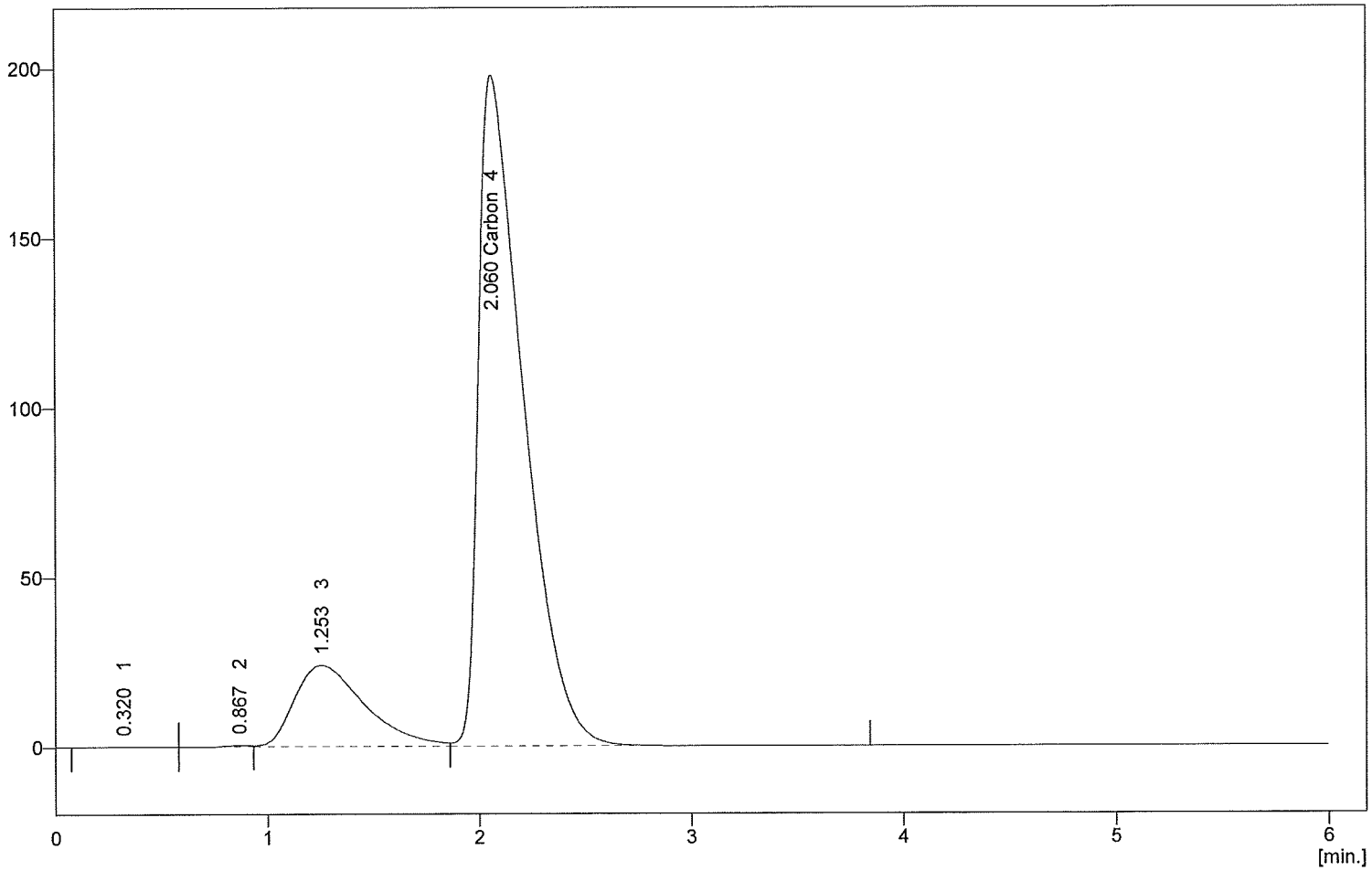


Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.061						Ordnr
	Total	574.110	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #1

Created	: 10/29/2016 6:11:45 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 10 mg		
Sample	: CCV	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A003
Calibration	: 102916A		



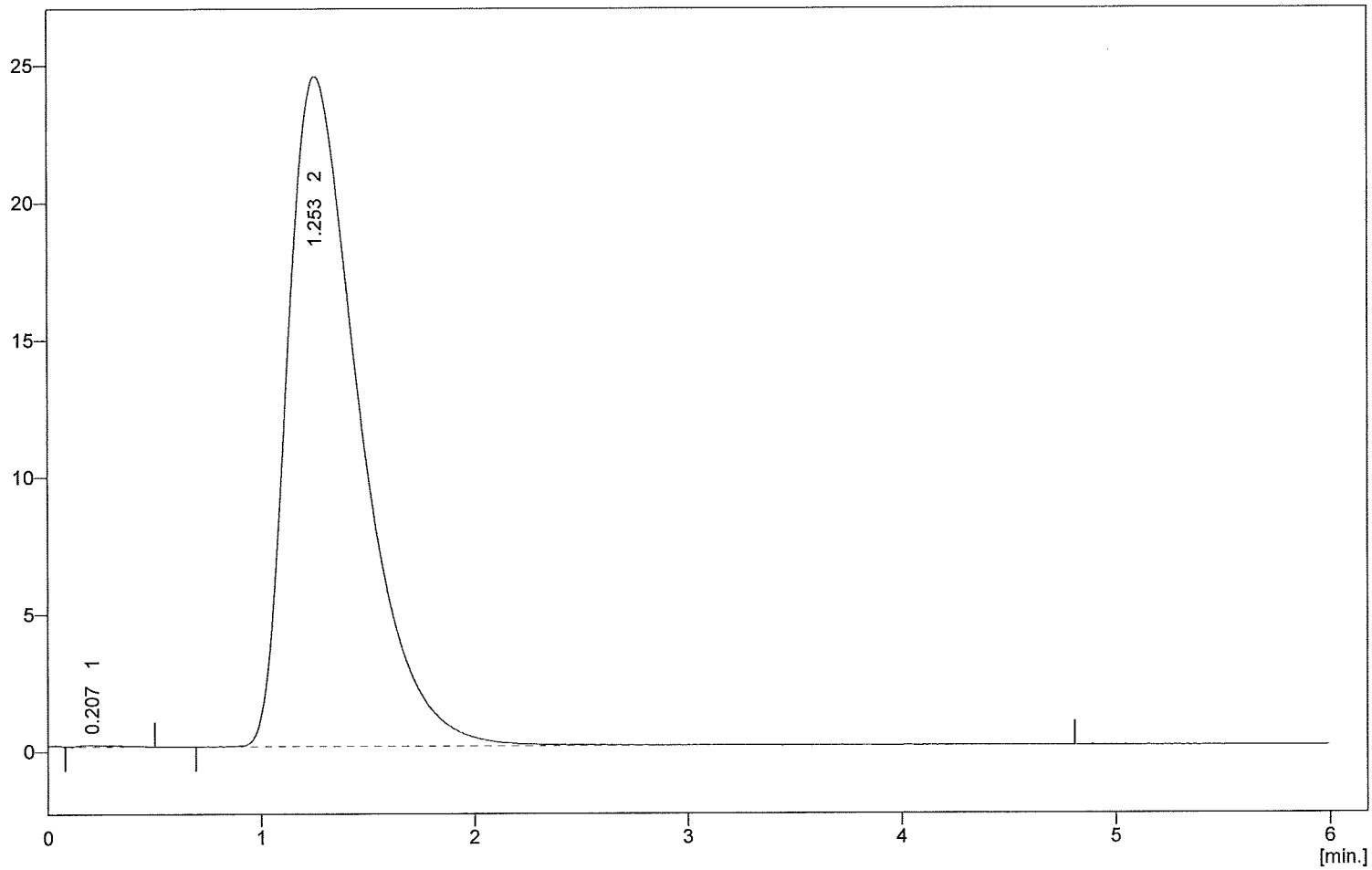
Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.060	2915.045	83.9	0.338	3.3779	1.0000	Ordnr
	Total	3476.044	100.0	10.000	3.3779		

Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 6:18:18 PM
Project : WORK1
Weight : 10 mg
Sample : CCB
Calibration : 102916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A004



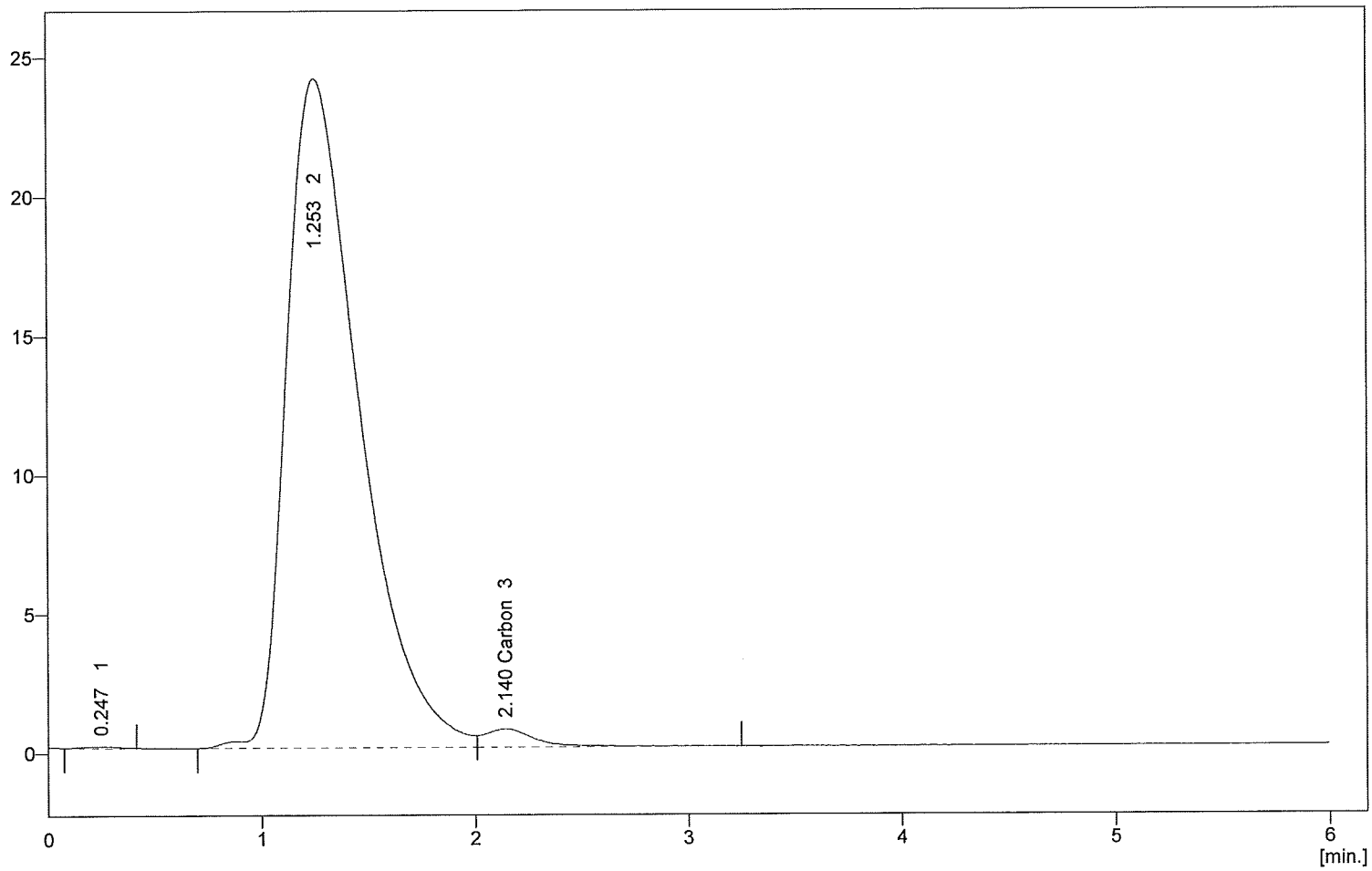
Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.061						Ordnr
	Total	576.984	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 6:24:51 PM
Project : WORK1
Weight : 10 mg
Sample : MB
Calibration : 102916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A005



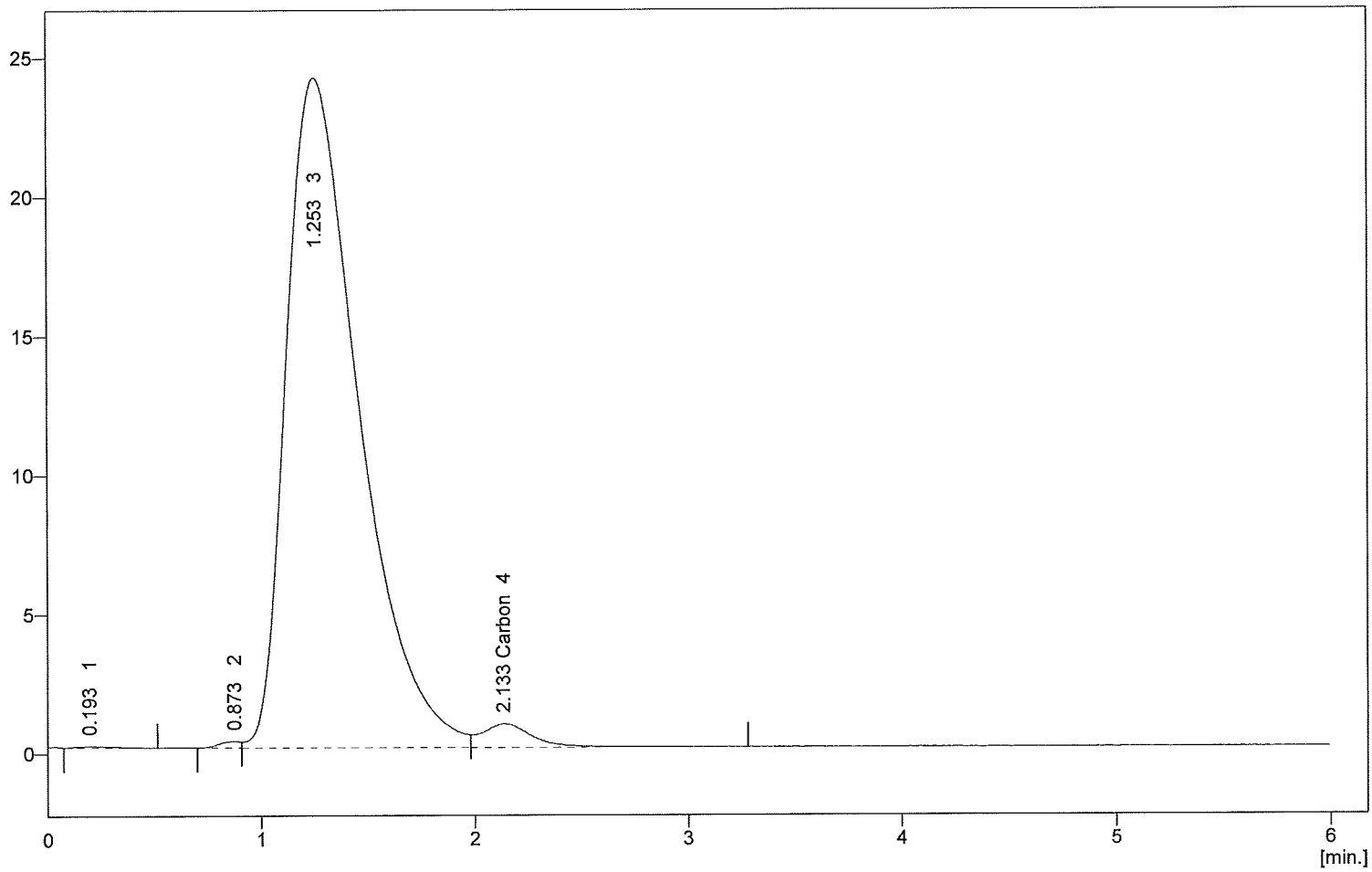
Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.140	11.250	1.9	0.001	0.0131	1.0000	Free
	Total	580.772	100.0	10.000	0.0131		

Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 6:31:24 PM
Project : WORK1
Weight : 10 mg
Sample : MB
Calibration : 102916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A006



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.133	14.054	2.4	0.002	0.0164	1.0000	Free
	Total	583.937	100.0	10.000	0.0164		

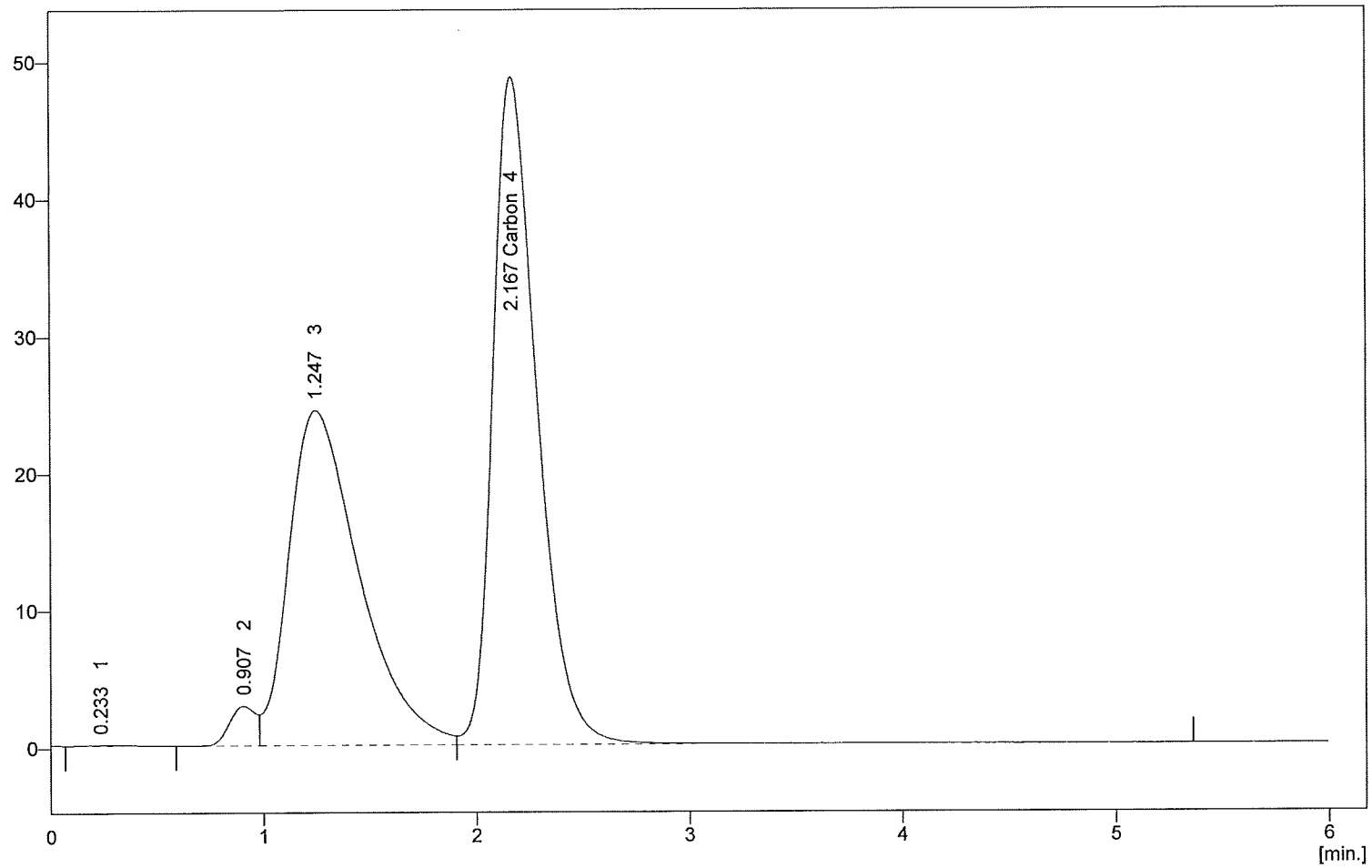
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 6:37:58 PM
Project : WORK1
Weight : 9 mg
Sample : LCS

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A007



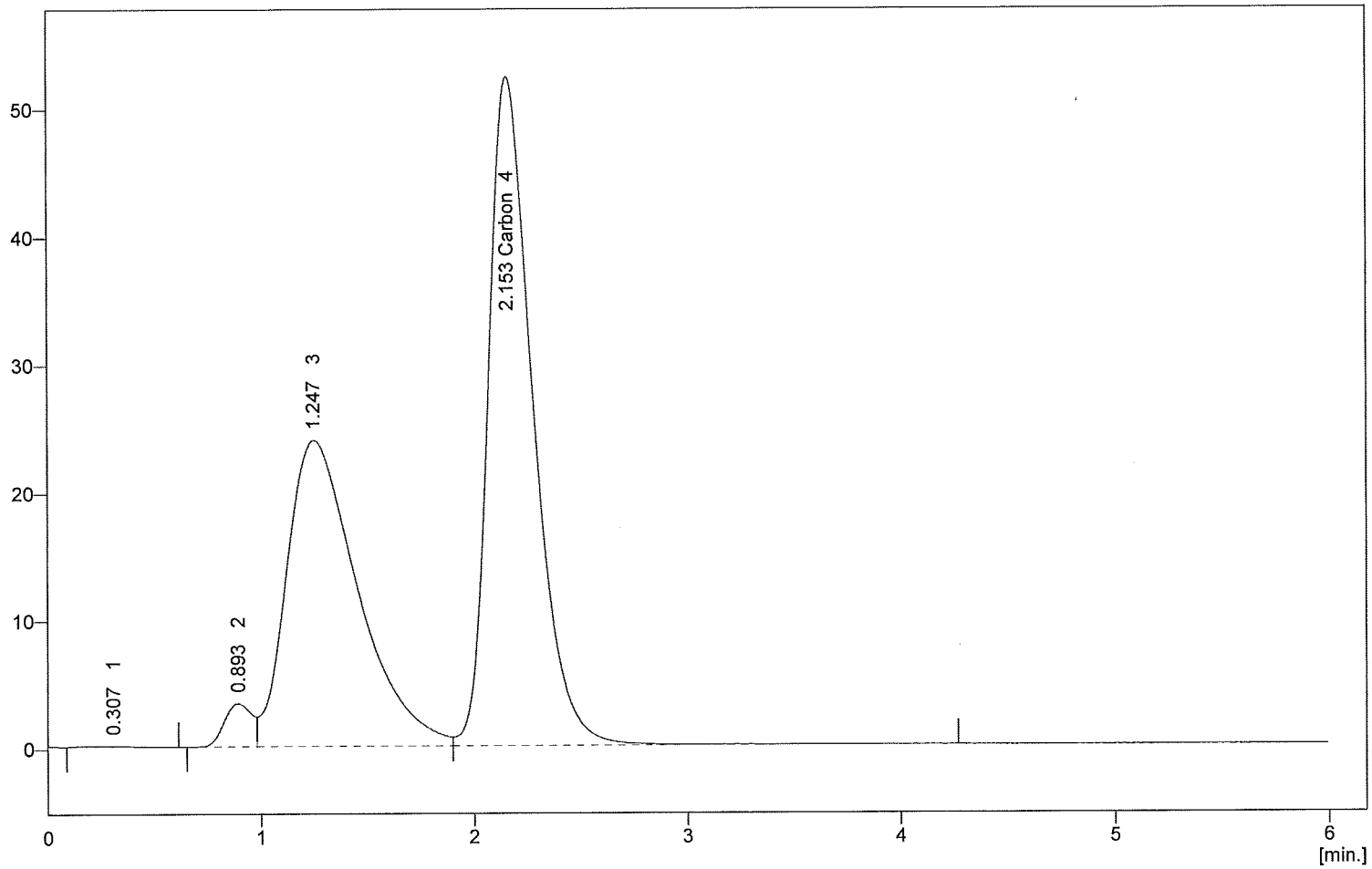
Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.167	702.602	54.4	0.079	0.8751	1.0000	Ordnr
	Total	1292.471	100.0	9.000	0.8751		

Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 6:44:32 PM
Project : WORK1
Weight : 10.6 mg
Sample : LCS
Calibration : 102916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A008



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.153	755.387	56.3	0.085	0.8013	1.0000	Ordnr
	Total	1341.730	100.0	10.600	0.8013		

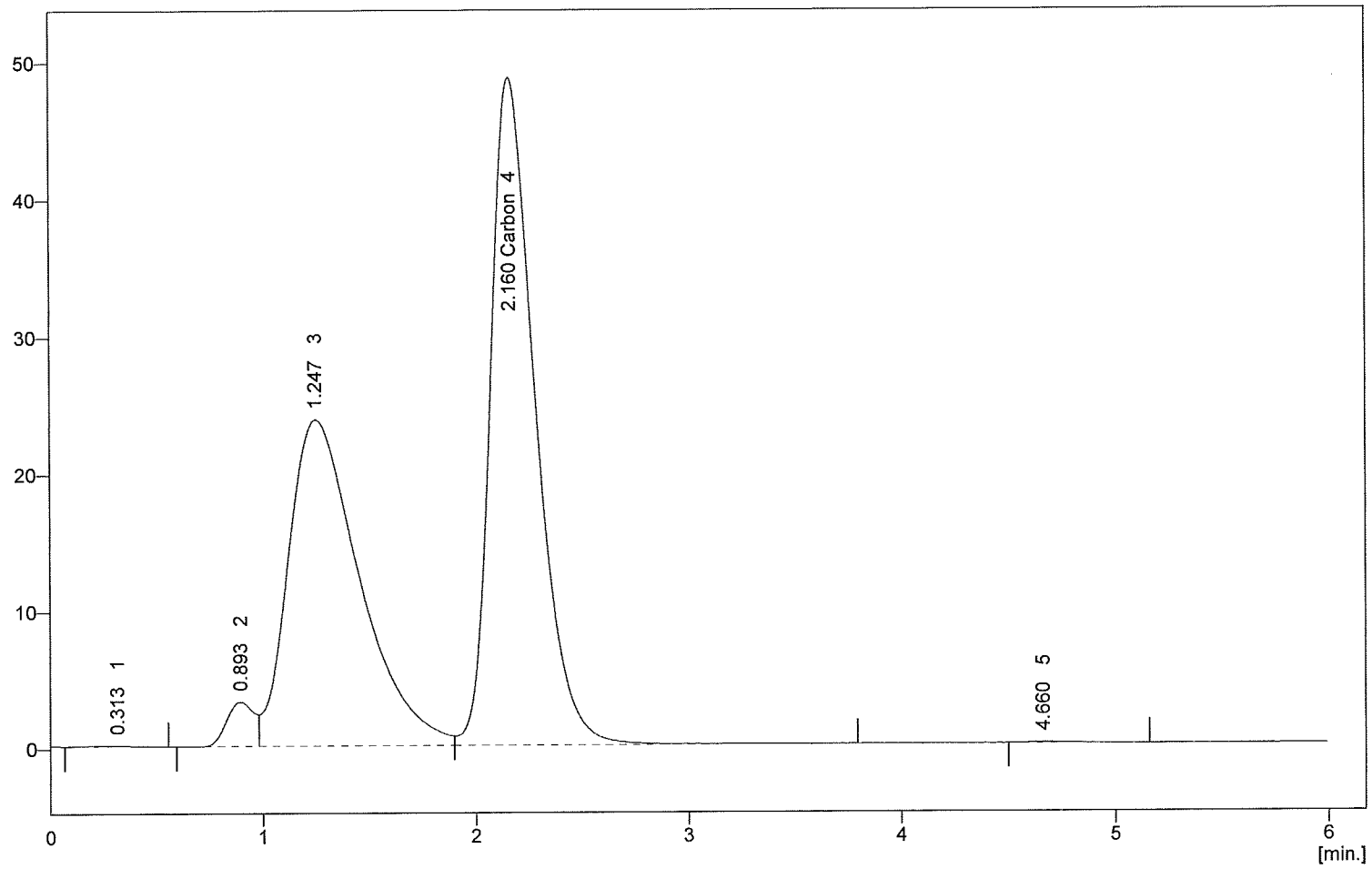
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 6:51:06 PM
Project : WORK1
Weight : 9.3 mg
Sample : LCS

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A009



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.160	707.836	54.7	0.079	0.8534	1.0000	Ordnr
	Total	1293.407	100.0	9.300	0.8534		

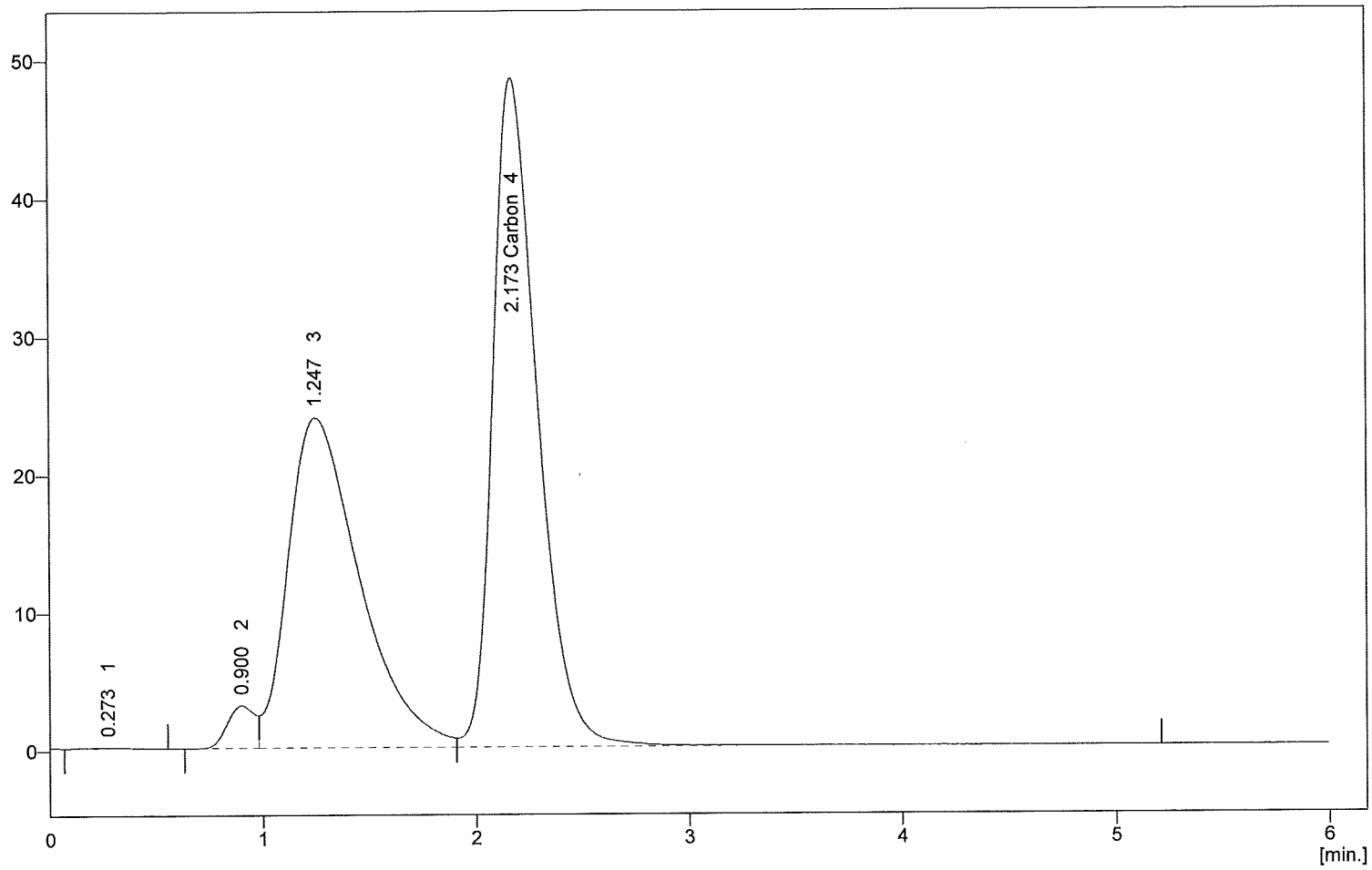
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 6:57:44 PM
Project : WORK1
Weight : 9.5 mg
Sample : LCS

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A010



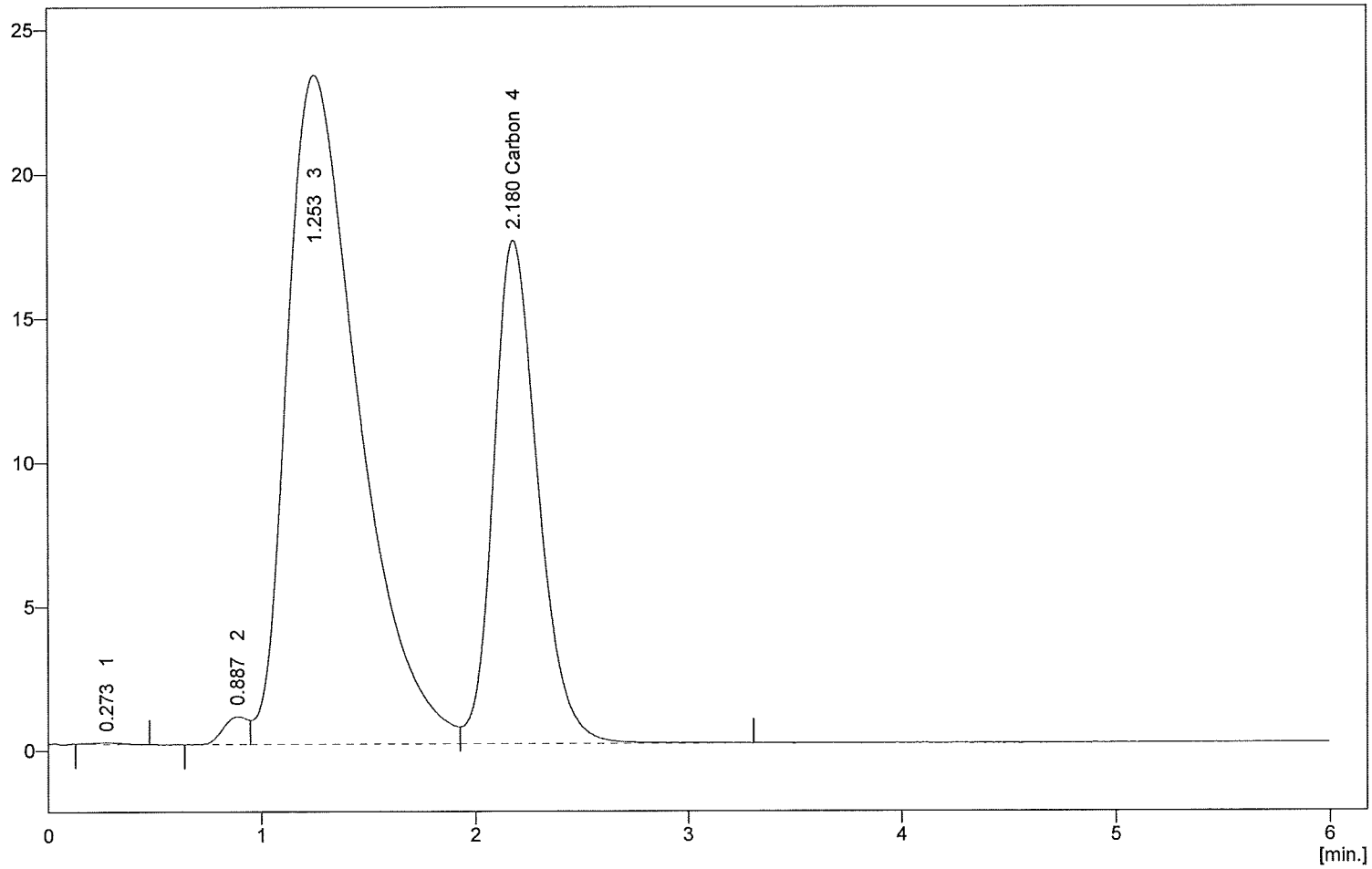
Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.173	706.465	54.7	0.079	0.8338	1.0000	Ordnr
	Total	1291.213	100.0	9.500	0.8338		

Lloyd Kahn TOC
Instrument #1

Created	: 10/29/2016 7:04:22 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 10 mg		
Sample	: 240-71037-~~B~~A-27	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A011
Calibration	: 102916A		

KSH 10/31/16



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.180	253.591	31.7	0.026	0.2619	1.0000	Ordnr
	Total	800.677	100.0	10.000	0.2619		

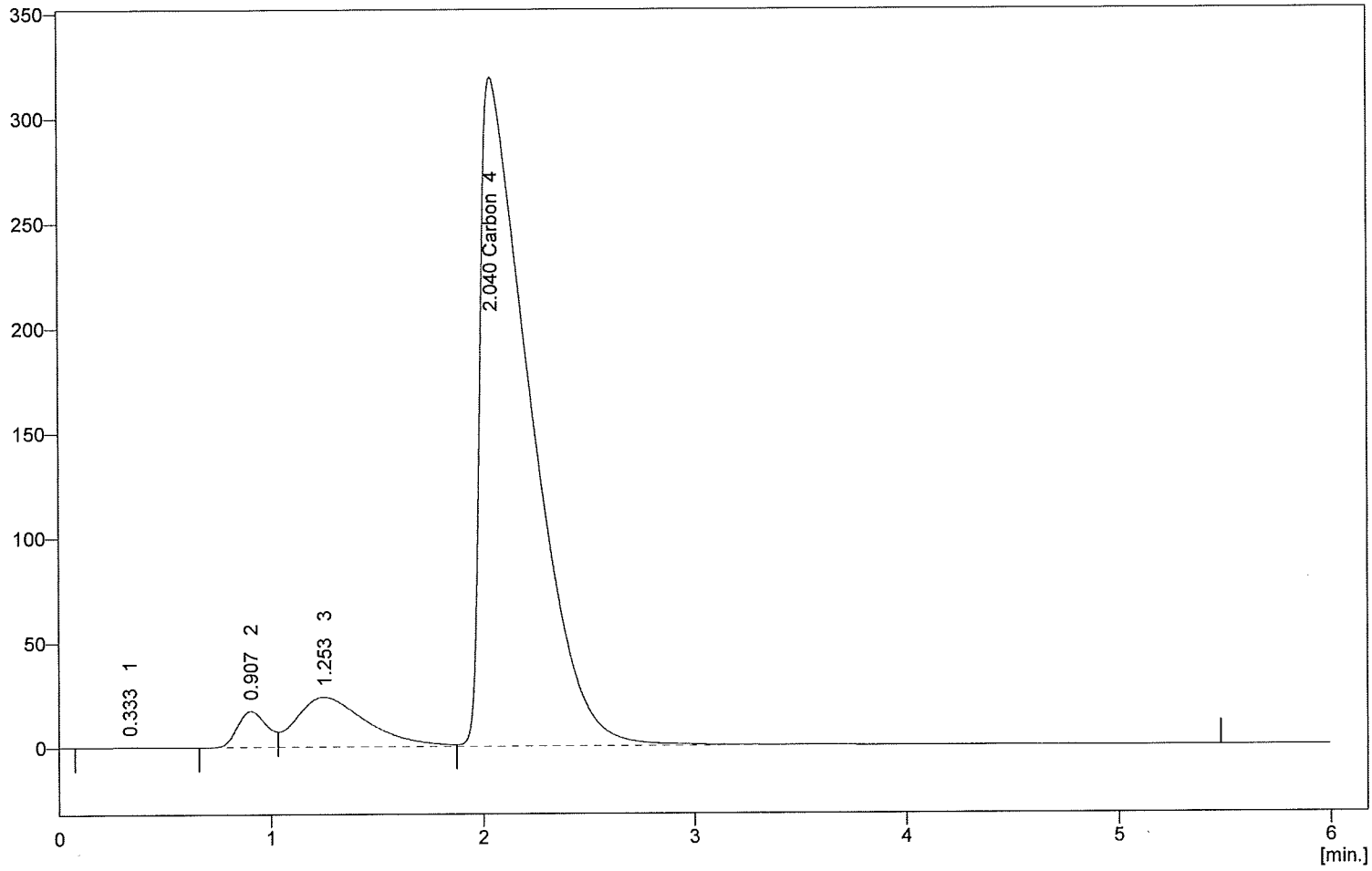
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 7:10:58 PM
Project : WORK1
Weight : 9.9 mg
Sample : 480-108283-C-1

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A012



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.040	5238.548	87.9	0.610	6.1598	1.0000	Ordnr
	Total	5956.689	100.0	9.900	6.1598		

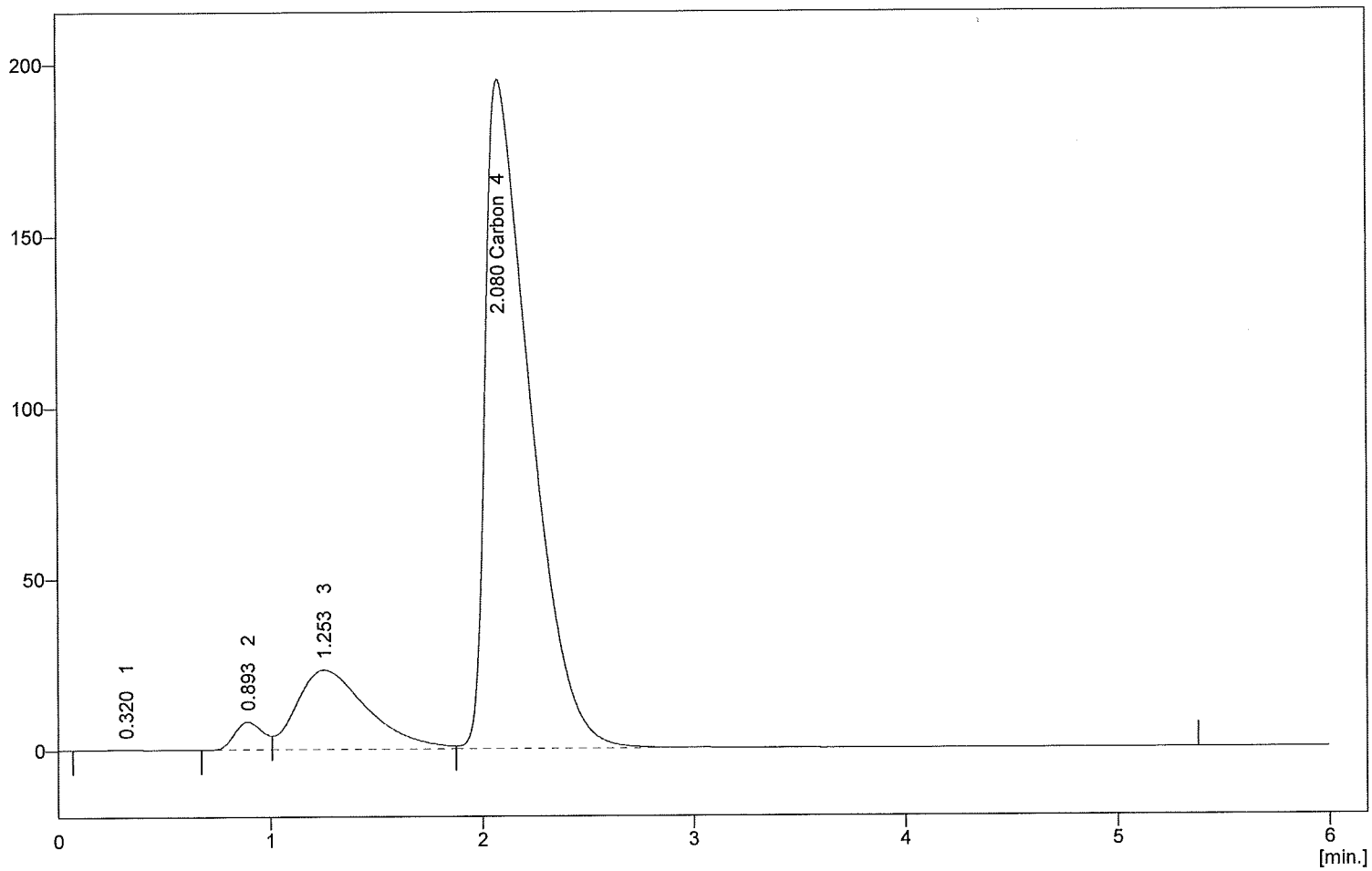
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 7:17:37 PM
Project : WORK1
Weight : 9.5 mg
Sample : 480-108283-C-2

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A013



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.080	2903.583	82.5	0.336	3.5415	1.0000	Ordnr
	Total	3521.353	100.0	9.500	3.5415		

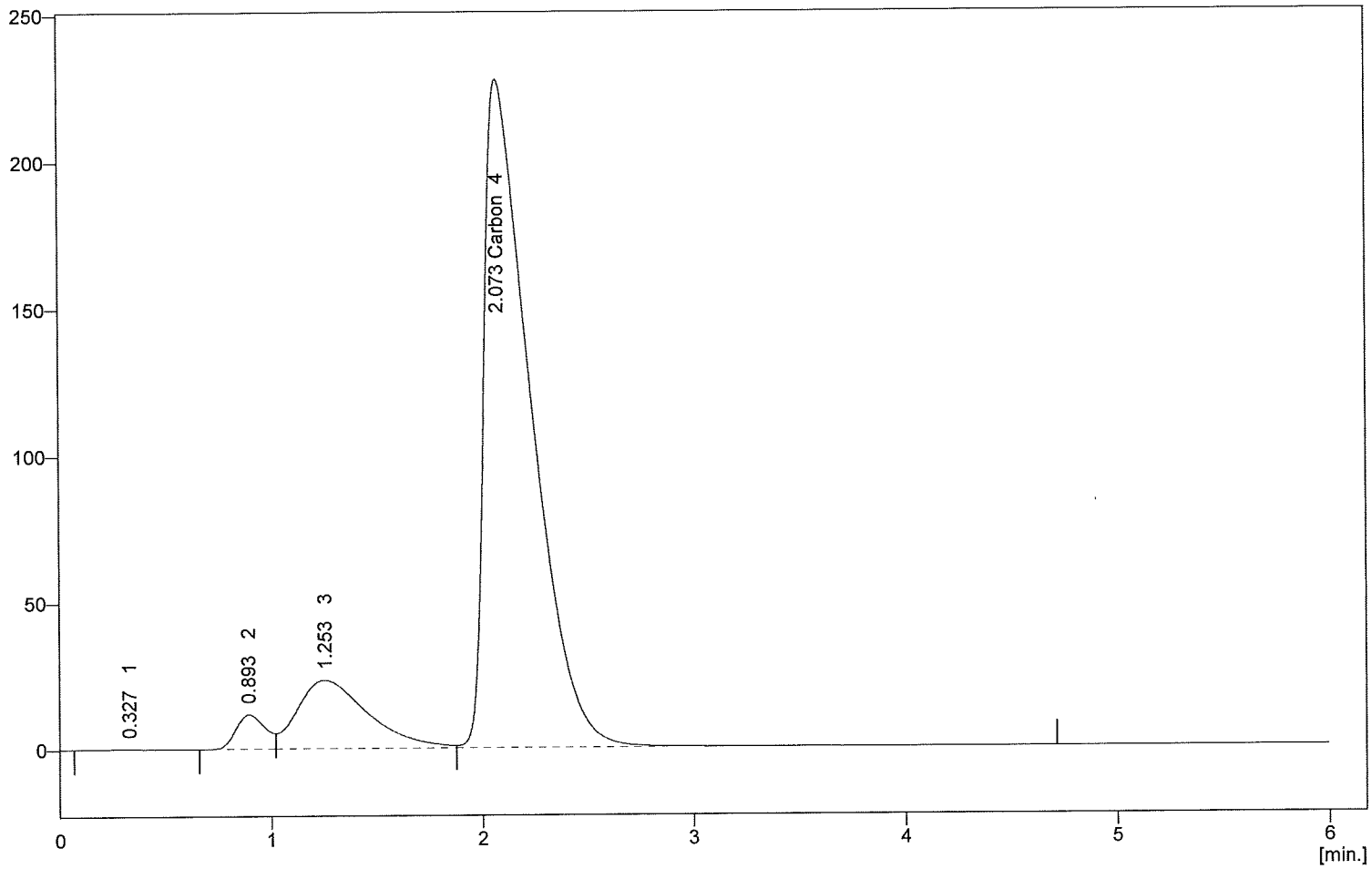
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 7:24:17 PM
Project : WORK1
Weight : 10.4 mg
Sample : 480-108283-C-3

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A014



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.073	3469.527	84.1	0.403	3.8722	1.0000	Ordnr
	Total	4126.705	100.0	10.400	3.8722		

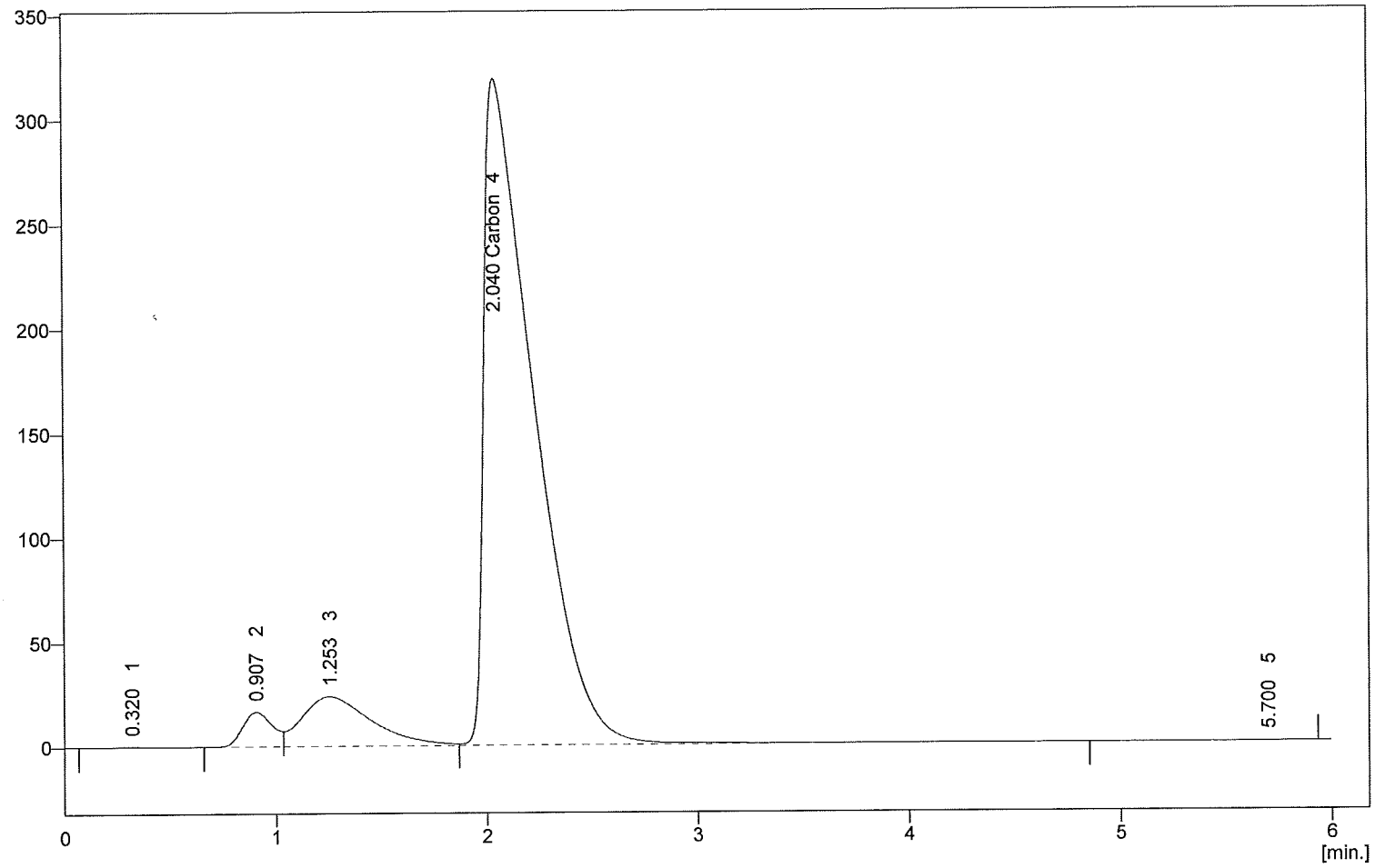
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 7:30:55 PM
Project : WORK1
Weight : 10.1 mg
Sample : 480-108283-C-4

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A015



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.040	5261.549	88.1	0.613	6.0645	1.0000	Ordnr
	Total	5970.522	100.0	10.100	6.0645		

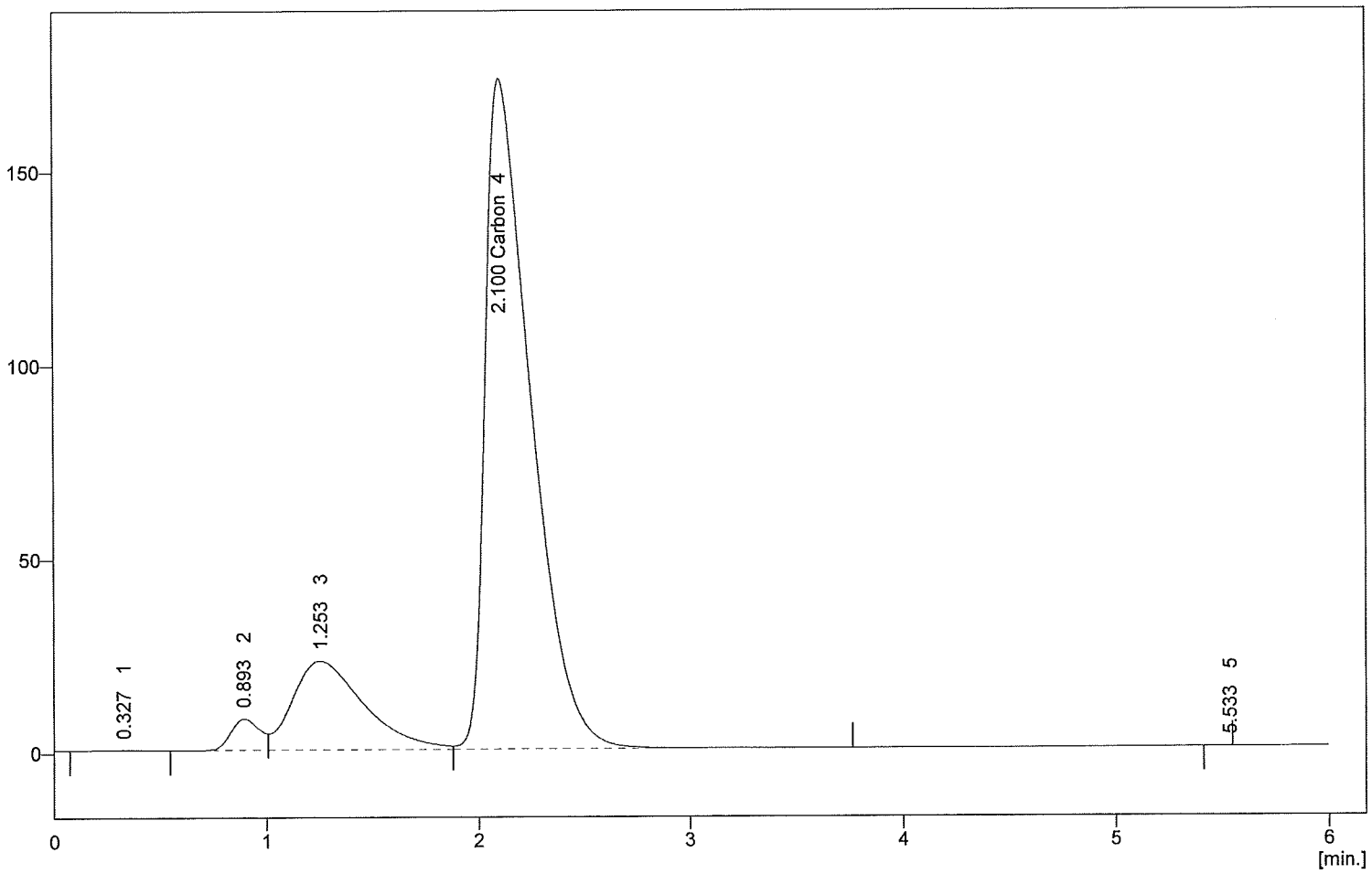
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 7:37:33 PM
Project : WORK1
Weight : 9.3 mg
Sample : 480-108283-C-5

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A016



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.100	2597.809	80.9	0.301	3.2327	1.0000	Ordnr
	Total	3210.123	100.0	9.300	3.2327		

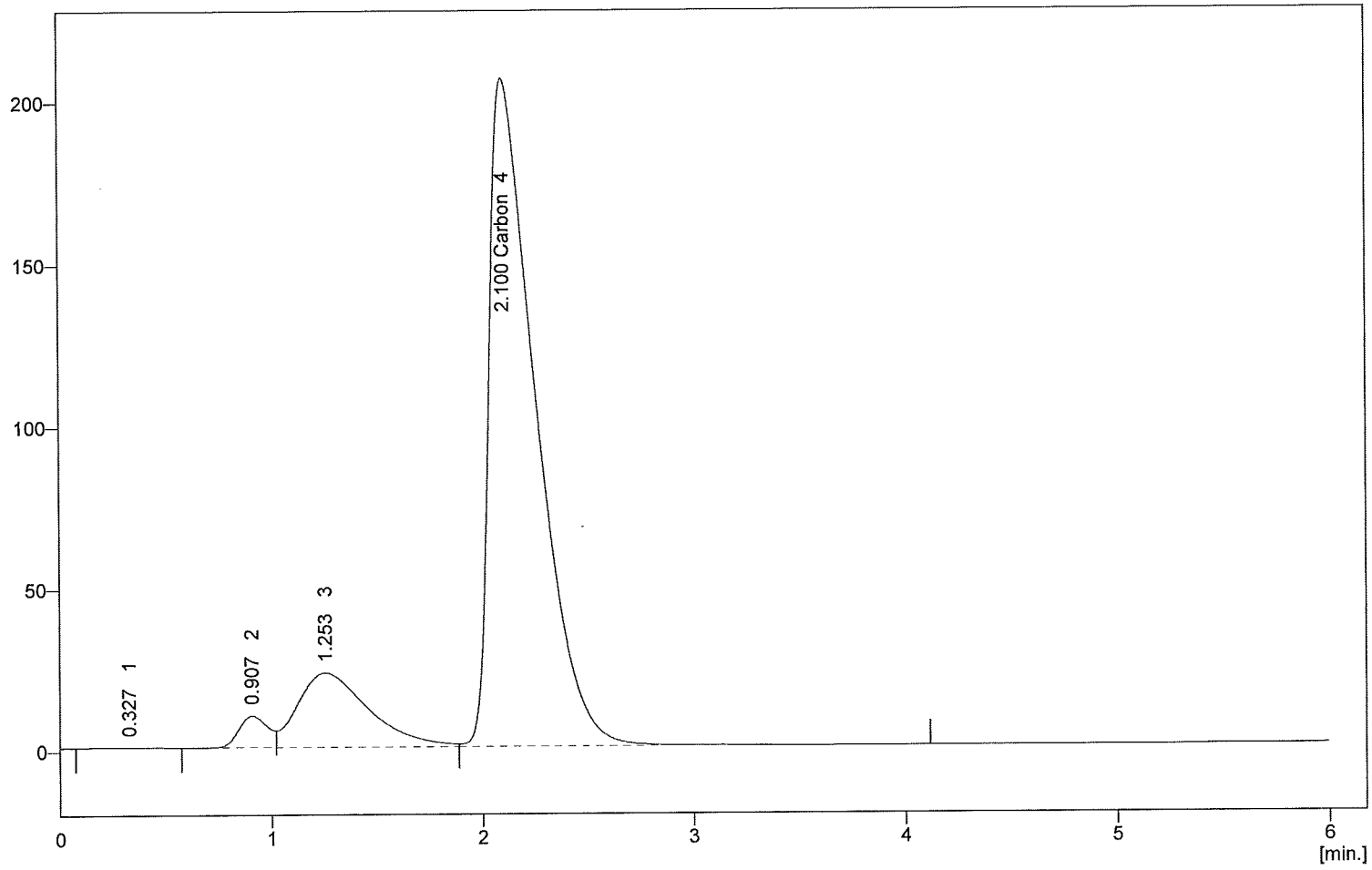
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 7:44:12 PM
Project : WORK1
Weight : 10.3 mg
Sample : 480-108283-C-6

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A017



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.100	3131.181	83.3	0.363	3.5252	1.0000	Ordnr
	Total	3761.159	100.0	10.300	3.5252		

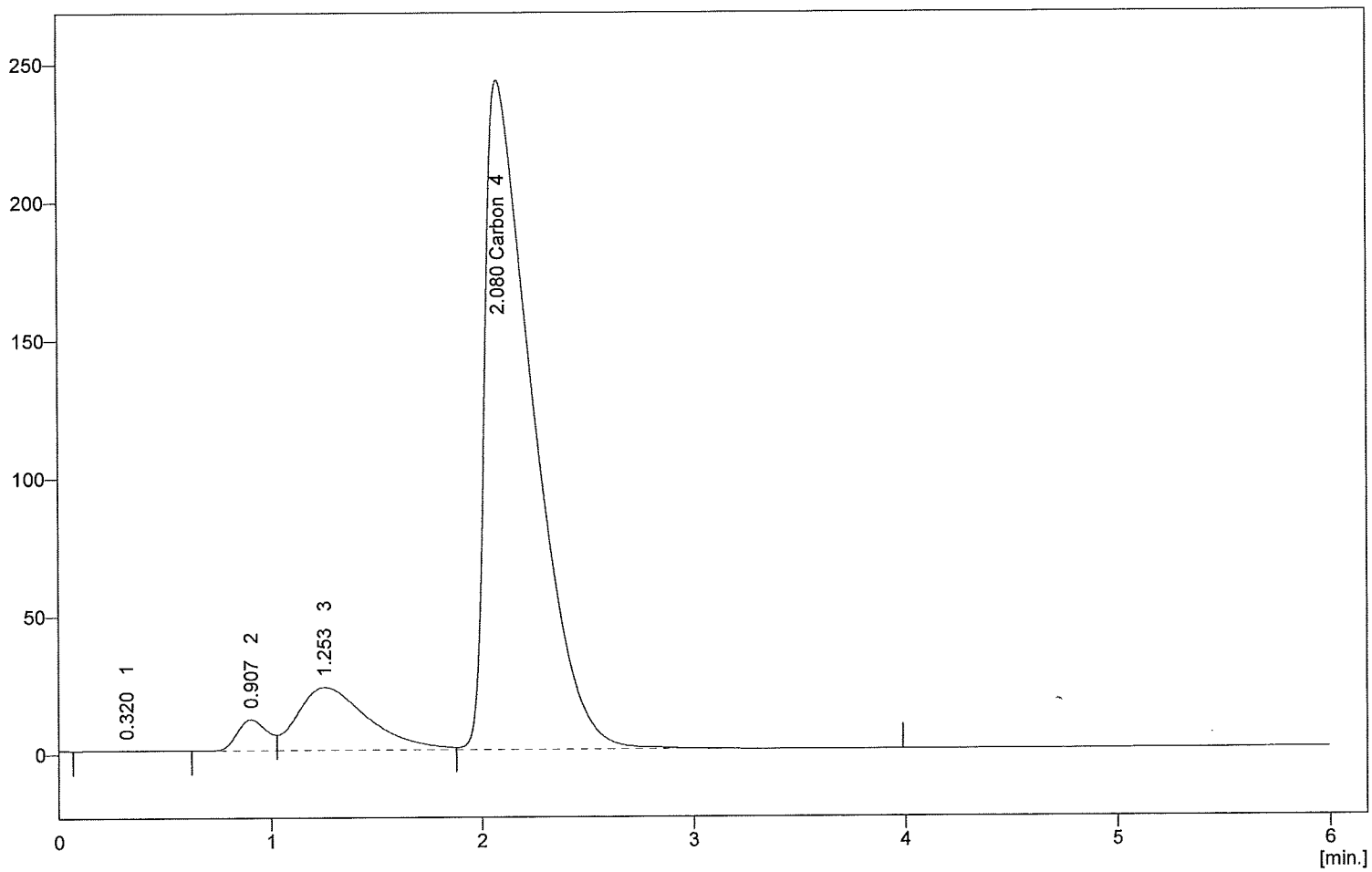
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 7:50:54 PM
Project : WORK1
Weight : 9.5 mg
Sample : 480-108283-C-7

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A018



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.080	3793.423	85.4	0.441	4.6382	1.0000	Ordnr
	Total	4440.620	100.0	9.500	4.6382		

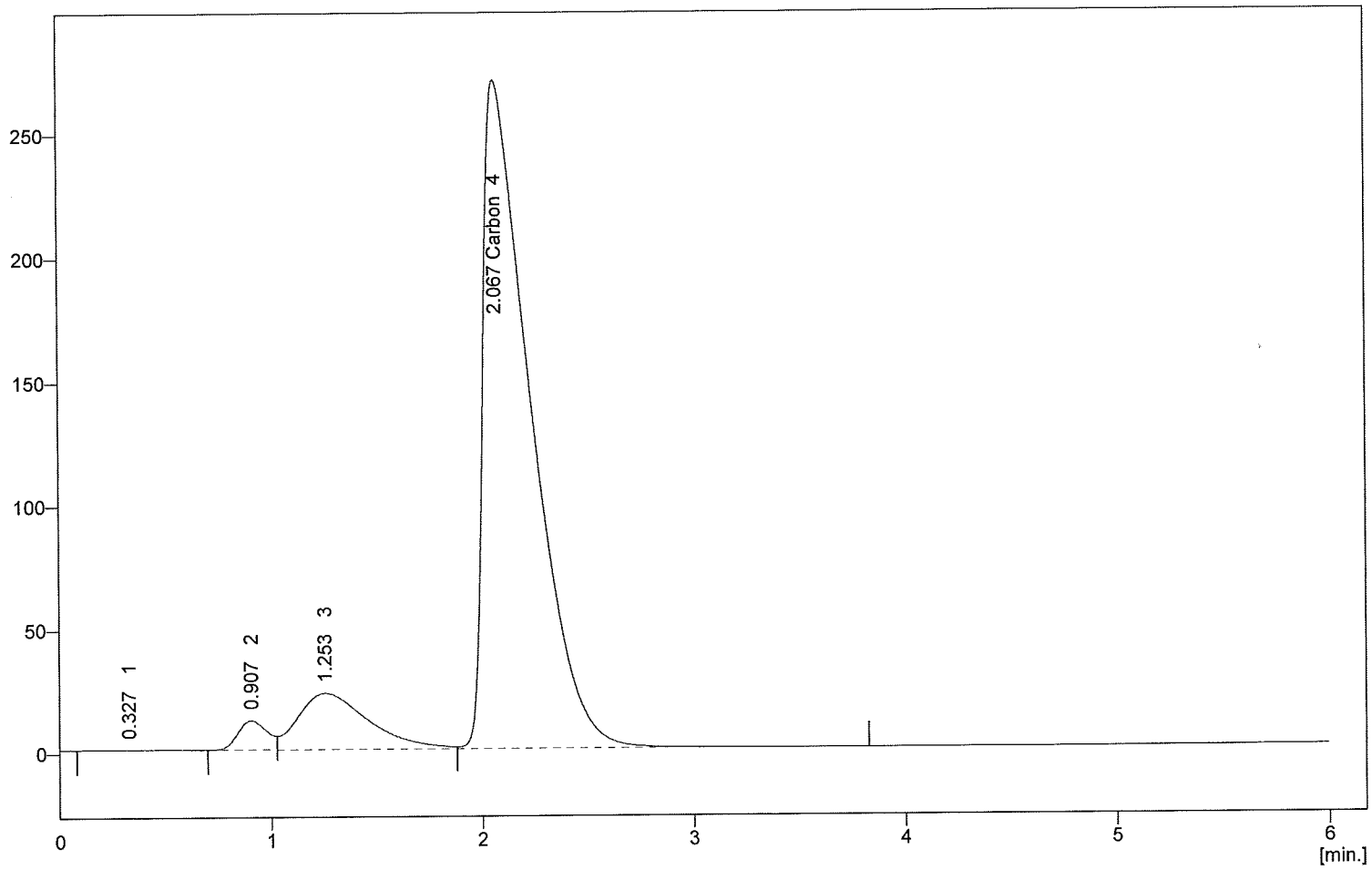
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 7:57:34 PM
Project : WORK1
Weight : 9.6 mg
Sample : 480-108283-C-8

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A019



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.067	4209.193	86.8	0.489	5.0969	1.0000	Ordnr
	Total	4849.815	100.0	9.600	5.0969		

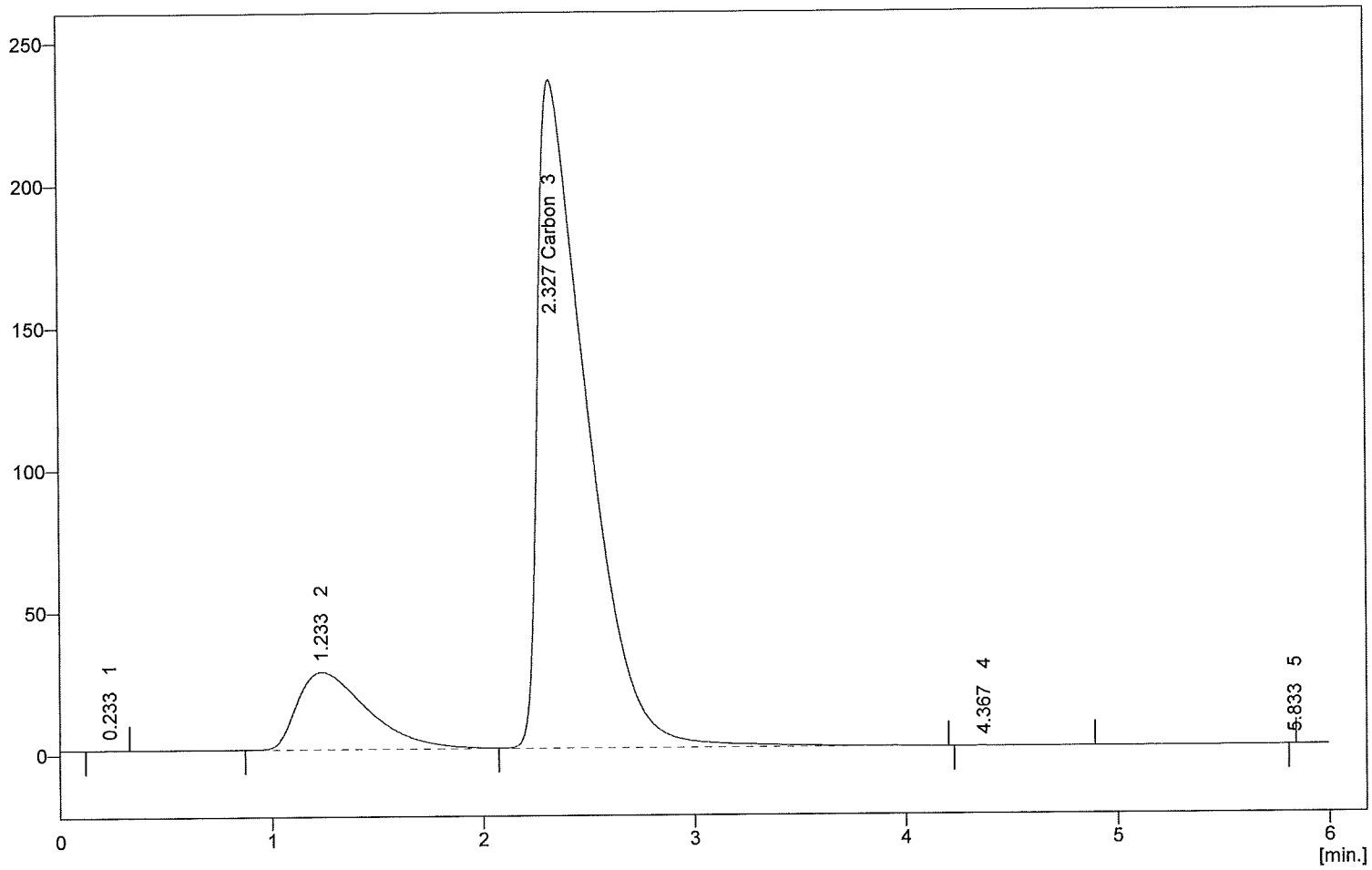
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 8:04:18 PM
Project : WORK1
Weight : 9.8 mg
Sample : 480-108283-C-9

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A020



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.327	3811.169	85.7	0.443	4.5174	1.0000	Ordnr
	Total	4446.954	100.0	9.800	4.5174		

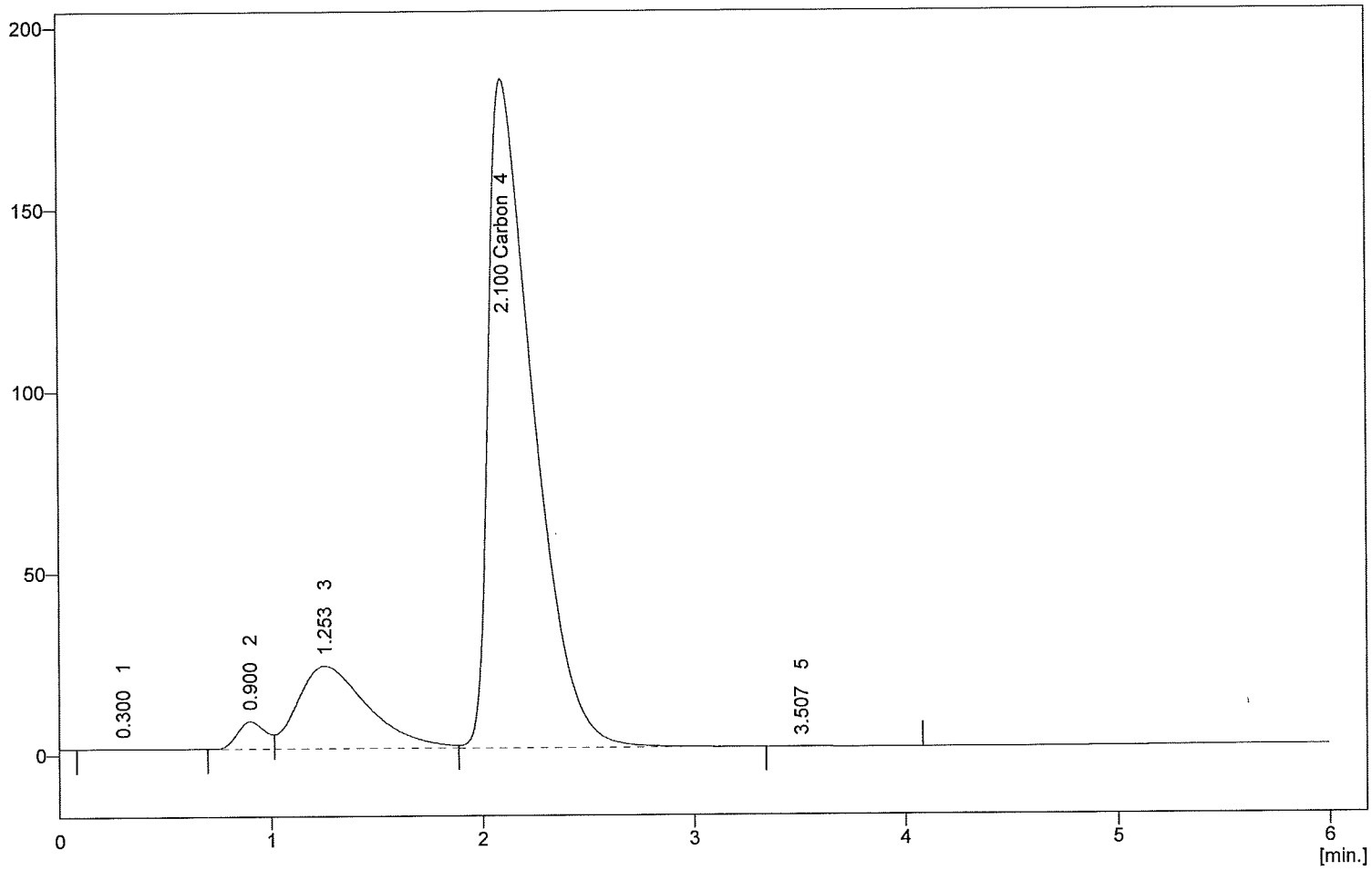
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 8:10:59 PM
Project : WORK1
Weight : 9.2 mg
Sample : 480-108283-C-10

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A021



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.100	2725.657	82.0	0.316	3.4306	1.0000	Ordnr
	Total	3325.110	100.0	9.200	3.4306		

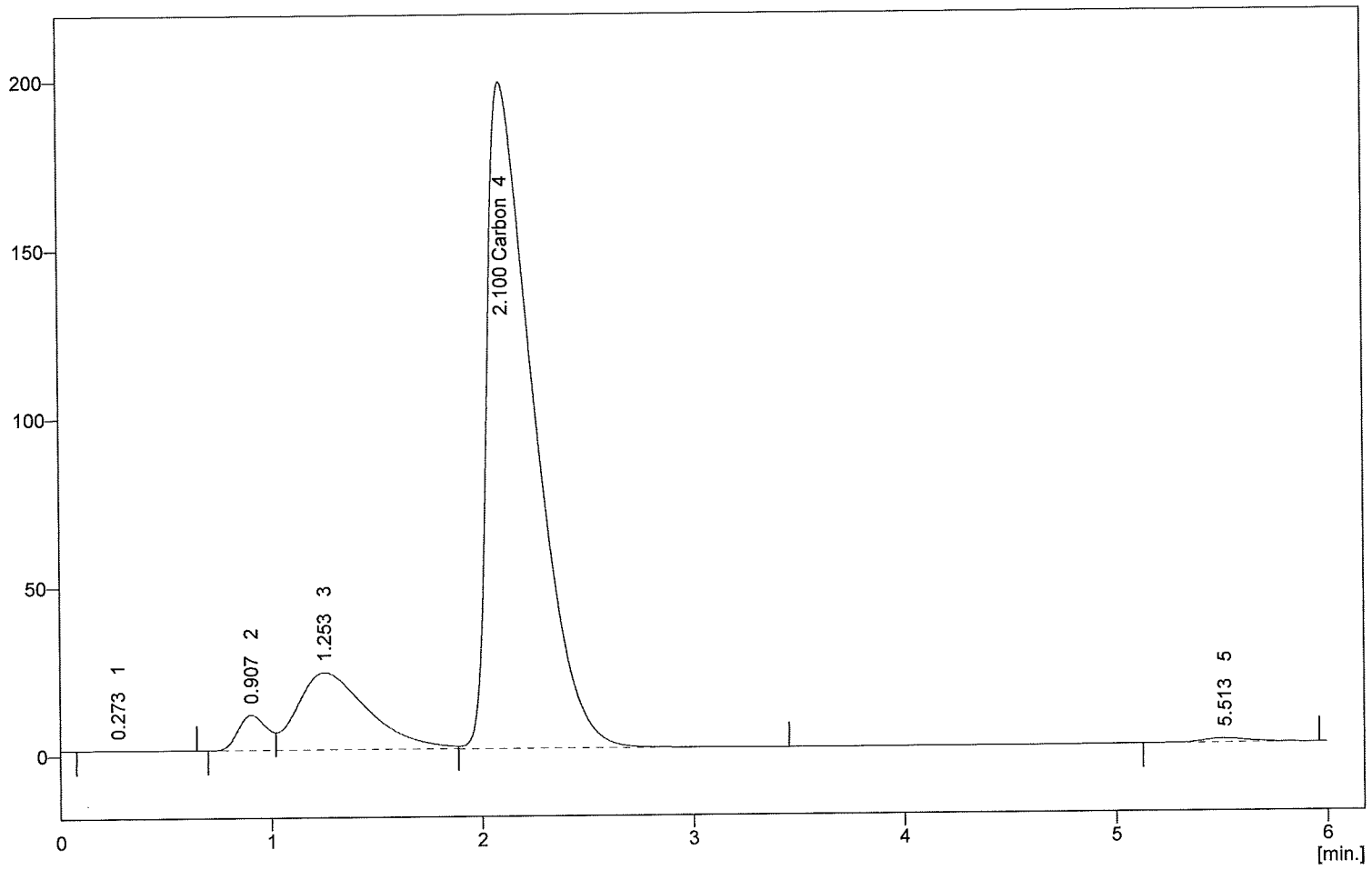
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 8:17:40 PM
Project : WORK1
Weight : 9.1 mg
Sample : 480-108283-C-11

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A022



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.100	2979.789	82.1	0.345	3.7952	1.0000	Ordnr
	Total	3629.530	100.0	9.100	3.7952		

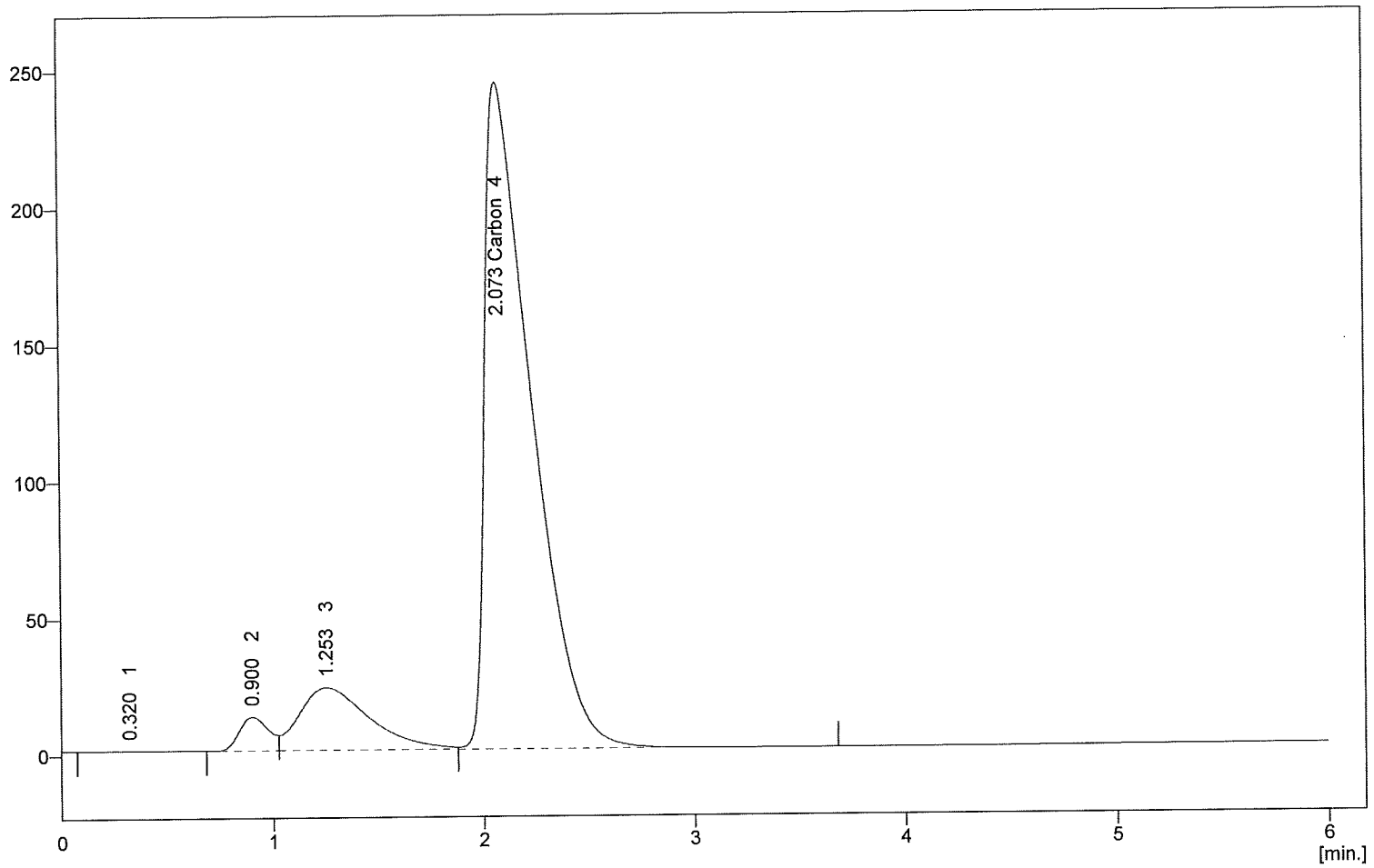
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 8:24:26 PM
Project : WORK1
Weight : 9.9 mg
Sample : 480-108283-C-12

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A023



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.073	3719.185	85.1	0.432	4.3630	1.0000	Ordnr
	Total	4372.308	100.0	9.900	4.3630		

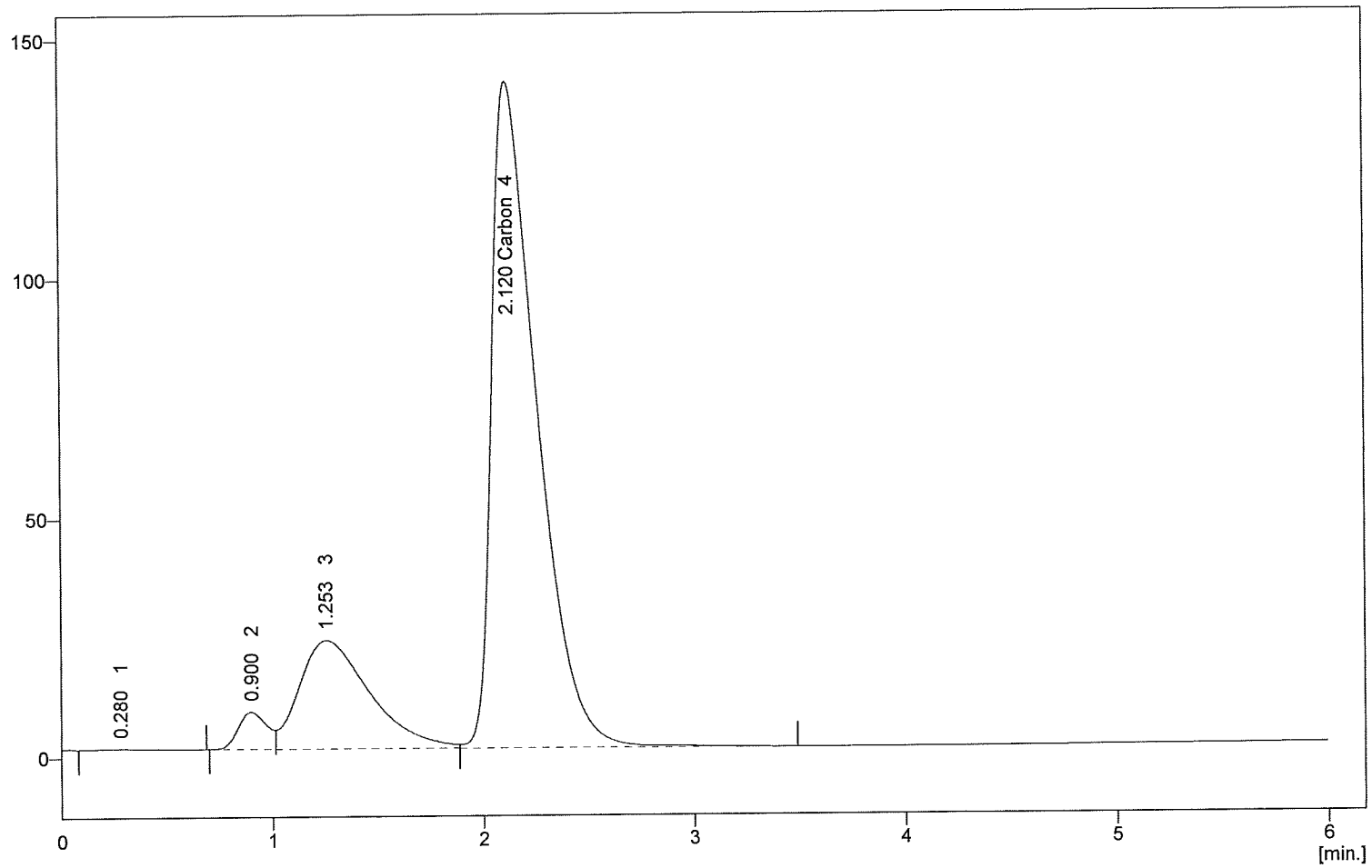
Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 8:31:08 PM
Project : WORK1
Weight : 9.4 mg
Sample : 480-108283-C-13

Calibration : 102916A

By : None
Style : Sequence

Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A024



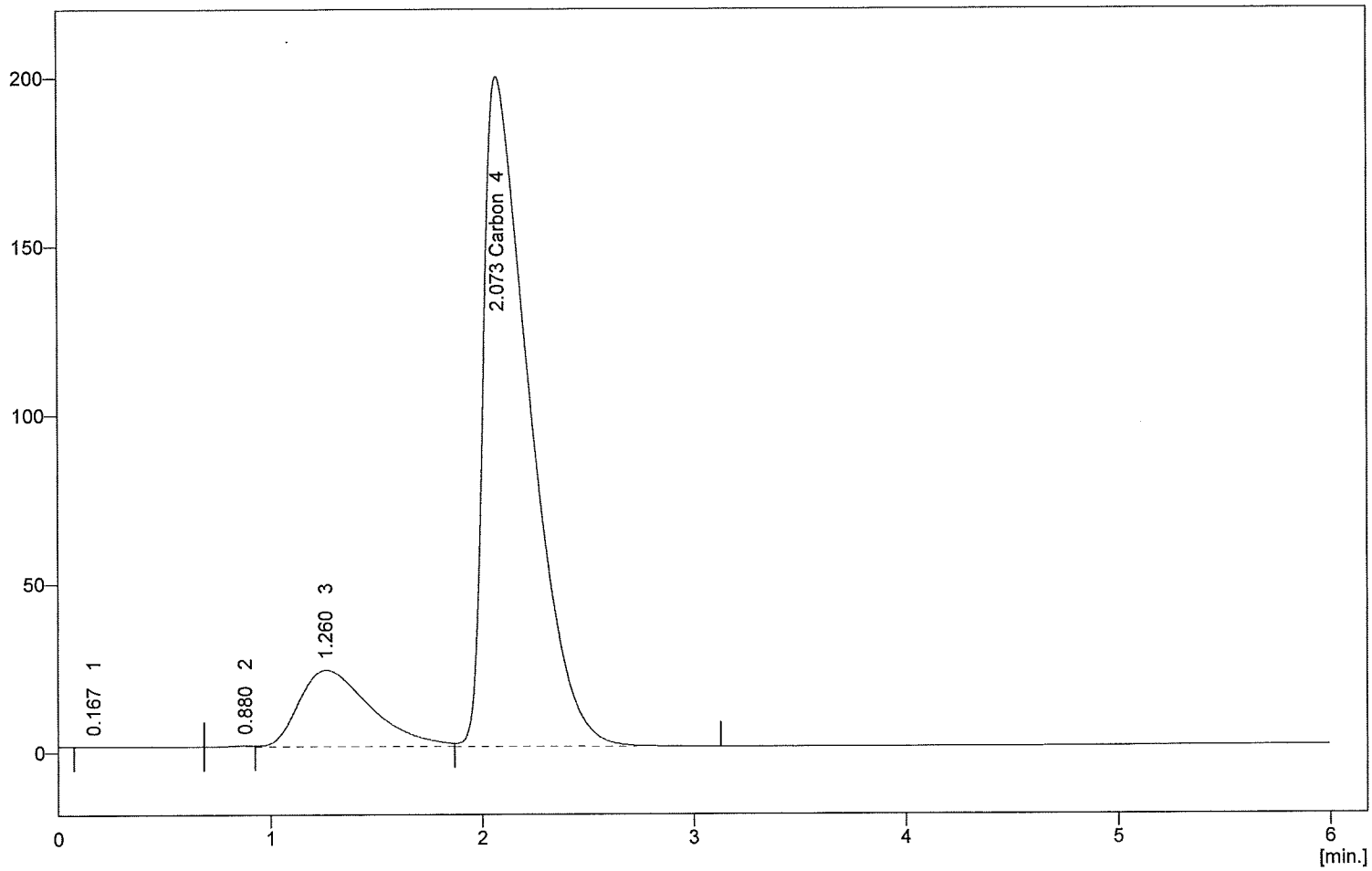
Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.120	2053.912	77.4	0.237	2.5209	1.0000	Ordnr
	Total	2653.605	100.0	9.400	2.5209		

Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 8:37:51 PM
Project : WORK1
Weight : 10 mg
Sample : CCV
Calibration : 102916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A025



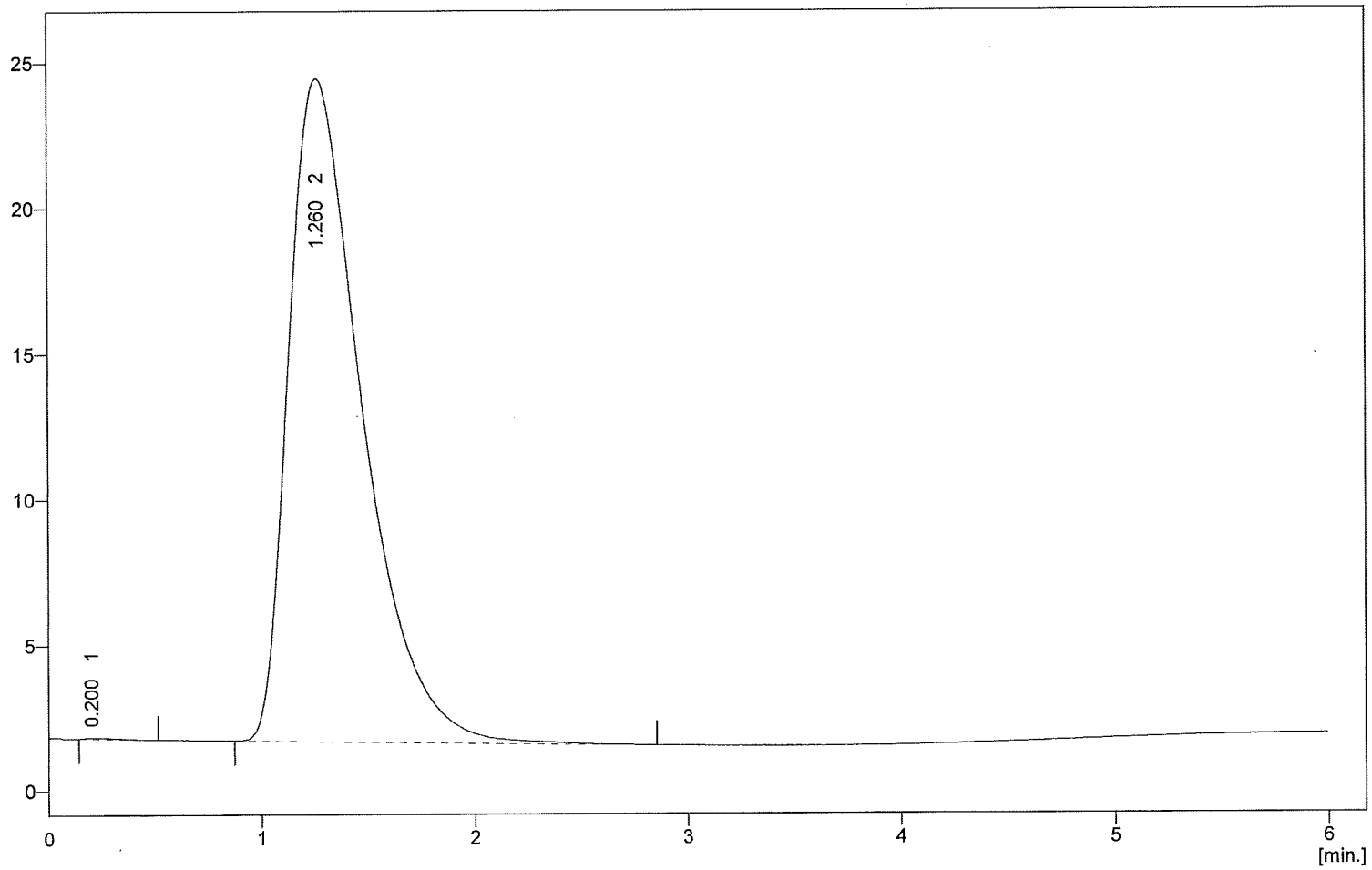
Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.073	2969.599	84.7	0.344	3.4417	1.0000	Ordnr
	Total	3506.810	100.0	10.000	3.4417		

Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 8:44:39 PM
Project : WORK1
Weight : 10 mg
Sample : CCB
Calibration : 102916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A026

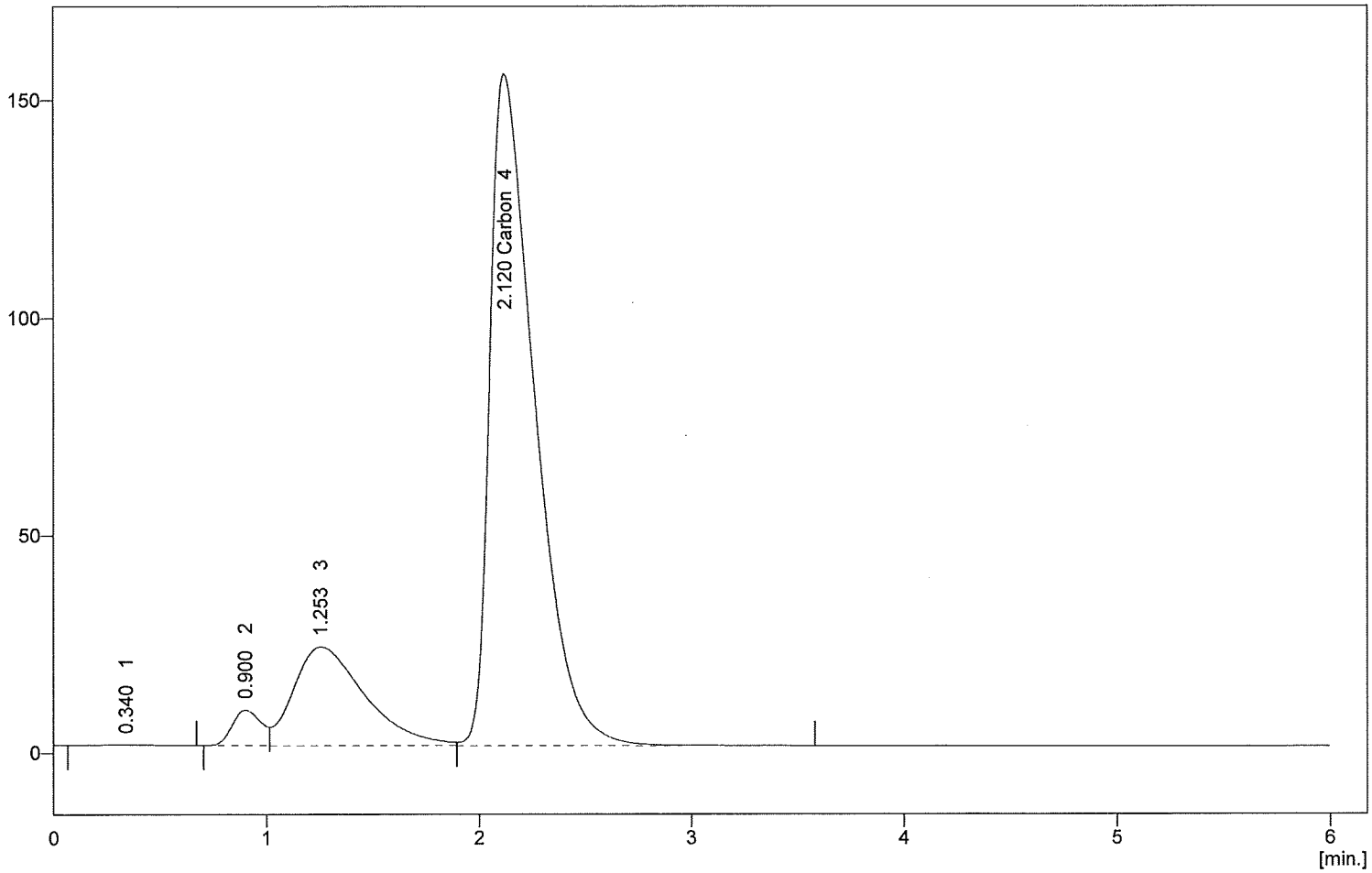


Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.061						Ordnr
	Total	546.223	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #1

Created	: 10/29/2016 8:51:27 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 9.6 mg		
Sample	: 480-108283-C-14	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A027
Calibration	: 102916A		



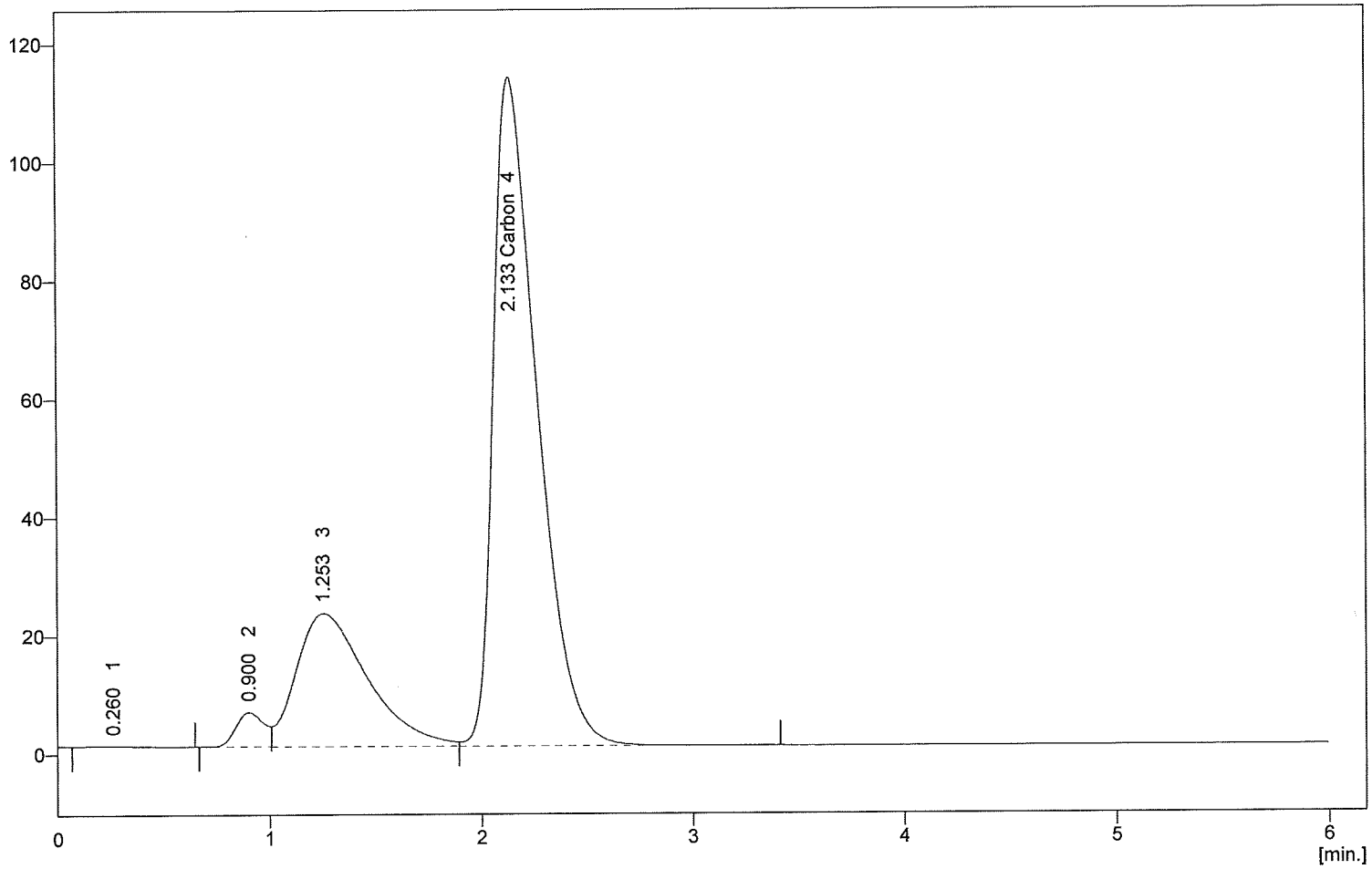
Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.120	2272.438	79.1	0.263	2.7349	1.0000	Ordnr
	Total	2873.902	100.0	9.600	2.7349		

Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 8:58:11 PM
Project : WORK1
Weight : 9.3 mg
Sample : 480-108283-C-15
Calibration : 102916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A028

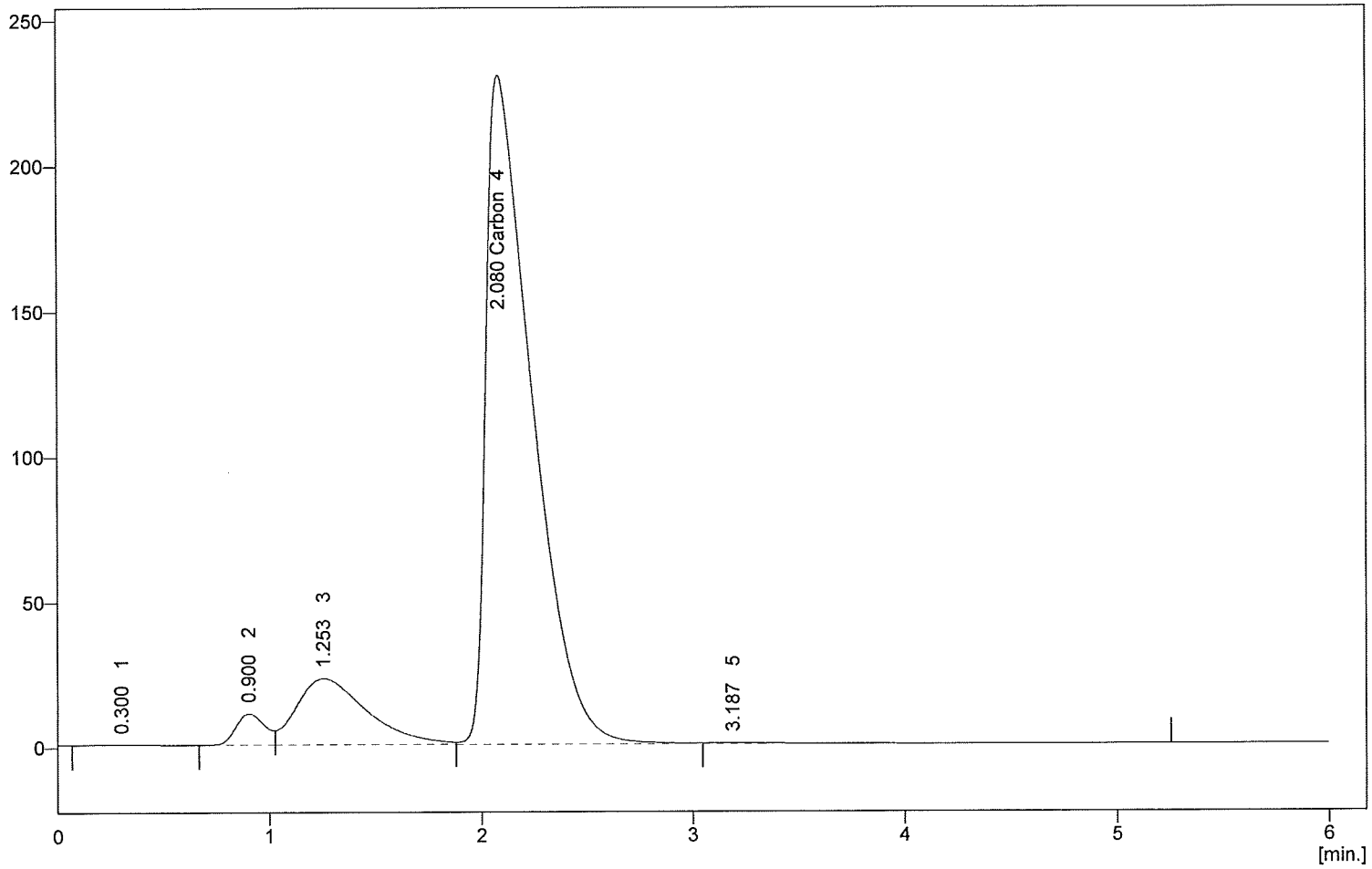


Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.133	1623.182	73.7	0.187	2.0058	1.0000	Ordnr
	Total	2201.682	100.0	9.300	2.0058		

Lloyd Kahn TOC
Instrument #1

Created	: 10/29/2016 9:04:56 PM	By	: None
Project	: WORK1	Style	: Sequence
Weight	: 9 mg		
Sample	: 480-108283-C-16	Chromatogram	: C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A029
Calibration	: 102916A		



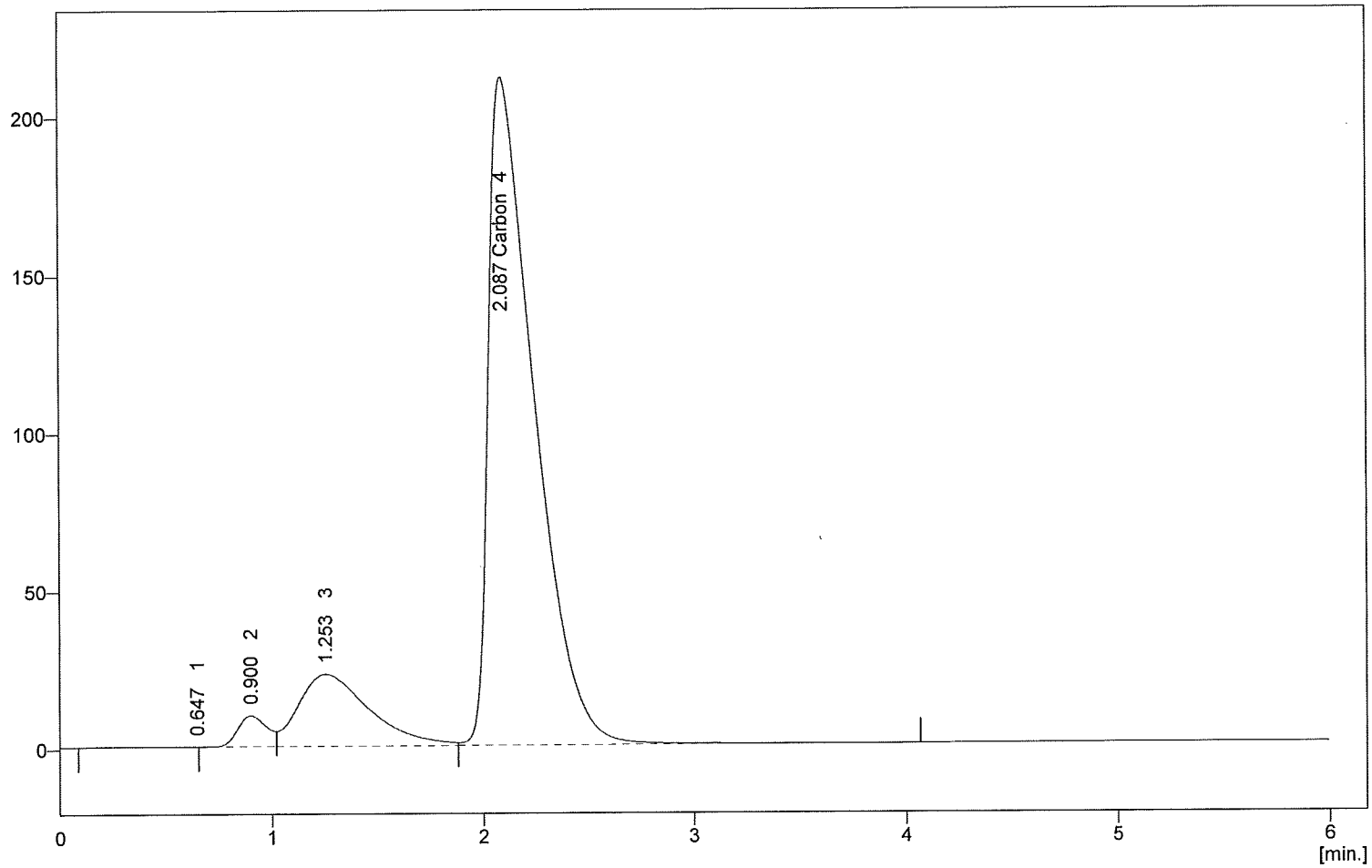
Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.080	3508.190	84.5	0.407	4.5248	1.0000	Ordnr
	Total	4149.869	100.0	9.000	4.5248		

Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 9:11:42 PM
Project : WORK1
Weight : 9.6 mg
Sample : 200-35736-A-13
Calibration : 102916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A030



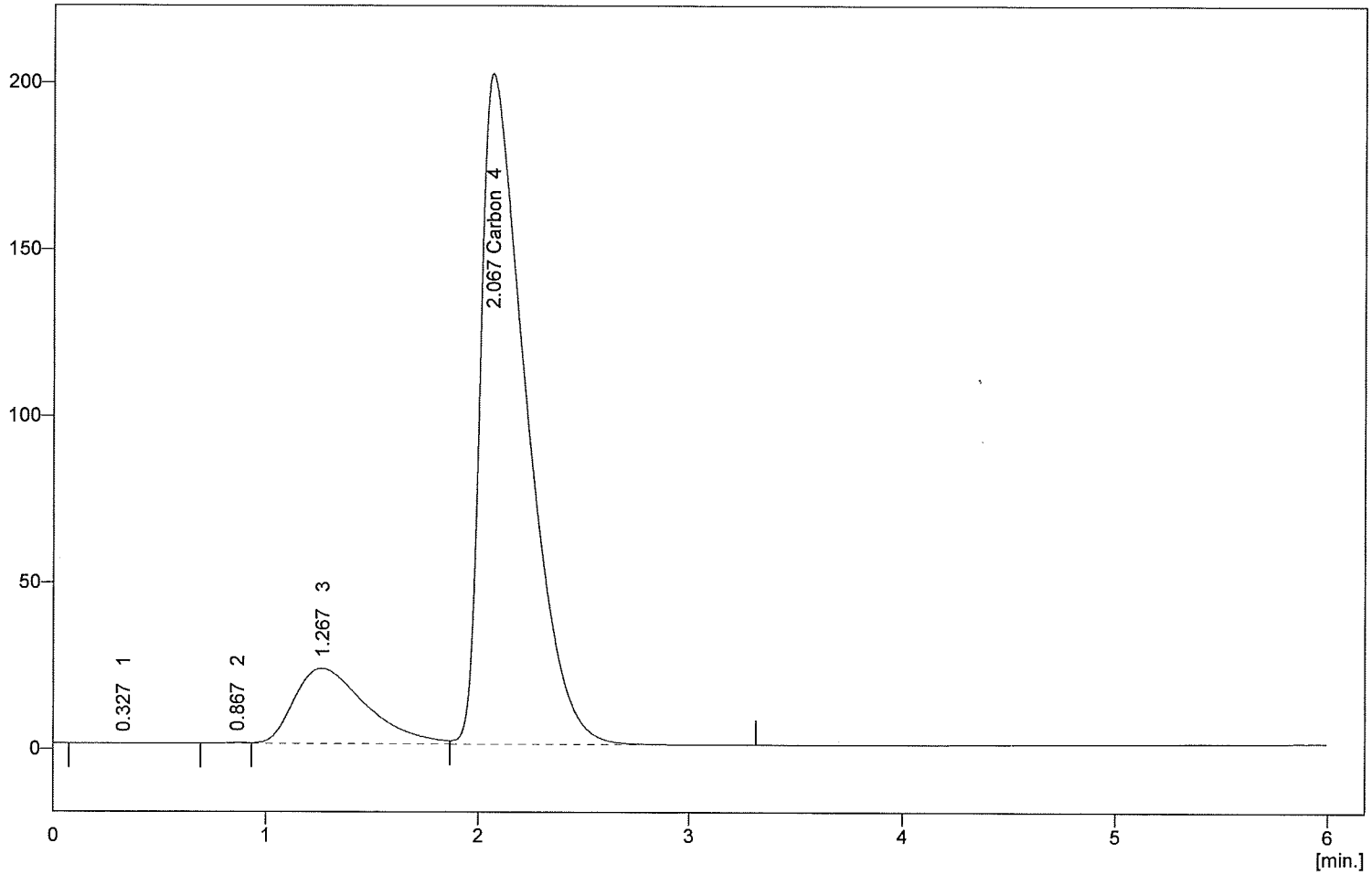
Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.087	3185.908	83.6	0.369	3.8490	1.0000	Ordnr
	Total	3812.597	100.0	9.600	3.8490		

Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 9:18:27 PM
Project : WORK1
Weight : 10 mg
Sample : CCV
Calibration : 102916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A031



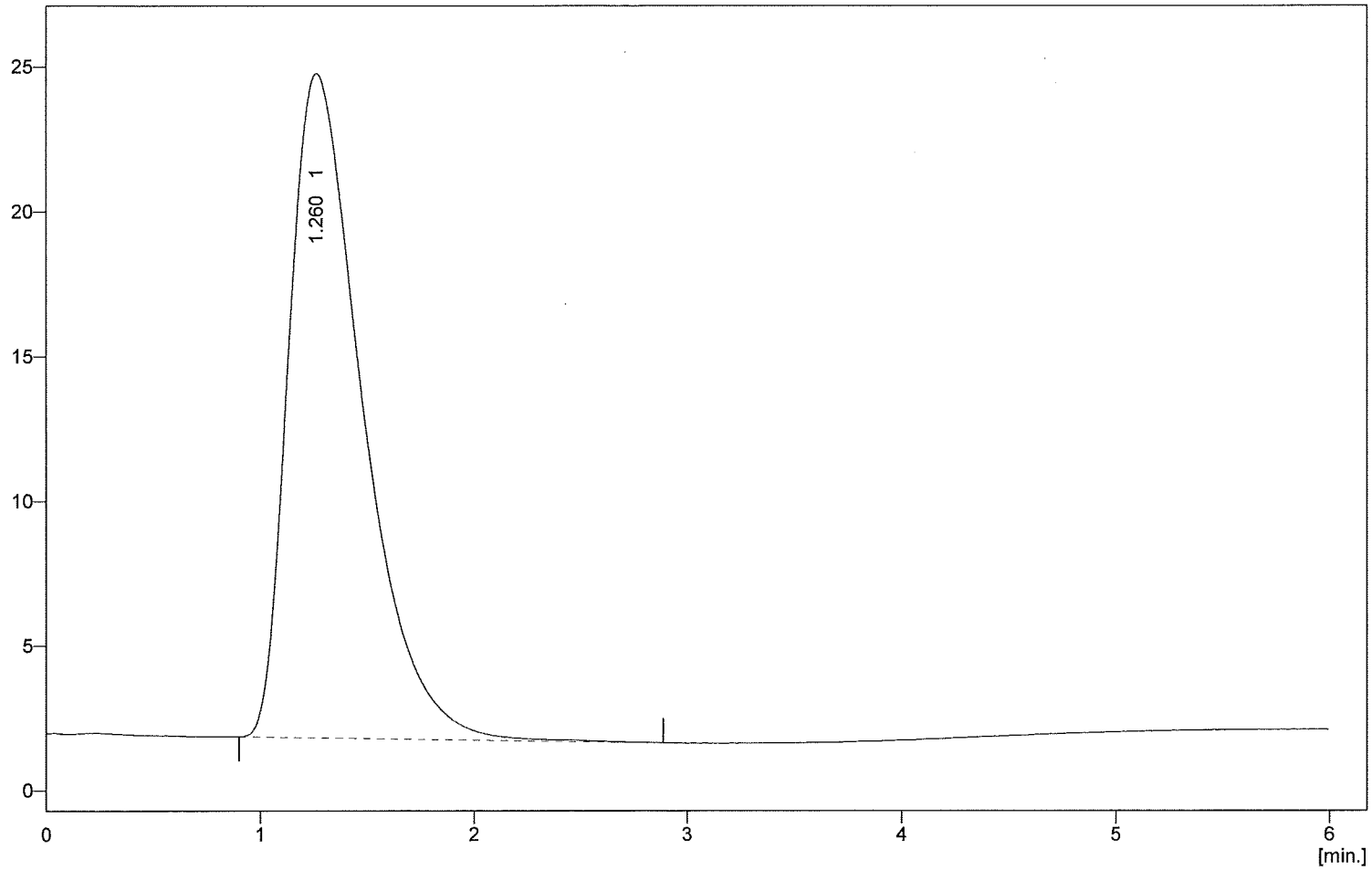
Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.067	3001.272	84.8	0.348	3.4788	1.0000	Ordnr
	Total	3539.456	100.0	10.000	3.4788		

Lloyd Kahn TOC
Instrument #1

Created : 10/29/2016 9:25:13 PM
Project : WORK1
Weight : 10 mg
Sample : CCB
Calibration : 102916A

By : None
Style : Sequence
Chromatogram : C:\Documents and Settings\inorg-user\Desktop\WCCH1 Configuration Files\EAS32\WORK1\DATA\102916A032



Result Table - Calculation Method ESTD

Compound	Reten. Time	Area	Area	Weight	Weight	Carbon	Peak
Carbon	2.061						Ordnr
	Total	549.002	100.0	10.000	0.0000		

COVER PAGE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job Number: 200-35736-1

SDG No.: 200-35736-1

Project: Port Ewen DNS Sediment

Client Sample ID	Lab Sample ID
PE1016-P1SCD-REF1-A-0006IN	200-35736-1
PE1016-P1SCD-REF1-B-0006IN	200-35736-2
PE1016-P1SCD-REF2-A-0006IN	200-35736-3
PE1016-P1SCD-REF2-B-0006IN	200-35736-4
PE1016-P1SCD-REF3-A-0006IN	200-35736-5
PE1016-P1SCD-REF3-B-0006IN	200-35736-6
PE1016-P1SCD-REF4-A-0006IN	200-35736-7
PE1016-P1SCD-REF4-B-0006IN	200-35736-8
PE1016-P1SCD-REF5-A-0003IN	200-35736-9
PE1016-P1SCD-REF5-B-0003IN	200-35736-10
PE1016-P1SCD-05-A-0006IN	200-35736-11
PE1016-P1SCD-05-B-0006IN	200-35736-12
PE1016-P1SCD-REF3-A-0006IN-D	200-35736-13

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-REF1-A-0006IN
Lab Sample ID: 200-35736-1
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 11:05
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	5.7			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	26.5			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	1.5			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	14.5			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	10.5			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	94.3			% Passing			1	D422
	Silt	42.0			%			1	D422
	Clay	25.8			%			1	D422
	Sieve Size #10 - Percent Finer	92.8			% Passing			1	D422
	Sieve Size #20 - Percent Finer	81.8			% Passing			1	D422
	Sieve Size #40 - Percent Finer	78.3			% Passing			1	D422
	Sieve Size #60 - Percent Finer	74.3			% Passing			1	D422
	Sieve Size #80 - Percent Finer	72.6			% Passing			1	D422
	Sieve Size #100 - Percent Finer	71.6			% Passing			1	D422
	Sieve Size #200 - Percent Finer	68.3			% Passing			1	D422
	Sieve Size #230 - Percent Finer	67.8			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	48.8			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	44.2			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	39.6			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	35.0			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	25.8			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	14.3			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	7.5			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-REF1-B-0006IN
Lab Sample ID: 200-35736-2
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 11:10
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	4.1			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	27.9			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	2.6			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	12.7			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	12.6			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	95.9			% Passing			1	D422
	Silt	47.9			%			1	D422
	Clay	20.1			%			1	D422
	Sieve Size #10 - Percent Finer	93.3			% Passing			1	D422
	Sieve Size #20 - Percent Finer	84.3			% Passing			1	D422
	Sieve Size #40 - Percent Finer	80.6			% Passing			1	D422
	Sieve Size #60 - Percent Finer	76.2			% Passing			1	D422
	Sieve Size #80 - Percent Finer	74.1			% Passing			1	D422
	Sieve Size #100 - Percent Finer	72.8			% Passing			1	D422
	Sieve Size #200 - Percent Finer	68.7			% Passing			1	D422
	Sieve Size #230 - Percent Finer	68.0			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	39.7			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	37.5			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	33.2			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	24.5			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	20.1			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	11.4			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	2.7			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-REF2-A-0006IN
Lab Sample ID: 200-35736-3
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:50
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	1.9			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	35.8			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	6.7			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	12.7			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	16.4			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	98.1			% Passing			1	D422
	Silt	39.9			%			1	D422
	Clay	22.4			%			1	D422
	Sieve Size #10 - Percent Finer	91.4			% Passing			1	D422
	Sieve Size #20 - Percent Finer	82.3			% Passing			1	D422
	Sieve Size #40 - Percent Finer	78.7			% Passing			1	D422
	Sieve Size #60 - Percent Finer	73.4			% Passing			1	D422
	Sieve Size #80 - Percent Finer	70.6			% Passing			1	D422
	Sieve Size #100 - Percent Finer	68.8			% Passing			1	D422
	Sieve Size #200 - Percent Finer	63.2			% Passing			1	D422
	Sieve Size #230 - Percent Finer	62.3			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	46.7			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	41.8			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	37.0			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	27.3			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	22.4			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	15.2			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	5.5			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-REF2-B-0006IN
Lab Sample ID: 200-35736-4
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:55
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	5.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	46.6			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	12.6			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	19.3			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	14.7			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	95.0			% Passing			1	D422
	Silt	36.9			%			1	D422
	Clay	11.5			%			1	D422
	Sieve Size #10 - Percent Finer	82.4			% Passing			1	D422
	Sieve Size #20 - Percent Finer	70.5			% Passing			1	D422
	Sieve Size #40 - Percent Finer	63.1			% Passing			1	D422
	Sieve Size #60 - Percent Finer	58.2			% Passing			1	D422
	Sieve Size #80 - Percent Finer	55.9			% Passing			1	D422
	Sieve Size #100 - Percent Finer	54.4			% Passing			1	D422
	Sieve Size #200 - Percent Finer	49.3			% Passing			1	D422
	Sieve Size #230 - Percent Finer	48.4			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	30.3			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	24.9			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	22.2			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	14.1			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	11.5			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	6.1			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	0.7			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN
Lab Sample ID: 200-35736-5
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:40
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	1.2			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	22.7			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	3.7			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	9.0			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	10.0			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	98.8			% Passing			1	D422
	Silt	47.2			%			1	D422
	Clay	28.9			%			1	D422
	Sieve Size #10 - Percent Finer	95.1			% Passing			1	D422
	Sieve Size #20 - Percent Finer	88.0			% Passing			1	D422
	Sieve Size #40 - Percent Finer	86.1			% Passing			1	D422
	Sieve Size #60 - Percent Finer	83.2			% Passing			1	D422
	Sieve Size #80 - Percent Finer	81.5			% Passing			1	D422
	Sieve Size #100 - Percent Finer	80.5			% Passing			1	D422
	Sieve Size #200 - Percent Finer	76.7			% Passing			1	D422
	Sieve Size #230 - Percent Finer	76.1			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	54.5			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	49.4			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	44.3			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	34.0			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	28.9			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	18.6			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	13.5			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-REF3-B-0006IN
Lab Sample ID: 200-35736-6
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:45
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	3.1			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	35.5			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	4.1			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	18.7			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	12.7			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	96.9			% Passing			1	D422
	Silt	34.5			%			1	D422
	Clay	26.9			%			1	D422
	Sieve Size #10 - Percent Finer	92.8			% Passing			1	D422
	Sieve Size #20 - Percent Finer	80.4			% Passing			1	D422
	Sieve Size #40 - Percent Finer	74.1			% Passing			1	D422
	Sieve Size #60 - Percent Finer	68.4			% Passing			1	D422
	Sieve Size #80 - Percent Finer	66.2			% Passing			1	D422
	Sieve Size #100 - Percent Finer	65.1			% Passing			1	D422
	Sieve Size #200 - Percent Finer	61.9			% Passing			1	D422
	Sieve Size #230 - Percent Finer	61.4			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	51.6			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	46.3			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	39.3			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	30.4			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	26.9			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	16.3			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	7.5			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-REF4-A-0006IN
Lab Sample ID: 200-35736-7
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:30
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	9.5			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	48.4			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	16.4			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	15.4			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	16.6			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	90.5			% Passing			1	D422
	Silt	26.5			%			1	D422
	Clay	15.6			%			1	D422
	Sieve Size #10 - Percent Finer	74.1			% Passing			1	D422
	Sieve Size #20 - Percent Finer	65.9			% Passing			1	D422
	Sieve Size #40 - Percent Finer	58.7			% Passing			1	D422
	Sieve Size #60 - Percent Finer	51.5			% Passing			1	D422
	Sieve Size #80 - Percent Finer	48.6			% Passing			1	D422
	Sieve Size #100 - Percent Finer	47.1			% Passing			1	D422
	Sieve Size #200 - Percent Finer	42.8			% Passing			1	D422
	Sieve Size #230 - Percent Finer	42.1			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	36.3			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	32.2			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	26.7			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	18.3			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	15.6			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	10.0			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	4.5			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-REF4-B-0006IN
Lab Sample ID: 200-35736-8
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:35
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	6.6			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	33.6			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	5.6			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	9.7			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	18.3			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	93.4			% Passing			1	D422
	Silt	41.7			%			1	D422
	Clay	18.1			%			1	D422
	Sieve Size #10 - Percent Finer	87.8			% Passing			1	D422
	Sieve Size #20 - Percent Finer	81.3			% Passing			1	D422
	Sieve Size #40 - Percent Finer	78.1			% Passing			1	D422
	Sieve Size #60 - Percent Finer	72.5			% Passing			1	D422
	Sieve Size #80 - Percent Finer	69.1			% Passing			1	D422
	Sieve Size #100 - Percent Finer	67.1			% Passing			1	D422
	Sieve Size #200 - Percent Finer	60.7			% Passing			1	D422
	Sieve Size #230 - Percent Finer	59.8			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	48.1			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	41.0			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	32.2			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	23.4			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	18.1			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	12.8			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	5.7			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-REF5-A-0003IN
Lab Sample ID: 200-35736-9
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:15
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	8.5			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	29.4			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	4.3			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	8.8			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	16.3			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	91.5			% Passing			1	D422
	Silt	38.8			%			1	D422
	Clay	23.3			%			1	D422
	Sieve Size #10 - Percent Finer	87.2			% Passing			1	D422
	Sieve Size #20 - Percent Finer	81.0			% Passing			1	D422
	Sieve Size #40 - Percent Finer	78.4			% Passing			1	D422
	Sieve Size #60 - Percent Finer	74.3			% Passing			1	D422
	Sieve Size #80 - Percent Finer	71.5			% Passing			1	D422
	Sieve Size #100 - Percent Finer	69.6			% Passing			1	D422
	Sieve Size #200 - Percent Finer	63.1			% Passing			1	D422
	Sieve Size #230 - Percent Finer	62.1			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	51.7			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	44.1			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	38.4			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	32.7			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	23.3			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	15.7			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	6.2			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-REF5-B-0003IN
Lab Sample ID: 200-35736-10
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 10:20
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	13.9			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	37.1			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	7.5			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	12.3			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	17.3			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	86.1			% Passing			1	D422
	Silt	32.1			%			1	D422
	Clay	16.9			%			1	D422
	Sieve Size #10 - Percent Finer	78.6			% Passing			1	D422
	Sieve Size #20 - Percent Finer	72.2			% Passing			1	D422
	Sieve Size #40 - Percent Finer	66.3			% Passing			1	D422
	Sieve Size #60 - Percent Finer	59.3			% Passing			1	D422
	Sieve Size #80 - Percent Finer	56.3			% Passing			1	D422
	Sieve Size #100 - Percent Finer	54.6			% Passing			1	D422
	Sieve Size #200 - Percent Finer	49.7			% Passing			1	D422
	Sieve Size #230 - Percent Finer	49.0			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	36.3			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	32.1			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	26.6			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	23.8			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	16.9			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	11.4			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	5.9			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-05-A-0006IN
Lab Sample ID: 200-35736-11
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 12:25
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	14.2			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	54.8			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	17.6			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	12.7			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	24.5			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	85.8			% Passing			1	D422
	Silt	21.1			%			1	D422
	Clay	9.9			%			1	D422
	Sieve Size #10 - Percent Finer	68.2			% Passing			1	D422
	Sieve Size #20 - Percent Finer	62.8			% Passing			1	D422
	Sieve Size #40 - Percent Finer	55.5			% Passing			1	D422
	Sieve Size #60 - Percent Finer	46.0			% Passing			1	D422
	Sieve Size #80 - Percent Finer	40.9			% Passing			1	D422
	Sieve Size #100 - Percent Finer	38.0			% Passing			1	D422
	Sieve Size #200 - Percent Finer	31.6			% Passing			1	D422
	Sieve Size #230 - Percent Finer	31.0			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	25.0			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	21.2			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	17.4			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	13.7			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	9.9			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	4.2			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	1.9			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-05-B-0006IN
Lab Sample ID: 200-35736-12
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 12:30
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	7.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	45.3			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	11.9			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	9.4			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	24.0			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	93.0			% Passing			1	D422
	Silt	42.8			%			1	D422
	Clay	4.9			%			1	D422
	Sieve Size #10 - Percent Finer	81.1			% Passing			1	D422
	Sieve Size #20 - Percent Finer	77.4			% Passing			1	D422
	Sieve Size #40 - Percent Finer	71.7			% Passing			1	D422
	Sieve Size #60 - Percent Finer	63.3			% Passing			1	D422
	Sieve Size #80 - Percent Finer	58.1			% Passing			1	D422
	Sieve Size #100 - Percent Finer	54.8			% Passing			1	D422
	Sieve Size #200 - Percent Finer	48.3			% Passing			1	D422
	Sieve Size #230 - Percent Finer	47.7			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	17.1			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	14.0			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	9.5			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	8.0			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	4.9			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	0.4			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	0.0			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE1016-P1SCD-REF3-A-0006IN-D
Lab Sample ID: 200-35736-13
Lab Name: TestAmerica Burlington
Job No.: 200-35736-1
SDG ID.: 200-35736-1
Matrix: Sediment
Date Sampled: 10/11/2016 14:41
Reporting Basis: WET
Date Received: 10/14/2016 10:20

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	2.6			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	24.7			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	3.4			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	8.2			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	13.1			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	97.4			% Passing			1	D422
	Silt	39.7			%			1	D422
	Clay	33.0			%			1	D422
	Sieve Size #10 - Percent Finer	94.0			% Passing			1	D422
	Sieve Size #20 - Percent Finer	89.5			% Passing			1	D422
	Sieve Size #40 - Percent Finer	85.8			% Passing			1	D422
	Sieve Size #60 - Percent Finer	80.9			% Passing			1	D422
	Sieve Size #80 - Percent Finer	78.9			% Passing			1	D422
	Sieve Size #100 - Percent Finer	77.7			% Passing			1	D422
	Sieve Size #200 - Percent Finer	73.5			% Passing			1	D422
	Sieve Size #230 - Percent Finer	72.7			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	65.2			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	57.2			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	49.1			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	41.0			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	33.0			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	21.5			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	13.5			% Passing			1	D422

6-IN
DUPLICATE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Matrix: Sediment

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
Batch ID: 110706 Date: 10/25/2016 10:00								
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Gravel	1.2	%			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Gravel	1.2	%	0	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Sieve Size 2 inch - Percent Finer	100.0	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Sieve Size 2 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Sand	22.7	%			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Sand	21.9	%	4	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Sieve Size 1.5 inch - Percent Finer	100.0	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Sieve Size 1.5 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Coarse Sand	3.7	%			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Coarse Sand	1.6	%	79	50	F3
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Sieve Size 1 inch - Percent Finer	100.0	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Sieve Size 1 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Medium Sand	9.0	%			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Medium Sand	9.9	%	10	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Sieve Size 0.75 inch - Percent Finer	100.0	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Sieve Size 0.75 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Fine Sand	10.0	%			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Fine Sand	10.4	%	4	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Sieve Size 0.375 inch - Percent Finer	100.0	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Sieve Size 0.375 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Sieve Size #4 - Percent Finer	98.8	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Sieve Size #4 - Percent Finer	98.8	% Passing	0	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Silt	47.2	%			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Silt	47.7	%	1	50	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

6-IN
DUPLICATE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Matrix: Sediment

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Clay	28.9	%			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Clay	29.2	%	1	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Sieve Size #10 - Percent Finer	95.1	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Sieve Size #10 - Percent Finer	97.2	% Passing	2	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Sieve Size #20 - Percent Finer	88.0	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Sieve Size #20 - Percent Finer	90.3	% Passing	3	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Sieve Size #40 - Percent Finer	86.1	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Sieve Size #40 - Percent Finer	87.3	% Passing	1	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Sieve Size #60 - Percent Finer	83.2	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Sieve Size #60 - Percent Finer	83.8	% Passing	0.7	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Sieve Size #80 - Percent Finer	81.5	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Sieve Size #80 - Percent Finer	81.9	% Passing	0.5	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Sieve Size #100 - Percent Finer	80.5	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Sieve Size #100 - Percent Finer	80.8	% Passing	0.4	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Sieve Size #200 - Percent Finer	76.7	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Sieve Size #200 - Percent Finer	77.4	% Passing	0.9	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Sieve Size #230 - Percent Finer	76.1	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Sieve Size #230 - Percent Finer	76.9	% Passing	1	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Hydrometer Reading 1 - Percent Finer	54.5	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Hydrometer Reading 1 - Percent Finer	56.3	% Passing	3	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Hydrometer Reading 2 - Percent Finer	49.4	% Passing			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

6-IN
DUPLICATE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Matrix: Sediment

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Hydrometer Reading 2 - Percent Finer	52.9	% Passing	7	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Hydrometer Reading 3 - Percent Finer	44.3	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Hydrometer Reading 3 - Percent Finer	42.8	% Passing	3	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Hydrometer Reading 4 - Percent Finer	34.0	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Hydrometer Reading 4 - Percent Finer	34.3	% Passing	0.9	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Hydrometer Reading 5 - Percent Finer	28.9	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Hydrometer Reading 5 - Percent Finer	29.2	% Passing	1	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Hydrometer Reading 6 - Percent Finer	18.6	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Hydrometer Reading 6 - Percent Finer	17.4	% Passing	7	50	
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5	Hydrometer Reading 7 - Percent Finer	13.5	% Passing			
D422	PE1016-P1SCD-REF3-A-0006IN	200-35736-5 DU	Hydrometer Reading 7 - Percent Finer	12.3	% Passing	9	50	
Batch ID: 110706 Date: 10/25/2016 10:39								
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Gravel	14.2	%			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Gravel	18.5	%	26	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Sieve Size 2 inch - Percent Finer	100.0	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Sieve Size 2 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Sand	54.8	%			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Sand	46.0	%	17	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Sieve Size 1.5 inch - Percent Finer	100.0	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Sieve Size 1.5 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Coarse Sand	17.6	%			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Coarse Sand	15.0	%	16	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Sieve Size 1 inch - Percent Finer	100.0	% Passing			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

6-IN
DUPLICATE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Matrix: Sediment

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Sieve Size 1 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Medium Sand	12.7	%			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Medium Sand	11.3	%	12	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Sieve Size 0.75 inch - Percent Finer	100.0	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Sieve Size 0.75 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Fine Sand	24.5	%			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Fine Sand	19.7	%	22	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Sieve Size 0.375 inch - Percent Finer	100.0	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Sieve Size 0.375 inch - Percent Finer	100.0	% Passing	0	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Sieve Size #4 - Percent Finer	85.8	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Sieve Size #4 - Percent Finer	81.5	% Passing	5	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Silt	21.1	%			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Silt	26.5	%	23	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Clay	9.9	%			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Clay	9.1	%	9	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Sieve Size #10 - Percent Finer	68.2	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Sieve Size #10 - Percent Finer	66.5	% Passing	3	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Sieve Size #20 - Percent Finer	62.8	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Sieve Size #20 - Percent Finer	61.8	% Passing	2	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Sieve Size #40 - Percent Finer	55.5	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Sieve Size #40 - Percent Finer	55.2	% Passing	0.5	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Sieve Size #60 - Percent Finer	46.0	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Sieve Size #60 - Percent Finer	47.4	% Passing	3	50	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

6-IN
DUPLICATE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Matrix: Sediment

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Sieve Size #80 - Percent Finer	40.9	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Sieve Size #80 - Percent Finer	43.4	% Passing	6	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Sieve Size #100 - Percent Finer	38.0	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Sieve Size #100 - Percent Finer	41.0	% Passing	8	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Sieve Size #200 - Percent Finer	31.6	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Sieve Size #200 - Percent Finer	36.0	% Passing	13	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Sieve Size #230 - Percent Finer	31.0	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Sieve Size #230 - Percent Finer	35.5	% Passing	14	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Hydrometer Reading 1 - Percent Finer	25.0	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Hydrometer Reading 1 - Percent Finer	19.7	% Passing	24	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Hydrometer Reading 2 - Percent Finer	21.2	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Hydrometer Reading 2 - Percent Finer	17.6	% Passing	19	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Hydrometer Reading 3 - Percent Finer	17.4	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Hydrometer Reading 3 - Percent Finer	15.4	% Passing	12	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Hydrometer Reading 4 - Percent Finer	13.7	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Hydrometer Reading 4 - Percent Finer	11.2	% Passing	20	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Hydrometer Reading 5 - Percent Finer	9.9	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Hydrometer Reading 5 - Percent Finer	9.1	% Passing	9	50	
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Hydrometer Reading 6 - Percent Finer	4.2	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Hydrometer Reading 6 - Percent Finer	0.5	% Passing	155	50	F3

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

6-IN
DUPLICATE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Matrix: Sediment

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11	Hydrometer Reading 7 - Percent Finer	1.9	% Passing			
D422	PE1016-P1SCD-05-A-0006IN	200-35736-11 DU	Hydrometer Reading 7 - Percent Finer	0.0	% Passing	200	50	F3

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

GEOTECHNICAL BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-35736-1

SDG No.: 200-35736-1

Batch Number: 110706 Batch Start Date: 10/23/16 18:44 Batch Analyst: Pham, Vu T

Batch Method: D422 Batch End Date: 11/01/16 15:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	AnalysisComment				
200-35736-B-1	PE1016-P1SCD-REF 1-A-0006IN	D422	T	73.07 g	SEE-SAMPLE-DATA SHEETS				
200-35736-B-2	PE1016-P1SCD-REF 1-B-0006IN	D422	T	71.63 g	SEE-SAMPLE-DATA SHEETS				
200-35736-B-3	PE1016-P1SCD-REF 2-A-0006IN	D422	T	74.9 g	SEE-SAMPLE-DATA SHEETS				
200-35736-B-4	PE1016-P1SCD-REF 2-B-0006IN	D422	T	69.89 g	SEE-SAMPLE-DATA SHEETS				
200-35736-B-5	PE1016-P1SCD-REF 3-A-0006IN	D422	T	69.68 g	SEE-SAMPLE-DATA SHEETS				
200-35736-B-5 DU	PE1016-P1SCD-REF 3-A-0006IN	D422	T	107.15 g	SEE-SAMPLE-DATA SHEETS				
200-35736-B-6	PE1016-P1SCD-REF 3-B-0006IN	D422	T	100.21 g	SEE-SAMPLE-DATA SHEETS				
200-35736-B-7	PE1016-P1SCD-REF 4-A-0006IN	D422	T	107.65 g	SEE-SAMPLE-DATA SHEETS				
200-35736-B-8	PE1016-P1SCD-REF 4-B-0006IN	D422	T	106.77 g	SEE-SAMPLE-DATA SHEETS				
200-35736-B-9	PE1016-P1SCD-REF 5-A-0003IN	D422	T	99 g	SEE-SAMPLE-DATA SHEETS				
200-35736-B-10	PE1016-P1SCD-REF 5-B-0003IN	D422	T	108.79 g	SEE-SAMPLE-DATA SHEETS				
200-35736-B-11	PE1016-P1SCD-05-A-0006IN	D422	T	129.41 g	SEE-SAMPLE-DATA SHEETS				
200-35736-B-11 DU	PE1016-P1SCD-05-A-0006IN	D422	T	118.79 g	SEE-SAMPLE-DATA SHEETS				
200-35736-B-12	PE1016-P1SCD-05-B-0006IN	D422	T	137.62 g	SEE-SAMPLE-DATA SHEETS				
200-35736-B-13	PE1016-P1SCD-REF 3-A-0006IN-D	D422	T	86.75 g					

Batch Notes	

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802.660.1990 fax 802.660.1919

200-35736 Chain of Custody

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: GARY LONG	Site Contact: GARY LONG	Date: 10/11/16	COC No:
EHS SUPPORT - ASHLAND	Tel/Fax: 215 498 0548	Lab Contact: KRIS DUSABLON	Carrier:	1 of 2 COCs
	Analysis Turnaround Time			Sampler:
(215) 498 0548 Phone	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
( ) FAX	TAT if different from Below _____			Walk-in Client:
Project Name: DNS SED SAMPLING - PHASE 2	☐ 2 weeks			Lab Sampling:
Site: DN POST EWEN NY	☐ 1 week			
P O #	☐ 2 days			Job / SDG No.:
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Cu, Se, Zn (L07604)	Hg (74718)	TOC (Lloyd Kahn)	GRAIN SIZE (D422)	Moisture (25400)	METALS = Cu, Se, Zn, Hg Sample Specific Notes:
PE1016-P1SCD-REF1-A-0006 IN	10/11/16	1105		SED	2			X	X	X	X	X	HOLD SAMPLE
PE1016-P1SCD-REF1-B-0006 IN		1110						X	X	X	X	X	
PE1016-P1SCD-REF2-A-0006 IN		1050						X	X	X	X	X	
PE1016-P1SCD-REF2-B-0006 IN		1055						X	X	X	X	X	
PE1016-P1SCD-REF3-A-0006 IN		1040						X	X	X	X	X	
PE1016-P1SCD-REF3-B-0006 IN		1045						X	X	X	X	X	
PE1016-P1SCD-REF4-A-0006 IN		1030						X	X	X	X	X	
PE1016-P1SCD-REF4-B-0006 IN		1035						X	X	X	X	X	
PE1016-P1SCD-REF5-A-0003 IN		1015						X	X	X	X	X	
PE1016-P1SCD-REF5-B-0003 IN		1020						X	X	X	X	X	HOLD SAMPLE
PE1016-P1SCD-05-A-0006 IN		1225						X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT
PE1016-P1SCD-05-B-0006 IN	10/12/16	1230		SED	2			X	X	X	X	X	METALS 3-d TAT; TOC/GS STD TAT

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1 ; 4

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:
PLEASE REFER TO SPREADSHEET PROVIDED TO KRIS DUSABLON FOR FURTHER DETAILS REGARDING TATS AND SAMPLE HOLDS.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: 00007		Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____		
Relinquished by:	Company: EHS SUPPORT	Date/Time: 10/11/16 1700	Received by:	Company: TA	Date/Time: 10/12/16 1020
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802.660.1990 fax 802.660.1919

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager:	Site Contact:	Date: 10/14/16	COC No:
* SEE PAGE #1 *	Tel/Fax:	Lab Contact:	Carrier:	2 of 2 COCs
( ) Phone	Analysis Turnaround Time ☐ CALENDAR DAYS ☐ WORKING DAYS			Sampler:
( ) FAX	TAT if different from Below _____ ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			For Lab Use Only: Walk-in Client: Lab Sampling:
Project Name:				Job / SDG No.:
Site:				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Cr, Se, Zn (6020A)	Hg (7471B)	TOC (Lloyd Kahn)	Grain Size (ASTM D422)	Moisture (D2216)	Sample Specific Notes:
PE1016-P1SCD-REF3-A-0006IN-D	10/11/16	1441		SED	2			X	X	X	X	X	HOLD SAMPLE
PE1016-P1SCD-05-A-0006IN-MS		1226			1		Y	X	X			X	STANDARD TAT
PE1016-P1SCD-05-A-0006IN-MSD		1227			1		Y	X	X			X	STANDARD TAT
PE1016-P1SCD-REF3-A-0006IN-MS		1043			1			X	X			X	HOLD SAMPLE
PE1016-P1SCD-REF3-A-0006IN-MSD		1042		SED	1			X	X			X	HOLD SAMPLE
PE1016-P1SCD-BLK-Z-101116	10/11/16	1610		AQ	1			X	X				EQUIP BLANK, STD TAT

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 4

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:

* SEE PAGE 1 *

Custody Seals Intact: ☒ Yes ☐ No | Custody Seal No.: 00002 | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Eth Support	10/11/16 1700	[signature]	TA	10/14/16 1020
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013



ORIGIN ID:PHTA (800) 463-3339
FEDEX EMP #: 62091
FEDEX OVERGOODS
2915 SOUTHAIRE

MEMPHIS, TN 38129
UNITED STATES US

SHIP DATE: 13OCT16
ACTWGT: 50.00 LB
CAD: 5673651/WSXI2200
DIMS: 0x0x0 IN

BILL SENDER

TO KRISTINE DUSABLON
TEST AMERICAN
30 COMMUNITY DR STE 11

SOUTH BURLINGTON VT 05403
(802) 497-8749 REF: PK:5216287
INV: ORI784325804310
PO: SHIP ON ORIGINAL P.O. # DEPT:

FedEx Express

FRI - 14 OCT 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7843 2580 4310

XH BTVA

05403
VT-US BTV

Part # 156148V-434 RIT2 10/15

ANALYTICAL REPORT

Job Number: 200-36502-1

SDG Number: 200-36502-1

Job Description: Port Ewen DNS Sediment

For:
Ashland LLC
Ashland Hercules Research Center
500 Hercules Rd Bldg 8139
Wilmington, DE 19808

Attention: John Hoffman

Approved for release.
Kristine A Dusablon
Project Manager II
12/16/2016 1:50 PM

Kristine A Dusablon, Project Manager II
30 Community Drive, South Burlington, VT, 05403
(802)660-1990
kris.dusablon@testamericainc.com
12/16/2016

cc: Melissa Hollinger
Gary Long

The test results in this report relate only to sample(s) as received by the laboratory. These test results were derived under a quality system that adheres to the requirements of NELAC. Pursuant to NELAC, this report may not be produced in full without written approval from the laboratory

CASE NARRATIVE

Client: Ashland LLC

Project: Port Ewen DNS Sediment

Report Number: 200-36502-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 12/06/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt time were 3.4º C and 4.4º C.

METALS (ICPMS)
Samples PE1216-P1SCD-20-B-0006 IN, PE1216-P1SCD-20-B-0006 IN-D, PE1216-P1SCD-20-A-0005 IN, PE1216-P1SCD-20-A-0517 IN, PE1216-P1SCD-19-B-0008 IN, PE1216-P1SCD-19-A-0009 IN, PE1216-P1SCD-19-A-0918 IN, PE1216-P1SCD-18-A-0004 IN, PE1216-P1SCD-18-B-0001 IN, PE1216-P1SCD-17-A-0005 IN, PE1216-P1SCD-17-B-0008 IN, PE1216-P1SCD-16-A-0006 IN, PE1216-P1SCD-16-B-0004 IN, PE1216-P1SCD-15-A-0006 IN, PE1216-P1SCD-15-B-0004 IN and PE1216-P1SCD-EQBLK-1 were analyzed for metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 12/09/2016 and analyzed on 12/12/2016.

A serial dilution was performed on the digestate of sample PE1216-P1SCD-15-B-0004 IN, associated with batch 200-112326, and it was outside control limits for Cu and Zn. Refer to the QC report for details.

Due to the high concentration of Cu and Zn, the matrix spike (MS) recovery on sample PE1216-P1SCD-15-B-0004 IN, for preparation batch 200-112229 and analytical batch 200-112326, could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria for all target analytes.

The matrix spike and matrix spike duplicate (MS/MSD) recoveries for sample PE1216-P1SCD-15-B-0004 IN in preparation batch 200-112229 and analytical batch 200-112326 were outside control limits for Se. Sample matrix interference and/or non-homogeneity are suspected.

The post digestion spike was performed on the digestate of sample PE1216-P1SCD-15-B-0004 IN and Selenium recovery was outside of control limits. Refer to the QC report for details.

Due to the high concentration of Copper, the matrix spike duplicates (MSD) for the sample PE1216-P1SCD-15-B-0004 IN for preparation batch 200-112229 and analytical batch 200-112326 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria for all target analytes..

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY
Samples PE1216-P1SCD-20-B-0006 IN, PE1216-P1SCD-20-B-0006 IN-D, PE1216-P1SCD-20-A-0005 IN, PE1216-P1SCD-20-A-0517 IN, PE1216-P1SCD-19-B-0008 IN, PE1216-P1SCD-19-A-0009 IN, PE1216-P1SCD-19-A-0918 IN, PE1216-P1SCD-18-A-0004 IN, PE1216-P1SCD-18-B-0001 IN, PE1216-P1SCD-17-A-0005 IN, PE1216-P1SCD-17-B-0008 IN, PE1216-P1SCD-16-A-0006 IN, PE1216-P1SCD-16-B-0004 IN, PE1216-P1SCD-15-A-0006 IN, PE1216-P1SCD-15-B-0004 IN and PE1216-P1SCD-EQBLK-1 were analyzed for mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared and analyzed on 12/09/2016.

The matrix spike (MS) and matrix spike duplicate (MSD) recoveries for preparation batch 200-112231 and analytical batch 200-112283 were outside control limits for Mercury. Additionally, Mercury exceeded the RPD limit. The concentration in the unspiked sample PE1216-P1SCD-15-B-0004 IN exceeded four times the spiking amount added to sample. The associated laboratory control sample (LCS) recovery was within acceptance limits.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GRAIN SIZE

Samples PE1216-P1SCD-20-B-0006 IN, PE1216-P1SCD-20-B-0006 IN-D, PE1216-P1SCD-20-A-0005 IN, PE1216-P1SCD-20-A-0517 IN, PE1216-P1SCD-19-B-0008 IN, PE1216-P1SCD-19-A-0009 IN, PE1216-P1SCD-19-A-0918 IN, PE1216-P1SCD-18-A-0004 IN, PE1216-P1SCD-18-B-0001 IN, PE1216-P1SCD-17-A-0005 IN, PE1216-P1SCD-17-B-0008 IN, PE1216-P1SCD-16-A-0006 IN, PE1216-P1SCD-16-B-0004 IN, PE1216-P1SCD-15-A-0006 IN and PE1216-P1SCD-15-B-0004 IN were analyzed for grain size in accordance with D422 grain size. The samples were analyzed on 12/09/2016 and 12/10/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Samples PE1216-P1SCD-20-B-0006 IN, PE1216-P1SCD-20-B-0006 IN-D, PE1216-P1SCD-20-A-0005 IN, PE1216-P1SCD-20-A-0517 IN, PE1216-P1SCD-19-B-0008 IN, PE1216-P1SCD-19-A-0009 IN, PE1216-P1SCD-19-A-0918 IN, PE1216-P1SCD-18-A-0004 IN, PE1216-P1SCD-18-B-0001 IN, PE1216-P1SCD-17-A-0005 IN, PE1216-P1SCD-17-B-0008 IN, PE1216-P1SCD-16-A-0006 IN, PE1216-P1SCD-16-B-0004 IN, PE1216-P1SCD-15-A-0006 IN and PE1216-P1SCD-15-B-0004 IN were analyzed for total organic carbon in accordance with Lloyd Kahn Method. The samples were analyzed on 12/09/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples PE1216-P1SCD-20-B-0006 IN, PE1216-P1SCD-20-B-0006 IN-D, PE1216-P1SCD-20-A-0005 IN, PE1216-P1SCD-20-A-0517 IN, PE1216-P1SCD-19-B-0008 IN, PE1216-P1SCD-19-A-0009 IN, PE1216-P1SCD-19-A-0918 IN, PE1216-P1SCD-18-A-0004 IN, PE1216-P1SCD-18-B-0001 IN, PE1216-P1SCD-17-A-0005 IN, PE1216-P1SCD-17-B-0008 IN, PE1216-P1SCD-16-A-0006 IN, PE1216-P1SCD-16-B-0004 IN, PE1216-P1SCD-15-A-0006 IN, PE1216-P1SCD-15-B-0004 IN and PE1216-P1SCD-EQBLK-1 were analyzed for percent solids in accordance with EPA Moisture. The samples were analyzed on 12/08/2016 and 12/09/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

EXECUTIVE SUMMARY - Detections

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-36502-1	**PE1216-P1SCD-20-B-0006 IN**					
Copper		53.8		0.62	mg/Kg	6020A
Selenium		0.31	J	0.50	mg/Kg	6020A
Zinc		52.4		2.5	mg/Kg	6020A
Mercury		0.12		0.053	mg/Kg	7471B
Total Organic Carbon		11600		1000	mg/Kg	Lloyd Kahn
Percent Solids		71.5		0.3	%	Moisture
Sieve Size 2 inch - Percent Finer		100.0			% Passing	D422
Gravel		0.0			%	D422
Sieve Size 1.5 inch - Percent Finer		100.0			% Passing	D422
Sand		65.1			%	D422
Sieve Size 1 inch - Percent Finer		100.0			% Passing	D422
Coarse Sand		0.5			%	D422
Sieve Size 0.75 inch - Percent Finer		100.0			% Passing	D422
Medium Sand		2.1			%	D422
Sieve Size 0.375 inch - Percent Finer		100.0			% Passing	D422
Fine Sand		62.5			%	D422
Sieve Size #4 - Percent Finer		100.0			% Passing	D422
Silt		24.3			%	D422
Sieve Size #10 - Percent Finer		99.5			% Passing	D422
Clay		10.6			%	D422
Sieve Size #20 - Percent Finer		98.6			% Passing	D422
Sieve Size #40 - Percent Finer		97.4			% Passing	D422
Sieve Size #60 - Percent Finer		88.0			% Passing	D422
Sieve Size #80 - Percent Finer		77.8			% Passing	D422
Sieve Size #100 - Percent Finer		69.4			% Passing	D422
Sieve Size #200 - Percent Finer		38.7			% Passing	D422
Sieve Size #230 - Percent Finer		34.9			% Passing	D422
Hydrometer Reading 1 - Percent Finer		24.1			% Passing	D422
Hydrometer Reading 2 - Percent Finer		19.4			% Passing	D422
Hydrometer Reading 3 - Percent Finer		15.3			% Passing	D422
Hydrometer Reading 4 - Percent Finer		12.2			% Passing	D422
Hydrometer Reading 5 - Percent Finer		10.6			% Passing	D422
Hydrometer Reading 6 - Percent Finer		7.0			% Passing	D422
Hydrometer Reading 7 - Percent Finer		4.9			% Passing	D422

EXECUTIVE SUMMARY - Detections

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-36502-2	**PE1216-P1SCD-20-B-0006 IN-D**					
Copper		25.7		0.63	mg/Kg	6020A
Selenium		0.32	J	0.50	mg/Kg	6020A
Zinc		48.8		2.5	mg/Kg	6020A
Mercury		0.084		0.050	mg/Kg	7471B
Total Organic Carbon		10600		1000	mg/Kg	Lloyd Kahn
Percent Solids		70.8		0.3	%	Moisture
Sieve Size 2 inch - Percent Finer		100.0			% Passing	D422
Gravel		0.0			%	D422
Sieve Size 1.5 inch - Percent Finer		100.0			% Passing	D422
Sand		66.6			%	D422
Sieve Size 1 inch - Percent Finer		100.0			% Passing	D422
Coarse Sand		0.5			%	D422
Sieve Size 0.75 inch - Percent Finer		100.0			% Passing	D422
Medium Sand		2.3			%	D422
Sieve Size 0.375 inch - Percent Finer		100.0			% Passing	D422
Fine Sand		63.8			%	D422
Sieve Size #4 - Percent Finer		100.0			% Passing	D422
Silt		23.1			%	D422
Sieve Size #10 - Percent Finer		99.5			% Passing	D422
Clay		10.3			%	D422
Sieve Size #20 - Percent Finer		98.5			% Passing	D422
Sieve Size #40 - Percent Finer		97.2			% Passing	D422
Sieve Size #60 - Percent Finer		87.2			% Passing	D422
Sieve Size #80 - Percent Finer		76.5			% Passing	D422
Sieve Size #100 - Percent Finer		67.8			% Passing	D422
Sieve Size #200 - Percent Finer		37.4			% Passing	D422
Sieve Size #230 - Percent Finer		33.4			% Passing	D422
Hydrometer Reading 1 - Percent Finer		23.3			% Passing	D422
Hydrometer Reading 2 - Percent Finer		19.0			% Passing	D422
Hydrometer Reading 3 - Percent Finer		15.1			% Passing	D422
Hydrometer Reading 4 - Percent Finer		13.2			% Passing	D422
Hydrometer Reading 5 - Percent Finer		10.3			% Passing	D422
Hydrometer Reading 6 - Percent Finer		7.5			% Passing	D422
Hydrometer Reading 7 - Percent Finer		5.1			% Passing	D422

EXECUTIVE SUMMARY - Detections

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-36502-3	**PE1216-P1SCD-20-A-0005 IN**					
Copper		176		0.75	mg/Kg	6020A
Selenium		0.94		0.60	mg/Kg	6020A
Zinc		128		3.0	mg/Kg	6020A
Mercury		0.45		0.066	mg/Kg	7471B
Total Organic Carbon		27600		1000	mg/Kg	Lloyd Kahn
Percent Solids		51.1		0.3	%	Moisture
Sieve Size 2 inch - Percent Finer		100.0			% Passing	D422
Gravel		2.1			%	D422
Sieve Size 1.5 inch - Percent Finer		100.0			% Passing	D422
Sand		59.1			%	D422
Sieve Size 1 inch - Percent Finer		100.0			% Passing	D422
Coarse Sand		2.1			%	D422
Sieve Size 0.75 inch - Percent Finer		100.0			% Passing	D422
Medium Sand		5.4			%	D422
Sieve Size 0.375 inch - Percent Finer		100.0			% Passing	D422
Fine Sand		51.6			%	D422
Sieve Size #4 - Percent Finer		97.9			% Passing	D422
Silt		33.5			%	D422
Sieve Size #10 - Percent Finer		95.8			% Passing	D422
Clay		5.3			%	D422
Sieve Size #20 - Percent Finer		93.3			% Passing	D422
Sieve Size #40 - Percent Finer		90.4			% Passing	D422
Sieve Size #60 - Percent Finer		76.2			% Passing	D422
Sieve Size #80 - Percent Finer		61.5			% Passing	D422
Sieve Size #100 - Percent Finer		54.0			% Passing	D422
Sieve Size #200 - Percent Finer		40.2			% Passing	D422
Sieve Size #230 - Percent Finer		38.8			% Passing	D422
Hydrometer Reading 1 - Percent Finer		11.6			% Passing	D422
Hydrometer Reading 2 - Percent Finer		9.7			% Passing	D422
Hydrometer Reading 3 - Percent Finer		7.8			% Passing	D422
Hydrometer Reading 4 - Percent Finer		6.6			% Passing	D422
Hydrometer Reading 5 - Percent Finer		5.3			% Passing	D422
Hydrometer Reading 6 - Percent Finer		2.8			% Passing	D422
Hydrometer Reading 7 - Percent Finer		1.6			% Passing	D422

EXECUTIVE SUMMARY - Detections

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-36502-4	**PE1216-P1SCD-20-A-0517 IN**					
Copper		130		0.55	mg/Kg	6020A
Selenium		1.1		0.44	mg/Kg	6020A
Zinc		103		2.2	mg/Kg	6020A
Mercury		0.13		0.046	mg/Kg	7471B
Total Organic Carbon		8550		1000	mg/Kg	Lloyd Kahn
Percent Solids		83.7		0.3	%	Moisture
Sieve Size 2 inch - Percent Finer		100.0			% Passing	D422
Gravel		4.1			%	D422
Sieve Size 1.5 inch - Percent Finer		100.0			% Passing	D422
Sand		51.3			%	D422
Sieve Size 1 inch - Percent Finer		100.0			% Passing	D422
Coarse Sand		5.5			%	D422
Sieve Size 0.75 inch - Percent Finer		100.0			% Passing	D422
Medium Sand		28.7			%	D422
Sieve Size 0.375 inch - Percent Finer		98.8			% Passing	D422
Fine Sand		17.1			%	D422
Sieve Size #4 - Percent Finer		95.9			% Passing	D422
Silt		43.6			%	D422
Sieve Size #10 - Percent Finer		90.4			% Passing	D422
Clay		1			%	D422
Sieve Size #20 - Percent Finer		77.2			% Passing	D422
Sieve Size #40 - Percent Finer		61.7			% Passing	D422
Sieve Size #60 - Percent Finer		49.3			% Passing	D422
Sieve Size #80 - Percent Finer		46.8			% Passing	D422
Sieve Size #100 - Percent Finer		46.0			% Passing	D422
Sieve Size #200 - Percent Finer		44.8			% Passing	D422
Sieve Size #230 - Percent Finer		44.6			% Passing	D422
Hydrometer Reading 1 - Percent Finer		2.1			% Passing	D422
Hydrometer Reading 2 - Percent Finer		1.8			% Passing	D422
Hydrometer Reading 3 - Percent Finer		1.5			% Passing	D422
Hydrometer Reading 4 - Percent Finer		1.3			% Passing	D422
Hydrometer Reading 5 - Percent Finer		1			% Passing	D422
Hydrometer Reading 6 - Percent Finer		0.4			% Passing	D422
Hydrometer Reading 7 - Percent Finer		0.4			% Passing	D422

EXECUTIVE SUMMARY - Detections

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-36502-5	**PE1216-P1SCD-19-B-0008 IN**					
Copper		62.6		0.65	mg/Kg	6020A
Selenium		0.57		0.52	mg/Kg	6020A
Zinc		73.3		2.6	mg/Kg	6020A
Mercury		0.13		0.046	mg/Kg	7471B
Total Organic Carbon		8290		1000	mg/Kg	Lloyd Kahn
Percent Solids		74.1		0.3	%	Moisture
Sieve Size 2 inch - Percent Finer		100.0			% Passing	D422
Gravel		2.7			%	D422
Sieve Size 1.5 inch - Percent Finer		100.0			% Passing	D422
Sand		73.4			%	D422
Sieve Size 1 inch - Percent Finer		100.0			% Passing	D422
Coarse Sand		2.0			%	D422
Sieve Size 0.75 inch - Percent Finer		100.0			% Passing	D422
Medium Sand		8.6			%	D422
Sieve Size 0.375 inch - Percent Finer		100.0			% Passing	D422
Fine Sand		62.8			%	D422
Sieve Size #4 - Percent Finer		97.3			% Passing	D422
Silt		20.6			%	D422
Sieve Size #10 - Percent Finer		95.3			% Passing	D422
Clay		3.3			%	D422
Sieve Size #20 - Percent Finer		92.7			% Passing	D422
Sieve Size #40 - Percent Finer		86.7			% Passing	D422
Sieve Size #60 - Percent Finer		70.4			% Passing	D422
Sieve Size #80 - Percent Finer		56.8			% Passing	D422
Sieve Size #100 - Percent Finer		47.9			% Passing	D422
Sieve Size #200 - Percent Finer		25.9			% Passing	D422
Sieve Size #230 - Percent Finer		23.9			% Passing	D422
Hydrometer Reading 1 - Percent Finer		7.6			% Passing	D422
Hydrometer Reading 2 - Percent Finer		6.0			% Passing	D422
Hydrometer Reading 3 - Percent Finer		4.5			% Passing	D422
Hydrometer Reading 4 - Percent Finer		3.7			% Passing	D422
Hydrometer Reading 5 - Percent Finer		3.3			% Passing	D422
Hydrometer Reading 6 - Percent Finer		2.1			% Passing	D422
Hydrometer Reading 7 - Percent Finer		1.4			% Passing	D422

EXECUTIVE SUMMARY - Detections

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-36502-6	**PE1216-P1SCD-19-A-0009 IN**					
Copper		66.0		0.59	mg/Kg	6020A
Selenium		0.42	J	0.47	mg/Kg	6020A
Zinc		66.1		2.4	mg/Kg	6020A
Mercury		0.24		0.049	mg/Kg	7471B
Total Organic Carbon		13100		1000	mg/Kg	Lloyd Kahn
Percent Solids		69.6		0.3	%	Moisture
Sieve Size 2 inch - Percent Finer		100.0			% Passing	D422
Gravel		9.7			%	D422
Sieve Size 1.5 inch - Percent Finer		100.0			% Passing	D422
Sand		72.6			%	D422
Sieve Size 1 inch - Percent Finer		100.0			% Passing	D422
Coarse Sand		2.7			%	D422
Sieve Size 0.75 inch - Percent Finer		100.0			% Passing	D422
Medium Sand		7.2			%	D422
Sieve Size 0.375 inch - Percent Finer		93.0			% Passing	D422
Fine Sand		62.7			%	D422
Sieve Size #4 - Percent Finer		90.3			% Passing	D422
Silt		13.4			%	D422
Sieve Size #10 - Percent Finer		87.6			% Passing	D422
Clay		4.3			%	D422
Sieve Size #20 - Percent Finer		84.7			% Passing	D422
Sieve Size #40 - Percent Finer		80.4			% Passing	D422
Sieve Size #60 - Percent Finer		65.3			% Passing	D422
Sieve Size #80 - Percent Finer		52.4			% Passing	D422
Sieve Size #100 - Percent Finer		44.0			% Passing	D422
Sieve Size #200 - Percent Finer		20.6			% Passing	D422
Sieve Size #230 - Percent Finer		17.7			% Passing	D422
Hydrometer Reading 1 - Percent Finer		12.2			% Passing	D422
Hydrometer Reading 2 - Percent Finer		10.8			% Passing	D422
Hydrometer Reading 3 - Percent Finer		7.9			% Passing	D422
Hydrometer Reading 4 - Percent Finer		5.0			% Passing	D422
Hydrometer Reading 5 - Percent Finer		4.3			% Passing	D422
Hydrometer Reading 6 - Percent Finer		2.2			% Passing	D422
Hydrometer Reading 7 - Percent Finer		0.7			% Passing	D422

EXECUTIVE SUMMARY - Detections

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-36502-7	**PE1216-P1SCD-19-A-0918 IN**					
Copper		14.7		0.69	mg/Kg	6020A
Selenium		0.39	J	0.55	mg/Kg	6020A
Zinc		44.8		2.7	mg/Kg	6020A
Mercury		0.024	J	0.052	mg/Kg	7471B
Total Organic Carbon		25500		1000	mg/Kg	Lloyd Kahn
Percent Solids		70.7		0.3	%	Moisture
Sieve Size 2 inch - Percent Finer		100.0			% Passing	D422
Gravel		2.8			%	D422
Sieve Size 1.5 inch - Percent Finer		100.0			% Passing	D422
Sand		70.5			%	D422
Sieve Size 1 inch - Percent Finer		100.0			% Passing	D422
Coarse Sand		3.5			%	D422
Sieve Size 0.75 inch - Percent Finer		100.0			% Passing	D422
Medium Sand		9.6			%	D422
Sieve Size 0.375 inch - Percent Finer		100.0			% Passing	D422
Fine Sand		57.4			%	D422
Sieve Size #4 - Percent Finer		97.2			% Passing	D422
Silt		19.5			%	D422
Sieve Size #10 - Percent Finer		93.7			% Passing	D422
Clay		7.2			%	D422
Sieve Size #20 - Percent Finer		89.2			% Passing	D422
Sieve Size #40 - Percent Finer		84.1			% Passing	D422
Sieve Size #60 - Percent Finer		70.7			% Passing	D422
Sieve Size #80 - Percent Finer		60.4			% Passing	D422
Sieve Size #100 - Percent Finer		53.1			% Passing	D422
Sieve Size #200 - Percent Finer		29.9			% Passing	D422
Sieve Size #230 - Percent Finer		26.7			% Passing	D422
Hydrometer Reading 1 - Percent Finer		18.9			% Passing	D422
Hydrometer Reading 2 - Percent Finer		14.4			% Passing	D422
Hydrometer Reading 3 - Percent Finer		11.1			% Passing	D422
Hydrometer Reading 4 - Percent Finer		8.5			% Passing	D422
Hydrometer Reading 5 - Percent Finer		7.2			% Passing	D422
Hydrometer Reading 6 - Percent Finer		3.9			% Passing	D422
Hydrometer Reading 7 - Percent Finer		2.0			% Passing	D422

EXECUTIVE SUMMARY - Detections

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-36502-8	**PE1216-P1SCD-18-A-0004 IN**					
Copper		233		0.97	mg/Kg	6020A
Selenium		1.2		0.78	mg/Kg	6020A
Zinc		198		3.9	mg/Kg	6020A
Mercury		0.59		0.069	mg/Kg	7471B
Total Organic Carbon		26000		1000	mg/Kg	Lloyd Kahn
Percent Solids		50.9		0.3	%	Moisture
Sieve Size 2 inch - Percent Finer		100.0			% Passing	D422
Gravel		1.9			%	D422
Sieve Size 1.5 inch - Percent Finer		100.0			% Passing	D422
Sand		76.4			%	D422
Sieve Size 1 inch - Percent Finer		100.0			% Passing	D422
Coarse Sand		6.2			%	D422
Sieve Size 0.75 inch - Percent Finer		100.0			% Passing	D422
Medium Sand		27.7			%	D422
Sieve Size 0.375 inch - Percent Finer		100.0			% Passing	D422
Fine Sand		42.5			%	D422
Sieve Size #4 - Percent Finer		98.1			% Passing	D422
Silt		16.0			%	D422
Sieve Size #10 - Percent Finer		91.9			% Passing	D422
Clay		5.7			%	D422
Sieve Size #20 - Percent Finer		76.4			% Passing	D422
Sieve Size #40 - Percent Finer		64.2			% Passing	D422
Sieve Size #60 - Percent Finer		48.9			% Passing	D422
Sieve Size #80 - Percent Finer		40.5			% Passing	D422
Sieve Size #100 - Percent Finer		35.9			% Passing	D422
Sieve Size #200 - Percent Finer		24.0			% Passing	D422
Sieve Size #230 - Percent Finer		21.7			% Passing	D422
Hydrometer Reading 1 - Percent Finer		17.0			% Passing	D422
Hydrometer Reading 2 - Percent Finer		14.7			% Passing	D422
Hydrometer Reading 3 - Percent Finer		11.3			% Passing	D422
Hydrometer Reading 4 - Percent Finer		7.9			% Passing	D422
Hydrometer Reading 5 - Percent Finer		5.7			% Passing	D422
Hydrometer Reading 6 - Percent Finer		3.4			% Passing	D422
Hydrometer Reading 7 - Percent Finer		1.1			% Passing	D422

EXECUTIVE SUMMARY - Detections

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-36502-9	**PE1216-P1SCD-18-B-0001 IN**					
Copper		280		0.81	mg/Kg	6020A
Selenium		1.4		0.65	mg/Kg	6020A
Zinc		198		3.3	mg/Kg	6020A
Mercury		1.0		0.076	mg/Kg	7471B
Total Organic Carbon		31000		1000	mg/Kg	Lloyd Kahn
Percent Solids		48.0		0.3	%	Moisture
Sieve Size 2 inch - Percent Finer		100.0			% Passing	D422
Gravel		14.6			%	D422
Sieve Size 1.5 inch - Percent Finer		100.0			% Passing	D422
Sand		52.2			%	D422
Sieve Size 1 inch - Percent Finer		100.0			% Passing	D422
Coarse Sand		14.0			%	D422
Sieve Size 0.75 inch - Percent Finer		100.0			% Passing	D422
Medium Sand		13.6			%	D422
Sieve Size 0.375 inch - Percent Finer		100.0			% Passing	D422
Fine Sand		24.6			%	D422
Sieve Size #4 - Percent Finer		85.4			% Passing	D422
Silt		26.1			%	D422
Sieve Size #10 - Percent Finer		71.4			% Passing	D422
Clay		7.2			%	D422
Sieve Size #20 - Percent Finer		63.3			% Passing	D422
Sieve Size #40 - Percent Finer		57.8			% Passing	D422
Sieve Size #60 - Percent Finer		51.3			% Passing	D422
Sieve Size #80 - Percent Finer		47.1			% Passing	D422
Sieve Size #100 - Percent Finer		44.5			% Passing	D422
Sieve Size #200 - Percent Finer		35.2			% Passing	D422
Sieve Size #230 - Percent Finer		33.2			% Passing	D422
Hydrometer Reading 1 - Percent Finer		19.4			% Passing	D422
Hydrometer Reading 2 - Percent Finer		15.3			% Passing	D422
Hydrometer Reading 3 - Percent Finer		12.3			% Passing	D422
Hydrometer Reading 4 - Percent Finer		9.2			% Passing	D422
Hydrometer Reading 5 - Percent Finer		7.2			% Passing	D422
Hydrometer Reading 6 - Percent Finer		3.1			% Passing	D422
Hydrometer Reading 7 - Percent Finer		1.0			% Passing	D422

EXECUTIVE SUMMARY - Detections

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-36502-10	**PE1216-P1SCD-17-A-0005 IN**					
Copper		215		0.87	mg/Kg	6020A
Selenium		1.4		0.70	mg/Kg	6020A
Zinc		103		3.5	mg/Kg	6020A
Mercury		2.0		0.067	mg/Kg	7471B
Total Organic Carbon		22800		1000	mg/Kg	Lloyd Kahn
Percent Solids		54.0		0.3	%	Moisture
Sieve Size 2 inch - Percent Finer		100.0			% Passing	D422
Gravel		1.1			%	D422
Sieve Size 1.5 inch - Percent Finer		100.0			% Passing	D422
Sand		59.7			%	D422
Sieve Size 1 inch - Percent Finer		100.0			% Passing	D422
Coarse Sand		5.8			%	D422
Sieve Size 0.75 inch - Percent Finer		100.0			% Passing	D422
Medium Sand		11.2			%	D422
Sieve Size 0.375 inch - Percent Finer		100.0			% Passing	D422
Fine Sand		42.7			%	D422
Sieve Size #4 - Percent Finer		98.9			% Passing	D422
Silt		27.7			%	D422
Sieve Size #10 - Percent Finer		93.1			% Passing	D422
Clay		11.5			%	D422
Sieve Size #20 - Percent Finer		87.7			% Passing	D422
Sieve Size #40 - Percent Finer		81.9			% Passing	D422
Sieve Size #60 - Percent Finer		69.7			% Passing	D422
Sieve Size #80 - Percent Finer		60.1			% Passing	D422
Sieve Size #100 - Percent Finer		55.1			% Passing	D422
Sieve Size #200 - Percent Finer		41.5			% Passing	D422
Sieve Size #230 - Percent Finer		39.2			% Passing	D422
Hydrometer Reading 1 - Percent Finer		29.2			% Passing	D422
Hydrometer Reading 2 - Percent Finer		23.9			% Passing	D422
Hydrometer Reading 3 - Percent Finer		18.6			% Passing	D422
Hydrometer Reading 4 - Percent Finer		15.0			% Passing	D422
Hydrometer Reading 5 - Percent Finer		11.5			% Passing	D422
Hydrometer Reading 6 - Percent Finer		8.0			% Passing	D422
Hydrometer Reading 7 - Percent Finer		2.7			% Passing	D422

EXECUTIVE SUMMARY - Detections

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-36502-11	**PE1216-P1SCD-17-B-0008 IN**					
Copper		244		1.2	mg/Kg	6020A
Selenium		1.7		0.99	mg/Kg	6020A
Zinc		138		5.0	mg/Kg	6020A
Mercury		1.1		0.091	mg/Kg	7471B
Total Organic Carbon		36600		1000	mg/Kg	Lloyd Kahn
Percent Solids		39.5		0.3	%	Moisture
Sieve Size 2 inch - Percent Finer		100.0			% Passing	D422
Gravel		3.0			%	D422
Sieve Size 1.5 inch - Percent Finer		100.0			% Passing	D422
Sand		59.4			%	D422
Sieve Size 1 inch - Percent Finer		100.0			% Passing	D422
Coarse Sand		15.0			%	D422
Sieve Size 0.75 inch - Percent Finer		100.0			% Passing	D422
Medium Sand		20.4			%	D422
Sieve Size 0.375 inch - Percent Finer		100.0			% Passing	D422
Fine Sand		24.0			%	D422
Sieve Size #4 - Percent Finer		97.0			% Passing	D422
Silt		27.0			%	D422
Sieve Size #10 - Percent Finer		82.0			% Passing	D422
Clay		10.6			%	D422
Sieve Size #20 - Percent Finer		72.1			% Passing	D422
Sieve Size #40 - Percent Finer		61.6			% Passing	D422
Sieve Size #60 - Percent Finer		51.2			% Passing	D422
Sieve Size #80 - Percent Finer		46.7			% Passing	D422
Sieve Size #100 - Percent Finer		44.5			% Passing	D422
Sieve Size #200 - Percent Finer		38.8			% Passing	D422
Sieve Size #230 - Percent Finer		37.6			% Passing	D422
Hydrometer Reading 1 - Percent Finer		29.5			% Passing	D422
Hydrometer Reading 2 - Percent Finer		24.8			% Passing	D422
Hydrometer Reading 3 - Percent Finer		20.1			% Passing	D422
Hydrometer Reading 4 - Percent Finer		15.4			% Passing	D422
Hydrometer Reading 5 - Percent Finer		10.6			% Passing	D422
Hydrometer Reading 6 - Percent Finer		7.1			% Passing	D422
Hydrometer Reading 7 - Percent Finer		3.5			% Passing	D422

EXECUTIVE SUMMARY - Detections

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-36502-12	**PE1216-P1SCD-16-A-0006 IN**					
Copper		623		0.70	mg/Kg	6020A
Selenium		0.59		0.56	mg/Kg	6020A
Zinc		114		2.8	mg/Kg	6020A
Mercury		2.5		0.057	mg/Kg	7471B
Total Organic Carbon		14000		1000	mg/Kg	Lloyd Kahn
Percent Solids		67.8		0.3	%	Moisture
Sieve Size 2 inch - Percent Finer		100.0			% Passing	D422
Gravel		0.0			%	D422
Sieve Size 1.5 inch - Percent Finer		100.0			% Passing	D422
Sand		53.7			%	D422
Sieve Size 1 inch - Percent Finer		100.0			% Passing	D422
Coarse Sand		1.9			%	D422
Sieve Size 0.75 inch - Percent Finer		100.0			% Passing	D422
Medium Sand		7.3			%	D422
Sieve Size 0.375 inch - Percent Finer		100.0			% Passing	D422
Fine Sand		44.5			%	D422
Sieve Size #4 - Percent Finer		100.0			% Passing	D422
Silt		34.9			%	D422
Sieve Size #10 - Percent Finer		98.1			% Passing	D422
Clay		11.4			%	D422
Sieve Size #20 - Percent Finer		94.8			% Passing	D422
Sieve Size #40 - Percent Finer		90.8			% Passing	D422
Sieve Size #60 - Percent Finer		82.7			% Passing	D422
Sieve Size #80 - Percent Finer		75.2			% Passing	D422
Sieve Size #100 - Percent Finer		69.6			% Passing	D422
Sieve Size #200 - Percent Finer		49.9			% Passing	D422
Sieve Size #230 - Percent Finer		46.3			% Passing	D422
Hydrometer Reading 1 - Percent Finer		34.1			% Passing	D422
Hydrometer Reading 2 - Percent Finer		26.5			% Passing	D422
Hydrometer Reading 3 - Percent Finer		20.2			% Passing	D422
Hydrometer Reading 4 - Percent Finer		16.4			% Passing	D422
Hydrometer Reading 5 - Percent Finer		11.4			% Passing	D422
Hydrometer Reading 6 - Percent Finer		7.6			% Passing	D422
Hydrometer Reading 7 - Percent Finer		3.8			% Passing	D422

EXECUTIVE SUMMARY - Detections

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-36502-13	**PE1216-P1SCD-16-B-0004 IN**					
Copper		401		1.1	mg/Kg	6020A
Selenium		1.4		0.88	mg/Kg	6020A
Zinc		168		4.4	mg/Kg	6020A
Mercury		1.9		0.084	mg/Kg	7471B
Total Organic Carbon		39700		1000	mg/Kg	Lloyd Kahn
Percent Solids		43.7		0.3	%	Moisture
Sieve Size 2 inch - Percent Finer		100.0			% Passing	D422
Gravel		2.9			%	D422
Sieve Size 1.5 inch - Percent Finer		100.0			% Passing	D422
Sand		50.0			%	D422
Sieve Size 1 inch - Percent Finer		100.0			% Passing	D422
Coarse Sand		6.1			%	D422
Sieve Size 0.75 inch - Percent Finer		100.0			% Passing	D422
Medium Sand		7.7			%	D422
Sieve Size 0.375 inch - Percent Finer		97.4			% Passing	D422
Fine Sand		36.2			%	D422
Sieve Size #4 - Percent Finer		97.1			% Passing	D422
Silt		33.2			%	D422
Sieve Size #10 - Percent Finer		91.0			% Passing	D422
Clay		13.9			%	D422
Sieve Size #20 - Percent Finer		87.7			% Passing	D422
Sieve Size #40 - Percent Finer		83.3			% Passing	D422
Sieve Size #60 - Percent Finer		66.4			% Passing	D422
Sieve Size #80 - Percent Finer		58.0			% Passing	D422
Sieve Size #100 - Percent Finer		54.8			% Passing	D422
Sieve Size #200 - Percent Finer		48.2			% Passing	D422
Sieve Size #230 - Percent Finer		47.1			% Passing	D422
Hydrometer Reading 1 - Percent Finer		33.2			% Passing	D422
Hydrometer Reading 2 - Percent Finer		28.9			% Passing	D422
Hydrometer Reading 3 - Percent Finer		22.5			% Passing	D422
Hydrometer Reading 4 - Percent Finer		18.2			% Passing	D422
Hydrometer Reading 5 - Percent Finer		13.9			% Passing	D422
Hydrometer Reading 6 - Percent Finer		8.6			% Passing	D422
Hydrometer Reading 7 - Percent Finer		5.4			% Passing	D422

EXECUTIVE SUMMARY - Detections

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-36502-14	**PE1216-P1SCD-15-A-0006 IN**					
Copper		587		1.5	mg/Kg	6020A
Selenium		2.3		1.2	mg/Kg	6020A
Zinc		220		5.8	mg/Kg	6020A
Mercury		3.1		0.11	mg/Kg	7471B
Total Organic Carbon		65300		1000	mg/Kg	Lloyd Kahn
Percent Solids		33.6		0.3	%	Moisture
Sieve Size 2 inch - Percent Finer		100.0			% Passing	D422
Gravel		2.0			%	D422
Sieve Size 1.5 inch - Percent Finer		100.0			% Passing	D422
Sand		33.7			%	D422
Sieve Size 1 inch - Percent Finer		100.0			% Passing	D422
Coarse Sand		4.6			%	D422
Sieve Size 0.75 inch - Percent Finer		100.0			% Passing	D422
Medium Sand		9.6			%	D422
Sieve Size 0.375 inch - Percent Finer		100.0			% Passing	D422
Fine Sand		19.5			%	D422
Sieve Size #4 - Percent Finer		98.0			% Passing	D422
Silt		48.8			%	D422
Sieve Size #10 - Percent Finer		93.4			% Passing	D422
Clay		15.5			%	D422
Sieve Size #20 - Percent Finer		87.5			% Passing	D422
Sieve Size #40 - Percent Finer		83.8			% Passing	D422
Sieve Size #60 - Percent Finer		75.9			% Passing	D422
Sieve Size #80 - Percent Finer		71.7			% Passing	D422
Sieve Size #100 - Percent Finer		69.9			% Passing	D422
Sieve Size #200 - Percent Finer		65.3			% Passing	D422
Sieve Size #230 - Percent Finer		64.3			% Passing	D422
Hydrometer Reading 1 - Percent Finer		56.2			% Passing	D422
Hydrometer Reading 2 - Percent Finer		44.2			% Passing	D422
Hydrometer Reading 3 - Percent Finer		27.5			% Passing	D422
Hydrometer Reading 4 - Percent Finer		20.3			% Passing	D422
Hydrometer Reading 5 - Percent Finer		15.5			% Passing	D422
Hydrometer Reading 6 - Percent Finer		11.9			% Passing	D422
Hydrometer Reading 7 - Percent Finer		8.4			% Passing	D422

EXECUTIVE SUMMARY - Detections

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-36502-15	**PE1216-P1SCD-15-B-0004 IN**					
Copper		713		1.1	mg/Kg	6020A
Selenium		1.6	F1	0.84	mg/Kg	6020A
Zinc		173		4.2	mg/Kg	6020A
Mercury		4.2	F1 F2	0.086	mg/Kg	7471B
Total Organic Carbon		45700		1000	mg/Kg	Lloyd Kahn
Percent Solids		44.1		0.3	%	Moisture
Sieve Size 2 inch - Percent Finer		100.0			% Passing	D422
Gravel		2.1			%	D422
Sieve Size 1.5 inch - Percent Finer		100.0			% Passing	D422
Sand		26.1			%	D422
Sieve Size 1 inch - Percent Finer		100.0			% Passing	D422
Coarse Sand		4.5			%	D422
Sieve Size 0.75 inch - Percent Finer		100.0			% Passing	D422
Medium Sand		7.1			%	D422
Sieve Size 0.375 inch - Percent Finer		100.0			% Passing	D422
Fine Sand		14.5			%	D422
Sieve Size #4 - Percent Finer		97.9			% Passing	D422
Silt		46.9			%	D422
Sieve Size #10 - Percent Finer		93.4			% Passing	D422
Clay		24.9			%	D422
Sieve Size #20 - Percent Finer		89.6			% Passing	D422
Sieve Size #40 - Percent Finer		86.3			% Passing	D422
Sieve Size #60 - Percent Finer		81.0			% Passing	D422
Sieve Size #80 - Percent Finer		78.3			% Passing	D422
Sieve Size #100 - Percent Finer		77.0			% Passing	D422
Sieve Size #200 - Percent Finer		72.9			% Passing	D422
Sieve Size #230 - Percent Finer		71.8			% Passing	D422
Hydrometer Reading 1 - Percent Finer		61.8			% Passing	D422
Hydrometer Reading 2 - Percent Finer		50.9			% Passing	D422
Hydrometer Reading 3 - Percent Finer		40.1			% Passing	D422
Hydrometer Reading 4 - Percent Finer		31.4			% Passing	D422
Hydrometer Reading 5 - Percent Finer		24.9			% Passing	D422
Hydrometer Reading 6 - Percent Finer		17.3			% Passing	D422
Hydrometer Reading 7 - Percent Finer		9.8			% Passing	D422
200-36502-16	**PE1216-P1SCD-EQBLK-1**					
Percent Solids		100.0		0.3	%	Moisture

METHOD SUMMARY

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Description	Lab Location	Method	Preparation Method
Matrix: Sediment			
Metals (ICP/MS)	TAL BUR	SW846 6020A	
Preparation, Metals	TAL BUR		SW846 3050B
Mercury (CVAA)	TAL BUR	SW846 7471B	
Preparation, Mercury	TAL BUR		SW846 7471B
Organic Carbon, Total (TOC)	TAL BUR	EPA Lloyd Kahn	
Percent Moisture	TAL BUR	EPA Moisture	
Grain Size	TAL BUR	ASTM D422	

Lab References:

TAL BUR = TestAmerica Burlington

Method References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Method	Analyst	Analyst ID
SW846 6020A	Markey, Rachel R	RM1
SW846 7471B	Pham, Vu T	VTP
EPA Lloyd Kahn	Henry, Kayla S	KSH
EPA Moisture	Henry, Kayla S	KSH
EPA Moisture	Pham, Vu T	VTP
ASTM D422	Lavigne, Scott M	SML

SAMPLE SUMMARY

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
200-36502-1	PE1216-P1SCD-20-B-0006 IN	Sediment	12/05/2016 1200	12/06/2016 0955
200-36502-2	PE1216-P1SCD-20-B-0006 IN-D	Sediment	12/05/2016 1200	12/06/2016 0955
200-36502-3	PE1216-P1SCD-20-A-0005 IN	Sediment	12/05/2016 1145	12/06/2016 0955
200-36502-4	PE1216-P1SCD-20-A-0517 IN	Sediment	12/05/2016 1146	12/06/2016 0955
200-36502-5	PE1216-P1SCD-19-B-0008 IN	Sediment	12/05/2016 1230	12/06/2016 0955
200-36502-6	PE1216-P1SCD-19-A-0009 IN	Sediment	12/05/2016 1220	12/06/2016 0955
200-36502-7	PE1216-P1SCD-19-A-0918 IN	Sediment	12/05/2016 1221	12/06/2016 0955
200-36502-8	PE1216-P1SCD-18-A-0004 IN	Sediment	12/05/2016 1320	12/06/2016 0955
200-36502-9	PE1216-P1SCD-18-B-0001 IN	Sediment	12/05/2016 1315	12/06/2016 0955
200-36502-10	PE1216-P1SCD-17-A-0005 IN	Sediment	12/05/2016 1435	12/06/2016 0955
200-36502-11	PE1216-P1SCD-17-B-0008 IN	Sediment	12/05/2016 1425	12/06/2016 0955
200-36502-12	PE1216-P1SCD-16-A-0006 IN	Sediment	12/05/2016 1500	12/06/2016 0955
200-36502-13	PE1216-P1SCD-16-B-0004 IN	Sediment	12/05/2016 1450	12/06/2016 0955
200-36502-14	PE1216-P1SCD-15-A-0006 IN	Sediment	12/05/2016 1510	12/06/2016 0955
200-36502-15	PE1216-P1SCD-15-B-0004 IN	Sediment	12/05/2016 1520	12/06/2016 0955
200-36502-15MS	PE1216-P1SCD-15-B-0004 IN	Sediment	12/05/2016 1520	12/06/2016 0955
200-36502-15MSD	PE1216-P1SCD-15-B-0004 IN	Sediment	12/05/2016 1520	12/06/2016 0955
200-36502-16	PE1216-P1SCD-EQBLK-1	Sediment	12/05/2016 1710	12/06/2016 0955

SAMPLE RESULTS

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-20-B-0006 IN**

Lab Sample ID: 200-36502-1
Client Matrix: Sediment
% Moisture: 28.5

Date Sampled: 12/05/2016 1200
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.12 g
Analysis Date:	12/12/2016 1135			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		53.8		0.15	0.62
Selenium		0.31	J	0.079	0.50
Zinc		52.4		0.77	2.5

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.52 g
Analysis Date:	12/09/2016 1523			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.12		0.019	0.053

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-20-B-0006 IN-D**

Lab Sample ID: 200-36502-2
Client Matrix: Sediment
% Moisture: 29.2

Date Sampled: 12/05/2016 1200
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.13 g
Analysis Date:	12/12/2016 1141			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		25.7		0.15	0.63
Selenium		0.32	J	0.079	0.50
Zinc		48.8		0.78	2.5

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.56 g
Analysis Date:	12/09/2016 1525			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.084		0.018	0.050

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-20-A-0005 IN**

Lab Sample ID: 200-36502-3
Client Matrix: Sediment
% Moisture: 48.9

Date Sampled: 12/05/2016 1145
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.30 g
Analysis Date:	12/12/2016 1146			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		176		0.18	0.75
Selenium		0.94		0.095	0.60
Zinc		128		0.93	3.0

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.59 g
Analysis Date:	12/09/2016 1526			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.45		0.024	0.066

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-20-A-0517 IN**

Lab Sample ID: 200-36502-4
Client Matrix: Sediment % Moisture: 16.3

Date Sampled: 12/05/2016 1146
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.09 g
Analysis Date:	12/12/2016 1152			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		130		0.13	0.55
Selenium		1.1		0.069	0.44
Zinc		103		0.68	2.2

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.51 g
Analysis Date:	12/09/2016 1528			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.13		0.017	0.046

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-19-B-0008 IN**

Lab Sample ID: 200-36502-5
Client Matrix: Sediment % Moisture: 25.9

Date Sampled: 12/05/2016 1230
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.04 g
Analysis Date:	12/12/2016 1158			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		62.6		0.16	0.65
Selenium		0.57		0.082	0.52
Zinc		73.3		0.80	2.6

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.58 g
Analysis Date:	12/09/2016 1533			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.13		0.017	0.046

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-19-A-0009 IN**

Lab Sample ID: 200-36502-6
Client Matrix: Sediment % Moisture: 30.4

Date Sampled: 12/05/2016 1220
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.21 g
Analysis Date:	12/12/2016 1203			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		66.0		0.14	0.59
Selenium		0.42	J	0.075	0.47
Zinc		66.1		0.74	2.4

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.58 g
Analysis Date:	12/09/2016 1534			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.24		0.018	0.049

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-19-A-0918 IN**

Lab Sample ID: 200-36502-7
Client Matrix: Sediment % Moisture: 29.3

Date Sampled: 12/05/2016 1221
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.03 g
Analysis Date:	12/12/2016 1209			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		14.7		0.16	0.69
Selenium		0.39	J	0.087	0.55
Zinc		44.8		0.85	2.7

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.54 g
Analysis Date:	12/09/2016 1536			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.024	J	0.019	0.052

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-18-A-0004 IN**

Lab Sample ID: 200-36502-8
Client Matrix: Sediment % Moisture: 49.1

Date Sampled: 12/05/2016 1320
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.01 g
Analysis Date:	12/12/2016 1215			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		233		0.23	0.97
Selenium		1.2		0.12	0.78
Zinc		198		1.2	3.9

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.56 g
Analysis Date:	12/09/2016 1538			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.59		0.025	0.069

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-18-B-0001 IN**

Lab Sample ID: 200-36502-9
Client Matrix: Sediment % Moisture: 52.0

Date Sampled: 12/05/2016 1315
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.28 g
Analysis Date:	12/12/2016 1238			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		280		0.20	0.81
Selenium		1.4		0.10	0.65
Zinc		198		1.0	3.3

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.54 g
Analysis Date:	12/09/2016 1539			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		1.0		0.028	0.076

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-17-A-0005 IN**

Lab Sample ID: 200-36502-10
Client Matrix: Sediment % Moisture: 46.0

Date Sampled: 12/05/2016 1435
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.06 g
Analysis Date:	12/12/2016 1244			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		215		0.21	0.87
Selenium		1.4		0.11	0.70
Zinc		103		1.1	3.5

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.55 g
Analysis Date:	12/09/2016 1541			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		2.0		0.024	0.067

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-17-B-0008 IN**

Lab Sample ID: 200-36502-11
Client Matrix: Sediment % Moisture: 60.5

Date Sampled: 12/05/2016 1425
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.02 g
Analysis Date:	12/12/2016 1249			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		244		0.30	1.2
Selenium		1.7		0.16	0.99
Zinc		138		1.5	5.0

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.55 g
Analysis Date:	12/09/2016 1542			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		1.1		0.033	0.091

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-16-A-0006 IN**

Lab Sample ID: 200-36502-12
Client Matrix: Sediment % Moisture: 32.2

Date Sampled: 12/05/2016 1500
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.05 g
Analysis Date:	12/12/2016 1255			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		623		0.17	0.70
Selenium		0.59		0.089	0.56
Zinc		114		0.87	2.8

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.51 g
Analysis Date:	12/09/2016 1544			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		2.5		0.021	0.057

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-16-B-0004 IN**

Lab Sample ID: 200-36502-13
Client Matrix: Sediment % Moisture: 56.3

Date Sampled: 12/05/2016 1450
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.04 g
Analysis Date:	12/12/2016 1301			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		401		0.26	1.1
Selenium		1.4		0.14	0.88
Zinc		168		1.4	4.4

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.54 g
Analysis Date:	12/09/2016 1546			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		1.9		0.030	0.084

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-15-A-0006 IN**

Lab Sample ID: 200-36502-14
Client Matrix: Sediment % Moisture: 66.4

Date Sampled: 12/05/2016 1510
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.02 g
Analysis Date:	12/12/2016 1306			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		587		0.35	1.5
Selenium		2.3		0.18	1.2
Zinc		220		1.8	5.8

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.54 g
Analysis Date:	12/09/2016 1547			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		3.1		0.040	0.11

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-15-B-0004 IN**

Lab Sample ID: 200-36502-15
Client Matrix: Sediment % Moisture: 55.9

Date Sampled: 12/05/2016 1520
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.08 g
Analysis Date:	12/12/2016 1312			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		713		0.25	1.1
Selenium		1.6	F1	0.13	0.84
Zinc		173		1.3	4.2

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.52 g
Analysis Date:	12/09/2016 1552			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		4.2	F1 F2	0.031	0.086

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-EQBLK-1**

Lab Sample ID: 200-36502-16
Client Matrix: Sediment % Moisture: 0.0

Date Sampled: 12/05/2016 1710
Date Received: 12/06/2016 0955

6020A Metals (ICP/MS)

Analysis Method:	6020A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Prep Method:	3050B	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0			Initial Weight/Volume:	1.02 g
Analysis Date:	12/12/2016 1358			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Copper		0.49	U	0.12	0.49
Selenium		0.39	U	0.062	0.39
Zinc		2.0	U	0.61	2.0

7471B Mercury (CVAA)

Analysis Method:	7471B	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Prep Method:	7471B	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0			Initial Weight/Volume:	0.55 g
Analysis Date:	12/09/2016 1557			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.036	U	0.013	0.036

General Chemistry

Client Sample ID: **PE1216-P1SCD-20-B-0006 IN**

Lab Sample ID: 200-36502-1
Client Matrix: Sediment

Date Sampled: 12/05/2016 1200
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	11600		mg/Kg	380	1000	1.0	Lloyd Kahn
Analysis Batch: 200-112336	Analysis Date: 12/09/2016 1322						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	71.5		%	0.3	0.3	1.0	Moisture
Analysis Batch: 200-112215	Analysis Date: 12/08/2016 1201						DryWt Corrected: N

General Chemistry

Client Sample ID: **PE1216-P1SCD-20-B-0006 IN-D**

Lab Sample ID: 200-36502-2
Client Matrix: Sediment

Date Sampled: 12/05/2016 1200
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	10600		mg/Kg	380	1000	1.0	Lloyd Kahn
Analysis Batch: 200-112336	Analysis Date: 12/09/2016 1328						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	70.8		%	0.3	0.3	1.0	Moisture
Analysis Batch: 200-112215	Analysis Date: 12/08/2016 1201						DryWt Corrected: N

General Chemistry

Client Sample ID: **PE1216-P1SCD-20-A-0005 IN**

Lab Sample ID: 200-36502-3
Client Matrix: Sediment

Date Sampled: 12/05/2016 1145
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	27600		mg/Kg	380	1000	1.0	Lloyd Kahn
Analysis Batch: 200-112336	Analysis Date: 12/09/2016 1335						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	51.1		%	0.3	0.3	1.0	Moisture
Analysis Batch: 200-112215	Analysis Date: 12/08/2016 1201						DryWt Corrected: N

General Chemistry

Client Sample ID: **PE1216-P1SCD-20-A-0517 IN**

Lab Sample ID: 200-36502-4
Client Matrix: Sediment

Date Sampled: 12/05/2016 1146
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	8550		mg/Kg	380	1000	1.0	Lloyd Kahn
Analysis Batch: 200-112336	Analysis Date: 12/09/2016 1341						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	83.7		%	0.3	0.3	1.0	Moisture
Analysis Batch: 200-112215	Analysis Date: 12/08/2016 1201						DryWt Corrected: N

General Chemistry

Client Sample ID: **PE1216-P1SCD-19-B-0008 IN**

Lab Sample ID: 200-36502-5
Client Matrix: Sediment

Date Sampled: 12/05/2016 1230
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	8290		mg/Kg	380	1000	1.0	Lloyd Kahn
Analysis Batch: 200-112336	Analysis Date: 12/09/2016 1347						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	74.1		%	0.3	0.3	1.0	Moisture
Analysis Batch: 200-112215	Analysis Date: 12/08/2016 1201						DryWt Corrected: N

General Chemistry

Client Sample ID: **PE1216-P1SCD-19-A-0009 IN**

Lab Sample ID: 200-36502-6
Client Matrix: Sediment

Date Sampled: 12/05/2016 1220
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	13100		mg/Kg	380	1000	1.0	Lloyd Kahn
Analysis Batch: 200-112336	Analysis Date: 12/09/2016 1354						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	69.6		%	0.3	0.3	1.0	Moisture
Analysis Batch: 200-112215	Analysis Date: 12/08/2016 1201						DryWt Corrected: N

General Chemistry

Client Sample ID: **PE1216-P1SCD-19-A-0918 IN**

Lab Sample ID: 200-36502-7
Client Matrix: Sediment

Date Sampled: 12/05/2016 1221
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	25500		mg/Kg	380	1000	1.0	Lloyd Kahn
Analysis Batch: 200-112336	Analysis Date: 12/09/2016 1400						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	70.7		%	0.3	0.3	1.0	Moisture
Analysis Batch: 200-112215	Analysis Date: 12/08/2016 1201						DryWt Corrected: N

General Chemistry

Client Sample ID: **PE1216-P1SCD-18-A-0004 IN**

Lab Sample ID: 200-36502-8
Client Matrix: Sediment

Date Sampled: 12/05/2016 1320
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	26000		mg/Kg	380	1000	1.0	Lloyd Kahn
Analysis Batch: 200-112336	Analysis Date: 12/09/2016 1406						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	50.9		%	0.3	0.3	1.0	Moisture
Analysis Batch: 200-112215	Analysis Date: 12/08/2016 1201						DryWt Corrected: N

General Chemistry

Client Sample ID: **PE1216-P1SCD-18-B-0001 IN**

Lab Sample ID: 200-36502-9
Client Matrix: Sediment

Date Sampled: 12/05/2016 1315
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	31000		mg/Kg	380	1000	1.0	Lloyd Kahn
Analysis Batch: 200-112336	Analysis Date: 12/09/2016 1413						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	48.0		%	0.3	0.3	1.0	Moisture
Analysis Batch: 200-112215	Analysis Date: 12/08/2016 1201						DryWt Corrected: N

General Chemistry

Client Sample ID: **PE1216-P1SCD-17-A-0005 IN**

Lab Sample ID: 200-36502-10
Client Matrix: Sediment

Date Sampled: 12/05/2016 1435
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	22800		mg/Kg	380	1000	1.0	Lloyd Kahn
Analysis Batch: 200-112336	Analysis Date: 12/09/2016 1419						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	54.0		%	0.3	0.3	1.0	Moisture
Analysis Batch: 200-112215	Analysis Date: 12/08/2016 1201						DryWt Corrected: N

General Chemistry

Client Sample ID: **PE1216-P1SCD-17-B-0008 IN**

Lab Sample ID: 200-36502-11
Client Matrix: Sediment

Date Sampled: 12/05/2016 1425
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	36600		mg/Kg	380	1000	1.0	Lloyd Kahn
Analysis Batch: 200-112336	Analysis Date: 12/09/2016 1425						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	39.5		%	0.3	0.3	1.0	Moisture
Analysis Batch: 200-112215	Analysis Date: 12/08/2016 1201						DryWt Corrected: N

General Chemistry

Client Sample ID: **PE1216-P1SCD-16-A-0006 IN**

Lab Sample ID: 200-36502-12
Client Matrix: Sediment

Date Sampled: 12/05/2016 1500
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	14000		mg/Kg	380	1000	1.0	Lloyd Kahn
Analysis Batch: 200-112336	Analysis Date: 12/09/2016 1432						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	67.8		%	0.3	0.3	1.0	Moisture
Analysis Batch: 200-112215	Analysis Date: 12/08/2016 1201						DryWt Corrected: N

General Chemistry

Client Sample ID: **PE1216-P1SCD-16-B-0004 IN**

Lab Sample ID: 200-36502-13
Client Matrix: Sediment

Date Sampled: 12/05/2016 1450
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	39700		mg/Kg	380	1000	1.0	Lloyd Kahn
Analysis Batch: 200-112336	Analysis Date: 12/09/2016 1438						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	43.7		%	0.3	0.3	1.0	Moisture
Analysis Batch: 200-112215	Analysis Date: 12/08/2016 1201						DryWt Corrected: N

General Chemistry

Client Sample ID: **PE1216-P1SCD-15-A-0006 IN**

Lab Sample ID: 200-36502-14
Client Matrix: Sediment

Date Sampled: 12/05/2016 1510
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	65300		mg/Kg	380	1000	1.0	Lloyd Kahn
Analysis Batch: 200-112336	Analysis Date: 12/09/2016 1444						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	33.6		%	0.3	0.3	1.0	Moisture
Analysis Batch: 200-112215	Analysis Date: 12/08/2016 1201						DryWt Corrected: N

General Chemistry

Client Sample ID: **PE1216-P1SCD-15-B-0004 IN**

Lab Sample ID: 200-36502-15
Client Matrix: Sediment

Date Sampled: 12/05/2016 1520
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	45700		mg/Kg	380	1000	1.0	Lloyd Kahn
Analysis Batch: 200-112336	Analysis Date: 12/09/2016 1519						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	44.1		%	0.3	0.3	1.0	Moisture
Analysis Batch: 200-112215	Analysis Date: 12/08/2016 1201						DryWt Corrected: N

General Chemistry

Client Sample ID: **PE1216-P1SCD-EQBLK-1**

Lab Sample ID: 200-36502-16
Client Matrix: Sediment

Date Sampled: 12/05/2016 1710
Date Received: 12/06/2016 0955

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Solids	100.0		%	0.3	0.3	1.0	Moisture

Analysis Batch: 200-112285 Analysis Date: 12/09/2016 1644 DryWt Corrected: N

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-20-B-0006 IN**

Lab Sample ID: 200-36502-1
Client Matrix: Sediment

Date Sampled: 12/05/2016 1200
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-1.txt
Dilution:	1.0			Initial Weight/Volume:	214.35 g
Analysis Date:	12/09/2016 1929			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (% Passing)	Qualifier	NONE	NONE
Sieve Size 2 inch - Percent Finer		100.0			
Sieve Size 1.5 inch - Percent Finer		100.0			
Sieve Size 1 inch - Percent Finer		100.0			
Sieve Size 0.75 inch - Percent Finer		100.0			
Sieve Size 0.375 inch - Percent Finer		100.0			
Sieve Size #4 - Percent Finer		100.0			
Sieve Size #10 - Percent Finer		99.5			
Sieve Size #20 - Percent Finer		98.6			
Sieve Size #40 - Percent Finer		97.4			
Sieve Size #60 - Percent Finer		88.0			
Sieve Size #80 - Percent Finer		77.8			
Sieve Size #100 - Percent Finer		69.4			
Sieve Size #200 - Percent Finer		38.7			
Sieve Size #230 - Percent Finer		34.9			
Hydrometer Reading 1 - Percent Finer		24.1			
Hydrometer Reading 2 - Percent Finer		19.4			
Hydrometer Reading 3 - Percent Finer		15.3			
Hydrometer Reading 4 - Percent Finer		12.2			
Hydrometer Reading 5 - Percent Finer		10.6			
Hydrometer Reading 6 - Percent Finer		7.0			
Hydrometer Reading 7 - Percent Finer		4.9			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-20-B-0006 IN**

Lab Sample ID: 200-36502-1
Client Matrix: Sediment

Date Sampled: 12/05/2016 1200
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-1.txt
Dilution:	1.0			Initial Weight/Volume:	214.35 g
Analysis Date:	12/09/2016 1929			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (%)	Qualifier	NONE	NONE
Gravel		0.0			
Sand		65.1			
Coarse Sand		0.5			
Medium Sand		2.1			
Fine Sand		62.5			
Silt		24.3			
Clay		10.6			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-20-B-0006 IN-D**

Lab Sample ID: 200-36502-2
Client Matrix: Sediment

Date Sampled: 12/05/2016 1200
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-2.txt
Dilution:	1.0			Initial Weight/Volume:	227.72 g
Analysis Date:	12/09/2016 2018			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (% Passing)	Qualifier	NONE	NONE
Sieve Size 2 inch - Percent Finer		100.0			
Sieve Size 1.5 inch - Percent Finer		100.0			
Sieve Size 1 inch - Percent Finer		100.0			
Sieve Size 0.75 inch - Percent Finer		100.0			
Sieve Size 0.375 inch - Percent Finer		100.0			
Sieve Size #4 - Percent Finer		100.0			
Sieve Size #10 - Percent Finer		99.5			
Sieve Size #20 - Percent Finer		98.5			
Sieve Size #40 - Percent Finer		97.2			
Sieve Size #60 - Percent Finer		87.2			
Sieve Size #80 - Percent Finer		76.5			
Sieve Size #100 - Percent Finer		67.8			
Sieve Size #200 - Percent Finer		37.4			
Sieve Size #230 - Percent Finer		33.4			
Hydrometer Reading 1 - Percent Finer		23.3			
Hydrometer Reading 2 - Percent Finer		19.0			
Hydrometer Reading 3 - Percent Finer		15.1			
Hydrometer Reading 4 - Percent Finer		13.2			
Hydrometer Reading 5 - Percent Finer		10.3			
Hydrometer Reading 6 - Percent Finer		7.5			
Hydrometer Reading 7 - Percent Finer		5.1			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-20-B-0006 IN-D**

Lab Sample ID: 200-36502-2
Client Matrix: Sediment

Date Sampled: 12/05/2016 1200
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-2.txt
Dilution:	1.0			Initial Weight/Volume:	227.72 g
Analysis Date:	12/09/2016 2018			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (%)	Qualifier	NONE	NONE
Gravel		0.0			
Sand		66.6			
Coarse Sand		0.5			
Medium Sand		2.3			
Fine Sand		63.8			
Silt		23.1			
Clay		10.3			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-20-A-0005 IN**

Lab Sample ID: 200-36502-3
Client Matrix: Sediment

Date Sampled: 12/05/2016 1145
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-3.txt
Dilution:	1.0			Initial Weight/Volume:	250.44 g
Analysis Date:	12/09/2016 2020			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (% Passing)	Qualifier	NONE	NONE
Sieve Size 2 inch - Percent Finer		100.0			
Sieve Size 1.5 inch - Percent Finer		100.0			
Sieve Size 1 inch - Percent Finer		100.0			
Sieve Size 0.75 inch - Percent Finer		100.0			
Sieve Size 0.375 inch - Percent Finer		100.0			
Sieve Size #4 - Percent Finer		97.9			
Sieve Size #10 - Percent Finer		95.8			
Sieve Size #20 - Percent Finer		93.3			
Sieve Size #40 - Percent Finer		90.4			
Sieve Size #60 - Percent Finer		76.2			
Sieve Size #80 - Percent Finer		61.5			
Sieve Size #100 - Percent Finer		54.0			
Sieve Size #200 - Percent Finer		40.2			
Sieve Size #230 - Percent Finer		38.8			
Hydrometer Reading 1 - Percent Finer		11.6			
Hydrometer Reading 2 - Percent Finer		9.7			
Hydrometer Reading 3 - Percent Finer		7.8			
Hydrometer Reading 4 - Percent Finer		6.6			
Hydrometer Reading 5 - Percent Finer		5.3			
Hydrometer Reading 6 - Percent Finer		2.8			
Hydrometer Reading 7 - Percent Finer		1.6			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-20-A-0005 IN**

Lab Sample ID: 200-36502-3
Client Matrix: Sediment

Date Sampled: 12/05/2016 1145
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-3.txt
Dilution:	1.0			Initial Weight/Volume:	250.44 g
Analysis Date:	12/09/2016 2020			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (%)	Qualifier	NONE	NONE
Gravel		2.1			
Sand		59.1			
Coarse Sand		2.1			
Medium Sand		5.4			
Fine Sand		51.6			
Silt		33.5			
Clay		5.3			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-20-A-0517 IN**

Lab Sample ID: 200-36502-4
Client Matrix: Sediment

Date Sampled: 12/05/2016 1146
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-4.txt
Dilution:	1.0			Initial Weight/Volume:	326.78 g
Analysis Date:	12/09/2016 2021			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (% Passing)	Qualifier	NONE	NONE
Sieve Size 2 inch - Percent Finer		100.0			
Sieve Size 1.5 inch - Percent Finer		100.0			
Sieve Size 1 inch - Percent Finer		100.0			
Sieve Size 0.75 inch - Percent Finer		100.0			
Sieve Size 0.375 inch - Percent Finer		98.8			
Sieve Size #4 - Percent Finer		95.9			
Sieve Size #10 - Percent Finer		90.4			
Sieve Size #20 - Percent Finer		77.2			
Sieve Size #40 - Percent Finer		61.7			
Sieve Size #60 - Percent Finer		49.3			
Sieve Size #80 - Percent Finer		46.8			
Sieve Size #100 - Percent Finer		46.0			
Sieve Size #200 - Percent Finer		44.8			
Sieve Size #230 - Percent Finer		44.6			
Hydrometer Reading 1 - Percent Finer		2.1			
Hydrometer Reading 2 - Percent Finer		1.8			
Hydrometer Reading 3 - Percent Finer		1.5			
Hydrometer Reading 4 - Percent Finer		1.3			
Hydrometer Reading 5 - Percent Finer		1			
Hydrometer Reading 6 - Percent Finer		0.4			
Hydrometer Reading 7 - Percent Finer		0.4			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-20-A-0517 IN**

Lab Sample ID: 200-36502-4
Client Matrix: Sediment

Date Sampled: 12/05/2016 1146
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-4.txt
Dilution:	1.0			Initial Weight/Volume:	326.78 g
Analysis Date:	12/09/2016 2021			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (%)	Qualifier	NONE	NONE
Gravel		4.1			
Sand		51.3			
Coarse Sand		5.5			
Medium Sand		28.7			
Fine Sand		17.1			
Silt		43.6			
Clay		1			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-19-B-0008 IN**

Lab Sample ID: 200-36502-5
Client Matrix: Sediment

Date Sampled: 12/05/2016 1230
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-5.txt
Dilution:	1.0			Initial Weight/Volume:	265.48 g
Analysis Date:	12/09/2016 2024			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (% Passing)	Qualifier	NONE	NONE
Sieve Size 2 inch - Percent Finer		100.0			
Sieve Size 1.5 inch - Percent Finer		100.0			
Sieve Size 1 inch - Percent Finer		100.0			
Sieve Size 0.75 inch - Percent Finer		100.0			
Sieve Size 0.375 inch - Percent Finer		100.0			
Sieve Size #4 - Percent Finer		97.3			
Sieve Size #10 - Percent Finer		95.3			
Sieve Size #20 - Percent Finer		92.7			
Sieve Size #40 - Percent Finer		86.7			
Sieve Size #60 - Percent Finer		70.4			
Sieve Size #80 - Percent Finer		56.8			
Sieve Size #100 - Percent Finer		47.9			
Sieve Size #200 - Percent Finer		25.9			
Sieve Size #230 - Percent Finer		23.9			
Hydrometer Reading 1 - Percent Finer		7.6			
Hydrometer Reading 2 - Percent Finer		6.0			
Hydrometer Reading 3 - Percent Finer		4.5			
Hydrometer Reading 4 - Percent Finer		3.7			
Hydrometer Reading 5 - Percent Finer		3.3			
Hydrometer Reading 6 - Percent Finer		2.1			
Hydrometer Reading 7 - Percent Finer		1.4			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-19-B-0008 IN**

Lab Sample ID: 200-36502-5
Client Matrix: Sediment

Date Sampled: 12/05/2016 1230
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-5.txt
Dilution:	1.0			Initial Weight/Volume:	265.48 g
Analysis Date:	12/09/2016 2024			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (%)	Qualifier	NONE	NONE
Gravel		2.7			
Sand		73.4			
Coarse Sand		2.0			
Medium Sand		8.6			
Fine Sand		62.8			
Silt		20.6			
Clay		3.3			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-19-A-0009 IN**

Lab Sample ID: 200-36502-6
Client Matrix: Sediment

Date Sampled: 12/05/2016 1220
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-6.txt
Dilution:	1.0			Initial Weight/Volume:	145.52 g
Analysis Date:	12/10/2016 1210			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (% Passing)	Qualifier	NONE	NONE
Sieve Size 2 inch - Percent Finer		100.0			
Sieve Size 1.5 inch - Percent Finer		100.0			
Sieve Size 1 inch - Percent Finer		100.0			
Sieve Size 0.75 inch - Percent Finer		100.0			
Sieve Size 0.375 inch - Percent Finer		93.0			
Sieve Size #4 - Percent Finer		90.3			
Sieve Size #10 - Percent Finer		87.6			
Sieve Size #20 - Percent Finer		84.7			
Sieve Size #40 - Percent Finer		80.4			
Sieve Size #60 - Percent Finer		65.3			
Sieve Size #80 - Percent Finer		52.4			
Sieve Size #100 - Percent Finer		44.0			
Sieve Size #200 - Percent Finer		20.6			
Sieve Size #230 - Percent Finer		17.7			
Hydrometer Reading 1 - Percent Finer		12.2			
Hydrometer Reading 2 - Percent Finer		10.8			
Hydrometer Reading 3 - Percent Finer		7.9			
Hydrometer Reading 4 - Percent Finer		5.0			
Hydrometer Reading 5 - Percent Finer		4.3			
Hydrometer Reading 6 - Percent Finer		2.2			
Hydrometer Reading 7 - Percent Finer		0.7			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-19-A-0009 IN**

Lab Sample ID: 200-36502-6
Client Matrix: Sediment

Date Sampled: 12/05/2016 1220
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-6.txt
Dilution:	1.0			Initial Weight/Volume:	145.52 g
Analysis Date:	12/10/2016 1210			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (%)	Qualifier	NONE	NONE
Gravel		9.7			
Sand		72.6			
Coarse Sand		2.7			
Medium Sand		7.2			
Fine Sand		62.7			
Silt		13.4			
Clay		4.3			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-19-A-0918 IN**

Lab Sample ID: 200-36502-7
Client Matrix: Sediment

Date Sampled: 12/05/2016 1221
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-7.txt
Dilution:	1.0			Initial Weight/Volume:	163.92 g
Analysis Date:	12/10/2016 1213			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (% Passing)	Qualifier	NONE	NONE
Sieve Size 2 inch - Percent Finer		100.0			
Sieve Size 1.5 inch - Percent Finer		100.0			
Sieve Size 1 inch - Percent Finer		100.0			
Sieve Size 0.75 inch - Percent Finer		100.0			
Sieve Size 0.375 inch - Percent Finer		100.0			
Sieve Size #4 - Percent Finer		97.2			
Sieve Size #10 - Percent Finer		93.7			
Sieve Size #20 - Percent Finer		89.2			
Sieve Size #40 - Percent Finer		84.1			
Sieve Size #60 - Percent Finer		70.7			
Sieve Size #80 - Percent Finer		60.4			
Sieve Size #100 - Percent Finer		53.1			
Sieve Size #200 - Percent Finer		29.9			
Sieve Size #230 - Percent Finer		26.7			
Hydrometer Reading 1 - Percent Finer		18.9			
Hydrometer Reading 2 - Percent Finer		14.4			
Hydrometer Reading 3 - Percent Finer		11.1			
Hydrometer Reading 4 - Percent Finer		8.5			
Hydrometer Reading 5 - Percent Finer		7.2			
Hydrometer Reading 6 - Percent Finer		3.9			
Hydrometer Reading 7 - Percent Finer		2.0			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-19-A-0918 IN**

Lab Sample ID: 200-36502-7
Client Matrix: Sediment

Date Sampled: 12/05/2016 1221
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-7.txt
Dilution:	1.0			Initial Weight/Volume:	163.92 g
Analysis Date:	12/10/2016 1213			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (%)	Qualifier	NONE	NONE
Gravel		2.8			
Sand		70.5			
Coarse Sand		3.5			
Medium Sand		9.6			
Fine Sand		57.4			
Silt		19.5			
Clay		7.2			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-18-A-0004 IN**

Lab Sample ID: 200-36502-8
Client Matrix: Sediment

Date Sampled: 12/05/2016 1320
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-8.txt
Dilution:	1.0			Initial Weight/Volume:	158.92 g
Analysis Date:	12/10/2016 1214			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (% Passing)	Qualifier	NONE	NONE
Sieve Size 2 inch - Percent Finer		100.0			
Sieve Size 1.5 inch - Percent Finer		100.0			
Sieve Size 1 inch - Percent Finer		100.0			
Sieve Size 0.75 inch - Percent Finer		100.0			
Sieve Size 0.375 inch - Percent Finer		100.0			
Sieve Size #4 - Percent Finer		98.1			
Sieve Size #10 - Percent Finer		91.9			
Sieve Size #20 - Percent Finer		76.4			
Sieve Size #40 - Percent Finer		64.2			
Sieve Size #60 - Percent Finer		48.9			
Sieve Size #80 - Percent Finer		40.5			
Sieve Size #100 - Percent Finer		35.9			
Sieve Size #200 - Percent Finer		24.0			
Sieve Size #230 - Percent Finer		21.7			
Hydrometer Reading 1 - Percent Finer		17.0			
Hydrometer Reading 2 - Percent Finer		14.7			
Hydrometer Reading 3 - Percent Finer		11.3			
Hydrometer Reading 4 - Percent Finer		7.9			
Hydrometer Reading 5 - Percent Finer		5.7			
Hydrometer Reading 6 - Percent Finer		3.4			
Hydrometer Reading 7 - Percent Finer		1.1			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-18-A-0004 IN**

Lab Sample ID: 200-36502-8
Client Matrix: Sediment

Date Sampled: 12/05/2016 1320
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-8.txt
Dilution:	1.0			Initial Weight/Volume:	158.92 g
Analysis Date:	12/10/2016 1214			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (%)	Qualifier	NONE	NONE
Gravel		1.9			
Sand		76.4			
Coarse Sand		6.2			
Medium Sand		27.7			
Fine Sand		42.5			
Silt		16.0			
Clay		5.7			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-18-B-0001 IN**

Lab Sample ID: 200-36502-9
Client Matrix: Sediment

Date Sampled: 12/05/2016 1315
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-9.txt
Dilution:	1.0			Initial Weight/Volume:	156.3 g
Analysis Date:	12/10/2016 1216			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (% Passing)	Qualifier	NONE	NONE
Sieve Size 2 inch - Percent Finer		100.0			
Sieve Size 1.5 inch - Percent Finer		100.0			
Sieve Size 1 inch - Percent Finer		100.0			
Sieve Size 0.75 inch - Percent Finer		100.0			
Sieve Size 0.375 inch - Percent Finer		100.0			
Sieve Size #4 - Percent Finer		85.4			
Sieve Size #10 - Percent Finer		71.4			
Sieve Size #20 - Percent Finer		63.3			
Sieve Size #40 - Percent Finer		57.8			
Sieve Size #60 - Percent Finer		51.3			
Sieve Size #80 - Percent Finer		47.1			
Sieve Size #100 - Percent Finer		44.5			
Sieve Size #200 - Percent Finer		35.2			
Sieve Size #230 - Percent Finer		33.2			
Hydrometer Reading 1 - Percent Finer		19.4			
Hydrometer Reading 2 - Percent Finer		15.3			
Hydrometer Reading 3 - Percent Finer		12.3			
Hydrometer Reading 4 - Percent Finer		9.2			
Hydrometer Reading 5 - Percent Finer		7.2			
Hydrometer Reading 6 - Percent Finer		3.1			
Hydrometer Reading 7 - Percent Finer		1.0			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-18-B-0001 IN**

Lab Sample ID: 200-36502-9
Client Matrix: Sediment

Date Sampled: 12/05/2016 1315
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-9.txt
Dilution:	1.0			Initial Weight/Volume:	156.3 g
Analysis Date:	12/10/2016 1216			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (%)	Qualifier	NONE	NONE
Gravel		14.6			
Sand		52.2			
Coarse Sand		14.0			
Medium Sand		13.6			
Fine Sand		24.6			
Silt		26.1			
Clay		7.2			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-17-A-0005 IN**

Lab Sample ID: 200-36502-10
Client Matrix: Sediment

Date Sampled: 12/05/2016 1435
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-10.txt
Dilution:	1.0			Initial Weight/Volume:	163.29 g
Analysis Date:	12/10/2016 1217			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (% Passing)	Qualifier	NONE	NONE
Sieve Size 2 inch - Percent Finer		100.0			
Sieve Size 1.5 inch - Percent Finer		100.0			
Sieve Size 1 inch - Percent Finer		100.0			
Sieve Size 0.75 inch - Percent Finer		100.0			
Sieve Size 0.375 inch - Percent Finer		100.0			
Sieve Size #4 - Percent Finer		98.9			
Sieve Size #10 - Percent Finer		93.1			
Sieve Size #20 - Percent Finer		87.7			
Sieve Size #40 - Percent Finer		81.9			
Sieve Size #60 - Percent Finer		69.7			
Sieve Size #80 - Percent Finer		60.1			
Sieve Size #100 - Percent Finer		55.1			
Sieve Size #200 - Percent Finer		41.5			
Sieve Size #230 - Percent Finer		39.2			
Hydrometer Reading 1 - Percent Finer		29.2			
Hydrometer Reading 2 - Percent Finer		23.9			
Hydrometer Reading 3 - Percent Finer		18.6			
Hydrometer Reading 4 - Percent Finer		15.0			
Hydrometer Reading 5 - Percent Finer		11.5			
Hydrometer Reading 6 - Percent Finer		8.0			
Hydrometer Reading 7 - Percent Finer		2.7			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-17-A-0005 IN**

Lab Sample ID: 200-36502-10
Client Matrix: Sediment

Date Sampled: 12/05/2016 1435
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-10.txt
Dilution:	1.0			Initial Weight/Volume:	163.29 g
Analysis Date:	12/10/2016 1217			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (%)	Qualifier	NONE	NONE
Gravel		1.1			
Sand		59.7			
Coarse Sand		5.8			
Medium Sand		11.2			
Fine Sand		42.7			
Silt		27.7			
Clay		11.5			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-17-B-0008 IN**

Lab Sample ID: 200-36502-11
Client Matrix: Sediment

Date Sampled: 12/05/2016 1425
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-11.txt
Dilution:	1.0			Initial Weight/Volume:	164.84 g
Analysis Date:	12/10/2016 1219			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (% Passing)	Qualifier	NONE	NONE
Sieve Size 2 inch - Percent Finer		100.0			
Sieve Size 1.5 inch - Percent Finer		100.0			
Sieve Size 1 inch - Percent Finer		100.0			
Sieve Size 0.75 inch - Percent Finer		100.0			
Sieve Size 0.375 inch - Percent Finer		100.0			
Sieve Size #4 - Percent Finer		97.0			
Sieve Size #10 - Percent Finer		82.0			
Sieve Size #20 - Percent Finer		72.1			
Sieve Size #40 - Percent Finer		61.6			
Sieve Size #60 - Percent Finer		51.2			
Sieve Size #80 - Percent Finer		46.7			
Sieve Size #100 - Percent Finer		44.5			
Sieve Size #200 - Percent Finer		38.8			
Sieve Size #230 - Percent Finer		37.6			
Hydrometer Reading 1 - Percent Finer		29.5			
Hydrometer Reading 2 - Percent Finer		24.8			
Hydrometer Reading 3 - Percent Finer		20.1			
Hydrometer Reading 4 - Percent Finer		15.4			
Hydrometer Reading 5 - Percent Finer		10.6			
Hydrometer Reading 6 - Percent Finer		7.1			
Hydrometer Reading 7 - Percent Finer		3.5			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-17-B-0008 IN**

Lab Sample ID: 200-36502-11
Client Matrix: Sediment

Date Sampled: 12/05/2016 1425
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-11.txt
Dilution:	1.0			Initial Weight/Volume:	164.84 g
Analysis Date:	12/10/2016 1219			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (%)	Qualifier	NONE	NONE
Gravel		3.0			
Sand		59.4			
Coarse Sand		15.0			
Medium Sand		20.4			
Fine Sand		24.0			
Silt		27.0			
Clay		10.6			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-16-A-0006 IN**

Lab Sample ID: 200-36502-12
Client Matrix: Sediment

Date Sampled: 12/05/2016 1500
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-12.txt
Dilution:	1.0			Initial Weight/Volume:	92.22 g
Analysis Date:	12/10/2016 1221			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (% Passing)	Qualifier	NONE	NONE
Sieve Size 2 inch - Percent Finer		100.0			
Sieve Size 1.5 inch - Percent Finer		100.0			
Sieve Size 1 inch - Percent Finer		100.0			
Sieve Size 0.75 inch - Percent Finer		100.0			
Sieve Size 0.375 inch - Percent Finer		100.0			
Sieve Size #4 - Percent Finer		100.0			
Sieve Size #10 - Percent Finer		98.1			
Sieve Size #20 - Percent Finer		94.8			
Sieve Size #40 - Percent Finer		90.8			
Sieve Size #60 - Percent Finer		82.7			
Sieve Size #80 - Percent Finer		75.2			
Sieve Size #100 - Percent Finer		69.6			
Sieve Size #200 - Percent Finer		49.9			
Sieve Size #230 - Percent Finer		46.3			
Hydrometer Reading 1 - Percent Finer		34.1			
Hydrometer Reading 2 - Percent Finer		26.5			
Hydrometer Reading 3 - Percent Finer		20.2			
Hydrometer Reading 4 - Percent Finer		16.4			
Hydrometer Reading 5 - Percent Finer		11.4			
Hydrometer Reading 6 - Percent Finer		7.6			
Hydrometer Reading 7 - Percent Finer		3.8			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-16-A-0006 IN**

Lab Sample ID: 200-36502-12
Client Matrix: Sediment

Date Sampled: 12/05/2016 1500
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-12.txt
Dilution:	1.0			Initial Weight/Volume:	92.22 g
Analysis Date:	12/10/2016 1221			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (%)	Qualifier	NONE	NONE
Gravel		0.0			
Sand		53.7			
Coarse Sand		1.9			
Medium Sand		7.3			
Fine Sand		44.5			
Silt		34.9			
Clay		11.4			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-16-B-0004 IN**

Lab Sample ID: 200-36502-13
Client Matrix: Sediment

Date Sampled: 12/05/2016 1450
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-13.txt
Dilution:	1.0			Initial Weight/Volume:	158.08 g
Analysis Date:	12/10/2016 1222			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (% Passing)	Qualifier	NONE	NONE
Sieve Size 2 inch - Percent Finer		100.0			
Sieve Size 1.5 inch - Percent Finer		100.0			
Sieve Size 1 inch - Percent Finer		100.0			
Sieve Size 0.75 inch - Percent Finer		100.0			
Sieve Size 0.375 inch - Percent Finer		97.4			
Sieve Size #4 - Percent Finer		97.1			
Sieve Size #10 - Percent Finer		91.0			
Sieve Size #20 - Percent Finer		87.7			
Sieve Size #40 - Percent Finer		83.3			
Sieve Size #60 - Percent Finer		66.4			
Sieve Size #80 - Percent Finer		58.0			
Sieve Size #100 - Percent Finer		54.8			
Sieve Size #200 - Percent Finer		48.2			
Sieve Size #230 - Percent Finer		47.1			
Hydrometer Reading 1 - Percent Finer		33.2			
Hydrometer Reading 2 - Percent Finer		28.9			
Hydrometer Reading 3 - Percent Finer		22.5			
Hydrometer Reading 4 - Percent Finer		18.2			
Hydrometer Reading 5 - Percent Finer		13.9			
Hydrometer Reading 6 - Percent Finer		8.6			
Hydrometer Reading 7 - Percent Finer		5.4			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-16-B-0004 IN**

Lab Sample ID: 200-36502-13
Client Matrix: Sediment

Date Sampled: 12/05/2016 1450
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-13.txt
Dilution:	1.0			Initial Weight/Volume:	158.08 g
Analysis Date:	12/10/2016 1222			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (%)	Qualifier	NONE	NONE
Gravel		2.9			
Sand		50.0			
Coarse Sand		6.1			
Medium Sand		7.7			
Fine Sand		36.2			
Silt		33.2			
Clay		13.9			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-15-A-0006 IN**

Lab Sample ID: 200-36502-14
Client Matrix: Sediment

Date Sampled: 12/05/2016 1510
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-14.txt
Dilution:	1.0			Initial Weight/Volume:	170.6 g
Analysis Date:	12/10/2016 1223			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (% Passing)	Qualifier	NONE	NONE
Sieve Size 2 inch - Percent Finer		100.0			
Sieve Size 1.5 inch - Percent Finer		100.0			
Sieve Size 1 inch - Percent Finer		100.0			
Sieve Size 0.75 inch - Percent Finer		100.0			
Sieve Size 0.375 inch - Percent Finer		100.0			
Sieve Size #4 - Percent Finer		98.0			
Sieve Size #10 - Percent Finer		93.4			
Sieve Size #20 - Percent Finer		87.5			
Sieve Size #40 - Percent Finer		83.8			
Sieve Size #60 - Percent Finer		75.9			
Sieve Size #80 - Percent Finer		71.7			
Sieve Size #100 - Percent Finer		69.9			
Sieve Size #200 - Percent Finer		65.3			
Sieve Size #230 - Percent Finer		64.3			
Hydrometer Reading 1 - Percent Finer		56.2			
Hydrometer Reading 2 - Percent Finer		44.2			
Hydrometer Reading 3 - Percent Finer		27.5			
Hydrometer Reading 4 - Percent Finer		20.3			
Hydrometer Reading 5 - Percent Finer		15.5			
Hydrometer Reading 6 - Percent Finer		11.9			
Hydrometer Reading 7 - Percent Finer		8.4			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-15-A-0006 IN**

Lab Sample ID: 200-36502-14
Client Matrix: Sediment

Date Sampled: 12/05/2016 1510
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-14.txt
Dilution:	1.0			Initial Weight/Volume:	170.6 g
Analysis Date:	12/10/2016 1223			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (%)	Qualifier	NONE	NONE
Gravel		2.0			
Sand		33.7			
Coarse Sand		4.6			
Medium Sand		9.6			
Fine Sand		19.5			
Silt		48.8			
Clay		15.5			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-15-B-0004 IN**

Lab Sample ID: 200-36502-15
Client Matrix: Sediment

Date Sampled: 12/05/2016 1520
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-15.txt
Dilution:	1.0			Initial Weight/Volume:	157.6 g
Analysis Date:	12/10/2016 1224			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (% Passing)	Qualifier	NONE	NONE
Sieve Size 2 inch - Percent Finer		100.0			
Sieve Size 1.5 inch - Percent Finer		100.0			
Sieve Size 1 inch - Percent Finer		100.0			
Sieve Size 0.75 inch - Percent Finer		100.0			
Sieve Size 0.375 inch - Percent Finer		100.0			
Sieve Size #4 - Percent Finer		97.9			
Sieve Size #10 - Percent Finer		93.4			
Sieve Size #20 - Percent Finer		89.6			
Sieve Size #40 - Percent Finer		86.3			
Sieve Size #60 - Percent Finer		81.0			
Sieve Size #80 - Percent Finer		78.3			
Sieve Size #100 - Percent Finer		77.0			
Sieve Size #200 - Percent Finer		72.9			
Sieve Size #230 - Percent Finer		71.8			
Hydrometer Reading 1 - Percent Finer		61.8			
Hydrometer Reading 2 - Percent Finer		50.9			
Hydrometer Reading 3 - Percent Finer		40.1			
Hydrometer Reading 4 - Percent Finer		31.4			
Hydrometer Reading 5 - Percent Finer		24.9			
Hydrometer Reading 6 - Percent Finer		17.3			
Hydrometer Reading 7 - Percent Finer		9.8			

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Client Sample ID: **PE1216-P1SCD-15-B-0004 IN**

Lab Sample ID: 200-36502-15
Client Matrix: Sediment

Date Sampled: 12/05/2016 1520
Date Received: 12/06/2016 0955

D422 Grain Size

Analysis Method:	D422	Analysis Batch:	200-112453	Instrument ID:	D422_import
	N/A	Prep Batch:	N/A	Lab File ID:	200-36502-B-15.txt
Dilution:	1.0			Initial Weight/Volume:	157.6 g
Analysis Date:	12/10/2016 1224			Final Weight/Volume:	
Prep Date:	N/A				

Analyte	DryWt Corrected: N	Result (%)	Qualifier	NONE	NONE
Gravel		2.1			
Sand		26.1			
Coarse Sand		4.5			
Medium Sand		7.1			
Fine Sand		14.5			
Silt		46.9			
Clay		24.9			

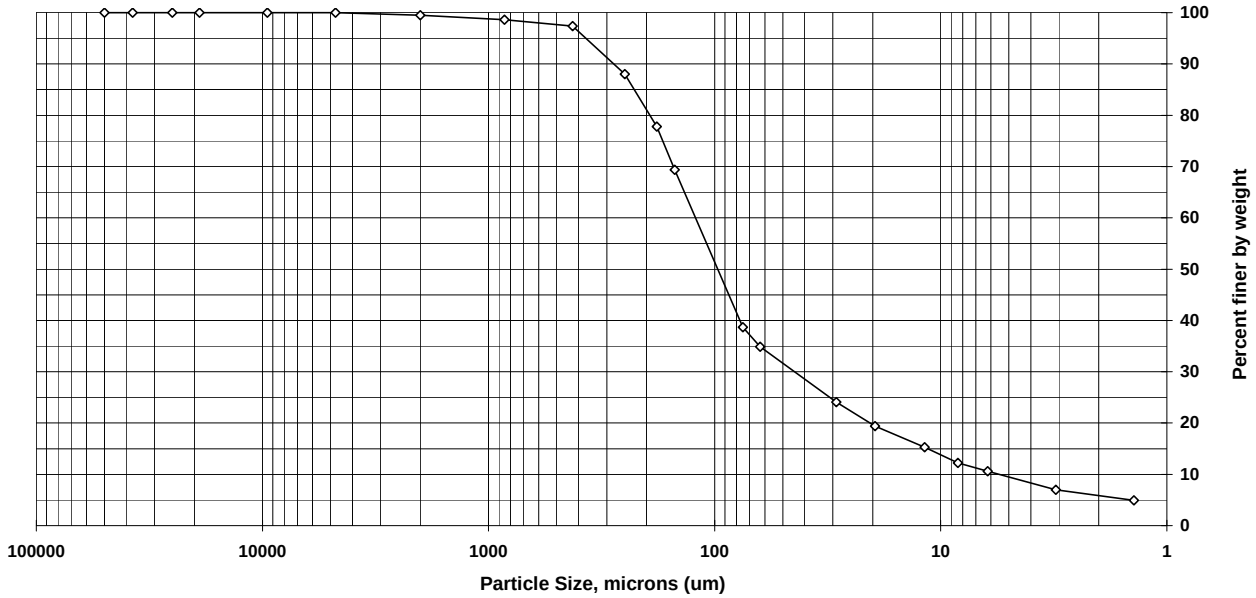
Particle Size of Soils by ASTM D422

				Date Received:	12/6/2016
Sample ID:	PE1216-P1SCD-20-B-00	**Percent Solids:**	72.4%	**Start Date:**	12/9/2016
Lab ID:	200-36502-B-1	**Specific Gravity:**	2.650	**End Date:**	12/15/2016

Shape (> #10): na

Non-soil material: plant,wood

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.5	0.5
#20	850	98.6	0.9
#40	425	97.4	1.2
#60	250	88.0	9.4
#80	180	77.8	10.2
#100	150	69.4	8.4
#200	75	38.7	30.7
#230	63	34.9	3.8
Hyd1	29	24.1	10.8
Hyd2	19.5	19.4	4.7
Hyd3	11.8	15.3	4.1
Hyd4	8.4	12.2	3.1
Hyd5	6.2	10.6	1.6
Hyd6	3.1	7.0	3.6
Hyd7	1.4	4.9	2.1

Soil Classification	Percent of sample
Gravel	0.0
Sand	65.1
Coarse Sand	0.5
Medium Sand	2.1
Fine Sand	62.5
Silt	24.3
Clay	10.6

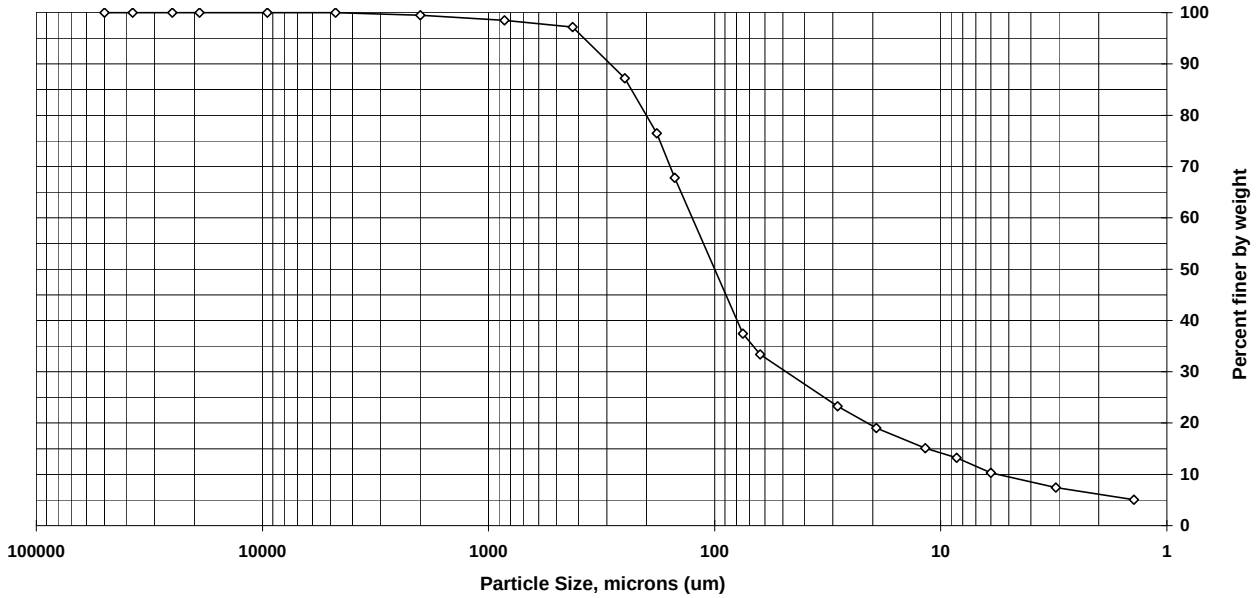
Particle Size of Soils by ASTM D422

				Date Received:	12/6/2016
Sample ID:	PE1216-P1SCD-20-B-00	**Percent Solids:**	73.3%	**Start Date:**	12/9/2016
Lab ID:	200-36502-B-2	**Specific Gravity:**	2.650	**End Date:**	12/15/2016

Shape (> #10): subangular

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.5	0.5
#20	850	98.5	1.0
#40	425	97.2	1.3
#60	250	87.2	10.0
#80	180	76.5	10.7
#100	150	67.8	8.7
#200	75	37.4	30.4
#230	63	33.4	4.0
Hyd1	28.6	23.3	10.1
Hyd2	19.3	19.0	4.3
Hyd3	11.7	15.1	3.9
Hyd4	8.5	13.2	1.9
Hyd5	6	10.3	2.9
Hyd6	3.1	7.5	2.8
Hyd7	1.4	5.1	2.4

Soil Classification	Percent of sample
Gravel	0.0
Sand	66.6
Coarse Sand	0.5
Medium Sand	2.3
Fine Sand	63.8
Silt	23.1
Clay	10.3

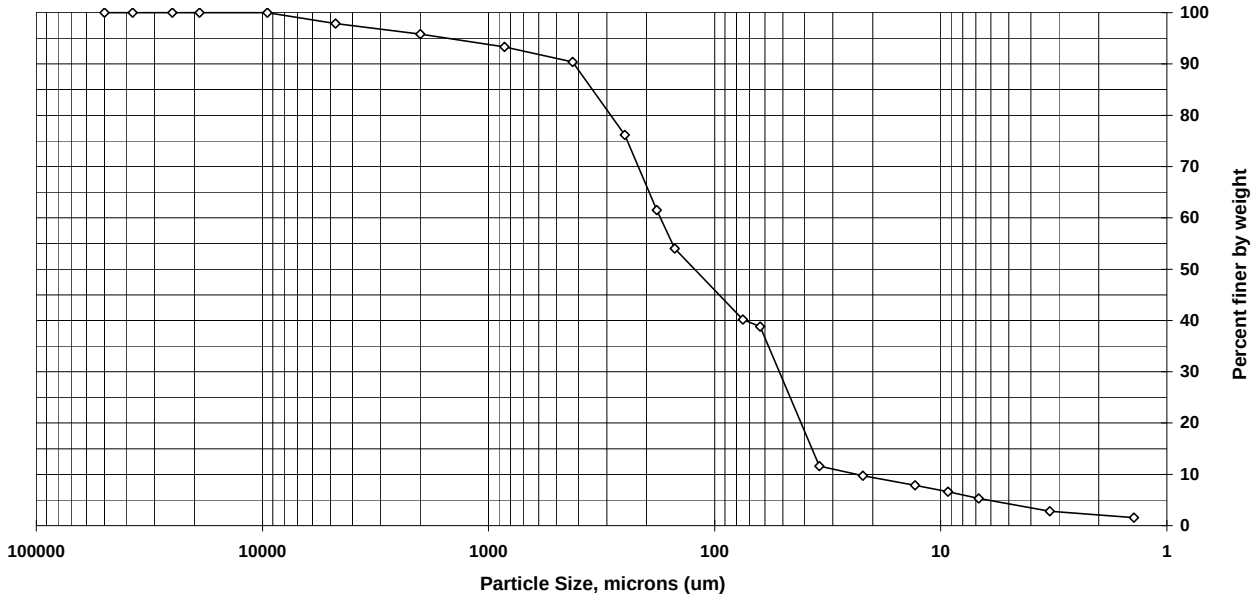
Particle Size of Soils by ASTM D422

				Date Received:	12/6/2016
Sample ID:	PE1216-P1SCD-20-A-00	**Percent Solids:**	51.0%	**Start Date:**	12/9/2016
Lab ID:	200-36502-B-3	**Specific Gravity:**	2.650	**End Date:**	12/15/2016

Shape (> #10): subrounded

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	97.9	2.1
#10	2000	95.8	2.1
#20	850	93.3	2.5
#40	425	90.4	2.9
#60	250	76.2	14.2
#80	180	61.5	14.7
#100	150	54.0	7.5
#200	75	40.2	13.8
#230	63	38.8	1.4
Hyd1	34.4	11.6	27.2
Hyd2	22.1	9.7	1.9
Hyd3	13	7.8	1.9
Hyd4	9.3	6.6	1.3
Hyd5	6.8	5.3	1.3
Hyd6	3.3	2.8	2.5
Hyd7	1.4	1.6	1.3

Soil Classification	Percent of sample
Gravel	2.1
Sand	59.1
Coarse Sand	2.1
Medium Sand	5.4
Fine Sand	51.6
Silt	33.5
Clay	5.3

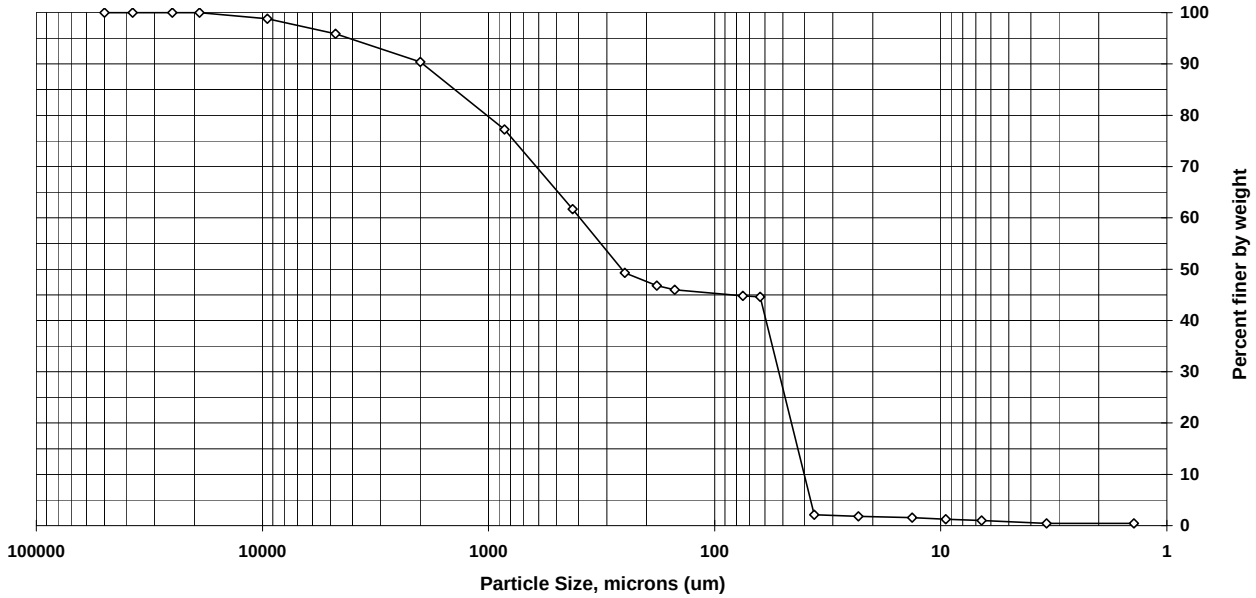
Particle Size of Soils by ASTM D422

				Date Received:	12/6/2016
Sample ID:	PE1216-P1SCD-20-A-05	**Percent Solids:**	88.2%	**Start Date:**	12/9/2016
Lab ID:	200-36502-B-4	**Specific Gravity:**	2.650	**End Date:**	12/15/2016

Shape (> #10): subrounded

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	98.8	1.2
#4	4750	95.9	2.9
#10	2000	90.4	5.5
#20	850	77.2	13.2
#40	425	61.7	15.5
#60	250	49.3	12.4
#80	180	46.8	2.5
#100	150	46.0	0.8
#200	75	44.8	1.2
#230	63	44.6	0.2
Hyd1	36.3	2.1	42.5
Hyd2	23.1	1.8	0.3
Hyd3	13.4	1.5	0.3
Hyd4	9.5	1.3	0.3
Hyd5	6.6	1.0	0.3
Hyd6	3.4	0.4	0.6
Hyd7	1.4	0.4	0.0

Soil Classification	Percent of sample
Gravel	4.1
Sand	51.3
Coarse Sand	5.5
Medium Sand	28.7
Fine Sand	17.1
Silt	43.6
Clay	1.0

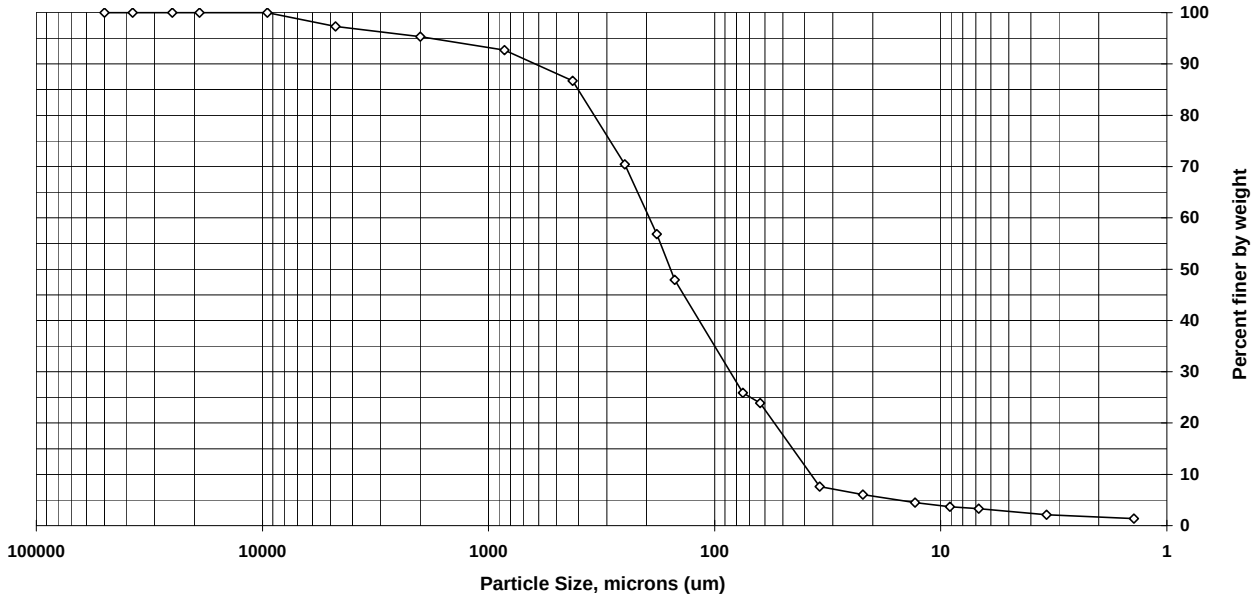
Particle Size of Soils by ASTM D422

				Date Received:	12/6/2016
Sample ID:	PE1216-P1SCD-19-B-00	**Percent Solids:**	77.7%	**Start Date:**	12/9/2016
Lab ID:	200-36502-B-5	**Specific Gravity:**	2.650	**End Date:**	12/15/2016

Shape (> #10): subrounded

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	97.3	2.7
#10	2000	95.3	2.0
#20	850	92.7	2.6
#40	425	86.7	6.0
#60	250	70.4	16.3
#80	180	56.8	13.6
#100	150	47.9	8.9
#200	75	25.9	22.0
#230	63	23.9	2.0
Hyd1	34.3	7.6	16.3
Hyd2	22.1	6.0	1.6
Hyd3	13	4.5	1.6
Hyd4	9.1	3.7	0.8
Hyd5	6.8	3.3	0.4
Hyd6	3.4	2.1	1.2
Hyd7	1.4	1.4	0.8

Soil Classification	Percent of sample
Gravel	2.7
Sand	73.4
Coarse Sand	2.0
Medium Sand	8.6
Fine Sand	62.8
Silt	20.6
Clay	3.3

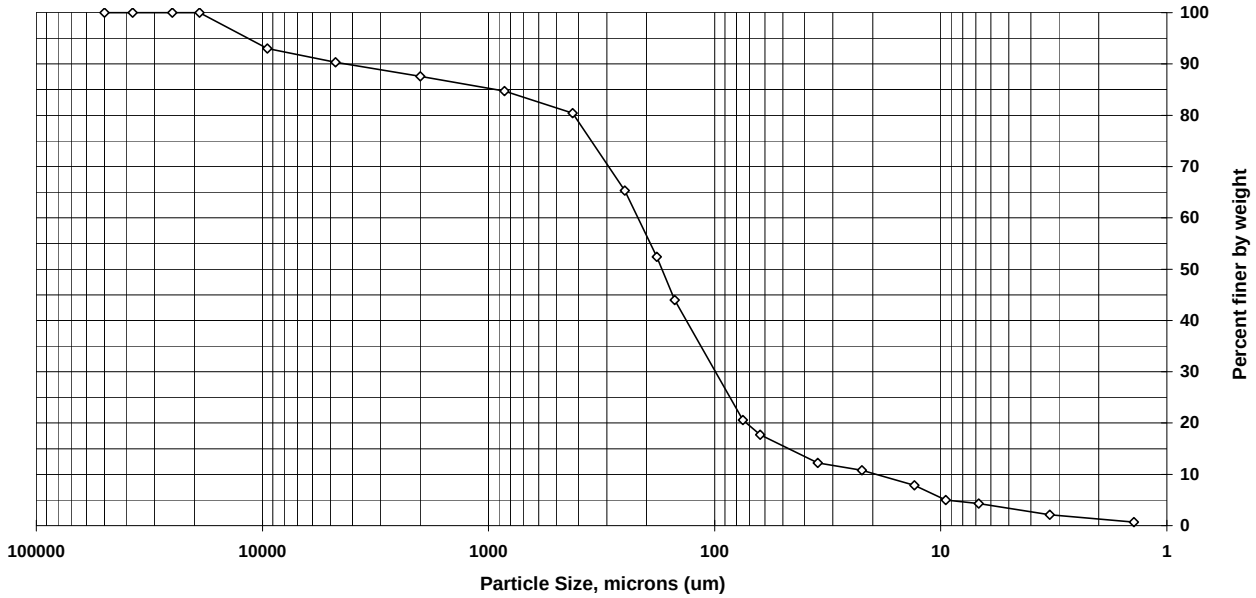
Particle Size of Soils by ASTM D422

				Date Received:	12/6/2016
Sample ID:	PE1216-P1SCD-19-A-00	**Percent Solids:**	76.7%	**Start Date:**	12/10/2016
Lab ID:	200-36502-B-6	**Specific Gravity:**	2.650	**End Date:**	12/15/2016

Shape (> #10): subangular

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	93.0	7.0
#4	4750	90.3	2.7
#10	2000	87.6	2.7
#20	850	84.7	2.9
#40	425	80.4	4.3
#60	250	65.3	15.1
#80	180	52.4	12.9
#100	150	44.0	8.4
#200	75	20.6	23.4
#230	63	17.7	2.9
Hyd1	35	12.2	5.5
Hyd2	22.3	10.8	1.4
Hyd3	13.1	7.9	2.9
Hyd4	9.5	5.0	2.9
Hyd5	6.8	4.3	0.7
Hyd6	3.3	2.2	2.1
Hyd7	1.4	0.7	1.4

Soil Classification	Percent of sample
Gravel	9.7
Sand	72.6
Coarse Sand	2.7
Medium Sand	7.2
Fine Sand	62.7
Silt	13.4
Clay	4.3

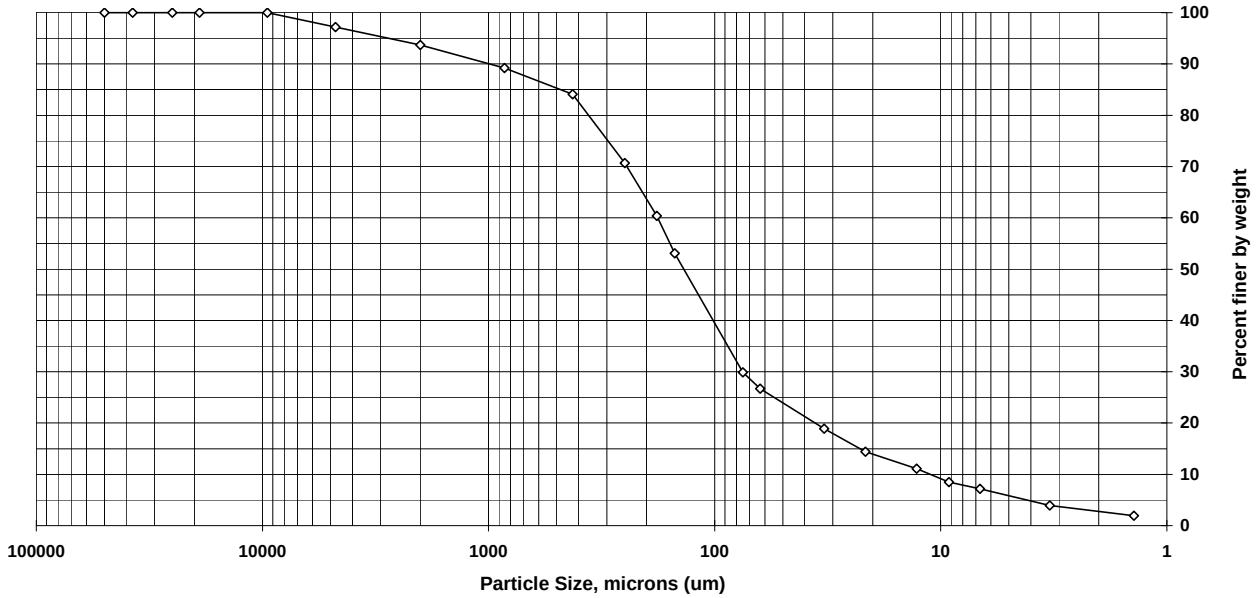
Particle Size of Soils by ASTM D422

				Date Received:	12/6/2016
Sample ID:	PE1216-P1SCD-19-A-09	**Percent Solids:**	74.8%	**Start Date:**	12/10/2016
Lab ID:	200-36502-B-7	**Specific Gravity:**	2.650	**End Date:**	12/15/2016

Shape (> #10): subangular

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	97.2	2.8
#10	2000	93.7	3.5
#20	850	89.2	4.5
#40	425	84.1	5.1
#60	250	70.7	13.4
#80	180	60.4	10.3
#100	150	53.1	7.3
#200	75	29.9	23.2
#230	63	26.7	3.2
Hyd1	32.8	18.9	7.8
Hyd2	21.5	14.4	4.5
Hyd3	12.8	11.1	3.3
Hyd4	9.2	8.5	2.6
Hyd5	6.7	7.2	1.3
Hyd6	3.3	3.9	3.3
Hyd7	1.4	2.0	2.0

Soil Classification	Percent of sample
Gravel	2.8
Sand	70.5
Coarse Sand	3.5
Medium Sand	9.6
Fine Sand	57.4
Silt	19.5
Clay	7.2

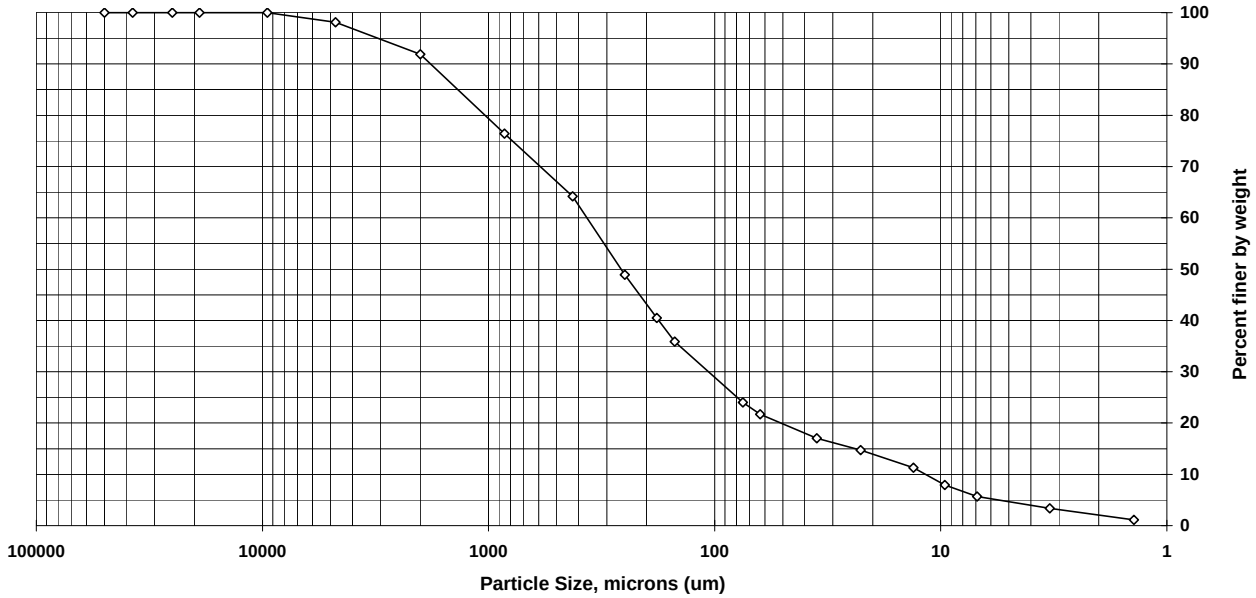
Particle Size of Soils by ASTM D422

				Date Received:	12/6/2016
Sample ID:	PE1216-P1SCD-18-A-00	**Percent Solids:**	44.7%	**Start Date:**	12/10/2016
Lab ID:	200-36502-B-8	**Specific Gravity:**	2.650	**End Date:**	12/15/2016

Shape (> #10): subangular

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	98.1	1.9
#10	2000	91.9	6.2
#20	850	76.4	15.5
#40	425	64.2	12.2
#60	250	48.9	15.3
#80	180	40.5	8.4
#100	150	35.9	4.6
#200	75	24.0	11.9
#230	63	21.7	2.3
Hyd1	35.3	17.0	4.7
Hyd2	22.6	14.7	2.3
Hyd3	13.2	11.3	3.4
Hyd4	9.6	7.9	3.4
Hyd5	6.9	5.7	2.3
Hyd6	3.3	3.4	2.3
Hyd7	1.4	1.1	2.3

Soil Classification	Percent of sample
Gravel	1.9
Sand	76.4
Coarse Sand	6.2
Medium Sand	27.7
Fine Sand	42.5
Silt	16.0
Clay	5.7

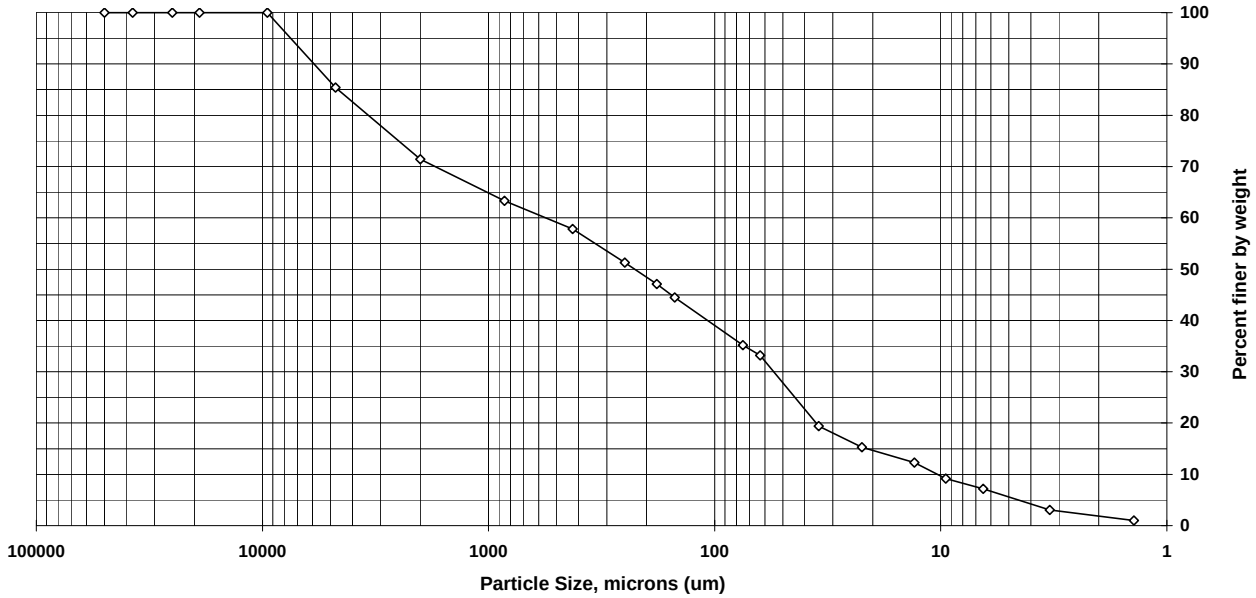
Particle Size of Soils by ASTM D422

				Date Received:	12/6/2016
Sample ID:	PE1216-P1SCD-18-B-00	**Percent Solids:**	50.3%	**Start Date:**	12/10/2016
Lab ID:	200-36502-B-9	**Specific Gravity:**	2.650	**End Date:**	12/15/2016

Shape (> #10): subangular

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	85.4	14.6
#10	2000	71.4	14.0
#20	850	63.3	8.1
#40	425	57.8	5.5
#60	250	51.3	6.5
#80	180	47.1	4.2
#100	150	44.5	2.6
#200	75	35.2	9.3
#230	63	33.2	2.0
Hyd1	34.6	19.4	13.8
Hyd2	22.3	15.3	4.1
Hyd3	13.1	12.3	3.0
Hyd4	9.5	9.2	3.1
Hyd5	6.5	7.2	2.1
Hyd6	3.3	3.1	4.1
Hyd7	1.4	1.0	2.1

Soil Classification	Percent of sample
Gravel	14.6
Sand	52.2
Coarse Sand	14.0
Medium Sand	13.6
Fine Sand	24.6
Silt	26.1
Clay	7.2

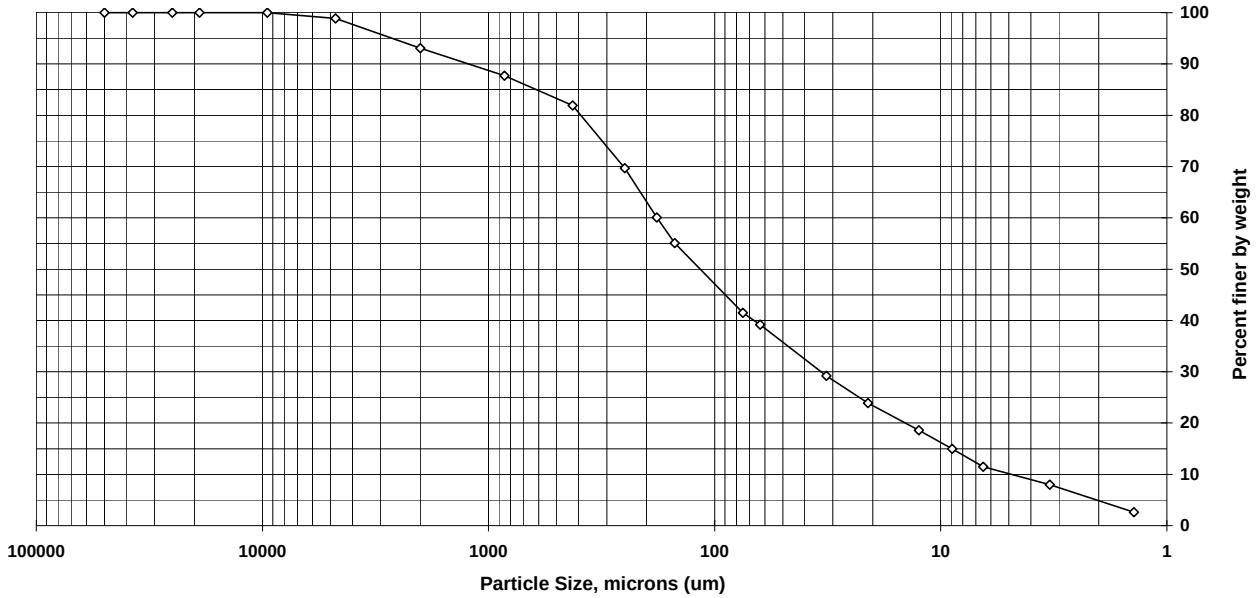
Particle Size of Soils by ASTM D422

				Date Received:	12/6/2016
Sample ID:	PE1216-P1SCD-17-A-00	**Percent Solids:**	55.6%	**Start Date:**	12/10/2016
Lab ID:	200-36502-B-10	**Specific Gravity:**	2.650	**End Date:**	12/15/2016

Shape (> #10): subangular

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	98.9	1.1
#10	2000	93.1	5.8
#20	850	87.7	5.4
#40	425	81.9	5.8
#60	250	69.7	12.2
#80	180	60.1	9.6
#100	150	55.1	5.0
#200	75	41.5	13.6
#230	63	39.2	2.3
Hyd1	32	29.2	10.0
Hyd2	21	23.9	5.3
Hyd3	12.5	18.6	5.3
Hyd4	8.9	15.0	3.6
Hyd5	6.5	11.5	3.5
Hyd6	3.3	8.0	3.5
Hyd7	1.4	2.7	5.3

Soil Classification	Percent of sample
Gravel	1.1
Sand	59.7
Coarse Sand	5.8
Medium Sand	11.2
Fine Sand	42.7
Silt	27.7
Clay	11.5

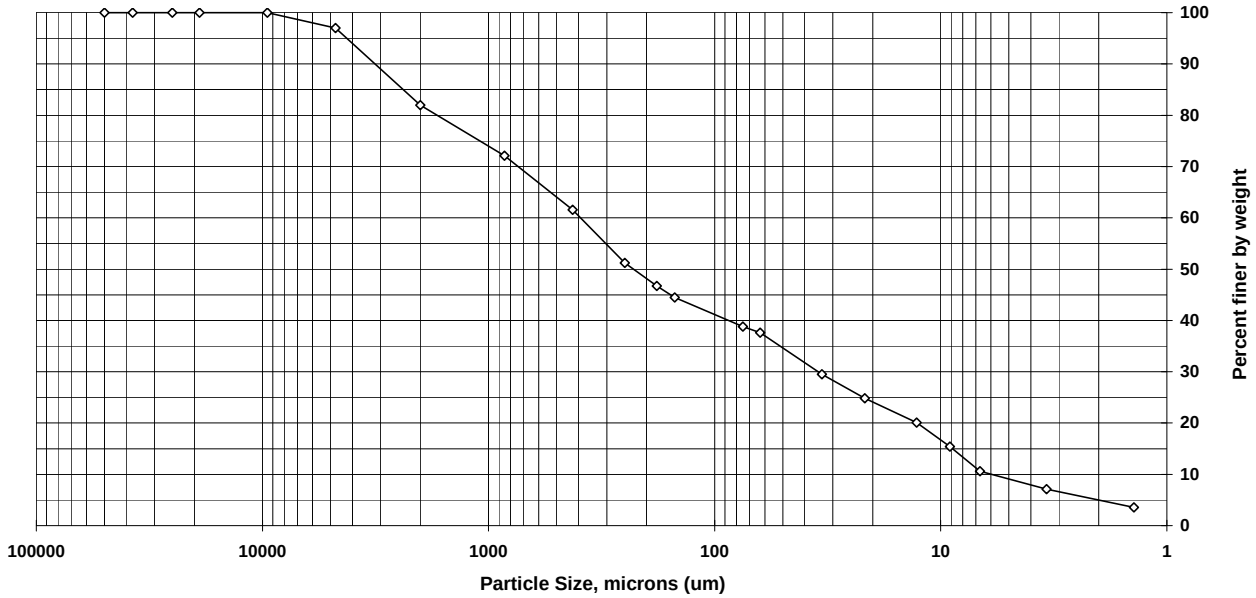
Particle Size of Soils by ASTM D422

				Date Received:	12/6/2016
Sample ID:	PE1216-P1SCD-17-B-00	**Percent Solids:**	41.3%	**Start Date:**	12/10/2016
Lab ID:	200-36502-B-11	**Specific Gravity:**	2.650	**End Date:**	12/15/2016

Shape (> #10): subangular

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	97.0	3.0
#10	2000	82.0	15.0
#20	850	72.1	9.9
#40	425	61.6	10.5
#60	250	51.2	10.4
#80	180	46.7	4.5
#100	150	44.5	2.2
#200	75	38.8	5.7
#230	63	37.6	1.2
Hyd1	33.5	29.5	8.1
Hyd2	21.7	24.8	4.7
Hyd3	12.8	20.1	4.7
Hyd4	9.1	15.4	4.7
Hyd5	6.7	10.6	4.8
Hyd6	3.4	7.1	3.5
Hyd7	1.4	3.5	3.6

Soil Classification	Percent of sample
Gravel	3.0
Sand	59.4
Coarse Sand	15.0
Medium Sand	20.4
Fine Sand	24.0
Silt	27.0
Clay	10.6

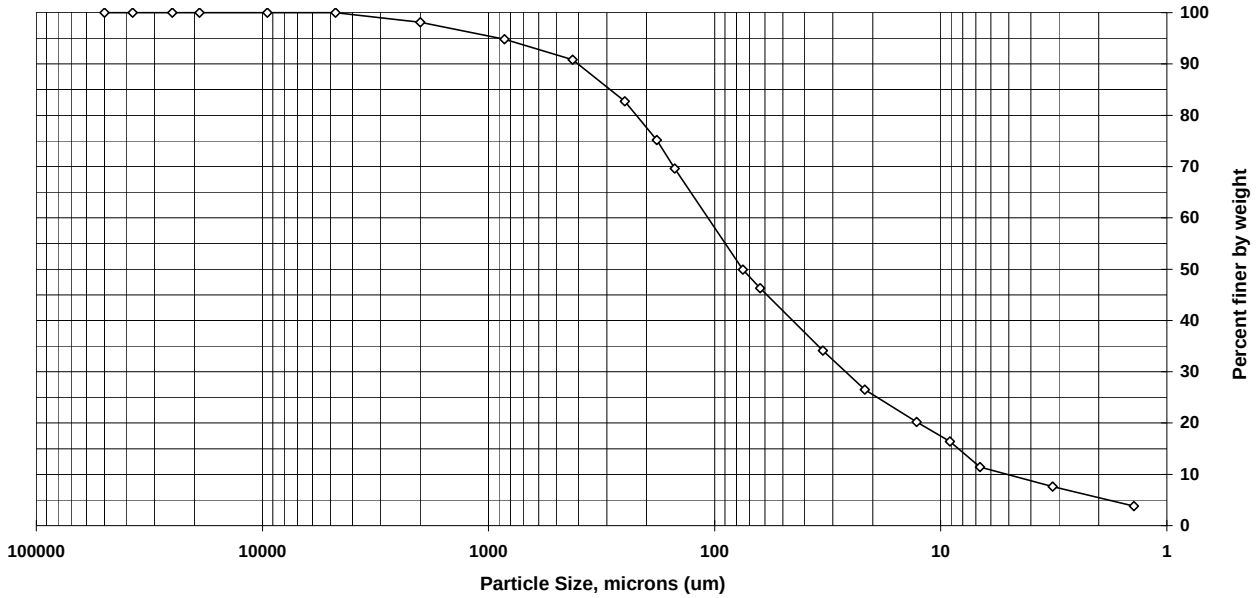
Particle Size of Soils by ASTM D422

				Date Received:	12/6/2016
Sample ID:	PE1216-P1SCD-16-A-00	**Percent Solids:**	69.0%	**Start Date:**	12/10/2016
Lab ID:	200-36502-B-12	**Specific Gravity:**	2.650	**End Date:**	12/15/2016

Shape (> #10): subangular

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	98.1	1.9
#20	850	94.8	3.3
#40	425	90.8	4.0
#60	250	82.7	8.1
#80	180	75.2	7.5
#100	150	69.6	5.6
#200	75	49.9	19.7
#230	63	46.3	3.6
Hyd1	33.2	34.1	12.2
Hyd2	21.7	26.5	7.6
Hyd3	12.8	20.2	6.3
Hyd4	9.1	16.4	3.8
Hyd5	6.7	11.4	5.0
Hyd6	3.2	7.6	3.8
Hyd7	1.4	3.8	3.8

Soil Classification	Percent of sample
Gravel	0.0
Sand	53.7
Coarse Sand	1.9
Medium Sand	7.3
Fine Sand	44.5
Silt	34.9
Clay	11.4

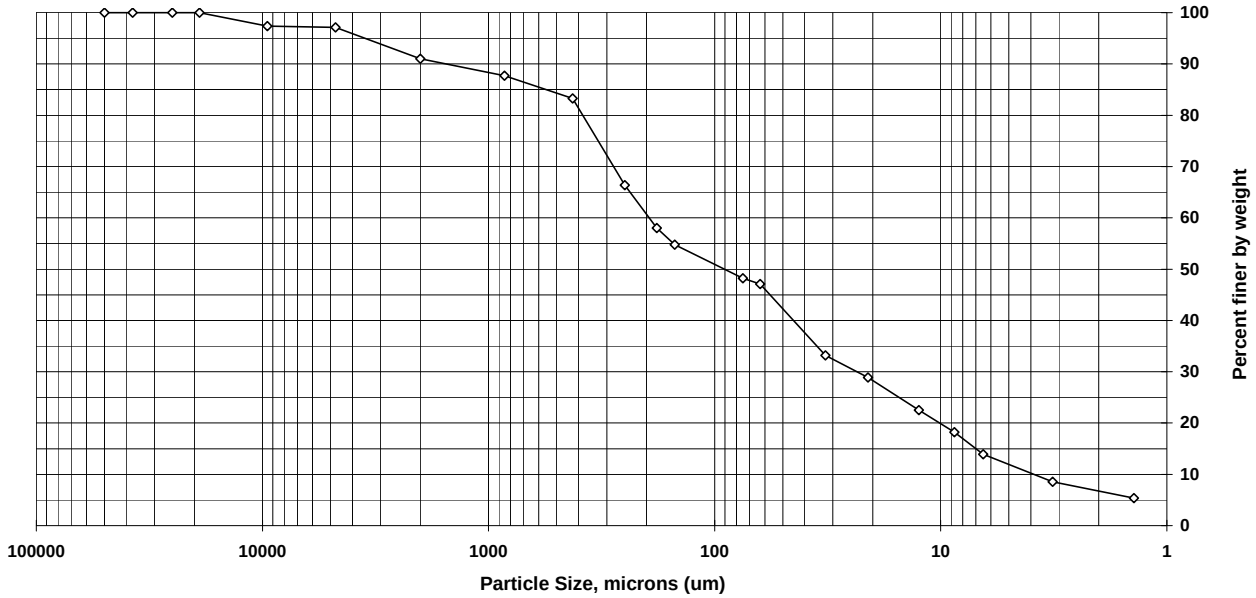
Particle Size of Soils by ASTM D422

				Date Received:	12/6/2016
Sample ID:	PE1216-P1SCD-16-B-00	**Percent Solids:**	47.4%	**Start Date:**	12/10/2016
Lab ID:	200-36502-B-13	**Specific Gravity:**	2.650	**End Date:**	12/15/2016

Shape (> #10): subangular

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	97.4	2.6
#4	4750	97.1	0.3
#10	2000	91.0	6.1
#20	850	87.7	3.3
#40	425	83.3	4.4
#60	250	66.4	16.9
#80	180	58.0	8.4
#100	150	54.8	3.2
#200	75	48.2	6.6
#230	63	47.1	1.1
Hyd1	32.4	33.2	13.9
Hyd2	21	28.9	4.3
Hyd3	12.5	22.5	6.4
Hyd4	8.7	18.2	4.3
Hyd5	6.5	13.9	4.3
Hyd6	3.2	8.6	5.3
Hyd7	1.4	5.4	3.2

Soil Classification	Percent of sample
Gravel	2.9
Sand	50.0
Coarse Sand	6.1
Medium Sand	7.7
Fine Sand	36.2
Silt	33.2
Clay	13.9

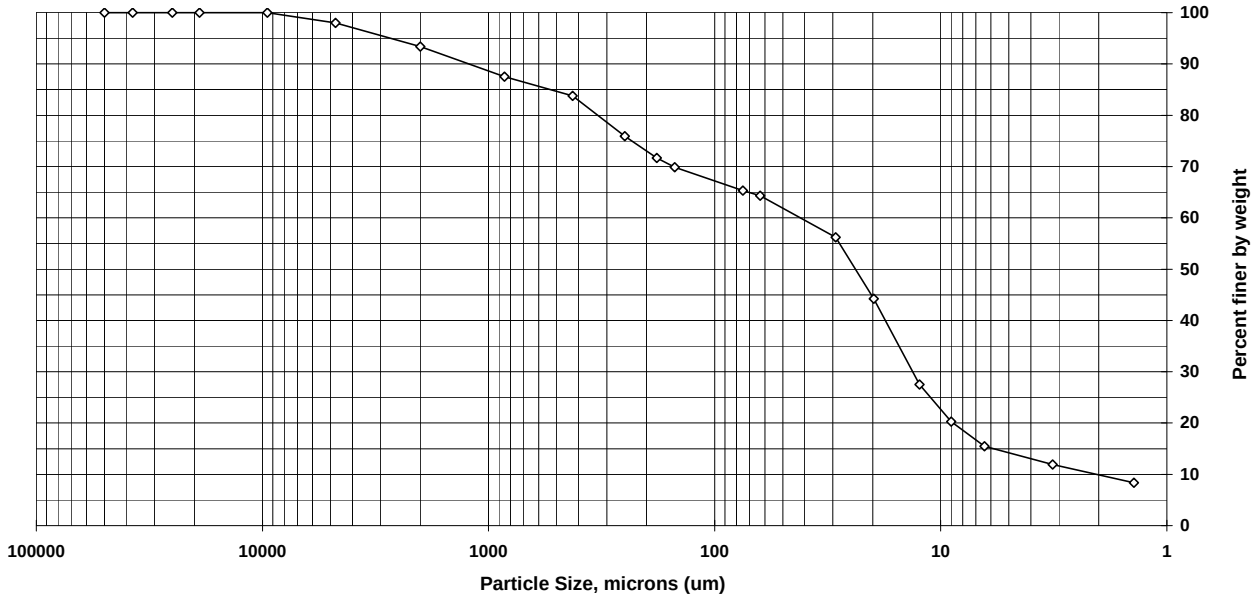
Particle Size of Soils by ASTM D422

				Date Received:	12/6/2016
Sample ID:	PE1216-P1SCD-15-A-00	**Percent Solids:**	39.4%	**Start Date:**	12/10/2016
Lab ID:	200-36502-B-14	**Specific Gravity:**	2.650	**End Date:**	12/15/2016

Shape (> #10): subangular

Non-soil material: plant,wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	98.0	2.0
#10	2000	93.4	4.6
#20	850	87.5	5.9
#40	425	83.8	3.7
#60	250	75.9	7.9
#80	180	71.7	4.2
#100	150	69.9	1.8
#200	75	65.3	4.6
#230	63	64.3	1.0
Hyd1	29.2	56.2	8.1
Hyd2	19.8	44.2	12.0
Hyd3	12.4	27.5	16.7
Hyd4	9	20.3	7.2
Hyd5	6.4	15.5	4.8
Hyd6	3.2	11.9	3.6
Hyd7	1.4	8.4	3.5

Soil Classification	Percent of sample
Gravel	2.0
Sand	33.7
Coarse Sand	4.6
Medium Sand	9.6
Fine Sand	19.5
Silt	48.8
Clay	15.5

Particle Size of Soils by ASTM D422

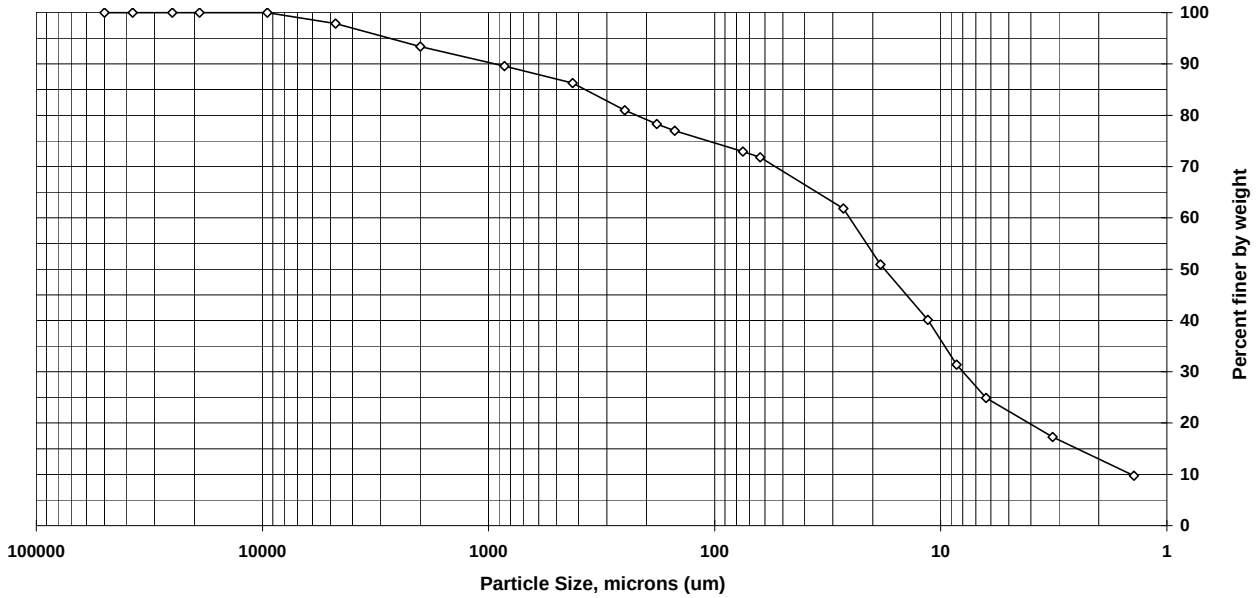
Sample ID: PE1216-P1SCD-15-B-00
Lab ID: 200-36502-B-15

Percent Solids: 47.0%
Specific Gravity: 2.650

Date Received: 12/6/2016
Start Date: 12/10/2016
End Date: 12/15/2016

Shape (> #10): subangular

Non-soil material: plant,wood
Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	97.9	2.1
#10	2000	93.4	4.5
#20	850	89.6	3.8
#40	425	86.3	3.3
#60	250	81.0	5.3
#80	180	78.3	2.7
#100	150	77.0	1.3
#200	75	72.9	4.1
#230	63	71.8	1.1
Hyd1	27	61.8	10.0
Hyd2	18.5	50.9	10.9
Hyd3	11.4	40.1	10.8
Hyd4	8.5	31.4	8.7
Hyd5	6.3	24.9	6.5
Hyd6	3.2	17.3	7.6
Hyd7	1.4	9.8	7.6

Soil Classification	Percent of sample
Gravel	2.1
Sand	26.1
Coarse Sand	4.5
Medium Sand	7.1
Fine Sand	14.5
Silt	46.9
Clay	24.9

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1216-P1SCD-20-B-00
Lab Sample ID	200-36502-B-1

Date Received	12/6/2016 09:55
Start Date	12/9/2016 19:29
End Date	12/15/2016 10:10

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	36.80	g
Dry Sample + Tin	26.92	g
% Moisture	27.61	%

Non-soil material:	plant,wood
Shape (> #10):	na
Hardness (> #10):	na
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.83	259.18	214.35
Sample Weight (Oven Dried)			155

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			0.83
Sample <#10			154
% Passing #10			71.8

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	462.78	463.61	0.83	g	99.5	Sand	Coarse
#20	850	379.67	381.12	1.45	g	98.6	Sand	Medium
#40	425	353.49	355.28	1.79	g	97.4	Sand	Medium
#60	250	351.18	365.78	14.60	g	88.0	Sand	Fine
#80	180	338.16	353.92	15.76	g	77.8	Sand	Fine
#100	150	328.94	341.98	13.04	g	69.4	Sand	Fine
#200	75	323.77	371.41	47.64	g	38.7	Sand	Fine
#230	63	341.19	347.15	5.96	g	34.9	Sand	Fine
				0.00	g	34.9		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	155

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0275	20.0	29	24.1	Silt	
5	5	1.0230	20.0	19.5	19.4	Silt	
15	15	1.0190	20.0	11.8	15.3	Silt	
30	32	1.0160	20.0	8.4	12.2	Silt	
60	60	1.0145	20.0	6.2	10.6	Silt	
250	259	1.0110	20.0	3.1	6.99	Clay	
1440	1406	1.0090	20.0	1.4	4.92	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1216-P1SCD-20-B-00
Lab Sample ID	200-36502-B-2

Date Received	12/6/2016 09:55
Start Date	12/9/2016 20:18
End Date	12/15/2016 10:31

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	42.89	g
Dry Sample + Tin	31.72	g
% Moisture	26.68	%

Non-soil material:	plant,wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.63	272.35	227.72
Sample Weight (Oven Dried)			167

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			0.85
Sample <#10			166
% Passing #10			72.9

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	462.78	463.63	0.85	g	99.5	Sand	Coarse
#20	850	379.67	381.26	1.59	g	98.5	Sand	Medium
#40	425	353.49	355.69	2.20	g	97.2	Sand	Medium
#60	250	351.18	367.80	16.62	g	87.2	Sand	Fine
#80	180	338.16	356.08	17.92	g	76.5	Sand	Fine
#100	150	328.94	343.48	14.54	g	67.8	Sand	Fine
#200	75	323.77	374.61	50.84	g	37.4	Sand	Fine
#230	63	341.19	347.80	6.61	g	33.4	Sand	Fine
				0.00	g	33.4		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	167

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0285	20.0	28.6	23.3	Silt	
5	5	1.0240	20.0	19.3	19	Silt	
15	15	1.0200	20.0	11.7	15.1	Silt	
30	30	1.0180	20.0	8.5	13.2	Silt	
60	63	1.0150	20.0	6	10.3	Silt	
250	253	1.0120	20.0	3.1	7.45	Clay	
1440	1400	1.0095	20.0	1.4	5.05	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1216-P1SCD-20-A-00
Lab Sample ID	200-36502-B-3

Date Received	12/6/2016 09:55
Start Date	12/9/2016 20:20
End Date	12/15/2016 10:43

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	31.56	g
Dry Sample + Tin	16.59	g
% Moisture	48.99	%

Non-soil material:	plant,wood
Shape (> #10):	subrounded
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.93	295.37	250.44
Sample Weight (Oven Dried)			128

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			5.47
Sample <#10			123
% Passing #10			49.1

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.13	490.85	2.72	g	97.9	Gravel	
#10	2000	462.78	465.53	2.75	g	95.8	Sand	Coarse
#20	850	379.67	382.87	3.20	g	93.3	Sand	Medium
#40	425	353.49	357.15	3.66	g	90.4	Sand	Medium
#60	250	351.18	369.36	18.18	g	76.2	Sand	Fine
#80	180	338.16	356.98	18.82	g	61.5	Sand	Fine
#100	150	328.94	338.57	9.63	g	54.0	Sand	Fine
#200	75	323.77	341.43	17.66	g	40.2	Sand	Fine
#230	63	341.19	342.93	1.74	g	38.8	Sand	Fine
				0.00	g	38.8		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	128

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0135	20.0	34.4	11.6	Silt	
5	5	1.0120	20.0	22.1	9.72	Silt	
15	15	1.0105	20.0	13	7.84	Silt	
30	30	1.0095	20.0	9.3	6.59	Silt	
60	57	1.0085	20.0	6.8	5.33	Silt	
250	247	1.0065	20.0	3.3	2.82	Clay	
1440	1394	1.0055	20.0	1.4	1.57	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1216-P1SCD-20-A-05
Lab Sample ID	200-36502-B-4

Date Received	12/6/2016 09:55
Start Date	12/9/2016 20:21
End Date	12/15/2016 11:02

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	34.60	g
Dry Sample + Tin	30.64	g
% Moisture	11.79	%

Non-soil material:	plant,wood
Shape (> #10):	subrounded
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.74	371.52	326.78
Sample Weight (Oven Dried)			288

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			27.7
Sample <#10			260
% Passing #10			79.6

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	450.83	3.49	g	98.8	Gravel	
#4	4750	488.13	496.43	8.30	g	95.9	Gravel	
#10	2000	462.78	478.68	15.90	g	90.4	Sand	Coarse
#20	850	379.67	417.56	37.89	g	77.2	Sand	Medium
#40	425	353.49	398.10	44.61	g	61.7	Sand	Medium
#60	250	351.18	386.94	35.76	g	49.3	Sand	Fine
#80	180	338.16	345.34	7.18	g	46.8	Sand	Fine
#100	150	328.94	331.11	2.17	g	46.0	Sand	Fine
#200	75	323.77	327.32	3.55	g	44.8	Sand	Fine
#230	63	341.19	341.77	0.58	g	44.6	Sand	Fine
				0.00	g	44.6		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	288

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0080	20.0	36.3	2.09	Silt	
5	5	1.0075	20.0	23.1	1.81	Silt	
15	15	1.0070	20.0	13.4	1.53	Silt	
30	30	1.0065	20.0	9.5	1.25	Silt	
60	63	1.0060	20.0	6.6	0.976	Silt	
250	241	1.0050	20.0	3.4	0.418	Clay	
1440	1388	1.0050	20.0	1.4	0.418	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1216-P1SCD-19-B-00
Lab Sample ID	200-36502-B-5

Date Received	12/6/2016 09:55
Start Date	12/9/2016 20:24
End Date	12/15/2016 11:15

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	47.22	g
Dry Sample + Tin	36.91	g
% Moisture	22.31	%

Non-soil material:	plant,wood
Shape (> #10):	subrounded
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.76	310.24	265.48
Sample Weight (Oven Dried)			206

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			9.66
Sample <#10			196
% Passing #10			73.8

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.13	493.71	5.58	g	97.3	Gravel	
#10	2000	462.78	466.86	4.08	g	95.3	Sand	Coarse
#20	850	379.67	384.98	5.31	g	92.7	Sand	Medium
#40	425	353.49	365.82	12.33	g	86.7	Sand	Medium
#60	250	351.18	384.86	33.68	g	70.4	Sand	Fine
#80	180	338.16	366.24	28.08	g	56.8	Sand	Fine
#100	150	328.94	347.32	18.38	g	47.9	Sand	Fine
#200	75	323.77	369.18	45.41	g	25.9	Sand	Fine
#230	63	341.19	345.23	4.04	g	23.9	Sand	Fine
				0.00	g	23.9		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	206

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0140	20.0	34.3	7.6	Silt	
5	5	1.0120	20.0	22.1	6.04	Silt	
15	15	1.0100	20.0	13	4.48	Silt	
30	31	1.0090	20.0	9.1	3.7	Silt	
60	57	1.0085	20.0	6.8	3.31	Silt	
250	235	1.0070	20.0	3.4	2.14	Clay	
1440	1382	1.0060	20.0	1.4	1.36	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1216-P1SCD-19-A-00
Lab Sample ID	200-36502-B-6

Date Received	12/6/2016
Start Date	12/10/2016 12:10
End Date	12/15/2016 11:37

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	41.34	g
Dry Sample + Tin	31.94	g
% Moisture	23.31	%

Non-soil material:	plant,wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.66	190.18	145.52
Sample Weight (Oven Dried)			112

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			13.9
Sample <#10			98.1
% Passing #10			67.4

Hydrometer Data

Serial Number	503315
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0040
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.006833333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	455.20	7.86	g	93.0	Gravel	
#4	4750	488.13	491.17	3.04	g	90.3	Gravel	
#10	2000	462.78	465.79	3.01	g	87.6	Sand	Coarse
#20	850	379.67	382.97	3.30	g	84.7	Sand	Medium
#40	425	353.49	358.29	4.80	g	80.4	Sand	Medium
#60	250	351.18	368.12	16.94	g	65.3	Sand	Fine
#80	180	338.16	352.66	14.50	g	52.4	Sand	Fine
#100	150	328.94	338.40	9.46	g	44.0	Sand	Fine
#200	75	323.77	349.95	26.18	g	20.6	Sand	Fine
#230	63	341.19	344.43	3.24	g	17.7	Sand	Fine
				0.00	g	17.7		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	112

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0120	20.0	35	12.2	Silt	
5	5	1.0110	20.0	22.3	10.8	Silt	
15	15	1.0090	20.0	13.1	7.89	Silt	
30	30	1.0070	20.0	9.5	5.02	Silt	
60	59	1.0065	20.0	6.8	4.3	Silt	
250	256	1.0050	20.0	3.3	2.15	Clay	
1440	1440	1.0040	20.0	1.4	0.717	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE1216-P1SCD-19-A-09
Lab Sample ID	200-36502-B-7

Date Received	12/6/2016
Start Date	12/10/2016 12:13
End Date	12/15/2016 11:53

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	42.60	g
Dry Sample + Tin	32.13	g
% Moisture	25.17	%

Non-soil material:	plant,wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.67	208.59	163.92
Sample Weight (Oven Dried)			123

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			7.74
Sample <#10			115
% Passing #10			70.2

Hydrometer Data

Serial Number	503315
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0040
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.006833333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.13	491.54	3.41	g	97.2	Gravel	
#10	2000	462.78	467.11	4.33	g	93.7	Sand	Coarse
#20	850	379.67	385.16	5.49	g	89.2	Sand	Medium
#40	425	353.49	359.80	6.31	g	84.1	Sand	Medium
#60	250	351.18	367.63	16.45	g	70.7	Sand	Fine
#80	180	338.16	350.78	12.62	g	60.4	Sand	Fine
#100	150	328.94	337.87	8.93	g	53.1	Sand	Fine
#200	75	323.77	352.27	28.50	g	29.9	Sand	Fine
#230	63	341.19	345.10	3.91	g	26.7	Sand	Fine
				0.00	g	26.7		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	123

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0180	20.0	32.8	18.9	Silt	
5	5	1.0145	20.0	21.5	14.4	Silt	
15	15	1.0120	20.0	12.8	11.1	Silt	
30	30	1.0100	20.0	9.2	8.49	Silt	
60	58	1.0090	20.0	6.7	7.18	Silt	
250	256	1.0065	20.0	3.3	3.92	Clay	
1440	1440	1.0050	20.0	1.4	1.96	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1216-P1SCD-18-A-00
Lab Sample ID	200-36502-B-8

Date Received	12/6/2016
Start Date	12/10/2016 12:14
End Date	12/15/2016 12:04

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	32.68	g
Dry Sample + Tin	15.15	g
% Moisture	55.33	%

Non-soil material:	plant,wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.66	203.58	158.92
Sample Weight (Oven Dried)			71

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			5.79
Sample <#10			65.2
% Passing #10			41

Hydrometer Data

Serial Number	503315
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0040
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.006833333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.13	489.50	1.37	g	98.1	Gravel	
#10	2000	462.78	467.20	4.42	g	91.9	Sand	Coarse
#20	850	379.67	390.66	10.99	g	76.4	Sand	Medium
#40	425	353.49	362.16	8.67	g	64.2	Sand	Medium
#60	250	351.18	362.07	10.89	g	48.9	Sand	Fine
#80	180	338.16	344.10	5.94	g	40.5	Sand	Fine
#100	150	328.94	332.19	3.25	g	35.9	Sand	Fine
#200	75	323.77	332.23	8.46	g	24.0	Sand	Fine
#230	63	341.19	342.84	1.65	g	21.7	Sand	Fine
				0.00	g	21.7		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	71

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0110	20.0	35.3	17	Silt	
5	5	1.0100	20.0	22.6	14.7	Silt	
15	15	1.0085	20.0	13.2	11.3	Silt	
30	29	1.0070	20.0	9.6	7.92	Silt	
60	58	1.0060	20.0	6.9	5.66	Silt	
250	250	1.0050	20.0	3.3	3.39	Clay	
1440	1434	1.0040	20.0	1.4	1.13	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1216-P1SCD-18-B-00
Lab Sample ID	200-36502-B-9

Date Received	12/6/2016
Start Date	12/10/2016 12:16
End Date	12/15/2016 12:17

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	42.41	g
Dry Sample + Tin	21.83	g
% Moisture	49.72	%

Non-soil material:	plant,wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.74	201.04	156.3
Sample Weight (Oven Dried)			78.6

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			22.5
Sample <#10			56.1
% Passing #10			35.9

Hydrometer Data

Serial Number	503315
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0040
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.006833333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.13	499.59	11.46	g	85.4	Gravel	
#10	2000	462.78	473.77	10.99	g	71.4	Sand	Coarse
#20	850	379.67	386.06	6.39	g	63.3	Sand	Medium
#40	425	353.49	357.80	4.31	g	57.8	Sand	Medium
#60	250	351.18	356.26	5.08	g	51.3	Sand	Fine
#80	180	338.16	341.43	3.27	g	47.1	Sand	Fine
#100	150	328.94	330.97	2.03	g	44.5	Sand	Fine
#200	75	323.77	331.09	7.32	g	35.2	Sand	Fine
#230	63	341.19	342.74	1.55	g	33.2	Sand	Fine
				0.00	g	33.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	78.6

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0130	20.0	34.6	19.4	Silt	
5	5	1.0110	20.0	22.3	15.3	Silt	
15	15	1.0095	20.0	13.1	12.3	Silt	
30	29	1.0080	20.0	9.5	9.2	Silt	
60	63	1.0070	20.0	6.5	7.15	Silt	
250	250	1.0050	20.0	3.3	3.07	Clay	
1440	1434	1.0040	20.0	1.4	1.02	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1216-P1SCD-17-A-00
Lab Sample ID	200-36502-B-10

Date Received	12/6/2016
Start Date	12/10/2016 12:17
End Date	12/15/2016 12:27

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	45.15	g
Dry Sample + Tin	25.57	g
% Moisture	44.37	%

Non-soil material:	plant,wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.77	208.06	163.29
Sample Weight (Oven Dried)			90.8

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			6.23
Sample <#10			84.6
% Passing #10			51.8

Hydrometer Data

Serial Number	503315
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0040
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.006833333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.13	489.09	0.96	g	98.9	Gravel	
#10	2000	462.78	468.05	5.27	g	93.1	Sand	Coarse
#20	850	379.67	384.61	4.94	g	87.7	Sand	Medium
#40	425	353.49	358.72	5.23	g	81.9	Sand	Medium
#60	250	351.18	362.23	11.05	g	69.7	Sand	Fine
#80	180	338.16	346.92	8.76	g	60.1	Sand	Fine
#100	150	328.94	333.45	4.51	g	55.1	Sand	Fine
#200	75	323.77	336.15	12.38	g	41.5	Sand	Fine
#230	63	341.19	343.31	2.12	g	39.2	Sand	Fine
				0.00	g	39.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	90.8

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0200	20.0	32	29.2	Silt	
5	5	1.0170	20.0	21	23.9	Silt	
15	15	1.0140	20.0	12.5	18.6	Silt	
30	31	1.0120	20.0	8.9	15	Silt	
60	60	1.0100	20.0	6.5	11.5	Silt	
250	240	1.0080	20.0	3.3	7.96	Clay	
1440	1424	1.0050	20.0	1.4	2.65	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1216-P1SCD-17-B-00
Lab Sample ID	200-36502-B-11

Date Received	12/6/2016
Start Date	12/10/2016 12:19
End Date	12/15/2016 12:37

Dry Weight Determination

Tin Weight	1.06	g
Wet Sample + Tin	41.54	g
Dry Sample + Tin	17.77	g
% Moisture	58.72	%

Non-soil material:	plant,wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.92	209.76	164.84
Sample Weight (Oven Dried)			68

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			12.2
Sample <#10			55.8
% Passing #10			33.9

Hydrometer Data

Serial Number	503315
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0040
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.006833333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.13	490.16	2.03	g	97.0	Gravel	
#10	2000	462.78	472.97	10.19	g	82.0	Sand	Coarse
#20	850	379.67	386.37	6.70	g	72.1	Sand	Medium
#40	425	353.49	360.65	7.16	g	61.6	Sand	Medium
#60	250	351.18	358.22	7.04	g	51.2	Sand	Fine
#80	180	338.16	341.24	3.08	g	46.7	Sand	Fine
#100	150	328.94	330.41	1.47	g	44.5	Sand	Fine
#200	75	323.77	327.63	3.86	g	38.8	Sand	Fine
#230	63	341.19	342.02	0.83	g	37.6	Sand	Fine
				0.00	g	37.6		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	68

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0160	20.0	33.5	29.5	Silt	
5	5	1.0140	20.0	21.7	24.8	Silt	
15	15	1.0120	20.0	12.8	20.1	Silt	
30	31	1.0100	20.0	9.1	15.4	Silt	
60	59	1.0080	20.0	6.7	10.6	Silt	
250	234	1.0065	20.0	3.4	7.09	Clay	
1440	1418	1.0050	20.0	1.4	3.54	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1216-P1SCD-16-A-00
Lab Sample ID	200-36502-B-12

Date Received	12/6/2016
Start Date	12/10/2016 12:21
End Date	12/15/2016 12:48

Dry Weight Determination

Tin Weight	1.03	g
Wet Sample + Tin	38.47	g
Dry Sample + Tin	26.87	g
% Moisture	30.98	%

Non-soil material:	plant,wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.76	136.98	92.22
Sample Weight (Oven Dried)			63.6

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			1.24
Sample <#10			62.4
% Passing #10			67.7

Hydrometer Data

Serial Number	503315
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0040
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.006833333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	462.78	464.02	1.24	g	98.1	Sand	Coarse
#20	850	379.67	381.75	2.08	g	94.8	Sand	Medium
#40	425	353.49	356.04	2.55	g	90.8	Sand	Medium
#60	250	351.18	356.30	5.12	g	82.7	Sand	Fine
#80	180	338.16	342.96	4.80	g	75.2	Sand	Fine
#100	150	328.94	332.50	3.56	g	69.6	Sand	Fine
#200	75	323.77	336.31	12.54	g	49.9	Sand	Fine
#230	63	341.19	343.47	2.28	g	46.3	Sand	Fine
				0.00	g	46.3		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	63.6

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0170	20.0	33.2	34.1	Silt	
5	5	1.0140	20.0	21.7	26.5	Silt	
15	15	1.0115	20.0	12.8	20.2	Silt	
30	31	1.0100	20.0	9.1	16.4	Silt	
60	59	1.0080	20.0	6.7	11.4	Silt	
250	265	1.0065	20.0	3.2	7.58	Clay	
1440	1412	1.0050	20.0	1.4	3.79	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1216-P1SCD-16-B-00
Lab Sample ID	200-36502-B-13

Date Received	12/6/2016
Start Date	12/10/2016 12:22
End Date	12/15/2016 12:57

Dry Weight Determination

Tin Weight	1.03	g
Wet Sample + Tin	41.65	g
Dry Sample + Tin	20.29	g
% Moisture	52.58	%

Non-soil material:	plant,wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.72	202.80	158.08
Sample Weight (Oven Dried)			75

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			6.78
Sample <#10			68.2
% Passing #10			43.1

Hydrometer Data

Serial Number	503315
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0040
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.006833333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.34	449.29	1.95	g	97.4	Gravel	
#4	4750	488.13	488.39	0.26	g	97.1	Gravel	
#10	2000	462.78	467.35	4.57	g	91.0	Sand	Coarse
#20	850	379.67	382.16	2.49	g	87.7	Sand	Medium
#40	425	353.49	356.77	3.28	g	83.3	Sand	Medium
#60	250	351.18	363.83	12.65	g	66.4	Sand	Fine
#80	180	338.16	344.47	6.31	g	58.0	Sand	Fine
#100	150	328.94	331.37	2.43	g	54.8	Sand	Fine
#200	75	323.77	328.74	4.97	g	48.2	Sand	Fine
#230	63	341.19	342.05	0.86	g	47.1	Sand	Fine
				0.00	g	47.1		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	75

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0190	20.0	32.4	33.2	Silt	
5	5	1.0170	20.0	21	28.9	Silt	
15	15	1.0140	20.0	12.5	22.5	Silt	
30	32	1.0120	20.0	8.7	18.2	Silt	
60	60	1.0100	20.0	6.5	13.9	Silt	
250	259	1.0075	20.0	3.2	8.57	Clay	
1440	1406	1.0060	20.0	1.4	5.35	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1216-P1SCD-15-A-00
Lab Sample ID	200-36502-B-14

Date Received	12/6/2016
Start Date	12/10/2016 12:23
End Date	12/15/2016 13:06

Dry Weight Determination

Tin Weight	1.03	g
Wet Sample + Tin	30.37	g
Dry Sample + Tin	12.58	g
% Moisture	60.63	%

Non-soil material:	plant,wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.89	215.49	170.6
Sample Weight (Oven Dried)			67.2

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			4.4
Sample <#10			62.8
% Passing #10			36.8

Hydrometer Data

Serial Number	503315
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0040
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.006833333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.13	489.46	1.33	g	98.0	Gravel	
#10	2000	462.78	465.85	3.07	g	93.4	Sand	Coarse
#20	850	379.67	383.62	3.95	g	87.5	Sand	Medium
#40	425	353.49	355.96	2.47	g	83.8	Sand	Medium
#60	250	351.18	356.47	5.29	g	75.9	Sand	Fine
#80	180	338.16	340.98	2.82	g	71.7	Sand	Fine
#100	150	328.94	330.16	1.22	g	69.9	Sand	Fine
#200	75	323.77	326.86	3.09	g	65.3	Sand	Fine
#230	63	341.19	341.86	0.67	g	64.3	Sand	Fine
				0.00	g	64.3		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	67.2

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0270	20.0	29.2	56.2	Silt	
5	5	1.0220	20.0	19.8	44.2	Silt	
15	15	1.0150	20.0	12.4	27.5	Silt	
30	30	1.0120	20.0	9	20.3	Silt	
60	63	1.0100	20.0	6.4	15.5	Silt	
250	253	1.0085	20.0	3.2	11.9	Clay	
1440	1400	1.0070	20.0	1.4	8.36	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE1216-P1SCD-15-B-00
Lab Sample ID	200-36502-B-15

Date Received	12/6/2016
Start Date	12/10/2016 12:24
End Date	12/15/2016 13:19

Dry Weight Determination

Tin Weight	1.04	g
Wet Sample + Tin	31.15	g
Dry Sample + Tin	15.19	g
% Moisture	53.01	%

Non-soil material:	plant,wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.91	202.51	157.6
Sample Weight (Oven Dried)			74.1

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			4.9
Sample <#10			69.2
% Passing #10			43.9

Hydrometer Data

Serial Number	503315
Calib. Date (mm/dd/yyyy)	07/18/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0040
High Temp (C)	23.0
Reading at High Temp	1.0030
Hydrometer Cal Slope	-0.000166667
Hydrometer Cal Intercept	1.006833333

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.13	489.68	1.55	g	97.9	Gravel	
#10	2000	462.78	466.13	3.35	g	93.4	Sand	Coarse
#20	850	379.67	382.48	2.81	g	89.6	Sand	Medium
#40	425	353.49	355.95	2.46	g	86.3	Sand	Medium
#60	250	351.18	355.13	3.95	g	81.0	Sand	Fine
#80	180	338.16	340.18	2.02	g	78.3	Sand	Fine
#100	150	328.94	329.92	0.98	g	77.0	Sand	Fine
#200	75	323.77	326.80	3.03	g	72.9	Sand	Fine
#230	63	341.19	342.01	0.82	g	71.8	Sand	Fine
				0.00	g	71.8		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	74.1

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0320	20.0	27	61.8	Silt	
5	5	1.0270	20.0	18.5	50.9	Silt	
15	15	1.0220	20.0	11.4	40.1	Silt	
30	30	1.0180	20.0	8.5	31.4	Silt	
60	57	1.0150	20.0	6.3	24.9	Silt	
250	247	1.0115	20.0	3.2	17.3	Clay	
1440	1394	1.0080	20.0	1.4	9.75	Clay	

DATA REPORTING QUALIFIERS

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Lab Section	Qualifier	Description
Metals		
	U	Indicates the analyte was analyzed for but not detected.
	F1	MS and/or MSD Recovery is outside acceptance limits.
	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
	F2	MS/MSD RPD exceeds control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry		
	U	Indicates the analyte was analyzed for but not detected.

QUALITY CONTROL RESULTS

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 200-112229					
LCS 200-112229/2-A	Lab Control Sample	T	Sediment	3050B	
MB 200-112229/1-A	Method Blank	T	Sediment	3050B	
200-36502-1	PE1216-P1SCD-20-B-0006 IN	T	Sediment	3050B	
200-36502-2	PE1216-P1SCD-20-B-0006 IN-D	T	Sediment	3050B	
200-36502-3	PE1216-P1SCD-20-A-0005 IN	T	Sediment	3050B	
200-36502-4	PE1216-P1SCD-20-A-0517 IN	T	Sediment	3050B	
200-36502-5	PE1216-P1SCD-19-B-0008 IN	T	Sediment	3050B	
200-36502-6	PE1216-P1SCD-19-A-0009 IN	T	Sediment	3050B	
200-36502-7	PE1216-P1SCD-19-A-0918 IN	T	Sediment	3050B	
200-36502-8	PE1216-P1SCD-18-A-0004 IN	T	Sediment	3050B	
200-36502-9	PE1216-P1SCD-18-B-0001 IN	T	Sediment	3050B	
200-36502-10	PE1216-P1SCD-17-A-0005 IN	T	Sediment	3050B	
200-36502-11	PE1216-P1SCD-17-B-0008 IN	T	Sediment	3050B	
200-36502-12	PE1216-P1SCD-16-A-0006 IN	T	Sediment	3050B	
200-36502-13	PE1216-P1SCD-16-B-0004 IN	T	Sediment	3050B	
200-36502-14	PE1216-P1SCD-15-A-0006 IN	T	Sediment	3050B	
200-36502-15	PE1216-P1SCD-15-B-0004 IN	T	Sediment	3050B	
200-36502-15MS	Matrix Spike	T	Sediment	3050B	
200-36502-15MSD	Matrix Spike Duplicate	T	Sediment	3050B	
200-36502-16	PE1216-P1SCD-EQBLK-1	T	Sediment	3050B	
Prep Batch: 200-112231					
LCS 200-112231/12-A	Lab Control Sample	T	Sediment	7471B	
MB 200-112231/11-A	Method Blank	T	Sediment	7471B	
200-36502-1	PE1216-P1SCD-20-B-0006 IN	T	Sediment	7471B	
200-36502-2	PE1216-P1SCD-20-B-0006 IN-D	T	Sediment	7471B	
200-36502-3	PE1216-P1SCD-20-A-0005 IN	T	Sediment	7471B	
200-36502-4	PE1216-P1SCD-20-A-0517 IN	T	Sediment	7471B	
200-36502-5	PE1216-P1SCD-19-B-0008 IN	T	Sediment	7471B	
200-36502-6	PE1216-P1SCD-19-A-0009 IN	T	Sediment	7471B	
200-36502-7	PE1216-P1SCD-19-A-0918 IN	T	Sediment	7471B	
200-36502-8	PE1216-P1SCD-18-A-0004 IN	T	Sediment	7471B	
200-36502-9	PE1216-P1SCD-18-B-0001 IN	T	Sediment	7471B	
200-36502-10	PE1216-P1SCD-17-A-0005 IN	T	Sediment	7471B	
200-36502-11	PE1216-P1SCD-17-B-0008 IN	T	Sediment	7471B	
200-36502-12	PE1216-P1SCD-16-A-0006 IN	T	Sediment	7471B	
200-36502-13	PE1216-P1SCD-16-B-0004 IN	T	Sediment	7471B	
200-36502-14	PE1216-P1SCD-15-A-0006 IN	T	Sediment	7471B	
200-36502-15	PE1216-P1SCD-15-B-0004 IN	T	Sediment	7471B	
200-36502-15MS	Matrix Spike	T	Sediment	7471B	
200-36502-15MSD	Matrix Spike Duplicate	T	Sediment	7471B	
200-36502-16	PE1216-P1SCD-EQBLK-1	T	Sediment	7471B	

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:200-112283					
LCS 200-112231/12-A	Lab Control Sample	T	Sediment	7471B	200-112231
MB 200-112231/11-A	Method Blank	T	Sediment	7471B	200-112231
200-36502-1	PE1216-P1SCD-20-B-0006 IN	T	Sediment	7471B	200-112231
200-36502-2	PE1216-P1SCD-20-B-0006 IN-D	T	Sediment	7471B	200-112231
200-36502-3	PE1216-P1SCD-20-A-0005 IN	T	Sediment	7471B	200-112231
200-36502-4	PE1216-P1SCD-20-A-0517 IN	T	Sediment	7471B	200-112231
200-36502-5	PE1216-P1SCD-19-B-0008 IN	T	Sediment	7471B	200-112231
200-36502-6	PE1216-P1SCD-19-A-0009 IN	T	Sediment	7471B	200-112231
200-36502-7	PE1216-P1SCD-19-A-0918 IN	T	Sediment	7471B	200-112231
200-36502-8	PE1216-P1SCD-18-A-0004 IN	T	Sediment	7471B	200-112231
200-36502-9	PE1216-P1SCD-18-B-0001 IN	T	Sediment	7471B	200-112231
200-36502-10	PE1216-P1SCD-17-A-0005 IN	T	Sediment	7471B	200-112231
200-36502-11	PE1216-P1SCD-17-B-0008 IN	T	Sediment	7471B	200-112231
200-36502-12	PE1216-P1SCD-16-A-0006 IN	T	Sediment	7471B	200-112231
200-36502-13	PE1216-P1SCD-16-B-0004 IN	T	Sediment	7471B	200-112231
200-36502-14	PE1216-P1SCD-15-A-0006 IN	T	Sediment	7471B	200-112231
200-36502-15	PE1216-P1SCD-15-B-0004 IN	T	Sediment	7471B	200-112231
200-36502-15MS	Matrix Spike	T	Sediment	7471B	200-112231
200-36502-15MSD	Matrix Spike Duplicate	T	Sediment	7471B	200-112231
200-36502-16	PE1216-P1SCD-EQBLK-1	T	Sediment	7471B	200-112231
Analysis Batch:200-112326					
LCS 200-112229/2-A	Lab Control Sample	T	Sediment	6020A	200-112229
MB 200-112229/1-A	Method Blank	T	Sediment	6020A	200-112229
200-36502-1	PE1216-P1SCD-20-B-0006 IN	T	Sediment	6020A	200-112229
200-36502-2	PE1216-P1SCD-20-B-0006 IN-D	T	Sediment	6020A	200-112229
200-36502-3	PE1216-P1SCD-20-A-0005 IN	T	Sediment	6020A	200-112229
200-36502-4	PE1216-P1SCD-20-A-0517 IN	T	Sediment	6020A	200-112229
200-36502-5	PE1216-P1SCD-19-B-0008 IN	T	Sediment	6020A	200-112229
200-36502-6	PE1216-P1SCD-19-A-0009 IN	T	Sediment	6020A	200-112229
200-36502-7	PE1216-P1SCD-19-A-0918 IN	T	Sediment	6020A	200-112229
200-36502-8	PE1216-P1SCD-18-A-0004 IN	T	Sediment	6020A	200-112229
200-36502-9	PE1216-P1SCD-18-B-0001 IN	T	Sediment	6020A	200-112229
200-36502-10	PE1216-P1SCD-17-A-0005 IN	T	Sediment	6020A	200-112229
200-36502-11	PE1216-P1SCD-17-B-0008 IN	T	Sediment	6020A	200-112229
200-36502-12	PE1216-P1SCD-16-A-0006 IN	T	Sediment	6020A	200-112229
200-36502-13	PE1216-P1SCD-16-B-0004 IN	T	Sediment	6020A	200-112229
200-36502-14	PE1216-P1SCD-15-A-0006 IN	T	Sediment	6020A	200-112229
200-36502-15	PE1216-P1SCD-15-B-0004 IN	T	Sediment	6020A	200-112229
200-36502-15MS	Matrix Spike	T	Sediment	6020A	200-112229
200-36502-15MSD	Matrix Spike Duplicate	T	Sediment	6020A	200-112229
200-36502-16	PE1216-P1SCD-EQBLK-1	T	Sediment	6020A	200-112229

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch

Report Basis
T = Total

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:200-112215					
200-36502-1	PE1216-P1SCD-20-B-0006 IN	T	Sediment	Moisture	
200-36502-2	PE1216-P1SCD-20-B-0006 IN-D	T	Sediment	Moisture	
200-36502-3	PE1216-P1SCD-20-A-0005 IN	T	Sediment	Moisture	
200-36502-4	PE1216-P1SCD-20-A-0517 IN	T	Sediment	Moisture	
200-36502-5	PE1216-P1SCD-19-B-0008 IN	T	Sediment	Moisture	
200-36502-6	PE1216-P1SCD-19-A-0009 IN	T	Sediment	Moisture	
200-36502-7	PE1216-P1SCD-19-A-0918 IN	T	Sediment	Moisture	
200-36502-8	PE1216-P1SCD-18-A-0004 IN	T	Sediment	Moisture	
200-36502-9	PE1216-P1SCD-18-B-0001 IN	T	Sediment	Moisture	
200-36502-10	PE1216-P1SCD-17-A-0005 IN	T	Sediment	Moisture	
200-36502-11	PE1216-P1SCD-17-B-0008 IN	T	Sediment	Moisture	
200-36502-12	PE1216-P1SCD-16-A-0006 IN	T	Sediment	Moisture	
200-36502-13	PE1216-P1SCD-16-B-0004 IN	T	Sediment	Moisture	
200-36502-14	PE1216-P1SCD-15-A-0006 IN	T	Sediment	Moisture	
200-36502-15	PE1216-P1SCD-15-B-0004 IN	T	Sediment	Moisture	
200-36502-15DU	Duplicate	T	Sediment	Moisture	
Analysis Batch:200-112285					
200-36502-16	PE1216-P1SCD-EQBLK-1	T	Sediment	Moisture	
Analysis Batch:200-112336					
LCS 200-112336/6	Lab Control Sample	T	Sediment	Lloyd Kahn	
MB 200-112336/5	Method Blank	T	Sediment	Lloyd Kahn	
200-36502-1	PE1216-P1SCD-20-B-0006 IN	T	Sediment	Lloyd Kahn	
200-36502-2	PE1216-P1SCD-20-B-0006 IN-D	T	Sediment	Lloyd Kahn	
200-36502-3	PE1216-P1SCD-20-A-0005 IN	T	Sediment	Lloyd Kahn	
200-36502-4	PE1216-P1SCD-20-A-0517 IN	T	Sediment	Lloyd Kahn	
200-36502-5	PE1216-P1SCD-19-B-0008 IN	T	Sediment	Lloyd Kahn	
200-36502-6	PE1216-P1SCD-19-A-0009 IN	T	Sediment	Lloyd Kahn	
200-36502-7	PE1216-P1SCD-19-A-0918 IN	T	Sediment	Lloyd Kahn	
200-36502-8	PE1216-P1SCD-18-A-0004 IN	T	Sediment	Lloyd Kahn	
200-36502-9	PE1216-P1SCD-18-B-0001 IN	T	Sediment	Lloyd Kahn	
200-36502-10	PE1216-P1SCD-17-A-0005 IN	T	Sediment	Lloyd Kahn	
200-36502-11	PE1216-P1SCD-17-B-0008 IN	T	Sediment	Lloyd Kahn	
200-36502-12	PE1216-P1SCD-16-A-0006 IN	T	Sediment	Lloyd Kahn	
200-36502-13	PE1216-P1SCD-16-B-0004 IN	T	Sediment	Lloyd Kahn	
200-36502-14	PE1216-P1SCD-15-A-0006 IN	T	Sediment	Lloyd Kahn	
200-36502-15	PE1216-P1SCD-15-B-0004 IN	T	Sediment	Lloyd Kahn	

Report Basis
T = Total

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Geotechnical					
Analysis Batch:200-112453					
200-36502-1	PE1216-P1SCD-20-B-0006 IN	T	Sediment	D422	
200-36502-2	PE1216-P1SCD-20-B-0006 IN-D	T	Sediment	D422	
200-36502-3	PE1216-P1SCD-20-A-0005 IN	T	Sediment	D422	
200-36502-4	PE1216-P1SCD-20-A-0517 IN	T	Sediment	D422	
200-36502-5	PE1216-P1SCD-19-B-0008 IN	T	Sediment	D422	
200-36502-6	PE1216-P1SCD-19-A-0009 IN	T	Sediment	D422	
200-36502-7	PE1216-P1SCD-19-A-0918 IN	T	Sediment	D422	
200-36502-8	PE1216-P1SCD-18-A-0004 IN	T	Sediment	D422	
200-36502-9	PE1216-P1SCD-18-B-0001 IN	T	Sediment	D422	
200-36502-10	PE1216-P1SCD-17-A-0005 IN	T	Sediment	D422	
200-36502-11	PE1216-P1SCD-17-B-0008 IN	T	Sediment	D422	
200-36502-12	PE1216-P1SCD-16-A-0006 IN	T	Sediment	D422	
200-36502-13	PE1216-P1SCD-16-B-0004 IN	T	Sediment	D422	
200-36502-14	PE1216-P1SCD-15-A-0006 IN	T	Sediment	D422	
200-36502-15	PE1216-P1SCD-15-B-0004 IN	T	Sediment	D422	

Report Basis
T = Total

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Method Blank - Batch: 200-112229

Method: 6020A
Preparation: 3050B

Lab Sample ID:	MB 200-112229/1-A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Client Matrix:	Sediment	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.00 g
Analysis Date:	12/12/2016 1129	Units:	mg/Kg	Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Copper	0.50	U	0.12	0.50
Selenium	0.40	U	0.063	0.40
Zinc	2.0	U	0.62	2.0

Lab Control Sample - Batch: 200-112229

Method: 6020A
Preparation: 3050B

Lab Sample ID:	LCS 200-112229/2-A	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Client Matrix:	Sediment	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.00 g
Analysis Date:	12/12/2016 1123	Units:	mg/Kg	Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Copper	5.00	5.30	106	80 - 120	
Selenium	4.00	3.25	81	80 - 120	
Zinc	20.0	17.04	85	80 - 120	

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 200-112229

Method: 6020A
Preparation: 3050B

MS Lab Sample ID:	200-36502-15	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Client Matrix:	Sediment	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.11 g
Analysis Date:	12/12/2016 1329			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				
Leach Date:	N/A				

MSD Lab Sample ID:	200-36502-15	Analysis Batch:	200-112326	Instrument ID:	METICPMS2
Client Matrix:	Sediment	Prep Batch:	200-112229	Lab File ID:	121216-03 6020A.xml
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.02 g
Analysis Date:	12/12/2016 1352			Final Weight/Volume:	100.00 mL
Prep Date:	12/09/2016 1000				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Copper	-965	-465	75 - 125	7	20	4	4
Selenium	50	53	75 - 125	11	20	F1	F1
Zinc	64	77	75 - 125	4	20	4	

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Method Blank - Batch: 200-112231

Method: 7471B
Preparation: 7471B

Lab Sample ID:	MB 200-112231/11-A	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Client Matrix:	Sediment	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	12/09/2016 1513	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	0.033	U	0.012	0.033

Lab Control Sample - Batch: 200-112231

Method: 7471B
Preparation: 7471B

Lab Sample ID:	LCS 200-112231/12-A	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Client Matrix:	Sediment	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	12/09/2016 1515	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.417	0.412	99	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 200-112231

Method: 7471B
Preparation: 7471B

MS Lab Sample ID:	200-36502-15	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Client Matrix:	Sediment	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	2.0	Leach Batch:	N/A	Initial Weight/Volume:	0.54 g
Analysis Date:	12/09/2016 1601			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				
Leach Date:	N/A				

MSD Lab Sample ID:	200-36502-15	Analysis Batch:	200-112283	Instrument ID:	MEPCV3 II
Client Matrix:	Sediment	Prep Batch:	200-112231	Lab File ID:	120916AA.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.55 g
Analysis Date:	12/09/2016 1556			Final Weight/Volume:	100 mL
Prep Date:	12/09/2016 1000				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Mercury	167	-34	80 - 120	43	20	F1	4 F2

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Method Blank - Batch: 200-112336

Method: Lloyd Kahn
Preparation: N/A

Lab Sample ID:	MB 200-112336/5	Analysis Batch:	200-112336	Instrument ID:	WCCH2
Client Matrix:	Sediment	Prep Batch:	N/A	Lab File ID:	120916A005
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	12/09/2016 1245	Units:	mg/Kg	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Total Organic Carbon	1000	U	380	1000

Lab Control Sample - Batch: 200-112336

Method: Lloyd Kahn
Preparation: N/A

Lab Sample ID:	LCS 200-112336/6	Analysis Batch:	200-112336	Instrument ID:	WCCH2
Client Matrix:	Sediment	Prep Batch:	N/A	Lab File ID:	120916A007
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	12/09/2016 1257	Units:	mg/Kg	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon	9260	9358	101	75 - 125	

Client: Ashland LLC

Job Number: 200-36502-1
Sdg Number: 200-36502-1

Duplicate - Batch: 200-112215

Method: Moisture
Preparation: N/A

Lab Sample ID:	200-36502-15	Analysis Batch:	200-112215	Instrument ID:	No Equipment Assigned
Client Matrix:	Sediment	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	12/08/2016 1201	Units:	%	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Solids	44.1	44.9	2	20	

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802.660.1990 fax 802.660.1919

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

Client Contact	Project Manager: G. Long (EHS Support)	Site Contact: G. Long/S. Parker	Date: Dec 2016	COC No:
Company: EHS Support, LLC	Tel/Fax: 215.498.0548 or 802.498.7849 (Parker)	Lab Contact:K. Dusablon	Carrier: EHS Support Drop Off	1 of 2 COCs
Address: 15 College Ave.	**Analysis Turnaround Time**			Sampler:
City/State/Zip: Collegeille, PA 19426	☐ CALENDAR DAYS ☑ WORKING DAYS			**For Lab Use Only:**
Phone: 215.498.0548	TAT if different from Below 3-Day			Walk-in Client:
E-mail: Gary.Long@ehs-support.com	☐ 2 weeks			Lab Sampling:
Project Name: Port Ewen, Phase 1 Sediment Evaluation	☐ 1 week			
Site: Dyno-Nobel, Port Ewen	☐ 2 days			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	RCRA Metals - EPA 6020A	Mercury - EPA 7471B	TOC Lloyd Khan	Percent Moisture - 2540G	Grain Size ASTM D422	Sample Specific Notes:
PE1216-P1SCD- 20 - B - 0004 in	5-Dec-16	1200	G	SED	2			X	X	X	X	X	
PE1216-P1SCD- 20 - B - 0006 in-D	5-Dec-16	1200	G		2			X	X	X	X	X	
PE1216-P1SCD- 20 - A - 0005 in	5-Dec-16	1145	G		2			X	X	X	X	X	
PE1216-P1SCD- 20 - A - 0517 in	5-Dec-16	1145	G		2			X	X	X	X	X	
PE1216-P1SCD- 19 - B - 0008 in	5-Dec-16	1230	G		2			X	X	X	X	X	
PE1216-P1SCD- 19 - A - 0009 in	5-Dec-16	1220	G		2			X	X	X	X	X	
PE1216-P1SCD- 19 - A - 0918 in	5-Dec-16	1221	G		2			X	X	X	X	X	
PE1216-P1SCD- 18 - A - 0004 in	5-Dec-16	1320	G		2			X	X	X	X	X	
PE1216-P1SCD- 18 - B - 0001 in	5-Dec-16	1315	G		2			X	X	X	X	X	
PE1216-P1SCD- 17 - A - 0005 in	5-Dec-16	1435	G		2			X	X	X	X	X	
PE1216-P1SCD- 17 - B - 0008 in	5-Dec-16	1425	G		2			X	X	X	X	X	
PE1216-P1SCD- 16 - A - 0000 in	5-Dec-16	1500	G	SED	2			X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐Return to Client ☐Disposal by

200-36502 Chain of Custody

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____			
Relinquished by: Gary Long	Company: EHS SUPPORT	Date/Time: 12/5/16 1730	Received by:	Company:	Date/Time: 12/6/16 0955
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Page 127 of 128

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802.660.1990 fax 802.660.1919

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: G. Long (EHS Support)	Site Contact: G. Long/S. Parker	Date: Dec 2016	COC No:
Company: EHS Support, LLC	Tel/Fax: 215.498.0548 or 802.498.7849 (Parker)	Lab Contact:K. Dusablon	Carrier: EHS Support Drop Off	2 of 2 COCs
Address: 15 College Ave.	Analysis Turnaround Time			Sampler:
City/State/Zip: Collegeille, PA 19426	☐ CALENDAR DAYS ☑ WORKING DAYS			For Lab Use Only:
Phone: 215.498.0548	TAT if different from Below 3-Day			Walk-in Client:
E-mail: Gary.Long@ehs-support.com	☐ 2 weeks			Lab Sampling:
Project Name: Port Ewen, Phase 1 Sediment Evaluation	☐ 1 week			
Site: Dyno-Nobel, Port Ewen	☐ 2 days			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	RCRA Metals - EPA 6020A	Mercury - EPA 7471B	TOC Lloyd Khan	Percent Moisture - 2540G	Grain Size ASTM D422	Sample Specific Notes:
PE1216-P1SCD-16 - B - 0004 in	5-Dec-16	1450	G	SED	2			X	X	X	X	X	
PE1216-P1SCD-15 - A - 0006 in	5-Dec-16	1510	G	SED	2			X	X	X	X	X	
PE1216-P1SCD-15 - B - 0004 in	5-Dec-16	1520	G	SED	2			X	X	X	X	X	
PE1216-P1SCD-15 - B - 0004 in MS	5-Dec-16	1520	G	SED	2		X	X	X				MS
PE1216-P1SCD-15 - B - 0004 in MSD	5-Dec-16	1520	G	SED	2		X	X	X				MSD
PE1216-P1SCD- EQBLK-1 in	5-Dec-16	1710	G	AQ SED	1			X	X				EQUIPMENT BLANK
PE1216-P1SCD- - - in	5-Dec-16		G	SED									
PE1216-P1SCD- - - in	5-Dec-16		G	SED									
PE1216-P1SCD- - - in	5-Dec-16		G	SED									
PE1216-P1SCD- - - in	5-Dec-16		G	SED									
PE1216-P1SCD- - - in	5-Dec-16		G	SED									
PE1216-P1SCD- - - in	5-Dec-16		G	SED									

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐Return to Client ☐Disposal by Lab ☐Archive for_____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

	Company:	Date/Time:		Company:	Date/Time:
Relinquished by:	EHS SUPPORT	12/5/16 1730	Received by:	FA	12/6/16 0955
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 200-36502-1
SDG Number: 200-36502-1

Login Number: 36502
List Number: 1
Creator: Lavigne III, Scott M

List Source: TestAmerica Burlington

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.4ºC, 3.4ºC
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 200-38498-1

SDG Number: 200-38498-1

Job Description: Port Ewen DNS Sediment

For:
Ashland LLC
Ashland Hercules Research Center
500 Hercules Rd Bldg 8139
Wilmington, DE 19808

Attention: John Hoffman

Kristine Dusablon

Approved for release.
Kristine A Dusablon
Project Manager II
5/23/2017 3:14 PM

Kristine A Dusablon, Project Manager II
30 Community Drive, South Burlington, VT, 05403
(802)660-1990
kris.dusablon@testamericainc.com
05/23/2017

The test results in this report relate only to sample(s) as received by the laboratory. These test results were derived under a quality system that adheres to the requirements of NELAC. Pursuant to NELAC, this report may not be produced in full without written approval from the laboratory

Table of Contents

Cover Title Page 1

Data Summaries 5

- Definitions 5
- Case Narrative 6
- Detection Summary 8
- Client Sample Results 16
- Default Detection Limits 45
- QC Sample Results 46
- QC Association 50
- Chronicle 54
- Certification Summary 60
- Method Summary 61
- Sample Summary 62
- Reagent Traceability 63
  - COAs 87

Inorganic Sample Data 292

- Metals Data 292
  - Met Cover Page 293
  - Met Sample Data 294
  - Met QC Data 305
    - Met ICV/CCV 305
    - Met Blanks 316
    - Met ICSA/ICSAB 328
    - Met MS/MSD/PDS 332
    - Met LCS/LCSD 338
    - Met Serial Dilution 344

Table of Contents

Met MDL 346

Met Linear Ranges 354

Met Preparation Log 357

Met Analysis Run Log 363

Met ICP/MS Tune 370

Met ICP/MS Int Stds 372

Met Prep Data 378

Met Raw Data 389

General Chemistry Data 748

Gen Chem Cover Page 749

Gen Chem Sample Data 750

Gen Chem QC Data 760

Gen Chem ICV/CCV 760

Gen Chem Blanks 761

Gen Chem LCS/LCSD 762

Gen Chem MDL 763

Gen Chem Linear Ranges 766

Gen Chem Analysis Run Log 767

Gen Chem Prep Data 769

Gen Chem Raw Data 772

Geotechnical Data 803

Geo Cover Page 803

Geo Sample Data 804

Geo Prep Data 813

Shipping and Receiving Documents 814

Client Chain of Custody 815

Table of Contents

Sample Receipt Checklist 817

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
W	PS: Post-digestion spike was outside control limits
V	Serial Dilution exceeds the control limits
^	Instrument related QC is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Ashland LLC

Project: Port Ewen DNS Sediment

Report Number: 200-38498-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 05/05/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 3.8º C.

METALS (ICPMS) - Aqueous
Sample PE0517-P2SCD-EQBLK-1 was analyzed for metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 05/09/2017 and analyzed on 05/10/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS) - Non Aqueous
Samples PE0517-P2SCD-04-A-0006IN, PE0517-P2SCD-04-B-0002IN, PE0517-P2SCD-18.7-A-0001IN, PE0517-P2SCD-18.7-B-0006IN, PE0517-P2SCD-18.8-A-0006IN, PE0517-P2SCD-18.8-B-0004IN, PE0517-P2SCD-18.9-A-0012IN, PE0517-P2SCD-18.9-B-0006IN, PE0517-P2SCD-18.9-B-0006IN-D and PE0517-P2SCD-18.9-A-1218IN were analyzed for metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 05/08/2017 and 05/18/2017 and analyzed on 05/10/2017 and 05/19/2017.

Copper was detected in method blank MB 200-116803/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

The matrix spike and matrix spike duplicate (MS/MSD) recoveries of sample PE0517-P2SCD-18.9-A-0012IN for preparation batch 200-116489 and analytical batch 200-116617 were outside control limits for Selenium and Zinc. Additionally, a post digestion spike analysis was performed on batch 200-116617 and the recovery was outside criteria for Selenium and Zinc. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Due to the high concentration of Copper, the matrix spike and matrix spike duplicate (MS/MSD) of sample PE0517-P2SCD-18.9-A-0012IN for preparation batch 200-116803 and analytical batch 200-116890 could not be evaluated for accuracy and precision. The post digestion spike analysis performed for Copper in batch 200-116890 was outside of control limits. The associated laboratory control sample (LCS) met acceptance criteria.

In the analysis of the serial dilution performed for sample PE0517-P2SCD-18.9-A-0012IN, associated with batch 200-116617, Zinc was outside control limits.

In the analysis of the serial dilution performed for sample PE0517-P2SCD-18.9-A-0012IN, associated with batch 200-116617, Copper was outside control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY- Aqueous
Sample PE0517-P2SCD-EQBLK-1 was analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 05/11/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY- Non Aqueous

Samples PE0517-P2SCD-04-A-0006IN, PE0517-P2SCD-04-B-0002IN, PE0517-P2SCD-18.7-A-0001IN, PE0517-P2SCD-18.7-B-0006IN, PE0517-P2SCD-18.8-A-0006IN, PE0517-P2SCD-18.8-B-0004IN, PE0517-P2SCD-18.9-A-0012IN, PE0517-P2SCD-18.9-B-0006IN, PE0517-P2SCD-18.9-B-0006IN-D and PE0517-P2SCD-18.9-A-1218IN were analyzed for mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared and analyzed on 05/11/2017 and 05/15/2017.

Sample PE0517-P2SCD-04-A-0006IN[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The matrix spike duplicate (MSD) recovery for sample PE0517-P2SCD-18.9-A-0012IN in preparation batch 200-116612 and analytical batch 200-116630 was outside control limits for mercury. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GRAIN SIZE

Samples PE0517-P2SCD-04-A-0006IN, PE0517-P2SCD-18.7-A-0001IN, PE0517-P2SCD-18.7-B-0006IN, PE0517-P2SCD-18.8-A-0006IN, PE0517-P2SCD-18.8-B-0004IN, PE0517-P2SCD-18.9-A-0012IN, PE0517-P2SCD-18.9-B-0006IN, PE0517-P2SCD-18.9-B-0006IN-D and PE0517-P2SCD-18.9-A-1218IN were analyzed for grain size in accordance with D422 grain size. The samples were analyzed on 05/17/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Samples PE0517-P2SCD-04-A-0006IN, PE0517-P2SCD-04-B-0002IN, PE0517-P2SCD-18.7-A-0001IN, PE0517-P2SCD-18.7-B-0006IN, PE0517-P2SCD-18.8-A-0006IN, PE0517-P2SCD-18.8-B-0004IN, PE0517-P2SCD-18.9-A-0012IN, PE0517-P2SCD-18.9-B-0006IN, PE0517-P2SCD-18.9-B-0006IN-D and PE0517-P2SCD-18.9-A-1218IN were analyzed for total organic carbon in accordance with Lloyd Kahn Method. The samples were analyzed on 05/10/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-38498-1
SDG: 200-38498-1

Client Sample ID: PE0517-P2SCD-04-A-0006IN — Lab Sample ID: 200-38498-1

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	0.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	27.9				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	11.3				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	3.9				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	12.7				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Silt	53.4				%	1		D422	Total/NA
Clay	18.7				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	88.7				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	86.7				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	84.8				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	82.0				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	79.7				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	77.9				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	72.8				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	72.1				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	46.1				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	41.1				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	33.7				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	26.2				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	18.7				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	10				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	4.4				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	707	B	1.4	0.33	mg/Kg	1	☼	6020A	Total/NA
Selenium	2.0		0.89	0.14	mg/Kg	1	☼	6020A	Total/NA
Zinc	212		4.4	1.4	mg/Kg	1	☼	6020A	Total/NA
Mercury	6.4		0.18	0.065	mg/Kg	2	☼	7471B	Total/NA
Total Organic Carbon	62800		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE0517-P2SCD-04-B-0002IN — Lab Sample ID: 200-38498-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	533	B	1.6	0.40	mg/Kg	1	☼	6020A	Total/NA
Selenium	1.8		1.4	0.22	mg/Kg	1	☼	6020A	Total/NA
Zinc	131		7.0	2.2	mg/Kg	1	☼	6020A	Total/NA
Mercury	4.3		0.12	0.042	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	62200		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE0517-P2SCD-18.7-A-0001IN — Lab Sample ID: 200-38498-3

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	27.4				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	57.4				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE0517-P2SCD-18.7-A-0001IN (Continued) — Lab Sample ID: 200-38498-3

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	10.4				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	16.5				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	30.5				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	87.7				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	72.6				% Passing	1		D422	Total/NA
Silt	12.5				%	1		D422	Total/NA
Clay	2.7				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	62.2				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	57.4				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	45.7				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	30.0				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	23.9				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	21.3				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	16.1				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	15.2				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	9.1				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	7.0				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	5.9				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	4.8				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	2.7				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	2.1				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	1.9				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	105	B	1.0	0.25	mg/Kg	1	☼	6020A	Total/NA
Selenium	0.48	J	0.63	0.099	mg/Kg	1	☼	6020A	Total/NA
Zinc	126		3.1	0.97	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.37		0.068	0.025	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	18700		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE0517-P2SCD-18.7-B-0006IN — Lab Sample ID: 200-38498-4

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	7.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	56.3				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	4.8				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	6.9				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	44.6				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	93.0				% Passing	1		D422	Total/NA
Silt	27.2				%	1		D422	Total/NA
Clay	9.5				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	88.2				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	85.0				% Passing	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE0517-P2SCD-18.7-B-0006IN (Continued) — Lab Sample ID: 200-38498-4

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Sieve Size #40 - Percent Finer	81.3				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	71.7				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	62.4				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	55.8				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	39.5				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	36.7				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	23.3				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	19.9				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	16.4				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	13.0				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	9.5				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	5.2				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	1.3				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	371	B	0.92	0.22	mg/Kg	1	☼	6020A	Total/NA
Selenium	0.58		0.53	0.083	mg/Kg	1	☼	6020A	Total/NA
Zinc	158		2.6	0.81	mg/Kg	1	☼	6020A	Total/NA
Mercury	1.1		0.058	0.021	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	16800		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE0517-P2SCD-18.8-A-0006IN — Lab Sample ID: 200-38498-5

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	0.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	71.2				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	2.7				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	6.5				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	62.0				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Silt	21.7				%	1		D422	Total/NA
Clay	7.1				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	97.3				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	95.0				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	90.8				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	83.5				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	71.5				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	59.8				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	32.2				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	28.8				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	15.9				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	13.7				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	10.4				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	9.3				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	7.1				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	4.4				% Passing	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE0517-P2SCD-18.8-A-0006IN (Continued) — Lab Sample ID: 200-38498-5

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Hydrometer Reading 7 - Percent Finer	1.9				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	47.8	B	0.61	0.15	mg/Kg	1	☼	6020A	Total/NA
Selenium	0.15	J	0.50	0.080	mg/Kg	1	☼	6020A	Total/NA
Zinc	40.2		2.5	0.78	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.14		0.048	0.018	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	9600		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE0517-P2SCD-18.8-B-0004IN — Lab Sample ID: 200-38498-6

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	0.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	68.0				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	7.3				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	7.6				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	53.1				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Silt	27.2				%	1		D422	Total/NA
Clay	4.8				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	92.7				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	91.0				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	85.1				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	69.7				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	56.9				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	49.1				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	34.0				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	32.0				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	12.4				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	10.2				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	8.1				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	7.0				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	4.8				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	3.2				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	0.8				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	138	B	0.93	0.22	mg/Kg	1	☼	6020A	Total/NA
Selenium	0.37	J	0.54	0.085	mg/Kg	1	☼	6020A	Total/NA
Zinc	93.1		2.7	0.83	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.46		0.056	0.020	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	16900		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE0517-P2SCD-18.9-A-0012IN — Lab Sample ID: 200-38498-7

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	3.1				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE0517-P2SCD-18.9-A-0012IN (Continued) — Lab Sample ID: 200-38498-7

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	46.6				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	2.0				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	2.5				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	42.1				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	96.9				% Passing	1		D422	Total/NA
Silt	34.4				%	1		D422	Total/NA
Clay	15.9				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	94.9				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	93.6				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	92.4				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	87.5				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	81.3				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	76.1				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	54.3				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	50.3				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	35.1				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	28.7				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	22.3				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	18.5				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	15.9				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	11.5				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	4.8				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	34.4	B	0.62	0.15	mg/Kg	1	☼	6020A	Total/NA
Selenium	0.21	J F1	0.50	0.079	mg/Kg	1	☼	6020A	Total/NA
Zinc	51.9	F1	2.5	0.77	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.61	F1	0.045	0.016	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	9890		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN — Lab Sample ID: 200-38498-8

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	0.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	81.6				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	3.9				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	6.7				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	71.0				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Silt	12.3				%	1		D422	Total/NA
Clay	6.1				%	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN (Continued) — Lab Sample ID: 200-38498-8

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Sieve Size #10 - Percent Finer	96.1				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	94.5				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	89.4				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	65.8				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	48.7				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	39.6				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	20.6				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	18.4				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	15.6				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	12.9				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	10.2				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	7.5				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	6.1				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	2.7				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	-0.3				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	141	B	0.71	0.17	mg/Kg	1	☼	6020A	Total/NA
Selenium	0.37	J	0.48	0.076	mg/Kg	1	☼	6020A	Total/NA
Zinc	86.1		2.4	0.75	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.42		0.057	0.021	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	16000		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN-D — Lab Sample ID: 200-38498-9

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	0.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	72.0				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	3.5				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	5.8				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	62.7				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Silt	22.4				%	1		D422	Total/NA
Clay	5.6				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	96.5				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	95.2				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	90.7				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	70.1				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	55.2				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	47.1				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	30.1				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	28.0				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	14.3				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	11.8				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	9.3				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	6.8				% Passing	1		D422	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN-D (Continued)

Lab Sample ID: 200-38498-9

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Hydrometer Reading 5 - Percent Finer	5.6				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	2.5				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	0.9				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	158	B	0.84	0.20	mg/Kg	1	☼	6020A	Total/NA
Selenium	0.43	J	0.66	0.10	mg/Kg	1	☼	6020A	Total/NA
Zinc	105		3.3	1.0	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.64		0.060	0.022	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	16200		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

Client Sample ID: PE0517-P2SCD-EQBLK-1

Lab Sample ID: 200-38498-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	6.5		5.0	2.2	ug/L	1		6020A	Total/NA

Client Sample ID: PE0517-P2SCD-18.9-A-1218IN

Lab Sample ID: 200-38498-11

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Gravel	0.0				%	1		D422	Total/NA
Sieve Size 2 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sand	57.5				%	1		D422	Total/NA
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Coarse Sand	2.3				%	1		D422	Total/NA
Sieve Size 1 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Medium Sand	5.7				%	1		D422	Total/NA
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Fine Sand	49.5				%	1		D422	Total/NA
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing	1		D422	Total/NA
Sieve Size #4 - Percent Finer	100.0				% Passing	1		D422	Total/NA
Silt	33.5				%	1		D422	Total/NA
Clay	9.0				%	1		D422	Total/NA
Sieve Size #10 - Percent Finer	97.7				% Passing	1		D422	Total/NA
Sieve Size #20 - Percent Finer	96.0				% Passing	1		D422	Total/NA
Sieve Size #40 - Percent Finer	92.0				% Passing	1		D422	Total/NA
Sieve Size #60 - Percent Finer	83.8				% Passing	1		D422	Total/NA
Sieve Size #80 - Percent Finer	77.4				% Passing	1		D422	Total/NA
Sieve Size #100 - Percent Finer	72.0				% Passing	1		D422	Total/NA
Sieve Size #200 - Percent Finer	47.1				% Passing	1		D422	Total/NA
Sieve Size #230 - Percent Finer	42.5				% Passing	1		D422	Total/NA
Hydrometer Reading 1 - Percent Finer	28.3				% Passing	1		D422	Total/NA
Hydrometer Reading 2 - Percent Finer	22.3				% Passing	1		D422	Total/NA
Hydrometer Reading 3 - Percent Finer	17.5				% Passing	1		D422	Total/NA
Hydrometer Reading 4 - Percent Finer	13.8				% Passing	1		D422	Total/NA
Hydrometer Reading 5 - Percent Finer	9.0				% Passing	1		D422	Total/NA
Hydrometer Reading 6 - Percent Finer	4.8				% Passing	1		D422	Total/NA
Hydrometer Reading 7 - Percent Finer	0.9				% Passing	1		D422	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	18.9	B	0.69	0.16	mg/Kg	1	☼	6020A	Total/NA
Selenium	0.19	J	0.48	0.076	mg/Kg	1	☼	6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE0517-P2SCD-18.9-A-1218IN (Continued) — Lab Sample ID: 200-38498-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Zinc	35.1		2.4	0.75	mg/Kg	1	☼	6020A	Total/NA
Mercury	0.17		0.046	0.017	mg/Kg	1	☼	7471B	Total/NA
Total Organic Carbon	22000		1000	380	mg/Kg	1		Lloyd Kahn	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PE0517-P2SCD-04-A-0006IN

Date Collected: 05/04/17 17:15
Date Received: 05/05/17 12:12

Lab Sample ID: 200-38498-1

Matrix: Sediment
Percent Solids: 35.7

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	707	B	1.4	0.33	mg/Kg	☼	05/18/17 09:26	05/19/17 19:45	1
Selenium	2.0		0.89	0.14	mg/Kg	☼	05/08/17 14:00	05/10/17 16:56	1
Zinc	212		4.4	1.4	mg/Kg	☼	05/08/17 14:00	05/10/17 16:56	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	6.4		0.18	0.065	mg/Kg	☼	05/15/17 12:30	05/15/17 15:29	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	62800		1000	380	mg/Kg			05/10/17 13:02	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	35.7		0.3	0.3	%			05/08/17 09:20	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			05/17/17 09:57	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			05/17/17 09:57	1
Sand	27.9				%			05/17/17 09:57	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			05/17/17 09:57	1
Coarse Sand	11.3				%			05/17/17 09:57	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			05/17/17 09:57	1
Medium Sand	3.9				%			05/17/17 09:57	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			05/17/17 09:57	1
Fine Sand	12.7				%			05/17/17 09:57	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			05/17/17 09:57	1
Sieve Size #4 - Percent Finer	100.0				% Passing			05/17/17 09:57	1
Silt	53.4				%			05/17/17 09:57	1
Clay	18.7				%			05/17/17 09:57	1
Sieve Size #10 - Percent Finer	88.7				% Passing			05/17/17 09:57	1
Sieve Size #20 - Percent Finer	86.7				% Passing			05/17/17 09:57	1
Sieve Size #40 - Percent Finer	84.8				% Passing			05/17/17 09:57	1
Sieve Size #60 - Percent Finer	82.0				% Passing			05/17/17 09:57	1
Sieve Size #80 - Percent Finer	79.7				% Passing			05/17/17 09:57	1
Sieve Size #100 - Percent Finer	77.9				% Passing			05/17/17 09:57	1
Sieve Size #200 - Percent Finer	72.8				% Passing			05/17/17 09:57	1
Sieve Size #230 - Percent Finer	72.1				% Passing			05/17/17 09:57	1
Hydrometer Reading 1 - Percent Finer	46.1				% Passing			05/17/17 09:57	1
Hydrometer Reading 2 - Percent Finer	41.1				% Passing			05/17/17 09:57	1
Hydrometer Reading 3 - Percent Finer	33.7				% Passing			05/17/17 09:57	1
Hydrometer Reading 4 - Percent Finer	26.2				% Passing			05/17/17 09:57	1
Hydrometer Reading 5 - Percent Finer	18.7				% Passing			05/17/17 09:57	1
Hydrometer Reading 6 - Percent Finer	10				% Passing			05/17/17 09:57	1

Client Sample ID: PE0517-P2SCD-04-A-0006IN

Lab Sample ID: 200-38498-1
Date Collected: 05/04/17 17:15
Matrix: Sediment
Date Received: 05/05/17 12:12

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 7 - Percent Finer	4.4				% Passing			05/17/17 09:57	1

Client Sample ID: PE0517-P2SCD-04-B-0002IN

Lab Sample ID: 200-38498-2
Date Collected: 05/04/17 17:30
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 27.1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	533	B	1.6	0.40	mg/Kg	☼	05/18/17 09:26	05/19/17 19:51	1
Selenium	1.8		1.4	0.22	mg/Kg	☼	05/08/17 14:00	05/10/17 17:02	1
Zinc	131		7.0	2.2	mg/Kg	☼	05/08/17 14:00	05/10/17 17:02	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	4.3		0.12	0.042	mg/Kg	☼	05/11/17 09:27	05/11/17 16:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	62200		1000	380	mg/Kg			05/10/17 13:08	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	27.1		0.3	0.3	%			05/08/17 09:20	1

Client Sample ID: PE0517-P2SCD-18.7-A-0001IN

Lab Sample ID: 200-38498-3
Date Collected: 05/04/17 14:45
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 46.8

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	105	B	1.0	0.25	mg/Kg	☼	05/18/17 09:26	05/19/17 19:56	1
Selenium	0.48	J	0.63	0.099	mg/Kg	☼	05/08/17 14:00	05/10/17 17:25	1
Zinc	126		3.1	0.97	mg/Kg	☼	05/08/17 14:00	05/10/17 17:25	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.37		0.068	0.025	mg/Kg	☼	05/11/17 09:27	05/11/17 16:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	18700		1000	380	mg/Kg			05/10/17 13:14	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	46.8		0.3	0.3	%			05/08/17 09:20	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	27.4				%			05/17/17 09:59	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			05/17/17 09:59	1
Sand	57.4				%			05/17/17 09:59	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			05/17/17 09:59	1
Coarse Sand	10.4				%			05/17/17 09:59	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			05/17/17 09:59	1

Client Sample ID: PE0517-P2SCD-18.7-A-0001IN

Lab Sample ID: 200-38498-3

Date Collected: 05/04/17 14:45
Matrix: Sediment
Date Received: 05/05/17 12:12

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Medium Sand	16.5				%			05/17/17 09:59	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			05/17/17 09:59	1
Fine Sand	30.5				%			05/17/17 09:59	1
Sieve Size 0.375 inch - Percent Finer	87.7				% Passing			05/17/17 09:59	1
Sieve Size #4 - Percent Finer	72.6				% Passing			05/17/17 09:59	1
Silt	12.5				%			05/17/17 09:59	1
Clay	2.7				%			05/17/17 09:59	1
Sieve Size #10 - Percent Finer	62.2				% Passing			05/17/17 09:59	1
Sieve Size #20 - Percent Finer	57.4				% Passing			05/17/17 09:59	1
Sieve Size #40 - Percent Finer	45.7				% Passing			05/17/17 09:59	1
Sieve Size #60 - Percent Finer	30.0				% Passing			05/17/17 09:59	1
Sieve Size #80 - Percent Finer	23.9				% Passing			05/17/17 09:59	1
Sieve Size #100 - Percent Finer	21.3				% Passing			05/17/17 09:59	1
Sieve Size #200 - Percent Finer	16.1				% Passing			05/17/17 09:59	1
Sieve Size #230 - Percent Finer	15.2				% Passing			05/17/17 09:59	1
Hydrometer Reading 1 - Percent Finer	9.1				% Passing			05/17/17 09:59	1
Hydrometer Reading 2 - Percent Finer	7.0				% Passing			05/17/17 09:59	1
Hydrometer Reading 3 - Percent Finer	5.9				% Passing			05/17/17 09:59	1
Hydrometer Reading 4 - Percent Finer	4.8				% Passing			05/17/17 09:59	1
Hydrometer Reading 5 - Percent Finer	2.7				% Passing			05/17/17 09:59	1
Hydrometer Reading 6 - Percent Finer	2.1				% Passing			05/17/17 09:59	1
Hydrometer Reading 7 - Percent Finer	1.9				% Passing			05/17/17 09:59	1

Client Sample ID: PE0517-P2SCD-18.7-B-0006IN

Lab Sample ID: 200-38498-4

Date Collected: 05/04/17 14:50
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 54.0

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	371	B	0.92	0.22	mg/Kg	☼	05/18/17 09:26	05/19/17 20:02	1
Selenium	0.58		0.53	0.083	mg/Kg	☼	05/08/17 14:00	05/10/17 17:31	1
Zinc	158		2.6	0.81	mg/Kg	☼	05/08/17 14:00	05/10/17 17:31	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	1.1		0.058	0.021	mg/Kg	☼	05/11/17 09:27	05/11/17 16:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	16800		1000	380	mg/Kg			05/10/17 13:21	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	54.0		0.3	0.3	%			05/08/17 09:20	1

Client Sample ID: PE0517-P2SCD-18.7-B-0006IN

Lab Sample ID: 200-38498-4

Date Collected: 05/04/17 14:50
Matrix: Sediment
Date Received: 05/05/17 12:12

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	7.0				%			05/17/17 10:00	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			05/17/17 10:00	1
Sand	56.3				%			05/17/17 10:00	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			05/17/17 10:00	1
Coarse Sand	4.8				%			05/17/17 10:00	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			05/17/17 10:00	1
Medium Sand	6.9				%			05/17/17 10:00	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			05/17/17 10:00	1
Fine Sand	44.6				%			05/17/17 10:00	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			05/17/17 10:00	1
Sieve Size #4 - Percent Finer	93.0				% Passing			05/17/17 10:00	1
Silt	27.2				%			05/17/17 10:00	1
Clay	9.5				%			05/17/17 10:00	1
Sieve Size #10 - Percent Finer	88.2				% Passing			05/17/17 10:00	1
Sieve Size #20 - Percent Finer	85.0				% Passing			05/17/17 10:00	1
Sieve Size #40 - Percent Finer	81.3				% Passing			05/17/17 10:00	1
Sieve Size #60 - Percent Finer	71.7				% Passing			05/17/17 10:00	1
Sieve Size #80 - Percent Finer	62.4				% Passing			05/17/17 10:00	1
Sieve Size #100 - Percent Finer	55.8				% Passing			05/17/17 10:00	1
Sieve Size #200 - Percent Finer	39.5				% Passing			05/17/17 10:00	1
Sieve Size #230 - Percent Finer	36.7				% Passing			05/17/17 10:00	1
Hydrometer Reading 1 - Percent Finer	23.3				% Passing			05/17/17 10:00	1
Hydrometer Reading 2 - Percent Finer	19.9				% Passing			05/17/17 10:00	1
Hydrometer Reading 3 - Percent Finer	16.4				% Passing			05/17/17 10:00	1
Hydrometer Reading 4 - Percent Finer	13.0				% Passing			05/17/17 10:00	1
Hydrometer Reading 5 - Percent Finer	9.5				% Passing			05/17/17 10:00	1
Hydrometer Reading 6 - Percent Finer	5.2				% Passing			05/17/17 10:00	1
Hydrometer Reading 7 - Percent Finer	1.3				% Passing			05/17/17 10:00	1

Client Sample ID: PE0517-P2SCD-18.8-A-0006IN

Lab Sample ID: 200-38498-5

Date Collected: 05/04/17 14:10
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 67.2

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	47.8	B	0.61	0.15	mg/Kg	☼	05/18/17 09:26	05/19/17 20:08	1
Selenium	0.15	J	0.50	0.080	mg/Kg	☼	05/08/17 14:00	05/10/17 17:36	1
Zinc	40.2		2.5	0.78	mg/Kg	☼	05/08/17 14:00	05/10/17 17:36	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.14		0.048	0.018	mg/Kg	☼	05/11/17 09:27	05/11/17 16:20	1

Client Sample ID: PE0517-P2SCD-18.8-A-0006IN

Lab Sample ID: 200-38498-5

Date Collected: 05/04/17 14:10
Matrix: Sediment
Date Received: 05/05/17 12:12

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	9600		1000	380	mg/Kg			05/10/17 13:27	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	67.2		0.3	0.3	%			05/08/17 09:20	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			05/17/17 10:01	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			05/17/17 10:01	1
Sand	71.2				%			05/17/17 10:01	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			05/17/17 10:01	1
Coarse Sand	2.7				%			05/17/17 10:01	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			05/17/17 10:01	1
Medium Sand	6.5				%			05/17/17 10:01	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			05/17/17 10:01	1
Fine Sand	62.0				%			05/17/17 10:01	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			05/17/17 10:01	1
Sieve Size #4 - Percent Finer	100.0				% Passing			05/17/17 10:01	1
Silt	21.7				%			05/17/17 10:01	1
Clay	7.1				%			05/17/17 10:01	1
Sieve Size #10 - Percent Finer	97.3				% Passing			05/17/17 10:01	1
Sieve Size #20 - Percent Finer	95.0				% Passing			05/17/17 10:01	1
Sieve Size #40 - Percent Finer	90.8				% Passing			05/17/17 10:01	1
Sieve Size #60 - Percent Finer	83.5				% Passing			05/17/17 10:01	1
Sieve Size #80 - Percent Finer	71.5				% Passing			05/17/17 10:01	1
Sieve Size #100 - Percent Finer	59.8				% Passing			05/17/17 10:01	1
Sieve Size #200 - Percent Finer	32.2				% Passing			05/17/17 10:01	1
Sieve Size #230 - Percent Finer	28.8				% Passing			05/17/17 10:01	1
Hydrometer Reading 1 - Percent Finer	15.9				% Passing			05/17/17 10:01	1
Hydrometer Reading 2 - Percent Finer	13.7				% Passing			05/17/17 10:01	1
Hydrometer Reading 3 - Percent Finer	10.4				% Passing			05/17/17 10:01	1
Hydrometer Reading 4 - Percent Finer	9.3				% Passing			05/17/17 10:01	1
Hydrometer Reading 5 - Percent Finer	7.1				% Passing			05/17/17 10:01	1
Hydrometer Reading 6 - Percent Finer	4.4				% Passing			05/17/17 10:01	1
Hydrometer Reading 7 - Percent Finer	1.9				% Passing			05/17/17 10:01	1

Client Sample ID: PE0517-P2SCD-18.8-B-0004IN

Lab Sample ID: 200-38498-6

Date Collected: 05/04/17 14:00
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 53.5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	138	B	0.93	0.22	mg/Kg	☼	05/18/17 09:26	05/19/17 20:13	1
Selenium	0.37	J	0.54	0.085	mg/Kg	☼	05/08/17 14:00	05/10/17 17:42	1

Client Sample ID: PE0517-P2SCD-18.8-B-0004IN

Date Collected: 05/04/17 14:00
Date Received: 05/05/17 12:12

Lab Sample ID: 200-38498-6

Matrix: Sediment
Percent Solids: 53.5

Method: 6020A - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	93.1		2.7	0.83	mg/Kg	☼	05/08/17 14:00	05/10/17 17:42	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.46		0.056	0.020	mg/Kg	☼	05/11/17 09:27	05/11/17 16:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	16900		1000	380	mg/Kg			05/10/17 13:33	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	53.5		0.3	0.3	%			05/08/17 09:20	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			05/17/17 10:02	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			05/17/17 10:02	1
Sand	68.0				%			05/17/17 10:02	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			05/17/17 10:02	1
Coarse Sand	7.3				%			05/17/17 10:02	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			05/17/17 10:02	1
Medium Sand	7.6				%			05/17/17 10:02	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			05/17/17 10:02	1
Fine Sand	53.1				%			05/17/17 10:02	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			05/17/17 10:02	1
Sieve Size #4 - Percent Finer	100.0				% Passing			05/17/17 10:02	1
Silt	27.2				%			05/17/17 10:02	1
Clay	4.8				%			05/17/17 10:02	1
Sieve Size #10 - Percent Finer	92.7				% Passing			05/17/17 10:02	1
Sieve Size #20 - Percent Finer	91.0				% Passing			05/17/17 10:02	1
Sieve Size #40 - Percent Finer	85.1				% Passing			05/17/17 10:02	1
Sieve Size #60 - Percent Finer	69.7				% Passing			05/17/17 10:02	1
Sieve Size #80 - Percent Finer	56.9				% Passing			05/17/17 10:02	1
Sieve Size #100 - Percent Finer	49.1				% Passing			05/17/17 10:02	1
Sieve Size #200 - Percent Finer	34.0				% Passing			05/17/17 10:02	1
Sieve Size #230 - Percent Finer	32.0				% Passing			05/17/17 10:02	1
Hydrometer Reading 1 - Percent Finer	12.4				% Passing			05/17/17 10:02	1
Hydrometer Reading 2 - Percent Finer	10.2				% Passing			05/17/17 10:02	1
Hydrometer Reading 3 - Percent Finer	8.1				% Passing			05/17/17 10:02	1
Hydrometer Reading 4 - Percent Finer	7.0				% Passing			05/17/17 10:02	1
Hydrometer Reading 5 - Percent Finer	4.8				% Passing			05/17/17 10:02	1
Hydrometer Reading 6 - Percent Finer	3.2				% Passing			05/17/17 10:02	1
Hydrometer Reading 7 - Percent Finer	0.8				% Passing			05/17/17 10:02	1

Client Sample ID: PE0517-P2SCD-18.9-A-0012IN

Date Collected: 05/04/17 13:30
Date Received: 05/05/17 12:12

Lab Sample ID: 200-38498-7

Matrix: Sediment
Percent Solids: 73.5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	34.4	B	0.62	0.15	mg/Kg	☼	05/18/17 09:26	05/19/17 20:19	1
Selenium	0.21	J F1	0.50	0.079	mg/Kg	☼	05/08/17 14:00	05/10/17 17:48	1
Zinc	51.9	F1	2.5	0.77	mg/Kg	☼	05/08/17 14:00	05/10/17 17:48	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.61	F1	0.045	0.016	mg/Kg	☼	05/11/17 09:27	05/11/17 16:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	9890		1000	380	mg/Kg			05/10/17 13:40	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	73.5		0.3	0.3	%			05/08/17 09:20	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	3.1				%			05/17/17 10:03	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			05/17/17 10:03	1
Sand	46.6				%			05/17/17 10:03	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			05/17/17 10:03	1
Coarse Sand	2.0				%			05/17/17 10:03	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			05/17/17 10:03	1
Medium Sand	2.5				%			05/17/17 10:03	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			05/17/17 10:03	1
Fine Sand	42.1				%			05/17/17 10:03	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			05/17/17 10:03	1
Sieve Size #4 - Percent Finer	96.9				% Passing			05/17/17 10:03	1
Silt	34.4				%			05/17/17 10:03	1
Clay	15.9				%			05/17/17 10:03	1
Sieve Size #10 - Percent Finer	94.9				% Passing			05/17/17 10:03	1
Sieve Size #20 - Percent Finer	93.6				% Passing			05/17/17 10:03	1
Sieve Size #40 - Percent Finer	92.4				% Passing			05/17/17 10:03	1
Sieve Size #60 - Percent Finer	87.5				% Passing			05/17/17 10:03	1
Sieve Size #80 - Percent Finer	81.3				% Passing			05/17/17 10:03	1
Sieve Size #100 - Percent Finer	76.1				% Passing			05/17/17 10:03	1
Sieve Size #200 - Percent Finer	54.3				% Passing			05/17/17 10:03	1
Sieve Size #230 - Percent Finer	50.3				% Passing			05/17/17 10:03	1
Hydrometer Reading 1 - Percent Finer	35.1				% Passing			05/17/17 10:03	1
Hydrometer Reading 2 - Percent Finer	28.7				% Passing			05/17/17 10:03	1
Hydrometer Reading 3 - Percent Finer	22.3				% Passing			05/17/17 10:03	1
Hydrometer Reading 4 - Percent Finer	18.5				% Passing			05/17/17 10:03	1
Hydrometer Reading 5 - Percent Finer	15.9				% Passing			05/17/17 10:03	1
Hydrometer Reading 6 - Percent Finer	11.5				% Passing			05/17/17 10:03	1

Client Sample ID: PE0517-P2SCD-18.9-A-0012IN

Lab Sample ID: 200-38498-7

Date Collected: 05/04/17 13:30
Matrix: Sediment
Date Received: 05/05/17 12:12

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 7 - Percent Finer	4.8				% Passing			05/17/17 10:03	1

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN

Lab Sample ID: 200-38498-8

Date Collected: 05/04/17 13:45
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 57.1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	141	B	0.71	0.17	mg/Kg	☼	05/18/17 09:26	05/19/17 21:05	1
Selenium	0.37	J	0.48	0.076	mg/Kg	☼	05/08/17 14:00	05/10/17 18:16	1
Zinc	86.1		2.4	0.75	mg/Kg	☼	05/08/17 14:00	05/10/17 18:16	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.42		0.057	0.021	mg/Kg	☼	05/11/17 09:27	05/11/17 16:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	16000		1000	380	mg/Kg			05/10/17 13:46	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	57.1		0.3	0.3	%			05/08/17 09:20	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			05/17/17 10:04	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			05/17/17 10:04	1
Sand	81.6				%			05/17/17 10:04	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			05/17/17 10:04	1
Coarse Sand	3.9				%			05/17/17 10:04	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			05/17/17 10:04	1
Medium Sand	6.7				%			05/17/17 10:04	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			05/17/17 10:04	1
Fine Sand	71.0				%			05/17/17 10:04	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			05/17/17 10:04	1
Sieve Size #4 - Percent Finer	100.0				% Passing			05/17/17 10:04	1
Silt	12.3				%			05/17/17 10:04	1
Clay	6.1				%			05/17/17 10:04	1
Sieve Size #10 - Percent Finer	96.1				% Passing			05/17/17 10:04	1
Sieve Size #20 - Percent Finer	94.5				% Passing			05/17/17 10:04	1
Sieve Size #40 - Percent Finer	89.4				% Passing			05/17/17 10:04	1
Sieve Size #60 - Percent Finer	65.8				% Passing			05/17/17 10:04	1
Sieve Size #80 - Percent Finer	48.7				% Passing			05/17/17 10:04	1
Sieve Size #100 - Percent Finer	39.6				% Passing			05/17/17 10:04	1
Sieve Size #200 - Percent Finer	20.6				% Passing			05/17/17 10:04	1
Sieve Size #230 - Percent Finer	18.4				% Passing			05/17/17 10:04	1
Hydrometer Reading 1 - Percent Finer	15.6				% Passing			05/17/17 10:04	1

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN

Lab Sample ID: 200-38498-8

Date Collected: 05/04/17 13:45
Matrix: Sediment
Date Received: 05/05/17 12:12

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Hydrometer Reading 2 - Percent Finer	12.9				% Passing			05/17/17 10:04	1
Hydrometer Reading 3 - Percent Finer	10.2				% Passing			05/17/17 10:04	1
Hydrometer Reading 4 - Percent Finer	7.5				% Passing			05/17/17 10:04	1
Hydrometer Reading 5 - Percent Finer	6.1				% Passing			05/17/17 10:04	1
Hydrometer Reading 6 - Percent Finer	2.7				% Passing			05/17/17 10:04	1
Hydrometer Reading 7 - Percent Finer	-0.3				% Passing			05/17/17 10:04	1

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN-D

Lab Sample ID: 200-38498-9

Date Collected: 05/04/17 13:46
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 53.3

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	158	B	0.84	0.20	mg/Kg	☼	05/18/17 09:26	05/19/17 21:10	1
Selenium	0.43	J	0.66	0.10	mg/Kg	☼	05/08/17 14:00	05/10/17 18:39	1
Zinc	105		3.3	1.0	mg/Kg	☼	05/08/17 14:00	05/10/17 18:39	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.64		0.060	0.022	mg/Kg	☼	05/11/17 09:27	05/11/17 16:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	16200		1000	380	mg/Kg			05/10/17 13:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	53.3		0.3	0.3	%			05/08/17 09:20	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			05/17/17 10:06	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			05/17/17 10:06	1
Sand	72.0				%			05/17/17 10:06	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			05/17/17 10:06	1
Coarse Sand	3.5				%			05/17/17 10:06	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			05/17/17 10:06	1
Medium Sand	5.8				%			05/17/17 10:06	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			05/17/17 10:06	1
Fine Sand	62.7				%			05/17/17 10:06	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			05/17/17 10:06	1
Sieve Size #4 - Percent Finer	100.0				% Passing			05/17/17 10:06	1
Silt	22.4				%			05/17/17 10:06	1
Clay	5.6				%			05/17/17 10:06	1
Sieve Size #10 - Percent Finer	96.5				% Passing			05/17/17 10:06	1
Sieve Size #20 - Percent Finer	95.2				% Passing			05/17/17 10:06	1

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN-D

Lab Sample ID: 200-38498-9
Date Collected: 05/04/17 13:46
Matrix: Sediment
Date Received: 05/05/17 12:12

Method: D422 - Grain Size (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Sieve Size #40 - Percent Finer	90.7				% Passing			05/17/17 10:06	1
Sieve Size #60 - Percent Finer	70.1				% Passing			05/17/17 10:06	1
Sieve Size #80 - Percent Finer	55.2				% Passing			05/17/17 10:06	1
Sieve Size #100 - Percent Finer	47.1				% Passing			05/17/17 10:06	1
Sieve Size #200 - Percent Finer	30.1				% Passing			05/17/17 10:06	1
Sieve Size #230 - Percent Finer	28.0				% Passing			05/17/17 10:06	1
Hydrometer Reading 1 - Percent Finer	14.3				% Passing			05/17/17 10:06	1
Hydrometer Reading 2 - Percent Finer	11.8				% Passing			05/17/17 10:06	1
Hydrometer Reading 3 - Percent Finer	9.3				% Passing			05/17/17 10:06	1
Hydrometer Reading 4 - Percent Finer	6.8				% Passing			05/17/17 10:06	1
Hydrometer Reading 5 - Percent Finer	5.6				% Passing			05/17/17 10:06	1
Hydrometer Reading 6 - Percent Finer	2.5				% Passing			05/17/17 10:06	1
Hydrometer Reading 7 - Percent Finer	0.9				% Passing			05/17/17 10:06	1

Client Sample ID: PE0517-P2SCD-EQBLK-1

Lab Sample ID: 200-38498-10
Date Collected: 05/04/17 16:45
Matrix: Water
Date Received: 05/05/17 12:12

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	6.5		5.0	2.2	ug/L		05/09/17 08:00	05/10/17 19:02	1
Selenium	4.0	U	4.0	0.97	ug/L		05/09/17 08:00	05/10/17 19:02	1
Zinc	20.0	U	20.0	2.6	ug/L		05/09/17 08:00	05/10/17 19:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.044	ug/L		05/11/17 08:11	05/11/17 15:13	1

Client Sample ID: PE0517-P2SCD-18.9-A-1218IN

Lab Sample ID: 200-38498-11
Date Collected: 05/04/17 13:30
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 69.3

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	18.9	B	0.69	0.16	mg/Kg	☼	05/18/17 09:26	05/19/17 21:16	1
Selenium	0.19	J	0.48	0.076	mg/Kg	☼	05/08/17 14:00	05/10/17 18:45	1
Zinc	35.1		2.4	0.75	mg/Kg	☼	05/08/17 14:00	05/10/17 18:45	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.17		0.046	0.017	mg/Kg	☼	05/11/17 09:27	05/11/17 16:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	22000		1000	380	mg/Kg			05/10/17 13:59	1

Client Sample ID: PE0517-P2SCD-18.9-A-1218IN

Date Collected: 05/04/17 13:30
Date Received: 05/05/17 12:12

Lab Sample ID: 200-38498-11

Matrix: Sediment

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	69.3		0.3	0.3	%			05/08/17 09:20	1

Method: D422 - Grain Size

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Gravel	0.0				%			05/17/17 10:07	1
Sieve Size 2 inch - Percent Finer	100.0				% Passing			05/17/17 10:07	1
Sand	57.5				%			05/17/17 10:07	1
Sieve Size 1.5 inch - Percent Finer	100.0				% Passing			05/17/17 10:07	1
Coarse Sand	2.3				%			05/17/17 10:07	1
Sieve Size 1 inch - Percent Finer	100.0				% Passing			05/17/17 10:07	1
Medium Sand	5.7				%			05/17/17 10:07	1
Sieve Size 0.75 inch - Percent Finer	100.0				% Passing			05/17/17 10:07	1
Fine Sand	49.5				%			05/17/17 10:07	1
Sieve Size 0.375 inch - Percent Finer	100.0				% Passing			05/17/17 10:07	1
Sieve Size #4 - Percent Finer	100.0				% Passing			05/17/17 10:07	1
Silt	33.5				%			05/17/17 10:07	1
Clay	9.0				%			05/17/17 10:07	1
Sieve Size #10 - Percent Finer	97.7				% Passing			05/17/17 10:07	1
Sieve Size #20 - Percent Finer	96.0				% Passing			05/17/17 10:07	1
Sieve Size #40 - Percent Finer	92.0				% Passing			05/17/17 10:07	1
Sieve Size #60 - Percent Finer	83.8				% Passing			05/17/17 10:07	1
Sieve Size #80 - Percent Finer	77.4				% Passing			05/17/17 10:07	1
Sieve Size #100 - Percent Finer	72.0				% Passing			05/17/17 10:07	1
Sieve Size #200 - Percent Finer	47.1				% Passing			05/17/17 10:07	1
Sieve Size #230 - Percent Finer	42.5				% Passing			05/17/17 10:07	1
Hydrometer Reading 1 - Percent Finer	28.3				% Passing			05/17/17 10:07	1
Hydrometer Reading 2 - Percent Finer	22.3				% Passing			05/17/17 10:07	1
Hydrometer Reading 3 - Percent Finer	17.5				% Passing			05/17/17 10:07	1
Hydrometer Reading 4 - Percent Finer	13.8				% Passing			05/17/17 10:07	1
Hydrometer Reading 5 - Percent Finer	9.0				% Passing			05/17/17 10:07	1
Hydrometer Reading 6 - Percent Finer	4.8				% Passing			05/17/17 10:07	1
Hydrometer Reading 7 - Percent Finer	0.9				% Passing			05/17/17 10:07	1

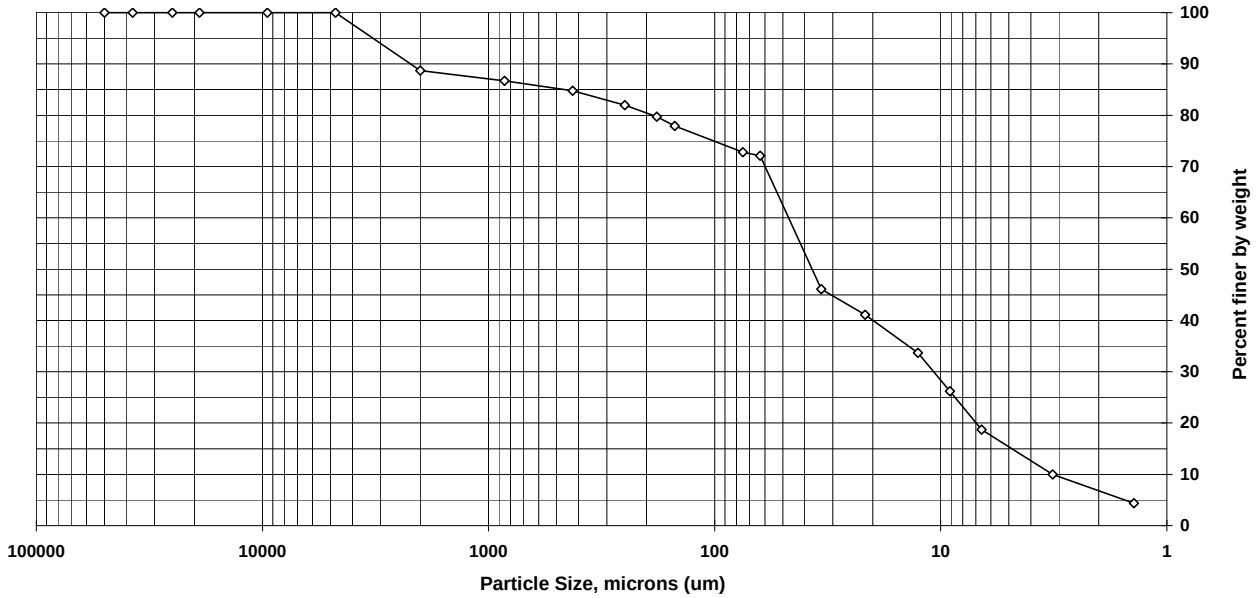
Particle Size of Soils by ASTM D422

				Date Received:	5/5/2017
Sample ID:	PE0517-P2SCD-04-A-00	**Percent Solids:**	34.0%	**Start Date:**	5/17/2017
Lab ID:	200-38498-B-1	**Specific Gravity:**	2.650	**End Date:**	5/19/2017

Shape (> #10): na

Non-soil material: plant, wood

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	88.7	11.3
#20	850	86.7	2.0
#40	425	84.8	1.9
#60	250	82.0	2.8
#80	180	79.7	2.3
#100	150	77.9	1.8
#200	75	72.8	5.1
#230	63	72.1	0.7
Hyd1	33.8	46.1	26.0
Hyd2	21.6	41.1	5.0
Hyd3	12.6	33.7	7.4
Hyd4	9.1	26.2	7.5
Hyd5	6.6	18.7	7.5
Hyd6	3.2	10.0	8.7
Hyd7	1.4	4.4	5.6

Soil Classification	Percent of sample
Gravel	0.0
Sand	27.9
Coarse Sand	11.3
Medium Sand	3.9
Fine Sand	12.7
Silt	53.4
Clay	18.7

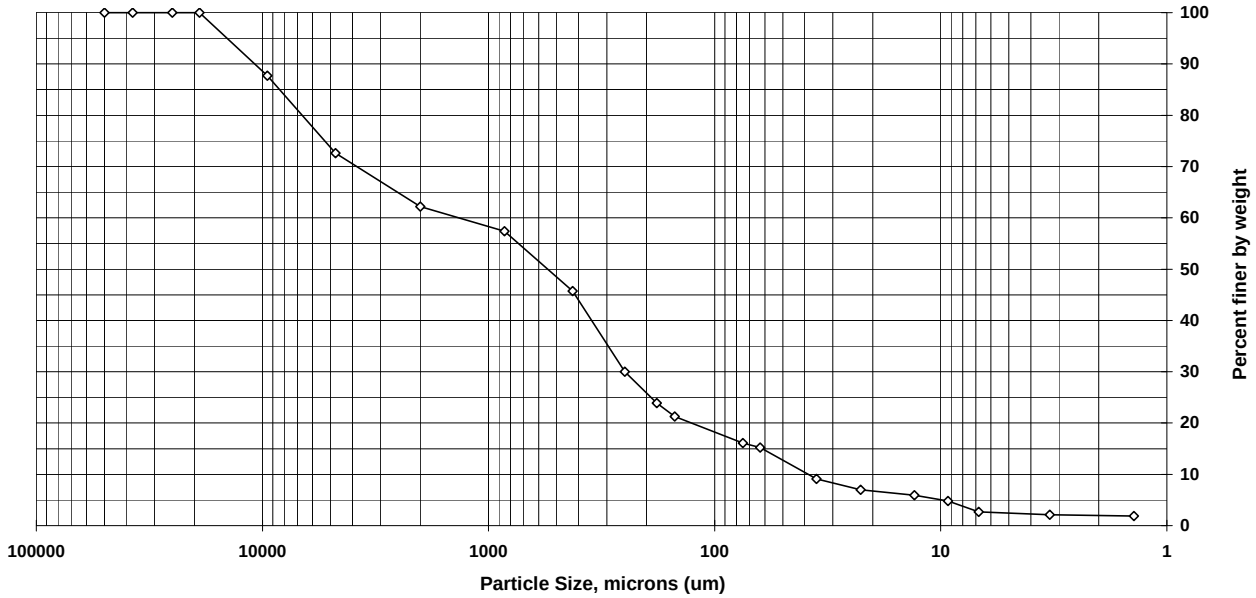
Particle Size of Soils by ASTM D422

				Date Received:	5/5/2017
Sample ID:	PE0517-P2SCD-18.7-A-	**Percent Solids:**	62.1%	**Start Date:**	5/17/2017
Lab ID:	200-38498-B-3	**Specific Gravity:**	2.650	**End Date:**	5/19/2017

Shape (> #10): subangular

Non-soil material: plant, wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	87.7	12.3
#4	4750	72.6	15.1
#10	2000	62.2	10.4
#20	850	57.4	4.8
#40	425	45.7	11.7
#60	250	30.0	15.7
#80	180	23.9	6.1
#100	150	21.3	2.6
#200	75	16.1	5.2
#230	63	15.2	0.9
Hyd1	35.5	9.1	6.1
Hyd2	22.6	7.0	2.1
Hyd3	13.1	5.9	1.1
Hyd4	9.3	4.8	1.1
Hyd5	6.8	2.7	2.1
Hyd6	3.3	2.1	0.5
Hyd7	1.4	1.9	0.3

Soil Classification	Percent of sample
Gravel	27.4
Sand	57.4
Coarse Sand	10.4
Medium Sand	16.5
Fine Sand	30.5
Silt	12.5
Clay	2.7

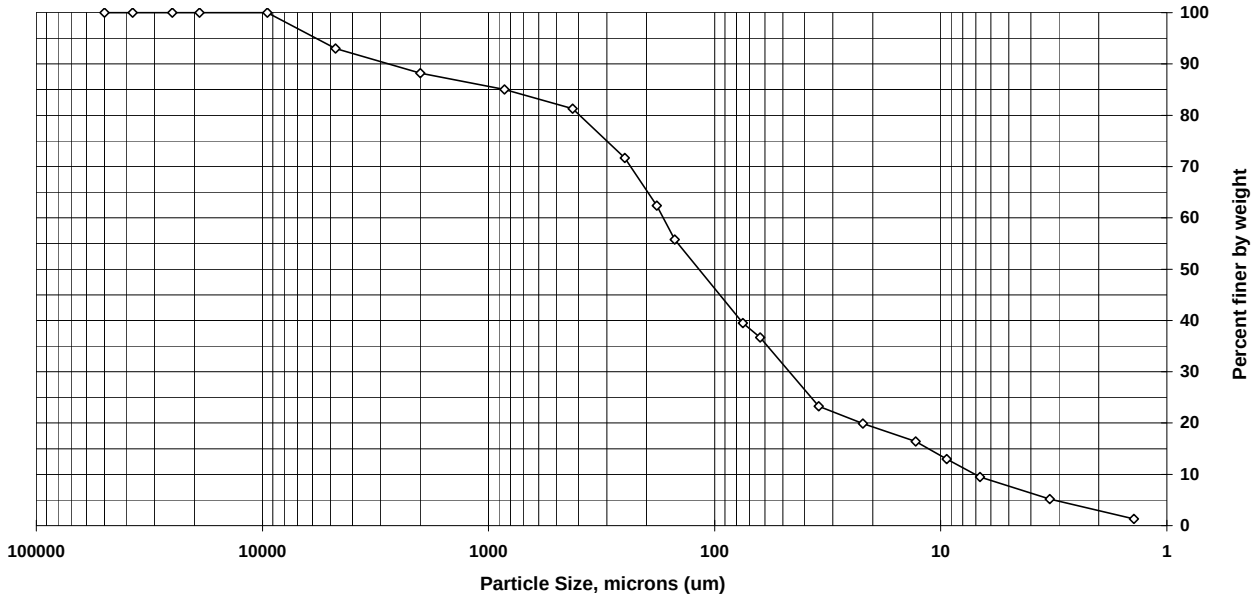
Particle Size of Soils by ASTM D422

				Date Received:	5/5/2017
Sample ID:	PE0517-P2SCD-18.7-B-	**Percent Solids:**	55.6%	**Start Date:**	5/17/2017
Lab ID:	200-38498-B-4	**Specific Gravity:**	2.650	**End Date:**	5/19/2017

Shape (> #10): subangular

Non-soil material: plant, wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	93.0	7.0
#10	2000	88.2	4.8
#20	850	85.0	3.2
#40	425	81.3	3.7
#60	250	71.7	9.6
#80	180	62.4	9.3
#100	150	55.8	6.6
#200	75	39.5	16.3
#230	63	36.7	2.8
Hyd1	34.6	23.3	13.4
Hyd2	22.1	19.9	3.4
Hyd3	12.9	16.4	3.5
Hyd4	9.4	13.0	3.4
Hyd5	6.7	9.5	3.5
Hyd6	3.3	5.2	4.3
Hyd7	1.4	1.3	3.9

Soil Classification	Percent of sample
Gravel	7.0
Sand	56.3
Coarse Sand	4.8
Medium Sand	6.9
Fine Sand	44.6
Silt	27.2
Clay	9.5

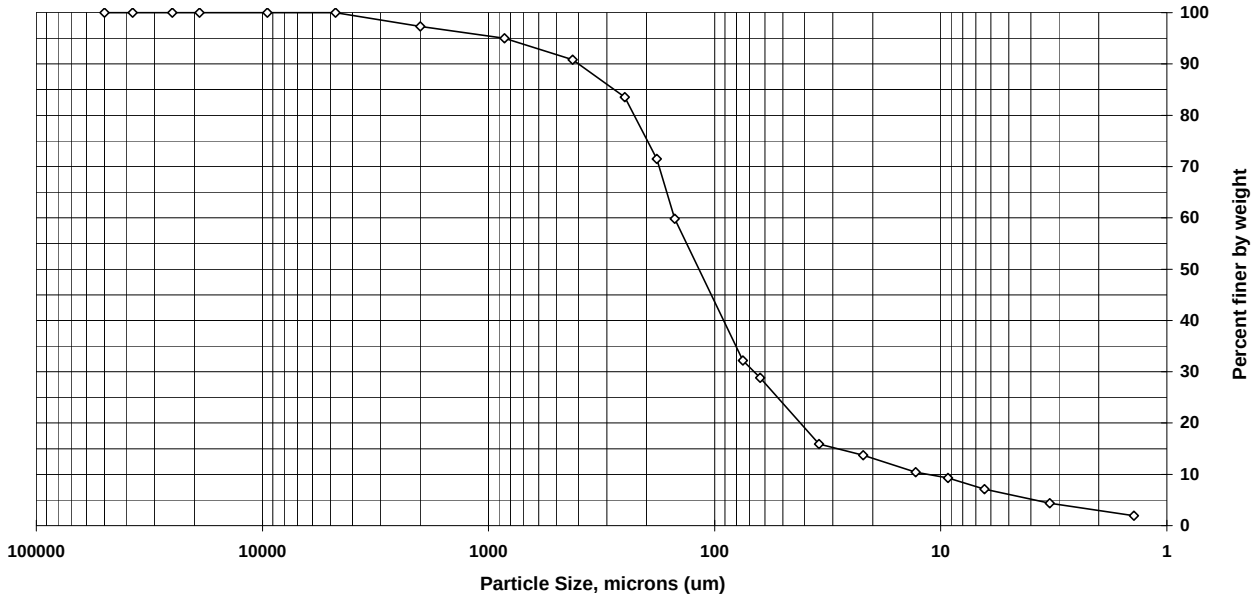
Particle Size of Soils by ASTM D422

				Date Received:	5/5/2017
Sample ID:	PE0517-P2SCD-18.8-A-	**Percent Solids:**	70.9%	**Start Date:**	5/17/2017
Lab ID:	200-38498-B-5	**Specific Gravity:**	2.650	**End Date:**	5/19/2017

Shape (> #10): subangular

Non-soil material: plant, wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	97.3	2.7
#20	850	95.0	2.3
#40	425	90.8	4.2
#60	250	83.5	7.3
#80	180	71.5	12.0
#100	150	59.8	11.7
#200	75	32.2	27.6
#230	63	28.8	3.4
Hyd1	34.5	15.9	12.9
Hyd2	22	13.7	2.2
Hyd3	12.9	10.4	3.3
Hyd4	9.3	9.3	1.1
Hyd5	6.4	7.1	2.2
Hyd6	3.3	4.4	2.7
Hyd7	1.4	1.9	2.5

Soil Classification	Percent of sample
Gravel	0.0
Sand	71.2
Coarse Sand	2.7
Medium Sand	6.5
Fine Sand	62.0
Silt	21.7
Clay	7.1

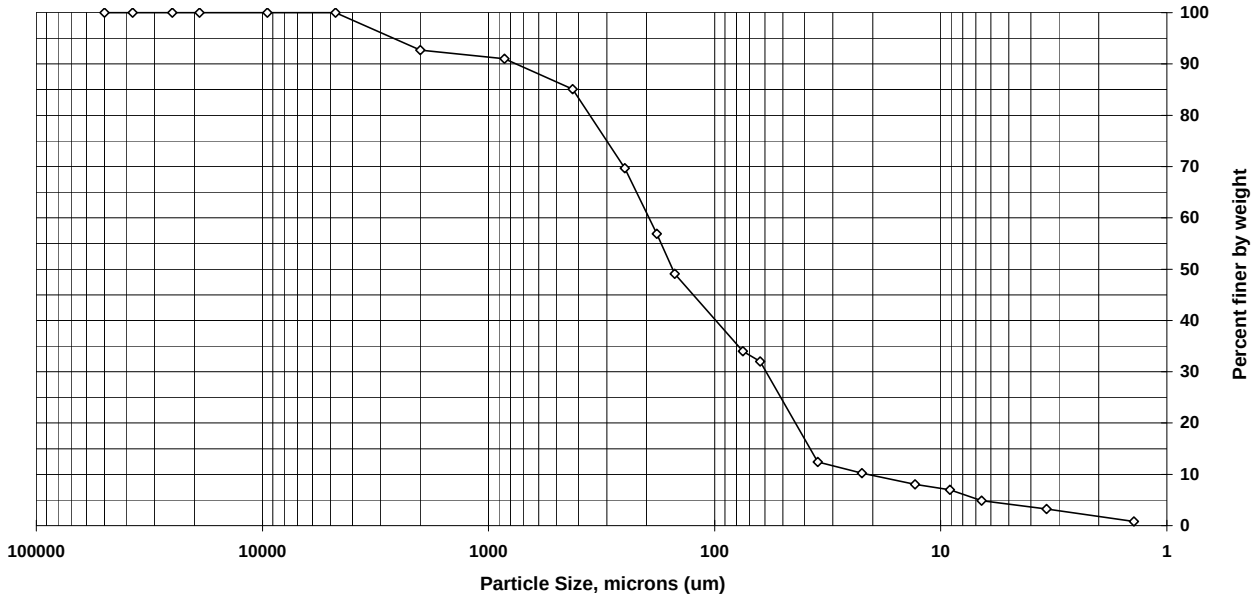
Particle Size of Soils by ASTM D422

				Date Received:	5/5/2017
Sample ID:	PE0517-P2SCD-18.8-B-	**Percent Solids:**	57.7%	**Start Date:**	5/17/2017
Lab ID:	200-38498-B-6	**Specific Gravity:**	2.650	**End Date:**	5/19/2017

Shape (> #10): na

Non-soil material: plant, wood

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	92.7	7.3
#20	850	91.0	1.7
#40	425	85.1	5.9
#60	250	69.7	15.4
#80	180	56.9	12.8
#100	150	49.1	7.8
#200	75	34.0	15.1
#230	63	32.0	2.0
Hyd1	35	12.4	19.6
Hyd2	22.3	10.2	2.2
Hyd3	13	8.1	2.1
Hyd4	9.1	7.0	1.1
Hyd5	6.6	4.8	2.1
Hyd6	3.4	3.2	1.6
Hyd7	1.4	0.8	2.4

Soil Classification	Percent of sample
Gravel	0.0
Sand	68.0
Coarse Sand	7.3
Medium Sand	7.6
Fine Sand	53.1
Silt	27.2
Clay	4.8

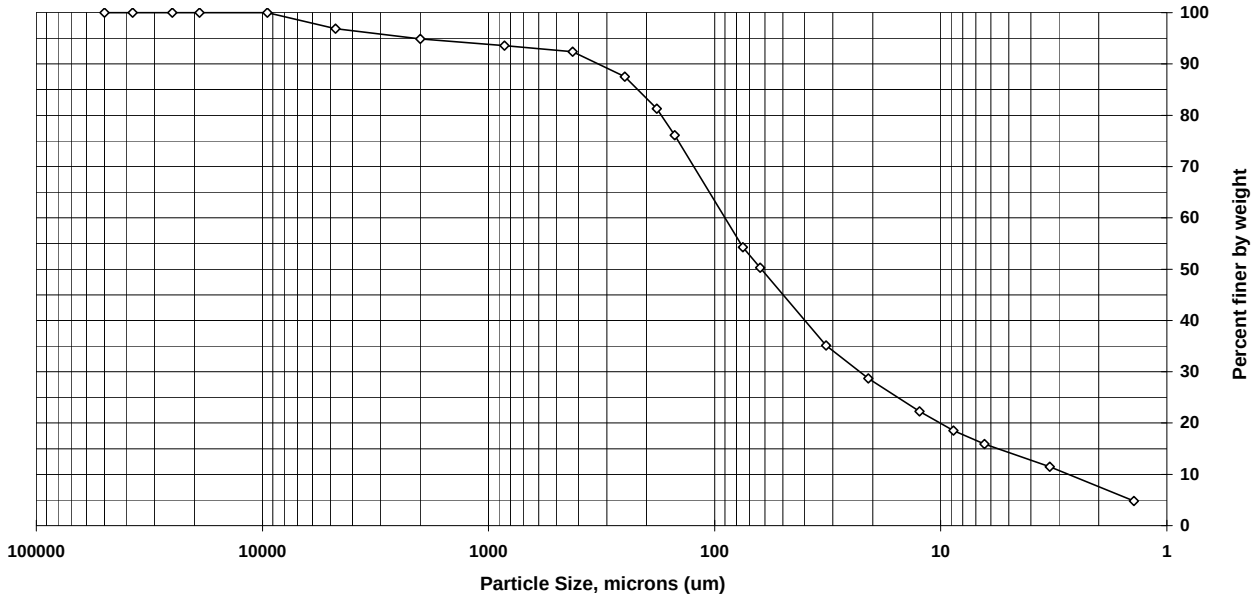
Particle Size of Soils by ASTM D422

				Date Received:	5/5/2017
Sample ID:	PE0517-P2SCD-18.9-A-	**Percent Solids:**	71.5%	**Start Date:**	5/17/2017
Lab ID:	200-38498-B-7	**Specific Gravity:**	2.650	**End Date:**	5/19/2017

Shape (> #10): subangular

Non-soil material: wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	96.9	3.1
#10	2000	94.9	2.0
#20	850	93.6	1.3
#40	425	92.4	1.2
#60	250	87.5	4.9
#80	180	81.3	6.2
#100	150	76.1	5.2
#200	75	54.3	21.8
#230	63	50.3	4.0
Hyd1	32.2	35.1	15.2
Hyd2	20.9	28.7	6.4
Hyd3	12.4	22.3	6.4
Hyd4	8.8	18.5	3.8
Hyd5	6.4	15.9	2.6
Hyd6	3.3	11.5	4.4
Hyd7	1.4	4.8	6.7

Soil Classification	Percent of sample
Gravel	3.1
Sand	46.6
Coarse Sand	2.0
Medium Sand	2.5
Fine Sand	42.1
Silt	34.4
Clay	15.9

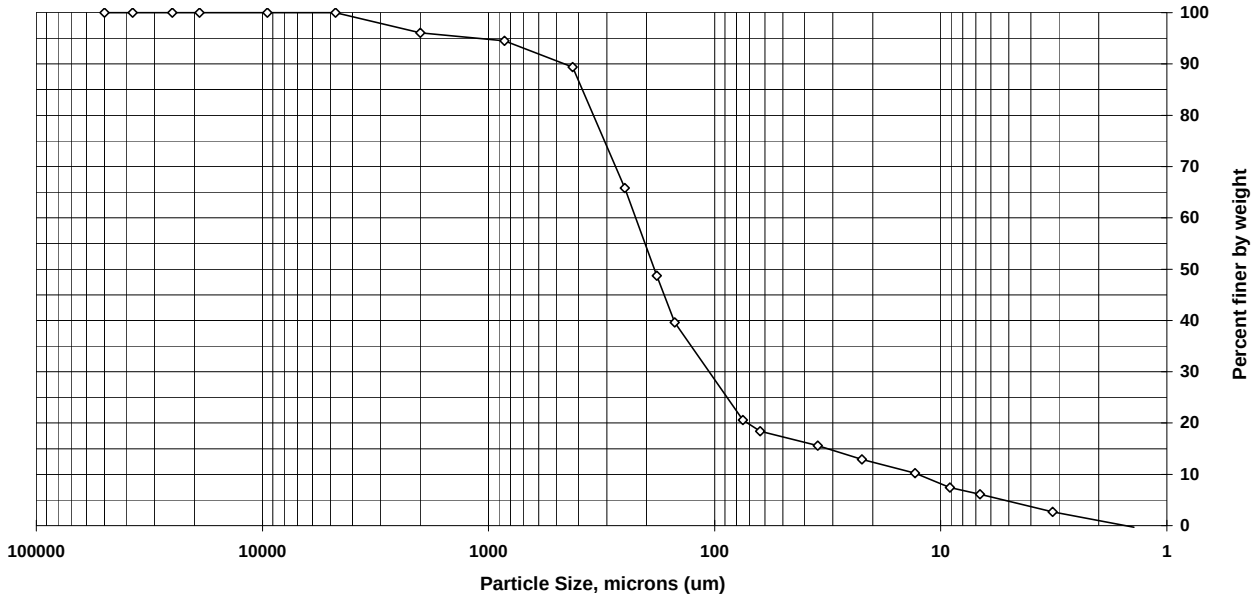
Particle Size of Soils by ASTM D422

				Date Received:	5/5/2017
Sample ID:	PE0517-P2SCD-18.9-B-	**Percent Solids:**	61.2%	**Start Date:**	5/17/2017
Lab ID:	200-38498-B-8	**Specific Gravity:**	2.650	**End Date:**	5/19/2017

Shape (> #10): subangular

Non-soil material: plant, wood

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	96.1	3.9
#20	850	94.5	1.6
#40	425	89.4	5.1
#60	250	65.8	23.6
#80	180	48.7	17.1
#100	150	39.6	9.1
#200	75	20.6	19.0
#230	63	18.4	2.2
Hyd1	35	15.6	2.8
Hyd2	22.3	12.9	2.7
Hyd3	13	10.2	2.7
Hyd4	9.1	7.5	2.8
Hyd5	6.7	6.1	1.4
Hyd6	3.2	2.7	3.4
Hyd7	1.4	-0.3	3.0

Soil Classification	Percent of sample
Gravel	0.0
Sand	81.6
Coarse Sand	3.9
Medium Sand	6.7
Fine Sand	71.0
Silt	12.3
Clay	6.1

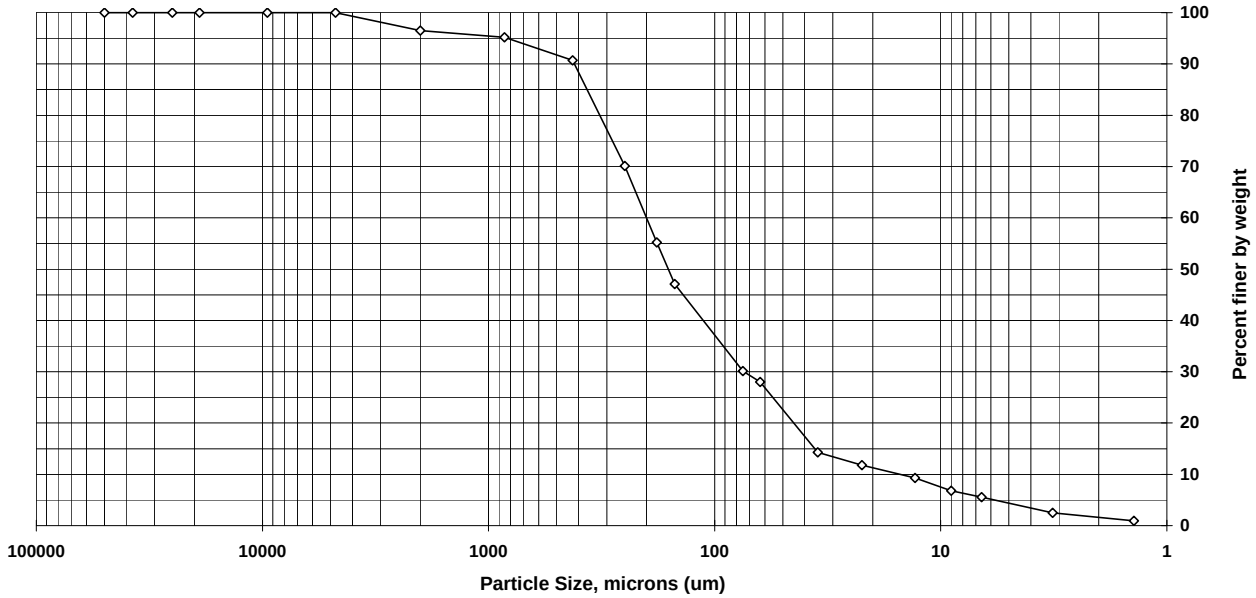
Particle Size of Soils by ASTM D422

				Date Received:	5/5/2017
Sample ID:	PE0517-P2SCD-18.9-B-	**Percent Solids:**	63.5%	**Start Date:**	5/17/2017
Lab ID:	200-38498-B-9	**Specific Gravity:**	2.650	**End Date:**	5/19/2017

Shape (> #10): na

Non-soil material: plant, wood

Hardness (> #10): na



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	96.5	3.5
#20	850	95.2	1.3
#40	425	90.7	4.5
#60	250	70.1	20.6
#80	180	55.2	14.9
#100	150	47.1	8.1
#200	75	30.1	17.0
#230	63	28.0	2.1
Hyd1	35	14.3	13.7
Hyd2	22.3	11.8	2.5
Hyd3	13	9.3	2.5
Hyd4	9	6.8	2.5
Hyd5	6.6	5.6	1.2
Hyd6	3.2	2.5	3.1
Hyd7	1.4	0.9	1.6

Soil Classification	Percent of sample
Gravel	0.0
Sand	72.0
Coarse Sand	3.5
Medium Sand	5.8
Fine Sand	62.7
Silt	22.4
Clay	5.6

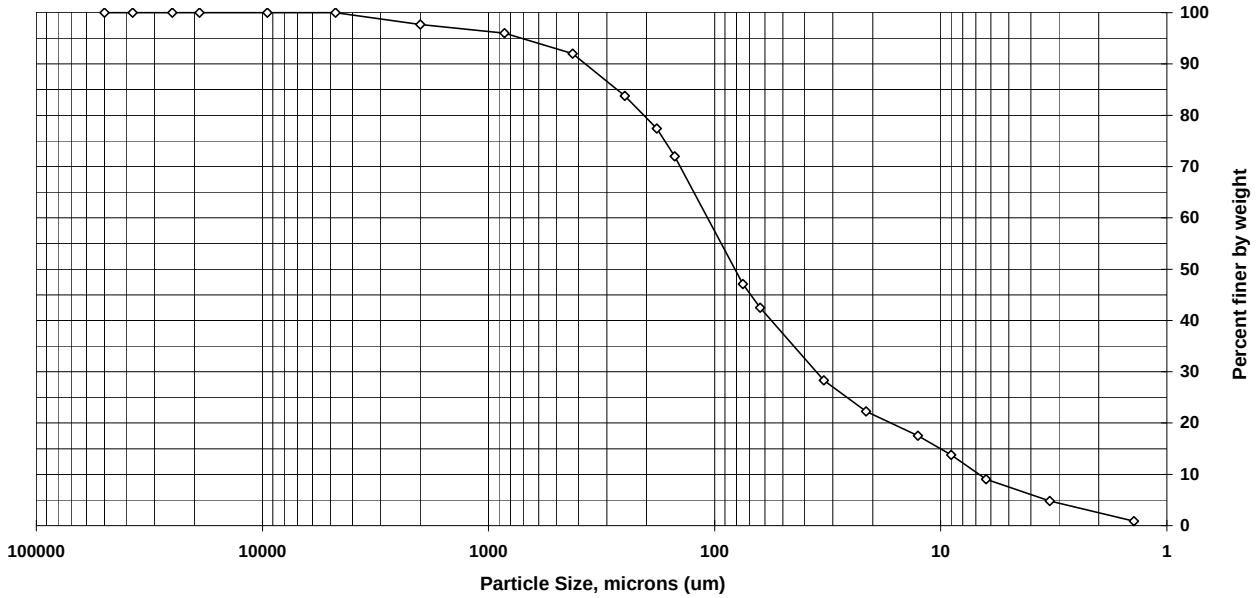
Particle Size of Soils by ASTM D422

				Date Received:	5/5/2017
Sample ID:	PE0517-P2SCD-18.9-A-	**Percent Solids:**	67.4%	**Start Date:**	5/17/2017
Lab ID:	200-38498-B-11	**Specific Gravity:**	2.650	**End Date:**	5/19/2017

Shape (> #10): subangular

Non-soil material: wood, plant

Hardness (> #10): hard



Sieve size	Particle size, um	Percent finer	Incremental percent
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	97.7	2.3
#20	850	96.0	1.7
#40	425	92.0	4.0
#60	250	83.8	8.2
#80	180	77.4	6.4
#100	150	72.0	5.4
#200	75	47.1	24.9
#230	63	42.5	4.6
Hyd1	32.9	28.3	14.2
Hyd2	21.4	22.3	6.0
Hyd3	12.6	17.5	4.8
Hyd4	9	13.8	3.7
Hyd5	6.3	9.0	4.8
Hyd6	3.3	4.8	4.2
Hyd7	1.4	0.9	3.9

Soil Classification	Percent of sample
Gravel	0.0
Sand	57.5
Coarse Sand	2.3
Medium Sand	5.7
Fine Sand	49.5
Silt	33.5
Clay	9.0

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE0517-P2SCD-04-A-00
Lab Sample ID	200-38498-B-1

Date Received	5/5/2017 12:12
Start Date	5/17/2017 09:57
End Date	5/19/2017 11:14

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	23.00	g
Dry Sample + Tin	8.50	g
% Moisture	65.97	%

Non-soil material:	plant, wood
Shape (> #10):	na
Hardness (> #10):	na
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.75	139.35	94.6
Sample Weight (Oven Dried)			32.2

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			3.64
Sample <#10			28.6
% Passing #10			30.2

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	350.85	354.49	3.64	g	88.7	Sand	Coarse
#20	850	388.34	388.98	0.64	g	86.7	Sand	Medium
#40	425	366.90	367.50	0.60	g	84.8	Sand	Medium
#60	250	348.37	349.26	0.89	g	82.0	Sand	Fine
#80	180	330.79	331.54	0.75	g	79.7	Sand	Fine
#100	150	330.10	330.69	0.59	g	77.9	Sand	Fine
#200	75	322.68	324.33	1.65	g	72.8	Sand	Fine
#230	63	224.44	224.66	0.22	g	72.1	Sand	Fine
				0.00	g	72.1		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	32.2

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0130	22.0	33.8	46.1	Silt	
5	5	1.0120	22.0	21.6	41.1	Silt	
15	15	1.0105	22.0	12.6	33.7	Silt	
30	30	1.0090	22.0	9.1	26.2	Silt	
60	59	1.0075	22.0	6.6	18.7	Silt	
250	256	1.0060	21.0	3.2	9.98	Clay	
1440	1440	1.0050	20.5	1.4	4.36	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE0517-P2SCD-18.7-A-
Lab Sample ID	200-38498-B-3

Date Received	5/5/2017 12:12
Start Date	5/17/2017 09:59
End Date	5/19/2017 11:24

Dry Weight Determination

Tin Weight	1.03	g
Wet Sample + Tin	36.97	g
Dry Sample + Tin	23.33	g
% Moisture	37.95	%

Non-soil material:	plant, wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	45.54	166.23	120.69
Sample Weight (Oven Dried)			74.9

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			28.3
Sample <#10			46.6
% Passing #10			38.6

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500	447.37	456.55	9.18	g	87.7	Gravel	
#4	4750	488.10	499.42	11.32	g	72.6	Gravel	
#10	2000	350.85	358.65	7.80	g	62.2	Sand	Coarse
#20	850	388.34	391.95	3.61	g	57.4	Sand	Medium
#40	425	366.90	375.64	8.74	g	45.7	Sand	Medium
#60	250	348.37	360.14	11.77	g	30.0	Sand	Fine
#80	180	330.79	335.36	4.57	g	23.9	Sand	Fine
#100	150	330.10	332.01	1.91	g	21.3	Sand	Fine
#200	75	322.68	326.54	3.86	g	16.1	Sand	Fine
#230	63	224.44	225.09	0.65	g	15.2	Sand	Fine
				0.00	g	15.2		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	74.9

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0080	22.0	35.5	9.11	Silt	
5	5	1.0070	22.0	22.6	6.97	Silt	
15	15	1.0065	22.0	13.1	5.9	Silt	
30	30	1.0060	22.0	9.3	4.82	Silt	
60	58	1.0050	22.0	6.8	2.68	Silt	
250	256	1.0050	21.0	3.3	2.14	Clay	
1440	1440	1.0050	20.5	1.4	1.88	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE0517-P2SCD-18.7-B-
Lab Sample ID	200-38498-B-4

Date Received	5/5/2017 12:12
Start Date	5/17/2017 10:00
End Date	5/19/2017 11:36

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	27.28	g
Dry Sample + Tin	15.61	g
% Moisture	44.42	%

Non-soil material:	plant, wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.68	128.41	83.73
Sample Weight (Oven Dried)			46.5

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			5.5
Sample <#10			41
% Passing #10			49

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.10	491.36	3.26	g	93.0	Gravel	
#10	2000	350.85	353.09	2.24	g	88.2	Sand	Coarse
#20	850	388.34	389.82	1.48	g	85.0	Sand	Medium
#40	425	366.90	368.61	1.71	g	81.3	Sand	Medium
#60	250	348.37	352.85	4.48	g	71.7	Sand	Fine
#80	180	330.79	335.12	4.33	g	62.4	Sand	Fine
#100	150	330.10	333.16	3.06	g	55.8	Sand	Fine
#200	75	322.68	330.24	7.56	g	39.5	Sand	Fine
#230	63	224.44	225.76	1.32	g	36.7	Sand	Fine
				0.00	g	36.7		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	46.5

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0105	22.0	34.6	23.3	Silt	
5	5	1.0095	22.0	22.1	19.9	Silt	
15	15	1.0085	22.0	12.9	16.4	Silt	
30	29	1.0075	22.0	9.4	13	Silt	
60	58	1.0065	22.0	6.7	9.5	Silt	
250	250	1.0055	21.0	3.3	5.18	Clay	
1440	1434	1.0045	20.5	1.4	1.3	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE0517-P2SCD-18.8-A-
Lab Sample ID	200-38498-B-5

Date Received	5/5/2017 12:12
Start Date	5/17/2017 10:01
End Date	5/19/2017 11:52

Dry Weight Determination

Tin Weight	1.03	g
Wet Sample + Tin	34.89	g
Dry Sample + Tin	25.03	g
% Moisture	29.12	%

Non-soil material:	plant, wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.74	148.04	103.3
Sample Weight (Oven Dried)			73.2

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			1.95
Sample <#10			71.3
% Passing #10			69

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	350.85	352.80	1.95	g	97.3	Sand	Coarse
#20	850	388.34	389.99	1.65	g	95.0	Sand	Medium
#40	425	366.90	369.97	3.07	g	90.8	Sand	Medium
#60	250	348.37	353.73	5.36	g	83.5	Sand	Fine
#80	180	330.79	339.55	8.76	g	71.5	Sand	Fine
#100	150	330.10	338.68	8.58	g	59.8	Sand	Fine
#200	75	322.68	342.87	20.19	g	32.2	Sand	Fine
#230	63	224.44	226.94	2.50	g	28.8	Sand	Fine
				0.00	g	28.8		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	73.2

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0110	22.0	34.5	15.9	Silt	
5	5	1.0100	22.0	22	13.7	Silt	
15	15	1.0085	22.0	12.9	10.4	Silt	
30	29	1.0080	22.0	9.3	9.32	Silt	
60	63	1.0070	22.0	6.4	7.13	Silt	
250	250	1.0060	21.0	3.3	4.39	Clay	
1440	1434	1.0050	20.5	1.4	1.92	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE0517-P2SCD-18.8-B-
Lab Sample ID	200-38498-B-6

Date Received	5/5/2017 12:12
Start Date	5/17/2017 10:02
End Date	5/19/2017 12:07

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	28.66	g
Dry Sample + Tin	16.98	g
% Moisture	42.26	%

Non-soil material:	plant, wood
Shape (> #10):	na
Hardness (> #10):	na
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.69	174.11	129.42
Sample Weight (Oven Dried)			74.7

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			5.47
Sample <#10			69.2
% Passing #10			53.5

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	350.85	356.32	5.47	g	92.7	Sand	Coarse
#20	850	388.34	389.63	1.29	g	91.0	Sand	Medium
#40	425	366.90	371.31	4.41	g	85.1	Sand	Medium
#60	250	348.37	359.89	11.52	g	69.7	Sand	Fine
#80	180	330.79	340.35	9.56	g	56.9	Sand	Fine
#100	150	330.10	335.94	5.84	g	49.1	Sand	Fine
#200	75	322.68	333.98	11.30	g	34.0	Sand	Fine
#230	63	224.44	225.95	1.51	g	32.0	Sand	Fine
				0.00	g	32.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	74.7

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0095	22.0	35	12.4	Silt	
5	5	1.0085	22.0	22.3	10.2	Silt	
15	15	1.0075	22.0	13	8.06	Silt	
30	31	1.0070	22.0	9.1	6.99	Silt	
60	60	1.0060	22.0	6.6	4.84	Silt	
250	240	1.0055	21.0	3.4	3.23	Clay	
1440	1424	1.0045	20.5	1.4	0.806	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE0517-P2SCD-18.9-A-
Lab Sample ID	200-38498-B-7

Date Received	5/5/2017 12:12
Start Date	5/17/2017 10:03
End Date	5/19/2017 11:21

Dry Weight Determination

Tin Weight	1.02	g
Wet Sample + Tin	25.60	g
Dry Sample + Tin	18.59	g
% Moisture	28.52	%

Non-soil material:	wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	45.16	133.23	88.07
Sample Weight (Oven Dried)			63

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			3.24
Sample <#10			59.8
% Passing #10			67.9

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750	488.10	490.06	1.96	g	96.9	Gravel	
#10	2000	350.85	352.13	1.28	g	94.9	Sand	Coarse
#20	850	379.31	380.14	0.83	g	93.6	Sand	Medium
#40	425	353.06	353.84	0.78	g	92.4	Sand	Medium
#60	250	350.82	353.93	3.11	g	87.5	Sand	Fine
#80	180	337.80	341.68	3.88	g	81.3	Sand	Fine
#100	150	328.42	331.72	3.30	g	76.1	Sand	Fine
#200	75	323.20	336.91	13.71	g	54.3	Sand	Fine
#230	63	217.24	219.75	2.51	g	50.3	Sand	Fine
				0.00	g	50.3		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	63

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0175	22.0	32.2	35.1	Silt	
5	5	1.0150	22.0	20.9	28.7	Silt	
15	15	1.0125	22.0	12.4	22.3	Silt	
30	31	1.0110	22.0	8.8	18.5	Silt	
60	59	1.0100	22.0	6.4	15.9	Silt	
250	234	1.0085	21.0	3.3	11.5	Clay	
1440	1418	1.0060	20.5	1.4	4.78	Clay	

Sediment Grain Size - D422

Client	
Client Sample ID	PE0517-P2SCD-18.9-B-
Lab Sample ID	200-38498-B-8

Date Received	5/5/2017 12:12
Start Date	5/17/2017 10:04
End Date	5/19/2017 11:39

Dry Weight Determination

Tin Weight	1.04	g
Wet Sample + Tin	31.21	g
Dry Sample + Tin	19.49	g
% Moisture	38.85	%

Non-soil material:	plant, wood
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.79	141.82	97.03
Sample Weight (Oven Dried)			59.3

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			2.34
Sample <#10			57
% Passing #10			58.7

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	350.85	353.19	2.34	g	96.1	Sand	Coarse
#20	850	379.31	380.23	0.92	g	94.5	Sand	Medium
#40	425	353.06	356.10	3.04	g	89.4	Sand	Medium
#60	250	350.82	364.84	14.02	g	65.8	Sand	Fine
#80	180	337.80	347.94	10.14	g	48.7	Sand	Fine
#100	150	328.42	333.81	5.39	g	39.6	Sand	Fine
#200	75	323.20	334.46	11.26	g	20.6	Sand	Fine
#230	63	217.24	218.53	1.29	g	18.4	Sand	Fine
				0.00	g	18.4		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	59.3

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0095	22.0	35	15.6	Silt	
5	5	1.0085	22.0	22.3	12.9	Silt	
15	15	1.0075	22.0	13	10.2	Silt	
30	31	1.0065	22.0	9.1	7.45	Silt	
60	59	1.0060	22.0	6.7	6.09	Silt	
250	265	1.0050	21.0	3.2	2.71	Clay	
1440	1412	1.0040	20.5	1.4	-0.339	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE0517-P2SCD-18.9-B-
Lab Sample ID	200-38498-B-9

Date Received	5/5/2017 12:12
Start Date	5/17/2017 10:06
End Date	5/19/2017 11:55

Dry Weight Determination

Tin Weight	1.01	g
Wet Sample + Tin	31.37	g
Dry Sample + Tin	20.30	g
% Moisture	36.46	%

Non-soil material:	plant, wood
Shape (> #10):	na
Hardness (> #10):	na
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.94	146.88	101.94
Sample Weight (Oven Dried)			64.8

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			2.28
Sample <#10			62.5
% Passing #10			61.3

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	350.85	353.13	2.28	g	96.5	Sand	Coarse
#20	850	379.31	380.16	0.85	g	95.2	Sand	Medium
#40	425	353.06	355.99	2.93	g	90.7	Sand	Medium
#60	250	350.82	364.14	13.32	g	70.1	Sand	Fine
#80	180	337.80	347.46	9.66	g	55.2	Sand	Fine
#100	150	328.42	333.65	5.23	g	47.1	Sand	Fine
#200	75	323.20	334.20	11.00	g	30.1	Sand	Fine
#230	63	217.24	218.57	1.33	g	28.0	Sand	Fine
				0.00	g	28.0		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	64.8

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0095	22.0	35	14.3	Silt	
5	5	1.0085	22.0	22.3	11.8	Silt	
15	15	1.0075	22.0	13	9.29	Silt	
30	32	1.0065	22.0	9	6.82	Silt	
60	60	1.0060	22.0	6.6	5.58	Silt	
250	259	1.0050	21.0	3.2	2.48	Clay	
1440	1406	1.0045	20.5	1.4	0.929	Clay	

TestAmerica Burlington

Sediment Grain Size - D422

Client	
Client Sample ID	PE0517-P2SCD-18.9-A-
Lab Sample ID	200-38498-B-11

Date Received	5/5/2017 12:12
Start Date	5/17/2017 10:07
End Date	5/19/2017 12:10

Dry Weight Determination

Tin Weight	1.00	g
Wet Sample + Tin	13.93	g
Dry Sample + Tin	9.72	g
% Moisture	32.56	%

Non-soil material:	wood, plant
Shape (> #10):	subangular
Hardness (> #10):	hard
Default Soil Gravity	2.6500

Sample Weights	Tare (g)	Pan+Samp (g)	Samp (g)
Sample Weight (Wet)	44.72	143.57	98.85
Sample Weight (Oven Dried)			66.7

Sample Split (oven dried)	Tare (g)	Pan+Samp (g)	Samp (g)
Sample >=#10			1.56
Sample <#10			65.1
% Passing #10			65.9

Hydrometer Data

Serial Number	410848
Calib. Date (mm/dd/yyyy)	06/28/2016
Low Temp (C)	17.0
Reading at Low Temp	1.0050
High Temp (C)	23.0
Reading at High Temp	1.0035
Hydrometer Cal Slope	-0.00025
Hydrometer Cal Intercept	1.00925

Gravel/Sand Fraction (Sieves)

Sample Fraction	Size (um)	Pan Tare (g)	Pan+Sample (g)	Sample		% Finer	Classification	Sub Class
2 inch	50000			0.00	g	100.0	Gravel	
1.5 inch	37500			0.00	g	100.0	Gravel	
1 inch	25000			0.00	g	100.0	Gravel	
3/4 inch	19000			0.00	g	100.0	Gravel	
3/8 inch	9500			0.00	g	100.0	Gravel	
#4	4750			0.00	g	100.0	Gravel	
#10	2000	350.85	352.41	1.56	g	97.7	Sand	Coarse
#20	850	379.31	380.42	1.11	g	96.0	Sand	Medium
#40	425	353.06	355.74	2.68	g	92.0	Sand	Medium
#60	250	350.82	356.28	5.46	g	83.8	Sand	Fine
#80	180	337.80	342.04	4.24	g	77.4	Sand	Fine
#100	150	328.42	332.01	3.59	g	72.0	Sand	Fine
#200	75	323.20	339.78	16.58	g	47.1	Sand	Fine
#230	63	217.24	220.28	3.04	g	42.5	Sand	Fine
				0.00	g	42.5		

Adjusted Hydrometer Sample Mass

Hydrometer Sample Mass (g)	66.7

Silt/Clay Fraction (Hydrometer Test)

Hydrometer Test Time (min)	Actual	Spec. Gravity	Temp C	Particle Size (Micron)	% Finer	Classification	Sub Class
2	2	1.0155	22.0	32.9	28.3	Silt	
5	5	1.0130	22.0	21.4	22.3	Silt	
15	15	1.0110	22.0	12.6	17.5	Silt	
30	30	1.0095	22.0	9	13.8	Silt	
60	63	1.0075	22.0	6.3	9.03	Silt	
250	253	1.0060	21.0	3.3	4.82	Clay	
1440	1400	1.0045	20.5	1.4	0.903	Clay	

Default Detection Limits

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-38498-1
SDG: 200-38498-1

Method: 6020A - Metals (ICP/MS)
Prep: 3010A

Analyte	RL	MDL	Units	Method
Copper	5.0	2.2	ug/L	6020A
Selenium	4.0	0.97	ug/L	6020A
Zinc	20.0	2.6	ug/L	6020A

Method: 6020A - Metals (ICP/MS)
Prep: 3050B

Analyte	RL	MDL	Units	Method
Copper	0.50	0.12	mg/Kg	6020A
Selenium	0.40	0.063	mg/Kg	6020A
Zinc	2.0	0.62	mg/Kg	6020A

Method: 7470A - Mercury (CVAA)
Prep: 7470A

Analyte	RL	MDL	Units	Method
Mercury	0.20	0.044	ug/L	7470A

Method: 7471B - Mercury (CVAA)
Prep: 7471B

Analyte	RL	MDL	Units	Method
Mercury	0.033	0.012	mg/Kg	7471B

General Chemistry

Analyte	RL	MDL	Units	Method
Total Organic Carbon	1000	380	mg/Kg	Lloyd Kahn
Percent Solids	0.1	0.1	%	Moisture

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 200-116489/1-A
Matrix: Sediment
Analysis Batch: 116617

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 116489

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.40	U	0.40	0.063	mg/Kg		05/08/17 14:00	05/10/17 16:45	1
Zinc	2.0	U	2.0	0.62	mg/Kg		05/08/17 14:00	05/10/17 16:45	1

Lab Sample ID: LCS 200-116489/2-A
Matrix: Sediment
Analysis Batch: 116617

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 116489

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	4.00	3.61		mg/Kg		90	80 - 120
Zinc	20.0	18.38		mg/Kg		92	80 - 120

Lab Sample ID: 200-38498-7 MS
Matrix: Sediment
Analysis Batch: 116617

Client Sample ID: PE0517-P2SCD-18.9-A-0012IN
Prep Type: Total/NA
Prep Batch: 116489

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	0.21	J F1	4.43	1.53	F1	mg/Kg	☼	30	75 - 125
Zinc	51.9	F1	22.1	67.05	F1	mg/Kg	☼	68	75 - 125

Lab Sample ID: 200-38498-7 MSD
Matrix: Sediment
Analysis Batch: 116617

Client Sample ID: PE0517-P2SCD-18.9-A-0012IN
Prep Type: Total/NA
Prep Batch: 116489

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	0.21	J F1	4.65	1.68	F1	mg/Kg	☼	32	75 - 125	10	20
Zinc	51.9	F1	23.3	68.41	F1	mg/Kg	☼	71	75 - 125	2	20

Lab Sample ID: MB 200-116492/1-A
Matrix: Water
Analysis Batch: 116617

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 116492

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	5.0	U	5.0	2.2	ug/L		05/09/17 08:00	05/10/17 18:51	1
Selenium	4.0	U	4.0	0.97	ug/L		05/09/17 08:00	05/10/17 18:51	1
Zinc	20.0	U	20.0	2.6	ug/L		05/09/17 08:00	05/10/17 18:51	1

Lab Sample ID: LCS 200-116492/2-A
Matrix: Water
Analysis Batch: 116617

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 116492

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	50.0	49.57		ug/L		99	80 - 120
Selenium	40.0	38.57		ug/L		96	80 - 120
Zinc	200	181.9		ug/L		91	80 - 120

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 200-38498-10 MS — **Client Sample ID: PE0517-P2SCD-EQBLK-1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 116617 — **Prep Batch: 116492**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	6.5		50.0	57.22		ug/L		102	75 - 125
Selenium	4.0	U	40.0	37.98		ug/L		95	75 - 125
Zinc	20.0	U	200	184.4		ug/L		92	75 - 125

Lab Sample ID: 200-38498-10 MSD — **Client Sample ID: PE0517-P2SCD-EQBLK-1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 116617 — **Prep Batch: 116492**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Copper	6.5		50.0	57.29		ug/L		102	75 - 125	0	20
Selenium	4.0	U	40.0	37.90		ug/L		95	75 - 125	0	20
Zinc	20.0	U	200	185.4		ug/L		93	75 - 125	1	20

Lab Sample ID: MB 200-116803/1-A — **Client Sample ID: Method Blank**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 116890 — **Prep Batch: 116803**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.247	J	0.50	0.12	mg/Kg		05/18/17 09:26	05/19/17 19:34	1

Lab Sample ID: LCS 200-116803/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 116890 — **Prep Batch: 116803**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	5.00	5.20		mg/Kg		104	80 - 120

Lab Sample ID: 200-38498-7 MS — **Client Sample ID: PE0517-P2SCD-18.9-A-0012IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 116890 — **Prep Batch: 116803**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	34.4	B	5.40	36.28	4	mg/Kg	☼	34	75 - 125

Lab Sample ID: 200-38498-7 MSD — **Client Sample ID: PE0517-P2SCD-18.9-A-0012IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 116890 — **Prep Batch: 116803**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Copper	34.4	B	6.13	40.32	4	mg/Kg	☼	96	75 - 125	11	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 200-116602/11-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 116629 — **Prep Batch: 116602**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.044	ug/L		05/11/17 08:11	05/11/17 15:10	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 200-116602/12-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 116629 — **Prep Batch: 116602**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			1.00	1.02		ug/L		102	85 - 115		

Lab Sample ID: 200-38498-10 MS — **Client Sample ID: PE0517-P2SCD-EQBLK-1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 116629 — **Prep Batch: 116602**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	0.20	U	1.00	0.997		ug/L		100	85 - 115		

Lab Sample ID: 200-38498-10 MSD — **Client Sample ID: PE0517-P2SCD-EQBLK-1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 116629 — **Prep Batch: 116602**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.20	U	1.00	0.972		ug/L		97	85 - 115	3	20

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 200-116612/11-A — **Client Sample ID: Method Blank**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 116630 — **Prep Batch: 116612**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.033	U	0.033	0.012	mg/Kg		05/11/17 09:27	05/11/17 16:09	1

Lab Sample ID: LCS 200-116612/12-A — **Client Sample ID: Lab Control Sample**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 116630 — **Prep Batch: 116612**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.417	0.402		mg/Kg		96	80 - 120		

Lab Sample ID: 200-38498-7 MS — **Client Sample ID: PE0517-P2SCD-18.9-A-0012IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 116630 — **Prep Batch: 116612**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	0.61	F1	0.540	1.09		mg/Kg	☼	89	80 - 120		

Lab Sample ID: 200-38498-7 MSD — **Client Sample ID: PE0517-P2SCD-18.9-A-0012IN**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 116630 — **Prep Batch: 116612**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.61	F1	0.558	1.30	F1	mg/Kg	☼	123	80 - 120	17	20

Method: 7471B - Mercury (CVAA) (Continued)

Lab Sample ID: MB 200-116700/11-A
Matrix: Sediment
Analysis Batch: 116711

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 116700

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.033	U	0.033	0.012	mg/Kg		05/15/17 12:30	05/15/17 15:24	1

Lab Sample ID: LCS 200-116700/12-A
Matrix: Sediment
Analysis Batch: 116711

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 116700

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.417	0.415		mg/Kg		100	80 - 120

Method: Lloyd Kahn - Organic Carbon, Total (TOC)

Lab Sample ID: MB 200-116601/5
Matrix: Sediment
Analysis Batch: 116601

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1000	U	1000	380	mg/Kg			05/10/17 12:18	1

Lab Sample ID: LCS 200-116601/6
Matrix: Sediment
Analysis Batch: 116601

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	9260	9408		mg/Kg		102	75 - 125

Method: Moisture - Percent Moisture

Lab Sample ID: 200-38498-11 DU
Matrix: Sediment
Analysis Batch: 116479

Client Sample ID: PE0517-P2SCD-18.9-A-1218IN
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	69.3		71.1		%		3	20

Metals

Prep Batch: 116489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-1	PE0517-P2SCD-04-A-0006IN	Total/NA	Sediment	3050B	
200-38498-2	PE0517-P2SCD-04-B-0002IN	Total/NA	Sediment	3050B	
200-38498-3	PE0517-P2SCD-18.7-A-0001IN	Total/NA	Sediment	3050B	
200-38498-4	PE0517-P2SCD-18.7-B-0006IN	Total/NA	Sediment	3050B	
200-38498-5	PE0517-P2SCD-18.8-A-0006IN	Total/NA	Sediment	3050B	
200-38498-6	PE0517-P2SCD-18.8-B-0004IN	Total/NA	Sediment	3050B	
200-38498-7	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	3050B	
200-38498-8	PE0517-P2SCD-18.9-B-0006IN	Total/NA	Sediment	3050B	
200-38498-9	PE0517-P2SCD-18.9-B-0006IN-D	Total/NA	Sediment	3050B	
200-38498-11	PE0517-P2SCD-18.9-A-1218IN	Total/NA	Sediment	3050B	
MB 200-116489/1-A	Method Blank	Total/NA	Sediment	3050B	
LCS 200-116489/2-A	Lab Control Sample	Total/NA	Sediment	3050B	
200-38498-7 MS	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	3050B	
200-38498-7 MSD	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	3050B	

Prep Batch: 116492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-10	PE0517-P2SCD-EQBLK-1	Total/NA	Water	3010A	
MB 200-116492/1-A	Method Blank	Total/NA	Water	3010A	
LCS 200-116492/2-A	Lab Control Sample	Total/NA	Water	3010A	
200-38498-10 MS	PE0517-P2SCD-EQBLK-1	Total/NA	Water	3010A	
200-38498-10 MSD	PE0517-P2SCD-EQBLK-1	Total/NA	Water	3010A	

Prep Batch: 116602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-10	PE0517-P2SCD-EQBLK-1	Total/NA	Water	7470A	
MB 200-116602/11-A	Method Blank	Total/NA	Water	7470A	
LCS 200-116602/12-A	Lab Control Sample	Total/NA	Water	7470A	
200-38498-10 MS	PE0517-P2SCD-EQBLK-1	Total/NA	Water	7470A	
200-38498-10 MSD	PE0517-P2SCD-EQBLK-1	Total/NA	Water	7470A	

Prep Batch: 116612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-2	PE0517-P2SCD-04-B-0002IN	Total/NA	Sediment	7471B	
200-38498-3	PE0517-P2SCD-18.7-A-0001IN	Total/NA	Sediment	7471B	
200-38498-4	PE0517-P2SCD-18.7-B-0006IN	Total/NA	Sediment	7471B	
200-38498-5	PE0517-P2SCD-18.8-A-0006IN	Total/NA	Sediment	7471B	
200-38498-6	PE0517-P2SCD-18.8-B-0004IN	Total/NA	Sediment	7471B	
200-38498-7	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	7471B	
200-38498-8	PE0517-P2SCD-18.9-B-0006IN	Total/NA	Sediment	7471B	
200-38498-9	PE0517-P2SCD-18.9-B-0006IN-D	Total/NA	Sediment	7471B	
200-38498-11	PE0517-P2SCD-18.9-A-1218IN	Total/NA	Sediment	7471B	
MB 200-116612/11-A	Method Blank	Total/NA	Sediment	7471B	
LCS 200-116612/12-A	Lab Control Sample	Total/NA	Sediment	7471B	
200-38498-7 MS	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	7471B	
200-38498-7 MSD	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	7471B	

Analysis Batch: 116617

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-1	PE0517-P2SCD-04-A-0006IN	Total/NA	Sediment	6020A	116489
200-38498-2	PE0517-P2SCD-04-B-0002IN	Total/NA	Sediment	6020A	116489

Metals (Continued)

Analysis Batch: 116617 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-3	PE0517-P2SCD-18.7-A-0001IN	Total/NA	Sediment	6020A	116489
200-38498-4	PE0517-P2SCD-18.7-B-0006IN	Total/NA	Sediment	6020A	116489
200-38498-5	PE0517-P2SCD-18.8-A-0006IN	Total/NA	Sediment	6020A	116489
200-38498-6	PE0517-P2SCD-18.8-B-0004IN	Total/NA	Sediment	6020A	116489
200-38498-7	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	6020A	116489
200-38498-8	PE0517-P2SCD-18.9-B-0006IN	Total/NA	Sediment	6020A	116489
200-38498-9	PE0517-P2SCD-18.9-B-0006IN-D	Total/NA	Sediment	6020A	116489
200-38498-10	PE0517-P2SCD-EQBLK-1	Total/NA	Water	6020A	116492
200-38498-11	PE0517-P2SCD-18.9-A-1218IN	Total/NA	Sediment	6020A	116489
MB 200-116489/1-A	Method Blank	Total/NA	Sediment	6020A	116489
MB 200-116492/1-A	Method Blank	Total/NA	Water	6020A	116492
LCS 200-116489/2-A	Lab Control Sample	Total/NA	Sediment	6020A	116489
LCS 200-116492/2-A	Lab Control Sample	Total/NA	Water	6020A	116492
200-38498-7 MS	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	6020A	116489
200-38498-7 MSD	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	6020A	116489
200-38498-10 MS	PE0517-P2SCD-EQBLK-1	Total/NA	Water	6020A	116492
200-38498-10 MSD	PE0517-P2SCD-EQBLK-1	Total/NA	Water	6020A	116492

Analysis Batch: 116629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-10	PE0517-P2SCD-EQBLK-1	Total/NA	Water	7470A	116602
MB 200-116602/11-A	Method Blank	Total/NA	Water	7470A	116602
LCS 200-116602/12-A	Lab Control Sample	Total/NA	Water	7470A	116602
200-38498-10 MS	PE0517-P2SCD-EQBLK-1	Total/NA	Water	7470A	116602
200-38498-10 MSD	PE0517-P2SCD-EQBLK-1	Total/NA	Water	7470A	116602

Analysis Batch: 116630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-2	PE0517-P2SCD-04-B-0002IN	Total/NA	Sediment	7471B	116612
200-38498-3	PE0517-P2SCD-18.7-A-0001IN	Total/NA	Sediment	7471B	116612
200-38498-4	PE0517-P2SCD-18.7-B-0006IN	Total/NA	Sediment	7471B	116612
200-38498-5	PE0517-P2SCD-18.8-A-0006IN	Total/NA	Sediment	7471B	116612
200-38498-6	PE0517-P2SCD-18.8-B-0004IN	Total/NA	Sediment	7471B	116612
200-38498-7	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	7471B	116612
200-38498-8	PE0517-P2SCD-18.9-B-0006IN	Total/NA	Sediment	7471B	116612
200-38498-9	PE0517-P2SCD-18.9-B-0006IN-D	Total/NA	Sediment	7471B	116612
200-38498-11	PE0517-P2SCD-18.9-A-1218IN	Total/NA	Sediment	7471B	116612
MB 200-116612/11-A	Method Blank	Total/NA	Sediment	7471B	116612
LCS 200-116612/12-A	Lab Control Sample	Total/NA	Sediment	7471B	116612
200-38498-7 MS	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	7471B	116612
200-38498-7 MSD	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	7471B	116612

Prep Batch: 116700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-1	PE0517-P2SCD-04-A-0006IN	Total/NA	Sediment	7471B	
MB 200-116700/11-A	Method Blank	Total/NA	Sediment	7471B	
LCS 200-116700/12-A	Lab Control Sample	Total/NA	Sediment	7471B	

Analysis Batch: 116711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-1	PE0517-P2SCD-04-A-0006IN	Total/NA	Sediment	7471B	116700

Metals (Continued)

Analysis Batch: 116711 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 200-116700/11-A	Method Blank	Total/NA	Sediment	7471B	116700
LCS 200-116700/12-A	Lab Control Sample	Total/NA	Sediment	7471B	116700

Prep Batch: 116803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-1	PE0517-P2SCD-04-A-0006IN	Total/NA	Sediment	3050B	
200-38498-2	PE0517-P2SCD-04-B-0002IN	Total/NA	Sediment	3050B	
200-38498-3	PE0517-P2SCD-18.7-A-0001IN	Total/NA	Sediment	3050B	
200-38498-4	PE0517-P2SCD-18.7-B-0006IN	Total/NA	Sediment	3050B	
200-38498-5	PE0517-P2SCD-18.8-A-0006IN	Total/NA	Sediment	3050B	
200-38498-6	PE0517-P2SCD-18.8-B-0004IN	Total/NA	Sediment	3050B	
200-38498-7	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	3050B	
200-38498-8	PE0517-P2SCD-18.9-B-0006IN	Total/NA	Sediment	3050B	
200-38498-9	PE0517-P2SCD-18.9-B-0006IN-D	Total/NA	Sediment	3050B	
200-38498-11	PE0517-P2SCD-18.9-A-1218IN	Total/NA	Sediment	3050B	
MB 200-116803/1-A	Method Blank	Total/NA	Sediment	3050B	
LCS 200-116803/2-A	Lab Control Sample	Total/NA	Sediment	3050B	
200-38498-7 MS	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	3050B	
200-38498-7 MSD	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	3050B	

Analysis Batch: 116890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-1	PE0517-P2SCD-04-A-0006IN	Total/NA	Sediment	6020A	116803
200-38498-2	PE0517-P2SCD-04-B-0002IN	Total/NA	Sediment	6020A	116803
200-38498-3	PE0517-P2SCD-18.7-A-0001IN	Total/NA	Sediment	6020A	116803
200-38498-4	PE0517-P2SCD-18.7-B-0006IN	Total/NA	Sediment	6020A	116803
200-38498-5	PE0517-P2SCD-18.8-A-0006IN	Total/NA	Sediment	6020A	116803
200-38498-6	PE0517-P2SCD-18.8-B-0004IN	Total/NA	Sediment	6020A	116803
200-38498-7	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	6020A	116803
200-38498-8	PE0517-P2SCD-18.9-B-0006IN	Total/NA	Sediment	6020A	116803
200-38498-9	PE0517-P2SCD-18.9-B-0006IN-D	Total/NA	Sediment	6020A	116803
200-38498-11	PE0517-P2SCD-18.9-A-1218IN	Total/NA	Sediment	6020A	116803
MB 200-116803/1-A	Method Blank	Total/NA	Sediment	6020A	116803
LCS 200-116803/2-A	Lab Control Sample	Total/NA	Sediment	6020A	116803
200-38498-7 MS	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	6020A	116803
200-38498-7 MSD	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	6020A	116803

General Chemistry

Analysis Batch: 116479

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-1	PE0517-P2SCD-04-A-0006IN	Total/NA	Sediment	Moisture	
200-38498-2	PE0517-P2SCD-04-B-0002IN	Total/NA	Sediment	Moisture	
200-38498-3	PE0517-P2SCD-18.7-A-0001IN	Total/NA	Sediment	Moisture	
200-38498-4	PE0517-P2SCD-18.7-B-0006IN	Total/NA	Sediment	Moisture	
200-38498-5	PE0517-P2SCD-18.8-A-0006IN	Total/NA	Sediment	Moisture	
200-38498-6	PE0517-P2SCD-18.8-B-0004IN	Total/NA	Sediment	Moisture	
200-38498-7	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	Moisture	
200-38498-8	PE0517-P2SCD-18.9-B-0006IN	Total/NA	Sediment	Moisture	
200-38498-9	PE0517-P2SCD-18.9-B-0006IN-D	Total/NA	Sediment	Moisture	

General Chemistry (Continued)

Analysis Batch: 116479 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-11	PE0517-P2SCD-18.9-A-1218IN	Total/NA	Sediment	Moisture	
200-38498-11 DU	PE0517-P2SCD-18.9-A-1218IN	Total/NA	Sediment	Moisture	

Analysis Batch: 116601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-1	PE0517-P2SCD-04-A-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-38498-2	PE0517-P2SCD-04-B-0002IN	Total/NA	Sediment	Lloyd Kahn	
200-38498-3	PE0517-P2SCD-18.7-A-0001IN	Total/NA	Sediment	Lloyd Kahn	
200-38498-4	PE0517-P2SCD-18.7-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-38498-5	PE0517-P2SCD-18.8-A-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-38498-6	PE0517-P2SCD-18.8-B-0004IN	Total/NA	Sediment	Lloyd Kahn	
200-38498-7	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	Lloyd Kahn	
200-38498-8	PE0517-P2SCD-18.9-B-0006IN	Total/NA	Sediment	Lloyd Kahn	
200-38498-9	PE0517-P2SCD-18.9-B-0006IN-D	Total/NA	Sediment	Lloyd Kahn	
200-38498-11	PE0517-P2SCD-18.9-A-1218IN	Total/NA	Sediment	Lloyd Kahn	
MB 200-116601/5	Method Blank	Total/NA	Sediment	Lloyd Kahn	
LCS 200-116601/6	Lab Control Sample	Total/NA	Sediment	Lloyd Kahn	

Geotechnical

Analysis Batch: 116684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-38498-1	PE0517-P2SCD-04-A-0006IN	Total/NA	Sediment	D422	
200-38498-3	PE0517-P2SCD-18.7-A-0001IN	Total/NA	Sediment	D422	
200-38498-4	PE0517-P2SCD-18.7-B-0006IN	Total/NA	Sediment	D422	
200-38498-5	PE0517-P2SCD-18.8-A-0006IN	Total/NA	Sediment	D422	
200-38498-6	PE0517-P2SCD-18.8-B-0004IN	Total/NA	Sediment	D422	
200-38498-7	PE0517-P2SCD-18.9-A-0012IN	Total/NA	Sediment	D422	
200-38498-8	PE0517-P2SCD-18.9-B-0006IN	Total/NA	Sediment	D422	
200-38498-9	PE0517-P2SCD-18.9-B-0006IN-D	Total/NA	Sediment	D422	
200-38498-11	PE0517-P2SCD-18.9-A-1218IN	Total/NA	Sediment	D422	

Client Sample ID: PE0517-P2SCD-04-A-0006IN
Lab Sample ID: 200-38498-1
Date Collected: 05/04/17 17:15
Matrix: Sediment
Date Received: 05/05/17 12:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	116601	05/10/17 13:02	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	116479	05/08/17 09:20	KSH	TAL BUR
Total/NA	Analysis	D422		1	116684	05/17/17 09:57	MAP	TAL BUR

Client Sample ID: PE0517-P2SCD-04-A-0006IN
Lab Sample ID: 200-38498-1
Date Collected: 05/04/17 17:15
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 35.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			116489	05/08/17 14:00	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116617	05/10/17 16:56	MDK	TAL BUR
Total/NA	Prep	3050B			116803	05/18/17 09:26	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116890	05/19/17 19:45	MDK	TAL BUR
Total/NA	Prep	7471B			116700	05/15/17 12:30	SJO	TAL BUR
Total/NA	Analysis	7471B		2	116711	05/15/17 15:29	SJO	TAL BUR

Client Sample ID: PE0517-P2SCD-04-B-0002IN
Lab Sample ID: 200-38498-2
Date Collected: 05/04/17 17:30
Matrix: Sediment
Date Received: 05/05/17 12:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	116601	05/10/17 13:08	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	116479	05/08/17 09:20	KSH	TAL BUR

Client Sample ID: PE0517-P2SCD-04-B-0002IN
Lab Sample ID: 200-38498-2
Date Collected: 05/04/17 17:30
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 27.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			116489	05/08/17 14:00	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116617	05/10/17 17:02	MDK	TAL BUR
Total/NA	Prep	3050B			116803	05/18/17 09:26	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116890	05/19/17 19:51	MDK	TAL BUR
Total/NA	Prep	7471B			116612	05/11/17 09:27	SJO	TAL BUR
Total/NA	Analysis	7471B		1	116630	05/11/17 16:15	SJO	TAL BUR

Client Sample ID: PE0517-P2SCD-18.7-A-0001IN
Lab Sample ID: 200-38498-3
Date Collected: 05/04/17 14:45
Matrix: Sediment
Date Received: 05/05/17 12:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	116601	05/10/17 13:14	KSH	TAL BUR

Client Sample ID: PE0517-P2SCD-18.7-A-0001IN
Lab Sample ID: 200-38498-3
Date Collected: 05/04/17 14:45
Matrix: Sediment
Date Received: 05/05/17 12:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	116479	05/08/17 09:20	KSH	TAL BUR
Total/NA	Analysis	D422		1	116684	05/17/17 09:59	MAP	TAL BUR

Client Sample ID: PE0517-P2SCD-18.7-A-0001IN
Lab Sample ID: 200-38498-3
Date Collected: 05/04/17 14:45
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 46.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			116489	05/08/17 14:00	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116617	05/10/17 17:25	MDK	TAL BUR
Total/NA	Prep	3050B			116803	05/18/17 09:26	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116890	05/19/17 19:56	MDK	TAL BUR
Total/NA	Prep	7471B			116612	05/11/17 09:27	SJO	TAL BUR
Total/NA	Analysis	7471B		1	116630	05/11/17 16:17	SJO	TAL BUR

Client Sample ID: PE0517-P2SCD-18.7-B-0006IN
Lab Sample ID: 200-38498-4
Date Collected: 05/04/17 14:50
Matrix: Sediment
Date Received: 05/05/17 12:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	116601	05/10/17 13:21	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	116479	05/08/17 09:20	KSH	TAL BUR
Total/NA	Analysis	D422		1	116684	05/17/17 10:00	MAP	TAL BUR

Client Sample ID: PE0517-P2SCD-18.7-B-0006IN
Lab Sample ID: 200-38498-4
Date Collected: 05/04/17 14:50
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 54.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			116489	05/08/17 14:00	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116617	05/10/17 17:31	MDK	TAL BUR
Total/NA	Prep	3050B			116803	05/18/17 09:26	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116890	05/19/17 20:02	MDK	TAL BUR
Total/NA	Prep	7471B			116612	05/11/17 09:27	SJO	TAL BUR
Total/NA	Analysis	7471B		1	116630	05/11/17 16:18	SJO	TAL BUR

Client Sample ID: PE0517-P2SCD-18.8-A-0006IN
Lab Sample ID: 200-38498-5
Date Collected: 05/04/17 14:10
Matrix: Sediment
Date Received: 05/05/17 12:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	116601	05/10/17 13:27	KSH	TAL BUR

Client Sample ID: PE0517-P2SCD-18.8-A-0006IN
Lab Sample ID: 200-38498-5
Date Collected: 05/04/17 14:10
Matrix: Sediment
Date Received: 05/05/17 12:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	116479	05/08/17 09:20	KSH	TAL BUR
Total/NA	Analysis	D422		1	116684	05/17/17 10:01	MAP	TAL BUR

Client Sample ID: PE0517-P2SCD-18.8-A-0006IN
Lab Sample ID: 200-38498-5
Date Collected: 05/04/17 14:10
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 67.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			116489	05/08/17 14:00	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116617	05/10/17 17:36	MDK	TAL BUR
Total/NA	Prep	3050B			116803	05/18/17 09:26	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116890	05/19/17 20:08	MDK	TAL BUR
Total/NA	Prep	7471B			116612	05/11/17 09:27	SJO	TAL BUR
Total/NA	Analysis	7471B		1	116630	05/11/17 16:20	SJO	TAL BUR

Client Sample ID: PE0517-P2SCD-18.8-B-0004IN
Lab Sample ID: 200-38498-6
Date Collected: 05/04/17 14:00
Matrix: Sediment
Date Received: 05/05/17 12:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	116601	05/10/17 13:33	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	116479	05/08/17 09:20	KSH	TAL BUR
Total/NA	Analysis	D422		1	116684	05/17/17 10:02	MAP	TAL BUR

Client Sample ID: PE0517-P2SCD-18.8-B-0004IN
Lab Sample ID: 200-38498-6
Date Collected: 05/04/17 14:00
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 53.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			116489	05/08/17 14:00	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116617	05/10/17 17:42	MDK	TAL BUR
Total/NA	Prep	3050B			116803	05/18/17 09:26	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116890	05/19/17 20:13	MDK	TAL BUR
Total/NA	Prep	7471B			116612	05/11/17 09:27	SJO	TAL BUR
Total/NA	Analysis	7471B		1	116630	05/11/17 16:22	SJO	TAL BUR

Client Sample ID: PE0517-P2SCD-18.9-A-0012IN
Lab Sample ID: 200-38498-7
Date Collected: 05/04/17 13:30
Matrix: Sediment
Date Received: 05/05/17 12:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	116601	05/10/17 13:40	KSH	TAL BUR

Client Sample ID: PE0517-P2SCD-18.9-A-0012IN
Lab Sample ID: 200-38498-7
Date Collected: 05/04/17 13:30
Matrix: Sediment
Date Received: 05/05/17 12:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	116479	05/08/17 09:20	KSH	TAL BUR
Total/NA	Analysis	D422		1	116684	05/17/17 10:03	MAP	TAL BUR

Client Sample ID: PE0517-P2SCD-18.9-A-0012IN
Lab Sample ID: 200-38498-7
Date Collected: 05/04/17 13:30
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 73.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			116489	05/08/17 14:00	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116617	05/10/17 17:48	MDK	TAL BUR
Total/NA	Prep	3050B			116803	05/18/17 09:26	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116890	05/19/17 20:19	MDK	TAL BUR
Total/NA	Prep	7471B			116612	05/11/17 09:27	SJO	TAL BUR
Total/NA	Analysis	7471B		1	116630	05/11/17 16:23	SJO	TAL BUR

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN
Lab Sample ID: 200-38498-8
Date Collected: 05/04/17 13:45
Matrix: Sediment
Date Received: 05/05/17 12:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	116601	05/10/17 13:46	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	116479	05/08/17 09:20	KSH	TAL BUR
Total/NA	Analysis	D422		1	116684	05/17/17 10:04	MAP	TAL BUR

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN
Lab Sample ID: 200-38498-8
Date Collected: 05/04/17 13:45
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 57.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			116489	05/08/17 14:00	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116617	05/10/17 18:16	MDK	TAL BUR
Total/NA	Prep	3050B			116803	05/18/17 09:26	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116890	05/19/17 21:05	MDK	TAL BUR
Total/NA	Prep	7471B			116612	05/11/17 09:27	SJO	TAL BUR
Total/NA	Analysis	7471B		1	116630	05/11/17 16:32	SJO	TAL BUR

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN-D
Lab Sample ID: 200-38498-9
Date Collected: 05/04/17 13:46
Matrix: Sediment
Date Received: 05/05/17 12:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	116601	05/10/17 13:52	KSH	TAL BUR

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN-D
Lab Sample ID: 200-38498-9

Date Collected: 05/04/17 13:46
Matrix: Sediment
Date Received: 05/05/17 12:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	116479	05/08/17 09:20	KSH	TAL BUR
Total/NA	Analysis	D422		1	116684	05/17/17 10:06	MAP	TAL BUR

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN-D
Lab Sample ID: 200-38498-9

Date Collected: 05/04/17 13:46
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 53.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			116489	05/08/17 14:00	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116617	05/10/17 18:39	MDK	TAL BUR
Total/NA	Prep	3050B			116803	05/18/17 09:26	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116890	05/19/17 21:10	MDK	TAL BUR
Total/NA	Prep	7471B			116612	05/11/17 09:27	SJO	TAL BUR
Total/NA	Analysis	7471B		1	116630	05/11/17 16:33	SJO	TAL BUR

Client Sample ID: PE0517-P2SCD-EQBLK-1
Lab Sample ID: 200-38498-10

Date Collected: 05/04/17 16:45
Matrix: Water
Date Received: 05/05/17 12:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			116492	05/09/17 08:00	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116617	05/10/17 19:02	MDK	TAL BUR
Total/NA	Prep	7470A			116602	05/11/17 08:11	SJO	TAL BUR
Total/NA	Analysis	7470A		1	116629	05/11/17 15:13	SJO	TAL BUR

Client Sample ID: PE0517-P2SCD-18.9-A-1218IN
Lab Sample ID: 200-38498-11

Date Collected: 05/04/17 13:30
Matrix: Sediment
Date Received: 05/05/17 12:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1	116601	05/10/17 13:59	KSH	TAL BUR
Total/NA	Analysis	Moisture		1	116479	05/08/17 09:20	KSH	TAL BUR
Total/NA	Analysis	D422		1	116684	05/17/17 10:07	MAP	TAL BUR

Client Sample ID: PE0517-P2SCD-18.9-A-1218IN
Lab Sample ID: 200-38498-11

Date Collected: 05/04/17 13:30
Matrix: Sediment
Date Received: 05/05/17 12:12
Percent Solids: 69.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			116489	05/08/17 14:00	SJO	TAL BUR
Total/NA	Analysis	6020A		1	116617	05/10/17 18:45	MDK	TAL BUR
Total/NA	Prep	3050B			116803	05/18/17 09:26	SJO	TAL BUR

Lab Chronicle

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-38498-1
SDG: 200-38498-1

Client Sample ID: PE0517-P2SCD-18.9-A-1218IN
Date Collected: 05/04/17 13:30
Date Received: 05/05/17 12:12

Lab Sample ID: 200-38498-11
Matrix: Sediment
Percent Solids: 69.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6020A		1	116890	05/19/17 21:16	MDK	TAL BUR
Total/NA	Prep	7471B			116612	05/11/17 09:27	SJO	TAL BUR
Total/NA	Analysis	7471B		1	116630	05/11/17 16:35	SJO	TAL BUR

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Accreditation/Certification Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-38498-1
SDG: 200-38498-1

Laboratory: TestAmerica Burlington

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State Program	1	PH-0751	09-30-17
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	NA	02-02-18
Florida	NELAP	4	E87467	06-30-17 *
L-A-B	DoD ELAP		L2336	02-25-20
Maine	State Program	1	VT00008	04-17-19
Minnesota	NELAP	5	050-999-436	12-31-17
New Hampshire	NELAP	1	2006	12-18-17
New Jersey	NELAP	2	VT972	06-30-17 *
New York	NELAP	2	10391	04-01-18
Pennsylvania	NELAP	3	68-00489	04-30-18
Rhode Island	State Program	1	LAO00298	12-30-17
US Fish & Wildlife	Federal		LE-058448-0	10-31-17
USDA	Federal		P330-11-00093	12-05-19
Vermont	State Program	1	VT-4000	12-31-17
Virginia	NELAP	3	460209	12-14-17

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-38498-1
SDG: 200-38498-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL BUR
7470A	Mercury (CVAA)	SW846	TAL BUR
7471B	Mercury (CVAA)	SW846	TAL BUR
Lloyd Kahn	Organic Carbon, Total (TOC)	EPA	TAL BUR
Moisture	Percent Moisture	EPA	TAL BUR
D422	Grain Size	ASTM	TAL BUR

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Sample Summary

Client: Ashland LLC
Project/Site: Port Ewen DNS Sediment

TestAmerica Job ID: 200-38498-1
SDG: 200-38498-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
200-38498-1	PE0517-P2SCD-04-A-0006IN	Sediment	05/04/17 17:15	05/05/17 12:12
200-38498-2	PE0517-P2SCD-04-B-0002IN	Sediment	05/04/17 17:30	05/05/17 12:12
200-38498-3	PE0517-P2SCD-18.7-A-0001IN	Sediment	05/04/17 14:45	05/05/17 12:12
200-38498-4	PE0517-P2SCD-18.7-B-0006IN	Sediment	05/04/17 14:50	05/05/17 12:12
200-38498-5	PE0517-P2SCD-18.8-A-0006IN	Sediment	05/04/17 14:10	05/05/17 12:12
200-38498-6	PE0517-P2SCD-18.8-B-0004IN	Sediment	05/04/17 14:00	05/05/17 12:12
200-38498-7	PE0517-P2SCD-18.9-A-0012IN	Sediment	05/04/17 13:30	05/05/17 12:12
200-38498-8	PE0517-P2SCD-18.9-B-0006IN	Sediment	05/04/17 13:45	05/05/17 12:12
200-38498-9	PE0517-P2SCD-18.9-B-0006IN-D	Sediment	05/04/17 13:46	05/05/17 12:12
200-38498-10	PE0517-P2SCD-EQBLK-1	Water	05/04/17 16:45	05/05/17 12:12
200-38498-11	PE0517-P2SCD-18.9-A-1218IN	Sediment	05/04/17 13:30	05/05/17 12:12

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
ME6020CALi_A_00026	07/12/17	05/08/17	DI WATER, Lot NA	200 mL	MEHCLACIDs_00232	20 mL	Hydrogen Chloride	100000000 ug/L
					MEHNO3s_00203	5 mL	Nitric acid	25000000 ug/L
					MEIVAGs_00013	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVASs_00011	0.4 mL	As	2000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
							Ba-137 (Tune)	10000 ug/L
					MEIVBEs_00011	0.2 mL	Be	1000 ug/L
							Be-9 (Tune)	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
							Calcium hardness as calcium carbonate	1248500 ug/L
							Hardness as calcium carbonate	2072100 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
							Co-59 (Tune)	1000 ug/L
					MEIVCRs_00011	0.8 mL	Cr	4000 ug/L
							Cr (III)	4000 ug/L
					MEIVCUs_00015	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Hardness as calcium carbonate	2072100 ug/L
							Magnesium hardness as calcium carbonate	823600 ug/L
							Mg	200000 ug/L
							Mg-24 (Tune)	200000 ug/L
							Mg-25 (Tune)	200000 ug/L
							Mg-26 (Tune)	200000 ug/L
					MEIVMNs_00011	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00013	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Cation Exchange Capacity	500000 ug/L
							Na	500000 ug/L
					MEIVNIs_00012	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00018	0.2 mL	Pb	1000 ug/L
							Pb-206 (Tune)	1000 ug/L
							Pb-207 (Tune)	1000 ug/L
							Pb-208 (Tune)	1000 ug/L
					MEIVSBs_00012	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00014	0.8 mL	Selenium	4000 ug/L
					MEIVSRs_00007	1 mL	Sr	5000 ug/L
					MEIVTLs_00014	0.4 mL	Tl	2000 ug/L
					MEIVVs_00011	1 mL	V	5000 ug/L
					MEIVZNs_00015	4 mL	Zinc	20000 ug/L
.MEHCLACIDs_00232	04/13/18	JT Baker 0000155130, Lot 0000155130			(Purchased Reagent)		Hydrogen Chloride	1 mL/mL
.MEHNO3s_00203	04/26/18	Macron 0000162025, Lot 0000162025			(Purchased Reagent)		Nitric acid	1 mL/mL
.MEIVAGs_00013	05/08/18	IV/K2-AG03062, Lot K2-AG03062			(Purchased Reagent)		Ag	1000 ppm
.MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
.MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
							Ba-137 (Tune)	1000 ug/mL
.MEIVBEs_00011	05/05/18	IV K2-BE650750, Lot K2-BE650750			(Purchased Reagent)		Be	1000 ppm
							Be-9 (Tune)	1000 ppm
.MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
							Calcium hardness as calcium carbonate	24970 ug/mL
							Hardness as calcium carbonate	24970 ug/mL
.MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
.MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
							Co-59 (Tune)	1000 ug/mL
.MEIVCRs_00011	10/01/17	IV H2-CR03099, Lot H2-CR03099			(Purchased Reagent)		Cr	1000 ug/mL
							Cr (III)	1000 ug/mL
.MEIVCUs_00015	05/08/18	IV/M2-CU656225, Lot M2-CU656225			(Purchased Reagent)		Copper	1000 ug/mL
.MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
.MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
.MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Hardness as calcium carbonate	41180 ppm
							Magnesium hardness as calcium carbonate	41180 ppm
							Mg	10000 ppm
							Mg-24 (Tune)	10000 ppm
							Mg-25 (Tune)	10000 ppm
							Mg-26 (Tune)	10000 ppm
.MEIVMNs_00011	01/10/18	IV K2-MN651112, Lot K2-MN651112			(Purchased Reagent)		Mn	1000 ug/mL
.MEIVMOs_00013	01/05/18	Inorganic Ventures K2-MO02086, Lot K2-MO02086			(Purchased Reagent)		Mo	1000 ug/mL
.MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Cation Exchange Capacity	10000 ug/mL
							Na	10000 ug/mL
.MEIVNIs_00012	01/10/18	Inorganic Ventures J2-NI02103, Lot J2-NI02103			(Purchased Reagent)		Ni	1000 ug/mL
.MEIVPBs_00018	07/21/17	IV/J2-PB03074, Lot J2-PB03074			(Purchased Reagent)		Pb	1000 ug/mL
							Pb-206 (Tune)	1000 ug/mL
							Pb-207 (Tune)	1000 ug/mL
							Pb-208 (Tune)	1000 ug/mL
.MEIVSBs_00012	05/05/18	IV/K2-SB03048, Lot K2-SB03048			(Purchased Reagent)		Sb	1000 ug/mL
.MEIVSEs_00014	05/08/18	IV/ M2-SE02058R, Lot M2-SE02058R			(Purchased Reagent)		Selenium	1000 ug/mL
.MEIVSRs_00007	05/08/18	IV/ K2-SR02059, Lot K2-SR02059			(Purchased Reagent)		Sr	1000 ug/mL
.MEIVTLs_00014	01/10/18	Inorganic Ventures K2-TL651554, Lot K2-TL651554			(Purchased Reagent)		Tl	1000 ug/mL
.MEIVVs_00011	01/03/18	IV K2-V651103, Lot K2-V651103			(Purchased Reagent)		V	1000 ug/mL
.MEIVZNs_00015	01/10/18	IV K2-ZN02116, Lot K2-ZN02116			(Purchased Reagent)		Zinc	1000 ug/mL
ME6020CALi_B_00022	07/21/17	04/25/17	5% HCL / 2% HNO3, Lot 961049	500 mL	MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00007	20 mL	B	40000 ppb
					MEIVTHs_00010	1 mL	Th	2000 ppb
							Th-232 (Tune)	2000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVUs_00013	0.5 mL	U	1000 ppb
					MEIVWs_00012	1 mL	W	2000 ppb
					MEMS2%0.5%Riw_00244	476.5 mL	Hydrogen Chloride	4765000 ppb
							Nitric acid	19060000 ppb
.MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
.MEIVBs_00007	01/04/18	Inoganic Ventures K2-B652900, Lot K2-B652900			(Purchased Reagent)		B	1000 ppm
.MEIVTHs_00010	04/25/18	IV/K2-TH01118, Lot K2-TH01118			(Purchased Reagent)		Th	1000 ug/mL
							Th-232 (Tune)	1000 ug/mL
.MEIVUs_00013	01/06/18	Inorg Vent. J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
.MEIVWs_00012	01/10/18	Inorganic Ventures J2-W02027, Lot J2-W02027			(Purchased Reagent)		W	1000 ug/mL
.MEMS2%0.5%Riw_00244	09/30/17	03/30/17	DI WATER, Lot na	20 L	MEHCLACIDs_00230	100 mL	Hydrogen Chloride	0.5 %
					MEHNO3s_00201	400 mL	Nitric acid	2 %
..MEHCLACIDs_00230	12/28/17	JT Baker 0000132880, Lot 0000132880			(Purchased Reagent)		Hydrogen Chloride	1 mL/mL
..MEHNO3s_00201	02/21/18	Macron 0000162025, Lot 0000162025			(Purchased Reagent)		Nitric acid	1 mL/mL
ME6020ICVw_00470	05/14/17	05/10/17	DI WATER, Lot na	100 mL	MESCPICVi_00011	1 mL	Copper	625 ug/L
							Selenium	100 ug/L
							Zinc	625 ug/L
.MESCPICVi_00011	09/30/17	03/30/17	DI WATER, Lot na	200 mL	MESCPICV1_00004	20 mL	Copper	62500 ppb
							Selenium	10000 ppb
							Zinc	62500 ppb
..MESCPICV1_00004	01/04/18	SCP Science/S161222007, Lot S161222007			(Purchased Reagent)		Copper	625000 ug/L
							Selenium	100000 ug/L
							Zinc	625000 ug/L
ME6020ICVw_00473	05/20/17	05/19/17	DI WATER, Lot na	100 mL	MESCPICVi_00011	1 mL	Copper	625 ug/L
.MESCPICVi_00011	09/30/17	03/30/17	DI WATER, Lot na	200 mL	MESCPICV1_00004	20 mL	Copper	62500 ppb
..MESCPICV1_00004	01/04/18	SCP Science/S161222007, Lot S161222007			(Purchased Reagent)		Copper	625000 ug/L
ME6020STD1_00463	05/14/17	05/10/17	DI WATER, Lot na	250 mL	ME6020CALi_A_00026	0.25 mL	Ag	1 ug/L
							Al	50 ug/L
							As	4 ug/L
							Ba	10 ug/L
							Be	1 ug/L
							Ca	500 ug/L
							Cd	1 ug/L
							Co	1 ug/L
							Cr	4 ug/L
							Copper	5 ug/L
							Fe	200 ug/L
							K	500 ug/L
							Mg	200 ug/L
							Mn	2 ug/L
							Mo	10 ug/L
							Na	500 ug/L
							Ni	2 ug/L
							Pb	1 ug/L
							Sb	2 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Selenium	4 ug/L
							Tl	2 ug/L
							V	5 ug/L
							Zinc	20 ug/L
					ME6020CALi_B_00022	0.25 mL	As	4 ug/L
							B	40 ug/L
							Th	2 ug/L
							U	1 ug/L
							W	2 ug/L
.ME6020CALi_A_00026	07/12/17	05/08/17	DI WATER, Lot NA	200 mL	MEIVAGs_00013	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVASs_00011	0.4 mL	As	2000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00011	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00011	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00015	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00011	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00013	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00012	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00018	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00012	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00014	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00014	0.4 mL	Tl	2000 ug/L
					MEIVVs_00011	1 mL	V	5000 ug/L
					MEIVZNs_00015	4 mL	Zinc	20000 ug/L
..MEIVAGs_00013	05/08/18		IV/K2-AG03062, Lot K2-AG03062		(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17		IV J2-AL05009, Lot J2-AL05009		(Purchased Reagent)		Al	10000 ppm
..MEIVASs_00011	07/21/17		IV J2-AS02122, Lot J2-AS02122		(Purchased Reagent)		As	1000 ug/mL
..MEIVBAs_00016	07/21/17		IV J2-BA02093, Lot J2-BA02093		(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00011	05/05/18		IV K2-BE650750, Lot K2-BE650750		(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17		Inorg Vent./H2-CA04105, Lot H2-CA04105		(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17		IV J2-CD02063, Lot J2-CD02063		(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17		IV J2-CO02068, Lot J2-CO02068		(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00011	10/01/17		IV H2-CR03099, Lot H2-CR03099		(Purchased Reagent)		Cr	1000 ug/mL
..MEIVCUs_00015	05/08/18		IV/M2-CU656225, Lot M2-CU656225		(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17		IV./K2-FE04057, Lot K2-FE04057		(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17		IV J2-K03054, Lot J2-K03054		(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17		IV J2-MG03145, Lot J2-MG03145		(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00011	01/10/18		IV K2-MN651112, Lot K2-MN651112		(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00013	01/05/18		Inorganic Ventures K2-MO02086, Lot K2-MO02086		(Purchased Reagent)		Mo	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00012	01/10/18	Inorganic Ventures J2-NI02103, Lot J2-NI02103			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00018	07/21/17	IV/J2-PB03074, Lot J2-PB03074			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00012	05/05/18	IV/K2-SB03048, Lot K2-SB03048			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00014	05/08/18	IV/ M2-SE02058R, Lot M2-SE02058R			(Purchased Reagent)		Selenium	1000 ug/mL
..MEIVTLs_00014	01/10/18	Inorganic Ventures K2-TL651554, Lot K2-TL651554			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00011	01/03/18	IV K2-V651103, Lot K2-V651103			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00015	01/10/18	IV K2-ZN02116, Lot K2-ZN02116			(Purchased Reagent)		Zinc	1000 ug/mL
.ME6020CALi_B_00022	07/21/17	04/25/17	5% HCL / 2% HNO3, Lot 961049	500 mL	MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00007	20 mL	B	40000 ppb
					MEIVTHs_00010	1 mL	Th	2000 ppb
					MEIVUs_00013	0.5 mL	U	1000 ppb
					MEIVWs_00012	1 mL	W	2000 ppb
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00007	01/04/18	Inoganic Ventures K2-B652900, Lot K2-B652900			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00010	04/25/18	IV/K2-TH01118, Lot K2-TH01118			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00013	01/06/18	Inorg Vent. J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
..MEIVWs_00012	01/10/18	Inorganic Ventures J2-W02027, Lot J2-W02027			(Purchased Reagent)		W	1000 ug/mL
ME6020STD1_00465	05/20/17	05/19/17	DI WATER, Lot na	250 mL	ME6020CALi_A_00026	0.25 mL	Ag	1 ug/L
							Al	50 ug/L
							As	4 ug/L
							Ba	10 ug/L
							Be	1 ug/L
							Ca	500 ug/L
							Cd	1 ug/L
							Co	1 ug/L
							Cr	4 ug/L
							Copper	5 ug/L
							Fe	200 ug/L
							K	500 ug/L
							Mg	200 ug/L
							Mn	2 ug/L
							Mo	10 ug/L
							Na	500 ug/L
							Ni	2 ug/L
							Pb	1 ug/L
							Sb	2 ug/L
							Selenium	4 ug/L
							Tl	2 ug/L
							V	5 ug/L
							Zinc	20 ug/L
					ME6020CALi_B_00022	0.25 mL	As	4 ug/L

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							B	40 ug/L
							Th	2 ug/L
							U	1 ug/L
							W	2 ug/L
.ME6020CALi_A_00026	07/12/17	05/08/17	DI WATER, Lot NA	200 mL	MEIVAGs_00013	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVASs_00011	0.4 mL	As	2000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00011	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00011	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00015	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00011	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00013	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00012	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00018	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00012	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00014	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00014	0.4 mL	Tl	2000 ug/L
					MEIVVs_00011	1 mL	V	5000 ug/L
					MEIVZNs_00015	4 mL	Zinc	20000 ug/L
..MEIVAGs_00013	05/08/18		IV/K2-AG03062, Lot K2-AG03062		(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17		IV J2-AL05009, Lot J2-AL05009		(Purchased Reagent)		Al	10000 ppm
..MEIVASs_00011	07/21/17		IV J2-AS02122, Lot J2-AS02122		(Purchased Reagent)		As	1000 ug/mL
..MEIVBAs_00016	07/21/17		IV J2-BA02093, Lot J2-BA02093		(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00011	05/05/18		IV K2-BE650750, Lot K2-BE650750		(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17		Inorg Vent./H2-CA04105, Lot H2-CA04105		(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17		IV J2-CD02063, Lot J2-CD02063		(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17		IV J2-CO02068, Lot J2-CO02068		(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00011	10/01/17		IV H2-CR03099, Lot H2-CR03099		(Purchased Reagent)		Cr	1000 ug/mL
..MEIVCUs_00015	05/08/18		IV/M2-CU656225, Lot M2-CU656225		(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17		IV./K2-FE04057, Lot K2-FE04057		(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17		IV J2-K03054, Lot J2-K03054		(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17		IV J2-MG03145, Lot J2-MG03145		(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00011	01/10/18		IV K2-MN651112, Lot K2-MN651112		(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00013	01/05/18		Inorganic Ventures K2-MO02086, Lot K2-MO02086		(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17		Inorganic Ventures J2-NA03138, Lot J2-NA03138		(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00012	01/10/18		Inorganic Ventures J2-NI02103, Lot J2-NI02103		(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00018	07/21/17		IV/J2-PB03074, Lot J2-PB03074		(Purchased Reagent)		Pb	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVSBs_00012	05/05/18	IV/K2-SB03048, Lot K2-SB03048			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00014	05/08/18	IV/ M2-SE02058R, Lot M2-SE02058R			(Purchased Reagent)		Selenium	1000 ug/mL
..MEIVTLs_00014	01/10/18	Inorganic Ventures K2-TL651554, Lot K2-TL651554			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00011	01/03/18	IV K2-V651103, Lot K2-V651103			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00015	01/10/18	IV K2-ZN02116, Lot K2-ZN02116			(Purchased Reagent)		Zinc	1000 ug/mL
.ME6020CALi_B_00022	07/21/17	04/25/17	5% HCL / 2% HNO3, Lot 961049	500 mL	MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00007	20 mL	B	40000 ppb
					MEIVTHs_00010	1 mL	Th	2000 ppb
					MEIVUs_00013	0.5 mL	U	1000 ppb
					MEIVWs_00012	1 mL	W	2000 ppb
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00007	01/04/18	Inoganic Ventures K2-B652900, Lot K2-B652900			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00010	04/25/18	IV/K2-TH01118, Lot K2-TH01118			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00013	01/06/18	Inorg Vent. J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
..MEIVWs_00012	01/10/18	Inorganic Ventures J2-W02027, Lot J2-W02027			(Purchased Reagent)		W	1000 ug/mL
ME6020STD2_00468	05/14/17	05/10/17	DI WATER, Lot na	100 mL	ME6020CALi_A_00026	0.5 mL	Ag	5 ug/L
							Al	250 ug/L
							As	20 ug/L
							Ba	50 ug/L
							Be	5 ug/L
							Ca	2500 ug/L
							Cd	5 ug/L
							Co	5 ug/L
							Cr	20 ug/L
							Copper	25 ug/L
							Fe	1000 ug/L
							K	2500 ug/L
							Mg	1000 ug/L
							Mn	10 ug/L
							Mo	50 ug/L
							Na	2500 ug/L
							Ni	10 ug/L
							Pb	5 ug/L
							Sb	10 ug/L
							Selenium	20 ug/L
							Tl	10 ug/L
							V	25 ug/L
							Zinc	100 ug/L
					ME6020CALi_B_00022	0.5 mL	As	20 ug/L
							B	200 ug/L
							Th	10 ug/L
							U	5 ug/L
							W	10 ug/L
.ME6020CALi_A_00026	07/12/17	05/08/17	DI WATER, Lot NA	200 mL	MEIVAGs_00013	0.2 mL	Ag	1000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVASs_00011	0.4 mL	As	2000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00011	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00011	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00015	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00011	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00013	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00012	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00018	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00012	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00014	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00014	0.4 mL	Tl	2000 ug/L
					MEIVVs_00011	1 mL	V	5000 ug/L
					MEIVZNs_00015	4 mL	Zinc	20000 ug/L
..MEIVAGs_00013	05/08/18	IV/K2-AG03062, Lot K2-AG03062			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00011	05/05/18	IV K2-BE650750, Lot K2-BE650750			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00011	10/01/17	IV H2-CR03099, Lot H2-CR03099			(Purchased Reagent)		Cr	1000 ug/mL
..MEIVCUs_00015	05/08/18	IV/M2-CU656225, Lot M2-CU656225			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00011	01/10/18	IV K2-MN651112, Lot K2-MN651112			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00013	01/05/18	Inorganic Ventures K2-MO02086, Lot K2-MO02086			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00012	01/10/18	Inorganic Ventures J2-NI02103, Lot J2-NI02103			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00018	07/21/17	IV/J2-PB03074, Lot J2-PB03074			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00012	05/05/18	IV/K2-SB03048, Lot K2-SB03048			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00014	05/08/18	IV/ M2-SE02058R, Lot M2-SE02058R			(Purchased Reagent)		Selenium	1000 ug/mL
..MEIVTLs_00014	01/10/18	Inorganic Ventures K2-TL651554, Lot K2-TL651554			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00011	01/03/18	IV K2-V651103, Lot K2-V651103			(Purchased Reagent)		V	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVZNs_00015	01/10/18	IV K2-ZN02116, Lot K2-ZN02116			(Purchased Reagent)		Zinc	1000 ug/mL
.ME6020CALi_B_00022	07/21/17	04/25/17	5% HCL / 2% HNO3, Lot 961049	500 mL	MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00007	20 mL	B	40000 ppb
					MEIVTHs_00010	1 mL	Th	2000 ppb
					MEIVUs_00013	0.5 mL	U	1000 ppb
					MEIVWs_00012	1 mL	W	2000 ppb
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00007	01/04/18	Inoganic Ventures K2-B652900, Lot K2-B652900			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00010	04/25/18	IV/K2-TH01118, Lot K2-TH01118			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00013	01/06/18	Inorg Vent. J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
..MEIVWs_00012	01/10/18	Inorganic Ventures J2-W02027, Lot J2-W02027			(Purchased Reagent)		W	1000 ug/mL
ME6020STD2_00470	05/20/17	05/19/17	DI WATER, Lot na	100 mL	ME6020CALi_A_00026	0.5 mL	Ag	5 ug/L
							Al	250 ug/L
							As	20 ug/L
							Ba	50 ug/L
							Be	5 ug/L
							Ca	2500 ug/L
							Cd	5 ug/L
							Co	5 ug/L
							Cr	20 ug/L
							Copper	25 ug/L
							Fe	1000 ug/L
							K	2500 ug/L
							Mg	1000 ug/L
							Mn	10 ug/L
							Mo	50 ug/L
							Na	2500 ug/L
							Ni	10 ug/L
							Pb	5 ug/L
							Sb	10 ug/L
							Selenium	20 ug/L
							Tl	10 ug/L
							V	25 ug/L
							Zinc	100 ug/L
					ME6020CALi_B_00022	0.5 mL	As	20 ug/L
							B	200 ug/L
							Th	10 ug/L
							U	5 ug/L
							W	10 ug/L
.ME6020CALi_A_00026	07/12/17	05/08/17	DI WATER, Lot NA	200 mL	MEIVAGs_00013	0.2 mL	Ag	1000 ug/L
					MEIVALs_00012	1 mL	Al	50000 ug/L
					MEIVASs_00011	0.4 mL	As	2000 ug/L
					MEIVBAs_00016	2 mL	Ba	10000 ug/L
					MEIVBEs_00011	0.2 mL	Be	1000 ug/L
					MEIVCAwHRDs_00011	10 mL	Ca	500000 ug/L

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVCDs_00012	0.2 mL	Cd	1000 ug/L
					MEIVCOs_00012	0.2 mL	Co	1000 ug/L
					MEIVCRs_00011	0.8 mL	Cr	4000 ug/L
					MEIVCUs_00015	1 mL	Copper	5000 ug/L
					MEIVFEs_00015	4 mL	Fe	200000 ug/L
					MEIVKs_00013	10 mL	K	500000 ug/L
					MEIVMGs_00018	4 mL	Mg	200000 ug/L
					MEIVMNs_00011	0.4 mL	Mn	2000 ug/L
					MEIVMOs_00013	2 mL	Mo	10000 ug/L
					MEIVNAs_00016	10 mL	Na	500000 ug/L
					MEIVNIs_00012	0.4 mL	Ni	2000 ug/L
					MEIVPBs_00018	0.2 mL	Pb	1000 ug/L
					MEIVSBs_00012	0.4 mL	Sb	2000 ug/L
					MEIVSEs_00014	0.8 mL	Selenium	4000 ug/L
					MEIVTLs_00014	0.4 mL	Tl	2000 ug/L
					MEIVVs_00011	1 mL	V	5000 ug/L
					MEIVZNs_00015	4 mL	Zinc	20000 ug/L
..MEIVAGs_00013	05/08/18	IV/K2-AG03062, Lot K2-AG03062			(Purchased Reagent)		Ag	1000 ppm
..MEIVALs_00012	09/01/17	IV J2-AL05009, Lot J2-AL05009			(Purchased Reagent)		Al	10000 ppm
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba	1000 ug/mL
..MEIVBEs_00011	05/05/18	IV K2-BE650750, Lot K2-BE650750			(Purchased Reagent)		Be	1000 ppm
..MEIVCAwHRDs_00011	07/21/17	Inorg Vent./H2-CA04105, Lot H2-CA04105			(Purchased Reagent)		Ca	10000 ug/mL
..MEIVCDs_00012	07/21/17	IV J2-CD02063, Lot J2-CD02063			(Purchased Reagent)		Cd	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co	1000 ug/mL
..MEIVCRs_00011	10/01/17	IV H2-CR03099, Lot H2-CR03099			(Purchased Reagent)		Cr	1000 ug/mL
..MEIVCUs_00015	05/08/18	IV/M2-CU656225, Lot M2-CU656225			(Purchased Reagent)		Copper	1000 ug/mL
..MEIVFEs_00015	07/21/17	IV./K2-FE04057, Lot K2-FE04057			(Purchased Reagent)		Fe	10000 ppm
..MEIVKs_00013	07/12/17	IV J2-K03054, Lot J2-K03054			(Purchased Reagent)		K	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg	10000 ppm
..MEIVMNs_00011	01/10/18	IV K2-MN651112, Lot K2-MN651112			(Purchased Reagent)		Mn	1000 ug/mL
..MEIVMOs_00013	01/05/18	Inorganic Ventures K2-MO02086, Lot K2-MO02086			(Purchased Reagent)		Mo	1000 ug/mL
..MEIVNAs_00016	09/01/17	Inorganic Ventures J2-NA03138, Lot J2-NA03138			(Purchased Reagent)		Na	10000 ug/mL
..MEIVNIs_00012	01/10/18	Inorganic Ventures J2-NI02103, Lot J2-NI02103			(Purchased Reagent)		Ni	1000 ug/mL
..MEIVPBs_00018	07/21/17	IV/J2-PB03074, Lot J2-PB03074			(Purchased Reagent)		Pb	1000 ug/mL
..MEIVSBs_00012	05/05/18	IV/K2-SB03048, Lot K2-SB03048			(Purchased Reagent)		Sb	1000 ug/mL
..MEIVSEs_00014	05/08/18	IV/ M2-SE02058R, Lot M2-SE02058R			(Purchased Reagent)		Selenium	1000 ug/mL
..MEIVTLs_00014	01/10/18	Inorganic Ventures K2-TL651554, Lot K2-TL651554			(Purchased Reagent)		Tl	1000 ug/mL
..MEIVVs_00011	01/03/18	IV K2-V651103, Lot K2-V651103			(Purchased Reagent)		V	1000 ug/mL
..MEIVZNs_00015	01/10/18	IV K2-ZN02116, Lot K2-ZN02116			(Purchased Reagent)		Zinc	1000 ug/mL
.ME6020CALi_B_00022	07/21/17	04/25/17	5% HCL / 2% HNO3, Lot 961049	500 mL	MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00007	20 mL	B	40000 ppb
					MEIVTHs_00010	1 mL	Th	2000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MEIVUs_00013	0.5 mL	U	1000 ppb
					MEIVWs_00012	1 mL	W	2000 ppb
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00007	01/04/18	Inoganic Ventures K2-B652900, Lot K2-B652900			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00010	04/25/18	IV/K2-TH01118, Lot K2-TH01118			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00013	01/06/18	Inorg Vent. J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
..MEIVWs_00012	01/10/18	Inorganic Ventures J2-W02027, Lot J2-W02027			(Purchased Reagent)		W	1000 ug/mL
ME6020STD3_00470	05/14/17	05/10/17	DI WATER, Lot na	30 mL	6020CALi_UWTh_00016	0.3 mL	Th	20 ug/L
							U	10 ug/L
							W	20 ug/L
					MEIVCALi_00044	0.6 mL	Ag	100 ug/L
							As	200 ug/L
							B	250 ug/L
							Ba	1250 ug/L
							Be	625 ug/L
							Cd	200 ug/L
							Co	500 ug/L
							Copper	1250 ug/L
							Cr	400 ug/L
							Mn	1250 ug/L
							Ni	1250 ug/L
							Pb	1250 ug/L
							Selenium	200 ug/L
							Tl	200 ug/L
							V	1250 ug/L
							Zinc	1250 ug/L
							Ca	30000 ug/L
							K	10000 ug/L
							Mg	30000 ug/L
							Na	10000 ug/L
							Mo	1250 ug/L
							Sb	250 ug/L
							Al	30000 ug/L
							Fe	30000 ug/L
.6020CALi_UWTh_00016	09/30/17	04/25/17	DI WATER, Lot NA	100 mL	MEIVTHs_00010	0.2 mL	Th	2000 ug/L
					MEIVUs_00013	0.1 mL	U	1000 ug/L
					MEIVWs_00012	0.2 mL	W	2000 ug/L
..MEIVTHs_00010	04/25/18	IV/K2-TH01118, Lot K2-TH01118			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00013	01/06/18	Inorg Vent. J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
..MEIVWs_00012	01/10/18	Inorganic Ventures J2-W02027, Lot J2-W02027			(Purchased Reagent)		W	1000 ug/mL
.MEIVCALi_00044	06/01/17	03/30/17	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00005	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00011	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00008	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00008	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00005	02/01/18	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00011	03/30/18	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00008	06/01/17	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00008	02/01/18	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD3_00472	05/20/17	05/19/17	DI WATER, Lot na	30 mL	6020CALi_UWTh_00016	0.3 mL	Th	20 ug/L
							U	10 ug/L
							W	20 ug/L
					MEIVCALi_00044	0.6 mL	Ag	100 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							As	200 ug/L
							B	250 ug/L
							Ba	1250 ug/L
							Be	625 ug/L
							Cd	200 ug/L
							Co	500 ug/L
							Copper	1250 ug/L
							Cr	400 ug/L
							Mn	1250 ug/L
							Ni	1250 ug/L
							Pb	1250 ug/L
							Selenium	200 ug/L
							Tl	200 ug/L
							V	1250 ug/L
							Zinc	1250 ug/L
							Ca	30000 ug/L
							K	10000 ug/L
							Mg	30000 ug/L
							Na	10000 ug/L
							Mo	1250 ug/L
							Sb	250 ug/L
							Al	30000 ug/L
							Fe	30000 ug/L
.6020CALi_UWTh_00016	09/30/17	04/25/17	DI WATER, Lot NA	100 mL	MEIVTHs_00010	0.2 mL	Th	2000 ug/L
					MEIVUs_00013	0.1 mL	U	1000 ug/L
					MEIVWs_00012	0.2 mL	W	2000 ug/L
..MEIVTHs_00010	04/25/18	IV/K2-TH01118, Lot K2-TH01118			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00013	01/06/18	Inorg Vent. J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
..MEIVWs_00012	01/10/18	Inorganic Ventures J2-W02027, Lot J2-W02027			(Purchased Reagent)		W	1000 ug/mL
.MEIVCALi_00044	06/01/17	03/30/17	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00005	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00011	50 mL	Ca	1500000 ppb
							K	500000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00008	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00008	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00005	02/01/18	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00011	03/30/18	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00008	06/01/17	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00008	02/01/18	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD4_00211	05/14/17	05/10/17	DI WATER, Lot na	10 mL	6020CALi_UWTh_00016	0.3 mL	Th	60 ug/L
							U	30 ug/L
							W	60 ug/L
					MEIVCALi_00044	0.6 mL	Ag	300 ug/L
							As	600 ug/L
							B	750 ug/L
							Ba	3750 ug/L
							Be	1875 ug/L
							Cd	600 ug/L
							Co	1500 ug/L
							Copper	3750 ug/L
							Cr	1200 ug/L
							Mn	3750 ug/L
							Ni	3750 ug/L
							Pb	3750 ug/L
							Selenium	600 ug/L
							Tl	600 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							V	3750 ug/L
							Zinc	3750 ug/L
							Ca	90000 ug/L
							K	30000 ug/L
							Mg	90000 ug/L
							Na	30000 ug/L
							Mo	3750 ug/L
							Sb	750 ug/L
							Al	90000 ug/L
							Fe	90000 ug/L
.6020CALi_UWTh_00016	09/30/17	04/25/17	DI WATER, Lot NA	100 mL	MEIVTHs_00010	0.2 mL	Th	2000 ug/L
					MEIVUs_00013	0.1 mL	U	1000 ug/L
					MEIVWs_00012	0.2 mL	W	2000 ug/L
..MEIVTHs_00010	04/25/18	IV/K2-TH01118, Lot K2-TH01118			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00013	01/06/18	Inorg Vent. J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
..MEIVWs_00012	01/10/18	Inorganic Ventures J2-W02027, Lot J2-W02027			(Purchased Reagent)		W	1000 ug/mL
.MEIVCALi_00044	06/01/17	03/30/17	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00005	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00011	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00008	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00008	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00005	02/01/18	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00011	03/30/18	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00008	06/01/17	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00008	02/01/18	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD4_00213	05/20/17	05/19/17	DI WATER, Lot na	10 mL	6020CALi_UWTh_00016	0.3 mL	Th	60 ug/L
							U	30 ug/L
							W	60 ug/L
					MEIVCALi_00044	0.6 mL	Ag	300 ug/L
							As	600 ug/L
							B	750 ug/L
							Ba	3750 ug/L
							Be	1875 ug/L
							Cd	600 ug/L
							Co	1500 ug/L
							Copper	3750 ug/L
							Cr	1200 ug/L
							Mn	3750 ug/L
							Ni	3750 ug/L
							Pb	3750 ug/L
							Selenium	600 ug/L
							Tl	600 ug/L
							V	3750 ug/L
							Zinc	3750 ug/L
							Ca	90000 ug/L
							K	30000 ug/L
							Mg	90000 ug/L
							Na	30000 ug/L
							Mo	3750 ug/L
							Sb	750 ug/L
							Al	90000 ug/L
							Fe	90000 ug/L
.6020CALi_UWTh_00016	09/30/17	04/25/17	DI WATER, Lot NA	100 mL	MEIVTHs_00010	0.2 mL	Th	2000 ug/L
					MEIVUs_00013	0.1 mL	U	1000 ug/L
					MEIVWs_00012	0.2 mL	W	2000 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MEIVTHs_00010	04/25/18	IV/K2-TH01118, Lot K2-TH01118			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00013	01/06/18	Inorg Vent. J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
..MEIVWs_00012	01/10/18	Inorganic Ventures J2-W02027, Lot J2-W02027			(Purchased Reagent)		W	1000 ug/mL
.MEIVCALi_00044	06/01/17	03/30/17	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00005	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00011	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00008	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00008	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00005	02/01/18	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00011	03/30/18	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..META-70_00008	06/01/17	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00008	02/01/18	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD5_00204	05/14/17	05/10/17	DI WATER, Lot na	10 mL	6020CALi_UWTh_00016	0.6 mL	Th	120 ug/L
							U	60 ug/L
							W	120 ug/L
					MEIVCALi_00044	1 mL	Ag	500 ug/L
							As	1000 ug/L
							B	1250 ug/L
							Ba	6250 ug/L
							Be	3125 ug/L
							Cd	1000 ug/L
							Co	2500 ug/L
							Copper	6250 ug/L
							Cr	2000 ug/L
							Mn	6250 ug/L
							Ni	6250 ug/L
							Pb	6250 ug/L
							Selenium	1000 ug/L
							Tl	1000 ug/L
							V	6250 ug/L
							Zinc	6250 ug/L
							Ca	150000 ug/L
							K	50000 ug/L
							Mg	150000 ug/L
							Na	50000 ug/L
							Mo	6250 ug/L
							Sb	1250 ug/L
							Al	150000 ug/L
							Fe	150000 ug/L
.6020CALi_UWTh_00016	09/30/17	04/25/17	DI WATER, Lot NA	100 mL	MEIVTHs_00010	0.2 mL	Th	2000 ug/L
					MEIVUs_00013	0.1 mL	U	1000 ug/L
					MEIVWs_00012	0.2 mL	W	2000 ug/L
..MEIVTHs_00010	04/25/18	IV/K2-TH01118, Lot K2-TH01118			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00013	01/06/18	Inorg Vent. J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
..MEIVWs_00012	01/10/18	Inorganic Ventures J2-W02027, Lot J2-W02027			(Purchased Reagent)		W	1000 ug/mL
.MEIVCALi_00044	06/01/17	03/30/17	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00005	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00011	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00008	50 mL	Mo	62500 ppb
							Sb	12500 ppb
					META-71_00008	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00005	02/01/18	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00011	03/30/18	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00008	06/01/17	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00008	02/01/18	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
ME6020STD5_00206	05/20/17	05/19/17	DI WATER, Lot na	10 mL	6020CALi_UWTh_00016	0.6 mL	Th	120 ug/L
							U	60 ug/L
							W	120 ug/L
					MEIVCALi_00044	1 mL	Ag	500 ug/L
							As	1000 ug/L
							B	1250 ug/L
							Ba	6250 ug/L
							Be	3125 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cd	1000 ug/L
							Co	2500 ug/L
							Copper	6250 ug/L
							Cr	2000 ug/L
							Mn	6250 ug/L
							Ni	6250 ug/L
							Pb	6250 ug/L
							Selenium	1000 ug/L
							Tl	1000 ug/L
							V	6250 ug/L
							Zinc	6250 ug/L
							Ca	150000 ug/L
							K	50000 ug/L
							Mg	150000 ug/L
							Na	50000 ug/L
							Mo	6250 ug/L
							Sb	1250 ug/L
							Al	150000 ug/L
							Fe	150000 ug/L
.6020CALi_UWTh_00016	09/30/17	04/25/17	DI WATER, Lot NA	100 mL	MEIVTHs_00010	0.2 mL	Th	2000 ug/L
					MEIVUs_00013	0.1 mL	U	1000 ug/L
					MEIVWs_00012	0.2 mL	W	2000 ug/L
..MEIVTHs_00010	04/25/18	IV/K2-TH01118, Lot K2-TH01118			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00013	01/06/18	Inorg Vent. J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
..MEIVWs_00012	01/10/18	Inorganic Ventures J2-W02027, Lot J2-W02027			(Purchased Reagent)		W	1000 ug/mL
.MEIVCALi_00044	06/01/17	03/30/17	DI WATER, Lot NA	500 mL	MEIVTA-68-R1_00005	50 mL	Ag	5000 ppb
							As	10000 ppb
							B	12500 ppb
							Ba	62500 ppb
							Be	31250 ppb
							Cd	10000 ppb
							Co	25000 ppb
							Copper	62500 ppb
							Cr	20000 ppb
							Mn	62500 ppb
							Ni	62500 ppb
							Pb	62500 ppb
							Selenium	10000 ppb
							Tl	10000 ppb
							V	62500 ppb
							Zinc	62500 ppb
					META-69_00011	50 mL	Ca	1500000 ppb
							K	500000 ppb
							Mg	1500000 ppb
							Na	500000 ppb
					META-70_00008	50 mL	Mo	62500 ppb
							Sb	12500 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					META-71_00008	50 mL	Al	1500000 ppb
							Fe	1500000 ppb
..MEIVTA-68-R1_00005	02/01/18	IV/K2-MEB628028, Lot K2-MEB628028			(Purchased Reagent)		Ag	50 ug/mL
							As	100 ug/mL
							B	125 ug/mL
							Ba	625 ug/mL
							Be	312.5 ug/mL
							Cd	100 ug/mL
							Co	250 ug/mL
							Copper	625 ug/mL
							Cr	200 ug/mL
							Mn	625 ug/mL
							Ni	625 ug/mL
							Pb	625 ug/mL
							Selenium	100 ug/mL
							Tl	100 ug/mL
							V	625 ug/mL
							Zinc	625 ug/mL
..META-69_00011	03/30/18	IV K2-MEB637108, Lot K2-MEB637108			(Purchased Reagent)		Ca	15000 ug/mL
							K	5000 ug/mL
							Mg	15000 ug/mL
							Na	5000 ug/mL
..META-70_00008	06/01/17	IV J2-MEB615044, Lot J2-MEB615044			(Purchased Reagent)		Mo	625 ug/mL
							Sb	125 ug/mL
..META-71_00008	02/01/18	Inorg. Vent./K2-MEB628027, Lot K2-MEB628027			(Purchased Reagent)		Al	15000 ug/mL
							Fe	15000 ug/mL
mehgccvw_01093	05/12/17	05/11/17	DI WATER, Lot na	100 mL	MEHGCCVi_00265	1 mL	Nitric acid	3030000 ppb
							Mercury	100 ppb
					MEHNO3s_00203	0.3 mL	Nitric acid	3030000 ppb
.MEHGCCVi_00265	08/13/17	03/13/17	DI WATER, Lot na	100 mL	MEHNO3s_00201	0.3 mL	Nitric acid	3000000 ppb
					MEIVHGs_00016	1 mL	Mercury	10000 ppb
..MEHNO3s_00201	02/21/18	Macron 0000162025, Lot 0000162025			(Purchased Reagent)		Nitric acid	1 mL/mL
..MEIVHGs_00016	01/05/18	Inorg. Vent. J2-HG02140, Lot J2-HG02140			(Purchased Reagent)		Mercury	1000 ug/mL
.MEHNO3s_00203	04/26/18	Macron 0000162025, Lot 0000162025			(Purchased Reagent)		Nitric acid	1 mL/mL
mehgccvw_01094	05/16/17	05/15/17	DI WATER, Lot na	100 mL	MEHGCCVi_00265	1 mL	Nitric acid	3030000 ppb
							Mercury	100 ppb
					MEHNO3s_00203	0.3 mL	Nitric acid	3030000 ppb
.MEHGCCVi_00265	08/13/17	03/13/17	DI WATER, Lot na	100 mL	MEHNO3s_00201	0.3 mL	Nitric acid	3000000 ppb
					MEIVHGs_00016	1 mL	Mercury	10000 ppb
..MEHNO3s_00201	02/21/18	Macron 0000162025, Lot 0000162025			(Purchased Reagent)		Nitric acid	1 mL/mL
..MEIVHGs_00016	01/05/18	Inorg. Vent. J2-HG02140, Lot J2-HG02140			(Purchased Reagent)		Mercury	1000 ug/mL
.MEHNO3s_00203	04/26/18	Macron 0000162025, Lot 0000162025			(Purchased Reagent)		Nitric acid	1 mL/mL
MEHGICVw_00095	01/11/18	04/26/17	DI WATER, Lot na	500 mL	MEHGICVi_00038	1.5 mL	Nitric acid	2030000 ppb
							Mercury	30 ppb
					MEHNO3s_00202	1 mL	Nitric acid	2030000 ppb
.MEHGICVi_00038	01/11/18	04/26/17	DI WATER, Lot na	100 mL	MEHNO3s_00202	1 mL	Nitric acid	10000000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MESPEXHgs_00015	1 mL	Mercury	10000 ppb
..MEHNO3s_00202	04/07/18	Macron 0000162025, Lot 0000162025			(Purchased Reagent)		Nitric acid	1 mL/mL
..MESPEXHgs_00015	01/11/18	SPEX Certiprep 22-32HGY, Lot 22-32HGY			(Purchased Reagent)		Mercury	1000 ug/mL
.MEHNO3s_00202	04/07/18	Macron 0000162025, Lot 0000162025			(Purchased Reagent)		Nitric acid	1 mL/mL
MEMSABw_00236	07/21/17	05/01/17	DI WATER, Lot na	200 mL	ME6020CALi_B_00022	2 mL	As	45 ppb
							B	400 ppb
							Th	20 ppb
							U	10 ppb
							W	20 ppb
					ME6020ICS-OAs_00016	20 mL	Al	100000 ppb
							Ca	100000 ppb
							Fe	100000 ppb
							K	100000 ppb
							Mg	100000 ppb
							Mo	2000 ppb
							Na	100000 ppb
					MESCPCLPCRQLs_00006	0.5 mL	Ag	25 ppb
							As	45 ppb
							Ba	250 ppb
							Be	25 ppb
							Cd	25 ppb
							Co	25 ppb
							Copper	50 ppb
							Cr	50 ppb
							Mn	25 ppb
							Ni	25 ppb
							Pb	25 ppb
							Sb	50 ppb
							Selenium	125 ppb
							Tl	25 ppb
							V	25 ppb
							Zinc	50 ppb
.ME6020CALi_B_00022	07/21/17	04/25/17	5% HCL / 2% HNO3, Lot 961049	500 mL	MEIVASs_00011	1 mL	As	2000 ppb
					MEIVBs_00007	20 mL	B	40000 ppb
					MEIVTHs_00010	1 mL	Th	2000 ppb
					MEIVUs_00013	0.5 mL	U	1000 ppb
					MEIVWs_00012	1 mL	W	2000 ppb
..MEIVASs_00011	07/21/17	IV J2-AS02122, Lot J2-AS02122			(Purchased Reagent)		As	1000 ug/mL
..MEIVBs_00007	01/04/18	Inoganic Ventures K2-B652900, Lot K2-B652900			(Purchased Reagent)		B	1000 ppm
..MEIVTHs_00010	04/25/18	IV/K2-TH01118, Lot K2-TH01118			(Purchased Reagent)		Th	1000 ug/mL
..MEIVUs_00013	01/06/18	Inorg Vent. J2-U01107R, Lot J2-U01107R			(Purchased Reagent)		U	1000 ug/mL
..MEIVWs_00012	01/10/18	Inorganic Ventures J2-W02027, Lot J2-W02027			(Purchased Reagent)		W	1000 ug/mL
.ME6020ICS-OAs_00016	07/21/17	IV J2-MEB613036, Lot J2-MEB613036			(Purchased Reagent)		Al	1000 ug/mL
							Ca	1000 ug/mL
							Fe	1000 ug/mL

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							K	1000 ug/mL
							Mg	1000 ug/mL
							Mo	20 ug/mL
							Na	1000 ug/mL
.MESCPCLPCRQLs_00006	10/20/17	SCP S161013009, Lot S161013009			(Purchased Reagent)		Ag	10 ug/mL
							As	10 ug/mL
							Ba	100 ug/mL
							Be	10 ug/mL
							Cd	10 ug/mL
							Co	10 ug/mL
							Copper	20 ug/mL
							Cr	20 ug/mL
							Mn	10 ug/mL
							Ni	10 ug/mL
							Pb	10 ug/mL
							Sb	20 ug/mL
							Selenium	50 ug/mL
							Tl	10 ug/mL
							V	10 ug/mL
							Zinc	20 ug/mL
MEMSICSAw_00215	07/21/17	05/01/17	DI WATER, Lot na	200 mL	ME6020ICS-OAs_00016	20 mL	Al	100000 ppb
							Ca	100000 ppb
							Fe	100000 ppb
							K	100000 ppb
							Mg	100000 ppb
							Mo	2000 ppb
							Na	100000 ppb
.ME6020ICS-OAs_00016	07/21/17	IV J2-MEB613036, Lot J2-MEB613036			(Purchased Reagent)		Al	1000 ug/mL
							Ca	1000 ug/mL
							Fe	1000 ug/mL
							K	1000 ug/mL
							Mg	1000 ug/mL
							Mo	20 ug/mL
							Na	1000 ug/mL
MEMSISw_00195	08/25/17	05/08/17	DI WATER, Lot na	8000 mL	MEIVLi_00008	1.92 mL	Li-6 Internal Standard	240 ug/L
					MEMSINSTDi_00062	16 mL	In-115 (IS)	100 ug/L
.MEIVLi_00008	01/06/18	IV K2-LI651014, Lot K2-LI651014			(Purchased Reagent)		Li-6 Internal Standard	1000 ug/mL
.MEMSINSTDi_00062	08/25/17	05/08/17	DI WATER, Lot na	100 mL	MEIVINs_00026	0.5 mL	In-115 (IS)	50000 ug/L
..MEIVINs_00026	01/05/18	IV K2-IN01121, Lot K2-IN01121			(Purchased Reagent)		In-115 (IS)	10000 ug/mL
MEMSTUNEw_00081	07/21/17	05/08/17	DI WATER, Lot na	500 mL	MEMS6020TUNEi_00045	5 mL	Ba-137 (Tune)	10 ppb
							Be-9 (Tune)	10 ppb
							Ce-140 (Tune)	10 ppb
							Co-59 (Tune)	10 ppb
							In-113 (Tune)	10 ppb
							In-115 (Tune)	10 ppb
							Mg-24 (Tune)	10 ppb
							Mg-25 (Tune)	10 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Mg-26 (Tune)	10 ppb
							Pb-206 (Tune)	1 ppb
							Pb-207 (Tune)	1 ppb
							Pb-208 (Tune)	1 ppb
							Th-232 (Tune)	10 ppb
.MEMS6020TUNEi_00045	07/21/17	05/05/17	0.5% HCL / 2% HNO3, Lot 1035925	1000 mL	MEIVBAs_00016	1 mL	Ba-137 (Tune)	1 ppm
					MEIVBEs_00011	1 mL	Be-9 (Tune)	1 ppm
					MEIVCEs_00011	1 mL	Ce-140 (Tune)	1 ppm
					MEIVCOs_00012	1 mL	Co-59 (Tune)	1 ppm
					MEIVINs_00026	0.1 mL	In-113 (Tune)	1 ppm
							In-115 (Tune)	1 ppm
					MEIVMGs_00018	0.1 mL	Mg-24 (Tune)	1 ppm
							Mg-25 (Tune)	1 ppm
							Mg-26 (Tune)	1 ppm
					MEIVPBs_00018	0.1 mL	Pb-206 (Tune)	0.1 ppm
							Pb-207 (Tune)	0.1 ppm
							Pb-208 (Tune)	0.1 ppm
					MEIVTHs_00010	1 mL	Th-232 (Tune)	1 ppm
..MEIVBAs_00016	07/21/17	IV J2-BA02093, Lot J2-BA02093			(Purchased Reagent)		Ba-137 (Tune)	1000 ug/mL
..MEIVBEs_00011	05/05/18	IV K2-BE650750, Lot K2-BE650750			(Purchased Reagent)		Be-9 (Tune)	1000 ppm
..MEIVCEs_00011	01/04/18	Inorganic Ventures K2-CE01099, Lot K2-CE01099			(Purchased Reagent)		Ce-140 (Tune)	1000 ug/mL
..MEIVCOs_00012	07/21/17	IV J2-CO02068, Lot J2-CO02068			(Purchased Reagent)		Co-59 (Tune)	1000 ug/mL
..MEIVINs_00026	01/05/18	IV K2-IN01121, Lot K2-IN01121			(Purchased Reagent)		In-113 (Tune)	10000 ug/mL
							In-115 (Tune)	10000 ug/mL
..MEIVMGs_00018	07/21/17	IV J2-MG03145, Lot J2-MG03145			(Purchased Reagent)		Mg-24 (Tune)	10000 ppm
							Mg-25 (Tune)	10000 ppm
							Mg-26 (Tune)	10000 ppm
..MEIVPBs_00018	07/21/17	IV/J2-PB03074, Lot J2-PB03074			(Purchased Reagent)		Pb-206 (Tune)	1000 ug/mL
							Pb-207 (Tune)	1000 ug/mL
							Pb-208 (Tune)	1000 ug/mL
..MEIVTHs_00010	04/25/18	IV/K2-TH01118, Lot K2-TH01118			(Purchased Reagent)		Th-232 (Tune)	1000 ug/mL
WCLKLCSs_00019	01/30/18	LECO 1017, Lot 1017			(Purchased Reagent)		Total Organic Carbon	0.00926 g/g
WCTOCCALs_00016	04/30/19	AccuSPEC, Lot S170407005			(Purchased Reagent)		Total Organic Carbon	10000 mg/L

Reagent

ME6020ICS-OAs_00016

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	6020ICS-0A
Lot Number:	J2-MEB613036
Matrix:	1% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Chloride, 2 000 µg/mL ea: Carbon, 1 000 µg/mL ea: Aluminum, Calcium, Iron, Potassium, Magnesium, Sodium, Phosphorus, Sulfur, 20 µg/mL ea: Molybdenum, Titanium

954502
ID: ME6020ICS-OAs_00016
Exp:07/21/17 Prpd:MDK Opn:07/21/16
6020ICS-OA Stock Std
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	1 001 ± 4 µg/mL	Calcium, Ca	1 001 ± 6 µg/mL
Carbon, C	2 001 ± 9 µg/mL	Chloride, Cl	10 010.0 ± 40.0 µg/mL
Iron, Fe	1 001 ± 4 µg/mL	Magnesium, Mg	1 001 ± 4 µg/mL
Molybdenum, Mo	20.01 ± 0.09 µg/mL	Phosphorus, P	1 001 ± 5 µg/mL
Potassium, K	1 001 ± 4 µg/mL	Sodium, Na	1 001 ± 4 µg/mL
Sulfur, S	1 001 ± 4 µg/mL	Titanium, Ti	20.01 ± 0.11 µg/mL

Certified Density: 1.034 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
C	Acidimetric	84L	84L
Ca	ICP Assay	3109a	050825
Ca	EDTA	928	928
Cl	Acidimetric	84L	84L
Fe	ICP Assay	3126a	051031
Fe	EDTA	928	928
K	ICP Assay	3141a	051220
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
Mo	ICP Assay	3134	891307
Mo	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
S	Acidimetric	84L	84L
S	ICP Assay	3154	892205
Ti	ICP Assay	3162a	060808
Ti	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000207	M	Eu	<	0.000103	s	Na	<		M	Se	<	0.003315	M	Zn	0.010362
s	Al	<		s	Fe	<		M	Nb	<	0.000621	n	Si	<		M	Zr	< 0.000828
O	As	<	0.041360	M	Ga	<	0.000103	M	Nd	<	0.000103	M	Sm	<	0.000103			
M	Au	<	0.000205	M	Gd	<	0.000103	O	Ni	<	0.009092	M	Sn	<	0.000414			
M	B	<	0.006320	M	Ge	<	0.005388	M	Os	<	0.000102	O	Sr		0.004446			
M	Ba		0.000932	M	Hf	<	0.000103	s	P	<		M	Ta	<	0.000103			
O	Be	<	0.000103	M	Hg	<	0.000308	M	Pb		0.004662	M	Tb	<	0.000103			
M	Bi	<	0.000414	M	Ho	<	0.000103	M	Pd	<	0.000205	M	Te	<	0.001761			
s	Ca	<		M	In	<	0.000103	M	Pr	<	0.000103	M	Th	<	0.000103			
O	Cd	<	0.000827	M	Ir	<	0.000102	M	Pt	<	0.000103	s	Ti	<				
M	Ce	<	0.000414	s	K	<		M	Rb		0.011812	M	Tl	<	0.000103			
M	Co	<	0.001036	M	La	<	0.000103	M	Re	<	0.000103	M	Tm	<	0.000103			
M	Cr		0.011294	O	Li		0.001095	M	Rh	<	0.000103	M	U	<	0.000103			
M	Cs	<	0.000103	M	Lu	<	0.000103	M	Ru	<	0.000205	O	V	<	0.006204			
O	Cu	<	0.006809	s	Mg	<		s	S	<		M	W		0.001347			
M	Dy	<	0.000103	M	Mn		0.001554	M	Sb	<	0.000621	M	Y	<	0.000103			
M	Er	<	0.000103	s	Mo	<		O	Sc	<	0.000310	M	Yb	<	0.000103			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 06, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- January 06, 2019

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MWK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

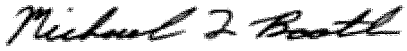
Certificate Prepared By:

James King Jr
Product Documentation Supervisor



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEHCLACIDs_00232

Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

Material No.: 9530-33
Batch No.: 0000155130
Manufactured Date: 2016/09/15
Retest Date: 2021/09/14

Certificate of Analysis

Test	Specification	Result
ACS - Assay (as HCl) (by acid-base titrn)	36.5 - 38.0 %	37.7
ACS - Color (APHA)	<= 10	5
ACS - Residue after Ignition	<= 3 ppm	< 1
ACS - Specific Gravity at 60°/60°F	1.185 - 1.192	1.190
ACS - Bromide (Br)	<= 0.005 %	< 0.005
ACS - Extractable Organic Substances	<= 5 ppm	< 1
ACS - Free Chlorine (as Cl_2)	<= 0.5 ppm	< 0.5
Phosphate (PO_4)	<= 0.05 ppm	< 0.03
Sulfate (SO_4)	<= 0.5 ppm	< 0.3
Sulfite (SO_3)	<= 0.8 ppm	0.3
Ammonium (NH_4)	<= 3 ppm	< 1
Trace Impurities - Arsenic (As)	<= 0.010 ppm	< 0.003
Trace Impurities - Aluminum (Al)	<= 10.0 ppb	0.2
Arsenic and Antimony (as As)	<= 5 ppb	< 3
Trace Impurities - Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities - Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities - Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 20.0 ppb	< 5.0
Trace Impurities - Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities - Calcium (Ca)	<= 50.0 ppb	12.5
Trace Impurities - Chromium (Cr)	<= 1.0 ppb	< 0.4
Trace Impurities - Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities - Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities - Gallium (Ga)	<= 1.0 ppb	< 0.2

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.573.2600
Avantor ™ Performance Materials Inc.
3477 Corporate Parkway. Suite #200. Center Valley, PA 18034. U.S.A. Phone: 610.573.2600 . Fax: 610.573.2610

Material No.: 9530-33
Batch No.: 0000155130

Test	Specification	Result
Trace Impurities - Germanium (Ge)	<= 3.0 ppb	< 2.0
Trace Impurities - Gold (Au)	<= 4.0 ppb	0.2
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities - Iron (Fe)	<= 15.0 ppb	<1
Trace Impurities - Lead (Pb)	<= 1.0 ppb	< 0.5
Trace Impurities - Lithium (Li)	<= 1.0 ppb	< 0.2
Trace Impurities - Magnesium (Mg)	<= 10.0 ppb	0.6
Trace Impurities - Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities - Mercury (Hg)	<= 0.5 ppb	0.2
Trace Impurities - Molybdenum (Mo)	<= 10.0 ppb	< 3.0
Trace Impurities - Nickel (Ni)	<= 4.0 ppb	< 0.3
Trace Impurities - Niobium (Nb)	<= 1.0 ppb	< 0.2
Trace Impurities - Potassium (K)	<= 9.0 ppb	< 2.0
Trace Impurities - Selenium (Se), For Information Only	ppb	1.0
Trace Impurities - Silicon (Si)	<= 100.0 ppb	< 0.4
Trace Impurities - Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities - Sodium (Na)	<= 100.0 ppb	0.5
Trace Impurities - Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities - Tantalum (Ta)	<= 1.0 ppb	< 0.9
Trace Impurities - Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities - Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities - Titanium (Ti)	<= 1.0 ppb	0.3
Trace Impurities - Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities - Zinc (Zn)	<= 5.0 ppb	0.3
Trace Impurities - Zirconium (Zr)	<= 1.0 ppb	< 0.1

For Laboratory, Research or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC

ISO
Phillipsburg, NJ 9001:2008, 14001:2004, FSSC 22000
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Deventer, The Netherlands 9001:2008, 14001:2004, 13485:2003
Gliwice, Poland 9001:2008, 13485:2012
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2008
Panoli, India 9001:2008



Jamie Ethier
Vice President Global Quality

Reagent

MEHNO3s_00201

Nitric Acid
AR Select® (ACS)
For Trace Element Analysis

Material No.: 6623-46
Batch No.: 0000162025
Manufactured Date: 2016/12/02
Retest Date: 2021/12/01

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
ACS - Assay (HNO_3)	68.0 - 70.0 %	69.5
Appearance	Passes Test	PT
ACS - Color (APHA)	<= 10	5
ACS - Arsenic (As)	<= 0.010 ppm	< 0.002
ACS - Arsenic and Antimony (as As)	<= 0.005 ppm	< 0.002
ACS - Chloride (Cl)	<= 0.04 ppm	< 0.03
ACS - Heavy Metals (as Pb)	<= 0.05 ppm	< 0.05
ACS - Residue after Ignition	<= 5 ppm	1
ACS - Sulfate (SO_4)	<= 0.4 ppm	< 0.2
Determine by Flame Photometry & ICP - Aluminum (Al)	<= 50.0 ppb	0.7
Determine by Flame Photometry & ICP - Barium (Ba)	<= 1.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Beryllium (Be)	<= 1.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Bismuth (Bi)	<= 10.0 ppb	< 1.0
Determine by Flame Photometry & ICP - Boron (B)	<= 10.0 ppb	< 0.7
Determine by Flame Photometry & ICP - Cadmium (Cd)	<= 1.0 ppb	< 0.3
Determine by Flame Photometry & ICP - * Calcium (Ca)	<= 200.0 ppb	2.0
Determine by Flame Photometry & ICP - Chromium (Cr)	<= 10.0 ppb	1.0
Determine by Flame Photometry & ICP - Cobalt (Co)	<= 5.0 ppb	< 0.3
Determine by Flame Photometry & ICP - Copper (Cu)	<= 1.0 ppb	< 0.1
Determine by Flame Photometry & ICP - Gallium (Ga)	<= 20.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Germanium (Ge)	<= 10.0 ppb	< 2.0
Determine by Flame Photometry & ICP - Gold (Au)	<= 10.0 ppb	< 0.2

Material No.: 6623-46
Batch No.: 0000162025

Test	Specification	Result
Determine by Flame Photometry & ICP - Iron (Fe)	<= 40.0 ppb	0.9
Determine by Flame Photometry & ICP - Lead (Pb)	<= 1.0 ppb	< 0.5
Determine by Flame Photometry & ICP - Lithium (Li)	<= 5.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Magnesium (Mg)	<= 10.0 ppb	0.2
Determine by Flame Photometry & ICP - Manganese (Mn)	<= 1.0 ppb	< 0.4
Determine by Flame Photometry & ICP - Mercury (Hg)	<= 1.0 ppb	< 0.1
Determine by Flame Photometry & ICP - Molybdenum (Mo)	<= 5.0 ppb	< 3.0
Determine by Flame Photometry & ICP - Nickel (Ni)	<= 5.0 ppb	< 0.3
Determine by Flame Photometry & ICP - Potassium (K)	<= 20.0 ppb	< 2.0
Determine by Flame Photometry & ICP - * Silicon (Si)	<= 50.0 ppb	1.0
Determine by Flame Photometry & ICP - Silver (Ag)	<= 5.0 ppb	0.8
Determine by Flame Photometry & ICP - * Sodium (Na)	<= 500.0 ppb	1.0
Determine by Flame Photometry & ICP - Strontium (Sr)	<= 1.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Thallium (Tl)	<= 20.0 ppb	2.0
Determine by Flame Photometry & ICP - Tin (Sn)	<= 10.0 ppb	< 0.8
Determine by Flame Photometry & ICP - Vanadium (V)	<= 1.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Zinc (Zn)	<= 5.0 ppb	0.3
Determine by Flame Photometry & ICP - Zirconium (Zr)	<= 10.0 ppb	0.2

For Laboratory, Research or Manufacturing Use
Determine by Flame Photometry & ICP
* May change over time due to extraction from glass container.

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC

ISO
Phillipsburg, NJ 9001:2008, 14001:2004, FSSC 22000
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Deventer, The Netherlands 9001:2008, 14001:2004, 13485:2003
Gliwice, Poland 9001:2008, 13485:2012
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2008
Panoli, India 9001:2008



Jamie Ethier
Vice President Global Quality

Reagent

MEHNO3s_00202

Nitric Acid
AR Select® (ACS)
For Trace Element Analysis

Material No.: 6623-46
Batch No.: 0000162025
Manufactured Date: 2016/12/02
Retest Date: 2021/12/01

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
ACS - Assay (HNO_3)	68.0 - 70.0 %	69.5
Appearance	Passes Test	PT
ACS - Color (APHA)	<= 10	5
ACS - Arsenic (As)	<= 0.010 ppm	< 0.002
ACS - Arsenic and Antimony (as As)	<= 0.005 ppm	< 0.002
ACS - Chloride (Cl)	<= 0.04 ppm	< 0.03
ACS - Heavy Metals (as Pb)	<= 0.05 ppm	< 0.05
ACS - Residue after Ignition	<= 5 ppm	1
ACS - Sulfate (SO_4)	<= 0.4 ppm	< 0.2
Determine by Flame Photometry & ICP - Aluminum (Al)	<= 50.0 ppb	0.7
Determine by Flame Photometry & ICP - Barium (Ba)	<= 1.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Beryllium (Be)	<= 1.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Bismuth (Bi)	<= 10.0 ppb	< 1.0
Determine by Flame Photometry & ICP - Boron (B)	<= 10.0 ppb	< 0.7
Determine by Flame Photometry & ICP - Cadmium (Cd)	<= 1.0 ppb	< 0.3
Determine by Flame Photometry & ICP - * Calcium (Ca)	<= 200.0 ppb	2.0
Determine by Flame Photometry & ICP - Chromium (Cr)	<= 10.0 ppb	1.0
Determine by Flame Photometry & ICP - Cobalt (Co)	<= 5.0 ppb	< 0.3
Determine by Flame Photometry & ICP - Copper (Cu)	<= 1.0 ppb	< 0.1
Determine by Flame Photometry & ICP - Gallium (Ga)	<= 20.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Germanium (Ge)	<= 10.0 ppb	< 2.0
Determine by Flame Photometry & ICP - Gold (Au)	<= 10.0 ppb	< 0.2

Material No.: 6623-46
Batch No.: 0000162025

Test	Specification	Result
Determine by Flame Photometry & ICP - Iron (Fe)	<= 40.0 ppb	0.9
Determine by Flame Photometry & ICP - Lead (Pb)	<= 1.0 ppb	< 0.5
Determine by Flame Photometry & ICP - Lithium (Li)	<= 5.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Magnesium (Mg)	<= 10.0 ppb	0.2
Determine by Flame Photometry & ICP - Manganese (Mn)	<= 1.0 ppb	< 0.4
Determine by Flame Photometry & ICP - Mercury (Hg)	<= 1.0 ppb	< 0.1
Determine by Flame Photometry & ICP - Molybdenum (Mo)	<= 5.0 ppb	< 3.0
Determine by Flame Photometry & ICP - Nickel (Ni)	<= 5.0 ppb	< 0.3
Determine by Flame Photometry & ICP - Potassium (K)	<= 20.0 ppb	< 2.0
Determine by Flame Photometry & ICP - * Silicon (Si)	<= 50.0 ppb	1.0
Determine by Flame Photometry & ICP - Silver (Ag)	<= 5.0 ppb	0.8
Determine by Flame Photometry & ICP - * Sodium (Na)	<= 500.0 ppb	1.0
Determine by Flame Photometry & ICP - Strontium (Sr)	<= 1.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Thallium (Tl)	<= 20.0 ppb	2.0
Determine by Flame Photometry & ICP - Tin (Sn)	<= 10.0 ppb	< 0.8
Determine by Flame Photometry & ICP - Vanadium (V)	<= 1.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Zinc (Zn)	<= 5.0 ppb	0.3
Determine by Flame Photometry & ICP - Zirconium (Zr)	<= 10.0 ppb	0.2

For Laboratory, Research or Manufacturing Use
Determine by Flame Photometry & ICP
* May change over time due to extraction from glass container.

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC

ISO
Phillipsburg, NJ 9001:2008, 14001:2004, FSSC 22000
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Deventer, The Netherlands 9001:2008, 14001:2004, 13485:2003
Gliwice, Poland 9001:2008, 13485:2012
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2008
Panoli, India 9001:2008



Jamie Ethier
Vice President Global Quality

Reagent

MEHNO3s_00203

Nitric Acid
AR Select® (ACS)
For Trace Element Analysis

Material No.: 6623-46
Batch No.: 0000162025
Manufactured Date: 2016/12/02
Retest Date: 2021/12/01

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
ACS - Assay (HNO_3)	68.0 - 70.0 %	69.5
Appearance	Passes Test	PT
ACS - Color (APHA)	<= 10	5
ACS - Arsenic (As)	<= 0.010 ppm	< 0.002
ACS - Arsenic and Antimony (as As)	<= 0.005 ppm	< 0.002
ACS - Chloride (Cl)	<= 0.04 ppm	< 0.03
ACS - Heavy Metals (as Pb)	<= 0.05 ppm	< 0.05
ACS - Residue after Ignition	<= 5 ppm	1
ACS - Sulfate (SO_4)	<= 0.4 ppm	< 0.2
Determine by Flame Photometry & ICP - Aluminum (Al)	<= 50.0 ppb	0.7
Determine by Flame Photometry & ICP - Barium (Ba)	<= 1.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Beryllium (Be)	<= 1.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Bismuth (Bi)	<= 10.0 ppb	< 1.0
Determine by Flame Photometry & ICP - Boron (B)	<= 10.0 ppb	< 0.7
Determine by Flame Photometry & ICP - Cadmium (Cd)	<= 1.0 ppb	< 0.3
Determine by Flame Photometry & ICP - * Calcium (Ca)	<= 200.0 ppb	2.0
Determine by Flame Photometry & ICP - Chromium (Cr)	<= 10.0 ppb	1.0
Determine by Flame Photometry & ICP - Cobalt (Co)	<= 5.0 ppb	< 0.3
Determine by Flame Photometry & ICP - Copper (Cu)	<= 1.0 ppb	< 0.1
Determine by Flame Photometry & ICP - Gallium (Ga)	<= 20.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Germanium (Ge)	<= 10.0 ppb	< 2.0
Determine by Flame Photometry & ICP - Gold (Au)	<= 10.0 ppb	< 0.2

Material No.: 6623-46
Batch No.: 0000162025

Test	Specification	Result
Determine by Flame Photometry & ICP - Iron (Fe)	<= 40.0 ppb	0.9
Determine by Flame Photometry & ICP - Lead (Pb)	<= 1.0 ppb	< 0.5
Determine by Flame Photometry & ICP - Lithium (Li)	<= 5.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Magnesium (Mg)	<= 10.0 ppb	0.2
Determine by Flame Photometry & ICP - Manganese (Mn)	<= 1.0 ppb	< 0.4
Determine by Flame Photometry & ICP - Mercury (Hg)	<= 1.0 ppb	< 0.1
Determine by Flame Photometry & ICP - Molybdenum (Mo)	<= 5.0 ppb	< 3.0
Determine by Flame Photometry & ICP - Nickel (Ni)	<= 5.0 ppb	< 0.3
Determine by Flame Photometry & ICP - Potassium (K)	<= 20.0 ppb	< 2.0
Determine by Flame Photometry & ICP - * Silicon (Si)	<= 50.0 ppb	1.0
Determine by Flame Photometry & ICP - Silver (Ag)	<= 5.0 ppb	0.8
Determine by Flame Photometry & ICP - * Sodium (Na)	<= 500.0 ppb	1.0
Determine by Flame Photometry & ICP - Strontium (Sr)	<= 1.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Thallium (Tl)	<= 20.0 ppb	2.0
Determine by Flame Photometry & ICP - Tin (Sn)	<= 10.0 ppb	< 0.8
Determine by Flame Photometry & ICP - Vanadium (V)	<= 1.0 ppb	< 0.2
Determine by Flame Photometry & ICP - Zinc (Zn)	<= 5.0 ppb	0.3
Determine by Flame Photometry & ICP - Zirconium (Zr)	<= 10.0 ppb	0.2

For Laboratory, Research or Manufacturing Use
Determine by Flame Photometry & ICP
* May change over time due to extraction from glass container.

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC

ISO
Phillipsburg, NJ 9001:2008, 14001:2004, FSSC 22000
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Deventer, The Netherlands 9001:2008, 14001:2004, 13485:2003
Gliwice, Poland 9001:2008, 13485:2012
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2008
Panoli, India 9001:2008



Jamie Ethier
Vice President Global Quality

Reagent

MEIVAGs_00013

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

toll: 800.669.6769 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAG1
Lot Number:	K2-AG03062
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Silver
Starting Material:	Ag shot
Starting Material Lot#:	2042
Starting Material Purity:	99.9993%

1033978
ID: MEIVAGs_00013
Exp: 05/11/20 Prpd: BAA
IV 1000 ppm Silver Stock

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 6 µg/mL

Certified Density: 1.026 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1000 ± 4 µg/mL**
ICP Assay NIST SRM 3151 Lot Number: 992212

Assay Method #2 **1000 ± 3 µg/mL**
Volhard NIST SRM 999c Lot Number: 999c

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

s	Ag	<		M	Eu	<	0.000247	O	Na		0.001171	M	Se	<	0.006432	O	Zn		0.000694
O	Al		0.000170	O	Fe		0.000383	M	Nb	<	0.001484	O	Si		0.001631	M	Zr	<	0.000247
M	As	<	0.000989	M	Ga	<	0.000247	M	Nd	<	0.000247	M	Sm	<	0.000247				
M	Au	<	0.002212	M	Gd	<	0.000247	O	Ni		0.000198	M	Sn		0.000270				
O	B		0.000330	M	Ge	<	0.000247	M	Os	<	0.000245	M	Sr	<	0.000247				
M	Ba	<	0.000247	M	Hf	<	0.000247	O	P	<	0.016678	M	Ta	<	0.000247				
O	Be	<	0.000211	M	Hg	<	0.001966	M	Pb		0.000343	M	Tb	<	0.000247				
M	Bi	<	0.004948	M	Ho	<	0.000247	M	Pd	<	0.000737	M	Te	<	0.002721				
O	Ca		0.000751	M	In		0.000072	M	Pr	<	0.000247	M	Th	<	0.000247				
M	Cd	<	0.000247	M	Ir	<	0.000245	M	Pt	<	0.002474	O	Ti	<	0.000626				
M	Ce	<	0.000247	O	K		0.000369	M	Rb	<	0.000247	M	Tl	<	0.002969				
M	Co	<	0.000247	M	La	<	0.000247	M	Re	<	0.000247	M	Tm	<	0.000247				
M	Cr	<	0.000989	O	Li		0.000013	M	Rh	<	0.000247	M	U	<	0.000247				
M	Cs	<	0.000247	M	Lu	<	0.000247	M	Ru	<	0.000737	M	V	<	0.000494				
O	Cu		0.000488	O	Mg		0.000102	O	S	<	0.021140	M	W	<	0.004948				
M	Dy	<	0.000247	M	Mn	<	0.000494	M	Sb	<	0.009896	M	Y	<	0.000247				
M	Er	<	0.000247	O	Mo	<	0.001099	O	Sc	<	0.000127	M	Yb	<	0.000247				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 107.87 +1 6 $Ag(H_2O)_6^+$
Chemical Compatibility -Stable in HNO_3, and HF. Avoid basic media. Ag forms more insoluble salts than any other metal. It also is subject to photochemical reduction to the metal in HCl media although 10 µg/mL solutions in 10% HCl [AgClx1-x] are commonly used in the analytical laboratory. The most common solubility problems exist with arsenate, arsenite , bromide, chloride, iodide, carbonate , chromate, cyanide, iodate, oxalate, oxide, sulfate, sulfide, tartrate, and thiocyanate in aqueous media. The addition of nitric acid renders many of these salts soluble.
Stability - 2-100 ppb levels stable for 75+ days when mixed with equivalent levels of all other elements including the precious metals (where chloride is present) when in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Ag Containing Samples (Preparation and Solution) -Metal (Soluble in HNO_3); Oxides (Soluble in HNO_3); Ores (Digestion with conc. HNO_3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 107 amu	1 ppt	N/A	91Zr16O
ICP-OES 243.779 nm	0.12/0.01 µg/mL	1	Mn, Th, Ni, Rh
ICP-OES 328.068 nm	0.007/0.0007 µg/mL	1	Ce, Rh, V
ICP-OES 338.289 nm	0.013/0.001 µg/mL	1	Ce, Cr, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 11, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- May 11, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

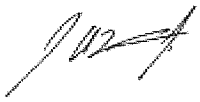
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVASs_00011

INORGANIC VENTURES
300 Technology Drive
Christiansburg VA 24073 USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.583.3030
fax: 540.585.0019
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAS1
Lot Number:	J2-AS02122
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: As
Starting Material:	As pieces
Starting Material Lot#:	1665
Starting Material Purity:	99.9980%

954503
ID: MEIVASs_00011
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000ppm Arsenic
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 5 µg/mL

Certified Density: 1.012 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1001 ± 4 µg/mL**
ICP Assay NIST SRM 3103a Lot Number: 100818

Assay Method #2 **1001 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.010063	M	Eu	<	0.015094	O	Na		0.002724	M	Se	<	0.040252	O	Zn		0.000656
O	Al		0.000556	O	Fe		0.000099	O	Nb	<	0.002000	O	Si		0.007755	M	Zr	<	0.025157
s	As	<		M	Ga	<	0.005031	M	Nd	<	0.010063	M	Sm	<	0.005031				
M	Au	<	0.015094	M	Gd	<	0.005031	O	Ni	<	0.002000	O	Sn	<	0.004000				
O	B		0.000298	M	Ge	<	0.030189	n	Os	<		M	Sr	<	0.002515				
M	Ba	<	0.050315	M	Hf	<	0.010063	O	P	<	0.002600	M	Ta	<	0.035220				
M	Be	<	0.002515	O	Hg	<	0.012000	M	Pb	<	0.015094	M	Tb	<	0.001509				
M	Bi	<	0.002012	M	Ho	<	0.002515	M	Pd	<	0.025157	M	Te	<	0.150946				
O	Ca		0.007954	M	In	<	0.050315	M	Pr	<	0.001509	M	Th	<	0.005031				
M	Cd	<	0.015094	M	Ir	<	0.025157	M	Pt	<	0.010063	M	Ti	<	0.251578				
M	Ce	<	0.025157	O	K		0.000596	M	Rb	<	0.005031	M	Tl	<	0.005031				
M	Co	<	0.015094	M	La	<	0.002515	O	Re	<	0.010000	M	Tm	<	0.002012				
O	Cr	<	0.000800	O	Li	<	0.000020	M	Rh	<	0.005031	M	U	<	0.010063				
M	Cs	<	0.001509	M	Lu	<	0.002012	M	Ru	<	0.010063	M	V	<	0.010063				
M	Cu	<	0.030189	O	Mg		0.000159	n	S	<		M	W	<	0.050315				
M	Dy	<	0.030189	O	Mn	<	0.000030	O	Sb	<	0.010000	M	Y	<	0.201262				
M	Er	<	0.025157	M	Mo	<	0.010063	M	Sc	<	0.050315	M	Yb	<	0.005031				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 74.92 ; mix of +3 and +5 ; 6 ; H_3AsO_4 and $HAsO_2$

Chemical Compatibility - Arsenic has no cationic chemistry. It is soluble in HCl, HNO_3,H_3PO_4, H_2SO_4 and HF aqueous matrices water and NH_4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO_3 / LDPE container.

As Containing Samples (Preparation and Solution) - Metal (soluble in 1:1 H_2O / HNO_3); Oxides (the oxide exists in crystalline and amorphous forms where the amorphic form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (one gram of powered sample is fused in a Ni crucible with 10 grams of a 1:1 mix of K_2CO_3 and KNO_3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of sample are fused with 15 grams of a 1:1 Na_2CO_3 / Na_2O_2 mix in a Ni crucible. The fuseate is extracted with water and acidified with HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 75 amu	20 ppt	N/A	40Ar35Cl, 59Co16O, 36Ar38Ar1H,8Ar37Cl,Ar39K, 150Nd2+,150Sm2+
ICP-OES 189.042 nm	0.05/0.005 µg/mL	1	Cr
ICP-OES 193.696 nm	0.1/0.01 µg/mL	1	V, Ge
ICP-OES 228.812 nm	0.1/0.01 µg/mL	1	Cd, Pt, Ir, Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 12, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 12, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

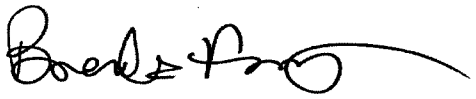
- Sealed TCT Bag Open Date: 2/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

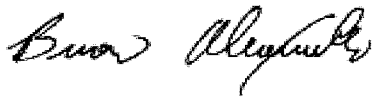
Certificate Prepared By:

Brenda Francis
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVBAs_00016

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBA1
Lot Number:	J2-BA02093
Matrix:	0.1% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Ba
Starting Material:	Ba(NO3)2
Starting Material Lot#:	1822
Starting Material Purity:	99.9991%

954505
ID: MEIVBAs_00016
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000ppm Barium Stock std
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 5 µg/mL

Certified Density: 1.000 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **997 ± 3 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

Assay Method #2 **998 ± 5 µg/mL**
ICP Assay NIST SRM 3104a Lot Number: 070222

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001998	O	Eu	<	0.001700	O	Na	<	0.020000	O	Se	<	0.050000	O	Zn	<	0.000400
O	Al	<	0.001500	O	Fe	<	0.001200	M	Nb	<	0.000199	O	Si	<	0.004000	M	Zr	<	0.000199
M	As	<	0.002997	M	Ga	<	0.000199	M	Nd	<	0.000199	O	Sm	<	0.007000				
M	Au	<	0.001998	M	Gd	<	0.000199	O	Ni	<	0.002000	M	Sn	<	0.003996				
M	B	<	0.005994	M	Ge	<	0.001198	n	Os	<		O	Sr		0.010487				
s	Ba	<		M	Hf	<	0.001998	O	P	<	0.050000	M	Ta	<	0.000999				
M	Be	<	0.000199	O	Hg	<	0.009000	M	Pb		0.001596	M	Tb	<	0.000199				
M	Bi	<	0.001398	M	Ho	<	0.000199	M	Pd	<	0.000199	M	Te	<	0.011988				
O	Ca		0.000499	M	In	<	0.000199	M	Pr	<	0.000199	M	Th	<	0.000199				
M	Cd	<	0.000199	M	Ir	<	0.000199	M	Pt	<	0.000199	O	Ti	<	0.000400				
M	Ce	<	0.000199	O	K	<	0.002000	M	Rb	<	0.000199	M	Tl	<	0.000199				
M	Co	<	0.000199	O	La	<	0.002000	M	Re	<	0.000199	M	Tm	<	0.000199				
M	Cr	<	0.000999	O	Li	<	0.000080	M	Rh	<	0.000199	M	U	<	0.000199				
M	Cs	<	0.000599	M	Lu	<	0.000199	M	Ru	<	0.000199	M	V	<	0.000199				
O	Cu	<	0.004000	O	Mg	<	0.000600	O	S		0.004994	M	W	<	0.005994				
M	Dy	<	0.000199	O	Mn	<	0.000400	M	Sb	<	0.001998	O	Y	<	0.000400				
M	Er	<	0.000199	O	Mo	<	0.000300	O	Sc	<	0.000300	M	Yb	<	0.000999				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference

n - Not Checked For s - Solution Standard Element

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001998	O	Eu	<	0.001700	O	Na	<	0.020000	O	Se	<	0.050000	O	Zn	<	0.000400
O	Al	<	0.001500	O	Fe	<	0.001200	M	Nb	<	0.000199	O	Si	<	0.004000	M	Zr	<	0.000199
M	As	<	0.002997	M	Ga	<	0.000199	M	Nd	<	0.000199	O	Sm	<	0.007000				
M	Au	<	0.001998	M	Gd	<	0.000199	O	Ni	<	0.002000	M	Sn	<	0.003996				
M	B	<	0.005994	M	Ge	<	0.001198	n	Os	<		O	Sr		0.010487				
s	Ba	<		M	Hf	<	0.001998	O	P	<	0.050000	M	Ta	<	0.000999				
M	Be	<	0.000199	O	Hg	<	0.009000	M	Pb		0.001596	M	Tb	<	0.000199				
M	Bi	<	0.001398	M	Ho	<	0.000199	M	Pd	<	0.000199	M	Te	<	0.011988				
O	Ca		0.000499	M	In	<	0.000199	M	Pr	<	0.000199	M	Th	<	0.000199				
M	Cd	<	0.000199	M	Ir	<	0.000199	M	Pt	<	0.000199	O	Ti	<	0.000400				
M	Ce	<	0.000199	O	K	<	0.002000	M	Rb	<	0.000199	M	Tl	<	0.000199				
M	Co	<	0.000199	O	La	<	0.002000	M	Re	<	0.000199	M	Tm	<	0.000199				
M	Cr	<	0.000999	O	Li	<	0.000080	M	Rh	<	0.000199	M	U	<	0.000199				
M	Cs	<	0.000599	M	Lu	<	0.000199	M	Ru	<	0.000199	M	V	<	0.000199				
O	Cu	<	0.004000	O	Mg	<	0.000600	O	S		0.004994	M	W	<	0.005994				
M	Dy	<	0.000199	O	Mn	<	0.000400	M	Sb	<	0.001998	O	Y	<	0.000400				
M	Er	<	0.000199	O	Mo	<	0.000300	O	Sc	<	0.000300	M	Yb	<	0.000999				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 137.33 +2 6 Ba(H2O)6+2
Chemical Compatibility - Soluble in HCl, and HNO3. Avoid H2SO4, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, iodate, molybdate, sulfite and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1 -10,000 ppm solutions chemically stable for years in 1-3.5% HNO3 / LDPE container.
Ba Containing Samples (Preparation and Solution) -Metal(is best dissolved in diluted HNO3); Ores(Carbonate fusion in Pt0 followed by HCl dissolution. If sulfate is present dissolve the fuseate using HCl / tartaric acid to prevent BaSO4 precipitate); Organic Matrices (dry ash and dissolve in dilute HCl.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 138 amu	1 ppt	N/A	122Sn16O, 122Te16O
ICP-OES 230.424 nm	0.004/0.0005 µg/mL	1	Mo, Ir, Co
ICP-OES 233.527 nm	0.004/0.0003 µg/mL	1	
ICP-OES 455.403 nm	0.002/0.0001 µg/mL	1	Zr, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 02, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 02, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MPK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVBEs_00011

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS
[illegible]

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBE1
Lot Number:	K2-BE650750
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Beryllium
Starting Material:	Be4O(OOCCH3)6
Starting Material Lot#:	1772
Starting Material Purity:	99.9999%

1033979
ID: MEIVBEs_00011
Exp: 08/11/20 Prpd: BAA
1000ppm Beryllium stock s

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1006 ± 5 µg/mL

Certified Density: 1.022 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1006 ± 4 µg/mL**
ICP Assay NIST SRM 3105a Lot Number: 090514

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000020	M	Eu	<	0.000030	O	Na		0.001569	M	Se	<	0.000080	O	Zn		0.003817
O	Al		0.001357	O	Fe		0.002162	M	Nb	<	0.000005	O	Si	<	0.003400	M	Zr	<	0.000050
M	As	<	0.000100	M	Ga	<	0.000010	M	Nd	<	0.000020	M	Sm	<	0.000010				
M	Au	<	0.000030	M	Gd	<	0.000010	O	Ni	<	0.003000	M	Sn	<	0.000050				
O	B	<	0.012000	M	Ge	<	0.000060	n	Os	<		M	Sr	<	0.000005				
M	Ba	<	0.000100	M	Hf	<	0.000020	n	P	<		M	Ta	<	0.000070				
s	Be	<		O	Hg	<	0.015000	M	Pb	<	0.000030	M	Tb	<	0.000003				
M	Bi	<	0.000004	M	Ho	<	0.000005	M	Pd	<	0.000050	M	Te	<	0.000300				
O	Ca		0.007464	M	In	<	0.000100	M	Pr	<	0.000003	M	Th	<	0.000010				
M	Cd	<	0.000030	M	Ir	<	0.000050	M	Pt	<	0.000020	M	Ti	<	0.000500				
M	Ce	<	0.000050	O	K	<	0.100000	M	Rb	<	0.000010	M	Tl	<	0.000010				
M	Co	<	0.000030	M	La	<	0.000005	M	Re	<	0.000010	M	Tm	<	0.000004				
O	Cr	<	0.009000	O	Li	<	0.000020	M	Rh	<	0.000010	M	U	<	0.000020				
M	Cs	<	0.000003	M	Lu	<	0.000004	M	Ru	<	0.000020	M	V	<	0.000020				
M	Cu	<	0.000060	O	Mg		0.000636	i	S	<		M	W	<	0.000100				
M	Dy	<	0.000060	O	Mn	<	0.000020	M	Sb	<	0.000005	M	Y	<	0.000400				
M	Er	<	0.000050	M	Mo	<	0.000020	O	Sc	<	0.000090	M	Yb	<	0.000010				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 9.01 +2 4 Be+(H2O)4+2
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Stable with all metals and inorganic anions.
Stability - 2-100 ppb levels stable for months in 1 % HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 5-10 % HNO3 / LDPE container.
Be Containing Samples (Preparation and Solution) - Meta l(is best dissolved in diluted H2SO4); BeO (boiling nitric, hydrochloric, or sulfuric acids or KHSO4 fusion); Ores (H2SO4/HF digestion or carbonate fusion in Pt0); Organic Matrices (sulfuric/peroxide digestion or nitric/sulfuric/perchloric acid decomposition, or dry ash and dissolution according to the BeO procedure above).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 9 amu	4 ppt	N/A	
ICP-OES 234.861 nm	0.0003/0.00016 µg/mL	1	Fe, Ta, Mo
ICP-OES 313.042 nm	0.0003/0.00009 µg/mL	1	V, Ce, U
ICP-OES 313.107 nm	0.0007/0.0005 µg/mL	1	Ce, Th, Tm

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 11, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- August 11, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

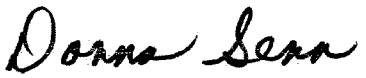
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician



Certificate Approved By:

Michael Booth
Supervisor, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Reagent

MEIVBs_00007

300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com
tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGB1
Lot Number:	K2-B652900
Matrix:	H2O
Value / Analyte(s):	1 000 µg/mL ea: Boron
Starting Material:	H3BO3
Starting Material Lot#:	1631
Starting Material Purity:	99.9998%

1005429
ID: MEIVBs_00007
Exp:01/04/18 Prpd:BAA Opn:01/04/17
Inorganic Ventures 1,000

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1 002 ± 6 µg/mL

Certified Density: 1.001 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1 004 ± 6 µg/mL**
ICP Assay NIST SRM 3107 Lot Number: 110830

Assay Method #2 **1 000 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000501	M	Eu	<	0.000100	O	Na		0.001788	M	Se	<	0.004008	O	Zn	<	0.002040
O	Al	<	0.002040	O	Fe	<	0.005100	M	Nb	<	0.000100	O	Si		0.006705	M	Zr	<	0.000301
M	As	<	0.003006	M	Ga	<	0.002004	M	Nd	<	0.000501	M	Sm	<	0.000100				
M	Au	<	0.002503	M	Gd	<	0.000100	O	Ni	<	0.003060	M	Sn	<	0.001002				
s	B	<		M	Ge	<	0.002004	M	Os	<	0.000100	M	Sr	<	0.000301				
O	Ba	<	0.002040	M	Hf	<	0.000501	i	P	<		M	Ta	<	0.000100				
O	Be	<	0.000510	M	Hg	<	0.000200	M	Pb	<	0.000100	M	Tb	<	0.000100				
M	Bi	<	0.000200	M	Ho	<	0.000100	M	Pd	<	0.002004	M	Te	<	0.001002				
O	Ca		0.000894	M	In	<	0.000802	M	Pr	<	0.000100	M	Th	<	0.000501				
M	Cd	<	0.000100	M	Ir	<	0.002002	M	Pt	<	0.000100	O	Ti	<	0.002040				
M	Ce	<	0.000100	O	K		0.001006	M	Rb	<	0.005009	M	Tl	<	0.000100				
M	Co	<	0.001002	M	La	<	0.000100	M	Re	<	0.000100	M	Tm	<	0.000100				
M	Cr	<	0.001002	O	Li	<	0.000102	M	Rh	<	0.000100	M	U	<	0.000100				
M	Cs	<	0.004008	M	Lu	<	0.000100	M	Ru	<	0.000100	O	V	<	0.005100				
M	Cu	<	0.002004	O	Mg		0.000073	i	S	<		M	W	<	0.001002				
M	Dy	<	0.000100	M	Mn	<	0.004008	M	Sb	<	0.000100	M	Y	<	0.000100				
M	Er	<	0.000100	M	Mo	<	0.000100	O	Sc	<	0.005100	M	Yb	<	0.000100				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 10.81 +3 4 B(OH)3 and B(OH)4-1
Chemical Compatibility -Moderately soluble in HCl, HNO3, H2SO4 and HF aqueous matrices and very soluble in NH4OH . Stable with all metals and inorganic anions at low to moderate ppm levels.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-1,000 ppm solutions chemically stable for years in 1% HNO3 / LDPE container. 1000 -10,000 ppm stable for years in dilute NH4OH / LDPE container.
B Containing Samples (Preparation and Solution) -Metal (Crystalline form is scarcely attacked by acids or alkaline solutions; amorphous form is soluble in conc. HNO3 or H2SO4); B(OH)3 (water soluble); Ores(avoid acid digestions and use caustic fusions in PtE); Organic Matrices (dry ash mixed with Na2CO3 in PtE at 450EC then increase heat to 1000EC to fuse; or perform a Na2O2 fusion in a NiE crucible / Parr bomb).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 11 amu	700 ppt	N/A	
ICP-OES 208.959 nm	0.007/0.0005 µg/mL	1	Mo
ICP-OES 249.678 nm	0.004/0.003 µg/mL	1	Os, W, Co, Cr, Hf
ICP-OES 249.773 nm	0.003/0.001 µg/mL	1	W, Ce, Co, Th, Ta, Mn, Mo, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 18, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- November 18, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 01/04/2017

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Reagent

MEIVCAwHRDs_00011

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6779 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCA10
Lot Number:	H2-CA04105
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Calcium
Starting Material:	CaO
Starting Material Lot#:	1748
Starting Material Purity:	99.9971%

954506
ID: MEIVCAwHRDs_00011
Exp:07/21/17 Prpd:MDK Opn:07/21/16
10000ppm Calcium stock st
Recd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9950 ± 24 µg/mL - weighted mean

Certified Density: 1.040 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **9956 ± 50 µg/mL**
ICP Assay NIST SRM 3109a Lot Number: 130213

Assay Method #2 **9948 ± 25 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stablility standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001138	M	Eu	<	0.000569	O	Na		0.051844	M	Se	<	0.017081	O	Zn		0.000607
O	Al	<	0.058400	O	Fe		0.001626	M	Nb	<	0.000569	O	Si		0.010604	M	Zr	<	0.001708
M	As	<	0.005693	M	Ga	<	0.000569	M	Nd	<	0.000569	M	Sm	<	0.000569				
M	Au	<	0.000572	M	Gd	<	0.000569	O	Ni	<	0.003504	M	Sn	<	0.001708				
O	B	<	0.023360	M	Ge	<	0.002846	M	Os	<	0.000572	O	Sr		0.336991				
O	Ba		0.010173	M	Hf	<	0.000569	O	P	<	0.058400	M	Ta	<	0.000569				
O	Be	<	0.000233	M	Hg	<	0.000572	M	Pb		0.003216	M	Tb	<	0.000569				
M	Bi	<	0.000569	M	Ho	<	0.000569	M	Pd	<	0.000569	M	Te	<	0.000569				
s	Ca	<		M	In	<	0.000569	M	Pr	<	0.000569	M	Th	<	0.000569				
O	Cd	<	0.000487	M	Ir	<	0.000572	M	Pt	<	0.000569	M	Ti	<	0.003985				
M	Ce	<	0.000569	O	K		0.016496	M	Rb		0.004135	M	Tl	<	0.000569				
O	Co	<	0.002336	M	La	<	0.000569	M	Re	<	0.000569	M	Tm	<	0.000569				
O	Cr	<	0.002336	M	Li	<	0.006832	M	Rh	<	0.000569	M	U	<	0.000569				
M	Cs		0.009190	O	Lu	<	0.000268	M	Ru	<	0.000572	O	V	<	0.001752				
O	Cu	<	0.004672	O	Mg		0.022896	n	S	<		M	W	<	0.001138				
M	Dy	<	0.000569	O	Mn	<	0.000350	M	Sb	<	0.003416	M	Y	<	0.000569				
M	Er	<	0.000569	M	Mo	<	0.005693	O	Sc	<	0.000584	M	Yb	<	0.000569				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 40.08 +2 6 Ca(H2O)6+2
Chemical Compatibility - Soluble in HCl and HNO3. Avoid H2SO4, HF, H3PO4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO3 / LDPE container.
Ca Containing Samples (Preparation and Solution) -Metal (best dissolved in diluted HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (dry ash and dissolution in dilute HCl. Do not heat when dissolving to avoid precipitation of SiO2). The oxide, hydroxide, carbonate, phosphate, and fluoride of calcium are soluble in % levels of HCl or HNO3. The sulfates (gypsum, anhydrite, etc.), certain silicates, and complex compounds require fusion with Na2CO3 followed by HCl / water dissolution. Note that contamination is a very real problem when analyzing for trace levels.
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 44 amu	1200 ppt	n/a	16O212C, 28Si16O, 88Sr
ICP-OES 393.366 nm	0.0002 / 0.00004 µg/mL	1	U, Ce
ICP-OES 396.847 nm	0.0005 / 0.00006 µg/mL	1	Th
ICP-OES 422.673 nm	0.01 / 0.001 µg/mL	1	Ge

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 03, 2014

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- December 03, 2017

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MMK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Brian Alexander

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVCDs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

toll: 800.669.6739 - 540.382.3082
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCO1
Lot Number:	J2-CO02068
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Cobalt
Starting Material:	Cobalt Carbonate
Starting Material Lot#:	1850
Starting Material Purity:	99.9990%

954510
ID: MEIVCDs_00012
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000 PPM Cd
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 996 ± 3 µg/mL

Certified Density: 1.017 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1	**997 ± 3 µg/mL** EDTA NIST SRM 928 Lot Number: 928
Assay Method #2	**994 ± 4 µg/mL** ICP Assay NIST SRM 3113 Lot Number: 000630 Co

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.005549	M	Eu	<	0.000555	O	Na		0.005793	M	Se	<	0.110979	O	Zn		0.000897
O	Al	<	0.034740	O	Fe	<	0.023160	M	Nb	<	0.001665	O	Si		0.002720	M	Zr	<	0.005549
i	As	<		M	Ga	<	0.000555	M	Nd	<	0.000555	M	Sm	<	0.001665				
M	Au	<	0.000555	M	Gd	<	0.000555	O	Ni		0.002094	M	Sn	<	0.016647				
M	B	<	0.066587	M	Ge	<	0.005549	n	Os	<		M	Sr	<	0.002774				
O	Ba		0.000625	M	Hf	<	0.000555	n	P	<		M	Ta	<	0.001110				
O	Be	<	0.000116	n	Hg	<		M	Pb	<	0.011098	M	Tb	<	0.000555				
M	Bi		0.005630	M	Ho	<	0.000555	M	Pd	<	0.000555	M	Te	<	0.022196				
O	Ca		0.005793	M	In	<	0.002774	M	Pr	<	0.001665	M	Th	<	0.000555				
M	Cd	<	0.000555	M	Ir	<	0.000555	M	Pt	<	0.000555	M	Ti	<	0.016647				
M	Ce	<	0.000555	O	K		0.000816	M	Rb	<	0.000555	M	Tl	<	0.000555				
s	Co	<		M	La	<	0.002774	M	Re	<	0.000555	M	Tm	<	0.000555				
M	Cr	<	0.022196	O	Li		0.000011	M	Rh	<	0.000555	M	U	<	0.000555				
M	Cs	<	0.000555	M	Lu	<	0.000555	M	Ru	<	0.000555	O	V	<	0.001158				
M	Cu	<	0.011098	O	Mg		0.001169	n	S	<		M	W	<	0.011098				
M	Dy	<	0.000555	O	Mn	<	0.001158	M	Sb	<	0.005549	M	Y	<	0.000555				
M	Er		0.001043	M	Mo	<	0.016647	M	Sc	<	0.005549	M	Yb	<	0.005549				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.93 +2 6 $Co(H_2O)_6^{2+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Co Containing Samples (Preparation and Solution) - Metal (soluble in HNO_3); Oxides (Soluble in HCl); Ores (dissolve in HCl / HNO_3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 59 amu	2 ppt	n/a	42Ca16O1H , 40Ar18O1H , 36Ar23Na, 43Ca16O, 24Mg35Cl
ICP-OES 228.616 nm	0.01/0.001 µg/mL	1	
ICP-OES 237.862 nm	0.01/0.002 µg/mL	1	W, Re, Al, Ta
ICP-OES 238.892 nm	0.01/0.002 µg/mL	1	Fe, W, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 15, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- September 15, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVCEs_00011

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.961.3000
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCE1
Lot Number:	K2-CE01099
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Cerium
Starting Material:	CeO2
Starting Material Lot#:	0609251 OCE
Starting Material Purity:	99.9980%

1005443
ID: MEIVCEs_00011
Exp:01/04/18 Prpd:BAA Opn:01/04/17
1000ppm Cerium stock std

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1 004 ± 4 µg/mL

Certified Density: 1.040 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1 000 ± 5 µg/mL**
ICP Assay NIST SRM 3110 Lot Number: 090504

Assay Method #2 **1 005 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001015	M	Eu	<	0.002031	M	Na		0.008019	M	Se	<	0.040628	O	Zn	<	0.050000
M	Al		0.008019	O	Fe	<	0.050000	M	Nb	<	0.002031	O	Si	<	0.200000	M	Zr	<	0.006094
M	As	<	0.001015	O	Ga	<	0.100000	M	Nd		0.005814	M	Sm	<	0.006094				
M	Au	<	0.000203	M	Gd	<	0.304715	M	Ni	<	0.016251	M	Sn	<	0.006094				
M	B	<	0.020314	M	Ge	<	0.002031	n	Os	<		M	Sr	<	0.002031				
M	Ba	<	0.040628	M	Hf	<	0.002031	i	P	<		M	Ta	<	0.002031				
M	Be	<	0.000203	i	Hg	<		M	Pb		0.000701	i	Tb	<					
M	Bi	<	0.000406	M	Ho	<	0.001015	M	Pd	<	0.001015	M	Te	<	0.040628				
O	Ca	<	0.100000	M	In	<	0.004062	M	Pr	<	0.406287	M	Th	<	0.001015				
M	Cd	<	0.002031	M	Ir	<	0.000203	M	Pt	<	0.000203	M	Ti	<	0.010157				
s	Ce	<		O	K	<	0.100000	M	Rb	<	0.000609	M	Tl	<	0.000203				
M	Co	<	0.000203	O	La	<	0.100000	M	Re	<	0.000203	M	Tm	<	0.000812				
M	Cr	<	0.020314	O	Li	<	0.005000	M	Rh	<	0.000203	M	U	<	0.000203				
M	Cs	<	0.002031	M	Lu		0.000631	M	Ru	<	0.000203	M	V	<	0.014220				
M	Cu	<	0.010157	O	Mg		0.000246	i	S	<		M	W	<	0.006094				
M	Dy		0.002115	M	Mn	<	0.006094	M	Sb	<	0.002031	M	Y		0.000360				
M	Er	<	0.004062	M	Mo	<	0.002031	M	Sc	<	0.001015	M	Yb		0.000651				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 140.12 +4 6 to 8,9,10 for some compounds Ce(OH)y(H2O)x+4-y

Chemical Compatibility -Soluble in HCl, and HNO3. Avoid HF, H3PO4, H2SO4 and neutral to basic media. Stable with most metals and inorganic anions forming an insoluble carbonate, oxide, oxalate, and fluoride and sparingly soluble sulfates (La - Eu exhibit low sulfate solubility). Avoid mixing with elements/solutions containing moderate amounts of fluoride.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5 % HNO3 / LDPE container.

Ce Containing Samples (Preparation and Solution) -Metal (Soluble in acids); Oxide (dissolved by heating in H2O / HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (dry ash and dissolve in 1:1 H2O/ HCl or HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 140 amu	1 ppt	n/a	124Sn16O, 124Te16O
ICP-OES 413.765 nm	0.05 / 0.0058 µg/mL	1	a Ce 413.747 line may effect Bkg. Corr.
ICP-OES 418.660 nm	0.05 / 0.003 µg/mL	1	Zr
ICP-OES 453.975 nm	0.06 / 0.0063 µg/mL	1	

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 08, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 08, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 01/04/17

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

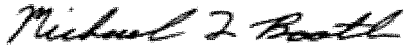
Certificate Prepared By:

Maurice Harris
Product Documentation Technician



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVCOs_00012

300 Technology Drive
Christiansburg, VA 24073 - USA
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCD1
Lot Number:	J2-CD02063
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Cadmium
Starting Material:	Cd shot
Starting Material Lot#:	1714
Starting Material Purity:	99.9958%

954511
ID: MEIVCOs_00012
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000ppm Cobalt Stock Std
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 5 µg/mL

Certified Density: 1.016 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **997 ± 5 µg/mL**
ICP Assay NIST SRM 3108 Lot Number: 130116

Assay Method #2 **999 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.009150	M	Eu	<	0.013725	O	Na		0.005201	M	Se	<	0.036600	O	Zn		0.000570
O	Al		0.001755	O	Fe	<	0.001100	M	Nb	<	0.002287	O	Si		0.028532	M	Zr	<	0.022875
M	As	<	0.045750	M	Ga	<	0.004575	M	Nd	<	0.009150	M	Sm	<	0.004575				
M	Au	<	0.013725	M	Gd	<	0.004575	O	Ni	<	0.003000	M	Sn	<	0.022875				
O	B		0.003950	M	Ge	<	0.027450	n	Os	<		M	Sr	<	0.002287				
M	Ba	<	0.045750	M	Hf	<	0.009150	O	P	<	0.003000	M	Ta	<	0.032025				
M	Be	<	0.002287	O	Hg	<	0.012000	M	Pb	<	0.013725	M	Tb	<	0.001372				
M	Bi	<	0.001830	M	Ho	<	0.002287	M	Pd	<	0.022875	O	Te	<	0.007000				
O	Ca		0.002194	O	In	<	0.002000	M	Pr	<	0.001372	M	Th	<	0.004575				
s	Cd	<		M	Ir	<	0.022875	M	Pt	<	0.009150	M	Ti	<	0.228751				
M	Ce	<	0.022875	O	K		0.000219	M	Rb	<	0.004575	M	Tl	<	0.004575				
M	Co	<	0.013725	M	La	<	0.002287	M	Re	<	0.004575	M	Tm	<	0.001830				
M	Cr	<	0.022875	O	Li	<	0.000020	M	Rh	<	0.004575	M	U	<	0.009150				
M	Cs	<	0.001372	M	Lu	<	0.001830	M	Ru	<	0.009150	M	V	<	0.009150				
M	Cu	<	0.027450	O	Mg		0.000197	O	S	<	0.030000	M	W	<	0.045750				
M	Dy	<	0.027450	M	Mn	<	0.018300	M	Sb	<	0.002287	M	Y	<	0.183001				
M	Er	<	0.022875	M	Mo	<	0.009150	M	Sc	<	0.045750	M	Yb	<	0.004575				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 112.41 +2 4 Cd2(OH) (aq)3+ and Cd(OH)(aq)
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 , and HF. Avoid basic media forming insoluble carbonate and hydroxide.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO3 / LDPE container.
Cd Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (soluble in HCl or HNO3); Ores (dissolve in HCl /HNO3 then take to fumes with H2SO4. The silica and lead sulfate are filtered off after the addition of water); Organic based (dry ash at 450°C and dissolve ash in HCl), (sulfuric / peroxide acid digestion).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 111 amu	11 ppt	n/a	95Mo16O
ICP-OES 214.438 nm	0.003 / 0.0003 µg/mL	1	Pt, Ir
ICP-OES 226.502 nm	0.003 / 0.0003 µg/mL	1	Ir
ICP-OES 228.802 nm	0.003 / 0.0003 µg/mL	1	Co, Ir, As, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 20, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 20, 2018**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Brian Alexander
PhD., Technical Process Director

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVCRs_00011

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 • USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 • 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number (010105).

ACCREDITED Testing Laboratory Certificate 863.01 ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCR(3)1
Lot Number:	H2-CR03099
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Cr3
Starting Material:	Cr Flake
Starting Material Lot#:	1661
Starting Material Purity:	99.9899%

768598 69
ID: MEIVCRs_00011
Exp: 10/01/17 Prpd: BAA
1000ppm Chromium (+3) sto

768598 69
ID: MEIVCRs_00011
Exp. 10/01/17 Prpd: BAA
1000ppm Chromium (+3) sto

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 997 ± 4 µg/mL - weighted mean

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **995 ± 5 µg/mL**
ICP Assay NIST SRM 3112a Lot Number: 030730

Assay Method #2 **999 ± 4 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

p 69

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / \{(1/u_{char\ a})^2 + (1/u_{char\ b})^2)\}$

$w_b = (1/u_{char\ b})^2 / \{(1/u_{char\ a})^2 + (1/u_{char\ b})^2)\}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

No correction has been applied for transpiration that will occur after the CRM/RM bottle has been removed from the sealed aluminized bag. See Sec. 7.0 (Instructions for the Correct Use of this Reference Material) for more information.

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001009	M	Er	<	0.010088	O	Mn		0.000796	i	S	<		M	V	<	0.075661
O	Al		0.002712	M	Eu	<	0.025220	M	Mo		0.020067	M	Sb	<	0.020176	M	W		0.005455
M	As	<	0.025220	O	Fe		0.040087	O	Na		0.017686	M	Sc	<	0.020176	M	Y	<	0.001513
M	Au	<	0.000504	O	Ga	<	0.024420	M	Nb	<	0.025220	M	Se	<	0.050441	M	Yb	<	0.000504
O	B		0.000855	M	Gd	<	0.000504	M	Nd	<	0.001009	n	Si	<		O	Zn	<	0.036630
M	Ba	<	0.025220	M	Ge	<	0.005044	O	Ni		0.001209	M	Sm	<	0.000504	M	Zr	<	0.015132
M	Be	<	0.002522	M	Hf	<	0.000504	n	Os	<		M	Sn	<	0.015132				
M	Bi	<	0.010088	O	Hg	<	0.003663	i	P	<		M	Sr	<	0.025220				
O	Ca		0.007428	M	Ho	<	0.000504	M	Pb		0.000572	M	Ta	<	0.000504				
M	Cd	<	0.001513	M	In	<	0.001009	M	Pd	<	0.005044	M	Tb	<	0.000504				
M	Ce	<	0.001513	M	Ir	<	0.000504	M	Pr	<	0.001513	M	Te	<	0.010088				
O	Co		0.007693	O	K		0.009432	M	Pt	<	0.000504	M	Th	<	0.000504				
s	Cr	<		M	La	<	0.000504	i	Rb	<		O	Ti		0.002358				
M	Cs	<	0.005044	O	Li	<	0.004274	M	Re	<	0.015132	M	Tl	<	0.000504				
O	Cu		0.006308	M	Lu	<	0.000504	M	Rh	<	0.100881	M	Tm	<	0.030264				
M	Dy	<	0.000504	O	Mg		0.000707	M	Ru	<	0.050441	M	U	<	0.000504				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30°C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4°C. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**.

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 52.00 +3 6 $Cr(H_2O)_6^{3+}$

Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4, HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Cr3 Containing Samples (Preparation and Solution) -Metal (soluble in HCl); Oxides/Ores (Chrome ore/oxides are very difficult to dissolve. The following procedures [A-D] are commonly used: A. Fusion with $KHSO_4$ and extraction with hot KCl. The residue fused with Na_2CO_3 and $KClO_3$, 3:1. B. Fusion with $NaKSO_4$ and NaF 2:1, C. Fusion with magnesia or lime and sodium or potassium carbonates, 4:1. D. Fusion with Na_2O_2 or NaOH and KNO_3 or NaOH and Na_2O_2. Nickel, iron, copper, or silver crucibles should be used for D. Platinum may be used for A, B, C); Organic Matrices (ash at 4500C followed by one of the fusion methods above or sulfuric/hydrogen peroxide acid digestions may be applicable to non oxide containing samples).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 52 amu	40 ppt	N/A	36S16O, 36Ar16O - The 50Cr, 53Cr, 54Cr lines suffer from many more potential interferences from sulfur, chlorine and argon compounds of oxygen, nitrogen and carbon.
ICP-OES 205.552 nm	0.006/0.0008 µg/mL	1	Os
ICP-OES 276.654 nm	0.01/0.001 µg/mL	1	Cu, Ta, V
ICP-OES 284.325 nm	0.008/0.0007 µg/mL	1	

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

- October 01, 2014

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec. 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of opening the sealed TCT bag or after the date given in Sec. 11.3, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

11.3 Lot Expiration Date

- October 01, 2017

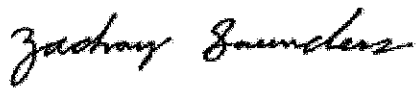
- The date after which this CRM/RM should not be used (See Sec. 11.2).

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

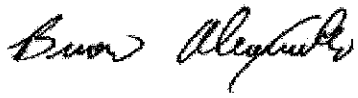
Certificate Prepared By:

Zach Saunders
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVCUs_00015

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.4799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCU1
Lot Number:	M2-CU656225
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Copper
Starting Material:	Cu shot
Starting Material Lot#:	1718
Starting Material Purity:	100.0000%

1034064
ID: MEIVCUs_00015
Exp: 03/06/21 Prpd: BAA
IV 1000ppm Copper stock s

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL

Certified Density: 1.017 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1001 ± 4 µg/mL**
ICP Assay NIST SRM 3114 Lot Number: 121207

Assay Method #2 **1002 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.017868	M	Eu	<	0.026802	O	Na		0.000168	M	Se	<	0.071472	O	Zn	<	0.010000
O	Al	<	0.000900	O	Fe	<	0.001100	M	Nb	<	0.004467	O	Si	<	0.003400	M	Zr	<	0.044670
M	As	<	0.089340	M	Ga	<	0.008934	M	Nd	<	0.017868	M	Sm	<	0.008934				
M	Au	<	0.026802	M	Gd	<	0.008934	O	Ni	<	0.003000	O	Sn	<	0.004000				
M	B	<	0.625382	M	Ge	<	0.053604	n	Os	<		M	Sr	<	0.004467				
M	Ba	<	0.089340	M	Hf	<	0.017868	O	P	<	0.002600	M	Ta	<	0.062538				
M	Be	<	0.004467	O	Hg	<	0.015000	O	Pb	<	0.010000	M	Tb	<	0.002680				
M	Bi	<	0.003573	M	Ho	<	0.004467	M	Pd	<	0.044670	M	Te	<	0.268021				
O	Ca		0.000078	M	In	<	0.089340	M	Pr	<	0.002680	M	Th	<	0.008934				
M	Cd	<	0.026802	M	Ir	<	0.044670	M	Pt	<	0.017868	M	Ti	<	0.446701				
M	Ce	<	0.044670	O	K		0.000224	M	Rb	<	0.008934	M	Tl	<	0.008934				
M	Co	<	0.026802	M	La	<	0.004467	M	Re	<	0.008934	M	Tm	<	0.003573				
M	Cr	<	0.044670	O	Li	<	0.000020	M	Rh	<	0.008934	M	U	<	0.017868				
M	Cs	<	0.002680	M	Lu	<	0.003573	M	Ru	<	0.017868	O	V	<	0.003000				
s	Cu	<		O	Mg		0.000003	n	S	<		M	W	<	0.089340				
M	Dy	<	0.053604	O	Mn	<	0.000200	M	Sb	<	0.004467	M	Y	<	0.357361				
M	Er	<	0.044670	M	Mo	<	0.017868	M	Sc	<	0.089340	M	Yb	<	0.008934				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 63.55 +2 6 $Cu(H_2O)_6^{2+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4, HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Cu Containing Samples (Preparation and Solution) -Metal (soluble in HNO_3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO_3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 63 amu	10 ppt	n/a	40Ar23Na 47Ti16O, 14N12C37Cl, 16O12C35Cl, 23Na40Ca
ICP-OES 219.958 nm	0.01/.002 µg/mL	1	Th, Ta, Nb, U, Hf
ICP-OES 224.700 nm	0.01/.001 µg/mL	1	Pb, Ir, Ni, W
ICP-OES 324.754 nm	0.06/.001 µg/mL		Nb, U, Th, Mo, Hf

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 06, 2017

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- March 06, 2021

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

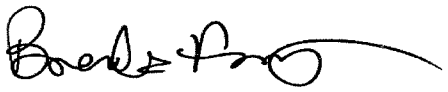
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician



Certificate Approved By:

Michael Booth
Supervisor, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Reagent

MEIVFEs_00015

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGFE10
Lot Number:	K2-FE04057
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Iron
Starting Material:	Iron Metal
Starting Material Lot#:	2031
Starting Material Purity:	99.9970%

954508

ID: MEIVFEs_00015

Exp:07/21/17 Prpd:MDK Opn:07/21/16

10,000 ppm Iron

Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10 003 ± 26 µg/mL

Certified Density: 1.041 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **9998 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **10038 ± 66 µg/mL**
ICP Assay NIST SRM 3126a Lot Number: 140812

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001204	M	Eu	<	0.000602	O	Na		0.014010	M	Se	<	0.003000	M	Zn	<	0.021079
O	Al		0.005094	s	Fe	<		M	Nb	<	0.001204	O	Si		0.056296	M	Zr	<	0.002409
M	As	<	0.063841	M	Ga	<	0.018068	M	Nd	<	0.000602	M	Sm	<	0.000602				
M	Au	<	0.000600	M	Gd	<	0.000602	M	Ni		0.029566	M	Sn	<	0.006022				
O	B	<	0.037050	i	Ge	<		M	Os	<	0.000600	M	Sr	<	0.000602				
O	Ba	<	0.001852	M	Hf	<	0.000602	i	P	<		M	Ta	<	0.000602				
O	Be	<	0.000617	M	Hg	<	0.003000	M	Pb	<	0.004818	M	Tb	<	0.000602				
M	Bi	<	0.000602	M	Ho	<	0.000602	M	Pd	<	0.001204	M	Te	<	0.008431				
O	Ca		0.011717	M	In	<	0.000602	M	Pr	<	0.000602	M	Th	<	0.000602				
M	Cd	<	0.000602	M	Ir	<	0.000600	M	Pt	<	0.000602	M	Ti	<	0.001806				
M	Ce	<	0.000602	O	K		0.005604	M	Rb	<	0.001204	M	Tl	<	0.000602				
M	Co		0.038013	M	La	<	0.000602	M	Re	<	0.000602	M	Tm	<	0.000602				
O	Cr		0.030058	O	Li	<	0.000123	M	Rh	<	0.000602	M	U	<	0.000602				
M	Cs	<	0.000602	M	Lu	<	0.000602	M	Ru	<	0.000600	M	V	<	0.004818				
M	Cu		0.023230	O	Mg		0.001783	O	S		0.020124	M	W	<	0.001204				
M	Dy	<	0.000602	O	Mn		0.076420	M	Sb		0.035404	M	Y	<	0.000602				
M	Er	<	0.000602	M	Mo		0.005838	M	Sc	<	0.001204	M	Yb	<	0.000602				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 55.85 +3 6 $Fe(H_2O)_6^{3+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF and H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Fe Containing Samples (Preparation and Solution) - Metal (Soluble in HCl); Oxides (If the oxide has been at a high temperature then Na_2CO_3 fusion in Pt0 followed by HCl dissolution otherwise dissolve in dilute HCl); Ores (See Oxides above using only the fusion approach).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 56 amu	970 ppt	N/A	40Ar15N1H, 40Ar16O, 36Ar17O1H , 38Ar18O, 37Cl18O1H, 40Ca16O
ICP-OES 238.204 nm	0.005/0.001 µg/mL	1	Ru, Co
ICP-OES 239.562 nm	0.005/0.001 µg/mL	1	Co, W, Cr
ICP-OES 259.940 nm	0.006/0.001 µg/mL	1	Hf, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 27, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- February 27, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVHGs_00016

300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com
tel: 800.669.4796 - 540.382.3030
fax: 540.382.3031
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 863.01
ACCREDITED Reference Material Producer Certificate 863.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGHG1
Lot Number:	J2-HG02140
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Mercury
Starting Material:	Hg Metal
Starting Material Lot#:	1780
Starting Material Purity:	99.9997%

1005710
ID: MEIVHGS_00016
Exp:01/05/18 Prpd:BAA Opn:01/05/17
IV 1000ppm Mercury Stock

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1 000 ± 3 µg/mL

Certified Density: 1.029 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1004 ± 5 µg/mL**
ICP Assay NIST SRM 3133 Lot Number: 061204

Assay Method #2 **998 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.003050	M	Eu	<	0.000203	O	Na		0.000779	M	Se	<	0.014233	O	Zn		0.000145
O	Al	<	0.000753	O	Fe	<	0.001614	M	Nb	<	0.000610	O	Si		0.000890	O	Zr	<	0.001614
M	As	<	0.001017	M	Ga	<	0.000203	M	Nd	<	0.000203	M	Sm	<	0.000203				
M	Au	<	0.002033	M	Gd	<	0.000203	O	Ni	<	0.001614	M	Sn	<	0.000203				
M	B	<	0.004067	M	Ge	<	0.001627	n	Os	<		O	Sr	<	0.000215				
M	Ba	<	0.000610	M	Hf	<	0.000610	O	P	<	0.010760	M	Ta	<	0.000610				
O	Be	<	0.000108	s	Hg	<		M	Pb	<	0.000610	M	Tb	<	0.000203				
M	Bi	<	0.002033	M	Ho	<	0.000203	M	Pd	<	0.003050	M	Te	<	0.004067				
O	Ca		0.001057	M	In	<	0.000407	M	Pr	<	0.000203	M	Th	<	0.000407				
M	Cd	<	0.000203	M	Ir	<	0.000203	M	Pt	<	0.000203	O	Ti	<	0.000646				
M	Ce	<	0.000203	O	K		0.000556	M	Rb	<	0.000203	O	Tl	<	0.005380				
M	Co	<	0.000407	M	La	<	0.000203	M	Re	<	0.000203	M	Tm	<	0.000203				
O	Cr	<	0.000538	O	Li	<	0.000215	M	Rh	<	0.000203	M	U	<	0.004067				
M	Cs	<	0.004067	M	Lu	<	0.000203	M	Ru	<	0.000203	O	V	<	0.000538				
O	Cu	<	0.002152	O	Mg		0.000167	O	S	<	0.005380	M	W	<	0.001017				
M	Dy	<	0.000203	O	Mn	<	0.000161	M	Sb	<	0.002033	M	Y	<	0.000203				
M	Er	<	0.000203	M	Mo	<	0.002033	O	Sc	<	0.000430	M	Yb	<	0.000203				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59 +2 4 Hg(OH)(aq) 1+
Chemical Compatibility - Stable in HNO3. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.
Stability - 2-100 ppb levels not stable in 1% HNO3 / LDPE container, stable in 10% HNO3 packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO3 packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO3 / LDPE container.
Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO3); Oxide (Soluble in HNO3); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th ,Rh , Fe, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 29, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- December 29, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVINs_00026

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGIN10
Lot Number:	K2-IN01121
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Indium
Starting Material:	In Shot
Starting Material Lot#:	2015
Starting Material Purity:	99.9995%

1005654

ID: MEIVINs_00026

Exp:01/05/18 Prpd:BAA Opn:01/05/17

IV 10000ppm Indium stock

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10047 ± 33 µg/mL

Certified Density: 1.046 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **10047 ± 56 µg/mL**
ICP Assay NIST SRM 3124a Lot Number: 110516

Assay Method #2 **10047 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000649	M	Eu	<	0.000649	O	Na		0.006584	M	Se	<	0.009094	M	Zn		0.002481
M	Al		0.004850	O	Fe		0.003086	M	Nb	<	0.000649	O	Si		0.017079	M	Zr	<	0.001299
M	As	<	0.002598	M	Ga	<	0.000649	M	Nd	<	0.000649	M	Sm	<	0.000649				
M	Au	<	0.004595	M	Gd	<	0.000649	M	Ni	<	0.005196	M	Sn	<	0.002598				
O	B		0.001646	M	Ge	<	0.002598	M	Os	<	0.000656	O	Sr	<	0.000237				
M	Ba		0.000225	M	Hf	<	0.000649	n	P	<		M	Ta	<	0.000649				
O	Be	<	0.000711	M	Hg	<	0.000656	M	Pb		0.001240	M	Tb	<	0.000649				
M	Bi	<	0.002598	M	Ho	<	0.000649	M	Pd	<	0.000649	M	Te	<	0.010393				
O	Ca		0.011935	s	In	<		M	Pr	<	0.000649	M	Th	<	0.000649				
M	Cd	<	0.000649	M	Ir	<	0.000656	M	Pt	<	0.000649	M	Ti	<	0.002598				
M	Ce	<	0.000649	O	K		0.011523	M	Rb	<	0.000649	M	Tl	<	0.000649				
M	Co	<	0.000649	M	La	<	0.000649	M	Re	<	0.000649	M	Tm	<	0.000649				
M	Cr	<	0.000649	O	Li	<	0.000237	M	Rh	<	0.000649	M	U	<	0.000649				
M	Cs	<	0.000649	M	Lu	<	0.000649	M	Ru	<	0.000656	O	V	<	0.002370				
O	Cu	<	0.004384	O	Mg		0.001172	n	S	<		M	W	<	0.000649				
M	Dy	<	0.000649	O	Mn		0.000154	M	Sb	<	0.000649	M	Y	<	0.000649				
M	Er	<	0.000649	M	Mo	<	0.000649	M	Sc	<	0.000649	M	Yb	<	0.000649				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 114.82 +3 6 In(H2O)6+3
Chemical Compatibility -Soluble in HCl, HNO3, and H2SO4. Avoid neutral and basic media. Stable with most metals and inorganic anions. The oxalate, sulfide, carbonate, hydroxide and phosphate are insoluble in water.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
In Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO3); Oxide (Soluble in mineral acids); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 115 amu	1 ppt	n/a	115Sn, 99Ru16O
ICP-OES 158.583 nm	0.05 / 0.002 µg/mL	1	
ICP-OES 230.606 nm	0.1 / 0.03 µg/mL	1	Ni, Os
ICP-OES 325.609 nm	0.2 / 0.05 µg/mL	1	Mn, Mo, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 05, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 05, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVKs_00013

INORGANIC VENTURES

CERTIFICATE of ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGK10
Lot Number:	J2-K03054
Matrix:	2% (v/v) HNO_3
Value / Analyte(s):	10 000 µg/mL ea: Potassium
Starting Material:	KNO_3
Starting Material Lot#:	1727
Starting Material Purity:	99.9990%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10 003 ± 24 µg/mL

Certified Density: 1.025 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **10008 ± 64 µg/mL**
ICP Assay NIST SRM 3141a Lot Number: 140813

Assay Method #2 **10003 ± 24 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

951638
ID MEIVKs_00013
Exp 07/12/17 Prpd RM1 Opn 07/12/16
10,000ppm Potassium Stock

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	< 0.000639	M	Eu	< 0.000639	O	Na	0.133153	M	Se	< 0.005751	O	Zn	0.000333			
O	Al	0.000592	O	Fe	0.000999	O	Nb	< 0.002994	O	Si	0.002589	M	Zr	< 0.000639			
O	As	< 0.005545	M	Ga	< 0.000639	M	Nd	< 0.000639	M	Sm	< 0.000639						
M	Au	< 0.000639	M	Gd	< 0.000639	O	Ni	< 0.003660	M	Sn	< 0.000639						
O	B	< 0.003327	M	Ge	< 0.001917	M	Os	< 0.000639	O	Sr	0.000142						
O	Ba	0.000592	M	Hf	< 0.000639	O	P	< 0.033270	M	Ta	< 0.000639						
O	Be	< 0.000222	M	Hg	< 0.003194	M	Pb	< 0.003834	M	Tb	< 0.000639						
M	Bi	< 0.000639	M	Ho	< 0.000639	M	Pd	< 0.000639	M	Te	< 0.007669						
O	Ca	0.007952	M	In	< 0.000639	M	Pr	< 0.000639	M	Th	< 0.000639						
M	Cd	< 0.000639	M	Ir	< 0.000639	M	Pt	< 0.000639	O	Ti	< 0.000588						
M	Ce	< 0.000639	s	K	<	M	Rb	0.102731	M	Tl	< 0.000639						
M	Co	< 0.000639	M	La	< 0.000639	M	Re	< 0.000639	M	Tm	< 0.000639						
O	Cr	< 0.002440	O	Li	< 0.000067	M	Rh	< 0.000639	M	U	< 0.000639						
M	Cs	< 0.000639	M	Lu	< 0.000639	M	Ru	< 0.001278	O	V	< 0.001331						
M	Cu	0.036233	O	Mg	0.000888	O	S	0.007212	M	W	< 0.000639						
M	Dy	< 0.000639	O	Mn	< 0.000776	M	Sb	< 0.001278	M	Y	< 0.000639						
M	Er	< 0.000639	O	Mo	< 0.001331	O	Sc	< 0.000288	M	Yb	< 0.000639						

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 39.10 +1 (6) K+(aq)
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Avoid use of HClO4 due to insolubility of the perchlorate. Stable with all metals and inorganic anions except ClO4-.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
K Containing Samples (Preparation and Solution) - Metal (Dissolves very rapidly in water); Ores (Sodium carbonate fusion in Pt0 followed by HCl dissolution-blank levels of K in sodium carbonate critical); Organic Matrices (Sulfuric/peroxide digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 39 amu	10 ppt	n/a	38ArH, 23Na16O, 78Se
ICP-OES 404.721 nm	1.1 / 0.05 µg/mL	1	U, Ce
ICP-OES 766.490 nm	0.4 / 0.001 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 771.531 nm	1.0 / 0.03 µg/mL	1	2nd order radiation from R.E.s on some optical designs

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 01, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- December 01, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

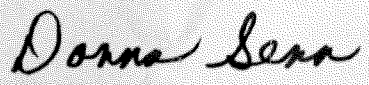
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVLi_00008

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CG6LI1
Lot Number:	K2-LI651014
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: 6-Lithium
Starting Material:	6Li Chunks
Starting Material Lot#:	1916
Starting Material Purity:	99.9377%

1005747
ID: MEIVLi_00008
Exp:01/06/18 Prpd:BAA Opn:01/06/17
IV Lithium6 1000ppm Tune

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 2 µg/mL

Certified Density: 1.016 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **999 ± 1 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

Assay Method #2 **1 000 ± 3 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Lithium Li6	95.6 ± 0.3
Lithium Li7	4.4 ± 0.1

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000118	M	Eu	<	0.000118	O	Na		0.304107	M	Se	<	0.007064	O	Zn	0.027891
O	Al		0.001166	O	Fe		0.000895	M	Nb	<	0.000118	O	Si		0.014794	M	Zr	< 0.000118
O	As	<	0.005400	M	Ga		0.001827	M	Nd	<	0.000118	M	Sm	<	0.000118			
M	Au	<	0.000236	M	Gd	<	0.000118	O	Ni	<	0.002160	O	Sn		0.002332			
M	B	<	0.004709	O	Ge	<	0.006480	M	Os	<	0.003535	O	Sr		0.000177			
O	Ba		0.000094	M	Hf	<	0.000353	O	P	<	0.054000	M	Ta	<	0.000118			
O	Be	<	0.000032	M	Hg	<	0.000471	M	Pb		0.003223	M	Tb	<	0.000118			
M	Bi	<	0.000235	M	Ho	<	0.000118	M	Pd	<	0.000118	M	Te	<	0.000589			
O	Ca		0.131669	M	In	<	0.000235	M	Pr	<	0.000118	M	Th	<	0.000118			
O	Cd	<	0.000540	M	Ir	<	0.000118	M	Pt	<	0.000118	O	Ti	<	0.000324			
M	Ce	<	0.000118	O	K		0.184651	M	Rb	<	0.000589	M	Tl		0.000851			
M	Co	<	0.000235	M	La	<	0.000118	M	Re	<	0.000118	M	Tm	<	0.000118			
O	Cr	<	0.000540	s	Li	<		M	Rh	<	0.000118	M	U	<	0.000118			
M	Cs	<	0.001177	M	Lu	<	0.000118	M	Ru	<	0.000118	O	V	<	0.000864			
O	Cu		0.026652	O	Mg		0.005539	O	S	<	0.027000	M	W		0.000329			
M	Dy	<	0.000118	O	Mn		0.000208	M	Sb		0.000318	M	Y	<	0.000118			
M	Er	<	0.000118	M	Mo	<	0.000942	O	Sc	<	0.000540	M	Yb	<	0.000118			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 6.94 +1 (6) Li+(aq) large effective radius due to hydration sphere

Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Stable with all metals and inorganic anions.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Li6 Containing Samples (Preparation and Solution) -Metal (Dissolves very rapidly in water); Ores (Sodium carbonate fusion in Pt0 followed by HCl dissolution-blank levels of Li in sodium carbonate critical); Organic Matrices (Sulfuric / peroxide digestion or nitric / sulfuric / perchloric acid decomposition).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 7 amu	10 ppt	n/a	
ICP-OES 323.261 nm	1.1 / 0.05 micro;g/mL	1	Sb, Th, Ni
ICP-OES 460.286 nm	0.9 / 0.04 µg/mL	1	Zr, Th
ICP-OES 670.784 nm	0.002 / 0.00002 µg/mL	1	2nd order radiation from R.E.s on some optical designs

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 07, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **September 07, 2020**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 01/06/17

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician



Certificate Approved By:

Michael Booth
Supervisor, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Reagent

MEIVMGs_00018

[illegible]

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMG10
Lot Number:	J2-MG03145
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Magnesium
Starting Material:	Mg chips
Starting Material Lot#:	1484
Starting Material Purity:	99.9987%

954509
ID: MEIVMGs_00018
Exp:07/21/17 Prpd:MDK Opn:07/21/16
10,000ppm Magnesium
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9970 ± 24 µg/mL

Certified Density: 1.053 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **9954 ± 58 µg/mL**
ICP Assay NIST SRM 3131a Lot Number: 050302

Assay Method #2 **9973 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001107	M	Eu	<	0.000554	O	Na		0.074480	M	Se	<	0.011074	O	Zn	<	0.002432
O	Al	<	0.006080	O	Fe	<	0.001459	M	Nb	<	0.000554	O	Si	<	0.006080	M	Zr	<	0.000554
M	As	<	0.003322	M	Ga	<	0.000554	M	Nd	<	0.008306	M	Sm	<	0.000554				
M	Au	<	0.002216	M	Gd	<	0.000554	M	Ni	<	0.005537	M	Sn	<	0.001107				
O	B	<	0.002432	M	Ge	<	0.000554	M	Os	<	0.002770	O	Sr		0.000056				
M	Ba	<	0.000554	M	Hf	<	0.000554	O	P	<	0.060800	M	Ta	<	0.000554				
M	Be	<	0.000554	M	Hg	<	0.005540	M	Pb		0.005869	M	Tb	<	0.000554				
M	Bi	<	0.000554	M	Ho	<	0.000554	M	Pd	<	0.000554	M	Te	<	0.002769				
O	Ca		0.018942	M	In	<	0.000554	M	Pr	<	0.002769	M	Th	<	0.000554				
M	Cd	<	0.000554	M	Ir	<	0.000554	M	Pt	<	0.000554	O	Ti	<	0.000973				
M	Ce	<	0.016611	O	K		0.018270	M	Rb	<	0.001107	M	Tl	<	0.000554				
M	Co	<	0.001661	M	La	<	0.008306	M	Re	<	0.000554	M	Tm	<	0.000554				
O	Cr	<	0.003648	O	Li		0.026060	M	Rh	<	0.000554	M	U	<	0.000554				
M	Cs	<	0.000554	M	Lu	<	0.000554	M	Ru	<	0.000554	M	V	<	0.001107				
M	Cu		0.004338	s	Mg	<		O	S		0.012301	M	W	<	0.000554				
M	Dy	<	0.000554	O	Mn		0.006725	M	Sb	<	0.000554	M	Y	<	0.000554				
M	Er	<	0.000554	M	Mo	<	0.001661	O	Sc		0.000336	M	Yb	<	0.000554				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 24.31 +2 6 $Mg(H_2O)_6^{+2}$
Chemical Compatibility -Soluble in HCl, HNO_3, and H_2SO_4 avoid HF, H_3PO_4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicates, carbonates, hydroxides, oxides, and tungstates in neutral and slightly acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO_3 / LDPE container.
Mg Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO_3); Oxide (Readily soluble in above compatible aqueous acidic solutions); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric / peroxide digestion or nitric / sulfuric / perchloric acid decomposition, or dry ash and dissolution in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 24 amu	42 ppt	n/a	7Li17O, 48Ti+2 , 48Ca+2
ICP-OES 279.553 nm	0.0002 / 0.00003 µg/mL	1	Th
ICP-OES 280.270 nm	0.0003 / 0.00005 µg/mL	1	U, V
ICP-OES 285.213 nm	0.002 / 0.00003 µg/mL	1	U, Hf, Cr, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 16, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 16, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MBK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVMNs_00011

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6779 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMN1
Lot Number:	K2-MN651112
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Manganese
Starting Material:	Mn Flake
Starting Material Lot#:	1909 and 1573
Starting Material Purity:	99.9920%

1006051
ID: MEIVMNs_00011
Exp:01/10/18 Prpd:BAA Opn:01/10/17
IV 1000 PPM Mn

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 995 ± 4 µg/mL

Certified Density: 1.016 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **996 ± 4 µg/mL**
ICP Assay NIST SRM 3132 Lot Number: 050429

Assay Method #2 **995 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000671	M	Eu	<	0.000671	O	Na		0.012155	M	Se	<	0.014098	O	Zn	<	0.023580
O	Al		0.003665	O	Fe		0.000937	M	Nb	<	0.000671	O	Si		0.012827	M	Zr	<	0.004699
M	As	<	0.006713	M	Ga	<		M	Nd	<	0.006713	M	Sm	<	0.004028				
M	Au	<	0.000671	M	Gd	<	0.006713	M	Ni		0.001426	M	Sn	<	0.004028				
M	B		0.011628	M	Ge	<	0.100699	M	Os	<	0.000650	O	Sr		0.000157				
M	Ba	<	0.003357	M	Hf	<	0.000671	i	P	<		M	Ta	<	0.000671				
M	Be	<	0.001343	M	Hg	<	0.003249	M	Pb		0.001101	M	Tb	<	0.000671				
M	Bi	<	0.000671	M	Ho	<	0.000671	M	Pd	<	0.006713	M	Te	<	0.040280				
O	Ca		0.005090	M	In	<	0.000671	M	Pr	<	0.002685	M	Th	<	0.000671				
M	Cd	<	0.001343	M	Ir	<	0.000650	M	Pt	<	0.000671	O	Ti	<	0.001179				
M	Ce	<	0.013427	O	K		0.001934	M	Rb	<	0.010741	M	Tl	<	0.000671				
M	Co		0.001971	M	La	<	0.006713	M	Re	<	0.000671	M	Tm	<	0.000671				
M	Cr		0.000927	O	Li		0.000081	M	Rh	<	0.020140	M	U	<	0.004028				
M	Cs	<	0.000671	M	Lu	<	0.000671	M	Ru	<	0.000650	M	V	<	0.000671				
M	Cu		0.001333	O	Mg		0.037056	i	S	<		M	W	<	0.006713				
M	Dy	<	0.003357	s	Mn	<		M	Sb	<	0.013427	M	Y	<	0.033566				
M	Er	<	0.003357	O	Mo	<	0.011790	O	Sc	<	0.001179	M	Yb	<	0.002014				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 54.94 +2 6 $Mn(H_2O)_6^{2+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO_3/LDPE container.
Mn Containing Samples (Preparation and Solution) -Metal (Soluble in dilute acids); Oxides (Soluble in dilute acids); Ores (Dissolve with HCl. If silica is present add HF and then fume off silica by adding H_2SO_4 and heat to SO_3 fumes - dense white fumes).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 55 amu	10 ppt	n/a	40Ar14N1H,39K16 O,37Cl18O,40Ar15 N,38Ar17O,36Ar18O 1H ,38Ar16O1H,37Cl17 O1H,23Na32S
ICP-OES 257.610 nm	0.0014 / 0.00002 µg/mL	1	Ce, W, Re
ICP-OES 259.373 nm	0.0016 / 0.00002 µg/mL	1	U, Ta, Mo, Fe, Nb
ICP-OES 260.569 nm	0.0021 / 0.00002 µg/mL	1	Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 22, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 22, 2020**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Chemist, Technical Manager



Certificate Approved By:

Michael Booth
Supervisor, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Reagent

MEIVMOs_00013

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com
tel: 800.669.4799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMO1
Lot Number:	K2-MO02086
Matrix:	H2O tr. NH4OH
Value / Analyte(s):	1 000 µg/mL ea: Molybdenum
Starting Material:	Ammonium Molybdate
Starting Material Lot#:	1934
Starting Material Purity:	99.9942%

1005708
ID: MEIVMOs_00013
Exp:01/05/18 Prpd:BAA Opn:01/05/17
IV 1000 PPM Mo

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 6 µg/mL

Certified Density: 1.000 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **998 ± 3 µg/mL**
ICP Assay NIST SRM 3134 Lot Number: 130418

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.006075	M	Eu	<	0.001518	O	Na	<	0.010480	M	Se	<	0.005062	M	Zn	<	0.026833
M	Al		0.002196	M	Fe		0.000617	M	Nb	<	0.126574	i	Si	<		M	Zr	<	0.003797
M	As		0.010771	M	Ga		0.000470	i	Nd	<		M	Sm	<	0.005062				
M	Au	<	0.001519	M	Gd	<	0.002531	M	Ni	<	0.010125	M	Sn	<	0.002025				
M	B	<	0.016454	M	Ge	<	0.022277	M	Os	<	0.006077	O	Sr	<	0.001572				
M	Ba	<	0.012657	M	Hf	<	0.001518	i	P	<		M	Ta	<	0.001012				
M	Be	<	0.000506	M	Hg	<	0.015192	M	Pb	<	0.010632	M	Tb	<	0.000253				
M	Bi	<	0.000253	M	Ho	<	0.000506	M	Pd	<	0.040503	i	Te	<					
O	Ca		0.001731	M	In	<	0.025314	M	Pr	<	0.101259	M	Th	<	0.001012				
O	Cd	<	0.010480	M	Ir	<	0.001519	M	Pt	<	0.001518	O	Ti	<	0.001048				
M	Ce	<	0.063287	O	K		0.008211	M	Rb	<	0.010632	M	Tl	<	0.005569				
M	Co	<	0.006075	M	La	<	0.001518	M	Re		0.002227	M	Tm	<	0.000253				
M	Cr	<	0.011138	O	Li	<	0.005240	M	Rh	<	0.001012	M	U	<	0.002531				
M	Cs	<	0.006581	M	Lu	<	0.000253	M	Ru	<	0.001519	O	V	<					
M	Cu	<	0.014176	M	Mg		0.000564	i	S	<		M	W		0.111065				
M	Dy	<	0.010632	M	Mn	<	0.037972	M	Sb	<	0.012657	M	Y	<	0.000253				
M	Er	<	0.001518	s	Mo	<		O	Sc	<	0.010480	M	Yb	<	0.002025				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 95.94 +6 6,7,8,9 [MoO4] -2(chemical form as received)
Chemical Compatibility -Mo is received in a NH4OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO4]-2 is soluble in concentrated HCl [MoOCl5]-2, dilute HF / HNO3 [MoOF5] -2 and basic media [MoO4]-2. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO4]-2 chemical form.
Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [MoO4] -2 chemically stable for years in 1% NH4OH in a LDPE container.
Mo Containing Samples (Preparation and Solution) -Metal (Soluble in HF / HNO3 or hot dilute HCl); Oxide (soluble in HF or NH4OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 95 amu	3 ppt	n/a	40Ar39K16O,79Br16O,190Os2+,190Pt2+
ICP-OES 202.030 nm	0.008 / 0.0002 µg/mL	1	Os, Hf
ICP-OES 203.844 nm	0.012 / 0.002 µg/mL	1	
ICP-OES 204.598 nm	0.012 / 0.001 µg/mL	1	Ir, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 19, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- May 19, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVNIs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGNI1
Lot Number:	J2-NI02103
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Nickel
Starting Material:	Ni Pieces
Starting Material Lot#:	1847
Starting Material Purity:	99.9991%

1006052
ID: MEIVNis_00012
Exp:01/10/18 Prpd:BAA Opn:01/10/17
IV 1000 PPM Ni

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1003 ± 5 µg/mL

Certified Density: 1.010 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1002 ± 5 µg/mL**
ICP Assay NIST SRM 3136 Lot Number: 120619

Assay Method #2 **1003 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.039015	M	Eu	<	0.000650	O	Na		0.000753	M	Se	<	0.032513	O	Zn		0.000320	
O	Al	<	0.024400	O	Fe		0.001141	M	Nb	<	0.003251	O	Si		0.001598	M	Zr	<	0.032513	
O	As	<	0.012200	M	Ga	<	0.000650	M	Nd	<	0.000650	M	Sm	<	0.000650					
M	Au	<	0.000650	M	Gd	<	0.000650	s	Ni	<		M	Sn	<	0.019508					
M	B	<	0.013005	M	Ge	<	0.006503	n	Os	<		M	Sr	<	0.001301					
M	Ba	<	0.000650	M	Hf	<	0.000650	i	P	<		M	Ta	<	0.000650					
M	Be	<	0.003251	O	Hg	<	0.004880	M	Pb		0.000949	M	Tb	<	0.000650					
M	Bi	<	0.019508	M	Ho	<	0.000650	M	Pd	<	0.000650	M	Te	<	0.019508					
O	Ca		0.000799	M	In	<	0.013005	M	Pr	<	0.000650	M	Th	<	0.001301					
M	Cd	<	0.013005	M	Ir	<	0.032513	M	Pt	<	0.000650	O	Ti		0.003652					
M	Ce	<	0.001301	O	K		0.001598	M	Rb	<	0.000650	M	Tl	<	0.000650					
O	Co	<	0.012200	M	La	<	0.001301	M	Re	<	0.032513	M	Tm	<	0.000650					
O	Cr	<	0.002440	O	Li	<	0.000073	M	Rh	<	0.001301	M	U	<	0.000650					
M	Cs	<	0.006503	M	Lu	<	0.000650	M	Ru	<	0.006503	M	V	<	0.001951					
O	Cu		0.000365	O	Mg		0.000030	O	S	<	0.061000	M	W	<	0.013005					
M	Dy	<	0.000650	O	Mn	<	0.000610	M	Sb	<	0.032513	M	Y	<	0.000650					
M	Er	<	0.000650	O	Mo	<	0.006100	M	Sc	<	0.001951	M	Yb	<	0.000650					

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.69 +2 6 Ni(H2O)62+
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Ni Containing Samples (Preparation and Solution) -Metal (Soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 60 amu	100 ppt	n/a	43Ca16O1H , 44Ca16O, 23Na37Cl
ICP-OES 221.647 nm	0.01 / 0.0009 µg/mL	1	Si
ICP-OES 231.604 nm	0.02 / 0.002 µg/mL	1	Sb, Ta, Co
ICP-OES 232.003 nm	0.02 / 0.006 µg/mL	1	Cr, Re, Os, Nb, Ag, Pt, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 13, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- January 13, 2019

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 01/10/17

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Joseph Burns
TSG Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVPBs_00018

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGPB1
Lot Number:	K2-PB03074
Matrix:	0.5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Lead
Starting Material:	Lead nitrate
Starting Material Lot#:	1840 and 1908
Starting Material Purity:	99.9994%

954504
ID: MEIVPBs_00018
Exp:07/21/17 Prpd:MDK Opn:07/21/16
1000 PPM Pb
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1003 ± 4 µg/mL

Certified Density: 1.002 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1003 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **1003 ± 4 µg/mL**
ICP Assay NIST SRM 3128 Lot Number: 101026

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000304	M	Eu	<	0.000304	O	Na		0.000155	M	Se	<	0.006074	O	Zn		0.000324
O	Al		0.003025	O	Fe		0.000360	M	Nb	<	0.000304	O	Si		0.001008	M	Zr	<	0.000911
M	As	<	0.000607	M	Ga	<	0.000304	M	Nd	<	0.000304	M	Sm	<	0.000304				
M	Au	<	0.000611	M	Gd	<	0.000304	M	Ni	<	0.000607	M	Sn	<	0.000304				
O	B	<	0.000624	M	Ge	<	0.000304	M	Os	<	0.000306	O	Sr		0.000012				
O	Ba		0.000648	M	Hf	<	0.000304	O	P	<	0.020800	M	Ta	<	0.000304				
O	Be	<	0.000031	O	Hg	<	0.002080	s	Pb	<		M	Tb	<	0.000304				
O	Bi		0.002593	M	Ho	<	0.000304	M	Pd	<	0.000304	M	Te	<	0.003037				
O	Ca		0.000360	M	In	<	0.000304	M	Pr	<	0.000304	M	Th	<	0.004555				
O	Cd	<	0.000208	M	Ir	<	0.000306	M	Pt	<	0.000304	O	Ti		0.000115				
M	Ce	<	0.000304	O	K		0.000576	M	Rb	<	0.000304	M	Tl	<	0.003037				
M	Co	<	0.000304	M	La	<	0.000304	M	Re	<	0.000304	M	Tm	<	0.000304				
O	Cr	<	0.000520	O	Li	<	0.000416	O	Rh	<	0.010400	M	U	<	0.000304				
M	Cs		0.000168	M	Lu	<	0.000304	M	Ru	<	0.000306	M	V	<	0.000304				
M	Cu	<	0.000304	O	Mg		0.000043	O	S	<	0.010400	M	W	<	0.000304				
M	Dy	<	0.000304	M	Mn	<	0.000607	M	Sb	<	0.000304	M	Y	<	0.000304				
M	Er	<	0.000304	M	Mo	<	0.000304	M	Sc	<	0.000304	M	Yb	<	0.000304				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 207.20 +2 6 $Pb(H_2O)_6^{+2}$
Chemical Compatibility - Soluble in HCl, HF and HNO_3. Avoid H_2SO_4. Stable with most metals and inorganic anions forming insoluble carbonate, borate, sulfate, sulfite, sulfide, phosphate, oxalate, chromate, tannate, iodate, and cyanide in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO_3 / LDPE container.
Pb Containing Samples (Preparation and Solution) -Metal (Best dissolved in 1:1 H_2O / HNO_3); Oxides (The many different Pb oxides are soluble in HNO_3 with the exception of PbO_2 which is soluble in HCl or HF); Ores and Alloys (Best attacked using 1:1 H_2O / HNO_3); Organic Matrices (Dry ash and dissolve in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 208 amu	5 ppt	n/a	192Pt16O, 192Os16O
ICP-OES 168.215 nm	0.03 / 0.003 µg/mL	1	Co
ICP-OES 217.000 nm	0.09 / 0.03 µg/mL	1	W, Ir, Hf, Sb, Th
ICP-OES 220.353 nm	0.04 / 0.006 µg/mL	1	Bi, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 19, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 19, 2020**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 7/21/16 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Michael Booth
QC Supervisor

Michael J Booth

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Paul R Gaines

Reagent

MEIVSBs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSB1
Lot Number:	K2-SB03048
Matrix:	1% (v/v) HNO_3 3% Tartaric Acid
Value / Analyte(s):	1 000 µg/mL ea: Antimony
Starting Material:	Sb Pieces
Starting Material Lot#:	1857/1647
Starting Material Purity:	99.9835%

1034069
ID: MEIVSBs_00012
Exp: 07/01/20 Prpd: BAA
IV 1000 PPM Sb

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 8 µg/mL

Certified Density: 1.020 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1000 ± 5 µg/mL**
ICP Assay NIST SRM 3102a Lot Number: 061229 Sb

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000303	M	Eu	<	0.000404	O	Na		0.007895	M	Se	<	0.002022	O	Zn		0.000398
O	Al		0.001425	O	Fe		0.002492	M	Nb	<	0.001011	O	Si		0.035346	O	Zr	<	0.003088
M	As	<	0.003842	M	Ga	<	0.000101	M	Nd	<	0.000101	M	Sm	<	0.000202				
M	Au	<	0.001961	M	Gd	<	0.000101	O	Ni	<	0.011715	M	Sn	<	0.002629				
M	B		0.005849	M	Ge	<	0.000303	M	Os	<	0.000103	O	Sr	<	0.000198				
O	Ba	<	0.001065	M	Hf	<	0.000202	O	P		0.061438	M	Ta	<	0.002224				
M	Be	<	0.000404	M	Hg	<	0.000103	M	Pb	<	0.001618	M	Tb	<	0.000101				
M	Bi		0.000704	M	Ho	<	0.000101	M	Pd	<	0.000202	M	Te	<	0.001213				
O	Ca		0.001146	M	In	<	0.000101	M	Pr	<	0.001415	M	Th	<	0.000101				
M	Cd	<	0.000101	M	Ir	<	0.000103	M	Pt	<	0.000101	M	Ti		0.000652				
O	Ce	<	0.010490	O	K		0.047431	M	Rb	<	0.002831	M	Tl	<	0.000404				
O	Co	<	0.001160	O	La	<	0.002587	M	Re	<	0.000101	M	Tm	<	0.000101				
O	Cr		0.008875	O	Li		0.000016	M	Rh	<	0.000101	M	U	<	0.000101				
M	Cs	<	0.001011	M	Lu	<	0.000404	M	Ru	<	0.000103	M	V	<	0.000404				
M	Cu		0.000441	O	Mg		0.000330	n	S	<		M	W	<	0.000202				
M	Dy	<	0.003438	O	Mn		0.000152	s	Sb	<		M	Y	<	0.000101				
M	Er	<	0.000101	M	Mo	<	0.006269	O	Sc	<	0.000711	M	Yb	<	0.000101				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 121.75 +3 6 Sb(O)C4H4O6-1
Chemical Compatibility -Stable in conc. HCl, dilute or conc. HF. Stable in dilute HNO3 as the fluoride or tartrate complex. Avoid basic media. Stable with most metals and inorganic anions in acidic media as the tartrate provided the acidity is not too high or the acid is oxidizing causing loss of the stabilizing tartrate ion. The fluoride complex of antimony is stable in strong acid but you should only mix with other metals that are fluorinated.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-2% HNO3 / LDPE container.
Sb Containing Samples (Preparation and Solution) -Metal and alloys (Soluble in H2O / HF / HNO3 mixture); Oxides (Soluble in HCl and tartaric acid or H2O / HF / HNO3 mixtures); Ores (fusion with Na2CO3 in Pt0 followed by dissolving the fuseate in a H2O / HF / HNO3 mixture); Organic based (sulfuric acid / hydrogen peroxide digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 121 amu	5 ppt	N/A	105Pd16O, 89Y16O2
ICP-OES 206.833 nm	0.03/0.003 µg/mL	1	Ta, Cr, Ge, Hf
ICP-OES 217.581 nm	0.05/0.005 µg/mL	1	Nb, W, Re, Fe
ICP-OES 231.147 nm	0.06/0.006 µg/mL	1	Ni, Co, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 01, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **July 01, 2020**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

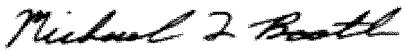
Certificate Prepared By:

Joseph Burns
TSG Technician



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVSEs_00014

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01 — ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSE(4)1
Lot Number:	M2-SE02058R
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Selenium
Starting Material:	Se Shot
Starting Material Lot#:	1616
Starting Material Purity:	99.9995%

1034073
ID: MEIVSEs_00014
Exp: 03/30/21 Prpd: BAA
IV 1000 ppm Se

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 4 µg/mL

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1004 ± 4 µg/mL**
ICP Assay NIST SRM 3149 Lot Number: 100901

Assay Method #2 **1000 ± 5 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.000353	M	Eu	<	0.000370	O	Na		0.002152	s	Se	<		O	Zn		0.000073
O	Al	<	0.005555	O	Fe		0.000209	O	Nb	<	0.001667	O	Si		0.000530	O	Zr	<	0.001111
O	As	<	0.005555	M	Ga	<	0.000370	M	Nd	<	0.000370	M	Sm	<	0.000370				
M	Au	<	0.000370	M	Gd	<	0.000370	O	Ni	<	0.003333	O	Sn	<	0.003333				
M	B	<	0.007405	M	Ge	<	0.001851	n	Os	<		O	Sr	<	0.000078				
O	Ba	<	0.000333	M	Hf	<	0.001851	O	P	<	0.002222	M	Ta	<	0.001851				
O	Be	<	0.000100	O	Hg	<	0.002222	M	Pb	<	0.007405	M	Tb	<	0.000370				
O	Bi	<	0.006666	M	Ho	<	0.000370	M	Pd	<	0.003703	M	Te	<	0.037027				
O	Ca		0.000497	M	In	<	0.003703	M	Pr	<	0.000370	M	Th	<	0.003703				
O	Cd	<	0.000444	M	Ir	<	0.003703	M	Pt	<	0.007405	O	Ti	<	0.000444				
M	Ce	<	0.000370	O	K		0.000397	M	Rb	<	0.001111	M	Tl	<	0.000370				
O	Co	<	0.000889	M	La	<	0.000370	M	Re	<	0.000370	M	Tm	<	0.000370				
O	Cr	<	0.001667	O	Li	<	0.000067	M	Rh	<	0.000370	M	U	<	0.000370				
M	Cs	<	0.000370	M	Lu	<	0.000370	M	Ru	<	0.001851	M	V	<	0.000370				
O	Cu		0.000927	O	Mg		0.000073	O	S	<	0.007777	O	W	<	0.003333				
M	Dy	<	0.000370	O	Mn	<	0.000222	M	Sb	<	0.011108	M	Y	<	0.000370				
M	Er	<	0.000370	O	Mo	<	0.000556	O	Sc	<	0.000333	M	Yb	<	0.000370				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 78.96 +4 6 H_2SeO_3
Chemical Compatibility -Soluble in HCl, HNO_3,H_3PO_4, H_2SO_4 and HF aqueous matrices and water. It is stable with most inorganic anions but many cationic metals form the insoluble selenites under pH neutral conditions. When fluorinated and/or under acidic conditions precipitation is typically not a problem at moderate to low concentrations.
Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Se Containing Samples (Preparation and Solution) -Metal (soluble in HNO_3); Oxides (readily soluble in water); Minerals and alloys (acid digestion with HNO_3or HNO_3 / HF); Organic Matrices (acid digestion with hot concentrated H_2SO_4 accompanied by the careful dropwise addition of H_2O_2 until clear).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 82 amu	200 ppt	N/A	12C35Cl2
ICP-OES 196.026 nm	0.08/0.006 µg/mL	1	Fe
ICP-OES 203.985 nm	0.2/0.05 µg/mL	1	Sb, Ir, Cr, Ta
ICP-OES 206.279 nm	0.3/0.16 µg/mL	1	Cr, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 30, 2017

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 30, 2021**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

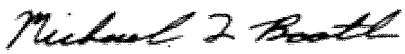
Certificate Prepared By:

Donna Senn
Product Documentation Technician



Certificate Approved By:

Michael Booth
Supervisor, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Reagent

MEIVSRs_00007

300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com
toll: 800.669.6795 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSR1
Lot Number:	K2-SR02059
Matrix:	0.1% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Strontium
Starting Material:	SrCO3
Starting Material Lot#:	1922
Starting Material Purity:	99.9967%

1034083
ID: MEIVSRs_00007
Exp: 05/18/20 Prpd: BAA
IV 1000ppm Strontium Stoc

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1005 ± 5 µg/mL

Certified Density: 1.001 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1003 ± 4 µg/mL**
ICP Assay NIST SRM 3153a Lot Number: 990906

Assay Method #2 **1005 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000562	M	Eu	<	0.000562	O	Na		0.000359	M	Se	<	0.007311	O	Zn		0.000195
M	Al		0.000790	O	Fe		0.000965	M	Nb	<	0.000562	O	Si		0.002245	M	Zr	<	0.002812
M	As	<	0.000562	M	Ga	<	0.000562	M	Nd	<	0.000562	M	Sm	<	0.000562				
M	Au	<	0.001680	M	Gd	<	0.000562	O	Ni		0.000179	M	Sn	<	0.003374				
O	B	<	0.001118	M	Ge	<	0.000562	M	Os	<	0.001680	s	Sr	<					
O	Ba		0.044452	M	Hf	<	0.000562	O	P	<	0.055900	M	Ta	<	0.000562				
O	Be	<	0.000111	M	Hg	<	0.000560	M	Pb	<	0.005624	M	Tb	<	0.000562				
M	Bi	<	0.002812	M	Ho	<	0.000562	M	Pd	<	0.000562	M	Te	<	0.005624				
O	Ca		0.003075	M	In	<	0.000562	M	Pr	<	0.000562	M	Th	<	0.000562				
O	Cd	<	0.000894	M	Ir	<	0.000560	M	Pt	<	0.000562	O	Ti	<	0.001118				
M	Ce		0.002450	M	K		0.002970	M	Rb	<	0.028120	M	Tl	<	0.000562				
M	Co	<	0.002249	O	La	<	0.005590	M	Re	<	0.000562	M	Tm	<	0.000562				
O	Cr		0.000118	M	Li	<	0.001687	O	Rh	<	0.011180	M	U	<	0.001124				
M	Cs	<	0.000562	M	Lu	<	0.000562	M	Ru	<	0.000560	M	V	<	0.000562				
M	Cu	<	0.011248	O	Mg		0.000067	O	S		0.003143	M	W	<	0.000562				
M	Dy	<	0.000562	O	Mn		0.000808	M	Sb	<	0.001124	O	Y	<	0.004472				
M	Er	<	0.000562	M	Mo	<	0.000562	O	Sc	<	0.003354	M	Yb	<	0.000562				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 87.62 +2 6 Sr(H2O)6+2
Chemical Compatibility - Soluble in HCl, and HNO3. Avoid H2SO4, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% HNO3 / LDPE container.
Sr Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolution in dilute HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 88 amu	1200 ppt	N/A	72Ge16O, 176Yb+2, 176Lu+2 , 176Hf+2
ICP-OES 407.771 nm	0.0004 / 0.00006 µg/mL	1	U, Ce
ICP-OES 421.552 nm	0.0008 / 0.00004 µg/mL	1	Rb
ICP-OES 460.733 nm	0.07 / 0.003 µg/mL	1	Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 18, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- May 18, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

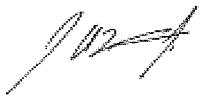
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVTA-68-R1_00005

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

1026376
ID: MEIVTA-68-R1_00005
Exp:02/01/18 Prpd:MDK Opn:03/30/17
6010 ICV stock part 1

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-68-REV1
Lot Number:	K2-MEB628028
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	625 µg/mL ea: Barium, Nickel, Zinc, 312.5 µg/mL ea: Beryllium, 250 µg/mL ea: Cobalt, 200 µg/mL ea: Chromium+3, 125 µg/mL ea: Boron, 100 µg/mL ea: Arsenic, Strontium, 50 µg/mL ea: Silver

Copper, Lead, Phosphorus, Cadmium, Thallium,

Manganese, Vanadium, Selenium,

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	100.0 ± 0.8 µg/mL	Barium, Ba	625.0 ± 2.6 µg/mL
Beryllium, Be	312.6 ± 1.5 µg/mL	Boron, B	125.0 ± 1.0 µg/mL
Cadmium, Cd	100.1 ± 0.4 µg/mL	Chromium+3, Cr3	200.0 ± 0.8 µg/mL
Cobalt, Co	250.0 ± 1.1 µg/mL	Copper, Cu	624.9 ± 2.5 µg/mL
Lead, Pb	625.0 ± 2.8 µg/mL	Manganese, Mn	625.2 ± 2.3 µg/mL
Nickel, Ni	625.1 ± 2.6 µg/mL	Phosphorus, P	250.3 ± 1.1 µg/mL
Selenium, Se	100.0 ± 0.6 µg/mL	Silver, Ag	50.00 ± 0.30 µg/mL
Strontium, Sr	100.1 ± 0.5 µg/mL	Thallium, Tl	100.0 ± 0.7 µg/mL
Vanadium, V	625.0 ± 2.6 µg/mL	Zinc, Zn	625.1 ± 2.6 µg/mL

Certified Density: 1.059 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	100.0 ± 0.8 µg/mL	Barium, Ba	625.0 ± 2.6 µg/mL
Beryllium, Be	312.6 ± 1.5 µg/mL	Boron, B	125.0 ± 1.0 µg/mL
Cadmium, Cd	100.1 ± 0.4 µg/mL	Chromium+3, Cr3	200.0 ± 0.8 µg/mL
Cobalt, Co	250.0 ± 1.1 µg/mL	Copper, Cu	624.9 ± 2.5 µg/mL
Lead, Pb	625.0 ± 2.8 µg/mL	Manganese, Mn	625.2 ± 2.3 µg/mL
Nickel, Ni	625.1 ± 2.6 µg/mL	Phosphorus, P	250.3 ± 1.1 µg/mL
Selenium, Se	100.0 ± 0.6 µg/mL	Silver, Ag	50.00 ± 0.30 µg/mL
Strontium, Sr	100.1 ± 0.5 µg/mL	Thallium, Tl	100.0 ± 0.7 µg/mL
Vanadium, V	625.0 ± 2.6 µg/mL	Zinc, Zn	625.1 ± 2.6 µg/mL

Certified Density: 1.059 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	992212
Ag	Volhard	999b	999b
As	ICP Assay	3103a	100818
B	ICP Assay	3107	110830
Ba	ICP Assay	3104a	070222
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514 [a]
Be	Calculated		See Sec. 4.2
Cd	ICP Assay	3108	060531
Cd	EDTA	928	928
Co	ICP Assay	3113	000630 Co
Co	EDTA	928	928
Cr3	ICP Assay	3112a	030730Cr3
Cr3	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric		traceable to 84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	3153a	990906
Tl	ICP Assay	3158	993012
V	EDTA	928	928
V	ICP Assay	3165	992706
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods | **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 21, 2016

11.2 Expiration Date

EXPIRES
1 FEB 2018

11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVTHs_00010

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTH1
Lot Number:	K2-TH01118
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Thorium
Starting Material:	Thorium Nitrate
Starting Material Lot#:	1803
Starting Material Purity:	99.9787%

1032863
ID: MEIVTHs_00010
Exp:04/25/18 Prpd:MDK Opn:04/25/17
1000ppm Thorium stock std

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1 000 ± 4 µg/mL

Certified Density: 1.026 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1 000 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **1 000 ± 4 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000583	M	Eu	<	0.000194	O	Na		0.163940	M	Se	<	0.003303	M	Zn	<	0.009716
M	Al		0.002284	O	Fe		0.098929	M	Nb	<	0.001166	i	Si	<		M	Zr		0.016998
M	As	<	0.001749	M	Ga	<	0.000777	M	Nd		0.000685	M	Sm		0.000228				
M	Au	<	0.001343	M	Gd		0.000103	M	Ni		0.015959	M	Sn	<	0.000388				
M	B	<	0.008356	M	Ge	<	0.000971	M	Os	<	0.004222	M	Sr		0.000612				
M	Ba		0.000114	M	Hf	<	0.000777	i	P	<		M	Ta	<	0.000194				
M	Be	<	0.000388	M	Hg	<	0.000383	M	Pb		0.000373	M	Tb	<	0.000388				
M	Bi	<	0.000194	M	Ho	<	0.000194	M	Pd	<	0.000777	M	Te	<	0.058300				
O	Ca		0.097233	M	In	<	0.000777	M	Pr		0.000176	s	Th	<					
M	Cd	<	0.000194	M	Ir	<	0.000191	M	Pt	<	0.000388	M	Ti	<	0.034980				
M	Ce		0.001889	M	K		0.013665	M	Rb	<	0.001360	M	Tl	<	0.000194				
M	Co		0.000269	M	La		0.000560	M	Re	<	0.000194	M	Tm	<	0.000194				
M	Cr		0.031400	M	Li	<	0.000388	M	Rh	<	0.000194	M	U		0.047713				
M	Cs		0.000290	M	Lu	<	0.000194	M	Ru	<	0.000191	M	V	<	0.004081				
M	Cu		0.001256	O	Mg		0.045225	i	S	<		M	W	<	0.001943				
M	Dy	<	0.001554	M	Mn		0.002232	M	Sb	<	0.000388	M	Y	<	0.001166				
M	Er	<	0.000194	M	Mo	<	0.020405	M	Sc	<	0.000777	M	Yb	<	0.000194				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 232.04 +4 8 Th(OH) 3+ and Th(OH)22+

Chemical Compatibility -Soluble in HCl, and HNO3. Avoid H3PO4, H2SO4 and HF although solubilities may not be a problem depending upon pH and matrix (For example: ThF4 is soluble in acids). Avoid neutral to basic media. Th4+ is stable with most metals and inorganic anions forming an insoluble carbonate, oxide, fluoride, oxalate, sulfate and phosphate in neutral to slightly acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

Th Containing Samples (Preparation and Solution) -Metal (Soluble in Aqua Regia); Oxide (The heated oxide is not soluble in acids except hot conc. H2SO4); Ores (Na2O2 fusion at 480 ± 20EC for 7 minutes, cool and treat sintered mass with 50 mL cold water and stand until disintegrated. The mass is transferred to a beaker and acidified with HCl with 25 mL excess HCl added. Any residue is collected on a Whatman No. 42 filter, dried and ignited to 1000 EC in Pt0 crucible and the ash treated with H2SO4 / HF and fumed. If residue remains, then treat it by peroxide fusion as above.)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 232 amu	1 ppt	N/A	
ICP-OES 274.716 nm	0.08 / 0.008 µg/mL	1	Ti, Ta, Fe, V
ICP-OES 283.231 nm	0.07 / 0.007 µg/mL	1	U, Mo, Ti, Fe, Cr
ICP-OES 283.730 nm	0.07 / 0.007 µg/mL	1	U, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 04, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- August 04, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

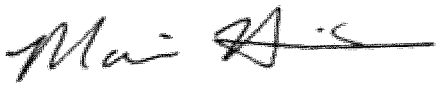
- Sealed TCT Bag Open Date: 4/25/17 MDK

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

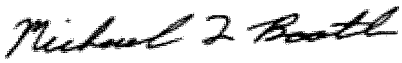
Certificate Prepared By:

Maurice Harris
Product Documentation Technician



Certificate Approved By:

Michael Booth
Supervisor, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Reagent

MEIVTLs_00014

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01 ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTL1
Lot Number:	K2-TL651554
Matrix:	1% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Thallium
Starting Material:	Thallium Nitrate
Starting Material Lot#:	2093
Starting Material Purity:	99.9964%

1006075
ID: MEIVTLs_00014
Exp:01/10/18 Prpd:BAA Opn:01/10/17
IV 1000 PPM TI

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 5 µg/mL

Certified Density: 1.005 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1001 ± 5 µg/mL**
ICP Assay NIST SRM 3158 Lot Number: 993012

Assay Method #2 **1002 ± 6 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/4}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.001292	M	Eu	<	0.000199	O	Na		0.000265	M	Se		0.001677	O	Zn		0.000217
O	Al		0.000031	O	Fe		0.000672	M	Nb	<	0.000399	O	Si	<	0.007329	M	Zr	<	0.000399
O	As	<	0.001606	M	Ga	<	0.000799	M	Nd	<	0.000199	M	Sm	<	0.000199				
M	Au	<	0.003599	M	Gd	<	0.000399	O	Ni	<	0.001098	M	Sn	<	0.001598				
M	B	<	0.019983	M	Ge	<	0.003597	M	Os	<	0.000799	O	Sr		0.000011				
M	Ba	<	0.000799	M	Hf	<	0.000199	O	P	<	0.018846	M	Ta	<	0.000199				
O	Be	<	0.000104	M	Hg		0.002162	M	Pb		0.013644	M	Tb	<	0.000199				
M	Bi		0.002181	M	Ho	<	0.000199	M	Pd	<	0.000199	M	Te		0.004645				
O	Ca		0.003290	M	In	<	0.001598	M	Pr	<	0.000199	M	Th	<	0.000199				
M	Cd		0.000323	M	Ir	<	0.000199	M	Pt	<	0.000199	M	Ti	<	0.000799				
M	Ce	<	0.000199	O	K	<	0.009533	M	Rb	<	0.000599	s	Tl	<					
M	Co	<	0.000399	M	La	<	0.000199	M	Re	<	0.001998	M	Tm	<	0.000199				
O	Cr		0.000111	O	Li	<	0.000043	M	Rh	<	0.000199	M	U	<	0.000199				
M	Cs	<	0.006394	M	Lu	<	0.000199	M	Ru	<	0.000399	O	V		0.000799				
M	Cu		0.003666	O	Mg		0.001316	O	S	<	0.018846	M	W	<	0.000399				
M	Dy	<	0.000199	O	Mn		0.000034	M	Sb	<	0.000999	O	Y		0.000221				
M	Er	<	0.000199	M	Mo	<	0.001199	O	Sc	<	0.000915	M	Yb	<	0.000199				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 204.38 +1 6 Tl(H2O)61+
Chemical Compatibility - Soluble in HCl, HNO3, and H2SO4. Stable with most metals and inorganic anions. The sulfite, thiocyanate and oxalate are moderately soluble; the phosphate and arsenite are slightly soluble and the sulfide is insoluble.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
Tl Containing Samples (Preparation and Solution) -Metal (Best dissolved in HNO3 which forms chiefly the Tl1+ ion.); Oxide (The thallous oxide is readily soluble in water. The thallic oxide requires high levels of acid); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 205 amu	2 ppt	N/A	189Os16O
ICP-OES 190.864 nm	0.04 / 0.004 µg/mL	1	V, Ti
ICP-OES 276.787 nm	0.1 / 0.01 µg/mL	1	Ta, V, Fe, Cr
ICP-OES 351.924 nm	0.2 / 0.02 µg/mL	1	Th, Ce, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 14, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- September 14, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 01/10/17

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Joseph Burns
Technical Support Technician

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Reagent

MEIVUs_00013

1 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com
Fax: 540.394.2038
Toll: 540.394.2037
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGU1
Lot Number:	J2-U01107R
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: U
Starting Material:	UO2(NO3)2.6H2O
Starting Material Lot#:	1841
Starting Material Purity:	99.9817%

1005788
ID: MEIVUs_00013
Exp:01/06/18 Prpd:BAA Opn:01/06/17
IV 1000 ppm U

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1005 ± 4 µg/mL - weighted mean

Certified Density: 1.026 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1005 ± 3 µg/mL**
ICP Assay NIST SRM 3164 Lot Number: 080521

Assay Method #2 **1005 ± 3 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.21 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.025329	M	Eu	<	0.000253	O	Na		0.008722	M	Se	<	0.012664	M	Zn	<	0.050658
M	Al	<	0.037993	M	Fe	<	1.266462	M	Nb	<	0.002532	i	Si	<		M	Zr	<	0.005065
M	As	<	0.151975	M	Ga	<	0.002532	M	Nd	<	0.012664	M	Sm	<	0.002532				
M	Au	<	0.000253	M	Gd	<	0.002532	M	Ni	<	0.050658	M	Sn	<	0.050658				
M	B	<	0.025329	M	Ge	<	0.005065	n	Os	<		M	Sr	<	0.012664				
M	Ba	<	0.025329	M	Hf	<	0.002532	i	P	<		M	Ta	<	0.002532				
M	Be	<	0.001266	i	Hg	<		M	Pb	<	0.075987	M	Tb	<	0.007598				
M	Bi	<	0.007598	M	Ho	<	0.000759	M	Pd	<	0.001266	M	Te	<	0.075987				
O	Ca		0.030527	M	In	<	0.050658	M	Pr	<	0.002532	M	Th	<	0.007598				
M	Cd	<	0.007598	M	Ir	<	0.000253	M	Pt	<	0.000253	M	Ti	<	0.012664				
M	Ce		0.351469	i	K	<		M	Rb	<	0.002532	M	Tl	<	0.012664				
M	Co	<	0.007598	M	La	<	0.025329	M	Re	<	0.000759	M	Tm	<	0.000506				
M	Cr	<	0.050658	O	Li	<	0.014000	M	Rh	<	0.000253	s	U	<	0.005065				
M	Cs	<	0.017730	M	Lu	<	0.005065	M	Ru	<	0.000253	M	V	<	0.075987				
M	Cu	<	0.025329	M	Mg	<	0.075987	i	S	<		M	W	<	0.126646				
M	Dy	<	0.002532	M	Mn	<	0.015197	M	Sb	<	0.012664	M	Y	<	0.012664				
M	Er	<	0.002532	M	Mo	<	0.037993	M	Sc	<	0.025329	M	Yb	<	0.005065				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 238.03 +6 8 UO22+(uranyl)
Chemical Compatibility - Soluble in HCl and HNO3. Avoid H3PO4. H2SO4 and HF matrices should not be a problem depending upon [U]. Although the UO22+ ion is distinctly basic, any U+4 will precipitate in basic media. UO22+salts are generally soluble in water and UO22+ is stable with most metals and inorganic anions. The uranyl phosphate is insoluble in water. UF4 and UF6 are water soluble.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.
U Containing Samples (Preparation and Solution) -Metal (Dissolves rapidly in HCl and HNO3); Oxide (Soluble in HNO3); Ores (Digest for 1-2 hours with 1 gram of ore to 30 mL 1:1 HNO3. Silica insolubles are removed by filtration after bringing the sample to fumes with conc. H2SO4.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 238 amu	2 ppt	N/A	206Pb16O2
ICP-OES 263.553 nm	0.3 / 0.01 µg/mL	1	Ce, Ir, Th, Rh, W, Zr, Ta, Ti, V, Hf, Fe, Re, Ru
ICP-OES 367.007 nm	0.3 / 0.02 µg/mL	1	Th, Ce
ICP-OES 385.958 nm	0.3 / 0.01 µg/mL	1	Th, Fe

Uranium Note: If uranium is present in this standard, it is natural abundance unless specified in Section 3.0

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 16, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- April 16, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

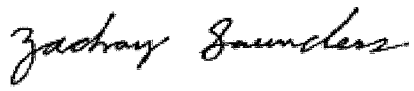
- Sealed TCT Bag Open Date: 01/06/17

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

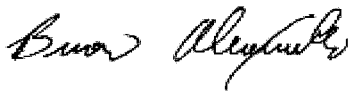
Certificate Prepared By:

Zach Saunders
Product Documentation Technician



Certificate Approved By:

Brian Alexander
PhD., Technical Process Director



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

MEIVVs_00011

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

Toll Free: 800.669.6799 - 540.585.3030
Fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGV1
Lot Number:	K2-V651103
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Vanadium
Starting Material:	V2O5
Starting Material Lot#:	1782
Starting Material Purity:	99.9947%

1005288
ID: MEIVVs_00011
Exp:01/03/18 Prpd:MDK Opn:01/03/17
1000 ppm V

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 5 µg/mL

Certified Density: 1.016 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **1001 ± 3 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **999 ± 5 µg/mL**
ICP Assay NIST SRM 3165 Lot Number: 992706

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000199	M	Eu	<	0.000099	O	Na		0.007915	M	Se	<	0.006683	O	Zn	<	0.006624
M	Al		0.009352	O	Fe		0.033582	M	Nb		0.001127	O	Si		0.002638	M	Zr	<	0.001995
M	As	<	0.001596	M	Ga		0.000433	M	Nd	<	0.000399	M	Sm	<	0.000099				
M	Au	<	0.000300	M	Gd	<	0.000099	M	Ni	<	0.006982	M	Sn	<	0.001396				
M	B	<	0.016458	M	Ge	<	0.000399	M	Os	<	0.000100	O	Sr		0.000143				
M	Ba		0.000184	M	Hf	<	0.000099	O	P	<	0.055200	M	Ta	<	0.000099				
M	Be	<	0.000498	M	Hg	<	0.008001	M	Pb		0.000238	M	Tb	<	0.000099				
M	Bi	<	0.000399	M	Ho	<	0.000099	M	Pd	<	0.000099	M	Te	<	0.001197				
O	Ca		0.011993	M	In	<	0.000099	M	Pr	<	0.000099	M	Th	<	0.000199				
M	Cd	<	0.000099	M	Ir	<	0.000100	M	Pt	<	0.000199	M	Ti		0.001452				
M	Ce	<	0.000399	O	K	<	0.110400	M	Rb	<	0.000598	M	Tl	<	0.001396				
M	Co	<	0.000099	M	La	<	0.000199	M	Re	<	0.000099	M	Tm	<	0.000099				
O	Cr		0.016311	O	Li	<	0.003312	M	Rh	<	0.000399	M	U	<	0.000199				
M	Cs	<	0.006184	M	Lu	<	0.000099	M	Ru	<	0.000100	s	V	<					
M	Cu	<	0.002793	O	Mg	<	0.033120	n	S	<		M	W		0.000368				
M	Dy	<	0.000099	M	Mn		0.000650	M	Sb		0.009363	M	Y	<	0.000099				
M	Er	<	0.000099	M	Mo		0.011021	M	Sc	<	0.000498	M	Yb	<	0.000099				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 50.94 +5 6 H2V10O284-
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4, HF, H3PO4 and strong basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
V Containing Samples (Preparation and Solution) -Metal (Fusion with NaOH or KOH in Ni0 or Na2CO3 / KNO3); Oxides (V2O3 - use HCl, V2O4 - use HCl or HNO3, V2O5 - use concentrated acids); Ores (Na2CO3 / KNO3 in Pt0 caution - nitrates attack Pto followed by water extraction of fuseate); Organic Matrices (Ash at 450 EC followed by dissolving according to V2O5 above) .
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 51 amu	4 ppt	N/A	34S16O1H, 35Cl16O, 38Ar13C, 36Ar15N, 36Ar14N1H, 37Cl14N,36S15N, 33S18O, 34S17O, 102Ru+2,02Pd+2
ICP-OES 290.882 nm	0.008 / 0.0008 µg/mL	1	Hf, Nb
ICP-OES 292.402 nm	0.006 / 0.001 µg/mL	1	Th
ICP-OES 309.311 nm	0.005 / 0.001 µg/mL	1	Mg, U, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 22, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1. are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- August 22, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 01/03/17

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Chemist, Technical Manager



Certificate Approved By:

Michael Booth
Supervisor, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Reagent

MEIVWs_00012

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

Tel: 800.669.6799 - 540.563.3000
Fax: 540.585.3017
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGW1
Lot Number:	J2-W02027
Matrix:	0.2% (v/v) HNO3 2% (v/v) HF
Value / Analyte(s):	1 000 µg/mL ea: W
Starting Material:	W Powder
Starting Material Lot#:	1898
Starting Material Purity:	99.9953%

1006079
ID: MEIVWs_00012
Exp:01/10/18 Prpd:BAA Opn:01/10/17
IV 1000 ppm W

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value:	997 ± 6 µg/mL
Certified Density:	1.007 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 **997 ± 4 µg/mL**
ICP Assay NIST SRM 3163 Lot Number: 080331

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000742	M	Eu	<	0.000185	O	Na		0.001855	M	Se	<	0.022259	M	Zn	<	0.027823
M	Al	<	0.037098	O	Fe	<	0.021300	M	Nb	<	0.020404	i	Si	<		O	Zr	<	0.006846
M	As	<	0.018549	M	Ga	<	0.000927	M	Nd	<	0.005565	M	Sm	<	0.000185				
O	Au	<	0.053249	M	Gd	<	0.000185	M	Ni	<	0.009274	M	Sn	<	0.004637				
M	B	<	0.007420	M	Ge	<	0.000927	n	Os	<		M	Sr	<	0.000371				
M	Ba	<	0.003710	M	Hf	<	0.003710	i	P	<		M	Ta		0.001630				
M	Be	<	0.002782	i	Hg	<		M	Pb	<	0.000927	M	Tb	<	0.000185				
M	Bi	<	0.003710	M	Ho	<	0.000185	M	Pd	<	0.000742	M	Te	<	0.004637				
O	Ca		0.000808	M	In	<	0.000927	M	Pr	<	0.000927	M	Th	<	0.032460				
M	Cd	<	0.000927	M	Ir	<	0.000185	M	Pt	<	0.000927	M	Ti	<	0.002782				
M	Ce	<	0.000742	O	K		0.046962	M	Rb	<	0.013912	M	Tl	<	0.001855				
M	Co	<	0.001855	M	La	<	0.000185	M	Re	<	0.126132	M	Tm	<	0.000185				
M	Cr	<	0.009274	O	Li	<	0.000400	M	Rh	<	0.000185	M	U	<	0.000927				
M	Cs		0.000474	M	Lu	<	0.000185	M	Ru	<	0.001855	M	V	<	0.009274				
M	Cu	<	0.003710	O	Mg	<	0.004004	i	S	<		s	W	<					
M	Dy	<	0.000185	M	Mn	<	0.004637	M	Sb	<	0.001855	M	Y	<	0.000185				
M	Er	<	0.000185	M	Mo	<	0.004637	O	Sc	<	0.004004	M	Yb	<	0.000185				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 183.85 +6 6,7,8,9 WOF5-2(chemical form as received)
Chemical Compatibility -W is very readily hydrolyzed requiring 0.1 to 1% HF solutions for stabile acidic solutions. The [WOF5]-2 is soluble in % levels of HCl and HNO3 provided it is in the [WOF5]-2 form. Stable at ppm levels with some metals provided it is fluorinated. <U>Do not mix with Alkaline or Rare Earths</U>. W is best to be mixed only with other fluorinated metals (Ti, Zr, Hf, Nb, Ta, Mo, Si, Sn, Ge). Look for yellow WO3 precipitate if mixed with other transitions at higher levels indicating instability. The yellow WO3 will form over a period of weeks even in trace HF, therefore, <U>HF levels of W multi-element blends should be ∼ 1%</U>.
Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [WOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [WOF5]-2 chemically stable for years in 1% HF in a LDPE container.
W Containing Samples (Preparation and Solution) -Metal (Soluble in HF / HNO3); Oxide (soluble in HF or NH4OH) ; Organic Matrices (dry ash at 450 0C in Pt0 and dissolve oxide with HF).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 182 amu	5 ppt	N/A	166Er16O
ICP-OES 207.911 nm	0.03/0.001 µg/mL	1	Ru, In
ICP-OES 209.475 nm	0.05/0.008 µg/mL	1	Mo
ICP-OES 224.875 nm	0.05/0.005 µg/mL	1	Co, Rh, Ag

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 19, 2015

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- August 19, 2018

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: 01/10/17

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MEIVZNs_00015

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

Tel: 800.669.2799 - 540.585.3030
Fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGZN1
Lot Number:	K2-ZN02116
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Zinc
Starting Material:	Zn Shot
Starting Material Lot#:	1887
Starting Material Purity:	99.9994%

1006080
ID: MEIVZNs_00015
Exp:01/10/18 Prpd:BAA Opn:01/10/17
IV 1000 ppm Zinc

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value:	998 ± 5 µg/mL
Certified Density:	1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1	**995 ± 3 µg/mL** ICP Assay NIST SRM 3168a Lot Number: 120629
Assay Method #2	**1001 ± 3 µg/mL** EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-FIlter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001528	M	Eu	<	0.000509	O	Na		0.000717	M	Se	<	0.050920	s	Zn	<	
O	Al	<	0.011300	O	Fe		0.000470	M	Nb	<	0.000509	O	Si	<	0.022600	O	Zr	<	0.001130
M	As	<	0.005092	M	Ga	<	0.005092	M	Nd	<	0.001018	M	Sm	<	0.000509				
M	Au	<	0.000509	M	Gd	<	0.002037	O	Ni	<	0.000904	M	Sn	<	0.000509				
O	B	<	0.001130	M	Ge	<	0.001018	n	Os	<		O	Sr		0.000009				
O	Ba	<	0.001130	M	Hf	<	0.000509	O	P	<	0.033900	M	Ta	<	0.000509				
O	Be	<	0.000113	O	Hg	<	0.002260	O	Pb		0.004227	M	Tb	<	0.000509				
M	Bi	<	0.010184	M	Ho	<	0.000509	M	Pd	<	0.000509	M	Te	<	0.005092				
O	Ca		0.000601	M	In	<	0.000509	M	Pr	<	0.000509	M	Th	<	0.000509				
O	Cd		0.000289	M	Ir	<	0.000509	M	Pt	<	0.000509	O	Ti	<	0.000565				
M	Ce	<	0.000509	O	K		0.000321	M	Rb	<	0.000509	M	Tl		0.000312				
M	Co	<	0.000509	M	La	<	0.000509	M	Re	<	0.000509	O	Tm	<	0.000379				
O	Cr	<	0.002260	O	Li	<	0.000565	M	Rh	<	0.000509	M	U	<	0.000509				
M	Cs	<	0.001528	M	Lu	<	0.000509	O	Ru	<	0.006780	O	V	<	0.001130				
O	Cu		0.000148	O	Mg		0.000023	O	S	<	0.011300	M	W	<	0.000509				
M	Dy	<	0.000509	O	Mn	<	0.000226	M	Sb	<	0.000509	O	Y		0.000082				
M	Er	<	0.000509	M	Mo	<	0.001528	O	Sc	<	0.000565	M	Yb	<	0.000509				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 65.39 +2 4 Zn(OH)(aq)1+
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media forming insoluble carbonate and hydroxide. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Zn Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3); Organic based (dry ash at 4500C and dissolve ash in HCl) (sulfuric/peroxide acid digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 66 amu	7 ppt	N/A	50Ti16O,50Cr16O, 50V16O, 34S16O2, 32S16O18O, 32S17O2, 33S16O17O, 32S34S, 33S2
ICP-OES 202.548 nm	0.004/0.0002 µg/mL	1	Nb, Cu, Co, Hf
ICP-OES 206.200 nm	0.006/0.0006 µg/mL	1	Sb, Ta, Bi, Os
ICP-OES 213.856 nm	0.002/0.0004 µg/mL	1	Ni, Cu, V

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 21, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- April 21, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

MESCPICV1_00004

SCP SCIENCE
Providing Innovative Solutions to Analytical Chemists

Certificate of Analysis

1.0 DESCRIPTION : ***Plasma*** **CAL – Custom Standard**

Catalogue Number : **600-304-822** **Cal #1**
Lot Number : **S161222007**
Matrix: **7.0% HNO3**
Expiration Date : **January 2018**

1005462
ID: MESCPICV1_00004
Exp:01/04/18 Prpd:BAA Opn:01/04/17
6010 ICV part 1

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Method of Analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)

Traceability: Applicable NIST Standard Reference Materials (see list below):

3101a	Al	3109a	Ca	3117a	Eu	3126a	Fe	3134	Mo	3142a	Pr	3151	Ag	3159	Th	3167a	Y
3102a	Sb	3110	Ce	3118a	Gd	3127a	La	3135a	Nd	3143	Re	3152a	Na	3160a	Tm	3168a	Zn
3103a	As	3111a	Cs	3119a	Ga	3128	Pb	3136	Ni	3144	Rh	3153a	Sr	3161a	Sn	3169	Zr
3104a	Ba	3112a	Cr	3120a	Ge	3129a	Li	3137	Nb	3145a	Rb	3154	S	3162a	Ti		
3105a	Be	3113	Co	3121	Au	3130a	Lu	3138	Pd	3147a	Sm	3155	Ta	3163	W		
3106	Bi	3114	Cu	3122	Hf	3131a	Mg	3139a	P	3148a	Sc	3156	Te	3164	U		
3107	B	3115a	Dy	3123a	Ho	3132	Mn	3140	Pt	3149	Se	3157a	Tb	3165	V		
3108	Cd	3116a	Er	3124a	In	3133	Hg	3141a	K	3150	Si	3158	Tl	3166a	Yb		

Certified Concentrations:

Ag	50.3 ± 0.5	µg/ml	P	248.8 ± 1.7	µg/ml
As	100.1 ± 1.0	µg/ml	Pb	620 ± 4	µg/ml
B	124.7 ± 0.8	µg/ml	Se	99.7 ± 0.6	µg/ml
Ba	626 ± 3	µg/ml	Sr	99.2 ± 0.7	µg/ml
Be	309.9 ± 2.1	µg/ml	Tl	99.4 ± 0.7	µg/ml
Cd	99.9 ± 0.8	µg/ml	V	619 ± 5	µg/ml
Co	249.4 ± 1.6	µg/ml	Zn	625 ± 5	µg/ml
Cr	199.5 ± 1.4	µg/ml			
Cu	622 ± 5	µg/ml			
Mn	624 ± 5	µg/ml			
Ni	619 ± 6	µg/ml			

ACCREDITED
Reference Material Producer
ISO Guide 34
CERTIFICATE #2885.02

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) such as the SRM inherited uncertainty, weighing and dilution errors and instrument variability. The combined uncertainty ($uc = \sqrt{\Sigma u_i^2}$) has been multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:

Density: **1.043 g/ml** **@** **22.9 °C**

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Yaling Sui, Chemist
Certification Date: **December 29, 2016**

Yaling Sui

5.0 INTENDED USE / *UTILISATION PRÉVUE*:

- ICP Standards: For the calibration of, including but not limited to: ICP-AES, ICP-MS, FAAS, GFAA, XRF and DCP. / *Étalons ICP : Pour l'étalonnage d'instruments de mesure tels que: ICP-AES, ICP-MS, FAAS, GFAA, XRF et DCP.*
- AA Standards: For the calibration of Flame (FAAS) and Graphite Furnace (GFAA) Atomic Absorption Spectrometers. / *Étalons AA : Pour l'étalonnage de spectromètres d'absorption atomique flamme (GFAA) et four au graphite (GFAA).*
- Matrix Modifiers: For the optimization of analytical conditions to provide better Graphite Furnace Atomic Absorption (GFAA) instrument response and improved detection limits. / *Modificateur de matrice : Pour l'optimisation des conditions analytiques afin de fournir des meilleurs réponses instrumentales et limites de détection pour SAA four au graphite.*
- pH Standards: For the calibrating pH meters or for other wet chemistry applications. / *Étalons pH : Pour étalonnage de pH mètres et autres applications de chimie humide.*
- Conductivity Standards: For electrolytic conductivity measurement as a calibration standard. / *Étalons de conductivité : Comme étalon pour les mesures de conductivité électrolytiques.*
- IC Standards: for calibration of, but not limited to IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS or other wet chemistry applications. / *Étalons IC : Pour étalonnage d'instruments tels que : IC, HPLC, TLC, ISE, IR, NMR, MS, UV/VIS et autres applications de chimie humide.*

For any inquiries, please contact **SCP SCIENCE**. / *Pour toute question, veuillez contacter SCP SCIENCE.*

6.0 INSTRUCTIONS FOR USE / *INSTRUCTIONS D'UTILISATION*:

Handling and Storage / *Manutention et entreposage*: Keep product tightly capped when not in use. The solution should be opened for a minimum amount of time necessary to dispense the amount required. Do not pipet or use directly from container. Do not return unused portions back to container. Store under normal laboratory conditions, with the exception of IC mono and multi element standards which we recommend be stored at 4°C / *Garder les contenants bien fermés lorsque non utilisés. Le contenant devrait être ouvert seulement pour le temps requis afin de prélever la quantité nécessaire. Ne pas pipetter ou utiliser directement du contenant. Ne pas retourner les portions non-utilisées dans le contentant. Conserver dans des conditions normales de laboratoire à l'excéption des étalons mono et multi-éléments IC que nous recommandons soient conservés à 4°C.*

Stability / *Stabilité*: This Standard is guaranteed to be stable and accurate to within the specified uncertainty of measurement up to the unopened expiry date, if sealed, or up to the opened expiry date (when indicated), whichever comes first, provided the solution is kept tightly capped and stored under the indicated storage conditions. Purchasers will be notified of any significant changes resulting in re-certification or withdrawal of the product prior to the expiration date. / *La stabilité et l'exactitude de cet étalon sont garanties d'être à l'intérieur de l'incertitude de mesure, jusqu'à la date d'expiration de la bouteille non-ouverte, si scellée, ou jusqu'à la date d'expiration de la bouteille ouverte (si indiquée), en présumant que le contenant est maintenu fermé et gardé dans les conditions d'entreposage indiquées. Les acheteurs seront avisés dans le cas où il y aura des changements significatifs nécessitant une re-certification ou un rappel du produit avant la date d'expiration.*

7.0 HAZARDOUS INFORMATION / *INFORMATION SUR LES RISQUES POTENTIELS*:

Please refer to the associated Material Safety Data Sheet (MSDS) for information regarding this product (available at www.SCPSCIENCE.com). / *SVP vous référer à la Fiche Signalétique applicable pour de l'information sur ce produit (Disponible à www.SCPSCIENCE.com).*

8.0 HOMOGENEITY / *HOMOGÉNÉITÉ*:

This solution has been blended according to an in-house procedure and its homogeneity is guaranteed to be fit for purpose when a sample size sufficient for the intended method of analysis is used. / *Cette solution a été préparée selon une procédure maison et nous assurons que sa homogénéité est approprié à l'emploi lorsqu'un échantillon suffisant pour la méthode d'analyse prévue est utilisé.*

9.0 TRACEABILITY / *TRAÇABILITÉ*:

This CRM (Certified Reference Material) is traceable to the NIST SRM (Standard Reference Material) indicated in section 2 through an unbroken chain of comparisons. In addition, balances used are regularly calibrated using weights which are traceable to NIST (National Institute of Standards and Technology) or NRC (National Research Council of Canada) standards. All conductivity meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable Thermometer and standards. All pH meters used to analyze this standard have been regularly calibrated using a NIST or NRC traceable thermometer and pH/MV simulator. / *Ce matériel de référence certifié est traçable au Matériel de Référence Standardisé de NIST indiqué à la section 2 par une chaine de comparaison ininterrompue. De plus, les balances utilisées sont étalonnées régulièrement en utilisant des poids qui sont traçables au NIST (National Institute of Standards and Technology) ou au CRNC (Conseil National de Recherches Canada). Tout conductimètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et étalons traçables au NIST ou CNRC. Tout pH mètre utilisé afin d'analyser cet étalon a été sujet à un étalonnage périodique utilisant des thermomètres et un simulateur pH/MV traçables au NIST ou au CNRC.*

10.0 PREPARATION / *PRÉPARATION*:

For the preparation of these solutions, 18 meghom/cm double deionized water, high-purity acids and glassware calibrated to ASTM Class A specifications are used. / *Une eau de 18 meghom/cm doublement déionisé, de l'acide de haute pureté, ainsi que de la verrerie étalonnée afin de satisfaire les spécifications Classe A de ASTM ont été utilisés pour la préparation de cet étalon.*

11.0 QUALITY SYSTEM CERTIFICATIONS / *CERTIFICATIONS DE SYSTÈME QUALITÉ*:

ISO 9001 Certification / *Certification ISO 9001*: This standard was produced in a facility which operates under a registered ISO 9001:2008 Quality Management System. Please consult our web site for a copy of the most recent revision of our certificate of registration. / *Cet étalon a été fabriqué dans un laboratoire qui utilise un Système de Gestion de la Qualité enregistré à la norme ISO 9001 :2008. Veuillez consulter notre site web pour obtenir la version la plus récente de notre certificat d'enregistrement.*

ISO 17025 Accreditation / *Accréditation ISO 17025*: SCP SCIENCE (Corporate Headquarters) operates an ISO 17025:2005 accredited laboratory. Please consult our web site for a copy of the most recent revision of our certificate and scope of accreditation. / ***SCP SCIENCE (Siège social)** est accréditée ISO 17025 :2005. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

ISO Guide 34 Accreditation / *Accréditation ISO Guide 34* : SCP SCIENCE (Corporate Headquarters) is an ISO Guide 34 :2009 accredited Reference Material Producer. Please consult our website for a copy of our most recent certificate and scope of accreditation. / ***SCP SCIENCE (Siège social)** est un Fabricant de Matériaux de Référence Accrédité ISO Guide 34:2009. Veuillez consulter notre site web afin d'obtenir la plus récente version de notre certificat d'accréditation ainsi que la portée de notre accréditation.*

Corporate Headquarters/ Siège Social :
Canada / International
21800 Clark Graham
Baie D'Urfé (Montreal),
Québec, Canada, H9X 4B6
Tel: 1-514-457-0701 /1-(800) 361-6820
Email: sales@scpscience.com
www.scpscience.com

USA
348 Route 11
Champlain, NY
12919-4816
Tel: 1-(800) 361-6820
Email: sales@scpscience.com
www.scpscience.com

France
12, avenue du Québec Bat. I-2
SILIC 642,
91965 Courtaboeuf Cedex
Tel: +33 (0)1 69 18 71 17
Email: sales@scpscience.com
www.scpscience.com

China
Room 708, No. 180
Majiapu Road
Feng Tai District, Beijing, China
100068
Tel: +86 (10) 87583441
Email: sales@scpscience.com
www.scpscience.com

Germany
Alte Marktoberdorfer Straße 14
87616 Marktoberdorf
Germany
Tel: +49 (0) 8342-89560-61
Email: sales@scpscience.com
www.scpscience.com

Reagent

MESPEXHgs_00015

Reference Materials Producer
Cert #2495.01

SPEXertificate®

Certificate of Reference Material

Chemical Testing
Cert #2495.02

Catalog Number: PLHG4-2Y **Lot No.** 22-32HGY

Description: 1000 µg/mL Mercury

Matrix: 10% HNO_3

This **ASSURANCE®** Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for inorganic spectroscopic instrumentation such as ICP-OES, DCP, AA, ICP-MS, and XRF. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

Certified Value: 1002 µg/mL ±5 µg/mL

1006727
ID: MESPEXHgs_00015
Exp:01/11/18 Prpd:BAA Opn:01/11/17
SPEX 1000ppm Mercury stoc

Certified Value is Traceable to: 3133*

* - indicates NIST SRM † - indicates SPEX CertiPrep CRM (when NIST SRM is not available)

The CRM is prepared gravimetrically using high purity Mercury Metal, Lot# 03141E. The certified value listed is the average of values obtained by classical wet assay and ICP spectrometer analysis.

Refer to side 2 for details of measurement uncertainties.

Classical Wet Assay: 1001 µg/mL

Method: Titration with Ammonium Thiocyanate using Ferric Nitrate as indicator.

Instrumental Analysis by ICP Spectrometer: 1002 µg/mL

Uncertified Properties

Density: 1.052 g/mL @ 20.0°C

Trace Metallic Impurities in the Actual Solution via ICP-MS Analysis:

Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL	Element	µg/mL
Ag	<0.002	Cr	0.003	Ho	<0.001	Nb	<0.001	Ru	<0.001	Th	<0.001
Al	0.002	Cs	<0.001	In	<0.001	Nd	<0.001	Sb	<0.001	Ti	<0.001
As	<0.001	Cu	<0.001	Ir	<0.001	Ni	<0.001	Sc	<0.001	Tl	<0.001
Au	<0.01	Dy	<0.001	K	<0.1	P	<0.1	Se	0.007	Tm	<0.001
B	<0.04	Er	<0.001	La	<0.001	Pb	<0.001	Si	<0.1	U	<0.001
Ba	<0.001	Eu	<0.001	Li	<0.001	Pd	<0.01	Sm	<0.001	V	<0.001
Be	<0.001	Fe	<0.001	Lu	<0.001	Pr	<0.001	Sn	<0.001	W	<0.002
Bi	<0.001	Ga	<0.001	Mg	0.001	Pt	<0.001	Sr	<0.001	Y	0.003
Ca	0.005	Gd	<0.001	Mn	<0.001	Rb	<0.001	Ta	<0.001	Yb	<0.001
Cd	<0.001	Ge	<0.002	Mo	<0.001	Re	<0.001	Tb	<0.001	Zn	<0.004
Ce	<0.001	Hf	<0.001	Na	0.005	Rh	<0.001	Te	<0.001	Zr	<0.001
Co	<0.001										

Balances are calibrated regularly with weight sets traceable to NIST #32856, #32867 and others. This CRM is guaranteed stable and accurate to +/- 0.5% of the certified value. This includes uncertainty components due to preparation, homogeneity by the most precise method, and short-term and long-term stability. This guarantee is valid for a period of one year from the date of certification only when the material is unopened and stored under ambient laboratory conditions.

Date of Certification: JAN - - 2017 Certifying Officer:

©2016 SPEX CertiPrep, LLC

Report of Certification

This Certified Reference Material (CRM) has been prepared and certified under an ISO 9001:2008, ISO 17025:2005, and ISO Guide 34:2009 quality system consistent with the following guides:

- ISO 9001: Quality management systems – Requirements – certified by UL-DQS
- ISO 17025: General requirements for the competence of testing and calibration laboratories – accredited by A2LA
- ISO Guide 34: General requirements for the competence of reference material producers – accredited by A2LA
- ISO Guide 31: Reference Materials – Contents of certificates and labels
- ISO Guide 35: Reference Materials – General & Statistical Principals for Certification
- Guide To The Expression Of Uncertainty In Measurement 1997
- EURACHEM/CITAC Guide: Quantifying Uncertainty in Analytical Measurement – Second Edition
- ASTM Guide D6362-98
- NIST Technical Note 1297
- ILAC-G12-2000: Guidelines for the requirements for the competence of reference materials producers
- ISO/REMCO N280

Material Source:

All analytes and matrix materials are obtained and verified by SPEX CertiPrep from pre-qualified vendors as per ISO 9001:2008, ISO 17025:2005, and ISO Guide 34:2009 guidelines. Vendor identifications are proprietary, however sources of all materials used in the preparation and testing of SPEX CertiPrep CRMs are tracked and documented. For further assistance, please contact the Sales Support Department at crmsales@spexcsp.com.

Instructions for Use:

Primary usage of this CRM is in neat form or diluted serially with matrix of a purity at or greater than the purity of the original matrix solution. If dilution is required the diluent must be compatible with all certified analytes and contain stabilizers appropriate for the period of intended use. The CRM can also be used as a spike or with a spike, again with appropriate compatibility considerations. All solutions should be thoroughly mixed, by shaking, prior to use and never pipetted directly from the bottle. All surfaces that come in contact with the solution must be thoroughly cleaned and leached prior to use. Dilutions should be performed only with Class A volumetric glassware.

Method of Preparation:

Clean laboratory procedures and techniques have been used throughout the preparation. All materials, equipment, analytical instrumentation and personnel have been qualified prior to use. The highest purity acids applicable, 18 megohm, double deionized water, acid-leached triple-rinsed bottles (where appropriate), and Class A/calibrated volumetrics have been used in all preparations.

Homogeneity:

The homogeneity of the CRM has been confirmed by procedures consistent with ISO 17025:2005, ISO Guide 34:2009, and ASTM D6362-98 Appendix X2. Random, replicate samples of the final, packaged material have been analyzed to prove homogeneity in accordance with our internal procedure 4600-HOMOGEN-1A. Since the product is highly homogeneous, any sample size taken for analysis would be within the uncertainty budget. This is consistent with the intended use of the CRM.

Statistical Estimator and Confidence Limits:

The certified value 'X' listed on the reverse of this document is at the 95% level of confidence and can be expressed as:

- $X = x \pm U$ where X = certified value, U = expanded uncertainty, x = property value
- $U = ku_c$ where $k = 2$ is the coverage factor at the 95% confidence level
- u_c is obtained by combining the individual element standard uncertainty components u_i, and $u_c = \sqrt{\sum u_i^2}$

Certification Traveler Report:

All certified values reported were derived from the Traveler Report (SPEX CertiPrep's traceability documentation) identified by the lot number of this CRM. During the stated period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution. For further assistance, please contact the Sales Support Department at crmsales@spexcsp.com.

Legal Notice:

SPEX CertiPrep reference materials are not for any cosmetic, drug or household application and are to be used only by qualified individuals who are trained in appropriate procedures. No claims against SPEX CertiPrep, LLC of any kind whatsoever, whether based on breach of warranty, alleged negligence, or otherwise, with respect to this Reference Material shall be greater than the purchase price. In no event shall SPEX CertiPrep, LLC be liable for any loss of profits or any incidental, special, or consequential damages.

SPEX CertiPrep®
Your Science is Our Passion®

203 Norcross Ave, Metuchen, NJ 08840
www.spexcertiprep.com • E-mail: crmsales@spexcsp.com
Phone: 732-603-9647 • Fax: 732-603-9647

Accredited to 17025 & Guide 34 ISO Certified to 9001

Reagent

META-69_00011

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

fax: 800.669.6799 · 540.585.3030
fax: 540.585.3013
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-69
Lot Number:	K2-MEB637108
Matrix:	1% (v/v) HNO3
Value / Analyte(s):	15 000 µg/mL ea: Calcium, Magnesium, 5 000 µg/mL ea: Potassium, Sodium

1026379
ID: META-69_00011
Exp:03/30/18 Prpd:MDK Opn:03/30/17
6010 ICV stock part 2

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Calcium, Ca	15 000.0 ± 60.0 µg/mL	Magnesium, Mg	15 000.0 ± 60.0 µg/mL
Potassium, K	5 000 ± 18 µg/mL	Sodium, Na	5 000 ± 18 µg/mL

Certified Density: 1.136 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ca	ICP Assay	3109a	050825
Ca	EDTA	928	928
K	ICP Assay	3141a	051220
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods **Characterization of CRM by one method**

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\ (u_{char\ a})^2 + (w_b)^2\ (u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pippette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 19, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 19, 2019**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Product Documentation Supervisor



Certificate Approved By:

Michael Booth
QC Supervisor



Certifying Officer:

Paul Gaines
PhD., Senior Technical Director



Reagent

META-70_00008

INORGANIC VENTURES™
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-70
Lot Number:	J2-MEB615044
Matrix:	5% (v/v) HNO3 0.4% (v/v) HF
Value / Analyte(s):	625 µg/mL ea: Molybdenum, 500 µg/mL ea: Silicon, 250 µg/mL ea: Tin, 125 µg/mL ea: Antimony, 100 µg/mL ea: Titanium

954501
ID: META-70_00008
Exp:06/01/17 Prpd:MDK Opn:07/21/16
6010 ICV stock part 3
Rec'd 7/21/16 MDK

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	**125.0 ± 0.9 µg/mL**	**Molybdenum, Mo**	**625.0 ± 3.3 µg/mL**
Silicon, Si	**500.0 ± 3.6 µg/mL**	**Tin, Sn**	**250.1 ± 0.9 µg/mL**
Titanium, Ti	**100.0 ± 0.6 µg/mL**		

Certified Density: 1.027 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	891307
Sb	ICP Assay	3102A	061229
Sb	Calculated		See Sec. 4.2
Si	ICP Assay	3150	071204
Si	Calculated		See Sec. 4.2
Sn	ICP Assay	3161a	070330
Sn	Calculated		See Sec. 4.2
Ti	ICP Assay	3162a	060808
Ti	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 29, 2015

11.2 Expiration Date

EXPIRES
1 JUN 2017

11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

META-71_00008

INORGANIC VENTURES
CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (SAI Global File Number 010105).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	TA-71QC
Lot Number:	K2-MEB628027
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	15 000 µg/mL ea: Aluminum, Iron

1026380
ID: META-71_00008
Exp:02/01/18 Prpd:MDK Opn:03/30/17
6010 Cal stock part 4

Second Source: Whenever possible, this solution was manufactured from a second set of concentrates in our manufacturing facility.

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	15 000.0 ± 70.0 µg/mL	Iron, Fe	15 000.0 ± 60.0 µg/mL

Certified Density: 1.144 g/mL (measured at 20 ± 1 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

Characterization of CRM by two independent methods

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2\,(u_{char\ a})^2 + (w_b)^2\,(u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

Characterization of CRM by one method

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{sts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{sts} = short term stability standard uncertainty (transportation)

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Keep cap tightly sealed when not in use. Store and use at 20 ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.4 ISO/IEC Guide 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 21, 2016

11.2 Expiration Date

EXPIRES
1 FEB 2018

11.3 Period of Validity

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is handled and stored in accordance with instructions given in Sec 7.0 and used prior to the date given in Sec 11.2. This certification is nullified if the CRM/RM is damaged, contaminated, or otherwise modified.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Maurice Harris
Product Documentation Technician

Certificate Approved By:

Michael Booth
QC Supervisor

Certifying Officer:

Paul Gaines
PhD., Senior Technical Director

Reagent

WCLKLCSs_00019

LECO Reference Material

LECO Corporation; Saint Joseph, Michigan USA

ACCREDITED
Reference Material Producer
Certificate # 3285.02

Part No: 502-062
Lot No: 1017

895119
ID: WCLKLCSs_00019
Exp:01/30/18 Prpd:KSH Opn:01/30/17
Lloyd Kahn LCS

LECO Reference Materials are traceable to national or international Certified Reference Materials whenever possible. When these Certified Reference Materials do not exist or are inadequate for calibration purposes, other appropriate materials are used. The accuracy of the reported results for LECO Reference Materials is greatly influenced by the accuracy of the primary reference materials used. The intended use of this reference material is for calibration purposes.

Category	Reference Value	+/-
% Carbon	0.926	0.04
% Hydrogen	0.36	0.03
% Nitrogen	0.092	0.016
% Sulfur	0.016	0.003

- +/- indicates two times the standard deviation (2s).
- Refer to the reverse side of certificate for additional information regarding calculations.

Homogeneity:
Homogeneity of this material was confirmed through analysis of a random selection of bottled material and was found to be highly homogeneous.

Material:
LECO 502-062 Lot: 1017 is a soil calibration material.

Traceability: The following Certified Reference Materials were used to validate the analytical data:
NIST SRM 915b, Calcium Carbonate @ 12.0% Carbon
NIST SRM 2690, Coal Fly Ash @ 0.15% Sulfur
LECO CRM EDTA 502-812 (HS10007A) @ 41.1% Carbon, 5.55% Hydrogen and 9.56% Nitrogen

Preparation:
A separate portion of this reference material must be dried for one hour at 105°Celsius prior to usage. The dried sample should be stored in a desiccator and must be used for analysis within 24 hours. Any unused portion of the dried sample should be discarded.

Analysis:
LECO analytical instruments were used to characterize this material. This material was analyzed by high temperature combustion using a resistance furnace utilizing LECO infrared (IR) and thermal conductivity (TC) detection technology.

Category	Method/Detection	n
% Carbon	Combustion/IR	60
% Hydrogen	Combustion/IR	30
% Nitrogen	Combustion/TC	40
% Sulfur	Combustion/IR	40

Expiration:
ISO Guide 31 States that the certificate should contain an expiration date for all materials where instability has been demonstrated or considered possible, after which the certified value is no longer guaranteed by the certifying body. This reference material is valid within the stated deviation until **August 5th, 2019** provided the RM is stored in its original bottle at room temperature. This reference material is nullified if it is contaminated or otherwise altered.

Certificate of Analysis

Delivering the Right Results

Analysis Data:

Data Set	Number of Analyses	% Carbon	Carbon Standard Dev.	% Hydrogen	Hydrogen Standard Dev.	% Nitrogen	Nitrogen Standard Dev.	% Sulfur	Sulfur Standard Dev.	Method	Instrument
1	10	0.9420	0.0078	0.371	0.010	0.0921	0.0121	-	-	TSL-C001	LECO CHN628-Argon
2	10	-	-	-	-	-	-	0.0158	0.0004	TSL-C001	LECO 628 S-Module
3	10	0.9250	0.0032	-	-	0.0842	0.0015	0.0156	0.0029	TSL-C001	LECO TruMac CNS
4	10	0.8905	0.0054	-	-	-	-	0.0159	0.0011	TSL-C001	LECO SC632
5	10	-	-	-	-	-	-	0.0146	0.0005	TSL-C001	LECO S632
6	10	0.9380	0.0063	0.365	0.012	0.0936	0.0019	-	-	TSL-C001	LECO CHN628
7	10	0.9288	0.0069	0.348	0.011	-	-	-	-	TSL-C001	LECO TruSpec CHN
8	10	0.9286	0.0066	-	-	0.0980	0.0005	-	-	TSL-C001	LECO TruMac CN
Average		0.9255		0.361		0.0920		0.0155			
Std Dev		0.0179		0.014		0.0078		0.0016			

- Each Data Set value represents an average of the sample analyses.
- Underline indicates last significant digit.

Participating Laboratories:

Lab:
LECO Technical Services Laboratory

Accreditation:
A2LA Accredited to ISO 17025:2005

Calculations:
In compliance with the requirements of ISO Guides 31, 34 and 35 for the production of Reference Materials, the values for this material were calculated using a mean and standard deviation of the overall data.

References:
LECO TSL-C001: In house method for the analysis of Plant Tissue and Soil materials

ISO Standard 17025:2005 General requirements for the competence of testing and calibration laboratories.
ISO Guide 30:1992 Terms and definitions used in connection with reference materials.
ISO Guide 31:2000 Reference Materials-Contents of certificates and labels.
ISO Guide 33:2000 Uses of certified reference materials.
ISO Guide 34:2009 General requirements for the competence of reference material producers.
ISO Guide 35:2006 Reference Materials-General and statistical principles for certification.

ASTM Documents available from ASTM, 1916 Race Street, Philadelphia, PA, 19103
ISO Guides and Standards available from Global Engineering – www.global.ihs.com

Approved by: Dennis Lawrenz
Technical Services Laboratory Director
Date of release: August 5th, 2014

No warranties of description, merchantability, or fitness for a particular purpose or any other express or implied warranties arise out of LECO's sale of this product. Remedies for any claimed defect in this product will be limited to replacement of the product or refund of the purchase price. In no event shall LECO be liable for incidental or consequential damages.

LECO Corporation • Technical Services Laboratory
3000 Lakeview Avenue • St. Joseph, MI. USA 49085
Phone: 800-292-6141 • Fax: 269-982-8977 • www.leco.com
info@leco.com • A2LA Accredited to ISO 17025:2005
LECO is a registered trademark of LECO Corporation.

Page 289 of 817

Reagent

WCTOCCALs_00016

SCP SCIENCE

Certificate of Analysis

Providing Innovative Solutions to Analytical Chemists /
Solutions innovatrices pour chimistes analystes

Catalogue numbers: 250-250-052/250-250-054
Description: *Accu*SPEC – **TOC Standard- 10000 µg/ml**

Lot Number: **S170407005**
Expiry Date: **April 2019**

4/24/17 KSH
Date bottle opened

TOC 10000 ppm

This standard analyzed by ICP-AES is traceable to NIST Standard Reference Material: 84L

Actual Value: **9930 ± 30 µg/ml**

Certified by: Yaling Sui
Yaling Sui, chemist

Date of certification: April 18, 2017

This TOC Standard is guaranteed to be stable and accurate to within ± 1% of the actual concentration, up to the expiry date provided the solution is kept tightly capped and stored under normal laboratory conditions. For these solutions, 18 megohm/cm double deionized water, and Class A glassware are used. The Material Safety Data Sheet and this Certificate of Analysis are available on our web site. (Également disponible en Français)

SCP SCIENCE is ISO 9001 registered and ISO 17025 / Guide 34* accredited.
(*This product is **not accredited**. See our Scope of Accreditation for an official list of accredited certified reference materials).

CORPORATE HEADQUARTERS
21800 Clark Graham
Baie D'Urfé (Montréal), Quebec,
H9X 4B6 Canada
Phone: +1 (800) 361-6820
Fax: +1 (800) 253-5549

USA
3rd Party Distribution Center
348 Route 11, Champlain,
N.Y. 12919-4816
Phone: +1 (800) 361-6820
Fax: +1 (800) 253-5549

FRANCE
12 Ave. de Québec, Bat. Iberis
SILIC 642, 91965 Courtaboeuf
Phone: +33 (0) 1 69 18 71 17
Fax: +33 (0) 1 60 92 05 67

GERMANY
Alte Marktoberdorfer Straße 14, 87616
Marktoberdorf
Phone: +49 (0) 8342-89560-61
Fax: +49 (0) 8342-89560-69

CHINA
Room 708, No. 180 Majiapu Road,
Fengtai District, Beijing, 100075
Phone: +86 (10) 87583441
Fax: +86 (10) 87583471

CORPORATE : Phone: +1 (514) 457-0701 | Fax: +1 (514) 457-4499 www.scpscience.com | sales@scpscience.com

METALS

COVER PAGE
METALS

Lab Name: TestAmerica Burlington Job Number: 200-38498-1

SDG No.: 200-38498-1

Project: Port Ewen DNS Sediment

Client Sample ID	Lab Sample ID
PE0517-P2SCD-04-A-0006IN	200-38498-1
PE0517-P2SCD-04-B-0002IN	200-38498-2
PE0517-P2SCD-18.7-A-0001IN	200-38498-3
PE0517-P2SCD-18.7-B-0006IN	200-38498-4
PE0517-P2SCD-18.8-A-0006IN	200-38498-5
PE0517-P2SCD-18.8-B-0004IN	200-38498-6
PE0517-P2SCD-18.9-A-0012IN	200-38498-7
PE0517-P2SCD-18.9-B-0006IN	200-38498-8
PE0517-P2SCD-18.9-B-0006IN-D	200-38498-9
PE0517-P2SCD-EQBLK-1	200-38498-10
PE0517-P2SCD-18.9-A-1218IN	200-38498-11

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE0517-P2SCD-04-A-0006IN
Lab Sample ID: 200-38498-1
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 17:15
Reporting Basis: DRY
Date Received: 05/05/2017 12:12
% Solids: 35.7

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	707	1.4	0.33	mg/Kg		B	1	6020A
7782-49-2	Selenium	2.0	0.89	0.14	mg/Kg			1	6020A
7440-66-6	Zinc	212	4.4	1.4	mg/Kg			1	6020A
7439-97-6	Mercury	6.4	0.18	0.065	mg/Kg			2	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE0517-P2SCD-04-B-0002IN
Lab Sample ID: 200-38498-2
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 17:30
Reporting Basis: DRY
Date Received: 05/05/2017 12:12
% Solids: 27.1

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	533	1.6	0.40	mg/Kg		B	1	6020A
7782-49-2	Selenium	1.8	1.4	0.22	mg/Kg			1	6020A
7440-66-6	Zinc	131	7.0	2.2	mg/Kg			1	6020A
7439-97-6	Mercury	4.3	0.12	0.042	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE0517-P2SCD-18.7-A-0001IN
Lab Sample ID: 200-38498-3
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 14:45
Reporting Basis: DRY
Date Received: 05/05/2017 12:12
% Solids: 46.8

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	105	1.0	0.25	mg/Kg		B	1	6020A
7782-49-2	Selenium	0.48	0.63	0.099	mg/Kg	J		1	6020A
7440-66-6	Zinc	126	3.1	0.97	mg/Kg			1	6020A
7439-97-6	Mercury	0.37	0.068	0.025	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE0517-P2SCD-18.7-B-0006IN
Lab Sample ID: 200-38498-4
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 14:50
Reporting Basis: DRY
Date Received: 05/05/2017 12:12
% Solids: 54.0

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	371	0.92	0.22	mg/Kg		B	1	6020A
7782-49-2	Selenium	0.58	0.53	0.083	mg/Kg			1	6020A
7440-66-6	Zinc	158	2.6	0.81	mg/Kg			1	6020A
7439-97-6	Mercury	1.1	0.058	0.021	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE0517-P2SCD-18.8-A-0006IN
Lab Sample ID: 200-38498-5
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 14:10
Reporting Basis: DRY
Date Received: 05/05/2017 12:12
% Solids: 67.2

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	47.8	0.61	0.15	mg/Kg		B	1	6020A
7782-49-2	Selenium	0.15	0.50	0.080	mg/Kg	J		1	6020A
7440-66-6	Zinc	40.2	2.5	0.78	mg/Kg			1	6020A
7439-97-6	Mercury	0.14	0.048	0.018	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE0517-P2SCD-18.8-B-0004IN
Lab Sample ID: 200-38498-6
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 14:00
Reporting Basis: DRY
Date Received: 05/05/2017 12:12
% Solids: 53.5

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	138	0.93	0.22	mg/Kg		B	1	6020A
7782-49-2	Selenium	0.37	0.54	0.085	mg/Kg	J		1	6020A
7440-66-6	Zinc	93.1	2.7	0.83	mg/Kg			1	6020A
7439-97-6	Mercury	0.46	0.056	0.020	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE0517-P2SCD-18.9-A-0012IN
Lab Sample ID: 200-38498-7
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 13:30
Reporting Basis: DRY
Date Received: 05/05/2017 12:12
% Solids: 73.5

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	34.4	0.62	0.15	mg/Kg		B	1	6020A
7782-49-2	Selenium	0.21	0.50	0.079	mg/Kg	J	F1	1	6020A
7440-66-6	Zinc	51.9	2.5	0.77	mg/Kg		F1	1	6020A
7439-97-6	Mercury	0.61	0.045	0.016	mg/Kg		F1	1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN
Lab Sample ID: 200-38498-8
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 13:45
Reporting Basis: DRY
Date Received: 05/05/2017 12:12
% Solids: 57.1

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	141	0.71	0.17	mg/Kg		B	1	6020A
7782-49-2	Selenium	0.37	0.48	0.076	mg/Kg	J		1	6020A
7440-66-6	Zinc	86.1	2.4	0.75	mg/Kg			1	6020A
7439-97-6	Mercury	0.42	0.057	0.021	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN-D
Lab Sample ID: 200-38498-9
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 13:46
Reporting Basis: DRY
Date Received: 05/05/2017 12:12
% Solids: 53.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	158	0.84	0.20	mg/Kg		B	1	6020A
7782-49-2	Selenium	0.43	0.66	0.10	mg/Kg	J		1	6020A
7440-66-6	Zinc	105	3.3	1.0	mg/Kg			1	6020A
7439-97-6	Mercury	0.64	0.060	0.022	mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE0517-P2SCD-EQBLK-1 Lab Sample ID: 200-38498-10

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG ID.: 200-38498-1

Matrix: Water Date Sampled: 05/04/2017 16:45

Reporting Basis: WET Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	6.5	5.0	2.2	ug/L			1	6020A
7782-49-2	Selenium	4.0	4.0	0.97	ug/L	U		1	6020A
7440-66-6	Zinc	20.0	20.0	2.6	ug/L	U		1	6020A
7439-97-6	Mercury	0.20	0.20	0.044	ug/L	U		1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: PE0517-P2SCD-18.9-A-1218IN
Lab Sample ID: 200-38498-11
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 13:30
Reporting Basis: DRY
Date Received: 05/05/2017 12:12
% Solids: 69.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-50-8	Copper	18.9	0.69	0.16	mg/Kg		B	1	6020A
7782-49-2	Selenium	0.19	0.48	0.076	mg/Kg	J		1	6020A
7440-66-6	Zinc	35.1	2.4	0.75	mg/Kg			1	6020A
7439-97-6	Mercury	0.17	0.046	0.017	mg/Kg			1	7471B

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICV Source: ME6020ICVw_00470 Concentration Units: ug/L

CCV Source: ME6020STD3_00470

Analyte	ICV 200-116617/8 05/10/2017 15:30				CCV 200-116617/13 05/10/2017 15:59				CCV 200-116617/25 05/10/2017 17:08			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	615.4		625	98	1275		1250	102	1239		1250	99
Selenium	106.2		100	106	208.5		200	104	213.1		200	107
Zinc	620.1		625	99	1318		1250	105	1253		1250	100

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICV Source: ME6020ICVw_00470 Concentration Units: ug/L

CCV Source: ME6020STD3_00470

Analyte	CCV 200-116617/38 05/10/2017 18:22				CCV 200-116617/51 05/10/2017 19:37							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	1229		1250	98	1240		1250	99				
Selenium	212.9		200	106	209.9		200	105				
Zinc	1242		1250	99	1243		1250	99				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICV Source: ME6020STD1_00463 Concentration Units: ug/L

CCV Source: ME6020STD1_00463

Analyte	ICVL 200-116617/9 05/10/2017 15:36				CCVL 200-116617/27 05/10/2017 17:19				CCVL 200-116617/40 05/10/2017 18:34			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	5.02		5.00	100	5.09		5.00	102	5.22		5.00	104
Selenium	3.99	J	4.00	100	4.37		4.00	109	4.03		4.00	101
Zinc	19.39	J	20.0	97	19.32	J	20.0	97	18.96	J	20.0	95

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICV Source: ME6020STD1_00463 Concentration Units: ug/L

CCV Source: ME6020STD1_00463

Analyte	CCVL 200-116617/53 05/10/2017 19:48											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	5.10		5.00	102								
Selenium	4.29		4.00	107								
Zinc	18.93	J	20.0	95								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICV Source: ME6020ICVw_00473 Concentration Units: ug/L

CCV Source: ME6020STD3_00472

Analyte	ICV 200-116890/8 05/19/2017 18:54				CCV 200-116890/13 05/19/2017 19:22				CCV 200-116890/25 05/19/2017 20:31			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	602.0		625	96	1200		1250	96	1212		1250	97

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICV Source: ME6020ICVw_00473 Concentration Units: ug/L

CCV Source: ME6020STD3_00472

	CCV 200-116890/34 05/19/2017 21:22											
Analyte	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	1216		1250	97								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICV Source: ME6020STD1_00465 Concentration Units: ug/L

CCV Source: ME6020STD1_00465

Analyte	ICVL 200-116890/9 05/19/2017 18:59				CCVL 200-116890/27 05/19/2017 20:42				CCVL 200-116890/36 05/19/2017 21:33			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Copper	5.22		5.00	104	5.12		5.00	102	5.08		5.00	102

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICV Source: MEHGICVw_00095 Concentration Units: ug/L

CCV Source: mehgccvw_01093

Analyte	ICV 200-116602/7-A 05/11/2017 15:03				CCV 200-116602/9-A 05/11/2017 15:07				CCV 200-116602/9-A 05/11/2017 15:18			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	2.96		3.00	99	5.15		5.00	103	5.10		5.00	102

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICV Source: MEHGICVw_00095 Concentration Units: ug/L

CCV Source: mehgccvw_01093

Analyte	ICV 200-116612/7-A 05/11/2017 16:03				CCV 200-116612/9-A 05/11/2017 16:06				CCV 200-116612/9-A 05/11/2017 16:27			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	2.93		3.00	98	4.96		5.00	99	4.79		5.00	96

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICV Source: MEHGICVw_00095 Concentration Units: ug/L

CCV Source: mehgccvw_01093

Analyte	CCV 200-116612/9-A 05/11/2017 16:47											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	4.72		5.00	94								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICV Source: MEHGICVw_00095 Concentration Units: ug/L

CCV Source: mehgccvw_01094

Analyte	ICV 200-116700/7-A 05/15/2017 15:18				CCV 200-116700/9-A 05/15/2017 15:21				CCV 200-116700/9-A 05/15/2017 15:31			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	2.99		3.00	100	4.91		5.00	98	4.85		5.00	97

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Concentration Units: ug/L

Analyte	RL	ICBIS 200-116617/10 05/10/2017 15:42		CCB 200-116617/14 05/10/2017 16:05		CCB 200-116617/26 05/10/2017 17:13		CCB 200-116617/39 05/10/2017 18:28	
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U	5.0	U	5.0	U	5.0	U
Selenium	4.0	4.0	U	4.0	U	4.0	U	4.0	U
Zinc	20.0	20.0	U	20.0	U	20.0	U	20.0	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Concentration Units: ug/L

Analyte	RL	CCB 200-116617/52 05/10/2017 19:43							
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U						
Selenium	4.0	4.0	U						
Zinc	20.0	20.0	U						

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Concentration Units: ug/L

Analyte	RL	ICBIS 200-116890/10 05/19/2017 19:05		CCB 200-116890/14 05/19/2017 19:28		CCB 200-116890/26 05/19/2017 20:36		CCB 200-116890/35 05/19/2017 21:27	
		Found	C	Found	C	Found	C	Found	C
Copper	5.0	5.0	U	5.0	U	5.0	U	5.0	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Concentration Units: ug/L

Analyte	RL	ICB 200-116602/8-A 05/11/2017 15:05		CCB 200-116602/10-A 05/11/2017 15:08		CCB 200-116602/10-A 05/11/2017 15:20			
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U		

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Concentration Units: ug/L

Analyte	RL	ICB 200-116612/8-A 05/11/2017 16:04		CCB 200-116612/10-A 05/11/2017 16:08		CCB 200-116612/10-A 05/11/2017 16:28		CCB 200-116612/10-A 05/11/2017 16:48	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U	0.20	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Concentration Units: ug/L

Analyte	RL	ICB 200-116700/8-A 05/15/2017 15:19		CCB 200-116700/10-A 05/15/2017 15:23		CCB 200-116700/10-A 05/15/2017 15:32			
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U		

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-116489/1-A

Instrument Code: METICPMS2 Batch No.: 116617

CAS No.	Analyte	Concentration	C	Q	Method
7782-49-2	Selenium	0.40	U		6020A
7440-66-6	Zinc	2.0	U		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Concentration Units: ug/L Lab Sample ID: MB 200-116492/1-A

Instrument Code: METICPMS2 Batch No.: 116617

CAS No.	Analyte	Concentration	C	Q	Method
7440-50-8	Copper	5.0	U		6020A
7782-49-2	Selenium	4.0	U		6020A
7440-66-6	Zinc	20.0	U		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-116803/1-A

Instrument Code: METICPMS2 Batch No.: 116890

CAS No.	Analyte	Concentration	C	Q	Method
7440-50-8	Copper	0.247	J		6020A

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Concentration Units: ug/L Lab Sample ID: MB 200-116602/11-A

Instrument Code: MEPCV3 II Batch No.: 116629

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.20	U		7470A

FORM III-IN

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-116612/11-A

Instrument Code: MEPCV3 II Batch No.: 116630

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.033	U		7471B

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Concentration Units: mg/Kg Lab Sample ID: MB 200-116700/11-A

Instrument Code: MEPCV3 II Batch No.: 116711

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.033	U		7471B

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Lab Sample ID: ICSA 200-116617/11 Instrument ID: METICPMS2

Lab File ID: 051017-03 6020A.xml ICS Source: MEMSICSAw_00215

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Copper		**1.20**	
Selenium		**0.125**	
Zinc		**-1.19**	
Aluminum	*100000*	*101567*	*102*
Antimony		*0.0747*	
Arsenic		*-2.01*	
Barium		*0.608*	
Beryllium		*0.0640*	
Boron		*10.0*	
Cadmium		*0.524*	
Calcium	*100000*	*101833*	*102*
Chromium		*1.35*	
Cobalt		*0.0920*	
Iron	*100000*	*102467*	*102*
Lead		*0.289*	
Magnesium	*100000*	*100220*	*100*
Manganese		*26.8*	
Molybdenum	*2000*	*1983*	*99*
Nickel		*0.896*	
Potassium	*100000*	*99050*	*99*
Silver		*0.0867*	
Sodium	*100000*	*97937*	*98*
Thallium		*0.0203*	
Thorium		*0.0013*	
Tungsten		*0.171*	
Uranium		*0.0010*	
Vanadium		*-7.38*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Lab Sample ID: ICSAB 200-116617/12 Instrument ID: METICPMS2

Lab File ID: 051017-03 6020A.xml ICS Source: MEMSABw_00236

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Copper	**50.0**	**48.3**	**97**
Selenium	**125**	**126**	**101**
Zinc	**50.0**	**48.4**	**97**
Aluminum	*100000*	*101733*	*102*
Antimony	*50.0*	*45.5*	*91*
Arsenic	*45.0*	*42.0*	*93*
Barium	*250*	*252*	*101*
Beryllium	*25.0*	*26.6*	*106*
Boron	*400*	*448*	*112*
Cadmium	*25.0*	*24.9*	*99*
Calcium	*100000*	*102767*	*103*
Chromium	*50.0*	*48.7*	*97*
Cobalt	*25.0*	*23.3*	*93*
Iron	*100000*	*104200*	*104*
Lead	*25.0*	*24.3*	*97*
Magnesium	*100000*	*100253*	*100*
Manganese	*25.0*	*50.1*	*200*
Molybdenum	*2000*	*2020*	*101*
Nickel	*25.0*	*25.4*	*102*
Potassium	*100000*	*99887*	*100*
Silver	*25.0*	*24.0*	*96*
Sodium	*100000*	*96930*	*97*
Thallium	*25.0*	*22.9*	*92*
Thorium	*20.0*	*20.5*	*103*
Tungsten	*20.0*	*25.4*	*127*
Uranium	*10.0*	*10.2*	*102*
Vanadium	*25.0*	*15.4*	*62*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Lab Sample ID: ICSA 200-116890/11 Instrument ID: METICPMS2

Lab File ID: 051917-03 6020A.xml ICS Source: MEMSICSAw_00215

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Copper		**1.43**	
Aluminum	*100000*	*100967*	*101*
Antimony		*0.141*	
Arsenic		*-3.04*	
Barium		*0.923*	
Beryllium		*0.205*	
Boron		*11.3*	
Cadmium		*0.294*	
Calcium	*100000*	*106133*	*106*
Chromium		*1.59*	
Cobalt		*0.157*	
Iron	*100000*	*98380*	*98*
Lead		*0.380*	
Magnesium	*100000*	*104333*	*104*
Manganese		*21.3*	
Molybdenum	*2000*	*2222*	*111*
Nickel		*0.963*	
Potassium	*100000*	*98677*	*99*
Selenium		*-0.695*	
Silver		*0.286*	
Sodium	*100000*	*99917*	*100*
Thallium		*0.0840*	
Thorium		*0.0053*	
Tungsten		*0.177*	
Uranium		*0.242*	
Vanadium		*-5.77*	
Zinc		*-0.522*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Lab Sample ID: ICSAB 200-116890/12 Instrument ID: METICPMS2

Lab File ID: 051917-03 6020A.xml ICS Source: MEMSABw_00236

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Copper	**50.0**	**48.4**	**97**
Aluminum	*100000*	*101300*	*101*
Antimony	*50.0*	*50.1*	*100*
Arsenic	*45.0*	*40.8*	*91*
Barium	*250*	*245*	*98*
Beryllium	*25.0*	*25.8*	*103*
Boron	*400*	*426*	*107*
Cadmium	*25.0*	*24.6*	*98*
Calcium	*100000*	*106033*	*106*
Chromium	*50.0*	*46.9*	*94*
Cobalt	*25.0*	*22.4*	*90*
Iron	*100000*	*99387*	*99*
Lead	*25.0*	*22.7*	*91*
Magnesium	*100000*	*104300*	*104*
Manganese	*25.0*	*44.5*	*178*
Molybdenum	*2000*	*2200*	*110*
Nickel	*25.0*	*25.7*	*103*
Potassium	*100000*	*99770*	*100*
Selenium	*125*	*120*	*96*
Silver	*25.0*	*24.4*	*98*
Sodium	*100000*	*99457*	*99*
Thallium	*25.0*	*22.5*	*90*
Thorium	*20.0*	*21.2*	*106*
Tungsten	*20.0*	*26.6*	*133*
Uranium	*10.0*	*10.4*	*104*
Vanadium	*25.0*	*17.0*	*68*
Zinc	*50.0*	*46.6*	*93*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: PE0517-P2SCD-18.9-A-0012IN MS Lab ID: 200-38498-7 MS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Matrix: Sediment Concentration Units: mg/Kg

% Solids: 73.5

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	36.28		34.4		5.40	34	75-125	4	6020A
Selenium	1.53		0.21	J	4.43	30	75-125	F1	6020A
Zinc	67.05		51.9		22.1	68	75-125	F1	6020A
Mercury	1.09		0.61		0.540	89	80-120		7471B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: PE0517-P2SCD-EQBLK-1 MS | Lab ID: 200-38498-10 MS

Lab Name: TestAmerica Burlington | Job No.: 200-38498-1

SDG No.: 200-38498-1

Matrix: Water | Concentration Units: ug/L

% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	57.22		6.5		50.0	102	75-125		6020A
Selenium	37.98		4.0	U	40.0	95	75-125		6020A
Zinc	184.4		20.0	U	200	92	75-125		6020A
Mercury	0.997		0.20	U	1.00	100	85-115		7470A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: PE0517-P2SCD-18.9-A-0012IN MSD Lab ID: 200-38498-7 MSD

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Matrix: Sediment Concentration Units: mg/Kg

% Solids: 73.5

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Copper	40.32		6.13	96	75-125	11	20	4	6020A
Selenium	1.68		4.65	32	75-125	10	20	F1	6020A
Zinc	68.41		23.3	71	75-125	2	20	F1	6020A
Mercury	1.30		0.558	123	80-120	17	20	F1	7471B

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VD - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: PE0517-P2SCD-EQBLK-1 MSD
Lab ID: 200-38498-10 MSD
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG No.: 200-38498-1
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Copper	57.29		50.0	102	75-125	0	20		6020A
Selenium	37.90		40.0	95	75-125	0	20		6020A
Zinc	185.4		200	93	75-125	1	20		6020A
Mercury	0.972		1.00	97	85-115	3	20		7470A

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: PE0517-P2SCD-18.9-A-0012IN PDS Lab ID: 200-38498-7 PDS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Matrix: Sediment Concentration Units: mg/Kg

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	38.55		34.4		6.24	66	80-120	W	6020A
Selenium	1.86		0.21	J	5.00	33	80-120	W	6020A
Zinc	69.08		51.9		25.0	69	80-120	W	6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VB - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: PE0517-P2SCD-EQBLK-1 PDS Lab ID: 200-38498-10 PDS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Matrix: Water Concentration Units: ug/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Copper	56.71		6.5		50.0	100	80-120		6020A
Selenium	37.54		4.0	U	40.0	94	80-120		6020A
Zinc	182.3		20.0	U	200	91	80-120		6020A

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VB - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-116489/2-A

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

Sample Matrix: Sediment LCS Source: ME6020CALi_A_00026

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Selenium	4.00	3.61		90	80	120		6020A
Zinc	20.0	18.38		92	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-116492/2-A

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

Sample Matrix: Water LCS Source: ME6020CALi_A_00026

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Copper	50.0	49.57		99	80	120		6020A
Selenium	40.0	38.57		96	80	120		6020A
Zinc	200	181.9		91	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-116803/2-A

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

Sample Matrix: Sediment LCS Source: ME6020CALi_A_00026

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Copper	5.00	5.20		104	80	120		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-116602/12-A

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

Sample Matrix: Water LCS Source: mehgccvw_01093

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Mercury	1.00	1.02		102	85	115		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-116612/12-A

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

Sample Matrix: Sediment LCS Source: mehgccvw_01093

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Mercury	0.417	0.402		96	80	120		7471B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 200-116700/12-A

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

Sample Matrix: Sediment LCS Source: mehgccvw_01094

Analyte	Sediment(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Mercury	0.417	0.415		100	80	120		7471B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 200-38498-7

SDG No: 200-38498-1

Lab Name: TestAmerica Burlington Job No: 200-38498-1

Matrix: Sediment Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Copper	34.4		41.94		22	V	6020A
Selenium	0.21	J	0.624	J	NC		6020A
Zinc	51.9		64.82		25	V	6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 200-38498-10

SDG No: 200-38498-1

Lab Name: TestAmerica Burlington Job No: 200-38498-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Copper	6.5		25.0	U	NC		6020A
Selenium	4.0	U	20.0	U	NC		6020A
Zinc	20.0	U	100	U	NC		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-38498-1

SDG Number: 200-38498-1

Matrix: Water Instrument ID: METICPMS2

Method: 6020A MDL Date: 08/25/2016 17:21

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Copper		5	2.2
Selenium		4	0.97
Zinc		20	2.6

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-38498-1

SDG Number: 200-38498-1

Matrix: Water Instrument ID: METICPMS2

Method: 6020A XMDL Date: 08/25/2016 17:21

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Copper		5	2.2
Selenium		4	0.97
Zinc		20	2.6

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-38498-1

SDG Number: 200-38498-1

Matrix: Sediment Instrument ID: METICPMS2

Method: 6020A MDL Date: 09/04/2014 14:11

Prep Method: 3050B

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Copper		0.5	0.12
Selenium		0.4	0.063
Zinc		2	0.62

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-38498-1

SDG Number: 200-38498-1

Matrix: Sediment Instrument ID: METICPMS2

Method: 6020A XMDL Date: 09/19/2014 14:34

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Copper		5	2.1
Selenium		4	0.79
Zinc		20	9.3

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-38498-1

SDG Number: 200-38498-1

Matrix: Water Instrument ID: MEPCV3 II

Method: 7470A MDL Date: 03/16/2016 14:58

Prep Method: 7470A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Mercury	253.7	0.2	0.044

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-38498-1

SDG Number: 200-38498-1

Matrix: Water Instrument ID: MEPCV3 II

Method: 7470A XMDL Date: 03/16/2016 14:58

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury	253.7	0.2	0.044

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-38498-1

SDG Number: 200-38498-1

Matrix: Sediment Instrument ID: MEPCV3 II

Method: 7471B MDL Date: 02/23/2015 16:26

Prep Method: 7471B

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Mercury	253.7	0.033	0.012

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Burlington Job Number: 200-38498-1

SDG Number: 200-38498-1

Matrix: Sediment Instrument ID: MEPCV3 II

Method: 7471B XMDL Date: 03/16/2016 14:59

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury	253.7	0.2	0.044

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Burlington Job No: 200-38498-1

SDG No.: 200-38498-1

Instrument ID: METICPMS2 Date: 03/25/2015 10:58

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Copper		6250	6020A
Selenium		1000	6020A
Zinc		6250	6020A

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Burlington Job No: 200-38498-1

SDG No.: 200-38498-1

Instrument ID: MEPCV3 II Date: 01/01/2011 09:52

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Mercury	10	10	7470A

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Burlington Job No: 200-38498-1

SDG No.: 200-38498-1

Instrument ID: MEPCV3 II Date: 04/18/2011 17:05

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Mercury	10	10	7471B

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Prep Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-116489/1-A	05/08/2017 14:00	116489	1.00		100.00
LCS 200-116489/2-A	05/08/2017 14:00	116489	1.00		100.00
200-38498-1	05/08/2017 14:00	116489	1.26		100.00
200-38498-2	05/08/2017 14:00	116489	1.06		100.00
200-38498-3	05/08/2017 14:00	116489	1.36		100.00
200-38498-4	05/08/2017 14:00	116489	1.41		100.00
200-38498-5	05/08/2017 14:00	116489	1.18		100.00
200-38498-6	05/08/2017 14:00	116489	1.39		100.00
200-38498-7	05/08/2017 14:00	116489	1.09		100.00
200-38498-7 MS	05/08/2017 14:00	116489	1.23		100.00
200-38498-7 MSD	05/08/2017 14:00	116489	1.17		100.00
200-38498-8	05/08/2017 14:00	116489	1.45		100.00
200-38498-9	05/08/2017 14:00	116489	1.14		100.00
200-38498-11	05/08/2017 14:00	116489	1.20		100.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 200-116492/1-A	05/09/2017 08:00	116492		50.00	50.00
LCS 200-116492/2-A	05/09/2017 08:00	116492		50.00	50.00
200-38498-10	05/09/2017 08:00	116492		50.00	50.00
200-38498-10 MS	05/09/2017 08:00	116492		50.00	50.00
200-38498-10 MSD	05/09/2017 08:00	116492		50.00	50.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Prep Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-116803/1-A	05/18/2017 09:26	116803	1.00		100.00
LCS 200-116803/2-A	05/18/2017 09:26	116803	1.00		100.00
200-38498-1	05/18/2017 09:26	116803	1.03		100.00
200-38498-2	05/18/2017 09:26	116803	1.12		100.00
200-38498-3	05/18/2017 09:26	116803	1.03		100.00
200-38498-4	05/18/2017 09:26	116803	1.01		100.00
200-38498-5	05/18/2017 09:26	116803	1.22		100.00
200-38498-6	05/18/2017 09:26	116803	1.01		100.00
200-38498-7	05/18/2017 09:26	116803	1.09		100.00
200-38498-7 MS	05/18/2017 09:26	116803	1.26		100.00
200-38498-7 MSD	05/18/2017 09:26	116803	1.11		100.00
200-38498-8	05/18/2017 09:26	116803	1.23		100.00
200-38498-9	05/18/2017 09:26	116803	1.12		100.00
200-38498-11	05/18/2017 09:26	116803	1.05		100.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Prep Method: 7470A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 200-116602/11-A	05/11/2017 08:11	116602		50.00	50.00
LCS 200-116602/12-A	05/11/2017 08:11	116602		50.00	50.00
200-38498-10	05/11/2017 08:11	116602		50.00	50.00
200-38498-10 MS	05/11/2017 08:11	116602		50.00	50.00
200-38498-10 MSD	05/11/2017 08:11	116602		50.00	50.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Prep Method: 7471B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-116612/11-A	05/11/2017 09:27	116612	0.60		100.00
LCS 200-116612/12-A	05/11/2017 09:27	116612	0.60		100.00
200-38498-2	05/11/2017 09:27	116612	0.63		100.00
200-38498-3	05/11/2017 09:27	116612	0.62		100.00
200-38498-4	05/11/2017 09:27	116612	0.63		100.00
200-38498-5	05/11/2017 09:27	116612	0.61		100.00
200-38498-6	05/11/2017 09:27	116612	0.66		100.00
200-38498-7	05/11/2017 09:27	116612	0.60		100.00
200-38498-7 MS	05/11/2017 09:27	116612	0.63		100.00
200-38498-7 MSD	05/11/2017 09:27	116612	0.61		100.00
200-38498-8	05/11/2017 09:27	116612	0.61		100.00
200-38498-9	05/11/2017 09:27	116612	0.62		100.00
200-38498-11	05/11/2017 09:27	116612	0.62		100.00

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Prep Method: 7471B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 200-116700/11-A	05/15/2017 12:30	116700	0.60		100.00
LCS 200-116700/12-A	05/15/2017 12:30	116700	0.60		100.00
200-38498-1	05/15/2017 12:30	116700	0.62		100.00

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 05/10/2017 11:21 End Date: 05/10/2017 20:57

Lab Sample Id	D/F	Type	Time	Analytes																										
				Cu	Se	Zn																								
ITUNE 200-116617/1	1		11:21																											
STD0 200-116617/2 IC	1		14:56	X	X	X																								
STD1 200-116617/3 IC	1		15:02	X	X	X																								
STD2 200-116617/4 IC	1		15:07	X	X	X																								
STD3 200-116617/5 IC	1		15:13	X	X	X																								
STD4 200-116617/6 IC	1		15:19	X	X	X																								
STD5 200-116617/7 IC	1		15:25	X	X	X																								
ICV 200-116617/8	1		15:30	X	X	X																								
ICVL 200-116617/9	1		15:36	X	X	X																								
ICBIS 200-116617/10	1		15:42	X	X	X																								
ICSA 200-116617/11	1		15:47	X	X	X																								
ICSAB 200-116617/12	1		15:53	X	X	X																								
CCV 200-116617/13	1		15:59	X	X	X																								
CCB 200-116617/14	1		16:05	X	X	X																								
ZZZZZZ			16:10																											
ZZZZZZ			16:16																											
ZZZZZZ			16:22																											
ZZZZZZ			16:28																											
ZZZZZZ			16:33																											
ZZZZZZ			16:39																											
MB 200-116489/1-A	1	T	16:45		X	X																								
LCS 200-116489/2-A	1	T	16:50		X	X																								
200-38498-1	1	T	16:56		X	X																								
200-38498-2	1	T	17:02		X	X																								
CCV 200-116617/25	1		17:08	X	X	X																								
CCB 200-116617/26	1		17:13	X	X	X																								
CCVL 200-116617/27	1		17:19	X	X	X																								
200-38498-3	1	T	17:25		X	X																								
200-38498-4	1	T	17:31		X	X																								
200-38498-5	1	T	17:36		X	X																								
200-38498-6	1	T	17:42		X	X																								
200-38498-7	1	T	17:48		X	X																								
200-38498-7 SD	5	T	17:54		X	X																								
200-38498-7 PDS	1	T	17:59		X	X																								
200-38498-7 MS	1	T	18:05		X	X																								
200-38498-7 MSD	1	T	18:11		X	X																								
200-38498-8	1	T	18:16		X	X																								
CCV 200-116617/38	1		18:22	X	X	X																								
CCB 200-116617/39	1		18:28	X	X	X																								
CCVL 200-116617/40	1		18:34	X	X	X																								
200-38498-9	1	T	18:39		X	X																								
200-38498-11	1	T	18:45		X	X																								

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 05/10/2017 11:21 End Date: 05/10/2017 20:57

Lab Sample Id	D/F	Type	Time	Analytes																										
				Cu	Se	Zn																								
MB 200-116492/1-A	1	T	18:51	X	X	X																								
LCS 200-116492/2-A	1	T	18:57	X	X	X																								
200-38498-10	1	T	19:02	X	X	X																								
200-38498-10 SD	5	T	19:08	X	X	X																								
200-38498-10 PDS	1	T	19:14	X	X	X																								
200-38498-10 MS	1	T	19:20	X	X	X																								
200-38498-10 MSD	1	T	19:25	X	X	X																								
ZZZZZZ			19:31																											
CCV 200-116617/51	1		19:37	X	X	X																								
CCB 200-116617/52	1		19:43	X	X	X																								
CCVL 200-116617/53	1		19:48	X	X	X																								
ZZZZZZ			19:54																											
ZZZZZZ			20:00																											
ZZZZZZ			20:05																											
ZZZZZZ			20:11																											
ZZZZZZ			20:17																											
ZZZZZZ			20:23																											
ZZZZZZ			20:28																											
ZZZZZZ			20:34																											
ZZZZZZ			20:40																											
CCV 200-116617/63			20:46																											
CCB 200-116617/64			20:51																											
CCVL 200-116617/65			20:57																											

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 05/19/2017 12:20 End Date: 05/20/2017 00:01

Lab Sample Id	D/F	Type	Time	Analytes																								
				Cu																								
ITUNE 200-116890/1	1		12:20																									
STD0 200-116890/2 IC	1		18:19	X																								
STD1 200-116890/3 IC	1		18:25	X																								
STD2 200-116890/4 IC	1		18:31	X																								
STD3 200-116890/5 IC	1		18:37	X																								
STD4 200-116890/6 IC	1		18:42	X																								
STD5 200-116890/7 IC	1		18:48	X																								
ICV 200-116890/8	1		18:54	X																								
ICVL 200-116890/9	1		18:59	X																								
ICBIS 200-116890/10	1		19:05	X																								
ICSA 200-116890/11	1		19:11	X																								
ICSAB 200-116890/12	1		19:16	X																								
CCV 200-116890/13	1		19:22	X																								
CCB 200-116890/14	1		19:28	X																								
MB 200-116803/1-A	1	T	19:34	X																								
LCS 200-116803/2-A	1	T	19:39	X																								
200-38498-1	1	T	19:45	X																								
200-38498-2	1	T	19:51	X																								
200-38498-3	1	T	19:56	X																								
200-38498-4	1	T	20:02	X																								
200-38498-5	1	T	20:08	X																								
200-38498-6	1	T	20:13	X																								
200-38498-7	1	T	20:19	X																								
200-38498-7 SD	5	T	20:25	X																								
CCV 200-116890/25	1		20:31	X																								
CCB 200-116890/26	1		20:36	X																								
CCVL 200-116890/27	1		20:42	X																								
200-38498-7 PDS	1	T	20:48	X																								
200-38498-7 MS	1	T	20:53	X																								
200-38498-7 MSD	1	T	20:59	X																								
200-38498-8	1	T	21:05	X																								
200-38498-9	1	T	21:10	X																								
200-38498-11	1	T	21:16	X																								
CCV 200-116890/34	1		21:22	X																								
CCB 200-116890/35	1		21:27	X																								
CCVL 200-116890/36	1		21:33	X																								
ZZZZZZ			21:39																									
ZZZZZZ			21:45																									
ZZZZZZ			21:50																									
ZZZZZZ			21:56																									
ZZZZZZ			22:02																									
ZZZZZZ			22:07																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Instrument ID: METICPMS2 Analysis Method: 6020A

Start Date: 05/19/2017 12:20 End Date: 05/20/2017 00:01

Lab Sample Id	D/F	Type	Time	Analytes																								
				Cu																								
ZZZZZZ			22:13																									
ZZZZZZ			22:19																									
ZZZZZZ			22:25																									
ZZZZZZ			22:30																									
CCV 200-116890/47			22:36																									
CCB 200-116890/48			22:42																									
CCVL 200-116890/49			22:47																									
ZZZZZZ			22:53																									
ZZZZZZ			22:59																									
ZZZZZZ			23:04																									
ZZZZZZ			23:10																									
ZZZZZZ			23:16																									
ZZZZZZ			23:22																									
ZZZZZZ			23:27																									
ZZZZZZ			23:33																									
ZZZZZZ			23:39																									
ZZZZZZ			23:44																									
CCV 200-116890/60			23:50																									
CCB 200-116890/61			23:56																									
CCVL 200-116890/62			00:01																									

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Instrument ID: MEPCV3 II Analysis Method: 7470A

Start Date: 05/11/2017 14:53 End Date: 05/11/2017 15:20

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
IC 200-116602/1-A	1		14:53	X																								
IC 200-116602/2-A	1		14:55	X																								
IC 200-116602/3-A	1		14:57	X																								
IC 200-116602/4-A	1		14:58	X																								
IC 200-116602/5-A	1		15:00	X																								
IC 200-116602/6-A	1		15:02	X																								
ICV 200-116602/7-A	1		15:03	X																								
ICB 200-116602/8-A	1		15:05	X																								
CCV 200-116602/9-A	1		15:07	X																								
CCB 200-116602/10-A	1		15:08	X																								
MB 200-116602/11-A	1	T	15:10	X																								
LCS 200-116602/12-A	1	T	15:11	X																								
200-38498-10	1	T	15:13	X																								
200-38498-10 MS	1	T	15:15	X																								
200-38498-10 MSD	1	T	15:16	X																								
CCV 200-116602/9-A	1		15:18	X																								
CCB 200-116602/10-A	1		15:20	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Instrument ID: MEPCV3 II Analysis Method: 7471B

Start Date: 05/11/2017 15:53 End Date: 05/11/2017 16:48

Lab Sample Id	D/F	Type	Time	Analytes
				Hg
IC 200-116612/1-A	1		15:53	X
IC 200-116612/2-A	1		15:55	X
IC 200-116612/3-A	1		15:56	X
IC 200-116612/4-A	1		15:58	X
IC 200-116612/5-A	1		16:00	X
IC 200-116612/6-A	1		16:01	X
ICV 200-116612/7-A	1		16:03	X
ICB 200-116612/8-A	1		16:04	X
CCV 200-116612/9-A	1		16:06	X
CCB 200-116612/10-A	1		16:08	X
MB 200-116612/11-A	1	T	16:09	X
LCS 200-116612/12-A	1	T	16:11	X
ZZZZZZ			16:13	
200-38498-2	1	T	16:15	X
200-38498-3	1	T	16:17	X
200-38498-4	1	T	16:18	X
200-38498-5	1	T	16:20	X
200-38498-6	1	T	16:22	X
200-38498-7	1	T	16:23	X
200-38498-7 MS	1	T	16:25	X
CCV 200-116612/9-A	1		16:27	X
CCB 200-116612/10-A	1		16:28	X
200-38498-7 MSD	1	T	16:30	X
200-38498-8	1	T	16:32	X
200-38498-9	1	T	16:33	X
200-38498-11	1	T	16:35	X
ZZZZZZ			16:37	
ZZZZZZ			16:39	
ZZZZZZ			16:40	
ZZZZZZ			16:42	
ZZZZZZ			16:44	
ZZZZZZ			16:45	
CCV 200-116612/9-A	1		16:47	X
CCB 200-116612/10-A	1		16:48	X

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Instrument ID: MEPCV3 II Analysis Method: 7471B

Start Date: 05/15/2017 15:08 End Date: 05/15/2017 15:32

Lab Sample Id	D/F	Type	Time	Analytes																								
				Hg																								
IC 200-116700/1-A	1		15:08	X																								
IC 200-116700/2-A	1		15:09	X																								
IC 200-116700/3-A	1		15:11	X																								
IC 200-116700/4-A	1		15:13	X																								
IC 200-116700/5-A	1		15:14	X																								
IC 200-116700/6-A	1		15:16	X																								
ICV 200-116700/7-A	1		15:18	X																								
ICB 200-116700/8-A	1		15:19	X																								
CCV 200-116700/9-A	1		15:21	X																								
CCB 200-116700/10-A	1		15:23	X																								
MB 200-116700/11-A	1	T	15:24	X																								
LCS 200-116700/12-A	1	T	15:26	X																								
ZZZZZZ			15:27																									
200-38498-1	2	T	15:29	X																								
CCV 200-116700/9-A	1		15:31	X																								
CCB 200-116700/10-A	1		15:32	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICP-MS Instrument ID: METICPMS2 Analysis Date: 05/10/17

Lab ID: ITUNE 200-116617/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	8.9622	0.78	2.117	
Mg-24	23.985	0.74	0.785	
Mg-25	24.9858	0.73	1.974	
Mg-26	25.9826	0.72	1.115	
Al-27	26.9815	0.73	0.375	
V-51	50.944	0.73	0.945	
Co-59	58.9232	0.74	0.506	
In-113	112.8941	0.73	1.502	
In-115	114.8939	0.74	0.760	
Ba-137	136.8858	0.77	0.827	
Ce-140	139.8954	0.78	0.153	
Pb-206	205.9645	0.74	1.606	
Pb-207	206.9559	0.75	1.376	
Pb-208	207.9666	0.77	1.120	
Th-232	232.0481	0.78	0.560	
U-238	238.0608	0.78	0.466	

14-IN
ICP-MS TUNE
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICP-MS Instrument ID: METICPMS2 Analysis Date: 05/19/17

Lab ID: ITUNE 200-116890/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	8.9922	0.69	1.789	
Mg-24	23.995	0.69	0.967	
Mg-25	25.0058	0.72	1.549	
Mg-26	25.9926	0.68	1.482	
Al-27	27.0015	0.68	0.900	
V-51	50.964	0.68	0.674	
Co-59	58.9432	0.68	0.383	
In-113	112.9241	0.67	0.967	
In-115	114.9339	0.69	0.551	
Ba-137	136.9458	0.69	0.186	
Ce-140	139.9454	0.69	0.616	
Pb-206	206.0245	0.72	1.700	
Pb-207	207.0359	0.71	0.814	
Pb-208	208.0266	0.69	0.357	
Th-232	232.1181	0.68	0.471	
U-238	238.1308	0.69	0.429	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICP-MS Instrument ID: METICPMS2 Start Date: 05/10/2017 End Date: 05/10/2017

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
STD0 200-116617/2 I	14:56	100		100		100		100		100	
STD1 200-116617/3 I	15:02	104		102		101		101		101	
STD2 200-116617/4 I	15:07	100		100		99		100		101	
STD3 200-116617/5 I	15:13	94		92		95		96		101	
STD4 200-116617/6 I	15:19	87		87		87		88		97	
STD5 200-116617/7 I	15:25	83		84		83		84		94	
ICV 200-116617/8	15:30	97		94		94		96		102	
ICVL 200-116617/9	15:36	101		99		98		98		101	
ICBIS 200-116617/10	15:42	102		101		99		99		99	
ICSA 200-116617/11	15:47	83		87		91		96		103	
ICSAB 200-116617/12	15:53	78		88		92		100		106	
CCV 200-116617/13	15:59	85		88		96		101		107	
CCB 200-116617/14	16:05	93		98		100		103		104	
MB 200-116489/1-A	16:45	99		101		103		104		107	
LCS 200-116489/2-A	16:50	96		100		101		102		106	
200-38498-1	16:56	88		115		250		99		125	
200-38498-2	17:02	94		110		164		103		115	
CCV 200-116617/25	17:08	87		93		94		98		103	
CCB 200-116617/26	17:13	93		98		97		100		101	
CCVL 200-116617/27	17:19	97		102		98		103		103	
200-38498-3	17:25	85		109		185		93		111	
200-38498-4	17:31	91		118		238		100		123	
200-38498-5	17:36	91		114		198		101		119	
200-38498-6	17:42	88		115		209		97		115	
200-38498-7	17:48	91		119		260		99		125	
200-38498-7 SD	17:54	95		109		135		101		106	
200-38498-7 PDS	17:59	89		118		254		99		126	
200-38498-7 MS	18:05	88		121		273		98		125	
200-38498-7 MSD	18:11	88		119		257		98		123	
200-38498-8	18:16	90		116		197		98		114	
CCV 200-116617/38	18:22	87		94		93		97		101	
CCB 200-116617/39	18:28	92		100		97		97		98	
CCVL 200-116617/40	18:34	95		103		99		99		99	
200-38498-9	18:39	90		112		186		99		114	
200-38498-11	18:45	91		118		231		100		120	
MB 200-116492/1-A	18:51	98		112		103		102		99	
LCS 200-116492/2-A	18:57	95		104		99		101		100	
200-38498-10	19:02	94		106		100		99		98	
200-38498-10 SD	19:08	92		102		97		96		94	
200-38498-10 PDS	19:14	92		103		98		99		99	
200-38498-10 MS	19:20	92		103		100		99		101	
200-38498-10 MSD	19:25	92		102		99		100		100	

FORM XV - IN

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICP-MS Instrument ID: METICPMS2 Start Date: 05/10/2017 End Date: 05/10/2017

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
CCV 200-116617/51	19:37	86		93		94		94		100	
CCB 200-116617/52	19:43	92		99		96		98		96	
CCVL 200-116617/53	19:48	97		104		98		98		98	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICP-MS Instrument ID: METICPMS2 Start Date: 05/10/2017 End Date: 05/10/2017

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
STD0 200-116617/2 I	14:56	100									
STD1 200-116617/3 I	15:02	100									
STD2 200-116617/4 I	15:07	100									
STD3 200-116617/5 I	15:13	100									
STD4 200-116617/6 I	15:19	95									
STD5 200-116617/7 I	15:25	90									
ICV 200-116617/8	15:30	100									
ICVL 200-116617/9	15:36	99									
ICBIS 200-116617/10	15:42	100									
ICSA 200-116617/11	15:47	99									
ICSAB 200-116617/12	15:53	102									
CCV 200-116617/13	15:59	106									
CCB 200-116617/14	16:05	105									
MB 200-116489/1-A	16:45	105									
LCS 200-116489/2-A	16:50	102									
200-38498-1	16:56	107									
200-38498-2	17:02	106									
CCV 200-116617/25	17:08	101									
CCB 200-116617/26	17:13	101									
CCVL 200-116617/27	17:19	101									
200-38498-3	17:25	100									
200-38498-4	17:31	103									
200-38498-5	17:36	103									
200-38498-6	17:42	99									
200-38498-7	17:48	103									
200-38498-7 SD	17:54	100									
200-38498-7 PDS	17:59	103									
200-38498-7 MS	18:05	102									
200-38498-7 MSD	18:11	101									
200-38498-8	18:16	98									
CCV 200-116617/38	18:22	97									
CCB 200-116617/39	18:28	96									
CCVL 200-116617/40	18:34	95									
200-38498-9	18:39	100									
200-38498-11	18:45	103									
MB 200-116492/1-A	18:51	92									
LCS 200-116492/2-A	18:57	96									
200-38498-10	19:02	93									
200-38498-10 SD	19:08	89									
200-38498-10 PDS	19:14	94									
200-38498-10 MS	19:20	96									
200-38498-10 MSD	19:25	96									

FORM XV - IN

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICP-MS Instrument ID: METICPMS2 Start Date: 05/10/2017 End Date: 05/10/2017

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
CCV 200-116617/51	19:37	97									
CCB 200-116617/52	19:43	94									
CCVL 200-116617/53	19:48	95									

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICP-MS Instrument ID: METICPMS2 Start Date: 05/19/2017 End Date: 05/19/2017

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc	Q	Element Y	Q	Element In-115	Q	Element Tb	Q
STD0 200-116890/2 I	18:19	100		100		100		100		100	
STD1 200-116890/3 I	18:25	100		101		100		100		100	
STD2 200-116890/4 I	18:31	99		101		100		100		99	
STD3 200-116890/5 I	18:37	91		93		96		96		100	
STD4 200-116890/6 I	18:42	83		85		88		87		95	
STD5 200-116890/7 I	18:48	78		82		85		83		90	
ICV 200-116890/8	18:54	90		94		95		95		98	
ICVL 200-116890/9	18:59	93		96		98		97		97	
ICBIS 200-116890/10	19:05	93		98		98		97		97	
ICSA 200-116890/11	19:11	86		92		94		92		97	
ICSAB 200-116890/12	19:16	84		91		95		93		99	
CCV 200-116890/13	19:22	86		91		97		97		101	
CCB 200-116890/14	19:28	90		96		98		99		99	
MB 200-116803/1-A	19:34	95		100		103		102		103	
LCS 200-116803/2-A	19:39	95		102		104		103		105	
200-38498-1	19:45	92		117		274		101		125	
200-38498-2	19:51	98		122		236		107		122	
200-38498-3	19:56	96		127		235		107		121	
200-38498-4	20:02	99		129		268		108		126	
200-38498-5	20:08	99		135		300		109		130	
200-38498-6	20:13	97		132		251		108		121	
200-38498-7	20:19	97		145		366		108		136	
200-38498-7 SD	20:25	105		128		170		115		114	
CCV 200-116890/25	20:31	92		103		103		102		103	
CCB 200-116890/26	20:36	99		110		108		107		102	
CCVL 200-116890/27	20:42	102		115		112		111		105	
200-38498-7 PDS	20:48	94		139		351		105		132	
200-38498-7 MS	20:53	94		149		403		106		138	
200-38498-7 MSD	20:59	94		144		365		106		134	
200-38498-8	21:05	96		136		271		107		123	
200-38498-9	21:10	97		139		267		109		124	
200-38498-11	21:16	98		146		347		110		131	
CCV 200-116890/34	21:22	92		104		103		102		101	
CCB 200-116890/35	21:27	99		111		109		107		100	
CCVL 200-116890/36	21:33	101		118		112		111		103	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

ICP-MS Instrument ID: METICPMS2 Start Date: 05/19/2017 End Date: 05/19/2017

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Bi-209	Q	Element	Q	Element	Q	Element	Q	Element	Q
STD0 200-116890/2 I	18:19	100									
STD1 200-116890/3 I	18:25	100									
STD2 200-116890/4 I	18:31	99									
STD3 200-116890/5 I	18:37	99									
STD4 200-116890/6 I	18:42	94									
STD5 200-116890/7 I	18:48	89									
ICV 200-116890/8	18:54	100									
ICVL 200-116890/9	18:59	98									
ICBIS 200-116890/10	19:05	98									
ICSA 200-116890/11	19:11	95									
ICSAB 200-116890/12	19:16	94									
CCV 200-116890/13	19:22	100									
CCB 200-116890/14	19:28	99									
MB 200-116803/1-A	19:34	101									
LCS 200-116803/2-A	19:39	103									
200-38498-1	19:45	107									
200-38498-2	19:51	107									
200-38498-3	19:56	103									
200-38498-4	20:02	110									
200-38498-5	20:08	109									
200-38498-6	20:13	105									
200-38498-7	20:19	108									
200-38498-7 SD	20:25	103									
CCV 200-116890/25	20:31	98									
CCB 200-116890/26	20:36	99									
CCVL 200-116890/27	20:42	100									
200-38498-7 PDS	20:48	106									
200-38498-7 MS	20:53	107									
200-38498-7 MSD	20:59	105									
200-38498-8	21:05	102									
200-38498-9	21:10	102									
200-38498-11	21:16	104									
CCV 200-116890/34	21:22	96									
CCB 200-116890/35	21:27	96									
CCVL 200-116890/36	21:33	96									

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Batch Number: 116489 Batch Start Date: 05/08/17 14:00 Batch Analyst: O'Brien, Seamus J

Batch Method: 3050B Batch End Date: 05/08/17 16:35

Lab Sample ID	Client Sample ID	Method Chain	Basis	CalcMsg	InitialAmount	FinalAmount	ME6020CALi_A 00026	ME6020CALi_B 00022	
MB 200-116489/1		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL			
LCS 200-116489/2		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL	1 mL	1 mL	
200-38498-A-1	PE0517-P2SCD-04-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.26 g	100.00 mL			
200-38498-A-2	PE0517-P2SCD-04-B-0002IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.06 g	100.00 mL			
200-38498-A-3	PE0517-P2SCD-18.7-A-0001IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.36 g	100.00 mL			
200-38498-A-4	PE0517-P2SCD-18.7-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.41 g	100.00 mL			
200-38498-A-5	PE0517-P2SCD-18.8-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.18 g	100.00 mL			
200-38498-A-6	PE0517-P2SCD-18.8-B-0004IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.39 g	100.00 mL			
200-38498-A-7	PE0517-P2SCD-18.9-A-0012IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.09 g	100.00 mL			
200-38498-A-7 MS	PE0517-P2SCD-18.9-A-0012IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.23 g	100.00 mL	1 mL	1 mL	
200-38498-A-7 MSD	PE0517-P2SCD-18.9-A-0012IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.17 g	100.00 mL	1 mL	1 mL	
200-38498-A-8	PE0517-P2SCD-18.9-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.45 g	100.00 mL			
200-38498-A-9	PE0517-P2SCD-18.9-B-0006IN-D	3050B, 6020A	T	CALC NOT SET TO RUN	1.14 g	100.00 mL			
200-38498-A-11	PE0517-P2SCD-18.9-A-1218IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.20 g	100.00 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Batch Number: 116489 Batch Start Date: 05/08/17 14:00 Batch Analyst: O'Brien, Seamus J

Batch Method: 3050B Batch End Date: 05/08/17 16:35

Batch Notes	
Balance ID	L92017
First End time	1635
Hydrogen Peroxide ID	1026089
Lot # of hydrochloric acid	1004667
Lot # of Nitric Acid	1:1 1030568 Conc. 1033707
Hot Block ID	B5
Oven, Bath or Block Temperature 1	92 Degrees C
Pipette ID	DH18394
Analyst ID - Reagent Drop Witness	JWM
Perform Calculation (0=No, 1=Yes)	0
First Start time	1415
Thermometer ID	73, CF=-1
Digestion Tube/Cup ID	266957-2201
Uncorrected Temperature	93 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Batch Number: 116492 Batch Start Date: 05/09/17 08:00 Batch Analyst: O'Brien, Seamus J

Batch Method: 3010A Batch End Date: 05/09/17 12:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	ME6020CALi_A 00026	ME6020CALi_B 00022	
MB 200-116492/1		3010A, 6020A			50.00 mL	50.00 mL			
LCS 200-116492/2		3010A, 6020A			50.00 mL	50.00 mL	0.5 mL	0.5 mL	
200-38498-A-10	PE0517-P2SCD-EQB LK-1	3010A, 6020A	T	<2	50.00 mL	50.00 mL			
200-38498-A-10 MS	PE0517-P2SCD-EQB LK-1	3010A, 6020A	T	<2	50.00 mL	50.00 mL	0.5 mL	0.5 mL	
200-38498-A-10 MSD	PE0517-P2SCD-EQB LK-1	3010A, 6020A	T	<2	50.00 mL	50.00 mL	0.5 mL	0.5 mL	

Batch Notes	
First End time	1215
Lot # of hydrochloric acid	1004667
Lot # of Nitric Acid	1033707
Hot Block ID	B8
Oven, Bath or Block Temperature 1	94 Degrees C
pH Paper ID	223016
Pipette ID	MP129654
Analyst ID - Spike Witness Analyst	JWM
First Start time	0830
Thermometer ID	170, CF=-1
Digestion Tube/Cup ID	266957-2201
Uncorrected Temperature	95 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Batch Number: 116803 Batch Start Date: 05/18/17 09:26 Batch Analyst: O'Brien, Seamus J

Batch Method: 3050B Batch End Date: 05/18/17 14:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	CalcMsg	InitialAmount	FinalAmount	ME6020CALi_A 00026	ME6020CALi_B 00022	
MB 200-116803/1		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL			
LCS 200-116803/2		3050B, 6020A		CALC NOT SET TO RUN	1.00 g	100.00 mL	1 mL	1 mL	
200-38498-A-1	PE0517-P2SCD-04-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.03 g	100.00 mL			
200-38498-A-2	PE0517-P2SCD-04-B-0002IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.12 g	100.00 mL			
200-38498-A-3	PE0517-P2SCD-18.7-A-0001IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.03 g	100.00 mL			
200-38498-A-4	PE0517-P2SCD-18.7-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.01 g	100.00 mL			
200-38498-A-5	PE0517-P2SCD-18.8-A-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.22 g	100.00 mL			
200-38498-A-6	PE0517-P2SCD-18.8-B-0004IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.01 g	100.00 mL			
200-38498-A-7	PE0517-P2SCD-18.9-A-0012IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.09 g	100.00 mL			
200-38498-A-7 MS	PE0517-P2SCD-18.9-A-0012IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.26 g	100.00 mL	1 mL	1 mL	
200-38498-A-7 MSD	PE0517-P2SCD-18.9-A-0012IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.11 g	100.00 mL	1 mL	1 mL	
200-38498-A-8	PE0517-P2SCD-18.9-B-0006IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.23 g	100.00 mL			
200-38498-A-9	PE0517-P2SCD-18.9-B-0006IN-D	3050B, 6020A	T	CALC NOT SET TO RUN	1.12 g	100.00 mL			
200-38498-A-11	PE0517-P2SCD-18.9-A-1218IN	3050B, 6020A	T	CALC NOT SET TO RUN	1.05 g	100.00 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Batch Number: 116803 Batch Start Date: 05/18/17 09:26 Batch Analyst: O'Brien, Seamus J

Batch Method: 3050B Batch End Date: 05/18/17 14:00

Batch Notes	
Balance ID	L92017
First End time	1400
Hydrogen Peroxide ID	1039094
Lot # of hydrochloric acid	1004667
Lot # of Nitric Acid	1:1 1030568 Conc. 1033708
Hot Block ID	B5, B6
Oven, Bath or Block Temperature 1	93 Degrees C
Oven, Bath or Block Temperature 2	93 Degrees C
Pipette ID	DH18394
Analyst ID - Reagent Drop Witness	MDK
Perform Calculation (0=No, 1=Yes)	0
First Start time	1020
Thermometer ID	73, CF=-1; 97, CF=-2
Digestion Tube/Cup ID	266957-2201
Uncorrected Temperature	94 Celsius
Uncorrected Temperature 2	95 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Batch Number: 116602 Batch Start Date: 05/11/17 08:11 Batch Analyst: O'Brien, Seamus J

Batch Method: 7470A Batch End Date: 05/11/17 11:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	mehgccvw 01093	MEHGICVw 00095	
IC 200-116602/1		7470A, 7470A			50.00 mL	50.00 mL			
IC 200-116602/2		7470A, 7470A			50.00 mL	50.00 mL	0.1 mL		
IC 200-116602/3		7470A, 7470A			50.00 mL	50.00 mL	0.25 mL		
IC 200-116602/4		7470A, 7470A			50.00 mL	50.00 mL	0.5 mL		
IC 200-116602/5		7470A, 7470A			50.00 mL	50.00 mL	2.5 mL		
IC 200-116602/6		7470A, 7470A			50.00 mL	50.00 mL	5 mL		
ICV 200-116602/7		7470A, 7470A			50.00 mL	50.00 mL		5 mL	
ICB 200-116602/8		7470A, 7470A			50.00 mL	50.00 mL			
CCV 200-116602/9		7470A, 7470A			50.00 mL	50.00 mL	2.5 mL		
CCB 200-116602/10		7470A, 7470A			50.00 mL	50.00 mL			
MB 200-116602/11		7470A, 7470A			50.00 mL	50.00 mL			
LCS 200-116602/12		7470A, 7470A			50.00 mL	50.00 mL	0.5 mL		
200-38498-A-10	PE0517-P2SCD-EQB LK-1	7470A, 7470A	T	<2	50.00 mL	50.00 mL			
200-38498-A-10 MS	PE0517-P2SCD-EQB LK-1	7470A, 7470A	T	<2	50.00 mL	50.00 mL	0.5 mL		
200-38498-A-10 MSD	PE0517-P2SCD-EQB LK-1	7470A, 7470A	T	<2	50.00 mL	50.00 mL	0.5 mL		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Batch Number: 116602 Batch Start Date: 05/11/17 08:11 Batch Analyst: O'Brien, Seamus J

Batch Method: 7470A Batch End Date: 05/11/17 11:00

Batch Notes	
Hydroxylamine Hydrochloride ID	1021217
Digestion End Time	1100
Digestion Start Time	0900
Sulfuric Acid Lot Number	1021353
Lot # of Nitric Acid	1033707
Hot Block ID	B1
Potassium Persulfate ID	1013879
Potassium Permanganate ID	1032563
Oven, Bath or Block Temperature 1	94 Celsius
pH Paper ID	223016
Pipette ID	DH18394
Stannous Chloride ID	1025933
SOP Number	Br-ME-004
Analyst ID - Spike Witness Analyst	KSH
Temperature	94
Thermometer ID	74, CF=-1
Digestion Tube/Cup ID	257183-0945
Uncorrected Temperature	94 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Batch Number: 116612 Batch Start Date: 05/11/17 09:27 Batch Analyst: O'Brien, Seamus J

Batch Method: 7471B Batch End Date: 05/11/17 13:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	mehgccvw 01093	MEHGICVw 00095		
IC 200-116612/1		7471B, 7471B		100.00 mL	100.00 mL				
IC 200-116612/2		7471B, 7471B		100.00 mL	100.00 mL	0.2 mL			
IC 200-116612/3		7471B, 7471B		100.00 mL	100.00 mL	0.5 mL			
IC 200-116612/4		7471B, 7471B		100.00 mL	100.00 mL	1 mL			
IC 200-116612/5		7471B, 7471B		100.00 mL	100.00 mL	5 mL			
IC 200-116612/6		7471B, 7471B		100.00 mL	100.00 mL	10 mL			
ICV 200-116612/7		7471B, 7471B		100.00 mL	100.00 mL		10 mL		
ICB 200-116612/8		7471B, 7471B		100.00 mL	100.00 mL				
CCV 200-116612/9		7471B, 7471B		100.00 mL	100.00 mL	5 mL			
CCB 200-116612/10		7471B, 7471B		100.00 mL	100.00 mL				
MB 200-116612/11		7471B, 7471B		0.60 g	100.00 mL				
LCS 200-116612/12		7471B, 7471B		0.60 g	100.00 mL	2.5 mL			
200-38498-A-2	PE0517-P2SCD-04-B-0002IN	7471B, 7471B	T	0.63 g	100.00 mL				
200-38498-A-3	PE0517-P2SCD-18.7-A-0001IN	7471B, 7471B	T	0.62 g	100.00 mL				
200-38498-A-4	PE0517-P2SCD-18.7-B-0006IN	7471B, 7471B	T	0.63 g	100.00 mL				
200-38498-A-5	PE0517-P2SCD-18.8-A-0006IN	7471B, 7471B	T	0.61 g	100.00 mL				
200-38498-A-6	PE0517-P2SCD-18.8-B-0004IN	7471B, 7471B	T	0.66 g	100.00 mL				
200-38498-A-7	PE0517-P2SCD-18.9-A-0012IN	7471B, 7471B	T	0.60 g	100.00 mL				
200-38498-A-7 MS	PE0517-P2SCD-18.9-A-0012IN	7471B, 7471B	T	0.63 g	100.00 mL	2.5 mL			
200-38498-A-7 MSD	PE0517-P2SCD-18.9-A-0012IN	7471B, 7471B	T	0.61 g	100.00 mL	2.5 mL			
200-38498-A-8	PE0517-P2SCD-18.9-B-0006IN	7471B, 7471B	T	0.61 g	100.00 mL				
200-38498-A-9	PE0517-P2SCD-18.9-B-0006IN-D	7471B, 7471B	T	0.62 g	100.00 mL				
200-38498-A-11	PE0517-P2SCD-18.9-A-1218IN	7471B, 7471B	T	0.62 g	100.00 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Batch Number: 116612 Batch Start Date: 05/11/17 09:27 Batch Analyst: O'Brien, Seamus J

Batch Method: 7471B Batch End Date: 05/11/17 13:00

Batch Notes	
Hydroxylamine Hydrochloride ID	1021217
Balance ID	L92017
Digestion End Time	1250
Digestion Start Time	1215
Lot # of hydrochloric acid	1030558
Lot # of Nitric Acid	1033707
Hot Block ID	B1, B7
Potassium Permanganate ID	1032563
Oven, Bath or Block Temperature 1	97 Celsius
Oven, Bath or Block Temperature 2	94 Celsius
SOP Number	Br-ME-004
Analyst ID - Spike Witness Analyst	MJZ
Thermometer ID	218, CF=0; 74, CF=0
Digestion Tube/Cup ID	257183-0945
Uncorrected Temperature	97 Celsius
Uncorrected Temperature 2	94 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Batch Number: 116700 Batch Start Date: 05/15/17 12:30 Batch Analyst: O'Brien, Seamus J

Batch Method: 7471B Batch End Date: 05/15/17 14:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	mehgccvw 01094	MEHGICVw 00095		
IC 200-116700/1		7471B, 7471B		100.00 mL	100.00 mL				
IC 200-116700/2		7471B, 7471B		100.00 mL	100.00 mL	0.2 mL			
IC 200-116700/3		7471B, 7471B		100.00 mL	100.00 mL	0.5 mL			
IC 200-116700/4		7471B, 7471B		100.00 mL	100.00 mL	1 mL			
IC 200-116700/5		7471B, 7471B		100.00 mL	100.00 mL	5 mL			
IC 200-116700/6		7471B, 7471B		100.00 mL	100.00 mL	10 mL			
ICV 200-116700/7		7471B, 7471B		100.00 mL	100.00 mL		10 mL		
ICB 200-116700/8		7471B, 7471B		100.00 mL	100.00 mL				
CCV 200-116700/9		7471B, 7471B		100.00 mL	100.00 mL	5 mL			
CCB 200-116700/10		7471B, 7471B		100.00 mL	100.00 mL				
MB 200-116700/11		7471B, 7471B		0.60 g	100.00 mL				
LCS 200-116700/12		7471B, 7471B		0.60 g	100.00 mL	2.5 mL			
200-38498-A-1	PE0517-P2SCD-04-A-0006IN	7471B, 7471B	T	0.62 g	100.00 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Batch Number: 116700 Batch Start Date: 05/15/17 12:30 Batch Analyst: O'Brien, Seamus J

Batch Method: 7471B Batch End Date: 05/15/17 14:15

Batch Notes	
Hydroxylamine Hydrochloride ID	1021217
Balance ID	L92017
Digestion End Time	1415
Digestion Start Time	1340
Lot # of hydrochloric acid	1030558
Lot # of Nitric Acid	1033707
Hot Block ID	B1
Potassium Permanganate ID	1032563
Oven, Bath or Block Temperature 1	95 Celsius
Pipette ID	DH18394, MP129654
SOP Number	Br-ME-004
Analyst ID - Spike Witness Analyst	VTP
Thermometer ID	74, CF=0
Digestion Tube/Cup ID	257183-0945
Uncorrected Temperature	95 Celsius

Basis	Basis Description
T	Total/NA

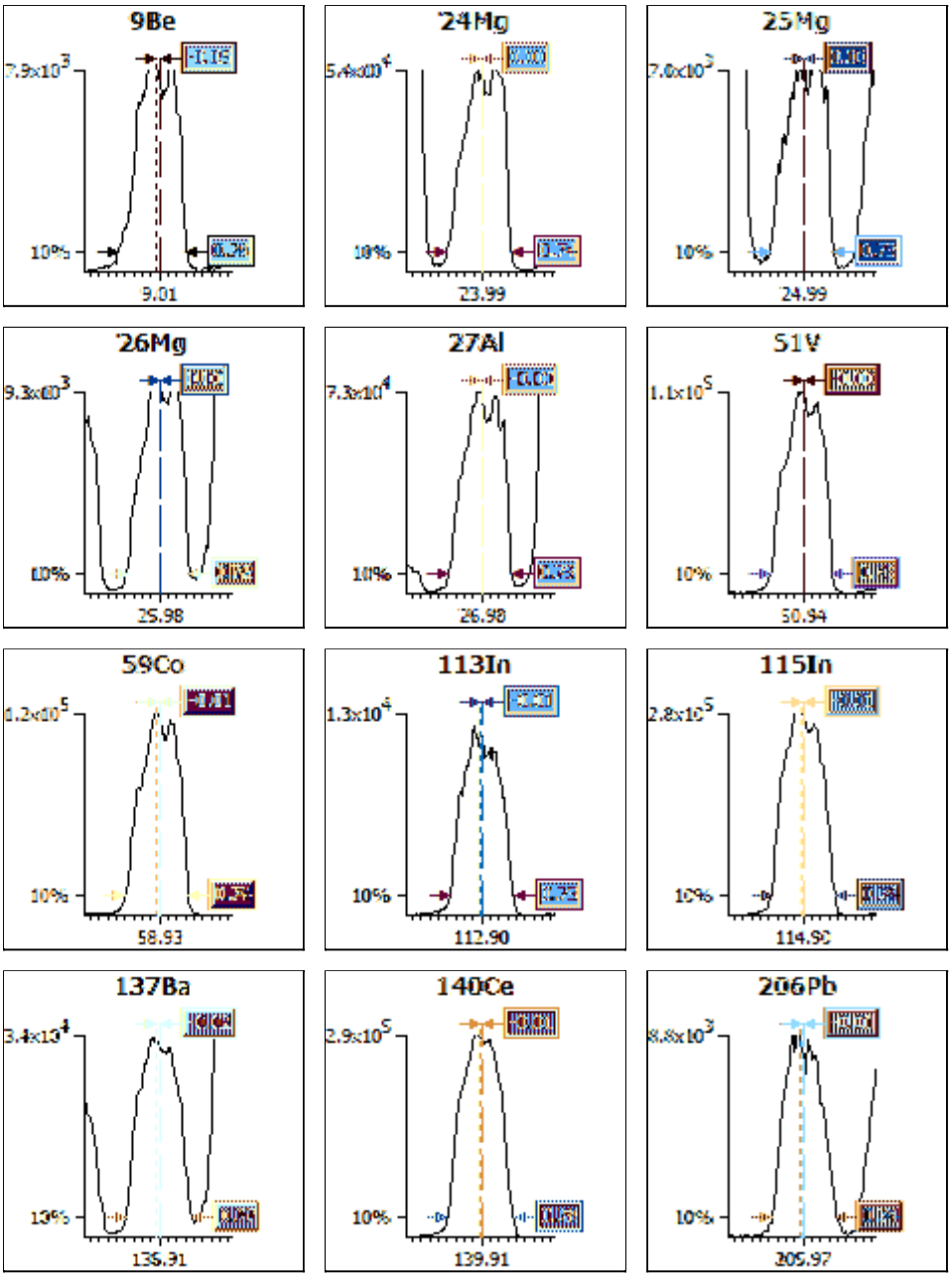
The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

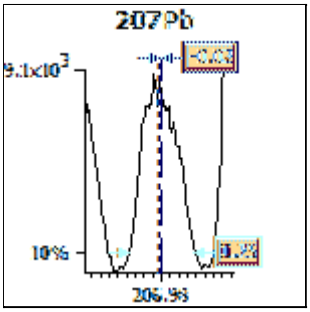
Performance Report

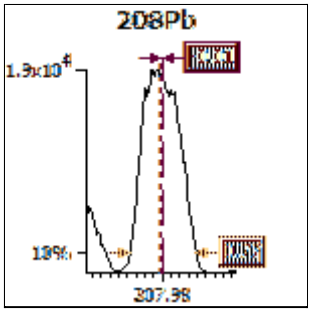
Sample details
Sample name : ITUNE
Acquired at : 5/10/2017 11:21:01 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 1:54:48 PM]

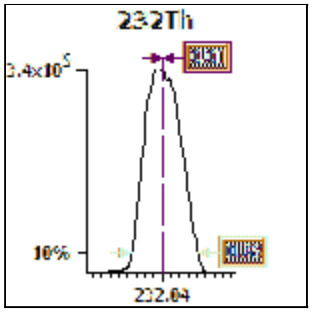
Mass Calibration verification

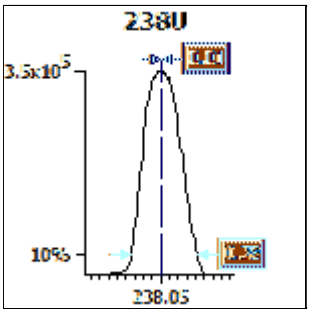
Acquisition parameters
Sweeps : 20
Dwell : 1.0 mSecs
Point spacing : 0.01 amu
Peak width measured at 10% of the peak maximum











Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
9Be	0.90	0.65	0.10	0.78	-0.05
24Mg	0.90	0.65	0.10	0.74	0.00
25Mg	0.90	0.65	0.10	0.73	0.00
26Mg	0.90	0.65	0.10	0.72	0.00
27Al	0.90	0.65	0.10	0.73	-0.00
51V	0.90	0.65	0.10	0.73	-0.00
59Co	0.90	0.65	0.10	0.74	-0.01
113In	0.90	0.65	0.10	0.73	-0.01
115In	0.90	0.65	0.10	0.74	-0.01
137Ba	0.90	0.65	0.10	0.77	-0.02
140Ce	0.90	0.65	0.10	0.78	-0.01
206Pb	0.90	0.65	0.10	0.74	-0.01
207Pb	0.90	0.65	0.10	0.75	-0.02
208Pb	0.90	0.65	0.10	0.77	-0.01
232Th	0.90	0.65	0.10	0.78	0.01
238U	0.90	0.65	0.10	0.78	0.01

Sample details
Sample name : ITUNE
Acquired at : 5/10/2017 11:21:01 AM
Report name : ISM PERFORMANCE REPORT [9/8/2011 1:54:48 PM]

Tune conditions

Major	
Extraction	-125
Lens 1	-12.9
Focus	19.0
D1	-47.8
Pole Bias	-7.0
Hexapole Bias	-3.0
Nebuliser	0.75
Sampling Depth	120

Minor	
Lens 2	-43.9
Lens 3	-171.0
Forward power	1400
Horizontal	107
Vertical	360
D2	-177
DA	-38.4
Cool	13.0
Auxiliary	0.90

Global	
Standard resolution	n/a
High resolution	n/a
Analogue Detector	n/a
PC Detector	n/a

Add. Gases	
No Cell Gas	0.00
No Cell Gas	0.00

Sensitivity and stability results

Acquisition parameters
Sweeps : 50

Run	Time	8Bkg	9Be	24Mg	25Mg	26Mg	27Al	51V	59Co	113In
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Countrate	-	>100	>100	>100	>100	>100	>100	>100	>100
1	11:21:55 AM	38.800	7003.471	52917.876	7315.605	9766.861	73467.568	127336.59	112407.79	10105.062
2	11:22:29 AM	41.000	7321.608	53471.639	7413.648	9850.910	74064.200	129263.33	113523.31	10197.118
3	11:23:03 AM	38.500	7269.585	53768.592	7577.722	9604.767	73616.222	126526.45	112993.73	10217.131
4	11:23:37 AM	40.500	7087.507	53963.220	7425.654	9796.879	73881.392	128348.30	113799.19	10447.273
5	11:24:11 AM	42.700	7349.620	53856.877	7183.548	9886.932	74098.352	129287.52	113660.24	10441.270
x		40.300	7206.358	53595.641	7383.236	9781.270	73825.547	128152.44	113276.85	10281.571
σ		1.72	152.56	420.72	145.77	109.11	276.80	1211.44	573.58	154.44
%RSD		4.258	2.117	0.785	1.974	1.115	0.375	0.945	0.506	1.502

Run	Time	115In	137Ba	140Ce	156Ce O	206Pb	207Pb	208Pb	220Bkg	232Th
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	5.0%	5.0%	5.0%	-	5.0%	5.0%	5.0%	-	5.0%
	Countrate	>100	>100	>100	-	>100	>100	>100	-	>100
1	11:21:55 AM	279506.22	34417.500	296481.80	2144.138	8314.073	7629.746	17475.157	0.000	344728.64
2	11:22:29 AM	280348.19	35060.839	296758.66	2274.155	8576.206	7855.851	17977.691	0.100	343591.52
3	11:23:03 AM	275608.11	35078.877	296412.58	2136.137	8606.221	7739.797	17719.414	0.100	342774.96
4	11:23:37 AM	279304.89	34898.499	296593.76	2176.142	8548.192	7805.828	17927.637	0.300	341742.07
5	11:24:11 AM	281121.04	34623.927	295588.13	2220.148	8676.258	7613.739	17815.517	0.200	346749.93
x		279177.69	34815.929	296366.99	2190.144	8544.190	7728.992	17783.083	0.140	343917.43
σ		2122.07	287.90	454.62	57.42	137.19	106.36	199.18	0.11	1925.15
%RSD		0.760	0.827	0.153	2.622	1.606	1.376	1.120	81.441	0.560

Run	Time	238U
Dwell (mSecs)		0.0
Limits	%RSD	5.0%
	Countrate	>100
1	11:21:55 AM	349273.82
2	11:22:29 AM	348736.74
3	11:23:03 AM	345727.01
4	11:23:37 AM	349132.91
5	11:24:11 AM	349843.58
x		348542.81
σ		1623.34
%RSD		0.466

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0200
1	11:21:55 AM	0.007
2	11:22:29 AM	0.008
3	11:23:03 AM	0.007
4	11:23:37 AM	0.007
5	11:24:11 AM	0.008
x		0.0074

σ	0.00
%RSD	2.6268

Result : The performance report passed.

Experiment Details

Description	PlasmaLab Template BlankExperiment
Template Filename	C:\Program Files\Thermo Fisher\PlasmaLab\TEMPLATES\6020A.tet
Created By User	user
Analyte Database	Default.tea
Creation Timestamp	8/29/2003 1:55:15 PM
Last Edited By	INORG-User
Last Edit Timestamp	5/11/2017 9:29:41 AM
Instrument Detector	Simultaneous
Database Version	3.51
Acquisition Mode	Unknown

Numerical Results report key (text indicates meaning)

Blue text indicates that cell is a statistic.
Underlining indicates that a data warning flag is set.

Column headings

No flag
Semi Quant
Standard Addition
Multi Element

Result cells

Internal Standard
Excluded
QC Warning
QC Failure
Transient TRA only:
Peak Not Found
Manually Edited
Merged Peak

Data warning flags
I - Invalid calibration
T - Tripped
F - Interference correction failed
M - Result over max
V - Valley integration failed
D - Different method used

Setup

Survey Scan Setup

Sweeps	10
Dwell Time	600
Channels Per Mass	10
Acquisition Duration	13247

Main Run Setup

Main Run	Peak Jumping
Sweeps	20
Dwell Time	10000
Channels Per Mass	1
Acquisition Duration	18211
Channel Spacing	0.02

Survey Scan Regions

Start AMU	End AMU	Channels	Dwell ms	Resolution
4.59	11.41	68	600	Standard
22.59	27.41	48	600	Standard
28.59	29.41	8	600	Standard
30.59	31.41	8	600	Standard

32.59	33.41	8	600	Standard
38.59	39.41	8	600	Standard
42.59	79.41	368	600	Standard
80.59	245.50	1649	600	Standard

Peak Jump Regions

Analyte	Channels	Dwell ms	Resolution
6Li	1	5000	Standard
7Li	1	5000	Standard
9Be	1	20000	Standard
11B	1	10000	Standard
23Na	1	5000	Standard
25Mg	1	5000	Standard
26Mg	1	5000	Standard
27Al	1	10000	Standard
39K	1	5000	Standard
43Ca	1	10000	Standard
44Ca	1	5000	Standard
45Sc	1	5000	Standard
47Ti	1	10000	Standard
51V	1	10000	Standard
52Cr	1	10000	Standard
53Cl O	1	10000	Standard
55Mn	1	10000	Standard
56Fe	1	10000	Standard
59Co	1	10000	Standard
60Ni	1	10000	Standard
65Cu	1	10000	Standard
66Zn	1	10000	Standard
75As	1	50000	Standard
77Ar Cl	1	50000	Standard
82Se	1	100000	Standard
83Kr	1	100000	Standard
84Kr	1	10000	Standard
88Sr	1	10000	Standard
89Y	1	5000	Standard
98Mo	1	10000	Standard
106Cd	1	10000	Standard
107Ag	1	10000	Standard
108Mo O	1	10000	Standard
111Cd	1	10000	Standard
115In	1	5000	Standard
118Sn	1	10000	Standard
121Sb	1	10000	Standard
123Sb	1	100000	Standard
135Ba	1	10000	Standard
159Tb	1	5000	Standard
182W	1	10000	Standard
205Tl	1	10000	Standard
206Pb	1	10000	Standard
207Pb	1	10000	Standard
208Pb	1	10000	Standard
209Bi	1	5000	Standard

220Bkg	1	10000	Standard
232Th	1	10000	Standard
238U	1	10000	Standard

Calibration Technique

Use External Drift Correction - No
Calibrate by - Isotope

Symbol	Interference Correction	RSF	Calibration Method	Line Fit	Weighting	Forcing	Use for Semi-Quant	Max Error	Minimum Correlation
6Li	Yes	1.00	None				No		
7Li	Yes	1.00	None				No		
9Be	Yes	0.75	Fully-Quantified	Linear	Absolute SD	None	Yes		
11B	Yes	0.58	Fully-Quantified	Linear	Absolute SD	None	Yes		
23Na	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
25Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
26Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
27Al	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
39K	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
43Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
44Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
45Sc	Yes	1.00	None				No		
47Ti	Yes	0.99	None				No		
51V	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
52Cr	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
55Mn	Yes	0.95	Fully-Quantified	Linear	Absolute SD	None	Yes		
56Fe	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
59Co	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
60Ni	No	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
65Cu	Yes	0.90	Fully-Quantified	Linear	Absolute SD	None	Yes		
66Zn	Yes	0.38	Fully-Quantified	Linear	Absolute SD	None	Yes		
75As	Yes	0.07	Fully-Quantified	Linear	Absolute SD	None	Yes		
82Se	Yes	0.10	Fully-Quantified	Linear	Absolute SD	None	Yes		
83Kr	Yes	0.01	None				No		
84Kr	Yes	0.01	None				No		
88Sr	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
89Y	Yes	0.98	None				No		
98Mo	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
107Ag	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
106Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
111Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
115In	Yes	0.99	None				No		
118Sn	Yes	0.96	None				No		
121Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes		
123Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes		
135Ba	Yes	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
159Tb	Yes	0.99	None				No		
182W	Yes	0.94	Fully-Quantified	Linear	Absolute SD	None	Yes		
206Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes		
207Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes		
208Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	No		
209Bi	Yes	0.92	None				No		
232Th	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
238U	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		

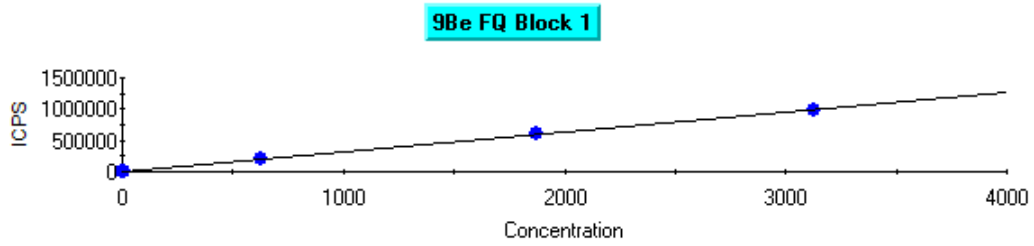
205Tl	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
220Bkg	Yes		Semi-Quantified				No
77Ar Cl	Yes		Semi-Quantified				No
53Cl O	Yes		Semi-Quantified				No
108Mo O	Yes		Semi-Quantified				No

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	STD0 1035925	Fully Quant Standard	1.000	0	1	2	144
2	STD1 1037148	Fully Quant Standard	1.000	0	1	3	144
3	STD2 1037149	Fully Quant Standard	1.000	0	1	4	144
4	STD3 1037150	Fully Quant Standard	1.000	0	1	5	144
5	STD4 1037151	Fully Quant Standard	1.000	1	1	1	144
6	STD5 1037152	Fully Quant Standard	1.000	1	1	2	144
7	ICV 1037153	QC Sample	1.000	0	1	6	144
8	ICVL 1037148	QC Sample	1.000	0	1	3	144
9	ICBIS 1036503	QC Sample	1.000	0	1	2	144
10	ICSA 1034645	QC Sample	1.000	1	1	3	144
11	ICSAB 1034648	QC Sample	1.000	1	1	4	144
12	CCV 1037150	QC Sample	1.000	0	1	5	144
13	CCB 1035925	QC Sample	1.000	0	1	2	144
14	MB 200-116243/1-A	Unknown	1.000	1	2	1	144
15	LCS 200-116243/2-A	Unknown	1.000	1	2	2	144
16	LCSD 200-116243/3-A	Unknown	1.000	1	2	3	144
17	200-38368-A-1-A @20	Unknown	1.000	1	2	4	144
18	200-38368-A-1-A @10	Unknown	1.000	1	2	5	144
19	200-38368-A-1-A @5	Unknown	1.000	1	2	6	144
20	MB 200-116489/1-A	Unknown	1.000	1	2	7	144
21	LCS 200-116489/2-A	Unknown	1.000	1	2	8	144
22	200-38498-A-1-A	Unknown	1.000	1	2	9	144
23	200-38498-A-2-A	Unknown	1.000	1	2	10	144
24	CCV 1037150	QC Sample	1.000	0	1	5	144
25	CCB 1035925	QC Sample	1.000	0	1	2	144
26	CCVL 1037148	QC Sample	1.000	0	1	3	144
27	200-38498-A-3-A	Unknown	1.000	1	2	11	144
28	200-38498-A-4-A	Unknown	1.000	1	2	12	144
29	200-38498-A-5-A	Unknown	1.000	1	3	1	144
30	200-38498-A-6-A	Unknown	1.000	1	3	2	144
31	200-38498-A-7-A	Unknown	1.000	1	3	3	144
32	200-38498-A-7-A SD@5	Unknown	1.000	1	3	4	144
33	200-38498-A-7-A PDS	Unknown	1.000	1	3	5	144
34	200-38498-A-7-B MS	Unknown	1.000	1	3	6	144
35	200-38498-A-7-C MSD	Unknown	1.000	1	3	7	144
36	200-38498-A-8-A	Unknown	1.000	1	3	8	144
37	CCV 1037150	QC Sample	1.000	0	1	5	144
38	CCB 1035925	QC Sample	1.000	0	1	2	144
39	CCVL 1037148	QC Sample	1.000	0	1	3	144
40	200-38498-A-9-A	Unknown	1.000	1	3	9	144
41	200-38498-A-11-A	Unknown	1.000	1	3	10	144
42	MB 200-116492/1-A	Unknown	1.000	1	3	11	144
43	LCS 200-116492/2-A	Unknown	1.000	1	3	12	144
44	200-38498-A-10-A	Unknown	1.000	1	4	1	144
45	200-38498-A-10-A SD@5	Unknown	1.000	1	4	2	144
46	200-38498-A-10-A PDS	Unknown	1.000	1	4	3	144
47	200-38498-A-10-B MS	Unknown	1.000	1	4	4	144

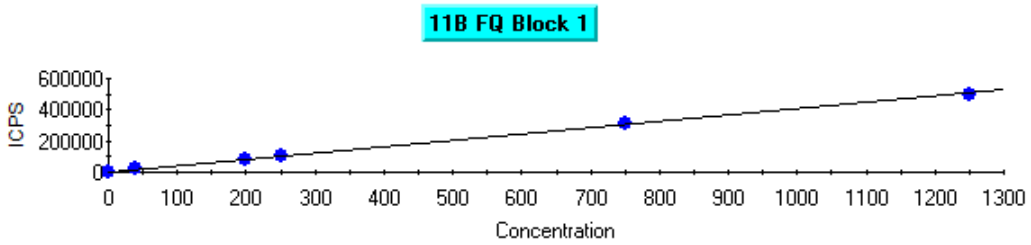
48	200-38498-A-10-C MSD	Unknown	1.000	1	4	5	144
49	MB 200-116422/1-A	Unknown	1.000	1	4	6	144
50	CCV 1037150	QC Sample	1.000	0	1	5	144
51	CCB 1035925	QC Sample	1.000	0	1	2	144
52	CCVL 1037148	QC Sample	1.000	0	1	3	144
53	LCS 200-116422/2-A	Unknown	1.000	1	4	7	144
54	480-117352-B-1-A	Unknown	1.000	1	4	8	144
55	480-117352-B-1-A SD@5	Unknown	1.000	1	4	9	144
56	480-117352-B-1-A PDS	Unknown	1.000	1	4	10	144
57	480-117352-B-1-B MS	Unknown	1.000	1	4	11	144
58	480-117352-B-1-C MSD	Unknown	1.000	1	4	12	144
59	480-117352-B-2-A	Unknown	1.000	1	5	1	144
60	480-117352-B-3-A	Unknown	1.000	1	5	2	144
61	480-117352-B-4-A	Unknown	1.000	1	5	3	144
62	CCV 1037150	QC Sample	1.000	0	1	5	144
63	CCB 1035925	QC Sample	1.000	0	1	2	144
64	CCVL 1037148	QC Sample	1.000	0	1	3	144

Fully Quant Calibration



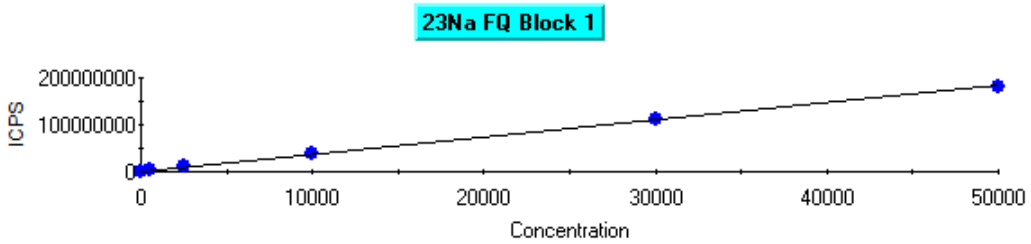
Intercept CPS=76.086928 Intercept Conc=0.240000
Sensitivity=317.028775 Correlation Coeff=0.999912

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-0.003	0.003	75.02	0.00
STD1 1037148	1.000	1.041	0.041	406.19	4.12
STD2 1037149	5.000	5.103	0.103	1693.82	2.06
STD3 1037150	625.000	629.359	4.359	199601.07	0.70
STD4 1037151	1875.000	1879.991	4.991	596087.30	0.27
STD5 1037152	3125.000	3060.449	64.551	970326.46	2.07



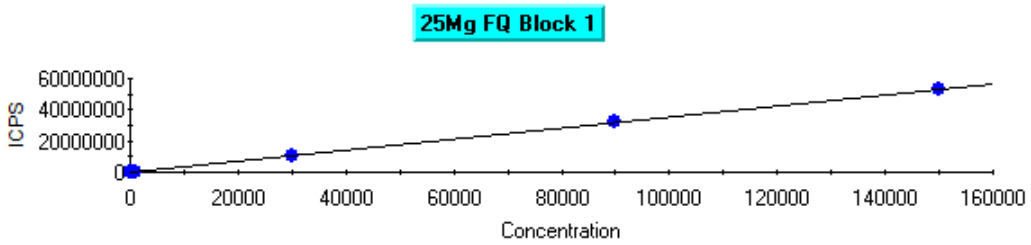
Intercept CPS=4173.982668 Intercept Conc=10.418334
Sensitivity=400.638226 Correlation Coeff=0.999937

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-0.076	0.076	4143.59	0.00
STD1 1037148	40.000	42.479	2.479	21192.84	6.20
STD2 1037149	200.000	203.571	3.571	85732.39	1.79
STD3 1037150	250.000	248.348	1.652	103671.80	0.66
STD4 1037151	750.000	752.919	2.919	305822.09	0.39
STD5 1037152	1250.000	1230.969	19.031	497347.30	1.52



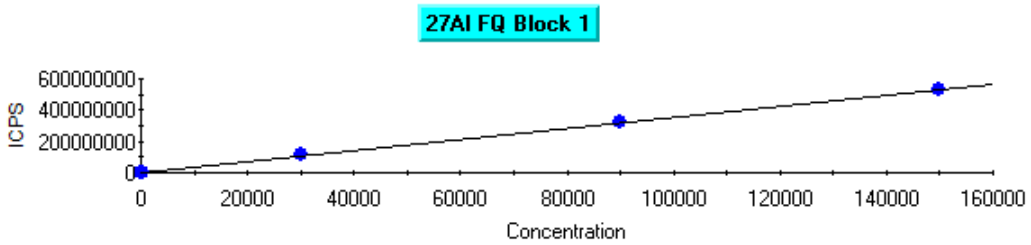
Intercept CPS=652363.956286 Intercept Conc=177.456041
Sensitivity=3676.200331 Correlation Coeff=0.999993

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-1.961	1.961	645155.35	0.00
STD1 1037148	500.000	523.731	23.731	2577703.72	4.75
STD2 1037149	2500.000	2523.436	23.436	9929019.31	0.94
STD3 1037150	10000.000	9996.224	3.776	37400484.56	0.04
STD4 1037151	30000.000	29713.113	286.887	109883720.42	0.96
STD5 1037152	50000.000	49246.653	753.347	181692924.56	1.51



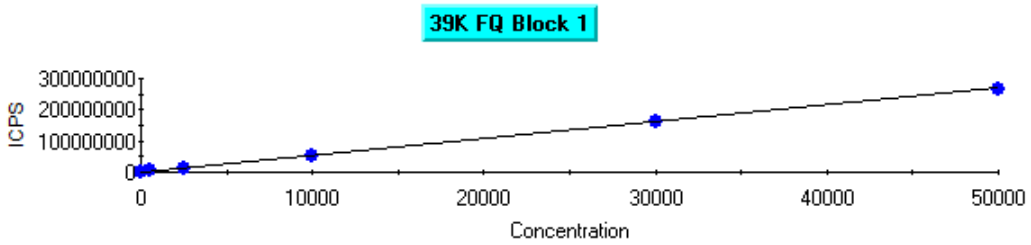
Intercept CPS=566.018493 Intercept Conc=1.598261
Sensitivity=354.146470 Correlation Coeff=0.999972

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.254	0.254	656.13	0.00
STD1 1037148	200.000	197.329	2.671	70449.38	1.34
STD2 1037149	1000.000	965.874	34.126	342626.97	3.41
STD3 1037150	30000.000	30815.758	815.758	10913858.07	2.72
STD4 1037151	90000.000	90761.378	761.378	32143387.83	0.85
STD5 1037152	150000.000	149711.382	288.618	53020323.66	0.19



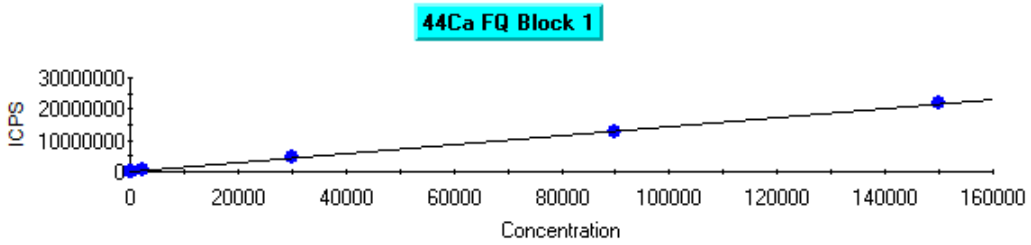
Intercept CPS=9842.449295 Intercept Conc=2.803535
Sensitivity=3510.728293 Correlation Coeff=0.999917

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.082	0.082	10129.56	0.00
STD1 1037148	50.000	49.990	0.010	185343.80	0.02
STD2 1037149	250.000	247.309	2.691	878077.77	1.08
STD3 1037150	30000.000	31298.576	1298.576	109890638.14	4.33
STD4 1037151	90000.000	91659.281	1659.281	321800672.60	1.84
STD5 1037152	150000.000	149763.687	236.313	525789456.56	0.16



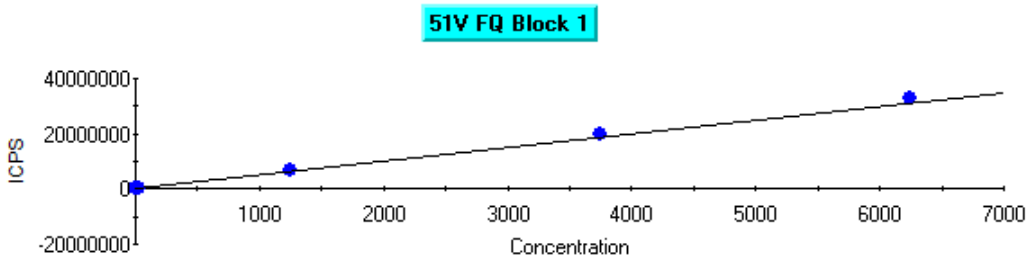
Intercept CPS=477339.838804 Intercept Conc=88.684739
Sensitivity=5382.434947 Correlation Coeff=0.999994

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-1.506	1.506	469234.80	0.00
STD1 1037148	500.000	518.045	18.045	3265683.18	3.61
STD2 1037149	2500.000	2536.151	36.151	14128005.40	1.45
STD3 1037150	10000.000	10037.633	37.633	54504245.70	0.38
STD4 1037151	30000.000	29699.063	300.937	160330615.42	1.00
STD5 1037152	50000.000	49305.717	694.283	265862155.44	1.39



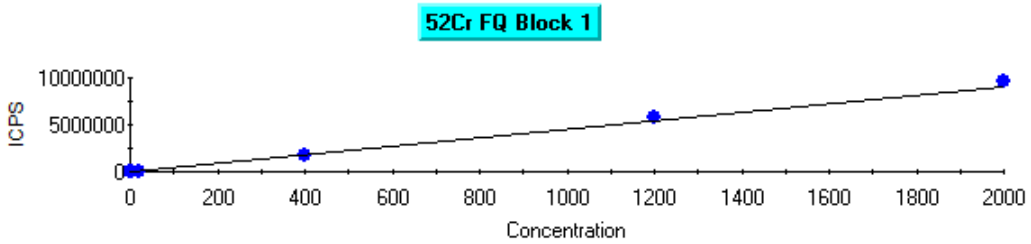
Intercept CPS=16187.918373 Intercept Conc=113.071198
Sensitivity=143.165710 Correlation Coeff=0.999934

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	9.121	9.121	17493.80	0.00
STD1 1037148	500.000	468.825	31.175	83307.56	6.24
STD2 1037149	2500.000	2263.183	236.817	340198.16	9.47
STD3 1037150	30000.000	30130.843	130.843	4329891.48	0.44
STD4 1037151	90000.000	90063.239	63.239	12910155.54	0.07
STD5 1037152	150000.000	153339.714	3339.714	21969177.00	2.23



Intercept CPS=-1629.827729 Intercept Conc=-0.326087
Sensitivity=4998.134211 Correlation Coeff=1.000000

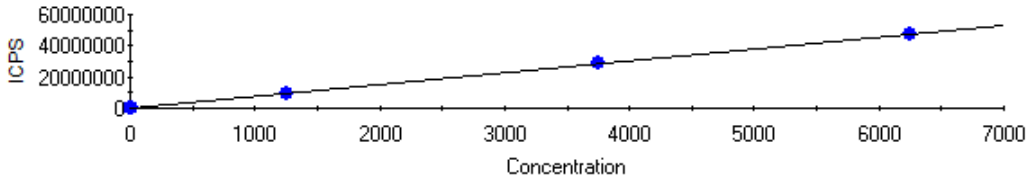
Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.062	0.062	-1317.45	0.00
STD1 1037148	5.000	4.715	0.285	21936.59	5.70
STD2 1037149	25.000	22.923	2.077	112941.88	8.31
STD3 1037150	1250.000	1318.814	68.814	6589981.14	5.51
STD4 1037151	3750.000	3959.661	209.661	19789288.72	5.59
STD5 1037152	6250.000	6600.354	350.354	32987824.19	5.61



Intercept CPS=2893.313390 Intercept Conc=0.635537
Sensitivity=4552.549357 Correlation Coeff=0.999878

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.018	0.018	2977.23	0.00
STD1 1037148	4.000	3.970	0.030	20967.99	0.74
STD2 1037149	20.000	18.922	1.078	89035.57	5.39
STD3 1037150	400.000	387.874	12.126	1768706.64	3.03
STD4 1037151	1200.000	1267.612	67.612	5773761.26	5.63
STD5 1037152	2000.000	2103.878	103.878	9580903.40	5.19

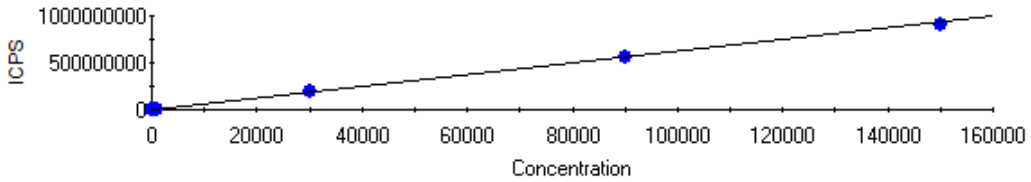
55Mn FQ Block 1



Intercept CPS=1917.525466 Intercept Conc=0.254725
Sensitivity=7527.829942 Correlation Coeff=0.999988

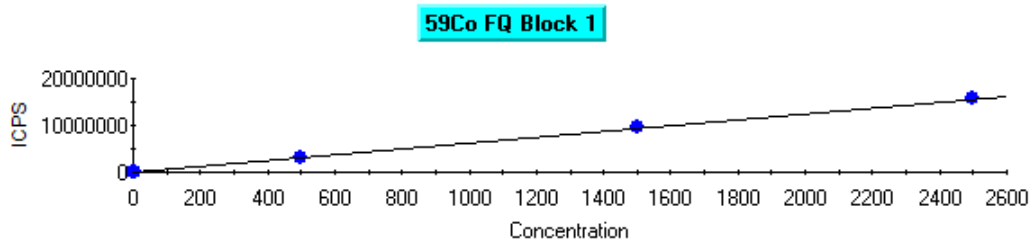
Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.005	0.005	1955.35	0.00
STD1 1037148	2.000	1.879	0.121	16065.81	6.03
STD2 1037149	10.000	9.330	0.670	72155.02	6.70
STD3 1037150	1250.000	1291.538	41.538	9724394.59	3.32
STD4 1037151	3750.000	3778.303	28.303	28444340.78	0.75
STD5 1037152	6250.000	6299.247	49.247	47421574.27	0.79

56Fe FQ Block 1



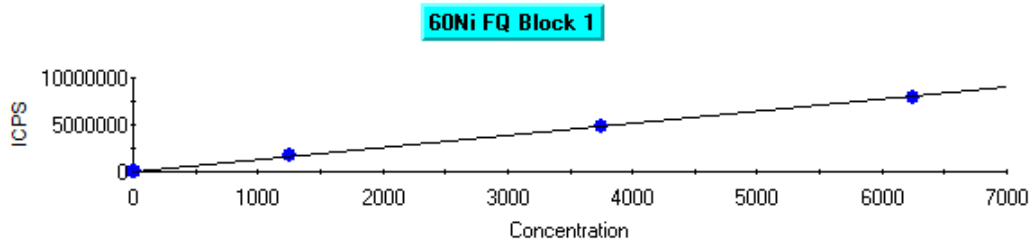
Intercept CPS=375543.544398 Intercept Conc=60.631159
Sensitivity=6193.903450 Correlation Coeff=0.999914

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.397	0.397	378004.23	0.00
STD1 1037148	200.000	197.328	2.672	1597776.24	1.34
STD2 1037149	1000.000	1064.526	64.526	6969112.21	6.45
STD3 1037150	30000.000	30935.036	935.036	191984171.86	3.12
STD4 1037151	90000.000	89890.062	109.938	557145908.33	0.12
STD5 1037152	150000.000	147047.963	2952.037	911176427.98	1.97



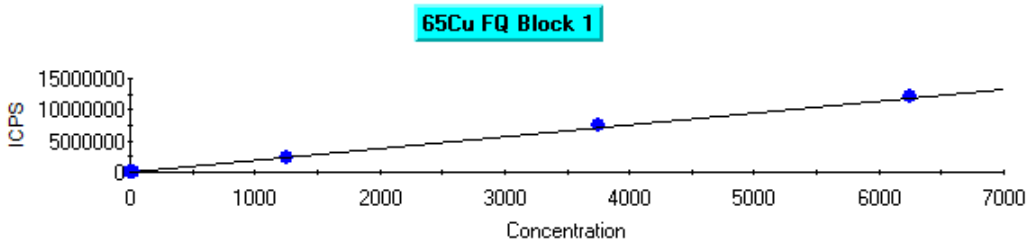
Intercept CPS=165.470902 Intercept Conc=0.026400
Sensitivity=6267.883174 Correlation Coeff=0.999917

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.004	0.004	191.58	0.00
STD1 1037148	1.000	0.967	0.033	6227.57	3.28
STD2 1037149	5.000	4.655	0.345	29340.67	6.91
STD3 1037150	500.000	509.497	9.497	3193634.76	1.90
STD4 1037151	1500.000	1539.121	39.121	9647194.15	2.61
STD5 1037152	2500.000	2506.113	6.113	15708189.67	0.24



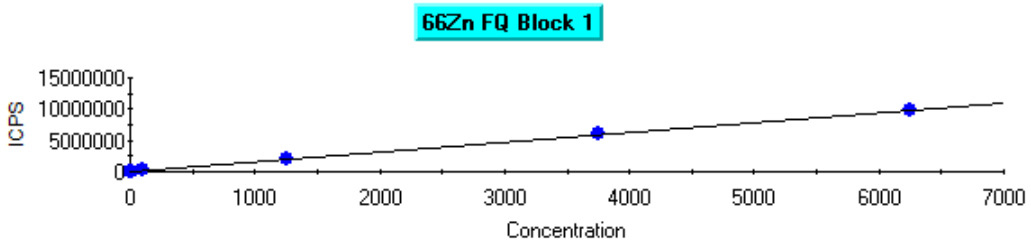
Intercept CPS=215.895586 Intercept Conc=0.168436
Sensitivity=1281.763192 Correlation Coeff=0.999840

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-0.032	0.032	175.01	0.00
STD1 1037148	2.000	2.138	0.138	2956.72	6.92
STD2 1037149	10.000	10.056	0.056	13105.12	0.56
STD3 1037150	1250.000	1280.831	30.831	1641937.61	2.47
STD4 1037151	3750.000	3764.769	14.769	4825757.89	0.39
STD5 1037152	6250.000	6090.077	159.923	7806252.06	2.56



Intercept CPS=717.510268 Intercept Conc=0.375301
Sensitivity=1911.825320 Correlation Coeff=0.999782

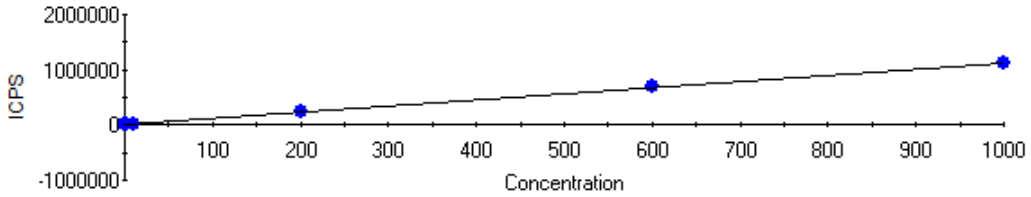
Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.006	0.006	728.54	0.00
STD1 1037148	5.000	5.069	0.069	10409.18	1.39
STD2 1037149	25.000	24.549	0.451	47651.82	1.80
STD3 1037150	1250.000	1241.008	8.992	2373307.94	0.72
STD4 1037151	3750.000	3977.195	227.195	7604418.90	6.06
STD5 1037152	6250.000	6407.335	157.335	12250423.43	2.52



Intercept CPS=372.393776 Intercept Conc=0.240038
Sensitivity=1551.394490 Correlation Coeff=0.999710

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.189	0.189	666.28	0.00
STD1 1037148	20.000	19.265	0.735	30260.31	3.67
STD2 1037149	100.000	93.499	6.501	145426.36	6.50
STD3 1037150	1250.000	1253.977	3.977	1945785.08	0.32
STD4 1037151	3750.000	3956.771	206.771	6138885.77	5.51
STD5 1037152	6250.000	6323.485	73.485	9810591.65	1.18

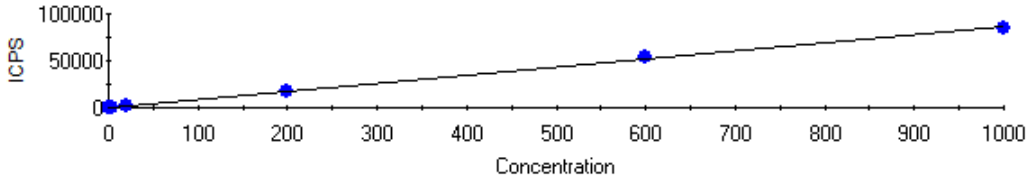
75As FQ Block 1



Intercept CPS=2351.448144 Intercept Conc=2.086670
Sensitivity=1126.890163 Correlation Coeff=0.999922

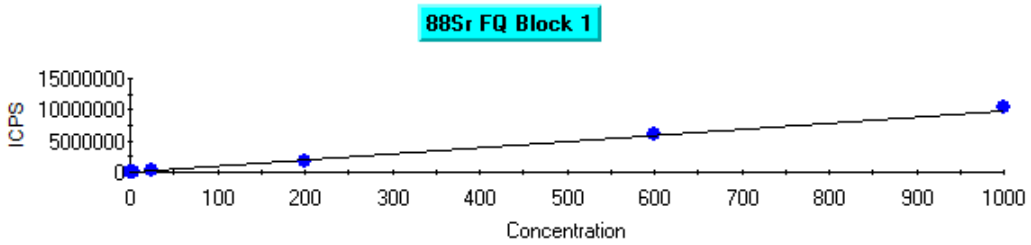
Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-2.009	2.009	87.82	0.00
STD1 1037148	2.000	1.960	0.040	4560.09	2.00
STD2 1037149	10.000	17.513	7.513	22086.77	75.13
STD3 1037150	200.000	199.660	0.340	227346.12	0.17
STD4 1037151	600.000	602.478	2.478	681277.54	0.41
STD5 1037152	1000.000	985.390	14.610	1112778.02	1.46

82Se FQ Block 1



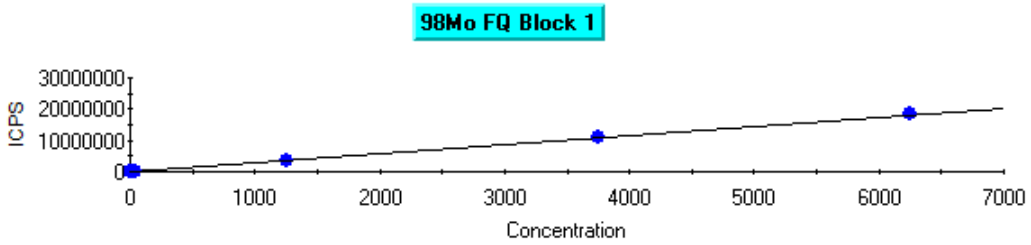
Intercept CPS=12.331577 Intercept Conc=0.143300
Sensitivity=86.054045 Correlation Coeff=0.999748

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.303	0.303	38.37	0.00
STD1 1037148	4.000	3.797	0.203	339.10	5.07
STD2 1037149	20.000	19.479	0.521	1688.60	2.60
STD3 1037150	200.000	209.592	9.592	18048.55	4.80
STD4 1037151	600.000	616.839	16.839	53093.80	2.81
STD5 1037152	1000.000	990.009	9.991	85206.59	1.00



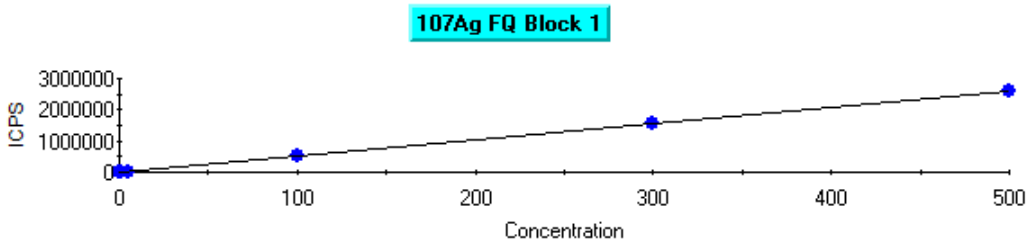
Intercept CPS=424.550386 Intercept Conc=0.043425
Sensitivity=9776.713412 Correlation Coeff=0.999735

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.003	0.003	452.98	0.00
STD1 1037148	5.000	4.585	0.415	45248.79	8.30
STD2 1037149	25.000	22.359	2.641	219022.66	10.56
STD3 1037150	200.000	184.335	15.665	1802614.11	7.83
STD4 1037151	600.000	625.712	25.712	6117827.92	4.29
STD5 1037152	1000.000	1051.568	51.568	10281302.62	5.16



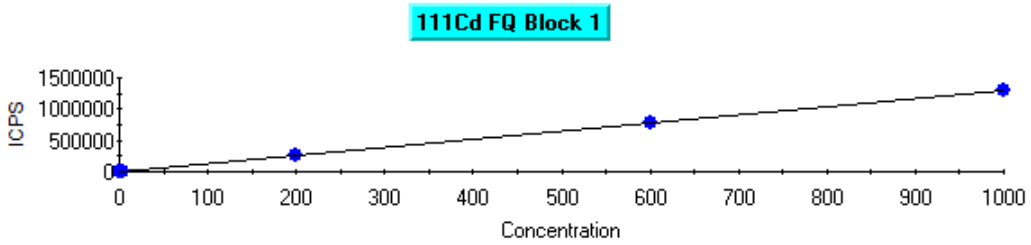
Intercept CPS=160.554345 Intercept Conc=0.055861
Sensitivity=2874.164576 Correlation Coeff=0.999940

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.036	0.036	263.68	0.00
STD1 1037148	10.000	9.067	0.933	26220.93	9.33
STD2 1037149	50.000	44.593	5.407	128328.44	10.81
STD3 1037150	1250.000	1218.383	31.617	3501992.64	2.53
STD4 1037151	3750.000	3818.439	68.439	10974981.74	1.83
STD5 1037152	6250.000	6436.546	186.546	18499851.75	2.98



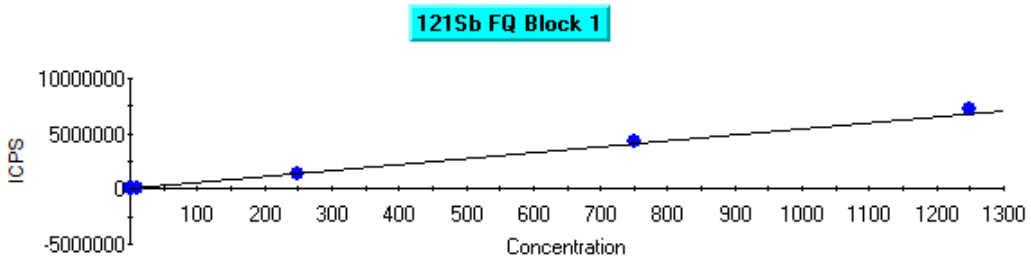
Intercept CPS=33.942804 Intercept Conc=0.006592
Sensitivity=5149.130329 Correlation Coeff=0.999995

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-0.000	0.000	33.32	0.00
STD1 1037148	1.000	1.073	0.073	5560.88	7.34
STD2 1037149	5.000	5.092	0.092	26255.25	1.85
STD3 1037150	100.000	100.354	0.354	516771.74	0.35
STD4 1037151	300.000	298.506	1.494	1537077.82	0.50
STD5 1037152	500.000	500.128	0.128	2575257.83	0.03



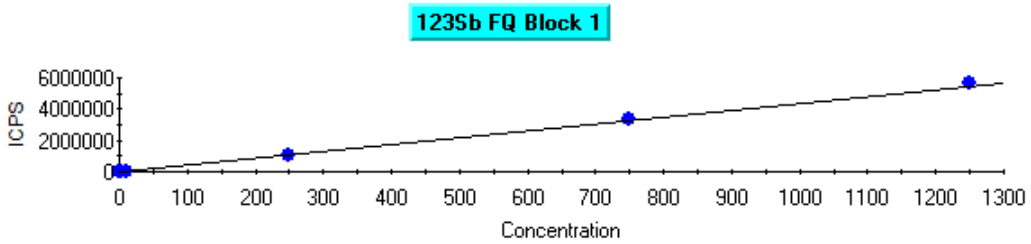
Intercept CPS=177.465560 Intercept Conc=0.135882
Sensitivity=1306.029543 Correlation Coeff=0.999970

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-0.003	0.003	173.37	0.00
STD1 1037148	1.000	1.024	0.024	1515.01	2.41
STD2 1037149	5.000	5.067	0.067	6794.49	1.33
STD3 1037150	200.000	204.803	4.803	267656.85	2.40
STD4 1037151	600.000	607.210	7.210	793212.13	1.20
STD5 1037152	1000.000	999.391	0.609	1305411.27	0.06



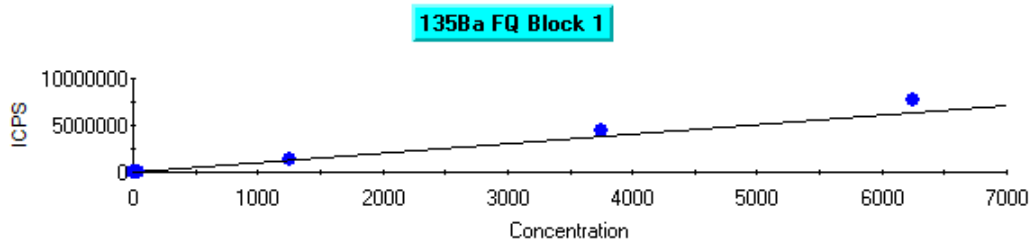
Intercept CPS=-302.007088 Intercept Conc=-0.055280
Sensitivity=5463.212769 Correlation Coeff=0.999776

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.078	0.078	121.63	0.00
STD1 1037148	2.000	1.896	0.104	10054.54	5.22
STD2 1037149	10.000	9.070	0.930	49247.11	9.30
STD3 1037150	250.000	235.335	14.665	1285382.11	5.87
STD4 1037151	750.000	789.021	39.021	4310287.73	5.20
STD5 1037152	1250.000	1324.118	74.118	7233635.14	5.93



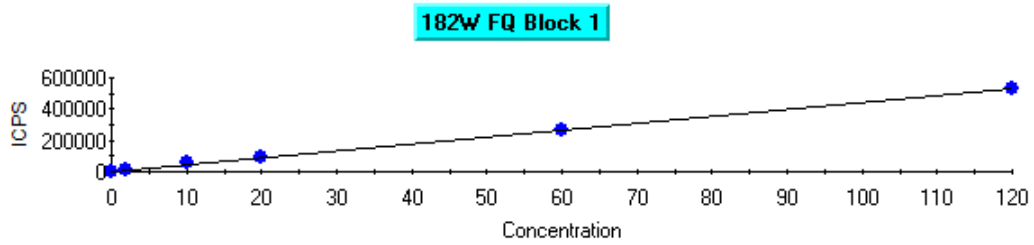
Intercept CPS=72.534737 Intercept Conc=0.016732
Sensitivity=4335.132260 Correlation Coeff=0.999676

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.001	0.001	74.81	0.00
STD1 1037148	2.000	1.781	0.219	7793.80	10.95
STD2 1037149	10.000	8.748	1.252	37997.35	12.52
STD3 1037150	250.000	233.416	16.584	1011960.35	6.63
STD4 1037151	750.000	762.501	12.501	3305613.21	1.67
STD5 1037152	1250.000	1313.185	63.185	5692903.69	5.05



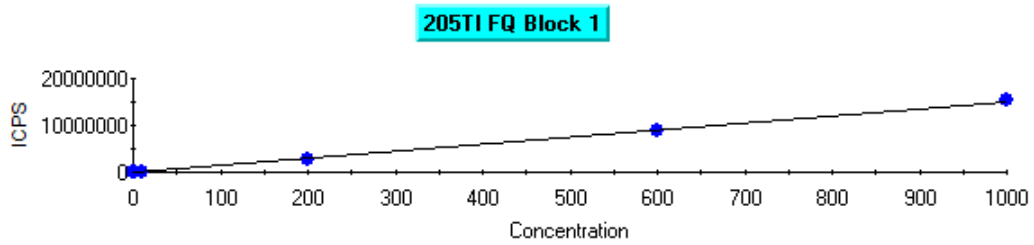
Intercept CPS=58.160473 Intercept Conc=0.057167
Sensitivity=1017.384830 Correlation Coeff=0.999567

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.010	0.010	68.30	0.00
STD1 1037148	10.000	10.101	0.101	10334.62	1.01
STD2 1037149	50.000	48.793	1.207	49699.16	2.41
STD3 1037150	1250.000	1266.441	16.441	1288516.10	1.32
STD4 1037151	3750.000	4410.067	660.067	4486793.89	17.60
STD5 1037152	6250.000	7476.554	1226.554	7606591.16	19.62



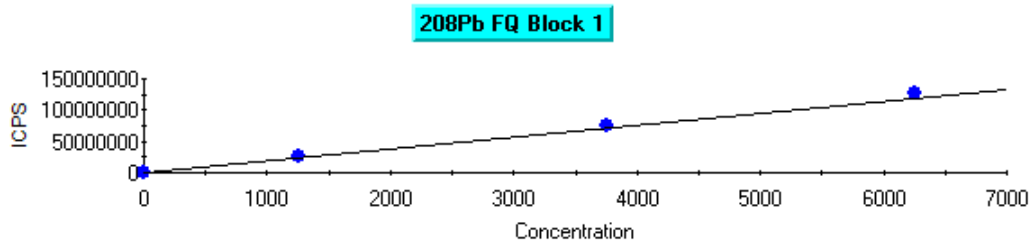
Intercept CPS=77.074545 Intercept Conc=0.017281
Sensitivity=4460.120215 Correlation Coeff=0.999792

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-0.002	0.002	70.04	0.00
STD1 1037148	2.000	2.447	0.447	10990.79	22.35
STD2 1037149	10.000	12.161	2.161	54316.93	21.61
STD3 1037150	20.000	19.656	0.344	87746.44	1.72
STD4 1037151	60.000	59.118	0.882	263752.03	1.47
STD5 1037152	120.000	119.645	0.355	533708.32	0.30



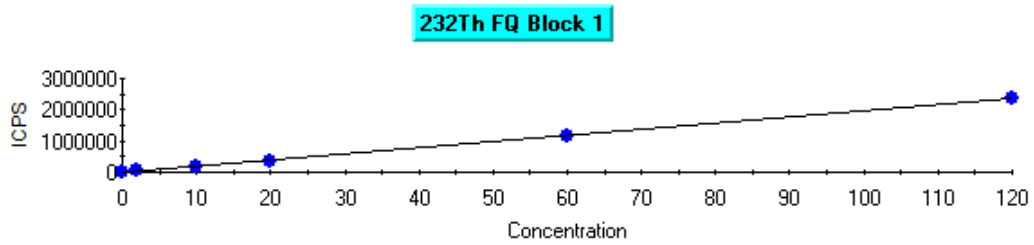
Intercept CPS=892.232360 Intercept Conc=0.058837
Sensitivity=15164.530152 Correlation Coeff=0.999804

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.003	0.003	943.75	0.00
STD1 1037148	2.000	1.763	0.237	27628.94	11.84
STD2 1037149	10.000	8.701	1.299	132842.72	12.99
STD3 1037150	200.000	182.877	17.123	2774133.70	8.56
STD4 1037151	600.000	592.179	7.821	8981007.76	1.30
STD5 1037152	1000.000	1008.765	8.765	15298345.58	0.88



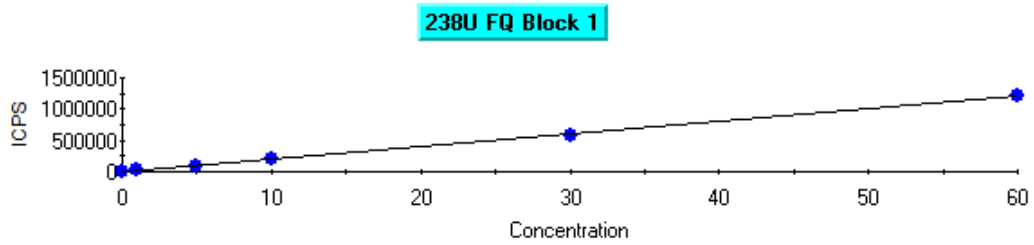
Intercept CPS=1026.554089 Intercept Conc=0.054018
Sensitivity=19004.046148 Correlation Coeff=0.999925

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.031	0.031	1616.22	0.00
STD1 1037148	1.000	0.981	0.019	19678.37	1.85
STD2 1037149	5.000	4.718	0.282	90686.72	5.64
STD3 1037150	1250.000	1293.054	43.054	24574279.69	3.44
STD4 1037151	3750.000	3880.098	130.098	73738597.34	3.47
STD5 1037152	6250.000	6612.489	362.489	125665077.04	5.80



Intercept CPS=30.625966 Intercept Conc=0.001565
Sensitivity=19574.068181 Correlation Coeff=0.999809

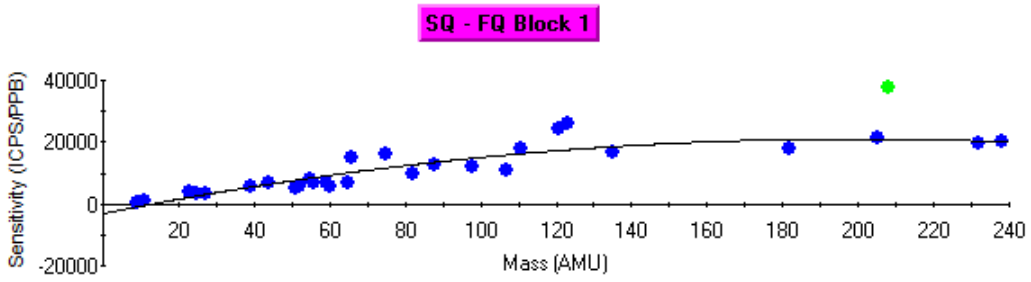
Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.000	0.000	33.26	0.00
STD1 1037148	2.000	1.867	0.133	36579.87	6.64
STD2 1037149	10.000	9.433	0.567	184668.70	5.67
STD3 1037150	20.000	19.002	0.998	371972.27	4.99
STD4 1037151	60.000	58.603	1.397	1147132.63	2.33
STD5 1037152	120.000	121.901	1.901	2386121.08	1.58



Intercept CPS=5.000342 Intercept Conc=0.000248
Sensitivity=20199.329675 Correlation Coeff=0.999845

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.000	0.000	5.00	0.00
STD1 1037148	1.000	0.923	0.077	18640.16	7.74
STD2 1037149	5.000	4.651	0.349	93948.11	6.98
STD3 1037150	10.000	9.336	0.664	188577.07	6.64
STD4 1037151	30.000	29.027	0.973	586340.84	3.24
STD5 1037152	60.000	60.070	0.070	1213371.54	0.12

Semi Quant Calibration



Coeff 0=-3053.607861 Coeff 1=241.830859 Coeff 2=-0.606630

Symbol	Mass	RSF	Available	Excluded	Sensitivity Measured	Corrected	Calculated	%Error
9Be	9.01	0.7500	1	1	317.03	422.71	-923.45	-318.5
11B	11.01	0.5800	1	1	400.64	852.57	-464.74	-154.5
23Na	22.99	1.0000	1	1	3676.20	3676.20	2185.40	-40.6
25Mg	24.99	0.9800	1	1	354.15	3574.42	2610.02	-27.0
27Al	26.98	0.9800	1	1	3510.73	3582.38	3029.73	-15.4
39K	38.96	1.0000	1	1	5382.43	5782.59	5448.05	-5.8
44Ca	43.96	0.9900	1	1	143.17	6789.29	6404.13	-5.7
51V	50.94	0.9900	1	1	4998.13	5060.77	7691.83	52.0
52Cr	51.94	0.9800	1	1	4552.55	5546.15	7870.63	41.9
55Mn	54.94	0.9500	1	1	7527.83	7924.03	8401.18	6.0
56Fe	55.93	0.9600	1	1	6193.90	7049.81	8575.21	21.6
59Co	58.93	0.9300	1	1	6267.88	6739.66	9091.36	34.9
60Ni	59.93	0.9100	1	1	1281.76	5384.29	9260.67	72.0
65Cu	64.93	0.9000	1	1	1911.83	6872.37	10090.61	46.8
66Zn	65.93	0.3750	1	1	1551.39	14876.13	10252.78	-31.1
75As	74.92	0.0700	1	1	1126.89	16098.43	11659.58	-27.6
82Se	81.92	0.1000	1	1	86.05	9734.62	12685.68	30.3
88Sr	87.91	0.9600	1	1	9776.71	12335.36	13517.01	9.6
98Mo	97.91	0.9800	1	1	2874.16	12220.09	14808.11	21.2
107Ag	106.91	0.9300	1	1	5149.13	10782.28	15866.35	47.2
111Cd	110.90	0.5660	1	1	1306.03	17943.02	16305.06	-9.1
121Sb	120.90	0.3900	1	1	5463.21	24468.54	17317.11	-29.2
123Sb	122.90	0.3900	1	1	4335.13	26001.69	17505.01	-32.7
135Ba	134.91	0.9100	1	1	1017.38	16965.18	18530.36	9.2
182W	181.95	0.9400	1	1	4460.12	18034.24	20864.51	15.7
205Tl	204.97	1.0000	1	1	15164.53	21509.97	21028.29	-2.2
208Pb	207.98	0.9700	0	1	19004.05	37403.21	21002.22	-43.8
232Th	232.04	1.0000	1	1	19574.07	19574.07	20398.39	4.2
238U	238.05	1.0000	1	1	20199.33	20345.82	20137.80	-1.0

Dilution Corrected Concentrations

STD0 1035925 5/10/2017 2:56:19 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:56:41	99.338%	-0.010	-0.416	-3.079	0.631	-0.028	-1.674	7.022	100.050%	0.000	0.033	0.034
2	14:57:02	99.841%	0.021	0.108	-3.757	0.394	0.008	-2.682	7.840	100.646%	0.000	0.091	-0.000
3	14:57:23	100.822%	-0.021	0.080	0.954	-0.262	0.266	-0.161	12.500	99.304%	0.000	0.063	0.021
x		100.000%	-0.003	-0.076	-1.961	0.255	0.082	-1.506	9.121	100.000%	0.000	0.063	0.018
σ		0.755%	0.022	0.295	2.547	0.463	0.160	1.269	2.956	0.672%	0.000	0.029	0.017
%RSD		0.755	637.400	389.100	129.900	181.800	195.800	84.290	32.410	0.672	0.000	45.870	94.770
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:56:41	6.044	0.002	-0.455	-0.001	-0.075	0.022	0.172	-2.103	0.399	0.080	0.000	0.000
2	14:57:02	5.867	0.001	0.128	0.010	-0.010	-0.024	0.237	-1.738	0.360	0.716	0.000	0.000
3	14:57:23	6.067	0.012	1.519	0.003	-0.011	0.020	0.159	-2.185	0.406	0.112	0.000	0.000
x		5.993	0.005	0.397	0.004	-0.032	0.006	0.189	-2.009	0.388	0.303	0.000	0.000
σ		0.110	0.006	1.014	0.006	0.037	0.026	0.042	0.238	0.025	0.359	0.000	0.000
%RSD		1.827	124.100	255.300	132.500	116.700	454.800	22.030	11.830	6.378	118.500	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	14:56:41	-0.005	99.441%	0.047	-0.001	-1.445	0.002	99.013%	0.000	0.077	-0.001	0.002	99.065%
2	14:57:02	0.007	99.509%	0.047	0.003	-1.079	-0.020	100.496%	0.000	0.084	0.001	0.026	100.703%
3	14:57:23	0.006	101.051%	0.013	-0.003	-1.511	0.008	100.492%	0.000	0.073	0.002	0.002	100.232%
x		0.003	100.000%	0.036	-0.000	-1.345	-0.003	100.000%	0.000	0.078	0.001	0.010	100.000%
σ		0.007	0.911%	0.020	0.003	0.233	0.015	0.855%	0.000	0.006	0.001	0.014	0.844%
%RSD		227.700	0.911	55.220	2426.000	17.300	461.900	0.855	0.000	7.126	240.800	139.200	0.844
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	14:56:41	0.001	0.008	0.028	98.831%	0.000	-0.000	0.000					
2	14:57:02	-0.002	0.002	0.028	100.274%	0.000	-0.000	-0.000					
3	14:57:23	-0.004	0.001	0.037	100.895%	0.000	0.001	-0.000					
x		-0.002	0.003	0.031	100.000%	0.000	0.000	0.000					
σ		0.002	0.004	0.005	1.059%	0.000	0.001	0.000					
%RSD		148.700	106.500	16.660	1.059	0.000	535.500	0.000					

STD1 1037148 5/10/2017 3:02:03 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:25	103.033%	1.038	40.520	T 525.100	199.100	49.960	T 520.400	475.700	100.982%	0.000	4.825	3.993
2	15:02:47	104.758%	0.949	42.640	T 532.000	196.700	50.060	T 521.300	468.200	101.871%	0.000	4.593	4.062
3	15:03:09	102.573%	1.136	44.270	T 514.100	196.200	49.950	T 512.400	462.600	103.712%	0.000	4.727	3.856
x		103.455%	1.041	42.480	T 523.700	197.300	49.990	T 518.000	468.800	102.188%	0.000	4.715	3.970
σ		1.152%	0.093	1.881	T 9.030	1.577	0.060	T 4.908	6.584	1.392%	0.000	0.117	0.105
%RSD		1.114	8.973	4.427	T 1.724	0.799	0.120	T 0.947	1.404	1.363	0.000	2.476	2.633
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb

1	15:02:25	8.415	1.903	199.900	0.944	2.188	5.133	19.340	1.901	0.556	4.032	0.000	0.000
2	15:02:47	8.526	1.843	195.600	0.973	2.198	5.041	19.170	1.977	0.556	3.924	0.000	0.000
3	15:03:09	8.012	1.892	196.500	0.985	2.028	5.034	19.290	2.002	0.535	3.435	0.000	0.000
x		8.318	1.879	197.300	0.967	2.138	5.069	19.270	1.960	0.549	3.797	0.000	0.000
σ		0.271	0.032	2.250	0.021	0.095	0.055	0.088	0.053	0.012	0.318	0.000	0.000
%RSD		3.256	1.683	1.140	2.166	4.458	1.092	0.455	2.690	2.205	8.373	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:02:25	4.656	100.283%	8.887	0.985	-1.264	0.986	98.411%	0.000	1.903	1.798	9.830	98.116%
2	15:02:47	4.614	100.724%	9.177	1.094	-1.749	1.071	101.046%	0.000	1.894	1.807	10.090	102.004%
3	15:03:09	4.484	101.575%	9.137	1.141	-1.216	1.015	102.929%	0.000	1.890	1.738	10.380	102.307%
x		4.585	100.861%	9.067	1.073	-1.410	1.024	100.795%	0.000	1.896	1.781	10.100	100.809%
σ		0.090	0.657%	0.157	0.080	0.295	0.044	2.269%	0.000	0.006	0.038	0.275	2.337%
%RSD		1.953	0.651	1.733	7.437	20.940	4.251	2.251	0.000	0.342	2.110	2.726	2.318

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:02:25	2.447	1.743	0.977	99.435%	0.000	1.850	0.894
2	15:02:47	2.402	1.822	0.982	99.531%	0.000	1.854	0.939
3	15:03:09	2.492	1.724	0.986	102.159%	0.000	1.898	0.935
x		2.447	1.763	0.982	100.375%	0.000	1.867	0.923
σ		0.045	0.052	0.004	1.546%	0.000	0.026	0.025
%RSD		1.848	2.923	0.425	1.540	0.000	1.416	2.706

STD2 1037149 5/10/2017 3:07:48 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:08:09	100.670%	4.883	203.100	T 2566.000	972.400	249.400	T 2546.000	2274.000	99.696%	0.000	23.050	19.010
2	15:08:30	99.476%	5.286	202.100	T 2495.000	947.100	244.400	T 2521.000	2233.000	100.199%	0.000	22.700	18.760
3	15:08:52	99.542%	5.139	205.600	T 2509.000	978.200	248.100	T 2541.000	2282.000	99.184%	0.000	23.020	18.990
x		99.896%	5.103	203.600	T 2523.000	965.900	247.300	T 2536.000	2263.000	99.693%	0.000	22.920	18.920
σ		0.671%	0.204	1.809	T 37.410	16.550	2.572	T 13.350	26.610	0.507%	0.000	0.193	0.136
%RSD		0.672	3.991	0.889	T 1.482	1.713	1.040	T 0.526	1.176	0.509	0.000	0.843	0.718
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:08:09	6.988	9.139	T 1055.000	4.624	10.130	24.650	92.730	17.660	0.500	19.580	0.000	0.000
2	15:08:30	6.970	9.208	T 1050.000	4.601	10.070	24.420	93.750	17.070	0.533	18.710	0.000	0.000
3	15:08:52	6.506	9.645	T 1089.000	4.740	9.964	24.580	94.020	17.800	0.491	20.140	0.000	0.000
x		6.821	9.330	T 1065.000	4.655	10.060	24.550	93.500	17.510	0.508	19.480	0.000	0.000
σ		0.273	0.274	T 21.500	0.075	0.085	0.120	0.678	0.386	0.022	0.719	0.000	0.000
%RSD		4.005	2.940	T 2.020	1.602	0.843	0.490	0.725	2.202	4.364	3.689	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:08:09	22.910	99.062%	44.490	5.247	-0.021	5.233	98.604%	0.000	9.211	8.836	48.930	101.597%
2	15:08:30	22.260	99.905%	44.340	5.154	-0.358	5.139	100.005%	0.000	9.037	8.745	48.630	100.213%
3	15:08:52	21.910	98.746%	44.950	4.876	-0.292	4.828	101.683%	0.000	8.960	8.664	48.820	101.149%
x		22.360	99.238%	44.590	5.092	-0.224	5.067	100.098%	0.000	9.070	8.748	48.790	100.986%
σ		0.506	0.599%	0.316	0.193	0.178	0.212	1.541%	0.000	0.129	0.086	0.150	0.706%
%RSD		2.262	0.604	0.707	3.785	79.770	4.188	1.540	0.000	1.420	0.981	0.307	0.699

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:08:09	12.240	8.675	4.736	99.159%	0.000	9.475	4.683
2	15:08:30	12.260	8.630	4.656	101.551%	0.000	9.326	4.561
3	15:08:52	11.990	8.799	4.761	100.029%	0.000	9.497	4.708
x		12.160	8.701	4.718	100.246%	0.000	9.433	4.651
σ		0.153	0.087	0.055	1.210%	0.000	0.093	0.079
%RSD		1.255	1.002	1.161	1.207	0.000	0.985	1.698

STD3 1037150 5/10/2017 3:13:33 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:13:55	94.426%	634.400	247.000	┬9926.000	┬30490.000	┬30590.000	┬9871.000	┬29880.000	93.350%	0.000	┬1300.000	380.100
2	15:14:17	94.660%	622.000	248.400	┬10040.000	┬30880.000	┬31650.000	┬10110.000	┬30350.000	90.898%	0.000	┬1332.000	393.700
3	15:14:39	93.473%	631.700	249.700	┬10020.000	┬31080.000	┬31660.000	┬10130.000	┬30170.000	91.662%	0.000	┬1325.000	389.900
x		94.187%	629.400	248.300	┬9996.000	┬30820.000	┬31300.000	┬10040.000	┬30130.000	91.970%	0.000	┬1319.000	387.900
σ		0.629%	6.531	1.346	┬62.170	┬299.300	┬614.400	┬144.800	┬237.700	1.255%	0.000	┬16.810	7.022
%RSD		0.667	1.038	0.542	┬0.622	┬0.971	┬1.963	┬1.443	┬0.789	1.364	0.000	┬1.275	1.810

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:13:55	6.611	┬1271.000	┬30500.000	470.800	1259.000	1221.000	1227.000	200.300	0.263	211.300	0.000	0.000
2	15:14:17	5.812	┬1317.000	┬31590.000	┬533.500	1302.000	1259.000	1273.000	201.400	0.371	212.200	0.000	0.000
3	15:14:39	5.399	┬1287.000	┬30720.000	┬524.100	1281.000	1243.000	1262.000	197.300	0.439	205.200	0.000	0.000
x		5.941	┬1292.000	┬30940.000	┬509.500	1281.000	1241.000	1254.000	199.700	0.358	209.600	0.000	0.000
σ		0.617	┬23.160	┬581.200	┬33.800	21.140	19.100	24.120	2.139	0.089	3.820	0.000	0.000
%RSD		10.380	┬1.793	┬1.879	┬6.634	1.650	1.539	1.923	1.071	24.850	1.823	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:13:55	185.300	95.025%	1180.000	101.800	15.350	207.000	94.783%	0.000	237.300	234.000	1261.000	99.087%
2	15:14:17	182.600	94.206%	┬1244.000	98.960	24.390	201.800	96.457%	0.000	235.200	231.700	1257.000	101.323%
3	15:14:39	185.100	95.950%	┬1231.000	100.300	16.310	205.500	95.362%	0.000	233.600	234.500	1282.000	102.730%
x		184.300	95.060%	┬1218.000	100.400	18.680	204.800	95.534%	0.000	235.300	233.400	1266.000	101.047%
σ		1.511	0.872%	┬33.760	1.434	4.968	2.671	0.850%	0.000	1.842	1.508	13.170	1.837%
%RSD		0.820	0.918	┬2.771	1.429	26.590	1.304	0.890	0.000	0.783	0.646	1.040	1.818

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:13:55	19.850	185.800	┬1311.000	98.123%	0.000	19.320	9.421
2	15:14:17	19.630	179.200	┬1266.000	101.778%	0.000	18.830	9.207
3	15:14:39	19.490	183.600	┬1302.000	100.300%	0.000	18.860	9.379
x		19.660	182.900	┬1293.000	100.067%	0.000	19.000	9.336
σ		0.181	3.359	┬23.860	1.838%	0.000	0.273	0.114
%RSD		0.919	1.837	┬1.845	1.837	0.000	1.438	1.218

STD4 1037151 5/10/2017 3:19:18 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:19:40	87.451%	1879.000	751.200	┬29920.000	┬91350.000	┬92780.000	┬30080.000	┬90730.000	85.997%	0.000	┬3991.000	┬1278.000
2	15:20:01	87.740%	1855.000	737.700	┬29320.000	┬89700.000	┬91240.000	┬29440.000	┬89290.000	87.431%	0.000	┬3933.000	┬1266.000

3	15:20:23	85.600%	1906.000	769.800	┬29900.000	┬91230.000	┬90960.000	┬29580.000	┬90170.000	86.459%	0.000	┬3955.000	┬1259.000
x		86.930%	1880.000	752.900	┬29710.000	┬90760.000	┬91660.000	┬29700.000	┬90060.000	86.629%	0.000	┬3960.000	┬1268.000
σ		1.161%	25.520	16.120	┬341.000	┬920.300	┬981.100	┬339.100	┬725.300	0.732%	0.000	┬29.440	┬9.850
%RSD		1.335	1.358	2.141	┬1.148	┬1.014	┬1.070	┬1.142	┬0.805	0.845	0.000	┬0.744	┬0.777
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:19:40	-48.940	┬3765.000	┬90610.000	┬1545.000	┬3798.000	┬3993.000	┬3961.000	605.300	0.198	617.400	0.000	0.000
2	15:20:01	-43.200	┬3763.000	┬88990.000	┬1525.000	┬3726.000	┬3930.000	┬3939.000	593.400	0.224	608.600	0.000	0.000
3	15:20:23	-38.410	┬3807.000	┬90070.000	┬1548.000	┬3771.000	┬4009.000	┬3970.000	608.800	0.211	624.600	0.000	0.000
x		-43.520	┬3778.000	┬89890.000	┬1539.000	┬3765.000	┬3977.000	┬3957.000	602.500	0.211	616.800	0.000	0.000
σ		5.271	┬24.670	┬822.700	┬12.600	┬36.450	┬41.910	┬15.600	8.041	0.013	7.996	0.000	0.000
%RSD		12.110	┬0.653	┬0.915	┬0.818	┬0.968	┬1.054	┬0.394	1.335	6.349	1.296	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:19:40	┬622.300	86.841%	┬3812.000	296.500	58.480	603.200	88.022%	┬0.000	┬788.900	┬775.700	┬4370.000	95.876%
2	15:20:01	┬629.800	88.104%	┬3814.000	297.500	59.500	608.000	88.711%	┬0.000	┬786.800	722.100	┬4385.000	97.778%
3	15:20:23	┬625.000	86.011%	┬3830.000	301.500	65.580	610.500	87.707%	┬0.000	┬791.300	┬789.700	┬4476.000	97.539%
x		┬625.700	86.986%	┬3818.000	298.500	61.190	607.200	88.147%	┬0.000	┬789.000	┬762.500	┬4410.000	97.064%
σ		┬3.764	1.054%	┬10.120	2.656	3.839	3.724	0.513%	┬0.000	┬2.270	┬35.650	┬57.410	1.036%
%RSD		┬0.602	1.211	┬0.265	0.890	6.273	0.613	0.582	┬0.000	┬0.288	┬4.675	┬1.302	1.067
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	15:19:40	59.380	┬598.800	┬3912.000	94.344%	0.000	58.790	28.880					
2	15:20:01	58.770	┬591.100	┬3865.000	95.327%	0.000	59.380	29.160					
3	15:20:23	59.200	┬586.700	┬3863.000	96.480%	0.000	57.640	29.050					
x		59.120	┬592.200	┬3880.000	95.384%	0.000	58.600	29.030					
σ		0.316	┬6.119	┬27.990	1.069%	0.000	0.886	0.142					
%RSD		0.535	┬1.033	┬0.722	1.121	0.000	1.512	0.488					

STD5 1037152 5/10/2017 3:25:00 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:25:22	84.342%	3008.000	1205.000	T 49630.000	T 149500.000	TM 151400.000	T 49540.000	TM 153400.000	83.102%	0.000	TM 6621.000	TM 2097.000
2	15:25:44	83.184%	3092.000	1224.000	T 48550.000	T 148100.000	T 148700.000	T 49140.000	TM 152600.000	84.903%	0.000	TM 6504.000	TM 2086.000
3	15:26:05	81.347%	3081.000	M 1264.000	T 49560.000	TM 151500.000	T 149200.000	T 49240.000	TM 154000.000	82.895%	0.000	TM 6676.000	TM 2128.000
x		82.958%	3060.000	M 1231.000	T 49250.000	TM 149700.000	TM 149800.000	T 49310.000	TM 153300.000	83.633%	0.000	TM 6600.000	TM 2104.000
σ		1.510%	45.990	M 29.770	T 603.000	TM 1722.000	TM 1433.000	T 205.600	TM 670.200	1.104%	0.000	TM 87.700	TM 21.730
%RSD		1.820	1.503	M 2.419	T 1.224	TM 1.150	TM 0.957	T 0.417	TM 0.437	1.320	0.000	TM 1.329	TM 1.033

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:25:22	-76.120	TM 6301.000	T 147200.000	TM 2510.000	T 6113.000	TM 6406.000	TM 6343.000	985.400	0.131	992.400	0.000	0.000
2	15:25:44	-75.000	T 6226.000	T 144900.000	T 2467.000	T 6017.000	TM 6340.000	TM 6256.000	979.900	0.175	983.000	0.000	0.000
3	15:26:05	-69.520	TM 6371.000	T 149100.000	TM 2541.000	T 6140.000	TM 6476.000	TM 6371.000	990.900	0.196	994.700	0.000	0.000
x		-73.540	TM 6299.000	T 147000.000	TM 2506.000	T 6090.000	TM 6407.000	TM 6323.000	985.400	0.167	990.000	0.000	0.000
σ		3.533	TM 72.390	T 2079.000	TM 36.830	T 65.070	TM 68.280	TM 59.980	5.491	0.033	6.184	0.000	0.000
%RSD		4.803	TM 1.149	T 1.414	TM 1.470	T 1.069	TM 1.066	TM 0.949	0.557	19.940	0.625	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:25:22	TM 1061.000	82.624%	TM 6434.000	498.300	102.200	M 1000.000	83.081%	T 0.000	TM 1327.000	TM 1313.000	TM 7521.000	93.370%
2	15:25:44	TM 1048.000	83.517%	TM 6395.000	M 500.600	117.200	998.100	84.135%	T 0.000	TM 1313.000	TM 1309.000	TM 7402.000	94.336%
3	15:26:05	TM 1046.000	81.924%	TM 6481.000	M 501.500	101.600	999.700	83.621%	T 0.000	TM 1332.000	TM 1318.000	TM 7507.000	93.779%
x		TM 1052.000	82.688%	TM 6437.000	M 500.100	107.000	M 999.400	83.612%	T 0.000	TM 1324.000	TM 1313.000	TM 7477.000	93.828%
σ		TM 8.024	0.798%	TM 43.320	M 1.692	8.813	M 1.143	0.527%	T 0.000	TM 9.938	TM 4.544	TM 65.220	0.485%
%RSD		TM 0.763	0.965	TM 0.673	M 0.338	8.237	M 0.114	0.631	T 0.000	TM 0.751	TM 0.346	TM 0.872	0.517

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:25:22	119.900	TM 1007.000	TM 6580.000	89.691%	0.000	M 121.700	M 60.040
2	15:25:44	119.700	TM 1010.000	TM 6673.000	90.010%	0.000	M 122.400	M 60.050
3	15:26:05	119.400	TM 1010.000	TM 6584.000	90.149%	0.000	M 121.600	M 60.120
x		119.600	TM 1009.000	TM 6612.000	89.950%	0.000	M 121.900	M 60.070
σ		0.261	TM 1.945	TM 52.550	0.235%	0.000	M 0.402	M 0.042
%RSD		0.218	TM 0.193	TM 0.795	0.261	0.000	M 0.330	M 0.070

ICV 1037153 5/10/2017 3:30:45 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:31:07	98.333%	309.500	131.000	T 5134.000	T 15660.000	T 15910.000	T 5051.000	14330.000	93.358%	0.000	T 653.100	193.100
2	15:31:29	95.912%	314.700	136.700	T 5146.000	T 15530.000	T 15690.000	T 4981.000	14270.000	93.262%	0.000	T 659.600	192.200
3	15:31:50	96.284%	312.200	131.700	T 4942.000	T 15130.000	T 15440.000	T 4964.000	14290.000	94.333%	0.000	T 649.200	191.100
x		96.843%	99.875%	106.513%	T 101.484%	T 102.928%	T 104.532%	T 99.970%	95.300%	93.651%	0.000	T 104.632%	96.066%
σ		1.304%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.592%	0.000	T n/a	n/a
%RSD		1.347	0.835	2.356	T 2.254	T 1.800	T 1.485	T 0.918	0.206	0.632	0.000	T 0.810	0.524

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:31:07	7.966	T 641.300	T 15670.000	236.800	641.100	617.900	620.300	101.600	0.356	107.400	0.000	0.000
2	15:31:29	7.009	T 649.300	T 15610.000	234.300	631.000	612.300	619.600	100.300	0.322	105.300	0.000	0.000

3	15:31:50	5.693	T 638.300	T 15440.000	233.400	637.300	615.900	620.300	100.600	0.321	105.800	0.000	0.000
x		6.889	T 102.877%	T 103.832%	93.930%	101.834%	98.459%	99.212%	100.842%	0.333	106.165%	0.000	0.000
σ		1.141	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.020	n/a	0.000	0.000
%RSD		16.570	T 0.888	T 0.743	0.751	0.797	0.460	0.065	0.715	5.957	1.044	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:31:07	91.810	92.889%	275.100	50.800	6.290	101.100	94.279%	0.000	121.900	119.900	635.800	101.261%
2	15:31:29	88.210	94.339%	273.200	49.260	9.763	100.600	97.162%	0.000	119.200	117.400	620.500	102.207%
3	15:31:50	88.570	93.922%	273.600	50.180	5.666	100.700	96.664%	0.000	118.900	118.300	629.000	102.611%
x		89.530	93.717%	87.680%	100.160%	7.240	100.794%	96.035%	0.000	120.000	94.833%	100.553%	102.026%
σ		1.985	0.747%	n/a	n/a	2.207	n/a	1.541%	0.000	1.649	n/a	n/a	0.692%
%RSD		2.217	0.797	0.371	1.545	30.490	0.246	1.605	0.000	1.374	1.045	1.222	0.679

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:31:07	22.640	90.190	T 647.000	97.551%	0.000	19.560	9.574
2	15:31:29	22.390	89.410	T 629.700	101.472%	0.000	18.930	9.244
3	15:31:50	22.150	89.170	T 627.300	101.109%	0.000	19.190	9.611
x		111.970%	89.593%	T 101.551%	100.044%	0.000	96.139%	94.765%
σ		n/a	n/a	T n/a	2.167%	0.000	n/a	n/a
%RSD		1.076	0.594	T 1.696	2.166	0.000	1.664	2.134

Page 418 of 817

ICVL 1037148 5/10/2017 3:36:30 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:36:52	101.305%	1.130	47.960	T 540.400	196.600	51.380	T 518.600	476.800	98.114%	0.000	4.541	3.883
2	15:37:13	100.694%	1.091	46.060	T 515.100	192.700	49.800	T 512.700	456.500	99.081%	0.000	4.844	3.973
3	15:37:34	99.498%	1.250	49.070	T 527.400	194.200	49.910	T 508.500	446.100	99.777%	0.000	4.715	3.873
x		100.499%	115.713%	119.239%	T 105.530%	97.257%	100.728%	T 102.654%	91.961%	98.990%	0.000	94.001%	97.742%
σ		0.919%	n/a	n/a	T n/a	n/a	n/a	T n/a	n/a	0.835%	0.000	n/a	n/a
%RSD		0.914	7.150	3.184	T 2.397	1.027	1.756	T 0.990	3.393	0.844	0.000	3.243	1.405
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:36:52	6.719	1.971	200.900	1.018	2.086	4.937	19.410	2.119	0.407	4.343	0.000	0.000
2	15:37:13	6.090	1.868	195.000	0.909	2.088	5.117	19.590	1.934	0.420	4.163	0.000	0.000
3	15:37:34	6.364	1.912	195.500	0.976	2.025	5.008	19.170	1.732	0.433	3.465	0.000	0.000
x		6.391	95.851%	98.553%	96.761%	103.317%	100.414%	96.956%	96.410%	0.420	99.755%	0.000	0.000
σ		0.316	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.013	n/a	0.000	0.000
%RSD		4.939	2.676	1.665	5.701	1.729	1.812	1.104	10.020	3.136	11.610	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:36:52	4.606	97.846%	9.032	1.063	-1.010	1.124	97.926%	0.000	1.962	1.788	9.849	99.306%
2	15:37:13	4.572	98.819%	8.924	1.014	-1.267	1.068	98.376%	0.000	1.946	1.796	10.400	102.798%
3	15:37:34	4.568	97.364%	9.062	1.100	-1.649	1.020	98.867%	0.000	1.860	1.794	9.709	101.387%
x		91.636%	98.010%	90.060%	105.880%	-1.309	107.065%	98.390%	0.000	1.922	89.645%	99.871%	101.164%
σ		n/a	0.741%	n/a	n/a	0.321	n/a	0.471%	0.000	0.055	n/a	n/a	1.756%
%RSD		0.451	0.756	0.803	4.042	24.560	4.887	0.478	0.000	2.857	0.226	3.675	1.736

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	15:36:52	2.518	1.871	1.024	99.762%	0.000	1.907	0.934
2	15:37:13	2.308	1.914	1.058	99.539%	0.000	1.913	0.917
3	15:37:34	2.432	1.917	1.049	98.289%	0.000	1.935	0.984
x		120.961%	95.038%	104.355%	99.197%	0.000	95.917%	94.497%
σ		n/a	n/a	n/a	0.794%	0.000	n/a	n/a
%RSD		4.375	1.346	1.684	0.800	0.000	0.765	3.689

ICBIS 1036503 5/10/2017 3:42:14 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:42:35	100.905%	0.135	2.051	-4.136	0.767	0.686	-6.567	-0.036	101.471%	0.000	0.390	0.023
2	15:42:57	102.556%	-0.017	1.984	-6.156	0.278	0.284	-6.275	-2.573	102.345%	0.000	0.140	-0.032
3	15:43:19	101.694%	0.117	1.414	-3.767	0.403	0.045	-6.167	7.496	100.179%	0.000	0.359	0.010
x		101.719%	0.078	1.817	-4.687	0.483	0.339	-6.336	1.629	101.331%	0.000	0.296	0.000
σ		0.826%	0.083	0.350	1.286	0.254	0.324	0.207	5.237	1.089%	0.000	0.136	0.029
%RSD		0.812	106.100	19.270	27.440	52.660	95.660	3.264	321.500	1.075	0.000	45.960	16560.000

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:42:35	5.281	0.012	-0.608	0.024	-0.026	0.073	0.243	-2.152	0.386	0.055	0.000	0.000
2	15:42:57	5.648	-0.011	-2.110	0.015	-0.035	0.041	0.176	-2.058	0.380	0.446	0.000	0.000
3	15:43:19	5.350	0.001	-0.769	0.001	-0.005	0.003	0.181	-2.210	0.396	-0.190	0.000	0.000
x		5.426	0.000	-1.162	0.013	-0.022	0.039	0.200	-2.140	0.387	0.104	0.000	0.000
σ		0.195	0.012	0.824	0.011	0.015	0.035	0.037	0.077	0.008	0.320	0.000	0.000
%RSD		3.596	3727.000	70.910	84.090	70.300	89.250	18.610	3.577	2.084	309.500	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:42:35	0.006	99.841%	0.056	-0.003	-1.450	0.003	97.646%	0.000	0.085	0.009	0.018	99.868%
2	15:42:57	-0.003	98.340%	0.052	0.002	-1.471	0.020	99.318%	0.000	0.076	0.006	-0.013	99.600%
3	15:43:19	0.007	98.746%	0.030	-0.003	-1.181	-0.010	98.559%	0.000	0.082	0.005	0.013	97.842%
x		0.003	98.976%	0.046	-0.001	-1.367	0.004	98.508%	0.000	0.081	0.007	0.006	99.103%
σ		0.006	0.777%	0.014	0.003	0.161	0.015	0.837%	0.000	0.004	0.002	0.016	1.100%
%RSD		168.000	0.785	29.580	274.200	11.800	354.100	0.850	0.000	5.453	31.680	269.600	1.110

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:42:35	0.016	0.036	0.064	99.159%	0.000	-0.000	0.003
2	15:42:57	-0.002	0.029	0.052	99.190%	0.000	0.000	0.001
3	15:43:19	0.009	0.017	0.038	100.685%	0.000	0.000	0.001
x		0.008	0.027	0.051	99.678%	0.000	0.000	0.002
σ		0.009	0.009	0.013	0.872%	0.000	0.000	0.001
%RSD		112.900	34.440	24.460	0.875	0.000	98.500	62.780

ICSA 1034645 5/10/2017 3:47:56 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:48:17	84.205%	0.135	9.803	TM 96880.000	T 98060.000	T 100400.000	TM 98070.000	T 100200.000	87.612%	0.000	-7.548	1.257
2	15:48:39	83.560%	0.034	10.050	TM 98360.000	T 100900.000	T 101600.000	TM 99410.000	T 102300.000	87.726%	0.000	-7.422	1.366
3	15:49:00	81.063%	0.023	10.170	TM 98570.000	T 101700.000	T 102700.000	TM 99670.000	T 103000.000	86.724%	0.000	-7.172	1.415
		82.943%	1.#IO%	1.#IO%	TM 97.936%	T 100.207%	T 101.565%	TM 99.052%	T 101.831%	87.354%	0.000	-1.#IO%	1.#IO%

x													
σ		1.659%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.548%	0.000	n/a	n/a
%RSD		2.001	96.940	1.873	TM 0.943	T 1.902	T 1.115	TM 0.866	T 1.438	0.628	0.000	2.594	6.034
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:48:17	14.560	26.810	T 101100.000	0.096	0.811	1.150	-1.271	-1.919	0.353	0.165	0.000	0.000
2	15:48:39	14.390	26.730	T 102500.000	0.091	0.934	1.214	-1.142	-2.150	0.380	0.054	0.000	0.000
3	15:49:00	14.270	26.940	T 103800.000	0.089	0.943	1.235	-1.168	-1.965	0.358	0.157	0.000	0.000
x		14.410	1.#IO%	T 102.482%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	0.363	1.#IO%	0.000	0.000
σ		0.145	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.014	n/a	0.000	0.000
%RSD		1.009	0.404	T 1.331	3.905	8.220	3.685	5.707	6.089	3.941	49.230	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:48:17	0.625	90.905%	T 1963.000	0.095	14.650	0.497	93.853%	0.000	0.145	0.077	0.587	100.803%
2	15:48:39	0.610	90.746%	T 2000.000	0.080	12.850	0.606	96.076%	0.000	0.137	0.074	0.618	103.072%
3	15:49:00	0.599	90.601%	T 1987.000	0.085	13.390	0.469	96.546%	0.000	0.145	0.073	0.620	104.887%
x		1.#IO%	90.751%	T 99.175%	1.#IO%	13.630	1.#IO%	95.492%	0.000	0.143	1.#IO%	1.#IO%	102.921%
σ		n/a	0.152%	T n/a	n/a	0.923	n/a	1.438%	0.000	0.005	n/a	n/a	2.046%
%RSD		2.139	0.167	T 0.939	8.531	6.769	13.830	1.506	0.000	3.166	2.658	3.045	1.988
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	15:48:17	0.194	0.025	0.289	97.048%	0.000	0.002	0.001					
2	15:48:39	0.146	0.016	0.298	98.578%	0.000	0.001	0.001					
3	15:49:00	0.174	0.020	0.281	100.156%	0.000	0.001	0.001					
x		1.#IO%	1.#IO%	1.#IO%	98.594%	0.000	1.#IO%	1.#IO%					
σ		n/a	n/a	n/a	1.554%	0.000	n/a	n/a					
%RSD		14.120	22.360	2.964	1.576	0.000	18.690	30.980					

ICSAB 1034648 5/10/2017 3:53:40 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:01	78.546%	26.980	441.200	TM 96730.000	T 99670.000	T 100900.000	TM 98750.000	T 101400.000	88.717%	0.000	14.320	48.540
2	15:54:23	78.825%	26.460	451.900	TM 98030.000	T 101100.000	T 103300.000	TM 101200.000	T 103700.000	87.310%	0.000	16.630	48.970
3	15:54:44	77.510%	26.330	449.900	TM 96030.000	T 99990.000	T 101000.000	TM 99710.000	T 103200.000	87.558%	0.000	15.190	48.600
x		78.294%	106.365%	111.911%	TM 96.928%	T 100.244%	T 101.756%	TM 99.886%	T 102.761%	87.862%	0.000	61.527%	97.410%
σ		0.693%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.751%	0.000	n/a	n/a
%RSD		0.885	1.304	1.272	TM 1.048	T 0.737	T 1.353	TM 1.237	T 1.206	0.855	0.000	7.583	0.475

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:01	16.060	49.900	T 103900.000	23.160	25.280	47.460	47.110	41.340	0.396	125.400	0.000	0.000
2	15:54:23	14.340	50.330	T 104500.000	23.210	25.070	49.340	48.590	41.730	0.453	125.200	0.000	0.000
3	15:54:44	15.700	50.140	T 104200.000	23.410	25.950	48.070	49.590	42.810	0.363	128.400	0.000	0.000
x		15.370	200.505%	T 104.178%	93.041%	101.721%	96.580%	96.862%	93.244%	0.404	101.072%	0.000	0.000
σ		0.911	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.046	n/a	0.000	0.000
%RSD		5.926	0.430	T 0.318	0.576	1.808	1.982	2.574	1.816	11.340	1.412	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:01	0.585	93.044%	T 1992.000	24.140	15.800	24.680	97.778%	0.000	46.360	45.700	256.400	104.125%
2	15:54:23	0.532	92.130%	T 2022.000	23.840	14.760	24.930	100.244%	0.000	46.400	45.310	247.100	106.690%
3	15:54:44	0.553	91.580%	T 2047.000	23.960	17.500	24.980	100.341%	0.000	46.730	45.430	251.300	107.947%
x		0.556	92.251%	T 101.011%	95.917%	16.020	99.453%	99.454%	0.000	46.490	90.959%	100.647%	106.254%
σ		0.027	0.739%	T n/a	n/a	1.385	n/a	1.453%	0.000	0.205	n/a	n/a	1.948%
%RSD		4.813	0.801	T 1.366	0.614	8.644	0.660	1.461	0.000	0.440	0.441	1.852	1.833

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:54:01	25.660	22.610	24.090	101.411%	0.000	20.470	10.200
2	15:54:23	25.060	22.920	24.310	101.590%	0.000	20.410	10.100
3	15:54:44	25.400	23.260	24.480	102.049%	0.000	20.690	10.420
x		126.857%	91.730%	97.164%	101.683%	0.000	102.617%	102.376%
σ		n/a	n/a	n/a	0.329%	0.000	n/a	n/a
%RSD		1.180	1.424	0.802	0.324	0.000	0.717	1.607

CCV 1037150 5/10/2017 3:59:25 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:59:46	85.718%	643.300	254.400	T 9959.000	T 31100.000	T 31490.000	T 10120.000	T 30310.000	87.827%	0.000	T 1351.000	398.100
2	16:00:08	84.389%	653.500	267.400	T 9892.000	T 31120.000	T 31310.000	T 10300.000	T 31240.000	87.312%	0.000	T 1371.000	402.100
3	16:00:29	84.985%	654.800	264.700	T 9769.000	T 29880.000	T 30470.000	T 9940.000	T 30510.000	89.735%	0.000	T 1317.000	384.600
x		85.030%	104.082%	104.873%	T 98.734%	T 102.325%	T 103.631%	T 101.220%	T 102.279%	88.291%	0.000	T 107.694%	98.731%
σ		0.666%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.277%	0.000	T n/a	n/a
%RSD		0.783	0.964	2.626	T 0.976	T 2.313	T 1.754	T 1.793	T 1.590	1.446	0.000	T 2.026	2.322

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	15:59:46	7.933	T 1361.000	T 32440.000	498.000	1325.000	1285.000	1325.000	198.100	0.259	209.800	0.000	0.000
2	16:00:08	7.150	T 1364.000	T 32710.000	500.000	1328.000	1286.000	1329.000	195.700	0.320	205.500	0.000	0.000

3	16:00:29	6.979	↓1319.000	↓31960.000	↓532.100	1287.000	1254.000	1301.000	197.900	0.287	210.200	0.000	0.000
x		7.354	↓107.842%	↓107.889%	↓102.007%	105.063%	101.999%	105.454%	98.626%	0.288	104.239%	0.000	0.000
σ		0.509	↓n/a	↓n/a	↓n/a	n/a	n/a	n/a	n/a	0.031	n/a	0.000	0.000
%RSD		6.917	↓1.871	↓1.173	↓3.753	1.711	1.422	1.141	0.666	10.620	1.260	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:59:46	178.700	96.003%	↓1251.000	99.110	18.350	202.700	99.751%	0.000	237.800	233.600	1255.000	104.777%
2	16:00:08	177.600	96.391%	↓1249.000	98.620	20.160	203.700	101.045%	0.000	237.500	232.500	1267.000	108.813%
3	16:00:29	174.400	95.659%	↓1252.000	98.120	22.310	202.000	101.165%	0.000	237.400	231.600	1248.000	106.606%
x		176.900	96.018%	↓100.068%	98.615%	20.280	101.402%	100.654%	0.000	237.600	93.028%	100.513%	106.732%
σ		2.221	0.366%	↓n/a	n/a	1.983	n/a	0.784%	0.000	0.208	n/a	n/a	2.021%
%RSD		1.256	0.381	↓0.126	0.504	9.782	0.412	0.779	0.000	0.088	0.423	0.779	1.894

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	15:59:46	19.780	183.700	↓1306.000	104.779%	0.000	19.300	9.607
2	16:00:08	19.220	186.200	↓1323.000	105.199%	0.000	19.070	9.578
3	16:00:29	19.480	180.300	↓1291.000	107.125%	0.000	19.000	9.512
x		97.466%	91.689%	↓104.540%	105.701%	0.000	95.609%	95.658%
σ		n/a	n/a	↓n/a	1.251%	0.000	n/a	n/a
%RSD		1.454	1.607	↓1.227	1.183	0.000	0.812	0.507

CCB 1035925 5/10/2017 4:05:08 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:05:30	92.538%	0.050	2.248	-4.493	3.305	3.403	-4.055	12.270	96.754%	0.000	0.141	0.073
2	16:05:51	93.485%	0.148	1.866	-3.198	3.392	2.541	-4.745	17.810	97.894%	0.000	0.287	0.011
3	16:06:13	92.059%	0.154	2.314	-5.207	1.800	1.780	-4.841	13.030	98.057%	0.000	0.255	-0.063
x		92.694%	0.117	2.142	-4.299	2.832	2.575	-4.547	14.370	97.568%	0.000	0.228	0.007
σ		0.726%	0.059	0.242	1.018	0.895	0.812	0.428	3.005	0.710%	0.000	0.076	0.068
%RSD		0.783	49.940	11.290	23.680	31.610	31.530	9.423	20.910	0.728	0.000	33.510	996.300
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:05:30	5.405	0.099	3.453	0.043	0.098	0.076	0.299	-1.939	0.347	-0.009	0.000	0.000
2	16:05:51	5.127	0.047	2.567	0.030	-0.017	0.074	0.303	-2.164	0.366	0.243	0.000	0.000
3	16:06:13	5.009	0.039	0.578	0.014	-0.005	0.091	0.332	-2.084	0.370	-0.138	0.000	0.000
x		5.180	0.062	2.199	0.029	0.025	0.080	0.311	-2.062	0.361	0.032	0.000	0.000
σ		0.203	0.033	1.472	0.014	0.063	0.010	0.018	0.114	0.012	0.194	0.000	0.000
%RSD		3.919	52.790	66.940	49.360	251.400	12.060	5.685	5.535	3.454	600.100	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:05:30	0.004	98.923%	0.194	0.010	-1.089	0.003	102.348%	0.000	0.087	0.016	0.111	103.114%
2	16:05:51	0.007	100.403%	0.137	0.002	-1.209	-0.005	103.873%	0.000	0.090	0.019	0.099	104.884%
3	16:06:13	0.007	99.955%	0.097	0.004	-1.092	-0.022	102.061%	0.000	0.091	0.011	0.049	103.660%
x		0.006	99.760%	0.143	0.005	-1.130	-0.008	102.760%	0.000	0.089	0.015	0.086	103.886%
σ		0.002	0.759%	0.049	0.005	0.068	0.013	0.974%	0.000	0.002	0.004	0.033	0.906%
%RSD		28.480	0.761	34.070	83.940	6.037	167.700	0.948	0.000	2.593	27.870	38.240	0.872

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	16:05:30	0.018	0.101	0.129	103.593%	0.000	0.001	0.000
2	16:05:51	-0.001	0.084	0.111	106.070%	0.000	0.001	0.001
3	16:06:13	0.000	0.076	0.078	104.009%	0.000	0.001	0.002
x		0.005	0.087	0.106	104.557%	0.000	0.001	0.001
σ		0.010	0.013	0.026	1.326%	0.000	0.000	0.001
%RSD		193.100	14.560	24.720	1.268	0.000	9.524	67.450

MB 200-116243/1-A 5/10/2017 4:10:52 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:14	102.417%	0.006	1.075	13.700	0.970	29.430	-7.988	70.970	103.346%	0.000	0.387	0.577
2	16:11:35	102.151%	-0.001	1.251	15.800	1.419	30.570	-8.649	68.100	103.901%	0.000	0.274	0.558
3	16:11:58	99.065%	0.062	1.489	16.160	1.452	30.360	-7.206	74.420	103.680%	0.000	0.030	0.580
x		101.211%	0.023	1.272	15.220	1.280	30.120	-7.948	71.160	103.642%	0.000	0.230	0.572
σ		1.863%	0.035	0.208	1.332	0.269	0.605	0.722	3.168	0.279%	0.000	0.182	0.012
%RSD		1.841	152.300	16.340	8.753	21.020	2.009	9.083	4.451	0.269	0.000	79.200	2.070

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:14	4.535	0.173	23.340	0.002	0.145	0.176	0.480	-2.065	0.286	0.138	0.000	0.000
2	16:11:35	4.425	0.209	23.310	-0.007	0.147	0.181	0.532	-2.023	0.290	0.099	0.000	0.000
3	16:11:58	4.740	0.193	23.550	0.004	0.114	0.177	0.577	-2.236	0.311	-0.130	0.000	0.000
x		4.567	0.192	23.400	-0.000	0.135	0.178	0.530	-2.108	0.295	0.035	0.000	0.000
σ		0.160	0.018	0.132	0.006	0.019	0.002	0.049	0.113	0.014	0.145	0.000	0.000
%RSD		3.495	9.446	0.564	1224.000	13.750	1.389	9.173	5.338	4.595	409.800	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:14	0.055	104.884%	0.077	-0.003	-1.296	-0.004	104.799%	0.000	0.081	0.002	0.004	106.693%
2	16:11:35	0.047	105.635%	0.043	-0.002	-1.669	0.018	105.741%	0.000	0.089	0.006	0.064	108.044%
3	16:11:58	0.052	105.773%	0.049	-0.006	-1.170	-0.023	106.384%	0.000	0.078	0.003	0.105	107.769%
x		0.051	105.431%	0.056	-0.004	-1.378	-0.003	105.641%	0.000	0.083	0.004	0.057	107.502%
σ		0.004	0.478%	0.018	0.002	0.260	0.021	0.797%	0.000	0.006	0.002	0.051	0.714%
%RSD		8.079	0.454	31.900	54.520	18.840	668.800	0.754	0.000	6.707	45.170	88.370	0.664

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:11:14	0.012	0.024	0.046	104.713%	0.000	-0.001	0.123
2	16:11:35	0.000	0.027	0.032	104.438%	0.000	-0.000	0.129
3	16:11:58	0.008	0.020	0.036	104.556%	0.000	0.000	0.132
x		0.007	0.024	0.038	104.569%	0.000	-0.000	0.128
σ		0.006	0.004	0.007	0.138%	0.000	0.001	0.005
%RSD		88.420	16.230	19.030	0.132	0.000	145.000	3.611

LCS 200-116243/2-A 5/10/2017 4:16:34 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:16:55	95.617%	10.920	402.300	T 5208.000	1996.000	T 578.800	T 5263.000	4771.000	99.767%	0.000	48.900	40.240
2	16:17:17	96.517%	11.100	408.600	T 5298.000	2029.000	548.900	T 5377.000	4853.000	99.579%	0.000	49.550	40.380
3	16:17:38	96.884%	10.760	403.600	T 5205.000	2026.000	549.000	T 5324.000	4756.000	99.708%	0.000	47.920	39.800
		96.339%	10.930	404.800	T 5237.000	2017.000	T 558.900	T 5321.000	4793.000	99.685%	0.000	48.790	40.140

x													
σ		0.652%	0.172	3.309	T 52.780	18.550	T 17.230	T 56.910	52.610	0.096%	0.000	0.820	0.302
%RSD		0.676	1.576	0.817	T 1.008	0.920	T 3.082	T 1.069	1.098	0.097	0.000	1.681	0.753
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:16:55	3.507	19.500	T 2233.000	9.719	20.790	51.450	190.500	35.800	0.243	37.740	0.000	0.000
2	16:17:17	3.279	19.550	T 2230.000	9.413	21.620	53.340	191.400	36.730	0.210	39.970	0.000	0.000
3	16:17:38	3.590	19.440	T 2271.000	9.767	20.750	52.220	193.600	36.200	0.234	38.600	0.000	0.000
x		3.459	19.500	T 2245.000	9.633	21.060	52.340	191.800	36.240	0.229	38.770	0.000	0.000
σ		0.161	0.057	T 22.960	0.192	0.494	0.948	1.632	0.469	0.017	1.126	0.000	0.000
%RSD		4.655	0.290	T 1.023	1.996	2.344	1.811	0.851	1.293	7.420	2.905	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:16:55	47.630	102.807%	90.420	10.490	0.203	10.410	100.861%	0.000	19.300	18.910	104.500	104.406%
2	16:17:17	46.830	100.979%	93.460	10.350	-0.548	10.340	102.280%	0.000	19.320	18.650	103.000	104.099%
3	16:17:38	46.360	101.362%	93.800	10.280	0.708	10.190	104.845%	0.000	18.960	18.500	101.600	107.785%
x		46.940	101.716%	92.560	10.370	0.121	10.310	102.662%	0.000	19.190	18.690	103.000	105.430%
σ		0.642	0.964%	1.862	0.106	0.632	0.109	2.019%	0.000	0.205	0.206	1.480	2.045%
%RSD		1.367	0.948	2.012	1.020	521.500	1.055	1.967	0.000	1.066	1.103	1.436	1.940
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	16:16:55	24.890	18.190	9.469	103.383%	0.000	19.580	9.916					
2	16:17:17	25.010	17.970	9.617	104.350%	0.000	19.750	9.873					
3	16:17:38	24.840	17.900	9.454	106.958%	0.000	19.280	9.618					
x		24.920	18.020	9.513	104.897%	0.000	19.530	9.802					
σ		0.088	0.153	0.090	1.849%	0.000	0.239	0.161					
%RSD		0.354	0.848	0.947	1.763	0.000	1.224	1.643					

LCSD 200-116243/3-A 5/10/2017 4:22:18 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:22:40	96.422%	10.720	412.600	T 5408.000	2063.000	576.700	T 5384.000	4834.000	99.506%	0.000	49.530	40.440
2	16:23:01	95.516%	10.840	417.400	T 5350.000	2061.000	T 605.900	T 5361.000	4832.000	100.815%	0.000	48.710	39.980
3	16:23:23	93.959%	10.770	429.300	T 5347.000	2062.000	572.400	T 5415.000	4806.000	100.317%	0.000	49.610	40.540
x		95.299%	10.780	419.700	T 5368.000	2062.000	T 585.000	T 5387.000	4824.000	100.213%	0.000	49.280	40.320
σ		1.246%	0.060	8.587	T 34.370	1.126	T 18.220	T 26.850	16.070	0.661%	0.000	0.496	0.295
%RSD		1.307	0.560	2.046	T 0.640	0.055	T 3.114	T 0.499	0.333	0.659	0.000	1.006	0.732

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:22:40	3.249	19.450	T 2278.000	9.647	22.290	53.570	193.000	36.850	0.254	38.790	0.000	0.000
2	16:23:01	3.692	19.250	T 2262.000	9.572	21.970	53.660	195.000	37.640	0.165	40.350	0.000	0.000
3	16:23:23	2.989	19.630	T 2269.000	9.783	21.540	53.930	196.400	37.760	0.229	39.090	0.000	0.000
x		3.310	19.440	T 2270.000	9.667	21.940	53.720	194.800	37.420	0.216	39.410	0.000	0.000
σ		0.356	0.190	T 7.763	0.107	0.377	0.187	1.676	0.493	0.046	0.831	0.000	0.000
%RSD		10.740	0.977	T 0.342	1.105	1.717	0.347	0.860	1.318	21.240	2.108	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:22:40	47.510	101.063%	93.270	10.700	0.236	10.590	101.696%	0.000	19.320	18.830	104.500	104.587%
2	16:23:01	45.700	102.217%	92.890	10.600	-0.569	10.230	104.173%	0.000	19.010	18.610	101.900	105.947%
3	16:23:23	47.520	101.778%	92.840	10.550	-0.180	10.650	104.513%	0.000	19.390	18.610	104.200	108.797%
x		46.910	101.686%	93.000	10.620	-0.171	10.490	103.461%	0.000	19.240	18.680	103.500	106.443%
σ		1.047	0.583%	0.235	0.076	0.403	0.229	1.538%	0.000	0.201	0.125	1.414	2.149%
%RSD		2.232	0.573	0.252	0.715	235.400	2.187	1.486	0.000	1.045	0.671	1.366	2.019

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:22:40	24.970	18.080	9.521	103.615%	0.000	19.500	9.857
2	16:23:01	25.070	18.190	9.709	103.103%	0.000	19.600	10.030
3	16:23:23	24.440	18.170	9.572	105.173%	0.000	19.530	9.882
x		24.820	18.150	9.601	103.964%	0.000	19.540	9.924
σ		0.339	0.059	0.097	1.078%	0.000	0.051	0.094
%RSD		1.365	0.324	1.011	1.037	0.000	0.260	0.951

200-38368-A-1-A @20 5/10/2017 4:28:00 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:28:22	92.264%	92.810	302.600	T 6541.000	T 6408.000	T 5429.000	T 5316.000	6488.000	97.292%	0.000	12.030	83.780
2	16:28:43	89.650%	93.790	312.600	T 6519.000	T 6365.000	T 5437.000	T 5378.000	6476.000	97.539%	0.000	12.580	83.400
3	16:29:05	90.625%	93.040	309.500	T 6342.000	5994.000	T 5292.000	T 5194.000	6400.000	99.481%	0.000	12.920	82.060
x		90.846%	93.220	308.200	T 6467.000	T 6256.000	T 5386.000	T 5296.000	6455.000	98.104%	0.000	12.510	83.080
σ		1.321%	0.514	5.077	T 109.200	T 228.000	T 81.380	T 93.830	47.900	1.198%	0.000	0.451	0.904
%RSD		1.454	0.552	1.647	T 1.688	T 3.645	T 1.511	T 1.772	0.742	1.222	0.000	3.608	1.088

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:28:22	6.318	T 667.000	T 7319.000	123.500	56.710	49.080	231.500	129.100	0.358	136.500	0.000	0.000
2	16:28:43	5.711	T 667.500	T 7239.000	121.900	56.630	48.320	232.700	130.400	0.328	137.800	0.000	0.000

3	16:29:05	5.024	┬650.400	┬7105.000	120.400	55.030	46.920	227.600	128.900	0.277	136.500	0.000	0.000
x		5.684	┬661.600	┬7221.000	122.000	56.120	48.100	230.600	129.500	0.321	136.900	0.000	0.000
σ		0.648	┬9.710	┬107.800	1.551	0.945	1.096	2.698	0.833	0.041	0.762	0.000	0.000
%RSD		11.390	┬1.468	┬1.492	1.272	1.684	2.278	1.170	0.643	12.790	0.556	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:28:22	40.670	113.996%	70.410	2.216	3.504	84.370	101.697%	0.000	10.070	9.924	125.900	105.636%
2	16:28:43	40.220	113.469%	72.190	2.267	3.317	84.820	101.913%	0.000	10.440	9.996	125.900	105.443%
3	16:29:05	40.560	114.616%	71.290	2.323	6.032	84.780	101.999%	0.000	10.230	10.010	126.800	109.082%
x		40.480	114.027%	71.300	2.269	4.284	84.660	101.870%	0.000	10.250	9.975	126.200	106.720%
σ		0.235	0.574%	0.895	0.053	1.516	0.251	0.155%	0.000	0.186	0.045	0.490	2.047%
%RSD		0.580	0.503	1.255	2.355	35.390	0.296	0.153	0.000	1.819	0.452	0.389	1.918

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:28:22	0.047	101.200	64.550	102.460%	0.000	4.330	39.510
2	16:28:43	0.050	102.400	65.230	102.959%	0.000	4.469	40.030
3	16:29:05	0.041	102.000	63.360	105.427%	0.000	4.363	40.080
x		0.046	101.800	64.380	103.615%	0.000	4.387	39.880
σ		0.004	0.593	0.946	1.588%	0.000	0.073	0.317
%RSD		9.424	0.582	1.470	1.533	0.000	1.661	0.794

200-38368-A-1-A @10 5/10/2017 4:33:44 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:34:05	86.796%	191.700	625.600	┬12420.000	┬12270.000	┬10260.000	┬10110.000	12790.000	97.093%	0.000	25.450	165.000
2	16:34:28	86.660%	195.100	631.500	┬12430.000	┬12110.000	┬10370.000	┬10320.000	┬14110.000	97.841%	0.000	24.290	163.900
3	16:34:50	86.279%	189.500	625.600	┬12350.000	┬12270.000	┬10430.000	┬10280.000	12860.000	97.651%	0.000	24.350	161.600
x		86.578%	192.100	627.600	┬12400.000	┬12220.000	┬10350.000	┬10240.000	┬13250.000	97.528%	0.000	24.700	163.500
σ		0.268%	2.839	3.405	┬45.160	┬92.280	┬84.620	┬109.800	┬744.700	0.389%	0.000	0.649	1.697
%RSD		0.309	1.478	0.542	┬0.364	┬0.755	┬0.817	┬1.073	┬5.619	0.399	0.000	2.627	1.038
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:34:05	5.160	┬1299.000	┬14150.000	240.000	110.800	92.690	449.100	230.500	0.443	241.400	0.000	0.000
2	16:34:28	5.440	┬1299.000	┬14070.000	240.200	107.500	92.490	455.600	233.200	0.391	243.400	0.000	0.000
3	16:34:50	6.278	┬1306.000	┬14230.000	241.300	109.900	92.610	452.100	235.100	0.267	247.800	0.000	0.000
x		5.626	┬1301.000	┬14150.000	240.500	109.400	92.600	452.200	232.900	0.367	244.200	0.000	0.000
σ		0.582	┬3.713	┬78.530	0.702	1.710	0.102	3.256	2.301	0.090	3.264	0.000	0.000
%RSD		10.340	┬0.285	┬0.555	0.292	1.564	0.110	0.720	0.988	24.600	1.337	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:34:05	81.840	124.412%	130.000	4.665	5.684	173.100	99.006%	0.000	20.660	20.440	257.100	108.222%
2	16:34:28	80.600	123.277%	130.600	4.513	4.690	172.200	100.160%	0.000	20.670	20.410	260.100	108.716%
3	16:34:50	80.420	122.539%	130.000	4.567	7.990	171.100	99.938%	0.000	20.530	20.480	257.600	108.532%
x		80.960	123.409%	130.200	4.582	6.122	172.100	99.701%	0.000	20.620	20.440	258.300	108.490%
σ		0.774	0.943%	0.372	0.077	1.693	1.035	0.612%	0.000	0.073	0.033	1.647	0.250%
%RSD		0.957	0.764	0.285	1.681	27.660	0.601	0.614	0.000	0.355	0.164	0.638	0.230

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	16:34:05	0.074	T 231.100	130.500	102.718%	0.000	8.788	M 82.860
2	16:34:28	0.070	T 225.400	128.200	106.122%	0.000	8.836	M 82.610
3	16:34:50	0.094	T 230.100	129.500	105.286%	0.000	8.882	M 81.490
x		0.080	T 228.900	129.400	104.709%	0.000	8.835	M 82.320
σ		0.013	T 3.020	1.176	1.774%	0.000	0.047	M 0.727
%RSD		16.240	T 1.320	0.909	1.694	0.000	0.533	M 0.884

200-38368-A-1-A @5 5/10/2017 4:39:28 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:39:49	82.158%	385.600	M 1275.000	T 24320.000	T 24120.000	T 20150.000	T 19990.000	T 27220.000	96.277%	0.000	50.130	322.400
2	16:40:11	82.819%	380.500	M 1275.000	T 25180.000	T 24390.000	T 20210.000	T 19990.000	T 27490.000	95.241%	0.000	48.520	323.500
3	16:40:32	81.798%	385.100	M 1277.000	T 24800.000	T 24340.000	T 20420.000	T 20230.000	T 27620.000	94.456%	0.000	49.310	321.900
x		82.258%	383.700	M 1276.000	T 24770.000	T 24280.000	T 20260.000	T 20070.000	T 27450.000	95.325%	0.000	49.320	322.600
σ		0.518%	2.805	M 1.436	T 432.900	T 147.200	T 144.200	T 138.700	T 202.300	0.914%	0.000	0.807	0.815
%RSD		0.630	0.731	M 0.113	T 1.748	T 0.606	T 0.712	T 0.691	T 0.737	0.958	0.000	1.636	0.253
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:39:49	5.054	T 2504.000	T 27230.000	T 526.000	209.400	180.100	868.300	373.100	0.321	384.000	0.000	0.000
2	16:40:11	6.760	T 2552.000	T 27710.000	480.100	210.100	179.300	880.400	375.300	0.313	381.900	0.000	0.000
3	16:40:32	5.058	T 2576.000	T 27990.000	T 534.900	214.400	181.300	887.900	372.300	0.235	381.200	0.000	0.000
x		5.624	T 2544.000	T 27640.000	T 513.700	211.300	180.200	878.900	373.600	0.290	382.400	0.000	0.000
σ		0.984	T 36.610	T 383.600	T 29.390	2.743	0.975	9.921	1.508	0.048	1.462	0.000	0.000
%RSD		17.500	T 1.439	T 1.388	T 5.722	1.298	0.541	1.129	0.404	16.550	0.382	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:39:49	163.900	147.778%	210.400	8.991	14.940	336.500	96.968%	0.000	41.450	40.960	520.400	111.087%
2	16:40:11	162.000	147.122%	210.500	8.883	18.360	338.900	97.788%	0.000	40.990	40.880	519.500	112.057%
3	16:40:32	165.000	148.209%	209.900	9.044	11.300	338.600	97.741%	0.000	41.490	41.110	515.600	110.333%
x		163.600	147.703%	210.300	8.972	14.860	338.000	97.499%	0.000	41.310	40.990	518.500	111.159%
σ		1.490	0.547%	0.306	0.082	3.532	1.314	0.460%	0.000	0.279	0.114	2.536	0.864%
%RSD		0.910	0.371	0.145	0.914	23.760	0.389	0.472	0.000	0.675	0.278	0.489	0.778
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	16:39:49	0.141	T 457.800	261.000	104.210%	0.000	18.030	TM 183.500					
2	16:40:11	0.149	T 452.100	257.600	106.319%	0.000	17.840	TM 181.900					
3	16:40:32	0.136	T 450.800	259.000	106.599%	0.000	17.800	TM 182.100					
x		0.142	T 453.600	259.200	105.710%	0.000	17.890	TM 182.500					
σ		0.006	T 3.704	1.707	1.306%	0.000	0.126	TM 0.847					
%RSD		4.484	T 0.817	0.659	1.236	0.000	0.704	TM 0.464					

MB 200-116489/1-A 5/10/2017 4:45:13 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:45:34	98.008%	0.146	17.460	235.700	21.400	318.200	38.470	356.100	99.726%	0.000	0.598	12.270
2	16:45:56	99.052%	0.078	14.740	234.400	22.550	311.400	37.940	333.900	101.551%	0.000	0.633	12.070
3	16:46:17	98.807%	0.071	14.370	220.000	21.590	310.800	35.940	338.900	102.932%	0.000	0.642	11.900
		98.622%	0.099	15.520	230.000	21.850	313.500	37.450	342.900	101.403%	0.000	0.624	12.080

x													
σ		0.546%	0.041	1.684	8.718	0.614	4.117	1.337	11.630	1.608%	0.000	0.024	0.181
%RSD		0.554	41.920	10.850	3.790	2.809	1.313	3.571	3.391	1.586	0.000	3.769	1.502
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:45:34	4.702	1.855	14.040	0.057	59.620	50.170	1.560	-2.041	0.293	0.317	0.000	0.000
2	16:45:56	4.774	1.849	12.650	0.041	59.390	49.130	1.346	-2.021	0.301	-0.239	0.000	0.000
3	16:46:17	4.572	1.833	9.953	0.039	58.830	48.480	1.347	-2.221	0.315	-0.175	0.000	0.000
x		4.683	1.846	12.210	0.046	59.280	49.260	1.418	-2.094	0.303	-0.032	0.000	0.000
σ		0.103	0.012	2.078	0.010	0.406	0.852	0.123	0.110	0.011	0.304	0.000	0.000
%RSD		2.191	0.630	17.010	20.850	0.686	1.729	8.673	5.251	3.689	937.200	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:45:34	0.430	101.262%	10.920	-0.003	-0.901	-0.025	103.269%	0.000	0.083	0.008	0.876	104.845%
2	16:45:56	0.457	102.490%	10.730	0.001	-1.499	0.036	104.626%	0.000	0.091	0.010	0.756	107.575%
3	16:46:17	0.461	103.825%	11.020	-0.000	-1.184	-0.007	105.166%	0.000	0.080	0.009	0.756	107.320%
x		0.449	102.526%	10.890	-0.001	-1.195	0.001	104.354%	0.000	0.084	0.009	0.796	106.580%
σ		0.017	1.282%	0.145	0.002	0.299	0.031	0.977%	0.000	0.006	0.001	0.069	1.508%
%RSD		3.712	1.250	1.331	268.000	25.040	2589.000	0.936	0.000	6.998	10.160	8.699	1.415
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	16:45:34	0.066	0.160	0.222	104.013%	0.000	0.009	1.528					
2	16:45:56	0.075	0.139	0.214	104.814%	0.000	0.006	1.510					
3	16:46:17	0.054	0.114	0.209	104.547%	0.000	0.009	1.499					
x		0.065	0.137	0.215	104.458%	0.000	0.008	1.512					
σ		0.011	0.023	0.007	0.408%	0.000	0.002	0.014					
%RSD		16.730	16.740	3.119	0.390	0.000	20.920	0.941					

LCS 200-116489/2-A 5/10/2017 4:50:56 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:51:18	96.555%	10.460	413.000	T 5206.000	1980.000	519.700	T 5176.000	4636.000	100.899%	0.000	47.680	39.340
2	16:51:39	95.291%	9.849	420.000	T 5283.000	2048.000	527.800	T 5283.000	4753.000	100.134%	0.000	47.390	39.740
3	16:52:00	95.128%	9.891	429.500	T 5362.000	2036.000	T 560.400	T 5300.000	4744.000	98.596%	0.000	48.120	40.080
x		95.658%	10.070	420.800	T 5284.000	2021.000	T 536.000	T 5253.000	4711.000	99.877%	0.000	47.730	39.720
σ		0.781%	0.341	8.272	T 78.000	36.420	T 21.570	T 66.930	64.960	1.173%	0.000	0.366	0.372
%RSD		0.816	3.392	1.966	T 1.476	1.802	T 4.024	T 1.274	1.379	1.174	0.000	0.766	0.936

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:51:18	3.568	19.600	T 2211.000	9.241	20.290	101.300	181.500	36.340	0.270	36.380	0.000	0.000
2	16:51:39	3.919	19.790	T 2256.000	9.865	20.750	103.500	184.000	35.540	0.248	35.930	0.000	0.000
3	16:52:00	3.531	20.090	T 2275.000	9.803	21.350	102.800	185.900	35.050	0.254	36.030	0.000	0.000
x		3.673	19.820	T 2247.000	9.637	20.800	102.500	183.800	35.640	0.257	36.110	0.000	0.000
σ		0.214	0.248	T 33.180	0.344	0.532	1.092	2.211	0.650	0.011	0.233	0.000	0.000
%RSD		5.824	1.250	T 1.476	3.567	2.558	1.064	1.203	1.823	4.461	0.645	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:51:18	46.080	99.879%	92.890	10.430	0.989	10.130	100.971%	0.000	18.450	17.920	103.000	104.409%
2	16:51:39	46.380	101.970%	92.310	10.620	0.379	9.909	101.961%	0.000	18.440	17.880	102.300	106.108%
3	16:52:00	47.120	101.810%	92.700	10.550	-0.335	9.836	102.531%	0.000	18.100	17.990	102.800	107.010%
x		46.530	101.220%	92.630	10.530	0.345	9.959	101.821%	0.000	18.330	17.930	102.700	105.842%
σ		0.536	1.164%	0.297	0.097	0.663	0.154	0.789%	0.000	0.201	0.054	0.366	1.321%
%RSD		1.153	1.150	0.321	0.919	192.300	1.547	0.775	0.000	1.095	0.304	0.357	1.248

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:51:18	26.630	18.470	9.997	101.249%	0.000	20.040	10.100
2	16:51:39	26.400	18.610	10.100	101.695%	0.000	20.220	9.912
3	16:52:00	25.990	18.200	9.944	103.882%	0.000	19.910	9.851
x		26.340	18.430	10.010	102.275%	0.000	20.060	9.954
σ		0.326	0.212	0.082	1.409%	0.000	0.159	0.129
%RSD		1.237	1.150	0.819	1.378	0.000	0.793	1.295

200-38498-A-1-A 5/10/2017 4:56:41 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:57:03	87.442%	4.495	41.790	T 391.300	T 15170.000	T 62420.000	T 4013.000	T 42050.000	115.060%	0.000	86.980	74.710
2	16:57:24	88.338%	4.572	39.980	T 406.100	T 15690.000	T 64330.000	T 4116.000	T 42410.000	113.434%	0.000	89.480	75.270
3	16:57:45	88.791%	4.378	41.200	T 392.300	T 15310.000	T 62520.000	T 4045.000	T 42410.000	115.856%	0.000	85.860	74.490
x		88.191%	4.482	40.990	T 396.600	T 15390.000	T 63090.000	T 4058.000	T 42290.000	114.783%	0.000	87.440	74.820
σ		0.687%	0.097	0.920	T 8.261	T 274.000	T 1073.000	T 52.560	T 207.400	1.235%	0.000	1.855	0.403
%RSD		0.778	2.171	2.245	T 2.083	T 1.781	T 1.700	T 1.295	T 0.490	1.076	0.000	2.121	0.539

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	16:57:03	14.830	T 3397.000	T 114700.000	47.070	112.900	T 3533.000	944.500	9.312	0.149	9.389	0.000	0.000
2	16:57:24	15.890	T 3453.000	T 118200.000	48.290	113.800	T 3612.000	967.500	9.781	0.144	9.258	0.000	0.000

3	16:57:45	15.510	┬3422.000	┬117300.000	47.660	114.200	┬3517.000	946.700	9.403	0.170	8.555	0.000	0.000
x		15.410	┬3424.000	┬116700.000	47.670	113.600	┬3554.000	952.900	9.499	0.154	9.068	0.000	0.000
σ		0.538	┬28.290	┬1783.000	0.610	0.636	┬50.520	12.670	0.249	0.013	0.449	0.000	0.000
%RSD		3.491	┬0.826	┬1.528	1.279	0.560	┬1.422	1.330	2.618	8.733	4.949	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:57:03	136.200	251.206%	2.630	3.832	-6.305	6.838	97.694%	0.000	1.373	1.282	906.000	123.590%
2	16:57:24	133.700	249.134%	2.649	3.925	-4.944	6.748	98.450%	0.000	1.281	1.282	913.800	124.898%
3	16:57:45	134.000	249.872%	2.511	3.847	-3.796	6.651	99.411%	0.000	1.243	1.289	898.000	125.336%
x		134.600	250.071%	2.597	3.868	-5.015	6.746	98.518%	0.000	1.299	1.285	905.900	124.608%
σ		1.384	1.050%	0.075	0.050	1.256	0.093	0.861%	0.000	0.067	0.004	7.905	0.908%
%RSD		1.028	0.420	2.884	1.292	25.040	1.383	0.874	0.000	5.135	0.337	0.873	0.729

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	16:57:03	0.348	0.670	224.200	104.862%	0.000	16.660	6.790
2	16:57:24	0.372	0.687	223.200	106.862%	0.000	16.520	6.855
3	16:57:45	0.357	0.687	224.000	108.154%	0.000	16.540	6.777
x		0.359	0.681	223.800	106.626%	0.000	16.570	6.807
σ		0.012	0.009	0.533	1.658%	0.000	0.073	0.042
%RSD		3.394	1.380	0.238	1.555	0.000	0.442	0.610

200-38498-A-2-A 5/10/2017 5:02:26 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:02:48	95.609%	1.575	21.290	263.500	5931.000	┬26950.000	┬1960.000	10500.000	110.056%	0.000	36.530	32.440
2	17:03:10	93.097%	1.886	23.600	261.100	5850.000	┬27090.000	┬1963.000	10460.000	110.379%	0.000	35.550	31.870
3	17:03:31	93.582%	1.698	22.300	┬295.600	┬6173.000	┬27160.000	┬1975.000	10510.000	109.120%	0.000	37.210	32.850
x		94.096%	1.720	22.390	┬273.400	┬5985.000	┬27070.000	┬1966.000	10490.000	109.852%	0.000	36.430	32.390
σ		1.333%	0.157	1.156	┬19.310	┬168.300	┬107.300	┬8.127	22.750	0.654%	0.000	0.836	0.488
%RSD		1.417	9.124	5.160	┬7.063	┬2.812	┬0.396	┬0.413	0.217	0.595	0.000	2.294	1.507
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:02:48	9.383	┬2623.000	┬54500.000	19.870	47.680	1269.000	375.300	4.918	0.207	5.180	0.000	0.000
2	17:03:10	8.713	┬2636.000	┬55640.000	19.860	48.020	1265.000	374.500	5.041	0.195	5.287	0.000	0.000
3	17:03:31	9.015	┬2661.000	┬55770.000	20.010	48.030	1284.000	379.300	5.227	0.193	5.217	0.000	0.000
x		9.037	┬2640.000	┬55300.000	19.910	47.910	1273.000	376.400	5.062	0.198	5.228	0.000	0.000
σ		0.336	┬19.440	┬698.900	0.088	0.199	9.986	2.572	0.156	0.007	0.054	0.000	0.000
%RSD		3.715	┬0.737	┬1.264	0.441	0.415	0.785	0.683	3.071	3.691	1.033	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:02:48	43.220	164.456%	1.060	1.372	-2.371	2.183	102.583%	0.000	0.941	0.905	402.000	115.392%
2	17:03:10	42.710	165.123%	1.027	1.433	-2.868	2.226	102.651%	0.000	0.925	0.936	405.600	114.705%
3	17:03:31	42.580	163.417%	1.075	1.502	-2.770	2.392	103.889%	0.000	0.977	0.915	402.300	115.579%
x		42.840	164.332%	1.054	1.435	-2.669	2.267	103.041%	0.000	0.948	0.919	403.300	115.225%
σ		0.337	0.860%	0.024	0.065	0.263	0.110	0.735%	0.000	0.027	0.016	1.978	0.460%
%RSD		0.786	0.523	2.309	4.514	9.856	4.854	0.713	0.000	2.803	1.710	0.490	0.399

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	17:02:48	0.202	0.287	89.620	106.311%	0.000	6.415	2.427
2	17:03:10	0.199	0.281	90.630	106.245%	0.000	6.575	2.401
3	17:03:31	0.204	0.280	91.540	105.925%	0.000	6.734	2.474
x		0.202	0.283	90.600	106.160%	0.000	6.574	2.434
σ		0.003	0.004	0.962	0.206%	0.000	0.159	0.037
%RSD		1.310	1.296	1.062	0.194	0.000	2.425	1.532

CCV 1037150 5/10/2017 5:08:11 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:08:33	88.032%	657.400	262.500	┬9929.000	┬30790.000	┬31320.000	┬10050.000	┬30080.000	93.585%	0.000	┬1348.000	389.500
2	17:08:54	87.220%	655.900	262.100	┬10010.000	┬31280.000	┬31650.000	┬10210.000	┬30820.000	92.941%	0.000	┬1352.000	388.800
3	17:09:15	86.542%	658.000	259.200	┬9768.000	┬30540.000	┬31150.000	┬10010.000	┬30420.000	92.851%	0.000	┬1346.000	387.100
x		87.265%	105.136%	104.504%	┬99.021%	┬102.897%	┬104.582%	┬100.904%	┬101.464%	93.126%	0.000	┬107.908%	97.116%
σ		0.746%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	0.400%	0.000	┬n/a	n/a
%RSD		0.855	0.165	0.676	┬1.236	┬1.226	┬0.808	┬1.039	┬1.202	0.430	0.000	┬0.245	0.326
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:08:33	5.586	┬1304.000	┬31600.000	┬537.300	1286.000	1231.000	1241.000	202.800	0.326	213.200	0.000	0.000
2	17:08:54	7.788	┬1312.000	┬32010.000	┬536.600	1296.000	1250.000	1263.000	204.200	0.417	215.800	0.000	0.000
3	17:09:15	6.289	┬1328.000	┬31880.000	┬533.700	1287.000	1235.000	1255.000	199.100	0.331	210.200	0.000	0.000
x		6.554	┬105.206%	┬106.096%	┬107.171%	103.188%	99.099%	100.231%	101.018%	0.358	106.550%	0.000	0.000
σ		1.125	┬n/a	┬n/a	┬n/a	n/a	n/a	n/a	n/a	0.051	n/a	0.000	0.000
%RSD		17.160	┬0.929	┬0.660	┬0.353	0.421	0.823	0.896	1.291	14.240	1.319	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:08:33	181.800	94.452%	┬1294.000	101.200	18.970	204.200	97.559%	0.000	237.000	231.600	1259.000	103.379%
2	17:08:54	179.500	92.960%	┬1313.000	102.300	22.070	203.300	98.368%	0.000	237.800	232.100	1249.000	102.853%
3	17:09:15	182.700	94.872%	┬1296.000	103.400	18.090	207.800	97.360%	0.000	238.500	234.300	1275.000	103.841%
x		181.300	94.095%	┬104.087%	102.303%	19.710	102.545%	97.762%	0.000	237.700	93.064%	100.886%	103.357%
σ		1.677	1.005%	┬n/a	n/a	2.095	n/a	0.534%	0.000	0.723	n/a	n/a	0.494%
%RSD		0.925	1.068	┬0.824	1.033	10.630	1.163	0.546	0.000	0.304	0.617	1.063	0.478
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	17:08:33	19.970	182.600	┬1331.000	99.679%	0.000	19.230	9.516					
2	17:08:54	19.790	182.100	┬1311.000	102.736%	0.000	19.120	9.469					
3	17:09:15	20.000	186.300	┬1346.000	100.685%	0.000	19.360	9.611					
x		99.602%	91.834%	┬106.360%	101.033%	0.000	96.183%	95.320%					
σ		n/a	n/a	┬n/a	1.558%	0.000	n/a	n/a					
%RSD		0.555	1.255	┬1.326	1.542	0.000	0.609	0.758					

CCB 1035925 5/10/2017 5:13:55 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:14:17	92.743%	-0.027	3.068	-0.642	2.874	2.480	-2.526	9.418	97.865%	0.000	0.375	-0.012
2	17:14:38	93.583%	-0.012	2.173	-1.157	2.625	1.993	-0.433	7.467	98.288%	0.000	0.266	0.029
3	17:14:59	93.682%	-0.038	1.907	2.515	2.561	1.887	-0.120	16.840	97.767%	0.000	0.373	0.031
		93.336%	-0.026	2.383	0.239	2.687	2.120	-1.026	11.240	97.973%	0.000	0.338	0.016

x													
σ		0.516%	0.013	0.608	1.988	0.166	0.316	1.308	4.945	0.277%	0.000	0.063	0.024
%RSD		0.553	49.330	25.530	832.700	6.159	14.910	127.500	43.990	0.283	0.000	18.580	148.100
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:14:17	5.072	0.088	3.817	0.037	0.099	0.084	0.369	-2.065	0.367	0.353	0.000	0.000
2	17:14:38	5.035	0.072	3.888	0.034	0.074	0.085	0.366	-1.970	0.362	0.028	0.000	0.000
3	17:14:59	5.049	0.064	3.686	0.042	0.099	0.082	0.380	-1.822	0.328	0.233	0.000	0.000
x		5.052	0.075	3.797	0.038	0.090	0.084	0.372	-1.952	0.352	0.205	0.000	0.000
σ		0.019	0.012	0.102	0.004	0.014	0.002	0.007	0.122	0.021	0.164	0.000	0.000
%RSD		0.370	16.510	2.695	11.310	16.030	1.805	1.869	6.262	6.022	80.310	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:14:17	-0.002	96.342%	0.172	0.009	-1.251	-0.008	99.493%	0.000	0.098	0.022	0.155	99.668%
2	17:14:38	0.014	95.966%	0.122	0.015	-1.436	0.024	100.143%	0.000	0.095	0.017	0.110	101.236%
3	17:14:59	0.008	97.671%	0.092	0.009	-1.426	0.004	99.531%	0.000	0.091	0.017	0.037	100.468%
x		0.007	96.659%	0.129	0.011	-1.371	0.007	99.722%	0.000	0.094	0.019	0.101	100.457%
σ		0.008	0.896%	0.040	0.003	0.104	0.016	0.365%	0.000	0.003	0.003	0.060	0.784%
%RSD		116.000	0.927	31.340	30.220	7.600	233.100	0.366	0.000	3.438	13.910	59.510	0.780
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	17:14:17	0.001	0.069	0.133	99.242%	0.000	0.001	0.002					
2	17:14:38	0.010	0.057	0.109	102.430%	0.000	0.001	0.001					
3	17:14:59	0.002	0.050	0.102	101.126%	0.000	0.002	-0.000					
x		0.004	0.059	0.115	100.933%	0.000	0.001	0.001					
σ		0.005	0.010	0.016	1.603%	0.000	0.001	0.001					
%RSD		125.000	16.460	14.400	1.588	0.000	59.200	97.210					

CCVL 1037148 5/10/2017 5:19:39 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:00	96.441%	0.978	43.620	T 539.300	201.300	51.720	T 536.600	474.400	101.092%	0.000	5.137	4.142
2	17:20:21	96.953%	0.923	43.720	T 538.100	198.800	52.020	T 541.300	465.100	100.815%	0.000	5.138	4.195
3	17:20:44	96.190%	1.014	48.340	T 537.700	207.500	51.650	T 532.000	470.300	102.757%	0.000	5.191	4.147
x		96.528%	97.193%	113.063%	T 107.676%	101.282%	103.596%	T 107.327%	93.989%	101.555%	0.000	103.104%	104.039%
σ		0.389%	n/a	n/a	T n/a	n/a	n/a	T n/a	n/a	1.050%	0.000	n/a	n/a
%RSD		0.402	4.726	5.973	T 0.154	2.220	0.384	T 0.866	0.996	1.034	0.000	0.593	0.695

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:00	7.593	1.896	207.100	0.962	2.282	5.036	19.450	2.028	0.510	4.473	0.000	0.000
2	17:20:21	7.528	1.972	209.700	0.973	2.153	5.046	19.350	1.783	0.543	3.956	0.000	0.000
3	17:20:44	7.209	1.888	205.400	0.953	2.110	5.176	19.150	2.198	0.522	4.693	0.000	0.000
x		7.444	95.938%	103.691%	96.260%	109.087%	101.721%	96.588%	100.143%	0.525	109.348%	0.000	0.000
σ		0.205	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.017	n/a	0.000	0.000
%RSD		2.759	2.428	1.038	1.064	4.112	1.526	0.801	10.410	3.186	8.656	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:00	4.428	98.336%	9.367	1.008	-2.109	1.034	102.014%	0.000	1.862	1.779	9.804	102.159%
2	17:20:21	4.412	99.479%	9.030	1.077	-1.751	1.013	103.580%	0.000	1.869	1.750	9.778	101.629%
3	17:20:44	4.379	97.197%	9.487	1.049	-1.360	1.075	103.423%	0.000	1.915	1.767	9.688	103.963%
x		88.129%	98.337%	92.946%	104.489%	-1.740	104.057%	103.006%	0.000	1.882	88.268%	97.566%	102.584%
σ		n/a	1.141%	n/a	n/a	0.375	n/a	0.863%	0.000	0.029	n/a	n/a	1.224%
%RSD		0.573	1.160	2.551	3.322	21.530	3.055	0.837	0.000	1.538	0.822	0.621	1.193

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:20:00	2.414	1.813	1.039	99.120%	0.000	1.899	0.928
2	17:20:21	2.510	1.755	1.056	100.890%	0.000	1.942	0.962
3	17:20:44	2.528	1.816	1.036	101.769%	0.000	1.937	0.958
x		124.200%	89.728%	104.389%	100.593%	0.000	96.291%	94.928%
σ		n/a	n/a	n/a	1.350%	0.000	n/a	n/a
%RSD		2.451	1.927	1.013	1.342	0.000	1.224	1.938

200-38498-A-3-A 5/10/2017 5:25:25 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:25:46	84.546%	3.304	28.190	T 405.300	T 23740.000	T 51370.000	T 5175.000	T 106700.000	108.817%	0.000	62.700	65.840
2	17:26:08	86.528%	3.005	28.500	T 395.200	T 23480.000	T 51090.000	T 5191.000	T 106300.000	108.978%	0.000	64.480	65.460
3	17:26:30	84.675%	2.601	28.230	T 409.200	T 23930.000	T 51680.000	T 5254.000	T 106800.000	107.809%	0.000	65.010	66.500
x		85.250%	2.970	28.310	T 403.200	T 23720.000	T 51380.000	T 5207.000	T 106600.000	108.535%	0.000	64.060	65.930
σ		1.109%	0.353	0.170	T 7.209	T 223.900	T 297.500	T 42.030	T 283.600	0.634%	0.000	1.209	0.524
%RSD		1.301	11.890	0.601	T 1.788	T 0.944	T 0.579	T 0.807	T 0.266	0.584	0.000	1.887	0.794

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:25:46	23.480	T 5087.000	TM 162500.000	49.220	120.200	753.600	798.500	23.880	0.185	2.936	0.000	0.000
2	17:26:08	21.410	T 5097.000	TM 161700.000	49.540	122.200	769.300	799.500	24.240	0.184	2.642	0.000	0.000

3	17:26:30	21.460	T 5161.000	TM 165700.000	50.960	123.400	765.800	812.700	24.680	0.158	3.639	0.000	0.000
x		22.120	T 5115.000	TM 163300.000	49.910	121.900	762.900	803.600	24.260	0.176	3.072	0.000	0.000
σ		1.178	T 40.210	TM 2115.000	0.924	1.641	8.212	7.916	0.402	0.016	0.512	0.000	0.000
%RSD		5.326	T 0.786	TM 1.295	1.851	1.346	1.076	0.985	1.655	8.905	16.670	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:25:46	206.700	186.078%	1.669	0.338	-5.317	2.546	91.636%	0.000	0.751	0.720	852.800	110.611%
2	17:26:08	202.900	184.583%	1.650	0.331	-4.897	2.694	93.623%	0.000	0.713	0.723	836.800	111.821%
3	17:26:30	204.400	183.767%	1.721	0.401	-6.282	2.425	93.115%	0.000	0.809	0.737	848.600	111.307%
x		204.700	184.809%	1.680	0.357	-5.498	2.555	92.791%	0.000	0.758	0.727	846.100	111.246%
σ		1.894	1.172%	0.037	0.039	0.710	0.135	1.032%	0.000	0.048	0.009	8.336	0.607%
%RSD		0.925	0.634	2.190	10.900	12.910	5.278	1.112	0.000	6.370	1.264	0.985	0.546

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:25:46	0.298	0.517	T 493.700	98.386%	0.000	16.210	2.120
2	17:26:08	0.273	0.506	T 493.100	100.038%	0.000	16.140	2.094
3	17:26:30	0.244	0.524	T 483.700	100.820%	0.000	16.290	2.073
x		0.271	0.516	T 490.200	99.748%	0.000	16.220	2.096
σ		0.027	0.009	T 5.581	1.243%	0.000	0.074	0.023
%RSD		10.020	1.712	T 1.139	1.246	0.000	0.458	1.117

200-38498-A-4-A 5/10/2017 5:31:09 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:31:30	91.138%	3.749	34.440	T 320.900	T 20200.000	T 65580.000	T 6194.000	T 19660.000	118.783%	0.000	91.460	78.080
2	17:31:52	89.942%	3.820	34.330	T 332.300	T 20530.000	T 66720.000	T 6332.000	T 19920.000	117.124%	0.000	91.940	80.290
3	17:32:13	90.420%	4.069	35.550	T 324.700	T 20680.000	T 66520.000	T 6382.000	T 20160.000	117.415%	0.000	95.410	80.810
x		90.500%	3.879	34.770	T 325.900	T 20470.000	T 66270.000	T 6303.000	T 19920.000	117.774%	0.000	92.940	79.720
σ		0.602%	0.168	0.671	T 5.807	T 242.500	T 612.900	T 97.750	T 249.600	0.886%	0.000	2.158	1.452
%RSD		0.665	4.327	1.931	T 1.782	T 1.185	T 0.925	T 1.551	T 1.253	0.752	0.000	2.322	1.821
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:31:30	16.440	T 1359.000	T 111500.000	58.380	144.700	T 2900.000	1184.000	15.170	0.188	4.369	0.000	0.000
2	17:31:52	17.150	T 1382.000	T 113800.000	60.450	150.100	T 2960.000	1209.000	14.990	0.182	4.325	0.000	0.000
3	17:32:13	14.880	T 1377.000	T 113500.000	60.510	148.900	T 2983.000	1217.000	15.270	0.177	4.447	0.000	0.000
x		16.160	T 1373.000	T 112900.000	59.780	147.900	T 2947.000	1203.000	15.140	0.182	4.380	0.000	0.000
σ		1.162	T 11.980	T 1257.000	1.211	2.843	T 42.980	17.260	0.145	0.006	0.062	0.000	0.000
%RSD		7.189	T 0.873	T 1.113	2.025	1.922	T 1.458	1.435	0.956	3.263	1.414	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:31:30	68.190	237.081%	1.708	1.214	-4.530	10.150	98.390%	0.000	1.695	1.632	579.200	121.621%
2	17:31:52	67.590	239.339%	1.701	1.158	-4.344	10.150	100.310%	0.000	1.676	1.605	579.700	122.999%
3	17:32:13	67.450	238.117%	1.635	1.158	-5.032	10.540	100.689%	0.000	1.692	1.608	582.400	124.194%
x		67.740	238.179%	1.682	1.176	-4.635	10.280	99.796%	0.000	1.688	1.615	580.400	122.938%
σ		0.389	1.130%	0.040	0.032	0.356	0.225	1.232%	0.000	0.010	0.015	1.730	1.288%
%RSD		0.574	0.475	2.384	2.727	7.686	2.192	1.235	0.000	0.589	0.909	0.298	1.047

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	17:31:30	0.242	0.750	T347.600	101.608%	0.000	21.370	4.635
2	17:31:52	0.250	0.694	T340.100	105.365%	0.000	20.920	4.542
3	17:32:13	0.284	0.769	T356.100	101.210%	0.000	22.050	4.756
x		0.259	0.738	T347.900	102.727%	0.000	21.450	4.644
σ		0.023	0.039	T7.987	2.293%	0.000	0.569	0.107
%RSD		8.727	5.259	T2.296	2.232	0.000	2.655	2.311

200-38498-A-5-A 5/10/2017 5:36:54 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:15	91.447%	2.890	24.290	T556.300	T15380.000	T53970.000	T4685.000	T19580.000	113.493%	0.000	63.210	56.900
2	17:37:37	90.234%	3.046	23.470	T570.400	T15570.000	T54500.000	T4747.000	T19690.000	113.949%	0.000	63.670	56.760
3	17:37:58	90.839%	2.833	23.780	T565.300	T15320.000	T53840.000	T4668.000	T19430.000	114.280%	0.000	64.000	57.260
x		90.840%	2.923	23.850	T564.000	T15420.000	T54100.000	T4700.000	T19560.000	113.907%	0.000	63.630	56.970
σ		0.607%	0.110	0.414	T7.140	T127.100	T348.100	T41.490	T132.200	0.395%	0.000	0.395	0.259
%RSD		0.668	3.769	1.738	T1.266	T0.824	T0.643	T0.883	T0.675	0.347	0.000	0.621	0.454

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:15	13.300	T1507.000	T85440.000	35.450	88.710	426.800	318.300	9.751	0.229	1.123	0.000	0.000
2	17:37:37	12.850	T1482.000	T84260.000	35.170	91.420	432.100	319.300	9.274	0.211	1.381	0.000	0.000
3	17:37:58	13.240	T1520.000	T86180.000	35.980	90.710	425.100	318.400	9.337	0.214	1.180	0.000	0.000
x		13.130	T1503.000	T85290.000	35.530	90.280	428.000	318.700	9.454	0.218	1.228	0.000	0.000
σ		0.243	T19.380	T966.800	0.412	1.403	3.651	0.541	0.259	0.010	0.136	0.000	0.000
%RSD		1.850	T1.289	T1.133	1.159	1.554	0.853	0.170	2.738	4.396	11.050	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:15	49.070	192.607%	0.893	0.250	-3.375	1.138	101.060%	0.000	0.482	0.430	402.500	117.636%
2	17:37:37	50.170	201.173%	0.845	0.228	-4.577	1.294	101.222%	0.000	0.548	0.427	401.500	120.249%
3	17:37:58	50.480	200.131%	0.896	0.255	-5.126	1.367	100.827%	0.000	0.468	0.436	405.000	119.610%
x		49.910	197.970%	0.878	0.244	-4.359	1.266	101.036%	0.000	0.499	0.431	403.000	119.165%
σ		0.739	4.674%	0.028	0.015	0.895	0.117	0.198%	0.000	0.043	0.005	1.792	1.362%
%RSD		1.480	2.361	3.231	6.054	20.540	9.219	0.196	0.000	8.553	1.073	0.445	1.143

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:37:15	0.075	0.437	89.570	102.207%	0.000	16.640	2.767
2	17:37:37	0.088	0.439	90.270	102.084%	0.000	16.480	2.772
3	17:37:58	0.106	0.461	89.150	104.070%	0.000	16.860	2.766
x		0.090	0.446	89.660	102.787%	0.000	16.660	2.768
σ		0.016	0.014	0.566	1.113%	0.000	0.191	0.003
%RSD		17.490	3.048	0.632	1.083	0.000	1.147	0.097

200-38498-A-6-A 5/10/2017 5:42:36 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:42:58	86.708%	3.716	36.480	249.300	T21620.000	T58780.000	T6849.000	T82300.000	116.227%	0.000	77.900	70.100
2	17:43:19	87.467%	3.520	37.910	T293.000	T21560.000	T59090.000	T6884.000	T82330.000	115.090%	0.000	80.630	72.800
3	17:43:41	89.122%	3.530	37.370	T293.200	T21740.000	T59540.000	T6847.000	T83380.000	114.665%	0.000	82.600	72.740
		87.766%	3.589	37.250	T278.500	T21640.000	T59140.000	T6860.000	T82670.000	115.327%	0.000	80.380	71.880

x													
σ		1.234%	0.111	0.725	┬25.260	┬90.350	┬379.900	┬20.740	┬618.500	0.808%	0.000	2.359	1.543
%RSD		1.407	3.087	1.946	┬9.071	┬0.418	┬0.642	┬0.302	┬0.748	0.700	0.000	2.935	2.146
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:42:58	17.110	┬3236.000	┬121200.000	44.240	113.200	965.100	681.600	17.530	0.197	2.913	0.000	0.000
2	17:43:19	16.920	┬3211.000	┬122200.000	45.550	114.200	978.900	694.300	17.040	0.195	2.880	0.000	0.000
3	17:43:41	16.050	┬3205.000	┬120900.000	44.610	113.700	980.900	700.400	17.460	0.208	2.524	0.000	0.000
x		16.690	┬3218.000	┬121400.000	44.800	113.700	975.000	692.100	17.350	0.200	2.772	0.000	0.000
σ		0.564	┬16.460	┬711.500	0.679	0.469	8.620	9.593	0.266	0.007	0.216	0.000	0.000
%RSD		3.376	┬0.512	┬0.586	1.516	0.412	0.884	1.386	1.535	3.489	7.794	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:42:58	171.600	206.551%	1.210	0.531	-5.652	2.653	96.601%	0.000	1.579	1.484	779.900	113.776%
2	17:43:19	170.700	211.152%	1.198	0.533	-3.626	2.762	97.256%	0.000	1.525	1.461	771.300	115.100%
3	17:43:41	173.700	208.653%	1.179	0.505	-5.287	2.893	96.921%	0.000	1.591	1.489	782.900	115.800%
x		172.000	208.785%	1.195	0.523	-4.855	2.769	96.926%	0.000	1.565	1.478	778.100	114.892%
σ		1.500	2.304%	0.015	0.015	1.080	0.120	0.328%	0.000	0.035	0.015	6.030	1.028%
%RSD		0.872	1.103	1.275	2.929	22.240	4.341	0.338	0.000	2.258	1.025	0.775	0.895
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	17:42:58	0.248	0.564	203.500	97.158%	0.000	20.410	2.973					
2	17:43:19	0.240	0.571	202.600	99.247%	0.000	20.250	2.933					
3	17:43:41	0.278	0.548	201.000	99.907%	0.000	19.870	2.839					
x		0.255	0.561	202.400	98.770%	0.000	20.180	2.915					
σ		0.020	0.012	1.251	1.435%	0.000	0.278	0.069					
%RSD		7.887	2.080	0.618	1.453	0.000	1.377	2.352					

200-38498-A-7-A 5/10/2017 5:48:20 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:41	92.942%	3.476	27.030	T 276.600	T 18770.000	T 71710.000	T 5564.000	T 15860.000	119.447%	0.000	87.910	78.450
2	17:49:02	89.048%	3.896	27.720	T 273.400	T 18910.000	T 73990.000	T 5711.000	T 15980.000	118.405%	0.000	87.210	80.580
3	17:49:24	90.381%	4.114	29.300	248.300	T 19210.000	T 74800.000	T 5628.000	T 16110.000	118.069%	0.000	90.250	81.600
x		90.790%	3.829	28.020	T 266.100	T 18960.000	T 73500.000	T 5634.000	T 15980.000	118.640%	0.000	88.450	80.210
σ		1.979%	0.324	1.167	T 15.500	T 223.400	T 1600.000	T 73.590	T 126.100	0.719%	0.000	1.593	1.609
%RSD		2.180	8.463	4.164	T 5.825	T 1.178	T 2.177	T 1.306	T 0.789	0.606	0.000	1.800	2.005

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:41	15.330	T 3108.000	T 111900.000	47.630	114.100	346.700	409.100	9.946	0.188	1.707	0.000	0.000
2	17:49:02	16.560	T 3175.000	T 113800.000	48.210	115.900	353.000	416.800	9.867	0.176	1.492	0.000	0.000
3	17:49:24	15.900	T 3199.000	T 115100.000	49.120	117.300	358.800	421.500	9.881	0.173	1.924	0.000	0.000
x		15.930	T 3161.000	T 113600.000	48.320	115.700	352.800	415.800	9.898	0.179	1.708	0.000	0.000
σ		0.618	T 46.890	T 1601.000	0.751	1.634	6.039	6.231	0.042	0.008	0.216	0.000	0.000
%RSD		3.881	T 1.483	T 1.409	1.555	1.411	1.712	1.499	0.426	4.312	12.640	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:41	61.470	256.869%	1.367	0.472	-3.820	1.512	98.954%	0.000	0.722	0.613	613.300	123.210%
2	17:49:02	63.230	261.200%	1.372	0.451	-6.418	1.769	98.140%	0.000	0.675	0.638	630.700	126.693%
3	17:49:24	61.820	260.407%	1.358	0.443	-5.693	1.742	100.470%	0.000	0.701	0.634	619.700	124.388%
x		62.180	259.492%	1.366	0.455	-5.310	1.675	99.188%	0.000	0.700	0.628	621.200	124.764%
σ		0.928	2.306%	0.007	0.015	1.341	0.141	1.183%	0.000	0.023	0.013	8.828	1.772%
%RSD		1.493	0.889	0.534	3.356	25.250	8.421	1.192	0.000	3.355	2.126	1.421	1.420

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:48:41	0.125	0.713	153.600	102.408%	0.000	21.730	5.078
2	17:49:02	0.118	0.747	155.800	102.683%	0.000	21.690	5.226
3	17:49:24	0.126	0.723	154.900	105.041%	0.000	21.650	5.142
x		0.123	0.728	154.800	103.378%	0.000	21.690	5.149
σ		0.004	0.018	1.073	1.448%	0.000	0.041	0.074
%RSD		3.444	2.418	0.693	1.400	0.000	0.187	1.447

200-38498-A-7-A SD@5 5/10/2017 5:54:02 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:54:24	95.685%	0.840	4.323	35.760	4024.000	T 17240.000	T 1326.000	3245.000	109.297%	0.000	20.160	18.090
2	17:54:46	95.679%	0.716	3.841	39.730	4116.000	T 17420.000	T 1345.000	3372.000	108.622%	0.000	20.300	18.800
3	17:55:07	94.421%	0.654	4.468	38.170	4055.000	T 17370.000	T 1331.000	3335.000	108.829%	0.000	19.890	18.350
x		95.262%	0.736	4.211	37.890	4065.000	T 17340.000	T 1334.000	3317.000	108.916%	0.000	20.120	18.410
σ		0.728%	0.095	0.328	2.003	46.630	T 93.010	T 9.940	65.280	0.346%	0.000	0.206	0.356
%RSD		0.765	12.850	7.790	5.287	1.147	T 0.536	T 0.745	1.968	0.318	0.000	1.022	1.935

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	17:54:24	7.352	T 718.600	T 26630.000	11.120	26.500	82.230	102.500	3.071	0.292	1.258	0.000	0.000
2	17:54:46	7.737	T 736.100	T 27140.000	11.100	27.140	84.450	104.700	3.399	0.289	0.959	0.000	0.000

3	17:55:07	7.577	₸736.000	₸27030.000	11.250	27.380	83.000	104.300	3.239	0.290	0.781	0.000	0.000
x		7.555	₸730.300	₸26940.000	11.160	27.010	83.230	103.800	3.236	0.290	0.999	0.000	0.000
σ		0.194	₸10.060	₸268.200	0.086	0.455	1.128	1.150	0.164	0.002	0.241	0.000	0.000
%RSD		2.562	₸1.378	₸0.996	0.772	1.686	1.355	1.107	5.073	0.541	24.110	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:54:24	12.460	136.222%	0.477	0.086	-2.452	0.395	101.234%	0.000	0.194	0.118	122.500	105.665%
2	17:54:46	12.790	133.413%	0.511	0.082	-2.600	0.465	100.207%	0.000	0.208	0.117	125.600	106.476%
3	17:55:07	12.230	134.249%	0.547	0.079	-2.573	0.384	102.508%	0.000	0.185	0.123	122.200	106.602%
x		12.490	134.628%	0.512	0.082	-2.542	0.415	101.317%	0.000	0.196	0.119	123.400	106.248%
σ		0.284	1.442%	0.035	0.004	0.079	0.044	1.152%	0.000	0.012	0.003	1.880	0.508%
%RSD		2.272	1.071	6.845	4.783	3.101	10.640	1.138	0.000	6.054	2.727	1.523	0.479

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	17:54:24	0.030	0.105	31.030	98.958%	0.000	4.283	1.026
2	17:54:46	0.033	0.106	31.760	98.490%	0.000	4.456	1.034
3	17:55:07	0.023	0.106	30.830	102.137%	0.000	4.266	1.007
x		0.029	0.106	31.210	99.862%	0.000	4.335	1.022
σ		0.005	0.001	0.490	1.984%	0.000	0.106	0.013
%RSD		19.030	0.650	1.570	1.987	0.000	2.433	1.319

200-38498-A-7-A PDS 5/10/2017 5:59:44 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:00:06	89.097%	14.510	440.000	₸4640.000	₸19900.000	₸72250.000	₸9831.000	₸20070.000	119.083%	0.000	127.600	111.600
2	18:00:27	88.346%	13.970	448.100	₸4660.000	₸20330.000	₸73740.000	₸10180.000	₸20260.000	117.397%	0.000	125.400	109.800
3	18:00:49	88.982%	14.460	442.300	₸4690.000	₸20490.000	₸73550.000	₸10040.000	₸20310.000	117.729%	0.000	128.200	111.800
x		88.808%	14.310	443.500	₸4663.000	₸20240.000	₸73180.000	₸10020.000	₸20210.000	118.070%	0.000	127.000	111.100
σ		0.404%	0.295	4.158	₸24.960	₸304.500	₸810.400	₸174.700	₸126.900	0.893%	0.000	1.481	1.124
%RSD		0.455	2.063	0.938	₸0.535	₸1.504	₸1.107	₸1.744	₸0.628	0.757	0.000	1.166	1.012
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:00:06	15.190	₸3106.000	₸112100.000	54.510	128.800	382.400	546.300	24.100	0.205	15.200	0.000	0.000
2	18:00:27	17.050	₸3143.000	₸112800.000	55.060	129.900	385.000	558.400	24.200	0.211	14.820	0.000	0.000
3	18:00:49	17.400	₸3133.000	₸113100.000	55.390	131.500	384.600	554.500	24.030	0.202	14.780	0.000	0.000
x		16.550	₸3127.000	₸112700.000	54.990	130.100	384.000	553.100	24.110	0.206	14.930	0.000	0.000
σ		1.191	₸19.150	₸511.100	0.444	1.315	1.437	6.191	0.082	0.005	0.230	0.000	0.000
%RSD		7.199	₸0.612	₸0.454	0.808	1.011	0.374	1.119	0.339	2.377	1.542	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:00:06	108.200	254.539%	37.200	10.910	-3.383	11.150	97.922%	0.000	18.140	18.240	714.600	123.473%
2	18:00:27	107.400	252.445%	37.350	10.690	-5.560	11.710	99.231%	0.000	18.120	18.330	714.300	127.479%
3	18:00:49	109.800	254.561%	37.170	10.790	-5.045	11.560	98.319%	0.000	18.200	18.600	718.800	125.661%
x		108.500	253.849%	37.240	10.790	-4.663	11.470	98.491%	0.000	18.150	18.390	715.900	125.538%
σ		1.269	1.215%	0.099	0.109	1.138	0.286	0.671%	0.000	0.042	0.184	2.522	2.006%
%RSD		1.169	0.479	0.266	1.009	24.400	2.494	0.681	0.000	0.229	1.003	0.352	1.598

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	18:00:06	20.490	18.300	160.500	102.333%	0.000	40.370	14.490
2	18:00:27	20.080	18.340	161.300	103.055%	0.000	40.780	14.560
3	18:00:49	21.350	18.460	161.800	104.635%	0.000	40.390	14.330
x		20.640	18.370	161.200	103.341%	0.000	40.510	14.460
σ		0.646	0.082	0.635	1.177%	0.000	0.230	0.115
%RSD		3.128	0.444	0.394	1.139	0.000	0.567	0.797

200-38498-A-7-B MS 5/10/2017 6:05:29 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:51	88.668%	14.940	405.600	T4641.000	T25580.000	T86960.000	T9746.000	T17910.000	121.683%	0.000	142.100	126.000
2	18:06:13	88.521%	14.780	405.400	T4585.000	T25370.000	T86370.000	T9790.000	T17700.000	121.933%	0.000	144.200	125.200
3	18:06:34	86.765%	15.400	426.700	T4792.000	T26150.000	T88300.000	T10060.000	T18080.000	119.916%	0.000	143.100	128.900
x		87.984%	15.040	412.500	T4673.000	T25700.000	T87210.000	T9864.000	T17900.000	121.177%	0.000	143.100	126.700
σ		1.059%	0.319	12.260	T107.200	T408.000	T988.300	T167.300	T189.700	1.100%	0.000	1.053	1.938
%RSD		1.203	2.122	2.971	T2.294	T1.587	T1.133	T1.696	T1.060	0.907	0.000	0.736	1.530

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:51	17.360	T4102.000	T137800.000	66.260	153.500	388.100	598.100	25.200	0.172	14.120	0.000	0.000
2	18:06:13	18.620	T4158.000	T138700.000	66.690	156.600	385.400	597.400	24.570	0.203	13.330	0.000	0.000
3	18:06:34	19.850	T4254.000	T143000.000	68.360	158.900	398.500	622.000	25.500	0.170	13.900	0.000	0.000
x		18.610	T4171.000	T139900.000	67.110	156.400	390.700	605.800	25.090	0.182	13.780	0.000	0.000
σ		1.243	T76.830	T2769.000	1.106	2.713	6.916	13.990	0.475	0.018	0.410	0.000	0.000
%RSD		6.677	T1.842	T1.980	1.649	1.735	1.770	2.309	1.891	10.020	2.972	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:51	108.400	270.893%	33.400	10.720	-2.534	11.330	98.187%	0.000	6.342	6.284	852.100	124.434%
2	18:06:13	110.400	274.617%	33.540	11.030	-5.855	12.110	97.982%	0.000	6.392	6.328	862.900	124.018%
3	18:06:34	110.800	274.261%	33.910	11.020	-4.351	11.380	98.275%	0.000	6.411	6.420	866.400	126.281%
x		109.900	273.257%	33.620	10.930	-4.247	11.610	98.148%	0.000	6.382	6.344	860.400	124.911%
σ		1.317	2.055%	0.264	0.174	1.663	0.432	0.150%	0.000	0.036	0.069	7.464	1.204%
%RSD		1.199	0.752	0.785	1.595	39.160	3.721	0.153	0.000	0.558	1.095	0.867	0.964

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:05:51	9.673	18.910	209.400	100.960%	0.000	45.650	15.700
2	18:06:13	9.853	18.740	208.000	102.762%	0.000	45.550	15.830
3	18:06:34	9.773	18.800	209.100	103.186%	0.000	45.860	15.730
x		9.766	18.810	208.800	102.303%	0.000	45.690	15.750
σ		0.090	0.089	0.765	1.182%	0.000	0.160	0.069
%RSD		0.921	0.474	0.366	1.155	0.000	0.350	0.438

200-38498-A-7-C MSD 5/10/2017 6:11:13 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:11:35	89.494%	14.990	382.300	T4692.000	T21110.000	T79980.000	T9469.000	T43070.000	117.865%	0.000	135.800	119.500
2	18:11:57	87.490%	14.500	395.800	T4562.000	T20730.000	T78190.000	T9310.000	T42760.000	119.983%	0.000	132.900	116.300
3	18:12:19	86.551%	15.090	400.600	T4622.000	T20650.000	T78040.000	T9268.000	T42440.000	120.318%	0.000	132.400	116.900
		87.845%	14.860	392.900	T4625.000	T20830.000	T78740.000	T9349.000	T42760.000	119.389%	0.000	133.700	117.600

x													
σ		1.503%	0.315	9.478	┬64.820	┬249.200	┬1077.000	┬106.000	┬313.100	1.330%	0.000	1.815	1.688
%RSD		1.711	2.120	2.412	┬1.401	┬1.196	┬1.367	┬1.134	┬0.732	1.114	0.000	1.358	1.436
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:11:35	16.050	┬3631.000	┬122400.000	61.680	142.300	396.700	594.100	26.370	0.205	14.260	0.000	0.000
2	18:11:57	17.590	┬3558.000	┬119400.000	60.590	140.200	391.700	585.900	26.630	0.202	14.680	0.000	0.000
3	18:12:19	16.430	┬3553.000	┬120000.000	60.970	139.700	385.500	584.000	26.460	0.207	14.400	0.000	0.000
x		16.690	┬3581.000	┬120600.000	61.080	140.700	391.300	588.000	26.490	0.205	14.440	0.000	0.000
σ		0.800	┬43.640	┬1583.000	0.554	1.370	5.634	5.395	0.135	0.003	0.214	0.000	0.000
%RSD		4.795	┬1.219	┬1.312	0.906	0.973	1.440	0.918	0.511	1.228	1.479	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:11:35	162.900	258.378%	34.780	10.700	-4.156	11.560	97.447%	0.000	6.376	6.358	803.200	122.506%
2	18:11:57	160.200	256.682%	34.980	10.820	-3.798	11.470	97.529%	0.000	6.455	6.355	798.100	121.968%
3	18:12:19	160.100	256.425%	34.950	10.720	-5.957	12.010	98.568%	0.000	6.244	6.381	792.800	124.229%
x		161.100	257.162%	34.900	10.750	-4.637	11.680	97.848%	0.000	6.358	6.365	798.000	122.901%
σ		1.603	1.061%	0.112	0.067	1.157	0.292	0.625%	0.000	0.106	0.014	5.176	1.181%
%RSD		0.995	0.413	0.320	0.622	24.950	2.503	0.639	0.000	1.672	0.223	0.649	0.961
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	18:11:35	9.187	18.520	188.500	99.950%	0.000	43.920	15.200					
2	18:11:57	9.050	18.650	186.400	102.010%	0.000	43.270	14.950					
3	18:12:19	9.103	18.530	189.900	101.673%	0.000	43.250	15.060					
x		9.113	18.570	188.300	101.211%	0.000	43.480	15.070					
σ		0.069	0.074	1.735	1.105%	0.000	0.380	0.125					
%RSD		0.756	0.401	0.922	1.092	0.000	0.873	0.830					

200-38498-A-8-A 5/10/2017 6:16:58 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:17:19	90.330%	2.693	37.930	┬404.600	┬19010.000	┬52850.000	┬6116.000	┬49450.000	115.915%	0.000	69.330	62.500
2	18:17:41	90.346%	2.832	38.740	┬406.300	┬19040.000	┬53500.000	┬6222.000	┬49790.000	115.230%	0.000	70.170	62.830
3	18:18:03	90.529%	2.556	37.840	┬396.700	┬18770.000	┬52620.000	┬6129.000	┬49080.000	118.035%	0.000	68.440	61.120
x		90.402%	2.694	38.170	┬402.500	┬18940.000	┬52990.000	┬6156.000	┬49440.000	116.393%	0.000	69.320	62.150
σ		0.110%	0.138	0.495	┬5.141	┬145.700	┬452.500	┬57.890	┬358.400	1.463%	0.000	0.864	0.908
%RSD		0.122	5.127	1.297	┬1.277	┬0.769	┬0.854	┬0.940	┬0.725	1.257	0.000	1.247	1.461

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:17:19	15.380	┬3591.000	┬109900.000	41.020	104.600	1131.000	707.400	13.090	0.244	2.556	0.000	0.000
2	18:17:41	14.840	┬3637.000	┬109400.000	40.740	105.900	1145.000	722.200	13.170	0.211	3.556	0.000	0.000
3	18:18:03	14.850	┬3596.000	┬107500.000	40.220	104.100	1125.000	710.700	13.130	0.220	3.015	0.000	0.000
x		15.020	┬3608.000	┬108900.000	40.660	104.900	1134.000	713.400	13.130	0.225	3.042	0.000	0.000
σ		0.310	┬25.660	┬1316.000	0.409	0.930	10.050	7.773	0.039	0.017	0.501	0.000	0.000
%RSD		2.063	┬0.711	┬1.208	1.007	0.887	0.887	1.089	0.295	7.444	16.460	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:17:19	111.200	195.792%	1.244	0.562	-4.172	4.208	97.183%	0.000	1.010	0.975	516.300	112.002%
2	18:17:41	109.800	197.808%	1.195	0.532	-3.409	3.960	98.552%	0.000	1.034	0.974	521.300	114.741%
3	18:18:03	111.800	197.261%	1.156	0.545	-4.114	4.206	98.542%	0.000	1.068	0.949	513.600	114.741%
x		110.900	196.954%	1.199	0.547	-3.899	4.125	98.093%	0.000	1.037	0.966	517.000	113.828%
σ		1.055	1.043%	0.044	0.015	0.425	0.143	0.787%	0.000	0.029	0.015	3.917	1.581%
%RSD		0.951	0.529	3.689	2.713	10.890	3.464	0.803	0.000	2.840	1.502	0.758	1.389

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:17:19	0.264	0.503	172.000	98.171%	0.000	17.430	2.934
2	18:17:41	0.296	0.507	174.200	96.563%	0.000	17.770	3.050
3	18:18:03	0.305	0.513	170.200	99.898%	0.000	17.350	2.893
x		0.289	0.508	172.100	98.211%	0.000	17.520	2.959
σ		0.022	0.005	2.013	1.668%	0.000	0.221	0.081
%RSD		7.515	1.011	1.169	1.698	0.000	1.260	2.738

CCV 1037150 5/10/2017 6:22:44 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:23:06	90.122%	641.400	249.600	┬9916.000	┬30920.000	┬31880.000	┬10320.000	┬30550.000	95.034%	0.000	┬1358.000	384.500
2	18:23:27	87.225%	653.500	258.700	┬9986.000	┬31440.000	┬32190.000	┬10330.000	┬30840.000	94.284%	0.000	┬1348.000	387.000
3	18:23:48	84.837%	675.700	263.700	┬9991.000	┬31510.000	┬32260.000	┬10310.000	┬30860.000	93.616%	0.000	┬1367.000	391.400
x		87.395%	105.096%	102.940%	┬99.645%	┬104.312%	┬107.031%	┬103.201%	┬102.509%	94.311%	0.000	┬108.598%	96.902%
σ		2.646%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	0.709%	0.000	┬n/a	n/a
%RSD		3.028	2.649	2.787	┬0.420	┬1.027	┬0.627	┬0.111	┬0.570	0.752	0.000	┬0.707	0.910

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:23:06	3.673	┬1306.000	┬31490.000	477.100	1264.000	1213.000	1220.000	202.500	0.332	211.600	0.000	0.000
2	18:23:27	7.462	┬1324.000	┬31940.000	┬538.100	1277.000	1235.000	1249.000	206.800	0.412	214.600	0.000	0.000

3	18:23:48	7.174	┬1356.000	┬32440.000	┬537.200	1293.000	1239.000	1258.000	207.700	0.398	212.600	0.000	0.000
x		6.103	┬106.281%	┬106.518%	┬103.487%	102.250%	98.343%	99.375%	102.835%	0.381	106.480%	0.000	0.000
σ		2.109	┬n/a	┬n/a	┬n/a	n/a	n/a	n/a	n/a	0.043	n/a	0.000	0.000
%RSD		34.570	┬1.931	┬1.495	┬6.755	1.104	1.137	1.606	1.336	11.220	0.723	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:23:06	181.700	94.450%	┬1275.000	101.300	20.380	204.600	95.665%	0.000	235.000	231.300	1282.000	101.291%
2	18:23:27	179.500	93.040%	┬1324.000	100.400	23.320	201.900	97.608%	0.000	236.600	230.100	1248.000	100.532%
3	18:23:48	179.600	92.305%	┬1318.000	102.200	20.610	206.800	96.638%	0.000	237.800	233.300	1249.000	100.823%
x		180.300	93.265%	┬104.478%	101.296%	21.430	102.219%	96.637%	0.000	236.400	92.625%	100.766%	100.882%
σ		1.254	1.091%	┬n/a	n/a	1.636	n/a	0.972%	0.000	1.379	n/a	n/a	0.383%
%RSD		0.696	1.169	┬2.060	0.907	7.632	1.182	1.005	0.000	0.583	0.696	1.537	0.379

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:23:06	19.140	181.100	┬1356.000	96.009%	0.000	19.260	9.398
2	18:23:27	19.890	183.400	┬1356.000	96.917%	0.000	19.140	9.671
3	18:23:48	19.500	179.400	┬1347.000	98.866%	0.000	19.200	9.425
x		97.548%	90.649%	┬108.248%	97.264%	0.000	95.989%	94.980%
σ		n/a	n/a	┬n/a	1.460%	0.000	n/a	n/a
%RSD		1.928	1.096	┬0.408	1.501	0.000	0.310	1.580

CCB 1035925 5/10/2017 6:28:28 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:28:50	92.239%	0.008	1.341	1.424	2.350	2.215	4.631	25.580	99.426%	0.000	0.360	0.014
2	18:29:12	90.923%	-0.093	1.759	0.869	1.688	2.077	5.383	23.410	99.673%	0.000	0.202	0.042
3	18:29:34	91.422%	-0.042	0.709	0.734	1.877	2.212	4.576	24.380	99.938%	0.000	0.214	0.081
x		91.528%	-0.042	1.270	1.009	1.972	2.168	4.863	24.450	99.679%	0.000	0.258	0.046
σ		0.664%	0.050	0.528	0.366	0.341	0.079	0.451	1.086	0.256%	0.000	0.088	0.034
%RSD		0.726	119.400	41.620	36.260	17.280	3.647	9.268	4.443	0.257	0.000	34.050	73.510
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:28:50	5.373	0.107	5.833	0.027	0.075	0.138	0.298	-2.041	0.391	0.027	0.000	0.000
2	18:29:12	5.394	0.105	5.715	0.026	0.074	0.126	0.287	-2.105	0.407	0.395	0.000	0.000
3	18:29:34	5.370	0.065	6.870	0.045	0.058	0.122	0.311	-2.165	0.400	0.502	0.000	0.000
x		5.379	0.092	6.139	0.033	0.069	0.129	0.299	-2.104	0.399	0.308	0.000	0.000
σ		0.013	0.023	0.635	0.011	0.010	0.008	0.012	0.062	0.008	0.249	0.000	0.000
%RSD		0.243	25.500	10.350	33.350	13.860	6.363	4.088	2.938	2.088	80.880	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:28:50	0.008	96.445%	0.134	0.001	-1.366	0.003	98.036%	0.000	0.094	0.019	0.118	98.052%
2	18:29:12	0.002	96.612%	0.124	0.002	-1.342	0.009	96.694%	0.000	0.099	0.017	0.060	98.445%
3	18:29:34	0.013	96.960%	0.111	0.009	-1.304	-0.003	96.935%	0.000	0.095	0.017	0.054	96.160%
x		0.007	96.672%	0.123	0.004	-1.337	0.003	97.222%	0.000	0.096	0.018	0.077	97.552%
σ		0.006	0.263%	0.011	0.004	0.031	0.006	0.716%	0.000	0.003	0.001	0.035	1.222%
%RSD		74.520	0.272	9.213	99.730	2.350	184.800	0.736	0.000	2.783	6.541	45.770	1.253

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	18:28:50	0.004	0.060	0.114	95.489%	0.000	0.000	0.002
2	18:29:12	0.007	0.048	0.093	95.620%	0.000	0.001	0.001
3	18:29:34	-0.002	0.039	0.111	95.358%	0.000	0.002	0.001
x		0.003	0.049	0.106	95.489%	0.000	0.001	0.001
σ		0.005	0.010	0.011	0.131%	0.000	0.001	0.001
%RSD		152.800	21.030	10.800	0.137	0.000	92.550	56.070

CCVL 1037148 5/10/2017 6:34:10 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:34:32	95.433%	1.330	43.540	T549.100	197.100	52.610	T550.500	479.000	103.142%	0.000	4.829	4.253
2	18:34:53	94.976%	1.047	44.190	T532.300	195.100	52.360	T545.400	485.500	104.400%	0.000	4.701	4.117
3	18:35:14	93.413%	0.832	41.940	T544.200	204.500	52.740	T551.600	498.500	102.282%	0.000	5.063	4.240
x		94.607%	106.970%	108.059%	T108.368%	99.452%	105.136%	T109.837%	97.536%	103.275%	0.000	97.285%	105.086%
σ		1.059%	n/a	n/a	Tn/a	n/a	n/a	Tn/a	n/a	1.065%	0.000	n/a	n/a
%RSD		1.119	23.350	2.675	T1.597	2.487	0.361	T0.603	2.037	1.031	0.000	3.771	1.779

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:34:32	8.208	1.934	211.700	0.999	2.165	5.124	18.470	2.069	0.582	3.993	0.000	0.000
2	18:34:53	8.260	1.910	206.000	0.959	2.029	5.071	18.670	2.134	0.589	4.018	0.000	0.000
3	18:35:14	8.001	2.050	213.000	1.017	2.311	5.452	19.730	2.173	0.576	4.075	0.000	0.000
x		8.156	98.230%	105.111%	99.135%	108.419%	104.314%	94.779%	106.271%	0.583	100.717%	0.000	0.000
σ		0.137	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.007	n/a	0.000	0.000
%RSD		1.684	3.825	1.763	2.987	6.504	3.959	3.552	2.471	1.129	1.046	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:34:32	4.732	98.979%	9.313	1.063	-0.936	0.952	98.802%	0.000	1.899	1.770	9.995	97.820%
2	18:34:53	4.585	98.369%	9.132	1.047	-1.427	1.093	98.849%	0.000	1.852	1.809	9.870	98.342%
3	18:35:14	4.554	98.718%	9.103	1.098	-1.732	1.020	100.005%	0.000	1.943	1.770	10.140	100.223%
x		92.471%	98.689%	91.828%	106.911%	-1.365	102.149%	99.219%	0.000	1.898	89.156%	100.031%	98.795%
σ		n/a	0.306%	n/a	n/a	0.402	n/a	0.681%	0.000	0.046	n/a	n/a	1.264%
%RSD		2.052	0.310	1.240	2.435	29.440	6.885	0.687	0.000	2.422	1.271	1.370	1.279

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:34:32	2.458	1.769	1.055	94.340%	0.000	1.855	0.935
2	18:34:53	2.443	1.814	1.056	93.842%	0.000	1.895	0.942
3	18:35:14	2.445	1.750	1.049	95.825%	0.000	1.912	0.905
x		122.422%	88.892%	105.339%	94.669%	0.000	94.356%	92.704%
σ		n/a	n/a	n/a	1.032%	0.000	n/a	n/a
%RSD		0.343	1.860	0.363	1.090	0.000	1.549	2.140

200-38498-A-9-A 5/10/2017 6:39:55 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:40:18	88.699%	2.463	27.170	274.400	T17060.000	T48310.000	T5608.000	T40660.000	110.022%	0.000	62.430	70.430
2	18:40:40	90.571%	2.355	26.970	T311.100	T17090.000	T47990.000	T5617.000	T40160.000	111.570%	0.000	61.990	69.000
3	18:41:02	90.362%	2.614	28.180	T311.000	T16830.000	T47300.000	T5510.000	T40360.000	112.893%	0.000	61.910	68.470
		89.878%	2.477	27.440	T298.800	T16990.000	T47870.000	T5578.000	T40390.000	111.495%	0.000	62.110	69.300

x													
σ		1.026%	0.130	0.647	ᵀ21.170	ᵀ144.300	ᵀ517.900	ᵀ59.080	ᵀ250.600	1.437%	0.000	0.278	1.013
%RSD		1.141	5.254	2.358	ᵀ7.085	ᵀ0.849	ᵀ1.082	ᵀ1.059	ᵀ0.621	1.289	0.000	0.448	1.462
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:40:18	14.060	ᵀ3460.000	ᵀ99050.000	35.600	93.120	995.800	635.400	16.780	0.219	2.460	0.000	0.000
2	18:40:40	13.910	ᵀ3425.000	ᵀ99400.000	35.290	92.530	991.400	637.300	16.830	0.202	2.907	0.000	0.000
3	18:41:02	13.660	ᵀ3440.000	ᵀ98110.000	35.320	93.400	994.700	631.500	16.890	0.219	2.550	0.000	0.000
x		13.880	ᵀ3442.000	ᵀ98850.000	35.410	93.020	994.000	634.700	16.840	0.213	2.639	0.000	0.000
σ		0.204	ᵀ17.700	ᵀ665.300	0.167	0.444	2.298	2.936	0.056	0.010	0.237	0.000	0.000
%RSD		1.472	ᵀ0.514	ᵀ0.673	0.473	0.477	0.231	0.463	0.331	4.523	8.963	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:40:18	85.610	184.482%	1.184	0.494	-3.915	3.317	98.823%	0.000	1.233	1.132	517.900	112.818%
2	18:40:40	86.570	186.452%	1.102	0.449	-4.086	3.411	99.160%	0.000	1.195	1.167	521.100	112.449%
3	18:41:02	86.920	186.582%	1.146	0.473	-4.512	3.404	99.128%	0.000	1.210	1.174	530.600	117.095%
x		86.370	185.838%	1.144	0.472	-4.171	3.377	99.037%	0.000	1.213	1.157	523.200	114.121%
σ		0.678	1.177%	0.041	0.022	0.308	0.052	0.186%	0.000	0.019	0.023	6.623	2.583%
%RSD		0.785	0.633	3.594	4.752	7.376	1.546	0.188	0.000	1.561	1.955	1.266	2.263
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	18:40:18	0.216	0.459	210.600	97.922%	0.000	15.740	2.601					
2	18:40:40	0.200	0.444	206.100	100.650%	0.000	15.880	2.558					
3	18:41:02	0.208	0.452	205.900	101.524%	0.000	15.800	2.605					
x		0.208	0.451	207.600	100.032%	0.000	15.810	2.588					
σ		0.008	0.008	2.666	1.879%	0.000	0.067	0.026					
%RSD		3.892	1.669	1.285	1.878	0.000	0.423	1.015					

200-38498-A-11-A 5/10/2017 6:45:40 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:46:02	91.131%	3.819	28.840	T 282.400	T 17330.000	T 73150.000	T 4642.000	10060.000	117.383%	0.000	82.730	73.630
2	18:46:24	92.194%	3.592	29.960	T 282.500	T 17590.000	T 73560.000	T 4601.000	9943.000	117.919%	0.000	81.480	72.230
3	18:46:45	88.060%	4.085	29.800	240.900	T 17400.000	T 72350.000	T 4578.000	10020.000	117.921%	0.000	83.350	73.810
x		90.462%	3.832	29.530	T 268.600	T 17440.000	T 73020.000	T 4607.000	10010.000	117.741%	0.000	82.520	73.220
σ		2.147%	0.247	0.605	T 23.980	T 132.000	T 612.200	T 32.120	61.150	0.310%	0.000	0.952	0.864
%RSD		2.373	6.444	2.049	T 8.928	T 0.757	T 0.838	T 0.697	0.611	0.263	0.000	1.153	1.179

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:46:02	11.050	T 1299.000	T 83440.000	37.190	112.900	144.500	294.200	9.819	0.175	1.586	0.000	0.000
2	18:46:24	11.770	T 1307.000	T 84340.000	37.740	115.200	143.300	292.500	9.754	0.152	1.901	0.000	0.000
3	18:46:45	11.260	T 1309.000	T 84940.000	37.220	111.000	140.500	289.500	9.672	0.158	1.266	0.000	0.000
x		11.360	T 1305.000	T 84240.000	37.380	113.000	142.800	292.100	9.748	0.161	1.585	0.000	0.000
σ		0.368	T 5.256	T 750.700	0.307	2.081	2.052	2.392	0.074	0.012	0.317	0.000	0.000
%RSD		3.237	T 0.403	T 0.891	0.822	1.841	1.437	0.819	0.756	7.342	20.020	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:46:02	57.670	228.082%	1.842	0.302	-5.344	1.185	99.040%	0.000	0.473	0.365	558.500	117.986%
2	18:46:24	57.380	231.700%	1.839	0.340	-5.169	1.169	101.308%	0.000	0.429	0.349	558.400	120.719%
3	18:46:45	57.500	231.874%	1.828	0.323	-5.057	1.186	100.423%	0.000	0.483	0.374	557.300	122.127%
x		57.520	230.552%	1.837	0.322	-5.190	1.180	100.257%	0.000	0.462	0.363	558.100	120.277%
σ		0.144	2.141%	0.007	0.019	0.145	0.009	1.143%	0.000	0.029	0.012	0.645	2.105%
%RSD		0.250	0.929	0.399	5.933	2.788	0.784	1.140	0.000	6.214	3.444	0.116	1.750

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:46:02	0.084	0.677	66.290	102.605%	0.000	19.390	6.141
2	18:46:24	0.099	0.632	66.460	102.670%	0.000	19.900	6.247
3	18:46:45	0.100	0.659	66.300	104.022%	0.000	19.530	6.127
x		0.094	0.656	66.350	103.099%	0.000	19.610	6.172
σ		0.009	0.023	0.096	0.800%	0.000	0.262	0.066
%RSD		9.273	3.443	0.144	0.776	0.000	1.338	1.062

MB 200-116492/1-A 5/10/2017 6:51:25 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:51:48	97.598%	-0.078	0.338	75.750	2.083	8.307	9.088	144.000	110.460%	0.000	0.153	0.148
2	18:52:10	96.445%	-0.076	0.596	76.290	2.242	7.202	8.018	138.000	111.785%	0.000	0.208	0.090
3	18:52:31	98.913%	-0.128	-0.298	70.360	2.054	6.731	5.928	138.800	112.120%	0.000	0.182	0.113
x		97.652%	-0.094	0.212	74.140	2.126	7.413	7.678	140.200	111.455%	0.000	0.181	0.117
σ		1.235%	0.029	0.460	3.280	0.101	0.809	1.607	3.229	0.878%	0.000	0.027	0.029
%RSD		1.264	31.170	217.000	4.424	4.752	10.910	20.930	2.302	0.788	0.000	15.110	25.160

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:51:48	5.199	0.089	19.160	-0.005	0.029	0.368	0.583	-2.088	0.397	0.278	0.000	0.000
2	18:52:10	5.237	0.060	16.090	-0.013	-0.018	0.338	0.582	-2.031	0.389	0.446	0.000	0.000

3	18:52:31	5.155	0.058	15.660	-0.015	-0.026	0.315	0.553	-2.210	0.416	-0.327	0.000	0.000
x		5.197	0.069	16.970	-0.011	-0.005	0.341	0.573	-2.109	0.401	0.133	0.000	0.000
σ		0.041	0.018	1.910	0.005	0.030	0.027	0.017	0.092	0.014	0.406	0.000	0.000
%RSD		0.783	25.800	11.250	45.120	604.700	7.802	2.913	4.338	3.397	306.600	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:51:48	0.068	101.585%	-0.040	-0.005	-1.642	0.012	101.275%	0.000	0.066	-0.006	0.006	98.104%
2	18:52:10	0.087	104.324%	-0.039	-0.004	-1.318	-0.009	101.594%	0.000	0.065	-0.006	0.035	99.648%
3	18:52:31	0.083	102.853%	-0.036	-0.002	-1.132	-0.011	102.873%	0.000	0.064	-0.006	-0.005	98.923%
x		0.080	102.921%	-0.038	-0.003	-1.364	-0.003	101.914%	0.000	0.065	-0.006	0.012	98.891%
σ		0.010	1.371%	0.003	0.001	0.258	0.013	0.846%	0.000	0.001	0.000	0.020	0.773%
%RSD		12.750	1.332	6.602	41.620	18.910	446.700	0.830	0.000	1.493	4.564	169.600	0.782

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:51:48	0.015	-0.038	0.022	90.699%	0.000	0.001	0.001
2	18:52:10	0.015	-0.045	0.018	91.803%	0.000	0.000	0.000
3	18:52:31	0.020	-0.045	0.014	93.100%	0.000	0.000	0.000
x		0.017	-0.043	0.018	91.867%	0.000	0.000	0.000
σ		0.003	0.004	0.004	1.202%	0.000	0.001	0.001
%RSD		17.660	9.742	23.080	1.308	0.000	131.300	120.200

LCS 200-116492/2-A 5/10/2017 6:57:12 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:57:33	94.998%	10.200	423.000	T 5395.000	1996.000	T 555.600	T 5422.000	4778.000	103.789%	0.000	47.930	39.280
2	18:57:55	95.372%	9.931	429.700	T 5429.000	2028.000	526.800	T 5524.000	4693.000	103.873%	0.000	48.120	39.930
3	18:58:16	93.552%	10.130	452.000	T 5501.000	2030.000	514.100	T 5403.000	4691.000	104.034%	0.000	49.170	40.410
x		94.641%	10.090	434.900	T 5442.000	2018.000	T 532.200	T 5450.000	4721.000	103.899%	0.000	48.410	39.870
σ		0.961%	0.141	15.170	T 54.250	18.660	T 21.290	T 65.020	49.820	0.125%	0.000	0.666	0.565
%RSD		1.016	1.396	3.488	T 0.997	0.925	T 4.000	T 1.193	1.055	0.120	0.000	1.375	1.418

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:57:33	6.681	19.240	T 2278.000	9.416	20.810	48.590	181.900	38.570	0.463	37.970	0.000	0.000
2	18:57:55	6.785	19.830	T 2305.000	9.579	20.600	49.960	181.800	38.170	0.460	38.090	0.000	0.000
3	18:58:16	5.945	19.360	T 2280.000	9.619	20.920	50.170	181.900	38.080	0.495	39.650	0.000	0.000
x		6.470	19.480	T 2288.000	9.538	20.780	49.570	181.900	38.280	0.473	38.570	0.000	0.000
σ		0.458	0.315	T 15.000	0.108	0.163	0.856	0.048	0.262	0.019	0.941	0.000	0.000
%RSD		7.078	1.617	T 0.656	1.129	0.786	1.727	0.026	0.683	4.064	2.440	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:57:33	46.740	99.152%	93.470	10.920	2.033	9.990	98.868%	0.000	18.610	17.960	102.900	98.771%
2	18:57:55	45.450	99.401%	93.810	10.740	0.304	10.150	101.656%	0.000	18.490	17.650	104.100	100.923%
3	18:58:16	45.940	98.622%	94.200	10.570	0.621	10.110	101.665%	0.000	18.120	17.670	102.800	101.110%
x		46.050	99.058%	93.830	10.750	0.986	10.080	100.730%	0.000	18.410	17.760	103.300	100.268%
σ		0.650	0.398%	0.370	0.175	0.920	0.082	1.612%	0.000	0.255	0.174	0.746	1.300%
%RSD		1.412	0.401	0.394	1.631	93.360	0.814	1.601	0.000	1.386	0.978	0.722	1.296

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb

1	18:57:33	25.550	18.500	9.767	94.759%	0.000	19.870	9.761
2	18:57:55	25.650	18.320	9.698	96.961%	0.000	19.690	9.846
3	18:58:16	25.820	18.630	9.835	96.664%	0.000	20.000	9.911
x		25.670	18.480	9.767	96.128%	0.000	19.850	9.840
σ		0.135	0.155	0.068	1.195%	0.000	0.157	0.075
%RSD		0.526	0.841	0.698	1.243	0.000	0.788	0.763

200-38498-A-10-A 5/10/2017 7:02:55 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:03:18	93.846%	-0.089	8.391	154.900	7.090	4.683	17.990	71.070	106.937%	0.000	0.000	0.207
2	19:03:40	94.023%	-0.123	7.917	169.300	8.019	4.502	20.120	71.360	104.836%	0.000	-0.099	0.266
3	19:04:01	93.914%	-0.164	7.513	168.100	6.460	4.852	20.680	70.970	105.133%	0.000	0.166	0.321
x		93.928%	-0.125	7.940	164.100	7.190	4.679	19.600	71.130	105.635%	0.000	0.022	0.264
σ		0.089%	0.038	0.439	7.992	0.784	0.175	1.423	0.201	1.137%	0.000	0.134	0.057
%RSD		0.095	30.270	5.534	4.870	10.900	3.741	7.261	0.282	1.076	0.000	596.000	21.520

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:03:18	6.852	2.227	14.370	0.013	0.182	6.112	2.424	-1.839	0.496	0.484	0.000	0.000
2	19:03:40	7.272	2.361	15.910	0.007	0.189	6.556	2.472	-2.078	0.516	0.375	0.000	0.000
3	19:04:01	6.950	2.293	15.620	0.008	0.125	6.723	2.372	-1.894	0.503	0.204	0.000	0.000
x		7.025	2.294	15.300	0.009	0.165	6.464	2.423	-1.937	0.505	0.354	0.000	0.000
σ		0.220	0.067	0.820	0.003	0.035	0.316	0.050	0.125	0.010	0.141	0.000	0.000
%RSD		3.133	2.924	5.357	35.630	21.290	4.893	2.058	6.462	2.034	39.880	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:03:18	0.134	101.089%	0.096	0.013	-1.491	0.018	98.518%	0.000	0.088	0.011	0.217	97.433%
2	19:03:40	0.110	100.064%	0.106	0.013	-1.305	-0.003	99.399%	0.000	0.087	0.015	0.264	98.923%
3	19:04:01	0.115	99.341%	0.088	0.007	-1.402	0.025	99.053%	0.000	0.089	0.019	0.251	96.269%
x		0.120	100.165%	0.096	0.011	-1.399	0.014	98.990%	0.000	0.088	0.015	0.244	97.542%
σ		0.012	0.878%	0.009	0.003	0.093	0.015	0.444%	0.000	0.001	0.004	0.024	1.330%
%RSD		10.340	0.877	9.410	30.800	6.634	107.800	0.449	0.000	1.186	27.500	9.907	1.364

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:03:18	0.281	-0.005	0.069	92.157%	0.000	0.021	0.012
2	19:03:40	0.301	-0.010	0.070	92.493%	0.000	0.020	0.012
3	19:04:01	0.312	-0.014	0.078	92.995%	0.000	0.026	0.009
x		0.298	-0.010	0.072	92.548%	0.000	0.022	0.011
σ		0.016	0.005	0.005	0.422%	0.000	0.003	0.002
%RSD		5.370	47.340	6.813	0.456	0.000	13.200	15.180

200-38498-A-10-A SD@5 5/10/2017 7:08:38 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:08:59	91.935%	-0.103	0.498	21.730	-0.157	0.083	12.190	48.470	101.881%	0.000	0.279	0.136
2	19:09:21	91.874%	-0.111	-0.990	15.820	-0.145	0.102	12.430	33.510	102.969%	0.000	-0.187	0.044
3	19:09:43	92.331%	-0.044	-0.185	19.040	-0.042	0.240	12.910	36.690	101.581%	0.000	0.189	0.103
		92.047%	-0.086	-0.226	18.860	-0.115	0.142	12.510	39.560	102.144%	0.000	0.094	0.094

x													
σ		0.249%	0.037	0.745	2.962	0.063	0.086	0.368	7.882	0.731%	0.000	0.248	0.047
%RSD		0.270	42.950	330.000	15.700	55.410	60.480	2.942	19.930	0.715	0.000	264.200	49.550
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:08:59	7.545	0.427	9.194	-0.012	-0.054	1.342	0.737	-2.209	0.580	0.065	0.000	0.000
2	19:09:21	8.017	0.443	7.311	-0.010	-0.002	1.291	0.699	-1.842	0.543	0.465	0.000	0.000
3	19:09:43	7.707	0.460	10.790	-0.017	-0.065	1.368	0.769	-1.838	0.533	0.907	0.000	0.000
x		7.756	0.443	9.100	-0.013	-0.040	1.334	0.735	-1.963	0.552	0.479	0.000	0.000
σ		0.240	0.016	1.743	0.004	0.034	0.039	0.035	0.213	0.025	0.422	0.000	0.000
%RSD		3.094	3.696	19.160	28.100	83.990	2.934	4.768	10.850	4.516	88.030	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:08:59	0.011	96.596%	-0.047	-0.001	-1.560	0.009	94.863%	0.000	0.073	-0.008	0.005	92.648%
2	19:09:21	0.010	95.449%	-0.045	-0.005	-1.362	-0.009	96.107%	0.000	0.065	-0.011	-0.032	93.711%
3	19:09:43	0.009	98.728%	-0.049	-0.004	-1.530	0.010	97.431%	0.000	0.067	-0.008	-0.017	95.557%
x		0.010	96.924%	-0.047	-0.003	-1.484	0.003	96.133%	0.000	0.068	-0.009	-0.014	93.972%
σ		0.001	1.664%	0.002	0.002	0.107	0.011	1.284%	0.000	0.004	0.002	0.018	1.472%
%RSD		9.792	1.717	4.147	49.270	7.215	330.000	1.336	0.000	6.071	17.410	127.200	1.566
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	19:08:59	0.052	-0.041	0.002	88.452%	0.000	-0.000	-0.000					
2	19:09:21	0.051	-0.044	0.005	89.778%	0.000	-0.001	0.000					
3	19:09:43	0.059	-0.038	0.010	89.482%	0.000	-0.001	-0.000					
x		0.054	-0.041	0.006	89.237%	0.000	-0.001	-0.000					
σ		0.004	0.003	0.004	0.696%	0.000	0.001	0.000					
%RSD		8.262	7.694	61.900	0.780	0.000	75.630	102.300					

200-38498-A-10-A PDS 5/10/2017 7:14:21 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:14:43	92.669%	10.650	423.300	T 5542.000	2015.000	527.200	T 5455.000	4767.000	102.773%	0.000	48.030	39.640
2	19:15:05	91.343%	11.170	436.700	T 5559.000	2006.000	T 564.800	T 5416.000	4743.000	103.903%	0.000	48.540	39.610
3	19:15:26	91.990%	10.630	434.300	T 5606.000	2031.000	529.900	T 5448.000	4705.000	102.557%	0.000	48.180	39.990
x		92.001%	10.810	431.400	T 5569.000	2017.000	T 540.600	T 5440.000	4738.000	103.077%	0.000	48.250	39.750
σ		0.663%	0.305	7.138	T 33.010	12.940	T 20.980	T 20.800	31.380	0.723%	0.000	0.262	0.214
%RSD		0.721	2.818	1.654	T 0.593	0.642	T 3.880	T 0.382	0.662	0.701	0.000	0.543	0.537

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:14:43	6.936	21.540	T 2296.000	9.617	20.720	56.280	180.700	37.570	0.491	37.580	0.000	0.000
2	19:15:05	6.020	21.020	T 2298.000	9.544	20.800	56.280	182.300	37.790	0.473	38.680	0.000	0.000
3	19:15:26	6.446	21.670	T 2289.000	9.565	21.320	57.550	183.800	37.160	0.497	36.350	0.000	0.000
x		6.467	21.410	T 2294.000	9.576	20.950	56.710	182.300	37.510	0.487	37.540	0.000	0.000
σ		0.458	0.343	T 4.903	0.037	0.329	0.733	1.533	0.319	0.013	1.164	0.000	0.000
%RSD		7.087	1.601	T 0.214	0.390	1.568	1.293	0.841	0.851	2.590	3.100	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:14:43	46.870	98.393%	93.180	10.910	-0.651	10.190	97.722%	0.000	18.410	17.710	103.000	99.735%
2	19:15:05	46.320	97.975%	93.320	10.700	1.381	10.520	100.002%	0.000	18.150	17.510	100.500	99.258%
3	19:15:26	46.160	98.899%	92.990	10.650	-0.835	10.290	100.281%	0.000	18.150	17.640	100.800	99.013%
x		46.450	98.423%	93.160	10.750	-0.035	10.340	99.335%	0.000	18.240	17.620	101.400	99.335%
σ		0.374	0.463%	0.168	0.137	1.230	0.167	1.404%	0.000	0.151	0.100	1.328	0.367%
%RSD		0.805	0.470	0.181	1.269	3499.000	1.614	1.414	0.000	0.828	0.569	1.310	0.370

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:14:43	24.600	18.070	9.732	93.794%	0.000	19.160	9.353
2	19:15:05	24.730	18.550	9.959	94.410%	0.000	19.160	9.500
3	19:15:26	24.780	18.760	9.841	94.362%	0.000	19.640	9.688
x		24.700	18.460	9.844	94.189%	0.000	19.320	9.514
σ		0.092	0.357	0.114	0.342%	0.000	0.277	0.168
%RSD		0.373	1.934	1.153	0.364	0.000	1.433	1.768

200-38498-A-10-B MS 5/10/2017 7:20:05 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:20:27	92.639%	10.410	444.200	T 5455.000	1999.000	T 573.200	T 5419.000	4682.000	104.125%	0.000	48.710	39.390
2	19:20:48	91.212%	11.010	457.300	T 5612.000	2060.000	533.000	T 5475.000	4778.000	102.657%	0.000	48.090	39.530
3	19:21:09	91.276%	10.790	459.600	T 5669.000	2069.000	T 586.900	T 5557.000	4819.000	101.541%	0.000	49.670	40.420
x		91.709%	10.740	453.700	T 5579.000	2043.000	T 564.400	T 5483.000	4760.000	102.774%	0.000	48.820	39.780
σ		0.806%	0.303	8.301	T 110.700	37.940	T 27.990	T 69.420	70.700	1.296%	0.000	0.795	0.562
%RSD		0.879	2.825	1.830	T 1.984	1.857	T 4.959	T 1.266	1.485	1.261	0.000	1.628	1.412

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:20:27	6.216	21.260	T 2294.000	9.599	21.240	55.210	178.600	38.410	0.444	38.690	0.000	0.000
2	19:20:48	6.135	22.140	T 2326.000	9.933	21.550	58.360	186.600	37.900	0.453	37.740	0.000	0.000

3	19:21:09	5.802	22.480	T 2358.000	9.823	22.140	58.090	187.800	37.870	0.471	37.500	0.000	0.000
x		6.051	21.960	T 2326.000	9.785	21.640	57.220	184.400	38.060	0.456	37.980	0.000	0.000
σ		0.220	0.629	T 32.280	0.170	0.461	1.746	4.994	0.303	0.014	0.631	0.000	0.000
%RSD		3.631	2.864	T 1.388	1.738	2.129	3.051	2.709	0.796	3.039	1.663	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:20:27	47.040	99.033%	93.990	10.980	-0.324	10.120	98.268%	0.000	18.360	18.100	102.800	100.190%
2	19:20:48	47.590	100.535%	93.760	10.820	-1.212	10.260	99.692%	0.000	18.370	18.040	103.700	101.881%
3	19:21:09	47.310	99.740%	95.030	11.070	-0.818	10.080	99.649%	0.000	18.750	18.080	103.600	100.777%
x		47.310	99.769%	94.260	10.960	-0.785	10.150	99.203%	0.000	18.490	18.070	103.400	100.950%
σ		0.272	0.751%	0.679	0.127	0.445	0.097	0.810%	0.000	0.222	0.029	0.505	0.858%
%RSD		0.575	0.753	0.721	1.159	56.710	0.953	0.816	0.000	1.199	0.160	0.489	0.850

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:20:27	25.730	18.700	9.870	93.724%	0.000	20.670	10.260
2	19:20:48	25.780	18.580	9.831	97.280%	0.000	20.080	9.853
3	19:21:09	25.490	17.980	9.738	98.132%	0.000	19.690	9.701
x		25.660	18.420	9.813	96.379%	0.000	20.140	9.937
σ		0.157	0.388	0.068	2.338%	0.000	0.494	0.287
%RSD		0.610	2.105	0.690	2.426	0.000	2.452	2.891

200-38498-A-10-C MSD 5/10/2017 7:25:47 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:26:09	92.351%	10.380	439.000	T 5464.000	2011.000	526.500	T 5371.000	4714.000	103.024%	0.000	47.320	39.320
2	19:26:30	91.233%	10.560	455.600	T 5636.000	2017.000	523.700	T 5390.000	4724.000	101.859%	0.000	48.950	39.830
3	19:26:52	92.990%	10.300	439.700	T 5587.000	2047.000	T 581.500	T 5534.000	4801.000	101.058%	0.000	48.950	41.080
x		92.191%	10.410	444.700	T 5562.000	2025.000	T 543.900	T 5432.000	4746.000	101.981%	0.000	48.410	40.070
σ		0.889%	0.131	9.379	T 88.220	19.120	T 32.590	T 88.980	47.170	0.988%	0.000	0.941	0.910
%RSD		0.965	1.261	2.109	T 1.586	0.944	T 5.992	T 1.638	0.994	0.969	0.000	1.943	2.270
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:26:09	5.900	21.900	T 2283.000	9.411	20.570	56.290	180.500	37.010	0.442	37.560	0.000	0.000
2	19:26:30	5.624	22.630	T 2321.000	9.535	21.000	58.360	186.100	38.250	0.423	38.000	0.000	0.000
3	19:26:52	5.870	23.070	T 2366.000	9.876	21.170	57.210	189.500	37.690	0.436	38.150	0.000	0.000
x		5.798	22.530	T 2324.000	9.607	20.910	57.290	185.400	37.650	0.434	37.900	0.000	0.000
σ		0.152	0.591	T 41.520	0.241	0.307	1.040	4.528	0.623	0.010	0.309	0.000	0.000
%RSD		2.617	2.624	T 1.787	2.503	1.469	1.815	2.443	1.654	2.240	0.816	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:26:09	46.640	99.445%	93.130	10.510	-0.261	10.390	99.706%	0.000	17.990	17.490	98.570	99.039%
2	19:26:30	47.010	97.593%	94.680	10.730	1.542	10.140	98.810%	0.000	18.210	17.940	99.960	100.358%
3	19:26:52	46.780	98.513%	93.510	10.800	-0.008	10.260	100.125%	0.000	18.420	17.930	100.900	100.503%
x		46.810	98.517%	93.770	10.680	0.425	10.260	99.547%	0.000	18.200	17.790	99.800	99.967%
σ		0.187	0.926%	0.809	0.149	0.976	0.129	0.672%	0.000	0.214	0.256	1.160	0.807%
%RSD		0.399	0.940	0.863	1.396	229.800	1.255	0.675	0.000	1.173	1.437	1.163	0.807

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	19:26:09	25.550	18.090	9.876	94.349%	0.000	20.210	10.060
2	19:26:30	25.510	18.170	9.795	95.314%	0.000	20.170	9.557
3	19:26:52	26.120	18.280	9.828	96.952%	0.000	19.990	9.954
x		25.730	18.180	9.833	95.538%	0.000	20.120	9.855
σ		0.343	0.095	0.041	1.316%	0.000	0.118	0.264
%RSD		1.331	0.522	0.413	1.378	0.000	0.587	2.674

MB 200-116422/1-A 5/10/2017 7:31:31 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:31:53	93.294%	-0.122	5.946	73.740	-0.398	0.261	0.938	32.040	103.486%	0.000	-0.020	-0.032
2	19:32:15	91.569%	-0.119	4.972	76.480	-1.050	0.259	-1.223	27.390	102.920%	0.000	0.193	-0.002
3	19:32:38	91.733%	-0.094	5.313	71.670	-0.378	0.364	1.215	39.450	101.806%	0.000	0.303	0.014
x		92.199%	-0.112	5.410	73.970	-0.608	0.295	0.310	32.960	102.737%	0.000	0.159	-0.006
σ		0.952%	0.015	0.494	2.411	0.382	0.060	1.335	6.079	0.854%	0.000	0.165	0.023
%RSD		1.033	13.840	9.132	3.259	62.830	20.320	431.000	18.440	0.832	0.000	103.700	361.800
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:31:53	5.704	-0.010	5.285	-0.016	-0.033	0.128	0.339	-2.088	0.430	0.369	0.000	0.000
2	19:32:15	5.276	-0.034	5.854	-0.016	-0.028	0.176	0.389	-1.844	0.396	0.641	0.000	0.000
3	19:32:38	5.283	-0.027	5.494	-0.012	-0.034	0.172	0.434	-2.206	0.431	-0.074	0.000	0.000
x		5.421	-0.024	5.544	-0.015	-0.032	0.159	0.388	-2.046	0.419	0.312	0.000	0.000
σ		0.245	0.013	0.288	0.002	0.003	0.027	0.048	0.184	0.020	0.361	0.000	0.000
%RSD		4.515	53.610	5.186	14.580	10.020	16.940	12.270	9.014	4.795	115.700	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:31:53	0.017	97.812%	-0.035	-0.003	-1.514	0.001	97.731%	0.000	0.066	-0.006	-0.037	94.787%
2	19:32:15	0.011	98.847%	-0.022	-0.002	-1.504	-0.000	97.628%	0.000	0.067	-0.003	-0.032	97.030%
3	19:32:38	0.016	97.762%	-0.015	-0.001	-2.067	0.058	99.578%	0.000	0.064	-0.003	-0.018	100.042%
x		0.014	98.141%	-0.024	-0.002	-1.695	0.020	98.312%	0.000	0.066	-0.004	-0.029	97.286%
σ		0.004	0.613%	0.010	0.001	0.322	0.033	1.097%	0.000	0.002	0.002	0.010	2.637%
%RSD		24.290	0.624	41.250	56.590	18.990	171.200	1.116	0.000	2.307	45.050	34.750	2.710
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	19:31:53	0.028	-0.020	0.012	93.440%	0.000	0.003	0.000					
2	19:32:15	0.012	-0.023	-0.004	95.257%	0.000	0.002	0.001					
3	19:32:38	0.015	-0.019	-0.007	92.192%	0.000	0.002	0.002					
x		0.018	-0.021	0.000	93.630%	0.000	0.002	0.001					
σ		0.008	0.002	0.011	1.541%	0.000	0.000	0.001					
%RSD		46.390	9.065	3507.000	1.646	0.000	17.970	99.240					

CCV 1037150 5/10/2017 7:37:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:37:37	86.833%	663.500	266.500	T 10710.000	T 33070.000	T 33320.000	T 10690.000	T 31750.000	92.724%	0.000	T 1399.000	394.300
2	19:37:59	86.066%	666.300	263.900	T 10560.000	T 32600.000	T 33430.000	T 10530.000	T 31810.000	91.801%	0.000	T 1413.000	398.400
3	19:38:22	86.283%	655.800	266.700	T 10290.000	T 31630.000	T 31880.000	T 10360.000	T 31340.000	93.853%	0.000	T 1376.000	385.600
		86.394%	105.892%	106.279%	T 105.197%	T 108.106%	T 109.601%	T 105.272%	T 105.442%	92.793%	0.000	T 111.664%	98.197%

x													
σ		0.396%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.028%	0.000	T n/a	n/a
%RSD		0.458	0.821	0.588	T 2.036	T 2.252	T 2.628	T 1.599	T 0.814	1.108	0.000	T 1.316	1.669
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:37:37	6.646	T 1384.000	T 33260.000	T 558.500	1301.000	1255.000	1255.000	205.100	0.382	211.900	0.000	0.000
2	19:37:59	6.074	T 1391.000	T 33530.000	T 559.200	1303.000	1258.000	1257.000	203.600	0.463	210.700	0.000	0.000
3	19:38:22	4.950	T 1338.000	T 32320.000	474.700	1271.000	1208.000	1218.000	199.300	0.453	207.000	0.000	0.000
x		5.890	T 109.673%	T 110.118%	T 106.157%	103.329%	99.215%	99.482%	101.345%	0.433	104.939%	0.000	0.000
σ		0.863	T n/a	T n/a	T n/a	n/a	n/a	n/a	n/a	0.044	n/a	0.000	0.000
%RSD		14.650	T 2.073	T 1.923	T 9.158	1.362	2.249	1.803	1.478	10.150	1.212	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:37:37	189.400	93.228%	T 1337.000	103.800	19.050	209.600	93.329%	0.000	242.600	235.700	1283.000	97.049%
2	19:37:59	184.900	93.216%	T 1321.000	103.100	20.150	207.400	94.899%	0.000	239.900	235.200	1267.000	101.252%
3	19:38:22	182.400	94.009%	T 1314.000	102.500	15.870	205.300	94.859%	0.000	237.100	234.600	1278.000	100.874%
x		185.500	93.485%	T 105.947%	103.134%	18.360	103.708%	94.362%	0.000	239.900	94.063%	102.092%	99.725%
σ		3.529	0.454%	T n/a	n/a	2.222	n/a	0.895%	0.000	2.768	n/a	n/a	2.325%
%RSD		1.902	0.486	T 0.898	0.602	12.100	1.029	0.948	0.000	1.154	0.238	0.626	2.331
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	19:37:37	20.350	186.200	T 1403.000	94.292%	0.000	19.570	9.687					
2	19:37:59	19.910	183.200	T 1367.000	98.552%	0.000	19.090	9.433					
3	19:38:22	19.830	185.600	T 1383.000	96.961%	0.000	19.200	9.414					
x		100.167%	92.503%	T 110.748%	96.602%	0.000	96.428%	95.111%					
σ		n/a	n/a	T n/a	2.152%	0.000	n/a	n/a					
%RSD		1.404	0.872	T 1.319	2.228	0.000	1.309	1.602					

CCB 1035925 5/10/2017 7:43:00 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:43:21	92.356%	-0.061	1.529	1.447	2.420	3.899	2.099	22.410	98.390%	0.000	0.090	-0.006
2	19:43:43	91.438%	-0.076	1.540	1.740	3.516	4.009	1.924	22.620	99.940%	0.000	0.000	0.014
3	19:44:04	93.279%	0.014	0.729	3.921	3.591	4.178	4.917	14.030	99.049%	0.000	0.444	0.054
x		92.357%	-0.041	1.266	2.369	3.175	4.029	2.980	19.690	99.126%	0.000	0.178	0.021
σ		0.921%	0.048	0.466	1.352	0.656	0.141	1.680	4.904	0.778%	0.000	0.234	0.031
%RSD		0.997	116.800	36.770	57.050	20.640	3.495	56.380	24.910	0.785	0.000	131.800	147.400

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:43:21	5.239	0.152	6.889	0.040	0.050	0.162	0.435	-2.268	0.379	0.268	0.000	0.000
2	19:43:43	5.279	0.126	7.015	0.056	0.097	0.195	0.463	-1.904	0.362	0.406	0.000	0.000
3	19:44:04	4.969	0.172	7.651	0.052	0.080	0.261	0.472	-2.079	0.374	0.363	0.000	0.000
x		5.162	0.150	7.185	0.049	0.075	0.206	0.457	-2.084	0.372	0.346	0.000	0.000
σ		0.168	0.023	0.409	0.008	0.024	0.051	0.020	0.182	0.008	0.071	0.000	0.000
%RSD		3.262	15.270	5.685	16.590	31.770	24.550	4.302	8.753	2.279	20.520	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:43:21	0.011	96.596%	0.144	0.013	-1.871	0.049	95.191%	0.000	0.092	0.022	0.134	96.173%
2	19:43:43	0.035	95.172%	0.189	0.016	-1.264	0.005	99.061%	0.000	0.095	0.020	0.112	96.234%
3	19:44:04	0.025	95.317%	0.152	0.014	-1.526	0.029	98.242%	0.000	0.096	0.025	0.098	96.724%
x		0.024	95.695%	0.162	0.014	-1.554	0.028	97.498%	0.000	0.094	0.023	0.114	96.377%
σ		0.012	0.784%	0.024	0.002	0.304	0.022	2.040%	0.000	0.002	0.003	0.018	0.302%
%RSD		50.700	0.819	14.830	11.090	19.590	79.060	2.092	0.000	2.524	11.100	15.860	0.313

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:43:21	0.013	0.106	0.140	92.899%	0.000	0.001	0.001
2	19:43:43	0.005	0.073	0.167	94.628%	0.000	0.005	0.002
3	19:44:04	0.006	0.072	0.185	94.851%	0.000	0.003	0.001
x		0.008	0.084	0.164	94.126%	0.000	0.003	0.001
σ		0.004	0.019	0.022	1.068%	0.000	0.002	0.001
%RSD		56.110	22.630	13.670	1.135	0.000	72.750	58.650

CCVL 1037148 5/10/2017 7:48:45 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:49:06	96.774%	1.031	42.360	T 547.700	204.500	51.360	T 547.100	466.100	104.382%	0.000	4.505	4.067
2	19:49:28	96.659%	1.008	42.110	T 556.600	207.300	52.940	T 557.500	478.000	102.317%	0.000	5.103	4.095
3	19:49:50	97.372%	0.894	40.670	T 555.200	201.400	52.950	T 549.000	478.400	103.700%	0.000	4.989	4.064
x		96.935%	97.775%	104.282%	T 110.630%	102.181%	104.829%	T 110.240%	94.838%	103.466%	0.000	97.313%	101.876%
σ		0.383%	n/a	n/a	T n/a	n/a	n/a	T n/a	n/a	1.052%	0.000	n/a	n/a
%RSD		0.395	7.527	2.181	T 0.861	1.439	1.748	T 1.001	1.481	1.017	0.000	6.522	0.423

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:49:06	7.374	2.012	201.900	0.983	2.336	4.934	18.530	2.380	0.508	4.466	0.000	0.000
2	19:49:28	7.375	2.048	210.900	1.009	2.203	5.143	19.550	2.230	0.508	4.134	0.000	0.000

3	19:49:50	7.112	1.909	206.400	0.961	2.232	5.226	18.700	1.824	0.550	4.272	0.000	0.000
x		7.287	99.480%	103.197%	98.449%	112.848%	102.018%	94.639%	107.236%	0.522	107.269%	0.000	0.000
σ		0.152	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.024	n/a	0.000	0.000
%RSD		2.083	3.616	2.182	2.462	3.090	2.954	2.884	13.400	4.625	3.884	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:49:06	4.623	95.594%	9.619	1.094	-2.024	1.158	97.122%	0.000	1.918	1.826	10.190	97.942%
2	19:49:28	4.752	98.393%	9.422	1.062	-1.119	1.091	98.936%	0.000	1.893	1.812	10.220	98.055%
3	19:49:50	4.599	99.116%	9.043	1.099	-1.392	1.010	98.679%	0.000	1.861	1.824	10.400	98.136%
x		93.158%	97.701%	93.617%	108.521%	-1.512	108.650%	98.246%	0.000	1.891	91.041%	102.698%	98.044%
σ		n/a	1.860%	n/a	n/a	0.464	n/a	0.982%	0.000	0.028	n/a	n/a	0.097%
%RSD		1.762	1.904	3.127	1.826	30.720	6.835	0.999	0.000	1.499	0.414	1.116	0.099

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:49:06	2.422	1.720	1.041	95.148%	0.000	1.904	0.932
2	19:49:28	2.397	1.801	1.039	94.624%	0.000	1.875	0.955
3	19:49:50	2.521	1.837	1.080	95.829%	0.000	1.945	0.962
x		122.332%	89.301%	105.290%	95.200%	0.000	95.406%	94.947%
σ		n/a	n/a	n/a	0.604%	0.000	n/a	n/a
%RSD		2.679	3.337	2.206	0.635	0.000	1.849	1.611

LCS 200-116422/2-A 5/10/2017 7:54:28 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:54:50	93.703%	10.890	421.600	T 5503.000	2036.000	520.300	T 5401.000	4652.000	101.137%	0.000	47.570	39.210
2	19:55:12	91.663%	10.640	422.900	T 5416.000	2019.000	525.300	T 5442.000	4701.000	99.840%	0.000	48.300	40.240
3	19:55:33	93.507%	10.560	421.400	T 5477.000	2018.000	T 571.800	T 5394.000	4669.000	101.196%	0.000	47.530	39.850
x		92.958%	10.700	422.000	T 5465.000	2024.000	T 539.100	T 5412.000	4674.000	100.724%	0.000	47.800	39.770
σ		1.125%	0.171	0.795	T 44.700	10.100	T 28.420	T 25.620	24.950	0.767%	0.000	0.437	0.520
%RSD		1.211	1.603	0.188	T 0.818	0.499	T 5.272	T 0.473	0.534	0.761	0.000	0.914	1.308
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:54:50	5.765	18.670	T 2290.000	9.350	20.400	50.260	181.500	36.450	0.352	38.700	0.000	0.000
2	19:55:12	5.135	19.560	T 2313.000	9.425	21.020	51.300	183.300	36.460	0.431	37.750	0.000	0.000
3	19:55:33	5.582	18.960	T 2299.000	9.450	19.760	50.230	183.500	36.030	0.369	38.240	0.000	0.000
x		5.494	19.060	T 2301.000	9.408	20.400	50.600	182.800	36.320	0.384	38.230	0.000	0.000
σ		0.324	0.458	T 11.570	0.052	0.629	0.610	1.086	0.245	0.041	0.474	0.000	0.000
%RSD		5.904	2.403	T 0.503	0.556	3.083	1.206	0.594	0.674	10.800	1.238	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:54:50	47.160	98.517%	90.890	10.490	0.258	10.190	96.560%	0.000	18.870	18.470	100.800	100.242%
2	19:55:12	45.380	97.545%	92.440	10.250	-0.257	10.370	99.603%	0.000	18.360	18.020	98.150	99.258%
3	19:55:33	45.810	99.393%	90.630	10.350	0.187	9.977	100.475%	0.000	18.450	18.030	100.600	101.323%
x		46.120	98.485%	91.320	10.360	0.063	10.180	98.880%	0.000	18.560	18.170	99.830	100.274%
σ		0.933	0.924%	0.980	0.119	0.279	0.197	2.055%	0.000	0.272	0.256	1.461	1.033%
%RSD		2.022	0.938	1.073	1.143	445.100	1.939	2.078	0.000	1.467	1.410	1.464	1.030

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	19:54:50	23.970	17.590	9.256	95.685%	0.000	19.240	9.636
2	19:55:12	24.170	17.730	9.505	94.689%	0.000	19.830	9.890
3	19:55:33	24.210	17.810	9.392	96.258%	0.000	19.600	9.706
x		24.120	17.710	9.384	95.544%	0.000	19.550	9.744
σ		0.127	0.112	0.125	0.794%	0.000	0.295	0.132
%RSD		0.528	0.635	1.329	0.831	0.000	1.510	1.351

480-117352-B-1-A 5/10/2017 8:00:12 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:00:34	91.998%	-0.051	97.970	T 11650.000	T 5870.000	5.733	T 3325.000	T 22240.000	98.806%	0.000	0.212	0.104
2	20:00:55	90.827%	-0.092	97.680	T 11690.000	5485.000	5.792	T 3341.000	T 22100.000	98.045%	0.000	0.384	0.144
3	20:01:16	90.267%	-0.118	100.600	T 11500.000	5397.000	5.666	T 3300.000	T 22170.000	100.032%	0.000	0.306	0.095
x		91.031%	-0.087	98.750	T 11610.000	T 5584.000	5.730	T 3322.000	T 22170.000	98.961%	0.000	0.301	0.114
σ		0.883%	0.033	1.601	T 97.730	T 251.900	0.063	T 21.040	T 70.600	1.002%	0.000	0.086	0.026
%RSD		0.971	38.360	1.621	T 0.842	T 4.511	1.092	T 0.633	T 0.319	1.013	0.000	28.640	23.090
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:00:34	4.512	4.683	7.574	0.002	0.159	0.617	1.607	19.840	0.344	0.227	0.000	0.000
2	20:00:55	4.585	4.701	7.879	-0.006	0.226	0.534	1.554	19.450	0.329	1.405	0.000	0.000
3	20:01:16	5.064	4.538	6.281	0.003	0.218	0.535	1.497	20.100	0.366	0.286	0.000	0.000
x		4.720	4.640	7.245	-0.000	0.201	0.562	1.553	19.800	0.346	0.640	0.000	0.000
σ		0.300	0.089	0.848	0.005	0.036	0.048	0.055	0.324	0.019	0.664	0.000	0.000
%RSD		6.351	1.926	11.710	1362.000	18.020	8.513	3.557	1.636	5.447	103.800	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:00:34	81.370	96.897%	2.347	0.003	-0.875	0.143	97.859%	0.000	0.100	0.026	134.200	99.981%
2	20:00:55	81.520	98.682%	2.496	0.010	-1.266	0.094	99.176%	0.000	0.091	0.025	135.400	101.923%
3	20:01:16	80.690	97.484%	2.499	0.006	-1.855	0.218	100.526%	0.000	0.104	0.027	134.400	101.478%
x		81.190	97.687%	2.447	0.006	-1.332	0.152	99.187%	0.000	0.098	0.026	134.600	101.127%
σ		0.441	0.910%	0.087	0.003	0.493	0.062	1.333%	0.000	0.006	0.001	0.626	1.018%
%RSD		0.544	0.932	3.544	52.510	37.000	41.190	1.344	0.000	6.482	2.767	0.465	1.006

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:00:34	0.530	-0.018	0.016	96.821%	0.000	0.002	1.136
2	20:00:55	0.479	-0.012	0.018	96.332%	0.000	0.001	1.128
3	20:01:16	0.528	-0.018	0.021	98.744%	0.000	0.001	1.158
x		0.512	-0.016	0.018	97.299%	0.000	0.001	1.141
σ		0.029	0.004	0.002	1.275%	0.000	0.001	0.016
%RSD		5.682	22.970	12.290	1.310	0.000	66.750	1.376

480-117352-B-1-A SD@5 5/10/2017 8:05:57 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:06:19	91.936%	-0.103	19.610	T 2373.000	1070.000	0.114	T 671.700	3836.000	97.931%	0.000	-0.298	-0.035
2	20:06:40	91.322%	-0.119	19.090	T 2385.000	1089.000	0.274	T 690.600	3924.000	97.469%	0.000	0.025	0.090
3	20:07:01	91.539%	-0.111	18.330	T 2352.000	1062.000	0.116	T 678.300	3853.000	98.286%	0.000	0.150	0.053
		91.599%	-0.111	19.010	T 2370.000	1074.000	0.168	T 680.200	3871.000	97.896%	0.000	-0.041	0.036

x													
σ		0.311%	0.008	0.641	T 16.600	13.660	0.092	T 9.598	46.330	0.410%	0.000	0.231	0.065
%RSD		0.340	7.372	3.373	T 0.700	1.273	54.690	T 1.411	1.197	0.419	0.000	564.800	179.900
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:06:19	9.597	0.933	6.893	-0.017	0.019	0.236	0.710	2.485	0.569	0.153	0.000	0.000
2	20:06:40	9.200	0.928	5.951	-0.012	-0.008	0.218	0.532	2.768	0.560	0.073	0.000	0.000
3	20:07:01	9.266	0.879	5.935	-0.016	-0.033	0.160	0.637	2.351	0.607	0.044	0.000	0.000
x		9.354	0.913	6.260	-0.015	-0.008	0.205	0.626	2.535	0.579	0.090	0.000	0.000
σ		0.213	0.030	0.548	0.003	0.026	0.040	0.089	0.213	0.025	0.056	0.000	0.000
%RSD		2.275	3.257	8.763	18.120	340.100	19.570	14.270	8.384	4.244	62.690	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:06:19	16.120	95.635%	0.448	-0.006	-1.537	0.038	96.787%	0.000	0.071	-0.000	26.830	97.858%
2	20:06:40	16.000	96.017%	0.477	0.001	-1.064	-0.001	99.033%	0.000	0.077	-0.001	26.130	99.964%
3	20:07:01	15.940	95.297%	0.494	-0.005	-1.001	0.001	97.708%	0.000	0.075	-0.002	26.720	97.813%
x		16.020	95.650%	0.473	-0.003	-1.201	0.013	97.843%	0.000	0.074	-0.001	26.560	98.545%
σ		0.089	0.360%	0.023	0.004	0.293	0.022	1.129%	0.000	0.003	0.001	0.376	1.229%
%RSD		0.556	0.377	4.878	124.100	24.390	172.300	1.154	0.000	3.576	94.530	1.414	1.247
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	20:06:19	0.081	-0.033	-0.009	95.663%	0.000	-0.001	0.213					
2	20:06:40	0.104	-0.040	-0.010	95.515%	0.000	-0.001	0.220					
3	20:07:01	0.108	-0.039	-0.003	97.411%	0.000	0.000	0.230					
x		0.098	-0.037	-0.007	96.196%	0.000	-0.001	0.221					
σ		0.014	0.004	0.004	1.054%	0.000	0.001	0.009					
%RSD		14.630	9.409	53.730	1.096	0.000	125.900	3.933					

480-117352-B-1-A PDS 5/10/2017 8:11:42 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:12:04	90.189%	10.510	529.400	T 17320.000	T 8207.000	524.400	T 8712.000	T 26870.000	95.942%	0.000	48.260	39.040
2	20:12:25	90.128%	10.370	520.300	T 16680.000	T 7845.000	515.200	T 8503.000	T 26800.000	98.133%	0.000	47.070	38.580
3	20:12:47	89.342%	10.090	526.300	T 16970.000	T 8003.000	515.800	T 8595.000	T 27020.000	97.147%	0.000	47.650	38.950
x		89.886%	10.320	525.300	T 16990.000	T 8018.000	518.500	T 8603.000	T 26900.000	97.074%	0.000	47.660	38.860
σ		0.472%	0.214	4.658	T 321.200	T 181.400	5.168	T 104.700	T 107.500	1.097%	0.000	0.595	0.240
%RSD		0.525	2.075	0.887	T 1.891	T 2.262	0.997	T 1.216	T 0.400	1.130	0.000	1.248	0.617

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:12:04	5.560	24.110	T 2313.000	9.338	20.600	48.960	184.100	57.440	0.429	36.990	0.000	0.000
2	20:12:25	5.361	23.320	T 2250.000	9.399	21.070	48.760	182.800	57.670	0.345	39.330	0.000	0.000
3	20:12:47	4.855	23.860	T 2316.000	9.713	20.470	49.170	182.700	57.170	0.375	37.550	0.000	0.000
x		5.259	23.760	T 2293.000	9.483	20.720	48.960	183.200	57.430	0.383	37.960	0.000	0.000
σ		0.364	0.402	T 36.930	0.202	0.316	0.203	0.827	0.251	0.043	1.225	0.000	0.000
%RSD		6.918	1.691	T 1.611	2.124	1.525	0.415	0.451	0.438	11.120	3.228	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:12:04	126.000	95.868%	93.570	10.440	0.405	9.828	96.904%	0.000	18.190	17.750	237.100	99.906%
2	20:12:25	128.600	97.312%	93.520	10.100	0.276	10.540	98.558%	0.000	18.190	17.680	235.500	104.093%
3	20:12:47	125.400	96.743%	95.680	10.160	-0.531	9.827	99.327%	0.000	18.330	17.760	234.400	104.302%
x		126.700	96.641%	94.260	10.230	0.050	10.060	98.263%	0.000	18.240	17.730	235.700	102.767%
σ		1.661	0.728%	1.233	0.184	0.507	0.409	1.238%	0.000	0.081	0.043	1.382	2.480%
%RSD		1.311	0.753	1.309	1.799	1010.000	4.060	1.260	0.000	0.442	0.242	0.586	2.413

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:12:04	25.770	17.920	9.497	97.175%	0.000	19.490	10.720
2	20:12:25	25.230	17.870	9.562	99.076%	0.000	19.420	10.720
3	20:12:47	24.940	18.110	9.647	98.486%	0.000	19.790	10.990
x		25.310	17.960	9.569	98.246%	0.000	19.570	10.810
σ		0.423	0.126	0.075	0.973%	0.000	0.197	0.153
%RSD		1.671	0.699	0.786	0.990	0.000	1.007	1.415

480-117352-B-1-B MS 5/10/2017 8:17:27 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:17:49	90.955%	11.700	526.200	T 17460.000	T 8215.000	T 569.900	T 8776.000	T 27770.000	96.812%	0.000	48.620	41.380
2	20:18:11	91.869%	10.840	522.900	T 17290.000	T 8205.000	528.800	T 8878.000	T 27750.000	96.507%	0.000	49.000	40.910
3	20:18:32	89.909%	10.920	527.900	T 17230.000	T 8316.000	526.100	T 8830.000	T 27990.000	96.556%	0.000	49.100	40.750
x		90.911%	11.150	525.700	T 17330.000	T 8245.000	T 541.600	T 8828.000	T 27840.000	96.625%	0.000	48.910	41.010
σ		0.980%	0.475	2.542	T 120.400	T 61.750	T 24.570	T 51.200	T 131.300	0.164%	0.000	0.256	0.326
%RSD		1.078	4.256	0.484	T 0.695	T 0.749	T 4.536	T 0.580	T 0.472	0.170	0.000	0.523	0.795

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:17:49	5.382	24.370	T 2343.000	9.413	21.020	51.450	187.600	59.140	0.358	38.970	0.000	0.000
2	20:18:11	5.320	24.180	T 2381.000	9.502	21.260	52.310	188.300	58.960	0.331	38.660	0.000	0.000

3	20:18:32	4.374	23.960	T 2371.000	9.460	21.270	51.710	188.600	58.940	0.303	39.660	0.000	0.000
x		5.025	24.170	T 2365.000	9.458	21.180	51.820	188.100	59.010	0.330	39.100	0.000	0.000
σ		0.565	0.210	T 19.730	0.044	0.143	0.438	0.508	0.108	0.027	0.513	0.000	0.000
%RSD		11.240	0.869	T 0.834	0.470	0.676	0.845	0.270	0.183	8.309	1.312	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:17:49	130.900	96.270%	97.040	10.530	1.103	10.390	97.073%	0.000	19.590	18.740	240.400	101.629%
2	20:18:11	129.800	96.718%	94.670	10.160	-1.430	10.960	99.167%	0.000	19.080	18.510	237.800	102.126%
3	20:18:32	129.300	97.237%	95.970	10.290	0.247	10.550	99.723%	0.000	18.770	18.580	239.300	103.560%
x		130.000	96.741%	95.890	10.320	-0.027	10.630	98.654%	0.000	19.150	18.610	239.100	102.438%
σ		0.817	0.484%	1.185	0.187	1.289	0.294	1.398%	0.000	0.410	0.120	1.277	1.002%
%RSD		0.628	0.500	1.236	1.812	4797.000	2.762	1.417	0.000	2.142	0.642	0.534	0.978

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:17:49	24.850	18.310	9.663	96.694%	0.000	19.930	11.090
2	20:18:11	24.940	18.400	9.674	96.904%	0.000	20.380	11.290
3	20:18:32	24.780	18.570	9.810	96.917%	0.000	20.410	11.330
x		24.860	18.430	9.716	96.839%	0.000	20.240	11.230
σ		0.079	0.134	0.082	0.125%	0.000	0.266	0.129
%RSD		0.320	0.728	0.840	0.129	0.000	1.315	1.151

480-117352-B-1-C MSD 5/10/2017 8:23:13 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:23:35	88.754%	11.410	543.500	T 17490.000	T 8370.000	530.400	T 8854.000	T 28230.000	97.457%	0.000	48.730	40.280
2	20:23:56	91.448%	11.130	519.700	T 17140.000	T 8195.000	524.200	T 8683.000	T 27690.000	97.271%	0.000	49.170	40.460
3	20:24:18	89.344%	10.750	543.100	T 17590.000	T 8345.000	535.600	T 8921.000	T 28100.000	96.791%	0.000	48.670	40.620
x		89.848%	11.100	535.400	T 17400.000	T 8303.000	530.100	T 8819.000	T 28010.000	97.173%	0.000	48.860	40.460
σ		1.416%	0.331	13.590	T 232.300	T 94.880	5.725	T 122.400	T 283.500	0.344%	0.000	0.275	0.169
%RSD		1.576	2.982	2.538	T 1.335	T 1.143	1.080	T 1.388	T 1.012	0.354	0.000	0.562	0.418
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:23:35	5.558	24.030	T 2352.000	9.417	20.610	50.810	186.300	59.420	0.320	40.820	0.000	0.000
2	20:23:56	4.532	23.990	T 2328.000	9.435	20.760	51.320	185.300	59.470	0.345	39.170	0.000	0.000
3	20:24:18	4.651	24.030	T 2362.000	9.551	21.300	52.230	187.200	58.680	0.378	38.120	0.000	0.000
x		4.914	24.020	T 2347.000	9.468	20.890	51.450	186.300	59.190	0.348	39.370	0.000	0.000
σ		0.561	0.025	T 17.840	0.073	0.361	0.722	0.967	0.442	0.029	1.359	0.000	0.000
%RSD		11.420	0.106	T 0.760	0.768	1.727	1.404	0.519	0.747	8.275	3.451	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:23:35	133.200	96.564%	97.270	10.590	1.274	10.280	96.620%	0.000	19.330	18.900	245.700	98.613%
2	20:23:56	131.600	95.978%	96.170	10.400	0.684	10.690	97.795%	0.000	19.390	18.760	245.300	101.994%
3	20:24:18	128.000	97.018%	95.530	10.360	-0.328	9.952	100.534%	0.000	18.830	18.450	240.500	105.297%
x		130.900	96.520%	96.320	10.450	0.543	10.310	98.316%	0.000	19.190	18.700	243.900	101.968%
σ		2.691	0.522%	0.882	0.122	0.810	0.370	2.009%	0.000	0.311	0.230	2.895	3.342%
%RSD		2.055	0.540	0.916	1.163	149.200	3.592	2.043	0.000	1.621	1.229	1.187	3.278

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	20:23:35	25.340	18.250	9.631	98.145%	0.000	19.920	10.940
2	20:23:56	24.900	18.500	9.750	96.957%	0.000	20.270	11.280
3	20:24:18	25.010	18.300	9.488	99.299%	0.000	19.920	11.000
x		25.090	18.350	9.623	98.134%	0.000	20.030	11.070
σ		0.229	0.132	0.131	1.171%	0.000	0.200	0.182
%RSD		0.911	0.720	1.359	1.194	0.000	1.000	1.647

480-117352-B-2-A 5/10/2017 8:28:57 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:29:19	91.530%	-0.145	46.150	T 15360.000	T 22610.000	9.250	T 1504.000	T 20300.000	98.055%	0.000	0.279	0.520
2	20:29:40	92.216%	-0.103	46.770	T 15180.000	T 22300.000	9.037	T 1513.000	T 20180.000	98.259%	0.000	0.170	0.447
3	20:30:03	94.698%	-0.115	44.480	T 15040.000	T 22290.000	9.622	T 1515.000	T 20360.000	99.183%	0.000	0.450	0.479
x		92.815%	-0.121	45.800	T 15190.000	T 22400.000	9.303	T 1511.000	T 20280.000	98.499%	0.000	0.299	0.482
σ		1.666%	0.022	1.184	T 159.300	T 183.100	0.296	T 5.687	T 94.680	0.601%	0.000	0.141	0.037
%RSD		1.795	17.890	2.586	T 1.048	T 0.818	3.178	T 0.376	T 0.467	0.610	0.000	47.200	7.581

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:29:19	7.211	0.537	15.850	0.009	0.476	1.295	1.619	-1.690	0.448	0.287	0.000	0.000
2	20:29:40	7.899	0.568	16.930	0.004	0.463	1.209	1.827	-1.580	0.449	0.934	0.000	0.000
3	20:30:03	7.933	0.570	16.300	0.012	0.485	1.228	1.572	-1.653	0.509	0.235	0.000	0.000
x		7.681	0.558	16.360	0.008	0.474	1.244	1.673	-1.641	0.469	0.485	0.000	0.000
σ		0.407	0.018	0.544	0.004	0.011	0.045	0.135	0.056	0.035	0.389	0.000	0.000
%RSD		5.304	3.248	3.327	46.120	2.301	3.625	8.088	3.407	7.479	80.220	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:29:19	77.390	98.708%	0.441	-0.004	-1.430	0.278	96.852%	0.000	0.105	0.049	20.770	102.498%
2	20:29:40	75.830	99.489%	0.441	-0.001	-1.426	0.294	99.264%	0.000	0.135	0.053	19.180	102.749%
3	20:30:03	75.260	98.666%	0.440	-0.003	-1.188	0.181	100.318%	0.000	0.135	0.049	19.430	101.684%
x		76.160	98.954%	0.441	-0.002	-1.348	0.251	98.811%	0.000	0.125	0.050	19.790	102.310%
σ		1.101	0.463%	0.001	0.001	0.139	0.061	1.777%	0.000	0.017	0.002	0.855	0.557%
%RSD		1.446	0.468	0.183	62.660	10.310	24.270	1.798	0.000	13.970	4.311	4.321	0.544

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:29:19	0.014	-0.015	0.033	96.227%	0.000	0.005	0.438
2	20:29:40	0.011	-0.018	0.039	97.267%	0.000	0.004	0.445
3	20:30:03	0.010	-0.024	0.033	98.626%	0.000	0.003	0.438
x		0.012	-0.019	0.035	97.373%	0.000	0.004	0.440
σ		0.002	0.005	0.004	1.203%	0.000	0.001	0.004
%RSD		18.470	24.530	10.230	1.235	0.000	19.230	0.864

480-117352-B-3-A 5/10/2017 8:34:41 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:35:02	94.835%	-0.157	27.530	T 7000.000	3845.000	23.720	T 2428.000	T 22080.000	96.691%	0.000	-0.050	0.207
2	20:35:24	94.132%	-0.106	29.010	T 6987.000	3837.000	23.570	T 2400.000	T 22120.000	96.916%	0.000	0.025	0.190
3	20:35:45	93.622%	-0.147	27.490	T 6856.000	3804.000	23.330	T 2425.000	T 22060.000	97.467%	0.000	-0.114	0.164
		94.196%	-0.137	28.010	T 6948.000	3828.000	23.540	T 2418.000	T 22090.000	97.025%	0.000	-0.046	0.187

x													
σ		0.609%	0.027	0.866	T 79.820	21.800	0.198	T 15.510	T 28.690	0.399%	0.000	0.069	0.022
%RSD		0.647	19.790	3.091	T 1.149	0.570	0.842	T 0.642	T 0.130	0.411	0.000	149.600	11.820
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:35:02	10.160	12.580	7.877	-0.003	0.090	0.301	1.166	14.790	0.533	0.230	0.000	0.000
2	20:35:24	10.280	12.420	6.303	-0.003	0.085	0.251	1.146	14.280	0.581	-0.066	0.000	0.000
3	20:35:45	10.860	12.710	6.215	0.012	0.056	0.320	1.207	14.630	0.569	0.583	0.000	0.000
x		10.430	12.570	6.798	0.002	0.077	0.291	1.173	14.570	0.561	0.249	0.000	0.000
σ		0.376	0.147	0.935	0.009	0.018	0.036	0.031	0.263	0.025	0.325	0.000	0.000
%RSD		3.602	1.170	13.750	416.400	24.050	12.270	2.682	1.809	4.468	130.700	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:35:02	69.650	97.106%	3.509	-0.003	-1.698	0.021	96.772%	0.000	0.073	0.002	2.619	99.990%
2	20:35:24	68.070	98.037%	3.429	-0.003	-1.478	0.001	99.380%	0.000	0.078	-0.001	2.614	102.633%
3	20:35:45	68.590	98.308%	3.486	-0.001	-1.313	0.013	99.675%	0.000	0.075	0.000	2.522	104.067%
x		68.770	97.817%	3.475	-0.002	-1.496	0.012	98.609%	0.000	0.076	0.000	2.585	102.230%
σ		0.806	0.631%	0.041	0.001	0.193	0.010	1.597%	0.000	0.003	0.002	0.055	2.068%
%RSD		1.172	0.645	1.189	54.380	12.920	84.480	1.620	0.000	3.339	804.100	2.118	2.023
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	20:35:02	16.970	-0.038	0.008	98.316%	0.000	0.000	2.709					
2	20:35:24	16.980	-0.037	0.006	98.351%	0.000	0.000	2.656					
3	20:35:45	16.750	-0.038	0.005	100.479%	0.000	-0.001	2.678					
x		16.900	-0.038	0.006	99.049%	0.000	-0.000	2.681					
σ		0.132	0.001	0.001	1.239%	0.000	0.001	0.027					
%RSD		0.780	2.635	23.700	1.251	0.000	413.600	1.007					

480-117352-B-4-A 5/10/2017 8:40:23 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:40:45	93.665%	-0.147	16.870	T 11830.000	T 20200.000	4.793	T 1168.000	12480.000	98.496%	0.000	0.316	10.970
2	20:41:06	94.443%	-0.081	15.190	T 11670.000	T 19920.000	4.779	T 1167.000	12450.000	100.354%	0.000	-0.481	10.860
3	20:41:27	94.600%	-0.165	16.950	T 11840.000	T 20300.000	4.583	T 1162.000	12510.000	99.559%	0.000	0.028	11.170
x		94.236%	-0.131	16.340	T 11780.000	T 20140.000	4.718	T 1166.000	12480.000	99.470%	0.000	-0.046	11.000
σ		0.501%	0.044	0.996	T 95.100	T 196.000	0.118	T 3.394	31.890	0.932%	0.000	0.404	0.157
%RSD		0.531	33.590	6.095	T 0.807	T 0.973	2.490	T 0.291	0.256	0.937	0.000	887.100	1.426

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:40:45	12.680	0.652	10.630	0.001	0.267	0.541	1.354	-1.652	0.694	1.520	0.000	0.000
2	20:41:06	13.680	0.582	9.696	0.005	0.209	0.581	1.151	-1.746	0.719	1.124	0.000	0.000
3	20:41:27	13.190	0.583	9.163	0.000	0.231	0.452	1.261	-1.958	0.765	0.655	0.000	0.000
x		13.180	0.606	9.830	0.002	0.236	0.525	1.255	-1.785	0.726	1.100	0.000	0.000
σ		0.501	0.040	0.743	0.003	0.030	0.066	0.102	0.157	0.036	0.433	0.000	0.000
%RSD		3.797	6.619	7.561	129.100	12.540	12.570	8.088	8.774	4.974	39.370	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:40:45	54.700	97.547%	6.939	0.003	-1.619	0.096	97.557%	0.000	0.149	0.092	9.064	101.487%
2	20:41:06	52.770	97.291%	7.177	0.002	-1.173	0.092	99.968%	0.000	0.186	0.091	8.893	103.479%
3	20:41:27	53.540	98.477%	6.922	-0.004	-1.211	0.076	100.882%	0.000	0.157	0.092	8.793	101.097%
x		53.670	97.772%	7.013	0.001	-1.334	0.088	99.469%	0.000	0.164	0.092	8.917	102.021%
σ		0.974	0.624%	0.143	0.004	0.247	0.011	1.718%	0.000	0.019	0.001	0.137	1.278%
%RSD		1.815	0.638	2.037	627.200	18.520	12.390	1.727	0.000	11.860	0.591	1.538	1.252

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:40:45	0.029	-0.041	0.053	97.542%	0.000	0.001	0.169
2	20:41:06	0.036	-0.039	0.046	98.455%	0.000	-0.001	0.172
3	20:41:27	0.034	-0.042	0.042	98.805%	0.000	0.001	0.176
x		0.033	-0.041	0.047	98.268%	0.000	0.000	0.172
σ		0.003	0.001	0.006	0.652%	0.000	0.001	0.004
%RSD		10.420	3.411	11.970	0.664	0.000	233.500	2.288

CCV 1037150 5/10/2017 8:46:07 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:46:28	85.053%	678.100	262.700	T 10740.000	T 33850.000	T 34050.000	T 10820.000	T 31830.000	89.784%	0.000	T 1436.000	399.200
2	20:46:49	86.665%	675.400	260.100	T 10580.000	T 32670.000	T 33430.000	T 10500.000	T 31460.000	91.522%	0.000	T 1405.000	392.900
3	20:47:11	85.695%	669.400	262.700	T 10710.000	T 33810.000	T 34010.000	T 10660.000	T 32070.000	89.761%	0.000	T 1420.000	396.600
x		85.804%	107.891%	104.745%	T 106.763%	T 111.476%	T 112.753%	T 106.632%	T 105.958%	90.355%	0.000	T 113.615%	99.055%
σ		0.812%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.010%	0.000	T n/a	n/a
%RSD		0.946	0.660	0.579	T 0.764	T 2.008	T 1.024	T 1.488	T 0.976	1.118	0.000	T 1.095	0.803

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:46:28	8.759	T 1404.000	T 33920.000	498.100	1320.000	1250.000	1262.000	203.700	0.321	213.200	0.000	0.000
2	20:46:49	7.083	T 1391.000	T 33310.000	T 560.500	1297.000	1234.000	1255.000	203.800	0.377	211.300	0.000	0.000

3	20:47:11	9.987	T 1411.000	T 34040.000	T 566.000	1303.000	1237.000	1275.000	203.300	0.398	214.000	0.000	0.000
x		8.609	T 112.167%	T 112.524%	T 108.305%	104.532%	99.235%	101.108%	101.789%	0.365	106.418%	0.000	0.000
σ		1.457	T n/a	T n/a	T n/a	n/a	n/a	n/a	n/a	0.040	n/a	0.000	0.000
%RSD		16.930	T 0.755	T 1.157	T 6.960	0.941	0.667	0.807	0.125	10.840	0.641	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:46:28	188.200	91.697%	T 1361.000	106.100	20.840	211.500	91.038%	0.000	246.600	241.100	1298.000	96.837%
2	20:46:49	186.100	91.900%	T 1364.000	102.600	13.830	208.800	94.209%	0.000	240.900	236.600	1278.000	99.016%
3	20:47:11	184.400	91.461%	T 1344.000	102.400	25.200	208.400	93.615%	0.000	242.500	237.800	1280.000	97.817%
x		186.200	91.686%	T 108.486%	103.712%	19.960	104.790%	92.954%	0.000	243.300	95.410%	102.836%	97.890%
σ		1.906	0.220%	T n/a	n/a	5.736	n/a	1.686%	0.000	2.944	n/a	n/a	1.092%
%RSD		1.023	0.240	T 0.796	2.012	28.740	0.806	1.813	0.000	1.210	0.972	0.873	1.115

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:46:28	20.510	183.800	T 1416.000	96.349%	0.000	19.230	9.430
2	20:46:49	20.480	188.700	T 1433.000	95.100%	0.000	19.520	9.799
3	20:47:11	20.180	185.200	T 1427.000	95.624%	0.000	19.620	9.762
x		101.946%	92.954%	T 114.015%	95.691%	0.000	97.284%	96.637%
σ		n/a	n/a	T n/a	0.627%	0.000	n/a	n/a
%RSD		0.899	1.361	T 0.611	0.656	0.000	1.050	2.100

CCB 1035925 5/10/2017 8:51:52 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:52:13	88.916%	0.168	1.205	3.801	4.084	5.093	1.462	12.540	93.427%	0.000	0.377	-0.004
2	20:52:35	89.674%	0.059	0.411	6.292	4.781	5.551	2.246	11.460	93.842%	0.000	0.346	-0.049
3	20:52:57	88.475%	0.081	0.149	7.713	9.161	6.948	1.337	6.163	95.022%	0.000	0.568	-0.015
x		89.022%	0.103	0.588	5.935	6.009	5.864	1.681	10.060	94.097%	0.000	0.430	-0.023
σ		0.606%	0.058	0.550	1.981	2.752	0.966	0.493	3.414	0.828%	0.000	0.121	0.023
%RSD		0.681	56.180	93.550	33.370	45.800	16.480	29.290	33.950	0.880	0.000	28.010	103.500
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:52:13	4.905	0.192	5.910	0.071	0.161	0.297	0.419	-1.948	0.327	0.209	0.000	0.000
2	20:52:35	4.948	0.186	6.513	0.084	0.131	0.335	0.684	-1.887	0.323	0.488	0.000	0.000
3	20:52:57	4.672	0.298	8.024	0.094	0.201	0.453	0.560	-2.007	0.326	0.223	0.000	0.000
x		4.842	0.225	6.816	0.083	0.164	0.362	0.554	-1.947	0.325	0.306	0.000	0.000
σ		0.149	0.063	1.089	0.012	0.035	0.082	0.133	0.060	0.002	0.157	0.000	0.000
%RSD		3.070	27.850	15.980	14.190	21.400	22.550	23.930	3.076	0.579	51.260	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:52:13	0.027	91.975%	0.232	0.012	-1.464	0.020	94.850%	0.000	0.097	0.031	0.176	96.601%
2	20:52:35	0.035	93.022%	0.195	0.019	-1.343	0.018	94.349%	0.000	0.112	0.031	0.188	95.841%
3	20:52:57	0.039	94.460%	0.270	0.038	-1.442	0.034	96.304%	0.000	0.131	0.056	0.310	96.585%
x		0.034	93.152%	0.232	0.023	-1.416	0.024	95.168%	0.000	0.113	0.039	0.225	96.342%
σ		0.006	1.248%	0.038	0.013	0.065	0.009	1.015%	0.000	0.017	0.014	0.074	0.435%
%RSD		17.680	1.340	16.230	58.370	4.559	36.280	1.067	0.000	15.270	35.870	33.110	0.451

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb

1	20:52:13	0.004	0.088	0.197	94.082%	0.000	0.004	0.002
2	20:52:35	0.008	0.079	0.223	97.398%	0.000	0.004	0.003
3	20:52:57	0.011	0.097	0.328	95.292%	0.000	0.003	0.003
x		0.008	0.088	0.249	95.591%	0.000	0.004	0.002
σ		0.004	0.009	0.069	1.678%	0.000	0.001	0.001
%RSD		47.330	10.360	27.830	1.755	0.000	24.520	29.630

CCVL 1037148 5/10/2017 8:57:37 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:57:58	91.064%	1.016	42.630	T572.800	202.400	53.700	T552.700	473.700	96.577%	0.000	5.119	4.096
2	20:58:19	93.497%	0.899	40.920	T563.300	203.900	53.180	T551.900	475.300	97.036%	0.000	5.130	4.001
3	20:58:41	90.691%	1.177	43.690	T568.100	206.900	54.160	T554.700	478.000	97.091%	0.000	4.854	3.900
x		91.751%	103.054%	106.035%	T113.610%	102.198%	107.358%	T110.620%	95.134%	96.901%	0.000	100.689%	99.969%
σ		1.524%	n/a	n/a	Tn/a	n/a	n/a	Tn/a	n/a	0.282%	0.000	n/a	n/a
%RSD		1.661	13.580	3.300	T0.828	1.130	0.915	T0.267	0.456	0.291	0.000	3.113	2.453

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:57:58	6.713	2.039	206.000	0.988	2.114	5.411	18.910	2.062	0.457	4.019	0.000	0.000
2	20:58:19	6.777	1.975	211.700	1.022	2.011	5.244	19.590	2.139	0.456	4.426	0.000	0.000
3	20:58:41	7.032	2.008	211.800	1.046	2.287	5.559	19.550	1.991	0.480	4.170	0.000	0.000
x		6.840	100.370%	104.902%	101.876%	106.855%	108.094%	96.765%	103.202%	0.464	105.117%	0.000	0.000
σ		0.169	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.014	n/a	0.000	0.000
%RSD		2.465	1.602	1.574	2.857	6.527	2.916	1.965	3.580	2.933	4.895	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:57:58	4.536	95.653%	9.548	1.054	-1.037	1.045	96.094%	0.000	2.001	1.815	10.020	95.979%
2	20:58:19	4.628	93.880%	9.284	1.090	-1.125	1.064	96.574%	0.000	1.956	1.810	9.875	99.687%
3	20:58:41	4.639	95.325%	9.482	1.147	-1.035	0.987	96.277%	0.000	1.958	1.831	10.330	101.220%
x		92.013%	94.953%	94.379%	109.693%	-1.066	103.218%	96.315%	0.000	1.972	90.924%	100.774%	98.962%
σ		n/a	0.943%	n/a	n/a	0.051	n/a	0.243%	0.000	0.026	n/a	n/a	2.694%
%RSD		1.231	0.994	1.458	4.316	4.825	3.859	0.252	0.000	1.305	0.603	2.330	2.723

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:57:58	2.551	1.787	1.071	94.502%	0.000	1.951	0.951
2	20:58:19	2.533	1.857	1.087	95.908%	0.000	1.897	0.975
3	20:58:41	2.443	1.950	1.154	92.593%	0.000	2.005	1.001
x		125.449%	93.237%	110.405%	94.334%	0.000	97.552%	97.564%
σ		n/a	n/a	n/a	1.664%	0.000	n/a	n/a
%RSD		2.321	4.391	4.009	1.764	0.000	2.749	2.556

Mass Uncorrected ICPS

STD0 1035925 5/10/2017 2:56:19 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:56:41	368183.670	72.500	3980.634	641362.270	790.025	9748.800	468560.390	17201.828	531817.550	110.000	19780.639	3050.372
2	14:57:02	370088.710	82.500	4210.709	642677.290	710.020	9933.946	465893.430	17422.133	534988.650	125.001	19560.292	2910.339
3	14:57:23	373734.810	70.000	4240.719	651307.210	470.009	10699.577	473158.830	17852.740	527854.770	85.000	19860.765	2970.353
x		370669.060	75.000	4144.021	645115.590	656.685	10127.441	469204.210	17492.233	531553.660	106.667	19733.899	2977.021
σ		2820.711	6.614	142.291	5402.264	166.542	504.058	3675.243	331.070	3574.256	20.207	155.594	70.254
%RSD		0.761	8.819	3.434	0.837	25.361	4.977	0.783	1.893	0.672	18.944	0.788	2.360

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:56:41	7322.144	1935.150	372910.740	160.001	120.001	760.023	640.016	3608.521	1178.056	303.004	325.504	1400.078
2	14:57:02	7142.040	1935.150	378767.960	230.002	205.002	675.018	745.022	3663.537	1109.049	303.504	301.004	1135.052
3	14:57:23	7287.124	1995.159	382272.250	185.001	200.002	750.023	615.015	3635.529	1219.059	275.503	281.503	1250.063
x		7250.436	1955.153	377983.650	191.668	175.001	728.355	666.685	3635.862	1168.721	294.003	302.670	1261.731
σ		95.493	34.646	4729.778	35.474	47.698	46.461	68.984	27.510	55.596	16.024	22.048	132.898
%RSD		1.317	1.772	1.251	18.508	27.256	6.379	10.347	0.757	4.757	5.450	7.284	10.533

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:56:41	375.006	520245.520	295.003	30.000	0.000	10.000	2441262.500	1240.062	115.001	68.500	60.000	314948.340
2	14:57:02	500.010	520599.820	295.003	50.000	5.000	25.000	2477829.800	1285.066	155.001	75.500	85.000	320158.210
3	14:57:23	485.009	528668.080	200.002	20.000	15.000	10.000	2477733.100	1360.074	95.000	80.500	60.000	318660.660
x		453.342	523171.140	263.336	33.333	6.667	15.000	2465608.500	1295.067	121.667	74.834	68.334	317922.400
σ		68.254	4763.787	54.849	15.275	7.638	8.660	21084.275	60.628	30.551	6.028	14.434	2682.250
%RSD		15.056	0.911	20.829	45.826	114.564	57.735	0.855	4.681	25.110	8.055	21.123	0.844

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:56:41	80.000	995.040	850.029	230302.200	0.000	25.000	5.000
2	14:57:02	70.000	920.034	850.029	233663.730	0.000	25.000	5.000
3	14:57:23	60.000	915.033	930.035	235110.480	0.000	50.000	5.000
x		70.000	943.369	876.697	233025.470	0.000	33.333	5.000
σ		10.000	44.818	46.191	2466.864	0.000	14.434	0.000
%RSD		14.286	4.751	5.269	1.059	0.000	43.301	0.000

STD1 1037148 5/10/2017 3:02:03 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:02:25	381906.320	417.507	21027.672	T 2607960.400	71785.536	187049.100	T 3310562.900	85118.825	536772.750	100.000	52560.271	21278.095
2	15:02:47	388267.860	395.006	22269.820	T 2656983.400	71524.044	189059.000	T 3344799.400	84776.511	541500.240	110.000	52238.929	21783.965
3	15:03:09	380174.710	447.508	22475.187	T 2636698.000	72650.512	192089.680	T 3355406.300	85471.218	551284.290	85.000	52002.948	21207.976
x		383449.630	420.007	21924.226	T 2633880.600	71986.697	189399.260	T 3336922.900	85122.184	543185.760	98.334	52267.383	21423.345
σ		4261.586	26.340	783.200	T 24632.608	589.561	2537.459	T 23436.368	347.366	7401.144	12.583	279.749	314.268
%RSD		1.111	6.271	3.572	T 0.935	0.819	1.340	T 0.702	0.408	1.363	12.796	0.535	1.467

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:02:25	12225.976	16400.752	1629326.000	6141.508	3050.372	10634.522	30682.611	9602.687	1927.149	649.517	292.003	1730.120
2	15:02:47	12501.248	16090.349	1616596.200	6381.629	3090.382	10549.450	30682.611	9731.787	1928.149	629.516	307.504	1675.112
3	15:03:09	12000.758	16761.230	1652071.300	6571.727	2920.341	10724.599	31429.463	9647.722	1847.137	632.016	301.004	1880.141
x		12242.661	16417.444	1632664.500	6364.955	3020.365	10636.190	30931.561	9660.732	1900.811	637.016	300.170	1761.791
σ		250.662	335.752	17971.618	215.593	88.903	87.586	431.195	65.526	46.486	10.898	7.784	106.120
%RSD		2.047	2.045	1.101	3.387	2.943	0.823	1.394	0.678	2.446	1.711	2.593	6.023

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:02:25	45216.634	524654.160	25776.550	5026.010	110.000	1295.067	2426439.000	2375.226	9928.942	7741.897	9898.918	311934.150
2	15:02:47	46009.519	526958.100	26728.546	5726.311	80.000	1385.077	2491427.100	2480.246	10164.131	7990.053	10434.353	324292.760
3	15:03:09	45562.888	531410.780	26838.782	6081.479	120.001	1400.078	2537831.500	2445.239	10309.249	7829.952	10929.776	325257.350
x		45596.347	527674.350	26447.959	5611.267	103.334	1360.074	2485232.500	2433.570	10134.107	7853.967	10421.016	320494.750
σ		397.500	3434.785	584.064	537.057	20.817	56.795	55954.001	53.474	191.923	125.809	515.559	7429.370
%RSD		0.872	0.651	2.208	9.571	20.145	4.176	2.251	2.197	1.894	1.602	4.947	2.318

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:02:25	10784.650	27174.506	10484.395	231707.820	0.000	36031.857	17957.890
2	15:02:47	11004.842	28382.185	10229.184	231931.920	10.000	36157.218	18884.254
3	15:03:09	11450.242	27625.493	10719.594	238055.430	0.000	37977.604	19294.880
x		11079.911	27727.395	10477.724	233898.390	3.333	36722.227	18712.341
σ		339.086	610.254	245.273	3601.849	5.774	1088.995	684.873
%RSD		3.060	2.201	2.341	1.540	173.205	2.965	3.660

STD2 1037149 5/10/2017 3:07:48 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:08:09	373240.370	1635.107	86100.514	T 10054474.000	343886.120	882816.270	T 14140517.000	340741.750	529940.290	115.001	137709.400	89146.756
2	15:08:30	368688.220	1742.622	84685.900	T 9845124.400	336632.640	869751.390	T 14074799.000	336519.650	532610.250	190.001	136587.190	88497.165
3	15:08:52	368966.250	1697.615	86140.790	T 9795836.300	344153.330	873521.120	T 14038147.000	340166.390	527218.750	105.000	135161.820	88638.159
x		370298.280	1691.781	85642.401	T 9898478.400	341557.360	875362.930	T 14084488.000	339142.600	529923.100	136.667	136486.140	88760.693
σ		2551.713	53.994	828.600	T 137325.970	4267.030	6724.358	T 51868.064	2289.681	2695.789	46.458	1276.793	341.692
%RSD		0.689	3.192	0.968	T 1.387	1.249	0.768	T 0.368	0.675	0.509	33.994	0.935	0.385

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:08:09	18198.237	70498.241	T 6887694.400	29058.737	13161.926	47695.822	143842.900	26580.230	2823.319	1930.649	306.504	2725.297
2	15:08:30	18143.157	71373.185	T 6890570.700	29058.737	13151.915	47490.041	146144.360	26442.940	2882.332	1946.652	306.504	3080.380
3	15:08:52	17547.308	73912.880	T 7063692.700	29630.076	12881.634	47329.434	145082.090	26562.192	2825.319	2014.162	299.504	2910.339
x		17962.901	71928.102	T 6947319.300	29249.183	13065.158	47505.099	145023.120	26528.454	2843.657	1963.821	304.170	2905.338
σ		360.966	1773.666	T 100792.600	329.863	159.016	183.658	1151.866	74.605	33.509	44.325	4.042	177.594
%RSD		2.010	2.466	T 1.451	1.128	1.217	0.387	0.794	0.281	1.178	2.257	1.329	6.113

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:08:09	221250.900	518265.770	126830.190	26673.429	545.012	6911.911	2431205.800	2065.171	49522.907	37841.192	49141.406	322999.930
2	15:08:30	218055.480	522673.730	127486.820	26573.215	490.010	6846.875	2465754.600	2135.182	49086.189	37984.124	49537.966	318599.120
3	15:08:52	218253.900	516609.270	127724.220	25566.118	490.010	6556.719	2507119.900	2550.260	49432.550	38266.483	50562.054	321573.860
x		219186.760	519182.920	127347.080	26270.921	508.344	6771.835	2468026.800	2250.204	49347.215	38030.600	49747.142	321057.640
σ		1790.349	3134.533	463.109	612.430	31.756	189.112	38008.030	262.203	230.526	216.421	733.060	2245.358
%RSD		0.817	0.604	0.364	2.331	6.247	2.793	1.540	11.652	0.467	0.569	1.474	0.699

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:08:09	55543.128	131326.260	47490.041	231066.100	0.000	183928.300	93805.664
2	15:08:30	54865.144	133812.420	47951.799	236638.920	0.000	185415.030	93558.825
3	15:08:52	54147.023	134358.230	47580.384	233093.220	0.000	185988.450	95140.697
x		54851.765	133165.630	47674.075	233599.410	0.000	185110.590	94168.395
σ		698.149	1616.154	244.721	2820.679	0.000	1063.279	851.035
%RSD		1.273	1.214	0.513	1.207	0.000	0.574	0.904

STD3 1037150 5/10/2017 3:13:33 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr

1	15:13:55	349971.570	189980.310	97377.826	┬34672108.000	┬10080062.000	┬100258250.000	┬50042972.000	┬4007935.600	496207.180	60516.134	┬6084768.000	1617882.800
2	15:14:17	350794.150	186726.840	98148.821	┬34155395.000	┬9941780.000	┬101012490.000	┬49886473.000	┬3963907.600	483171.120	60300.094	┬6067467.500	1631640.700
3	15:14:39	346517.310	187272.410	97403.021	┬34358680.000	┬10088511.000	┬101877640.000	┬50435503.000	┬3973932.600	487234.360	59250.091	┬6085744.700	1629723.100
x		349094.340	187993.190	97643.223	┬34395394.000	┬10036784.000	┬101049460.000	┬50121649.000	┬3981925.300	488870.890	60022.106	┬6079326.700	1626415.500
σ		2269.359	1742.388	438.042	┬260305.700	┬82384.652	┬810325.570	┬282844.670	┬23076.582	6670.339	677.255	┬10282.008	7451.495
%RSD		0.650	0.927	0.449	┬0.757	┬0.821	┬0.802	┬0.564	┬0.580	1.364	1.128	┬0.169	0.458
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	15:13:55	191556.600	┬8932833.900	┬176673810.000	2755117.300	1507126.300	2179945.800	1778396.100	219011.990	14826.788	17487.724	298.004	12601.349
2	15:14:17	192099.840	┬9010719.500	┬178218800.000	┬3039862.300	1516769.800	2188866.900	1796754.500	219217.540	15055.061	17273.427	314.504	11960.720
3	15:14:39	191495.670	┬8883015.600	┬174734790.000	┬3011355.100	1505715.500	2178486.100	1796386.900	219409.870	15054.060	17174.290	290.003	12776.526
x		191717.370	┬8942189.700	┬176542470.000	┬2935444.900	1509870.500	2182432.900	1790512.500	219213.140	14978.636	17311.814	300.837	12446.198
σ		332.625	┬64363.976	┬1745715.600	┬156817.420	6016.471	5619.578	10494.717	198.980	131.505	160.204	12.494	429.463
%RSD		0.173	┬0.720	┬0.989	┬5.342	0.398	0.257	0.586	0.091	0.878	0.925	4.153	3.451
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:13:55	1717948.000	497143.300	3223100.700	496997.680	16956.493	258163.690	2364213.300	1946316.300	1235613.400	961590.300	1215618.200	315020.110
2	15:14:17	1722368.900	492858.530	┬3367716.800	491548.430	17452.175	257214.420	2405609.600	1955619.400	1247049.800	968939.570	1233840.500	322127.850
3	15:14:39	1725774.100	501980.990	┬3395935.900	492411.420	16831.324	257990.160	2378358.000	1936729.300	1228688.100	969676.020	1243390.900	326601.730
x		1722030.300	497327.610	┬3328917.800	493652.510	17079.997	257789.420	2382727.000	1946221.600	1237117.100	966735.300	1230949.900	321249.900
σ		3924.007	4564.023	┬92720.145	2928.959	328.335	505.471	21041.138	9445.415	9272.742	4470.884	14110.166	5840.510
%RSD		0.228	0.918	┬2.785	0.593	1.922	0.196	0.883	0.485	0.750	0.462	1.146	1.818
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	15:13:55	87802.290	2766122.200	┬12875621.000	228652.320	15.000	371041.330	186729.370					
2	15:14:17	88769.083	2767127.500	┬12983432.000	237168.820	15.000	375141.010	189277.270					
3	15:14:39	89393.509	2792946.600	┬13181178.000	233724.850	5.000	370299.820	190028.540					
x		88654.961	2775398.800	┬13013410.000	233182.000	11.667	372160.720	188678.390					
σ		801.724	15205.147	┬154968.930	4284.121	5.774	2607.499	1729.193					
%RSD		0.904	0.548	┬1.191	1.837	49.487	0.701	0.916					

STD4 1037151 5/10/2017 3:19:18 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	15:19:40	324200.410	520925.470	266832.920	┬95155006.000	┬27821379.000	┬280121790.000	┬139652310.000	┬11184282.000	457118.200	169030.170	┬17005636.000	┬5007036.800
2	15:20:01	325206.040	516093.610	262992.810	┬94807404.000	┬27774842.000	┬280068930.000	┬138947350.000	┬11190716.000	464741.720	166815.720	┬17052016.000	┬5040321.100
3	15:20:23	317388.910	517348.940	267588.820	┬95592865.000	┬27935468.000	┬276093090.000	┬138054630.000	┬11175229.000	459575.900	166861.320	┬16972768.000	┬4957553.400
x		322265.120	518122.680	265804.850	┬95185092.000	┬27843896.000	┬278761270.000	┬138884760.000	┬11183409.000	460478.610	167569.070	┬17010140.000	┬5001637.100
σ		4252.748	2507.134	2464.452	┬393593.710	┬82646.357	┬2310858.800	┬800676.330	┬7780.057	3891.105	1265.555	┬39815.390	┬41647.241
%RSD		1.320	0.484	0.927	┬0.414	┬0.297	┬0.829	┬0.577	┬0.070	0.845	0.755	┬0.234	┬0.833
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	15:19:40	522262.050	┬24373361.000	┬482935100.000	┬8328563.600	┬4186620.600	┬6566232.500	┬5288702.100	595931.650	38112.013	45336.567	401.506	32326.747
2	15:20:01	531030.110	┬24771008.000	┬482247720.000	┬8355310.200	┬4175510.800	┬6569046.300	┬5347412.800	593038.820	38193.260	45272.335	358.005	32702.723
3	15:20:23	526859.050	┬24777994.000	┬482689180.000	┬8386819.300	┬4178675.900	┬6626546.100	┬5328488.600	593715.850	38216.330	45311.978	347.005	31780.348
x		526717.070	┬24640788.000	┬482624000.000	┬8356897.700	┬4180269.100	┬6587275.000	┬5321534.500	594228.780	38173.868	45306.960	368.839	32269.939
σ		4385.754	┬231624.690	┬348294.700	┬29160.302	┬5723.701	┬34038.893	┬29966.755	1513.084	54.796	32.409	28.821	463.804
%RSD		0.833	┬0.940	┬0.072	┬0.349	┬0.137	┬0.517	┬0.563	0.255	0.144	0.072	7.814	1.437
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	15:19:40	┬5356085.000	454329.230	┬9513649.100	1343691.600	45587.979	699615.490	2253136.700	┬5919986.600	┬3836380.600	┬2959858.000	┬3913297.200	304811.640
2	15:20:01	┬5462439.800	460934.580	┬9657415.700	1359185.000	46305.610	710753.200	2270605.100	┬5954283.400	┬3861728.700	2777235.200	┬3957281.700	310857.830
3	15:20:23	┬5359743.500	449986.300	┬9468435.800	1361686.600	46250.406	706248.330	2245117.600	┬5901218.100	┬3844344.300	┬3002687.900	┬3993901.500	310099.340
x		┬5392756.100	455083.370	┬9546500.200	1354854.400	46047.998	705539.010	2256286.500	┬5925162.700	┬3847484.500	┬2913260.400	┬3954826.800	308589.600

σ		┬60375.580	5512.961	┬98680.018	9747.837	399.343	5602.633	13032.443	┬26908.663	┬12962.538	┬119731.930	┬40358.192	3293.719
%RSD		┬1.120	1.211	┬1.034	0.719	0.867	0.794	0.578	┬0.454	┬0.337	┬4.110	┬1.020	1.067
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	15:19:40	254004.780	┬8567221.100	┬37153453.000	219846.450	5.000	1085664.500	550307.640					
2	15:20:01	256362.180	┬8545968.600	┬36927114.000	222136.400	35.000	1108062.700	561452.180					
3	15:20:23	257638.010	┬8584183.400	┬37627045.000	224823.810	10.000	1088560.900	566099.920					
x		256001.660	┬8565791.000	┬37235871.000	222268.880	16.667	1094096.000	559286.580					
σ		1843.251	┬19147.503	┬357170.320	2491.325	16.073	12181.911	8115.816					
%RSD		0.720	┬0.224	┬0.959	1.121	96.437	1.113	1.451					

STD5 1037152 5/10/2017 3:25:00 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:25:22	312610.740	804302.030	410728.860	T 152161090.000	T 44007655.000	TM 441682150.000	T 221968250.000	TM 18267559.000	441729.480	273509.920	TM 27277633.000	TM 7936574.200
2	15:25:44	308275.040	815600.000	411493.390	T 152092510.000	T 44526956.000	T 443192920.000	T 224977180.000	TM 18565954.000	451302.500	276908.530	TM 27375417.000	TM 8066414.000
3	15:26:05	301533.560	794666.610	M 415182.420	T 151564060.000	TM 44481257.000	T 434262080.000	T 220085430.000	TM 18284953.000	440631.740	273203.330	TM 27455322.000	TM 8033748.000
x		307473.110	804856.210	M 412468.220	T 151939220.000	TM 44338622.000	TM 439712380.000	T 222343620.000	TM 18372822.000	444554.570	274540.600	TM 27369457.000	TM 8012245.400
σ		5581.964	10477.689	M 2381.444	T 326700.350	TM 287535.930	TM 4780162.800	T 2467381.900	TM 167483.480	5869.591	2056.416	TM 88994.442	TM 67537.895
%RSD		1.815	1.302	M 0.577	T 0.215	TM 0.648	TM 1.087	T 1.110	TM 0.912	1.320	0.749	TM 0.325	TM 0.843

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:25:22	831815.460	TM 39417474.000	T 757934120.000	TM 13076577.000	T 6511930.900	TM 10177440.000	TM 8183781.900	920426.030	57830.466	68900.871	403.507	50205.622
2	15:25:44	846129.920	T 39794751.000	T 762325390.000	T 13130047.000	T 6547703.200	TM 10291583.000	TM 8246440.200	925518.180	58014.315	68863.667	402.506	49618.284
3	15:26:05	849384.940	TM 39757084.000	T 765609560.000	TM 13200266.000	T 6524357.700	TM 10264595.000	TM 8199476.400	918165.530	57628.536	68628.881	410.507	50577.115
x		842443.440	TM 39656437.000	T 761956360.000	TM 13135630.000	T 6527997.300	TM 10244540.000	TM 8209899.500	921369.920	57824.439	68797.807	405.507	50133.674
σ		9346.888	TM 207802.470	T 3851001.600	TM 62033.224	T 18161.783	TM 59656.006	TM 32603.611	3766.109	192.960	147.472	4.359	483.448
%RSD		1.109	TM 0.524	T 0.505	TM 0.472	T 0.278	TM 0.582	TM 0.397	0.409	0.334	0.214	1.075	0.964

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:25:22	TM 8616452.400	432267.160	TM 15278546.000	2131517.100	71770.450	M 1095624.800	2180779.100	T 9453479.200	TM 6114142.100	TM 4728610.200	TM 6357419.700	296843.280
2	15:25:44	TM 8620580.000	436935.330	TM 15350115.000	M 2168721.500	73218.814	1108548.100	2206762.300	T 9452382.500	TM 6125622.900	TM 4773744.300	TM 6335758.700	299915.320
3	15:26:05	TM 8551631.100	428604.210	TM 15261103.000	M 2159530.300	71896.169	1101891.300	2195054.200	T 9521150.600	TM 6177801.300	TM 4777474.400	TM 6386343.500	298143.680
x		TM 8596221.200	432602.230	TM 15296588.000	M 2153256.300	72295.144	M 1102021.400	2194198.500	T 9475670.800	TM 6139188.700	TM 4759943.000	TM 6359840.600	298300.760
σ		TM 38671.241	4175.653	TM 47169.153	M 19379.460	802.387	M 6462.610	13012.672	T 39390.494	TM 33928.551	TM 27198.978	TM 25379.122	1542.031
%RSD		TM 0.450	0.965	TM 0.308	M 0.900	1.110	M 0.586	0.593	T 0.416	TM 0.553	TM 0.571	TM 0.399	0.517

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:25:22	499395.460	TM 13691103.000	TM 59139503.000	209002.800	20.000	M 2136700.400	M 1087706.000
2	15:25:44	503505.510	TM 13789467.000	TM 60534868.000	209745.080	30.000	M 2155883.900	M 1091866.300
3	15:26:05	499400.660	TM 13802082.000	TM 59737209.000	210070.480	25.000	M 2146359.500	M 1094709.600
x		500767.210	TM 13760884.000	TM 59803860.000	209606.120	25.000	M 2146314.600	M 1091427.300
σ		2371.437	TM 60760.488	TM 700066.290	547.234	5.000	M 9591.844	M 3522.362
%RSD		0.474	TM 0.442	TM 1.171	0.261	20.000	M 0.447	M 0.323

ICV 1037153 5/10/2017 3:30:45 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:31:07	364446.510	96548.933	55713.885	T 18228311.000	T 5177022.000	T 52150137.000	T 25824459.000	1929881.500	496248.790	30642.513	T 3071862.700	823517.130
2	15:31:29	355545.600	95755.364	56547.617	T 18253071.000	T 5131428.200	T 51374111.000	T 25448423.000	1920068.500	495739.150	30416.963	T 3096278.800	818562.020
3	15:31:50	356862.340	95369.934	54814.924	T 17754688.000	T 5053856.000	T 51153136.000	T 25654673.000	1945369.400	501429.510	30667.574	T 3078041.500	823469.110
x		358951.480	95891.411	55692.142	T 18078690.000	T 5120768.800	T 51559128.000	T 25642519.000	1931773.100	497805.820	30575.683	T 3082061.000	821849.420
σ		4804.160	601.158	866.551	T 280867.070	T 62271.060	T 523618.510	T 188312.230	12756.107	3148.538	138.026	T 12694.634	2847.074
%RSD		1.338	0.627	1.556	T 1.554	T 1.216	T 1.016	T 0.734	0.660	0.632	0.451	T 0.412	0.346

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:31:07	102458.190	T 4508622.400	T 90937717.000	1385714.400	767303.930	1103493.900	899430.230	111606.020	7974.543	8840.625	292.003	6941.927
2	15:31:29	100855.240	T 4560615.900	T 90546015.000	1369900.500	754514.560	1092416.400	897487.800	111579.790	7863.473	8744.558	294.503	6606.746
3	15:31:50	100068.950	T 4534577.300	T 90595329.000	1379984.500	770815.400	1111482.200	908803.090	111459.730	7864.473	8787.588	301.504	6771.834
x		101127.460	T 4534605.200	T 90693020.000	1378533.100	764211.300	1102464.200	901907.040	111548.510	7900.830	8790.924	296.004	6773.502
σ		1217.660	T 25996.735	T 213343.340	8006.219	8579.196	9574.531	6050.608	78.002	63.840	48.121	4.925	167.597
%RSD		1.204	T 0.573	T 0.235	0.581	1.123	0.868	0.671	0.070	0.808	0.547	1.664	2.474

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:31:07	846675.040	485966.410	734726.440	246624.170	8302.756	125315.020	2338060.300	966148.450	633674.690	489998.840	609946.990	321932.930

2	15:31:29	838340.460	493555.230	740958.640	246476.300	8542.918	128936.570	2409371.500	982135.100	636802.800	494658.580	613447.180	324939.230
3	15:31:50	837437.870	491371.680	738838.510	249821.740	8412.830	127971.730	2396912.000	969174.800	632854.680	495947.680	618638.890	326222.000
x		840817.790	490297.770	738174.530	247640.740	8419.502	127407.780	2381447.900	972486.120	634444.060	493535.030	614011.020	324364.720
σ		5092.565	3906.727	3168.712	1890.248	120.220	1875.486	38087.730	8492.164	2083.473	3129.532	4373.299	2201.496
%RSD		0.606	0.797	0.429	0.763	1.428	1.472	1.599	0.873	0.328	0.634	0.712	0.679

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:31:07	102312.000	1335077.800	T 6576607.700	227318.320	5.000	373611.200	188663.090
2	15:31:29	102150.690	1376789.300	T 6648663.700	236455.490	0.000	375980.680	189475.230
3	15:31:50	101470.180	1368153.900	T 6566522.700	235609.750	0.000	379839.760	196299.330
x		101977.630	1360007.000	T 6597264.700	233127.850	1.667	376477.210	191479.220
σ		446.799	22016.798	T 44797.537	5048.944	2.887	3143.826	4194.045
%RSD		0.438	1.619	T 0.679	2.166	173.205	0.835	2.190

ICVL 1037148 5/10/2017 3:36:30 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:36:52	375486.140	440.008	23692.432	T 2589199.800	68879.253	186648.170	T 3207098.400	82853.682	521527.310	125.001	43826.697	20181.278
2	15:37:13	373199.160	425.007	22785.749	T 2522576.300	68165.355	182984.600	T 3207098.400	80800.306	526666.180	100.000	43570.804	20787.270
3	15:37:34	368822.080	470.009	23712.470	T 2585586.900	69201.023	184638.660	T 3207136.100	79874.384	530367.860	90.000	44198.001	20481.766
x		372502.460	445.008	23396.884	T 2565787.700	68748.543	184757.150	T 3207110.900	81176.124	526187.110	105.000	43865.167	20483.438
σ		3386.217	22.914	529.353	T 37465.690	530.062	1834.658	T 21.793	1524.790	4439.705	18.028	315.363	302.999
%RSD		0.909	5.149	2.262	T 1.460	0.771	0.993	T 0.001	1.878	0.844	17.169	0.719	1.479

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:36:52	9903.922	16435.798	1589261.400	6421.649	2835.322	9963.970	29920.767	8278.741	1475.087	643.517	294.503	1610.104
2	15:37:13	9328.480	15835.024	1568667.300	5806.348	2865.328	10404.328	30497.158	8269.735	1514.092	624.016	294.003	1570.099
3	15:37:34	9658.730	16275.589	1582623.000	6271.573	2805.315	10269.217	30051.079	8048.590	1483.088	565.013	263.003	1595.102
x		9630.377	16182.137	1580183.900	6166.523	2835.322	10212.505	30156.335	8199.022	1490.756	610.848	283.837	1591.768
σ		288.767	311.099	10511.520	320.820	30.007	225.591	302.267	130.355	20.602	40.875	18.044	20.210
%RSD		2.999	1.922	0.665	5.203	1.058	2.209	1.002	1.590	1.382	6.691	6.357	1.270

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:36:52	44509.102	511901.400	25556.098	5391.162	115.001	1495.089	2414505.100	4130.682	10219.176	7663.348	9868.894	315717.370
2	15:37:13	44388.674	516994.730	25505.996	5171.069	95.000	1400.078	2425620.600	4245.721	10219.176	7732.391	10469.382	326817.250
3	15:37:34	44574.333	509381.530	25516.016	5631.268	60.000	1300.068	2437708.700	4100.673	9778.824	7760.408	9823.859	322333.040
x		44490.703	512759.220	25526.037	5397.833	90.000	1398.412	2425944.800	4159.025	10072.392	7718.716	10054.045	321622.560
σ		94.187	3878.410	26.512	230.172	27.839	97.522	11605.194	76.565	254.237	49.954	360.397	5583.941
%RSD		0.212	0.756	0.104	4.264	30.932	6.974	0.478	1.841	2.524	0.647	3.585	1.736

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:36:52	11230.042	29199.064	10739.612	232471.810	0.000	37265.466	18829.171
2	15:37:13	10659.543	29785.445	11129.953	231952.290	0.000	37310.600	18438.589
3	15:37:34	11074.904	29444.639	10924.772	229039.310	0.000	37255.436	19540.261
x		10988.163	29476.382	10931.445	231154.470	0.000	37277.167	18936.007
σ		294.975	294.477	195.256	1850.108	0.000	29.385	558.552
%RSD		2.684	0.999	1.786	0.800	0.000	0.079	2.950

ICBIS 1036503 5/10/2017 3:42:14 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:42:35	373982.050	120.001	5041.016	646528.470	850.029	12431.178	448494.080	16420.779	539371.090	100.000	19149.657	3040.370
2	15:42:57	380102.570	72.500	5096.039	644497.510	680.019	11094.922	453966.400	16190.478	544016.020	65.000	19354.973	2810.316

3	15:43:19	376866.770	115.001	4820.930	639658.190	710.020	10019.014	444940.410	17291.952	532505.940	85.000	18989.413	2945.347
x		376983.800	102.500	4985.995	643561.390	746.689	11181.705	449133.630	16634.403	538631.020	83.334	19164.681	2932.011
σ		3061.938	26.101	145.574	3529.505	90.743	1208.422	4546.857	580.980	5790.615	17.560	183.243	115.605
%RSD		0.812	25.464	2.920	0.548	12.153	10.807	1.012	3.493	1.075	21.071	0.956	3.943

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:42:35	6526.704	2035.166	377242.870	320.004	185.001	870.030	760.023	3449.476	1143.052	282.503	292.503	1310.069
2	15:42:57	6986.952	1875.141	370974.390	265.003	175.001	815.027	660.017	3446.475	1135.052	287.003	278.003	1170.055
3	15:43:19	6516.698	1925.148	371443.000	175.001	210.002	725.021	655.017	3436.472	1142.052	291.003	300.004	1455.085
x		6676.785	1945.152	373220.080	253.336	190.001	803.359	691.686	3444.141	1140.052	286.837	290.170	1311.736
σ		268.660	81.866	3491.701	73.202	18.028	73.205	59.235	6.809	4.359	4.253	11.184	142.522
%RSD		4.024	4.209	0.936	28.895	9.488	9.112	8.564	0.198	0.382	1.483	3.854	10.865

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:42:35	475.009	522340.210	320.004	20.000	20.000	10.000	2407580.500	1980.157	160.001	110.500	75.000	317501.730
2	15:42:57	390.006	514484.270	305.004	45.000	0.000	30.000	2448794.800	1875.141	115.001	100.000	45.000	316650.540
3	15:43:19	490.010	516609.270	245.002	20.000	10.000	25.000	2430098.200	1790.128	145.001	93.000	70.000	311062.840
x		451.675	517811.250	290.003	28.333	10.000	21.667	2428824.500	1881.809	140.001	101.167	63.334	315071.700
σ		53.931	4063.563	39.687	14.434	10.000	10.408	20636.641	95.190	22.913	8.808	16.073	3497.766
%RSD		11.940	0.785	13.685	50.943	100.000	48.038	0.850	5.058	16.366	8.707	25.378	1.110

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:42:35	150.001	1430.082	1175.055	231066.100	0.000	30.000	65.000
2	15:42:57	70.000	1315.069	1150.053	231137.400	0.000	35.000	25.000
3	15:43:19	115.001	1165.054	1005.040	234621.420	0.000	35.000	30.000
x		111.667	1303.402	1110.050	232274.970	0.000	33.333	40.000
σ		40.104	132.898	91.796	2032.391	0.000	2.887	21.795
%RSD		35.914	10.196	8.270	0.875	0.000	8.660	54.486

ICSA 1034645 5/10/2017 3:47:56 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:48:17	312128.920	100.000	6821.861	TM 312590250.000	T 30426019.000	T 308842380.000	TM 462897580.000	T 12581957.000	465706.660	575253.960	10339.274	7547.278
2	15:48:39	309761.100	72.500	6851.877	TM 317791450.000	T 31337789.000	T 312974450.000	TM 469828040.000	T 12858843.000	466308.480	582948.410	10374.303	7992.554
3	15:49:00	300529.810	67.500	6686.788	TM 314813420.000	T 31234208.000	T 312600740.000	TM 465662130.000	T 12805538.000	460986.440	579022.090	10984.825	8097.622
x		307473.280	80.000	6786.842	TM 315065040.000	T 30999339.000	T 311472530.000	TM 466129250.000	T 12748779.000	464333.860	579074.820	10566.134	7879.151
σ		6128.658	17.500	87.940	TM 2609715.700	T 499203.550	T 2285421.900	TM 3488764.500	T 146910.610	2914.528	3847.499	363.019	292.173
%RSD		1.993	21.875	1.296	TM 0.828	T 1.610	T 0.734	TM 0.748	T 1.152	0.628	0.664	3.436	3.708

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:48:17	15574.697	178505.530	T 548914080.000	670.018	1100.048	2555.261	2520.254	3102.385	959.037	259.503	284.003	1200.058
2	15:48:39	15469.566	178175.880	T 557484370.000	645.017	1240.062	2665.284	2745.301	3084.381	1022.042	265.003	314.004	1270.065
3	15:49:00	15199.235	177547.030	T 557995690.000	625.016	1235.061	2670.285	2730.298	3088.382	969.038	268.003	303.504	1245.062
x		15414.499	178076.150	T 554798040.000	646.683	1191.724	2630.277	2665.285	3091.716	983.372	264.169	300.504	1238.395
σ		193.693	486.974	T 5102072.600	22.547	79.432	65.014	125.824	9.454	33.860	4.311	15.224	35.476
%RSD		1.257	0.273	T 0.920	3.487	6.665	2.472	4.721	0.306	3.443	1.632	5.066	2.865

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:48:17	6136.506	475588.480	T 5129733.200	490.010	1850.137	2395.229	2314081.800	2805.315	465.009	382.006	615.015	320476.200
2	15:48:39	6141.508	474757.780	T 5216388.300	430.007	1660.110	2385.228	2368886.600	2855.326	435.008	378.006	660.017	327689.650
3	15:49:00	6066.472	473999.810	T 5175103.600	455.008	1715.118	2285.209	2380480.900	2865.328	480.009	377.506	665.018	333459.260
x		6114.829	474782.020	T 5173741.700	458.342	1741.788	2355.222	2354483.100	2841.990	460.008	379.172	646.683	327208.370
σ		41.953	794.611	T 43343.586	30.140	97.780	60.839	35465.573	32.153	22.914	2.467	27.539	6504.894
%RSD		0.686	0.167	T 0.838	6.576	5.614	2.583	1.506	1.131	4.981	0.650	4.259	1.988

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:48:17	950.036	1240.062	3390.460	226147.370	0.000	65.000	20.000
2	15:48:39	750.023	1125.051	3195.408	229711.480	0.000	55.000	30.000
3	15:49:00	895.032	1190.057	3440.473	233388.660	0.000	60.000	35.000
x		865.030	1185.056	3342.114	229749.170	0.000	60.000	28.333
σ		103.327	57.668	129.488	3620.793	0.000	5.000	7.638
%RSD		11.945	4.866	3.874	1.576	0.000	8.333	26.956

ICSAB 1034648 5/10/2017 3:53:40 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:54:01	291161.970	6779.338	142108.220	TM 316041640.000	T 31314888.000	T 314382980.000	TM 471965350.000	T 12889068.000	471580.850	585818.010	112135.730	198630.730
2	15:54:23	292154.740	6671.780	145992.600	TM 315215310.000	T 31253968.000	T 316782370.000	TM 475996840.000	T 12980379.000	464098.470	586729.290	115132.790	197172.920
3	15:54:44	287304.240	6529.205	142942.660	TM 309672340.000	T 31004948.000	T 310436080.000	TM 470312630.000	T 12948620.000	465416.130	591842.060	113336.490	196263.780
x		290206.980	6660.108	143681.160	TM 313643100.000	T 31191268.000	T 313867150.000	TM 472758280.000	T 12939356.000	467031.820	588129.780	113535.000	197355.810
σ		2562.391	125.474	2044.784	TM 3463509.200	T 164207.680	T 3204434.800	TM 2923884.800	T 46354.871	3994.285	3247.051	1508.360	1194.026
%RSD		0.883	1.884	1.423	TM 1.104	T 0.526	T 1.021	TM 0.618	T 0.358	0.855	0.552	1.329	0.605

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:54:01	39080.998	334973.960	T 571048640.000	128936.570	28933.447	81132.447	69155.773	48898.456	9274.439	10331.768	328.004	1400.078
2	15:54:23	36914.427	332488.920	T 565562550.000	127148.400	28241.868	82979.513	70141.241	49309.064	9321.474	10191.153	357.005	1295.067
3	15:54:44	38228.367	332186.020	T 565180730.000	128633.470	29309.321	81102.252	71664.847	49371.309	9229.406	10381.809	305.504	1280.066
x		38074.597	333216.300	T 567263970.000	128239.480	28828.212	81738.071	70320.620	49192.943	9275.107	10301.577	330.171	1325.070
σ		1091.440	1529.693	T 3283171.300	956.984	541.452	1075.226	1264.118	256.925	46.038	98.849	25.819	65.391
%RSD		2.867	0.459	T 0.579	0.746	1.878	1.315	1.798	0.522	0.496	0.960	7.820	4.935

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:54:01	6006.443	486777.050	T 5326345.900	121553.150	3915.613	33504.843	2410838.000	2370.225	249403.510	193789.110	255142.600	331036.110
2	15:54:23	5636.270	481997.070	T 5355036.400	123113.300	3840.590	34562.717	2471658.000	2825.319	255897.810	196983.470	252091.630	339190.400
3	15:54:44	5851.369	479119.560	T 5387498.400	123810.140	4055.658	34983.886	2474025.000	2675.286	258337.220	197669.160	256607.130	343187.310
x		5831.361	482631.230	T 5356293.600	122825.530	3937.287	34350.482	2452173.700	2623.610	254546.180	196147.250	254613.790	337804.610
σ		185.896	3867.936	T 30595.597	1155.686	109.160	762.021	35817.279	231.906	4617.682	2070.783	2303.728	6192.996
%RSD		3.188	0.801	T 0.571	0.941	2.772	2.218	1.461	8.839	1.814	1.056	0.905	1.833

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:54:01	119235.990	348634.990	245956.200	236312.830	0.000	406282.020	208870.620
2	15:54:23	119331.900	354033.580	248990.390	236730.630	0.000	405967.030	207213.380
3	15:54:44	122355.920	360931.710	250015.550	237800.650	0.000	413332.610	214769.320
x		120307.940	354533.430	248320.720	236948.040	0.000	408527.220	210284.440
σ		1774.256	6163.580	2110.908	767.367	0.000	4164.568	3971.427
%RSD		1.475	1.739	0.850	0.324	0.000	1.019	1.889

CCV 1037150 5/10/2017 3:59:25 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:59:46	317655.560	174884.890	90939.601	T 32727565.000	T 9672336.900	T 97096336.000	T 48272072.000	T 3825090.200	466848.070	57878.688	T 5952721.900	1594115.100
2	16:00:08	312815.780	174887.430	93941.680	T 32321361.000	T 9622972.800	T 95990334.000	T 48836427.000	T 3918532.900	464108.850	57858.595	T 6002809.700	1600912.000
3	16:00:29	315020.110	176477.030	93679.725	T 32811855.000	T 9495512.700	T 95993744.000	T 48438800.000	T 3933869.700	476990.410	59024.025	T 5926870.700	1573773.300
x		315163.820	175416.450	92853.669	T 32620260.000	T 9596940.800	T 96360138.000	T 48515766.000	T 3892497.600	469315.780	58253.770	T 5960800.800	1589600.100
σ		2423.090	918.493	1662.798	T 262263.100	T 91241.155	T 637568.150	T 289943.260	T 58878.048	6786.074	667.137	T 38608.742	14121.512
%RSD		0.769	0.524	1.791	T 0.804	T 0.951	T 0.662	T 0.598	T 1.513	1.446	1.145	T 0.648	0.888

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:59:46	189764.570	T 8999906.700	T 176788030.000	2741645.800	1491497.800	2158527.100	1806247.900	218879.700	14861.830	17452.175	348.505	12356.104
2	16:00:08	189703.660	T 8967656.600	T 177201810.000	2736370.500	1486081.000	2146860.600	1801782.000	217702.410	14801.758	17177.795	337.505	12506.253
3	16:00:29	186632.950	T 8911417.500	T 177956760.000	T 2992982.300	1480952.600	2152073.300	1812756.900	218065.660	14914.893	17378.072	306.504	12010.768
x		188700.390	T 8959660.300	T 177315530.000	T 2823666.200	1486177.100	2152487.000	1806928.900	218215.920	14859.494	17336.014	330.838	12291.042
σ		1790.718	T 44783.284	T 592606.490	T 146655.780	5273.282	5844.262	5519.060	602.859	56.603	141.943	21.780	254.070
%RSD		0.949	T 0.500	T 0.334	T 5.194	0.355	0.272	0.305	0.276	0.381	0.819	6.583	2.067

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:59:46	1743328.000	502261.950	T 3452643.300	509095.220	17677.491	266429.450	2488210.900	2054373.900	1304232.200	1010255.500	1273425.600	333110.130

2	16:00:08	1754673.100	504291.250	T 3460814.900	513140.700	17742.583	271369.010	2520588.700	2087439.300	1323498.100	1018346.100	1302477.700	345941.690
3	16:00:29	1725619.800	500461.860	T 3442990.000	511130.810	17907.818	269749.520	2523121.600	2057512.800	1321186.700	1015992.700	1284110.200	338923.300
x		1741207.000	502338.350	T 3452149.400	511122.240	17775.964	269182.660	2510640.400	2066442.000	1316305.700	1014864.800	1286671.200	339325.040
σ		14642.329	1915.836	T 8922.709	2022.753	118.737	2518.102	19465.792	18251.826	10519.592	4161.567	14694.339	6425.205
%RSD		0.841	0.381	T 0.258	0.396	0.668	0.935	0.775	0.883	0.799	0.410	1.142	1.894

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:59:46	92536.255	2919752.800	T 13759259.000	244161.530	15.000	395783.120	203340.550
2	16:00:08	93352.289	2970582.100	T 14022185.000	245140.410	5.000	392744.500	203523.490
3	16:00:29	92692.406	2929646.800	T 13957120.000	249627.920	0.000	398399.290	205840.980
x		92860.317	2939993.900	T 13912855.000	246309.950	6.667	395642.300	204235.010
σ		433.155	26948.121	T 136938.000	2914.830	7.638	2830.024	1393.817
%RSD		0.466	0.917	T 0.984	1.183	114.564	0.715	0.682

CCB 1035925 5/10/2017 4:05:08 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:05:30	343022.880	85.000	4695.882	615205.510	1680.113	21082.764	440724.940	17362.049	514296.780	100.000	17477.210	3120.389
2	16:05:51	346537.870	115.001	4600.847	627116.030	1730.120	18368.486	442288.750	18343.449	520360.140	135.001	17437.154	2880.332
3	16:06:13	341224.660	115.001	4695.882	620917.820	1180.056	15779.954	442516.600	17702.526	521225.080	125.001	16906.425	2555.261
x		343595.140	105.000	4664.203	621079.790	1530.096	18410.401	441843.430	17802.675	518627.340	120.001	17273.596	2851.994
σ		2702.434	17.321	54.869	5956.910	304.173	2651.654	975.316	498.306	3775.222	18.028	318.609	283.628
%RSD		0.787	16.496	1.176	0.959	19.879	14.403	0.221	2.799	0.728	15.023	1.844	9.945

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:05:30	6386.631	2575.265	384045.380	420.007	330.004	835.028	810.026	3299.435	1014.041	279.003	291.503	1320.070
2	16:05:51	6116.496	2220.197	383200.020	345.005	190.001	840.028	825.027	3275.429	1105.049	309.004	295.503	1360.074
3	16:06:13	5956.419	2170.188	371757.130	250.003	205.002	875.031	870.030	3380.457	1083.047	302.504	291.503	1490.089
x		6153.182	2321.884	379667.510	338.338	241.669	850.029	835.028	3318.441	1067.379	296.837	292.837	1390.078
σ		217.440	220.855	6863.613	85.198	76.867	21.796	31.227	55.033	47.484	15.783	2.309	88.892
%RSD		3.534	9.512	1.808	25.181	31.807	2.564	3.740	1.658	4.449	5.317	0.789	6.395

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:05:30	475.009	517536.470	710.020	90.000	5.000	55.000	2523497.400	1865.139	175.001	143.001	175.001	327823.080
2	16:05:51	510.010	525279.620	555.012	45.000	10.000	30.000	2561098.500	1735.120	195.002	161.501	165.001	333448.990
3	16:06:13	505.010	522934.300	440.008	55.000	5.000	20.000	2516420.700	1865.139	200.002	121.501	110.000	329557.810
x		496.677	521916.800	568.347	63.334	6.667	35.000	2533672.200	1821.800	190.001	142.001	150.001	330276.630
σ		18.930	3970.592	135.499	23.629	2.887	18.028	24014.018	75.066	13.229	20.019	35.000	2881.013
%RSD		3.811	0.761	23.841	37.309	43.301	51.508	0.948	4.120	6.963	14.098	23.333	0.872

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:05:30	160.001	2510.252	2085.174	241398.640	0.000	55.000	15.000
2	16:05:51	75.000	2295.211	1975.156	247169.790	0.000	60.000	20.000
3	16:06:13	80.000	2130.182	1375.076	242367.110	0.000	60.000	40.000
x		105.001	2311.881	1811.802	243645.180	0.000	58.333	25.000
σ		47.697	190.583	382.195	3090.574	0.000	2.887	13.229
%RSD		45.426	8.244	21.095	1.268	0.000	4.949	52.915

MB 200-116243/1-A 5/10/2017 4:10:52 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:11:14	379546.040	80.000	4715.889	726230.920	940.035	116949.540	448877.480	27229.626	549341.500	205.002	16781.257	5706.302
2	16:11:35	378680.370	77.500	4775.912	738170.740	1110.049	121724.810	447592.620	26949.019	552287.130	245.002	15880.081	5646.275

3	16:11:58	367195.220	95.000	4725.893	737979.950	1120.050	120699.940	454692.070	27830.948	551117.160	220.002	15729.891	5736.316
x		375140.540	84.167	4739.232	734127.200	1056.712	119791.430	450387.390	27336.531	550915.260	223.335	16130.409	5696.298
σ		6894.447	9.465	32.158	6839.048	101.168	2513.928	3782.914	450.579	1483.158	20.208	568.631	45.847
%RSD		1.838	11.245	0.679	0.932	9.574	2.099	0.840	1.648	0.269	9.048	3.525	0.805

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:11:14	6056.467	3325.442	537508.370	185.001	415.007	1090.048	1155.053	2763.305	898.032	314.504	306.504	1430.082
2	16:11:35	5946.414	3625.526	540206.010	125.001	420.007	1105.049	1245.062	2871.330	914.033	296.004	345.005	1355.073
3	16:11:58	6321.598	3495.489	540613.050	195.002	375.006	1095.048	1315.069	2827.320	964.037	299.504	325.504	1475.087
x		6108.160	3482.152	539442.470	168.335	403.340	1096.715	1238.395	2820.652	925.368	303.337	325.671	1420.081
σ		192.860	150.486	1687.304	37.860	24.665	7.638	80.216	54.320	34.431	9.828	19.251	60.629
%RSD		3.157	4.322	0.313	22.491	6.115	0.696	6.477	1.926	3.721	3.240	5.911	4.269

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:11:14	1005.040	548725.300	400.006	20.000	5.000	20.000	2583942.400	1390.077	145.001	87.000	65.000	339200.680
2	16:11:35	930.035	552652.770	300.004	25.000	0.000	5.000	2607165.500	1390.077	195.002	103.500	130.001	343495.600
3	16:11:58	990.039	553373.640	320.004	5.000	15.000	10.000	2623003.000	1465.086	135.001	93.000	175.001	342622.110
x		975.038	551583.900	340.005	16.667	6.667	11.667	2604703.600	1415.080	158.334	94.500	123.334	341772.800
σ		39.689	2501.723	52.917	10.408	7.638	7.638	19646.365	43.306	32.146	8.352	55.303	2269.934
%RSD		4.071	0.454	15.563	62.450	114.564	65.465	0.754	3.060	20.303	8.838	44.840	0.664

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:11:14	140.001	1320.070	1025.042	244008.590	0.000	10.000	2610.273
2	16:11:35	85.000	1365.075	970.038	243366.250	0.000	25.000	2720.296
3	16:11:58	120.001	1245.062	1020.042	243641.530	0.000	35.000	2800.314
x		115.001	1310.069	1005.040	243672.120	0.000	23.333	2710.294
σ		27.839	60.628	30.416	322.262	0.000	12.583	95.415
%RSD		24.208	4.628	3.026	0.132	0.000	53.927	3.520

LCS 200-116243/2-A 5/10/2017 4:16:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:16:55	354403.860	3382.958	158093.460	T 19753226.000	705629.820	T 2037156.500	T 28738414.000	697597.250	530315.720	160.001	254494.590	185658.600
2	16:17:17	357757.380	3470.482	162013.170	T 20043419.000	716164.320	1928877.800	T 29293597.000	708040.570	529314.600	195.002	256479.550	185952.930
3	16:17:38	359115.510	3377.956	160716.590	T 19727704.000	715931.530	1931622.100	T 29050393.000	694998.310	530002.860	225.002	249780.930	183562.990
x		357092.250	3410.465	160274.410	T 19841450.000	712575.220	T 1965885.500	T 29027468.000	700212.050	529877.720	193.335	253585.030	185058.170
σ		2425.224	52.036	1996.918	T 175375.730	6016.022	T 61737.792	T 278300.510	6903.113	512.157	32.533	3440.691	1303.202
%RSD		0.679	1.526	1.246	T 0.884	0.844	T 3.140	T 0.959	0.986	0.097	16.827	1.357	0.704

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:16:55	25200.377	148370.360	T 14174240.000	60943.202	26803.707	98854.348	295256.350	46175.128	3464.480	3646.032	321.504	4635.860
2	16:17:17	24964.905	148456.370	T 14127740.000	58913.506	27815.915	102256.550	296111.220	46112.899	3463.480	3740.560	334.504	4430.785
3	16:17:38	25055.085	147803.700	T 14400950.000	61204.474	26733.557	100260.480	299987.010	45901.122	3449.476	3656.535	353.505	4590.843
x		25073.456	148210.140	T 14234310.000	60353.727	27117.726	100457.130	297118.190	46063.050	3459.145	3681.042	336.505	4552.496
σ		118.806	354.605	T 146175.210	1254.091	605.666	1709.606	2520.966	143.644	8.389	51.811	16.094	107.781
%RSD		0.474	0.239	T 1.027	2.078	2.233	1.702	0.848	0.312	0.243	1.407	4.783	2.368

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:16:55	470096.480	537857.930	267338.550	54493.523	1105.049	13912.738	2486844.800	1535.094	106557.250	82741.443	107318.720	331929.340
2	16:17:17	468742.010	528292.700	271399.670	54538.720	995.040	13927.755	2521836.900	1415.080	107913.810	82777.178	107207.780	330953.980
3	16:17:38	475650.780	530294.860	273438.380	55523.039	965.037	14233.099	2585074.600	1295.067	108680.410	84155.334	108403.020	342673.490
x		471496.420	532148.500	270725.530	54851.761	1021.709	14024.531	2531252.100	1415.081	107717.160	83224.652	107643.170	335185.600
σ		3660.965	5044.839	3105.293	581.783	73.717	180.781	49787.113	120.014	1075.155	806.193	660.380	6503.015
%RSD		0.776	0.948	1.147	1.061	7.215	1.289	1.967	8.481	0.998	0.969	0.613	1.940

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:16:55	115980.580	286173.740	98768.674	240909.340	0.000	396226.850	207071.050
2	16:17:17	116217.760	285247.940	101147.580	243162.330	0.000	403400.930	208113.140
3	16:17:38	119513.620	291361.540	101334.090	249240.300	0.000	403602.270	207797.960
x		117237.320	287594.410	100416.780	244437.320	0.000	401076.680	207660.720
σ		1974.899	3295.111	1430.346	4309.344	0.000	4201.283	534.431
%RSD		1.685	1.146	1.424	1.763	0.000	1.048	0.257

LCSD 200-116243/3-A 5/10/2017 4:22:18 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:22:40	357459.030	3350.449	163401.060	T 20431824.000	727724.110	2024543.700	T 29313565.000	704773.480	528928.770	175.001	256045.790	186064.570
2	16:23:01	354002.730	3355.450	163710.060	T 20484659.000	736538.550	T 2154392.100	T 29573680.000	713804.940	535885.890	125.001	256882.700	186429.950
3	16:23:23	348347.130	3280.430	165508.520	T 20374250.000	733041.720	2025759.000	T 29716552.000	706401.630	533236.100	120.001	257632.910	188038.780
x		353269.630	3328.777	164206.550	T 20430244.000	732434.800	T 2068231.600	T 29534599.000	708326.680	532683.590	140.001	256853.800	186844.440
σ		4599.975	41.944	1138.074	T 55221.617	4438.453	T 74619.677	T 204316.180	4813.645	3511.314	30.414	793.952	1050.346
%RSD		1.302	1.260	0.693	T 0.270	0.606	T 3.608	T 0.692	0.680	0.659	21.724	0.309	0.562

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:22:40	24939.855	147611.450	T 14413164.000	60330.239	28647.790	102619.510	298461.120	46692.043	3511.493	3706.049	309.004	4780.914
2	16:23:01	25546.077	148016.190	T 14506144.000	60651.789	28612.710	104157.150	305405.880	47302.331	3397.462	3846.092	310.504	4555.830
3	16:23:23	24894.765	150151.430	T 14475318.000	61676.787	27916.138	104147.060	306087.250	47832.343	3483.485	3717.553	280.003	4680.876
x		25126.899	148593.030	T 14464875.000	60886.272	28392.213	103641.240	303318.090	47275.572	3464.147	3756.565	299.837	4672.540
σ		363.718	1364.709	T 47361.704	703.231	412.666	884.860	4220.025	570.620	59.425	77.746	17.193	112.773
%RSD		1.448	0.918	T 0.327	1.155	1.453	0.854	1.391	1.207	1.715	2.070	5.734	2.414

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:22:40	472790.270	528730.650	271082.910	56060.430	1080.047	14268.139	2507422.600	1285.066	107439.760	83083.701	108150.850	332504.320
2	16:23:01	465883.050	534769.570	273050.030	56884.138	940.035	14027.867	2568502.200	1280.066	108145.810	84139.227	108060.070	336827.790
3	16:23:23	485976.800	532474.650	271757.320	56813.820	1025.042	14703.643	2576883.200	1285.066	111010.760	84388.398	110864.470	345890.300
x		474883.370	531991.620	271963.420	56586.129	1015.041	14333.216	2550936.000	1283.399	108865.440	83870.442	109025.130	338407.470
σ		10209.089	3048.302	999.628	456.625	70.539	342.556	37916.008	2.887	1891.141	692.634	1593.560	6831.371
%RSD		2.150	0.573	0.368	0.807	6.949	2.390	1.486	0.225	1.737	0.826	1.462	2.019

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:22:40	116550.840	285007.550	100295.760	241449.610	0.000	395561.260	206313.680
2	16:23:01	118524.270	285355.350	100084.080	240256.960	0.000	395597.380	208926.540
3	16:23:23	118660.550	290675.850	101908.730	245079.230	0.000	402079.350	209943.370
x		117911.890	287012.920	100762.860	242261.930	0.000	397746.000	208394.530
σ		1180.668	3176.959	997.984	2511.668	0.000	3752.839	1872.415
%RSD		1.001	1.107	0.990	1.037	0.000	0.944	0.898

200-38368-A-1-A @20 5/10/2017 4:28:00 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:28:22	353745.600	27217.099	115723.210	T 24031413.000	T 2208644.400	T 18552246.000	T 28302248.000	919445.680	517161.410	49051.052	78505.754	373899.640
2	16:28:43	343762.800	26726.041	116005.810	T 24010631.000	T 2199358.100	T 18627960.000	T 28701686.000	920144.390	518474.150	48488.865	79325.908	373163.110
3	16:29:05	347524.700	26801.201	116157.200	T 23842548.000	2112203.300	T 18492495.000	T 28285148.000	927563.780	528793.210	48353.341	80196.436	374517.730
x		348344.370	26914.780	115962.070	T 23961531.000	T 2173401.900	T 18557567.000	T 28429694.000	922384.620	521476.260	48631.086	79342.699	373860.160
σ		5041.624	264.499	220.279	T 103565.010	T 53202.565	T 67889.461	T 235707.350	4498.872	6370.570	369.960	845.466	678.173
%RSD		1.447	0.983	0.190	T 0.432	T 2.448	T 0.366	T 0.829	0.488	1.222	0.761	1.066	0.181

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:28:22	49713.662	T 4887007.600	T 44469603.000	753463.940	70930.677	91987.225	350105.230	172305.440	12121.875	13601.896	319.504	3705.549
2	16:28:43	48965.718	T 4903007.100	T 44098952.000	745581.750	71006.103	90798.582	352825.130	172841.770	12067.822	13737.044	313.504	4030.650
3	16:29:05	48458.748	T 4872848.400	T 44155458.000	751071.190	70387.620	89947.462	351884.150	172041.840	11910.672	13718.023	299.004	3945.623
x		49046.043	T 4887621.000	T 44241338.000	750038.960	70774.800	90911.090	351604.840	172396.350	12033.456	13685.655	310.671	3893.941
σ		631.301	T 15088.711	T 199692.510	4041.210	337.422	1024.525	1381.292	407.637	109.715	73.158	10.540	168.600
%RSD		1.287	T 0.309	T 0.451	0.539	0.477	1.127	0.393	0.236	0.912	0.535	3.393	4.330

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:28:22	404836.230	596396.030	230862.390	11640.417	7197.071	112655.370	2510873.400	245691.070	55934.869	43824.188	130310.710	335841.780

2	16:28:43	401186.340	593639.350	235630.130	11930.691	7102.017	113472.720	2516239.000	249235.200	58099.710	44234.630	130629.010	335225.570
3	16:29:05	404872.370	599635.630	235039.150	12235.986	7197.071	113846.090	2518347.000	247853.120	57185.509	44321.437	131599.110	346794.850
x		403631.640	596557.000	233843.890	11935.698	7165.387	113324.720	2515153.100	247593.130	57073.363	44126.751	130846.280	339287.400
σ		2117.776	3001.379	2598.907	297.816	54.880	608.996	3853.323	1786.315	1086.769	265.598	671.113	6508.936
%RSD		0.525	0.503	1.111	2.495	0.766	0.537	0.153	0.721	1.904	0.602	0.513	1.918

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:28:22	305.004	1573129.300	660343.270	238758.660	0.000	86870.816	817746.130
2	16:28:43	315.004	1598987.500	678529.460	239920.590	0.000	90103.580	832589.530
3	16:29:05	285.003	1630982.600	676535.630	245670.670	0.000	90063.291	853576.510
x		301.670	1601033.100	671802.790	241449.970	0.000	89012.562	834637.390
σ		15.276	28980.856	9974.177	3701.114	0.000	1854.916	18002.761
%RSD		5.064	1.810	1.485	1.533	0.000	2.084	2.157

200-38368-A-1-A @10 5/10/2017 4:33:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:34:05	344708.310	52808.816	221159.300	T 44966924.000	T 4218470.700	T 34995286.000	T 53315108.000	1794100.800	516098.820	97176.267	139504.140	731923.990
2	16:34:28	344009.450	53680.015	222864.180	T 45348203.000	T 4196860.800	T 35626976.000	T 54813287.000	T 1992745.700	520078.790	95704.981	135909.860	732734.470
3	16:34:50	342796.810	51905.042	219851.530	T 44963643.000	T 4245142.700	T 35770495.000	T 54506517.000	1812975.400	519068.050	94163.339	138806.430	721339.530
x		343838.190	52797.958	221291.670	T 45092923.000	T 4220158.000	T 35464252.000	T 54211637.000	T 1866607.300	518415.220	95681.529	138073.480	728666.000
σ		967.190	887.536	1510.681	T 221084.570	T 24185.144	T 412427.800	T 791422.850	T 109645.940	2068.738	1506.601	1905.942	6357.831
%RSD		0.281	1.681	0.683	T 0.490	T 0.573	T 1.163	T 1.460	T 5.874	0.399	1.575	1.380	0.873

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:34:05	89217.257	T 9499428.600	T 85463929.000	1460738.600	138053.160	172755.590	677347.900	331128.510	22691.578	26156.338	313.504	6836.869
2	16:34:28	89670.482	T 9567798.100	T 85627880.000	1473056.100	134974.810	173708.660	692436.870	331315.370	22474.185	26111.243	332.504	6681.785
3	16:34:50	89302.865	T 9598730.700	T 86411118.000	1477048.600	137739.730	173592.060	685753.100	330488.920	22267.817	26354.754	323.504	6366.621
x		89396.868	T 9555319.200	T 85834309.000	1470281.100	136922.570	173352.100	685179.290	330977.600	22477.860	26207.445	323.171	6628.425
σ		240.792	T 50813.560	T 506213.010	8501.748	1694.069	519.876	7560.833	433.401	211.904	129.550	9.505	239.622
%RSD		0.269	T 0.532	T 0.590	0.578	1.237	0.300	1.103	0.131	0.943	0.494	2.941	3.615

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:34:05	792644.060	650886.100	465156.740	23817.670	13707.512	224691.460	2447951.000	489848.620	112731.050	87795.745	258990.530	344060.830
2	16:34:28	789727.890	644949.980	463086.980	23311.717	13727.534	226050.640	2476464.800	494563.950	114002.500	88713.692	265152.720	345633.330
3	16:34:50	786195.310	641088.760	457952.930	23537.139	14173.030	224386.050	2470933.600	491439.260	113028.720	88803.325	261976.800	345047.480
x		789522.420	645641.610	462065.550	23555.509	13869.359	225042.720	2465116.400	491950.610	113254.090	88437.587	262040.020	344913.880
σ		3229.283	4935.157	3708.935	253.476	263.178	886.144	15120.773	2398.894	665.013	557.656	3081.582	794.717
%RSD		0.409	0.764	0.803	1.076	1.898	0.394	0.613	0.488	0.587	0.631	1.176	0.230

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:34:05	440.008	T 3600375.200	1354744.600	239359.990	0.000	176725.510	M 1719233.000
2	16:34:28	425.007	T 3628702.400	1374273.700	247292.180	0.000	183578.210	M 1770791.500
3	16:34:50	540.012	T 3674645.400	1379099.300	245344.350	0.000	183086.070	M 1733141.700
x		468.342	T 3634574.400	1369372.500	243998.840	0.000	181129.930	M 1741055.400
σ		62.519	T 37481.702	12895.921	4133.725	0.000	3822.272	M 26674.692
%RSD		13.349	T 1.031	0.942	1.694	0.000	2.110	M 1.532

200-38368-A-1-A @5 5/10/2017 4:39:28 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:39:49	348388.250	100489.810	M 422946.300	T 86707450.000	T 8223390.800	T 68102939.000	T 104027300.000	T 3768119.300	511766.030	187378.990	256755.120	1415891.800
2	16:40:11	351298.010	99965.633	M 426576.590	T 88799162.000	T 8227824.500	T 67580993.000	T 102942640.000	T 3763967.200	506258.420	187556.620	252020.210	1405534.900

3	16:40:32	347565.820	99927.833	M 421994.950	T 86741458.000	T 8144038.100	T 67727360.000	T 103298060.000	T 3750500.600	502085.050	183507.180	248026.510	1387140.300
x		349084.030	100127.760	M 423839.280	T 87416023.000	T 8198417.800	T 67803764.000	T 103422670.000	T 3760862.400	506703.170	186147.600	252267.280	1402855.700
σ		1960.964	314.115	M 2417.833	T 1197953.700	T 47146.350	T 269230.440	T 552961.350	T 9210.558	4855.788	2288.392	4369.546	14561.799
%RSD		0.562	0.314	M 0.570	T 1.370	T 0.575	T 0.397	T 0.535	T 0.245	0.958	1.229	1.732	1.038

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:39:49	167023.470	T 18152636.000	T 162744060.000	T 3174520.900	258566.900	332186.020	1298272.100	629146.330	41202.795	49036.997	321.004	11465.256
2	16:40:11	167656.860	T 18299288.000	T 163828630.000	2866324.600	256647.950	327212.390	1302206.500	629806.360	40774.394	48624.892	335.004	11745.516
3	16:40:32	163644.210	T 18320893.000	T 164100590.000	T 3166869.300	259807.220	328012.960	1302555.100	628536.790	40651.996	48854.785	354.505	11795.563
x		166108.180	T 18257606.000	T 163557760.000	T 3069238.200	258340.690	329137.120	1301011.200	629163.160	40876.395	48838.891	336.838	11668.778
σ		2157.234	T 91546.145	T 717681.950	T 175770.040	1591.735	2670.592	2378.581	634.951	289.220	206.512	16.826	178.023
%RSD		1.299	T 0.501	T 0.439	T 5.727	0.616	0.811	0.183	0.101	0.708	0.423	4.995	1.526

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:39:49	1554624.600	773132.110	893850.540	44925.588	26748.589	427993.820	2404468.000	973421.500	223149.200	172268.940	513463.560	353169.650
2	16:40:11	1549486.400	769699.700	890466.340	44759.995	26648.375	435077.170	2424766.200	979591.680	222528.280	173387.240	516890.550	356255.390
3	16:40:32	1576790.300	775385.460	894553.240	45547.833	26152.329	433690.200	2423731.300	988455.300	224732.180	174256.710	512802.220	350773.580
x		1560300.400	772739.090	892956.710	45077.805	26516.431	432253.730	2417655.200	980489.500	223469.890	173304.300	514385.440	353399.540
σ		14509.911	2863.181	2185.150	415.391	319.278	3753.803	11432.123	7557.007	1136.411	996.477	2194.541	2748.123
%RSD		0.930	0.371	0.245	0.921	1.204	0.868	0.473	0.771	0.509	0.575	0.427	0.778

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:39:49	785.025	T 7235754.500	2757379.200	242836.080	0.000	367895.370	TM 3862402.000
2	16:40:11	830.028	T 7290846.400	2779203.800	247751.130	0.000	371376.050	TM 3907504.100
3	16:40:32	755.023	T 7289056.400	2811862.800	248403.900	5.000	371365.750	TM 3921205.600
x		790.025	T 7271885.800	2782815.200	246330.370	1.667	370212.390	TM 3897037.200
σ		37.752	T 31303.359	27420.739	3043.692	2.887	2006.610	TM 30767.389
%RSD		4.779	T 0.430	0.985	1.236	173.205	0.542	TM 0.790

MB 200-116489/1-A 5/10/2017 4:45:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:45:34	363273.090	120.001	10944.789	1514666.200	8122.638	1123962.600	682549.710	66978.968	530096.720	260.003	17827.704	58571.906
2	16:45:56	367184.930	100.000	9983.986	1537599.100	8683.015	1120217.800	692146.420	64978.450	539798.980	155.001	18588.811	58722.611
3	16:46:17	366227.450	97.500	9813.851	1503950.800	8452.857	1133334.800	690446.150	66606.988	547137.940	250.003	18158.179	58757.775
x		365561.820	105.834	10247.542	1518738.700	8419.503	1125838.400	688380.760	66188.135	539011.210	221.669	18191.565	58684.097
σ		2039.097	12.332	609.797	17189.859	281.673	6756.692	5120.897	1064.000	8547.882	57.952	381.650	98.739
%RSD		0.558	11.653	5.951	1.132	3.345	0.600	0.744	1.608	1.586	26.144	2.098	0.168

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:45:34	12085.840	15840.030	461235.370	520.011	76422.906	96365.022	2785.310	2764.306	902.033	323.004	314.504	1425.081
2	16:45:56	12286.035	16085.343	460934.580	430.007	77519.629	96118.132	2500.250	2893.335	896.032	304.504	322.004	1575.099
3	16:46:17	12125.879	16175.459	450012.210	425.007	77836.589	96138.287	2535.257	2833.321	956.037	275.503	281.503	1405.079
x		12165.918	16033.611	457394.050	458.342	77259.708	96207.147	2606.939	2830.321	918.034	301.004	306.004	1468.420
σ		105.933	173.595	6394.634	53.465	741.818	137.095	155.462	64.567	33.048	23.943	21.547	92.927
%RSD		0.871	1.083	1.398	11.665	0.960	0.142	5.963	2.281	3.600	7.954	7.041	6.328

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:45:34	4780.914	529773.430	31935.744	20.000	60.000	40.000	2546218.100	1585.101	155.001	110.000	980.038	333325.770
2	16:45:56	5121.049	536198.890	31785.361	40.000	20.000	50.000	2579682.100	1640.108	205.002	119.501	865.030	342005.570
3	16:46:17	5181.074	543180.850	33053.644	35.000	55.000	30.000	2592978.400	1650.109	140.001	116.501	870.030	341193.830
x		5027.679	536384.390	32258.250	31.667	45.000	40.000	2572959.600	1625.106	166.668	115.334	905.033	338841.720
σ		215.802	6705.632	692.924	10.408	21.795	10.000	24094.087	35.005	34.035	4.856	65.005	4794.170
%RSD		4.292	1.250	2.148	32.868	48.432	25.000	0.936	2.154	20.421	4.211	7.183	1.415

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:45:34	390.006	3445.475	2940.346	242377.310	0.000	210.002	32101.167
2	16:45:56	445.008	3140.394	2970.353	244243.100	0.000	155.001	31980.859
3	16:46:17	340.005	2735.299	2780.309	243621.140	5.000	215.002	31670.069
x		391.673	3107.056	2897.003	243413.850	1.667	193.335	31917.365
σ		52.521	356.260	102.167	950.012	2.887	33.292	222.452
%RSD		13.410	11.466	3.527	0.390	173.205	17.220	0.697

LCS 200-116489/2-A 5/10/2017 4:50:56 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:51:18	357942.570	3275.429	163780.980	T 19968344.000	708061.720	1850752.600	T 28592107.000	686011.730	536334.530	145.001	251438.680	183618.800
2	16:51:39	353138.800	3047.872	164307.830	T 20100895.000	726908.660	1865295.000	T 28949646.000	697554.990	532266.040	140.001	249332.100	184039.930
3	16:52:00	352696.570	3055.373	167641.660	T 20077924.000	711488.300	T 1949560.900	T 28594409.000	685547.260	524091.270	200.002	247735.830	182761.370
x		354592.650	3126.225	165243.490	T 20049054.000	715486.230	T 1888536.200	T 28712054.000	689704.660	530897.280	161.668	249502.200	183473.370
σ		2909.534	129.269	2093.514	T 70834.646	10039.389	T 53346.831	T 205764.100	6802.553	6235.340	33.292	1857.272	651.566
%RSD		0.821	4.135	1.267	T 0.353	1.403	T 2.825	T 0.717	0.986	1.174	20.593	0.744	0.355
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:51:18	25085.145	150794.100	T 14195688.000	58612.094	26457.971	196212.990	284506.320	45714.440	3348.448	3392.460	285.003	4335.752
2	16:51:39	25505.996	151072.430	T 14368643.000	62083.794	26848.803	198788.200	286301.620	45541.811	3320.441	3408.965	307.004	4335.752
3	16:52:00	24849.676	150996.520	T 14266575.000	60747.251	27194.550	194567.570	284751.820	44972.757	3340.446	3407.965	291.003	4380.767
x		25146.939	150954.350	T 14276969.000	60481.046	26833.775	196522.920	285186.590	45409.669	3336.445	3403.130	294.337	4350.757
σ		332.495	143.878	T 86944.801	1751.092	368.519	2127.317	973.418	388.097	14.426	9.254	11.373	25.990
%RSD		1.322	0.095	T 0.609	2.895	1.373	1.082	0.341	0.855	0.432	0.272	3.864	0.597
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:51:18	455334.850	522538.240	266817.590	54237.413	1025.042	13657.457	2489552.900	1400.078	101923.850	78525.880	105881.540	331939.600
2	16:51:39	462780.950	533476.020	270694.630	55769.131	1010.041	13422.202	2513949.600	1320.070	102947.190	79123.129	106179.050	337341.360
3	16:52:00	472811.030	532641.540	271420.110	55733.975	875.031	13312.085	2528007.000	1610.104	101636.530	80043.460	107293.510	340207.490
x		463642.280	529551.930	269644.110	55246.840	970.038	13463.915	2510503.100	1443.417	102169.190	79230.823	106451.370	336496.150
σ		8769.874	6088.352	2474.565	874.366	82.620	176.424	19457.346	149.795	688.912	764.500	744.330	4198.246
%RSD		1.892	1.150	0.918	1.583	8.517	1.310	0.775	10.378	0.674	0.965	0.699	1.248
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	16:51:18	124077.770	284501.210	100850.200	235935.810	0.000	397284.640	206537.330					
2	16:51:39	125032.210	287959.050	102750.580	236975.200	0.000	402595.580	203604.800					
3	16:52:00	124103.020	287580.480	104540.330	242071.470	0.000	404800.080	206720.310					
x		124404.330	286680.250	102713.700	238327.490	0.000	401560.100	205620.810					
σ		543.904	1896.571	1845.342	3283.761	0.000	3863.239	1748.314					
%RSD		0.437	0.662	1.797	1.378	0.000	0.962	0.850					

200-38498-A-1-A 5/10/2017 4:56:41 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:57:03	335482.320	1312.569	18288.369	T 2405803.000	T 6180294.300	T 252149340.000	T 25399919.000	T 6945582.100	611605.130	25701.395	558253.600	394684.180
2	16:57:24	339159.580	1347.573	17837.718	T 2433446.700	T 6305555.000	T 256181820.000	T 25668904.000	T 6905706.300	602959.950	25120.216	568803.600	391996.560
3	16:57:45	340649.280	1300.068	18363.479	T 2426718.100	T 6281082.400	T 254313560.000	T 25779163.000	T 7053239.500	615835.420	30256.574	558441.730	396242.330
x		338430.400	1320.070	18163.189	T 2421989.300	T 6255643.900	T 254214900.000	T 25615995.000	T 6968176.000	610133.500	27026.062	561832.980	394307.690
σ		2659.539	24.625	284.356	T 14415.817	T 66391.988	T 2018051.100	T 195079.530	T 76317.578	6562.677	2812.757	6037.474	2147.776
%RSD		0.786	1.865	1.566	T 0.595	T 1.061	T 0.794	T 0.762	T 1.095	1.076	10.408	1.075	0.545
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:57:03	64671.866	T 29424861.000	T 818117600.000	339637.290	166820.790	T 7771966.600	1687259.300	35694.892	2778.309	2306.213	423.007	10034.026
2	16:57:24	65476.037	T 29491160.000	T 830755210.000	343505.880	165685.840	T 7833161.100	1703809.900	36604.517	2696.291	2267.206	383.506	9968.974
3	16:57:45	65898.246	T 29847878.000	T 841888500.000	346275.750	169825.850	T 7791932.500	1702840.100	36231.433	2767.306	2195.193	404.507	10429.349
x		65348.716	T 29587966.000	T 830253770.000	343139.640	167444.160	T 7799020.000	1697969.800	36176.947	2747.302	2256.204	403.673	10144.116
σ		623.025	T 227517.830	T 11893380.000	3334.347	2139.242	T 31206.825	9288.220	457.254	44.518	56.322	19.764	249.151
%RSD		0.953	T 0.769	T 1.432	0.972	1.278	T 0.400	0.547	1.264	1.620	2.496	4.896	2.456
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:57:03	1301691.800	1314238.300	19390.027	19309.903	725.021	8172.671	2409660.000	66531.588	7237.094	5498.709	900541.090	392919.890

2	16:57:24	1287703.100	1303396.400	19369.996	19930.877	880.031	8277.740	2428304.600	67280.581	6786.842	5544.730	915340.180	397078.240
3	16:57:45	1302411.200	1307260.400	18433.582	19725.552	960.037	8367.800	2452025.900	67878.802	6636.761	5629.267	908292.930	398471.540
x		1297268.700	1308298.400	19064.535	19655.444	855.030	8272.737	2429996.800	67230.324	6886.899	5557.569	908058.070	396156.550
σ		8291.839	5494.976	546.513	316.367	119.486	97.661	21233.626	675.012	312.424	66.219	7402.339	2888.312
%RSD		0.639	0.420	2.867	1.610	13.974	1.181	0.874	1.004	4.536	1.192	0.815	0.729

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:57:03	2015.162	11595.376	2349269.400	244355.260	0.000	341928.500	143817.610
2	16:57:24	2170.188	12080.835	2391688.900	249015.890	5.000	345684.720	147965.600
3	16:57:45	2090.175	12225.976	2446191.200	252025.310	0.000	350105.230	148066.790
x		2091.842	11967.396	2395716.500	248465.490	1.667	345906.150	146616.670
σ		77.526	330.251	48586.249	3864.536	2.887	4092.859	2424.583
%RSD		3.706	2.760	2.028	1.555	173.205	1.183	1.654

200-38498-A-2-A 5/10/2017 5:02:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:02:48	358817.120	550.012	12145.898	1783870.000	2312243.600	T 104155540.000	T 12133735.000	1672755.200	585006.290	21713.843	235446.720	165726.370
2	17:03:10	349467.760	627.516	12686.435	1779440.200	2287404.900	T 105005880.000	T 12191941.000	1671582.800	586724.050	21533.532	228107.500	163365.600
3	17:03:31	351380.270	575.013	12266.015	T 1897840.500	T 2386306.500	T 104076870.000	T 12122109.000	1658806.900	580032.350	21919.201	235726.930	166329.300
x		353221.720	584.180	12366.116	T 1820383.600	T 2328651.700	T 104412760.000	T 12149262.000	1667715.000	583920.900	21722.192	233093.720	165140.430
σ		4939.211	39.557	283.831	T 67116.221	T 51451.906	T 515160.350	T 37415.662	7736.811	3475.381	192.970	4320.459	1566.328
%RSD		1.398	6.771	2.295	T 3.687	T 2.210	T 0.493	T 0.308	0.464	0.595	0.888	1.854	0.948

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:02:48	30802.906	T 21730605.000	T 371900290.000	137234.220	67501.769	2670392.100	641441.160	16089.348	1610.104	1063.045	346.505	4465.798
2	17:03:10	29715.278	T 21906600.000	T 380786640.000	137567.850	68180.437	2670741.200	642035.540	16209.503	1573.099	1073.546	347.005	4395.773
3	17:03:31	30306.695	T 21860735.000	T 377324390.000	137072.460	67416.309	2679491.000	642803.540	16353.691	1539.095	1086.047	377.006	4570.836
x		30274.960	T 21832647.000	T 376670440.000	137291.510	67699.505	2673541.400	642093.420	16217.514	1574.099	1074.213	356.838	4477.469
σ		544.508	T 91297.944	T 4479123.100	252.619	418.686	5155.432	683.030	132.353	35.515	11.515	17.467	88.113
%RSD		1.799	T 0.418	T 1.189	0.184	0.618	0.193	0.106	0.816	2.256	1.072	4.895	1.968

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:02:48	433886.850	860385.370	5276.113	7282.121	285.003	2820.318	2529692.400	29284.263	5041.016	4099.172	419647.880	366855.460
2	17:03:10	429111.170	863874.090	5141.057	7607.314	220.002	2820.318	2531365.900	28768.066	4950.980	4239.219	423613.330	364672.980
3	17:03:31	432924.320	854950.830	5311.128	8067.603	290.003	3090.382	2561888.600	29439.627	5306.126	4197.705	425221.580	367452.620
x		431974.110	859736.760	5242.766	7652.346	265.003	2910.339	2540982.300	29163.985	5099.374	4178.699	422827.600	366327.020
σ		2525.662	4496.848	89.806	394.673	39.052	155.921	18124.676	351.566	184.625	71.932	2868.718	1463.233
%RSD		0.585	0.523	1.713	5.158	14.736	5.357	0.713	1.205	3.621	1.721	0.678	0.399

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:02:48	1130.051	5571.241	952347.340	247730.730	0.000	133519.310	52128.469
2	17:03:10	1105.049	5476.199	957181.450	247577.750	0.000	136759.050	51525.979
3	17:03:31	1140.052	5441.184	969654.980	246833.240	0.000	139645.700	52946.898
x		1125.051	5496.208	959727.920	247380.570	0.000	136641.350	52200.449
σ		18.029	67.298	8930.397	480.138	0.000	3064.893	713.189
%RSD		1.603	1.224	0.931	0.194	0.000	2.243	1.366

CCV 1037150 5/10/2017 5:08:11 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:08:33	326406.730	183552.840	96244.096	T 34771148.000	T 10203892.000	T 102921960.000	T 51093094.000	T 4045941.100	497455.350	61129.106	T 6321952.900	1662264.200
2	17:08:54	323369.300	181427.150	95221.308	T 34802803.000	T 10297069.000	T 103279870.000	T 51511821.000	T 4115331.100	494033.580	60390.529	T 6306725.200	1647844.100

3	17:09:15	320845.500	180587.620	93493.337	┬33948962.000	┬10042743.000	┬101553480.000	┬50461058.000	┬4058547.300	493555.230	59938.361	┬6265905.500	1638837.300
x		323540.510	181855.870	94986.247	┬34507638.000	┬10181235.000	┬102585110.000	┬51021991.000	┬4073273.200	495014.720	60485.999	┬6298194.500	1649648.500
σ		2784.567	1528.395	1390.363	┬484086.270	┬128668.260	┬911158.830	┬528977.830	┬36964.596	2127.139	601.086	┬28981.141	11817.252
%RSD		0.861	0.840	1.464	┬1.403	┬1.264	┬0.888	┬1.037	┬0.907	0.430	0.994	┬0.460	0.716

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:08:33	195527.370	┬9191609.000	┬183502440.000	┬3151837.000	1543245.500	2202913.700	1803040.500	220921.150	15037.039	17473.705	311.004	12396.144
2	17:08:54	196202.830	┬9183577.900	┬184594340.000	┬3125835.200	1544243.200	2222196.900	1822601.100	219593.050	15216.256	17438.656	340.505	12496.243
3	17:09:15	193562.140	┬9287083.700	┬183721980.000	┬3106266.200	1532005.800	2193161.100	1809496.200	217987.310	14917.896	17342.522	345.505	12621.369
x		195097.450	┬9220756.900	┬183939590.000	┬3127979.500	1539831.500	2206090.600	1811712.600	219500.500	15057.064	17418.294	332.338	12504.585
σ		1371.839	┬57580.928	┬577561.700	┬22860.969	6795.614	14776.321	9966.861	1469.107	150.184	67.920	18.644	112.844
%RSD		0.703	┬0.624	┬0.314	┬0.731	0.441	0.670	0.550	0.669	0.997	0.390	5.610	0.902

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:08:33	1734039.300	494147.970	┬3511887.500	508621.510	17467.196	262569.040	2433409.200	2000132.000	1272713.300	979676.990	1249585.300	328664.750
2	17:08:54	1726277.000	486340.540	┬3509260.900	518234.510	17877.775	263855.710	2453473.000	2009291.400	1285165.900	989669.460	1249921.500	326991.720
3	17:09:15	1739643.800	496342.400	┬3534875.800	518177.210	17367.056	266454.980	2428810.200	2022674.200	1278938.100	988967.540	1263400.900	330132.690
x		1733320.000	492276.970	┬3518674.800	515011.080	17570.676	264293.240	2438564.100	2010699.200	1278939.100	986104.660	1254302.600	328596.390
σ		6712.384	5256.876	┬14091.856	5533.605	270.628	1979.575	13114.603	11336.850	6226.293	5577.579	7881.190	1571.596
%RSD		0.387	1.068	┬0.400	1.074	1.540	0.749	0.538	0.564	0.487	0.566	0.628	0.478

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:08:33	92168.554	2760893.000	┬13391473.000	232278.260	15.000	375166.770	191612.440
2	17:08:54	90879.164	2837895.300	┬13576125.000	239400.760	0.000	384622.730	196502.480
3	17:09:15	92687.369	2845615.900	┬13619760.000	234621.420	0.000	381550.700	195466.430
x		91911.695	2814801.400	┬13529119.000	235433.480	5.000	380446.730	194527.120
σ		931.065	46845.363	┬121185.510	3630.028	8.660	4823.677	2576.791
%RSD		1.013	1.664	┬0.896	1.542	173.205	1.268	1.325

CCB 1035925 5/10/2017 5:13:55 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:14:17	343803.910	62.500	5011.004	636124.540	1550.096	18153.172	453842.000	17161.773	520203.830	130.001	17677.491	2780.309
2	17:14:38	346866.800	67.500	4720.891	637018.380	1470.086	16550.950	466879.200	16961.500	522454.860	70.000	17086.670	2975.354
3	17:14:59	347247.150	60.000	4625.856	646833.660	1440.083	16100.362	466049.070	18183.216	519682.820	115.001	17572.343	2965.352
x		345972.620	63.333	4785.917	639992.190	1486.755	16934.828	462256.760	17435.496	520780.510	105.000	17445.501	2907.005
σ		1887.763	3.819	200.639	5941.718	56.869	1078.902	7299.203	655.241	1473.249	31.225	315.173	109.836
%RSD		0.546	6.030	4.192	0.928	3.825	6.371	1.579	3.758	0.283	29.738	1.807	3.778

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:14:17	6041.460	2525.255	390660.710	390.006	335.004	860.030	925.034	3254.424	1069.046	322.004	318.004	1385.077
2	17:14:38	6046.462	2415.233	392785.770	370.005	305.004	865.030	925.034	3300.436	1029.042	341.505	326.004	1615.104
3	17:14:59	6031.455	2345.220	389479.700	420.007	335.004	855.029	940.035	3218.414	964.037	324.504	307.504	1445.084
x		6039.792	2428.569	390975.390	393.340	325.004	860.030	930.035	3257.758	1020.708	329.338	317.171	1481.755
σ		7.641	90.755	1675.350	25.167	17.321	5.000	8.661	41.112	52.998	10.611	9.278	119.318
%RSD		0.127	3.737	0.429	6.398	5.329	0.581	0.931	1.262	5.192	3.222	2.925	8.052

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:14:17	405.007	504031.070	630.016	80.000	15.000	20.000	2453111.200	1780.127	230.002	165.501	215.002	316865.890
2	17:14:38	560.013	502064.240	490.010	110.000	10.000	40.000	2469134.600	1430.082	215.002	148.501	170.001	321850.850
3	17:14:59	505.010	510985.030	415.007	80.000	5.000	15.000	2454051.800	1680.113	195.002	145.001	95.000	319409.410
x		490.010	505693.440	511.677	90.000	10.000	25.000	2458765.900	1630.107	213.335	153.001	160.001	319375.390
σ		78.584	4686.978	109.130	17.321	5.000	13.229	8991.888	180.301	17.560	10.966	60.623	2492.654
%RSD		16.037	0.927	21.328	19.245	50.000	52.915	0.366	11.061	8.231	7.167	37.889	0.780

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:14:17	80.000	1925.148	1955.153	231259.630	0.000	50.000	40.000
2	17:14:38	125.001	1795.129	1680.113	238687.310	0.000	50.000	25.000
3	17:14:59	85.000	1670.112	1660.110	235650.500	0.000	80.000	5.000
x		96.667	1796.796	1765.125	235199.150	0.000	60.000	23.333
σ		24.665	127.527	164.872	3734.354	0.000	17.321	17.559
%RSD		25.515	7.097	9.341	1.588	0.000	28.868	75.255

CCVL 1037148 5/10/2017 5:19:39 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:20:00	357510.470	372.506	20877.420	T 2663712.000	72650.512	193496.130	T 3402099.400	85028.212	537357.070	90.000	51274.950	21989.324
2	17:20:21	359311.010	357.505	21027.672	T 2652077.800	71554.216	194054.690	T 3418594.800	83447.614	535885.890	135.001	50908.456	22169.642
3	17:20:44	356543.430	382.506	22645.494	T 2701564.700	76111.012	196451.690	T 3433051.900	85823.620	546208.600	95.000	51008.864	22375.008
x		357788.300	370.839	21516.862	T 2672451.500	73438.580	194667.500	T 3417915.400	84766.482	539817.180	106.667	51064.090	22177.991
σ		1404.551	12.583	980.307	T 25875.168	2378.421	1570.192	T 15487.452	1209.433	5583.789	24.665	189.385	192.977
%RSD		0.393	3.393	4.556	T 0.968	3.239	0.807	T 0.453	1.427	1.034	23.123	0.371	0.870

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:20:00	11360.160	16370.713	1676563.300	6261.568	3175.403	10459.374	30893.128	9148.346	1789.128	669.518	315.504	1675.112
2	17:20:21	11280.087	16901.419	1687743.600	6316.596	3000.360	10449.366	30652.537	9280.444	1870.140	658.517	332.004	1820.133
3	17:20:44	11094.922	16570.977	1693003.800	6306.591	3000.360	10904.754	30918.190	9333.483	1817.132	668.018	293.003	1600.102
x		11245.056	16614.369	1685770.200	6294.918	3058.708	10604.498	30821.285	9254.091	1825.467	665.351	313.504	1698.449
σ		136.045	268.001	8395.993	29.312	101.061	260.078	146.676	95.340	41.144	5.965	19.577	111.856
%RSD		1.210	1.613	0.498	0.466	3.304	2.453	0.476	1.030	2.254	0.897	6.245	6.586

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:20:00	44599.423	514463.430	26633.343	5331.137	85.000	1305.068	2515282.000	2800.314	10069.054	7942.523	10234.188	324785.310
2	17:20:21	45121.291	520443.510	25976.964	5781.337	100.000	1340.072	2553905.400	2485.247	10234.188	7934.517	10364.295	323102.530
3	17:20:44	44714.834	508506.990	26658.397	5621.264	105.000	1470.086	2550018.700	2595.269	10514.420	7995.556	10254.204	330522.790
x		44811.849	514471.310	26422.901	5577.912	96.667	1371.742	2539735.400	2626.943	10272.554	7957.532	10284.229	326136.880
σ		274.127	5968.266	386.396	228.209	10.408	86.948	21266.213	159.904	225.148	33.172	70.058	3890.390
%RSD		0.612	1.160	1.462	4.091	10.767	6.339	0.837	6.087	2.192	0.417	0.681	1.193

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:20:00	11079.908	28141.642	10834.694	230974.430	0.000	36869.294	18588.811
2	17:20:21	11455.247	27745.759	11240.051	235100.290	0.000	38378.827	19610.371
3	17:20:44	11800.568	28928.435	11195.011	237148.440	0.000	38614.551	19690.496
x		11445.241	28271.946	11089.919	234407.720	0.000	37954.224	19296.560
σ		360.434	602.009	222.176	3144.729	0.000	946.941	614.236
%RSD		3.149	2.129	2.003	1.342	0.000	2.495	3.183

200-38498-A-3-A 5/10/2017 5:25:25 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:25:46	323523.200	950.036	13076.837	T 2331025.600	T 9149509.800	T 196273200.000	T 30827220.000	T 16640990.000	578420.160	38408.919	428987.010	329316.580
2	17:26:08	330738.380	890.032	13492.278	T 2294266.700	T 9064187.300	T 195459930.000	T 30967488.000	T 16597710.000	579278.570	38383.842	431408.240	327925.720
3	17:26:30	323687.370	762.523	13111.873	T 2325059.300	T 9137221.100	T 195613520.000	T 31003008.000	T 16501761.000	573061.620	38308.612	429819.900	329485.950
x		325982.990	867.530	13226.996	T 2316783.900	T 9116972.700	T 195782220.000	T 30932572.000	T 16580154.000	576920.120	38367.125	430071.720	328909.420
σ		4119.114	95.760	230.408	T 19727.310	T 46124.606	T 432081.740	T 92949.878	T 71255.439	3369.008	52.201	1230.098	856.105
%RSD		1.264	11.038	1.742	T 0.851	T 0.506	T 0.221	T 0.300	T 0.430	0.584	0.136	0.286	0.260

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:25:46	67004.102	T 41671890.000	TM 1095547200.000	335903.410	167864.620	1568650.300	1349633.500	57593.375	1412.080	688.019	366.505	13517.305
2	17:26:08	64289.904	T 41818375.000	TM 1092014700.000	338548.340	170971.310	1603539.000	1353255.500	57859.600	1356.074	692.519	398.006	13827.644
3	17:26:30	64249.698	T 41888251.000	TM 1106903100.000	344507.900	170793.900	1579242.900	1360836.000	58073.589	1336.071	686.519	375.506	13056.816
x		65181.234	T 41792839.000	TM 1098155000.000	339653.220	169876.610	1583810.700	1354575.000	57842.188	1368.075	689.019	380.006	13467.255
σ		1578.778	T 110417.640	TM 7779224.400	4407.364	1744.689	17887.228	5716.618	240.580	39.400	3.123	16.225	387.844
%RSD		2.422	T 0.264	TM 0.708	1.298	1.027	1.129	0.422	0.416	2.880	0.453	4.270	2.880

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:25:46	1852217.600	973507.850	9223.402	1625.106	445.008	2635.278	2261113.000	124118.170	3565.508	2927.343	795156.330	351657.920

2	17:26:08	1857918.000	965684.580	9048.274	1625.106	505.010	2920.341	2310107.400	124729.210	3440.473	3001.360	797083.440	355504.460
3	17:26:30	1861611.800	961413.450	9383.521	1955.153	430.007	2425.235	2297559.100	123739.440	3920.615	3043.370	803995.740	353869.020
x		1857249.100	966868.630	9218.399	1735.121	460.009	2660.285	2289593.200	124195.610	3642.199	2990.691	798745.170	353677.130
σ		4732.645	6133.526	167.680	190.553	39.688	248.498	25450.008	499.405	249.088	58.745	4648.095	1930.436
%RSD		0.255	0.634	1.819	10.982	8.628	9.341	1.112	0.402	6.839	1.964	0.582	0.546

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:25:46	1555.097	8587.949	┬5162820.100	229263.360	0.000	312282.690	42130.881
2	17:26:08	1445.084	8572.939	┬5246737.400	233113.600	5.000	316153.180	42326.540
3	17:26:30	1295.067	8908.173	┬5152362.700	234937.270	0.000	321553.340	42221.185
x		1431.749	8689.687	┬5187306.700	232438.070	1.667	316663.070	42226.202
σ		130.527	189.363	┬51733.397	2896.644	2.887	4656.309	97.926
%RSD		9.117	2.179	┬0.997	1.246	173.205	1.470	0.232

200-38498-A-4-A 5/10/2017 5:31:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:31:30	350968.950	1152.553	16380.726	┬2176034.900	┬8498698.900	┬273475180.000	┬40165413.000	┬3363338.200	631393.490	56175.946	609642.670	425645.650
2	17:31:52	346445.350	1157.554	16125.394	┬2194762.400	┬8514758.000	┬274375650.000	┬40478864.000	┬3359672.300	622577.390	55196.598	606872.640	431480.670
3	17:32:13	348357.410	1235.061	16651.083	┬2167416.900	┬8598020.700	┬274228300.000	┬40895213.000	┬3408488.400	624121.610	57476.840	619394.990	435372.180
x		348590.570	1181.723	16385.734	┬2179404.700	┬8537159.200	┬274026380.000	┬40513163.000	┬3377166.300	626030.830	56283.128	611970.100	430832.830
σ		2270.796	46.260	262.880	┬13980.711	┬53315.719	┬482998.970	┬366107.270	┬27187.616	4707.950	1143.893	6577.615	4895.520
%RSD		0.651	3.915	1.604	┬0.641	┬0.625	┬0.176	┬0.904	┬0.805	0.752	2.032	1.075	1.136

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:31:30	71046.331	┬12154985.000	┬820786170.000	434875.320	220548.650	┬6585415.400	2183238.100	50193.574	2059.170	1287.566	420.507	6256.565
2	17:31:52	72358.828	┬12185436.000	┬826259480.000	443951.150	225602.650	┬6628552.500	2198214.100	50043.976	2029.165	1304.068	423.007	6386.631
3	17:32:13	69784.251	┬12173787.000	┬825685040.000	445530.890	224335.150	┬6696328.800	2218432.900	50426.509	1998.160	1275.065	417.507	6151.513
x		71063.137	┬12171402.000	┬824243560.000	441452.450	223495.490	┬6636765.600	2199961.700	50221.353	2028.831	1288.900	420.340	6264.903
σ		1287.370	┬15365.127	┬3007936.000	5750.467	2629.545	┬55910.993	17662.393	192.773	30.506	14.547	2.754	117.780
%RSD		1.812	┬0.126	┬0.365	1.303	1.177	┬0.842	0.803	0.384	1.504	1.129	0.655	1.880

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:31:30	656319.440	1240338.800	12020.777	6181.528	1035.043	12696.445	2428533.300	187734.260	9048.274	7030.477	579796.790	386659.130
2	17:31:52	663293.480	1252154.300	12085.840	6016.448	1120.050	12966.722	2475921.200	192836.040	9113.321	7051.488	591700.590	391042.370
3	17:32:13	664457.950	1245760.300	11575.357	6036.457	1075.046	13447.229	2485261.300	190790.010	9243.416	7090.510	596668.580	394838.960
x		661356.960	1246084.400	11893.991	6078.144	1076.713	13036.799	2463238.600	190453.440	9135.004	7057.492	589388.650	390846.820
σ		4401.300	5914.377	277.856	90.090	42.528	380.266	30416.319	2567.492	99.362	30.464	8670.245	4093.419
%RSD		0.665	0.475	2.336	1.482	3.950	2.917	1.235	1.348	1.088	0.432	1.471	1.047

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:31:30	1405.079	12466.213	┬3738890.200	236771.390	0.000	425107.800	95140.697
2	17:31:52	1465.086	12035.792	┬3806935.200	245527.910	0.000	431434.110	96672.382
3	17:32:13	1670.112	12706.455	┬3819856.600	235844.100	5.000	436836.980	97236.734
x		1513.426	12402.820	┬3788560.700	239381.130	1.667	431126.300	96349.938
σ		138.972	339.796	┬43498.313	5343.414	2.887	5870.642	1084.583
%RSD		9.183	2.740	┬1.148	2.232	173.205	1.362	1.126

200-38498-A-5-A 5/10/2017 5:36:54 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:37:15	348449.930	907.533	12716.465	┬3061497.100	┬6183157.000	┬215043080.000	┬29163257.000	┬3199196.300	603274.600	51199.642	409726.760	297298.920
2	17:37:37	343988.890	940.035	12251.001	┬3132926.800	┬6282443.900	┬218026940.000	┬29658271.000	┬3230505.900	605697.660	51571.164	412226.980	297734.090

3	17:37:58	346188.380	885.031	12446.193	┬3120231.900	┬6202148.600	┬216030020.000	┬29258908.000	┬3196802.200	607460.170	51827.220	416830.940	301216.040
x		346209.070	910.867	12471.220	┬3104885.300	┬6222583.200	┬216366680.000	┬29360145.000	┬3208834.800	605477.470	51532.675	412928.230	298749.680
σ		2230.592	27.653	233.739	┬38107.566	┬52703.417	┬1520150.400	┬262576.690	┬18805.877	2101.455	315.555	3603.632	2146.981
%RSD		0.644	3.036	1.874	┬1.227	┬0.847	┬0.703	┬0.894	┬0.586	0.347	0.612	0.873	0.719
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:37:15	51295.032	┬12879630.000	┬601023370.000	252362.000	129295.250	926843.160	561645.590	29717.283	1461.085	562.513	357.505	5026.010
2	17:37:37	50828.130	┬12717334.000	┬595149600.000	251367.260	133766.930	942210.720	565660.700	29630.076	1457.085	567.013	363.505	4860.945
3	17:37:58	51787.054	┬13082731.000	┬610454560.000	257908.500	133115.030	929698.990	565728.670	29674.181	1439.083	536.512	344.005	4895.959
x		51303.405	┬12893232.000	┬602209180.000	253879.260	132059.070	932917.620	564344.980	29673.846	1452.418	555.346	355.005	4927.638
σ		479.517	┬183077.940	┬7721074.700	3524.699	2415.632	8173.748	2337.992	43.604	11.720	16.465	9.988	86.973
%RSD		0.935	┬1.420	┬1.282	1.388	1.829	0.876	0.414	0.147	0.807	2.965	2.813	1.765
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:37:15	485270.130	1007661.600	5251.103	1335.071	310.004	1280.066	2492213.100	35029.013	2400.230	1958.653	413849.290	373992.350
2	17:37:37	496883.260	1052478.400	5211.086	1220.060	335.004	1345.072	2496216.500	35665.810	2785.310	1946.152	413565.110	382298.020
3	17:37:58	498017.070	1047028.000	5476.199	1360.074	300.004	1370.075	2486482.100	35349.914	2325.216	1978.657	415502.810	380267.470
x		493390.150	1035722.700	5312.796	1305.068	315.004	1331.738	2491637.300	35348.245	2503.586	1961.154	414305.730	378852.610
σ		7054.963	24453.913	142.919	74.674	18.028	46.463	4892.668	318.402	246.847	16.396	1046.386	4329.828
%RSD		1.430	2.361	2.690	5.722	5.723	3.489	0.196	0.901	9.860	0.836	0.253	1.143
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	17:37:15	485.009	7682.360	916108.520	238167.540	0.000	332976.650	57140.303					
2	17:37:37	565.013	7702.372	919365.060	237882.180	0.000	329403.830	57155.371					
3	17:37:58	660.017	8207.694	926654.950	242509.840	0.000	343562.400	58159.989					
x		570.013	7864.142	920709.510	239519.850	0.000	335314.290	57485.221					
σ		87.611	297.693	5400.224	2593.332	0.000	7363.065	584.415					
%RSD		15.370	3.785	0.587	1.083	0.000	2.196	1.017					

200-38498-A-6-A 5/10/2017 5:42:36 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	17:42:58	333069.060	1087.547	16290.608	1823481.700	┬8901502.000	┬239869780.000	┬43400481.000	┬13712583.000	617809.340	59767.546	520511.240	374280.790
2	17:43:19	335718.540	1042.544	16936.466	┬1990317.900	┬8787482.700	┬238767700.000	┬43191476.000	┬13583754.000	611762.560	59154.640	530341.790	384777.380
3	17:43:41	341851.440	1065.045	17061.636	┬1983821.200	┬8827630.400	┬239687570.000	┬42804230.000	┬13706785.000	609506.250	59832.857	536178.020	383035.080
x		336879.680	1065.045	16762.903	┬1932540.300	┬8838871.700	┬239441680.000	┬43132063.000	┬13667707.000	613026.050	59585.014	529010.350	380697.750
σ		4504.857	22.502	413.780	┬94503.306	┬57834.916	┬590755.690	┬302533.460	┬72763.878	4293.323	374.143	7917.799	5625.114
%RSD		1.337	2.113	2.468	┬4.890	┬0.654	┬0.247	┬0.701	┬0.532	0.700	0.628	1.497	1.478
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:42:58	65601.693	┬28317585.000	┬872911590.000	322451.030	168918.680	2145321.900	1230554.000	49372.313	1632.107	754.023	364.505	12030.787
2	17:43:19	66320.471	┬27824170.000	┬871866860.000	328808.460	168645.020	2154715.800	1241242.200	49268.906	1652.109	778.024	408.507	12135.888
3	17:43:41	64893.008	┬27668880.000	┬859021650.000	320824.980	167413.640	2151218.200	1247446.600	49928.516	1659.110	798.025	408.007	12731.480
x		65605.057	┬27936878.000	┬867933370.000	324028.160	168325.780	2150418.600	1239747.600	49523.245	1647.775	776.691	393.673	12299.385
σ		713.737	┬338721.010	┬7735430.500	4218.944	801.703	4747.712	8544.940	354.763	14.014	22.032	25.261	377.877
%RSD		1.088	┬1.212	┬0.891	1.302	0.476	0.221	0.689	0.716	0.850	2.837	6.417	3.072
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:42:58	1621482.600	1080613.700	7512.257	2675.286	495.010	2875.331	2383971.900	156129.000	8212.697	6285.080	766576.260	361718.980
2	17:43:19	1623926.400	1104687.700	7607.314	2700.292	610.015	3265.427	2400118.900	155885.990	7977.545	6229.552	763246.480	365928.890
3	17:43:41	1646077.400	1091610.400	7407.194	2555.261	590.014	3230.417	2391832.900	154539.430	8317.766	6327.601	772069.340	368152.780
x		1630495.500	1092303.900	7508.922	2643.613	565.013	3123.725	2391974.600	155518.140	8169.336	6280.744	767297.360	365266.880
σ		13549.587	12051.986	100.102	77.530	61.444	215.827	8074.419	856.254	174.206	49.168	4455.414	3267.588
%RSD		0.831	1.103	1.333	2.933	10.875	6.909	0.338	0.551	2.132	0.783	0.581	0.895

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:42:58	1345.072	9178.369	1973866.600	226401.910	0.000	388092.540	58350.876
2	17:43:19	1320.070	9473.589	2023229.200	231269.820	10.000	393482.160	58802.987
3	17:43:41	1525.093	9193.380	2011077.400	232807.980	5.000	388536.000	57306.059
x		1396.745	9281.779	2002724.400	230159.900	5.000	390036.900	58153.307
σ		111.853	166.282	25719.522	3344.153	5.000	2991.913	767.772
%RSD		8.008	1.791	1.284	1.453	100.000	0.767	1.320

200-38498-A-7-A 5/10/2017 5:48:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:48:41	358271.810	1095.048	13942.772	T 1993831.300	T 7941798.700	T 300740830.000	T 36341000.000	T 2731721.000	634925.840	60526.183	587179.720	430063.050
2	17:49:02	344204.710	1167.555	13607.402	T 1962342.600	T 7929963.800	T 307562080.000	T 36959145.000	T 2727942.900	629385.960	60224.732	583058.370	437784.270
3	17:49:24	348943.420	1247.562	14383.270	1847920.900	T 8032811.600	T 310072820.000	T 36326429.000	T 2742793.500	627599.410	61742.108	596621.410	442050.540
x		350473.310	1170.055	13977.815	T 1934698.300	T 7968191.400	T 306125240.000	T 36542191.000	T 2734152.400	630637.070	60831.008	588953.160	436632.620
σ		7157.250	76.288	389.119	T 76782.939	T 56274.767	T 4829067.700	T 361165.690	T 7718.089	3820.095	803.303	6953.263	6076.156
%RSD		2.042	6.520	2.784	T 3.969	T 0.706	T 1.577	T 0.988	T 0.282	0.606	1.321	1.181	1.392
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:48:41	70141.241	T 27952104.000	T 828409660.000	356790.330	174874.750	792537.620	759657.450	39235.480	1745.122	715.020	428.507	5541.228
2	17:49:02	72524.785	T 28302861.000	T 834738370.000	357994.020	176106.870	799948.030	767038.350	39376.924	1643.108	712.020	404.507	5811.351
3	17:49:24	72052.063	T 28433263.000	T 842167310.000	363705.390	177790.450	810645.260	773541.290	39243.506	1699.116	725.521	398.006	5411.171
x		71572.697	T 28229409.000	T 835105110.000	359496.580	176257.360	801043.640	766745.700	39285.303	1695.782	717.521	410.340	5587.917
σ		1262.008	T 248847.060	T 6886154.300	3694.292	1463.664	9103.401	6946.547	79.447	51.089	7.089	16.066	204.134
%RSD		1.763	T 0.882	T 0.825	1.028	0.830	1.136	0.906	0.202	3.013	0.988	3.915	3.653
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:48:41	595148.630	1343863.700	10504.412	2440.238	430.007	1685.114	2440611.900	58089.663	3705.549	2701.292	617489.080	391712.880
2	17:49:02	607077.220	1366524.200	10719.594	2310.214	325.004	1700.116	2420518.900	56934.366	3430.471	2785.310	629827.380	402786.580
3	17:49:24	607701.490	1362376.000	10579.475	2325.216	420.007	1790.128	2477998.900	58546.789	3640.530	2832.821	633464.430	395458.070
x		603309.110	1357588.000	10601.160	2358.556	391.673	1725.119	2446376.600	57856.939	3592.183	2773.141	626926.960	396652.510
σ		7074.072	12065.167	109.218	71.135	57.953	56.797	29170.394	831.022	143.771	66.604	8373.305	5632.651
%RSD		1.173	0.889	1.030	3.016	14.796	3.292	1.192	1.436	4.002	2.402	1.336	1.420
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	17:48:41	780.024	11980.739	1570514.000	238636.350	0.000	435574.030	105044.530					
2	17:49:02	765.023	12546.293	1612652.200	239278.460	0.000	435936.340	108408.060					
3	17:49:24	795.025	12451.198	1636180.700	244773.320	0.000	445106.150	109109.120					
x		780.024	12326.077	1606449.000	240896.040	0.000	438872.170	107520.570					
σ		15.001	302.828	33269.928	3373.135	0.000	5401.822	2172.778					
%RSD		1.923	2.457	2.071	1.400	0.000	1.231	2.021					

200-38498-A-7-A SD@5 5/10/2017 5:54:02 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:54:24	357469.320	327.504	5651.277	856694.340	1558280.600	T 66163155.000	T 8323100.300	525488.120	580974.630	12571.318	136582.130	93186.056
2	17:54:46	357510.470	290.003	5466.195	867278.100	1583923.300	T 66441016.000	T 8383910.700	541980.390	577383.860	13111.873	137952.050	96087.901
3	17:55:07	353077.090	267.503	5631.268	862654.000	1563585.800	T 66377437.000	T 8317476.000	537242.290	578482.970	12451.198	135404.420	94042.433
x		356018.960	295.004	5582.913	862208.810	1568596.600	T 66327203.000	T 8341495.600	534903.600	578947.160	12711.463	136646.200	94438.797
σ		2547.814	30.312	101.575	5305.906	13535.830	T 145582.550	T 36839.996	8491.222	1839.838	351.928	1275.023	1490.975
%RSD		0.716	10.275	1.819	0.615	0.863	T 0.219	T 0.442	1.587	0.318	2.769	0.933	1.579
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:54:24	19890.813	T 5914829.700	T 180722190.000	76327.325	37360.750	172608.580	174428.580	11549.333	1298.067	419.507	329.504	2095.176
2	17:54:46	20647.038	T 6021284.500	T 183036760.000	75733.731	38022.741	176152.500	176994.270	11766.535	1231.061	446.008	383.506	2425.235
3	17:55:07	20231.359	T 6031658.100	T 182637020.000	76951.132	38428.981	173465.310	176659.580	11617.396	1228.060	458.508	362.505	2565.263
x		20256.403	T 5989257.500	T 182131990.000	76337.396	37937.491	174075.470	176027.480	11644.422	1252.396	441.341	358.505	2361.891
σ		378.734	T 64664.662	T 1237174.600	608.763	539.194	1849.072	1394.761	111.095	39.581	19.915	27.222	241.361
%RSD		1.870	T 1.080	T 0.679	0.797	1.421	1.062	0.792	0.954	3.160	4.512	7.593	10.219
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:54:24	123704.090	712673.020	2085.174	485.009	60.000	410.007	2496204.400	12736.485	770.024	591.014	126208.950	335934.220

2	17:54:46	125769.550	697977.630	2175.189	455.008	100.000	480.009	2470885.300	12951.706	845.029	580.013	128082.860	338512.390
3	17:55:07	123007.270	702352.770	2325.216	450.008	45.000	385.006	2527606.900	12841.593	730.021	620.515	127481.770	338913.030
x		124160.300	704334.470	2195.193	463.342	68.334	425.007	2498232.200	12843.262	781.691	597.181	127257.860	337786.550
σ		1436.541	7545.458	121.265	18.930	28.431	49.246	28415.131	107.620	58.385	20.943	956.813	1616.622
%RSD		1.157	1.071	5.524	4.086	41.607	11.587	1.137	0.838	7.469	3.507	0.752	0.479

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:54:24	225.002	2455.241	306394.640	230597.570	0.000	82984.546	20511.816
2	17:54:46	240.002	2455.241	312410.840	229507.790	0.000	85944.446	20566.906
3	17:55:07	190.001	2555.261	314861.180	238004.480	0.000	85320.191	20787.270
x		218.335	2488.581	311222.220	232703.280	0.000	84749.728	20621.997
σ		25.658	57.747	4356.624	4623.196	0.000	1560.232	145.757
%RSD		11.752	2.320	1.400	1.987	0.000	1.841	0.707

200-38498-A-7-A PDS 5/10/2017 5:59:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:00:06	343516.160	4165.694	160787.500	T 21090071.000	T 8393756.500	T 302079250.000	T 63581500.000	T 3440621.000	632991.340	58747.728	820924.660	608341.520
2	18:00:27	340803.400	3980.634	162286.680	T 20876909.000	T 8452965.500	T 303941910.000	T 64870560.000	T 3424910.100	624027.060	58215.246	803990.410	590039.780
3	18:00:49	342940.670	4145.687	161390.190	T 21064780.000	T 8543908.700	T 304007100.000	T 64206137.000	T 3441518.800	625792.090	58511.625	824274.690	602744.940
x		342420.080	4097.338	161488.120	T 21010586.000	T 8463543.600	T 303342750.000	T 64219399.000	T 3435683.300	627603.500	58491.533	816396.590	600375.410
σ		1429.347	101.563	754.377	T 116456.950	T 75632.947	T 1094709.200	T 644632.340	T 9340.671	4748.736	266.809	10873.849	9378.132
%RSD		0.417	2.479	0.467	T 0.554	T 0.894	T 0.361	T 1.004	T 0.272	0.757	0.456	1.332	1.562

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:00:06	90209.339	T 27843997.000	T 827304070.000	407087.600	196913.880	871341.610	1010838.400	79875.390	4266.728	3673.040	462.509	8567.935
2	18:00:27	90350.352	T 27775983.000	T 820544540.000	405378.380	195740.670	864987.250	1018623.900	79645.933	4211.709	3651.033	424.007	9038.266
3	18:00:49	92344.848	T 27768976.000	T 825190900.000	408941.670	198620.570	866518.010	1014384.100	79623.793	4168.695	3598.518	425.007	8783.085
x		90968.179	T 27796319.000	T 824346500.000	407135.880	197091.710	867615.620	1014615.500	79715.039	4215.711	3640.864	437.174	8796.429
σ		1194.313	T 41438.778	T 3457972.100	1782.136	1448.160	3316.331	3897.914	139.309	49.139	38.288	21.946	235.449
%RSD		1.313	T 0.149	T 0.419	0.438	0.735	0.382	0.384	0.175	1.166	1.052	5.020	2.677

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:00:06	1036421.400	1331677.200	272554.390	55025.848	1300.068	14047.889	2415130.400	55000.738	99549.835	77510.070	712006.600	392548.490
2	18:00:27	1041889.100	1320721.100	271430.320	54649.201	1240.062	14698.637	2447420.600	57115.188	100981.250	78923.372	721217.800	405285.440
3	18:00:49	1056323.300	1331788.100	272350.010	54654.223	1190.057	14428.322	2424934.700	57075.005	100436.890	79332.952	719100.920	399503.710
x		1044878.000	1328062.100	272111.570	54776.424	1243.395	14391.616	2429161.900	56396.977	100322.660	78588.798	717441.770	399112.550
σ		10282.105	6357.734	598.764	216.022	55.081	326.923	16554.948	1209.346	722.511	956.389	4824.534	6377.480
%RSD		0.984	0.479	0.220	0.394	4.430	2.272	0.682	2.144	0.720	1.217	0.672	1.598

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:00:06	112958.090	284905.260	1648656.400	238463.090	0.000	808673.490	299526.150
2	18:00:27	114295.160	287503.750	1661547.600	240144.830	0.000	822572.900	303059.810
3	18:00:49	119755.920	293792.460	1710480.400	243825.060	0.000	827204.020	302952.250
x		115669.720	288733.820	1673561.500	240811.000	0.000	819483.470	301846.070
σ		3601.351	4569.508	32615.947	2742.351	0.000	9643.836	2009.828
%RSD		3.113	1.583	1.949	1.139	0.000	1.177	0.666

200-38498-A-7-B MS 5/10/2017 6:05:29 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:05:51	344769.970	4265.728	147773.350	T 21554446.000	T 11023113.000	T 371507430.000	T 64413028.000	T 3140579.500	646812.610	66566.775	936510.330	701512.500
2	18:06:13	344122.500	4215.711	147459.670	T 21347615.000	T 10954164.000	T 369719420.000	T 64833870.000	T 3110018.000	648138.720	66903.566	956664.000	698305.190

3	18:06:34	337536.530	4300.740	151947.950	┬21908014.000	┬11107773.000	┬371728930.000	┬65473153.000	┬3123559.300	637418.000	65993.748	939395.200	706935.590
x		342143.000	4260.726	149060.320	┬21603358.000	┬11028350.000	┬370985260.000	┬64906684.000	┬3124718.900	644123.110	66488.030	944189.840	702251.090
σ		4002.437	42.735	2505.670	┬283383.480	┬76937.975	┬1101830.500	┬533799.950	┬15313.724	5844.534	459.992	10898.811	4362.349
%RSD		1.170	1.003	1.681	┬1.312	┬0.698	┬0.297	┬0.822	┬0.490	0.907	0.692	1.154	0.621

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:05:51	104338.650	┬37576622.000	┬1039252700.000	505592.250	239732.020	903750.780	1130985.600	87554.562	4073.664	3634.028	490.510	8577.942
2	18:06:13	105795.820	┬38166976.000	┬1048133700.000	509922.950	245012.950	899360.470	1131974.400	87568.660	4223.713	3605.020	483.009	9248.420
3	18:06:34	108039.900	┬38402138.000	┬1062638200.000	513994.730	244564.290	914496.670	1159006.200	89515.377	4069.662	3638.530	453.008	8813.106
x		106058.120	┬38048579.000	┬1050008200.000	509836.650	243103.090	905869.310	1140655.400	88212.866	4122.347	3625.859	475.509	8879.823
σ		1864.511	┬425303.000	┬11804909.000	4201.904	2928.034	7787.314	15899.907	1128.029	87.809	18.187	19.844	340.182
%RSD		1.758	┬1.118	┬1.124	0.824	1.204	0.860	1.394	1.279	2.130	0.502	4.173	3.831

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:05:51	1040625.000	1417231.600	260475.920	54252.478	1450.084	14413.305	2421709.900	59039.096	34723.161	26817.737	851218.590	395602.540
2	18:06:13	1057893.100	1436719.400	265168.040	55693.796	1210.059	14988.981	2416669.800	59144.593	34918.705	26952.025	860240.910	394281.780
3	18:06:34	1065288.300	1434852.000	267742.050	55794.243	1305.068	14283.156	2423911.800	60943.202	35189.462	27422.547	866293.200	401475.400
x		1054602.200	1429601.000	264462.010	55246.839	1321.737	14561.814	2420763.800	59708.964	34943.776	27064.103	859250.900	397119.900
σ		12656.711	10752.808	3684.157	862.605	120.878	375.618	3712.557	1070.182	234.159	317.600	7585.914	3829.341
%RSD		1.200	0.752	1.393	1.561	9.145	2.579	0.153	1.792	0.670	1.174	0.883	0.964

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:05:51	53780.445	290430.240	2118591.100	235263.310	0.000	902194.140	320086.400
2	18:06:13	54593.960	292881.450	2146854.700	239461.920	5.000	916156.880	328536.450
3	18:06:34	55141.355	295020.890	2175709.000	240450.630	0.000	926283.900	327792.290
x		54505.253	292777.530	2147051.600	238391.950	1.667	914878.310	325471.710
σ		684.778	2297.086	28559.452	2754.212	2.887	12095.667	4678.633
%RSD		1.256	0.785	1.330	1.155	173.205	1.322	1.437

200-38498-A-7-C MSD 5/10/2017 6:11:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:11:35	346342.560	4320.747	140808.640	┬21098921.000	┬8814050.000	┬330951480.000	┬60633535.000	┬7285985.800	626517.090	54227.370	864430.660	644534.340
2	18:11:57	338892.480	4088.168	142381.310	┬20906839.000	┬8809546.500	┬329373520.000	┬60698271.000	┬7364839.800	637775.560	55512.995	869007.210	638822.020
3	18:12:19	335040.710	4205.707	142517.850	┬21228124.000	┬8798270.200	┬329666180.000	┬60592126.000	┬7329752.000	639553.010	54789.814	863981.120	643724.150
x		340091.920	4204.874	141902.600	┬21077961.000	┬8807288.900	┬329997060.000	┬60641310.000	┬7326859.200	634615.220	54843.393	865806.330	642360.170
σ		5745.602	116.291	949.851	┬161664.310	┬8128.517	┬839401.610	┬53497.807	┬39506.491	7069.273	644.485	2781.144	3090.791
%RSD		1.689	2.766	0.669	┬0.767	┬0.092	┬0.254	┬0.088	┬0.539	1.114	1.175	0.321	0.481

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:11:35	95291.842	┬32219331.000	┬894161010.000	455884.340	215181.310	894762.440	1087951.000	87692.524	4161.693	3527.498	406.507	12130.883
2	18:11:57	97161.150	┬32140755.000	┬888153430.000	455879.160	215857.830	899435.600	1092133.200	87815.382	4187.701	3606.520	435.508	12000.758
3	18:12:19	96188.672	┬32182417.000	┬894624310.000	459990.740	215669.620	887517.290	1091632.100	87334.027	4171.696	3553.005	449.508	12150.903
x		96213.888	┬32180834.000	┬892312920.000	457251.410	215569.590	893905.110	1090572.100	87613.978	4173.697	3562.341	430.507	12094.181
σ		934.909	┬39311.785	┬3609660.100	2372.331	349.175	6005.231	2283.712	250.105	13.119	40.330	21.932	81.524
%RSD		0.972	┬0.122	┬0.405	0.519	0.162	0.672	0.209	0.285	0.314	1.132	5.095	0.674

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:11:35	1552531.800	1351761.000	258668.980	53730.230	1270.065	14408.299	2403626.900	70407.733	34612.856	26931.481	796348.760	389474.540
2	18:11:57	1528216.300	1342886.600	258500.550	54388.066	1410.080	14343.224	2405645.700	70000.455	35054.083	26938.496	791946.890	387762.530
3	18:12:19	1542862.300	1341543.200	258010.580	54418.196	1245.062	14948.933	2431278.100	71021.189	34291.973	27337.361	795129.710	394952.460
x		1541203.500	1345396.900	258393.370	54178.831	1308.402	14566.819	2413516.900	70476.459	34652.971	27069.113	794475.120	390729.840
σ		12242.372	5552.238	342.035	388.792	88.938	332.517	15414.719	513.826	382.635	232.336	2272.773	3755.743
%RSD		0.794	0.413	0.132	0.718	6.797	2.283	0.639	0.729	1.104	0.858	0.286	0.961

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:11:35	50290.964	281616.990	1878558.600	232909.850	0.000	859277.950	306819.880
2	18:11:57	49327.135	289468.310	1912615.000	237708.930	0.000	864023.930	307998.340
3	18:12:19	50531.933	286588.070	1950232.000	236924.240	0.000	860845.480	309248.650
x		50050.011	285891.120	1913801.800	235847.680	0.000	861382.450	308022.290
σ		637.517	3971.791	35851.433	2574.305	0.000	2418.128	1214.559
%RSD		1.274	1.389	1.873	1.092	0.000	0.281	0.394

200-38498-A-8-A 5/10/2017 6:16:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:17:19	344893.310	840.028	17497.238	T 2480215.700	T 7806169.400	T 215068320.000	T 38713361.000	T 8225275.600	616150.390	51295.032	462407.510	333182.010
2	18:17:41	345026.920	880.031	17792.654	T 2472989.900	T 7769268.500	T 216420290.000	T 39141034.000	T 8233205.900	612507.760	53233.110	462319.330	332950.970
3	18:18:03	345417.490	802.526	17502.245	T 2491319.700	T 7848551.400	T 218080620.000	T 39499857.000	T 8312583.500	627420.770	52379.515	463429.320	331857.470
x		345112.570	840.862	17597.379	T 2481508.400	T 7807996.400	T 216523070.000	T 39118084.000	T 8257021.700	618692.970	52302.552	462718.720	332663.480
σ		272.384	38.759	169.132	T 9232.991	T 39673.004	T 1508778.000	T 393750.190	T 48281.082	7774.832	971.329	616.976	707.526
%RSD		0.079	4.609	0.961	T 0.372	T 0.508	T 0.697	T 1.007	T 0.585	1.257	1.857	0.133	0.213

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:17:19	58541.765	T 31332933.000	T 789791810.000	298251.200	155597.430	2507235.000	1273541.600	37845.204	1769.125	855.029	370.505	9133.336
2	18:17:41	57672.740	T 31554166.000	T 781447820.000	294447.610	156665.650	2522927.700	1292480.500	37820.128	1738.121	878.531	399.506	8397.820
3	18:18:03	58044.454	T 31953194.000	T 786018230.000	297739.210	157779.530	2540258.300	1302820.800	37804.080	1710.117	878.531	433.508	8993.234
x		58086.320	T 31613431.000	T 785752620.000	296812.670	156680.870	2523473.700	1289614.300	37823.137	1739.121	870.697	401.173	8841.463
σ		436.023	T 314348.940	T 4178333.800	2064.145	1091.129	16518.467	14848.532	20.727	29.517	13.569	31.534	390.540
%RSD		0.751	T 0.994	T 0.532	0.695	0.696	0.655	1.151	0.055	1.697	1.558	7.860	4.417

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:17:19	1056497.200	1024328.000	7317.141	2845.324	470.009	5036.014	2397404.400	89836.669	5161.065	4178.698	510500.840	356080.510
2	18:17:41	1058012.600	1034875.900	7112.023	2735.299	630.016	4875.951	2431169.700	91045.367	5371.154	4232.216	522715.420	364786.210
3	18:18:03	1077855.100	1032013.100	6871.888	2800.314	565.013	5111.045	2430904.800	89705.734	5561.237	4127.181	514921.740	364786.210
x		1064121.600	1030405.700	7100.351	2793.646	555.012	5007.670	2419826.300	90195.923	5364.485	4179.365	516046.000	361884.310
σ		11917.659	5454.608	222.856	55.315	80.471	120.083	19418.406	738.547	200.169	52.521	6184.415	5026.238
%RSD		1.120	0.529	3.139	1.980	14.499	2.398	0.802	0.819	3.731	1.257	1.198	1.389

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:17:19	1405.079	8362.797	1696874.700	228764.340	0.000	335035.580	58180.083
2	18:17:41	1605.103	8277.740	1684422.100	225017.240	0.000	335913.680	59486.208
3	18:18:03	1650.109	8663.001	1706422.900	232787.610	10.000	339390.730	58391.063
x		1553.430	8434.512	1695906.600	228856.400	3.333	336780.000	58685.785
σ		130.432	202.395	11032.300	3885.999	5.774	2303.198	701.168
%RSD		8.396	2.400	0.651	1.698	173.205	0.684	1.195

CCV 1037150 5/10/2017 6:22:44 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:23:06	333993.230	183319.460	93881.228	T 35263632.000	T 10408435.000	T 106374850.000	T 53221873.000	T 4172002.700	505155.100	61340.136	T 6461792.300	1666075.000
2	18:23:27	323266.690	180772.770	94047.471	T 35227105.000	T 10500042.000	T 106549790.000	T 52887661.000	T 4178623.700	501169.380	61862.702	T 6373455.900	1663663.300
3	18:23:48	314476.680	181794.930	93186.056	T 34996177.000	T 10447885.000	T 106035320.000	T 52403065.000	T 4151728.100	497621.790	60842.714	T 6417006.200	1670911.300
x		323912.200	181962.390	93704.918	T 35162304.000	T 10452121.000	T 106319990.000	T 52837533.000	T 4167451.500	501315.420	61348.517	T 6417418.100	1666883.200
σ		9774.276	1281.575	456.972	T 145025.430	T 45949.897	T 261587.830	T 411699.180	T 14013.520	3768.781	510.046	T 44169.645	3690.954
%RSD		3.018	0.704	0.488	T 0.412	T 0.440	T 0.246	T 0.779	T 0.336	0.752	0.831	T 0.688	0.221

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:23:06	193958.210	T 9341398.700	T 185694730.000	2841925.600	1540444.600	2205133.900	1799908.700	220662.640	14944.929	17362.550	324.004	12276.025
2	18:23:27	197772.280	T 9397951.500	T 186867040.000	T 3179847.600	1543792.300	2227308.200	1829054.700	222489.600	15138.161	17239.880	321.004	11830.596
3	18:23:48	198229.430	T 9559181.400	T 188464090.000	T 3152153.000	1551302.300	2218717.400	1828208.300	221559.290	14850.817	17194.818	317.004	12946.701
x		196653.300	T 9432843.800	T 187008620.000	T 3057975.400	1545179.700	2217053.200	1819057.200	221570.510	14977.969	17265.750	320.671	12351.107
σ		2345.189	T 113006.340	T 1390101.800	T 187616.350	5560.261	11180.425	16588.524	913.531	146.494	86.807	3.512	561.828
%RSD		1.193	T 1.198	T 0.743	T 6.135	0.360	0.504	0.912	0.412	0.978	0.503	1.095	4.549

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:23:06	1699800.100	494137.570	T 3461623.100	499150.980	17487.224	258138.170	2385927.800	1944858.300	1237293.000	959188.380	1247733.200	322025.260

2	18:23:27	1712883.500	486756.270	T 3541767.800	504457.770	17557.322	260271.740	2434625.500	2001030.100	1266209.900	973788.500	1239369.400	319614.560
3	18:23:48	1697353.700	482911.360	T 3497901.500	508579.860	17226.862	263462.550	2410609.600	1993869.800	1262071.100	977455.810	1227862.600	320537.750
x		1703345.700	487935.070	T 3500430.800	504062.870	17423.803	260624.150	2410387.600	1979919.400	1255191.300	970144.230	1238321.800	320725.860
σ		8350.029	5705.184	T 40132.180	4726.829	174.119	2679.624	24349.624	30574.145	15637.940	9663.607	9976.645	1216.309
%RSD		0.490	1.169	T 1.146	0.938	0.999	1.028	1.010	1.544	1.246	0.996	0.806	0.379

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:23:06	86543.558	2638229.300	T 13214441.000	223724.350	15.000	361888.790	182264.190
2	18:23:27	89267.614	2695650.900	T 13227793.000	225841.920	0.000	363056.940	189322.950
3	18:23:48	87756.974	2690405.300	T 13384167.000	230383.680	0.000	371628.390	188231.660
x		87856.049	2674761.800	T 13275467.000	226649.980	5.000	365524.710	186606.270
σ		1364.728	31746.656	T 94373.355	3402.412	8.660	5318.115	3799.729
%RSD		1.553	1.187	T 0.711	1.501	173.205	1.455	2.036

CCB 1035925 5/10/2017 6:28:28 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:28:50	341923.370	72.500	4345.755	653823.610	1390.077	17517.266	499379.860	19735.567	528501.240	135.001	18934.330	2940.346
2	18:29:12	337064.030	42.500	4435.787	653412.950	1160.054	17076.657	504655.520	19475.159	529815.150	85.000	18268.340	3075.378
3	18:29:34	338800.030	57.500	4075.664	654655.500	1230.061	17597.378	501658.420	19665.457	531223.050	90.000	18293.376	3260.425
x		339262.470	57.500	4285.735	653964.020	1260.064	17397.100	501897.930	19625.395	529846.480	103.334	18498.682	3092.050
σ		2462.454	15.000	187.414	633.062	117.910	280.388	2645.974	134.747	1361.174	27.538	377.490	160.690
%RSD		0.726	26.087	4.373	0.097	9.357	1.612	0.527	0.687	0.257	26.650	2.041	5.197

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:28:50	6496.688	2705.293	409308.390	330.004	310.004	975.038	830.028	3492.488	1115.050	305.004	335.004	1435.082
2	18:29:12	6551.717	2695.291	409597.630	330.004	310.004	955.036	815.027	3575.511	1189.057	320.504	320.504	1360.074
3	18:29:34	6561.722	2405.231	417833.600	450.008	290.003	950.036	855.029	3456.478	1179.056	303.004	311.504	1230.061
x		6536.709	2601.938	412246.540	370.006	303.337	960.037	833.361	3508.159	1161.054	309.504	322.337	1341.739
σ		35.018	170.427	4840.697	69.284	11.547	13.230	20.209	61.044	40.153	9.579	11.857	103.733
%RSD		0.536	6.550	1.174	18.725	3.807	1.378	2.425	1.740	3.458	3.095	3.678	7.731

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:28:50	495.010	504572.260	525.011	40.000	0.000	20.000	2417186.900	1390.077	205.002	151.501	175.001	311729.130
2	18:29:12	425.007	505446.540	500.010	45.000	5.000	30.000	2384091.900	1235.061	230.002	141.001	115.001	312979.810
3	18:29:34	530.011	507268.140	465.009	80.000	20.000	20.000	2390032.300	1395.078	210.002	141.501	110.000	305713.260
x		483.343	505762.310	496.677	55.000	8.333	23.333	2397103.700	1340.072	215.002	144.668	133.334	310140.730
σ		53.465	1375.405	30.140	21.795	10.408	5.774	17644.373	90.977	13.229	5.923	36.171	3884.962
%RSD		11.062	0.272	6.068	39.626	124.900	24.744	0.736	6.789	6.153	4.094	27.128	1.253

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:28:50	95.000	1715.118	1610.104	222513.010	0.000	35.000	35.000
2	18:29:12	105.000	1555.097	1480.088	222818.380	0.000	40.000	20.000
3	18:29:34	65.000	1415.080	1640.108	222207.650	0.000	65.000	15.000
x		88.334	1561.765	1576.766	222513.010	0.000	46.667	23.333
σ		20.817	150.130	85.060	305.364	0.000	16.073	10.408
%RSD		23.566	9.613	5.395	0.137	0.000	34.442	44.607

CCVL 1037148 5/10/2017 6:34:10 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:34:32	353838.170	475.009	20632.013	T 2754830.400	72590.163	200637.390	T 3548595.500	87434.728	548255.340	160.001	52956.940	22956.060
2	18:34:53	352079.540	387.506	20777.253	T 2723838.800	72720.920	202192.150	T 3563165.800	89458.975	554940.870	120.001	53122.641	22590.395

3	18:35:14	346291.170	317.504	19595.347	┬2713431.000	74652.255	199433.360	┬3525041.300	89559.692	543681.940	110.000	52961.962	22700.594
x		350736.290	393.340	20334.871	┬2730700.100	73321.112	200754.300	┬3545600.900	88817.798	548959.390	130.001	53013.848	22749.016
σ		3948.738	78.914	644.551	┬21535.643	1154.655	1383.106	┬19237.840	1198.833	5662.388	26.458	94.251	187.580
%RSD		1.126	20.063	3.170	┬0.789	1.575	0.689	┬0.543	1.350	1.031	20.352	0.178	0.825

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:34:32	12381.129	16991.541	1739615.200	6626.756	3085.381	10844.702	29955.851	9901.920	1975.156	626.016	339.505	1660.110
2	18:34:53	12521.268	17011.568	1724214.200	6446.662	2940.346	10869.724	30632.488	9979.982	1986.158	664.518	327.004	1840.135
3	18:35:14	12025.782	17747.590	1733427.500	6686.788	3250.423	11395.192	31690.120	9939.951	1959.154	654.017	335.505	1760.124
x		12309.393	17250.233	1732419.000	6586.735	3092.050	11036.539	30759.486	9940.618	1973.489	648.183	334.004	1753.457
σ		255.414	430.840	7749.853	124.966	155.146	310.854	874.081	39.035	13.579	19.903	6.384	90.198
%RSD		2.075	2.498	0.447	1.897	5.018	2.817	2.842	0.393	0.688	3.071	1.911	5.144

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:34:32	46124.944	517828.180	26653.386	5441.184	130.001	1295.067	2436082.700	2335.218	9938.950	7653.843	10104.082	310991.090
2	18:34:53	44729.888	514640.500	25976.964	5361.149	90.000	1420.081	2437251.000	2315.214	9693.757	7824.948	9983.986	312651.750
3	18:35:14	44950.677	516463.430	25986.985	5686.293	55.000	1305.068	2465754.600	2480.246	10319.258	7745.399	10379.307	318629.890
x		45268.503	516310.700	26205.778	5496.209	91.667	1340.072	2446362.800	2376.893	9983.988	7741.397	10155.792	314090.910
σ		749.870	1599.318	387.672	169.412	37.528	69.470	16803.972	90.064	315.173	85.623	202.670	4017.616
%RSD		1.656	0.310	1.479	3.082	40.940	5.184	0.687	3.789	3.157	1.106	1.996	1.279

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:34:32	10799.663	26147.319	10804.668	219836.270	0.000	34281.946	17817.690
2	18:34:53	10789.655	26658.397	10474.387	218676.180	0.000	34828.453	17857.747
3	18:35:14	11004.842	26287.613	10609.501	223296.800	0.000	35891.454	17512.259
x		10864.720	26364.443	10629.518	220603.090	0.000	35000.618	17729.232
σ		121.452	264.059	166.048	2403.858	0.000	818.450	188.969
%RSD		1.118	1.002	1.562	1.090	0.000	2.338	1.066

200-38498-A-9-A 5/10/2017 6:39:55 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:40:18	337536.530	760.023	13357.133	1827500.000	┬6648869.800	┬186629680.000	┬33734230.000	┬6422370.400	584828.240	49939.560	395845.040	355967.350
2	18:40:40	344533.590	745.022	13567.359	┬2003974.000	┬6752625.300	┬188002460.000	┬34262839.000	┬6433255.900	593052.450	50441.569	398358.010	353719.890
3	18:41:02	343464.770	817.527	13972.805	┬2027010.500	┬6728013.000	┬187483470.000	┬34021862.000	┬6540875.800	600086.510	50301.004	401656.070	355185.580
x		341844.960	774.191	13632.432	┬1952828.200	┬6709836.000	┬187371870.000	┬34006310.000	┬6465500.700	592655.730	50227.378	398619.700	354957.610
σ		3769.292	38.272	312.952	┬109146.820	┬54213.493	┬693160.630	┬264647.420	┬65503.267	7636.867	258.977	2914.340	1140.945
%RSD		1.103	4.944	2.296	┬5.589	┬0.808	┬0.370	┬0.778	┬1.013	1.289	0.516	0.731	0.321

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:40:18	58426.227	┬28661356.000	┬675388740.000	245665.570	131558.680	2095430.500	1085746.100	42912.533	1519.092	731.521	351.005	7177.060
2	18:40:40	58220.269	┬28767790.000	┬687332150.000	247001.510	132564.220	2115443.900	1104344.300	43196.509	1502.090	766.524	414.007	7056.992
3	18:41:02	58275.526	┬29240291.000	┬686480170.000	250132.870	135394.320	2147591.700	1107326.600	43632.017	1547.096	788.525	425.507	7467.230
x		58307.340	┬28889812.000	┬683067020.000	247599.980	133172.410	2119488.700	1099139.000	43247.020	1522.759	762.190	396.840	7233.760
σ		106.601	┬308153.010	┬6663219.400	2292.990	1988.827	26314.760	11694.022	362.392	22.726	28.748	40.108	210.915
%RSD		0.183	┬1.067	┬0.975	0.926	1.493	1.242	1.064	0.838	1.492	3.772	10.107	2.916

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:40:18	827550.890	965156.010	6576.730	2545.259	485.009	4000.640	2438214.600	118075.050	6466.672	4919.468	520756.130	358673.070
2	18:40:40	839702.480	975461.710	6206.541	2325.216	485.009	4115.677	2446516.600	117449.190	6276.575	5088.536	525743.530	357500.180
3	18:41:02	842795.590	976141.850	6446.662	2445.239	460.008	4055.658	2445793.500	121129.060	6386.631	5115.547	535202.520	372272.130
x		836682.980	972253.190	6409.977	2438.572	476.676	4057.325	2443508.200	118884.430	6376.626	5041.183	527234.060	362815.130
σ		8058.424	6155.740	187.801	110.173	14.434	57.537	4598.636	1968.930	95.443	106.270	7337.630	8210.971
%RSD		0.963	0.633	2.930	4.518	3.028	1.418	0.188	1.656	1.497	2.108	1.392	2.263

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:40:18	1175.055	7682.360	2058461.600	228183.880	0.000	301784.500	51460.711
2	18:40:40	1090.048	7667.351	2081664.700	234539.910	0.000	312805.530	52002.948
3	18:41:02	1175.055	7867.475	2104396.200	236577.770	0.000	313948.650	53418.900
x		1146.719	7739.062	2081507.500	233100.520	0.000	309512.890	52294.186
σ		49.079	111.462	22967.660	4378.157	0.000	6717.343	1011.059
%RSD		4.280	1.440	1.103	1.878	0.000	2.170	1.933

200-38498-A-11-A 5/10/2017 6:45:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:46:02	350968.950	1172.555	14333.213	T 1984484.200	T 7204687.800	T 301452640.000	T 29885810.000	1710166.500	623953.520	38744.954	529022.620	396866.680
2	18:46:24	355432.450	1120.050	14913.892	T 1993798.200	T 7344576.200	T 304520590.000	T 29764264.000	1697581.800	626800.800	36172.262	527057.150	391181.620
3	18:46:45	339611.610	1207.558	14188.047	1813642.600	T 7268330.600	T 299541660.000	T 29620297.000	1710623.100	626811.300	37365.765	535979.790	399663.710
x		348671.010	1166.721	14478.384	T 1930641.700	T 7272531.500	T 301838300.000	T 29756791.000	1706123.800	625855.210	37427.660	530686.520	395904.000
σ		8156.910	44.045	384.081	T 101431.110	T 70038.743	T 2511769.300	T 132913.890	7401.132	1646.918	1287.463	4688.261	4322.210
%RSD		2.339	3.775	2.653	T 5.254	T 0.963	T 0.832	T 0.447	0.434	0.263	3.440	0.883	1.092
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	18:46:02	60204.636	T 11483608.000	T 607126850.000	273836.970	170170.490	325190.640	537174.460	34241.836	1444.083	695.519	416.007	5541.228
2	18:46:24	60596.522	T 11607485.000	T 616441600.000	279127.070	174337.320	324010.590	536449.300	34131.535	1363.074	726.521	414.507	5426.178
3	18:46:45	60872.860	T 11623903.000	T 620800190.000	275313.880	168057.190	317676.070	530983.180	34068.363	1301.068	643.017	410.507	5611.259
x		60558.006	T 11571665.000	T 614789550.000	276092.640	170855.000	322292.430	534868.980	34147.245	1369.409	688.352	413.674	5526.222
σ		335.773	T 76700.165	T 6984771.900	2729.675	3195.535	4041.191	3384.682	87.797	71.718	42.211	2.843	93.449
%RSD		0.554	T 0.663	T 1.136	0.989	1.870	1.254	0.633	0.257	5.237	6.132	0.687	1.691
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	18:46:02	558823.220	1193260.200	12441.188	1575.099	285.003	1085.047	2442045.700	8978.223	2310.214	1639.108	562790.390	375104.950
2	18:46:24	568777.450	1212187.900	12621.369	1810.131	310.004	1110.049	2497958.600	8948.202	2115.179	1606.103	575641.190	383792.790
3	18:46:45	565012.340	1213100.300	12556.303	1705.116	245.002	1135.052	2476162.800	9483.596	2405.231	1699.116	569494.000	388267.860
x		564204.340	1206182.800	12539.620	1696.782	280.003	1110.049	2472055.700	9136.674	2276.875	1648.109	569308.530	382388.530
σ		5026.065	11200.623	91.241	117.737	32.788	25.002	28181.788	300.818	147.872	47.155	6427.404	6692.868
%RSD		0.891	0.929	0.728	6.939	11.710	2.252	1.140	3.292	6.495	2.861	1.129	1.750
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	18:46:02	535.011	11445.237	680761.020	239094.990	0.000	389443.600	127284.770					
2	18:46:24	625.016	10754.624	677769.870	239247.880	0.000	399921.770	129563.000					
3	18:46:45	640.016	11325.128	686550.110	242397.700	0.000	397749.070	128749.660					
x		600.014	11174.997	681693.670	240246.860	0.000	395704.810	128532.480					
σ		56.792	368.973	4463.802	1864.250	0.000	5530.123	1154.537					
%RSD		9.465	3.302	0.655	0.776	0.000	1.398	0.898					

MB 200-116492/1-A 5/10/2017 6:51:25 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:51:48	361801.310	50.000	4205.707	1028218.800	1440.083	43084.122	581299.210	40645.977	587153.530	210.002	19219.765	3940.621
2	18:52:10	357623.640	50.000	4255.724	1042762.600	1520.092	39266.578	581833.210	40184.488	594194.830	155.001	19905.837	3690.545
3	18:52:31	366598.080	35.000	4010.643	1021445.800	1450.084	37531.259	570969.050	40425.263	595976.720	180.001	19500.198	3820.584
x		362007.680	45.000	4157.358	1030809.100	1470.087	39960.653	578033.830	40418.576	592441.690	181.668	19541.933	3817.250
σ		4490.776	8.660	129.497	10891.914	43.594	2840.753	6124.096	230.817	4665.543	27.538	344.935	125.071
%RSD		1.241	19.245	3.115	1.057	2.965	7.109	1.059	0.571	0.788	15.159	1.765	3.276
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	18:51:48	7072.000	2860.327	545916.230	145.001	280.003	1570.099	1410.080	3689.544	1213.059	305.504	319.504	1330.071
2	18:52:10	7172.057	2645.280	531212.620	95.000	215.002	1525.093	1425.081	3778.571	1233.061	330.504	319.504	1375.076
3	18:52:31	7102.017	2635.278	529794.290	80.000	205.002	1480.088	1380.076	3767.568	1240.062	332.504	363.505	1725.119
x		7115.358	2713.628	535641.050	106.667	233.336	1525.093	1405.079	3745.228	1228.727	322.838	334.171	1476.755
σ		51.345	127.143	8926.782	34.035	40.723	45.005	22.915	48.536	14.013	15.045	25.404	216.263
%RSD		0.722	4.685	1.667	31.907	17.453	2.951	1.631	1.296	1.140	4.660	7.602	14.644
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	18:51:48	1105.049	531462.930	45.000	10.000	5.000	0.000	2497051.200	1370.075	60.000	46.000	65.000	311893.150

2	18:52:10	1300.068	545790.930	50.000	15.000	0.000	10.000	2504916.800	1335.071	55.000	45.500	95.000	316804.360
3	18:52:31	1275.065	538097.940	60.000	25.000	10.000	30.000	2536448.300	1275.065	50.000	48.500	55.000	314497.190
x		1226.727	538450.600	51.667	16.667	5.000	13.333	2512805.400	1326.737	55.000	46.667	71.667	314398.230
σ		106.115	7170.507	7.638	7.638	5.000	15.275	20849.622	48.050	5.000	1.607	20.817	2457.103
%RSD		8.650	1.332	14.783	45.826	100.000	114.564	0.830	3.622	9.091	3.444	29.047	0.782

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:51:48	140.001	290.003	695.019	211351.800	0.000	45.000	25.000
2	18:52:10	145.001	195.002	665.018	213925.030	0.000	30.000	10.000
3	18:52:31	165.001	195.002	715.020	216946.430	0.000	30.000	5.000
x		150.001	226.669	691.686	214074.420	0.000	35.000	13.333
σ		13.229	54.849	25.168	2800.305	0.000	8.660	10.408
%RSD		8.819	24.198	3.639	1.308	0.000	24.744	78.063

LCS 200-116492/2-A 5/10/2017 6:57:12 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:57:33	352089.820	3145.396	164951.220	T 21260408.000	734397.960	T 2034834.700	T 30785057.000	726802.760	551691.690	250.003	271292.380	188612.330
2	18:57:55	353498.760	3075.378	168153.470	T 21410128.000	746515.050	1931320.400	T 31380968.000	714683.040	552140.880	185.001	272917.180	191820.600
3	18:58:16	346846.240	3075.378	173298.020	T 21717558.000	748381.870	1887942.200	T 30753274.000	715550.630	552997.530	170.001	275686.970	194394.910
x		350811.610	3098.717	168800.900	T 21462698.000	743098.290	T 1951365.800	T 30973100.000	719012.140	552276.700	201.668	273298.840	191609.280
σ		3505.620	40.425	4210.894	T 233064.620	7592.309	T 75469.934	T 353582.140	6760.803	663.432	42.525	2222.019	2897.078
%RSD		0.999	1.305	2.495	T 1.086	1.022	T 3.868	T 1.142	0.940	0.120	21.087	0.813	1.512

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:57:33	29499.768	152276.910	T 15031284.000	61425.554	27911.126	97166.189	293306.240	49628.324	3995.639	3559.507	318.504	4580.839
2	18:57:55	29995.947	157080.810	T 15218787.000	62536.040	27650.548	99958.073	293459.780	49279.949	4005.642	3584.014	307.504	4610.850
3	18:58:16	29294.286	153648.550	T 15084392.000	62897.848	28121.597	100532.650	294068.840	49102.252	4182.700	3677.541	319.504	4575.837
x		29596.667	154335.420	T 15111488.000	62286.481	27894.424	99218.972	293611.620	49336.842	4061.327	3607.021	315.171	4589.176
σ		360.727	2474.512	T 96643.900	767.217	235.968	1800.826	403.341	267.610	105.231	62.290	6.658	18.937
%RSD		1.219	1.603	T 0.640	1.232	0.846	1.815	0.137	0.542	2.591	1.727	2.113	0.413

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:57:33	452219.770	518734.630	266516.270	55633.529	1055.045	13312.085	2437696.700	1560.097	100205.040	77049.737	103531.990	314015.300
2	18:57:55	452173.130	520037.110	268160.880	56271.374	1070.046	13687.490	2506442.000	1550.096	102276.720	77865.267	107737.300	320855.760
3	18:58:16	457092.270	515963.400	267185.320	55372.373	970.038	13682.484	2506672.000	1765.125	100260.480	77939.226	106365.630	321450.750
x		453828.390	518245.050	267287.490	55759.092	1031.709	13560.686	2483603.600	1625.106	100914.080	77618.077	105878.310	318773.940
σ		2826.703	2080.516	827.055	462.467	53.933	215.310	39756.702	121.363	1180.405	493.584	2144.593	4131.826
%RSD		0.623	0.401	0.309	0.829	5.228	1.588	1.601	7.468	1.170	0.636	2.026	1.296

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:57:33	112625.100	266674.590	92057.741	220813.260	0.000	368585.250	186846.100
2	18:57:55	115516.310	270209.290	94979.478	225943.730	0.000	373755.420	192846.200
3	18:58:16	116495.330	273913.620	95523.601	225251.400	0.000	378510.330	193526.590
x		114878.910	270265.840	94186.940	224002.800	0.000	373617.000	191072.960
σ		2012.304	3619.847	1863.903	2783.826	0.000	4963.988	3676.347
%RSD		1.752	1.339	1.979	1.243	0.000	1.329	1.924

200-38498-A-10-A 5/10/2017 7:02:55 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:03:18	347925.630	45.000	7072.000	1306607.100	3290.433	28106.564	613977.280	28191.755	568427.040	205.002	23998.014	4100.673
2	19:03:40	348552.740	35.000	6906.908	1336526.000	3570.510	26888.889	613966.780	27680.615	557260.740	200.002	24559.102	4300.740

3	19:04:01	348090.110	22.500	6746.820	1335494.000	3000.360	28256.902	618880.420	27700.659	558838.900	180.001	24824.626	4575.837
x		348189.490	34.167	6908.576	1326209.000	3287.101	27750.785	615608.160	27857.676	561508.890	195.002	24460.581	4325.750
σ		325.154	11.273	162.596	16983.620	285.090	750.199	2833.863	289.494	6043.033	13.229	422.021	238.568
%RSD		0.093	32.995	2.354	1.281	8.673	2.703	0.460	1.039	1.076	6.784	1.725	5.515

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:03:18	8918.180	19975.949	496768.850	265.003	480.009	13262.032	4420.782	4867.948	1514.092	361.005	357.505	1520.092
2	19:03:40	9283.446	20642.030	497039.280	220.002	480.009	13892.716	4410.778	4732.896	1550.096	357.505	329.004	1550.096
3	19:04:01	8948.202	20166.254	496514.010	225.002	395.006	14268.139	4260.726	4779.914	1487.089	345.505	358.505	1565.098
x		9049.943	20261.411	496774.050	236.669	451.675	13807.629	4364.095	4793.586	1517.092	354.672	348.338	1545.096
σ		202.776	343.085	262.673	24.665	49.076	508.422	89.660	68.556	31.611	8.129	16.751	22.916
%RSD		2.241	1.693	0.053	10.422	10.865	3.682	2.054	1.430	2.084	2.292	4.809	1.483

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:03:18	1705.116	528866.200	440.008	100.000	10.000	25.000	2429075.000	2470.244	175.001	119.001	275.003	309761.100
2	19:03:40	1495.089	523507.560	465.009	100.000	5.000	20.000	2450808.200	2495.249	170.001	135.001	325.004	314497.190
3	19:04:01	1530.094	519724.500	410.007	70.000	5.000	45.000	2442274.600	2290.210	180.001	155.001	310.004	306061.630
x		1576.766	524032.750	438.341	90.000	6.667	30.000	2440719.300	2418.568	175.001	136.334	303.337	310106.640
σ		112.524	4593.425	27.539	17.321	2.887	13.229	10949.744	111.862	5.000	18.037	25.659	4228.380
%RSD		7.136	0.877	6.283	19.245	43.301	44.096	0.449	4.625	2.857	13.230	8.459	1.364

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:03:18	1295.067	755.023	1150.053	214748.970	0.000	405.007	225.002
2	19:03:40	1405.079	685.019	1115.050	215532.280	0.000	395.006	230.002
3	19:04:01	1415.080	635.016	1265.064	216702.250	0.000	495.010	175.001
x		1371.742	691.686	1176.722	215661.170	0.000	431.674	210.002
σ		66.590	60.280	78.483	982.997	0.000	55.078	30.414
%RSD		4.854	8.715	6.670	0.456	0.000	12.759	14.483

200-38498-A-10-A SD@5 5/10/2017 7:08:38 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:08:59	340731.480	40.000	4020.647	746037.790	520.011	10324.262	553143.790	23562.186	541552.430	105.000	26763.621	3580.513
2	19:09:21	340567.090	37.500	3470.482	731611.470	530.011	10504.412	560385.900	21608.661	547336.350	190.001	26357.760	3185.406
3	19:09:43	342344.670	57.500	3785.573	733762.200	560.013	10854.711	555463.330	21778.956	539955.520	85.000	26808.717	3415.467
x		341214.410	45.000	3758.901	737137.150	536.678	10561.128	556331.010	22316.601	542948.100	126.667	26643.366	3393.795
σ		982.276	10.897	276.051	7782.826	20.818	269.734	3698.200	1082.064	3883.309	55.753	248.368	198.443
%RSD		0.288	24.216	7.344	1.056	3.879	2.554	0.665	4.849	0.715	44.015	0.932	5.847

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:08:59	9273.439	5226.092	440626.560	95.000	150.001	3345.448	1545.096	4989.996	1656.110	300.004	292.503	1395.078
2	19:09:21	9883.906	5411.171	433322.780	105.000	220.002	3280.430	1500.090	5000.000	1559.097	321.504	329.504	1340.072
3	19:09:43	9418.547	5461.193	449390.430	60.000	135.001	3385.458	1590.101	5086.035	1614.104	373.006	344.505	1400.078
x		9525.297	5366.152	441113.260	86.667	168.335	3337.112	1545.096	5025.343	1609.770	331.504	322.171	1378.409
σ		318.927	123.847	8044.872	23.629	45.370	53.008	45.006	52.798	48.651	37.514	26.765	33.295
%RSD		3.348	2.308	1.824	27.264	26.952	1.588	2.913	1.051	3.022	11.316	8.308	2.415

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:08:59	505.010	505363.270	25.000	25.000	5.000	5.000	2338945.200	1315.069	90.000	34.000	60.000	294549.980
2	19:09:21	505.010	499359.050	30.000	10.000	0.000	5.000	2369617.700	1375.076	50.000	25.000	25.000	297928.650
3	19:09:43	500.010	516515.510	20.000	15.000	0.000	10.000	2402257.200	1280.066	60.000	38.000	40.000	303797.390
x		503.343	507079.280	25.000	16.667	1.667	6.667	2370273.400	1323.403	66.667	32.333	41.667	298758.670
σ		2.887	8706.009	5.000	7.638	2.887	2.887	31661.124	48.050	20.817	6.658	17.559	4679.250
%RSD		0.574	1.717	20.000	45.826	173.205	43.301	1.336	3.631	31.225	20.593	42.143	1.566

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:08:59	285.003	235.002	515.011	206115.450	0.000	25.000	0.000
2	19:09:21	285.003	200.002	555.012	209206.160	0.000	10.000	5.000
3	19:09:43	325.004	285.003	630.016	208514.750	0.000	5.000	0.000
x		298.337	240.002	566.680	207945.450	0.000	13.333	1.667
σ		23.095	42.721	58.384	1622.098	0.000	10.408	2.887
%RSD		7.741	17.800	10.303	0.780	0.000	78.063	173.205

200-38498-A-10-A PDS 5/10/2017 7:14:21 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:14:43	343567.540	3197.909	161030.600	T 21609402.000	733942.330	1912389.000	T 30667475.000	718016.150	546292.130	165.001	270081.580	188460.060
2	19:15:05	338574.030	3302.936	163634.080	T 21912091.000	738626.510	T 2070533.200	T 30785434.000	722355.770	552297.580	195.002	272360.230	190348.350
3	19:15:26	340998.610	3170.402	163882.300	T 21804334.000	738340.330	1917958.400	T 30561481.000	707374.400	545143.580	200.002	268528.650	189693.510
x		341046.730	3223.749	162848.990	T 21775276.000	736969.720	T 1966960.200	T 30671463.000	715915.440	547911.100	186.668	270323.490	189500.640
σ		2497.104	69.944	1579.660	T 153422.530	2625.702	T 89740.096	T 112029.740	7708.446	3841.968	18.930	1927.207	958.806
%RSD		0.732	2.170	0.970	T 0.705	0.356	T 4.562	T 0.365	1.077	0.701	10.141	0.713	0.506

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:14:43	29705.254	168634.890	T 15000999.000	62118.968	27510.239	111323.520	288613.890	48392.492	4019.646	3467.981	347.505	4385.769
2	19:15:05	28913.401	166420.510	T 15180853.000	62330.015	27931.171	112544.380	294324.760	48260.985	4025.648	3568.009	347.505	4525.819
3	19:15:26	29249.181	169258.230	T 14924422.000	61656.688	28251.891	113578.670	292886.570	48235.889	3972.631	3408.465	350.505	4560.832
x		29289.279	168104.540	T 15035425.000	62035.224	27897.767	112482.190	291941.740	48296.456	4005.975	3481.485	348.505	4490.807
σ		397.447	1491.348	T 131636.300	344.387	371.952	1128.861	2970.359	84.112	29.032	80.625	1.732	92.634
%RSD		1.357	0.887	T 0.876	0.555	1.333	1.004	1.017	0.174	0.725	2.316	0.497	2.063

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:14:43	448203.950	514765.500	263666.780	54905.320	880.031	13106.868	2409455.600	2525.255	98274.805	75086.846	102417.860	317081.250
2	19:15:05	453266.680	512578.310	262946.860	55136.333	1100.048	14077.923	2465682.200	2480.246	98768.674	75986.760	102332.170	315563.560
3	19:15:26	452950.530	517411.450	264473.560	55005.760	980.038	13562.354	2472563.700	2700.292	98960.180	76771.030	102916.940	314784.280
x		451473.720	514918.420	263695.730	55015.804	986.706	13582.382	2449233.800	2568.598	98667.887	75948.212	102555.660	315809.700
σ		2836.114	2420.194	763.765	115.834	110.160	485.837	34620.357	116.250	353.629	842.753	315.800	1168.100
%RSD		0.628	0.470	0.290	0.211	11.164	3.577	1.414	4.526	0.358	1.110	0.308	0.370

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:14:43	109512.630	257816.640	91609.466	218564.250	0.000	351837.880	177197.110
2	19:15:05	109542.890	266460.090	94999.631	219999.100	0.000	354126.150	181168.430
3	19:15:26	109512.630	269340.850	93065.160	219887.150	0.000	362815.070	184664.030
x		109522.720	264539.190	93224.752	219483.500	0.000	356259.700	181009.860
σ		17.473	5997.437	1700.708	798.057	0.000	5791.262	3735.984
%RSD		0.016	2.267	1.824	0.364	0.000	1.626	2.064

200-38498-A-10-B MS 5/10/2017 7:20:05 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:20:27	343362.010	3127.891	168731.170	T 21560379.000	737842.160	T 2105506.200	T 30866439.000	714746.520	553478.110	200.002	274562.630	189723.960
2	19:20:48	338101.490	3252.923	170920.620	T 21847225.000	749559.370	1931105.700	T 30740893.000	718841.620	545676.080	155.001	267195.540	187708.880
3	19:21:09	338327.480	3192.908	171873.550	T 21823724.000	744595.490	T 2102077.800	T 30855039.000	717042.580	539746.790	205.002	271113.560	189805.180
x		339930.330	3191.241	170508.450	T 21743776.000	743999.010	T 2046229.900	T 30820790.000	716876.910	546300.330	186.668	270957.240	189079.340
σ		2974.069	62.533	1611.226	T 159260.360	5881.334	T 99715.213	T 69427.902	2052.571	6886.913	27.538	3686.031	1187.548
%RSD		0.875	1.960	0.945	T 0.732	0.791	T 4.873	T 0.225	0.286	1.261	14.753	1.360	0.628

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:20:27	29093.819	168629.820	T 15185355.000	62822.471	28567.607	110657.650	289053.890	49212.685	3986.636	3581.513	314.504	4405.776
2	19:20:48	28662.825	173095.240	T 15175100.000	64083.850	28572.619	115279.130	297657.300	49462.669	4004.641	3498.490	301.004	4235.718
3	19:21:09	28432.299	173744.150	T 15214681.000	62686.792	29038.691	113502.990	296387.660	49202.646	4010.643	3536.000	314.004	4630.858
x		28729.647	171823.070	T 15191712.000	63197.704	28726.305	113146.590	294366.280	49292.667	4000.640	3538.668	309.837	4424.117
σ		335.784	2784.403	T 20541.926	770.417	270.545	2331.265	4644.258	147.312	12.494	41.576	7.654	198.208
%RSD		1.169	1.621	T 0.135	1.219	0.942	2.060	1.578	0.299	0.312	1.175	2.470	4.480

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:20:27	452380.430	518109.490	267675.650	55598.373	940.035	13126.889	2422925.100	2460.242	98541.895	77166.454	102816.110	318527.330

2	19:20:48	464233.350	525967.670	271077.800	55568.239	815.027	13397.176	2458020.000	2250.203	100043.750	78037.335	105266.380	323902.850
3	19:21:09	461328.720	521808.690	272585.050	56828.888	990.039	13196.963	2456982.600	2495.249	101933.930	78159.092	105049.570	320394.140
x		459314.170	521961.950	270446.160	55998.500	915.034	13240.342	2445975.900	2401.898	100173.190	77787.627	104377.360	320941.440
σ		6177.923	3931.332	2514.910	719.295	90.145	140.268	19969.294	132.533	1699.720	541.386	1356.413	2729.231
%RSD		1.345	0.753	0.930	1.284	9.852	1.059	0.816	5.518	1.697	0.696	1.300	0.850

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:20:27	115047.010	266582.660	92762.926	218401.440	0.000	379169.870	194186.710
2	19:20:48	117211.980	275022.580	96057.670	226687.010	0.000	382328.940	193623.070
3	19:21:09	114628.190	268390.740	96889.050	228672.690	0.000	378154.810	192297.850
x		115629.060	269998.660	95236.549	224587.050	0.000	379884.540	193369.210
σ		1386.754	4443.771	2182.179	5448.119	0.000	2176.905	969.684
%RSD		1.199	1.646	2.291	2.426	0.000	0.573	0.501

200-38498-A-10-C MSD 5/10/2017 7:25:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:26:09	342344.670	3107.886	166268.500	T 21368166.000	734154.250	1914538.800	T 30277548.000	711996.020	547628.750	190.001	263355.320	187378.990
2	19:26:30	338152.850	3122.890	170322.540	T 21768337.000	728317.200	1882662.800	T 30035212.000	705450.090	541437.610	125.001	267690.970	187627.680
3	19:26:52	344667.200	3107.886	167692.330	T 21413841.000	733031.120	T 2073000.200	T 30583337.000	710906.570	537179.680	190.001	266444.770	191937.370
x		341721.570	3112.888	168094.460	T 21516781.000	731834.190	T 1956733.900	T 30298699.000	709450.890	542082.010	168.335	265830.350	188981.340
σ		3301.569	8.662	2056.716	T 219047.680	3097.136	T 101943.150	T 274673.540	3507.357	5254.256	37.528	2232.173	2563.012
%RSD		0.966	0.278	1.224	T 1.018	0.423	T 5.210	T 0.907	0.494	0.969	22.294	0.840	1.356

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:26:09	28372.163	171817.790	T 14957708.000	60943.202	27389.976	111606.020	288982.260	47832.343	3918.614	3465.981	285.003	4265.728
2	19:26:30	27996.317	175437.550	T 15026761.000	61043.690	27635.515	114385.980	294626.750	48139.518	3821.584	3484.486	331.504	4465.798
3	19:26:52	28722.962	177450.670	T 15191337.000	62721.968	27640.526	111257.940	297513.940	48091.333	3905.610	3569.009	373.506	4695.882
x		28363.814	174902.010	T 15058602.000	61569.620	27555.339	112416.650	293707.650	48021.065	3881.936	3506.492	330.004	4475.802
σ		363.395	2854.372	T 120025.180	999.227	143.231	1714.351	4339.467	165.204	52.669	54.927	44.270	215.252
%RSD		1.281	1.632	T 0.797	1.623	0.520	1.525	1.477	0.344	1.357	1.566	13.415	4.809

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:26:09	455034.190	520266.360	266342.620	54016.459	885.031	13682.484	2458369.800	2630.277	97594.506	75682.422	100043.750	314866.310
2	19:26:30	454521.020	510578.930	265734.890	54629.113	1015.041	13437.218	2436275.400	2585.267	98209.293	76926.481	100542.730	319060.680
3	19:26:52	458341.800	515390.480	264917.820	55718.908	970.038	13587.381	2468700.000	2520.254	100482.250	77893.442	102811.070	319522.240
x		455965.670	515411.920	265665.110	54788.160	956.703	13569.028	2454448.400	2578.599	98762.017	76834.115	101132.520	317816.410
σ		2073.726	4843.749	714.959	862.296	66.023	123.659	16564.151	55.314	1521.149	1108.400	1474.924	2565.265
%RSD		0.455	0.940	0.269	1.574	6.901	0.911	0.675	2.145	1.540	1.443	1.458	0.807

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:26:09	112927.810	259684.710	93236.429	219856.620	0.000	373286.720	191637.830
2	19:26:30	114259.840	263549.350	94248.980	222105.860	0.000	376279.470	183999.340
3	19:26:52	117166.560	269637.140	96198.749	225923.370	0.000	379355.380	194943.350
x		114784.740	264290.400	94561.386	222628.620	0.000	376307.190	190193.510
σ		2167.575	5017.424	1505.667	3066.971	0.000	3034.423	5613.148
%RSD		1.888	1.898	1.592	1.378	0.000	0.806	2.951

MB 200-116422/1-A 5/10/2017 7:31:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:31:53	345766.950	35.000	6116.496	955656.110	440.008	11134.957	499203.000	21498.471	550083.070	135.001	18944.345	2845.324
2	19:32:15	339467.780	35.000	5646.275	960777.210	200.002	11064.895	484501.140	20697.121	547075.290	115.001	18393.523	2970.353

3	19:32:38	340043.110	42.500	5781.337	932394.040	440.008	11320.123	492619.380	22229.749	541155.790	180.001	18779.096	3010.362
x		341759.280	37.500	5848.036	949609.120	360.006	11173.325	492107.840	21475.114	546104.720	143.334	18705.654	2942.013
σ		3482.647	4.330	242.102	15126.984	138.568	131.869	7364.264	766.581	4542.089	33.292	282.659	86.092
%RSD		1.019	11.547	4.140	1.593	38.490	1.180	1.496	3.570	0.832	23.227	1.511	2.926

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:31:53	7132.034	1910.146	422511.980	70.000	180.001	995.040	930.035	3848.592	1269.064	343.005	339.505	1480.088
2	19:32:15	6601.743	1710.117	423825.340	65.000	185.001	1085.047	1005.040	3847.592	1201.058	354.505	356.005	1420.081
3	19:32:38	6546.714	1745.122	416970.480	90.000	175.001	1065.045	1065.045	3719.553	1239.061	324.004	323.504	1570.099
x		6760.164	1788.462	421102.600	75.000	180.001	1048.377	1000.040	3805.246	1236.395	340.505	339.671	1490.089
σ		323.222	106.825	3638.271	13.229	5.000	47.262	67.644	74.214	34.082	15.403	16.251	75.507
%RSD		4.781	5.973	0.864	17.638	2.778	4.508	6.764	1.950	2.757	4.524	4.784	5.067

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:31:53	580.013	511724.370	60.000	20.000	5.000	0.000	2409660.000	1255.063	55.000	45.500	20.000	301349.190
2	19:32:15	515.011	517140.580	95.000	25.000	10.000	0.000	2407123.800	1220.060	65.000	57.500	25.000	308480.000
3	19:32:38	575.013	511464.040	115.001	30.000	5.000	10.000	2455197.500	1155.053	50.000	60.500	40.000	318055.540
x		556.679	513443.000	90.000	25.000	6.667	3.333	2423993.800	1210.059	56.667	54.500	28.333	309294.910
σ		36.172	3204.845	27.839	5.000	2.887	5.774	27052.970	50.749	7.638	7.937	10.408	8382.935
%RSD		6.498	0.624	30.932	20.000	43.301	173.205	1.116	4.194	13.478	14.564	36.735	2.710

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:31:53	190.001	545.012	525.011	217740.050	0.000	75.000	5.000
2	19:32:15	125.001	520.011	600.014	221973.540	0.000	70.000	20.000
3	19:32:38	145.001	555.012	455.008	214830.350	0.000	60.000	35.000
x		153.334	540.012	526.678	218181.320	0.000	68.334	20.000
σ		33.292	18.029	72.517	3591.981	0.000	7.638	15.000
%RSD		21.712	3.339	13.769	1.646	0.000	11.177	75.000

CCV 1037150 5/10/2017 7:37:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:37:37	321943.190	182708.100	96349.907	┬37107842.000	┬10858892.000	┬108490260.000	┬53809217.000	┬4229235.400	492879.330	60993.446	┬6501834.700	1667195.700
2	19:37:59	319122.220	181855.810	94586.515	┬36248002.000	┬10597653.000	┬107755610.000	┬52479428.000	┬4196130.200	487972.330	61249.694	┬6499682.100	1667872.800
3	19:38:22	319850.480	179443.820	95780.556	┬36104844.000	┬10514879.000	┬105065890.000	┬52764719.000	┬4225943.600	498880.500	61983.297	┬6470402.700	1650287.000
x		320305.290	181335.910	95572.326	┬36486896.000	┬10657141.000	┬107103920.000	┬53017788.000	┬4217103.100	493244.050	61408.812	┬6490639.800	1661785.200
σ		1464.448	1693.103	899.948	┬542498.000	┬179556.070	┬1802806.800	┬700083.910	┬18237.450	5463.223	513.751	┬17558.875	9963.433
%RSD		0.457	0.934	0.942	┬1.487	┬1.685	┬1.683	┬1.320	┬0.432	1.108	0.837	┬0.271	0.600

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:37:37	197167.840	┬9660679.400	┬191381010.000	┬3245935.500	1545917.400	2225025.100	1807777.100	220966.940	14908.886	17181.800	311.504	12556.303
2	19:37:59	196568.510	┬9611948.700	┬190978180.000	┬3217902.300	1533323.600	2208153.900	1792515.800	219984.850	15049.054	17165.278	317.504	12866.619
3	19:38:22	193491.050	┬9457285.900	┬188222460.000	2792371.900	1529595.700	2168260.900	1774662.100	217293.380	14907.885	16945.979	315.504	12391.139
x		195742.470	┬9576638.000	┬190193880.000	┬3085403.200	1536278.900	2200479.900	1791651.600	219415.060	14955.275	17097.686	314.837	12604.687
σ		1972.677	┬106194.920	┬1719140.700	┬254159.410	8552.789	29149.803	16574.402	1901.910	81.216	131.641	3.055	241.404
%RSD		1.008	┬1.109	┬0.904	┬8.237	0.557	1.325	0.925	0.867	0.543	0.770	0.970	1.915

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:37:37	1728322.800	487743.660	┬3583995.300	498625.620	17116.711	257699.250	2328569.000	1960811.300	1243203.500	953706.850	1218004.600	308541.490
2	19:37:59	1715566.800	487681.290	┬3539814.700	504015.450	17131.732	259455.020	2367736.100	1994732.600	1254359.800	967623.770	1223576.300	321902.150
3	19:38:22	1692120.300	491829.150	┬3551488.500	500737.580	16611.030	256280.530	2366094.400	1947094.700	1238361.500	964750.960	1233906.500	320701.880
x		1712003.300	489084.700	┬3558432.800	501126.220	16953.158	257811.600	2354133.200	1967546.200	1245308.300	962027.200	1225162.500	317048.510
σ		18362.479	2376.970	┬22894.323	2715.851	296.387	1590.223	22154.449	24522.678	8204.218	7347.405	8068.763	7391.695
%RSD		1.073	0.486	┬0.643	0.542	1.748	0.617	0.941	1.246	0.659	0.764	0.659	2.331

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:37:37	88179.935	2663607.000	T 13294949.000	219724.330	0.000	361214.710	184501.660
2	19:37:59	90007.894	2738426.200	T 13567100.000	229650.370	5.000	368209.410	187779.940
3	19:38:22	89302.865	2730180.500	T 13495360.000	225943.730	10.000	364456.810	184379.880
x		89163.565	2710737.900	T 13452470.000	225106.140	5.000	364626.980	185553.830
σ		921.907	41024.243	T 141053.910	5015.750	5.000	3500.455	1928.830
%RSD		1.034	1.513	T 1.049	2.228	100.000	0.960	1.039

CCB 1035925 5/10/2017 7:43:00 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:43:21	342365.220	52.500	4420.782	647096.770	1400.078	23151.420	480771.190	19084.558	522996.830	115.001	16946.480	2820.318
2	19:43:43	339015.760	47.500	4380.767	658362.800	1810.131	23902.832	487400.660	19415.066	531233.480	110.000	16906.425	2955.349
3	19:44:04	345725.840	75.000	4165.694	660438.090	1820.133	24278.555	499015.740	18022.984	526499.370	140.001	17872.768	3110.387
x		342368.940	58.333	4322.414	655299.220	1676.781	23777.602	489062.530	18840.869	526909.890	121.667	17241.891	2962.018
σ		3355.041	14.649	137.191	7178.918	239.683	573.908	9235.109	727.332	4133.642	16.073	546.723	145.149
%RSD		0.980	25.112	3.174	1.096	14.294	2.414	1.888	3.860	0.785	13.211	3.171	4.900

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:43:21	6266.570	3015.364	411483.060	410.007	275.003	1010.041	1030.042	3147.396	1100.048	324.004	338.005	1430.082
2	19:43:43	6421.649	2865.328	418743.290	515.011	340.005	1090.048	1090.048	3348.448	1047.044	334.504	362.005	1430.082
3	19:44:04	6031.455	3180.405	418913.870	485.009	315.004	1205.058	1095.048	3266.427	1078.047	351.505	350.005	1530.094
x		6239.891	3020.366	416380.070	470.009	310.004	1101.716	1071.713	3254.090	1075.046	336.671	350.005	1463.419
σ		196.460	157.598	4241.794	54.085	32.788	98.031	36.174	101.092	26.629	13.878	12.000	57.742
%RSD		3.148	5.218	1.019	11.507	10.577	8.898	3.375	3.107	2.477	4.122	3.429	3.946

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:43:21	505.010	505363.270	555.012	95.000	20.000	20.000	2347031.600	1410.080	190.001	159.501	185.001	305754.250
2	19:43:43	755.023	497913.050	670.018	115.001	25.000	35.000	2442467.400	1430.082	215.002	159.501	170.001	305948.920
3	19:44:04	660.017	498672.440	570.013	105.000	10.000	35.000	2422275.400	1465.086	220.002	179.001	155.001	307506.450
x		640.017	500649.580	598.348	105.000	18.333	30.000	2403924.800	1435.082	208.335	166.001	170.001	306403.210
σ		126.201	4099.790	62.520	10.000	7.638	8.660	50294.676	27.842	16.073	11.258	15.000	960.383
%RSD		19.718	0.819	10.449	9.524	41.660	28.868	2.092	1.940	7.715	6.782	8.824	0.313

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:43:21	130.001	2315.214	1830.134	216478.420	0.000	45.000	15.000
2	19:43:43	95.000	1895.144	2255.203	220507.950	0.000	130.001	45.000
3	19:44:04	100.000	1885.142	2380.227	221026.990	0.000	85.000	30.000
x		108.334	2031.833	2155.188	219337.790	0.000	86.667	30.000
σ		18.930	245.466	288.362	2489.843	0.000	42.525	15.000
%RSD		17.474	12.081	13.380	1.135	0.000	49.067	50.000

CCVL 1037148 5/10/2017 7:48:45 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:49:06	358683.360	390.006	20461.734	T 2782673.000	76171.378	198473.250	T 3572111.900	86548.593	554846.830	100.000	48845.248	22344.954
2	19:49:28	358230.650	382.506	20341.538	T 2760962.400	75678.397	200236.040	T 3558522.900	86588.870	543869.860	125.001	50938.579	22034.403
3	19:49:50	360885.400	350.005	19930.877	T 2792915.100	74541.597	202964.510	T 3559353.400	87817.396	551221.610	125.001	50075.100	22184.669
x		359266.470	374.172	20244.716	T 2778850.200	75463.791	200557.930	T 3563329.400	86984.953	549979.440	116.667	49952.976	22188.009
σ		1420.188	21.263	278.358	T 16315.791	835.816	2262.867	T 7617.166	721.198	5592.920	14.434	1051.995	155.302
%RSD		0.395	5.683	1.375	T 0.587	1.108	1.128	T 0.214	0.829	1.017	12.372	2.106	0.700

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:49:06	11425.219	17812.683	1697330.900	6606.746	3350.449	10594.488	30411.951	9254.425	1733.120	663.518	289.003	1700.116
2	19:49:28	11215.029	17732.569	1720843.700	6641.764	3110.387	10794.659	31424.450	9360.503	1761.124	665.018	341.505	1805.130
3	19:49:50	11034.869	16891.405	1715047.300	6416.647	3190.407	11104.931	30477.109	9354.499	1905.145	704.020	344.005	1915.147
x		11225.039	17478.886	1711073.900	6555.052	3217.081	10831.359	30771.170	9323.142	1799.797	677.518	324.838	1806.798
σ		195.368	510.347	12249.650	121.135	122.234	257.193	566.695	59.587	92.303	22.963	31.059	107.525
%RSD		1.740	2.920	0.716	1.848	3.800	2.375	1.842	0.639	5.129	3.389	9.561	5.951

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:49:06	44313.408	500118.520	26583.237	5506.213	100.000	1410.080	2394666.400	2240.201	9893.914	7759.908	10124.098	311380.600

2	19:49:28	46380.888	514765.500	26803.707	5446.186	130.001	1455.085	2439395.200	2085.174	9918.934	7844.461	10344.278	311739.380
3	19:49:50	44785.085	518547.080	25921.850	5616.261	120.001	1315.069	2433048.000	2165.188	9728.784	7873.979	10499.408	311995.660
x		45159.794	511143.700	26436.264	5522.887	116.667	1393.411	2422369.900	2163.521	9847.211	7826.116	10322.595	311705.210
σ		1083.478	9733.499	458.932	86.255	15.275	71.481	24200.872	77.527	103.320	59.207	188.592	308.947
%RSD		2.399	1.904	1.736	1.562	13.093	5.130	0.999	3.583	1.049	0.757	1.827	0.099

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:49:06	10654.539	25671.334	10489.399	221719.090	0.000	35490.311	17922.840
2	19:49:28	10559.458	26688.461	10449.366	220497.770	0.000	34758.258	18248.310
3	19:49:50	11109.935	27545.316	10764.633	223306.980	0.000	36518.266	18618.856
x		10774.644	26635.037	10567.799	221841.280	0.000	35588.945	18263.335
σ		294.237	938.133	171.634	1408.587	0.000	884.140	348.251
%RSD		2.731	3.522	1.624	0.635	0.000	2.484	1.907

LCS 200-116422/2-A 5/10/2017 7:54:28 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:54:50	347349.940	3305.437	162195.510	T 21119272.000	729863.600	1857179.300	T 29884866.000	689897.050	537597.060	125.001	259276.370	183471.660
2	19:55:12	339817.080	3162.900	159116.320	T 20528544.000	714460.870	1850977.500	T 29719232.000	688070.380	530701.590	145.001	257418.560	185805.760
3	19:55:33	346609.820	3200.410	161759.920	T 21033855.000	723880.280	T 2041401.200	T 29864520.000	692759.000	537910.110	175.001	258592.420	186495.930
x		344592.280	3222.916	161023.920	T 20893890.000	722734.920	T 1916519.300	T 29822873.000	690242.140	535402.920	148.334	258429.110	185257.790
σ		4151.969	73.886	1666.326	T 319268.610	7764.983	T 108195.300	T 90330.112	2363.284	4074.481	25.166	939.609	1584.851
%RSD		1.205	2.293	1.035	T 1.528	1.074	T 5.645	T 0.303	0.342	0.761	16.966	0.364	0.855

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:54:50	27640.526	144050.260	T 14726142.000	59435.970	26668.418	97906.935	285273.510	45956.324	3699.547	3556.006	310.004	4315.745
2	19:55:12	27094.332	148957.270	T 14679100.000	59144.593	27114.376	98637.646	284358.000	46216.280	3823.585	3465.981	314.504	4400.775
3	19:55:33	27775.826	146377.060	T 14789880.000	60109.178	25851.705	97901.896	288542.270	46050.671	3750.563	3521.496	282.003	4225.714
x		27503.561	146461.530	T 14731707.000	59563.247	26544.833	98148.826	286057.930	46074.425	3757.898	3514.494	302.170	4314.078
σ		360.802	2454.595	T 55599.549	494.728	640.343	423.338	2199.658	131.596	62.343	45.419	17.610	87.542
%RSD		1.312	1.676	T 0.377	0.831	2.412	0.431	0.769	0.286	1.659	1.292	5.828	2.029

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:54:50	445650.030	515411.310	257525.730	52173.657	1030.042	13056.816	2380804.800	1485.088	99746.392	77374.232	99055.934	318691.430
2	19:55:12	442283.570	510329.030	259332.520	52610.482	995.040	13637.435	2455836.700	1880.141	99549.835	77872.814	99519.595	315563.560
3	19:55:33	450416.380	519995.430	259061.990	53559.499	935.035	13292.063	2477322.400	1770.125	101082.060	78603.868	102871.570	322127.850
x		446116.660	515245.260	258640.080	52781.213	986.706	13328.771	2437988.000	1711.785	100126.090	77950.305	100482.370	318794.280
σ		4086.436	4835.337	974.486	708.521	48.049	292.045	50673.927	203.886	833.701	618.470	2082.057	3283.353
%RSD		0.916	0.938	0.377	1.342	4.870	2.191	2.079	11.911	0.833	0.793	2.072	1.030

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:54:50	107248.120	256101.920	89020.864	222971.060	0.000	360376.020	186242.190
2	19:55:12	107081.700	255387.530	91020.185	220650.430	0.000	367483.510	189175.750
3	19:55:33	109472.280	260889.410	91730.348	224304.610	0.000	369244.280	188713.840
x		107934.030	257459.620	90590.465	222642.030	0.000	365701.270	188043.930
σ		1334.754	2991.687	1404.927	1849.177	0.000	4695.084	1577.352
%RSD		1.237	1.162	1.551	0.831	0.000	1.284	0.839

480-117352-B-1-A 5/10/2017 8:00:12 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:00:34	341574.010	55.000	39948.734	T 42955592.000	T 2054686.900	29610.029	T 18154948.000	T 3161602.200	525206.650	275.003	15099.114	3325.442
2	20:00:55	337207.830	42.500	39336.798	T 42763444.000	1904957.100	29584.969	T 18101347.000	T 3117462.000	521162.560	325.004	16075.330	3480.485

3	20:01:16	335163.950	35.000	40144.359	┬42948996.000	1912406.400	29745.349	┬18243352.000	┬3191602.600	531723.680	380.006	17697.519	3325.442
x		337981.930	44.167	39809.964	┬42889344.000	┬1957350.100	29646.782	┬18166549.000	┬3156889.000	526030.960	326.671	16290.654	3377.123
σ		3274.390	10.104	421.286	┬109082.080	┬84378.387	86.276	┬71709.379	┬37294.385	5328.596	52.521	1312.517	89.514
%RSD		0.969	22.876	1.058	┬0.254	┬4.311	0.291	┬0.395	┬1.181	1.013	16.078	8.057	2.651

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:00:34	5521.219	36723.867	417409.790	175.001	415.007	1875.141	3095.383	26988.103	1003.040	316.504	321.004	6686.788
2	20:00:55	5581.246	36573.426	416050.580	125.001	495.010	1705.116	2990.358	26917.952	1057.045	326.504	313.504	6321.598
3	20:01:16	6221.548	36087.016	414583.010	185.001	495.010	1740.121	2940.346	27633.511	1075.046	295.503	291.503	6656.772
x		5774.671	36461.436	416014.460	161.668	468.342	1773.459	3008.696	27179.855	1045.044	312.837	308.670	6555.053
σ		388.169	332.868	1413.735	32.146	46.190	89.781	79.129	394.440	37.473	15.822	15.333	202.734
%RSD		6.722	0.913	0.340	19.884	9.862	5.062	2.630	1.451	3.586	5.058	4.967	3.093

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:00:34	778904.440	506935.030	6691.791	50.000	25.000	255.003	2412821.700	1530.094	240.002	182.501	133635.540	317860.680
2	20:00:55	790834.680	516275.910	7237.094	85.000	10.000	150.001	2445287.300	1350.073	195.002	180.501	136627.630	324036.240
3	20:01:16	793458.370	510006.250	7157.048	65.000	10.000	245.002	2478566.700	1295.067	265.003	189.001	137522.360	322620.310
x		787732.500	511072.400	7028.645	66.667	15.000	216.669	2445558.600	1391.745	233.336	184.001	135928.510	321505.740
σ		7757.051	4760.833	294.457	17.560	8.660	57.952	32873.327	122.930	35.474	4.444	2035.537	3235.133
%RSD		0.985	0.932	4.189	26.339	57.735	26.747	1.344	8.833	15.203	2.415	1.498	1.006

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:00:34	2440.238	605.015	765.023	225617.930	0.000	75.000	22229.749
2	20:00:55	2255.203	690.019	755.023	224477.670	0.000	55.000	21949.254
3	20:01:16	2470.244	610.015	870.030	230098.500	0.000	40.000	23106.336
x		2388.562	635.016	796.692	226731.370	0.000	56.667	22428.446
σ		116.462	47.699	63.709	2971.234	0.000	17.560	603.590
%RSD		4.876	7.512	7.997	1.310	0.000	30.987	2.691

480-117352-B-1-A SD@5 5/10/2017 8:05:57 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:06:19	340957.520	40.000	11059.891	┬9180978.000	371612.940	10029.022	┬4007825.500	553739.310	520558.140	145.001	29965.875	2675.286
2	20:06:40	338656.210	35.000	10794.659	┬9182071.800	376330.990	10529.433	┬4088188.800	563292.260	518099.070	140.001	30036.043	3220.415
3	20:07:01	339385.590	37.500	10544.446	┬9140341.000	370232.880	10074.058	┬4057727.000	558065.470	522444.440	160.001	31128.712	3080.380
x		339666.440	37.500	10799.665	┬9167796.900	372725.600	10210.837	┬4051247.100	558365.680	520367.210	148.334	30376.877	2992.027
σ		1176.078	2.500	257.759	┬23783.828	3197.693	276.829	┬40571.657	4783.545	2178.967	10.408	652.053	283.101
%RSD		0.346	6.667	2.387	┬0.259	0.858	2.711	┬1.001	0.857	0.419	7.017	2.147	9.462

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:06:19	11144.966	8753.064	409587.300	60.000	235.002	1145.052	1490.089	9900.920	1614.104	279.003	297.004	2290.210
2	20:06:40	10709.586	8678.011	401965.790	90.000	200.002	1105.049	1215.059	10171.136	1591.101	255.003	265.503	2220.197
3	20:07:01	10854.711	8387.813	405238.970	65.000	170.001	1005.040	1385.077	10050.039	1706.116	283.503	332.004	2355.222
x		10903.088	8606.296	405597.350	71.667	201.668	1085.047	1363.408	10040.698	1637.107	272.503	298.170	2288.543
σ		221.685	192.897	3823.376	16.073	32.533	72.117	138.789	135.350	60.860	15.322	33.266	67.528
%RSD		2.033	2.241	0.943	22.427	16.132	6.646	10.180	1.348	3.718	5.623	11.157	2.951

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:06:19	152909.570	500337.010	1385.077	5.000	15.000	45.000	2386395.800	1035.043	85.000	69.500	26473.003	311114.090
2	20:06:40	155303.810	502334.790	1470.086	40.000	5.000	50.000	2441768.600	1155.053	115.001	68.500	26382.813	317809.400
3	20:07:01	152696.990	498568.410	1505.091	10.000	25.000	60.000	2409083.000	1075.046	105.000	62.500	26613.301	310970.580
x		153636.790	500413.400	1453.418	18.333	15.000	51.667	2412415.800	1088.381	101.667	66.834	26489.705	313298.020
σ		1447.591	1884.352	61.719	18.930	10.000	7.638	27836.446	61.106	15.275	3.786	116.148	3907.623
%RSD		0.942	0.377	4.246	103.253	66.667	14.783	1.154	5.614	15.025	5.665	0.438	1.247

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:06:19	430.007	370.005	495.010	222920.170	0.000	10.000	4115.677
2	20:06:40	540.012	275.003	520.011	222574.080	0.000	10.000	4245.721
3	20:07:01	545.012	295.003	545.012	226992.480	0.000	35.000	4530.821
x		505.010	313.337	520.011	224162.240	0.000	18.333	4297.406
σ		65.003	50.085	25.001	2457.156	0.000	14.434	212.343
%RSD		12.872	15.984	4.808	1.096	0.000	78.730	4.941

480-117352-B-1-A PDS 5/10/2017 8:11:42 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:12:04	334722.350	3072.878	195065.230	T 61705422.000	T 2788935.100	1775797.700	T 45446822.000	T 3706734.400	509985.420	380.006	248607.890	173282.810
2	20:12:25	334681.270	3032.868	191622.600	T 60799509.000	T 2726863.300	1784461.200	T 45381746.000	T 3781735.500	521631.520	320.004	247766.430	175214.460
3	20:12:47	331795.860	2925.342	192099.840	T 61237434.000	T 2754024.100	1768733.300	T 45405451.000	T 3773057.100	516390.500	295.003	246333.530	175057.280
x		333733.160	3010.363	192929.220	T 61247455.000	T 2756607.500	1776330.700	T 45411340.000	T 3753842.300	516002.480	331.671	247569.280	174518.180
σ		1677.877	76.299	1865.167	T 453039.800	T 31116.415	7877.442	T 32935.117	T 41026.737	5832.737	43.686	1149.929	1072.746
%RSD		0.503	2.535	0.967	T 0.740	T 1.129	0.443	T 0.073	T 1.093	1.130	13.171	0.464	0.615

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:12:04	25906.819	175939.540	T 14104041.000	56311.555	25546.077	90486.330	274807.930	68067.826	3701.548	3363.453	351.505	9573.665
2	20:12:25	26042.099	174159.870	T 14047661.000	57974.129	26718.525	92183.664	278963.470	68599.722	3677.541	3511.493	341.005	9413.543
3	20:12:47	25395.772	176375.620	T 14300945.000	59305.352	25701.395	92012.410	276024.300	67919.020	3620.524	3359.451	333.504	9353.498
x		25781.563	175491.680	T 14150882.000	57863.679	25988.666	91560.801	276598.570	68195.522	3666.538	3411.466	342.005	9446.902
σ		340.884	1173.804	T 132980.390	1499.952	636.829	934.451	2136.463	357.867	41.617	86.649	9.042	113.811
%RSD		1.322	0.669	T 0.940	2.592	2.450	1.021	0.772	0.525	1.135	2.540	2.644	1.205

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:12:04	1194209.700	501554.370	257979.960	52133.490	945.036	12656.404	2389264.100	1375.076	96415.409	74640.686	233836.920	317624.790
2	20:12:25	1239187.600	509110.830	261726.650	51279.970	905.033	13767.578	2430050.100	1470.086	98350.396	75621.555	236180.360	330933.450
3	20:12:47	1218593.000	506133.510	266204.730	51972.823	915.033	12861.613	2449011.800	1510.091	99816.952	76550.685	236908.960	331600.790
x		1217330.100	505599.570	261970.440	51795.428	921.701	13095.198	2422775.300	1451.751	98194.252	75604.309	235642.080	326719.680
σ		22515.519	3806.423	4117.805	453.570	20.818	591.268	30530.943	69.350	1706.139	955.116	1605.200	7883.464
%RSD		1.850	0.753	1.572	0.876	2.259	4.515	1.260	4.777	1.738	1.263	0.681	2.413

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:12:04	114915.810	264963.780	93160.869	226442.640	0.000	370737.510	210446.730
2	20:12:25	117201.890	269320.420	94385.001	230872.580	0.000	376609.180	214621.820
3	20:12:47	116096.650	271297.490	95236.422	229497.600	0.000	381519.780	218584.600
x		116071.450	268527.230	94260.764	228937.610	0.000	376288.820	214551.050
σ		1143.248	3240.497	1043.339	2267.439	0.000	5398.266	4069.401
%RSD		0.985	1.207	1.107	0.990	0.000	1.435	1.897

480-117352-B-1-B MS 5/10/2017 8:17:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:17:49	337711.150	3442.974	195532.450	T 62773353.000	T 2817003.500	T 1946658.600	T 46190740.000	T 3864554.600	514609.260	280.003	251969.200	185176.530
2	20:18:11	341080.810	3227.917	196299.330	T 61958127.000	T 2804679.900	1801098.100	T 46576401.000	T 3850302.500	512984.480	340.005	252805.840	182522.930
3	20:18:32	333911.080	3180.405	193917.580	T 61786033.000	T 2844269.000	1792912.000	T 46351580.000	T 3884679.500	513244.840	310.004	250224.680	181934.440
x		337567.680	3283.765	195249.790	T 62172505.000	T 2821984.100	T 1846889.600	T 46372907.000	T 3866512.200	513612.860	310.004	251666.570	183211.300
σ		3587.017	139.911	1215.772	T 527416.690	T 20259.041	T 86499.393	T 193713.070	T 17271.924	872.671	30.001	1316.924	1727.188
%RSD		1.063	4.261	0.623	T 0.848	T 0.718	T 4.684	T 0.418	T 0.447	0.170	9.678	0.523	0.943

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:17:49	27119.387	179494.540	T 14414435.000	57280.944	26287.613	95931.709	282430.030	69569.057	3650.533	3460.479	327.004	9508.615
2	20:18:11	26728.546	177531.810	T 14596103.000	57637.578	26508.077	97201.461	282583.440	69459.450	3568.509	3518.495	310.004	9958.966
3	20:18:32	25611.211	175969.960	T 14544892.000	57411.541	26528.120	96143.325	283171.520	69565.035	3577.512	3521.996	322.004	9493.604
x		26486.381	177665.440	T 14518477.000	57443.355	26441.270	96425.498	282728.330	69531.180	3598.851	3500.323	319.671	9653.728
σ		782.708	1766.088	T 93670.131	180.433	133.448	680.283	391.407	62.153	44.983	34.551	8.737	264.450
%RSD		2.955	0.994	T 0.645	0.314	0.505	0.706	0.138	0.089	1.250	0.987	2.733	2.739

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:17:49	1242884.000	503656.410	268646.140	52645.630	1030.042	13472.256	2393441.700	1550.096	104217.650	78952.052	237428.680	323102.530

2	20:18:11	1258926.500	505998.190	263319.580	51892.490	830.028	14203.065	2445070.300	1620.105	103471.490	79657.003	239981.750	324682.690
3	20:18:32	1261293.100	508715.210	268375.420	52881.623	1015.041	13942.772	2458792.000	1790.128	102503.560	80391.181	242805.500	329239.590
x		1254367.900	506123.270	266780.380	52473.247	958.370	13872.697	2432434.700	1653.443	103397.570	79666.746	240071.980	325674.940
σ		10015.485	2531.717	3000.194	516.607	111.401	370.409	34458.835	123.440	859.431	719.614	2689.543	3186.579
%RSD		0.798	0.500	1.125	0.985	11.624	2.670	1.417	7.466	0.831	0.903	1.120	0.978

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:17:49	112720.960	269335.740	94546.212	225322.670	0.000	377325.300	216519.120
2	20:18:11	113669.490	271231.070	94485.758	225811.370	0.000	386545.700	220920.130
3	20:18:32	114532.310	273831.860	95508.486	225841.920	0.000	387241.750	221744.530
x		113640.920	271466.220	94846.819	225658.650	0.000	383704.250	219727.930
σ		906.015	2257.264	573.818	291.370	0.000	5535.286	2809.314
%RSD		0.797	0.832	0.605	0.129	0.000	1.443	1.279

480-117352-B-1-C MSD 5/10/2017 8:23:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:23:35	329609.140	3277.930	196954.510	T 63283768.000	T 2889269.300	1824258.800	T 46909254.000	T 3954855.100	518036.560	305.004	254821.150	181548.890
2	20:23:56	339632.160	3295.434	194237.490	T 61935190.000	T 2823427.100	1799563.900	T 45927001.000	T 3871699.300	517046.820	335.004	252969.090	181995.320
3	20:24:18	331754.790	3112.888	198122.760	T 63204782.000	T 2861200.800	1829538.400	T 46937602.000	T 3909817.000	514494.680	400.006	249684.030	181797.470
x		333665.360	3228.751	196438.260	T 62807913.000	T 2857965.700	1817787.100	T 46591286.000	T 3912123.800	516526.020	346.672	252491.420	181780.560
σ		5277.588	100.721	1993.418	T 756831.540	T 33040.072	16000.956	T 575461.650	T 41625.846	1827.469	48.564	2601.659	223.691
%RSD		1.582	3.120	1.015	T 1.205	T 1.156	0.880	T 1.235	T 1.064	0.354	14.009	1.030	0.123

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:23:35	26944.008	178165.740	T 14561899.000	57687.809	25961.933	95362.377	282445.370	69756.095	3680.542	3516.995	294.003	9093.306
2	20:23:56	25831.663	177501.380	T 14388673.000	57682.786	26092.204	96128.209	280292.720	69603.246	3617.523	3537.501	338.505	9958.966
3	20:24:18	25916.839	176943.560	T 14526425.000	58104.733	26633.343	97347.592	281816.410	69783.246	3677.541	3432.971	316.504	9703.765
x		26230.837	177536.890	T 14492332.000	57825.109	26229.160	96279.393	281518.160	69714.196	3658.535	3495.822	316.337	9585.346
σ		619.091	611.862	T 91507.023	242.174	356.042	1001.205	1106.882	97.039	35.549	55.388	22.251	444.813
%RSD		2.360	0.345	T 0.631	0.419	1.357	1.040	0.393	0.139	0.972	1.584	7.034	4.641

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:23:35	1258937.500	505196.730	270127.560	52715.925	1020.042	13292.063	2382268.300	1465.086	102044.830	79224.769	241582.130	313512.920
2	20:23:56	1258253.500	502126.670	265454.020	52409.641	1000.040	13907.733	2411246.800	1480.088	103910.100	79625.302	244166.630	324261.980
3	20:24:18	1258181.800	507570.030	266531.590	53674.993	935.035	13206.973	2478784.200	1290.067	103748.770	80484.277	246068.380	334763.430
x		1258457.600	504964.480	267371.050	52933.520	985.039	13468.923	2424099.700	1411.747	103234.570	79778.116	243939.050	324179.440
σ		417.150	2729.103	2447.246	660.144	44.444	382.394	49525.028	105.645	1033.496	643.509	2251.765	10625.495
%RSD		0.033	0.540	0.915	1.247	4.512	2.839	2.043	7.483	1.001	0.807	0.923	3.278

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:23:35	111545.490	272554.390	95170.926	228703.240	0.000	382638.190	216859.950
2	20:23:56	113371.810	272927.400	94289.283	225933.550	0.000	384638.190	220955.750
3	20:24:18	117560.230	276514.960	93589.050	231392.050	0.000	387236.600	220706.400
x		114159.170	273998.920	94349.753	228676.280	0.000	384837.660	219507.370
σ		3083.707	2186.927	792.670	2729.349	0.000	2305.682	2296.116
%RSD		2.701	0.798	0.840	1.194	0.000	0.599	1.046

480-117352-B-2-A 5/10/2017 8:28:57 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:29:19	339878.730	27.500	20742.195	T 56007923.000	T 7852845.400	41493.755	T 8408333.000	T 2865638.000	521214.660	440.008	24609.201	5156.063
2	20:29:40	342478.250	40.000	21127.840	T 55475433.000	T 7759668.000	40846.629	T 8468992.400	T 2854004.500	522298.530	465.009	26498.056	4840.937

3	20:30:03	351627.070	37.500	20827.337	T 55493862.000	T 7830886.400	43264.744	T 8563435.400	T 2907197.200	527208.330	485.009	28256.902	5031.012
x		344661.350	35.000	20899.124	T 55659073.000	T 7814466.600	41868.376	T 8480253.600	T 2875613.200	523573.840	463.342	26454.720	5009.338
σ		6170.925	6.614	202.597	T 302253.970	T 48710.546	1251.829	T 78162.019	T 27964.187	3193.873	22.547	1824.237	158.677
%RSD		1.790	18.898	0.969	T 0.543	T 0.623	2.990	T 0.922	T 0.972	0.610	4.866	6.896	3.168
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	20:29:19	8743.057	5846.367	464492.720	215.002	810.026	3130.392	3825.585	4485.805	1326.070	313.004	298.004	6331.603
2	20:29:40	9503.611	6081.479	472053.180	190.001	795.025	2975.354	4130.682	4648.864	1383.077	343.005	300.504	6226.550
3	20:30:03	9648.722	6156.516	472608.590	240.002	830.028	3040.370	3775.570	5075.030	1498.090	323.504	334.504	6441.659
x		9298.463	6028.121	469718.160	215.002	811.693	3048.705	3910.613	4736.566	1402.412	326.504	311.004	6333.271
σ		486.438	161.813	4533.882	25.000	17.561	77.854	192.220	304.246	87.625	15.224	20.390	107.564
%RSD		5.231	2.684	0.965	11.628	2.163	2.554	4.915	6.423	6.248	4.663	6.556	1.698
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	20:29:19	733168.860	516411.340	1410.080	15.000	20.000	360.005	2387979.900	1155.053	265.003	275.003	20521.832	325862.810
2	20:29:40	736294.810	520495.610	1420.081	30.000	20.000	390.006	2447456.800	1310.069	435.008	298.004	19425.082	326663.300
3	20:30:03	738547.020	516192.580	1405.079	20.000	25.000	275.003	2473445.300	1265.064	440.008	285.003	19890.813	323276.950
x		736003.560	517699.840	1411.746	21.667	21.667	341.671	2436294.000	1243.395	380.006	286.003	19945.909	325267.690
σ		2700.881	2423.677	7.638	7.638	2.887	59.653	43812.549	79.747	99.627	11.533	550.447	1769.878
%RSD		0.367	0.468	0.541	35.251	13.323	17.459	1.798	6.414	26.217	4.032	2.760	0.544
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	20:29:19	145.001	640.016	880.031	224233.340	0.000	120.001	8512.898					
2	20:29:40	130.001	605.015	895.032	226656.460	0.000	100.000	8738.053					
3	20:30:03	125.001	520.011	860.030	229823.510	0.000	95.000	8733.050					
x		133.334	588.347	878.364	226904.440	0.000	105.000	8661.334					
σ		10.408	61.715	17.561	2803.320	0.000	13.229	128.573					
%RSD		7.806	10.489	1.999	1.235	0.000	12.599	1.484					

480-117352-B-3-A 5/10/2017 8:34:41 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	20:35:02	351976.700	25.000	14418.311	T 25513935.000	1317097.000	90028.039	T 13098511.000	T 3072536.200	513963.490	285.003	32687.684	3710.551
2	20:35:24	349447.200	40.000	14868.838	T 25525701.000	1317484.900	89740.986	T 12981948.000	T 3084843.100	515161.310	265.003	33524.897	3640.530
3	20:35:45	347514.420	27.500	14218.082	T 25201103.000	1313496.000	89408.617	T 13188462.000	T 3094494.100	518088.650	290.003	35039.041	3545.503
x		349646.110	30.833	14501.743	T 25413580.000	1316026.000	89725.880	T 13089640.000	T 3083957.800	515737.820	280.003	33750.540	3632.195
σ		2237.781	8.036	333.304	T 184104.430	2199.553	309.987	T 103542.290	T 11005.692	2122.148	13.229	1191.808	82.839
%RSD		0.640	26.064	2.298	T 0.724	0.167	0.345	T 0.791	T 0.357	0.411	4.725	3.531	2.281
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	20:35:02	11750.520	93453.038	410289.790	140.001	320.004	1250.063	2280.208	23201.512	1542.095	331.004	331.004	5946.414
2	20:35:24	11900.662	92445.588	401800.600	145.001	315.004	1160.054	2250.203	23287.672	1675.112	301.004	305.504	5936.409
3	20:35:45	12611.359	95120.545	403550.640	235.002	280.003	1295.067	2355.222	23634.322	1689.114	302.504	312.504	5721.309
x		12087.514	93673.057	405213.680	173.335	305.004	1235.061	2295.211	23374.502	1635.441	311.504	316.337	5868.044
σ		459.832	1350.983	4482.278	53.464	21.795	68.745	54.093	229.097	81.142	16.905	13.175	127.175
%RSD		3.804	1.442	1.106	30.844	7.146	5.566	2.357	0.980	4.961	5.427	4.165	2.167
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	20:35:02	659368.800	508028.090	9948.958	20.000	0.000	5.000	2386035.800	1605.103	95.000	78.000	2635.278	317891.440
2	20:35:24	661760.340	512901.160	9818.855	20.000	10.000	5.000	2450350.000	2945.347	125.001	66.000	2700.292	326293.840
3	20:35:45	668826.960	514317.610	10009.006	30.000	0.000	40.000	2457597.800	1640.108	110.000	73.000	2615.274	330851.320
x		663318.700	511748.950	9925.606	23.333	3.333	16.667	2431327.800	2063.519	110.000	72.334	2650.281	325012.200
σ		4917.879	3299.274	97.202	5.774	5.774	20.207	39391.153	763.886	15.000	6.028	44.450	6574.307
%RSD		0.741	0.645	0.979	24.744	173.205	121.244	1.620	37.019	13.636	8.333	1.677	2.023

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:35:02	75768.943	305.004	665.018	229100.420	0.000	35.000	53810.574
2	20:35:24	77816.464	330.004	575.013	229181.890	0.000	35.000	52761.115
3	20:35:45	77821.496	310.004	640.016	234142.560	0.000	10.000	54362.957
x		77135.635	315.004	626.682	230808.290	0.000	26.667	53644.882
σ		1183.592	13.229	46.460	2887.853	0.000	14.434	813.674
%RSD		1.534	4.200	7.414	1.251	0.000	54.127	1.517

480-117352-B-4-A 5/10/2017 8:40:23 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:40:45	347586.380	27.500	10239.192	T 43493386.000	T 7045004.900	26267.570	T 6664799.100	1776365.500	523559.670	290.003	43811.644	52038.094
2	20:41:06	350475.390	47.500	9688.753	T 43715232.000	T 7080160.300	26713.514	T 6781173.100	1805052.200	533434.300	360.005	44167.894	52500.019
3	20:41:27	351010.090	22.500	10374.303	T 43980632.000	T 7157907.100	25816.632	T 6701640.100	1799845.500	529210.320	375.006	44664.655	53489.199
x		349690.620	32.500	10100.750	T 43729750.000	T 7094357.400	26265.906	T 6715870.700	1793754.400	528734.760	341.671	44214.731	52675.771
σ		1841.830	13.229	363.138	T 243947.320	T 57774.513	448.443	T 59477.810	15282.592	4954.458	45.370	428.430	741.346
%RSD		0.527	40.704	3.595	T 0.558	T 0.814	1.707	T 0.886	0.852	0.937	13.279	0.969	1.407

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:40:45	20331.521	6721.807	434756.290	170.001	550.012	1725.119	3345.448	6662.775	2096.176	349.005	324.004	4570.836
2	20:41:06	21814.017	6321.598	437142.380	200.002	485.009	1835.135	3065.376	6771.834	2137.183	371.506	294.003	4805.924
3	20:41:27	21248.044	6276.575	430394.160	165.001	510.010	1575.099	3225.416	7028.976	2262.205	343.505	320.004	4940.976
x		21131.194	6439.993	434097.610	178.335	515.011	1711.784	3212.080	6821.195	2165.188	354.672	312.671	4772.579
σ		748.124	245.094	3421.988	18.930	32.789	130.530	140.511	188.024	86.485	14.836	16.289	187.310
%RSD		3.540	3.806	0.788	10.615	6.367	7.625	4.374	2.756	3.994	4.183	5.210	3.925

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:40:45	522152.620	510339.440	19610.371	50.000	15.000	110.000	2405381.300	1450.084	500.010	458.008	9053.277	322651.090
2	20:41:06	516135.280	508996.310	20226.351	45.000	20.000	160.001	2464825.200	1440.083	715.020	467.009	9103.314	328982.960
3	20:41:27	528501.240	515202.980	19750.591	15.000	25.000	135.001	2487352.500	1325.070	560.013	476.009	9083.299	321409.720
x		522263.050	511512.910	19862.438	36.667	20.000	135.001	2452519.700	1405.079	591.681	467.009	9079.963	324347.920
σ		6183.721	3265.495	322.862	18.930	5.000	25.000	42348.452	69.470	110.948	9.000	25.184	4061.766
%RSD		1.184	0.638	1.625	51.626	25.000	18.519	1.727	4.944	18.751	1.927	0.277	1.252

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:40:45	210.002	260.003	1140.052	227297.950	0.000	50.000	3325.442
2	20:41:06	245.002	290.003	1080.047	229426.310	0.000	20.000	3425.469
3	20:41:27	230.002	250.003	1030.042	230241.090	0.000	40.000	3525.497
x		228.335	266.670	1083.380	228988.450	0.000	36.667	3425.470
σ		17.560	20.817	55.080	1519.638	0.000	15.275	100.027
%RSD		7.690	7.806	5.084	0.664	0.000	41.660	2.920

CCV 1037150 5/10/2017 8:46:07 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:46:28	315235.440	182918.650	93080.272	T 36018233.000	T 10764144.000	T 107321550.000	T 52724783.000	T 4106540.500	477250.040	60315.167	T 6468788.300	1634347.500
2	20:46:49	321317.390	185630.690	93931.605	T 36204381.000	T 10588716.000	T 107410040.000	T 52182057.000	T 4136466.100	486486.050	61149.204	T 6446385.300	1639586.600
3	20:47:11	317686.330	181934.440	93780.476	T 35928772.000	T 10747875.000	T 107169910.000	T 51947686.000	T 4135905.000	477125.410	59280.233	T 6402017.700	1623172.200
x		318079.720	183494.590	93597.451	T 36050462.000	T 10700245.000	T 107300500.000	T 52284842.000	T 4126303.800	480287.170	60248.201	T 6439063.700	1632368.800
σ		3060.000	1914.250	454.220	T 140602.660	T 96928.871	T 121441.920	T 398614.730	T 17117.875	5368.749	936.283	T 33982.040	8384.200
%RSD		0.962	1.043	0.485	T 0.390	T 0.906	T 0.113	T 0.762	T 0.415	1.118	1.554	T 0.528	0.514

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:46:28	195385.170	T 9494325.500	T 188976850.000	2803344.500	1519678.300	2146041.100	1759925.400	215298.300	14584.503	16966.006	309.504	11995.753
2	20:46:49	194389.830	T 9581748.100	T 189177880.000	T 3215306.700	1521197.500	2160456.800	1782957.600	216358.370	14643.572	16817.806	322.004	12090.845
3	20:47:11	195380.090	T 9537660.300	T 189582880.000	T 3184429.500	1499337.800	2123581.100	1776835.900	215001.260	14799.756	16923.949	315.504	11800.568
x		195051.700	T 9537911.300	T 189245870.000	T 3067693.600	1513404.600	2143359.700	1773239.600	215552.640	14675.944	16902.587	315.671	11962.388
σ		573.199	T 43711.845	T 308683.300	T 229452.980	12205.813	18583.512	11929.806	713.413	111.218	76.375	6.252	147.987
%RSD		0.294	T 0.458	T 0.163	T 7.480	0.807	0.867	0.673	0.331	0.758	0.452	1.980	1.237

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:46:28	1675322.300	479732.400	T 3586801.500	497486.560	17066.643	253887.430	2271414.300	1913026.400	1236422.900	951628.570	1202588.800	307865.120

2	20:46:49	1714659.000	480791.970	T 3601910.000	497611.380	16606.023	258623.040	2350418.400	1971329.000	1248030.900	966455.910	1224775.700	314794.530
3	20:47:11	1687903.100	478496.350	T 3532406.400	493841.200	17547.308	257760.500	2335405.900	1945642.400	1247071.900	965333.990	1219384.900	310980.830
x		1692628.100	479673.570	T 3573706.000	496313.050	17073.325	256756.990	2319079.500	1943332.600	1243841.900	961139.490	1215583.100	311213.500
σ		20089.529	1148.937	T 36555.565	2141.594	470.678	2522.255	41956.219	29219.897	6442.888	8255.778	11571.740	3470.562
%RSD		1.187	0.240	T 1.023	0.432	2.757	0.982	1.809	1.504	0.518	0.859	0.952	1.115

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:46:28	88668.372	2686099.900	T 13775762.000	224518.390	0.000	362660.690	183537.620
2	20:46:49	90506.475	2722296.200	T 13703018.000	221607.130	10.000	363417.190	188241.810
3	20:47:11	88109.440	2686933.900	T 13812034.000	222828.560	5.000	367287.890	188556.500
x		89094.762	2698443.300	T 13763605.000	222984.690	5.000	364455.250	186778.640
σ		1254.113	20661.426	T 55515.106	1461.899	5.000	2482.124	2811.212
%RSD		1.408	0.766	T 0.403	0.656	100.000	0.681	1.505

CCB 1035925 5/10/2017 8:51:52 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:52:13	329537.280	115.001	4140.686	622535.370	1880.141	25901.808	453313.330	16801.284	496612.830	130.001	16335.667	2685.288
2	20:52:35	332360.570	85.000	3890.605	633895.470	2120.180	27525.272	459285.510	16731.190	498818.080	95.000	16405.759	2505.251
3	20:52:57	327977.040	90.000	3745.561	646833.660	3620.524	32532.279	460415.980	16220.517	505092.650	130.001	16746.210	2685.288
x		329958.300	96.667	3925.617	634421.500	2540.282	28653.120	457671.610	16584.330	500174.520	118.334	16495.879	2625.276
σ		2221.886	16.073	199.876	12157.685	943.185	3456.127	3816.467	317.014	4399.638	20.207	219.608	103.945
%RSD		0.673	16.627	5.092	1.916	37.129	12.062	0.834	1.912	0.880	17.077	1.331	3.959

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:52:13	5591.250	3140.394	385055.760	570.013	395.006	1200.058	955.036	2890.334	903.033	287.003	297.004	1280.066
2	20:52:35	5641.273	3115.388	390273.900	650.017	360.005	1275.065	1345.072	2957.350	922.034	305.504	308.004	1260.064
3	20:52:57	5426.178	3950.624	404077.250	720.021	450.008	1505.091	1180.056	2901.337	927.034	303.004	296.004	1350.073
x		5552.900	3402.136	393135.640	646.684	401.673	1326.738	1160.055	2916.340	917.367	298.504	300.337	1296.734
σ		112.559	475.170	9828.351	75.059	45.370	158.946	195.786	35.939	12.663	10.038	6.658	47.263
%RSD		2.027	13.967	2.500	11.607	11.295	11.980	16.877	1.232	1.380	3.363	2.217	3.645

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:52:13	655.017	481186.730	760.023	90.000	5.000	30.000	2338634.300	1285.066	215.002	196.502	225.002	307117.050
2	20:52:35	725.021	486662.730	670.018	125.001	5.000	40.000	2326274.800	1320.070	295.003	197.002	235.002	304698.940
3	20:52:57	775.024	494189.570	885.031	220.002	5.000	50.000	2374484.700	1650.109	400.006	302.504	360.005	307065.810
x		718.354	487346.340	771.691	145.001	5.000	40.000	2346464.600	1418.415	303.337	232.002	273.336	306293.930
σ		60.281	6528.319	107.981	67.269	0.000	10.000	25040.632	201.415	92.783	61.057	75.224	1381.543
%RSD		8.391	1.340	13.993	46.392	0.000	25.000	1.067	14.200	30.588	26.317	27.521	0.451

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:52:13	90.000	2100.176	2560.262	219235.860	0.000	105.000	35.000
2	20:52:35	110.000	2035.166	2765.306	226961.930	0.000	115.001	60.000
3	20:52:57	120.001	2255.203	3905.610	222054.970	0.000	80.000	60.000
x		106.667	2130.182	3077.059	222750.920	0.000	100.000	51.667
σ		15.275	113.046	724.833	3909.770	0.000	18.028	14.434
%RSD		14.321	5.307	23.556	1.755	0.000	18.028	27.936

CCVL 1037148 5/10/2017 8:57:37 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:57:58	337536.530	362.505	19354.973	T 2663513.100	69764.140	191571.830	T 3333966.000	81132.447	513359.410	95.000	45914.170	20802.295
2	20:58:19	346589.260	337.505	19229.780	T 2642598.000	70618.919	190713.860	T 3345554.400	81736.362	515796.730	130.001	46400.962	20481.766

3	20:58:41	336190.990	407.507	19660.449	T 2660927.700	71695.019	194166.400	T 3362427.300	82159.120	516088.400	110.000	45954.317	20046.061
x		340105.590	369.172	19415.067	T 2655679.600	70692.693	192150.700	T 3347315.900	81675.977	515081.510	111.667	46089.816	20443.374
σ		5655.184	35.474	221.534	T 11402.529	967.551	1797.591	T 14312.154	515.993	1498.501	17.560	270.207	379.576
%RSD		1.663	9.609	1.141	T 0.429	1.369	0.936	T 0.428	0.632	0.291	15.725	0.586	1.857
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	20:57:58	9848.879	16676.116	1594907.200	6141.508	2825.319	10684.564	28707.928	8470.869	1561.098	615.515	320.004	1635.107
2	20:58:19	9918.934	16285.602	1636543.900	6376.626	2710.294	10424.345	29860.624	8380.809	1554.097	637.516	300.004	1620.105
3	20:58:41	10159.127	16540.937	1638099.300	6526.704	3055.373	11014.851	29825.540	8563.933	1629.106	640.516	295.503	1710.117
x		9975.646	16500.885	1623183.500	6348.279	2863.662	10707.920	29464.697	8471.870	1581.433	631.183	305.170	1655.110
σ		162.714	198.314	24500.294	194.156	175.706	295.945	655.616	91.566	41.434	13.651	13.042	48.225
%RSD		1.631	1.202	1.509	3.058	6.136	2.764	2.225	1.081	2.620	2.163	4.274	2.914
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	20:57:58	43018.898	500430.650	26402.855	5246.101	125.001	1365.075	2369306.100	2225.198	10214.171	7630.829	9853.882	305139.490
2	20:58:19	44102.665	491153.350	25200.377	5451.188	85.000	1385.077	2381152.700	2120.180	10069.054	7646.338	9758.808	316927.420
3	20:58:41	44072.559	498714.050	26132.287	5721.309	125.001	1295.067	2373825.300	2215.196	10074.058	7710.878	10179.143	321799.560
x		43731.374	496766.020	25911.840	5472.866	111.667	1348.406	2374761.300	2186.858	10119.094	7662.681	9930.611	314622.160
σ		617.206	4935.912	630.822	238.345	23.094	47.263	5978.498	57.961	82.377	42.453	220.422	8565.928
%RSD		1.411	0.994	2.434	4.355	20.681	3.505	0.252	2.650	0.814	0.554	2.220	2.723
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	20:57:58	10994.833	26447.950	10854.711	220212.810	0.000	36117.103	18158.179					
2	20:58:19	11340.142	27871.037	11230.042	223490.210	0.000	35650.767	18894.269					
3	20:58:41	11104.931	28206.789	11275.083	215766.270	0.000	36362.813	18724.013					
x		11146.635	27508.592	11119.945	219823.100	0.000	36043.561	18592.154					
σ		176.391	933.758	230.801	3876.691	0.000	361.675	385.353					
%RSD		1.582	3.394	2.076	1.764	0.000	1.003	2.073					

Analyte ICPS

STD0 1035925 5/10/2017 2:56:19 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	14:56:41	99.338%	-3.103	-166.812	-11319.937	223.614	-98.487	-9011.954	1005.374	100.050%	109.976	167.165	155.545
2	14:57:02	99.841%	6.545	43.446	-13813.097	139.443	27.714	-14437.770	1122.352	100.646%	124.263	453.665	-1.661
3	14:57:23	100.822%	-6.657	32.180	3507.222	-92.716	932.104	-865.397	1789.923	99.304%	85.529	316.312	97.854
x		100.000%	-1.072	-30.395	-7208.604	90.114	287.110	-8105.040	1305.883	100.000%	106.589	312.381	83.913
σ		0.755%	6.832	118.275	9363.528	163.833	562.134	6831.486	423.251	0.672%	19.588	143.290	79.525
%RSD		0.755	637.361	389.122	129.894	181.807	195.790	84.287	32.411	0.672	18.377	45.870	94.771

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	14:56:41	6970.941	16.664	-2817.840	-5.549	-95.955	42.136	267.144	-2370.047	1169.043	6.856	328.750	1411.473
2	14:57:02	6766.535	5.199	792.464	63.054	-12.210	-46.826	367.732	-1959.078	1054.251	61.627	299.519	1126.080
3	14:57:23	6997.194	91.615	9407.438	20.827	-14.492	37.768	246.790	-2461.755	1188.472	9.646	280.126	1240.674
x		6911.557	37.826	2460.687	26.111	-40.886	11.026	293.889	-2263.627	1137.255	26.043	302.798	1259.409
σ		126.277	46.934	6281.050	34.606	47.705	50.149	64.755	267.703	72.538	30.848	24.478	143.616
%RSD		1.827	124.078	255.256	132.535	116.678	454.830	22.034	11.826	6.378	118.451	8.084	11.403

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	14:56:41	-45.805	99.441%	136.108	-3.644	-173.262	2.778	99.013%	1252.428	418.146	-3.351	2.438	99.065%
2	14:57:02	72.993	99.509%	135.906	15.811	-129.410	-25.509	100.496%	1278.728	456.200	2.593	26.421	100.703%
3	14:57:23	58.086	101.051%	37.368	-14.041	-181.211	10.435	100.492%	1353.419	396.576	7.572	1.546	100.232%
x		28.425	100.000%	103.127	-0.625	-161.294	-4.099	100.000%	1294.858	423.641	2.271	10.135	100.000%
σ		64.716	0.911%	56.950	15.153	27.898	18.933	0.855%	52.392	30.189	5.469	14.111	0.844%
%RSD		227.673	0.911	55.223	2426.326	17.296	461.922	0.855	4.046	7.126	240.793	139.231	0.844

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	14:56:41	3.681	114.573	536.754	98.831%	0.000	-5.330	0.059
2	14:57:02	-7.563	25.288	529.224	100.274%	0.000	-5.694	-0.014
3	14:57:23	-17.213	14.686	703.018	100.895%	0.000	18.931	-0.045
x		-7.032	51.516	589.665	100.000%	0.000	2.635	0.000
σ		10.457	54.866	98.239	1.059%	0.000	14.113	0.053
%RSD		148.716	106.503	16.660	1.059	0.000	535.531	157982.730

STD1 1037148 5/10/2017 3:02:03 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:02:25	103.033%	329.131	16234.731	T 1930239.000	70521.540	175387.960	T 2801034.100	68103.289	100.982%	99.059	24117.669	18177.893
2	15:02:47	104.758%	300.979	17084.381	T 1955814.400	69644.231	175743.810	T 2806020.400	67031.370	101.871%	108.036	22955.258	18490.512
3	15:03:09	102.573%	360.196	17737.468	T 1889965.800	69484.310	175372.290	T 2757975.500	66224.258	103.712%	82.036	23626.326	17555.623
x		103.455%	330.102	17018.860	T 1925339.800	69883.360	175501.350	T 2788343.300	67119.639	102.188%	96.377	23566.417	18074.676
σ		1.152%	29.621	753.508	T 33196.565	558.434	210.122	T 26417.256	942.620	1.392%	13.206	583.516	475.915
%RSD		1.114	8.973	4.427	T 1.724	0.799	0.120	T 0.947	1.404	1.363	13.702	2.476	2.633

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:02:25	9704.984	14323.761	1237940.300	5916.323	2804.818	9813.611	30002.989	2141.990	1628.880	346.958	296.719	1446.540
2	15:02:47	9833.862	13877.267	1211358.100	6098.936	2817.721	9638.161	29737.669	2227.894	1629.009	337.709	304.319	1349.050
3	15:03:09	9240.069	14243.815	1217399.600	6171.052	2599.926	9623.252	29923.081	2256.045	1567.512	295.624	292.439	1526.520
x		9592.972	14148.281	1222232.700	6062.104	2740.821	9691.675	29887.913	2208.643	1608.467	326.764	297.826	1440.703
σ		312.343	238.084	13934.569	131.298	122.190	105.863	136.111	59.415	35.468	27.361	6.017	88.879
%RSD		3.256	1.683	1.140	2.166	4.458	1.092	0.455	2.690	2.205	8.373	2.020	6.169

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:02:25	45522.298	100.283%	25543.134	5073.234	-151.562	1287.350	98.411%	2413.584	10395.418	7794.388	10000.618	98.116%
2	15:02:47	45108.474	100.724%	26375.908	5633.064	-209.809	1399.299	101.046%	2454.560	10348.007	7834.770	10268.130	102.004%
3	15:03:09	43841.956	101.575%	26262.086	5874.502	-145.833	1325.985	102.929%	2375.666	10326.224	7534.635	10560.635	102.307%
x		44824.242	100.861%	26060.376	5526.933	-169.068	1337.544	100.795%	2414.603	10356.550	7721.264	10276.461	100.809%
σ		875.487	0.657%	451.546	411.042	35.399	56.863	2.269%	39.457	35.379	162.882	280.102	2.337%
%RSD		1.953	0.651	1.733	7.437	20.938	4.251	2.251	1.634	0.342	2.110	2.726	2.318

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:02:25	10914.610	26436.806	18570.275	99.435%	0.000	36206.133	18055.011
2	15:02:47	10711.590	27623.774	18656.757	99.531%	10.047	36297.072	18968.292
3	15:03:09	11114.951	26149.551	18728.415	102.159%	0.000	37144.535	18882.191
x		10913.717	26736.710	18651.816	100.375%	3.349	36549.246	18635.164
σ		201.682	781.531	79.185	1.546%	5.801	517.536	504.269
%RSD		1.848	2.923	0.425	1.540	173.205	1.416	2.706

STD2 1037149 5/10/2017 3:07:48 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:08:09	100.670%	1548.145	81353.887	T 9432720.700	344367.040	875661.500	T 13706227.000	325591.200	99.696%	115.384	115207.800	86524.844
2	15:08:30	99.476%	1675.714	80957.998	T 9173229.600	335398.810	858183.530	T 13569538.000	319664.150	100.199%	189.650	113460.780	85428.291
3	15:08:52	99.542%	1629.343	82363.346	T 9224015.700	346417.010	870860.940	T 13676232.000	326775.390	99.184%	105.885	115046.550	86473.647
x		99.896%	1617.734	81558.410	T 9276655.400	342060.950	868235.320	T 13650666.000	324010.250	99.693%	136.973	114571.710	86142.261
σ		0.671%	64.572	724.654	T 137521.290	5859.927	9029.967	T 71841.457	3810.120	0.507%	45.866	965.469	618.846
%RSD		0.672	3.991	0.889	T 1.482	1.713	1.040	T 0.526	1.176	0.509	33.485	0.843	0.718

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:08:09	8059.971	68795.343	T 6533120.000	28981.734	12986.101	47123.519	143864.170	19905.023	1466.455	1685.320	310.842	1242.559
2	15:08:30	8038.502	69314.070	T 6501357.700	28835.620	12909.929	46678.320	145438.780	19241.523	1562.543	1610.408	306.487	1601.876
3	15:08:52	7503.752	72603.082	T 6746228.300	29708.230	12771.654	47001.076	145858.940	20059.418	1438.690	1733.087	294.547	1406.900
x		7867.408	70237.498	T 6593568.700	29175.194	12889.228	46934.305	145053.960	19735.321	1489.229	1676.272	303.959	1417.112
σ		315.119	2065.008	T 133157.570	467.368	108.712	229.988	1051.590	434.554	64.991	61.838	8.437	179.876
%RSD		4.005	2.940	T 2.020	1.602	0.843	0.490	0.725	2.202	4.364	3.689	2.776	12.693

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:08:09	223958.170	99.062%	127870.080	27017.050	-2.540	6834.778	98.604%	2094.403	50324.264	38304.301	49778.844	101.597%
2	15:08:30	217619.050	99.905%	127447.590	26537.825	-42.904	6711.167	100.005%	2135.066	49371.676	37909.520	49477.107	100.213%
3	15:08:52	214217.110	98.746%	129186.000	25109.040	-35.016	6305.122	101.683%	2508.052	48951.422	37560.613	49667.059	101.149%
x		218598.110	99.238%	128167.890	26221.305	-26.820	6617.022	100.098%	2245.840	49549.121	37924.811	49641.003	100.986%
σ		4943.784	0.599%	906.661	992.605	21.394	277.095	1.541%	227.990	703.412	372.080	152.547	0.706%
%RSD		2.262	0.604	0.707	3.785	79.768	4.188	1.540	10.152	1.420	0.981	0.307	0.699

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:08:09	54592.921	131547.630	90010.575	99.159%	0.000	185457.330	94596.105
2	15:08:30	54671.533	130876.890	88489.067	101.551%	0.000	182553.130	92125.192
3	15:08:52	53455.111	133426.940	90480.846	100.029%	0.000	185903.760	95108.042
x		54239.855	131950.480	89660.163	100.246%	0.000	184638.070	93943.113
σ		680.744	1321.897	1041.099	1.210%	0.000	1819.357	1595.038
%RSD		1.255	1.002	1.161	1.207	0.000	0.985	1.698

STD3 1037150 5/10/2017 3:13:33 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr

1	15:13:55	94.426%	201118.160	98951.745	┬36489553.000	┬10797533.000	┬107390130.000	┬53130358.000	┬4277246.100	93.350%	64775.017	┬6496610.200	1730236.600
2	15:14:17	94.660%	197184.660	99511.755	┬36923196.000	┬10936738.000	┬111117580.000	┬54404536.000	┬4344647.200	90.898%	66232.482	┬6656248.700	1792132.400
3	15:14:39	93.473%	200272.130	100029.950	┬36831613.000	┬11005605.000	┬111134680.000	┬54545824.000	┬4319217.400	91.662%	64508.371	┬6621974.000	1775070.900
x		94.187%	199524.980	99497.817	┬36748121.000	┬10913292.000	┬109880800.000	┬54026906.000	┬4313703.600	91.970%	65171.957	┬6591611.000	1765813.300
σ		0.629%	2070.451	539.237	┬228560.410	┬105999.380	┬2156994.100	┬779640.430	┬34037.127	1.255%	928.068	┬84038.937	31969.507
%RSD		0.667	1.038	0.542	┬0.622	┬0.971	┬1.963	┬1.443	┬0.789	1.364	1.424	┬1.275	1.810

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:13:55	7624.989	┬9567231.600	┬188883330.000	2951207.900	1614268.000	2334513.000	1903321.100	225722.820	770.530	18187.070	314.406	1006.150
2	15:14:17	6702.899	┬9911094.100	┬195689270.000	┬3344094.700	1668436.300	2407332.500	1974899.600	226957.120	1087.071	18262.431	326.057	293.456
3	15:14:39	6226.379	┬9689105.500	┬190253290.000	┬3285105.300	1642460.900	2375925.800	1958017.400	222304.090	1287.274	17659.157	304.107	1128.096
x		6851.422	┬9722477.100	┬191608630.000	┬3193469.300	1641721.700	2372590.400	1945412.700	224994.670	1048.292	18036.219	314.856	809.234
σ		711.036	┬174343.350	┬3599712.200	┬211867.600	27091.745	36524.135	37416.978	2410.459	260.546	328.713	10.982	450.819
%RSD		10.378	┬1.793	┬1.879	┬6.634	1.650	1.539	1.923	1.071	24.854	1.823	3.488	55.709

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:13:55	1812078.600	95.025%	3391684.900	524318.260	1841.282	270387.300	94.783%	2053440.600	1296205.500	1014443.300	1282467.100	99.087%
2	15:14:17	1785212.000	94.206%	┬3574683.200	509570.510	2925.874	263611.990	96.457%	2027455.100	1284697.300	1004459.000	1279104.900	101.323%
3	15:14:39	1809278.100	95.950%	┬3539128.100	516324.620	1955.711	268438.870	95.362%	2030917.100	1276149.600	1016761.100	1303801.800	102.730%
x		1802189.600	95.060%	┬3501832.100	516737.800	2240.955	267479.390	95.534%	2037270.900	1285684.100	1011887.800	1288457.900	101.047%
σ		14769.484	0.872%	┬97032.672	7382.552	595.910	3488.074	0.850%	14109.952	10064.258	6537.064	13394.071	1.837%
%RSD		0.820	0.918	┬2.771	1.429	26.592	1.304	0.890	0.693	0.783	0.646	1.040	1.818

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:13:55	88534.142	2818134.100	┬24911034.000	98.123%	15.287	378107.150	190295.710
2	15:14:17	87533.108	2717893.500	┬24057959.000	101.778%	14.738	368556.650	185965.580
3	15:14:39	86940.834	2783696.900	┬24750766.000	100.300%	4.985	369161.130	189454.910
x		87669.361	2773241.500	┬24573253.000	100.067%	11.670	371941.640	188572.070
σ		805.345	50931.641	┬453395.720	1.838%	5.796	5348.030	2296.095
%RSD		0.919	1.837	┬1.845	1.837	49.664	1.438	1.218

STD4 1037151 5/10/2017 3:19:18 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:19:40	87.451%	595600.120	300948.390	┬109997340.000	┬32351145.000	┬325725950.000	┬161915440.000	┬12989301.000	85.997%	196467.600	┬19948330.000	┬5819471.100
2	15:20:01	87.740%	588132.600	295567.480	┬107784690.000	┬31767228.000	┬320322200.000	┬158445280.000	┬12783321.000	87.431%	190731.190	┬19656849.000	┬5762031.600
3	15:20:23	85.600%	604300.920	308428.440	┬109912040.000	┬32310093.000	┬319324340.000	┬159199100.000	┬12909281.000	86.459%	193040.390	┬19767576.000	┬5731101.100
x		86.930%	596011.220	301648.100	┬109231360.000	┬32142822.000	┬321790830.000	┬159853280.000	┬12893968.000	86.629%	193413.060	┬19790919.000	┬5770867.900
σ		1.161%	8091.996	6458.967	┬1253576.900	┬325921.150	┬3444245.500	┬1825231.400	┬103840.470	0.732%	2886.306	┬147135.710	┬44842.764
%RSD		1.335	1.358	2.141	┬1.148	┬1.014	┬1.070	┬1.142	┬0.805	0.845	1.492	┬0.743	┬0.777

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:19:40	-56444.248	┬28340313.000	┬561198950.000	┬9684591.000	┬4868138.700	┬7634736.300	┬6145321.500	682073.030	578.614	53126.679	456.144	-4530.139
2	15:20:01	-49829.686	┬28330206.000	┬551200800.000	┬9556316.100	┬4775572.300	┬7512704.300	┬6111643.600	668710.840	657.100	52371.854	403.564	-4883.981
3	15:20:23	-44300.812	┬28656751.000	┬557911340.000	┬9700178.900	┬4832915.000	┬7663663.600	┬6158575.100	685994.400	618.822	53745.868	395.640	-5197.649
x		-50191.582	┬28442423.000	┬556770360.000	┬9647028.700	┬4825542.000	┬7603701.400	┬6138513.400	678926.090	618.179	53081.467	418.450	-4870.590
σ		6079.802	┬185681.880	┬5095794.800	┬78945.093	┬46721.599	┬80122.111	┬24195.099	9061.335	39.247	688.122	32.884	333.956
%RSD		12.113	┬0.653	┬0.915	┬0.818	┬0.968	┬1.054	┬0.394	1.335	6.349	1.296	7.859	6.857

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:19:40	┬6084528.600	86.841%	┬10955037.000	1526510.200	7014.504	787755.030	88.022%	┬6725591.700	┬4310081.400	┬3362569.500	┬4445769.400	95.876%
2	15:20:01	┬6157156.300	88.104%	┬10961224.000	1532118.700	7136.719	794016.760	88.711%	┬6712015.700	┬4298448.700	3130589.000	┬4460820.700	97.778%
3	15:20:23	┬6110525.200	86.011%	┬11008202.000	1552502.700	7865.987	797332.190	87.707%	┬6728315.800	┬4323239.100	┬3423463.500	┬4553617.100	97.539%
x		┬6117403.400	86.986%	┬10974821.000	1537043.900	7339.070	793034.660	88.147%	┬6721974.400	┬4310589.700	┬3305540.700	┬4486735.700	97.064%

σ		T 36799.193	1.054%	T 29073.754	13678.258	460.397	4863.525	0.513%	T 8731.403	T 12403.045	T 154541.510	T 58407.839	1.036%
%RSD		T 0.602	1.211	T 0.265	0.890	6.273	0.613	0.582	T 0.130	T 0.288	T 4.675	T 1.302	1.067
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	15:19:40	264853.130	T 9079903.700	T 74351315.000	94.344%	5.300	1150715.600	583291.640					
2	15:20:01	262111.200	T 8963997.500	T 73453369.000	95.327%	36.716	1162349.100	588969.420					
3	15:20:23	264060.530	T 8896445.400	T 73408028.000	96.480%	10.365	1128241.300	586746.460					
x		263674.950	T 8980115.500	T 73737571.000	95.384%	17.460	1147102.000	586335.840					
σ		1411.042	T 92785.123	T 532001.350	1.069%	16.867	17338.618	2861.074					
%RSD		0.535	T 1.033	T 0.721	1.121	96.604	1.512	0.488					

STD5 1037152 5/10/2017 3:25:00 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:25:22	84.342%	953541.700	482805.200	T 182450160.000	T 52955894.000	TM 531486860.000	T 266627390.000	TM 21966016.000	83.102%	329213.540	TM 33093481.000	TM 9547556.000
2	15:25:44	83.184%	980403.170	490505.690	T 178485420.000	T 52444227.000	T 521992180.000	T 264505550.000	TM 21851187.000	84.903%	326394.510	TM 32508458.000	TM 9497900.300
3	15:26:05	81.347%	976806.230	M 506209.060	T 182186100.000	TM 53659152.000	T 523859810.000	T 265021500.000	TM 22041764.000	82.895%	329754.670	TM 33366423.000	TM 9688574.000
x		82.958%	970250.370	M 493173.320	T 181040560.000	TM 53019758.000	TM 525779610.000	T 265384820.000	TM 21952989.000	83.633%	328454.240	TM 32989454.000	TM 9578010.100
σ		1.510%	14581.469	M 11927.799	T 2216751.100	TM 609974.840	TM 5030055.700	T 1106593.200	TM 95953.810	1.104%	1804.182	TM 438340.330	TM 98917.653
%RSD		1.820	1.503	M 2.419	T 1.224	TM 1.150	TM 0.957	T 0.417	TM 0.437	1.320	0.549	TM 1.329	TM 1.033

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:25:22	-87788.947	TM 47430965.000	T 911681880.000	TM 15735488.000	T 7835893.700	TM 12246270.000	TM 9840678.100	1110442.200	382.734	85397.776	485.680	-9886.679
2	15:25:44	-86500.693	T 46869185.000	T 897507480.000	T 15464683.000	T 7711807.900	TM 12120928.000	TM 9705746.200	1104230.900	513.095	84590.399	478.404	-10494.122
3	15:26:05	-80176.462	TM 47958820.000	T 923213300.000	TM 15923902.000	T 7870406.800	TM 12381920.000	TM 9884233.500	1116606.600	574.009	85594.597	490.912	-8852.943
x		-84822.034	TM 47419657.000	T 910800880.000	TM 15708024.000	T 7806036.200	TM 12249706.000	TM 9810219.300	1110426.600	489.946	85194.257	484.999	-9744.581
σ		4074.420	TM 544905.740	T 12875536.000	TM 230838.040	T 83408.695	TM 130529.980	TM 93060.335	6187.830	97.716	532.136	6.281	829.766
%RSD		4.803	TM 1.149	T 1.414	TM 1.470	T 1.069	TM 1.066	TM 0.949	0.557	19.944	0.625	1.295	8.515

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:25:22	TM 10370756.000	82.624%	TM 18491400.000	2565563.600	12263.494	M 1306527.000	83.081%	T 11378667.000	TM 7249049.200	TM 5691512.400	TM 7652041.000	93.370%
2	15:25:44	TM 10245682.000	83.517%	TM 18379532.000	M 2577629.100	14054.014	1303601.200	84.135%	T 11234756.000	TM 7173690.100	TM 5673825.400	TM 7530393.100	94.336%
3	15:26:05	TM 10226197.000	81.924%	TM 18628141.000	M 2582479.000	12185.152	1305573.200	83.621%	T 11386038.000	TM 7279072.200	TM 5713155.700	TM 7637165.000	93.779%
x		TM 10280878.000	82.688%	TM 18499691.000	M 2575223.900	12834.220	M 1305233.800	83.612%	T 11333154.000	TM 7233937.200	TM 5692831.200	TM 7606533.000	93.828%
σ		TM 78443.960	0.798%	TM 124511.530	M 8710.449	1057.099	M 1492.141	0.527%	T 85294.363	TM 54292.072	TM 19698.280	TM 66357.292	0.485%
%RSD		TM 0.763	0.965	TM 0.673	M 0.338	8.237	M 0.114	0.631	T 0.753	TM 0.751	TM 0.346	TM 0.872	0.517

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:25:22	534780.930	TM 15263859.000	TM 125052300.000	89.691%	22.299	M 2382260.900	M 1212721.400
2	15:25:44	533659.190	TM 15319119.000	TM 126816520.000	90.010%	33.330	M 2395142.900	M 1213051.600
3	15:26:05	532453.610	TM 15309382.000	TM 125123320.000	90.149%	27.732	M 2380867.600	M 1214326.600
x		533631.240	TM 15297453.000	TM 125664050.000	89.950%	27.787	M 2386090.500	M 1213366.500
σ		1163.916	TM 29498.447	TM 998703.160	0.235%	5.516	M 7870.505	M 847.680
%RSD		0.218	TM 0.193	TM 0.795	0.261	19.850	M 0.330	M 0.070

ICV 1037153 5/10/2017 3:30:45 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:31:07	98.333%	98109.138	52484.130	T 18872773.000	T 5544767.400	T 55850438.000	T 27184361.000	2050992.100	93.358%	32830.063	T 3264050.600	879211.690
2	15:31:29	95.912%	99760.667	54783.869	T 18919394.000	T 5501580.500	T 55075774.000	T 26809596.000	2042595.300	93.262%	32597.520	T 3296974.900	874805.440
3	15:31:50	96.284%	98974.531	52756.455	T 18168964.000	T 5356908.200	T 54216397.000	T 26718577.000	2046052.600	94.333%	32516.436	T 3244590.700	870046.970
x		96.843%	99.875%	106.513%	T 101.484%	T 102.928%	T 104.532%	T 99.970%	95.300%	93.651%	32648.006	T 104.632%	96.066%
σ		1.304%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.592%	162.794	T n/a	n/a
%RSD		1.347	0.835	2.356	T 2.254	T 1.800	T 1.485	T 0.918	0.206	0.632	0.499	T 0.810	0.524

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:31:07	9187.456	T 4827464.000	T 97031800.000	1484133.500	821676.710	1181282.800	962335.900	114546.320	1042.504	9242.338	309.723	1274.377
2	15:31:29	8083.831	T 4888178.500	T 96711937.000	1468703.000	808808.310	1170620.200	961253.510	112982.110	942.822	9058.221	303.105	949.749
3	15:31:50	6565.559	T 4805081.500	T 95662439.000	1462723.700	816907.420	1177538.700	962345.490	113385.800	940.921	9107.309	311.908	1131.758
x		7945.615	T 102.877%	T 103.832%	93.930%	101.834%	98.459%	99.212%	100.842%	975.416	106.165%	308.245	1118.628
σ		1316.402	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	58.108	n/a	4.584	162.712
%RSD		16.568	T 0.888	T 0.743	0.751	0.797	0.460	0.065	0.715	5.957	1.044	1.487	14.546

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:31:07	897627.980	92.889%	790815.250	261555.750	754.410	132001.030	94.279%	1024775.800	666112.190	519660.150	646901.310	101.261%

2	15:31:29	862401.270	94.339%	785259.500	253641.180	1170.944	131375.080	97.162%	1010820.300	651294.650	509033.510	631305.940	102.207%
3	15:31:50	865912.460	93.922%	786492.400	258408.890	679.606	131543.070	96.664%	1002620.100	649824.800	512989.810	639929.340	102.611%
x		875313.910	93.717%	87.680%	100.160%	868.320	100.794%	96.035%	1012738.700	655743.880	94.833%	100.553%	102.026%
σ		19404.140	0.747%	n/a	n/a	264.736	n/a	1.541%	11201.750	9009.246	n/a	n/a	0.692%
%RSD		2.217	0.797	0.370	1.545	30.488	0.246	1.605	1.106	1.374	1.045	1.222	0.679

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:31:07	100960.360	1367704.600	T 12296560.000	97.551%	5.126	382960.610	193394.740
2	15:31:29	99867.747	1355925.300	T 11966988.000	101.472%	0.000	370496.070	186721.700
3	15:31:50	98811.548	1352255.100	T 11921754.000	101.109%	0.000	375642.870	194141.220
x		111.970%	89.593%	T 101.551%	100.044%	1.709	96.139%	94.765%
σ		n/a	n/a	T n/a	2.167%	2.959	n/a	n/a
%RSD		1.076	0.594	T 1.696	2.166	173.205	1.664	2.134

ICVL 1037148 5/10/2017 3:36:30 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:36:52	101.305%	358.252	19213.193	T 1986613.100	69637.436	180394.030	T 2791414.900	68258.624	98.114%	127.420	22694.332	17675.949
2	15:37:13	100.694%	345.989	18454.613	T 1893622.000	68231.914	174840.260	T 2759520.500	65362.218	99.081%	100.941	24211.975	18086.863
3	15:37:34	99.498%	396.291	19658.014	T 1939003.800	68789.723	175209.030	T 2736966.800	63865.048	99.777%	90.303	23568.448	17634.246
x		100.499%	115.713%	119.239%	T 105.530%	97.257%	100.728%	T 102.654%	91.961%	98.990%	106.221	94.001%	97.742%
σ		0.919%	n/a	n/a	T n/a	n/a	n/a	T n/a	n/a	0.835%	19.113	n/a	n/a
%RSD		0.914	7.150	3.184	T 2.397	1.027	1.756	T 0.990	3.393	0.844	17.994	3.243	1.405

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:36:52	7749.429	14834.251	1244271.400	6379.634	2673.935	9438.016	30114.521	2387.561	1192.946	373.700	300.742	1336.045
2	15:37:13	7023.308	14064.448	1207681.000	5694.760	2676.023	9783.371	30398.768	2178.918	1230.181	358.219	298.855	1290.088
3	15:37:34	7340.183	14394.452	1210617.900	6120.124	2595.691	9574.666	29736.919	1952.156	1270.151	298.203	266.017	1307.706
x		7370.973	95.851%	98.553%	96.761%	103.317%	100.414%	96.956%	96.410%	1231.093	99.755%	288.538	1311.280
σ		364.038	n/a	n/a	n/a	n/a	n/a	n/a	n/a	38.611	n/a	19.526	23.186
%RSD		4.939	2.676	1.665	5.701	1.729	1.812	1.104	10.022	3.136	11.613	6.767	1.768

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:36:52	45027.347	97.846%	25958.172	5471.416	-121.115	1468.228	97.926%	4218.179	10717.871	7753.139	10019.778	99.306%
2	15:37:13	44696.673	98.819%	25650.155	5222.465	-152.021	1395.003	98.376%	4315.788	10628.936	7787.464	10583.999	102.798%
3	15:37:34	44660.670	97.364%	26046.213	5661.868	-197.744	1331.688	98.867%	4147.672	10159.397	7776.819	9878.294	101.387%
x		91.636%	98.010%	90.060%	105.880%	-156.960	107.065%	98.390%	4227.213	10502.068	89.645%	99.871%	101.164%
σ		n/a	0.741%	n/a	n/a	38.553	n/a	0.471%	84.421	300.075	n/a	n/a	1.756%
%RSD		0.451	0.756	0.803	4.042	24.562	4.887	0.478	1.997	2.857	0.226	3.675	1.736

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:36:52	11231.400	28376.372	19458.612	99.762%	0.000	37323.592	18869.014
2	15:37:13	10292.352	29031.021	20102.678	99.539%	0.000	37452.600	18518.899
3	15:37:34	10846.286	29064.855	19933.639	98.289%	0.000	37873.197	19875.336
x		120.961%	95.038%	104.355%	99.197%	0.000	95.917%	94.497%
σ		n/a	n/a	n/a	0.794%	0.000	n/a	n/a
%RSD		4.375	1.346	1.684	0.800	0.000	0.765	3.689

ICBIS 1036503 5/10/2017 3:42:14 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:42:35	100.905%	42.837	821.801	-15206.016	271.690	2408.557	-35346.052	-5.136	101.471%	98.624	1950.185	102.990
2	15:42:57	102.556%	-5.394	795.033	-22630.644	98.422	998.309	-33772.936	-368.333	102.345%	63.629	700.205	-147.376

3	15:43:19	101.694%	36.998	566.630	-13849.672	142.732	158.647	-33195.125	1073.110	100.179%	84.904	1791.842	46.766
x		101.719%	24.814	727.821	-17228.777	170.948	1188.504	-34104.705	233.214	101.331%	82.386	1480.744	0.793
σ		0.826%	26.323	140.236	4727.054	90.014	1136.949	1113.182	749.698	1.089%	17.633	680.587	131.362
%RSD		0.812	106.082	19.268	27.437	52.656	95.662	3.264	321.464	1.075	21.403	45.963	16555.868

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:42:35	6090.529	88.143	-3768.286	149.895	-33.576	139.910	376.480	-2425.175	1130.990	4.699	299.555	1338.352
2	15:42:57	6513.858	-85.341	-13067.467	93.461	-44.903	78.846	272.376	-2319.083	1112.918	38.342	279.913	1175.430
3	15:43:19	6169.875	4.180	-4764.801	9.217	-6.269	6.214	281.326	-2489.926	1159.807	-16.318	304.388	1472.981
x		6258.088	2.328	-7200.184	84.191	-28.249	74.990	310.061	-2411.395	1134.572	8.908	294.619	1328.921
σ		225.028	86.757	5105.587	70.796	19.860	66.931	57.695	86.251	23.649	27.572	12.963	148.999
%RSD		3.596	3727.402	70.909	84.089	70.302	89.254	18.607	3.577	2.084	309.530	4.400	11.212

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:42:35	61.909	99.841%	159.959	-13.461	-173.895	3.541	97.646%	2027.891	465.368	40.630	18.648	99.868%
2	15:42:57	-31.865	98.340%	149.599	11.366	-176.405	25.970	99.318%	1888.022	417.753	28.153	-12.851	99.600%
3	15:43:19	72.621	98.746%	87.560	-13.650	-141.692	-12.958	98.559%	1816.292	449.274	21.825	12.863	97.842%
x		34.222	98.976%	132.373	-5.248	-163.998	5.518	98.508%	1910.735	444.132	30.202	6.220	99.103%
σ		57.483	0.777%	39.153	14.389	19.358	19.540	0.837%	107.613	24.221	9.568	16.767	1.100%
%RSD		167.972	0.785	29.578	274.168	11.804	354.129	0.850	5.632	5.453	31.681	269.582	1.110

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:42:35	73.125	549.976	1207.306	99.159%	0.000	-0.372	60.551
2	15:42:57	-6.793	433.579	979.769	99.190%	0.000	4.660	20.204
3	15:43:19	40.462	264.897	731.458	100.685%	0.000	4.136	24.796
x		35.598	416.151	972.844	99.678%	0.000	2.808	35.184
σ		40.181	143.336	238.000	0.872%	0.000	2.766	22.089
%RSD		112.873	34.443	24.464	0.875	0.000	98.504	62.781

ICSA 1034645 5/10/2017 3:47:56 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:48:17	84.205%	42.671	3927.484	TM 356135510.000	T 34727436.000	T 352500250.000	TM 527870060.000	T 14344751.000	87.612%	655510.040	-37725.931	5721.086
2	15:48:39	83.560%	10.678	4026.008	TM 361603990.000	T 35721959.000	T 356755520.000	TM 535088330.000	T 14641845.000	87.726%	663509.200	-37093.921	6217.547
3	15:49:00	81.063%	7.182	4074.880	TM 362352290.000	T 36014936.000	T 360443430.000	TM 536467760.000	T 14749606.000	86.724%	666360.650	-35845.456	6443.882
x		82.943%	1.#IO%	1.#IO%	TM 97.936%	T 100.207%	T 101.565%	TM 99.052%	T 101.831%	87.354%	661793.300	-1.#IO%	1.#IO%
σ		1.659%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.548%	5625.134	n/a	n/a
%RSD		2.001	96.937	1.873	TM 0.943	T 1.902	T 1.115	TM 0.866	T 1.438	0.628	0.850	2.594	6.034

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:48:17	16794.786	201827.190	T 626150360.000	599.282	1039.690	2199.043	-1971.119	-2162.677	1033.336	14.236	302.603	1234.320
2	15:48:39	16595.407	201188.450	T 635111190.000	569.795	1197.673	2320.696	-1771.220	-2423.230	1112.401	4.678	326.828	1278.594
3	15:49:00	16461.474	202808.170	T 643037420.000	555.221	1208.227	2361.539	-1811.831	-2214.014	1048.502	13.509	314.360	1246.997
x		16617.222	1.#IO%	T 102.482%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	1064.746	1.#IO%	314.597	1253.303
σ		167.723	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	41.961	n/a	12.114	22.801
%RSD		1.009	0.404	T 1.331	3.905	8.220	3.685	5.707	6.089	3.941	49.230	3.851	1.819

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:48:17	6113.838	90.905%	T 5642802.800	488.158	1757.404	648.858	93.853%	2989.036	792.814	334.489	597.132	100.803%
2	15:48:39	5967.777	90.746%	T 5748168.200	413.626	1541.753	791.173	96.076%	2971.938	750.592	320.909	628.812	103.072%
3	15:49:00	5858.922	90.601%	T 5711792.900	437.341	1606.341	612.059	96.546%	2967.823	793.798	318.475	630.645	104.887%
x		1.#IO%	90.751%	T 99.175%	1.#IO%	1635.166	1.#IO%	95.492%	2976.266	779.068	1.#IO%	1.#IO%	102.921%
σ		n/a	0.152%	T n/a	n/a	110.677	n/a	1.438%	11.250	24.666	n/a	n/a	2.046%
%RSD		2.139	0.167	T 0.939	8.531	6.769	13.829	1.506	0.378	3.166	2.658	3.045	1.988

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:48:17	865.391	385.545	5486.315	97.048%	0.000	36.351	15.608
2	15:48:39	650.592	249.049	5669.313	98.578%	0.000	25.168	25.432
3	15:49:00	776.255	295.972	5344.164	100.156%	0.000	29.281	29.945
x		1.#IO%	1.#IO%	1.#IO%	98.594%	0.000	1.#IO%	1.#IO%
σ		n/a	n/a	n/a	1.554%	0.000	n/a	n/a
%RSD		14.124	22.357	2.964	1.576	0.000	18.689	30.981

ICSAB 1034648 5/10/2017 3:53:40 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:54:01	78.546%	8554.911	176748.680	TM 355581550.000	T 35296760.000	T 354354470.000	TM 531509720.000	T 14512034.000	88.717%	658924.580	71591.645	220998.070
2	15:54:23	78.825%	8387.947	181036.910	TM 360378450.000	T 35796063.000	T 362815800.000	TM 544704070.000	T 14850846.000	87.310%	670411.850	83131.051	222938.040
3	15:54:44	77.510%	8347.651	180245.340	TM 353025670.000	T 35410311.000	T 354540470.000	TM 536668630.000	T 14772484.000	87.558%	674597.050	75917.188	221260.340
x		78.294%	106.365%	111.911%	TM 96.928%	T 100.244%	T 101.756%	TM 99.886%	T 102.761%	87.862%	667977.830	61.527%	97.410%
σ		0.693%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.751%	8114.799	n/a	n/a
%RSD		0.885	1.304	1.272	TM 1.048	T 0.737	T 1.353	TM 1.237	T 1.206	0.855	1.215	7.583	0.475

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:54:01	18527.465	375656.400	T 643295610.000	145168.480	32397.133	90732.872	73089.180	46584.328	1159.805	10795.081	335.458	1390.246
2	15:54:23	16535.043	378897.560	T 647389660.000	145463.530	32130.835	94322.801	75383.583	47025.400	1328.330	10772.234	356.134	1253.788
3	15:54:44	18107.257	377473.480	T 645119660.000	146747.340	33258.399	91909.702	76933.458	48242.242	1063.126	11048.843	304.467	1236.183
x		17723.255	200.505%	T 104.178%	93.041%	101.721%	96.580%	96.862%	93.244%	1183.754	101.072%	332.020	1293.406
σ		1050.252	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	134.214	n/a	26.005	84.327
%RSD		5.926	0.431	T 0.318	0.576	1.808	1.982	2.574	1.816	11.338	1.412	7.832	6.520

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:54:01	5718.389	93.044%	T 5724411.800	124281.500	1895.243	32227.646	97.778%	2424.088	253254.130	198120.430	260882.560	104.125%
2	15:54:23	5197.974	92.130%	T 5812323.900	122779.100	1770.128	32562.689	100.244%	2818.429	253473.840	196430.500	251418.630	106.690%
3	15:54:44	5406.958	91.580%	T 5882679.400	123355.960	2099.200	32626.265	100.341%	2666.206	255289.770	196925.700	255678.000	107.947%
x		5441.107	92.251%	T 101.011%	95.917%	1921.524	99.453%	99.454%	2636.241	254005.920	90.959%	100.647%	106.254%
σ		261.883	0.739%	T n/a	n/a	166.103	n/a	1.453%	198.871	1117.265	n/a	n/a	1.948%
%RSD		4.813	0.801	T 1.366	0.614	8.644	0.660	1.461	7.544	0.440	0.441	1.852	1.833

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:54:01	114435.480	342892.870	457755.420	101.411%	0.000	400599.570	205960.000
2	15:54:23	111772.450	347600.240	461993.170	101.590%	0.000	399582.460	203965.200
3	15:54:44	113271.200	352791.740	465137.220	102.049%	0.000	405002.000	210451.620
x		126.857%	91.730%	97.164%	101.683%	0.000	102.617%	102.376%
σ		n/a	n/a	n/a	0.329%	0.000	n/a	n/a
%RSD		1.180	1.424	0.802	0.324	0.000	0.717	1.607

CCV 1037150 5/10/2017 3:59:25 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	15:59:46	85.718%	203947.730	101917.770	T 36611272.000	T 11012366.000	T 110544140.000	T 54485286.000	T 4339063.400	87.827%	65645.853	T 6751536.200	1812167.600
2	16:00:08	84.389%	207164.560	107146.400	T 36365972.000	T 11020828.000	T 109929910.000	T 55456050.000	T 4471790.500	87.312%	65983.212	T 6851657.300	1830665.000
3	16:00:29	84.985%	207580.510	106056.860	T 35912861.000	T 10581145.000	T 106964690.000	T 53502407.000	T 4367679.800	89.735%	65590.838	T 6581961.900	1750904.900
x		85.030%	104.082%	104.873%	T 98.734%	T 102.325%	T 103.631%	T 101.220%	T 102.279%	88.291%	65739.968	T 107.694%	98.731%
σ		0.666%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.277%	212.444	T n/a	n/a
%RSD		0.783	0.964	2.626	T 0.976	T 2.313	T 1.754	T 1.793	T 1.590	1.446	0.323	T 2.026	2.322

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	15:59:46	9149.174	T 10245385.000	T 200915480.000	3121475.100	1698004.900	2456983.500	2054824.200	223277.190	757.382	18052.879	349.375	537.679
2	16:00:08	8245.951	T 10268929.000	T 202577430.000	3133857.400	1701824.100	2458127.200	2061838.000	220579.260	936.584	17680.097	334.013	603.263
3	16:00:29	8049.019	T 9928883.000	T 197937810.000	T 3335186.100	1650143.800	2397532.900	2018380.000	222989.370	839.719	18088.235	302.974	307.483
x		8481.381	T 107.842%	T 107.889%	T 102.007%	105.063%	101.999%	105.454%	98.626%	844.562	104.239%	328.787	482.808
σ		586.648	T n/a	T n/a	T n/a	n/a	n/a	n/a	n/a	89.699	n/a	23.638	155.337
%RSD		6.917	T 1.871	T 1.173	T 3.753	1.711	1.422	1.141	0.667	10.621	1.260	7.189	32.174

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	15:59:46	1747256.200	96.003%	T 3596216.500	510332.380	2201.151	264755.670	99.751%	2059503.200	1299242.000	1012705.400	1276547.000	104.777%

2	16:00:08	1736095.800	96.391%	T 3590222.000	507798.100	2418.289	266009.360	101.045%	2065843.900	1297363.800	1007738.400	1288944.800	108.813%
3	16:00:29	1705322.000	95.659%	T 3599060.800	505210.370	2676.337	263837.290	101.165%	2033817.200	1297189.000	1004219.300	1269263.400	106.606%
x		1729558.000	96.018%	T 100.068%	98.615%	2431.926	101.402%	100.654%	2053054.800	1297931.600	93.028%	100.513%	106.732%
σ		21718.125	0.366%	T n/a	n/a	237.887	n/a	0.784%	16959.193	1138.186	n/a	n/a	2.021%
%RSD		1.256	0.381	T 0.126	0.504	9.782	0.412	0.779	0.826	0.088	0.423	0.778	1.894

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	15:59:46	88240.109	2785692.400	T 24811927.000	104.779%	14.316	377701.060	194061.310
2	16:00:08	85714.216	2822882.400	T 25148388.000	105.199%	4.753	373304.270	193460.270
3	16:00:29	86871.778	2733907.300	T 24539971.000	107.125%	0.000	371871.610	192145.740
x		97.466%	91.689%	T 104.540%	105.701%	6.356	95.609%	95.658%
σ		n/a	n/a	T n/a	1.251%	7.291	n/a	n/a
%RSD		1.454	1.607	T 1.227	1.183	114.712	0.812	0.507

CCB 1035925 5/10/2017 4:05:08 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:05:30	92.538%	15.767	900.543	-16515.646	1170.469	11947.733	-21826.675	1756.703	96.754%	103.253	706.934	331.779
2	16:05:51	93.485%	46.928	747.487	-11757.976	1201.318	8921.163	-25536.978	2550.119	97.894%	137.748	1432.150	48.977
3	16:06:13	92.059%	48.834	926.982	-19142.058	637.421	6250.200	-26054.347	1865.400	98.057%	127.368	1273.374	-287.417
x		92.694%	37.176	858.338	-15805.227	1003.070	9039.698	-24472.667	2057.407	97.568%	122.790	1137.486	31.113
σ		0.726%	18.565	96.905	3742.952	317.036	2850.616	2306.051	430.148	0.710%	17.697	381.227	309.984
%RSD		0.783	49.939	11.290	23.682	31.607	31.534	9.423	20.907	0.728	14.413	33.515	996.320

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:05:30	6233.270	744.151	21388.209	268.629	125.182	145.536	464.522	-2184.856	1015.630	-0.735	284.817	1286.645
2	16:05:51	5912.647	350.431	15899.523	186.955	-21.807	140.588	470.148	-2438.507	1073.507	20.928	284.486	1306.038
3	16:06:13	5777.379	295.667	3580.313	89.486	-6.832	174.860	514.656	-2348.894	1083.152	-11.859	285.618	1456.650
x		5974.432	463.416	13622.682	181.690	32.181	153.661	483.108	-2324.086	1057.430	2.778	284.974	1349.778
σ		234.141	244.660	9119.666	89.688	80.888	18.524	27.465	128.633	36.519	16.673	0.582	93.061
%RSD		3.919	52.795	66.945	49.363	251.354	12.055	5.685	5.535	3.454	600.122	0.204	6.895

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:05:30	39.563	98.923%	557.196	53.993	-130.634	4.556	102.348%	1822.358	472.821	67.186	112.827	103.114%
2	16:05:51	66.445	100.403%	392.230	9.380	-144.987	-6.207	103.873%	1670.430	489.492	82.945	100.689	104.884%
3	16:06:13	70.264	99.955%	279.653	19.947	-131.002	-29.226	102.061%	1827.483	497.559	46.513	49.619	103.660%
x		58.758	99.760%	409.693	27.773	-135.541	-10.292	102.760%	1773.424	486.624	65.548	87.712	103.886%
σ		16.732	0.759%	139.593	23.314	8.182	17.257	0.974%	89.232	12.616	18.271	33.543	0.906%
%RSD		28.476	0.761	34.073	83.943	6.037	167.672	0.948	5.032	2.593	27.875	38.242	0.872

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:05:30	78.094	1530.949	2453.615	103.593%	0.000	22.466	9.479
2	16:05:51	-5.567	1271.635	2108.354	106.070%	0.000	25.941	13.855
3	16:06:13	0.101	1155.845	1473.335	104.009%	0.000	27.062	33.458
x		24.210	1319.476	2011.768	104.557%	0.000	25.156	18.931
σ		46.751	192.074	497.226	1.326%	0.000	2.396	12.770
%RSD		193.111	14.557	24.716	1.268	0.000	9.524	67.454

MB 200-116243/1-A 5/10/2017 4:10:52 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:11:14	102.417%	2.025	430.597	50351.384	343.578	103320.230	-42997.147	10160.004	103.346%	198.232	1934.374	2628.217
2	16:11:35	102.151%	-0.219	501.345	58095.025	502.358	107312.670	-46550.350	9749.404	103.901%	235.629	1367.980	2540.994

3	16:11:58	99.065%	19.810	596.510	59419.260	514.272	106572.900	-38788.377	10655.090	103.680%	212.002	150.479	2639.375
x		101.211%	7.205	509.484	55955.223	453.403	105735.270	-42778.625	10188.166	103.642%	215.287	1150.944	2602.862
σ		1.863%	10.973	83.255	4898.026	95.297	2123.939	3885.598	453.499	0.279%	18.914	911.537	53.869
%RSD		1.841	152.295	16.341	8.753	21.018	2.009	9.083	4.451	0.269	8.785	79.199	2.070
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:11:14	5230.902	1300.238	144560.140	13.540	185.673	337.241	745.079	-2326.743	836.510	11.841	292.467	1358.088
2	16:11:35	5103.668	1571.894	144382.520	-45.163	188.344	346.054	825.757	-2280.017	848.310	8.483	326.273	1275.536
3	16:11:58	5466.468	1453.881	145878.880	22.608	145.798	338.666	895.804	-2519.217	910.505	-11.208	305.972	1380.265
x		5267.013	1442.004	144940.510	-3.005	173.272	340.654	822.213	-2375.326	865.108	3.039	308.237	1337.963
σ		184.076	136.217	817.486	36.790	23.830	4.731	75.425	126.785	39.755	12.452	17.016	55.189
%RSD		3.495	9.446	0.564	1224.391	13.753	1.389	9.173	5.338	4.595	409.765	5.520	4.125
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:11:14	534.464	104.884%	220.824	-14.859	-155.441	-5.738	104.799%	1326.418	440.033	10.481	3.863	106.693%
2	16:11:35	454.988	105.635%	123.445	-10.300	-200.208	23.867	105.741%	1314.603	485.885	25.346	64.782	108.044%
3	16:11:58	506.081	105.773%	141.984	-29.243	-140.296	-30.295	106.384%	1377.173	428.685	14.885	106.340	107.769%
x		498.511	105.431%	162.084	-18.134	-165.315	-4.055	105.641%	1339.398	451.534	16.904	58.328	107.502%
σ		40.275	0.478%	51.707	9.887	31.153	27.120	0.797%	33.244	30.285	7.635	51.542	0.714%
%RSD		8.079	0.454	31.901	54.522	18.844	668.754	0.754	2.482	6.707	45.168	88.366	0.664
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	16:11:14	54.144	368.419	873.932	104.713%	0.000	-21.076	2487.781					
2	16:11:35	1.597	414.839	610.834	104.438%	0.000	-6.688	2599.709					
3	16:11:58	34.275	298.579	675.938	104.556%	0.000	2.849	2673.297					
x		30.006	360.613	720.234	104.569%	0.000	-8.305	2586.929					
σ		26.532	58.522	137.028	0.138%	0.000	12.044	93.416					
%RSD		88.424	16.228	19.026	0.132	0.000	145.022	3.611					

LCS 200-116243/2-A 5/10/2017 4:16:34 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	16:16:55	95.617%	3461.932	161165.860	T 19146973.000	706710.980	T 2032069.500	T 28328160.000	683037.770	99.767%	160.159	244398.290	183198.680
2	16:17:17	96.517%	3519.633	163685.690	T 19475841.000	718627.750	1927194.700	T 28940172.000	694847.740	99.579%	195.703	247673.720	183846.220
3	16:17:38	96.884%	3410.518	161711.880	T 19133063.000	717460.340	1927431.600	T 28658055.000	680843.970	99.708%	225.493	239528.180	181206.790
x		96.339%	3464.028	162187.810	T 19251959.000	714266.360	T 1962232.000	T 28642129.000	686243.160	99.685%	193.785	243866.730	182750.560
σ		0.652%	54.588	1325.623	T 194012.270	6569.132	T 60481.215	T 306317.040	7532.085	0.096%	32.709	4098.705	1375.593
%RSD		0.676	1.576	0.817	T 1.008	0.920	T 3.082	T 1.069	1.098	0.097	16.879	1.681	0.753
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	16:16:55	4044.716	146799.180	T 13831784.000	60919.993	26650.380	98367.597	295482.510	40338.860	712.807	3247.879	318.759	1436.237
2	16:17:17	3782.203	147166.830	T 13811958.000	58997.245	27717.683	101971.600	296898.950	41391.523	616.309	3439.931	327.046	1224.784
3	16:17:38	4140.985	146318.650	T 14067544.000	61218.088	26595.884	99836.334	300401.020	40792.052	686.221	3321.308	337.168	1302.805
x		3989.302	146761.550	T 13903762.000	60378.442	26987.983	100058.510	297594.160	40840.812	671.779	3336.373	327.658	1321.275
σ		185.699	425.338	T 142185.010	1205.402	632.527	1812.244	2531.879	528.023	49.844	96.908	9.220	106.930
%RSD		4.655	0.290	T 1.023	1.996	2.344	1.811	0.851	1.293	7.420	2.905	2.814	8.093
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	16:16:55	465658.160	102.807%	259878.030	53994.305	24.375	13592.547	100.861%	1521.987	105460.590	81962.446	106344.260	104.406%
2	16:17:17	457866.330	100.979%	268608.020	53288.775	-65.675	13504.247	102.280%	1383.529	105558.550	80859.033	104759.300	104.099%
3	16:17:38	453244.450	101.362%	269604.590	52923.148	84.882	13314.509	104.845%	1235.217	103574.490	80193.636	103335.110	107.785%
x		458922.980	101.716%	266030.210	53402.076	14.528	13470.434	102.662%	1380.244	104864.550	81005.038	104812.890	105.430%
σ		6273.947	0.964%	5351.200	544.492	75.760	142.070	2.019%	143.414	1118.290	893.399	1505.289	2.045%
%RSD		1.367	0.948	2.012	1.020	521.490	1.055	1.967	10.390	1.066	1.103	1.436	1.940

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:16:55	111009.290	275916.340	179945.270	103.383%	0.000	383229.520	200289.550
2	16:17:17	111564.520	272464.390	182755.860	104.350%	0.000	386553.460	199432.390
3	16:17:38	110804.150	271514.190	179658.540	106.958%	0.000	377314.480	194274.240
x		111125.990	273298.310	180786.560	104.897%	0.000	382365.820	197998.730
σ		393.387	2316.527	1711.478	1.849%	0.000	4679.656	3253.848
%RSD		0.354	0.848	0.947	1.763	0.000	1.224	1.643

LCSD 200-116243/3-A 5/10/2017 4:22:18 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:22:40	96.422%	3398.699	165290.970	T 19880856.000	730769.530	2024748.300	T 28981698.000	692083.100	99.506%	175.747	247532.930	184094.630
2	16:23:01	95.516%	3436.872	167220.820	T 19666692.000	730018.180	T 2127133.100	T 28857259.000	691846.450	100.815%	123.913	243464.880	182029.500
3	16:23:23	93.959%	3415.246	171975.260	T 19657602.000	730162.840	2009525.000	T 29145452.000	687984.910	100.317%	119.544	247948.980	184552.180
x		95.299%	3416.939	168162.350	T 19735050.000	730316.850	T 2053802.100	T 28994803.000	690638.150	100.213%	139.735	246315.600	183558.770
σ		1.246%	19.143	3440.173	T 126353.690	398.651	T 63960.989	T 144542.540	2300.825	0.661%	31.264	2477.546	1344.002
%RSD		1.307	0.560	2.046	T 0.640	0.055	T 3.114	T 0.499	0.333	0.659	22.374	1.006	0.732

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:22:40	3746.997	146426.470	T 14109148.000	60464.166	28574.064	102411.260	299476.840	41528.346	744.004	3338.057	303.851	1549.124
2	16:23:01	4258.356	144902.070	T 14013330.000	59995.995	28165.502	102597.610	302472.580	42416.407	483.510	3472.656	298.065	1341.173
3	16:23:23	3447.432	147760.160	T 14054102.000	61316.715	27612.162	103100.950	304655.850	42550.940	671.223	3363.617	267.912	1326.105
x		3817.595	146362.900	T 14058860.000	60592.292	28117.243	102703.270	302201.760	42165.231	632.912	3391.443	289.943	1405.468
σ		410.046	1430.103	T 48085.849	669.618	482.763	356.781	2600.101	555.646	134.406	71.484	19.297	124.638
%RSD		10.741	0.977	T 0.342	1.105	1.717	0.347	0.860	1.318	21.236	2.108	6.656	8.868

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:22:40	464481.320	101.063%	268071.960	55091.606	28.306	13824.937	101.696%	1263.636	105552.070	81625.637	106289.130	104.587%
2	16:23:01	446795.140	102.217%	266967.390	54571.407	-68.224	13355.438	104.173%	1228.786	103878.640	80696.059	103673.000	105.947%
3	16:23:23	464566.670	101.778%	266848.560	54326.527	-21.594	13912.445	104.513%	1229.574	105949.030	80671.780	106018.930	108.797%
x		458614.380	101.686%	267295.970	54663.180	-20.504	13697.607	103.461%	1240.665	105126.580	80997.826	105327.020	106.443%
σ		10235.847	0.583%	674.652	390.708	48.274	299.540	1.538%	19.897	1098.822	543.836	1438.778	2.149%
%RSD		2.232	0.573	0.252	0.715	235.441	2.187	1.486	1.604	1.045	0.671	1.366	2.019

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:22:40	111362.450	274171.440	180941.430	103.615%	0.000	381729.560	199110.420
2	16:23:01	111794.690	275874.210	184506.110	103.103%	0.000	383659.670	202633.060
3	16:23:23	108988.860	275487.280	181903.540	105.173%	0.000	382273.210	199612.700
x		110715.330	275177.640	182450.360	103.964%	0.000	382554.150	200452.060
σ		1510.711	892.614	1844.179	1.078%	0.000	995.253	1905.427
%RSD		1.365	0.324	1.011	1.037	0.000	0.260	0.951

200-38368-A-1-A @20 5/10/2017 4:28:00 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:28:22	92.264%	29423.094	121252.310	T 24047827.000	T 2269543.400	T 19058700.000	T 28612540.000	928845.300	97.292%	50080.629	60126.005	381411.690
2	16:28:43	89.650%	29735.349	125224.150	T 23963981.000	T 2254275.100	T 19088044.000	T 28948402.000	927168.880	97.539%	49395.155	62892.243	379683.550
3	16:29:05	90.625%	29497.762	123999.960	T 23314648.000	2122663.600	T 18579188.000	T 27955465.000	916218.000	99.481%	48314.290	64596.951	373579.500
x		90.846%	29552.068	123492.140	T 23775486.000	T 2215494.000	T 18908644.000	T 28505469.000	924077.390	98.104%	49263.358	62538.399	378224.920
σ		1.321%	163.057	2034.030	T 401292.630	T 80755.197	T 285694.180	T 505053.620	6857.853	1.198%	890.515	2256.378	4114.790
%RSD		1.454	0.552	1.647	T 1.688	T 3.645	T 1.511	T 1.772	0.742	1.222	1.808	3.608	1.088

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:28:22	7286.388	T 5021092.100	T 45331618.000	774266.850	72688.733	93829.656	359187.760	145526.760	1048.636	11748.315	314.172	944.727
2	16:28:43	6587.210	T 5024777.400	T 44835890.000	764225.010	72581.473	92371.640	361065.760	146978.330	959.849	11859.395	307.620	1286.009
3	16:29:05	5793.815	T 4896368.500	T 44010418.000	754826.520	70539.167	89699.502	353062.170	145222.310	810.772	11743.585	293.144	1177.059
x		6555.804	T 4980746.000	T 44725975.000	764439.460	71936.458	91966.933	357771.900	145909.140	939.753	11783.765	304.979	1135.931
σ		746.782	T 73096.263	T 667422.970	9721.940	1211.277	2094.608	4185.436	938.382	120.199	65.540	10.760	174.319
%RSD		11.391	T 1.468	T 1.492	1.272	1.684	2.278	1.170	0.643	12.791	0.556	3.528	15.346

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:28:22	397655.880	113.996%	202356.790	11412.223	420.328	110185.180	101.697%	241591.040	55023.898	43020.327	128077.960	105.636%

2	16:28:43	393232.310	113.469%	207499.000	11672.833	397.851	110774.900	101.913%	244557.550	57051.182	43331.899	128119.200	105.443%
3	16:29:05	396513.100	114.616%	204906.820	11962.241	723.474	110727.010	101.999%	242995.680	55870.638	43380.287	128961.860	109.082%
x		395800.430	114.027%	204920.870	11682.432	513.884	110562.360	101.870%	243048.090	55981.906	43244.171	128386.340	106.720%
σ		2296.282	0.574%	2571.133	275.135	181.858	327.525	0.155%	1483.949	1018.212	195.358	498.838	2.047%
%RSD		0.580	0.503	1.255	2.355	35.389	0.296	0.153	0.611	1.819	0.452	0.389	1.918

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:28:22	211.655	1534462.300	1226628.500	102.460%	0.000	84754.206	798105.010
2	16:28:43	221.670	1552141.700	1239552.800	102.959%	0.000	87483.451	808656.580
3	16:29:05	184.201	1546140.100	1204024.900	105.427%	0.000	85396.912	809636.070
x		205.842	1544248.000	1223402.100	103.615%	0.000	85878.189	805465.890
σ		19.399	8990.289	17982.365	1.588%	0.000	1426.855	6393.495
%RSD		9.424	0.582	1.470	1.533	0.000	1.661	0.794

200-38368-A-1-A @10 5/10/2017 4:33:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:34:05	86.796%	60766.521	250630.230	T 45661117.000	T 4344228.900	T 36033395.000	T 54434316.000	1831638.200	97.093%	99088.213	127184.910	750948.510
2	16:34:28	86.660%	61867.353	252997.600	T 45696388.000	T 4288893.100	T 36403196.000	T 55545331.000	T 2020525.100	97.841%	96900.061	121427.170	746007.990
3	16:34:50	86.279%	60083.251	250639.850	T 45392829.000	T 4346688.900	T 36621072.000	T 55340271.000	1840396.600	97.651%	95538.952	121721.380	735797.240
x		86.578%	60905.708	251422.560	T 45583445.000	T 4326603.600	T 36352554.000	T 55106639.000	T 1897520.000	97.528%	97175.742	123444.480	744251.250
σ		0.268%	900.159	1364.032	T 166017.320	T 32681.428	T 297093.930	T 591207.710	T 106615.580	0.389%	1790.618	3242.642	7726.890
%RSD		0.309	1.478	0.543	T 0.364	T 0.755	T 0.817	T 1.073	T 5.619	0.399	1.843	2.627	1.038

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:34:05	5950.944	T 9781976.200	T 87647645.000	1504315.700	141971.340	177211.330	696700.400	259750.490	1299.200	20772.825	316.650	1477.422
2	16:34:28	6274.197	T 9776981.700	T 87141605.000	1505391.800	137736.960	176823.810	706790.980	262828.340	1146.452	20949.852	331.973	1325.307
3	16:34:50	7240.223	T 9827700.000	T 88114098.000	1512411.900	140837.010	177050.110	701318.420	264904.570	783.640	21323.107	323.706	1036.863
x		6488.454	T 9795552.600	T 87634449.000	1507373.100	140181.770	177028.410	701603.270	262494.470	1076.430	21015.261	324.110	1279.864
σ		670.813	T 27952.171	T 486380.780	4396.776	2191.912	194.670	5051.316	2593.209	264.817	280.911	7.669	223.767
%RSD		10.339	T 0.285	T 0.555	0.292	1.564	0.110	0.720	0.988	24.601	1.337	2.366	17.484

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:34:05	800173.980	124.412%	373724.490	24022.746	681.786	226099.340	99.006%	494764.420	112842.890	88604.271	261531.440	108.222%
2	16:34:28	788040.020	123.277%	375486.780	23240.483	562.544	224959.140	100.160%	493772.800	112901.240	88499.242	264670.400	108.716%
3	16:34:50	786261.150	122.539%	373559.550	23517.877	958.365	223407.430	99.938%	491745.800	112180.570	88786.181	262082.050	108.532%
x		791491.710	123.409%	374256.940	23593.702	734.232	224821.970	99.701%	493427.670	112641.570	88629.898	262761.300	108.490%
σ		7571.484	0.943%	1068.263	396.605	203.056	1351.189	0.612%	1538.623	400.304	145.176	1676.099	0.250%
%RSD		0.957	0.764	0.285	1.681	27.656	0.601	0.614	0.312	0.355	0.164	0.638	0.230

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:34:05	329.506	T 3504201.000	2480454.100	102.718%	0.000	172017.940	M 1673729.500
2	16:34:28	313.858	T 3418464.100	2435882.200	106.122%	0.000	172956.640	M 1668626.500
3	16:34:50	420.485	T 3489247.100	2461221.200	105.286%	0.000	173862.580	M 1646114.600
x		354.616	T 3470637.400	2459185.800	104.709%	0.000	172945.720	M 1662823.500
σ		57.578	T 45797.858	22355.552	1.774%	0.000	922.371	M 14693.595
%RSD		16.237	T 1.320	0.909	1.694	0.000	0.533	M 0.884

200-38368-A-1-A @5 5/10/2017 4:39:28 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:39:49	82.158%	122236.360	M 510620.460	T 89407663.000	T 8540785.300	T 70726323.000	T 107572210.000	T 3897627.200	96.277%	191543.940	250558.000	1467744.500
2	16:40:11	82.819%	120627.350	M 510895.620	T 92583654.000	T 8638362.300	T 70947839.000	T 107608830.000	T 3935846.100	95.241%	193774.310	242492.850	1472869.300

3	16:40:32	81.798%	122088.300	M 511725.870	T 91180163.000	T 8621465.700	T 71692603.000	T 108883540.000	T 3954438.800	94.456%	191077.900	246444.410	1465661.700
x		82.258%	121650.670	M 511080.650	T 91057160.000	T 8600204.400	T 71122255.000	T 108021530.000	T 3929304.000	95.325%	192132.050	246498.420	1468758.500
σ		0.518%	889.309	M 575.463	T 1591564.300	T 52147.348	T 506201.760	T 746748.410	T 28965.310	0.914%	1441.202	4032.851	3709.252
%RSD		0.630	0.731	M 0.113	T 1.748	T 0.606	T 0.712	T 0.691	T 0.737	0.958	0.750	1.636	0.253

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:39:49	5828.785	T 18852597.000	T 168661080.000	T 3297099.500	268348.590	344312.610	1347017.900	420449.560	941.130	33043.385	331.040	953.818
2	16:40:11	7796.915	T 19211696.000	T 171638790.000	3009375.200	269255.490	342844.070	1365795.700	422869.230	917.892	32867.172	342.582	1268.047
3	16:40:32	5833.625	T 19394274.000	T 173356510.000	T 3352575.200	274840.050	346547.340	1377531.800	419593.730	687.068	32799.703	362.698	1130.461
x		6486.442	T 19152855.000	T 171218790.000	T 3219683.300	270814.710	344568.010	1363448.500	420970.840	848.696	32903.420	345.440	1117.442
σ		1134.906	T 275590.420	T 2375724.100	T 184232.200	3515.414	1864.801	15391.802	1698.830	140.456	125.820	16.021	157.518
%RSD		17.497	T 1.439	T 1.388	T 5.722	1.298	0.541	1.129	0.404	16.550	0.382	4.638	14.096

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:39:49	1602805.700	147.778%	604699.600	46296.255	1791.729	439438.210	96.968%	1003855.800	226441.690	177582.440	529458.970	111.087%
2	16:40:11	1584111.600	147.122%	605096.650	45738.532	2201.949	442578.920	97.788%	1001750.200	223914.390	177236.760	528524.550	112.057%
3	16:40:32	1612808.500	148.209%	603415.940	46566.591	1354.751	442205.810	97.741%	1011300.500	226651.660	178211.590	524595.940	110.333%
x		1599908.600	147.703%	604404.070	46200.459	1782.810	441407.650	97.499%	1005635.500	225669.250	177676.930	527526.490	111.159%
σ		14566.203	0.547%	878.468	422.260	423.669	1715.751	0.460%	5017.701	1523.374	494.238	2580.573	0.864%
%RSD		0.910	0.371	0.145	0.914	23.764	0.389	0.472	0.499	0.675	0.278	0.489	0.778

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:39:49	629.603	T 6942536.700	4960519.100	104.210%	0.000	353001.710	TM 3706355.300
2	16:40:11	663.642	T 6856605.700	4896074.400	106.319%	0.000	349271.830	TM 3675247.500
3	16:40:32	607.238	T 6836906.200	4921771.000	106.599%	4.690	348344.260	TM 3678442.800
x		633.494	T 6878682.900	4926121.500	105.710%	1.563	350205.930	TM 3686681.900
σ		28.403	T 56169.398	32441.864	1.306%	2.708	2465.234	TM 17112.475
%RSD		4.484	T 0.817	0.659	1.236	173.205	0.704	TM 0.464

MB 200-116489/1-A 5/10/2017 4:45:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:45:34	98.008%	46.353	6993.287	866465.230	7578.944	1117209.300	207085.820	50975.137	99.726%	260.538	2986.525	55839.574
2	16:45:56	99.052%	24.871	5905.606	861748.640	7984.365	1093264.200	204234.190	47797.999	101.551%	152.570	3162.674	54932.321
3	16:46:17	98.807%	22.591	5758.374	808749.370	7646.073	1091211.200	193440.140	48521.884	102.932%	242.787	3209.551	54190.847
x		98.622%	31.272	6219.089	845654.410	7736.461	1100561.600	201586.720	49098.340	101.403%	218.631	3119.583	54987.581
σ		0.546%	13.111	674.505	32047.596	217.299	14453.831	7197.778	1665.166	1.608%	57.895	117.591	825.751
%RSD		0.554	41.925	10.846	3.790	2.809	1.313	3.571	3.391	1.586	26.481	3.769	1.502

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:45:34	5423.508	13966.040	86959.506	355.969	76417.055	95912.366	2419.478	-2300.240	858.541	27.239	304.548	1348.579
2	16:45:56	5506.246	13922.117	78350.350	257.968	76119.637	93932.437	2088.652	-2277.046	880.973	-20.566	307.766	1472.265
3	16:46:17	5272.899	13797.203	61650.835	247.431	75403.652	92682.442	2089.563	-2502.351	923.029	-15.044	267.676	1302.660
x		5400.884	13895.120	75653.564	287.123	75980.114	94175.748	2199.231	-2359.879	887.514	-2.790	293.330	1374.501
σ		118.307	87.596	12868.050	59.855	520.909	1628.651	190.740	123.928	32.738	26.152	22.275	87.724
%RSD		2.191	0.630	17.009	20.847	0.686	1.729	8.673	5.251	3.689	937.235	7.594	6.382

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:45:34	4205.013	101.262%	31377.190	-14.576	-108.020	-32.656	103.269%	1534.921	451.794	33.983	890.853	104.845%
2	16:45:56	4470.053	102.490%	30852.534	4.289	-179.737	46.825	104.626%	1567.584	497.212	41.682	768.619	107.575%
3	16:46:17	4502.031	103.825%	31675.459	-0.662	-142.064	-9.433	105.166%	1569.056	434.767	38.243	769.134	107.320%
x		4392.366	102.526%	31301.728	-3.650	-143.274	1.579	104.354%	1557.187	461.257	37.969	809.535	106.580%
σ		163.038	1.282%	416.620	9.781	35.874	40.869	0.977%	19.297	32.280	3.856	70.423	1.508%
%RSD		3.712	1.250	1.331	267.980	25.039	2588.529	0.936	1.239	6.998	10.157	8.699	1.415

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:45:34	294.909	2420.303	4218.426	104.013%	0.000	171.273	30857.581
2	16:45:56	336.597	2103.930	4059.092	104.814%	0.000	117.256	30507.037
3	16:46:17	239.740	1724.102	3966.826	104.547%	4.783	175.025	30287.661
x		290.415	2082.778	4081.448	104.458%	1.594	154.518	30550.760
σ		48.585	348.582	127.281	0.408%	2.761	32.324	287.465
%RSD		16.729	16.736	3.119	0.390	173.205	20.919	0.941

LCS 200-116489/2-A 5/10/2017 4:50:56 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:51:18	96.555%	3316.224	165451.430	T 19137982.000	701184.060	1824412.600	T 27859898.000	663708.720	100.899%	143.775	238291.110	179088.720
2	16:51:39	95.291%	3122.397	168253.200	T 19421627.000	725369.740	1852956.100	T 28433560.000	680433.460	100.134%	139.699	236862.170	180900.290
3	16:52:00	95.128%	3135.784	172054.380	T 19711444.000	721052.960	T 1967477.700	T 28524217.000	679120.650	98.596%	202.559	240489.650	182470.350
x		95.658%	3191.468	168586.330	T 19423685.000	715868.920	T 1881615.400	T 28272558.000	674420.940	99.877%	162.011	238547.640	180819.790
σ		0.781%	108.249	3314.056	T 286736.400	12899.323	T 75716.098	T 360237.780	9300.251	1.173%	35.174	1827.294	1692.252
%RSD		0.816	3.392	1.966	T 1.476	1.802	T 4.024	T 1.274	1.379	1.174	21.711	0.766	0.936

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:51:18	4115.586	147532.400	T 13693604.000	57924.156	26006.230	193746.440	281508.790	40949.552	791.285	3130.269	282.262	1236.573
2	16:51:39	4519.387	148952.710	T 13973869.000	61835.230	26596.973	197804.630	285455.000	40044.893	726.206	3092.080	301.100	1175.059
3	16:52:00	4072.046	151228.990	T 14094169.000	61446.743	27365.869	196620.450	288342.720	39500.237	744.055	3100.549	283.821	1146.105
x		4235.673	149238.040	T 13920547.000	60402.043	26656.358	196057.170	285102.170	40164.894	753.849	3107.633	289.061	1185.913
σ		246.666	1864.740	T 205536.800	2154.686	681.762	2086.908	3430.596	732.072	33.627	20.055	10.455	46.200
%RSD		5.824	1.250	T 1.476	3.567	2.558	1.064	1.203	1.823	4.461	0.645	3.617	3.896

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:51:18	450531.150	99.879%	266980.210	53681.846	118.645	13232.132	100.971%	1386.613	100792.590	77698.128	104805.080	104.409%
2	16:51:39	453457.520	101.970%	265305.200	54662.796	45.498	12941.960	101.961%	1294.686	100731.710	77529.124	104079.160	106.108%
3	16:52:00	460716.860	101.810%	266433.680	54324.441	-40.149	12845.485	102.531%	1570.364	98864.499	77995.344	104587.200	107.010%
x		454901.840	101.220%	266239.700	54223.028	41.331	13006.526	101.821%	1417.221	100129.600	77740.865	104490.480	105.842%
σ		5244.213	1.164%	854.186	498.276	79.479	201.247	0.789%	140.365	1096.033	236.030	372.498	1.321%
%RSD		1.153	1.150	0.321	0.919	192.298	1.547	0.775	9.904	1.095	0.304	0.356	1.248

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:51:18	118761.120	280099.560	189974.460	101.249%	0.000	392353.380	203984.620
2	16:51:39	117757.690	282267.320	192026.930	101.695%	0.000	395854.780	200206.260
3	16:52:00	115896.650	275941.620	188970.330	103.882%	0.000	389642.430	198990.360
x		117471.820	279436.170	190323.910	102.275%	0.000	392616.870	201060.410
σ		1453.474	3214.608	1557.974	1.409%	0.000	3114.543	2604.390
%RSD		1.237	1.150	0.819	1.378	0.000	0.793	1.295

200-38498-A-1-A 5/10/2017 4:56:41 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	16:57:03	87.442%	1424.986	16740.857	T 1438549.500	T 5370805.000	T 219136290.000	T 21598047.000	T 6020304.300	115.060%	21787.638	434721.450	340131.640
2	16:57:24	88.338%	1449.379	16018.491	T 1492898.800	T 5558245.700	T 225833320.000	T 22151692.000	T 6071701.400	113.434%	21597.551	447249.530	342680.560
3	16:57:45	88.791%	1388.100	16507.689	T 1442239.300	T 5420902.400	T 219498970.000	T 21773748.000	T 6071762.000	115.856%	25479.651	429151.540	339120.240
x		88.191%	1420.822	16422.346	T 1457895.800	T 5449984.400	T 221489530.000	T 21841162.000	T 6054589.200	114.783%	22954.947	437040.840	340644.150
σ		0.687%	30.851	368.668	T 30369.527	T 97045.481	T 3766203.400	T 282911.970	T 29691.677	1.235%	2188.523	9269.251	1834.661
%RSD		0.778	2.171	2.245	T 2.083	T 1.781	T 1.700	T 1.295	T 0.490	1.076	9.534	2.121	0.539

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	16:57:03	17102.282	T 25571597.000	T 710660680.000	295017.540	144770.130	T 6753995.700	1465346.400	10493.168	437.430	807.984	432.993	1237.085
2	16:57:24	18326.532	T 25996715.000	T 731996430.000	302660.290	145848.390	T 6904791.600	1500949.300	11021.851	422.888	796.721	389.546	1257.849
3	16:57:45	17890.025	T 25761051.000	T 726294100.000	298719.810	146367.990	T 6724829.700	1468711.400	10596.494	497.446	736.186	406.902	1608.470
x		17772.947	T 25776454.000	T 722983740.000	298799.210	145662.170	T 6794539.000	1478335.700	10703.838	452.588	780.297	409.813	1367.801
σ		620.466	T 212977.190	T 11046380.000	3821.993	815.044	T 96588.764	19656.076	280.211	39.522	38.614	21.870	208.683
%RSD		3.491	T 0.826	T 1.528	1.279	0.560	T 1.422	1.330	2.618	8.733	4.949	5.336	15.257

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	16:57:03	1331995.700	251.206%	7558.215	19731.801	-756.186	8930.708	97.694%	68102.171	7498.386	5555.980	921741.630	123.590%

2	16:57:24	1307558.200	249.134%	7614.381	20210.818	-592.929	8812.894	98.450%	68340.159	6996.766	5559.517	929697.390	124.898%
3	16:57:45	1309699.300	249.872%	7216.643	19808.419	-455.303	8686.994	99.411%	68280.765	6789.860	5590.068	913613.480	125.336%
x		1316417.700	250.071%	7463.080	19917.013	-601.473	8810.199	98.518%	68241.032	7095.004	5568.522	921684.170	124.608%
σ		13533.345	1.050%	215.260	257.311	150.623	121.880	0.861%	123.869	364.335	18.743	8042.109	0.908%
%RSD		1.028	0.420	2.884	1.292	25.042	1.383	0.874	0.182	5.135	0.337	0.873	0.729

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	16:57:03	1553.449	10165.511	4260594.900	104.862%	0.000	326044.000	137144.350
2	16:57:24	1660.496	10412.838	4241709.300	106.862%	4.679	323456.130	138459.070
3	16:57:45	1590.581	10412.044	4257514.000	108.154%	0.000	323680.650	136899.230
x		1601.509	10330.131	4253272.800	106.626%	1.560	324393.590	137500.880
σ		54.354	142.566	10132.025	1.658%	2.701	1433.693	838.812
%RSD		3.394	1.380	0.238	1.555	173.205	0.442	0.610

200-38498-A-2-A 5/10/2017 5:02:26 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:02:48	95.609%	499.183	8529.678	968512.020	2100405.500	T 94628898.000	T 10547724.000	1503725.900	110.056%	19433.452	182600.150	147690.470
2	17:03:10	93.097%	597.960	9453.175	959753.300	2071751.400	T 95122206.000	T 10568178.000	1498213.800	110.379%	19214.993	177679.930	145110.820
3	17:03:31	93.582%	538.362	8933.271	T 1086856.400	T 2186294.700	T 95368355.000	T 10631612.000	1503977.100	109.120%	19784.124	185985.800	149534.300
x		94.096%	545.168	8972.041	T 1005040.600	T 2119483.800	T 95039820.000	T 10582505.000	1501972.300	109.852%	19477.523	182088.630	147445.200
σ		1.333%	49.739	462.967	T 70989.794	T 59607.295	T 376550.070	T 43740.846	3257.326	0.654%	287.113	4176.494	2221.920
%RSD		1.417	9.124	5.160	T 7.063	T 2.812	T 0.396	T 0.413	0.217	0.595	1.474	2.294	1.507

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:02:48	10821.861	T 19743139.000	T 337543840.000	124529.510	61118.167	2425678.100	582175.550	5542.235	605.674	445.798	337.779	1485.666
2	17:03:10	10048.642	T 19844778.000	T 344605260.000	124466.710	61553.450	2418890.600	581008.200	5680.993	571.860	454.939	338.042	1448.007
3	17:03:31	10396.935	T 20031712.000	T 345412340.000	125450.570	61565.806	2454823.500	588427.490	5890.267	565.904	448.916	362.893	1574.381
x		10422.479	T 19873210.000	T 342520480.000	124815.600	61412.474	2433130.700	583870.410	5704.499	581.146	449.884	346.238	1502.685
σ		387.242	T 146372.470	T 4328750.300	550.797	254.953	19090.592	3989.470	175.203	21.450	4.647	14.424	64.884
%RSD		3.715	T 0.737	T 1.264	0.441	0.415	0.785	0.683	3.071	3.691	1.033	4.166	4.318

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:02:48	422536.210	164.456%	3047.671	7064.800	-284.369	2851.082	102.583%	28546.830	5141.738	3923.412	409022.200	115.392%
2	17:03:10	417603.000	165.123%	2952.923	7376.880	-343.947	2907.762	102.651%	28025.009	5056.029	4057.188	412613.560	114.705%
3	17:03:31	416293.730	163.417%	3089.491	7731.658	-332.200	3123.451	103.889%	28337.587	5339.093	3968.034	409245.710	115.579%
x		418810.980	164.332%	3030.028	7391.113	-320.172	2960.765	103.041%	28303.142	5178.953	3982.878	410293.830	115.225%
σ		3291.893	0.860%	69.972	333.657	31.557	143.713	0.735%	262.610	145.156	68.112	2012.059	0.460%
%RSD		0.786	0.523	2.309	4.514	9.856	4.854	0.713	0.928	2.803	1.710	0.490	0.399

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:02:48	902.245	4348.301	1703141.600	106.311%	0.000	125562.990	49029.129
2	17:03:10	886.309	4262.084	1722289.100	106.245%	0.000	128689.920	48492.352
3	17:03:31	909.306	4244.574	1739700.200	105.925%	0.000	131803.340	49980.065
x		899.286	4284.986	1721710.300	106.160%	0.000	128685.420	49167.182
σ		11.781	55.527	18286.162	0.206%	0.000	3120.178	753.403
%RSD		1.310	1.296	1.062	0.194	0.000	2.425	1.532

CCV 1037150 5/10/2017 5:08:11 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:08:33	88.032%	208430.260	105154.230	T 36502189.000	T 10902756.000	T 109966950.000	T 54117953.000	T 4307084.100	93.585%	65291.991	T 6737299.900	1773311.500
2	17:08:54	87.220%	207935.780	105000.210	T 36793587.000	T 11078529.000	T 111113770.000	T 54946619.000	T 4411687.800	92.941%	64976.380	T 6759967.000	1770098.600

3	17:09:15	86.542%	208594.510	103858.400	┬35910302.000	┬10815359.000	┬109362160.000	┬53868675.000	┬4354823.700	92.851%	64490.537	┬6727849.300	1762116.700
x		87.265%	105.136%	104.504%	┬99.021%	┬102.897%	┬104.582%	┬100.904%	┬101.464%	93.126%	64919.636	┬107.908%	97.116%
σ		0.746%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	0.400%	403.729	┬n/a	n/a
%RSD		0.855	0.165	0.676	┬1.236	┬1.226	┬0.808	┬1.039	┬1.202	0.430	0.622	┬0.245	0.326
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:08:33	6442.530	┬9819734.500	┬195705150.000	┬3367715.600	1648812.100	2353195.900	1924883.400	228566.250	954.800	18350.149	318.785	655.354
2	17:08:54	8982.657	┬9879120.100	┬198238080.000	┬3363065.700	1661307.000	2390247.300	1959238.200	230062.350	1220.847	18573.848	346.155	805.230
3	17:09:15	7253.190	┬10000171.000	┬197491040.000	┬3345249.700	1649737.800	2361293.300	1947052.800	224391.170	970.364	18090.598	354.874	849.000
x		7559.459	┬105.206%	┬106.096%	┬107.171%	103.188%	99.099%	100.231%	101.018%	1048.670	106.550%	339.938	769.861
σ		1297.463	┬n/a	┬n/a	┬n/a	n/a	n/a	n/a	n/a	149.313	n/a	18.831	101.552
%RSD		17.163	┬0.929	┬0.660	┬0.353	0.421	0.823	0.896	1.291	14.238	1.319	5.539	13.191
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:08:33	1777000.200	94.452%	┬3717993.300	521313.200	2274.895	266727.070	97.559%	2050175.000	1294848.600	1004115.800	1280791.500	103.379%
2	17:08:54	1754499.200	92.960%	┬3774856.900	526800.440	2647.572	265456.900	98.368%	2042634.700	1299029.600	1006020.000	1270605.200	102.853%
3	17:09:15	1786395.700	94.872%	┬3725785.500	532195.430	2169.187	271373.220	97.360%	2077526.000	1302748.600	1015714.300	1297604.200	103.841%
x		1772631.700	94.095%	┬104.087%	102.303%	2363.885	102.545%	97.762%	2056778.600	1298875.600	93.064%	100.886%	103.357%
σ		16390.820	1.005%	┬n/a	n/a	251.301	n/a	0.534%	18359.059	3952.248	n/a	n/a	0.494%
%RSD		0.925	1.068	┬0.824	1.033	10.631	1.163	0.546	0.893	0.304	0.617	1.063	0.478
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	17:08:33	89078.965	2768882.200	┬25292527.000	99.679%	15.048	376343.000	192223.830					
2	17:08:54	88281.499	2761429.200	┬24918406.000	102.736%	0.000	374349.510	191264.580					
3	17:09:15	89182.160	2825367.100	┬25586848.000	100.685%	0.000	378924.680	194131.820					
x		99.602%	91.834%	┬106.360%	101.033%	5.016	96.183%	95.320%					
σ		n/a	n/a	┬n/a	1.558%	8.688	n/a	n/a					
%RSD		0.555	1.255	┬1.326	1.542	173.205	0.609	0.758					

CCB 1035925 5/10/2017 5:13:55 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	17:14:17	92.743%	-8.696	1229.136	-2360.433	1017.898	8706.789	-13595.898	1348.291	97.865%	132.932	1875.729	-52.343
2	17:14:38	93.583%	-3.958	870.617	-4251.604	929.670	6996.743	-2329.715	1068.974	98.288%	71.298	1326.964	133.858
3	17:14:59	93.682%	-12.040	763.851	9244.981	906.960	6625.685	-645.059	2410.647	97.767%	117.633	1865.319	139.774
x		93.336%	-8.232	954.535	877.648	951.509	7443.072	-5523.557	1609.304	97.973%	107.288	1689.337	73.763
σ		0.516%	4.061	243.730	7307.758	58.605	1110.025	7041.416	707.896	0.277%	32.093	313.868	109.251
%RSD		0.553	49.334	25.534	832.653	6.159	14.914	127.480	43.988	0.283	29.913	18.579	148.111
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	17:14:17	5849.402	662.826	23640.608	233.044	126.418	161.283	572.571	-2326.861	1074.814	30.402	319.625	1389.377
2	17:14:38	5806.667	539.770	24082.772	210.978	94.420	162.585	568.537	-2220.351	1060.285	2.415	325.539	1609.008
3	17:14:59	5823.456	481.265	22832.828	264.130	126.761	157.050	588.893	-2053.495	960.646	20.039	308.953	1448.452
x		5826.508	561.287	23518.736	236.051	115.866	160.306	576.667	-2200.236	1031.915	17.619	318.039	1482.279
σ		21.530	92.673	633.821	26.703	18.574	2.894	10.779	137.789	62.147	14.150	8.406	113.656
%RSD		0.370	16.511	2.695	11.312	16.031	1.805	1.869	6.262	6.022	80.311	2.643	7.668
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	17:14:17	-17.479	96.342%	493.386	46.465	-150.012	-10.052	99.493%	1789.201	533.126	93.810	157.937	99.668%
2	17:14:38	134.663	95.966%	350.055	75.901	-172.256	31.632	100.143%	1428.041	516.386	75.754	111.598	101.236%
3	17:14:59	82.839	97.671%	264.350	46.434	-171.004	5.531	99.531%	1688.029	497.678	73.149	37.287	100.468%
x		66.674	96.659%	369.264	56.267	-164.424	9.037	99.722%	1635.090	515.730	80.904	102.274	100.457%
σ		77.349	0.896%	115.720	17.003	12.496	21.062	0.365%	186.309	17.733	11.252	60.863	0.784%
%RSD		116.010	0.927	31.338	30.219	7.600	233.061	0.366	11.394	3.438	13.908	59.510	0.780

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:14:17	3.192	1047.616	2530.604	99.242%	0.000	19.756	35.305
2	17:14:38	46.400	860.315	2063.523	102.430%	0.000	18.188	19.407
3	17:14:59	7.530	759.275	1935.227	101.126%	0.000	48.483	-0.056
x		19.041	889.068	2176.452	100.933%	0.000	28.809	18.219
σ		23.793	146.305	313.342	1.603%	0.000	17.056	17.711
%RSD		124.957	16.456	14.397	1.588	0.000	59.205	97.211

CCVL 1037148 5/10/2017 5:19:39 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:20:00	96.441%	310.165	17473.888	T 1982580.200	71299.874	181563.940	T 2888017.100	67921.996	101.092%	89.142	25674.872	18858.528
2	17:20:21	96.953%	292.655	17514.642	T 1978273.800	70409.736	182643.450	T 2913618.200	66585.085	100.815%	133.991	25681.390	19097.104
3	17:20:44	96.190%	321.569	19368.425	T 1976717.000	73502.913	181338.390	T 2863602.300	67333.028	102.757%	92.692	25942.838	18881.366
x		96.528%	97.193%	113.063%	T 107.676%	101.282%	103.596%	T 107.327%	93.989%	101.555%	105.275	103.104%	104.039%
σ		0.389%	n/a	n/a	T n/a	n/a	n/a	T n/a	n/a	1.050%	24.932	n/a	n/a
%RSD		0.402	4.726	5.973	T 0.153	2.220	0.384	T 0.866	0.996	1.034	23.683	0.593	0.695

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:20:00	8757.761	14276.385	1282913.000	6028.473	2925.214	9628.904	30177.887	2285.299	1495.655	384.915	309.276	1345.630
2	17:20:21	8681.989	14847.258	1298555.900	6100.060	2760.209	9647.380	30023.083	2009.138	1592.467	340.398	320.528	1461.868
3	17:20:44	8314.928	14208.847	1272036.400	5971.912	2703.964	9894.666	29706.980	2476.554	1530.332	403.867	283.306	1254.014
x		8584.893	95.938%	103.691%	96.260%	109.087%	101.721%	96.588%	100.143%	1539.485	109.348%	304.370	1353.837
σ		236.846	n/a	n/a	n/a	n/a	n/a	n/a	n/a	49.051	n/a	19.090	104.170
%RSD		2.759	2.428	1.038	1.064	4.112	1.526	0.801	10.412	3.186	8.656	6.272	7.694

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:20:00	43294.452	98.336%	26923.579	5191.954	-253.011	1350.297	102.014%	2745.034	10170.384	7713.198	9973.998	102.159%
2	17:20:21	43137.022	99.479%	25952.554	5547.549	-210.035	1322.538	103.580%	2399.339	10208.281	7587.709	9947.870	101.629%
3	17:20:44	42810.440	97.197%	27266.608	5401.284	-163.169	1404.200	103.423%	2509.379	10461.246	7658.408	9856.679	103.963%
x		88.129%	98.337%	92.946%	104.489%	-208.738	104.057%	103.006%	2551.250	10279.971	88.268%	97.566%	102.584%
σ		n/a	1.141%	n/a	n/a	44.935	n/a	0.863%	176.610	158.129	n/a	n/a	1.224%
%RSD		0.573	1.160	2.551	3.322	21.527	3.055	0.837	6.922	1.538	0.822	0.621	1.193

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:20:00	10768.709	27499.306	19752.944	99.120%	0.000	37166.064	18748.878
2	17:20:21	11194.516	26608.663	20067.695	100.890%	0.000	38009.498	19432.304
3	17:20:44	11273.625	27533.265	19693.808	101.769%	0.000	37912.588	19343.165
x		124.200%	89.728%	104.389%	100.593%	0.000	96.291%	94.928%
σ		n/a	n/a	n/a	1.350%	0.000	n/a	n/a
%RSD		2.451	1.927	1.013	1.342	0.000	1.224	1.938

200-38498-A-3-A 5/10/2017 5:25:25 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:25:46	84.546%	1047.605	11293.148	T 1489790.200	T 8407604.600	T 180360320.000	T 27852104.000	T 15276466.000	108.817%	34631.299	313388.160	299740.380
2	17:26:08	86.528%	952.523	11419.042	T 1452885.400	T 8316851.800	T 179346770.000	T 27938835.000	T 15214090.000	108.978%	34566.380	322291.070	298015.650
3	17:26:30	84.675%	824.442	11310.950	T 1504286.800	T 8474828.400	T 181435010.000	T 28280060.000	T 15290319.000	107.809%	34866.858	324912.660	302727.330
x		85.250%	941.523	11341.047	T 1482320.800	T 8399761.600	T 180380700.000	T 28023666.000	T 15260292.000	108.535%	34688.179	320197.290	300161.120
σ		1.109%	111.987	68.130	T 26502.269	T 79279.830	T 1044269.900	T 226238.340	T 40606.861	0.634%	158.108	6040.815	2383.853
%RSD		1.301	11.894	0.601	T 1.788	T 0.944	T 0.579	T 0.807	T 0.266	0.584	0.456	1.887	0.794

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:25:46	27074.852	T 38293507.000	TM 1006404900.000	308521.360	154047.490	1440832.900	1238826.800	26905.931	542.877	252.683	399.957	1046.822
2	17:26:08	24689.641	T 38371175.000	TM 1001671600.000	310490.950	156669.630	1470711.000	1240328.400	27312.011	539.317	227.364	425.116	1314.804
3	17:26:30	24755.214	T 38852286.000	TM 1026352400.000	319389.050	158207.080	1464137.800	1260808.800	27809.628	461.781	313.150	403.272	467.260
x		25506.569	T 38505656.000	TM 1011476300.000	312800.450	156308.070	1458560.500	1246654.700	27342.523	514.658	264.399	409.448	942.962
σ		1358.569	T 302691.750	TM 13098668.000	5790.253	2103.230	15700.457	12280.803	452.620	45.828	44.077	13.669	433.212
%RSD		5.326	T 0.786	TM 1.295	1.851	1.346	1.076	0.985	1.655	8.905	16.671	3.338	45.942

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:25:46	2020846.400	186.078%	4796.178	1739.488	-637.684	3324.542	91.636%	135446.530	4101.968	3121.989	867672.710	110.611%

2	17:26:08	1984041.600	184.583%	4741.456	1701.854	-587.356	3518.572	93.623%	133224.880	3895.310	3133.257	851316.960	111.821%
3	17:26:30	1998843.000	183.767%	4945.664	2065.783	-753.439	3166.980	93.115%	132889.280	4418.735	3195.876	863388.580	111.307%
x		2001243.700	184.809%	4827.766	1835.708	-659.493	3336.698	92.791%	133853.560	4138.671	3150.374	860792.750	111.246%
σ		18519.483	1.172%	105.705	200.137	85.162	176.111	1.032%	1389.718	263.636	39.807	8481.239	0.607%
%RSD		0.925	0.634	2.190	10.902	12.913	5.278	1.112	1.038	6.370	1.264	0.985	0.546

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:25:46	1328.838	7836.641	T9381573.200	98.386%	0.000	317376.480	42817.229
2	17:26:08	1215.242	7677.465	T9371818.700	100.038%	4.998	316003.040	42305.538
3	17:26:30	1086.437	7943.451	T9193186.600	100.820%	0.000	318906.080	41872.610
x		1210.172	7819.186	T9315526.100	99.748%	1.666	317428.530	42331.792
σ		121.280	133.849	T106061.380	1.243%	2.886	1452.222	472.856
%RSD		10.022	1.712	T1.139	1.246	173.205	0.457	1.117

200-38498-A-4-A 5/10/2017 5:31:09 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:31:30	91.138%	1188.531	13799.470	T1179582.900	T7154266.200	T230221760.000	T33336870.000	T2815318.500	118.783%	46221.420	457115.930	355446.620
2	17:31:52	89.942%	1210.913	13754.667	T1221513.900	T7269294.500	T234250800.000	T34083324.000	T2852284.600	117.124%	46033.782	459517.460	365502.870
3	17:32:13	90.420%	1289.834	14241.349	T1193587.800	T7322220.600	T233545690.000	T34352411.000	T2886763.200	117.415%	47825.189	476879.530	367905.700
x		90.500%	1229.759	13931.829	T1198228.200	T7248593.800	T232672750.000	T33924202.000	T2851455.400	117.774%	46693.464	464504.300	362951.730
σ		0.602%	53.216	268.987	T21347.189	T85869.472	T2151701.600	T526137.920	T35729.567	0.886%	984.583	10784.313	6609.720
%RSD		0.665	4.327	1.931	T1.782	T1.185	T0.925	T1.551	T1.253	0.752	2.109	2.322	1.821

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:31:30	18961.294	T10231046.000	T690622850.000	365944.680	185458.240	T5543371.300	1836709.200	17097.460	552.112	375.938	427.386	1836.276
2	17:31:52	19782.464	T10401951.000	T705080930.000	378877.940	192402.590	T5658709.600	1875513.500	16890.212	534.473	372.142	421.702	1883.671
3	17:32:13	17162.962	T10366288.000	T702846230.000	379285.540	190846.500	T5702430.800	1888083.300	17211.996	517.224	382.669	414.648	1635.214
x		18635.573	T10333095.000	T699516670.000	374702.720	189569.110	T5634837.200	1866768.600	17066.556	534.603	376.916	421.245	1785.054
σ		1339.783	T90157.910	T7782899.900	7587.422	3644.145	T82172.954	26780.193	163.103	17.444	5.331	6.381	131.911
%RSD		7.189	T0.873	T1.113	2.025	1.922	T1.458	1.435	0.956	3.263	1.414	1.515	7.390

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:31:30	666631.600	237.081%	4909.773	6248.709	-543.338	13260.237	98.390%	190805.400	9258.892	7072.953	589223.510	121.621%
2	17:31:52	660822.340	239.339%	4889.113	5963.941	-520.985	13260.855	100.310%	192241.050	9158.783	6957.196	589816.730	122.999%
3	17:32:13	659483.430	238.117%	4700.648	5961.179	-603.597	13770.414	100.689%	189483.540	9245.332	6969.422	592524.650	124.194%
x		662312.460	238.179%	4833.178	6057.943	-555.973	13430.502	99.796%	190843.330	9221.002	6999.857	590521.630	122.938%
σ		3799.926	1.130%	115.238	165.214	42.731	294.373	1.232%	1379.143	54.309	63.597	1759.841	1.288%
%RSD		0.574	0.475	2.384	2.727	7.686	2.192	1.235	0.723	0.589	0.909	0.298	1.047

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:31:30	1078.222	11376.755	T6606389.800	101.608%	0.000	418351.610	93630.491
2	17:31:52	1114.059	10530.689	T6463399.500	105.365%	0.000	409434.580	91744.762
3	17:32:13	1267.691	11662.364	T6766817.600	101.210%	4.940	431585.590	96069.631
x		1153.324	11189.936	T6612202.300	102.727%	1.647	419790.600	93814.961
σ		100.653	588.514	T151792.530	2.293%	2.852	11145.396	2168.328
%RSD		8.727	5.259	T2.296	2.232	173.205	2.655	2.311

200-38498-A-5-A 5/10/2017 5:36:54 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:37:15	91.447%	916.322	9731.772	T2045163.900	T5447499.800	T189467620.000	T25218812.000	T2802668.500	113.493%	44271.227	315938.470	259060.910
2	17:37:37	90.234%	965.689	9402.948	T2097058.400	T5512838.200	T191328220.000	T25550435.000	T2818868.800	113.949%	44367.172	318255.960	258394.880

3	17:37:58	90.839%	898.200	9527.415	₸2077972.500	₸5426579.600	₸189025670.000	₸25125457.000	₸2781150.900	114.280%	44467.576	319868.060	260683.620
x		90.840%	926.737	9554.045	₸2073398.300	₸5462305.900	₸189940500.000	₸25298235.000	₸2800896.100	113.907%	44368.658	318020.830	259379.800
σ		0.607%	34.929	166.022	₸26247.934	₸44995.043	₸1221945.800	₸223344.070	₸18921.340	0.395%	98.183	1975.320	1177.221
%RSD		0.668	3.769	1.738	₸1.266	₸0.824	₸0.643	₸0.883	₸0.676	0.347	0.221	0.621	0.454

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:37:15	15333.986	₸11346504.000	₸529194530.000	222194.210	113707.950	815936.920	493810.110	10987.824	669.789	96.622	353.756	1717.674
2	17:37:37	14819.359	₸11158676.000	₸521921260.000	220431.700	117176.510	826156.340	495333.100	10450.959	617.390	118.840	359.117	1474.065
3	17:37:58	15268.120	₸11446032.000	₸533798330.000	225515.510	116265.460	812808.910	493962.900	10521.899	626.290	101.509	341.182	1506.937
x		15140.488	₸11317071.000	₸528304700.000	222713.810	115716.640	818300.720	494368.710	10653.561	637.823	105.657	351.352	1566.225
σ		280.049	₸145921.780	₸5988326.000	2581.431	1798.227	6980.627	838.677	291.646	28.039	11.676	9.206	132.184
%RSD		1.850	₸1.289	₸1.133	1.159	1.554	0.853	0.170	2.738	4.396	11.051	2.620	8.440

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:37:15	479756.230	192.607%	2565.783	1287.127	-404.784	1486.673	101.060%	34661.640	2631.450	1865.577	409450.820	117.636%
2	17:37:37	490460.630	201.173%	2429.798	1171.389	-548.932	1690.421	101.222%	35235.273	2994.352	1850.124	408514.630	120.249%
3	17:37:58	493506.420	200.131%	2575.752	1314.972	-614.757	1785.060	100.827%	35059.877	2558.787	1889.888	412035.550	119.610%
x		487907.760	197.970%	2523.778	1257.829	-522.824	1654.051	101.036%	34985.597	2728.196	1868.530	410000.330	119.165%
σ		7221.827	4.674%	81.541	76.143	107.393	152.482	0.198%	293.942	233.343	20.046	1823.648	1.362%
%RSD		1.480	2.361	3.231	6.054	20.541	9.219	0.196	0.840	8.553	1.073	0.445	1.143

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:37:15	335.221	6624.264	1702126.900	102.207%	0.000	325757.000	55901.635
2	17:37:37	392.795	6652.885	1715563.500	102.084%	0.000	322647.940	55983.460
3	17:37:58	474.733	6994.465	1694279.800	104.070%	0.000	330095.310	55880.397
x		400.916	6757.205	1703990.000	102.787%	0.000	326166.750	55921.830
σ		70.110	205.971	10763.522	1.113%	0.000	3740.556	54.419
%RSD		17.487	3.048	0.632	1.083	0.000	1.147	0.097

200-38498-A-6-A 5/10/2017 5:42:36 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:42:58	86.708%	1178.176	14613.898	916531.710	₸7658149.500	₸206370430.000	₸36863767.000	₸11781908.000	116.227%	50401.898	389366.670	319132.130
2	17:43:19	87.467%	1115.847	15189.385	₸1077001.000	₸7634779.600	₸207452740.000	₸37051252.000	₸11786584.000	115.090%	50336.911	403005.440	331435.450
3	17:43:41	89.122%	1118.955	14970.152	₸1077737.200	₸7698057.600	₸209022970.000	₸36852458.000	₸11937573.000	114.665%	51113.160	412845.420	331153.620
x		87.766%	1137.660	14924.478	₸1023756.600	₸7663662.200	₸207615380.000	₸36922492.000	₸11835355.000	115.327%	50617.323	401739.180	327240.400
σ		1.234%	35.123	290.450	₸92860.229	₸31997.182	₸1333727.000	₸111652.180	₸88554.135	0.808%	430.635	11790.482	7023.386
%RSD		1.407	3.087	1.946	₸9.071	₸0.418	₸0.642	₸0.302	₸0.748	0.700	0.851	2.935	2.146

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:42:58	19731.788	₸24362097.000	₸750664170.000	277266.440	145119.140	1845084.500	1057387.500	19755.322	575.792	250.712	377.331	1073.627
2	17:43:19	19511.637	₸24174193.000	₸757179830.000	285532.530	146317.880	1871491.000	1077145.500	19202.273	570.395	247.828	420.032	1157.426
3	17:43:41	18512.188	₸24128260.000	₸748781830.000	279627.710	145786.430	1875371.300	1086547.200	19680.242	608.116	217.163	420.969	1620.989
x		19251.871	₸24221517.000	₸752208610.000	280808.890	145741.150	1863982.300	1073693.400	19545.945	584.768	238.568	406.111	1284.014
σ		649.973	₸123893.380	₸4406879.400	4257.753	600.652	16480.562	14883.224	299.987	20.400	18.593	24.929	294.821
%RSD		3.376	₸0.512	₸0.586	1.516	0.412	0.884	1.386	1.535	3.489	7.794	6.138	22.961

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:42:58	1678110.600	206.551%	3476.449	2735.475	-677.853	3464.686	96.601%	161622.470	8628.756	6433.688	793490.430	113.776%
2	17:43:19	1669318.300	211.152%	3442.208	2742.533	-434.928	3607.189	97.256%	160284.060	8331.304	6332.774	784722.080	115.100%
3	17:43:41	1697949.600	208.653%	3389.458	2602.500	-634.091	3778.261	96.921%	159449.220	8693.338	6456.097	796540.210	115.800%
x		1681792.800	208.785%	3436.038	2693.503	-582.290	3616.712	96.926%	160451.920	8551.133	6407.520	791584.240	114.892%
σ		14666.511	2.304%	43.823	78.889	129.482	157.004	0.328%	1096.304	193.096	65.695	6135.327	1.028%
%RSD		0.872	1.103	1.275	2.929	22.237	4.341	0.338	0.683	2.258	1.025	0.775	0.895

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:42:58	1105.138	8554.656	3867093.800	97.158%	0.000	399415.850	60052.974
2	17:43:19	1069.814	8653.274	3850682.400	99.247%	10.076	396438.590	59244.380
3	17:43:41	1239.936	8309.736	3820231.000	99.907%	5.005	388868.340	57354.594
x		1138.296	8505.888	3846002.400	98.770%	5.027	394907.590	58883.982
σ		89.777	176.885	23779.375	1.435%	5.038	5437.871	1384.821
%RSD		7.887	2.080	0.618	1.453	100.221	1.377	2.352

200-38498-A-7-A 5/10/2017 5:48:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:48:41	92.942%	1102.124	10827.671	T 1016852.000	T 6648229.500	T 251767410.000	T 29946987.000	T 2270782.000	119.447%	49440.860	439368.350	357151.240
2	17:49:02	89.048%	1235.071	11107.063	T 1004950.400	T 6696757.300	T 259744520.000	T 30736843.000	T 2287721.200	118.405%	49600.606	435873.280	366841.390
3	17:49:24	90.381%	1304.247	11740.030	912757.220	T 6802930.500	T 262610450.000	T 30289812.000	T 2306857.400	118.069%	50995.269	451071.080	371507.260
x		90.790%	1213.814	11224.921	T 978186.550	T 6715972.500	T 258040800.000	T 30324547.000	T 2288453.500	118.640%	50012.245	442104.240	365166.630
σ		1.979%	102.724	467.459	T 56975.077	T 79120.259	T 5618708.000	T 396072.160	T 18048.888	0.719%	855.063	7959.721	7323.080
%RSD		2.180	8.463	4.164	T 5.825	T 1.178	T 2.177	T 1.306	T 0.789	0.606	1.710	1.800	2.005

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:48:41	17676.477	T 23399308.000	T 693160860.000	298535.870	146187.520	662787.170	634752.260	11208.312	549.602	146.908	433.037	1522.042
2	17:49:02	19101.714	T 23901522.000	T 704610370.000	302181.640	148516.770	674885.900	646574.330	11119.112	514.365	128.399	412.174	1727.505
3	17:49:24	18343.786	T 24080012.000	T 712909250.000	307879.640	150366.090	685869.260	653911.720	11135.200	507.500	165.563	396.144	1284.916
x		18373.992	T 23793614.000	T 703560160.000	302865.720	148356.790	674514.110	645079.440	11154.208	523.822	146.957	413.785	1511.487
σ		713.098	T 352948.380	T 9915995.200	4709.297	2093.872	11545.536	9666.816	47.541	22.588	18.582	18.499	221.483
%RSD		3.881	T 1.483	T 1.409	1.555	1.411	1.712	1.499	0.426	4.312	12.644	4.471	14.653

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:48:41	601015.540	256.869%	3928.852	2432.092	-458.128	1975.343	98.954%	58703.743	3946.249	2657.313	623958.540	123.210%
2	17:49:02	618160.500	261.200%	3943.422	2320.063	-769.780	2310.802	98.140%	58013.621	3690.132	2765.574	641708.300	126.693%
3	17:49:24	604433.950	260.407%	3902.110	2280.396	-682.801	2274.798	100.470%	58272.891	3830.542	2747.034	630442.750	124.388%
x		607870.000	259.492%	3924.795	2344.184	-636.903	2186.981	99.188%	58330.085	3822.307	2723.307	632036.530	124.764%
σ		9074.266	2.306%	20.953	78.672	160.816	184.166	1.183%	348.598	128.257	57.899	8981.572	1.772%
%RSD		1.493	0.889	0.534	3.356	25.250	8.421	1.192	0.598	3.355	2.126	1.421	1.420

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:48:41	556.010	10806.812	2919510.400	102.408%	0.000	425302.060	102569.690
2	17:49:02	526.764	11326.193	2960094.600	102.683%	0.000	424513.530	105570.070
3	17:49:24	562.074	10961.373	2943141.700	105.041%	0.000	423712.730	103867.450
x		548.282	11031.459	2940915.600	103.378%	0.000	424509.440	104002.400
σ		18.881	266.689	20383.448	1.448%	0.000	794.673	1504.735
%RSD		3.444	2.418	0.693	1.400	0.000	0.187	1.447

200-38498-A-7-A SD@5 5/10/2017 5:54:02 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	17:54:24	95.685%	266.186	1732.137	131455.140	1425158.400	T 60525102.000	T 7137750.600	464599.220	109.297%	11398.694	100765.720	82365.812
2	17:54:46	95.679%	227.012	1539.044	146073.400	1457632.400	T 61157376.000	T 7241092.700	482772.440	108.622%	11969.248	101450.480	85567.551
3	17:55:07	94.421%	207.223	1790.038	140307.410	1436174.200	T 60982738.000	T 7165382.600	477470.700	108.829%	11342.717	99430.654	83519.947
x		95.262%	233.474	1687.073	139278.650	1439655.000	T 60888406.000	T 7181408.600	474947.450	108.916%	11570.220	100548.950	83817.770
σ		0.728%	30.008	131.425	7363.230	16514.444	T 326522.070	T 53502.521	9345.669	0.346%	346.701	1027.213	1621.514
%RSD		0.765	12.853	7.790	5.287	1.147	T 0.536	T 0.745	1.968	0.318	2.996	1.022	1.935

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	17:54:24	8479.248	T 5409763.500	T 164973400.000	69669.022	33966.738	157208.010	159035.080	3460.400	854.642	108.240	325.486	1241.141
2	17:54:46	8923.628	T 5541423.800	T 168132560.000	69556.848	34788.767	161452.780	162385.630	3830.399	845.446	82.513	382.712	1569.263
3	17:55:07	8738.983	T 5540423.600	T 167445080.000	70543.016	35095.542	158675.470	161770.840	3650.359	849.936	67.209	353.636	1688.916
x		8713.953	T 5497203.600	T 166850350.000	69922.962	34617.016	159112.080	161063.850	3647.053	850.008	85.987	353.945	1499.773
σ		223.245	T 75727.021	T 1661432.700	539.904	583.672	2155.804	1783.653	185.022	4.598	20.735	28.614	231.835
%RSD		2.562	T 1.378	T 0.996	0.772	1.686	1.355	1.107	5.073	0.541	24.114	8.084	15.458

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	17:54:24	121771.130	136.222%	1370.166	445.153	-294.077	516.325	101.234%	12581.181	1058.294	511.273	124611.830	105.665%

2	17:54:46	125084.700	133.413%	1469.865	420.124	-311.812	607.750	100.207%	12924.900	1138.520	506.278	127759.610	106.476%
3	17:55:07	119573.190	134.249%	1571.461	405.055	-308.617	501.183	102.508%	12527.407	1010.439	532.799	124304.600	106.602%
x		122143.010	134.628%	1470.497	423.444	-304.835	541.752	101.317%	12677.829	1069.084	516.783	125558.680	106.248%
σ		2774.510	1.442%	100.649	20.254	9.453	57.655	1.152%	215.653	64.718	14.093	1912.241	0.508%
%RSD		2.272	1.071	6.845	4.783	3.101	10.642	1.138	1.701	6.054	2.727	1.523	0.479

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	17:54:24	135.864	1588.859	589668.370	98.958%	0.000	83827.641	20722.778
2	17:54:46	148.330	1600.640	603569.870	98.490%	0.000	87231.096	20877.136
3	17:55:07	101.159	1609.573	585893.040	102.137%	0.000	83504.682	20347.404
x		128.451	1599.691	593043.760	99.862%	0.000	84854.473	20649.106
σ		24.443	10.390	9309.270	1.984%	0.000	2064.540	272.442
%RSD		19.029	0.649	1.570	1.987	0.000	2.433	1.319

200-38498-A-7-A PDS 5/10/2017 5:59:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:00:06	89.097%	4599.389	176290.090	T 17057995.000	T 7048080.100	T 253660820.000	T 52915142.000	T 2873069.100	119.083%	48141.116	637647.060	507960.690
2	18:00:27	88.346%	4429.646	179520.510	T 17130835.000	T 7199770.400	T 258891480.000	T 54780173.000	T 2901191.200	117.397%	48383.756	626579.510	499709.580
3	18:00:49	88.982%	4582.943	177200.440	T 17240257.000	T 7256709.900	T 258216630.000	T 54059954.000	T 2907070.400	117.729%	48487.144	640633.560	509083.880
x		88.808%	4537.326	177670.350	T 17143029.000	T 7168186.800	T 256922980.000	T 53918423.000	T 2893776.900	118.070%	48337.339	634953.380	505584.720
σ		0.404%	93.615	1665.687	T 91740.829	T 107841.300	T 2845192.900	T 940536.380	T 18172.766	0.893%	177.622	7404.123	5118.915
%RSD		0.455	2.063	0.938	T 0.535	T 1.504	T 1.107	T 1.744	T 0.628	0.757	0.367	1.166	1.012

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:00:06	17515.819	T 23380043.000	T 694351970.000	341685.810	165142.280	730990.480	847558.170	27155.537	600.438	1307.688	472.322	1573.696
2	18:00:27	19664.773	T 23657994.000	T 698574040.000	345140.650	166518.330	736088.900	866373.000	27266.589	619.146	1275.053	427.295	1989.565
3	18:00:49	20073.177	T 23585311.000	T 700549320.000	347193.410	168494.270	735310.990	860323.740	27083.679	590.954	1271.901	432.275	1648.936
x		19084.590	T 23541116.000	T 697825110.000	344673.290	166718.290	734130.120	858084.970	27168.602	603.513	1284.881	443.964	1737.399
σ		1373.856	T 144149.930	T 3165826.900	2783.382	1684.918	2746.693	9605.130	92.152	14.346	19.814	24.685	221.599
%RSD		7.199	T 0.612	T 0.454	0.808	1.011	0.374	1.119	0.339	2.377	1.542	5.560	12.755

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:00:06	1057988.500	254.539%	106916.890	56159.490	-405.771	14566.971	97.922%	56167.790	99096.861	79082.209	727056.400	123.473%
2	18:00:27	1049542.600	252.445%	107359.880	55038.969	-666.918	15290.047	99.231%	57558.019	98992.667	79462.752	726751.450	127.479%
3	18:00:49	1073962.800	254.561%	106827.680	55554.913	-605.142	15091.843	98.319%	58051.036	99426.943	80617.077	731339.980	125.661%
x		1060498.000	253.849%	107034.820	55584.457	-559.277	14982.954	98.491%	57258.948	99172.157	79720.680	728382.610	125.538%
σ		12401.995	1.215%	285.024	560.844	136.481	373.634	0.671%	976.594	226.718	799.281	2565.695	2.006%
%RSD		1.169	0.479	0.266	1.009	24.403	2.494	0.681	1.706	0.229	1.003	0.352	1.598

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:00:06	91406.926	277516.380	3050721.400	102.333%	0.000	790202.840	292691.110
2	18:00:27	89580.701	278088.140	3065487.000	103.055%	0.000	798156.160	294070.250
3	18:00:49	95223.895	279887.460	3074641.400	104.635%	0.000	790534.570	289528.770
x		92070.507	278497.330	3063616.600	103.341%	0.000	792964.520	292096.710
σ		2879.525	1237.368	12069.190	1.177%	0.000	4499.149	2328.357
%RSD		3.128	0.444	0.394	1.139	0.000	0.567	0.797

200-38498-A-7-B MS 5/10/2017 6:05:29 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:05:51	88.668%	4734.833	162485.900	T 17061181.000	T 9058280.500	T 305296710.000	T 52457591.000	T 2564755.100	121.683%	53336.550	710264.470	573612.970
2	18:06:13	88.521%	4686.323	162408.460	T 16855312.000	T 8983199.000	T 303205660.000	T 52694426.000	T 2534410.200	121.933%	53483.805	720789.540	569803.030

3	18:06:34	86.765%	4880.708	170952.840	┬17617100.000	┬9262393.500	┬309981200.000	┬54121831.000	┬2588601.100	119.916%	53626.859	715283.270	586632.240
x		87.984%	4767.288	165282.400	┬17177865.000	┬9101291.000	┬306161190.000	┬53091282.000	┬2562588.800	121.177%	53482.404	715445.760	576682.750
σ		1.059%	101.175	4910.896	┬394070.380	┬144481.220	┬3469509.400	┬900302.690	┬27160.292	1.100%	145.159	5264.414	8824.582
%RSD		1.203	2.122	2.971	┬2.294	┬1.587	┬1.133	┬1.696	┬1.060	0.907	0.271	0.736	1.530

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:05:51	20024.280	┬30878728.000	┬853687240.000	415332.630	196797.010	741989.140	927918.150	28398.316	503.528	1214.988	499.568	1550.621
2	18:06:13	21478.235	┬31299708.000	┬859223310.000	418034.210	200724.930	736868.950	926833.200	27684.920	593.313	1146.837	492.956	2118.653
3	18:06:34	22890.385	┬32022276.000	┬885776470.000	428463.440	203730.410	761896.750	964957.010	28731.572	498.650	1196.524	460.960	1618.368
x		21464.300	┬31400237.000	┬866229010.000	420610.090	200417.450	746918.280	939902.790	28271.603	531.830	1186.116	484.495	1762.547
σ		1433.103	┬578364.140	┬17153407.000	6934.039	3476.909	13221.949	21704.375	534.708	53.301	35.247	20.648	310.251
%RSD		6.677	┬1.842	┬1.980	1.649	1.735	1.770	2.309	1.891	10.022	2.972	4.262	17.602

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:05:51	1059417.900	270.893%	95994.147	55220.428	-303.945	14800.487	98.187%	60129.384	34649.717	27240.451	866880.060	124.434%
2	18:06:13	1079253.400	274.617%	96398.503	56806.737	-702.309	15809.847	97.982%	60362.538	34920.060	27434.504	877897.400	124.018%
3	18:06:34	1083562.700	274.261%	97462.690	56739.652	-521.814	14868.823	98.275%	62012.933	35026.804	27831.358	881441.010	126.281%
x		1074078.000	273.257%	96618.447	56255.605	-509.356	15159.719	98.148%	60834.951	34865.527	27502.104	875406.160	124.911%
σ		12877.536	2.055%	758.575	897.117	199.474	564.063	0.150%	1026.801	194.369	301.198	7593.420	1.204%
%RSD		1.199	0.752	0.785	1.595	39.162	3.721	0.153	1.688	0.557	1.095	0.867	0.964

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:05:51	43143.094	286775.410	3979265.000	100.960%	0.000	893581.770	317036.710
2	18:06:13	43943.836	284116.910	3952100.300	102.762%	4.866	891501.050	319700.780
3	18:06:34	43588.545	285018.350	3974691.800	103.186%	0.000	897649.450	317665.000
x		43558.492	285303.560	3968685.700	102.303%	1.622	894244.090	318134.160
σ		401.216	1352.003	14544.266	1.182%	2.809	3127.255	1392.622
%RSD		0.921	0.474	0.366	1.155	173.205	0.350	0.438

200-38498-A-7-C MSD 5/10/2017 6:11:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:11:35	89.494%	4751.889	153164.720	┬17248518.000	┬7477506.900	┬280778140.000	┬50965753.000	┬6165435.000	117.865%	44871.713	678659.170	543946.650
2	18:11:57	87.490%	4596.664	158566.960	┬16772429.000	┬7341745.200	┬274506320.000	┬50111597.000	┬6122033.400	119.983%	45148.318	664123.300	529532.510
3	18:12:19	86.551%	4783.112	160488.590	┬16991032.000	┬7311967.300	┬273986630.000	┬49882780.000	┬6075811.400	120.318%	44439.983	661981.480	532127.120
x		87.845%	4710.555	157406.760	┬17003993.000	┬7377073.200	┬276423690.000	┬50320044.000	┬6121093.300	119.389%	44820.004	668254.650	535202.090
σ		1.503%	99.860	3797.278	┬238309.000	┬88243.354	┬3779999.700	┬570784.720	┬44819.214	1.330%	356.987	9073.994	7683.325
%RSD		1.711	2.120	2.412	┬1.401	┬1.196	┬1.367	┬1.134	┬0.732	1.114	0.796	1.358	1.436

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:11:35	18508.361	┬27333814.000	┬758254290.000	386618.850	182349.620	758422.590	921715.760	29713.456	600.857	1226.736	417.157	1646.761
2	18:11:57	20282.358	┬26785776.000	┬739855400.000	379786.740	179690.680	748916.550	908920.550	30012.898	592.110	1262.962	446.542	1680.989
3	18:12:19	18953.257	┬26745953.000	┬743176310.000	382148.050	179034.260	736927.460	905970.230	29813.754	606.753	1239.341	456.038	1714.853
x		19247.992	┬26955181.000	┬747095330.000	382851.210	180358.190	748088.870	912202.180	29846.703	599.907	1243.013	439.912	1680.868
σ		922.994	┬328509.980	┬9805552.100	3469.910	1755.583	10771.444	8370.017	152.416	7.368	18.390	20.271	34.046
%RSD		4.795	┬1.219	┬1.312	0.906	0.973	1.440	0.918	0.511	1.228	1.479	4.608	2.026

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:11:35	1592783.600	258.378%	99951.923	55104.018	-498.481	15097.839	97.447%	72252.414	34831.428	27564.550	817154.920	122.506%
2	18:11:57	1566510.700	256.682%	100547.890	55732.101	-455.566	14976.525	97.529%	71773.990	35262.654	27548.476	811953.530	121.968%
3	18:12:19	1564852.100	256.425%	100457.670	55174.828	-714.477	15690.259	98.568%	72052.968	34112.694	27661.977	806623.010	124.229%
x		1574715.400	257.162%	100319.160	55336.982	-556.175	15254.874	97.848%	72026.457	34735.592	27591.668	811910.490	122.901%
σ		15669.444	1.061%	321.221	344.010	138.763	381.902	0.625%	240.311	580.939	61.417	5266.087	1.181%
%RSD		0.995	0.413	0.320	0.622	24.950	2.503	0.639	0.334	1.672	0.223	0.649	0.961

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:11:35	40974.708	280864.550	3581320.100	99.950%	0.000	859673.870	306967.190
2	18:11:57	40365.722	282872.820	3543148.500	102.010%	0.000	846969.850	301925.000
3	18:12:19	40599.298	280979.810	3608800.200	101.673%	0.000	846648.950	304154.710
x		40646.576	281572.390	3577756.200	101.211%	0.000	851097.560	304348.970
σ		307.233	1127.679	32970.619	1.105%	0.000	7429.034	2526.703
%RSD		0.756	0.400	0.922	1.092	0.000	0.873	0.830

200-38498-A-8-A 5/10/2017 6:16:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:17:19	90.330%	853.866	15196.331	┬1487321.000	┬6733825.400	┬185529840.000	┬32920722.000	┬7079766.900	115.915%	43432.437	346524.590	284543.190
2	18:17:41	90.346%	897.983	15519.977	┬1493775.100	┬6741851.600	┬187806550.000	┬33490491.000	┬7128849.300	115.230%	45321.572	350726.760	286052.100
3	18:18:03	90.529%	810.401	15159.383	┬1458293.100	┬6648761.500	┬184749020.000	┬32987115.000	┬7026269.700	118.035%	43566.793	342088.610	278257.800
x		90.402%	854.083	15291.897	┬1479796.400	┬6708146.200	┬186028470.000	┬33132776.000	┬7078295.300	116.393%	44106.934	346446.650	282951.030
σ		0.110%	43.792	198.385	┬18899.957	┬51584.955	┬1588580.600	┬311564.190	┬51305.601	1.463%	1054.050	4319.602	4133.885
%RSD		0.122	5.127	1.297	┬1.277	┬0.769	┬0.854	┬0.940	┬0.725	1.257	2.390	1.247	1.461

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:17:19	17736.287	┬27029040.000	┬680978770.000	257136.190	134018.190	2162277.000	1097454.000	14749.270	714.282	219.928	381.243	2027.386
2	18:17:41	17110.455	┬27381789.000	┬677789660.000	255365.500	135743.530	2188759.200	1120412.300	14836.179	619.218	306.039	405.375	1242.482
3	18:18:03	17124.292	┬27068970.000	┬665542590.000	252080.510	133455.620	2151400.600	1102537.200	14799.316	645.424	259.455	439.920	1710.308
x		17323.678	┬27159933.000	┬674770340.000	254860.730	134405.780	2167478.900	1106801.100	14794.922	659.641	261.807	408.846	1660.059
σ		357.397	┬193167.280	┬8148997.500	2565.358	1192.180	19214.840	12058.481	43.621	49.101	43.103	29.492	394.857
%RSD		2.063	┬0.711	┬1.208	1.007	0.887	0.887	1.089	0.295	7.444	16.464	7.214	23.786

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:17:19	1086691.400	195.792%	3576.644	2893.843	-500.436	5495.928	97.183%	92440.261	5516.880	4227.268	525237.700	112.002%
2	18:17:41	1073130.300	197.808%	3434.857	2741.538	-408.913	5171.665	98.552%	92382.828	5647.261	4221.853	530335.980	114.741%
3	18:18:03	1093375.100	197.261%	3323.097	2807.795	-493.441	5493.745	98.542%	91032.736	5836.922	4115.699	522480.730	114.741%
x		1084398.900	196.954%	3444.866	2814.392	-467.596	5387.113	98.093%	91951.942	5667.021	4188.274	526018.140	113.828%
σ		10315.229	1.043%	127.070	76.366	50.942	186.586	0.787%	796.573	160.933	62.909	3985.352	1.581%
%RSD		0.951	0.529	3.689	2.713	10.894	3.464	0.803	0.866	2.840	1.502	0.758	1.389

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:17:19	1177.434	7626.335	3268842.600	98.171%	0.000	341245.560	59258.785
2	18:17:41	1321.822	7680.107	3310977.100	96.563%	0.000	347838.010	61598.285
3	18:18:03	1361.046	7779.620	3234620.200	99.898%	10.010	339706.890	58445.726
x		1286.768	7695.354	3271480.000	98.211%	3.337	342930.150	59767.599
σ		96.695	77.772	38246.687	1.668%	5.779	4319.394	1636.712
%RSD		7.515	1.011	1.169	1.698	173.205	1.260	2.738

CCV 1037150 5/10/2017 6:22:44 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:23:06	90.122%	203337.540	99997.839	┬36454086.000	┬10951797.000	┬111923980.000	┬55525819.000	┬4373836.600	95.034%	64563.768	┬6788201.600	1750248.000
2	18:23:27	87.225%	207171.610	103647.130	┬36710446.000	┬11136059.000	┬112999720.000	┬55616729.000	┬4415772.200	94.284%	65653.086	┬6735271.900	1761632.500
3	18:23:48	84.837%	214212.050	105667.730	┬36730134.000	┬11159740.000	┬113255820.000	┬55498990.000	┬4418638.500	93.616%	65033.406	┬6830997.600	1781954.200
x		87.395%	105.096%	102.940%	┬99.645%	┬104.312%	┬107.031%	┬103.201%	┬102.509%	94.311%	65083.420	┬108.598%	96.902%
σ		2.646%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	0.709%	546.378	┬n/a	n/a
%RSD		3.028	2.649	2.787	┬0.420	┬1.027	┬0.627	┬0.111	┬0.570	0.752	0.840	┬0.707	0.910

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:23:06	4236.026	┬9827646.900	┬195023280.000	2990274.300	1620729.700	2319653.000	1892177.700	228241.160	972.849	18208.753	338.687	785.432
2	18:23:27	8606.628	┬9965801.300	┬197820640.000	┬3372466.000	1637171.500	2361625.100	1938139.400	233014.900	1207.689	18469.849	328.871	222.570
3	18:23:48	8273.702	┬10209086.000	┬200939550.000	┬3366926.800	1656866.700	2369290.000	1951075.400	234044.550	1164.886	18299.358	328.033	1488.694
x		7038.786	┬106.281%	┬106.518%	┬103.487%	102.250%	98.343%	99.375%	102.835%	1115.141	106.480%	331.864	832.232
σ		2432.962	┬n/a	┬n/a	┬n/a	n/a	n/a	n/a	n/a	125.073	n/a	5.924	634.358
%RSD		34.565	┬1.931	┬1.495	┬6.755	1.104	1.137	1.606	1.336	11.216	0.723	1.785	76.224

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:23:06	1776406.400	94.450%	┬3664853.800	521737.360	2444.066	267258.840	95.665%	2032994.600	1283875.300	1002584.000	1304219.400	101.291%

2	18:23:27	1754436.900	93.040%	T 3806571.600	516786.680	2796.838	263726.310	97.608%	2050069.800	1292400.100	997580.790	1269684.700	100.532%
3	18:23:48	1755980.700	92.305%	T 3789357.000	526239.610	2471.605	270023.930	96.638%	2063237.300	1298893.100	1011389.300	1270522.300	100.823%
x		1762274.700	93.265%	T 104.478%	101.296%	2570.836	102.219%	96.637%	2048767.200	1291722.800	92.625%	100.766%	100.882%
σ		12262.718	1.091%	T n/a	n/a	196.207	n/a	0.972%	15163.358	7531.741	n/a	n/a	0.383%
%RSD		0.696	1.169	T 2.060	0.907	7.632	1.182	1.005	0.740	0.583	0.696	1.537	0.379

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:23:06	85363.850	2747018.900	T 25778710.000	96.009%	15.624	376903.340	189836.650
2	18:23:27	88717.924	2780501.600	T 25771340.000	96.917%	0.000	374574.380	195339.910
3	18:23:48	86963.868	2720363.700	T 25593388.000	98.866%	0.000	375859.190	190385.090
x		97.548%	90.649%	T 108.248%	97.264%	5.208	95.989%	94.980%
σ		n/a	n/a	T n/a	1.460%	9.020	n/a	n/a
%RSD		1.928	1.096	T 0.408	1.501	173.205	0.310	1.580

CCB 1035925 5/10/2017 6:28:28 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:28:50	92.239%	2.514	537.444	5235.879	832.087	7775.989	24924.236	3661.634	99.426%	135.971	1797.225	64.015
2	18:29:12	90.923%	-29.344	704.639	3193.071	597.842	7290.242	28971.631	3351.146	99.673%	85.402	1007.510	192.156
3	18:29:34	91.422%	-13.191	284.115	2698.966	664.808	7765.880	24630.791	3489.777	99.938%	90.182	1068.013	369.141
x		91.528%	-13.341	508.733	3709.305	698.246	7610.704	26175.552	3500.852	99.679%	103.852	1290.916	208.437
σ		0.664%	15.929	211.727	1344.937	120.650	277.574	2425.916	155.540	0.256%	27.919	439.519	153.213
%RSD		0.726	119.406	41.619	36.258	17.279	3.647	9.268	4.443	0.257	26.883	34.047	73.506

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:28:50	6197.075	803.392	36128.843	166.439	95.899	263.159	462.178	-2300.151	1144.207	2.324	341.716	1460.408
2	18:29:12	6221.472	786.609	35398.121	165.616	95.125	240.660	445.106	-2372.653	1192.981	34.016	331.463	1403.597
3	18:29:34	6193.886	489.203	42550.093	284.817	74.288	233.117	482.933	-2439.407	1170.769	43.191	321.354	1265.251
x		6204.144	693.068	38025.685	205.624	88.437	245.645	463.406	-2370.737	1169.319	26.510	331.511	1376.419
σ		15.091	176.752	3935.249	68.584	12.260	15.629	18.944	69.648	24.419	21.442	10.181	100.377
%RSD		0.243	25.503	10.349	33.354	13.863	6.363	4.088	2.938	2.088	80.885	3.071	7.293

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:28:50	80.376	96.445%	383.809	6.859	-163.819	3.805	98.036%	1417.925	511.111	82.001	120.347	98.052%
2	18:29:12	14.989	96.612%	356.990	12.596	-160.922	11.585	96.694%	1277.290	539.297	73.287	60.772	98.445%
3	18:29:34	122.221	96.960%	319.032	48.587	-156.344	-3.303	96.935%	1439.193	518.888	73.441	55.318	96.160%
x		72.528	96.672%	353.277	22.681	-160.361	4.029	97.222%	1378.136	523.098	76.243	78.812	97.552%
σ		54.045	0.263%	32.547	22.618	3.769	7.447	0.716%	87.980	14.557	4.987	36.073	1.222%
%RSD		74.516	0.272	9.213	99.726	2.350	184.829	0.736	6.384	2.783	6.541	45.771	1.253

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:28:50	19.813	903.915	2162.456	95.489%	0.000	6.028	31.653
2	18:29:12	29.584	734.102	1760.648	95.620%	0.000	11.206	15.916
3	18:29:34	-9.478	591.739	2103.917	95.358%	0.000	37.539	10.730
x		13.306	743.252	2009.007	95.489%	0.000	18.258	19.433
σ		20.328	156.289	217.068	0.131%	0.000	16.897	10.896
%RSD		152.770	21.028	10.805	0.137	0.000	92.550	56.070

CCVL 1037148 5/10/2017 6:34:10 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:34:32	95.433%	421.654	17445.405	T 2018545.100	69812.806	184682.860	T 2963153.600	68583.256	103.142%	155.423	24137.987	19363.428
2	18:34:53	94.976%	331.918	17702.406	T 1956682.500	69090.178	183828.590	T 2935661.300	69500.932	104.400%	115.263	23495.043	18745.040

3	18:35:14	93.413%	263.805	16803.084	┬2000536.700	72420.917	185142.010	┬2969066.000	71373.904	102.282%	107.723	25303.742	19300.883
x		94.607%	106.970%	108.059%	┬108.368%	99.452%	105.136%	┬109.837%	97.536%	103.275%	126.136	97.285%	105.086%
σ		1.059%	n/a	n/a	┬n/a	n/a	n/a	┬n/a	n/a	1.065%	25.642	n/a	n/a
%RSD		1.119	23.346	2.675	┬1.597	2.487	0.361	┬0.603	2.037	1.031	20.329	3.771	1.779
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	18:34:32	9466.690	14556.396	1311077.200	6259.412	2775.494	9796.826	28661.744	2331.593	1705.464	343.585	343.622	1363.722
2	18:34:53	9526.804	14377.113	1276006.100	6009.505	2600.533	9694.124	28960.201	2405.078	1727.206	345.796	330.811	1554.758
3	18:35:14	9227.376	15434.157	1319215.200	6372.150	2962.018	10423.481	30601.611	2448.691	1688.753	350.669	335.487	1455.282
x		9406.957	98.230%	105.111%	99.135%	108.419%	104.314%	94.779%	106.271%	1707.141	100.717%	336.640	1457.920
σ		158.399	n/a	n/a	n/a	n/a	n/a	n/a	n/a	19.281	n/a	6.483	95.545
%RSD		1.684	3.825	1.763	2.987	6.504	3.959	3.552	2.471	1.129	1.046	1.926	6.554
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	18:34:32	46259.720	98.979%	26767.841	5473.223	-112.247	1243.533	98.802%	2363.536	10375.245	7674.121	10168.447	97.820%
2	18:34:53	44826.040	98.369%	26247.002	5389.616	-171.122	1427.189	98.849%	2342.166	10115.502	7843.504	10042.049	98.342%
3	18:35:14	44523.766	98.718%	26163.944	5652.052	-207.793	1331.587	100.005%	2480.116	10617.674	7672.457	10320.602	100.223%
x		92.471%	98.689%	91.828%	106.911%	-163.721	102.149%	99.219%	2395.273	10369.474	89.156%	100.031%	98.795%
σ		n/a	0.306%	n/a	n/a	48.201	n/a	0.681%	74.249	251.135	n/a	n/a	1.264%
%RSD		2.052	0.310	1.240	2.435	29.441	6.885	0.687	3.100	2.422	1.271	1.370	1.279
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	18:34:32	10963.290	26823.809	20058.160	94.340%	0.000	36308.084	18881.672					
2	18:34:53	10894.471	27515.458	20063.239	93.842%	0.000	37083.231	19024.552					
3	18:35:14	10903.332	26540.687	19934.881	95.825%	0.000	37424.558	18270.238					
x		122.422%	88.892%	105.339%	94.669%	0.000	94.356%	92.704%					
σ		n/a	n/a	n/a	1.032%	0.000	n/a	n/a					
%RSD		0.343	1.860	0.363	1.090	0.000	1.549	2.140					

200-38498-A-9-A 5/10/2017 6:39:55 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	18:40:18	88.699%	780.766	10884.906	1008661.000	┬6042628.900	┬169618920.000	┬30183890.000	┬5821140.500	110.022%	44558.392	312008.620	320647.410
2	18:40:40	90.571%	746.496	10805.801	┬1143800.500	┬6051820.500	┬168497000.000	┬30232486.000	┬5749947.400	111.570%	44386.279	309819.590	314146.270
3	18:41:02	90.362%	828.633	11289.098	┬1143151.900	┬5959074.600	┬166062090.000	┬29659057.000	┬5777687.500	112.893%	43757.261	309430.210	311728.320
x		89.878%	785.298	10993.268	┬1098537.800	┬6017841.300	┬168059330.000	┬30025144.000	┬5782925.100	111.495%	44233.977	310419.470	315507.330
σ		1.026%	41.256	259.231	┬77836.232	┬51100.583	┬1818357.500	┬317970.670	┬35884.371	1.437%	421.722	1389.942	4612.690
%RSD		1.141	5.254	2.358	┬7.085	┬0.849	┬1.082	┬1.059	┬0.621	1.289	0.953	0.448	1.462
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	18:40:18	16220.282	┬26048550.000	┬613489060.000	223121.340	119358.530	1903831.000	985692.310	18910.234	640.842	211.712	355.187	1584.925
2	18:40:40	16040.388	┬25782689.000	┬615681130.000	221222.300	118601.580	1895357.500	988673.030	18970.190	591.674	250.177	417.515	1375.366
3	18:41:02	15753.306	┬25898987.000	┬607705190.000	221400.980	119715.720	1901608.600	979727.030	19035.697	640.317	219.401	429.249	1768.492
x		16004.659	┬25910075.000	┬612291790.000	221914.870	119225.280	1900265.700	984697.450	18972.040	624.278	227.096	400.650	1576.261
σ		235.529	┬133276.630	┬4120554.400	1048.644	568.894	4393.468	4555.222	62.752	28.237	20.355	39.807	196.706
%RSD		1.472	┬0.514	┬0.673	0.473	0.477	0.231	0.463	0.331	4.523	8.963	9.936	12.479
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	18:40:18	836985.640	184.482%	3404.419	2541.640	-469.568	4331.954	98.823%	119481.770	6735.083	4905.543	526902.170	112.818%
2	18:40:40	846393.620	186.452%	3168.211	2310.978	-490.060	4454.328	99.160%	118444.470	6529.815	5059.121	530140.560	112.449%
3	18:41:02	849782.340	186.582%	3294.586	2432.799	-541.214	4445.329	99.128%	122194.230	6610.062	5087.997	539850.780	117.095%
x		844387.200	185.838%	3289.072	2428.472	-500.281	4410.537	99.037%	120040.160	6624.987	5017.554	532297.840	114.121%
σ		6630.098	1.177%	118.201	115.392	36.900	68.203	0.186%	1936.243	103.445	98.073	6738.473	2.583%
%RSD		0.785	0.633	3.594	4.752	7.376	1.546	0.188	1.613	1.561	1.955	1.266	2.263

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:40:18	964.477	6953.131	4002827.900	97.922%	0.000	308157.120	52547.600
2	18:40:40	892.297	6725.610	3916461.800	100.650%	0.000	310755.090	51662.161
3	18:41:02	926.429	6857.110	3913725.100	101.524%	0.000	309203.970	52611.794
x		927.734	6845.284	3944338.300	100.032%	0.000	309372.060	52273.852
σ		36.108	114.221	50671.997	1.879%	0.000	1307.117	530.711
%RSD		3.892	1.669	1.285	1.878	0.000	0.423	1.015

200-38498-A-11-A 5/10/2017 6:45:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:46:02	91.131%	1210.578	11554.105	T 1038242.500	T 6137195.900	T 256801360.000	T 24982748.000	1440723.900	117.383%	32279.802	413485.850	335202.280
2	18:46:24	92.194%	1138.797	12002.658	T 1038461.500	T 6227946.100	T 258236540.000	T 24764019.000	1423433.400	117.919%	29991.530	407261.750	328845.290
3	18:46:45	88.060%	1295.200	11937.768	885656.110	T 6163183.200	T 254009930.000	T 24641507.000	1434468.700	117.921%	30980.042	416605.540	336032.780
x		90.462%	1214.858	11831.510	T 987453.340	T 6176108.400	T 256349280.000	T 24796091.000	1432875.300	117.741%	31083.792	412451.050	333360.120
σ		2.147%	78.289	242.421	T 88159.058	T 46735.348	T 2149261.900	T 172866.440	8754.677	0.310%	1147.659	4757.068	3931.941
%RSD		2.373	6.444	2.049	T 8.928	T 0.757	T 0.838	T 0.697	0.611	0.263	3.692	1.153	1.179

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:46:02	12746.170	T 9781109.200	T 516843270.000	233119.600	144754.430	276316.390	456468.700	11064.583	511.829	136.518	420.039	1769.393
2	18:46:24	13570.220	T 9841721.800	T 522393080.000	236546.120	147629.550	274057.210	453762.970	10991.300	444.925	163.580	409.156	1549.602
3	18:46:45	12984.327	T 9855479.600	T 526080520.000	233308.460	142301.340	268680.760	449130.850	10898.958	462.238	108.982	408.776	1772.969
x		13100.239	T 9826103.500	T 521772290.000	234324.730	144895.100	273018.120	453120.840	10984.947	472.997	136.360	412.657	1697.321
σ		424.077	T 39568.794	T 4649811.400	1926.096	2666.889	3922.436	3710.830	82.995	34.726	27.299	6.396	127.941
%RSD		3.237	T 0.403	T 0.891	0.822	1.841	1.437	0.819	0.756	7.342	20.020	1.550	7.538

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:46:02	563815.540	228.082%	5294.141	1556.424	-640.997	1547.558	99.040%	9065.252	2583.562	1582.461	568187.550	117.986%
2	18:46:24	561010.920	231.700%	5286.733	1752.822	-619.987	1527.082	101.308%	8832.695	2344.125	1512.836	568152.440	120.719%
3	18:46:45	562205.530	231.874%	5254.575	1663.984	-606.569	1548.451	100.423%	9443.611	2639.085	1619.417	567034.690	122.127%
x		562344.000	230.552%	5278.483	1657.744	-622.518	1541.030	100.257%	9113.853	2522.257	1571.571	567791.560	120.277%
σ		1407.424	2.141%	21.034	98.348	17.353	12.088	1.143%	308.344	156.745	54.118	655.707	2.105%
%RSD		0.250	0.929	0.398	5.933	2.788	0.784	1.140	3.383	6.214	3.444	0.115	1.750

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:46:02	376.378	10262.463	1259769.100	102.605%	0.000	379526.780	124048.600
2	18:46:24	440.670	9582.684	1263036.200	102.670%	0.000	389489.890	126188.300
3	18:46:45	446.985	9995.013	1260009.600	104.022%	0.000	382339.600	123766.600
x		421.344	9946.720	1260938.300	103.099%	0.000	383785.420	124667.830
σ		39.070	342.453	1820.815	0.800%	0.000	5136.505	1324.291
%RSD		9.273	3.443	0.144	0.776	0.000	1.338	1.062

MB 200-116492/1-A 5/10/2017 6:51:25 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:51:48	97.598%	-24.856	135.243	278488.730	737.697	29161.868	48913.868	20609.131	110.460%	190.870	766.899	674.155
2	18:52:10	96.445%	-24.244	238.587	280468.620	793.823	25284.570	43155.391	19760.243	111.785%	139.111	1040.543	408.167
3	18:52:31	98.913%	-40.702	-119.263	258667.040	727.316	23631.808	31909.394	19867.510	112.120%	161.201	911.069	514.278
x		97.652%	-29.934	84.856	272541.460	752.946	26026.082	41326.218	20078.961	111.455%	163.727	906.170	532.200
σ		1.235%	9.330	184.169	12056.311	35.779	2838.621	8648.551	462.262	0.878%	25.972	136.888	133.897
%RSD		1.264	31.170	217.038	4.424	4.752	10.907	20.928	2.302	0.788	15.863	15.106	25.159

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:51:48	5995.633	671.946	118677.730	-34.201	37.593	703.910	903.952	-2353.025	1164.602	23.903	315.481	1305.925
2	18:52:10	6039.596	448.884	99667.614	-80.486	-23.560	646.805	902.242	-2288.161	1140.604	38.409	314.490	1344.821
3	18:52:31	5945.847	432.888	96981.778	-94.118	-33.054	602.585	858.305	-2490.145	1218.511	-28.096	353.353	1668.535
x		5993.692	517.906	105109.040	-69.602	-6.340	651.100	888.166	-2377.110	1174.572	11.405	327.775	1439.760
σ		46.904	133.642	11827.320	31.407	38.342	50.799	25.875	103.124	39.899	34.970	22.157	199.077
%RSD		0.783	25.804	11.252	45.123	604.748	7.802	2.913	4.338	3.397	306.610	6.760	13.827

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:51:48	666.584	101.585%	-116.256	-24.069	-196.891	15.882	101.275%	1352.824	361.513	-27.114	6.021	98.104%

2	18:52:10	855.116	104.324%	-112.626	-19.178	-158.081	-12.387	101.594%	1314.121	356.288	-27.749	35.349	99.648%
3	18:52:31	814.903	102.853%	-102.219	-9.641	-135.751	-14.996	102.873%	1239.454	350.875	-25.389	-4.696	98.923%
x		778.868	102.921%	-110.367	-17.629	-163.575	-3.834	101.914%	1302.133	356.225	-26.751	12.225	98.891%
σ		99.298	1.371%	7.286	7.338	30.938	17.124	0.846%	57.628	5.319	1.221	20.731	0.773%
%RSD		12.749	1.332	6.602	41.621	18.914	446.677	0.830	4.426	1.493	4.564	169.584	0.782

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:51:48	65.633	-572.490	412.300	90.699%	0.000	18.989	22.563
2	18:52:10	68.438	-679.820	340.526	91.803%	0.000	2.053	5.893
3	18:52:31	89.724	-682.778	257.041	93.100%	0.000	1.598	0.370
x		74.598	-645.029	336.622	91.867%	0.000	7.546	9.609
σ		13.174	62.839	77.703	1.202%	0.000	9.912	11.554
%RSD		17.660	9.742	23.083	1.308	0.000	131.350	120.244

LCS 200-116492/2-A 5/10/2017 6:57:12 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:57:33	94.998%	3234.922	169462.360	T 19831990.000	707024.700	T 1950716.000	T 29183991.000	684084.850	103.789%	241.388	239546.870	178834.230
2	18:57:55	95.372%	3148.516	172138.680	T 19959463.000	718114.340	1849466.400	T 29733552.000	671847.320	103.873%	178.467	240535.040	181775.030
3	18:58:16	93.552%	3211.262	181068.600	T 20223041.000	718795.460	1804890.100	T 29083398.000	671615.430	104.034%	163.816	245740.970	183963.450
x		94.641%	3198.233	174223.210	T 20004831.000	714644.830	T 1868357.500	T 29333647.000	675849.200	103.899%	194.557	241940.960	181524.230
σ		0.961%	44.652	6077.428	T 199433.990	6608.008	T 74725.895	T 349961.230	7133.225	0.125%	41.213	3327.789	2573.790
%RSD		1.016	1.396	3.488	T 0.997	0.925	T 4.000	T 1.193	1.055	0.120	21.183	1.375	1.418

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:57:33	7706.019	144800.930	T 14107063.000	59017.908	26676.410	92901.887	282137.270	43467.611	1356.959	3267.242	322.151	1532.136
2	18:57:55	7825.322	149306.340	T 14275793.000	60038.839	26403.669	95513.508	282053.410	43017.912	1348.582	3277.484	302.495	1519.946
3	18:58:16	6856.656	145772.910	T 14123913.000	60293.355	26815.216	95916.736	282201.130	42912.755	1449.994	3412.375	314.271	1452.564
x		7462.665	146626.730	T 14168923.000	59783.367	26631.765	94777.377	282130.610	43132.760	1385.179	3319.033	312.972	1501.549
σ		528.199	2370.958	T 92934.929	675.012	209.374	1636.688	74.085	294.718	56.288	80.998	9.893	42.858
%RSD		7.078	1.617	T 0.656	1.129	0.786	1.727	0.026	0.683	4.064	2.440	3.161	2.854

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:57:33	456973.900	99.152%	268635.110	56236.684	243.819	13047.635	98.868%	1577.963	101668.090	77859.553	104659.440	98.771%
2	18:57:55	444382.610	99.401%	269616.420	55320.763	36.434	13251.275	101.656%	1524.845	101012.260	76524.296	105924.080	100.923%
3	18:58:16	449180.900	98.622%	270757.210	54431.473	74.503	13207.748	101.665%	1736.213	98994.129	76590.107	104565.280	101.110%
x		450179.140	99.058%	269669.580	55329.640	118.252	13168.886	100.730%	1613.007	100558.160	76991.318	105049.600	100.268%
σ		6354.725	0.398%	1062.049	902.638	110.397	107.238	1.612%	109.955	1393.620	752.633	758.785	1.300%
%RSD		1.412	0.401	0.394	1.631	93.358	0.814	1.601	6.817	1.386	0.978	0.722	1.296

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:57:33	113949.350	280530.950	185616.310	94.759%	0.000	388939.440	197174.730
2	18:57:55	114383.150	277786.210	184308.730	96.961%	0.000	385439.370	198885.560
3	18:58:16	115139.560	282474.920	186899.800	96.664%	0.000	391543.170	200200.740
x		114490.690	280264.030	185608.280	96.128%	0.000	388640.660	198753.680
σ		602.348	2355.726	1295.557	1.195%	0.000	3062.845	1517.312
%RSD		0.526	0.841	0.698	1.243	0.000	0.788	0.763

200-38498-A-10-A 5/10/2017 7:02:55 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:03:18	93.846%	-28.136	3361.735	569484.620	2510.967	16440.865	96809.251	10175.061	106.937%	192.207	0.055	941.352
2	19:03:40	94.023%	-38.862	3171.978	622506.580	2839.780	15806.025	108303.950	10215.758	104.836%	191.188	-492.405	1209.028

3	19:04:01	93.914%	-52.129	3010.028	617924.670	2287.849	17034.813	111323.820	10160.259	105.133%	171.666	828.307	1459.109
x		93.928%	-39.709	3181.247	603305.290	2546.199	16427.234	105479.010	10183.693	105.635%	185.021	111.985	1203.163
σ		0.089%	12.019	176.036	29379.021	277.647	614.507	7658.550	28.738	1.137%	11.577	667.432	258.928
%RSD		0.095	30.267	5.534	4.870	10.904	3.741	7.261	0.282	1.076	6.257	595.999	21.521

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:03:18	7902.514	16762.600	89000.323	82.341	232.976	11684.224	3761.193	-2071.847	1453.822	41.613	362.885	1531.231
2	19:03:40	8387.523	17772.264	98566.745	44.382	241.970	12534.319	3834.476	-2341.330	1512.736	32.287	330.993	1549.270
3	19:04:01	8015.131	17264.114	96728.232	48.545	159.825	12853.988	3679.839	-2134.434	1472.628	17.512	361.932	1569.587
x		8101.722	17266.326	94765.100	58.423	211.590	12357.510	3758.502	-2182.537	1479.729	30.471	351.937	1550.029
σ		253.835	504.835	5076.369	20.818	45.055	604.593	77.354	141.035	30.092	12.153	18.144	19.189
%RSD		3.133	2.924	5.357	35.634	21.294	4.893	2.058	6.462	2.034	39.883	5.155	1.238

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:03:18	1306.223	101.089%	274.715	67.562	-178.802	23.495	98.518%	2507.414	479.911	48.256	220.981	97.433%
2	19:03:40	1079.578	100.064%	304.155	66.662	-156.542	-3.620	99.399%	2510.335	473.148	63.282	268.809	98.923%
3	19:04:01	1120.171	99.341%	252.171	36.727	-168.144	33.082	99.053%	2312.104	484.445	83.948	254.807	96.269%
x		1168.657	100.165%	277.014	56.984	-167.829	17.652	98.990%	2443.284	479.168	65.162	248.199	97.542%
σ		120.852	0.878%	26.068	17.549	11.133	19.036	0.444%	113.615	5.685	17.920	24.589	1.330%
%RSD		10.341	0.877	9.410	30.796	6.634	107.839	0.449	4.650	1.186	27.500	9.907	1.364

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:03:18	1252.114	-72.952	1306.504	92.157%	0.000	408.849	239.151
2	19:03:40	1343.307	-151.616	1330.459	92.493%	0.000	396.440	243.669
3	19:04:01	1392.844	-209.383	1479.048	92.995%	0.000	501.671	183.183
x		1329.422	-144.650	1372.004	92.548%	0.000	435.653	222.001
σ		71.385	68.482	93.474	0.422%	0.000	57.508	33.693
%RSD		5.370	47.343	6.813	0.456	0.000	13.201	15.177

200-38498-A-10-A SD@5 5/10/2017 7:08:38 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:08:59	91.935%	-32.578	199.386	79899.614	-55.609	291.194	65591.170	6939.235	101.881%	103.318	1394.297	621.092
2	19:09:21	91.874%	-35.270	-396.531	58151.160	-51.290	359.063	66887.076	4797.647	102.969%	185.183	-936.479	200.240
3	19:09:43	92.331%	-13.811	-73.997	69980.690	-14.720	843.359	69480.317	5252.151	101.581%	83.787	946.453	469.008
x		92.047%	-27.220	-90.381	69343.821	-40.540	497.872	67319.521	5663.011	102.144%	124.096	468.090	430.113
σ		0.249%	11.690	298.297	10888.205	22.465	301.119	1980.309	1128.364	0.731%	53.796	1236.832	213.105
%RSD		0.270	42.946	330.045	15.702	55.414	60.481	2.942	19.925	0.715	43.351	264.229	49.546

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:08:59	8701.579	3212.077	56947.659	-72.225	-68.664	2566.170	1144.033	-2489.279	1699.892	5.552	308.344	1467.018
2	19:09:21	9246.234	3337.612	45284.174	-63.498	-2.238	2468.327	1084.284	-2076.293	1590.792	40.001	342.852	1390.795
3	19:09:43	8888.687	3458.690	66854.234	-106.404	-82.996	2615.269	1192.839	-2070.894	1561.223	78.073	353.590	1433.521
x		8945.500	3336.126	56362.023	-80.709	-51.299	2549.922	1140.385	-2212.155	1617.302	41.209	334.929	1430.445
σ		276.736	123.313	10796.949	22.677	43.089	74.806	54.369	240.011	73.037	36.275	23.641	38.205
%RSD		3.094	3.696	19.156	28.097	83.995	2.934	4.768	10.850	4.516	88.028	7.058	2.671

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:08:59	107.808	96.596%	-134.673	-7.589	-187.114	11.552	94.863%	1386.286	397.190	-36.693	5.089	92.648%
2	19:09:21	100.918	95.449%	-129.124	-23.538	-163.309	-11.893	96.107%	1430.780	354.214	-46.522	-32.148	93.711%
3	19:09:43	88.646	98.728%	-140.297	-18.547	-183.568	13.062	97.431%	1313.823	363.754	-33.533	-17.106	95.557%
x		99.124	96.924%	-134.698	-16.558	-177.997	4.240	96.133%	1376.963	371.719	-38.916	-14.721	93.972%
σ		9.706	1.664%	5.586	8.158	12.843	13.992	1.284%	59.033	22.568	6.774	18.732	1.472%
%RSD		9.792	1.717	4.147	49.272	7.215	329.991	1.336	4.287	6.071	17.407	127.246	1.566

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:08:59	230.544	-626.549	47.492	88.452%	0.000	-2.362	-5.000
2	19:09:21	227.055	-669.459	104.028	89.778%	0.000	-19.487	0.569
3	19:09:43	263.041	-573.727	186.009	89.482%	0.000	-25.038	-5.000
x		240.213	-623.245	112.510	89.237%	0.000	-15.629	-3.144
σ		19.846	47.952	69.647	0.696%	0.000	11.820	3.215
%RSD		8.262	7.694	61.903	0.780	0.000	75.629	102.275

200-38498-A-10-A PDS 5/10/2017 7:14:21 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:14:43	92.669%	3374.800	169595.310	T 20374036.000	713575.200	1850952.000	T 29362754.000	682456.800	102.773%	160.874	240059.840	180482.260
2	19:15:05	91.343%	3539.889	174968.700	T 20436724.000	710318.180	T 1982922.900	T 29151814.000	679036.660	103.903%	188.193	242612.780	180305.680
3	19:15:26	91.990%	3370.382	173978.580	T 20608408.000	719368.170	1860303.000	T 29322272.000	673552.290	102.557%	195.343	240820.170	182071.310
x		92.001%	3428.357	172847.530	T 20473056.000	714420.520	T 1898059.300	T 29278947.000	678348.580	103.077%	181.470	241164.260	180953.080
σ		0.663%	96.615	2859.684	T 121336.600	4583.827	T 73642.639	T 111945.060	4491.955	0.723%	18.191	1310.792	972.428
%RSD		0.721	2.818	1.654	T 0.593	0.642	T 3.880	T 0.382	0.662	0.701	10.025	0.544	0.537

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:14:43	7999.018	162167.740	T 14220742.000	60277.583	26552.142	107602.600	280363.360	42340.355	1439.389	3234.164	355.606	1378.348
2	19:15:05	6942.748	158252.340	T 14235127.000	59823.471	26666.200	107599.780	282806.010	42581.580	1386.317	3328.190	347.497	1452.637
3	19:15:26	7434.059	163121.250	T 14176826.000	59954.173	27331.702	110029.750	285119.580	41874.125	1457.457	3128.033	349.522	1485.648
x		7458.608	161180.440	T 14210898.000	60018.409	26850.014	108410.710	282762.980	42265.353	1427.721	3230.129	350.875	1438.878
σ		528.563	2580.242	T 30371.348	233.772	421.033	1402.131	2378.400	359.641	36.978	100.140	4.221	54.958
%RSD		7.087	1.601	T 0.214	0.390	1.568	1.293	0.841	0.851	2.590	3.100	1.203	3.819

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:14:43	458228.240	98.393%	267811.660	56151.368	-78.098	13311.652	97.722%	2584.126	100591.140	76764.789	104747.340	99.735%
2	19:15:05	452831.640	97.975%	268220.300	55101.113	165.597	13737.515	100.002%	2480.189	99169.333	75912.465	102271.640	99.258%
3	19:15:26	451255.430	98.899%	267257.060	54817.523	-100.144	13445.186	100.281%	2692.717	99156.896	76483.149	102570.090	99.013%
x		454105.100	98.423%	267763.010	55356.668	-4.215	13498.118	99.335%	2585.677	99639.121	76386.801	103196.360	99.335%
σ		3656.682	0.463%	483.461	702.685	147.474	217.810	1.404%	106.273	824.492	434.254	1351.457	0.367%
%RSD		0.805	0.470	0.181	1.269	3498.659	1.614	1.414	4.110	0.827	0.568	1.310	0.370

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:14:43	109726.070	273982.740	184951.650	93.794%	0.000	375086.460	188916.290
2	19:15:05	110284.650	281345.230	189263.730	94.410%	0.000	375063.700	191890.600
3	19:15:26	110527.300	284541.800	187023.400	94.362%	0.000	384462.740	195692.750
x		110179.340	279956.590	187079.590	94.189%	0.000	378204.300	192166.550
σ		410.866	5414.768	2156.587	0.342%	0.000	5419.981	3396.651
%RSD		0.373	1.934	1.153	0.364	0.000	1.433	1.768

200-38498-A-10-B MS 5/10/2017 7:20:05 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:20:27	92.639%	3300.361	177965.340	T 20053962.000	708048.630	T 2012260.100	T 29166413.000	670245.960	104.125%	192.528	243477.930	179315.280
2	19:20:48	91.212%	3490.229	183213.430	T 20629442.000	729594.310	1871285.100	T 29467960.000	684049.660	102.657%	151.134	240356.650	179957.550
3	19:21:09	91.276%	3422.011	184127.920	T 20840085.000	732726.810	T 2060326.700	T 29909333.000	689970.250	101.541%	202.055	248246.080	184030.700
x		91.709%	3404.200	181768.890	T 20507830.000	723456.590	T 1981290.600	T 29514569.000	681421.960	102.774%	181.906	244026.880	181101.180
σ		0.806%	96.179	3325.561	T 406926.690	13435.287	T 98252.288	T 373646.370	10121.291	1.296%	27.071	3973.262	2557.289
%RSD		0.879	2.825	1.830	T 1.984	1.857	T 4.959	T 1.266	1.485	1.261	14.882	1.628	1.412

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:20:27	7169.571	160032.500	T 14208287.000	60168.467	27220.087	105556.750	277139.870	43279.953	1301.944	3329.557	320.047	1362.228
2	19:20:48	7076.015	166697.900	T 14406816.000	62259.851	27617.247	111578.130	289489.070	42709.665	1326.464	3247.650	301.935	1091.581
3	19:21:09	6691.371	169189.260	T 14608185.000	61569.761	28382.000	111062.550	291422.040	42670.109	1381.268	3226.744	315.109	1508.336
x		6978.986	165306.560	T 14407763.000	61332.693	27739.778	109399.140	286017.000	42886.576	1336.559	3267.984	312.363	1320.715
σ		253.436	4734.281	T 199950.680	1065.656	590.568	3337.581	7748.327	341.248	40.614	54.339	9.363	211.456
%RSD		3.631	2.864	T 1.388	1.738	2.129	3.051	2.709	0.796	3.039	1.663	2.997	16.011

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:20:27	459928.380	99.033%	270130.140	56544.265	-38.891	13218.955	98.268%	2503.600	100318.340	78453.857	104569.930	100.190%

2	19:20:48	465244.540	100.535%	269475.940	55706.154	-145.422	13403.948	99.692%	2257.162	100361.240	78206.148	105533.780	101.881%
3	19:21:09	462526.970	99.740%	273136.220	56994.849	-98.069	13162.224	99.649%	2504.026	102438.460	78361.494	105360.940	100.777%
x		462566.630	99.769%	270914.100	56415.089	-94.127	13261.709	99.203%	2421.596	101039.350	78340.500	105154.880	100.950%
σ		2658.303	0.751%	1952.010	653.987	53.375	126.407	0.810%	142.404	1211.855	125.182	513.904	0.858%
%RSD		0.575	0.753	0.721	1.159	56.705	0.953	0.816	5.881	1.199	0.160	0.489	0.850

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:20:27	114751.440	283540.640	187567.950	93.724%	0.000	404528.220	207184.330
2	19:20:48	114970.740	281820.330	186831.060	97.280%	0.000	392988.720	199032.020
3	19:21:09	113666.790	272607.320	185065.480	98.132%	0.000	385322.350	195953.230
x		114462.990	279322.760	186488.170	96.379%	0.000	394279.770	200723.190
σ		698.193	5879.009	1285.990	2.338%	0.000	9667.808	5803.402
%RSD		0.610	2.105	0.690	2.426	0.000	2.452	2.891

200-38498-A-10-C MSD 5/10/2017 7:25:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:26:09	92.351%	3289.212	175865.810	T 20088560.000	712037.860	1848497.000	T 28911441.000	674908.180	103.024%	184.726	236526.100	178985.350
2	19:26:30	91.233%	3346.905	182516.120	T 20718592.000	714455.740	1838452.300	T 29009579.000	676384.170	101.859%	122.962	244677.270	181309.220
3	19:26:52	92.990%	3266.090	176160.000	T 20537204.000	724787.880	T 2041446.700	T 29785689.000	687273.140	101.058%	188.232	244661.280	187033.850
x		92.191%	3300.736	178180.640	T 20448119.000	717093.830	T 1909465.300	T 29235570.000	679521.830	101.981%	165.307	241954.880	182442.800
σ		0.889%	41.622	3757.517	T 324325.460	6772.026	T 114409.500	T 478937.710	6753.276	0.988%	36.713	4701.467	4142.262
%RSD		0.965	1.261	2.109	T 1.586	0.944	T 5.992	T 1.638	0.994	0.969	22.209	1.943	2.270

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:26:09	6805.159	164856.730	T 14143096.000	58988.804	26370.075	107612.430	280037.090	41702.824	1296.516	3231.811	285.845	1184.081
2	19:26:30	6486.155	170317.410	T 14376903.000	59763.866	26915.133	111580.350	288785.050	43104.105	1240.773	3269.952	335.498	1400.821
3	19:26:52	6770.443	173674.660	T 14656691.000	61899.593	27135.144	109375.200	293932.300	42475.815	1278.874	3283.003	373.040	1586.347
x		6687.252	169616.270	T 14392230.000	60217.421	26806.784	109522.660	287584.810	42427.581	1272.055	3261.589	331.461	1390.416
σ		175.018	4450.582	T 257140.220	1507.467	393.875	1988.069	7024.929	701.885	28.491	26.601	43.738	201.334
%RSD		2.617	2.624	T 1.787	2.503	1.469	1.815	2.443	1.654	2.240	0.816	13.195	14.480

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:26:09	455952.970	99.445%	267669.130	54141.981	-31.257	13576.106	99.706%	2638.042	98274.465	75833.313	100280.940	99.039%
2	19:26:30	459572.410	97.593%	272128.050	55253.327	185.006	13239.965	98.810%	2616.414	99485.480	77780.736	101695.880	100.358%
3	19:26:52	457346.460	98.513%	268756.640	55615.576	-0.913	13393.891	100.125%	2517.116	100607.610	77723.903	102624.880	100.503%
x		457623.950	98.517%	269517.940	55003.628	50.945	13403.320	99.547%	2590.524	99455.850	77112.650	101533.900	99.967%
σ		1825.607	0.926%	2324.907	767.875	117.087	168.268	0.672%	64.487	1166.853	1108.303	1180.336	0.807%
%RSD		0.399	0.940	0.863	1.396	229.828	1.255	0.675	2.489	1.173	1.437	1.163	0.807

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:26:09	113946.820	274346.930	187683.150	94.349%	0.000	395615.010	203111.440
2	19:26:30	113775.130	275614.240	186149.950	95.314%	0.000	394748.230	193040.470
3	19:26:52	116502.830	277221.180	186762.810	96.952%	0.000	391250.120	201066.570
x		114741.590	275727.450	186865.300	95.538%	0.000	393871.120	199072.830
σ		1527.692	1440.467	771.721	1.316%	0.000	2310.858	5323.284
%RSD		1.331	0.522	0.413	1.378	0.000	0.587	2.674

MB 200-116422/1-A 5/10/2017 7:31:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:31:53	93.294%	-38.571	2382.165	271101.120	-140.832	917.430	5047.629	4586.382	103.486%	130.797	-101.625	-143.834
2	19:32:15	91.569%	-37.864	1992.136	281154.060	-371.691	908.512	-6584.974	3921.983	102.920%	111.947	965.284	-7.235

3	19:32:38	91.733%	-29.757	2128.401	263485.910	-133.818	1276.813	6538.621	5647.391	101.806%	177.140	1515.037	63.634
x		92.199%	-35.397	2167.568	271913.700	-215.447	1034.252	1667.092	4718.586	102.737%	139.961	792.899	-29.145
σ		0.952%	4.898	197.942	8862.059	135.357	210.111	7185.277	870.268	0.854%	33.549	822.001	105.455
%RSD		1.033	13.837	9.132	3.259	62.826	20.315	431.007	18.443	0.832	23.970	103.670	361.828

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:31:53	6578.353	-71.722	32736.225	-97.829	-41.958	244.012	526.225	-2352.747	1261.532	31.742	347.387	1510.429
2	19:32:15	6085.425	-255.928	36257.012	-102.315	-36.143	336.752	604.047	-2078.376	1160.060	55.157	364.655	1451.007
3	19:32:38	6093.459	-203.369	34028.318	-77.068	-44.000	328.637	673.653	-2485.991	1262.575	-6.383	324.876	1572.840
x		6252.412	-177.006	34340.518	-92.404	-40.700	303.134	601.308	-2305.705	1228.056	26.838	345.639	1511.425
σ		282.301	94.890	1781.035	13.470	4.076	51.362	73.752	207.839	58.888	31.062	19.947	60.923
%RSD		4.515	53.608	5.186	14.577	10.016	16.944	12.265	9.014	4.795	115.737	5.771	4.031

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:31:53	168.930	97.812%	-99.212	-13.478	-181.623	0.888	97.731%	1284.204	358.522	-25.978	-37.696	94.787%
2	19:32:15	102.973	98.847%	-64.446	-8.335	-180.432	-0.282	97.628%	1249.702	368.642	-13.638	-32.553	97.030%
3	19:32:38	152.901	97.762%	-42.922	-3.816	-247.900	76.015	99.578%	1159.950	352.187	-11.778	-17.991	100.042%
x		141.601	98.141%	-68.860	-8.543	-203.318	25.540	98.312%	1231.285	359.784	-17.131	-29.413	97.286%
σ		34.400	0.613%	28.404	4.835	38.614	43.716	1.097%	64.141	8.300	7.718	10.221	2.637%
%RSD		24.293	0.624	41.248	56.593	18.992	171.163	1.116	5.209	2.307	45.051	34.749	2.710

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:31:53	123.376	-308.960	236.305	93.440%	0.000	49.639	0.351
2	19:32:15	51.752	-346.331	-76.478	95.257%	0.000	42.859	15.995
3	19:32:38	67.866	-290.213	-142.516	92.192%	0.000	34.456	32.964
x		80.998	-315.168	5.771	93.630%	0.000	42.318	16.437
σ		37.575	28.569	202.361	1.541%	0.000	7.606	16.311
%RSD		46.389	9.065	3506.663	1.646	0.000	17.974	99.236

CCV 1037150 5/10/2017 7:37:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:37:37	86.833%	210336.520	106785.710	T 39367186.000	T 11710381.000	T 116993230.000	T 57554077.000	T 4544899.200	92.724%	65763.215	T 6990290.000	1795120.800
2	19:37:59	86.066%	211222.750	105726.390	T 38832985.000	T 11543575.000	T 117369540.000	T 56689081.000	T 4554703.200	91.801%	66673.969	T 7060467.100	1813938.900
3	19:38:22	86.283%	207894.770	106833.260	T 37817093.000	T 11202964.000	T 111937120.000	T 55743097.000	T 4486525.200	93.853%	66037.791	T 6878407.900	1755475.900
x		86.394%	105.892%	106.279%	T 105.197%	T 108.106%	T 109.601%	T 105.272%	T 105.442%	92.793%	66158.325	T 111.664%	98.197%
σ		0.396%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.028%	467.188	T n/a	n/a
%RSD		0.458	0.821	0.588	T 2.036	T 2.252	T 2.628	T 1.599	T 0.814	1.108	0.706	T 1.316	1.669

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:37:37	7665.223	T 10416798.000	T 206022390.000	T 3500466.000	1667003.700	2398896.600	1947763.800	231169.930	1120.385	18234.803	333.769	898.190
2	19:37:59	7005.375	T 10468485.000	T 207659100.000	T 3505131.100	1670050.500	2404649.000	1950748.500	229412.100	1355.824	18132.931	334.572	1301.469
3	19:38:22	5709.260	T 10074754.000	T 200174160.000	2975087.100	1629557.500	2309549.200	1889077.300	224643.810	1328.596	17815.028	332.603	968.345
x		6793.286	T 109.673%	T 110.118%	T 106.157%	103.329%	99.215%	99.482%	101.345%	1268.268	104.939%	333.648	1056.002
σ		995.080	T n/a	T n/a	T n/a	n/a	n/a	n/a	n/a	128.792	n/a	0.990	215.456
%RSD		14.648	T 2.073	T 1.923	T 9.158	1.362	2.249	1.803	1.478	10.155	1.212	0.297	20.403

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:37:37	1851430.400	93.228%	T 3844159.900	534231.020	2284.511	273697.490	93.329%	2100960.600	1325404.500	1021800.700	1305003.500	97.049%
2	19:37:59	1807365.500	93.216%	T 3797255.700	531075.730	2416.662	270851.840	94.899%	2101962.900	1310787.900	1019567.500	1289293.600	101.252%
3	19:38:22	1783401.700	94.009%	T 3777647.700	527841.560	1903.433	268123.250	94.859%	2052619.200	1295167.400	1016964.000	1300721.100	100.874%
x		1814065.900	93.485%	T 105.947%	103.134%	2201.535	103.708%	94.362%	2085180.900	1310453.300	94.063%	102.092%	99.725%
σ		34505.774	0.454%	T n/a	n/a	266.486	n/a	0.895%	28203.685	15121.331	n/a	n/a	2.325%
%RSD		1.902	0.486	T 0.898	0.602	12.105	1.029	0.948	1.353	1.154	0.237	0.626	2.331

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:37:37	90783.888	2823957.800	T 26666040.000	94.292%	0.000	383050.430	195665.580
2	19:37:59	88818.033	2777779.700	T 25972942.000	98.552%	5.073	373590.240	190534.680
3	19:38:22	88451.814	2814860.000	T 26285816.000	96.961%	10.313	375849.320	190153.880
x		100.167%	92.503%	T 110.748%	96.602%	5.129	96.428%	95.111%
σ		n/a	n/a	T n/a	2.152%	5.157	n/a	n/a
%RSD		1.404	0.872	T 1.319	2.228	100.545	1.309	1.602

CCB 1035925 5/10/2017 7:43:00 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:43:21	92.356%	-19.241	612.709	5320.054	856.967	13687.754	11297.317	3208.884	98.390%	116.981	448.658	-26.852
2	19:43:43	91.438%	-24.139	617.006	6395.640	1245.204	14074.789	10354.579	3238.849	99.940%	110.317	1.156	63.817
3	19:44:04	93.279%	4.317	291.864	14414.213	1271.587	14669.175	26466.353	2008.083	99.049%	141.596	2216.426	246.933
x		92.357%	-13.021	507.193	8709.969	1124.586	14143.906	16039.416	2818.605	99.126%	122.965	888.747	94.633
σ		0.921%	15.214	186.493	4969.207	232.140	494.348	9042.287	702.093	0.778%	16.476	1171.372	139.469
%RSD		0.997	116.841	36.770	57.052	20.642	3.495	56.375	24.909	0.785	13.399	131.800	147.379

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:43:21	6042.322	1147.173	42671.850	251.244	63.607	309.056	674.254	-2556.303	1109.987	23.037	355.082	1498.737
2	19:43:43	6088.407	949.530	43452.126	349.850	124.314	373.194	718.029	-2145.379	1061.615	34.961	365.435	1438.465
3	19:44:04	5731.368	1293.410	47391.815	324.195	102.132	499.116	732.875	-2342.425	1095.473	31.270	356.267	1552.913
x		5954.032	1130.038	44505.264	308.430	96.684	393.789	708.386	-2348.035	1089.025	29.756	358.928	1496.705
σ		194.205	172.579	2530.087	51.158	30.718	96.689	30.477	205.519	24.822	6.105	5.667	57.251
%RSD		3.262	15.272	5.685	16.587	31.772	24.554	4.302	8.753	2.279	20.515	1.579	3.825

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:43:21	105.975	96.596%	414.015	65.857	-224.395	63.901	95.191%	1481.321	501.330	95.025	136.188	96.173%
2	19:43:43	337.627	95.172%	543.452	82.147	-151.625	6.762	99.061%	1443.632	519.915	88.478	113.452	96.234%
3	19:44:04	247.275	95.317%	437.462	72.936	-183.019	37.885	98.242%	1491.297	526.424	109.669	99.614	96.724%
x		230.292	95.695%	464.977	73.647	-186.346	36.182	97.498%	1472.084	515.890	97.724	116.418	96.377%
σ		116.756	0.784%	68.966	8.168	36.499	28.607	2.040%	25.139	13.022	10.850	18.467	0.302%
%RSD		50.699	0.819	14.832	11.091	19.587	79.064	2.092	1.708	2.524	11.103	15.862	0.313

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:43:21	58.100	1599.951	2665.826	92.899%	0.000	17.814	11.146
2	19:43:43	21.644	1110.493	3174.371	94.628%	0.000	106.754	42.554
3	19:44:04	26.313	1095.245	3512.460	94.851%	0.000	58.989	26.628
x		35.352	1268.563	3117.553	94.126%	0.000	61.186	26.776
σ		19.838	287.092	426.167	1.068%	0.000	44.511	15.705
%RSD		56.115	22.631	13.670	1.135	0.000	72.748	58.651

CCVL 1037148 5/10/2017 7:48:45 PM QC Status: WARNING (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:49:06	96.774%	326.920	16969.840	T 2013488.900	72407.588	180298.650	T 2944810.200	66727.254	104.382%	96.202	22517.685	18513.571
2	19:49:28	96.659%	319.641	16870.677	T 2046075.000	73398.604	185859.140	T 3000598.600	68440.104	102.317%	122.391	25505.538	18642.110
3	19:49:50	97.372%	283.363	16294.748	T 2040898.100	71315.885	185880.150	T 2955013.400	68496.094	103.700%	120.794	24933.939	18499.792
x		96.935%	97.775%	104.282%	T 110.630%	102.181%	104.829%	T 110.240%	94.838%	103.466%	113.129	97.313%	101.876%
σ		0.383%	n/a	n/a	T n/a	n/a	n/a	T n/a	n/a	1.052%	14.681	n/a	n/a
%RSD		0.395	7.527	2.181	T 0.861	1.439	1.748	T 1.001	1.481	1.017	12.977	6.522	0.423

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:49:06	8505.189	15147.358	1250531.200	6163.915	2993.897	9432.208	28753.858	2681.541	1489.747	384.306	297.567	1441.144
2	19:49:28	8506.021	15413.481	1306330.800	6325.887	2824.055	9832.698	30331.282	2513.446	1489.890	355.756	345.176	1506.693
3	19:49:50	8202.323	14371.183	1278309.700	6022.225	2860.676	9991.189	29008.003	2055.636	1612.446	367.654	348.610	1633.078
x		8404.511	99.480%	103.197%	98.449%	112.848%	102.018%	94.639%	107.236%	1530.695	107.269%	330.451	1526.972
σ		175.100	n/a	n/a	n/a	n/a	n/a	n/a	n/a	70.799	n/a	28.530	97.561
%RSD		2.083	3.616	2.182	2.462	3.090	2.954	2.884	13.403	4.625	3.884	8.634	6.389

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:49:06	45201.906	95.594%	27648.018	5635.424	-242.793	1512.819	97.122%	2306.580	10477.460	7917.307	10365.924	97.942%

2	19:49:28	46454.955	98.393%	27080.832	5470.793	-134.231	1425.077	98.936%	2107.591	10339.854	7856.258	10397.324	98.055%
3	19:49:50	44960.106	99.116%	25992.449	5657.508	-166.909	1319.114	98.679%	2194.175	10168.475	7906.859	10581.811	98.136%
x		93.158%	97.701%	93.617%	108.521%	-181.311	108.650%	98.246%	2202.782	10328.597	91.041%	102.698%	98.044%
σ		n/a	1.860%	n/a	n/a	55.696	n/a	0.982%	99.774	154.800	n/a	n/a	0.097%
%RSD		1.762	1.904	3.127	1.826	30.718	6.835	0.999	4.529	1.499	0.414	1.116	0.099

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:49:06	10801.306	26088.189	19773.808	95.148%	0.000	37269.484	18831.800
2	19:49:28	10691.819	27312.547	19735.713	94.624%	0.000	36702.442	19280.098
3	19:49:50	11243.907	27851.877	20518.594	95.829%	0.000	38076.942	19424.162
x		122.332%	89.301%	105.290%	95.200%	0.000	95.406%	94.947%
σ		n/a	n/a	n/a	0.604%	0.000	n/a	n/a
%RSD		2.679	3.337	2.206	0.635	0.000	1.849	1.611

LCS 200-116422/2-A 5/10/2017 7:54:28 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:54:50	93.703%	3451.491	168921.840	T 20229496.000	721092.810	1826459.400	T 29071575.000	665953.640	101.137%	123.745	237738.200	178515.850
2	19:55:12	91.663%	3374.486	169414.310	T 19909140.000	715041.950	1844106.900	T 29289608.000	672987.190	99.840%	145.389	241423.370	183210.770
3	19:55:33	93.507%	3346.557	168818.450	T 20132935.000	714760.210	T 2007435.600	T 29034273.000	668384.790	101.196%	173.076	237555.420	181398.800
x		92.958%	3390.845	169051.530	T 20090524.000	716964.990	T 1892667.300	T 29131819.000	669108.540	100.724%	147.403	238905.660	181041.810
σ		1.125%	54.346	318.400	T 164335.040	3577.570	T 99783.197	T 137916.490	3572.195	0.767%	24.727	2182.315	2367.731
%RSD		1.211	1.603	0.188	T 0.818	0.499	T 5.272	T 0.473	0.534	0.761	16.775	0.913	1.308

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:54:50	6649.160	140513.400	T 14185055.000	58602.349	26152.729	96088.802	281602.710	41080.092	1030.989	3330.316	321.047	1340.340
2	19:55:12	5921.968	147278.910	T 14327124.000	59074.082	26942.014	98078.504	284349.980	41090.586	1261.939	3248.851	315.756	1407.676
3	19:55:33	6438.299	142729.810	T 14239565.000	59233.400	25330.321	96027.485	284667.500	40607.299	1081.142	3291.135	280.670	1166.353
x		6336.476	143507.370	T 14250581.000	58969.944	26141.688	96731.597	283540.060	40925.992	1124.690	3290.101	305.824	1304.790
σ		374.136	3449.129	T 71672.549	328.162	805.903	1166.858	1685.295	276.047	121.478	40.742	21.944	124.527
%RSD		5.904	2.403	T 0.503	0.556	3.083	1.206	0.594	0.675	10.801	1.238	7.175	9.544

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:54:50	461100.060	98.517%	261242.380	53998.202	30.952	13314.054	96.560%	1537.989	103084.410	80057.860	102526.260	100.242%
2	19:55:12	443620.350	97.545%	265697.900	52786.053	-30.790	13544.515	99.603%	1887.629	100295.670	78110.397	99857.758	99.258%
3	19:55:33	447863.240	99.393%	260483.580	53272.444	22.383	13029.802	100.475%	1761.760	100791.610	78159.865	102327.250	101.323%
x		450861.220	98.485%	262474.620	53352.233	7.515	13296.124	98.880%	1729.126	101390.570	78776.041	101570.430	100.274%
σ		9117.342	0.924%	2817.107	610.001	33.449	257.825	2.055%	177.090	1487.722	1110.363	1486.547	1.033%
%RSD		2.022	0.938	1.073	1.143	445.091	1.939	2.078	10.242	1.467	1.410	1.464	1.030

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:54:50	106912.250	266758.060	175902.190	95.685%	0.000	376595.770	194635.380
2	19:55:12	107805.070	268818.550	180637.230	94.689%	0.000	388062.970	199780.550
3	19:55:33	107966.020	270140.440	178488.440	96.258%	0.000	383569.700	196045.950
x		107561.110	268572.350	178342.620	95.544%	0.000	382742.810	196820.630
σ		567.665	1704.578	2370.885	0.794%	0.000	5778.144	2658.625
%RSD		0.528	0.635	1.329	0.831	0.000	1.510	1.351

480-117352-B-1-A 5/10/2017 8:00:12 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:00:34	91.998%	-16.303	39249.310	T 42822337.000	T 2078951.300	20125.410	T 17897007.000	T 3183621.600	98.806%	278.575	1059.235	472.316
2	20:00:55	90.827%	-29.295	39135.430	T 42963711.000	1942372.700	20332.394	T 17984918.000	T 3163431.000	98.045%	331.387	1918.912	656.566

3	20:01:16	90.267%	-37.313	40298.947	T42282899.000	1911228.800	19893.389	T17760178.000	T3174394.200	100.032%	380.335	1531.283	431.066
x		91.031%	-27.637	39561.229	T42689649.000	T1977517.600	20117.064	T17880701.000	T3173815.600	98.961%	330.099	1503.143	519.983
σ		0.883%	10.603	641.415	T359278.390	T89213.690	219.622	T113253.530	T10107.725	1.002%	50.892	430.529	120.070
%RSD		0.971	38.364	1.621	T0.842	T4.511	1.092	T0.633	T0.318	1.013	15.417	28.642	23.091

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:00:34	5204.260	35250.141	46910.546	11.645	204.127	1180.291	2493.232	22352.398	1009.177	19.556	328.027	1436.574
2	20:00:55	5287.840	35385.113	48802.383	-37.978	288.984	1021.603	2410.690	21922.891	962.539	120.949	316.109	967.715
3	20:01:16	5840.579	34157.951	38906.901	19.471	278.956	1022.054	2321.937	22648.662	1072.663	24.642	289.979	1270.447
x		5444.227	34931.069	44873.277	-2.287	257.355	1074.650	2408.620	22307.983	1014.793	55.049	311.372	1224.912
σ		345.786	672.932	5252.903	31.156	46.369	91.488	85.666	364.918	55.277	57.127	19.461	237.723
%RSD		6.351	1.926	11.706	1362.206	18.018	8.513	3.557	1.636	5.447	103.776	6.250	19.407

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:00:34	795521.660	96.897%	6745.561	17.151	-104.999	186.225	97.859%	1563.571	546.551	113.960	136501.210	99.981%
2	20:00:55	796982.550	98.682%	7173.197	51.764	-151.853	122.902	99.176%	1361.293	497.907	109.467	137704.940	101.923%
3	20:01:16	788885.490	97.484%	7181.240	30.718	-222.434	284.686	100.526%	1288.296	565.287	115.479	136745.210	101.478%
x		793796.570	97.687%	7033.333	33.211	-159.762	197.938	99.187%	1404.387	536.582	112.968	136983.790	101.127%
σ		4315.384	0.910%	249.250	17.441	59.116	81.526	1.333%	142.607	34.779	3.126	636.342	1.018%
%RSD		0.544	0.932	3.544	52.514	37.002	41.188	1.344	10.154	6.482	2.767	0.465	1.006

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:00:34	2363.638	-267.354	310.994	96.821%	0.000	46.837	22954.601
2	20:00:55	2135.578	-175.938	343.740	96.332%	0.000	26.468	22780.050
3	20:01:16	2357.199	-274.458	396.355	98.744%	0.000	9.883	23395.260
x		2285.471	-239.250	350.363	97.299%	0.000	27.729	23043.304
σ		129.851	54.944	43.064	1.275%	0.000	18.509	317.052
%RSD		5.682	22.965	12.291	1.310	0.000	66.749	1.376

480-117352-B-1-A SD@5 5/10/2017 8:05:57 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:06:19	91.936%	-32.578	7856.039	T8722539.800	378896.340	398.411	T3615141.200	549247.780	97.931%	148.225	-1487.368	-161.518
2	20:06:40	91.322%	-37.761	7646.510	T8768158.300	385537.960	960.424	T3717015.700	561732.560	97.469%	143.735	124.643	410.733
3	20:07:01	91.539%	-35.121	7345.077	T8647345.900	376122.160	407.257	T3651136.700	551607.850	98.286%	163.023	749.650	240.775
x		91.599%	-35.153	7615.875	T8712681.300	380185.490	588.697	T3661097.900	554196.060	97.896%	151.661	-204.358	163.330
σ		0.311%	2.591	256.855	T61006.602	4838.468	321.955	T51662.616	6632.610	0.410%	10.092	1154.229	293.881
%RSD		0.340	7.372	3.373	T0.700	1.273	54.689	T1.411	1.197	0.419	6.655	564.806	179.931

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:06:19	11068.952	7020.425	42695.289	-104.203	24.070	451.729	1101.319	2800.220	1667.021	13.125	306.862	1295.089
2	20:06:40	10611.043	6985.846	36860.949	-73.133	-10.700	416.236	825.441	3118.745	1641.933	6.276	268.095	1178.633
3	20:07:01	10686.685	6616.536	36761.074	-99.337	-42.930	305.054	987.886	2649.712	1777.184	3.771	339.794	1350.905
x		10788.893	6874.269	38772.438	-92.225	-9.853	391.006	971.549	2856.226	1695.380	7.724	304.917	1274.876
σ		245.469	223.872	3397.656	16.712	33.508	76.523	138.662	239.480	71.947	4.842	35.889	87.897
%RSD		2.275	3.257	8.763	18.121	340.072	19.571	14.272	8.384	4.244	62.693	11.770	6.895

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:06:19	157560.410	95.635%	1287.734	-28.777	-184.375	50.085	96.787%	1069.398	389.698	-0.728	27293.538	97.858%
2	20:06:40	156395.440	96.017%	1370.510	6.448	-127.635	-1.640	99.033%	1166.330	417.983	-3.366	26582.218	99.964%
3	20:07:01	155855.080	95.297%	1418.808	-23.708	-120.104	1.885	97.708%	1100.269	409.455	-8.568	27179.551	97.813%
x		156603.640	95.650%	1359.017	-15.346	-144.038	16.777	97.843%	1111.999	405.712	-4.221	27018.436	98.545%
σ		871.525	0.360%	66.288	19.043	35.135	28.899	1.129%	49.519	14.509	3.990	382.051	1.229%
%RSD		0.557	0.377	4.878	124.094	24.393	172.261	1.154	4.453	3.576	94.526	1.414	1.247

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:06:19	362.343	-505.454	-164.143	95.663%	0.000	-20.173	4297.247
2	20:06:40	463.129	-604.316	-183.741	95.515%	0.000	-20.156	4440.086
3	20:07:01	480.121	-589.388	-51.289	97.411%	0.000	5.304	4646.240
x		435.198	-566.386	-133.058	96.196%	0.000	-11.675	4461.191
σ		63.664	53.294	71.488	1.054%	0.000	14.704	175.451
%RSD		14.629	9.409	53.727	1.096	0.000	125.949	3.933

480-117352-B-1-A PDS 5/10/2017 8:11:42 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:12:04	90.189%	3331.084	212112.070	T 63662695.000	T 2906318.300	1841057.000	T 46891513.000	T 3847311.200	95.942%	396.091	241218.480	177717.950
2	20:12:25	90.128%	3288.979	208437.560	T 61303634.000	T 2778165.900	1808561.600	T 45767628.000	T 3837481.300	98.133%	326.216	235275.490	175653.960
3	20:12:47	89.342%	3198.228	210842.040	T 62383230.000	T 2834326.500	1810827.500	T 46261385.000	T 3867660.200	97.147%	303.723	238142.200	177304.300
x		89.886%	3272.764	210463.890	T 62449853.000	T 2839603.500	1820148.700	T 46306842.000	T 3850817.600	97.074%	342.010	238212.050	176892.070
σ		0.472%	67.896	1866.214	T 1180941.200	T 64238.966	18142.546	T 563319.490	T 15391.958	1.097%	48.167	2972.108	1092.000
%RSD		0.525	2.075	0.887	T 1.891	T 2.262	0.997	T 1.216	T 0.400	1.130	14.083	1.248	0.617

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:12:04	6412.782	181462.820	T 14324984.000	58527.604	26410.573	93595.655	285687.690	64728.836	1256.806	3183.100	362.737	1524.116
2	20:12:25	6183.066	175555.100	T 13939323.000	58911.404	27010.851	93219.612	283542.230	64990.478	1010.365	3384.895	345.995	1026.659
3	20:12:47	5598.958	179637.140	T 14345331.000	60881.308	26240.189	93996.727	283396.350	64424.756	1099.079	3231.006	335.765	1098.836
x		6064.936	178885.020	T 14203212.000	59440.105	26553.871	93603.998	284208.750	64714.690	1122.084	3266.334	348.166	1216.537
σ		419.575	3024.821	T 228761.430	1262.784	404.822	388.625	1282.870	283.126	124.820	105.434	13.616	268.805
%RSD		6.918	1.691	T 1.611	2.124	1.525	0.415	0.451	0.437	11.124	3.228	3.911	22.096

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:12:04	1231944.700	95.868%	268938.220	53765.411	48.596	12835.637	96.904%	1419.015	99390.663	76953.206	241250.740	99.906%
2	20:12:25	1256897.200	97.312%	268794.290	51996.454	33.119	13759.063	98.558%	1491.600	99368.467	76655.660	239578.450	104.093%
3	20:12:47	1226428.300	96.743%	275005.250	52291.161	-63.647	12833.828	99.327%	1520.327	100142.140	76997.024	238456.610	104.302%
x		1238423.400	96.641%	270912.590	52684.342	6.023	13142.843	98.263%	1476.980	99633.755	76868.630	239761.930	102.767%
σ		16234.812	0.728%	3545.078	947.758	60.830	533.663	1.238%	52.214	440.410	185.734	1406.074	2.480%
%RSD		1.311	0.753	1.309	1.799	1010.046	4.060	1.260	3.535	0.442	0.242	0.586	2.413

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:12:04	114946.410	271774.210	180490.550	97.175%	0.000	381484.460	216559.540
2	20:12:25	112516.880	270939.600	181717.050	99.076%	0.000	380090.440	216618.170
3	20:12:47	111230.640	274575.670	183340.030	98.486%	0.000	387353.920	221939.710
x		112897.970	272429.830	181849.210	98.246%	0.000	382976.270	218372.470
σ		1886.973	1904.634	1429.331	0.973%	0.000	3854.693	3089.458
%RSD		1.671	0.699	0.786	0.990	0.000	1.007	1.415

480-117352-B-1-B MS 5/10/2017 8:17:27 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:17:49	90.955%	3709.258	210802.290	T 64187911.000	T 2909192.200	T 2000913.200	T 47234310.000	T 3975613.800	96.812%	289.297	242988.640	188380.470
2	20:18:11	91.869%	3437.540	209500.220	T 63548544.000	T 2905638.600	1856452.400	T 47785049.000	T 3973489.100	96.507%	352.277	244898.810	186236.640
3	20:18:32	89.909%	3461.260	211507.330	T 63337742.000	T 2945165.600	1847027.500	T 47527724.000	T 4007068.500	96.556%	320.960	245415.340	185531.210
x		90.911%	3536.019	210603.280	T 63691399.000	T 2919998.800	T 1901464.400	T 47515694.000	T 3985390.500	96.625%	320.845	244434.260	186716.110
σ		0.980%	150.497	1018.243	T 442721.390	T 21867.408	T 86254.056	T 275566.490	T 18803.764	0.164%	31.490	1278.309	1483.910
%RSD		1.078	4.256	0.483	T 0.695	T 0.749	T 4.536	T 0.580	T 0.472	0.170	9.815	0.523	0.795

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:17:49	6207.128	183487.190	T 14513512.000	59001.548	26937.282	98372.916	290990.050	66641.877	1048.482	3353.920	336.865	1114.484
2	20:18:11	6135.260	182040.640	T 14748914.000	59558.491	27251.730	100002.480	292069.520	66443.926	968.411	3326.575	312.608	1435.404
3	20:18:32	5044.435	180329.750	T 14688203.000	59294.093	27258.553	98855.504	292522.620	66421.109	887.588	3412.925	322.898	944.651
x		5795.608	181952.530	T 14650210.000	59284.711	27149.188	99076.967	291860.730	66502.304	968.160	3364.474	324.124	1164.846
σ		651.526	1580.561	T 122213.520	278.590	183.548	837.052	787.332	121.411	80.447	44.132	12.174	249.223
%RSD		11.242	0.869	T 0.834	0.470	0.676	0.845	0.270	0.183	8.309	1.312	3.756	21.395

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:17:49	1279936.900	96.270%	278894.580	54199.145	132.321	13571.089	97.073%	1596.837	107006.150	81260.210	244529.860	101.629%

2	20:18:11	1269079.100	96.718%	272095.760	52294.535	-171.557	14313.398	99.167%	1633.717	104230.710	80253.728	241939.850	102.126%
3	20:18:32	1264368.800	97.237%	275841.170	52994.433	29.570	13774.961	99.723%	1795.096	102571.030	80541.742	243421.150	103.560%
x		1271128.300	96.741%	275610.500	53162.704	-3.222	13886.483	98.654%	1675.217	104602.630	80685.226	243296.960	102.438%
σ		7983.776	0.484%	3405.273	963.390	154.570	383.515	1.398%	105.443	2240.829	518.356	1299.463	1.002%
%RSD		0.628	0.500	1.236	1.812	4797.468	2.762	1.417	6.294	2.142	0.642	0.534	0.978

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:17:49	110836.690	277650.920	183645.410	96.694%	0.000	390193.770	223915.960
2	20:18:11	111225.680	279003.970	183851.090	96.904%	0.000	398864.220	227972.960
3	20:18:32	110518.340	281649.630	186429.170	96.917%	0.000	399528.460	228792.750
x		110860.240	279434.840	184641.890	96.839%	0.000	396195.480	226893.890
σ		354.258	2033.880	1551.240	0.125%	0.000	5208.235	2611.335
%RSD		0.320	0.728	0.840	0.129	0.000	1.315	1.151

480-117352-B-1-C MSD 5/10/2017 8:23:13 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:23:35	88.754%	3617.200	217737.280	T 64282665.000	T 2964092.800	1862016.700	T 47655915.000	T 4041861.000	97.457%	313.094	243573.780	183392.730
2	20:23:56	91.448%	3527.544	208229.050	T 63020549.000	T 2902078.300	1840212.000	T 46738241.000	T 3964140.100	97.271%	344.615	245775.530	184208.270
3	20:24:18	89.344%	3408.083	217579.390	T 64648083.000	T 2955502.900	1880357.500	T 48016561.000	T 4023266.000	96.791%	413.225	243253.590	184931.970
x		89.848%	3517.609	214515.240	T 63983766.000	T 2940558.000	1860862.100	T 47470239.000	T 4009755.700	97.173%	356.978	244200.970	184177.650
σ		1.416%	104.912	5444.569	T 853945.140	T 33600.031	20097.636	T 659076.770	T 40583.616	0.344%	51.198	1372.978	770.078
%RSD		1.576	2.982	2.538	T 1.335	T 1.143	1.080	T 1.388	T 1.012	0.354	14.342	0.562	0.418

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:23:35	6410.448	180897.080	T 14566319.000	59027.583	26423.461	97133.152	289067.420	66957.482	938.788	3512.459	304.289	577.222
2	20:23:56	5226.845	180564.040	T 14416834.000	59135.727	26608.380	98107.779	287413.940	67012.742	1011.595	3371.155	346.137	1460.203
3	20:24:18	5364.075	180892.910	T 14632530.000	59865.827	27300.523	99857.812	290409.900	66123.040	1106.947	3280.466	314.822	1167.056
x		5667.123	180784.670	T 14538561.000	59343.046	26777.455	98366.248	288963.760	66697.755	1019.110	3388.026	321.749	1068.160
σ		647.385	191.090	T 110494.540	455.959	462.330	1380.597	1500.669	498.484	84.331	116.913	21.767	449.722
%RSD		11.424	0.106	T 0.760	0.768	1.727	1.404	0.519	0.747	8.275	3.451	6.765	42.102

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:23:35	1302556.700	96.564%	279577.870	54526.241	152.815	13429.554	96.620%	1516.342	105625.900	81923.901	249975.690	98.613%
2	20:23:56	1286197.900	95.978%	276418.820	53557.343	82.002	13963.310	97.795%	1513.458	105958.700	81348.026	249613.530	101.994%
3	20:24:18	1251069.400	97.018%	274563.380	53355.744	-39.357	12997.955	100.534%	1283.209	102863.100	79983.932	244702.250	105.297%
x		1279941.400	96.520%	276853.360	53813.109	65.153	13463.606	98.316%	1437.670	104815.900	81085.287	248097.160	101.968%
σ		26307.658	0.522%	2535.334	625.762	97.188	483.577	2.009%	133.774	1699.342	996.315	2945.644	3.342%
%RSD		2.055	0.540	0.916	1.163	149.167	3.592	2.043	9.305	1.621	1.229	1.187	3.278

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:23:35	113037.270	276813.120	183029.380	98.145%	0.000	389838.990	220953.350
2	20:23:56	111078.220	280602.190	185281.850	96.957%	0.000	396681.120	227886.410
3	20:24:18	111569.020	277574.670	180318.180	99.299%	0.000	389939.510	222259.390
x		111894.840	278329.990	182876.470	98.134%	0.000	392153.210	223699.720
σ		1019.355	2004.281	2485.364	1.171%	0.000	3921.613	3684.121
%RSD		0.911	0.720	1.359	1.194	0.000	1.000	1.647

480-117352-B-2-A 5/10/2017 8:28:57 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:29:19	91.530%	-46.042	18487.557	T 56466552.000	T 8008051.200	32474.390	T 8097783.700	T 2906293.900	98.055%	448.601	1393.493	2365.027
2	20:29:40	92.216%	-32.710	18737.317	T 55806094.000	T 7896603.300	31727.982	T 8141723.100	T 2888389.500	98.259%	472.983	847.244	2033.405

3	20:30:03	94.698%	-36.487	17819.495	T 55298886.000	T 7894863.700	33778.889	T 8156676.700	T 2914970.900	99.183%	489.123	2248.770	2179.165
x		92.815%	-38.413	18348.123	T 55857177.000	T 7933172.700	32660.421	T 8132061.200	T 2903218.100	98.499%	470.236	1496.502	2192.533
σ		1.666%	6.871	474.532	T 585506.350	T 64852.468	1038.032	T 30612.238	T 13554.976	0.601%	20.400	706.418	166.215
%RSD		1.795	17.888	2.586	T 1.048	T 0.817	3.178	T 0.376	T 0.467	0.610	4.338	47.205	7.581

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:29:19	8317.036	4044.812	98163.012	53.796	610.199	2474.977	2511.717	-1904.239	1313.242	24.707	307.691	1404.952
2	20:29:40	9110.370	4271.717	104874.420	27.897	593.218	2310.567	2833.650	-1780.392	1314.649	80.352	302.732	1243.627
3	20:30:03	9149.986	4289.733	100960.360	76.510	620.973	2347.919	2439.392	-1862.285	1491.820	20.212	333.445	1429.766
x		8859.131	4202.088	101332.600	52.734	608.130	2377.821	2594.920	-1848.972	1373.237	41.757	314.623	1359.448
σ		469.885	136.502	3371.154	24.323	13.993	86.187	209.886	62.988	102.698	33.499	16.488	101.068
%RSD		5.304	3.248	3.327	46.125	2.301	3.625	8.088	3.407	7.479	80.225	5.240	7.435

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:29:19	756577.770	98.708%	1267.983	-18.455	-171.553	362.708	96.852%	1192.601	573.570	211.408	21130.784	102.498%
2	20:29:40	741331.130	99.489%	1266.826	-3.720	-171.061	383.415	99.264%	1319.785	738.215	227.679	19510.991	102.749%
3	20:30:03	735782.340	98.666%	1263.520	-14.006	-142.449	236.551	100.318%	1261.056	739.817	211.565	19769.628	101.684%
x		744563.750	98.954%	1266.110	-12.061	-161.688	327.558	98.811%	1257.814	683.867	216.884	20137.134	102.310%
σ		10768.003	0.463%	2.316	7.558	16.663	79.492	1.777%	63.654	95.524	9.349	870.189	0.557%
%RSD		1.446	0.468	0.183	62.665	10.306	24.268	1.798	5.061	13.968	4.311	4.321	0.544

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:29:19	64.393	-227.121	631.028	96.227%	0.000	94.080	8841.686
2	20:29:40	49.448	-270.217	746.965	97.267%	0.000	72.184	8978.590
3	20:30:03	45.856	-364.977	626.198	98.626%	0.000	65.698	8849.720
x		53.232	-287.438	668.064	97.373%	0.000	77.321	8889.999
σ		9.831	70.523	68.373	1.203%	0.000	14.872	76.828
%RSD		18.468	24.535	10.235	1.235	0.000	19.234	0.864

480-117352-B-3-A 5/10/2017 8:34:41 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:35:02	94.835%	-49.725	11029.524	T 25734774.000	1361608.100	83266.759	T 13069462.000	T 3161504.400	96.691%	294.700	-248.257	944.229
2	20:35:24	94.132%	-33.593	11621.788	T 25685561.000	1358841.000	82754.079	T 12917692.000	T 3166814.300	96.916%	273.293	122.990	863.058
3	20:35:45	93.622%	-46.713	11012.705	T 25203710.000	1347067.500	81889.877	T 13053887.000	T 3158731.400	97.467%	297.425	-569.898	744.336
x		94.196%	-43.344	11221.339	T 25541348.000	1355838.800	82636.905	T 13013680.000	T 3162350.000	97.025%	288.473	-231.721	850.541
σ		0.609%	8.578	346.901	T 293436.960	7721.184	695.879	T 83492.484	T 4107.296	0.399%	13.216	346.740	100.533
%RSD		0.647	19.790	3.091	T 1.149	0.569	0.842	T 0.642	T 0.130	0.411	4.581	149.637	11.820

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:35:02	11715.197	94733.901	48788.225	-20.679	115.061	575.335	1808.768	16668.493	1561.907	19.759	342.044	1525.117
2	20:35:24	11851.113	93469.665	39042.283	-15.856	109.132	479.456	1777.368	16088.349	1703.260	-5.714	307.409	1458.715
3	20:35:45	12524.433	95675.181	38495.290	75.639	71.385	611.215	1873.106	16487.834	1667.271	50.147	313.523	1190.533
x		12030.248	94626.249	42108.599	13.035	98.526	555.336	1819.747	16414.892	1644.146	21.397	320.992	1391.455
σ		433.339	1106.692	5791.188	54.270	23.691	68.118	48.804	296.870	73.459	27.966	18.486	177.143
%RSD		3.602	1.170	13.753	416.353	24.045	12.266	2.682	1.809	4.468	130.700	5.759	12.731

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:35:02	680935.180	97.106%	10084.957	-13.276	-203.676	27.711	96.772%	1658.636	399.745	8.067	2665.008	99.990%
2	20:35:24	665462.930	98.037%	9854.907	-13.818	-177.250	1.626	99.380%	2963.716	427.244	-6.123	2658.972	102.633%
3	20:35:45	670583.830	98.308%	10020.747	-3.845	-157.463	17.294	99.675%	1645.457	411.732	0.704	2565.643	104.067%
x		672327.310	97.817%	9986.870	-10.313	-179.463	15.543	98.609%	2089.269	412.907	0.883	2629.874	102.230%
σ		7882.096	0.631%	118.708	5.608	23.186	13.130	1.597%	757.321	13.787	7.097	55.708	2.068%
%RSD		1.172	0.645	1.189	54.378	12.919	84.476	1.620	36.248	3.339	804.134	2.118	2.023

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:35:02	75699.248	-582.003	143.171	98.316%	0.000	4.974	54727.481
2	20:35:24	75742.921	-556.694	117.333	98.351%	0.000	4.961	53640.964
3	20:35:45	74703.335	-583.708	88.123	100.479%	0.000	-20.674	54098.591
x		75381.834	-574.135	116.209	99.049%	0.000	-3.580	54155.679
σ		588.003	15.129	27.541	1.239%	0.000	14.804	545.503
%RSD		0.780	2.635	23.700	1.251	0.000	413.559	1.007

480-117352-B-4-A 5/10/2017 8:40:23 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:40:45	93.665%	-46.727	6757.772	T 43505101.000	T 7152005.700	16826.188	T 6289220.800	1787300.100	98.496%	294.561	1580.837	49939.325
2	20:41:06	94.443%	-25.792	6084.881	T 42908749.000	T 7054632.900	16776.885	T 6279926.000	1782500.500	100.354%	359.249	-2403.190	49421.615
3	20:41:27	94.600%	-52.303	6792.513	T 43523014.000	T 7189036.200	16088.499	T 6253975.100	1791627.200	99.559%	376.854	140.178	50832.736
x		94.236%	-41.607	6545.055	T 43312288.000	T 7131891.600	16563.857	T 6274374.000	1787142.600	99.470%	343.555	-227.392	50064.559
σ		0.501%	13.977	398.901	T 349590.110	T 69422.560	412.410	T 18267.028	4565.393	0.932%	43.333	2017.287	713.847
%RSD		0.531	33.593	6.095	T 0.807	T 0.973	2.490	T 0.291	0.255	0.937	12.613	887.142	1.426

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:40:45	14619.033	4906.913	65850.831	7.126	342.514	1033.949	2101.136	-1861.704	2032.230	130.799	332.117	1056.448
2	20:41:06	15773.210	4381.786	60057.676	33.826	267.404	1111.155	1786.385	-1967.503	2107.844	96.694	294.097	1306.943
3	20:41:27	15217.360	4386.843	56756.400	0.261	296.373	864.563	1955.707	-2206.277	2241.191	56.382	317.207	1345.869
x		15203.201	4558.514	60888.302	13.737	302.097	1003.222	1947.742	-2011.828	2127.088	94.625	314.474	1236.420
σ		577.219	301.733	4603.762	17.732	37.881	126.134	157.526	176.511	105.801	37.252	19.157	157.071
%RSD		3.797	6.619	7.561	129.080	12.539	12.573	8.088	8.774	4.974	39.368	6.092	12.704

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:40:45	534802.580	97.547%	19942.889	17.309	-194.145	125.940	97.557%	1486.394	811.832	396.942	9221.808	101.487%
2	20:41:06	515875.170	97.291%	20629.072	11.072	-140.646	120.701	99.968%	1440.542	1013.948	394.623	9048.053	103.479%
3	20:41:27	523456.680	98.477%	19895.501	-19.074	-145.270	99.011	100.882%	1313.487	856.963	399.313	8945.735	101.097%
x		524711.470	97.772%	20155.820	3.102	-160.021	115.217	99.469%	1413.474	894.248	396.959	9071.865	102.021%
σ		9525.893	0.624%	410.532	19.457	29.643	14.277	1.718%	89.575	106.091	2.345	139.568	1.278%
%RSD		1.815	0.638	2.037	627.168	18.524	12.392	1.727	6.337	11.864	0.591	1.538	1.252

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:40:45	129.849	-625.678	1008.532	97.542%	0.000	20.634	3404.237
2	20:41:06	159.691	-597.680	882.999	98.455%	0.000	-10.312	3474.207
3	20:41:27	150.432	-639.207	795.270	98.805%	0.000	9.858	3563.132
x		146.657	-620.855	895.600	98.268%	0.000	6.727	3480.525
σ		15.275	21.179	107.188	0.652%	0.000	15.709	79.635
%RSD		10.415	3.411	11.968	0.664	0.000	233.536	2.288

CCV 1037150 5/10/2017 8:46:07 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:46:28	85.053%	214987.810	105263.770	T 39464183.000	T 11988369.000	T 119523230.000	T 58246702.000	T 4557612.900	89.784%	67114.447	T 7175696.100	1817417.400
2	20:46:49	86.665%	214116.310	104210.230	T 38905957.000	T 11569078.000	T 117350560.000	T 56538814.000	T 4503476.500	91.522%	66801.528	T 7020317.500	1788583.100
3	20:47:11	85.695%	212229.180	105261.530	T 39374995.000	T 11973376.000	T 119385510.000	T 57396296.000	T 4591521.800	89.761%	65986.893	T 7098876.600	1805442.800
x		85.804%	107.891%	104.745%	T 106.763%	T 111.476%	T 112.753%	T 106.632%	T 105.958%	90.355%	66634.289	T 113.615%	99.055%
σ		0.812%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.010%	582.083	T n/a	n/a
%RSD		0.946	0.660	0.579	T 0.764	T 2.008	T 1.024	T 1.488	T 0.976	1.118	0.874	T 1.095	0.803

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:46:28	10101.534	T 10572714.000	T 210103930.000	3122156.000	1692378.200	2389509.700	1958275.400	229506.340	940.806	18348.764	339.971	699.780
2	20:46:49	8169.616	T 10467475.000	T 206327600.000	T 3513004.200	1661904.000	2359882.000	1946256.400	229634.750	1103.519	18184.974	341.796	494.066
3	20:47:11	11517.826	T 10623755.000	T 210834070.000	T 3547528.900	1670159.400	2365111.800	1977631.100	229087.700	1165.286	18412.514	337.022	380.904
x		9929.659	T 112.167%	T 112.524%	T 108.305%	104.532%	99.235%	101.108%	101.789%	1069.870	106.418%	339.596	524.917
σ		1680.709	T n/a	T n/a	T n/a	n/a	n/a	n/a	n/a	115.961	n/a	2.409	161.661
%RSD		16.926	T 0.755	T 1.157	T 6.960	0.941	0.667	0.807	0.125	10.839	0.641	0.709	30.797

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:46:28	1839814.100	91.697%	T 3911418.100	546424.500	2499.843	276247.450	91.038%	2101342.000	1347353.000	1045233.000	1320911.800	96.837%

2	20:46:49	1819624.900	91.900%	T 3919238.100	528162.800	1658.998	272712.530	94.209%	2092495.500	1316277.300	1025786.000	1299997.600	99.016%
3	20:47:11	1802598.300	91.461%	T 3862048.800	527488.620	3022.585	272194.850	93.615%	2078340.700	1324629.200	1031100.000	1302492.300	97.817%
x		1820679.100	91.686%	T 108.486%	103.712%	2393.809	104.790%	92.954%	2090726.100	1329419.800	95.410%	102.836%	97.890%
σ		18630.287	0.220%	T n/a	n/a	687.949	n/a	1.686%	11602.272	16082.232	n/a	n/a	1.092%
%RSD		1.023	0.240	T 0.796	2.012	28.739	0.806	1.813	0.555	1.210	0.972	0.873	1.115

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:46:28	91487.900	2786984.800	T 26903602.000	96.349%	0.000	376371.390	190486.920
2	20:46:49	91328.693	2861670.700	T 27228426.000	95.100%	10.515	382111.680	197935.990
3	20:47:11	89999.103	2808999.100	T 27121180.000	95.624%	5.229	384064.810	197180.070
x		101.946%	92.954%	T 114.015%	95.691%	5.248	97.284%	96.637%
σ		n/a	n/a	T n/a	0.627%	5.258	n/a	n/a
%RSD		0.899	1.361	T 0.611	0.656	100.184	1.050	2.100

CCB 1035925 5/10/2017 8:51:52 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:52:13	88.916%	53.249	482.846	13971.938	1446.406	17881.766	7867.843	1795.475	93.427%	139.247	1883.684	-19.093
2	20:52:35	89.674%	18.701	164.615	23131.724	1693.301	19489.204	12086.874	1641.277	93.842%	101.275	1728.266	-223.652
3	20:52:57	88.475%	25.637	59.478	28356.297	3244.179	24394.144	7196.604	882.366	95.022%	136.848	2840.625	-67.347
x		89.022%	32.529	235.647	21819.987	2127.962	20588.372	9050.440	1439.706	94.097%	125.790	2150.858	-103.364
σ		0.606%	18.276	220.441	7281.342	974.523	3392.476	2650.960	488.789	0.828%	21.264	602.389	106.930
%RSD		0.681	56.184	93.547	33.370	45.796	16.478	29.291	33.951	0.880	16.905	28.007	103.450

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:52:13	5656.980	1443.822	36604.078	444.647	206.903	566.981	649.491	-2195.229	957.148	17.946	313.129	1344.884
2	20:52:35	5707.147	1402.314	40342.583	527.204	167.735	641.233	1060.604	-2126.732	946.951	41.965	326.452	1330.327
3	20:52:57	5388.286	2240.066	49702.676	592.271	257.688	866.430	868.995	-2261.738	955.697	19.206	307.364	1396.431
x		5584.138	1695.401	42216.445	521.374	210.775	691.548	859.697	-2194.566	953.265	26.372	315.648	1357.214
σ		171.457	472.150	6747.358	73.984	45.101	155.936	205.715	67.506	5.516	13.519	9.790	34.734
%RSD		3.070	27.849	15.983	14.190	21.398	22.549	23.929	3.076	0.579	51.261	3.102	2.559

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:52:13	266.031	91.975%	665.782	60.944	-175.594	26.597	94.850%	1354.838	528.122	134.636	179.058	96.601%
2	20:52:35	343.897	93.022%	559.727	98.545	-161.053	23.084	94.349%	1399.137	614.017	136.266	190.917	95.841%
3	20:52:57	380.218	94.460%	776.379	194.503	-172.944	44.284	96.304%	1713.438	717.200	241.579	315.661	96.585%
x		330.048	93.152%	667.296	117.997	-169.864	31.322	95.168%	1489.138	619.780	170.827	228.546	96.342%
σ		58.340	1.248%	108.334	68.871	7.745	11.362	1.015%	195.508	94.671	61.278	75.677	0.435%
%RSD		17.676	1.340	16.235	58.367	4.559	36.276	1.067	13.129	15.275	35.871	33.112	0.451

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:52:13	16.092	1340.042	3746.218	94.082%	0.000	80.979	32.201
2	20:52:35	37.700	1197.305	4235.796	97.398%	0.000	87.447	56.603
3	20:52:57	47.169	1474.388	6236.157	95.292%	0.000	53.327	57.964
x		33.654	1337.245	4739.390	95.591%	0.000	73.917	48.923
σ		15.928	138.563	1319.149	1.678%	0.000	18.123	14.497
%RSD		47.331	10.362	27.834	1.755	0.000	24.518	29.633

CCVL 1037148 5/10/2017 8:57:37 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:57:58	91.064%	321.990	17080.229	T 2105548.200	71670.670	188518.980	T 2974787.100	67819.988	96.577%	98.410	25587.831	18646.247
2	20:58:19	93.497%	284.893	16393.346	T 2070962.000	72210.218	186697.470	T 2970416.900	68045.385	97.036%	134.177	25641.675	18214.145

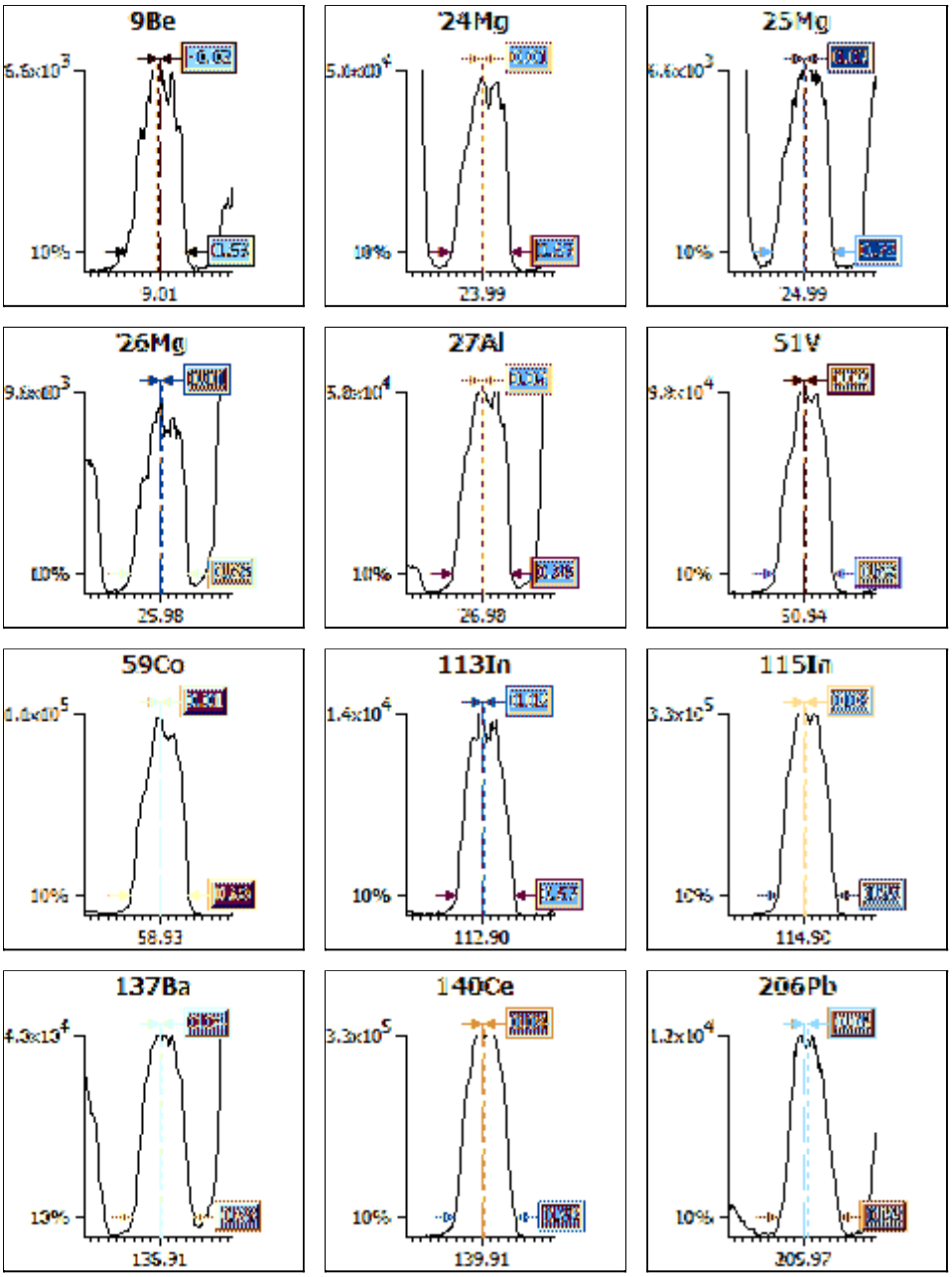
3	20:58:41	90.691%	373.249	17504.550	T 2088301.900	73277.434	190142.400	T 2985846.900	68433.206	97.091%	113.392	24258.693	17753.454
x		91.751%	103.054%	106.035%	T 113.610%	102.198%	107.358%	T 110.620%	95.134%	96.901%	115.326	100.689%	99.969%
σ		1.524%	n/a	n/a	T n/a	n/a	n/a	T n/a	n/a	0.282%	17.961	n/a	n/a
%RSD		1.661	13.580	3.300	T 0.828	1.130	0.915	T 0.267	0.455	0.291	15.574	3.113	2.453
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	20:57:58	7742.428	15349.618	1275889.700	6193.702	2709.557	10345.732	29343.550	2323.102	1340.145	345.818	333.013	1398.052
2	20:58:19	7815.694	14865.581	1310994.700	6405.953	2577.194	10025.285	30391.355	2410.623	1334.960	380.855	310.646	1367.953
3	20:58:41	8109.827	15119.082	1311643.500	6556.814	2931.036	10627.415	30337.384	2244.138	1406.514	358.814	306.931	1465.881
x		7889.316	100.370%	104.902%	101.876%	106.855%	108.094%	96.765%	103.202%	1360.539	105.117%	316.863	1410.629
σ		194.449	n/a	n/a	n/a	n/a	n/a	n/a	n/a	39.900	n/a	14.109	50.161
%RSD		2.465	1.602	1.574	2.857	6.527	2.916	1.965	3.580	2.933	4.895	4.453	3.556
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	20:57:58	44343.145	95.653%	27442.095	5425.422	-124.413	1365.275	96.094%	2315.657	10933.130	7868.501	10196.301	95.979%
2	20:58:19	45242.602	93.880%	26682.610	5610.620	-134.976	1389.292	96.574%	2195.391	10683.873	7845.048	10046.829	99.687%
3	20:58:41	45352.322	95.325%	27253.268	5908.613	-124.176	1289.623	96.277%	2300.859	10695.995	7936.527	10514.616	101.220%
x		92.013%	94.953%	94.379%	109.693%	-127.855	103.218%	96.315%	2270.635	10771.000	90.924%	100.774%	98.962%
σ		n/a	0.943%	n/a	n/a	6.168	n/a	0.243%	65.583	140.540	n/a	n/a	2.694%
%RSD		1.231	0.994	1.458	4.316	4.825	3.859	0.252	2.888	1.305	0.603	2.330	2.723
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	20:57:58	11378.355	27094.541	20350.288	94.502%	0.000	38187.880	19209.677					
2	20:58:19	11298.669	28167.928	20657.623	95.908%	0.000	37141.188	19695.396					
3	20:58:41	10894.060	29570.825	21936.284	92.593%	0.000	39240.858	20216.751					
x		125.449%	93.237%	110.405%	94.334%	0.000	97.552%	97.564%					
σ		n/a	n/a	n/a	1.664%	0.000	n/a	n/a					
%RSD		2.321	4.391	4.009	1.764	0.000	2.749	2.556					

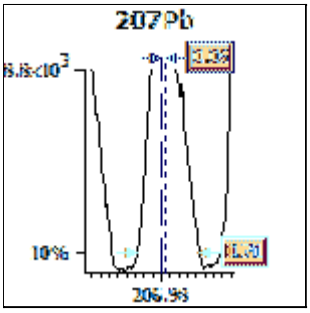
Performance Report

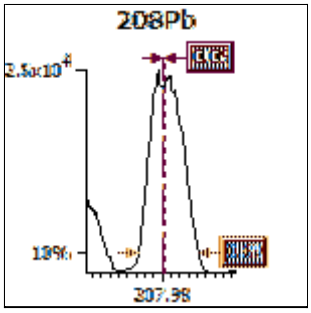
Sample details
Sample name : ITUNE
Acquired at : 5/19/2017 12:20:36 PM
Report name : ISM PERFORMANCE REPORT [9/8/2011 1:54:48 PM]

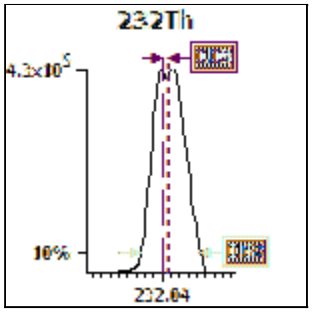
Mass Calibration verification

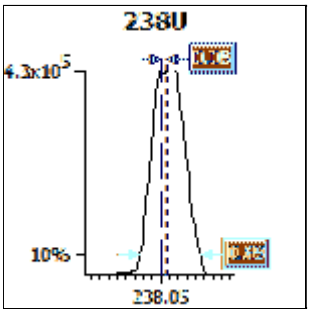
Acquisition parameters
Sweeps : 20
Dwell : 1.0 mSecs
Point spacing : 0.01 amu
Peak width measured at 10% of the peak maximum











Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error
9Be	0.90	0.65	0.10	0.69	-0.02
24Mg	0.90	0.65	0.10	0.69	0.01
25Mg	0.90	0.65	0.10	0.72	0.02
26Mg	0.90	0.65	0.10	0.68	0.01
27Al	0.90	0.65	0.10	0.68	0.02
51V	0.90	0.65	0.10	0.68	0.02
59Co	0.90	0.65	0.10	0.68	0.01
113In	0.90	0.65	0.10	0.67	0.02
115In	0.90	0.65	0.10	0.69	0.03
137Ba	0.90	0.65	0.10	0.69	0.04
140Ce	0.90	0.65	0.10	0.69	0.04
206Pb	0.90	0.65	0.10	0.72	0.05
207Pb	0.90	0.65	0.10	0.71	0.06
208Pb	0.90	0.65	0.10	0.69	0.05
232Th	0.90	0.65	0.10	0.68	0.08
238U	0.90	0.65	0.10	0.69	0.08

Sample details
Sample name : ITUNE
Acquired at : 5/19/2017 12:20:36 PM
Report name : ISM PERFORMANCE REPORT [9/8/2011 1:54:48 PM]

Tune conditions

Major	
Extraction	-129
Lens 1	-5.0
Focus	18.0
D1	-48.6
Pole Bias	-7.0
Hexapole Bias	-3.0
Nebuliser	0.75
Sampling Depth	120

Minor	
Lens 2	-43.9
Lens 3	-171.0
Forward power	1400
Horizontal	107
Vertical	370
D2	-177
DA	-38.4
Cool	13.0
Auxiliary	0.90

Global	
Standard resolution	n/a
High resolution	n/a
Analogue Detector	n/a
PC Detector	n/a

Add. Gases	
No Cell Gas	0.00
No Cell Gas	0.00

Sensitivity and stability results

Acquisition parameters
Sweeps : 50

Run	Time	8Bkg	9Be	24Mg	25Mg	26Mg	27Al	51V	59Co	113In
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	-	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
	Countrate	-	>100	>100	>100	>100	>100	>100	>100	>100
1	12:21:32 PM	23.000	6497.266	48241.717	6807.390	8542.189	60955.263	118346.69	106092.60	12318.551
2	12:22:06 PM	22.000	6571.295	47397.299	6765.373	8622.230	60824.787	116741.43	105349.91	12496.683
3	12:22:40 PM	24.100	6773.376	48315.932	6939.444	8858.353	62173.751	117420.17	105899.37	12636.789
4	12:23:13 PM	24.000	6711.351	48119.364	6723.356	8794.320	60949.241	117984.13	106362.31	12438.640
5	12:23:47 PM	22.200	6743.364	48662.939	6961.454	8660.249	61306.548	118767.67	106295.89	12558.730
x		23.060	6659.330	48147.450	6839.403	8695.468	61241.918	117852.02	106000.02	12489.879
σ		0.98	119.15	465.43	105.92	128.84	550.98	793.80	406.24	120.78
%RSD		4.244	1.789	0.967	1.549	1.482	0.900	0.674	0.383	0.967

Run	Time	115In	137Ba	140Ce	156Ce O	206Pb	207Pb	208Pb	220Bkg	232Th
Dwell (mSecs)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limits	%RSD	5.0%	5.0%	5.0%	-	5.0%	5.0%	5.0%	-	5.0%
	Countrate	>100	>100	>100	-	>100	>100	>100	-	>100
1	12:21:32 PM	332461.17	43366.346	348624.43	2700.219	11792.170	10361.220	24872.545	0.000	429419.68
2	12:22:06 PM	333395.56	43266.086	350143.79	2736.225	11525.984	10475.291	24768.391	0.000	430618.01
3	12:22:40 PM	333277.22	43380.382	354075.55	2684.216	12042.349	10577.355	24690.275	0.000	431128.97
4	12:23:13 PM	335556.27	43236.008	352112.62	2618.206	11768.153	10427.261	24688.272	0.000	430022.94
5	12:23:47 PM	336896.92	43426.502	352788.69	2750.227	11602.037	10533.327	24858.525	0.000	426007.78
x		334317.43	43335.065	351549.02	2697.818	11746.139	10474.891	24775.601	0.000	429439.47
σ		1841.61	80.57	2165.97	51.84	199.74	85.30	88.37	0.00	2022.42
%RSD		0.551	0.186	0.616	1.922	1.700	0.814	0.357	0.000	0.471

Run	Time	238U
Dwell (mSecs)		0.0
Limits	%RSD	5.0%
	Countrate	>100
1	12:21:32 PM	428769.25
2	12:22:06 PM	429276.05
3	12:22:40 PM	427462.31
4	12:23:13 PM	426615.01
5	12:23:47 PM	424674.39
x		427359.40
σ		1832.70
%RSD		0.429

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		<0.0200
1	12:21:32 PM	0.008
2	12:22:06 PM	0.008
3	12:22:40 PM	0.008
4	12:23:13 PM	0.007
5	12:23:47 PM	0.008
x		0.0077

σ	0.00
%RSD	2.1122

Result : The performance report passed.

Experiment Details

Description	PlasmaLab Template BlankExperiment
Template Filename	C:\Program Files\Thermo Fisher\PlasmaLab\TEMPLATES\6020A.tet
Created By User	user
Analyte Database	Default.tea
Creation Timestamp	8/29/2003 1:55:15 PM
Last Edited By	INORG-User
Last Edit Timestamp	5/19/2017 6:17:12 PM
Instrument Detector	Simultaneous
Database Version	3.51
Acquisition Mode	Unknown

Numerical Results report key (text indicates meaning)

Blue text indicates that cell is a statistic.
Underlining indicates that a data warning flag is set.

Column headings

No flag
Semi Quant
Standard Addition
Multi Element

Result cells

Internal Standard
Excluded
QC Warning
QC Failure
Transient TRA only:
Peak Not Found
Manually Edited
Merged Peak

Data warning flags
I - Invalid calibration
T - Tripped
F - Interference correction failed
M - Result over max
V - Valley integration failed
D - Different method used

Setup

Survey Scan Setup

Sweeps	10
Dwell Time	600
Channels Per Mass	10
Acquisition Duration	13247

Main Run Setup

Main Run	Peak Jumping
Sweeps	20
Dwell Time	10000
Channels Per Mass	1
Acquisition Duration	18211
Channel Spacing	0.02

Survey Scan Regions

Start AMU	End AMU	Channels	Dwell ms	Resolution
4.59	11.41	68	600	Standard
22.59	27.41	48	600	Standard
28.59	29.41	8	600	Standard
30.59	31.41	8	600	Standard

32.59	33.41	8	600	Standard
38.59	39.41	8	600	Standard
42.59	79.41	368	600	Standard
80.59	245.50	1649	600	Standard

Peak Jump Regions

Analyte	Channels	Dwell ms	Resolution
6Li	1	5000	Standard
7Li	1	5000	Standard
9Be	1	20000	Standard
11B	1	10000	Standard
23Na	1	5000	Standard
25Mg	1	5000	Standard
26Mg	1	5000	Standard
27Al	1	10000	Standard
39K	1	5000	Standard
43Ca	1	10000	Standard
44Ca	1	5000	Standard
45Sc	1	5000	Standard
47Ti	1	10000	Standard
51V	1	10000	Standard
52Cr	1	10000	Standard
53Cl O	1	10000	Standard
55Mn	1	10000	Standard
56Fe	1	10000	Standard
59Co	1	10000	Standard
60Ni	1	10000	Standard
65Cu	1	10000	Standard
66Zn	1	10000	Standard
75As	1	50000	Standard
77Ar Cl	1	50000	Standard
82Se	1	100000	Standard
83Kr	1	100000	Standard
84Kr	1	10000	Standard
88Sr	1	10000	Standard
89Y	1	5000	Standard
98Mo	1	10000	Standard
106Cd	1	10000	Standard
107Ag	1	10000	Standard
108Mo O	1	10000	Standard
111Cd	1	10000	Standard
115In	1	5000	Standard
118Sn	1	10000	Standard
121Sb	1	10000	Standard
123Sb	1	100000	Standard
135Ba	1	10000	Standard
159Tb	1	5000	Standard
182W	1	10000	Standard
205Tl	1	10000	Standard
206Pb	1	10000	Standard
207Pb	1	10000	Standard
208Pb	1	10000	Standard
209Bi	1	5000	Standard

220Bkg	1	10000	Standard
232Th	1	10000	Standard
238U	1	10000	Standard

Calibration Technique

Use External Drift Correction - No
Calibrate by - Isotope

Symbol	Interference Correction	RSF	Calibration Method	Line Fit	Weighting	Forcing	Use for Semi-Quant	Max Error	Minimum Correlation
6Li	Yes	1.00	None				No		
7Li	Yes	1.00	None				No		
9Be	Yes	0.75	Fully-Quantified	Linear	Absolute SD	None	Yes		
11B	Yes	0.58	Fully-Quantified	Linear	Absolute SD	None	Yes		
23Na	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
25Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
26Mg	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
27Al	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
39K	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
43Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
44Ca	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
45Sc	Yes	1.00	None				No		
47Ti	Yes	0.99	None				No		
51V	Yes	0.99	Fully-Quantified	Linear	Absolute SD	None	Yes		
52Cr	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
55Mn	Yes	0.95	Fully-Quantified	Linear	Absolute SD	None	Yes		
56Fe	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
59Co	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
60Ni	No	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
65Cu	Yes	0.90	Fully-Quantified	Linear	Absolute SD	None	Yes		
66Zn	Yes	0.38	Fully-Quantified	Linear	Absolute SD	None	Yes		
75As	Yes	0.07	Fully-Quantified	Linear	Absolute SD	None	Yes		
82Se	Yes	0.10	Fully-Quantified	Linear	Absolute SD	None	Yes		
83Kr	Yes	0.01	None				No		
84Kr	Yes	0.01	None				No		
88Sr	Yes	0.96	Fully-Quantified	Linear	Absolute SD	None	Yes		
89Y	Yes	0.98	None				No		
98Mo	Yes	0.98	Fully-Quantified	Linear	Absolute SD	None	Yes		
107Ag	Yes	0.93	Fully-Quantified	Linear	Absolute SD	None	Yes		
106Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
111Cd	Yes	0.57	Fully-Quantified	Linear	Absolute SD	None	Yes		
115In	Yes	0.99	None				No		
118Sn	Yes	0.96	None				No		
121Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes		
123Sb	Yes	0.39	Fully-Quantified	Linear	Absolute SD	None	Yes		
135Ba	Yes	0.91	Fully-Quantified	Linear	Absolute SD	None	Yes		
159Tb	Yes	0.99	None				No		
182W	Yes	0.94	Fully-Quantified	Linear	Absolute SD	None	Yes		
206Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes		
207Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	Yes		
208Pb	Yes	0.97	Fully-Quantified	Linear	Absolute SD	None	No		
209Bi	Yes	0.92	None				No		
232Th	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		
238U	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes		

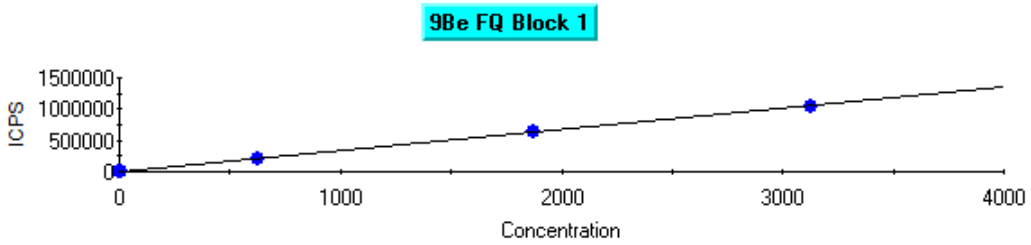
205Tl	Yes	1.00	Fully-Quantified	Linear	Absolute SD	None	Yes
220Bkg	Yes		Semi-Quantified				No
77Ar Cl	Yes		Semi-Quantified				No
53Cl O	Yes		Semi-Quantified				No
108Mo O	Yes		Semi-Quantified				No

Sample List

No	Label	Type	Weight	Rack	Row	Col	Height
1	STD0 1035925	Fully Quant Standard	1.000	0	1	2	144
2	STD1 1039949	Fully Quant Standard	1.000	0	1	3	144
3	STD2 1039950	Fully Quant Standard	1.000	0	1	4	144
4	STD3 1039951	Fully Quant Standard	1.000	0	1	5	144
5	STD4 1039952	Fully Quant Standard	1.000	1	1	1	144
6	STD5 1039953	Fully Quant Standard	1.000	1	1	2	144
7	ICV 1039955	QC Sample	1.000	0	1	6	144
8	ICVL 1039949	QC Sample	1.000	0	1	3	144
9	ICBIS 1036503	QC Sample	1.000	0	1	2	144
10	ICSA 1034645	QC Sample	1.000	1	1	3	144
11	ICSAB 1034648	QC Sample	1.000	1	1	4	144
12	CCV 1039951	QC Sample	1.000	0	1	5	144
13	CCB 1035925	QC Sample	1.000	0	1	2	144
14	MB 200-116803/1-A	Unknown	1.000	1	2	1	144
15	LCS 200-116803/2-A	Unknown	1.000	1	2	2	144
16	200-38498-A-1-E	Unknown	1.000	1	2	3	144
17	200-38498-A-2-D	Unknown	1.000	1	2	4	144
18	200-38498-A-3-D	Unknown	1.000	1	2	5	144
19	200-38498-A-4-D	Unknown	1.000	1	2	6	144
20	200-38498-A-5-D	Unknown	1.000	1	2	7	144
21	200-38498-A-6-D	Unknown	1.000	1	2	8	144
22	200-38498-A-7-J	Unknown	1.000	1	2	9	144
23	200-38498-A-7-J SD@5	Unknown	1.000	1	2	10	144
24	CCV 1039951	QC Sample	1.000	0	1	5	144
25	CCB 1035925	QC Sample	1.000	0	1	2	144
26	CCVL 1039949	QC Sample	1.000	0	1	3	144
27	200-38498-A-7-J PDS	Unknown	1.000	1	2	11	144
28	200-38498-A-7-K MS	Unknown	1.000	1	2	12	144
29	200-38498-A-7-L MSD	Unknown	1.000	1	3	1	144
30	200-38498-A-8-D	Unknown	1.000	1	3	2	144
31	200-38498-A-9-D	Unknown	1.000	1	3	3	144
32	200-38498-A-11-D	Unknown	1.000	1	3	4	144
33	CCV 1039951	QC Sample	1.000	0	1	5	144
34	CCB 1035925	QC Sample	1.000	0	1	2	144
35	CCVL 1039949	QC Sample	1.000	0	1	3	144
36	MB 200-116636/1-A	Unknown	1.000	1	3	5	144
37	LCS 200-116636/2-A	Unknown	1.000	1	3	6	144
38	480-117618-E-1-A	Unknown	1.000	1	3	7	144
39	480-117618-E-2-A	Unknown	1.000	1	3	8	144
40	480-117618-E-3-A	Unknown	1.000	1	3	9	144
41	480-117618-E-4-A	Unknown	1.000	1	3	10	144
42	480-117618-E-5-A	Unknown	1.000	1	3	11	144
43	480-117618-E-6-A	Unknown	1.000	1	3	12	144
44	480-117679-B-2-A	Unknown	1.000	1	4	1	144
45	480-117679-B-3-A	Unknown	1.000	1	4	2	144
46	CCV 1039951	QC Sample	1.000	0	1	5	144
47	CCB 1035925	QC Sample	1.000	0	1	2	144

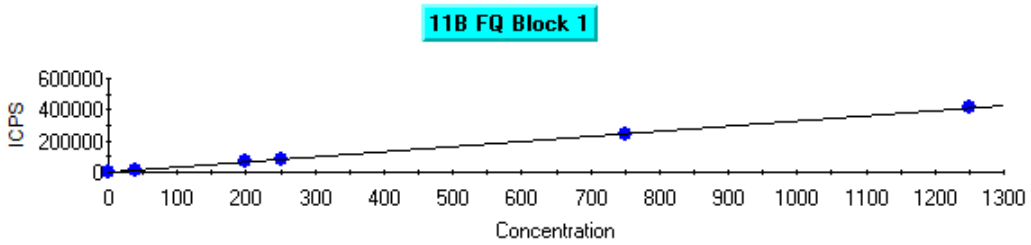
48	CCVL 1039949	QC Sample	1.000	0	1	3	144
49	480-117679-B-4-A	Unknown	1.000	1	4	3	144
50	480-117679-B-5-A	Unknown	1.000	1	4	4	144
51	480-117679-B-6-A	Unknown	1.000	1	4	5	144
52	480-117756-C-1-A	Unknown	1.000	1	4	6	144
53	480-117756-C-2-A	Unknown	1.000	1	4	7	144
54	480-117756-C-3-A	Unknown	1.000	1	4	8	144
55	480-117756-C-3-A SD@5	Unknown	1.000	1	4	9	144
56	480-117756-C-3-A PDS	Unknown	1.000	1	4	10	144
57	480-117756-C-3-B MS	Unknown	1.000	1	4	11	144
58	480-117756-C-3-C MSD	Unknown	1.000	1	4	12	144
59	CCV 1039951	QC Sample	1.000	0	1	5	144
60	CCB 1035925	QC Sample	1.000	0	1	2	144
61	CCVL 1039949	QC Sample	1.000	0	1	3	144

Fully Quant Calibration



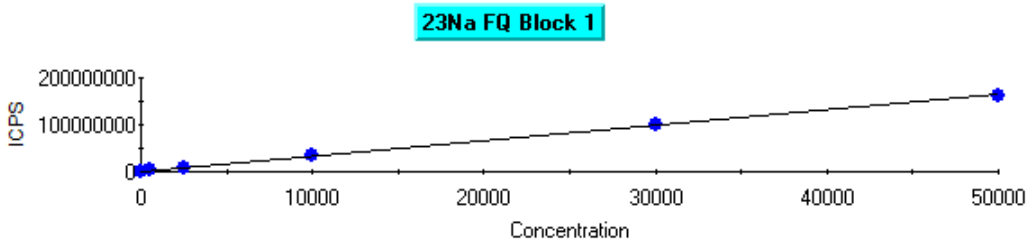
Intercept CPS=70.472651 Intercept Conc=0.209943
Sensitivity=335.674621 Correlation Coeff=0.999992

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-0.002	0.002	69.97	0.00
STD1 1039949	1.000	1.013	0.013	410.59	1.32
STD2 1039950	5.000	4.958	0.042	1734.74	0.84
STD3 1039951	625.000	628.411	3.411	211012.04	0.55
STD4 1039952	1875.000	1862.812	12.188	625369.24	0.65
STD5 1039953	3125.000	3125.567	0.567	1049243.94	0.02



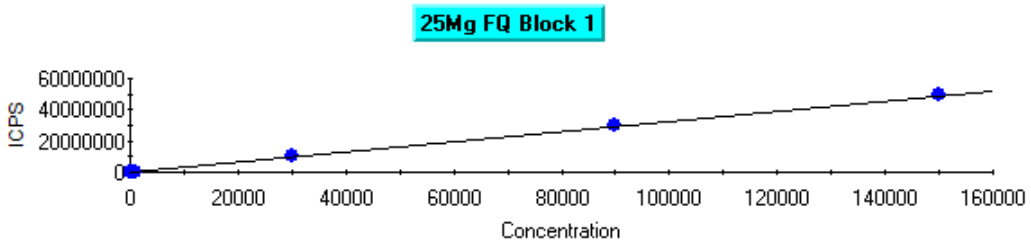
Intercept CPS=2633.062997 Intercept Conc=8.043718
Sensitivity=327.344026 Correlation Coeff=0.999987

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.033	0.033	2643.77	0.00
STD1 1039949	40.000	39.158	0.842	15451.16	2.11
STD2 1039950	200.000	200.154	0.154	68152.44	0.08
STD3 1039951	250.000	250.236	0.236	84546.46	0.09
STD4 1039952	750.000	744.231	5.769	246252.71	0.77
STD5 1039953	1250.000	1251.099	1.099	412172.76	0.09



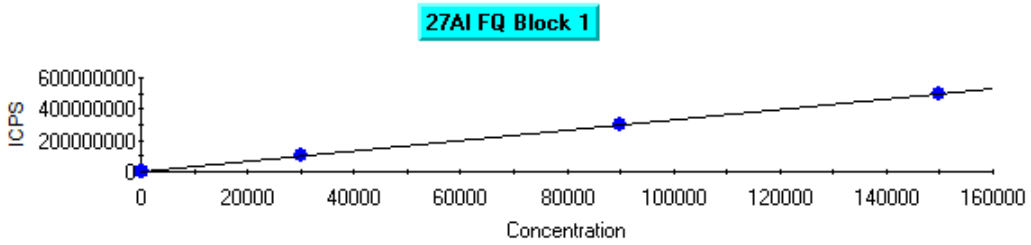
Intercept CPS=562136.044494 Intercept Conc=171.737219
Sensitivity=3273.233652 Correlation Coeff=0.999919

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-0.137	0.137	561687.89	0.00
STD1 1039949	500.000	495.638	4.362	2184476.35	0.87
STD2 1039950	2500.000	2666.364	166.364	9289768.82	6.65
STD3 1039951	10000.000	10360.310	360.310	34473851.03	3.60
STD4 1039952	30000.000	30333.013	333.013	99849174.92	1.11
STD5 1039953	50000.000	49561.821	438.179	162789557.79	0.88



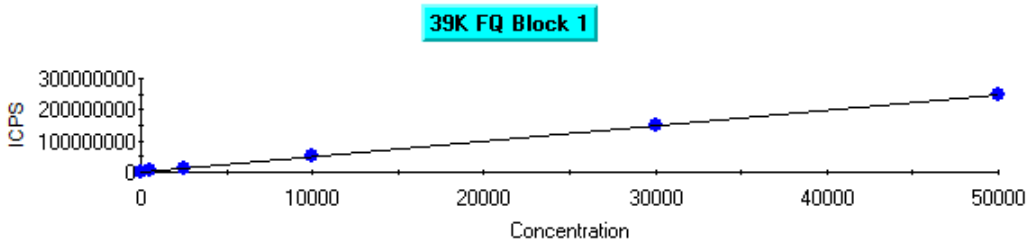
Intercept CPS=238.436584 Intercept Conc=0.737409
Sensitivity=323.343933 Correlation Coeff=0.999930

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.025	0.025	246.57	0.00
STD1 1039949	200.000	192.573	7.427	62505.90	3.71
STD2 1039950	1000.000	958.858	41.142	310279.26	4.11
STD3 1039951	30000.000	32328.668	2328.668	10453517.23	7.76
STD4 1039952	90000.000	93878.849	3878.849	30355394.65	4.31
STD5 1039953	150000.000	154088.958	4088.958	49823968.18	2.73



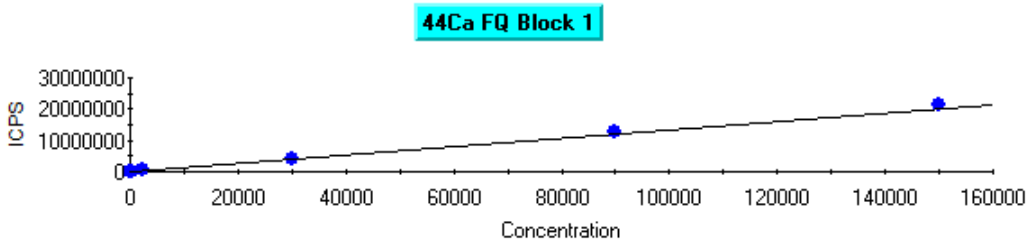
Intercept CPS=2894.979144 Intercept Conc=0.873163
Sensitivity=3315.509208 Correlation Coeff=0.999953

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.001	0.001	2898.25	0.00
STD1 1039949	50.000	47.587	2.413	160670.55	4.83
STD2 1039950	250.000	232.321	17.679	773158.33	7.07
STD3 1039951	30000.000	31424.216	1424.216	104190172.27	4.75
STD4 1039952	90000.000	91027.894	1027.894	301806714.27	1.14
STD5 1039953	150000.000	150220.636	220.636	498060798.39	0.15



Intercept CPS=667372.075841 Intercept Conc=133.339569
Sensitivity=5005.056481 Correlation Coeff=0.999985

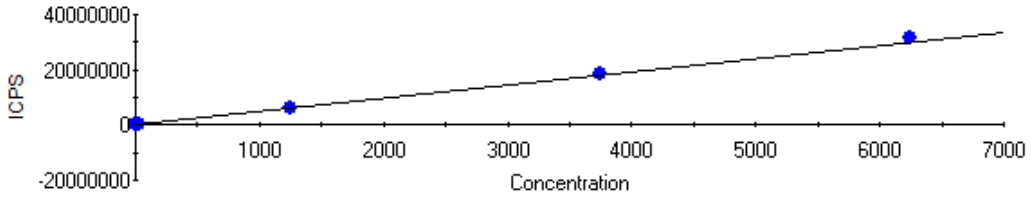
Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-1.075	1.075	661991.77	0.00
STD1 1039949	500.000	532.378	32.378	3331951.77	6.48
STD2 1039950	2500.000	2626.384	126.384	13812573.93	5.06
STD3 1039951	10000.000	10255.252	255.252	51995487.18	2.55
STD4 1039952	30000.000	29891.277	108.723	150274902.99	0.36
STD5 1039953	50000.000	49866.505	133.495	250252046.56	0.27



Intercept CPS=11667.089387 Intercept Conc=87.213995
Sensitivity=133.775426 Correlation Coeff=0.999989

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	1.170	1.170	11823.58	0.00
STD1 1039949	500.000	482.034	17.966	76151.44	3.59
STD2 1039950	2500.000	2294.571	205.429	318624.31	8.22
STD3 1039951	30000.000	32184.803	2184.803	4317202.87	7.28
STD4 1039952	90000.000	94867.019	4867.019	12702543.03	5.41
STD5 1039953	150000.000	157919.772	7919.772	21137451.89	5.28

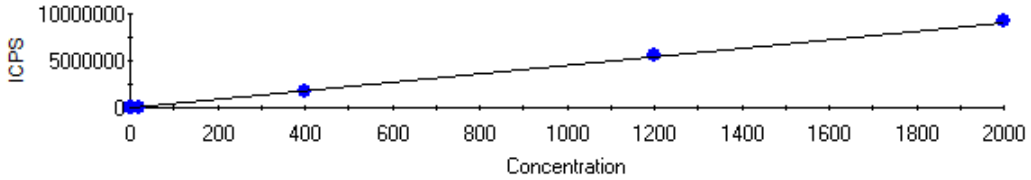
51V FQ Block 1



Intercept CPS=-1895.462476 Intercept Conc=-0.396320
Sensitivity=4782.658045 Correlation Coeff=0.999981

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.104	0.104	-1396.97	0.00
STD1 1039949	5.000	4.741	0.259	20777.76	5.19
STD2 1039950	25.000	22.736	2.264	106844.01	9.06
STD3 1039951	1250.000	1309.568	59.568	6261320.29	4.77
STD4 1039952	3750.000	3915.885	165.885	18726443.57	4.42
STD5 1039953	6250.000	6601.504	351.504	31570841.53	5.62

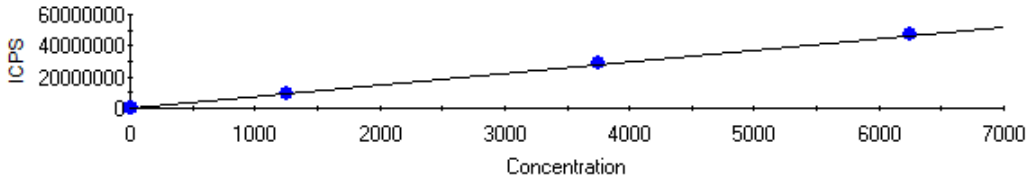
52Cr FQ Block 1



Intercept CPS=2131.409131 Intercept Conc=0.469084
Sensitivity=4543.769835 Correlation Coeff=0.999808

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.008	0.008	2166.86	0.00
STD1 1039949	4.000	3.686	0.314	18878.72	7.86
STD2 1039950	20.000	18.034	1.966	84074.42	9.83
STD3 1039951	400.000	364.869	35.131	1660010.26	8.78
STD4 1039952	1200.000	1207.286	7.286	5487760.04	0.61
STD5 1039953	2000.000	2032.481	32.481	9237256.13	1.62

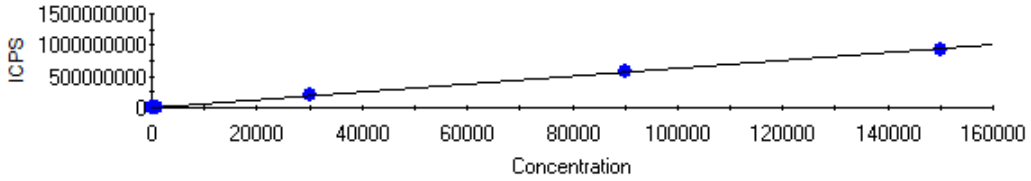
55Mn FQ Block 1



Intercept CPS=981.725229 Intercept Conc=0.132121
Sensitivity=7430.522749 Correlation Coeff=0.999996

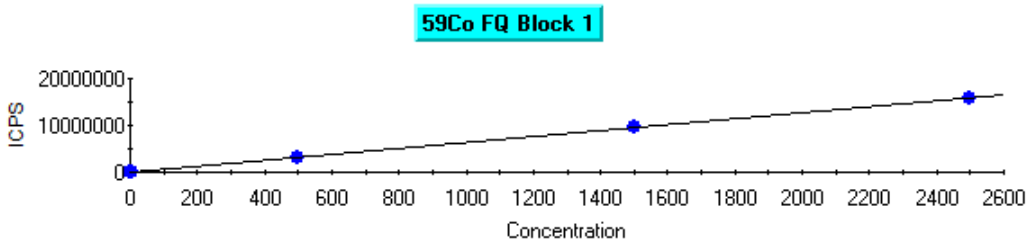
Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.002	0.002	993.09	0.00
STD1 1039949	2.000	1.917	0.083	15223.19	4.17
STD2 1039950	10.000	9.312	0.688	70172.95	6.88
STD3 1039951	1250.000	1285.877	35.877	9555723.37	2.87
STD4 1039952	3750.000	3805.708	55.708	28279382.72	1.49
STD5 1039953	6250.000	6358.815	108.815	47250303.72	1.74

56Fe FQ Block 1



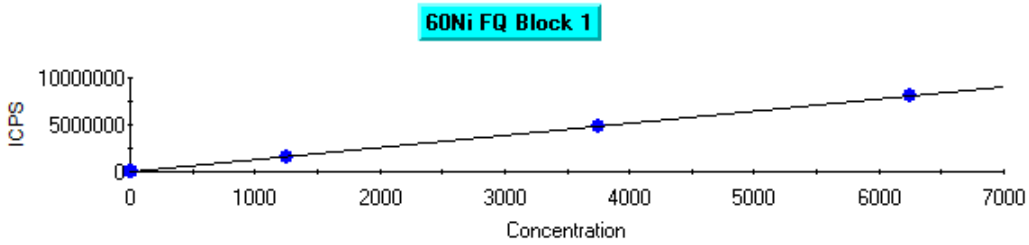
Intercept CPS=331885.982248 Intercept Conc=52.295536
Sensitivity=6346.353983 Correlation Coeff=0.999990

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-0.264	0.264	330208.00	0.00
STD1 1039949	200.000	188.002	11.998	1525012.27	6.00
STD2 1039950	1000.000	1041.253	41.253	6940047.12	4.13
STD3 1039951	30000.000	30235.258	235.258	192215533.43	0.78
STD4 1039952	90000.000	88619.179	1380.821	562740567.55	1.53
STD5 1039953	150000.000	147665.717	2334.283	937470797.87	1.56



Intercept CPS=44.137728 Intercept Conc=0.006982
Sensitivity=6321.344977 Correlation Coeff=0.999979

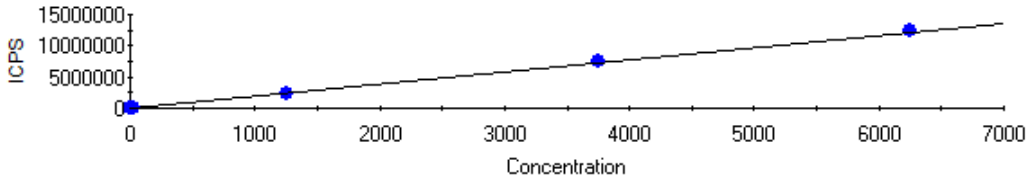
Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.004	0.004	68.16	0.00
STD1 1039949	1.000	0.921	0.079	5869.16	7.85
STD2 1039950	5.000	4.538	0.462	28730.57	9.24
STD3 1039951	500.000	485.116	14.884	3066627.92	2.98
STD4 1039952	1500.000	1491.642	8.358	9429226.83	0.56
STD5 1039953	2500.000	2503.111	3.111	15823070.47	0.12



Intercept CPS=90.492124 Intercept Conc=0.070601
Sensitivity=1281.744301 Correlation Coeff=0.999992

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.009	0.009	102.03	0.00
STD1 1039949	2.000	2.055	0.055	2724.62	2.76
STD2 1039950	10.000	9.820	0.180	12677.31	1.80
STD3 1039951	1250.000	1226.375	23.625	1571989.27	1.89
STD4 1039952	3750.000	3755.889	5.889	4814179.93	0.16
STD5 1039953	6250.000	6250.272	0.272	8011340.47	0.00

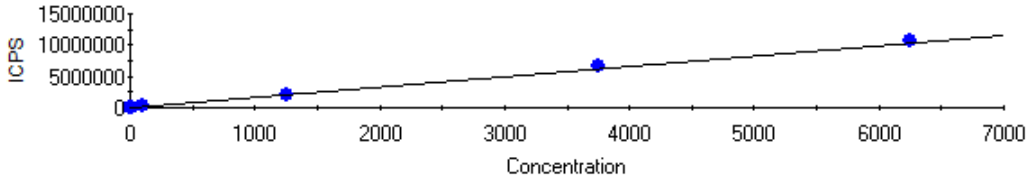
65Cu FQ Block 1



Intercept CPS=672.158634 Intercept Conc=0.350530
Sensitivity=1917.547418 Correlation Coeff=0.999858

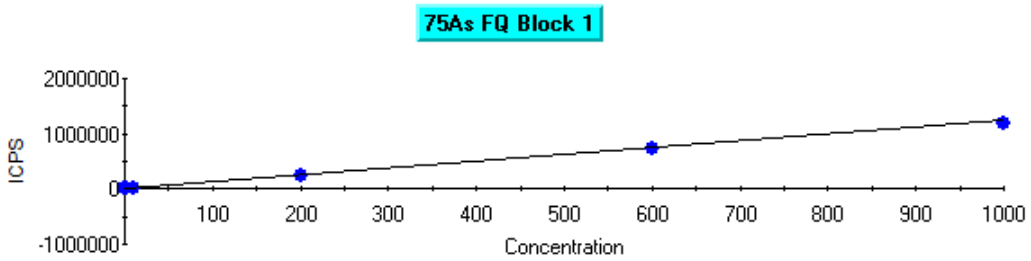
Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.008	0.008	686.93	0.00
STD1 1039949	5.000	4.862	0.138	9996.08	2.75
STD2 1039950	25.000	23.996	1.004	46684.78	4.02
STD3 1039951	1250.000	1170.915	79.085	2245957.62	6.33
STD4 1039952	3750.000	3850.293	100.293	7383791.42	2.67
STD5 1039953	6250.000	6395.592	145.592	12264522.23	2.33

66Zn FQ Block 1



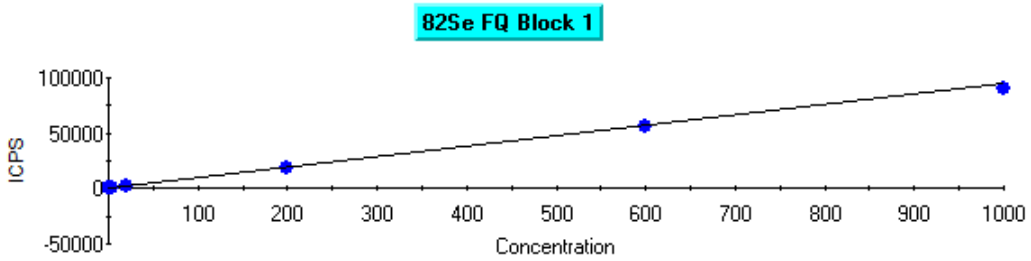
Intercept CPS=2094.815560 Intercept Conc=1.258577
Sensitivity=1664.431786 Correlation Coeff=0.999841

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.045	0.045	2170.48	0.00
STD1 1039949	20.000	21.084	1.084	37187.71	5.42
STD2 1039950	100.000	97.823	2.177	164914.06	2.18
STD3 1039951	1250.000	1198.560	51.440	1997016.25	4.12
STD4 1039952	3750.000	3900.649	150.649	6494459.02	4.02
STD5 1039953	6250.000	6362.415	112.415	10591899.87	1.80



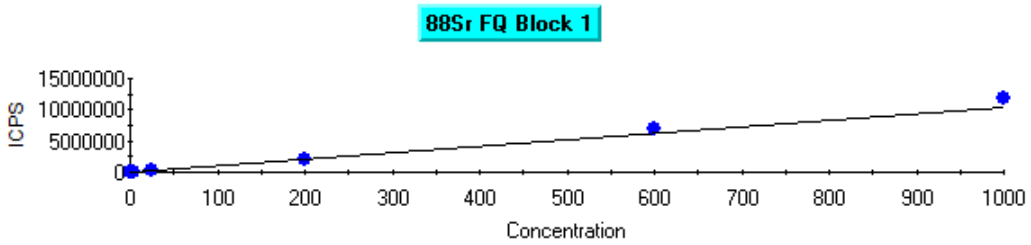
Intercept CPS=4071.717885 Intercept Conc=3.279364
Sensitivity=1241.618286 Correlation Coeff=0.999953

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-3.292	3.292	-15.31	0.00
STD1 1039949	2.000	0.773	1.227	5031.14	61.36
STD2 1039950	10.000	17.108	7.108	25313.42	71.08
STD3 1039951	200.000	194.839	5.161	245986.89	2.58
STD4 1039952	600.000	582.477	17.523	727286.07	2.92
STD5 1039953	1000.000	964.003	35.997	1200995.32	3.60



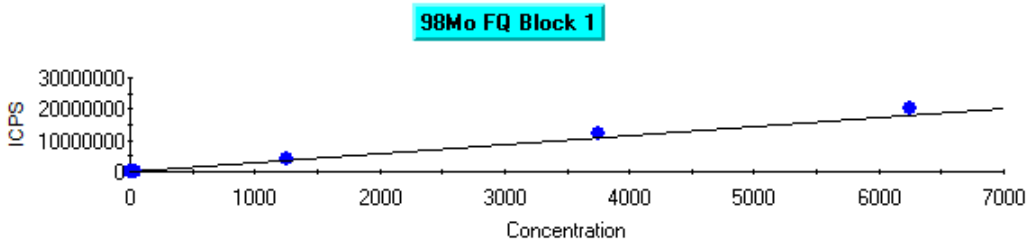
Intercept CPS=93.196348 Intercept Conc=0.984353
Sensitivity=94.677783 Correlation Coeff=0.999781

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-0.695	0.695	27.41	0.00
STD1 1039949	4.000	3.485	0.515	423.14	12.88
STD2 1039950	20.000	20.810	0.810	2063.42	4.05
STD3 1039951	200.000	202.760	2.760	19290.02	1.38
STD4 1039952	600.000	596.121	3.879	56532.64	0.65
STD5 1039953	1000.000	959.366	40.634	90923.80	4.06



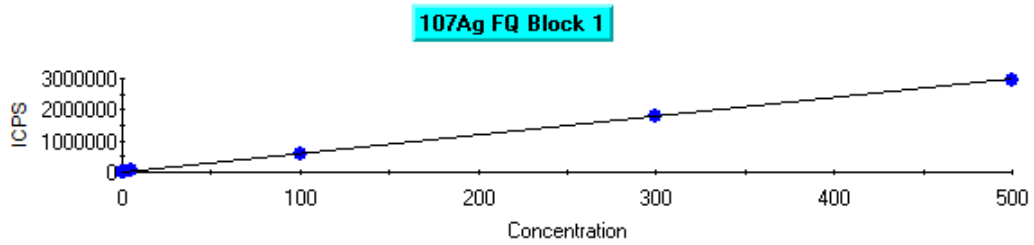
Intercept CPS=214.366483 Intercept Conc=0.020796
Sensitivity=10308.269633 Correlation Coeff=0.999569

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.004	0.004	253.29	0.00
STD1 1039949	5.000	4.843	0.157	50135.15	3.14
STD2 1039950	25.000	24.505	0.495	252820.32	1.98
STD3 1039951	200.000	192.960	7.040	1989298.27	3.52
STD4 1039952	600.000	678.806	78.806	6997526.85	13.13
STD5 1039953	1000.000	1143.764	143.764	11790439.04	14.38



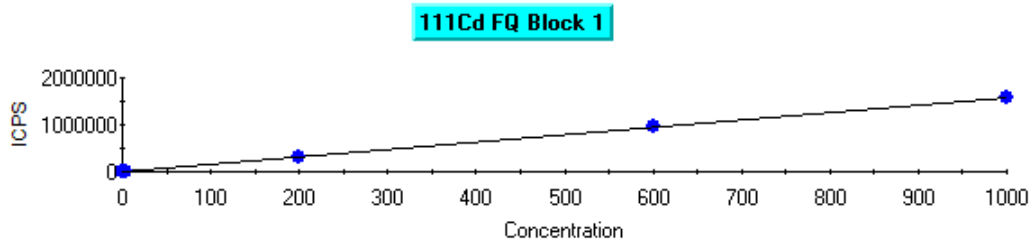
Intercept CPS=15.090329 Intercept Conc=0.005252
Sensitivity=2873.405869 Correlation Coeff=0.999995

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.008	0.008	38.33	0.00
STD1 1039949	10.000	9.872	0.128	28380.12	1.28
STD2 1039950	50.000	49.713	0.287	142859.73	0.57
STD3 1039951	1250.000	1395.609	145.609	4010165.55	11.65
STD4 1039952	3750.000	4227.000	477.000	12145902.09	12.72
STD5 1039953	6250.000	7078.325	828.325	20338915.75	13.25



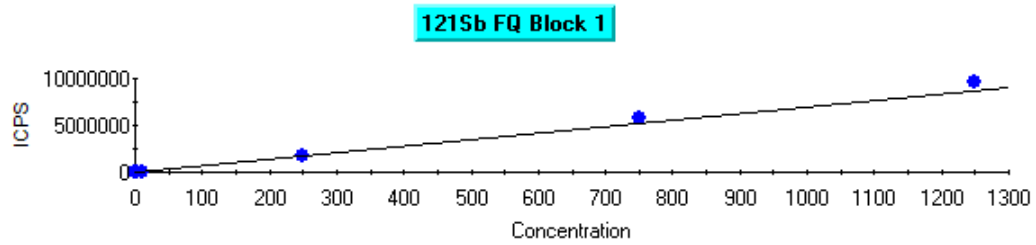
Intercept CPS=5.852674 Intercept Conc=0.000979
Sensitivity=5980.761885 Correlation Coeff=0.999999

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-0.000	0.000	5.02	0.00
STD1 1039949	1.000	1.028	0.028	6152.16	2.77
STD2 1039950	5.000	5.066	0.066	30306.93	1.33
STD3 1039951	100.000	99.158	0.842	593045.62	0.84
STD4 1039952	300.000	297.374	2.626	1778528.95	0.88
STD5 1039953	500.000	496.541	3.459	2969700.83	0.69



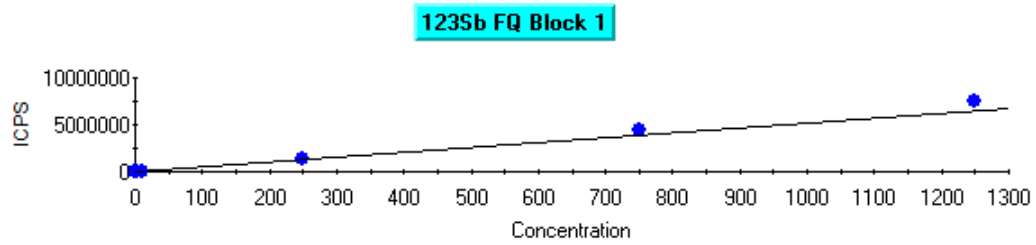
Intercept CPS=195.800620 Intercept Conc=0.123998
Sensitivity=1579.061876 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-0.004	0.004	190.10	0.00
STD1 1039949	1.000	1.024	0.024	1813.27	2.43
STD2 1039950	5.000	4.992	0.008	8078.85	0.16
STD3 1039951	200.000	200.183	0.183	316296.77	0.09
STD4 1039952	600.000	599.412	0.588	946703.73	0.10
STD5 1039953	1000.000	1000.326	0.326	1579772.23	0.03



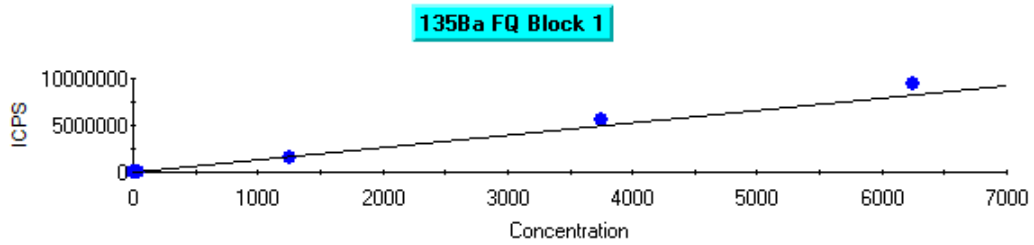
Intercept CPS=239.928296 Intercept Conc=0.034257
Sensitivity=7003.864791 Correlation Coeff=0.999717

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.004	0.004	266.74	0.00
STD1 1039949	2.000	1.934	0.066	13784.81	3.30
STD2 1039950	10.000	9.570	0.430	67266.92	4.30
STD3 1039951	250.000	239.708	10.292	1679123.31	4.12
STD4 1039952	750.000	815.628	65.628	5712790.04	8.75
STD5 1039953	1250.000	1369.651	119.651	9593088.03	9.57



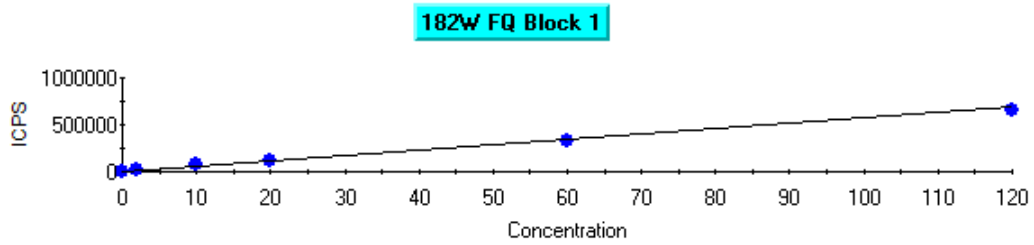
Intercept CPS=198.861873 Intercept Conc=0.038148
Sensitivity=5212.959431 Correlation Coeff=0.999680

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.000	0.000	199.85	0.00
STD1 1039949	2.000	1.982	0.018	10530.92	0.90
STD2 1039950	10.000	9.891	0.109	51759.07	1.09
STD3 1039951	250.000	249.326	0.674	1299923.25	0.27
STD4 1039952	750.000	858.842	108.842	4477308.14	14.51
STD5 1039953	1250.000	1436.972	186.972	7491076.89	14.96



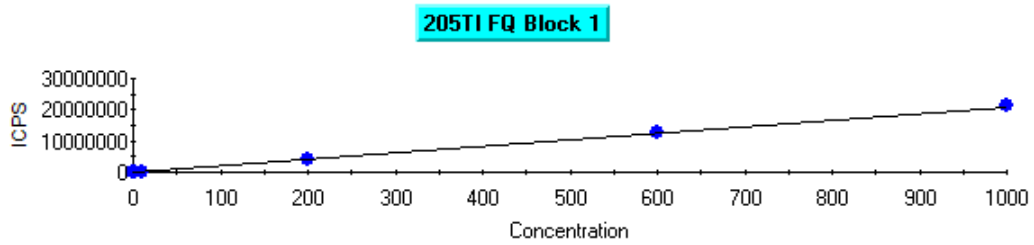
Intercept CPS=11.558491 Intercept Conc=0.008724
Sensitivity=1324.942994 Correlation Coeff=0.999515

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.000	0.000	11.66	0.00
STD1 1039949	10.000	9.634	0.366	12775.81	3.66
STD2 1039950	50.000	48.411	1.589	64152.77	3.18
STD3 1039951	1250.000	1190.224	59.776	1576990.37	4.78
STD4 1039952	3750.000	4185.517	435.517	5545582.74	11.61
STD5 1039953	6250.000	7099.303	849.303	9406183.13	13.59



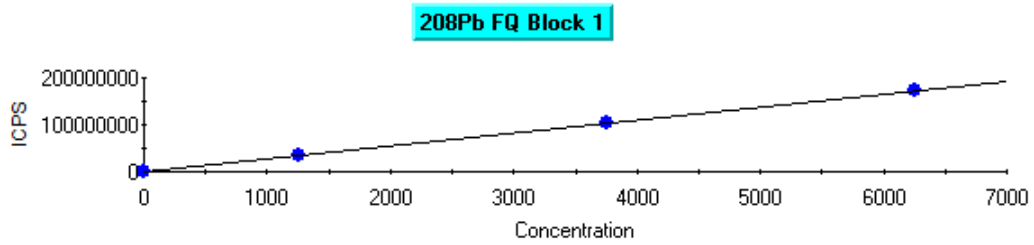
Intercept CPS=110.540027 Intercept Conc=0.019276
Sensitivity=5734.575779 Correlation Coeff=0.999406

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	-0.004	0.004	89.93	0.00
STD1 1039949	2.000	2.648	0.648	15297.33	32.41
STD2 1039950	10.000	13.412	3.412	77022.33	34.12
STD3 1039951	20.000	18.606	1.394	106809.36	6.97
STD4 1039952	60.000	57.234	2.766	328325.40	4.61
STD5 1039953	120.000	114.135	5.865	654624.68	4.89



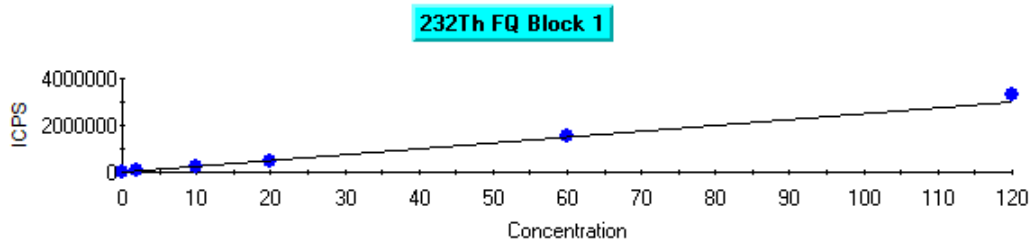
Intercept CPS=1435.199409 Intercept Conc=0.069665
Sensitivity=20601.380596 Correlation Coeff=0.999985

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.018	0.018	1801.09	0.00
STD1 1039949	2.000	1.721	0.279	36896.52	13.93
STD2 1039950	10.000	8.822	1.178	183188.47	11.78
STD3 1039951	200.000	201.519	1.519	4152999.12	0.76
STD4 1039952	600.000	615.463	15.463	12680817.76	2.58
STD5 1039953	1000.000	1033.140	33.140	21285537.62	3.31



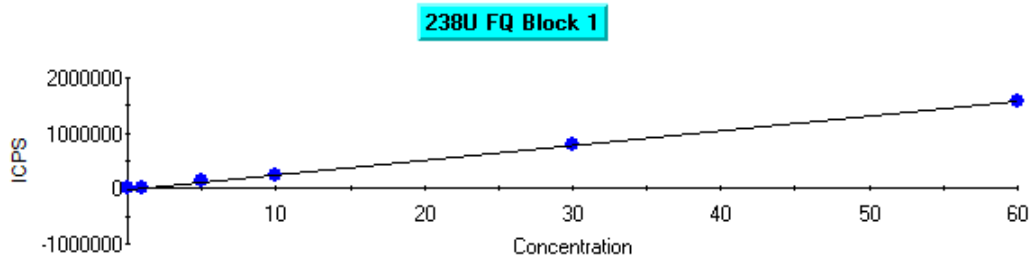
Intercept CPS=942.503960 Intercept Conc=0.034339
Sensitivity=27447.185250 Correlation Coeff=0.999969

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.001	0.001	968.14	0.00
STD1 1039949	1.000	0.934	0.066	26577.68	6.60
STD2 1039950	5.000	4.488	0.512	124117.39	10.25
STD3 1039951	1250.000	1250.364	0.364	34319909.50	0.03
STD4 1039952	3750.000	3770.929	20.929	103502337.21	0.56
STD5 1039953	6250.000	6372.069	122.069	174896295.25	1.95



Intercept CPS=29.762305 Intercept Conc=0.001186
Sensitivity=25087.242936 Correlation Coeff=0.999493

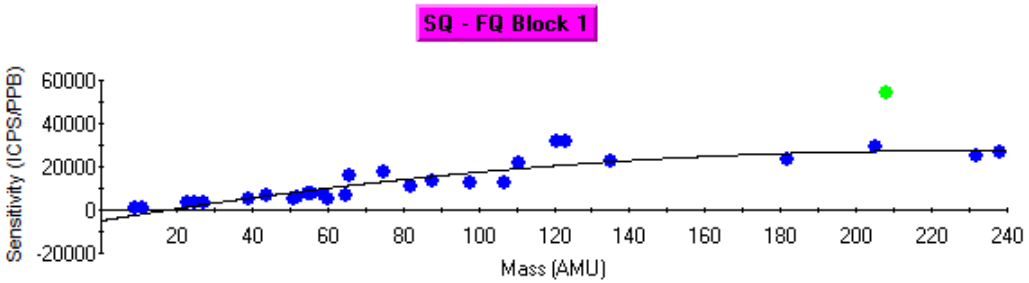
Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.000	0.000	29.96	0.00
STD1 1039949	2.000	1.947	0.053	48876.13	2.65
STD2 1039950	10.000	9.994	0.006	250744.22	0.06
STD3 1039951	20.000	19.698	0.302	494192.00	1.51
STD4 1039952	60.000	61.313	1.313	1538200.67	2.19
STD5 1039953	120.000	130.901	10.901	3283970.93	9.08



Intercept CPS=-6309.149604 Intercept Conc=-0.239092
Sensitivity=26387.949418 Correlation Coeff=0.999933

Label	Defined	Measured	Error	Mean CPS	% Error
STD0 1035925	0.000	0.239	0.239	0.00	0.00
STD1 1039949	1.000	1.189	0.189	25057.42	18.87
STD2 1039950	5.000	5.045	0.045	126809.79	0.89
STD3 1039951	10.000	9.618	0.382	247496.89	3.82
STD4 1039952	30.000	29.705	0.295	777546.97	0.98
STD5 1039953	60.000	60.204	0.204	1582356.66	0.34

Semi Quant Calibration



Coeff 0=-4942.636493 Coeff 1=289.827387 Coeff 2=-0.651423

Symbol	Mass	RSF	Available	Excluded	Sensitivity Measured	Corrected	Calculated	%Error
9Be	9.01	0.7500	1	1	335.67	447.57	-2383.57	-632.6
11B	11.01	0.5800	1	1	327.34	696.60	-1830.79	-362.8
23Na	22.99	1.0000	1	1	3273.23	3273.23	1376.13	-58.0
25Mg	24.99	0.9800	1	1	323.34	3263.53	1892.26	-42.0
27Al	26.98	0.9800	1	1	3315.51	3383.17	2403.11	-29.0
39K	38.96	1.0000	1	1	5005.06	5377.16	5361.14	-0.3
44Ca	43.96	0.9900	1	1	133.78	6343.98	6538.28	3.1
51V	50.94	0.9900	1	1	4782.66	4842.59	8131.69	67.9
52Cr	51.94	0.9800	1	1	4543.77	5535.46	8353.72	50.9
55Mn	54.94	0.9500	1	1	7430.52	7821.60	9013.80	15.2
56Fe	55.93	0.9600	1	1	6346.35	7223.32	9230.72	27.8
59Co	58.93	0.9300	1	1	6321.34	6797.15	9875.35	45.3
60Ni	59.93	0.9100	1	1	1281.74	5384.21	10087.23	87.3
65Cu	64.93	0.9000	1	1	1917.55	6892.94	11129.07	61.5
66Zn	65.93	0.3750	1	1	1664.43	15960.03	11333.29	-29.0
75As	74.92	0.0700	1	1	1241.62	17737.40	13115.10	-26.1
82Se	81.92	0.1000	1	1	94.68	10710.16	14427.80	34.7
88Sr	87.91	0.9600	1	1	10308.27	13006.03	15501.02	19.2
98Mo	97.91	0.9800	1	1	2873.41	12216.86	17188.84	40.7
107Ag	106.91	0.9300	1	1	5980.76	12523.71	18596.47	48.5
111Cd	110.90	0.5660	1	1	1579.06	21694.11	19188.10	-11.6
121Sb	120.90	0.3900	1	1	7003.86	31368.78	20576.28	-34.4
123Sb	122.90	0.3900	1	1	5212.96	31266.81	20838.34	-33.4
135Ba	134.91	0.9100	1	1	1324.94	22093.80	22301.13	0.9
182W	181.95	0.9400	1	1	5734.58	23187.43	26225.49	13.1
205Tl	204.97	1.0000	1	1	20601.38	29221.82	27095.30	-7.3
208Pb	207.98	0.9700	0	1	27447.19	54020.75	27157.87	-49.7
232Th	232.04	1.0000	1	1	25087.24	25087.24	27234.67	8.6
238U	238.05	1.0000	1	1	26387.95	26579.32	27136.06	2.1

Dilution Corrected Concentrations

STD0 1035925 5/19/2017 6:19:58 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:20:19	99.411%	0.030	-0.438	0.164	-0.079	-0.011	-0.735	1.574	98.623%	0.000	0.128	0.005
2	18:20:41	101.787%	0.002	0.060	0.925	0.133	0.004	-0.192	0.001	99.544%	0.000	0.081	0.013
3	18:21:02	98.801%	-0.037	0.475	-1.500	0.022	0.010	-2.298	1.934	101.833%	0.000	0.104	0.005
x		100.000%	-0.002	0.033	-0.137	0.025	0.001	-1.075	1.170	100.000%	0.000	0.104	0.008
σ		1.578%	0.033	0.457	1.240	0.106	0.010	1.094	1.028	1.653%	0.000	0.024	0.004
%RSD		1.578	2210.000	1398.000	905.900	420.200	1060.000	101.700	87.880	1.653	0.000	22.710	56.870

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:20:19	4.595	-0.002	0.081	0.001	0.009	0.020	0.002	-3.207	0.341	-0.457	0.000	0.000
2	18:20:41	4.752	0.002	0.246	0.004	0.047	0.008	0.006	-3.179	0.349	-0.610	0.000	0.000
3	18:21:02	4.696	0.005	-1.120	0.006	-0.028	-0.005	0.128	-3.489	0.373	-1.018	0.000	0.000
x		4.681	0.002	-0.264	0.004	0.009	0.008	0.045	-3.292	0.354	-0.695	0.000	0.000
σ		0.079	0.004	0.746	0.003	0.038	0.012	0.071	0.171	0.017	0.290	0.000	0.000
%RSD		1.697	238.800	282.000	68.650	418.900	158.900	157.200	5.197	4.785	41.720	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:20:19	0.001	99.550%	0.010	0.001	-1.512	0.021	99.521%	0.000	0.006	0.001	-0.001	98.995%
2	18:20:41	0.007	99.617%	0.005	-0.000	-1.121	-0.023	100.052%	0.000	0.006	-0.001	-0.001	100.416%
3	18:21:02	0.003	100.833%	0.009	-0.001	-1.276	-0.009	100.427%	0.000	-0.001	-0.000	0.003	100.589%
x		0.004	100.000%	0.008	-0.000	-1.303	-0.004	100.000%	0.000	0.004	0.000	0.000	100.000%
σ		0.003	0.722%	0.003	0.001	0.197	0.022	0.455%	0.000	0.004	0.001	0.002	0.875%
%RSD		76.110	0.722	32.840	599.900	15.080	619.600	0.455	0.000	106.100	473.700	2803.000	0.875

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:20:19	-0.006	0.030	-0.001	99.206%	0.000	-0.000	0.239
2	18:20:41	-0.001	0.010	0.001	100.380%	0.000	0.001	0.239
3	18:21:02	-0.004	0.013	0.003	100.414%	0.000	-0.000	0.239
x		-0.004	0.018	0.001	100.000%	0.000	0.000	0.239
σ		0.003	0.011	0.002	0.688%	0.000	0.001	0.000
%RSD		69.920	59.900	192.400	0.688	0.000	6548.000	0.000

STD1 1039949 5/19/2017 6:25:40 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:26:02	100.281%	0.926	36.670	466.600	189.700	47.210	T 538.100	487.600	100.294%	0.000	4.506	3.731
2	18:26:24	98.884%	1.048	40.020	T 557.300	195.900	48.380	T 533.300	483.900	99.814%	0.000	4.962	3.655
3	18:26:45	99.857%	1.065	40.790	463.000	192.200	47.180	T 525.700	474.600	101.674%	0.000	4.754	3.671
x		99.674%	1.013	39.160	T 495.600	192.600	47.590	T 532.400	482.000	100.594%	0.000	4.741	3.686
σ		0.716%	0.076	2.193	T 53.390	3.119	0.685	T 6.238	6.693	0.966%	0.000	0.228	0.040
%RSD		0.719	7.475	5.600	T 10.770	1.619	1.439	T 1.172	1.388	0.960	0.000	4.816	1.086

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb

1	18:26:02	5.152	1.953	190.400	0.935	1.995	4.968	20.630	0.616	0.367	3.365	0.000	0.000
2	18:26:24	4.643	1.924	189.600	0.903	2.173	4.850	21.400	0.687	0.381	3.690	0.000	0.000
3	18:26:45	4.807	1.872	184.000	0.927	1.998	4.770	21.230	1.015	0.333	3.401	0.000	0.000
x		4.867	1.917	188.000	0.922	2.055	4.862	21.080	0.773	0.360	3.485	0.000	0.000
σ		0.260	0.041	3.510	0.017	0.102	0.100	0.404	0.213	0.025	0.178	0.000	0.000
%RSD		5.344	2.149	1.867	1.801	4.964	2.048	1.914	27.580	6.950	5.111	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:26:02	4.863	100.958%	9.601	1.017	-1.133	1.088	99.315%	0.000	1.935	1.981	9.430	98.631%
2	18:26:24	4.839	99.212%	10.020	1.041	-1.020	0.977	100.164%	0.000	1.951	1.999	9.674	99.970%
3	18:26:45	4.826	100.312%	9.997	1.025	-0.720	1.008	100.708%	0.000	1.915	1.966	9.798	101.759%
x		4.843	100.161%	9.872	1.028	-0.958	1.024	100.062%	0.000	1.934	1.982	9.634	100.120%
σ		0.019	0.883%	0.234	0.012	0.213	0.057	0.702%	0.000	0.018	0.016	0.187	1.570%
%RSD		0.385	0.881	2.372	1.182	22.260	5.590	0.702	0.000	0.932	0.818	1.945	1.568

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:26:02	2.692	1.724	0.924	99.387%	0.000	1.944	1.202
2	18:26:24	2.679	1.770	0.957	98.944%	0.000	1.993	1.188
3	18:26:45	2.574	1.669	0.921	102.080%	0.000	1.904	1.176
x		2.648	1.721	0.934	100.137%	0.000	1.947	1.189
σ		0.065	0.051	0.020	1.697%	0.000	0.044	0.013
%RSD		2.449	2.948	2.111	1.695	0.000	2.276	1.061

STD2 1039950 5/19/2017 6:31:22 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:31:43	100.380%	5.184	198.600	T 2700.000	963.900	233.900	T 2662.000	2314.000	100.028%	0.000	22.660	17.920
2	18:32:05	98.166%	4.911	204.200	T 2682.000	959.200	233.200	T 2636.000	2285.000	100.763%	0.000	22.860	18.100
3	18:32:27	99.445%	4.778	197.600	T 2616.000	953.500	229.900	T 2581.000	2285.000	102.096%	0.000	22.680	18.080
x		99.330%	4.958	200.200	T 2666.000	958.900	232.300	T 2626.000	2295.000	100.962%	0.000	22.740	18.030
σ		1.111%	0.207	3.543	T 44.200	5.227	2.132	T 41.140	16.790	1.049%	0.000	0.112	0.098
%RSD		1.119	4.176	1.770	T 1.658	0.545	0.918	T 1.566	0.732	1.039	0.000	0.490	0.545
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:31:43	5.552	9.353	T 1047.000	4.578	9.893	24.160	98.240	17.230	0.356	20.600	0.000	0.000
2	18:32:05	5.113	9.387	T 1038.000	4.540	9.891	23.830	97.530	17.250	0.342	20.940	0.000	0.000
3	18:32:27	4.927	9.195	T 1038.000	4.496	9.676	24.000	97.700	16.850	0.347	20.890	0.000	0.000
x		5.197	9.312	T 1041.000	4.538	9.820	24.000	97.820	17.110	0.348	20.810	0.000	0.000
σ		0.321	0.102	T 5.317	0.041	0.125	0.163	0.372	0.224	0.007	0.181	0.000	0.000
%RSD		6.172	1.099	T 0.511	0.905	1.268	0.681	0.380	1.306	2.055	0.869	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:31:43	24.660	99.179%	49.720	5.093	-0.944	5.215	98.700%	0.000	9.616	9.919	48.480	98.541%
2	18:32:05	24.630	100.146%	49.720	5.123	-0.351	4.858	99.661%	0.000	9.430	9.882	48.890	99.655%
3	18:32:27	24.230	100.662%	49.690	4.983	-0.220	4.904	100.288%	0.000	9.664	9.871	47.860	100.015%
x		24.510	99.995%	49.710	5.066	-0.505	4.992	99.550%	0.000	9.570	9.891	48.410	99.404%
σ		0.241	0.753%	0.016	0.073	0.386	0.194	0.800%	0.000	0.124	0.025	0.518	0.768%
%RSD		0.985	0.753	0.032	1.450	76.410	3.889	0.804	0.000	1.292	0.257	1.069	0.773

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:31:43	13.400	8.903	4.479	98.409%	0.000	9.890	5.012
2	18:32:05	13.340	8.646	4.427	99.559%	0.000	10.050	5.076
3	18:32:27	13.490	8.918	4.557	99.321%	0.000	10.040	5.045
x		13.410	8.822	4.488	99.096%	0.000	9.994	5.045
σ		0.074	0.153	0.066	0.607%	0.000	0.090	0.032
%RSD		0.554	1.733	1.460	0.613	0.000	0.903	0.636

STD3 1039951 5/19/2017 6:37:04 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:37:26	91.779%	627.700	247.200	T 10140.000	T 31490.000	T 30600.000	T 10020.000	T 31440.000	95.695%	0.000	T 1276.000	356.900
2	18:37:48	90.681%	633.900	253.200	T 10480.000	T 32660.000	T 31850.000	T 10350.000	T 32450.000	92.341%	0.000	T 1329.000	370.100
3	18:38:10	91.479%	623.600	250.200	T 10470.000	T 32830.000	T 31820.000	T 10390.000	T 32670.000	91.495%	0.000	T 1323.000	367.600
x		91.313%	628.400	250.200	T 10360.000	T 32330.000	T 31420.000	T 10260.000	T 32180.000	93.177%	0.000	T 1310.000	364.900
σ		0.568%	5.169	3.010	T 193.900	T 733.600	T 711.600	T 202.300	T 658.600	2.221%	0.000	T 29.360	7.043
%RSD		0.622	0.823	1.203	T 1.871	T 2.269	T 2.265	T 1.973	T 2.046	2.384	0.000	T 2.242	1.930

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:37:26	9.784	T 1254.000	T 29500.000	T 493.300	1206.000	1140.000	1167.000	195.400	0.195	204.300	0.000	0.000
2	18:37:48	10.830	T 1306.000	T 30610.000	T 506.900	1236.000	1184.000	1219.000	196.400	0.251	204.500	0.000	0.000
3	18:38:10	11.190	T 1298.000	T 30590.000	455.100	1237.000	1189.000	1210.000	192.700	0.400	199.400	0.000	0.000
x		10.600	T 1286.000	T 30240.000	T 485.100	1226.000	1171.000	1199.000	194.800	0.282	202.800	0.000	0.000
σ		0.730	T 27.590	T 634.700	T 26.860	17.410	27.050	27.920	1.897	0.106	2.878	0.000	0.000
%RSD		6.884	T 2.145	T 2.099	T 5.536	1.419	2.311	2.329	0.974	37.560	1.420	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:37:26	193.300	96.384%	T 1387.000	98.550	21.030	199.500	95.612%	0.000	239.500	248.500	1194.000	99.437%
2	18:37:48	195.000	96.035%	T 1405.000	100.200	26.810	203.100	94.965%	0.000	242.200	252.300	1199.000	99.977%
3	18:38:10	190.500	95.738%	T 1396.000	98.700	17.310	197.900	96.158%	0.000	237.500	247.200	1178.000	100.026%
x		193.000	96.052%	T 1396.000	99.160	21.720	200.200	95.578%	0.000	239.700	249.300	1190.000	99.814%
σ		2.271	0.323%	T 9.001	0.928	4.789	2.616	0.597%	0.000	2.373	2.680	10.690	0.327%
%RSD		1.177	0.336	T 0.645	0.936	22.050	1.307	0.625	0.000	0.990	1.075	0.898	0.327

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:37:26	18.490	T 200.700	T 1260.000	98.333%	0.000	19.630	9.618
2	18:37:48	18.660	T 202.900	T 1252.000	99.335%	0.000	20.020	9.694
3	18:38:10	18.670	T 201.000	T 1239.000	99.836%	0.000	19.450	9.542
x		18.610	T 201.500	T 1250.000	99.168%	0.000	19.700	9.618
σ		0.098	T 1.180	T 10.440	0.766%	0.000	0.289	0.076
%RSD		0.527	T 0.586	T 0.835	0.772	0.000	1.465	0.789

STD4 1039952 5/19/2017 6:42:47 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:43:08	83.656%	1867.000	733.200	T 30540.000	T 94140.000	T 91670.000	T 30120.000	T 95590.000	85.160%	0.000	T 3901.000	T 1207.000
2	18:43:29	82.838%	1868.000	755.700	T 30430.000	T 94330.000	T 91080.000	T 29880.000	T 94520.000	85.169%	0.000	T 3924.000	T 1209.000

3	18:43:51	82.749%	1853.000	743.800	┬30040.000	┬93170.000	┬90330.000	┬29670.000	┬94500.000	85.685%	0.000	┬3923.000	┬1206.000
x		83.081%	1863.000	744.200	┬30330.000	┬93880.000	┬91030.000	┬29890.000	┬94870.000	85.338%	0.000	┬3916.000	┬1207.000
σ		0.500%	8.253	11.250	┬261.700	┬622.100	┬671.100	┬222.100	┬623.800	0.301%	0.000	┬13.090	┬1.330
%RSD		0.602	0.443	1.512	┬0.863	┬0.663	┬0.737	┬0.743	┬0.658	0.353	0.000	┬0.334	┬0.110
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:43:08	-25.440	┬3822.000	┬89090.000	┬1502.000	┬3768.000	┬3869.000	┬3939.000	587.400	-0.070	599.700	0.000	0.000
2	18:43:29	-31.600	┬3816.000	┬88860.000	┬1490.000	┬3751.000	┬3858.000	┬3904.000	577.500	0.092	591.700	0.000	0.000
3	18:43:51	-29.120	┬3780.000	┬87910.000	┬1482.000	┬3749.000	┬3824.000	┬3859.000	582.600	-0.073	597.000	0.000	0.000
x		-28.720	┬3806.000	┬88620.000	┬1492.000	┬3756.000	┬3850.000	┬3901.000	582.500	-0.017	596.100	0.000	0.000
σ		3.099	┬22.770	┬624.100	┬10.260	┬10.570	┬23.780	┬39.780	4.946	0.095	4.053	0.000	0.000
%RSD		10.790	┬0.598	┬0.704	┬0.688	┬0.281	┬0.618	┬1.020	0.849	548.000	0.680	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:43:08	┬676.600	88.169%	┬4231.000	294.100	79.580	596.000	87.631%	┬0.000	┬811.100	┬852.400	┬4160.000	94.350%
2	18:43:29	┬683.900	88.376%	┬4230.000	301.300	60.290	603.800	85.700%	┬0.000	┬827.900	┬868.700	┬4246.000	94.305%
3	18:43:51	┬675.900	88.097%	┬4220.000	296.700	67.180	598.500	86.886%	┬0.000	┬807.900	┬855.400	┬4151.000	95.786%
x		┬678.800	88.214%	┬4227.000	297.400	69.020	599.400	86.739%	┬0.000	┬815.600	┬858.800	┬4186.000	94.814%
σ		┬4.416	0.145%	┬5.764	3.629	9.776	3.966	0.974%	┬0.000	┬10.710	┬8.689	┬52.320	0.842%
%RSD		┬0.651	0.164	┬0.136	1.220	14.160	0.662	1.123	┬0.000	┬1.313	┬1.012	┬1.250	0.888
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	18:43:08	57.310	┬617.300	┬3771.000	94.024%	0.000	60.990	29.460					
2	18:43:29	57.410	┬604.600	┬3738.000	95.126%	0.000	60.710	29.340					
3	18:43:51	56.990	┬624.500	┬3804.000	93.075%	0.000	62.240	30.310					
x		57.230	┬615.500	┬3771.000	94.075%	0.000	61.310	29.710					
σ		0.222	┬10.120	┬33.150	1.026%	0.000	0.817	0.528					
%RSD		0.388	┬1.645	┬0.879	1.091	0.000	1.332	1.777					

STD5 1039953 5/19/2017 6:48:28 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:48:49	78.371%	3123.000	M 1256.000	T 49760.000	TM 155200.000	TM 150100.000	T 49840.000	TM 159300.000	81.905%	0.000	TM 6545.000	TM 2012.000
2	18:49:11	78.707%	M 3127.000	M 1254.000	T 49330.000	TM 153500.000	TM 150200.000	T 49770.000	TM 157800.000	82.282%	0.000	TM 6616.000	TM 2040.000
3	18:49:32	77.733%	M 3128.000	1244.000	T 49590.000	TM 153500.000	TM 150400.000	T 49980.000	TM 156700.000	81.568%	0.000	TM 6643.000	TM 2046.000
x		78.271%	M 3126.000	M 1251.000	T 49560.000	TM 154100.000	TM 150200.000	T 49870.000	TM 157900.000	81.919%	0.000	TM 6602.000	TM 2032.000
σ		0.495%	M 2.619	M 6.534	T 219.700	TM 989.200	TM 187.600	T 105.600	TM 1263.000	0.357%	0.000	TM 50.490	TM 18.060
%RSD		0.632	M 0.084	M 0.522	T 0.443	TM 0.642	TM 0.125	T 0.212	TM 0.800	0.436	0.000	TM 0.765	TM 0.889

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:48:49	-47.670	TM 6347.000	T 148200.000	TM 2504.000	T 6243.000	TM 6371.000	TM 6370.000	971.100	-0.604	971.300	0.000	0.000
2	18:49:11	-59.830	TM 6318.000	T 147000.000	TM 2501.000	T 6236.000	TM 6370.000	TM 6335.000	964.600	-0.041	956.000	0.000	0.000
3	18:49:32	-51.900	TM 6412.000	T 147700.000	TM 2505.000	TM 6271.000	TM 6446.000	TM 6382.000	956.300	0.104	950.800	0.000	0.000
x		-53.130	TM 6359.000	T 147700.000	TM 2503.000	TM 6250.000	TM 6396.000	TM 6362.000	964.000	-0.180	959.400	0.000	0.000
σ		6.173	TM 48.160	T 603.100	TM 2.088	TM 18.330	TM 43.520	TM 24.510	7.429	0.374	10.690	0.000	0.000
%RSD		11.620	TM 0.757	T 0.408	TM 0.083	TM 0.293	TM 0.680	TM 0.385	0.771	207.300	1.115	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:48:49	TM 1163.000	84.535%	TM 7120.000	499.700	109.700	M 1003.000	81.310%	T 0.000	TM 1385.000	TM 1455.000	TM 7217.000	91.492%
2	18:49:11	TM 1121.000	85.358%	TM 7021.000	491.600	103.800	994.000	83.531%	T 0.000	TM 1357.000	TM 1421.000	TM 7007.000	90.375%
3	18:49:32	TM 1147.000	85.524%	TM 7094.000	498.400	109.600	M 1004.000	82.602%	T 0.000	TM 1367.000	TM 1435.000	TM 7074.000	89.424%
x		TM 1144.000	85.139%	TM 7078.000	496.500	107.700	M 1000.000	82.481%	T 0.000	TM 1370.000	TM 1437.000	TM 7099.000	90.430%
σ		TM 21.240	0.530%	TM 51.440	4.351	3.376	M 5.514	1.115%	T 0.000	TM 14.450	TM 17.350	TM 107.600	1.035%
%RSD		TM 1.857	0.622	TM 0.727	0.876	3.136	M 0.551	1.352	T 0.000	TM 1.055	TM 1.207	TM 1.516	1.144

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:48:49	112.100	TM 1040.000	TM 6384.000	88.893%	0.000	M 124.800	59.930
2	18:49:11	115.300	TM 1023.000	TM 6335.000	89.995%	0.000	TM 141.200	M 60.420
3	18:49:32	115.000	TM 1037.000	TM 6398.000	89.103%	0.000	M 126.700	M 60.260
x		114.100	TM 1033.000	TM 6372.000	89.330%	0.000	TM 130.900	M 60.200
σ		1.749	TM 8.976	TM 33.230	0.585%	0.000	TM 8.997	M 0.250
%RSD		1.532	TM 0.869	TM 0.521	0.655	0.000	TM 6.873	M 0.414

ICV 1039955 5/19/2017 6:54:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:54:32	88.999%	317.700	137.400	T 5186.000	T 16060.000	T 15500.000	T 5055.000	14030.000	93.341%	0.000	T 641.000	181.900
2	18:54:53	90.566%	314.300	138.900	T 5147.000	T 15880.000	T 15470.000	T 5025.000	14080.000	94.443%	0.000	T 639.200	180.800
3	18:55:14	91.367%	317.700	137.500	T 5283.000	T 16230.000	T 15750.000	T 5193.000	14560.000	92.777%	0.000	T 653.300	184.700
x		90.311%	101.301%	110.348%	T 104.111%	T 107.042%	T 103.811%	T 101.815%	94.819%	93.520%	0.000	T 103.122%	91.222%
σ		1.204%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.847%	0.000	T n/a	n/a
%RSD		1.333	0.619	0.606	T 1.344	T 1.091	T 0.978	T 1.757	2.034	0.906	0.000	T 1.194	1.100

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	18:54:32	7.575	T 639.300	T 15070.000	226.000	619.700	596.000	612.600	98.600	0.212	105.300	0.000	0.000
2	18:54:53	5.518	T 635.700	T 14980.000	226.000	619.700	597.600	612.800	99.080	0.150	104.700	0.000	0.000

3	18:55:14	5.707	T 645.800	T 15440.000	231.900	635.100	612.300	624.800	99.900	0.180	105.900	0.000	0.000
x		6.267	T 102.445%	T 101.090%	91.197%	99.978%	96.314%	98.676%	99.195%	0.180	105.299%	0.000	0.000
σ		1.137	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.031	n/a	0.000	0.000
%RSD		18.140	T 0.796	T 1.614	1.503	1.425	1.491	1.131	0.666	17.150	0.570	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:54:32	97.590	94.980%	299.700	49.950	2.660	100.900	93.386%	0.000	123.400	130.300	615.600	97.184%
2	18:54:53	97.330	95.683%	300.500	50.250	6.210	101.800	94.530%	0.000	123.800	129.900	610.200	97.394%
3	18:55:14	96.860	95.149%	305.600	49.750	8.688	100.100	95.548%	0.000	123.000	128.600	605.700	99.569%
x		97.260	95.270%	96.616%	99.963%	5.853	100.945%	94.488%	0.000	123.400	103.679%	97.679%	98.049%
σ		0.370	0.367%	n/a	n/a	3.030	n/a	1.081%	0.000	0.408	n/a	n/a	1.320%
%RSD		0.380	0.385	1.050	0.506	51.770	0.867	1.145	0.000	0.331	0.688	0.810	1.347

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	18:54:32	22.780	88.040	T 634.000	99.216%	0.000	20.010	9.772
2	18:54:53	23.010	88.750	T 632.500	99.707%	0.000	19.960	9.784
3	18:55:14	22.500	87.500	T 624.700	101.068%	0.000	19.690	9.675
x		113.823%	88.100%	T 100.866%	99.997%	0.000	99.418%	97.437%
σ		n/a	n/a	T n/a	0.959%	0.000	n/a	n/a
%RSD		1.116	0.712	T 0.796	0.959	0.000	0.858	0.611

ICVL 1039949 5/19/2017 6:59:52 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:00:14	92.544%	1.190	47.890	T 545.400	193.300	48.770	T 525.100	494.600	95.100%	0.000	4.902	3.610
2	19:00:35	91.406%	1.143	47.710	T 525.900	192.200	48.900	T 521.200	472.600	96.352%	0.000	5.115	3.642
3	19:00:57	93.550%	1.311	46.440	T 537.800	193.900	49.100	T 514.200	497.400	95.763%	0.000	5.051	3.561
x		92.500%	121.456%	118.364%	T 107.269%	96.561%	97.844%	T 104.034%	97.639%	95.738%	0.000	100.453%	90.104%
σ		1.073%	n/a	n/a	T n/a	n/a	n/a	T n/a	n/a	0.626%	0.000	n/a	n/a
%RSD		1.160	7.129	1.674	T 1.834	0.446	0.334	T 1.061	2.784	0.654	0.000	2.171	1.141

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:00:14	2.765	1.925	184.900	1.013	2.079	5.220	21.540	0.710	0.212	3.483	0.000	0.000
2	19:00:35	2.461	1.958	182.900	0.926	2.221	5.123	20.890	0.822	0.206	3.737	0.000	0.000
3	19:00:57	2.653	1.969	185.300	0.974	2.129	5.331	21.550	0.695	0.201	3.254	0.000	0.000
x		2.626	97.541%	92.178%	97.103%	107.157%	104.494%	106.620%	37.103%	0.206	87.282%	0.000	0.000
σ		0.154	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.005	n/a	0.000	0.000
%RSD		5.861	1.180	0.712	4.498	3.363	1.992	1.774	9.387	2.511	6.924	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:00:14	4.938	96.694%	10.060	1.094	-0.560	1.018	95.591%	0.000	1.886	2.018	9.537	97.379%
2	19:00:35	4.812	96.868%	10.040	1.051	-1.418	1.119	97.071%	0.000	1.924	1.976	9.628	96.764%
3	19:00:57	4.934	100.038%	9.901	1.015	-1.367	1.142	96.985%	0.000	1.866	2.005	9.653	98.129%
x		97.892%	97.867%	100.004%	105.321%	-1.115	109.298%	96.549%	0.000	1.892	99.998%	96.058%	97.424%
σ		n/a	1.882%	n/a	n/a	0.481	n/a	0.831%	0.000	0.029	n/a	n/a	0.683%
%RSD		1.468	1.923	0.867	3.782	43.170	6.015	0.860	0.000	1.557	1.073	0.637	0.702

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	19:00:14	2.526	1.955	1.022	97.455%	0.000	1.980	1.192
2	19:00:35	2.647	1.940	0.997	97.569%	0.000	1.952	1.178
3	19:00:57	2.587	1.880	1.043	98.791%	0.000	1.956	1.205
x		129.346%	96.247%	102.062%	97.938%	0.000	98.138%	119.168%
σ		n/a	n/a	n/a	0.741%	0.000	n/a	n/a
%RSD		2.335	2.044	2.271	0.756	0.000	0.785	1.117

ICBIS 1036503 5/19/2017 7:05:35 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:05:56	92.247%	0.137	5.470	-0.958	0.658	0.492	-6.453	3.485	97.535%	0.000	0.300	-0.049
2	19:06:17	92.856%	0.039	5.430	-1.101	1.481	0.642	-4.930	1.366	97.588%	0.000	0.114	-0.078
3	19:06:38	93.720%	0.068	5.094	2.649	1.229	0.899	-8.801	3.425	97.517%	0.000	0.230	-0.066
x		92.941%	0.081	5.331	0.197	1.123	0.678	-6.728	2.759	97.547%	0.000	0.215	-0.064
σ		0.741%	0.051	0.206	2.125	0.422	0.206	1.950	1.206	0.037%	0.000	0.094	0.014
%RSD		0.797	62.140	3.871	1080.000	37.570	30.390	28.980	43.730	0.038	0.000	43.820	22.170

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:05:56	2.510	0.024	-4.714	0.007	0.061	0.216	0.020	-3.178	0.198	-0.506	0.000	0.000
2	19:06:17	2.696	0.018	-4.852	0.012	0.097	0.189	0.250	-3.446	0.223	-1.178	0.000	0.000
3	19:06:38	2.676	0.022	-4.019	0.012	0.061	0.163	0.183	-3.268	0.211	-0.702	0.000	0.000
x		2.627	0.021	-4.528	0.010	0.073	0.189	0.151	-3.297	0.211	-0.795	0.000	0.000
σ		0.102	0.004	0.447	0.003	0.021	0.027	0.118	0.136	0.012	0.346	0.000	0.000
%RSD		3.884	16.700	9.861	27.950	28.250	14.090	78.510	4.137	5.847	43.460	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:05:56	0.005	97.840%	0.080	0.012	-0.717	-0.055	96.378%	0.000	0.012	0.008	0.042	97.101%
2	19:06:17	0.010	98.131%	0.078	0.009	-1.265	-0.000	97.626%	0.000	0.026	0.007	0.065	96.820%
3	19:06:38	0.003	97.547%	0.080	0.012	-0.828	-0.035	97.949%	0.000	0.025	0.011	0.045	97.821%
x		0.006	97.840%	0.080	0.011	-0.937	-0.030	97.318%	0.000	0.021	0.009	0.051	97.248%
σ		0.004	0.292%	0.001	0.002	0.290	0.028	0.830%	0.000	0.007	0.002	0.012	0.516%
%RSD		61.150	0.299	1.573	13.780	30.980	91.590	0.853	0.000	35.640	23.500	24.130	0.531

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:05:56	-0.004	0.054	0.033	97.517%	0.000	-0.000	0.239
2	19:06:17	0.001	0.060	0.059	97.755%	0.000	0.001	0.240
3	19:06:38	0.008	0.053	0.059	98.819%	0.000	0.000	0.239
x		0.002	0.056	0.050	98.030%	0.000	0.000	0.239
σ		0.006	0.004	0.015	0.694%	0.000	0.000	0.000
%RSD		321.700	7.562	29.500	0.708	0.000	251.400	0.124

ICSA 1034645 5/19/2017 7:11:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:11:37	86.668%	0.297	10.160	TM 99740.000	T 104000.000	T 101000.000	TM 99420.000	T 106200.000	92.077%	0.000	-5.662	1.606
2	19:11:58	86.069%	0.162	11.680	TM 100300.000	T 105000.000	T 101400.000	TM 98730.000	T 107100.000	91.783%	0.000	-5.517	1.559
3	19:12:20	85.189%	0.157	11.930	TM 99710.000	T 104000.000	T 100500.000	TM 97880.000	T 105100.000	92.378%	0.000	-6.118	1.605
		85.975%	1.#IO%	1.#IO%	TM 99.924%	T 104.352%	T 100.970%	TM 98.678%	T 106.129%	92.080%	0.000	-1.#IO%	1.#IO%

x													
σ		0.744%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.297%	0.000	n/a	n/a
%RSD		0.865	38.620	8.489	TM 0.343	T 0.529	T 0.435	TM 0.779	T 0.969	0.323	0.000	5.442	1.704
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:11:37	10.780	21.120	T 97910.000	0.155	0.929	1.357	-0.456	-3.094	0.350	-0.533	0.000	0.000
2	19:11:58	10.680	21.180	T 98570.000	0.146	1.090	1.496	-0.586	-2.949	0.333	-1.010	0.000	0.000
3	19:12:20	11.430	21.540	T 98660.000	0.169	0.871	1.431	-0.523	-3.088	0.341	-0.542	0.000	0.000
x		10.960	1.#IO%	T 98.383%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	0.341	-1.#IO%	0.000	0.000
σ		0.407	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.008	n/a	0.000	0.000
%RSD		3.709	1.057	T 0.418	7.377	11.750	4.870	12.490	2.692	2.397	39.280	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:11:37	0.793	92.826%	T 2235.000	0.297	13.150	0.337	91.352%	0.000	0.120	0.137	0.925	95.197%
2	19:11:58	0.801	94.949%	T 2193.000	0.272	12.460	0.411	92.545%	0.000	0.149	0.146	0.946	97.322%
3	19:12:20	0.802	93.405%	T 2239.000	0.290	13.300	0.134	92.399%	0.000	0.154	0.140	0.898	97.919%
x		1.#IO%	93.727%	T 111.105%	1.#IO%	12.970	1.#IO%	92.099%	0.000	0.141	1.#IO%	1.#IO%	96.813%
σ		n/a	1.098%	T n/a	n/a	0.453	n/a	0.651%	0.000	0.019	n/a	n/a	1.431%
%RSD		0.645	1.171	T 1.139	4.436	3.492	48.820	0.707	0.000	13.250	3.007	2.581	1.478
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	19:11:37	0.180	0.087	0.379	93.380%	0.000	0.006	0.243					
2	19:11:58	0.164	0.083	0.374	95.140%	0.000	0.006	0.242					
3	19:12:20	0.187	0.082	0.387	94.988%	0.000	0.004	0.241					
x		1.#IO%	1.#IO%	1.#IO%	94.503%	0.000	1.#IO%	1.#IO%					
σ		n/a	n/a	n/a	0.975%	0.000	n/a	n/a					
%RSD		6.630	3.052	1.712	1.032	0.000	26.750	0.262					

ICSAB 1034648 5/19/2017 7:16:56 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:17:18	82.923%	26.130	426.600	M 98140.000	T 103100.000	T 100200.000	M 97910.000	T 104300.000	91.790%	0.000	16.720	46.730
2	19:17:39	82.741%	25.950	430.700	M 101100.000	T 105500.000	T 102700.000	M 101100.000	T 107200.000	89.685%	0.000	16.620	46.870
3	19:18:00	84.851%	25.250	421.300	M 99130.000	T 104300.000	T 101000.000	M 100300.000	T 106600.000	90.870%	0.000	17.610	47.100
x		83.505%	103.111%	106.552%	M 99.452%	T 104.302%	T 101.308%	M 99.747%	T 106.037%	90.782%	0.000	67.939%	93.799%
σ		1.169%	n/a	n/a	M n/a	T n/a	T n/a	M n/a	T n/a	1.055%	0.000	n/a	n/a
%RSD		1.400	1.805	1.096	M 1.504	T 1.170	T 1.280	M 1.645	T 1.437	1.162	0.000	3.200	0.406

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:17:18	12.280	43.630	T 98590.000	22.030	26.080	48.250	46.390	40.920	0.408	121.700	0.000	0.000
2	19:17:39	12.680	45.020	T 100500.000	22.820	26.110	48.470	46.700	40.470	0.351	118.900	0.000	0.000
3	19:18:00	11.260	44.730	T 99070.000	22.470	25.030	48.330	46.740	40.970	0.364	119.600	0.000	0.000
x		12.070	177.835%	T 99.392%	89.751%	102.959%	96.700%	93.215%	90.630%	0.374	96.047%	0.000	0.000
σ		0.731	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	0.030	n/a	0.000	0.000
%RSD		6.052	1.653	T 1.007	1.765	2.387	0.221	0.410	0.678	8.054	1.235	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:17:18	0.703	94.008%	T 2214.000	24.300	15.820	24.740	92.646%	0.000	47.960	50.000	245.600	98.410%
2	19:17:39	0.662	95.752%	T 2186.000	24.630	12.480	24.830	92.814%	0.000	47.750	50.510	246.900	98.654%
3	19:18:00	0.693	94.509%	T 2201.000	24.240	15.930	24.150	93.639%	0.000	47.450	49.640	243.800	99.524%
x		0.686	94.756%	T 110.031%	97.559%	14.740	98.298%	93.033%	0.000	47.720	100.103%	98.173%	98.862%
σ		0.021	0.898%	T n/a	n/a	1.962	n/a	0.531%	0.000	0.259	n/a	n/a	0.586%
%RSD		3.071	0.948	T 0.631	0.870	13.310	1.519	0.571	0.000	0.542	0.873	0.643	0.592

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:17:18	26.420	22.450	22.780	93.557%	0.000	21.380	10.430
2	19:17:39	26.980	22.630	22.640	94.926%	0.000	21.050	10.320
3	19:18:00	26.440	22.510	22.700	94.826%	0.000	21.250	10.360
x		133.079%	90.115%	90.832%	94.436%	0.000	106.125%	103.695%
σ		n/a	n/a	n/a	0.763%	0.000	n/a	n/a
%RSD		1.199	0.419	0.297	0.808	0.000	0.778	0.542

CCV 1039951 5/19/2017 7:22:39 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:23:00	85.721%	633.100	247.800	T 10170.000	T 31760.000	T 31200.000	T 10220.000	T 31640.000	88.992%	0.000	T 1308.000	371.000
2	19:23:21	86.213%	627.000	252.000	T 9907.000	T 30900.000	T 29910.000	T 9741.000	T 30590.000	92.765%	0.000	T 1276.000	357.200
3	19:23:43	86.619%	625.300	249.000	T 10100.000	T 31530.000	T 30670.000	T 10140.000	T 31460.000	90.047%	0.000	T 1312.000	366.700
x		86.184%	100.554%	99.834%	T 100.612%	T 104.659%	T 101.975%	T 100.319%	T 104.097%	90.601%	0.000	T 103.901%	91.245%
σ		0.449%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.947%	0.000	T n/a	n/a
%RSD		0.521	0.656	0.852	T 1.372	T 1.415	T 2.126	T 2.541	T 1.785	2.149	0.000	T 1.516	1.932

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:23:00	11.870	T 1307.000	T 30850.000	463.800	1271.000	1218.000	1244.000	187.500	0.346	194.600	0.000	0.000
2	19:23:21	11.820	T 1261.000	T 29870.000	T 495.100	1230.000	1173.000	1194.000	190.500	0.380	199.100	0.000	0.000

3	19:23:43	10.750	┬1301.000	┬30500.000	458.300	1259.000	1210.000	1237.000	192.300	0.183	201.100	0.000	0.000
x		11.480	┬103.158%	┬101.358%	┬94.482%	100.271%	96.040%	98.013%	95.049%	0.303	99.151%	0.000	0.000
σ		0.634	┬n/a	┬n/a	┬n/a	n/a	n/a	n/a	n/a	0.105	n/a	0.000	0.000
%RSD		5.524	┬1.916	┬1.623	┬4.195	1.664	2.018	2.201	1.279	34.710	1.673	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:23:00	189.900	97.882%	┬1357.000	96.380	13.260	197.100	96.986%	0.000	233.900	243.800	1166.000	100.480%
2	19:23:21	188.500	95.985%	┬1384.000	97.480	29.250	196.600	96.663%	0.000	236.800	245.400	1172.000	99.666%
3	19:23:43	192.500	95.954%	┬1382.000	97.010	21.420	196.400	96.169%	0.000	238.400	248.400	1185.000	102.165%
x		190.300	96.607%	┬109.950%	96.956%	21.310	98.333%	96.606%	0.000	236.400	98.344%	93.972%	100.770%
σ		2.025	1.104%	┬n/a	n/a	7.995	n/a	0.412%	0.000	2.247	n/a	n/a	1.274%
%RSD		1.064	1.143	┬1.068	0.571	37.510	0.184	0.426	0.000	0.951	0.939	0.836	1.264

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:23:00	18.520	┬197.800	┬1229.000	99.865%	0.000	19.560	9.605
2	19:23:21	18.910	┬197.600	┬1239.000	100.514%	0.000	19.790	9.695
3	19:23:43	18.410	┬198.700	┬1246.000	99.822%	0.000	19.820	9.689
x		93.050%	┬99.019%	┬99.051%	100.067%	0.000	98.619%	96.629%
σ		n/a	┬n/a	┬n/a	0.388%	0.000	n/a	n/a
%RSD		1.419	┬0.287	┬0.670	0.388	0.000	0.715	0.520

CCB 1035925 5/19/2017 7:28:21 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:28:42	89.595%	0.081	2.851	-1.048	1.349	1.383	-6.275	13.390	96.330%	0.000	0.094	-0.090
2	19:29:04	89.241%	0.132	3.819	2.522	2.239	1.942	-4.705	8.696	95.589%	0.000	0.370	-0.044
3	19:29:25	90.300%	0.079	2.326	3.517	3.707	2.971	-5.191	12.180	95.326%	0.000	0.342	-0.027
x		89.712%	0.097	2.999	1.664	2.432	2.099	-5.390	11.420	95.748%	0.000	0.269	-0.054
σ		0.539%	0.030	0.757	2.400	1.191	0.805	0.804	2.439	0.520%	0.000	0.152	0.032
%RSD		0.601	31.090	25.250	144.300	48.960	38.370	14.910	21.350	0.544	0.000	56.690	60.500

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:28:42	3.389	0.048	-3.074	0.014	0.047	0.180	0.051	-3.278	0.243	-0.911	0.000	0.000
2	19:29:04	2.997	0.052	-1.280	0.024	0.068	0.132	0.175	-3.448	0.258	-0.819	0.000	0.000
3	19:29:25	3.019	0.069	-0.526	0.030	0.101	0.145	0.251	-3.513	0.270	-0.928	0.000	0.000
x		3.135	0.056	-1.627	0.023	0.072	0.152	0.159	-3.413	0.257	-0.886	0.000	0.000
σ		0.220	0.011	1.309	0.008	0.027	0.025	0.101	0.122	0.013	0.058	0.000	0.000
%RSD		7.017	19.950	80.450	36.280	38.050	16.270	63.430	3.563	5.215	6.598	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:28:42	0.010	97.087%	0.129	0.004	-1.169	-0.015	98.245%	0.000	0.007	0.010	0.030	97.731%
2	19:29:04	0.013	98.095%	0.131	0.014	-1.147	-0.014	98.696%	0.000	0.024	0.016	0.072	98.916%
3	19:29:25	0.009	98.259%	0.186	0.010	-1.139	-0.008	99.373%	0.000	0.020	0.017	0.128	99.910%
x		0.011	97.814%	0.149	0.009	-1.151	-0.013	98.771%	0.000	0.017	0.015	0.076	98.852%
σ		0.002	0.635%	0.032	0.005	0.015	0.004	0.568%	0.000	0.009	0.004	0.049	1.091%
%RSD		18.640	0.649	21.640	53.850	1.338	29.150	0.575	0.000	51.850	26.840	64.550	1.103

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	19:28:42	-0.001	0.092	0.048	98.237%	0.000	0.000	0.239
2	19:29:04	0.000	0.098	0.066	99.111%	0.000	0.000	0.240
3	19:29:25	-0.001	0.079	0.091	99.669%	0.000	0.001	0.240
x		-0.000	0.089	0.069	99.006%	0.000	0.000	0.240
σ		0.001	0.010	0.022	0.722%	0.000	0.000	0.000
%RSD		117.300	10.730	31.340	0.729	0.000	21.670	0.079

MB 200-116803/1-A 5/19/2017 7:34:02 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:34:24	93.988%	0.107	1.887	-56.660	2.084	7.104	-12.130	52.350	98.660%	0.000	0.256	0.380
2	19:34:45	95.221%	0.095	1.534	-57.620	1.912	6.806	-11.640	59.040	100.387%	0.000	0.128	0.324
3	19:35:07	95.385%	-0.023	1.741	-59.690	1.525	6.782	-14.470	53.590	101.141%	0.000	0.286	0.347
x		94.864%	0.060	1.721	-57.990	1.840	6.897	-12.750	54.990	100.063%	0.000	0.223	0.350
σ		0.764%	0.072	0.178	1.548	0.286	0.180	1.513	3.562	1.272%	0.000	0.084	0.028
%RSD		0.805	119.600	10.320	2.669	15.540	2.604	11.870	6.476	1.271	0.000	37.520	8.072

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:34:24	3.115	0.127	5.887	0.017	0.250	2.502	0.428	-3.361	0.249	-0.648	0.000	0.000
2	19:34:45	3.286	0.121	4.934	0.021	0.190	2.427	0.405	-3.323	0.246	-0.707	0.000	0.000
3	19:35:07	3.168	0.135	5.011	0.013	0.196	2.473	0.334	-3.173	0.219	-0.577	0.000	0.000
x		3.190	0.128	5.278	0.017	0.212	2.467	0.389	-3.286	0.238	-0.644	0.000	0.000
σ		0.087	0.007	0.530	0.004	0.033	0.038	0.049	0.099	0.017	0.065	0.000	0.000
%RSD		2.738	5.792	10.030	25.910	15.620	1.535	12.710	3.027	7.007	10.110	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:34:24	0.027	102.211%	0.122	0.007	-0.948	-0.038	101.287%	0.000	0.026	0.020	0.189	101.613%
2	19:34:45	0.042	102.425%	0.085	0.003	-1.249	-0.009	101.784%	0.000	0.020	0.017	0.162	103.962%
3	19:35:07	0.052	103.806%	0.082	0.007	-1.064	-0.028	103.068%	0.000	0.020	0.014	0.138	103.350%
x		0.040	102.814%	0.096	0.006	-1.087	-0.025	102.046%	0.000	0.022	0.017	0.163	102.975%
σ		0.013	0.866%	0.023	0.002	0.152	0.015	0.919%	0.000	0.003	0.003	0.026	1.219%
%RSD		31.520	0.842	23.460	40.280	13.980	60.420	0.901	0.000	14.840	16.640	15.680	1.183

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:34:24	0.012	0.023	0.077	101.111%	0.000	0.001	0.257
2	19:34:45	0.016	0.027	0.061	101.201%	0.000	0.001	0.257
3	19:35:07	0.014	0.024	0.067	101.631%	0.000	0.001	0.258
x		0.014	0.025	0.068	101.314%	0.000	0.001	0.257
σ		0.002	0.002	0.008	0.278%	0.000	0.000	0.001
%RSD		12.200	7.006	12.060	0.274	0.000	19.640	0.349

LCS 200-116803/2-A 5/19/2017 7:39:43 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:40:05	94.219%	10.630	413.600	T 5334.000	1967.000	484.600	T 5296.000	4719.000	101.978%	0.000	47.370	37.660
2	19:40:26	94.264%	10.010	417.700	T 5218.000	1926.000	479.800	T 5302.000	4700.000	102.695%	0.000	47.700	37.700
3	19:40:48	95.195%	10.150	404.600	T 5256.000	1958.000	481.400	T 5344.000	4792.000	102.050%	0.000	48.160	38.350
		94.559%	10.260	412.000	T 5269.000	1950.000	481.900	T 5314.000	4737.000	102.241%	0.000	47.740	37.910

x													
σ		0.551%	0.323	6.683	T 59.230	21.390	2.422	T 26.310	48.140	0.395%	0.000	0.397	0.388
%RSD		0.583	3.142	1.622	T 1.124	1.097	0.503	T 0.495	1.016	0.386	0.000	0.832	1.023
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:40:05	3.491	19.100	T 2163.000	9.230	20.470	51.830	183.100	34.560	0.235	34.880	0.000	0.000
2	19:40:26	3.847	19.420	T 2152.000	9.341	20.870	52.040	181.700	34.370	0.269	34.590	0.000	0.000
3	19:40:48	3.574	19.300	T 2165.000	9.498	21.500	52.180	184.900	34.800	0.246	34.630	0.000	0.000
x		3.638	19.270	T 2160.000	9.357	20.950	52.020	183.200	34.580	0.250	34.700	0.000	0.000
σ		0.187	0.161	T 6.845	0.135	0.517	0.173	1.590	0.217	0.017	0.158	0.000	0.000
%RSD		5.128	0.834	T 0.317	1.440	2.470	0.333	0.868	0.629	6.877	0.455	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:40:05	49.460	104.100%	101.100	10.490	1.538	10.120	103.185%	0.000	18.470	19.410	98.240	104.138%
2	19:40:26	49.870	104.206%	101.700	10.310	-0.390	9.821	102.898%	0.000	18.930	19.710	97.580	105.167%
3	19:40:48	49.690	104.430%	102.300	10.480	0.690	9.672	103.468%	0.000	18.870	19.610	96.940	105.051%
x		49.670	104.245%	101.700	10.430	0.612	9.871	103.184%	0.000	18.760	19.580	97.590	104.785%
σ		0.203	0.169%	0.589	0.101	0.966	0.230	0.285%	0.000	0.252	0.151	0.647	0.563%
%RSD		0.409	0.162	0.579	0.967	157.800	2.324	0.276	0.000	1.343	0.770	0.663	0.537
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	19:40:05	24.940	18.400	9.305	101.015%	0.000	20.770	10.160					
2	19:40:26	24.740	18.070	9.179	102.858%	0.000	20.730	10.100					
3	19:40:48	25.130	18.240	9.178	103.828%	0.000	20.600	10.080					
x		24.930	18.240	9.221	102.567%	0.000	20.700	10.110					
σ		0.196	0.168	0.073	1.429%	0.000	0.091	0.042					
%RSD		0.787	0.922	0.794	1.393	0.000	0.440	0.414					

200-38498-A-1-E 5/19/2017 7:45:24 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:45:46	90.082%	3.048	25.880	187.900	T 10860.000	T 45080.000	T 2986.000	T 24640.000	116.068%	0.000	63.240	50.760
2	19:46:07	92.305%	3.235	27.360	195.400	T 11100.000	T 45730.000	T 3018.000	T 25100.000	116.143%	0.000	63.780	51.480
3	19:46:29	92.004%	3.101	28.390	189.600	T 10790.000	T 44450.000	T 2919.000	T 24270.000	119.288%	0.000	62.370	50.060
x		91.464%	3.128	27.210	191.000	T 10920.000	T 45090.000	T 2974.000	T 24670.000	117.166%	0.000	63.130	50.770
σ		1.206%	0.097	1.264	3.963	T 161.600	T 637.700	T 50.190	T 412.100	1.838%	0.000	0.710	0.708
%RSD		1.319	3.094	4.645	2.075	T 1.481	T 1.414	T 1.687	T 1.670	1.569	0.000	1.125	1.395
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:45:46	9.991	T 2406.000	T 81230.000	34.820	80.280	T 2610.000	638.300	4.596	0.108	5.351	0.000	0.000
2	19:46:07	9.511	T 2438.000	T 81780.000	35.000	80.840	T 2621.000	645.700	4.447	0.116	4.503	0.000	0.000
3	19:46:29	9.356	T 2405.000	T 80830.000	34.860	79.590	T 2581.000	633.300	4.559	0.107	4.645	0.000	0.000
x		9.619	T 2416.000	T 81280.000	34.890	80.240	T 2604.000	639.100	4.534	0.110	4.833	0.000	0.000
σ		0.331	T 18.970	T 478.200	0.094	0.623	T 20.660	6.197	0.077	0.005	0.454	0.000	0.000
%RSD		3.444	T 0.785	T 0.588	0.269	0.777	T 0.793	0.970	1.708	4.752	9.399	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:45:46	85.870	272.079%	1.926	2.914	-3.927	4.323	99.797%	0.000	1.025	1.148	606.900	124.300%
2	19:46:07	84.960	274.456%	1.848	2.871	-4.157	4.431	101.568%	0.000	1.046	1.151	607.300	126.846%
3	19:46:29	85.480	276.595%	1.901	2.859	-3.528	4.375	102.337%	0.000	1.086	1.149	604.100	125.147%
x		85.440	274.377%	1.892	2.881	-3.871	4.376	101.234%	0.000	1.052	1.149	606.100	125.431%
σ		0.458	2.259%	0.040	0.029	0.318	0.054	1.303%	0.000	0.031	0.001	1.724	1.296%
%RSD		0.536	0.823	2.116	1.009	8.226	1.230	1.287	0.000	2.978	0.107	0.285	1.034
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	19:45:46	0.288	0.516	156.300	105.289%	0.000	12.500	4.892					
2	19:46:07	0.315	0.513	157.600	106.082%	0.000	12.890	4.932					
3	19:46:29	0.298	0.499	154.400	108.581%	0.000	12.400	4.812					
x		0.300	0.509	156.100	106.651%	0.000	12.600	4.879					
σ		0.014	0.009	1.598	1.718%	0.000	0.260	0.061					
%RSD		4.524	1.782	1.024	1.611	0.000	2.062	1.259					

200-38498-A-2-D 5/19/2017 7:51:06 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:51:28	96.248%	2.220	26.560	T 277.500	T 7968.000	T 35180.000	T 2758.000	11830.000	118.660%	0.000	48.090	39.420
2	19:51:49	97.552%	1.958	24.850	T 250.800	T 7668.000	T 33950.000	T 2657.000	11620.000	123.635%	0.000	46.280	38.020
3	19:52:10	99.433%	2.082	23.070	T 263.400	T 7846.000	T 34040.000	T 2656.000	11650.000	123.124%	0.000	47.160	38.710
x		97.744%	2.087	24.830	T 263.900	T 7827.000	T 34390.000	T 2690.000	11700.000	121.806%	0.000	47.180	38.720
σ		1.601%	0.131	1.746	T 13.330	T 150.800	T 685.600	T 58.480	114.700	2.737%	0.000	0.903	0.700
%RSD		1.638	6.269	7.031	T 5.052	T 1.927	T 1.994	T 2.174	0.981	2.247	0.000	1.914	1.808
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:51:28	8.323	T 2996.000	T 64840.000	23.790	58.710	T 1645.000	421.600	3.302	0.140	3.249	0.000	0.000
2	19:51:49	8.535	T 2925.000	T 62730.000	22.920	55.610	T 1598.000	407.300	3.521	0.141	3.379	0.000	0.000

3	19:52:10	8.405	T 2956.000	T 63690.000	23.030	56.540	T 1607.000	398.400	3.187	0.151	3.231	0.000	0.000
x		8.421	T 2959.000	T 63750.000	23.250	56.950	T 1617.000	409.100	3.337	0.144	3.286	0.000	0.000
σ		0.107	T 35.930	T 1052.000	0.473	1.588	T 25.160	11.720	0.170	0.006	0.081	0.000	0.000
%RSD		1.268	T 1.214	T 1.650	2.033	2.788	T 1.556	2.865	5.093	4.351	2.459	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:51:28	55.770	236.335%	1.101	1.784	-2.799	2.492	106.333%	0.000	0.817	0.865	462.900	120.005%
2	19:51:49	56.040	233.506%	1.072	1.740	-3.234	2.466	106.545%	0.000	0.842	0.886	470.300	123.114%
3	19:52:10	54.530	237.654%	1.039	1.721	-3.015	2.511	108.693%	0.000	0.781	0.866	464.300	122.459%
x		55.450	235.832%	1.071	1.748	-3.016	2.490	107.190%	0.000	0.813	0.872	465.800	121.859%
σ		0.806	2.119%	0.031	0.032	0.218	0.023	1.306%	0.000	0.030	0.012	3.963	1.639%
%RSD		1.454	0.899	2.888	1.836	7.217	0.925	1.218	0.000	3.742	1.331	0.851	1.345

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:51:28	0.232	0.356	104.300	106.321%	0.000	8.740	2.981
2	19:51:49	0.255	0.367	105.800	107.334%	0.000	8.684	3.006
3	19:52:10	0.228	0.360	105.700	107.167%	0.000	8.830	3.031
x		0.238	0.361	105.300	106.941%	0.000	8.751	3.006
σ		0.015	0.006	0.845	0.543%	0.000	0.074	0.025
%RSD		6.091	1.574	0.802	0.508	0.000	0.842	0.828

200-38498-A-3-D 5/19/2017 7:56:47 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	19:57:09	95.817%	2.231	30.790	223.500	T 15320.000	T 34480.000	T 4407.000	T 65940.000	125.570%	0.000	49.500	42.290
2	19:57:30	94.241%	2.264	31.450	218.000	T 15010.000	T 34060.000	T 4354.000	T 65610.000	128.110%	0.000	49.230	41.630
3	19:57:52	96.430%	2.269	29.800	226.200	T 15380.000	T 34650.000	T 4411.000	T 65830.000	126.174%	0.000	49.680	42.260
x		95.496%	2.255	30.680	222.600	T 15230.000	T 34390.000	T 4391.000	T 65790.000	126.618%	0.000	49.470	42.060
σ		1.129%	0.021	0.834	4.146	T 197.700	T 304.800	T 31.790	T 168.100	1.327%	0.000	0.225	0.374
%RSD		1.182	0.924	2.718	1.863	T 1.298	T 0.886	T 0.724	T 0.255	1.048	0.000	0.456	0.890
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:57:09	10.940	T 3947.000	T 101400.000	28.920	75.310	509.800	450.800	11.630	0.129	0.849	0.000	0.000
2	19:57:30	10.750	T 3910.000	T 100500.000	28.220	73.230	499.800	443.200	11.820	0.101	2.047	0.000	0.000
3	19:57:52	10.260	T 3963.000	T 101500.000	29.020	74.750	507.400	452.800	11.480	0.112	1.719	0.000	0.000
x		10.650	T 3940.000	T 101100.000	28.720	74.430	505.700	448.900	11.640	0.114	1.538	0.000	0.000
σ		0.351	T 26.900	T 563.000	0.433	1.077	5.182	5.082	0.173	0.014	0.619	0.000	0.000
%RSD		3.298	T 0.683	T 0.557	1.508	1.448	1.025	1.132	1.489	12.360	40.230	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	19:57:09	145.100	234.328%	1.084	0.387	-2.522	1.914	105.941%	0.000	0.691	0.722	646.500	120.927%
2	19:57:30	144.400	234.103%	1.065	0.406	-3.249	2.094	107.773%	0.000	0.706	0.727	634.100	120.430%
3	19:57:52	144.500	236.166%	1.039	0.369	-3.520	1.952	107.293%	0.000	0.717	0.728	636.800	120.652%
x		144.600	234.866%	1.063	0.388	-3.097	1.987	107.002%	0.000	0.704	0.726	639.100	120.670%
σ		0.366	1.132%	0.022	0.019	0.516	0.095	0.950%	0.000	0.013	0.003	6.540	0.249%
%RSD		0.253	0.482	2.110	4.792	16.660	4.767	0.888	0.000	1.871	0.447	1.023	0.206

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb

1	19:57:09	0.240	0.357	126.800	103.575%	0.000	12.540	1.967
2	19:57:30	0.267	0.360	129.400	101.927%	0.000	12.960	2.012
3	19:57:52	0.240	0.374	128.200	104.329%	0.000	12.860	1.998
x		0.249	0.363	128.100	103.277%	0.000	12.780	1.992
σ		0.016	0.009	1.268	1.228%	0.000	0.221	0.023
%RSD		6.300	2.482	0.990	1.189	0.000	1.727	1.142

200-38498-A-4-D 5/19/2017 8:02:28 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:02:50	100.704%	2.386	20.720	135.200	┬12450.000	┬39050.000	┬3600.000	12020.000	129.379%	0.000	61.170	47.850
2	20:03:11	98.238%	2.633	21.660	129.700	┬12310.000	┬38930.000	┬3583.000	┬13860.000	129.825%	0.000	60.490	47.860
3	20:03:32	98.889%	2.675	21.470	133.300	┬12500.000	┬39040.000	┬3598.000	┬13790.000	129.108%	0.000	61.250	49.080
x		99.277%	2.565	21.280	132.800	┬12420.000	┬39010.000	┬3594.000	┬13230.000	129.437%	0.000	60.970	48.260
σ		1.278%	0.156	0.496	2.795	┬102.300	┬65.000	┬9.484	┬1046.000	0.362%	0.000	0.419	0.704
%RSD		1.287	6.085	2.330	2.105	┬0.824	┬0.167	┬0.264	┬7.906	0.280	0.000	0.687	1.459
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:02:50	8.774	┬855.600	┬69760.000	30.810	83.090	┬2010.000	┬839.400	9.040	0.126	1.815	0.000	0.000
2	20:03:11	8.974	┬861.600	┬69450.000	31.150	84.590	┬2017.000	┬829.400	8.868	0.125	1.981	0.000	0.000
3	20:03:32	9.047	┬871.600	┬70220.000	30.760	84.810	┬2037.000	┬843.400	9.040	0.116	2.419	0.000	0.000
x		8.932	┬863.000	┬69810.000	30.910	84.160	┬2021.000	┬837.400	8.983	0.123	2.072	0.000	0.000
σ		0.141	┬8.075	┬384.900	0.214	0.939	┬13.770	┬7.169	0.099	0.006	0.312	0.000	0.000
%RSD		1.582	┬0.936	┬0.551	0.691	1.115	┬0.681	┬0.856	1.103	4.562	15.050	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:02:50	49.250	266.696%	1.360	0.889	-3.118	6.033	107.987%	0.000	1.635	1.741	349.500	124.631%
2	20:03:11	49.660	268.004%	1.390	0.825	-2.583	5.900	108.060%	0.000	1.717	1.740	356.700	128.127%
3	20:03:32	49.580	268.271%	1.385	0.867	-3.520	5.877	108.594%	0.000	1.723	1.737	348.200	124.944%
x		49.490	267.657%	1.378	0.860	-3.074	5.937	108.214%	0.000	1.691	1.739	351.500	125.901%
σ		0.219	0.843%	0.016	0.033	0.470	0.084	0.331%	0.000	0.049	0.002	4.589	1.934%
%RSD		0.442	0.315	1.150	3.786	15.300	1.413	0.306	0.000	2.891	0.112	1.305	1.536
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	20:02:50	0.254	0.400	┬225.000	109.953%	0.000	12.140	3.474					
2	20:03:11	0.242	0.411	┬227.700	108.266%	0.000	12.320	3.571					
3	20:03:32	0.260	0.431	┬224.200	110.693%	0.000	12.260	3.489					
x		0.252	0.414	┬225.600	109.637%	0.000	12.240	3.511					
σ		0.009	0.016	┬1.827	1.244%	0.000	0.093	0.052					
%RSD		3.589	3.850	┬0.810	1.135	0.000	0.761	1.482					

200-38498-A-5-D 5/19/2017 8:08:11 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:08:32	99.016%	3.047	16.410	┬569.800	┬14460.000	┬50890.000	┬3741.000	12680.000	134.634%	0.000	63.460	53.210
2	20:08:53	99.669%	3.422	17.260	┬565.500	┬14240.000	┬50550.000	┬3718.000	┬14760.000	136.195%	0.000	62.540	53.150
3	20:09:15	99.236%	3.040	17.620	┬575.400	┬14530.000	┬51520.000	┬3792.000	┬14730.000	134.053%	0.000	63.520	55.010
		99.307%	3.170	17.100	┬570.200	┬14410.000	┬50990.000	┬3751.000	┬14060.000	134.960%	0.000	63.180	53.790

x													
σ		0.332%	0.219	0.621	┬4.970	┬149.300	┬495.400	┬37.680	┬1194.000	1.108%	0.000	0.548	1.057
%RSD		0.334	6.893	3.632	┬0.872	┬1.036	┬0.972	┬1.005	┬8.497	0.821	0.000	0.868	1.965
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:08:32	9.697	┬2085.000	┬83390.000	36.050	90.870	388.200	320.000	8.443	0.117	0.142	0.000	0.000
2	20:08:53	9.986	┬2068.000	┬83260.000	35.860	90.170	389.200	321.300	8.240	0.119	0.039	0.000	0.000
3	20:09:15	10.570	┬2135.000	┬84840.000	36.310	92.960	397.800	326.100	8.390	0.118	0.191	0.000	0.000
x		10.080	┬2096.000	┬83830.000	36.070	91.340	391.800	322.500	8.358	0.118	0.124	0.000	0.000
σ		0.444	┬34.700	┬874.900	0.225	1.448	5.291	3.206	0.105	0.001	0.078	0.000	0.000
%RSD		4.401	┬1.656	┬1.044	0.623	1.586	1.351	0.994	1.256	0.915	62.720	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:08:32	52.810	299.340%	1.078	0.295	-4.871	1.583	108.029%	0.000	1.327	1.482	433.900	128.677%
2	20:08:53	52.770	301.340%	1.034	0.286	-3.197	1.327	109.750%	0.000	1.449	1.479	429.300	130.825%
3	20:09:15	52.650	298.958%	1.093	0.303	-4.126	1.491	109.616%	0.000	1.370	1.485	436.100	130.456%
x		52.740	299.880%	1.068	0.295	-4.065	1.467	109.132%	0.000	1.382	1.482	433.100	129.986%
σ		0.085	1.279%	0.031	0.009	0.839	0.130	0.957%	0.000	0.062	0.003	3.493	1.149%
%RSD		0.161	0.427	2.871	2.922	20.630	8.837	0.877	0.000	4.495	0.205	0.807	0.884
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	20:08:32	0.100	0.459	97.170	107.697%	0.000	16.900	3.165					
2	20:08:53	0.104	0.447	96.510	111.133%	0.000	16.620	3.104					
3	20:09:15	0.091	0.424	97.630	109.374%	0.000	17.140	3.204					
x		0.098	0.443	97.110	109.402%	0.000	16.890	3.158					
σ		0.007	0.018	0.567	1.718%	0.000	0.258	0.050					
%RSD		6.776	4.035	0.584	1.571	0.000	1.526	1.593					

200-38498-A-6-D 5/19/2017 8:13:53 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:14:14	96.901%	2.772	18.400	100.900	T 15810.000	T 40090.000	T 3912.000	T 63790.000	131.360%	0.000	53.760	48.650
2	20:14:36	97.459%	2.151	18.100	90.690	T 15480.000	T 38850.000	T 3813.000	T 62470.000	134.025%	0.000	53.520	48.100
3	20:14:57	96.159%	3.051	18.860	100.800	T 15940.000	T 40130.000	T 3926.000	T 64680.000	131.057%	0.000	55.120	49.700
x		96.840%	2.658	18.450	97.460	T 15740.000	T 39690.000	T 3884.000	T 63650.000	132.147%	0.000	54.140	48.820
σ		0.652%	0.460	0.379	5.864	T 239.400	T 728.100	T 61.910	T 1114.000	1.633%	0.000	0.865	0.810
%RSD		0.674	17.320	2.051	6.016	T 1.521	T 1.834	T 1.594	T 1.750	1.236	0.000	1.597	1.659

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:14:14	9.287	T 2469.000	T 85120.000	32.410	84.770	745.300	545.400	9.652	0.095	1.184	0.000	0.000
2	20:14:36	9.302	T 2445.000	T 84380.000	31.880	83.730	731.200	531.600	9.809	0.089	1.469	0.000	0.000
3	20:14:57	9.339	T 2529.000	T 86410.000	32.640	86.140	756.900	552.900	9.805	0.094	1.521	0.000	0.000
x		9.310	T 2481.000	T 85300.000	32.310	84.880	744.500	543.300	9.756	0.092	1.391	0.000	0.000
σ		0.027	T 43.370	T 1031.000	0.389	1.205	12.900	10.820	0.090	0.003	0.182	0.000	0.000
%RSD		0.285	T 1.748	T 1.209	1.205	1.419	1.733	1.992	0.918	3.639	13.060	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:14:14	132.600	251.975%	0.985	0.378	-3.630	2.117	108.005%	0.000	0.608	0.646	499.700	120.084%
2	20:14:36	132.100	249.853%	1.047	0.410	-3.868	2.128	107.885%	0.000	0.645	0.658	512.500	121.081%
3	20:14:57	133.000	251.717%	0.977	0.426	-3.544	2.072	108.809%	0.000	0.651	0.666	506.900	121.909%
x		132.600	251.181%	1.003	0.405	-3.681	2.106	108.233%	0.000	0.635	0.657	506.400	121.025%
σ		0.453	1.158%	0.038	0.024	0.168	0.030	0.503%	0.000	0.023	0.010	6.434	0.914%
%RSD		0.342	0.461	3.800	5.934	4.553	1.413	0.464	0.000	3.682	1.476	1.271	0.755

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:14:14	0.143	0.337	135.400	103.193%	0.000	13.650	2.132
2	20:14:36	0.174	0.332	133.700	106.417%	0.000	13.510	2.093
3	20:14:57	0.167	0.342	135.300	104.878%	0.000	13.570	2.136
x		0.162	0.337	134.800	104.829%	0.000	13.580	2.120
σ		0.016	0.005	0.929	1.613%	0.000	0.073	0.024
%RSD		10.070	1.460	0.689	1.538	0.000	0.541	1.122

200-38498-A-7-J 5/19/2017 8:19:35 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:19:57	96.603%	4.470	16.870	135.200	T 16850.000	T 64300.000	T 4031.000	T 13330.000	144.551%	0.000	79.720	69.230
2	20:20:18	94.289%	4.545	19.320	139.600	T 17490.000	T 66610.000	T 4104.000	T 13910.000	144.314%	0.000	82.240	71.250
3	20:20:40	98.583%	4.255	16.750	135.400	T 16790.000	T 63800.000	T 3960.000	11530.000	145.887%	0.000	80.430	69.480
x		96.491%	4.423	17.650	136.700	T 17050.000	T 64900.000	T 4032.000	T 12920.000	144.917%	0.000	80.800	69.990
σ		2.149%	0.151	1.453	2.480	T 390.200	T 1498.000	T 72.070	T 1242.000	0.848%	0.000	1.301	1.104
%RSD		2.227	3.405	8.235	1.814	T 2.289	T 2.308	T 1.788	T 9.610	0.585	0.000	1.610	1.578

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:19:57	11.460	T 3395.000	T 102500.000	46.900	109.300	274.500	404.500	8.363	0.088	0.249	0.000	0.000
2	20:20:18	11.370	T 3469.000	T 105200.000	47.930	110.900	280.000	417.300	8.379	0.083	0.542	0.000	0.000

3	20:20:40	10.340	T 3361.000	T 102400.000	46.970	109.600	272.200	403.900	8.147	0.085	0.254	0.000	0.000
x		11.060	T 3408.000	T 103400.000	47.270	109.900	275.600	408.500	8.296	0.085	0.349	0.000	0.000
σ		0.622	T 55.420	T 1631.000	0.576	0.846	4.009	7.574	0.130	0.003	0.167	0.000	0.000
%RSD		5.621	T 1.626	T 1.578	1.219	0.769	1.455	1.854	1.565	2.978	48.020	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:19:57	56.690	361.814%	1.376	0.435	-3.785	1.684	108.291%	0.000	0.668	0.721	591.300	136.203%
2	20:20:18	58.280	367.980%	1.359	0.422	-5.542	1.802	106.999%	0.000	0.662	0.758	616.800	135.746%
3	20:20:40	57.120	367.319%	1.439	0.456	-5.067	1.855	109.066%	0.000	0.644	0.730	592.300	136.833%
x		57.360	365.704%	1.391	0.437	-4.798	1.781	108.118%	0.000	0.658	0.737	600.100	136.260%
σ		0.821	3.385%	0.042	0.017	0.909	0.088	1.044%	0.000	0.012	0.019	14.420	0.546%
%RSD		1.432	0.926	3.032	3.947	18.940	4.927	0.966	0.000	1.894	2.638	2.403	0.400

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:19:57	0.115	0.644	157.700	109.054%	0.000	20.910	5.146
2	20:20:18	0.098	0.673	165.800	105.490%	0.000	22.270	5.607
3	20:20:40	0.095	0.644	159.600	108.987%	0.000	20.980	5.239
x		0.103	0.654	161.000	107.844%	0.000	21.390	5.331
σ		0.011	0.017	4.252	2.039%	0.000	0.765	0.244
%RSD		10.760	2.588	2.640	1.891	0.000	3.575	4.579

200-38498-A-7-J SD@5 5/19/2017 8:25:19 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:25:40	104.162%	1.027	2.868	34.750	3626.000	T 15690.000	T 998.400	2788.000	128.148%	0.000	19.140	16.900
2	20:26:01	105.249%	0.830	3.495	32.930	3608.000	T 15770.000	T 1008.000	2798.000	128.597%	0.000	19.460	16.630
3	20:26:23	104.947%	0.791	3.368	35.160	3648.000	T 15890.000	T 1017.000	2805.000	127.577%	0.000	19.620	16.780
x		104.786%	0.883	3.244	34.280	3628.000	T 15780.000	T 1008.000	2797.000	128.107%	0.000	19.410	16.770
σ		0.561%	0.127	0.332	1.188	20.130	T 103.600	T 9.055	8.500	0.511%	0.000	0.243	0.134
%RSD		0.535	14.340	10.230	3.465	0.555	T 0.656	T 0.899	0.304	0.399	0.000	1.253	0.798

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:25:40	5.393	T 820.900	T 25440.000	11.450	26.610	66.980	103.600	2.259	0.183	-0.224	0.000	0.000
2	20:26:01	4.755	T 821.200	T 25390.000	11.400	27.010	66.740	103.800	2.003	0.191	-0.136	0.000	0.000
3	20:26:23	5.314	T 828.300	T 25610.000	11.430	26.560	67.780	104.800	2.189	0.180	0.139	0.000	0.000
x		5.154	T 823.500	T 25480.000	11.430	26.730	67.170	104.100	2.150	0.185	-0.073	0.000	0.000
σ		0.348	T 4.207	T 115.700	0.025	0.244	0.547	0.647	0.132	0.006	0.189	0.000	0.000
%RSD		6.748	T 0.511	T 0.454	0.219	0.914	0.814	0.622	6.155	3.175	257.700	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:25:40	11.370	168.845%	0.556	0.085	-1.833	0.277	113.325%	0.000	0.141	0.148	115.700	111.356%
2	20:26:01	11.110	172.009%	0.634	0.090	-2.079	0.362	115.511%	0.000	0.165	0.140	114.500	114.250%
3	20:26:23	11.110	169.968%	0.604	0.077	-1.718	0.247	115.076%	0.000	0.169	0.142	115.400	114.927%
x		11.190	170.274%	0.598	0.084	-1.877	0.295	114.638%	0.000	0.158	0.143	115.200	113.511%
σ		0.152	1.604%	0.039	0.006	0.185	0.060	1.157%	0.000	0.015	0.004	0.607	1.897%
%RSD		1.360	0.942	6.548	7.616	9.832	20.340	1.009	0.000	9.628	2.772	0.527	1.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb

1	20:25:40	0.023	0.101	33.450	102.328%	0.000	4.354	1.272
2	20:26:01	0.025	0.091	33.020	103.775%	0.000	4.319	1.250
3	20:26:23	0.036	0.110	33.640	102.696%	0.000	4.386	1.285
x		0.028	0.101	33.370	102.933%	0.000	4.353	1.269
σ		0.007	0.009	0.318	0.752%	0.000	0.033	0.017
%RSD		25.190	9.306	0.951	0.731	0.000	0.769	1.377

CCV 1039951 5/19/2017 8:31:01 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:31:23	93.198%	655.700	256.200	┬10250.000	┬32280.000	┬31440.000	┬10240.000	┬31780.000	104.715%	0.000	┬1326.000	366.000
2	20:31:44	92.237%	657.800	256.100	┬10420.000	┬32700.000	┬31820.000	┬10370.000	┬32090.000	101.690%	0.000	┬1351.000	372.500
3	20:32:05	91.891%	647.300	252.200	┬10290.000	┬32310.000	┬31460.000	┬10180.000	┬31500.000	102.245%	0.000	┬1322.000	363.900
x		92.442%	104.580%	101.942%	┬103.185%	┬108.094%	┬105.248%	┬102.649%	┬105.957%	102.883%	0.000	┬106.636%	91.866%
σ		0.677%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.610%	0.000	┬n/a	n/a
%RSD		0.732	0.848	0.888	┬0.826	┬0.716	┬0.680	┬0.925	┬0.928	1.565	0.000	┬1.207	1.219
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:31:23	10.030	┬1292.000	┬30630.000	┬512.400	1257.000	1206.000	1202.000	200.800	0.163	205.700	0.000	0.000
2	20:31:44	11.250	┬1325.000	┬31150.000	┬519.500	1280.000	1227.000	1232.000	203.100	0.350	204.600	0.000	0.000
3	20:32:05	11.040	┬1295.000	┬30630.000	┬511.900	1256.000	1203.000	1213.000	199.500	0.200	205.500	0.000	0.000
x		10.770	┬104.345%	┬102.672%	┬102.919%	101.145%	96.961%	97.251%	100.554%	0.238	102.641%	0.000	0.000
σ		0.650	┬n/a	┬n/a	┬n/a	n/a	n/a	n/a	n/a	0.099	n/a	0.000	0.000
%RSD		6.031	┬1.404	┬0.972	┬0.828	1.061	1.103	1.258	0.894	41.640	0.305	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:31:23	┬227.300	104.408%	┬1429.000	102.100	22.310	201.900	102.519%	0.000	238.500	249.500	1183.000	102.536%
2	20:31:44	196.700	102.253%	┬1451.000	101.000	18.230	204.300	101.813%	0.000	241.800	250.700	1192.000	102.840%
3	20:32:05	┬222.000	103.160%	┬1430.000	100.400	19.390	199.700	102.707%	0.000	237.600	246.000	1169.000	102.412%
x		┬215.300	103.274%	┬114.948%	101.139%	19.980	100.976%	102.346%	0.000	239.300	99.498%	94.502%	102.596%
σ		┬16.330	1.082%	┬n/a	n/a	2.103	n/a	0.471%	0.000	2.184	n/a	n/a	0.220%
%RSD		┬7.583	1.048	┬0.876	0.850	10.530	1.125	0.460	0.000	0.913	0.993	0.969	0.215
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	20:31:23	18.710	┬207.400	┬1300.000	97.497%	0.000	20.100	9.819					
2	20:31:44	18.450	┬207.600	┬1281.000	98.185%	0.000	20.210	9.956					
3	20:32:05	18.950	┬207.100	┬1281.000	99.435%	0.000	20.030	9.744					
x		93.524%	┬103.672%	┬102.988%	98.372%	0.000	100.559%	98.398%					
σ		n/a	┬n/a	┬n/a	0.982%	0.000	n/a	n/a					
%RSD		1.316	┬0.125	┬0.857	0.999	0.000	0.450	1.095					

CCB 1035925 5/19/2017 8:36:42 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:37:04	99.242%	-0.082	1.238	-1.864	0.669	0.979	3.912	19.250	109.932%	0.000	0.126	-0.003
2	20:37:25	97.829%	-0.004	1.481	0.052	1.038	1.359	4.573	22.010	109.764%	0.000	0.459	-0.025
3	20:37:47	98.313%	0.245	1.077	3.719	9.968	11.760	10.020	32.440	110.078%	0.000	0.723	0.150
		98.462%	0.053	1.265	0.636	3.892	4.698	6.170	24.570	109.924%	0.000	0.436	0.041

x													
σ		0.718%	0.171	0.204	2.837	5.266	6.115	3.354	6.954	0.157%	0.000	0.299	0.095
%RSD		0.729	324.600	16.080	446.300	135.300	130.200	54.360	28.310	0.143	0.000	68.650	233.300
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:37:04	3.409	0.041	1.551	0.009	0.007	0.131	0.179	-3.283	0.272	-0.673	0.000	0.000
2	20:37:25	3.220	0.056	2.046	0.016	0.068	0.077	0.225	-3.467	0.305	-0.605	0.000	0.000
3	20:37:47	3.225	0.495	13.140	0.189	0.493	0.573	0.507	-3.265	0.293	-0.844	0.000	0.000
x		3.285	0.198	5.580	0.071	0.189	0.261	0.303	-3.338	0.290	-0.707	0.000	0.000
σ		0.108	0.258	6.554	0.102	0.265	0.272	0.178	0.112	0.017	0.123	0.000	0.000
%RSD		3.276	130.600	117.500	143.000	139.600	104.500	58.530	3.356	5.871	17.410	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:37:04	-0.001	107.766%	0.093	0.005	-0.948	-0.032	106.657%	0.000	0.020	0.006	0.055	102.288%
2	20:37:25	0.003	107.333%	0.116	0.008	-0.898	-0.028	106.844%	0.000	0.014	0.018	0.097	101.264%
3	20:37:47	0.077	108.771%	0.542	0.045	-0.981	0.073	108.403%	0.000	0.099	0.096	0.514	103.121%
x		0.026	107.957%	0.251	0.019	-0.943	0.004	107.301%	0.000	0.044	0.040	0.222	102.225%
σ		0.044	0.738%	0.253	0.022	0.042	0.059	0.959%	0.000	0.048	0.049	0.253	0.930%
%RSD		166.800	0.683	100.900	112.300	4.425	1353.000	0.893	0.000	108.300	122.200	114.200	0.910
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	20:37:04	0.007	0.068	0.031	98.624%	0.000	0.000	0.240					
2	20:37:25	-0.000	0.060	0.072	98.824%	0.000	0.000	0.240					
3	20:37:47	-0.002	0.122	0.428	100.423%	0.000	0.009	0.243					
x		0.001	0.083	0.177	99.290%	0.000	0.003	0.241					
σ		0.005	0.034	0.218	0.986%	0.000	0.005	0.002					
%RSD		337.900	40.630	123.600	0.993	0.000	160.800	0.655					

CCVL 1039949 5/19/2017 8:42:24 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:42:45	101.994%	1.177	40.370	T 535.500	195.300	49.890	T 545.600	480.900	114.899%	0.000	5.006	3.676
2	20:43:07	103.267%	1.124	40.300	T 536.900	189.300	49.570	T 541.900	500.900	115.458%	0.000	4.799	3.710
3	20:43:28	101.838%	1.216	40.220	T 552.500	197.600	50.590	T 548.800	503.600	114.124%	0.000	5.059	3.700
x		102.366%	117.265%	100.738%	T 108.322%	97.035%	100.037%	T 109.085%	99.026%	114.827%	0.000	99.096%	92.382%
σ		0.784%	n/a	n/a	T n/a	n/a	n/a	T n/a	n/a	0.670%	0.000	n/a	n/a
%RSD		0.766	3.933	0.188	T 1.744	2.211	1.046	T 0.629	2.509	0.583	0.000	2.783	0.477

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:42:45	3.392	1.977	193.300	0.991	2.306	4.962	20.680	0.859	0.295	3.487	0.000	0.000
2	20:43:07	3.801	2.079	193.500	0.991	2.149	5.011	20.390	0.653	0.302	3.152	0.000	0.000
3	20:43:28	3.492	1.991	196.500	0.991	2.343	5.382	21.170	0.712	0.323	2.780	0.000	0.000
x		3.562	100.773%	97.213%	99.090%	113.308%	102.361%	103.738%	37.066%	0.307	78.496%	0.000	0.000
σ		0.213	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.014	n/a	0.000	0.000
%RSD		5.979	2.734	0.921	0.047	4.535	4.490	1.909	14.290	4.718	11.260	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:42:45	4.885	111.594%	9.878	1.037	-1.307	0.978	109.352%	0.000	1.895	1.936	9.147	103.497%
2	20:43:07	4.843	112.561%	10.020	1.126	-1.113	0.942	110.449%	0.000	1.813	1.946	9.890	106.252%
3	20:43:28	4.762	113.036%	10.010	1.022	-1.234	0.931	111.658%	0.000	1.818	1.926	9.174	103.928%
x		96.599%	112.397%	99.697%	106.167%	-1.218	95.048%	110.486%	0.000	1.842	96.794%	94.039%	104.559%
σ		n/a	0.735%	n/a	n/a	0.098	n/a	1.154%	0.000	0.046	n/a	n/a	1.482%
%RSD		1.300	0.654	0.801	5.320	8.039	2.558	1.044	0.000	2.501	0.529	4.483	1.417

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:42:45	2.611	1.676	1.009	99.006%	0.000	1.962	1.137
2	20:43:07	2.550	1.720	0.971	99.535%	0.000	1.988	1.155
3	20:43:28	2.564	1.724	0.998	100.390%	0.000	1.923	1.152
x		128.750%	85.321%	99.255%	99.644%	0.000	97.882%	114.829%
σ		n/a	n/a	n/a	0.698%	0.000	n/a	n/a
%RSD		1.251	1.554	1.962	0.701	0.000	1.686	0.840

200-38498-A-7-J PDS 5/19/2017 8:48:07 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:48:28	94.774%	14.780	426.400	T 4271.000	T 18770.000	T 64960.000	T 8137.000	T 17680.000	138.162%	0.000	117.000	97.620
2	20:48:49	92.429%	15.180	449.800	T 4288.000	T 18740.000	T 64820.000	T 8135.000	T 17830.000	139.962%	0.000	115.800	97.200
3	20:49:10	93.503%	15.120	437.700	T 4265.000	T 18780.000	T 64910.000	T 8132.000	T 17590.000	139.818%	0.000	116.400	96.110
x		93.569%	15.030	438.000	T 4275.000	T 18770.000	T 64900.000	T 8134.000	T 17700.000	139.314%	0.000	116.400	96.980
σ		1.174%	0.217	11.720	T 11.950	T 19.640	T 74.410	T 2.479	T 122.700	1.000%	0.000	0.570	0.780
%RSD		1.255	1.445	2.676	T 0.280	T 0.105	T 0.115	T 0.030	T 0.693	0.718	0.000	0.490	0.805

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:48:28	11.010	T 3373.000	T 104300.000	53.900	124.500	309.600	549.400	20.020	0.096	11.440	0.000	0.000
2	20:48:49	11.750	T 3391.000	T 103900.000	53.260	122.700	305.800	544.600	20.300	0.091	12.020	0.000	0.000

3	20:49:10	12.020	T3402.000	T104200.000	53.760	123.000	310.800	553.900	20.430	0.076	12.570	0.000	0.000
x		11.600	T3389.000	T104100.000	53.640	123.400	308.700	549.300	20.250	0.087	12.010	0.000	0.000
σ		0.521	T14.860	T221.400	0.339	0.982	2.613	4.654	0.207	0.010	0.565	0.000	0.000
%RSD		4.495	T0.439	T0.213	0.633	0.796	0.846	0.847	1.024	11.810	4.701	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:48:28	106.100	348.916%	32.320	10.780	-2.520	11.870	104.065%	0.000	18.790	20.120	687.100	130.697%
2	20:48:49	107.400	351.573%	32.580	10.750	-5.277	11.910	105.075%	0.000	18.890	20.200	688.600	131.828%
3	20:49:10	T125.300	353.648%	32.580	10.600	-4.785	11.890	106.318%	0.000	18.860	19.990	685.600	133.706%
x		T113.000	351.379%	32.500	10.710	-4.194	11.890	105.152%	0.000	18.850	20.100	687.100	132.077%
σ		T10.710	2.372%	0.150	0.097	1.471	0.020	1.128%	0.000	0.052	0.108	1.497	1.520%
%RSD		T9.484	0.675	0.462	0.903	35.070	0.171	1.073	0.000	0.278	0.535	0.218	1.151

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:48:28	20.550	17.380	166.800	105.265%	0.000	40.460	14.500
2	20:48:49	20.840	17.590	166.700	106.120%	0.000	40.540	14.340
3	20:49:10	20.710	17.520	166.000	107.109%	0.000	40.170	14.470
x		20.700	17.500	166.500	106.165%	0.000	40.390	14.440
σ		0.147	0.105	0.423	0.923%	0.000	0.194	0.083
%RSD		0.711	0.601	0.254	0.869	0.000	0.480	0.577

200-38498-A-7-K MS 5/19/2017 8:53:49 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:54:10	93.334%	15.910	356.700	T4253.000	T20640.000	T75180.000	T8708.000	T17190.000	147.101%	0.000	129.600	108.100
2	20:54:32	94.124%	15.860	358.600	T4164.000	T20310.000	T74070.000	T8516.000	T17110.000	150.557%	0.000	128.500	106.700
3	20:54:54	94.431%	16.320	363.700	T4269.000	T20940.000	T75870.000	T8716.000	T17370.000	147.702%	0.000	128.800	108.100
x		93.963%	16.030	359.700	T4229.000	T20630.000	T75040.000	T8647.000	T17220.000	148.453%	0.000	129.000	107.600
σ		0.566%	0.253	3.643	T56.450	T314.400	T906.400	T113.200	T137.900	1.846%	0.000	0.585	0.757
%RSD		0.602	1.579	1.013	T1.335	T1.524	T1.208	T1.309	T0.801	1.244	0.000	0.453	0.704
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:54:10	12.100	T3574.000	T114600.000	58.210	137.600	337.800	601.400	20.210	0.096	9.953	0.000	0.000
2	20:54:32	11.540	T3495.000	T111900.000	57.130	135.400	331.100	591.100	20.340	0.071	9.878	0.000	0.000
3	20:54:54	13.480	T3553.000	T114700.000	58.930	139.500	338.500	600.200	20.160	0.081	10.000	0.000	0.000
x		12.370	T3541.000	T113700.000	58.090	137.500	335.800	597.600	20.240	0.083	9.945	0.000	0.000
σ		1.002	T40.550	T1596.000	0.908	2.068	4.082	5.650	0.091	0.012	0.064	0.000	0.000
%RSD		8.102	T1.145	T1.403	1.562	1.504	1.216	0.946	0.451	14.870	0.639	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	20:54:10	118.700	401.437%	27.950	11.170	-5.072	12.300	104.766%	0.000	6.102	6.519	805.000	137.633%
2	20:54:32	118.100	403.706%	28.070	11.100	-2.394	12.060	106.217%	0.000	6.104	6.476	795.100	138.384%
3	20:54:54	117.700	402.925%	28.510	11.030	-3.275	12.050	106.192%	0.000	6.250	6.511	790.600	139.157%
x		118.200	402.689%	28.180	11.100	-3.580	12.130	105.725%	0.000	6.152	6.502	796.900	138.391%
σ		0.495	1.153%	0.295	0.068	1.365	0.141	0.831%	0.000	0.085	0.023	7.339	0.762%
%RSD		0.419	0.286	1.045	0.615	38.120	1.164	0.786	0.000	1.382	0.352	0.921	0.551

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb

1	20:54:10	6.712	18.320	193.000	105.576%	0.000	44.720	15.940
2	20:54:32	6.681	18.140	189.000	108.318%	0.000	44.480	15.550
3	20:54:54	6.667	17.960	190.100	107.735%	0.000	44.950	15.880
x		6.687	18.140	190.700	107.210%	0.000	44.720	15.790
σ		0.023	0.180	2.066	1.445%	0.000	0.233	0.210
%RSD		0.344	0.990	1.084	1.348	0.000	0.520	1.329

200-38498-A-7-L MSD 5/19/2017 8:59:31 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:59:53	94.383%	15.610	383.000	T4413.000	T18990.000	T68130.000	T8378.000	T24850.000	144.007%	0.000	119.000	100.200
2	21:00:14	93.431%	15.590	387.600	T4382.000	T19090.000	T69300.000	T8432.000	T24750.000	143.713%	0.000	121.600	102.200
3	21:00:36	94.369%	16.030	391.200	T4413.000	T19050.000	T68490.000	T8326.000	T24690.000	144.742%	0.000	122.500	102.600
x		94.061%	15.740	387.200	T4403.000	T19040.000	T68640.000	T8379.000	T24760.000	144.154%	0.000	121.000	101.700
σ		0.545%	0.252	4.132	T17.620	T48.380	T601.800	T52.900	T84.670	0.530%	0.000	1.795	1.263
%RSD		0.580	1.599	1.067	T0.400	T0.254	T0.877	T0.631	T0.342	0.368	0.000	1.483	1.242

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:59:53	12.060	T3766.000	T102200.000	53.810	123.800	326.100	537.200	21.510	0.088	11.240	0.000	0.000
2	21:00:14	12.050	T3807.000	T103800.000	54.900	127.200	330.000	538.600	20.860	0.107	10.620	0.000	0.000
3	21:00:36	11.570	T3804.000	T104100.000	54.990	126.500	330.100	538.700	20.980	0.103	10.840	0.000	0.000
x		11.890	T3793.000	T103400.000	54.560	125.800	328.800	538.200	21.120	0.099	10.900	0.000	0.000
σ		0.281	T22.560	T1024.000	0.654	1.836	2.267	0.868	0.345	0.010	0.312	0.000	0.000
%RSD		2.360	T0.595	T0.991	1.199	1.459	0.690	0.161	1.634	10.210	2.865	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:59:53	129.200	360.389%	31.670	10.920	-3.259	12.150	105.223%	0.000	7.471	8.052	700.900	132.838%
2	21:00:14	131.500	368.268%	31.350	11.080	-3.506	12.180	105.707%	0.000	7.626	8.139	709.600	134.004%
3	21:00:36	130.900	366.867%	31.550	10.930	-3.885	11.880	105.638%	0.000	7.654	8.203	715.300	133.962%
x		130.500	365.175%	31.520	10.970	-3.550	12.070	105.523%	0.000	7.584	8.131	708.600	133.601%
σ		1.169	4.203%	0.163	0.091	0.315	0.164	0.262%	0.000	0.099	0.076	7.233	0.661%
%RSD		0.895	1.151	0.517	0.830	8.877	1.355	0.248	0.000	1.304	0.931	1.021	0.495

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	20:59:53	7.627	17.900	166.600	104.487%	0.000	42.460	15.130
2	21:00:14	7.707	18.280	168.500	104.740%	0.000	42.850	15.390
3	21:00:36	7.781	18.250	169.500	104.248%	0.000	43.100	15.240
x		7.705	18.140	168.200	104.492%	0.000	42.800	15.260
σ		0.077	0.212	1.483	0.246%	0.000	0.325	0.130
%RSD		1.000	1.168	0.881	0.235	0.000	0.759	0.854

200-38498-A-8-D 5/19/2017 9:05:12 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:05:34	95.947%	2.980	33.400	168.000	T17460.000	T47770.000	T5103.000	T43090.000	134.409%	0.000	63.030	58.870
2	21:05:55	95.753%	2.761	33.340	T222.500	T17330.000	T46930.000	T4972.000	T42440.000	138.094%	0.000	62.490	58.190
3	21:06:17	96.835%	2.697	32.830	T224.000	T17400.000	T47150.000	T5051.000	T42410.000	135.701%	0.000	62.150	57.850
		96.178%	2.813	33.190	T204.800	T17400.000	T47280.000	T5042.000	T42640.000	136.068%	0.000	62.560	58.300

x													
σ		0.577%	0.148	0.313	T 31.930	T 65.250	T 436.300	T 66.160	T 383.200	1.870%	0.000	0.448	0.518
%RSD		0.600	5.277	0.943	T 15.590	T 0.375	T 0.923	T 1.312	T 0.899	1.374	0.000	0.716	0.889
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	21:05:34	10.600	T 3193.000	T 98630.000	36.070	96.390	991.100	655.700	8.582	0.119	1.563	0.000	0.000
2	21:05:55	11.040	T 3153.000	T 97410.000	35.770	96.100	987.100	644.400	8.648	0.119	1.280	0.000	0.000
3	21:06:17	11.220	T 3173.000	T 98080.000	36.100	97.500	995.500	652.900	8.638	0.115	1.567	0.000	0.000
x		10.960	T 3173.000	T 98040.000	35.980	96.660	991.200	651.000	8.623	0.118	1.470	0.000	0.000
σ		0.320	T 19.940	T 611.900	0.183	0.737	4.214	5.889	0.035	0.002	0.164	0.000	0.000
%RSD		2.923	T 0.629	T 0.624	0.507	0.762	0.425	0.905	0.411	2.015	11.180	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	21:05:34	108.100	269.562%	1.049	0.603	-3.370	3.657	105.916%	0.000	0.859	0.896	443.300	123.212%
2	21:05:55	108.400	272.591%	1.032	0.614	-3.746	3.768	107.346%	0.000	0.820	0.895	448.700	123.746%
3	21:06:17	105.100	270.698%	1.051	0.607	-3.561	3.776	108.988%	0.000	0.867	0.874	432.300	123.344%
x		107.200	270.950%	1.044	0.608	-3.559	3.734	107.416%	0.000	0.849	0.889	441.400	123.434%
σ		1.830	1.530%	0.010	0.005	0.188	0.066	1.537%	0.000	0.025	0.012	8.390	0.279%
%RSD		1.707	0.565	0.976	0.890	5.281	1.777	1.431	0.000	2.939	1.388	1.901	0.226
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	21:05:34	0.197	0.457	175.400	101.521%	0.000	16.050	2.784					
2	21:05:55	0.218	0.438	175.100	102.705%	0.000	15.960	2.784					
3	21:06:17	0.233	0.444	176.800	101.474%	0.000	16.560	2.846					
x		0.216	0.446	175.800	101.900%	0.000	16.190	2.805					
σ		0.018	0.010	0.940	0.698%	0.000	0.324	0.036					
%RSD		8.317	2.172	0.535	0.685	0.000	2.002	1.276					

200-38498-A-9-D 5/19/2017 9:10:53 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:11:15	97.954%	3.120	24.870	158.600	T 17400.000	T 46510.000	T 4856.000	T 35800.000	137.959%	0.000	60.970	54.050
2	21:11:36	96.940%	2.825	27.560	T 210.300	T 17370.000	T 46610.000	T 4860.000	T 35540.000	139.237%	0.000	60.350	53.800
3	21:11:57	96.140%	2.718	27.890	158.000	T 17280.000	T 46620.000	T 4868.000	T 35470.000	138.978%	0.000	60.970	53.890
x		97.011%	2.888	26.770	T 175.600	T 17350.000	T 46580.000	T 4861.000	T 35600.000	138.725%	0.000	60.760	53.910
σ		0.909%	0.208	1.658	T 30.020	T 60.900	T 58.690	T 6.068	T 174.200	0.675%	0.000	0.359	0.125
%RSD		0.937	7.212	6.192	T 17.100	T 0.351	T 0.126	T 0.125	T 0.489	0.487	0.000	0.590	0.231

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:11:15	9.927	T 2802.000	T 94670.000	35.230	96.760	941.000	637.400	7.836	0.129	1.049	0.000	0.000
2	21:11:36	10.100	T 2809.000	T 95430.000	35.630	98.330	943.200	633.100	7.778	0.131	1.074	0.000	0.000
3	21:11:57	10.550	T 2805.000	T 95000.000	35.420	96.260	935.600	640.500	7.934	0.119	1.272	0.000	0.000
x		10.190	T 2805.000	T 95030.000	35.430	97.120	939.900	637.000	7.850	0.126	1.132	0.000	0.000
σ		0.320	T 3.389	T 381.800	0.198	1.082	3.916	3.694	0.079	0.006	0.122	0.000	0.000
%RSD		3.142	T 0.121	T 0.402	0.559	1.114	0.417	0.580	1.007	4.867	10.780	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:11:15	90.840	265.053%	0.954	0.443	-2.969	3.169	108.066%	0.000	0.685	0.736	427.500	123.554%
2	21:11:36	91.690	268.507%	0.965	0.515	-4.526	3.323	109.006%	0.000	0.695	0.753	431.300	123.389%
3	21:11:57	91.750	267.967%	0.976	0.491	-4.023	3.030	109.848%	0.000	0.732	0.747	429.300	124.251%
x		91.420	267.175%	0.965	0.483	-3.839	3.174	108.974%	0.000	0.704	0.745	429.400	123.731%
σ		0.507	1.858%	0.011	0.037	0.794	0.146	0.891%	0.000	0.024	0.008	1.898	0.458%
%RSD		0.555	0.695	1.144	7.591	20.690	4.606	0.818	0.000	3.466	1.126	0.442	0.370

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:11:15	0.140	0.391	137.700	101.894%	0.000	16.780	2.927
2	21:11:36	0.166	0.374	139.600	102.514%	0.000	16.750	2.908
3	21:11:57	0.152	0.380	140.500	101.750%	0.000	16.820	2.987
x		0.153	0.382	139.300	102.053%	0.000	16.790	2.941
σ		0.013	0.009	1.430	0.406%	0.000	0.037	0.041
%RSD		8.412	2.322	1.027	0.398	0.000	0.220	1.393

200-38498-A-11-D 5/19/2017 9:16:34 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:16:56	97.232%	4.149	18.950	138.900	T 16160.000	T 60510.000	T 3726.000	6512.000	147.896%	0.000	70.620	64.770
2	21:17:18	97.188%	4.059	19.370	144.200	T 16500.000	T 61880.000	T 3815.000	6609.000	144.498%	0.000	72.920	65.240
3	21:17:40	98.570%	3.870	19.720	140.000	T 16120.000	T 60800.000	T 3721.000	6548.000	146.303%	0.000	71.830	64.950
x		97.663%	4.026	19.350	141.000	T 16260.000	T 61060.000	T 3754.000	6556.000	146.233%	0.000	71.790	64.990
σ		0.785%	0.142	0.383	2.789	T 208.000	T 726.800	T 52.570	49.110	1.700%	0.000	1.150	0.236
%RSD		0.804	3.527	1.982	1.977	T 1.279	T 1.190	T 1.400	0.749	1.163	0.000	1.601	0.362

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:16:56	9.311	T 1551.000	T 84170.000	36.630	110.100	135.400	276.300	5.033	0.096	0.204	0.000	0.000
2	21:17:18	9.547	T 1579.000	T 85700.000	37.350	113.300	139.900	285.500	5.061	0.088	0.239	0.000	0.000

3	21:17:40	9.396	┬1556.000	┬85080.000	37.090	112.500	138.500	282.000	5.099	0.096	0.103	0.000	0.000
x		9.418	┬1562.000	┬84980.000	37.020	112.000	137.900	281.300	5.065	0.093	0.182	0.000	0.000
σ		0.120	┬15.270	┬767.700	0.365	1.668	2.321	4.665	0.033	0.004	0.071	0.000	0.000
%RSD		1.273	┬0.978	┬0.903	0.987	1.489	1.682	1.658	0.660	4.812	38.830	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	21:16:56	47.190	347.092%	1.918	0.344	-4.896	1.248	109.072%	0.000	0.451	0.478	473.300	129.265%
2	21:17:18	46.500	349.878%	1.962	0.345	-3.845	1.094	109.955%	0.000	0.459	0.489	473.700	132.341%
3	21:17:40	46.470	344.283%	1.925	0.331	-5.047	1.165	109.921%	0.000	0.439	0.477	469.100	132.322%
x		46.720	347.084%	1.935	0.340	-4.596	1.169	109.650%	0.000	0.450	0.482	472.000	131.309%
σ		0.404	2.798%	0.024	0.008	0.655	0.077	0.500%	0.000	0.010	0.007	2.522	1.770%
%RSD		0.865	0.806	1.230	2.223	14.250	6.608	0.456	0.000	2.271	1.361	0.534	1.348

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	21:16:56	0.072	0.523	87.670	103.469%	0.000	28.870	5.055
2	21:17:18	0.079	0.531	88.820	102.982%	0.000	29.100	5.132
3	21:17:40	0.082	0.514	87.640	104.186%	0.000	28.540	5.168
x		0.078	0.523	88.040	103.546%	0.000	28.830	5.118
σ		0.005	0.008	0.672	0.605%	0.000	0.280	0.058
%RSD		6.856	1.600	0.763	0.585	0.000	0.973	1.132

CCV 1039951 5/19/2017 9:22:17 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	21:22:38	91.395%	671.800	260.500	┬10330.000	┬32580.000	┬31680.000	┬10220.000	┬31970.000	105.836%	0.000	┬1349.000	367.200
2	21:22:59	92.412%	659.900	259.300	┬10500.000	┬32930.000	┬32320.000	┬10430.000	┬32350.000	103.353%	0.000	┬1370.000	376.300
3	21:23:20	91.865%	651.800	253.400	┬10310.000	┬32360.000	┬31810.000	┬10170.000	┬32140.000	103.654%	0.000	┬1354.000	371.700
x		91.891%	105.787%	103.086%	┬103.802%	┬108.743%	┬106.458%	┬102.743%	┬107.175%	104.281%	0.000	┬108.620%	92.930%
σ		0.509%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.355%	0.000	┬n/a	n/a
%RSD		0.554	1.521	1.483	┬0.963	┬0.882	┬1.058	┬1.316	┬0.601	1.299	0.000	┬0.790	1.227
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	21:22:38	12.380	┬1309.000	┬30820.000	┬515.500	1265.000	1207.000	1195.000	202.000	0.325	202.400	0.000	0.000
2	21:22:59	8.611	┬1324.000	┬31200.000	┬523.900	1284.000	1227.000	1220.000	204.400	0.299	207.900	0.000	0.000
3	21:23:20	9.509	┬1315.000	┬31170.000	┬522.700	1264.000	1214.000	1211.000	203.900	0.167	211.800	0.000	0.000
x		10.170	┬105.272%	┬103.553%	┬104.142%	101.668%	97.280%	96.692%	101.723%	0.264	103.684%	0.000	0.000
σ		1.968	┬n/a	┬n/a	┬n/a	n/a	n/a	n/a	n/a	0.085	n/a	0.000	0.000
%RSD		19.360	┬0.574	┬0.683	┬0.879	0.872	0.847	1.044	0.608	32.040	2.270	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	21:22:38	199.200	104.613%	┬1450.000	101.900	13.540	202.000	102.450%	0.000	236.600	246.700	1191.000	100.821%
2	21:22:59	┬227.000	102.816%	┬1457.000	102.300	23.020	202.800	101.532%	0.000	241.600	248.800	1197.000	102.832%
3	21:23:20	┬228.600	102.181%	┬1451.000	101.200	20.740	199.400	101.660%	0.000	240.200	247.900	1183.000	99.599%
x		┬218.300	103.203%	┬116.209%	101.825%	19.100	100.710%	101.880%	0.000	239.500	99.119%	95.237%	101.084%
σ		┬16.540	1.262%	┬n/a	n/a	4.951	n/a	0.497%	0.000	2.583	n/a	n/a	1.633%
%RSD		┬7.576	1.223	┬0.248	0.549	25.920	0.894	0.488	0.000	1.079	0.422	0.595	1.615

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	21:22:38	18.830	₸205.900	₸1281.000	96.219%	0.000	19.710	9.642
2	21:22:59	18.450	₸208.200	₸1290.000	96.472%	0.000	20.090	9.747
3	21:23:20	19.100	₸209.600	₸1286.000	96.123%	0.000	20.160	9.928
x		93.964%	₸103.963%	₸102.846%	96.271%	0.000	99.937%	97.725%
σ		n/a	₸n/a	₸n/a	0.180%	0.000	n/a	n/a
%RSD		1.724	₸0.907	₸0.361	0.187	0.000	1.223	1.481

CCB 1035925 5/19/2017 9:27:59 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:28:20	97.994%	0.010	2.463	2.630	1.409	2.069	10.490	29.480	110.938%	0.000	0.522	0.011
2	21:28:41	98.127%	0.018	1.437	2.480	1.440	2.532	9.641	30.610	110.767%	0.000	0.441	0.019
3	21:29:03	99.293%	0.015	1.849	2.644	2.108	3.548	7.600	29.010	110.876%	0.000	0.342	0.019
x		98.471%	0.014	1.916	2.585	1.652	2.716	9.243	29.700	110.861%	0.000	0.435	0.016
σ		0.715%	0.004	0.516	0.091	0.395	0.756	1.485	0.822	0.087%	0.000	0.090	0.005
%RSD		0.726	25.560	26.950	3.507	23.880	27.850	16.060	2.767	0.078	0.000	20.690	28.150
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:28:20	3.341	0.086	5.752	0.022	0.070	0.075	0.201	-3.119	0.297	-0.454	0.000	0.000
2	21:28:41	3.560	0.110	6.608	0.019	0.039	0.144	0.130	-3.363	0.319	-0.518	0.000	0.000
3	21:29:03	3.699	0.165	8.414	0.027	0.130	0.127	0.148	-3.294	0.307	-0.336	0.000	0.000
x		3.533	0.120	6.925	0.023	0.080	0.115	0.160	-3.259	0.308	-0.436	0.000	0.000
σ		0.181	0.041	1.359	0.004	0.046	0.036	0.037	0.126	0.011	0.092	0.000	0.000
%RSD		5.111	33.760	19.620	15.740	58.370	31.180	23.180	3.854	3.687	21.100	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:28:20	0.009	107.372%	0.108	0.005	-1.064	-0.016	105.506%	0.000	0.025	0.011	0.088	98.905%
2	21:28:41	0.006	108.355%	0.115	0.005	-1.272	-0.007	107.306%	0.000	0.014	0.015	0.097	101.163%
3	21:29:03	0.014	109.877%	0.152	0.009	-1.321	0.021	107.227%	0.000	0.012	0.014	0.111	100.889%
x		0.010	108.534%	0.125	0.007	-1.219	-0.001	106.680%	0.000	0.017	0.013	0.099	100.319%
σ		0.004	1.262%	0.023	0.002	0.137	0.019	1.017%	0.000	0.007	0.002	0.012	1.232%
%RSD		38.990	1.163	18.620	33.730	11.230	3854.000	0.953	0.000	41.250	15.900	11.820	1.228
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	21:28:20	-0.001	0.073	0.053	94.330%	0.000	0.000	0.239					
2	21:28:41	-0.002	0.044	0.060	96.491%	0.000	0.001	0.240					
3	21:29:03	0.008	0.055	0.088	96.009%	0.000	-0.000	0.240					
x		0.002	0.057	0.067	95.610%	0.000	0.000	0.240					
σ		0.005	0.015	0.019	1.135%	0.000	0.001	0.000					
%RSD		330.100	25.770	27.820	1.187	0.000	199.200	0.124					

CCVL 1039949 5/19/2017 9:33:40 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:34:02	102.474%	1.062	41.800	₸560.200	192.300	50.510	₸563.400	512.900	116.824%	0.000	4.933	3.766
2	21:34:24	100.061%	1.167	42.650	₸535.300	192.500	50.470	₸557.200	503.100	118.034%	0.000	5.043	3.755
3	21:34:45	101.608%	1.007	42.510	₸552.800	194.800	50.070	₸558.200	499.800	117.508%	0.000	5.264	3.752
		101.381%	107.861%	105.791%	₸109.885%	96.597%	100.701%	₸111.923%	101.055%	117.455%	0.000	101.600%	93.938%

x													
σ		1.223%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.607%	0.000	n/a	n/a
%RSD		1.206	7.547	1.078	2.321	0.709	0.479	0.596	1.342	0.517	0.000	3.318	0.199
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	21:34:02	4.186	2.049	198.800	0.916	2.160	5.314	20.440	0.419	0.373	3.064	0.000	0.000
2	21:34:24	4.102	1.996	199.300	0.982	2.137	4.942	20.690	0.982	0.338	4.065	0.000	0.000
3	21:34:45	3.728	2.045	198.400	0.915	2.157	4.981	20.500	0.927	0.339	3.186	0.000	0.000
x		4.005	101.508%	99.418%	93.770%	107.577%	101.585%	102.714%	38.804%	0.350	85.960%	0.000	0.000
σ		0.244	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.020	n/a	0.000	0.000
%RSD		6.091	1.458	0.217	4.061	0.577	4.024	0.644	39.980	5.753	15.870	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	21:34:02	4.868	111.657%	10.190	1.059	-0.639	1.061	109.630%	0.000	1.853	1.914	9.434	101.515%
2	21:34:24	4.878	111.677%	10.310	1.093	-0.699	1.029	110.493%	0.000	1.862	1.921	9.316	102.877%
3	21:34:45	4.808	113.970%	9.962	1.042	-0.998	1.071	112.671%	0.000	1.852	1.878	9.310	104.566%
x		97.024%	112.435%	101.514%	106.476%	-0.779	105.367%	110.931%	0.000	1.856	95.219%	93.531%	102.986%
σ		n/a	1.330%	n/a	n/a	0.192	n/a	1.567%	0.000	0.006	n/a	n/a	1.528%
%RSD		0.777	1.182	1.718	2.395	24.700	2.073	1.412	0.000	0.314	1.198	0.748	1.484
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	21:34:02	2.604	1.765	0.956	96.352%	0.000	1.942	1.178					
2	21:34:24	2.518	1.760	1.005	94.759%	0.000	2.014	1.204					
3	21:34:45	2.453	1.698	0.984	97.984%	0.000	1.880	1.141					
x		126.265%	87.044%	98.206%	96.365%	0.000	97.270%	117.429%					
σ		n/a	n/a	n/a	1.613%	0.000	n/a	n/a					
%RSD		2.995	2.136	2.512	1.674	0.000	3.438	2.685					

MB 200-116636/1-A 5/19/2017 9:39:22 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:39:43	103.098%	0.093	2.758	104.100	22.200	34.340	20.980	284.900	118.554%	0.000	0.356	0.317
2	21:40:04	104.588%	0.061	3.816	97.340	21.790	33.390	17.010	279.700	120.854%	0.000	0.386	0.246
3	21:40:26	103.817%	0.106	1.815	95.170	20.490	33.750	16.120	281.200	121.387%	0.000	0.255	0.197
x		103.834%	0.087	2.796	98.870	21.490	33.830	18.040	281.900	120.265%	0.000	0.332	0.253
σ		0.745%	0.023	1.001	4.662	0.891	0.477	2.588	2.690	1.505%	0.000	0.069	0.060
%RSD		0.718	26.900	35.810	4.715	4.147	1.409	14.350	0.954	1.252	0.000	20.660	23.800

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:39:43	4.938	0.814	47.900	0.078	0.216	0.600	1.671	-3.354	0.435	-0.707	0.000	0.000
2	21:40:04	4.972	0.788	46.920	0.072	0.210	0.664	1.846	-3.108	0.408	-1.217	0.000	0.000
3	21:40:26	4.923	0.849	46.920	0.054	0.219	0.625	1.793	-3.247	0.425	-0.826	0.000	0.000
x		4.944	0.817	47.250	0.068	0.215	0.629	1.770	-3.236	0.422	-0.917	0.000	0.000
σ		0.025	0.031	0.568	0.013	0.004	0.032	0.090	0.123	0.014	0.267	0.000	0.000
%RSD		0.514	3.735	1.202	18.870	1.985	5.117	5.085	3.798	3.226	29.120	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:39:43	0.190	114.732%	0.281	0.021	-0.882	-0.018	111.455%	0.000	0.025	0.030	0.306	102.303%
2	21:40:04	0.163	115.124%	0.324	0.021	-1.164	0.003	112.574%	0.000	0.032	0.033	0.310	105.745%
3	21:40:26	0.177	117.519%	0.298	0.024	-0.918	-0.018	111.964%	0.000	0.030	0.034	0.362	104.210%
x		0.177	115.791%	0.301	0.022	-0.988	-0.011	111.998%	0.000	0.029	0.032	0.326	104.086%
σ		0.014	1.509%	0.022	0.002	0.154	0.012	0.560%	0.000	0.004	0.002	0.031	1.724%
%RSD		7.677	1.303	7.165	9.873	15.540	111.400	0.500	0.000	13.370	5.607	9.594	1.656

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:39:43	0.017	0.001	0.168	96.023%	0.000	0.014	0.244
2	21:40:04	0.022	-0.013	0.188	96.858%	0.000	0.016	0.243
3	21:40:26	0.024	-0.014	0.167	97.607%	0.000	0.009	0.243
x		0.021	-0.009	0.174	96.829%	0.000	0.013	0.243
σ		0.004	0.009	0.012	0.792%	0.000	0.003	0.000
%RSD		18.960	100.400	6.784	0.818	0.000	25.270	0.137

LCS 200-116636/2-A 5/19/2017 9:45:03 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:45:25	100.647%	10.400	439.000	T 5708.000	2014.000	513.100	T 5560.000	4877.000	117.826%	0.000	49.990	39.710
2	21:45:46	101.434%	10.330	441.600	T 5697.000	2005.000	T 582.700	T 5542.000	4861.000	119.201%	0.000	49.730	38.940
3	21:46:07	100.329%	10.500	440.000	T 5606.000	2007.000	509.700	T 5535.000	4900.000	118.140%	0.000	49.840	39.350
x		100.803%	10.410	440.200	T 5670.000	2009.000	T 535.200	T 5546.000	4879.000	118.389%	0.000	49.850	39.340
σ		0.569%	0.088	1.279	T 56.090	4.752	T 41.190	T 12.950	19.840	0.721%	0.000	0.130	0.384
%RSD		0.564	0.850	0.291	T 0.989	0.237	T 7.696	T 0.233	0.407	0.609	0.000	0.260	0.975

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:45:25	5.818	20.250	T 2292.000	9.681	21.900	51.560	187.700	37.940	0.426	37.230	0.000	0.000
2	21:45:46	5.345	19.770	T 2245.000	9.717	21.940	51.310	187.400	37.680	0.415	37.470	0.000	0.000

3	21:46:07	5.185	20.310	T2286.000	9.763	21.940	51.460	184.200	38.120	0.397	36.550	0.000	0.000
x		5.450	20.110	T2274.000	9.720	21.930	51.440	186.400	37.910	0.413	37.090	0.000	0.000
σ		0.329	0.293	T25.990	0.041	0.024	0.125	1.953	0.222	0.015	0.478	0.000	0.000
%RSD		6.041	1.456	T1.143	0.425	0.109	0.243	1.048	0.586	3.548	1.287	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:45:25	51.950	112.594%	105.500	10.980	-0.209	10.230	109.883%	0.000	18.840	19.570	97.830	103.125%
2	21:45:46	51.430	113.344%	105.800	10.980	-0.679	10.370	110.511%	0.000	19.130	19.650	98.070	105.944%
3	21:46:07	51.910	112.883%	106.600	10.970	0.146	10.460	110.354%	0.000	19.310	19.690	97.550	104.244%
x		51.770	112.940%	106.000	10.980	-0.247	10.350	110.249%	0.000	19.090	19.640	97.820	104.438%
σ		0.293	0.379%	0.563	0.006	0.414	0.116	0.326%	0.000	0.235	0.063	0.258	1.419%
%RSD		0.566	0.335	0.531	0.054	167.400	1.119	0.296	0.000	1.229	0.319	0.264	1.359

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:45:25	26.290	19.380	9.739	93.204%	0.000	21.440	10.310
2	21:45:46	25.440	18.630	9.415	96.758%	0.000	20.890	10.250
3	21:46:07	26.180	18.830	9.508	97.197%	0.000	20.830	10.200
x		25.970	18.950	9.554	95.720%	0.000	21.060	10.250
σ		0.461	0.393	0.167	2.190%	0.000	0.339	0.054
%RSD		1.776	2.075	1.743	2.288	0.000	1.610	0.530

480-117618-E-1-A 5/19/2017 9:50:44 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:51:06	94.854%	-0.022	48.960	T10300.000	3567.000	65.300	T2603.000	T21930.000	107.503%	0.000	0.377	0.315
2	21:51:27	95.282%	0.048	49.620	T10070.000	3489.000	65.000	T2535.000	T21580.000	108.503%	0.000	0.426	0.312
3	21:51:50	92.607%	-0.057	51.890	T10300.000	3551.000	65.180	T2599.000	T22110.000	107.438%	0.000	0.410	0.256
x		94.248%	-0.010	50.160	T10220.000	3536.000	65.160	T2579.000	T21870.000	107.814%	0.000	0.404	0.294
σ		1.436%	0.053	1.540	T136.000	41.270	0.153	T38.200	T268.100	0.597%	0.000	0.025	0.033
%RSD		1.524	523.600	3.070	T1.330	1.167	0.234	T1.481	T1.226	0.554	0.000	6.108	11.260

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:51:06	4.163	17.160	84.460	0.094	0.427	1.185	2.748	13.140	0.351	0.257	0.000	0.000
2	21:51:27	4.059	17.290	83.440	0.107	0.523	1.192	2.653	12.660	0.353	-0.274	0.000	0.000
3	21:51:50	4.350	17.310	84.030	0.092	0.420	1.128	3.022	12.930	0.362	0.804	0.000	0.000
x		4.190	17.260	83.980	0.097	0.456	1.168	2.808	12.910	0.355	0.262	0.000	0.000
σ		0.147	0.081	0.513	0.008	0.058	0.035	0.192	0.240	0.006	0.539	0.000	0.000
%RSD		3.513	0.471	0.611	8.368	12.620	3.035	6.823	1.861	1.589	205.400	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:51:06	80.790	106.073%	3.966	0.019	-0.935	0.028	103.339%	0.000	0.052	0.047	9.482	100.506%
2	21:51:27	80.340	107.311%	3.815	0.017	-1.126	0.038	104.233%	0.000	0.037	0.052	9.151	101.425%
3	21:51:50	80.540	106.467%	3.999	0.015	-1.254	0.044	103.939%	0.000	0.045	0.051	9.489	101.827%
x		80.560	106.617%	3.927	0.017	-1.105	0.037	103.837%	0.000	0.045	0.050	9.374	101.253%
σ		0.223	0.632%	0.098	0.002	0.161	0.008	0.456%	0.000	0.007	0.003	0.193	0.677%
%RSD		0.277	0.593	2.500	12.290	14.530	21.170	0.439	0.000	16.240	6.033	2.063	0.669

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb

1	21:51:06	0.849	0.005	0.202	95.055%	0.000	0.049	3.779
2	21:51:27	0.829	0.004	0.220	95.312%	0.000	0.052	3.871
3	21:51:50	0.867	-0.002	0.215	95.909%	0.000	0.055	3.840
x		0.848	0.002	0.212	95.425%	0.000	0.052	3.830
σ		0.019	0.004	0.009	0.438%	0.000	0.003	0.046
%RSD		2.279	152.900	4.325	0.459	0.000	5.582	1.212

480-117618-E-2-A 5/19/2017 9:56:28 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:56:49	97.585%	0.004	7.783	T 6335.000	T 13050.000	16.300	312.600	14690.000	107.820%	0.000	0.023	0.331
2	21:57:11	98.124%	-0.051	5.843	T 6289.000	T 13000.000	16.400	308.800	T 17240.000	109.531%	0.000	-0.047	0.299
3	21:57:32	95.938%	-0.031	6.797	T 6317.000	T 12980.000	16.310	T 376.600	T 17300.000	108.804%	0.000	0.181	0.330
x		97.216%	-0.026	6.808	T 6314.000	T 13010.000	16.340	T 332.700	T 16410.000	108.718%	0.000	0.052	0.320
σ		1.139%	0.028	0.970	T 23.210	T 35.750	0.052	T 38.090	T 1492.000	0.859%	0.000	0.117	0.018
%RSD		1.172	105.700	14.250	T 0.367	T 0.275	0.321	T 11.450	T 9.094	0.790	0.000	223.000	5.781
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:56:49	5.691	T 1440.000	15.940	0.693	2.567	1.558	1.186	-3.257	0.410	-0.914	0.000	0.000
2	21:57:11	5.436	T 1430.000	15.600	0.733	2.426	1.752	1.295	-3.121	0.369	-0.303	0.000	0.000
3	21:57:32	5.236	T 1446.000	15.560	0.757	2.554	1.541	1.184	-3.182	0.374	-0.186	0.000	0.000
x		5.454	T 1439.000	15.700	0.727	2.516	1.617	1.222	-3.186	0.384	-0.468	0.000	0.000
σ		0.228	T 7.797	0.208	0.032	0.078	0.117	0.063	0.068	0.022	0.391	0.000	0.000
%RSD		4.176	T 0.542	1.325	4.408	3.095	7.257	5.190	2.138	5.833	83.600	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	21:56:49	51.800	111.374%	0.199	0.015	-0.991	0.040	102.746%	0.000	0.031	0.041	4.444	99.647%
2	21:57:11	51.060	111.246%	0.208	0.010	-1.032	0.030	104.091%	0.000	0.036	0.046	4.375	102.007%
3	21:57:32	50.810	110.174%	0.248	0.009	-0.779	0.013	105.421%	0.000	0.029	0.042	4.420	103.309%
x		51.230	110.931%	0.218	0.011	-0.934	0.028	104.086%	0.000	0.032	0.043	4.413	101.654%
σ		0.515	0.659%	0.026	0.004	0.136	0.013	1.337%	0.000	0.004	0.003	0.035	1.856%
%RSD		1.005	0.594	11.790	30.880	14.520	48.350	1.285	0.000	11.080	5.934	0.788	1.826
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	21:56:49	0.005	-0.029	0.073	94.897%	0.000	0.008	0.259					
2	21:57:11	0.012	-0.022	0.074	95.455%	0.000	0.007	0.262					
3	21:57:32	0.013	-0.029	0.077	96.534%	0.000	0.009	0.260					
x		0.010	-0.027	0.075	95.629%	0.000	0.008	0.260					
σ		0.004	0.004	0.002	0.832%	0.000	0.001	0.001					
%RSD		41.970	14.700	3.019	0.870	0.000	11.880	0.504					

480-117618-E-3-A 5/19/2017 10:02:10 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:02:32	95.410%	0.016	7.135	T 6224.000	T 12760.000	14.740	T 372.100	T 17000.000	107.674%	0.000	0.163	0.371
2	22:02:53	96.822%	-0.002	6.551	T 6238.000	T 12770.000	15.390	T 365.100	14370.000	107.795%	0.000	0.209	0.321
3	22:03:14	96.315%	-0.024	6.929	T 6270.000	T 12890.000	15.260	T 367.300	14280.000	107.195%	0.000	0.287	0.323
		96.182%	-0.003	6.872	T 6244.000	T 12810.000	15.130	T 368.200	T 15220.000	107.555%	0.000	0.220	0.338

x													
σ		0.715%	0.020	0.296	T 23.570	T 75.040	0.343	T 3.599	T 1542.000	0.317%	0.000	0.063	0.028
%RSD		0.744	601.500	4.312	T 0.377	T 0.586	2.264	T 0.978	T 10.130	0.295	0.000	28.680	8.415
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:02:32	5.376	T 1405.000	15.610	0.706	2.495	1.241	1.206	-3.225	0.381	-0.459	0.000	0.000
2	22:02:53	5.190	T 1382.000	14.950	0.668	2.611	1.164	1.156	-3.109	0.353	-0.563	0.000	0.000
3	22:03:14	5.126	T 1417.000	15.370	0.725	2.568	1.202	1.322	-3.239	0.347	-0.997	0.000	0.000
x		5.231	T 1401.000	15.310	0.700	2.558	1.202	1.228	-3.191	0.360	-0.673	0.000	0.000
σ		0.130	T 17.770	0.338	0.029	0.059	0.038	0.085	0.071	0.018	0.285	0.000	0.000
%RSD		2.482	T 1.268	2.207	4.135	2.304	3.194	6.938	2.239	5.020	42.360	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:02:32	49.010	109.346%	0.203	0.009	-1.189	0.059	103.679%	0.000	0.054	0.048	4.247	102.195%
2	22:02:53	48.760	111.224%	0.208	0.017	-1.321	0.061	105.080%	0.000	0.045	0.046	4.108	102.720%
3	22:03:14	48.550	112.163%	0.238	0.009	-0.767	0.037	104.928%	0.000	0.041	0.049	4.405	103.260%
x		48.780	110.911%	0.216	0.012	-1.092	0.052	104.562%	0.000	0.047	0.048	4.253	102.725%
σ		0.229	1.434%	0.019	0.005	0.289	0.014	0.768%	0.000	0.007	0.001	0.149	0.533%
%RSD		0.469	1.293	8.849	40.630	26.470	25.930	0.735	0.000	14.660	2.821	3.498	0.519
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	22:02:32	0.019	-0.025	0.102	96.052%	0.000	0.005	0.260					
2	22:02:53	0.014	-0.027	0.109	97.474%	0.000	0.005	0.257					
3	22:03:14	0.009	-0.037	0.107	96.810%	0.000	0.006	0.258					
x		0.014	-0.030	0.106	96.779%	0.000	0.005	0.258					
σ		0.005	0.006	0.004	0.711%	0.000	0.001	0.002					
%RSD		38.030	20.830	3.662	0.735	0.000	15.300	0.634					

480-117618-E-4-A 5/19/2017 10:07:54 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:08:15	95.550%	0.055	177.800	T 18910.000	T 15490.000	19.150	T 2483.000	T 20360.000	104.206%	0.000	-0.159	0.298
2	22:08:37	94.489%	0.113	180.000	T 19120.000	T 15670.000	19.040	T 2502.000	T 20740.000	103.191%	0.000	-0.117	0.289
3	22:08:59	95.383%	-0.023	179.200	T 18760.000	T 15260.000	18.780	T 2441.000	T 20250.000	104.684%	0.000	0.080	0.334
x		95.141%	0.049	179.000	T 18930.000	T 15470.000	18.990	T 2476.000	T 20450.000	104.027%	0.000	-0.065	0.307
σ		0.570%	0.068	1.115	T 181.900	T 201.900	0.191	T 31.380	T 256.500	0.762%	0.000	0.127	0.024
%RSD		0.599	140.200	0.623	T 0.961	T 1.305	1.005	T 1.268	T 1.254	0.733	0.000	194.700	7.774
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:08:15	9.133	23.830	23.760	0.058	0.315	0.866	1.812	0.242	0.607	-0.695	0.000	0.000
2	22:08:37	9.778	24.390	23.930	0.051	0.368	0.850	1.782	0.659	0.594	-0.449	0.000	0.000
3	22:08:59	9.763	23.650	22.230	0.056	0.380	0.798	2.038	0.235	0.639	0.468	0.000	0.000
x		9.558	23.960	23.310	0.055	0.354	0.838	1.877	0.379	0.613	-0.226	0.000	0.000
σ		0.368	0.385	0.937	0.003	0.035	0.035	0.140	0.242	0.023	0.613	0.000	0.000
%RSD		3.851	1.605	4.021	5.879	9.789	4.236	7.449	64.010	3.808	271.600	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:08:15	87.800	101.956%	1.429	0.017	-0.780	0.042	100.683%	0.000	0.049	0.039	2.544	98.957%
2	22:08:37	88.610	101.782%	1.544	0.022	-1.153	0.122	100.748%	0.000	0.044	0.044	2.407	100.203%
3	22:08:59	86.830	101.909%	1.451	0.021	-0.671	0.044	101.047%	0.000	0.054	0.041	2.598	99.430%
x		87.750	101.882%	1.475	0.020	-0.868	0.069	100.826%	0.000	0.049	0.041	2.517	99.530%
σ		0.891	0.090%	0.061	0.003	0.253	0.045	0.194%	0.000	0.005	0.002	0.098	0.629%
%RSD		1.016	0.089	4.141	13.040	29.110	65.440	0.192	0.000	9.969	5.974	3.907	0.632
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	22:08:15	0.008	-0.039	0.083	94.549%	0.000	0.006	0.739					
2	22:08:37	0.015	-0.038	0.084	94.143%	0.000	0.005	0.756					
3	22:08:59	0.023	-0.042	0.093	94.811%	0.000	0.005	0.754					
x		0.015	-0.040	0.087	94.501%	0.000	0.005	0.750					
σ		0.007	0.002	0.006	0.336%	0.000	0.000	0.009					
%RSD		48.790	5.284	6.412	0.356	0.000	4.122	1.231					

480-117618-E-5-A 5/19/2017 10:13:36 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:13:57	94.455%	0.003	47.840	T 11660.000	T 16690.000	8.036	T 1924.000	16380.000	101.479%	0.000	-0.092	0.354
2	22:14:19	94.341%	0.019	46.010	T 11600.000	T 16730.000	8.019	T 1929.000	T 19560.000	100.239%	0.000	-0.360	0.319
3	22:14:41	94.171%	-0.091	49.100	T 11690.000	T 16810.000	7.739	T 1920.000	T 19790.000	100.387%	0.000	-0.372	0.374
x		94.322%	-0.023	47.650	T 11650.000	T 16740.000	7.931	T 1925.000	T 18580.000	100.702%	0.000	-0.275	0.349
σ		0.143%	0.060	1.551	T 47.740	T 58.960	0.167	T 4.592	T 1905.000	0.677%	0.000	0.158	0.028
%RSD		0.151	257.700	3.256	T 0.410	T 0.352	2.103	T 0.239	T 10.250	0.673	0.000	57.600	7.938
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:13:57	12.290	0.459	10.140	0.034	0.264	0.338	0.924	-2.975	0.785	0.045	0.000	0.000
2	22:14:19	12.550	0.498	11.030	0.034	0.264	0.459	1.089	-3.162	0.783	-0.004	0.000	0.000

3	22:14:41	12.980	0.426	10.740	0.026	0.306	0.411	0.998	-2.454	0.749	-0.243	0.000	0.000
x		12.610	0.461	10.640	0.032	0.278	0.402	1.003	-2.863	0.772	-0.067	0.000	0.000
σ		0.346	0.036	0.456	0.005	0.024	0.061	0.083	0.367	0.020	0.154	0.000	0.000
%RSD		2.742	7.812	4.291	14.820	8.797	15.060	8.239	12.810	2.624	229.200	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:13:57	73.640	101.518%	1.200	0.034	-1.283	0.170	99.083%	0.000	0.052	0.060	2.890	97.214%
2	22:14:19	72.830	102.009%	1.179	0.039	-1.007	0.117	99.532%	0.000	0.054	0.054	3.082	100.124%
3	22:14:41	73.780	99.811%	1.172	0.036	-1.156	0.072	99.905%	0.000	0.058	0.058	2.968	98.837%
x		73.420	101.113%	1.183	0.037	-1.148	0.120	99.507%	0.000	0.055	0.057	2.980	98.725%
σ		0.513	1.154%	0.015	0.003	0.138	0.049	0.412%	0.000	0.003	0.003	0.096	1.458%
%RSD		0.698	1.141	1.240	6.882	12.030	41.030	0.414	0.000	5.914	5.053	3.235	1.477

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:13:57	0.013	-0.041	0.052	93.762%	0.000	0.002	0.711
2	22:14:19	0.012	-0.039	0.059	95.064%	0.000	0.002	0.701
3	22:14:41	0.016	-0.042	0.055	94.115%	0.000	0.003	0.735
x		0.014	-0.041	0.055	94.314%	0.000	0.002	0.716
σ		0.002	0.002	0.003	0.673%	0.000	0.001	0.017
%RSD		15.010	3.734	6.015	0.714	0.000	23.420	2.411

480-117618-E-6-A 5/19/2017 10:19:20 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:19:42	94.505%	-0.052	7.911	T 16580.000	2019.000	9.336	T 1847.000	11490.000	101.305%	0.000	0.765	1.182
2	22:20:04	94.451%	-0.021	7.386	T 16440.000	2052.000	9.537	T 1863.000	11620.000	99.860%	0.000	0.795	1.176
3	22:20:26	92.565%	-0.057	8.493	T 16440.000	2028.000	9.560	T 1841.000	11650.000	99.814%	0.000	0.798	1.171
x		93.841%	-0.043	7.930	T 16480.000	2033.000	9.477	T 1850.000	11590.000	100.326%	0.000	0.786	1.176
σ		1.105%	0.020	0.554	T 81.660	16.930	0.123	T 11.090	80.650	0.848%	0.000	0.018	0.006
%RSD		1.178	45.600	6.982	T 0.495	0.833	1.298	T 0.600	0.696	0.845	0.000	2.309	0.498

Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:19:42	16.490	0.600	16.760	0.023	0.272	2.110	2.369	4.154	1.066	-0.840	0.000	0.000
2	22:20:04	16.750	0.613	17.770	0.024	0.273	2.086	2.530	4.481	1.055	-0.947	0.000	0.000
3	22:20:26	16.730	0.622	18.240	0.015	0.258	2.124	2.417	4.476	1.012	-0.347	0.000	0.000
x		16.660	0.612	17.590	0.021	0.268	2.107	2.439	4.371	1.044	-0.711	0.000	0.000
σ		0.145	0.011	0.756	0.005	0.009	0.019	0.083	0.188	0.029	0.320	0.000	0.000
%RSD		0.869	1.791	4.301	22.870	3.230	0.908	3.391	4.291	2.744	45.020	0.000	0.000

Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:19:42	100.600	98.716%	16.260	0.005	-0.905	-0.035	97.838%	0.000	0.034	0.021	0.238	98.264%
2	22:20:04	100.300	98.758%	16.140	0.006	-0.723	-0.048	98.362%	0.000	0.025	0.024	0.160	98.185%
3	22:20:26	101.100	100.479%	16.180	0.004	-0.736	-0.040	97.891%	0.000	0.023	0.022	0.157	98.342%
x		100.700	99.317%	16.190	0.005	-0.788	-0.041	98.030%	0.000	0.027	0.022	0.185	98.264%
σ		0.446	1.006%	0.057	0.001	0.102	0.006	0.288%	0.000	0.006	0.002	0.046	0.079%
%RSD		0.443	1.013	0.354	16.790	12.910	15.710	0.294	0.000	22.380	6.825	24.830	0.080

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	22:19:42	0.100	-0.050	0.083	95.002%	0.000	0.003	53.750
2	22:20:04	0.078	-0.048	0.087	95.274%	0.000	0.003	54.760
3	22:20:26	0.097	-0.049	0.093	94.625%	0.000	0.002	55.430
x		0.091	-0.049	0.088	94.967%	0.000	0.002	54.650
σ		0.012	0.001	0.005	0.326%	0.000	0.001	0.849
%RSD		13.190	2.151	5.551	0.343	0.000	26.620	1.554

480-117679-B-2-A 5/19/2017 10:25:01 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:25:21	92.192%	-0.016	56.160	T 21010.000	T 50700.000	7.698	T 2345.000	T 47340.000	100.310%	0.000	0.066	0.528
2	22:25:43	91.161%	-0.055	56.130	T 21480.000	T 51740.000	7.862	T 2363.000	T 48200.000	98.924%	0.000	-0.405	0.524
3	22:26:06	92.146%	-0.056	55.980	T 21790.000	T 51960.000	7.960	T 2389.000	T 48420.000	98.778%	0.000	-0.005	0.603
x		91.833%	-0.042	56.090	T 21430.000	T 51470.000	7.840	T 2366.000	T 47990.000	99.337%	0.000	-0.115	0.552
σ		0.582%	0.023	0.099	T 391.800	T 674.600	0.133	T 22.180	T 569.800	0.845%	0.000	0.254	0.044
%RSD		0.634	53.820	0.176	T 1.828	T 1.311	1.694	T 0.937	T 1.187	0.851	0.000	221.000	8.005
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:25:21	9.651	21.670	12.740	0.097	0.684	0.983	0.968	-1.511	0.461	7.182	0.000	0.000
2	22:25:43	10.340	22.280	14.330	0.074	0.588	0.994	1.199	-3.150	0.673	-0.174	0.000	0.000
3	22:26:06	10.140	22.110	15.110	0.076	0.585	0.909	1.136	-1.358	0.470	7.314	0.000	0.000
x		10.040	22.020	14.060	0.082	0.619	0.962	1.101	-2.006	0.535	4.774	0.000	0.000
σ		0.354	0.315	1.204	0.013	0.056	0.046	0.120	0.993	0.120	4.286	0.000	0.000
%RSD		3.521	1.428	8.560	15.540	9.088	4.820	10.870	49.520	22.450	89.760	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:25:21	T 241.100	98.658%	0.208	0.108	-1.368	0.143	96.525%	0.000	0.066	0.069	2.799	98.129%
2	22:25:43	205.800	99.492%	0.196	0.112	-0.806	0.097	96.622%	0.000	0.063	0.071	2.718	97.690%
3	22:26:06	T 242.000	98.630%	0.203	0.142	-1.259	0.162	97.134%	0.000	0.075	0.077	2.894	97.844%
x		T 229.600	98.927%	0.202	0.121	-1.144	0.134	96.760%	0.000	0.068	0.072	2.803	97.887%
σ		T 20.640	0.490%	0.006	0.019	0.298	0.033	0.327%	0.000	0.006	0.004	0.088	0.223%
%RSD		T 8.989	0.495	3.047	15.430	26.010	24.850	0.338	0.000	9.187	5.790	3.143	0.227
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	22:25:21	-0.001	-0.047	0.112	94.015%	0.000	0.002	2.413					
2	22:25:43	0.011	-0.047	0.114	93.853%	0.000	0.001	2.485					
3	22:26:06	0.004	-0.044	0.105	94.683%	0.000	-0.000	2.474					
x		0.005	-0.046	0.110	94.183%	0.000	0.001	2.457					
σ		0.006	0.002	0.005	0.440%	0.000	0.001	0.039					
%RSD		123.200	3.326	4.195	0.467	0.000	120.900	1.588					

480-117679-B-3-A 5/19/2017 10:30:43 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:31:04	94.667%	-0.068	76.730	T 15620.000	2724.000	12.940	T 2546.000	T 16130.000	98.977%	0.000	0.164	0.443
2	22:31:25	93.486%	-0.011	80.160	T 15710.000	2755.000	12.990	T 2538.000	13640.000	98.701%	0.000	0.414	0.426
3	22:31:46	93.157%	-0.050	78.170	T 15870.000	2789.000	13.150	T 2519.000	T 16010.000	98.986%	0.000	0.011	0.412
		93.770%	-0.043	78.350	T 15730.000	2756.000	13.030	T 2534.000	T 15260.000	98.888%	0.000	0.196	0.427

x													
σ		0.794%	0.029	1.721	T 127.900	32.580	0.108	T 13.700	T 1403.000	0.162%	0.000	0.203	0.016
%RSD		0.847	68.310	2.196	T 0.813	1.182	0.826	T 0.541	T 9.198	0.164	0.000	103.700	3.659
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:31:04	14.170	21.680	17.920	0.021	0.209	0.387	1.454	14.160	0.836	0.034	0.000	0.000
2	22:31:25	14.180	21.750	17.390	0.031	0.234	0.318	1.625	14.380	0.821	-0.086	0.000	0.000
3	22:31:46	14.920	21.250	16.380	0.024	0.264	0.421	1.638	13.620	0.897	-1.202	0.000	0.000
x		14.420	21.560	17.230	0.025	0.236	0.376	1.573	14.050	0.852	-0.418	0.000	0.000
σ		0.434	0.271	0.781	0.005	0.028	0.053	0.103	0.394	0.040	0.682	0.000	0.000
%RSD		3.008	1.255	4.535	19.540	11.720	14.040	6.523	2.804	4.698	163.200	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:31:04	54.340	98.242%	4.494	0.039	-1.090	-0.025	97.267%	0.000	0.029	0.034	24.080	95.497%
2	22:31:25	55.930	97.436%	4.293	0.038	-1.185	-0.017	96.091%	0.000	0.041	0.038	24.450	97.536%
3	22:31:46	54.330	97.522%	4.271	0.034	-0.791	-0.038	97.170%	0.000	0.033	0.045	24.920	98.200%
x		54.870	97.733%	4.353	0.037	-1.022	-0.027	96.843%	0.000	0.034	0.039	24.480	97.078%
σ		0.923	0.443%	0.123	0.002	0.206	0.011	0.653%	0.000	0.006	0.005	0.422	1.409%
%RSD		1.682	0.453	2.814	6.370	20.120	40.180	0.675	0.000	17.130	13.970	1.722	1.451
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	22:31:04	0.825	-0.057	0.043	94.640%	0.000	0.002	2.547					
2	22:31:25	0.862	-0.051	0.039	94.659%	0.000	0.003	2.583					
3	22:31:46	0.898	-0.050	0.040	93.600%	0.000	0.001	2.659					
x		0.862	-0.053	0.041	94.299%	0.000	0.002	2.596					
σ		0.036	0.004	0.002	0.606%	0.000	0.001	0.057					
%RSD		4.216	7.125	5.085	0.643	0.000	36.200	2.214					

CCV 1039951 5/19/2017 10:36:25 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:36:47	84.983%	666.400	256.200	↓10850.000	↓34040.000	↓33310.000	↓10600.000	↓33480.000	92.483%	0.000	↓1401.000	380.600
2	22:37:08	85.749%	656.600	249.600	↓10560.000	↓33200.000	↓32560.000	↓10360.000	↓32620.000	94.812%	0.000	↓1365.000	369.800
3	22:37:30	87.040%	645.600	251.700	↓10680.000	↓33590.000	↓32640.000	↓10390.000	↓32750.000	93.935%	0.000	↓1368.000	374.600
x		85.924%	104.991%	101.006%	↓106.941%	↓112.025%	↓109.449%	↓104.502%	↓109.836%	93.743%	0.000	↓110.221%	93.750%
σ		1.040%	n/a	n/a	↓n/a	↓n/a	↓n/a	↓n/a	↓n/a	1.176%	0.000	↓n/a	n/a
%RSD		1.210	1.587	1.351	↓1.376	↓1.250	↓1.246	↓1.243	↓1.413	1.255	0.000	↓1.445	1.438

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:36:47	11.070	↓1370.000	↓32270.000	464.500	1284.000	1221.000	1238.000	203.600	0.198	210.600	0.000	0.000
2	22:37:08	8.311	↓1351.000	↓31860.000	↓530.400	1261.000	1195.000	1208.000	201.000	0.181	203.600	0.000	0.000
3	22:37:30	11.390	↓1363.000	↓32020.000	↓531.100	1262.000	1217.000	1223.000	197.200	0.262	200.700	0.000	0.000
x		10.260	↓108.908%	↓106.828%	↓101.736%	101.530%	96.863%	97.835%	100.304%	0.214	102.479%	0.000	0.000
σ		1.692	↓n/a	↓n/a	↓n/a	n/a	n/a	n/a	n/a	0.042	n/a	0.000	0.000
%RSD		16.500	↓0.731	↓0.640	↓7.519	0.994	1.139	1.202	1.592	19.860	2.478	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:36:47	↓230.600	93.839%	↓1492.000	100.400	23.710	204.600	94.242%	0.000	241.400	251.700	1197.000	94.436%
2	22:37:08	194.300	94.783%	↓1480.000	101.000	17.750	203.100	94.774%	0.000	241.300	251.600	1200.000	97.218%
3	22:37:30	195.200	96.143%	↓1460.000	99.100	18.480	201.500	95.476%	0.000	238.800	249.100	1182.000	96.085%
x		↓206.700	94.922%	↓118.165%	100.171%	19.980	101.534%	94.831%	0.000	240.500	100.314%	95.429%	95.913%
σ		↓20.670	1.158%	↓n/a	n/a	3.248	n/a	0.619%	0.000	1.436	n/a	n/a	1.399%
%RSD		↓9.998	1.220	↓1.095	0.983	16.260	0.770	0.652	0.000	0.597	0.595	0.823	1.458

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:36:47	19.220	↓211.700	↓1307.000	94.048%	0.000	20.430	9.964
2	22:37:08	18.760	↓213.000	↓1336.000	92.670%	0.000	20.880	10.190
3	22:37:30	18.930	↓211.300	↓1311.000	94.115%	0.000	20.330	9.929
x		94.846%	↓106.008%	↓105.420%	93.611%	0.000	102.739%	100.261%
σ		n/a	↓n/a	↓n/a	0.816%	0.000	n/a	n/a
%RSD		1.225	↓0.411	↓1.176	0.871	0.000	1.433	1.388

CCB 1035925 5/19/2017 10:42:06 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:42:28	89.308%	0.049	1.620	7.061	4.152	3.475	3.739	14.130	96.144%	0.000	0.151	0.041
2	22:42:49	90.872%	-0.030	0.479	6.166	3.036	2.887	5.985	28.840	96.723%	0.000	0.266	0.004
3	22:43:10	90.559%	0.020	0.913	8.097	3.237	2.731	4.658	17.420	97.275%	0.000	0.349	-0.028
x		90.246%	0.013	1.004	7.108	3.475	3.031	4.794	20.130	96.714%	0.000	0.255	0.006
σ		0.828%	0.040	0.576	0.967	0.595	0.392	1.129	7.721	0.566%	0.000	0.099	0.035
%RSD		0.917	302.500	57.370	13.600	17.130	12.940	23.550	38.350	0.585	0.000	38.800	585.700

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:42:28	4.001	0.154	4.358	0.040	0.149	0.412	0.304	-3.404	0.287	-0.909	0.000	0.000
2	22:42:49	3.797	0.121	4.008	0.044	0.067	0.310	0.273	-3.246	0.274	-0.935	0.000	0.000

3	22:43:10	3.592	0.127	2.877	0.040	0.138	0.250	0.261	-3.298	0.277	-0.159	0.000	0.000
x		3.797	0.134	3.748	0.041	0.118	0.324	0.279	-3.316	0.279	-0.667	0.000	0.000
σ		0.205	0.017	0.774	0.002	0.045	0.082	0.022	0.081	0.007	0.441	0.000	0.000
%RSD		5.386	12.940	20.660	5.150	37.900	25.230	7.933	2.431	2.446	66.060	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:42:28	0.027	96.849%	0.209	0.010	-0.739	-0.023	95.677%	0.000	0.041	0.034	0.192	93.912%
2	22:42:49	0.019	98.522%	0.180	0.010	-0.907	-0.028	97.236%	0.000	0.043	0.024	0.116	96.217%
3	22:43:10	0.017	97.228%	0.149	0.009	-1.188	0.002	98.288%	0.000	0.024	0.018	0.087	96.412%
x		0.021	97.533%	0.179	0.010	-0.945	-0.016	97.067%	0.000	0.036	0.025	0.132	95.513%
σ		0.005	0.877%	0.030	0.001	0.227	0.016	1.313%	0.000	0.010	0.008	0.054	1.390%
%RSD		26.030	0.899	16.730	6.234	23.990	101.200	1.353	0.000	28.780	31.590	41.330	1.456

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:42:28	0.000	0.090	0.142	91.444%	0.000	0.003	0.240
2	22:42:49	0.006	0.078	0.102	93.209%	0.000	0.002	0.240
3	22:43:10	-0.006	0.061	0.106	93.595%	0.000	0.002	0.240
x		0.000	0.076	0.116	92.749%	0.000	0.002	0.240
σ		0.006	0.015	0.022	1.147%	0.000	0.001	0.000
%RSD		2915.000	19.330	19.230	1.236	0.000	35.070	0.051

CCVL 1039949 5/19/2017 10:47:48 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:48:10	92.323%	0.936	39.030	T 588.000	191.100	49.890	T 567.600	502.200	99.287%	0.000	5.128	3.895
2	22:48:31	91.665%	1.049	41.180	T 575.100	192.100	50.220	T 560.300	507.100	101.414%	0.000	5.197	3.784
3	22:48:52	92.549%	0.860	40.070	T 578.000	192.200	50.360	T 568.700	500.800	100.087%	0.000	4.969	3.865
x		92.179%	94.846%	100.237%	T 116.078%	95.905%	100.321%	T 113.108%	100.677%	100.262%	0.000	101.960%	96.197%
σ		0.459%	n/a	n/a	T n/a	n/a	n/a	T n/a	n/a	1.074%	0.000	n/a	n/a
%RSD		0.498	10.040	2.689	T 1.167	0.313	0.480	T 0.802	0.660	1.072	0.000	2.300	1.496
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:48:10	3.911	2.095	200.400	1.004	2.275	5.179	22.100	0.963	0.298	4.144	0.000	0.000
2	22:48:31	3.842	2.033	197.500	0.971	2.049	4.950	21.150	1.192	0.278	4.126	0.000	0.000
3	22:48:52	3.894	2.039	200.200	0.969	2.077	5.078	22.150	0.902	0.309	3.177	0.000	0.000
x		3.882	102.775%	99.695%	98.128%	106.689%	101.384%	108.996%	50.954%	0.295	95.394%	0.000	0.000
σ		0.036	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.016	n/a	0.000	0.000
%RSD		0.936	1.657	0.803	2.021	5.777	2.266	2.570	14.980	5.425	14.500	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:48:10	4.807	97.331%	10.540	1.018	-1.086	0.975	99.011%	0.000	1.841	1.941	9.714	94.901%
2	22:48:31	4.883	99.024%	10.440	1.042	-0.828	0.975	99.049%	0.000	1.913	1.993	9.699	95.268%
3	22:48:52	4.914	100.151%	10.330	1.084	-1.811	1.067	99.651%	0.000	1.935	1.999	9.777	96.520%
x		97.357%	98.835%	104.401%	104.770%	-1.241	100.571%	99.237%	0.000	1.896	98.870%	97.300%	95.563%
σ		n/a	1.420%	n/a	n/a	0.510	n/a	0.359%	0.000	0.049	n/a	n/a	0.849%
%RSD		1.132	1.436	0.998	3.212	41.050	5.295	0.362	0.000	2.595	1.625	0.424	0.888

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	22:48:10	2.726	1.781	0.973	92.360%	0.000	2.006	1.211
2	22:48:31	2.669	1.745	0.997	94.420%	0.000	2.005	1.225
3	22:48:52	2.717	1.707	0.956	95.088%	0.000	1.967	1.191
x		135.208%	87.221%	97.512%	93.956%	0.000	99.625%	120.907%
σ		n/a	n/a	n/a	1.422%	0.000	n/a	n/a
%RSD		1.140	2.109	2.118	1.514	0.000	1.118	1.422

480-117679-B-4-A 5/19/2017 10:53:29 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:53:52	90.013%	0.220	1173.000	TM 54610.000	3911.000	127.500	T 3028.000	15970.000	97.817%	0.000	0.335	0.274
2	22:54:13	89.048%	0.284	1194.000	TM 55870.000	3953.000	129.600	T 3050.000	T 18840.000	96.754%	0.000	0.415	0.281
3	22:54:34	88.164%	0.272	1195.000	TM 55290.000	3954.000	129.500	T 3041.000	T 18980.000	96.866%	0.000	0.155	0.259
x		89.075%	0.259	1187.000	TM 55250.000	3939.000	128.900	T 3040.000	T 17930.000	97.146%	0.000	0.302	0.271
σ		0.925%	0.034	12.490	TM 630.400	24.560	1.174	T 11.210	T 1702.000	0.584%	0.000	0.133	0.011
%RSD		1.038	12.990	1.052	TM 1.141	0.623	0.911	T 0.369	T 9.494	0.601	0.000	44.120	4.008

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:53:52	5.358	43.080	106.000	3.931	0.384	1.670	2.269	7.468	0.438	-0.235	0.000	0.000
2	22:54:13	5.770	43.220	108.800	4.145	0.413	1.714	2.783	7.471	0.443	0.533	0.000	0.000
3	22:54:34	6.163	43.290	106.100	4.207	0.437	1.626	2.539	7.253	0.466	-0.261	0.000	0.000
x		5.764	43.200	107.000	4.095	0.411	1.670	2.530	7.397	0.449	0.013	0.000	0.000
σ		0.403	0.106	1.594	0.145	0.026	0.044	0.257	0.125	0.015	0.451	0.000	0.000
%RSD		6.989	0.244	1.490	3.533	6.429	2.651	10.160	1.694	3.275	3576.000	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:53:52	187.600	97.334%	18.420	0.011	-0.921	-0.020	94.411%	0.000	0.059	0.057	4.373	93.342%
2	22:54:13	184.500	97.392%	18.570	0.016	-0.783	0.004	96.160%	0.000	0.047	0.051	4.407	96.734%
3	22:54:34	186.700	98.902%	18.110	0.012	-1.262	0.020	95.588%	0.000	0.071	0.054	4.299	96.359%
x		186.300	97.876%	18.370	0.013	-0.989	0.001	95.386%	0.000	0.059	0.054	4.360	95.478%
σ		1.577	0.889%	0.235	0.003	0.247	0.020	0.892%	0.000	0.012	0.003	0.055	1.859%
%RSD		0.847	0.908	1.279	23.310	24.940	1706.000	0.935	0.000	19.980	5.386	1.264	1.948

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:53:52	3.205	-0.016	0.229	91.854%	0.000	0.300	18.440
2	22:54:13	3.229	-0.017	0.226	91.773%	0.000	0.304	18.520
3	22:54:34	3.254	-0.021	0.207	94.086%	0.000	0.305	18.020
x		3.230	-0.018	0.220	92.571%	0.000	0.303	18.330
σ		0.025	0.003	0.012	1.313%	0.000	0.003	0.267
%RSD		0.765	15.960	5.381	1.418	0.000	0.849	1.458

480-117679-B-5-A 5/19/2017 10:59:10 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	22:59:32	91.764%	0.042	98.570	T 32420.000	T 19190.000	285.000	T 2156.000	T 24100.000	97.616%	0.000	0.500	0.837
2	22:59:53	90.800%	-0.021	97.480	T 31710.000	T 18650.000	T 334.500	T 2122.000	T 23850.000	99.234%	0.000	0.744	0.806
3	23:00:15	91.511%	0.050	96.380	T 31460.000	T 18590.000	T 336.200	T 2115.000	T 23800.000	100.282%	0.000	0.677	0.794
		91.358%	0.024	97.480	T 31860.000	T 18810.000	T 318.600	T 2131.000	T 23920.000	99.044%	0.000	0.640	0.812

x													
σ		0.500%	0.039	1.098	T 497.300	T 328.500	T 29.080	T 21.840	T 158.700	1.343%	0.000	0.126	0.022
%RSD		0.547	165.700	1.127	T 1.561	T 1.747	T 9.130	T 1.025	T 0.663	1.356	0.000	19.650	2.686
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:59:32	7.730	47.480	271.600	0.233	1.084	1.399	4.025	-2.776	0.512	0.631	0.000	0.000
2	22:59:53	7.411	46.560	T 321.400	0.240	1.038	1.271	4.295	-2.712	0.502	0.054	0.000	0.000
3	23:00:15	7.487	46.480	265.600	0.246	0.933	1.368	4.245	-3.310	0.581	-0.614	0.000	0.000
x		7.543	46.840	T 286.200	0.240	1.018	1.346	4.188	-2.933	0.531	0.023	0.000	0.000
σ		0.167	0.556	T 30.670	0.007	0.078	0.067	0.144	0.328	0.043	0.623	0.000	0.000
%RSD		2.210	1.187	T 10.710	2.786	7.611	4.978	3.431	11.190	8.060	2660.000	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	22:59:32	112.500	99.248%	0.566	0.004	-1.460	0.154	95.094%	0.000	0.152	0.143	11.580	96.520%
2	22:59:53	112.400	100.218%	0.637	0.004	-1.475	0.161	95.433%	0.000	0.126	0.138	11.510	98.031%
3	23:00:15	110.800	98.724%	0.665	0.004	-0.759	0.135	97.114%	0.000	0.157	0.136	10.990	97.750%
x		111.900	99.397%	0.623	0.004	-1.231	0.150	95.881%	0.000	0.145	0.139	11.360	97.434%
σ		0.961	0.758%	0.051	0.000	0.409	0.014	1.082%	0.000	0.017	0.004	0.325	0.804%
%RSD		0.859	0.762	8.141	1.380	33.230	9.026	1.128	0.000	11.450	2.739	2.857	0.825
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	22:59:32	0.023	-0.034	0.602	90.481%	0.000	0.171	2.722					
2	22:59:53	0.034	-0.038	0.629	90.681%	0.000	0.170	2.742					
3	23:00:15	0.032	-0.033	0.569	93.261%	0.000	0.176	2.712					
x		0.030	-0.035	0.600	91.474%	0.000	0.172	2.725					
σ		0.006	0.003	0.030	1.551%	0.000	0.003	0.015					
%RSD		19.280	8.141	4.957	1.695	0.000	1.844	0.551					

480-117679-B-6-A 5/19/2017 11:04:51 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:05:13	92.177%	-0.089	27.030	T 10130.000	6326.000	18.170	T 1822.000	14470.000	96.401%	0.000	-0.353	0.386
2	23:05:34	92.461%	-0.017	25.240	T 9739.000	6145.000	17.880	T 1777.000	14240.000	98.908%	0.000	-0.156	0.426
3	23:05:55	91.492%	-0.072	26.930	T 9887.000	6230.000	17.880	T 1804.000	14360.000	97.260%	0.000	-0.216	0.378
x		92.043%	-0.059	26.400	T 9919.000	6234.000	17.980	T 1801.000	14360.000	97.523%	0.000	-0.242	0.397
σ		0.498%	0.038	1.007	T 198.600	90.720	0.169	T 22.700	116.300	1.274%	0.000	0.101	0.025
%RSD		0.541	63.870	3.814	T 2.002	1.455	0.938	T 1.260	0.810	1.307	0.000	41.730	6.374

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:05:13	10.090	29.970	15.480	0.036	0.277	0.818	1.432	28.270	0.615	-0.449	0.000	0.000
2	23:05:34	9.718	29.490	12.920	0.031	0.280	0.799	1.376	27.060	0.684	-0.466	0.000	0.000
3	23:05:55	10.010	29.720	13.830	0.035	0.242	0.778	1.465	26.910	0.653	-1.350	0.000	0.000
x		9.937	29.720	14.080	0.034	0.267	0.798	1.425	27.420	0.651	-0.755	0.000	0.000
σ		0.194	0.240	1.299	0.003	0.021	0.020	0.045	0.746	0.035	0.515	0.000	0.000
%RSD		1.954	0.807	9.231	8.358	7.957	2.494	3.137	2.722	5.350	68.270	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:05:13	54.020	96.594%	2.207	0.006	-0.846	0.049	95.561%	0.000	0.007	0.015	1.982	94.774%
2	23:05:34	54.620	97.741%	2.187	0.002	-1.010	0.066	96.610%	0.000	0.018	0.014	2.015	95.156%
3	23:05:55	53.680	98.744%	2.201	0.003	-1.091	0.069	97.501%	0.000	0.015	0.017	1.934	95.771%
x		54.110	97.693%	2.199	0.004	-0.982	0.061	96.557%	0.000	0.013	0.015	1.977	95.233%
σ		0.477	1.076%	0.011	0.002	0.125	0.011	0.971%	0.000	0.006	0.001	0.040	0.503%
%RSD		0.882	1.101	0.483	47.000	12.730	17.120	1.006	0.000	43.930	8.718	2.045	0.528

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:05:13	1.529	-0.042	0.063	92.174%	0.000	0.002	0.297
2	23:05:34	1.530	-0.048	0.060	92.722%	0.000	0.001	0.297
3	23:05:55	1.517	-0.046	0.060	94.215%	0.000	0.001	0.298
x		1.525	-0.045	0.061	93.037%	0.000	0.001	0.297
σ		0.007	0.003	0.002	1.056%	0.000	0.001	0.001
%RSD		0.460	6.827	3.231	1.136	0.000	91.700	0.265

480-117756-C-1-A 5/19/2017 11:10:34 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:10:55	91.845%	0.033	6.427	T 10130.000	T 21310.000	6.189	T 1342.000	T 24940.000	97.975%	0.000	-0.504	0.833
2	23:11:16	90.133%	-0.078	7.871	T 10270.000	T 21540.000	6.498	T 1364.000	T 25370.000	96.333%	0.000	-0.176	0.961
3	23:11:38	90.398%	-0.053	7.149	T 10080.000	T 21250.000	6.212	T 1356.000	T 25070.000	97.597%	0.000	-0.288	0.879
x		90.792%	-0.033	7.149	T 10160.000	T 21370.000	6.299	T 1354.000	T 25130.000	97.302%	0.000	-0.323	0.891
σ		0.922%	0.058	0.722	T 94.730	T 149.700	0.172	T 11.290	T 220.200	0.860%	0.000	0.167	0.065
%RSD		1.015	179.000	10.100	T 0.932	T 0.700	2.730	T 0.834	T 0.877	0.884	0.000	51.580	7.310

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:10:55	12.250	5.789	8.171	0.050	1.223	0.435	1.312	-2.939	0.740	0.724	0.000	0.000
2	23:11:16	12.520	5.857	8.180	0.046	1.246	0.483	1.358	-3.050	0.762	0.748	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
3	23:11:38	12.740	5.716	7.231	0.047	1.216	0.448	1.107	-2.922	0.777	0.101	0.000	0.000
x		12.500	5.787	7.861	0.047	1.228	0.455	1.259	-2.970	0.759	0.525	0.000	0.000
σ		0.247	0.071	0.545	0.002	0.015	0.025	0.134	0.070	0.019	0.367	0.000	0.000
%RSD		1.977	1.220	6.939	4.387	1.234	5.499	10.630	2.344	2.478	69.980	0.000	0.000
1	23:10:55	132.500	96.414%	0.034	0.003	-1.241	0.084	95.695%	0.000	0.037	0.037	2.204	95.471%
2	23:11:16	133.700	97.054%	0.054	0.003	-1.077	0.092	96.108%	0.000	0.038	0.034	2.135	96.550%
3	23:11:38	133.700	97.361%	0.066	0.004	-0.614	0.039	95.613%	0.000	0.036	0.036	2.340	97.041%
x		133.300	96.943%	0.052	0.004	-0.977	0.072	95.805%	0.000	0.037	0.036	2.226	96.354%
σ		0.665	0.483%	0.016	0.001	0.325	0.029	0.265%	0.000	0.001	0.001	0.104	0.803%
%RSD		0.499	0.498	31.100	13.940	33.270	39.880	0.277	0.000	2.681	3.854	4.676	0.834

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:10:55	0.001	-0.043	0.059	94.072%	0.000	0.001	0.319
2	23:11:16	0.020	-0.040	0.066	92.441%	0.000	0.000	0.326
3	23:11:38	0.004	-0.046	0.066	93.729%	0.000	0.002	0.320
x		0.008	-0.043	0.064	93.414%	0.000	0.001	0.322
σ		0.011	0.003	0.004	0.860%	0.000	0.001	0.004
%RSD		124.500	7.375	5.978	0.921	0.000	83.410	1.205

480-117756-C-2-A 5/19/2017 11:16:17 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:16:38	91.189%	0.256	11.570	T 27960.000	T 10730.000	T 1272.000	T 1257.000	9244.000	99.845%	0.000	0.317	1.481
2	23:17:00	90.835%	0.118	12.530	T 28160.000	T 10830.000	T 1286.000	T 1285.000	9338.000	98.905%	0.000	1.337	1.601
3	23:17:21	92.742%	0.184	11.210	T 28530.000	T 10930.000	T 1288.000	T 1280.000	9330.000	98.673%	0.000	1.064	1.563
x		91.588%	0.186	11.770	T 28220.000	T 10830.000	T 1282.000	T 1274.000	9304.000	99.141%	0.000	0.906	1.548
σ		1.015%	0.069	0.678	T 289.000	T 101.100	T 8.602	T 15.220	52.350	0.620%	0.000	0.528	0.061
%RSD		1.108	37.050	5.761	T 1.024	T 0.934	T 0.671	T 1.194	0.563	0.626	0.000	58.290	3.958

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:16:38	14.540	12.430	T 1049.000	0.344	2.719	4.171	6.829	-1.847	0.850	-0.495	0.000	0.000
2	23:17:00	13.720	12.550	T 1065.000	0.362	2.659	4.235	6.603	-1.566	0.838	-0.227	0.000	0.000
3	23:17:21	14.150	12.810	T 1076.000	0.341	2.752	4.384	6.877	-1.467	0.820	-0.468	0.000	0.000
x		14.140	12.600	T 1063.000	0.349	2.710	4.263	6.770	-1.627	0.836	-0.397	0.000	0.000
σ		0.410	0.191	T 13.630	0.011	0.047	0.109	0.146	0.197	0.015	0.147	0.000	0.000
%RSD		2.897	1.517	T 1.281	3.216	1.748	2.555	2.156	12.140	1.783	37.160	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:16:38	60.950	104.735%	0.399	0.148	-1.187	0.421	95.392%	0.000	0.262	0.273	17.020	97.233%
2	23:17:00	60.480	103.620%	0.309	0.138	-1.147	0.482	97.101%	0.000	0.283	0.275	16.740	97.487%
3	23:17:21	60.600	104.092%	0.327	0.130	-0.683	0.415	97.194%	0.000	0.292	0.276	16.900	97.694%
x		60.680	104.149%	0.345	0.139	-1.006	0.439	96.562%	0.000	0.279	0.275	16.890	97.471%
σ		0.244	0.560%	0.047	0.009	0.280	0.037	1.014%	0.000	0.015	0.002	0.137	0.231%
%RSD		0.401	0.538	13.720	6.608	27.850	8.415	1.050	0.000	5.457	0.620	0.809	0.237

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb

1	23:16:38	0.017	-0.036	1.971	91.525%	0.000	2.766	1.164
2	23:17:00	0.012	-0.035	1.929	93.895%	0.000	2.677	1.126
3	23:17:21	0.016	-0.035	1.900	94.520%	0.000	2.669	1.176
x		0.015	-0.035	1.933	93.314%	0.000	2.704	1.155
σ		0.002	0.001	0.036	1.580%	0.000	0.054	0.026
%RSD		16.230	1.849	1.857	1.693	0.000	1.984	2.265

480-117756-C-3-A 5/19/2017 11:22:00 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:22:21	92.937%	-0.066	7.835	T 7399.000	T 10130.000	12.760	T 1087.000	15370.000	96.156%	0.000	0.357	0.552
2	23:22:42	90.870%	-0.005	8.415	T 7373.000	T 10070.000	12.450	T 1074.000	T 18270.000	97.027%	0.000	-0.742	0.522
3	23:23:02	91.665%	-0.031	7.972	T 7146.000	T 9824.000	12.250	T 1057.000	15220.000	99.383%	0.000	-0.770	0.502
x		91.824%	-0.034	8.074	T 7306.000	T 10010.000	12.490	T 1072.000	T 16290.000	97.522%	0.000	-0.385	0.525
σ		1.042%	0.030	0.303	T 139.200	T 163.400	0.255	T 14.880	T 1718.000	1.669%	0.000	0.643	0.025
%RSD		1.135	89.530	3.753	T 1.905	T 1.632	2.045	T 1.388	T 10.550	1.712	0.000	166.800	4.763
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:22:21	13.930	27.990	13.660	0.028	0.165	0.393	0.959	7.398	0.917	0.054	0.000	0.000
2	23:22:42	15.070	28.550	12.450	0.025	0.183	0.381	1.093	7.050	0.913	-0.860	0.000	0.000
3	23:23:02	14.670	27.690	11.170	0.031	0.157	0.308	1.005	7.082	0.957	-0.906	0.000	0.000
x		14.550	28.080	12.430	0.028	0.168	0.360	1.019	7.177	0.929	-0.571	0.000	0.000
σ		0.580	0.436	1.246	0.003	0.013	0.046	0.068	0.192	0.024	0.542	0.000	0.000
%RSD		3.985	1.553	10.020	11.540	7.826	12.680	6.674	2.674	2.625	94.910	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:22:21	79.280	95.988%	0.147	0.133	-0.799	-0.031	97.038%	0.000	0.047	0.041	0.602	97.536%
2	23:22:42	79.610	98.888%	0.129	0.145	-0.936	0.000	97.711%	0.000	0.043	0.048	0.617	96.760%
3	23:23:02	79.750	96.641%	0.139	0.153	-0.749	-0.016	97.931%	0.000	0.047	0.035	0.569	99.632%
x		79.550	97.172%	0.138	0.144	-0.828	-0.016	97.560%	0.000	0.046	0.041	0.596	97.976%
σ		0.245	1.521%	0.009	0.010	0.097	0.016	0.465%	0.000	0.003	0.007	0.024	1.486%
%RSD		0.308	1.566	6.728	6.735	11.720	98.510	0.477	0.000	5.954	16.020	4.086	1.517
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	23:22:21	0.065	-0.049	0.049	93.452%	0.000	0.007	0.555					
2	23:22:42	0.069	-0.047	0.048	96.028%	0.000	0.004	0.544					
3	23:23:02	0.062	-0.052	0.044	96.171%	0.000	0.004	0.537					
x		0.065	-0.049	0.047	95.217%	0.000	0.005	0.545					
σ		0.003	0.002	0.002	1.530%	0.000	0.002	0.009					
%RSD		5.349	4.692	4.695	1.607	0.000	37.620	1.631					

480-117756-C-3-A SD@5 5/19/2017 11:27:41 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:28:02	93.743%	-0.051	0.658	T 1562.000	1773.000	4.316	194.300	3122.000	97.997%	0.000	-0.426	0.249
2	23:28:23	91.049%	-0.055	2.207	T 1533.000	1754.000	4.394	190.300	3108.000	99.032%	0.000	-0.594	0.284
3	23:28:45	93.855%	-0.059	1.380	T 1535.000	1735.000	4.518	T 245.400	3127.000	99.057%	0.000	-0.925	0.302
		92.883%	-0.055	1.415	T 1543.000	1754.000	4.409	T 210.000	3119.000	98.696%	0.000	-0.648	0.278

x													
σ		1.589%	0.004	0.775	T 16.270	18.740	0.102	T 30.740	10.010	0.605%	0.000	0.254	0.027
%RSD		1.711	7.423	54.790	T 1.055	1.068	2.310	T 14.640	0.321	0.613	0.000	39.220	9.785
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	23:28:02	13.620	5.780	9.374	0.018	0.117	0.182	1.374	-0.824	0.856	-0.811	0.000	0.000
2	23:28:23	13.990	5.910	9.000	0.015	0.107	0.131	1.295	-1.154	0.879	-1.454	0.000	0.000
3	23:28:45	14.000	5.905	8.385	0.015	0.150	0.134	1.570	-0.944	0.853	-0.581	0.000	0.000
x		13.870	5.865	8.920	0.016	0.124	0.149	1.413	-0.974	0.863	-0.948	0.000	0.000
σ		0.216	0.074	0.499	0.002	0.023	0.028	0.142	0.167	0.014	0.452	0.000	0.000
%RSD		1.560	1.259	5.597	12.690	18.240	19.040	10.050	17.160	1.673	47.700	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	23:28:02	16.240	98.929%	0.076	0.038	-1.147	-0.001	98.678%	0.000	0.040	0.041	0.435	96.696%
2	23:28:23	16.070	99.060%	0.081	0.034	-1.143	0.005	99.884%	0.000	0.063	0.047	0.445	97.173%
3	23:28:45	16.150	98.771%	0.053	0.036	-1.108	-0.011	99.803%	0.000	0.039	0.043	0.419	98.721%
x		16.150	98.920%	0.070	0.036	-1.132	-0.003	99.455%	0.000	0.047	0.043	0.433	97.530%
σ		0.084	0.144%	0.015	0.002	0.021	0.008	0.674%	0.000	0.014	0.003	0.013	1.059%
%RSD		0.521	0.146	21.300	5.311	1.885	304.700	0.678	0.000	29.360	7.134	3.048	1.085
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	23:28:02	0.066	-0.037	0.082	94.764%	0.000	0.000	0.301					
2	23:28:23	0.045	-0.041	0.071	96.324%	0.000	-0.000	0.303					
3	23:28:45	0.071	-0.038	0.079	95.379%	0.000	0.001	0.297					
x		0.061	-0.039	0.077	95.489%	0.000	0.000	0.300					
σ		0.014	0.002	0.006	0.786%	0.000	0.001	0.003					
%RSD		22.380	5.544	7.352	0.823	0.000	177.300	1.041					

480-117756-C-3-A PDS 5/19/2017 11:33:23 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:33:44	90.782%	11.060	426.300	T 12930.000	T 12350.000	508.100	T 6569.000	T 23680.000	95.856%	0.000	48.660	39.010
2	23:34:06	89.581%	10.440	434.800	T 12900.000	T 12350.000	507.900	T 6589.000	T 23850.000	95.636%	0.000	49.260	39.690
3	23:34:27	88.082%	10.110	443.900	T 12900.000	T 12390.000	507.000	T 6573.000	T 23720.000	95.357%	0.000	48.560	38.980
x		89.482%	10.530	435.000	T 12910.000	T 12370.000	507.700	T 6577.000	T 23750.000	95.616%	0.000	48.820	39.230
σ		1.353%	0.481	8.833	T 16.640	T 24.740	0.585	T 10.680	T 89.270	0.250%	0.000	0.379	0.402
%RSD		1.512	4.567	2.031	T 0.129	T 0.200	0.115	T 0.162	T 0.376	0.261	0.000	0.776	1.024

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:33:44	12.760	48.170	T 2311.000	9.752	20.740	50.440	189.400	46.430	0.810	35.910	0.000	0.000
2	23:34:06	12.290	47.950	T 2309.000	9.629	21.640	50.500	191.900	46.210	0.841	35.880	0.000	0.000
3	23:34:27	12.390	48.440	T 2324.000	9.673	21.300	50.800	191.600	46.770	0.756	37.090	0.000	0.000
x		12.480	48.190	T 2315.000	9.684	21.230	50.580	190.900	46.470	0.802	36.290	0.000	0.000
σ		0.247	0.247	T 8.439	0.063	0.455	0.196	1.389	0.281	0.043	0.690	0.000	0.000
%RSD		1.976	0.513	T 0.365	0.647	2.143	0.387	0.727	0.604	5.338	1.902	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:33:44	129.100	96.375%	105.000	10.680	-0.173	10.250	95.869%	0.000	19.410	20.190	101.100	96.708%
2	23:34:06	127.600	95.589%	106.200	10.660	0.459	9.927	96.971%	0.000	19.290	20.130	99.060	97.904%
3	23:34:27	129.800	95.212%	106.800	10.690	0.502	10.320	96.145%	0.000	19.610	20.230	101.200	98.264%
x		128.800	95.725%	106.000	10.670	0.263	10.170	96.328%	0.000	19.440	20.190	100.500	97.625%
σ		1.125	0.593%	0.886	0.014	0.378	0.210	0.573%	0.000	0.160	0.050	1.231	0.815%
%RSD		0.874	0.620	0.836	0.134	144.000	2.068	0.595	0.000	0.824	0.249	1.225	0.834

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:33:44	27.890	19.040	9.535	92.641%	0.000	21.760	11.030
2	23:34:06	27.750	18.720	9.371	94.492%	0.000	21.500	10.880
3	23:34:27	27.420	18.600	9.341	95.670%	0.000	21.220	10.760
x		27.690	18.780	9.415	94.268%	0.000	21.490	10.890
σ		0.244	0.227	0.104	1.527%	0.000	0.273	0.135
%RSD		0.879	1.206	1.107	1.620	0.000	1.268	1.243

480-117756-C-3-B MS 5/19/2017 11:39:06 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:39:28	88.555%	11.090	449.400	T 13150.000	T 12500.000	519.600	T 6668.000	T 24080.000	94.332%	0.000	49.860	40.110
2	23:39:49	89.479%	10.840	442.800	T 13210.000	T 12510.000	524.100	T 6789.000	T 24280.000	93.898%	0.000	50.360	39.980
3	23:40:10	87.187%	10.720	456.200	T 12890.000	T 12330.000	518.700	T 6690.000	20130.000	95.571%	0.000	49.260	40.080
x		88.407%	10.880	449.500	T 13080.000	T 12450.000	520.800	T 6716.000	T 22830.000	94.600%	0.000	49.830	40.060
σ		1.153%	0.188	6.702	T 169.500	T 101.100	2.905	T 64.660	T 2339.000	0.868%	0.000	0.553	0.067
%RSD		1.304	1.725	1.491	T 1.296	T 0.813	0.558	T 0.963	T 10.240	0.918	0.000	1.110	0.167

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:39:28	10.750	48.850	T 2366.000	9.823	22.250	51.550	193.900	48.150	0.689	38.330	0.000	0.000
2	23:39:49	10.560	49.510	T 2385.000	10.130	21.760	51.750	195.400	47.630	0.643	37.140	0.000	0.000

3	23:40:10	10.620	48.660	T 2325.000	9.739	20.690	50.810	190.100	47.070	0.593	37.870	0.000	0.000
x		10.640	49.010	T 2359.000	9.898	21.570	51.370	193.100	47.620	0.642	37.780	0.000	0.000
σ		0.100	0.447	T 30.910	0.207	0.796	0.492	2.726	0.542	0.048	0.599	0.000	0.000
%RSD		0.943	0.911	T 1.311	2.093	3.690	0.958	1.411	1.139	7.414	1.584	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	23:39:28	133.700	94.254%	109.200	10.890	-0.210	10.760	94.102%	0.000	19.730	20.870	104.600	94.496%
2	23:39:49	131.300	95.556%	107.200	10.800	0.783	10.560	96.097%	0.000	19.690	20.420	101.700	95.411%
3	23:40:10	130.200	96.467%	105.700	11.100	0.552	10.210	96.248%	0.000	19.700	20.550	100.900	97.390%
x		131.700	95.425%	107.400	10.930	0.375	10.510	95.482%	0.000	19.700	20.610	102.400	95.766%
σ		1.783	1.112%	1.726	0.154	0.520	0.280	1.198%	0.000	0.019	0.231	1.966	1.479%
%RSD		1.354	1.165	1.607	1.407	138.700	2.662	1.255	0.000	0.096	1.118	1.920	1.545

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	23:39:28	28.260	19.160	9.779	92.670%	0.000	22.200	11.220
2	23:39:49	27.800	19.300	9.763	93.175%	0.000	21.930	11.320
3	23:40:10	27.010	19.110	9.504	94.683%	0.000	21.670	11.100
x		27.690	19.190	9.682	93.509%	0.000	21.930	11.210
σ		0.630	0.100	0.154	1.047%	0.000	0.264	0.111
%RSD		2.274	0.521	1.592	1.120	0.000	1.203	0.986

480-117756-C-3-C MSD 5/19/2017 11:44:50 PM

User Pre-dilution: 1.000

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	23:45:12	88.205%	10.810	433.900	T 12860.000	T 12270.000	511.000	T 6578.000	T 23670.000	94.669%	0.000	48.700	39.380
2	23:45:33	89.473%	10.120	428.900	T 12570.000	T 11940.000	503.800	T 6477.000	19750.000	96.150%	0.000	48.560	38.600
3	23:45:55	87.103%	10.420	439.600	T 12700.000	T 12150.000	505.000	T 6525.000	T 23650.000	95.360%	0.000	48.710	38.790
x		88.261%	10.450	434.200	T 12710.000	T 12120.000	506.600	T 6527.000	T 22360.000	95.393%	0.000	48.660	38.920
σ		1.186%	0.346	5.329	T 143.800	T 166.600	3.862	T 50.780	T 2259.000	0.741%	0.000	0.082	0.412
%RSD		1.344	3.306	1.227	T 1.131	T 1.375	0.762	T 0.778	T 10.100	0.777	0.000	0.169	1.057
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	23:45:12	9.933	47.480	T 2294.000	9.600	21.290	49.640	187.800	46.560	0.579	36.900	0.000	0.000
2	23:45:33	9.548	47.060	T 2267.000	9.466	20.700	49.410	186.900	47.350	0.598	37.740	0.000	0.000
3	23:45:55	8.577	47.320	T 2280.000	9.512	20.980	50.460	190.600	46.820	0.546	37.260	0.000	0.000
x		9.353	47.290	T 2281.000	9.526	20.990	49.840	188.400	46.910	0.574	37.300	0.000	0.000
σ		0.699	0.208	T 13.750	0.068	0.295	0.552	1.936	0.407	0.027	0.420	0.000	0.000
%RSD		7.473	0.440	T 0.603	0.714	1.403	1.108	1.027	0.867	4.619	1.127	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	23:45:12	129.200	95.506%	104.200	10.640	-0.062	10.190	94.724%	0.000	19.410	20.140	102.100	97.296%
2	23:45:33	127.800	94.351%	105.400	10.560	0.215	10.120	95.650%	0.000	19.370	20.070	99.930	96.854%
3	23:45:55	127.500	95.448%	104.400	10.470	0.426	10.270	96.223%	0.000	19.230	20.020	99.450	97.435%
x		128.200	95.101%	104.600	10.560	0.193	10.190	95.532%	0.000	19.340	20.080	100.500	97.195%
σ		0.937	0.650%	0.626	0.081	0.245	0.072	0.757%	0.000	0.095	0.060	1.435	0.303%
%RSD		0.731	0.684	0.598	0.769	126.700	0.709	0.792	0.000	0.490	0.300	1.428	0.312

Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**

1	23:45:12	26.240	18.640	9.497	93.123%	0.000	21.400	10.890
2	23:45:33	26.840	18.940	9.548	93.170%	0.000	21.460	11.080
3	23:45:55	26.600	19.140	9.519	92.965%	0.000	21.610	11.050
x		26.560	18.910	9.521	93.086%	0.000	21.490	11.010
σ		0.302	0.253	0.025	0.107%	0.000	0.107	0.103
%RSD		1.138	1.338	0.265	0.115	0.000	0.496	0.938

CCV 1039951 5/19/2017 11:50:32 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:50:54	84.275%	659.900	257.100	┬10730.000	┬33800.000	┬32810.000	┬10450.000	┬32990.000	94.196%	0.000	┬1375.000	371.400
2	23:51:16	85.449%	655.800	258.000	┬10830.000	┬33690.000	┬33080.000	┬10510.000	┬33290.000	93.824%	0.000	┬1388.000	375.200
3	23:51:38	84.981%	654.400	269.500	┬10910.000	┬34400.000	┬33090.000	┬10580.000	┬33540.000	92.198%	0.000	┬1405.000	377.800
x		84.902%	105.074%	104.619%	┬108.210%	┬113.208%	┬109.982%	┬105.103%	┬110.913%	93.406%	0.000	┬111.137%	93.706%
σ		0.591%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.062%	0.000	┬n/a	n/a
%RSD		0.696	0.441	2.647	┬0.827	┬1.121	┬0.472	┬0.609	┬0.820	1.137	0.000	┬1.063	0.865
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:50:54	10.470	┬1358.000	┬31820.000	┬530.100	1251.000	1196.000	1216.000	197.800	0.283	203.300	0.000	0.000
2	23:51:16	10.700	┬1368.000	┬32440.000	┬534.900	1279.000	1216.000	1226.000	198.500	0.300	200.800	0.000	0.000
3	23:51:38	10.630	┬1390.000	┬32640.000	┬541.900	1286.000	1230.000	1238.000	198.700	0.300	202.400	0.000	0.000
x		10.600	┬109.762%	┬107.664%	┬107.132%	101.751%	97.127%	98.155%	99.180%	0.295	101.081%	0.000	0.000
σ		0.120	┬n/a	┬n/a	┬n/a	n/a	n/a	n/a	n/a	0.010	n/a	0.000	0.000
%RSD		1.133	┬1.173	┬1.322	┬1.110	1.432	1.394	0.906	0.236	3.278	0.604	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:50:54	┬232.300	95.492%	┬1477.000	101.600	16.850	203.900	93.755%	0.000	241.200	252.100	1208.000	97.341%
2	23:51:16	196.900	95.525%	┬1482.000	102.200	17.370	204.100	94.129%	0.000	243.200	252.000	1201.000	96.588%
3	23:51:38	196.000	94.786%	┬1494.000	101.000	18.660	203.500	94.524%	0.000	244.300	251.700	1195.000	96.284%
x		┬208.400	95.268%	┬118.747%	101.601%	17.630	101.918%	94.136%	0.000	242.900	100.772%	96.117%	96.738%
σ		┬20.680	0.418%	┬n/a	n/a	0.933	n/a	0.385%	0.000	1.564	n/a	n/a	0.544%
%RSD		┬9.925	0.438	┬0.600	0.607	5.295	0.160	0.409	0.000	0.644	0.087	0.505	0.563
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	ppb	ppb	ppb	ppb	ppb	ppb					
1	23:50:54	18.580	┬212.800	┬1335.000	92.617%	0.000	20.210	9.976					
2	23:51:16	18.760	┬216.000	┬1333.000	93.256%	0.000	20.380	10.170					
3	23:51:38	18.820	┬216.200	┬1346.000	92.546%	0.000	20.720	10.080					
x		93.600%	┬107.497%	┬107.044%	92.806%	0.000	102.186%	100.771%					
σ		n/a	┬n/a	┬n/a	0.391%	0.000	n/a	n/a					
%RSD		0.671	┬0.887	┬0.552	0.422	0.000	1.278	0.980					

CCB 1035925 5/19/2017 11:56:15 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	23:56:36	88.239%	0.111	4.889	9.223	10.010	10.070	4.821	20.810	94.703%	0.000	0.377	0.090
2	23:56:57	86.991%	0.244	4.442	9.799	11.320	10.560	6.721	23.410	93.895%	0.000	0.682	0.051
3	23:57:18	88.178%	0.069	4.378	5.222	6.675	6.632	4.736	17.610	96.383%	0.000	0.484	0.029
		87.803%	0.141	4.569	8.082	9.334	9.088	5.426	20.610	94.994%	0.000	0.514	0.057

x													
σ		0.704%	0.091	0.278	2.493	2.394	2.142	1.122	2.908	1.269%	0.000	0.155	0.031
%RSD		0.802	64.750	6.089	30.850	25.650	23.570	20.680	14.110	1.336	0.000	30.120	54.580
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	23:56:36	3.920	0.431	10.690	0.151	0.486	0.621	0.572	-3.335	0.294	-0.682	0.000	0.000
2	23:56:57	3.569	0.422	10.900	0.153	0.445	0.533	0.488	-3.264	0.276	-0.855	0.000	0.000
3	23:57:18	3.641	0.269	6.081	0.111	0.225	0.412	0.290	-3.237	0.292	-0.471	0.000	0.000
x		3.710	0.374	9.221	0.138	0.385	0.522	0.450	-3.279	0.288	-0.669	0.000	0.000
σ		0.185	0.091	2.722	0.024	0.140	0.105	0.144	0.050	0.010	0.193	0.000	0.000
%RSD		4.998	24.380	29.520	17.030	36.410	20.090	32.090	1.540	3.469	28.790	0.000	0.000
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**
1	23:56:36	0.078	93.302%	0.545	0.045	-1.404	0.113	93.996%	0.000	0.096	0.096	0.473	94.331%
2	23:56:57	0.075	96.386%	0.531	0.038	-0.788	0.018	95.146%	0.000	0.078	0.092	0.431	93.245%
3	23:57:18	0.051	94.063%	0.326	0.019	-1.367	0.045	96.740%	0.000	0.069	0.058	0.249	93.837%
x		0.068	94.584%	0.467	0.034	-1.186	0.059	95.294%	0.000	0.081	0.082	0.384	93.804%
σ		0.015	1.607%	0.123	0.014	0.346	0.049	1.378%	0.000	0.014	0.021	0.119	0.544%
%RSD		21.300	1.699	26.240	39.990	29.160	83.650	1.446	0.000	16.900	25.500	31.040	0.580
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
		ppb	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**	**ppb**					
1	23:56:36	0.008	0.139	0.429	91.435%	0.000	0.007	0.243					
2	23:56:57	0.014	0.121	0.360	92.522%	0.000	0.009	0.243					
3	23:57:18	0.019	0.083	0.249	93.619%	0.000	0.007	0.242					
x		0.014	0.114	0.346	92.525%	0.000	0.008	0.243					
σ		0.005	0.029	0.091	1.092%	0.000	0.001	0.001					
%RSD		37.460	24.970	26.280	1.180	0.000	14.290	0.355					

CCVL 1039949 5/20/2017 12:01:56 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.000

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	00:02:17	90.043%	0.923	42.940	T 601.000	202.400	50.650	T 577.200	515.300	96.259%	0.000	4.897	3.780
2	00:02:39	89.533%	0.855	46.460	T 576.100	201.000	50.250	T 559.900	498.900	98.053%	0.000	5.079	4.007
3	00:03:00	90.230%	1.086	42.120	T 578.800	202.500	49.410	T 557.900	491.500	99.141%	0.000	5.133	3.787
x		89.935%	95.467%	109.594%	T 117.066%	100.990%	100.205%	T 113.000%	100.377%	97.818%	0.000	100.728%	96.448%
σ		0.360%	n/a	n/a	T n/a	n/a	n/a	T n/a	n/a	1.456%	0.000	n/a	n/a
%RSD		0.401	12.440	5.254	T 2.336	0.405	1.262	T 1.877	2.435	1.488	0.000	2.459	3.346

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	00:02:17	4.149	2.021	202.900	0.966	2.175	5.158	21.770	0.738	0.325	3.647	0.000	0.000
2	00:02:39	3.866	2.050	197.900	1.000	2.237	5.068	21.640	0.676	0.315	2.780	0.000	0.000
3	00:03:00	3.382	2.088	196.400	1.000	2.267	5.006	21.770	0.606	0.305	3.617	0.000	0.000
x		3.799	102.636%	99.529%	98.870%	111.310%	101.548%	108.628%	33.663%	0.315	83.696%	0.000	0.000
σ		0.388	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.010	n/a	0.000	0.000
%RSD		10.200	1.641	1.712	1.980	2.112	1.508	0.347	9.876	3.155	14.710	0.000	0.000

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	00:02:17	4.899	96.248%	10.370	0.974	-1.245	1.152	96.583%	0.000	1.943	1.977	9.568	94.346%
2	00:02:39	4.841	98.397%	10.260	1.022	-0.752	1.008	97.101%	0.000	1.961	1.980	9.715	95.890%
3	00:03:00	4.951	97.605%	10.820	1.022	-0.671	0.946	97.668%	0.000	2.005	2.012	9.825	96.914%
x		97.938%	97.417%	104.839%	100.599%	-0.889	103.555%	97.117%	0.000	1.970	99.483%	97.024%	95.717%
σ		n/a	1.087%	n/a	n/a	0.310	n/a	0.542%	0.000	0.032	n/a	n/a	1.293%
%RSD		1.126	1.116	2.826	2.768	34.890	10.200	0.559	0.000	1.630	0.970	1.330	1.350

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
1	00:02:17	2.647	1.767	0.989	91.654%	0.000	2.058	1.236
2	00:02:39	2.704	1.797	1.010	92.622%	0.000	2.012	1.192
3	00:03:00	2.644	1.776	1.032	93.061%	0.000	2.023	1.233
x		133.258%	88.994%	101.053%	92.446%	0.000	101.547%	122.045%
σ		n/a	n/a	n/a	0.720%	0.000	n/a	n/a
%RSD		1.273	0.865	2.134	0.779	0.000	1.165	1.989

Mass Uncorrected ICPS

STD0 1035925 5/19/2017 6:19:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:20:19	234204.070	80.000	2475.184	554927.040	210.001	2820.239	654555.760	11714.115	324376.180	60.000	15697.389	2125.136
2	18:20:41	239833.270	72.500	2700.219	562587.550	280.002	2895.252	663374.360	11614.045	327404.530	55.000	16202.872	2180.143
3	18:21:02	232885.780	57.500	2755.228	567437.890	250.002	2980.266	667889.420	12144.423	334931.900	65.000	16473.137	2195.145
x		235641.040	70.000	2643.543	561650.830	246.669	2898.586	661939.850	11824.194	328904.200	60.000	16124.466	2166.807
σ		3689.929	11.456	148.375	6307.806	35.119	80.066	6781.590	281.804	5435.311	5.000	393.773	36.860
%RSD		1.566	16.366	5.613	1.123	14.237	2.762	1.025	2.383	1.653	8.333	2.442	1.701

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:20:19	5811.013	950.027	327822.630	50.000	100.000	700.015	2070.129	3588.386	1162.041	538.009	524.008	2405.174
2	18:20:41	6061.102	995.030	331927.690	70.000	150.001	685.014	2095.132	3709.413	1178.042	518.508	510.008	2380.170
3	18:21:02	6126.126	1035.032	330729.220	85.000	55.000	675.014	2350.166	3621.393	1242.046	511.508	509.508	2535.193
x		5999.414	993.363	330159.850	68.333	101.667	686.681	2171.809	3639.731	1194.043	522.675	514.508	2440.179
σ		166.367	42.527	2110.927	17.559	47.522	12.584	154.967	62.562	42.335	13.733	8.231	83.229
%RSD		2.773	4.281	0.639	25.697	46.743	1.833	7.135	1.719	3.546	2.627	1.600	3.411

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:20:19	225.002	367170.360	45.000	10.000	0.000	20.000	1844158.900	565.010	280.002	204.001	10.000	268241.370
2	18:20:41	285.002	367415.680	30.000	5.000	10.000	5.000	1853995.700	555.009	285.002	196.001	10.000	272093.060
3	18:21:02	250.002	371903.580	40.000	0.000	35.000	5.000	1860950.600	640.012	235.002	199.501	15.000	272560.600
x		253.335	368829.870	38.333	5.000	15.000	10.000	1853035.100	586.677	266.669	199.835	11.667	270965.010
σ		30.139	2664.737	7.638	5.000	18.028	8.660	8436.933	46.460	27.538	4.010	2.887	2370.297
%RSD		11.897	0.722	19.924	100.000	120.185	86.603	0.455	7.919	10.327	2.007	24.744	0.875

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:20:19	75.000	2035.124	565.010	210480.720	0.000	20.000	0.000
2	18:20:41	105.000	1650.082	530.008	212972.070	0.000	45.000	0.000
3	18:21:02	90.000	1715.088	625.012	213042.970	0.000	25.000	0.000
x		90.000	1800.098	573.343	212165.260	0.000	30.000	0.000
σ		15.000	206.118	48.047	1459.279	0.000	13.229	0.000
%RSD		16.667	11.450	8.380	0.688	0.000	44.096	0.000

STD1 1039949 5/19/2017 6:25:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:26:02	236364.240	382.504	14676.459	2095739.500	61744.159	159873.120	T 3370618.400	77118.004	329872.490	70.000	39055.707	19140.985
2	18:26:24	233058.170	417.505	15557.257	T 2381709.900	63450.550	162988.080	T 3330164.300	76264.088	328291.730	105.000	39140.906	18705.491
3	18:26:45	235319.610	427.505	15962.641	2112478.200	63430.473	161983.350	T 3353990.300	76414.776	334411.610	35.000	39486.721	19125.968
x		234914.010	409.172	15398.786	T 2196642.500	62875.061	161614.850	T 3351591.000	76598.956	330858.610	70.000	39227.778	18990.815
σ		1689.945	23.630	657.572	T 160491.420	979.441	1589.836	T 20333.464	455.779	3176.879	35.000	228.261	247.212
%RSD		0.719	5.775	4.270	T 7.306	1.558	0.984	T 0.607	0.595	0.960	50.000	0.582	1.302

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:26:02	8532.183	15542.243	1545009.400	5971.069	2655.212	10228.137	36545.022	8708.274	1565.074	902.524	502.008	2735.224
2	18:26:24	7826.837	15251.975	1532220.800	5740.989	2870.247	9952.971	37647.472	8790.318	1609.078	920.525	490.007	2710.220
3	18:26:45	8187.010	15141.875	1524591.500	6001.080	2695.218	9982.989	38058.404	8792.319	1443.063	883.523	503.508	2640.209
x		8182.010	15312.031	1533940.600	5904.379	2740.226	10054.699	37416.966	8763.637	1539.071	902.191	498.507	2695.218
σ		352.700	206.830	10317.029	142.294	114.365	150.950	782.579	47.956	86.008	18.503	7.400	49.252
%RSD		4.311	1.351	0.673	2.410	4.174	1.501	2.092	0.547	5.588	2.051	1.484	1.827

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:26:02	49999.887	372363.690	27868.280	6046.097	130.001	1745.091	1840339.300	770.018	13685.617	10452.276	12419.626	267255.730
2	18:26:24	50175.414	365923.380	28569.465	6241.168	130.001	1600.077	1856068.500	760.017	13925.815	10635.893	12849.952	270883.590
3	18:26:45	50320.851	369981.510	28829.913	6181.146	95.000	1700.087	1866157.300	815.020	13770.687	10523.821	13085.135	275732.130
x		50165.384	369422.860	28422.553	6156.137	118.334	1681.752	1854188.400	781.685	13794.040	10537.330	12784.904	271290.480
σ		160.717	3256.296	497.365	99.912	20.207	74.226	13011.284	29.299	121.790	92.550	337.489	4252.828
%RSD		0.320	0.881	1.750	1.623	17.077	4.414	0.702	3.748	0.883	0.878	2.640	1.568

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:26:02	15337.054	36735.440	13620.563	210865.540	0.000	48505.481	25244.103
2	18:26:24	15467.174	37507.156	14321.150	209923.770	0.000	49493.379	24773.398
3	18:26:45	15131.866	36565.066	14536.336	216578.100	0.000	48796.328	25249.111
x		15312.031	36935.888	14159.350	212455.800	0.000	48931.729	25088.871
σ		169.048	502.014	478.847	3600.934	0.000	507.677	273.219
%RSD		1.104	1.359	3.382	1.695	0.000	1.038	1.089

STD2 1039950 5/19/2017 6:31:22 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:31:43	236617.800	1817.599	67908.064	T 9403293.000	312003.300	778454.890	T 13994211.000	321307.590	328995.400	60.000	127299.300	83584.065
2	18:32:05	231405.380	1687.585	68204.270	T 9413753.100	312747.050	782068.290	T 13966113.000	319758.210	331412.590	90.000	127561.300	85011.256
3	18:32:27	234356.180	1665.083	66954.216	T 9317430.400	315009.050	781125.590	T 13871810.000	323968.360	335799.090	105.000	127657.020	86061.626
x		234126.450	1723.423	67688.850	T 9378158.800	313253.130	780549.590	T 13944045.000	321678.050	332069.030	85.000	127505.870	84885.649
σ		2613.794	82.332	653.222	T 52851.793	1565.480	1874.301	T 64115.347	2129.380	3449.018	22.913	185.188	1243.548
%RSD		1.116	4.777	0.965	T 0.564	0.500	0.240	T 0.460	0.662	1.039	26.956	0.145	1.465

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:31:43	16353.019	70498.788	T 6980899.800	28990.191	12774.894	47011.208	165694.570	28894.024	2819.238	2511.189	536.509	4085.501
2	18:32:05	16022.698	71272.066	T 6975079.600	28965.148	12864.963	46725.406	165719.820	29054.303	2826.240	2566.198	521.508	4115.508
3	18:32:27	15992.669	70759.891	T 7063932.000	29060.313	12754.879	47663.056	168199.470	28757.789	2852.244	2583.200	508.008	4155.518
x		16122.795	70843.581	T 7006637.200	29005.217	12798.245	47133.223	166537.950	28902.039	2832.574	2553.529	522.008	4118.842
σ		199.944	393.374	T 49704.063	49.330	58.640	480.585	1438.974	148.419	17.391	37.640	14.257	35.128
%RSD		1.240	0.555	T 0.709	0.170	0.458	1.020	0.864	0.514	0.614	1.474	2.731	0.853

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:31:43	251137.960	365800.730	141714.940	30067.096	515.008	8192.013	1828952.200	1295.050	66698.193	51232.623	63415.416	267011.860
2	18:32:05	253198.790	369368.130	143091.630	30542.961	575.010	7791.821	1846765.200	1165.041	66060.661	51540.570	64564.817	270029.910
3	18:32:27	250676.080	371269.680	143752.280	29896.791	615.011	7931.887	1858386.800	1120.038	68093.819	51802.881	63606.141	271005.550
x		251670.940	368812.850	142852.950	30168.949	568.343	7971.907	1844701.400	1193.376	66950.891	51525.358	63862.125	269349.110
σ		1343.155	2776.439	1039.428	334.910	50.334	203.075	14825.401	90.882	1039.868	285.433	615.976	2082.067
%RSD		0.534	0.753	0.728	1.110	8.856	2.547	0.804	7.616	1.553	0.554	0.965	0.773

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:31:43	75832.124	181912.370	64273.695	208789.650	0.000	244195.940	123949.190
2	18:32:05	76369.569	178763.580	64544.739	211230.120	0.000	251168.410	127082.660
3	18:32:27	77489.722	183899.000	65739.395	210723.770	0.000	250097.490	125969.260
x		76563.805	181524.980	64852.610	210247.850	0.000	248487.280	125667.040
σ		845.697	2589.534	779.844	1287.960	0.000	3754.787	1588.444
%RSD		1.105	1.427	1.202	0.613	0.000	1.511	1.264

STD3 1039951 5/19/2017 6:37:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr

1	18:37:26	216284.320	193458.810	76691.040	┬32288649.000	┬9743120.600	┬97098032.000	┬48642077.000	┬4035351.100	314744.120	59651.559	┬5872434.800	1553732.100
2	18:37:48	213731.710	193013.690	77560.048	┬32187131.000	┬9753093.000	┬97516678.000	┬48470292.000	┬4019251.000	303712.250	59425.754	┬5906897.700	1554849.400
3	18:38:10	215585.350	191557.030	77344.048	┬31861760.000	┬9714089.700	┬96526594.000	┬48186344.000	┬4009401.100	300932.500	58101.096	┬5827820.700	1530333.700
x		215200.460	192676.510	77198.379	┬32112513.000	┬9736767.800	┬97047101.000	┬48432905.000	┬4021334.400	306462.960	59059.470	┬5869051.100	1546305.100
σ		1319.116	994.715	452.447	┬223011.920	┬20262.879	┬497003.360	┬230155.630	┬13099.871	7305.132	837.620	┬39646.945	13842.898
%RSD		0.613	0.516	0.586	┬0.694	┬0.208	┬0.512	┬0.475	┬0.326	2.384	1.418	┬0.676	0.895

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:37:26	188631.450	┬8920178.400	┬179489480.000	┬2984319.800	1479671.100	2092226.500	1861569.300	239729.800	15889.571	19015.842	498.007	14306.137
2	18:37:48	189541.690	┬8959134.900	┬179692390.000	┬2958914.400	1462848.900	2096665.900	1876547.600	240548.470	16025.701	19152.498	491.007	15241.966
3	18:38:10	187038.650	┬8823288.300	┬177944760.000	2632284.000	1450697.600	2086958.300	1845890.800	236932.220	16071.745	18486.747	500.008	14381.202
x		188403.930	┬8900867.200	┬179042210.000	┬2858506.000	1464405.800	2091950.200	1861335.900	239070.160	15995.672	18885.029	496.341	14643.102
σ		1266.936	┬69951.911	┬955820.370	┬196325.440	14549.351	4859.691	15329.704	1896.221	94.727	351.625	4.726	519.988
%RSD		0.672	┬0.786	┬0.534	┬6.868	0.994	0.232	0.824	0.793	0.592	1.862	0.952	3.551

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:37:26	1905240.400	355491.210	┬3840128.800	563538.890	20347.413	304226.500	1803577.600	2275917.200	1612357.500	1238580.100	1511959.900	269440.480
2	18:37:48	1909582.800	354204.250	┬3875900.600	569248.070	20322.382	308203.580	1792136.600	2315172.600	1622153.000	1249346.300	1508479.800	270903.920
3	18:38:10	1888909.000	353111.420	┬3839428.200	567624.070	20342.407	303050.360	1813936.500	2293237.900	1607934.200	1239241.700	1501177.600	271036.040
x		1901244.100	354268.960	┬3851819.200	566803.680	20337.401	305160.150	1803216.900	2294775.900	1614148.300	1242389.400	1507205.800	270460.150
σ		10900.910	1191.216	┬20858.047	2941.679	13.245	2700.495	10904.444	19672.862	7276.587	6033.978	5502.920	885.524
%RSD		0.573	0.336	┬0.542	0.519	0.065	0.885	0.605	0.857	0.451	0.486	0.365	0.327

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:37:26	105563.250	┬4066186.100	┬18108738.000	208627.640	0.000	484202.870	243374.050
2	18:37:48	107087.930	┬4152873.200	┬18206865.000	210754.150	0.000	498814.420	247839.130
3	18:38:10	107183.540	┬4136392.700	┬18075972.000	211817.500	0.000	487208.580	245088.900
x		106611.580	┬4118484.000	┬18130525.000	210399.760	0.000	490075.290	245434.030
σ		909.133	┬46034.856	┬68112.285	1624.189	0.000	7716.080	2252.458
%RSD		0.853	┬1.118	┬0.376	0.772	0.000	1.574	0.918

STD4 1039952 5/19/2017 6:42:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:43:08	197290.840	524461.470	202988.650	┬85597609.000	┬25921943.000	┬258831440.000	┬128938730.000	┬10899495.000	280093.970	157228.140	┬15804873.000	┬4671264.200
2	18:43:29	195277.330	519404.250	207103.810	┬85297592.000	┬25977494.000	┬257199120.000	┬127949400.000	┬10778764.000	280124.470	155587.850	┬15882508.000	┬4679734.700
3	18:43:51	195024.400	514840.880	203646.600	┬84727726.000	┬25813465.000	┬256625110.000	┬127831110.000	┬10841780.000	281822.750	157344.230	┬15979913.000	┬4698418.800
x		195864.190	519568.870	204579.690	┬85207643.000	┬25904301.000	┬257551890.000	┬128239750.000	┬10840013.000	280680.400	156720.070	┬15889098.000	┬4683139.200
σ		1241.970	4812.407	2210.573	┬441862.400	┬83425.237	┬1144688.800	┬608219.860	┬60384.899	989.422	982.247	┬87705.776	┬13893.744
%RSD		0.634	0.926	1.081	┬0.519	┬0.322	┬0.444	┬0.474	┬0.557	0.353	0.627	┬0.552	┬0.297

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:43:08	505903.360	┬24183625.000	┬481761000.000	┬8088105.300	┬4112964.400	┬6318404.700	┬5587884.800	645942.290	40658.533	48976.355	496.507	35713.222
2	18:43:29	500421.530	┬24149282.000	┬480576670.000	┬8024313.000	┬4094957.300	┬6302063.400	┬5539163.400	638090.350	40685.599	48843.466	488.007	37281.651
3	18:43:51	504955.250	┬24065294.000	┬478334130.000	┬8027413.400	┬4117008.600	┬6282811.600	┬5509148.500	640183.360	40435.993	48722.613	506.508	35367.486
x		503760.050	┬24132733.000	┬480223930.000	┬8046610.500	┬4108310.100	┬6301093.200	┬5545398.900	641405.330	40593.375	48847.478	497.007	36120.786
σ		2929.841	┬60876.402	┬1740451.700	┬35968.916	┬11739.316	┬17816.397	┬39736.761	4066.101	136.967	126.919	9.260	1020.092
%RSD		0.582	┬0.252	┬0.362	┬0.447	┬0.286	┬0.283	┬0.717	0.634	0.337	0.260	1.863	2.824

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:43:08	┬6112060.500	325191.840	┬10719215.000	1541473.400	56194.575	834512.040	1722651.100	┬7058415.900	┬5027155.500	┬3894142.900	┬4830415.800	255655.870
2	18:43:29	┬6041778.900	325956.560	┬10740411.000	1544243.100	53435.524	824344.310	1685384.300	┬6953224.200	┬5031864.900	┬3881198.500	┬4820852.600	255534.030
3	18:43:51	┬6054121.200	324926.750	┬10683443.000	1541894.900	54925.355	829348.640	1708002.300	┬6998889.800	┬4979812.200	┬3874512.900	┬4778084.700	259545.300
x		┬6069320.200	325358.380	┬10714356.000	1542537.100	54851.818	829401.660	1705345.900	┬7003510.000	┬5012944.200	┬3883284.800	┬4809784.300	256911.730

σ		₸37525.126	534.728	₸28793.232	1492.338	1380.995	5084.070	18774.839	₸52747.850	₸28789.584	₸9979.922	₸27866.025	2281.549
%RSD		₸0.618	0.164	₸0.269	0.097	2.518	0.613	1.101	₸0.753	₸0.574	₸0.257	₸0.579	0.888
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	18:43:08	310164.450	₸11958405.000	₸51740706.000	199486.750	5.000	1438707.100	725081.510					
2	18:43:29	310587.220	₸11848953.000	₸52009064.000	201824.640	20.000	1448737.600	730521.510					
3	18:43:51	313118.930	₸11976885.000	₸51537449.000	197472.980	10.000	1453360.200	738575.050					
x		311290.200	₸11928081.000	₸51762406.000	199594.790	11.667	1446935.000	731392.690					
σ		1597.772	₸69146.694	₸236555.060	2177.843	7.638	7491.047	6788.824					
%RSD		0.513	₸0.580	₸0.457	1.091	65.465	0.518	0.928					

STD5 1039953 5/19/2017 6:48:28 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:48:49	184808.980	821522.480	M 324274.220	T 133877800.000	TM 41110908.000	TM 407524870.000	T 204875970.000	TM 17458646.000	269389.670	255193.870	TM 25492398.000	TM 7489126.000
2	18:49:11	185587.560	M 826108.530	M 325069.490	T 133318710.000	TM 40847266.000	TM 409657910.000	T 205532700.000	TM 17375654.000	270629.510	257519.230	TM 25848758.000	TM 7628672.600
3	18:49:32	183251.930	M 816113.730	318504.550	T 132865080.000	TM 40487076.000	TM 406827530.000	T 204596600.000	TM 17112672.000	268282.020	257158.730	TM 25756725.000	TM 7583223.500
x		184549.490	M 821248.240	M 322616.090	T 133353860.000	TM 40815083.000	TM 408003440.000	T 205001760.000	TM 17315657.000	269433.730	256623.950	TM 25699294.000	TM 7567007.400
σ		1189.241	M 5003.038	M 3582.829	T 507275.470	TM 313158.800	TM 1474630.200	T 480560.510	TM 180621.750	1174.369	1251.527	TM 184991.610	TM 71172.603
%RSD		0.644	M 0.609	M 1.111	T 0.380	TM 0.767	TM 0.361	T 0.234	TM 1.043	0.436	0.488	TM 0.720	TM 0.941

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:48:49	805778.630	TM 38626124.000	T 770821310.000	TM 12963242.000	T 6554524.200	TM 10006590.000	TM 8690392.200	1017484.300	61736.129	75883.858	488.007	56560.811
2	18:49:11	809172.260	TM 38628650.000	T 768089350.000	TM 13007428.000	T 6577214.000	TM 10051105.000	TM 8683017.300	1025362.800	62911.512	75626.693	504.008	57037.431
3	18:49:32	812466.880	TM 38863120.000	T 764962120.000	TM 12915353.000	TM 6556439.800	TM 10082571.000	TM 8672013.400	1019890.900	63104.239	75031.010	492.007	56204.609
x		809139.260	TM 38705965.000	T 767957600.000	TM 12962008.000	TM 6562726.000	TM 10046756.000	TM 8681807.600	1020912.600	62583.960	75513.854	494.674	56600.951
σ		3344.245	TM 136106.170	T 2931816.700	TM 46049.926	TM 12583.474	TM 38176.982	TM 9248.925	4037.420	740.539	437.478	8.327	417.859
%RSD		0.413	TM 0.352	T 0.382	TM 0.355	TM 0.192	TM 0.380	TM 0.107	0.395	1.183	0.579	1.683	0.738

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:48:49	TM 9748892.700	311789.350	TM 17294974.000	2429989.000	86192.299	M 1300444.700	1663556.100	T 11204134.000	TM 8009904.800	TM 6169178.200	TM 7775364.900	247910.170
2	18:49:11	TM 9652878.300	314825.630	TM 17219973.000	2455809.800	87096.983	1323194.900	1705118.200	T 11233736.000	TM 8019298.700	TM 6187728.100	TM 7754513.700	244885.950
3	18:49:32	TM 9768035.000	315437.030	TM 17433067.000	2461984.000	86433.543	M 1322049.100	1687028.900	T 11171215.000	TM 7993309.700	TM 6177185.900	TM 7741855.800	242308.690
x		TM 9723268.700	314017.340	TM 17316005.000	2449261.000	86574.275	M 1315229.600	1685234.400	T 11203029.000	TM 8007504.400	TM 6178030.700	TM 7757244.800	245034.940
σ		TM 61706.630	1953.561	TM 108092.680	16973.107	468.474	M 12816.901	20839.063	T 31275.171	TM 13159.704	TM 9303.736	TM 16920.698	2803.710
%RSD		TM 0.635	0.622	TM 0.624	0.693	0.541	M 0.974	1.237	T 0.279	TM 0.164	TM 0.151	TM 0.218	1.144

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:48:49	588365.070	TM 19039191.000	TM 82887626.000	188601.110	30.000	M 2782786.800	1400222.500
2	18:49:11	597574.180	TM 18965728.000	TM 83117943.000	190937.480	50.000	TM 3188634.900	M 1429198.900
3	18:49:32	589825.350	TM 19036335.000	TM 83269211.000	189046.110	30.000	M 2831971.200	M 1411224.900
x		591921.530	TM 19013752.000	TM 83091593.000	189528.230	36.667	TM 2934464.300	M 1413548.800
σ		4949.483	TM 41613.723	TM 192152.680	1240.564	11.547	TM 221487.690	M 14627.321
%RSD		0.836	TM 0.219	TM 0.231	0.655	31.492	TM 7.548	M 1.035

ICV 1039955 5/19/2017 6:54:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:54:32	209812.380	94984.895	42363.772	T 16369701.000	T 4846980.000	T 47960575.000	T 24237205.000	1762834.900	307001.700	28719.723	T 2886310.400	773345.060
2	18:54:53	213539.260	95613.474	43561.855	T 16443268.000	T 4849528.600	T 48448371.000	T 24383240.000	1790249.000	310627.970	29395.901	T 2904875.000	777816.070
3	18:55:14	215332.110	97489.293	43541.802	T 16565498.000	T 4869104.100	T 48440736.000	T 24731353.000	1817350.100	305148.120	29566.202	T 2917040.600	780491.910
x		212894.580	96029.221	43155.810	T 16459489.000	T 4855204.200	T 48283227.000	T 24450599.000	1790144.700	307592.590	29227.275	T 2902742.000	777217.680
σ		2815.772	1302.934	685.998	T 98901.425	T 12104.898	T 279451.160	T 253866.850	27257.741	2787.301	447.725	T 15475.747	3610.809
%RSD		1.323	1.357	1.590	T 0.601	T 0.249	T 0.579	T 1.038	1.523	0.906	1.532	T 0.533	0.465

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:54:32	96850.586	T 4435193.400	T 89595068.000	1333586.100	741542.560	1067458.300	954363.760	122213.450	8457.145	10006.503	481.507	8562.199
2	18:54:53	95075.409	T 4462145.600	T 90083232.000	1349384.900	750244.300	1082796.800	965805.440	123087.850	8275.054	10010.005	486.507	8587.212
3	18:55:14	95482.727	T 4452834.500	T 91222528.000	1360360.600	755373.360	1089914.000	967340.750	123666.100	8412.122	10006.003	495.507	8337.085
x		95802.907	T 4450057.800	T 90300276.000	1347777.200	749053.410	1080056.400	962503.320	122989.130	8381.440	10007.504	487.840	8495.498
σ		929.892	T 13688.962	T 835157.110	13459.423	6991.881	11475.959	7090.739	731.342	94.844	2.181	7.095	137.759
%RSD		0.971	T 0.308	T 0.925	0.999	0.933	1.063	0.737	0.595	1.132	0.022	1.454	1.622

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:54:32	939615.160	350313.290	817887.590	278975.440	9302.595	149356.230	1746291.800	1130305.700	811853.020	634412.880	761644.300	263334.040

2	18:54:53	948666.940	352907.160	826313.310	284095.850	9782.870	152994.010	1767680.000	1143319.900	823142.020	640433.710	764322.830	263902.930
3	18:55:14	954194.470	350936.190	835394.650	284284.020	10008.004	152327.950	1786507.700	1141629.800	827767.890	640680.940	766771.550	269796.170
x		947492.190	351385.550	826531.850	282451.770	9697.823	151559.400	1766826.500	1138418.500	820920.980	638509.180	764246.230	265677.710
σ		7360.305	1354.060	8755.574	3012.060	360.312	1936.841	20121.520	7076.517	8186.607	3549.651	2564.485	3578.011
%RSD		0.777	0.385	1.059	1.066	3.715	1.278	1.139	0.622	0.997	0.556	0.336	1.347

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:54:32	127062.510	1801005.500	T 9214744.200	210500.980	0.000	497990.320	249584.890
2	18:54:53	128624.420	1824524.000	T 9274110.300	211544.060	0.000	499205.880	251122.730
3	18:55:14	128599.230	1823389.400	T 9246761.500	214430.600	0.000	499241.940	251660.760
x		128095.380	1816306.300	T 9245205.300	212158.550	0.000	498812.710	250789.460
σ		894.586	13263.002	T 29713.634	2035.601	0.000	712.443	1077.316
%RSD		0.698	0.730	T 0.321	0.959	0.000	0.143	0.430

ICVL 1039949 5/19/2017 6:59:52 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:00:14	218036.930	435.006	16943.608	T 2232220.900	59656.576	156536.680	T 3134206.700	74013.978	312787.800	75.000	30337.586	17624.314
2	19:00:35	215423.280	415.005	16683.346	T 2200078.700	60108.195	158989.730	T 3156262.000	72155.857	316904.480	90.000	30618.098	17999.714
3	19:00:57	220499.010	477.507	16683.346	T 2224116.100	60268.773	158656.580	T 3103760.300	74897.914	314968.290	55.000	30828.486	17534.219
x		217986.410	442.506	16770.100	T 2218805.300	60011.181	158061.000	T 3131409.600	73689.249	314886.860	73.334	30594.723	17719.416
σ		2538.244	31.919	150.263	T 16716.287	317.419	1330.568	T 26362.383	1399.573	2059.547	17.559	246.283	246.890
%RSD		1.164	7.213	0.896	T 0.753	0.529	0.842	T 0.842	1.899	0.654	23.945	0.805	1.393

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:00:14	5240.824	14536.336	1431727.800	6131.128	2620.206	10158.095	36089.030	6900.428	1010.031	876.023	466.007	2630.208
2	19:00:35	4965.740	14966.717	1437912.700	5680.968	2830.240	10113.067	35522.816	6992.467	1013.031	885.524	463.006	2555.196
3	19:00:57	5120.787	14951.704	1443898.500	5941.059	2700.219	10433.265	36359.617	7013.475	993.030	899.024	491.007	2785.233
x		5109.117	14818.252	1437846.300	5917.718	2716.888	10234.809	35990.488	6968.790	1005.364	886.857	473.340	2656.879
σ		137.913	244.262	6085.635	225.986	106.005	173.336	427.015	60.128	10.786	11.558	15.374	117.315
%RSD		2.699	1.648	0.423	3.819	3.902	1.694	1.186	0.863	1.073	1.303	3.248	4.416

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:00:14	48861.519	356635.270	27958.431	6261.176	140.001	1650.082	1771350.800	1710.088	12889.983	10246.649	12089.383	263862.300
2	19:00:35	48355.045	357278.830	27968.447	6106.118	80.000	1715.088	1798778.200	1705.087	13305.309	10193.616	12394.607	262196.310
3	19:00:57	49538.513	368969.440	28474.303	5891.041	120.000	1755.092	1797178.600	1635.080	12925.010	10332.202	12414.622	265894.210
x		48918.359	360961.180	28133.727	6086.112	113.334	1706.754	1789102.500	1683.418	13040.100	10257.489	12299.537	263984.270
σ		593.778	6942.816	294.990	185.877	30.551	52.999	15394.257	41.937	230.344	69.926	182.274	1851.963
%RSD		1.214	1.923	1.049	3.054	26.956	3.105	0.860	2.491	1.766	0.682	1.482	0.702

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:00:14	14216.060	40644.499	14891.650	206764.640	0.000	48445.306	24508.006
2	19:00:35	14796.565	40388.879	14686.468	207007.630	0.000	47798.443	24177.524
3	19:00:57	14666.450	39687.196	15352.067	209599.730	0.000	48515.510	25173.998
x		14559.692	40240.191	14976.728	207790.670	0.000	48253.086	24619.842
σ		304.622	495.669	340.858	1571.396	0.000	395.295	507.563
%RSD		2.092	1.232	2.276	0.756	0.000	0.819	2.062

ICBIS 1036503 5/19/2017 7:05:35 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:05:56	217418.940	107.500	4080.500	545224.570	440.006	4415.585	619420.460	11834.200	320797.910	50.000	8712.276	1860.104
2	19:06:17	218948.770	77.500	4095.503	545059.300	700.015	4900.720	627193.190	11564.010	320971.200	70.000	8527.181	1735.090

3	19:06:38	220884.060	87.500	4030.487	556632.520	620.012	5730.985	607845.790	11824.193	320736.750	60.000	8992.425	1785.096
x		219083.920	90.834	4068.830	548972.130	586.677	5015.764	618153.150	11740.801	320835.290	60.000	8743.961	1793.430
σ		1736.508	15.275	34.043	6634.609	133.171	665.203	9735.762	153.187	121.611	10.000	234.235	62.922
%RSD		0.793	16.817	0.837	1.209	22.699	13.262	1.575	1.305	0.038	16.667	2.679	3.508

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:05:56	3220.311	1135.039	294529.640	85.000	165.001	1060.034	2075.129	2123.135	677.014	495.007	476.007	2220.148
2	19:06:17	3430.353	1085.035	293832.490	115.000	210.001	1010.031	2450.180	2052.126	708.015	489.507	486.507	2500.188
3	19:06:38	3410.349	1120.038	298774.190	115.000	165.001	960.028	2340.164	2141.138	703.015	522.508	487.507	2445.179
x		3353.671	1113.371	295712.110	105.000	180.001	1010.031	2288.491	2105.466	696.015	502.341	483.340	2388.505
σ		115.925	25.660	2674.653	17.321	25.981	50.003	192.791	47.063	16.644	17.681	6.371	148.373
%RSD		3.457	2.305	0.904	16.496	14.434	4.951	8.424	2.235	2.391	3.520	1.318	6.212

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:05:56	255.002	360864.860	240.002	75.000	5.000	10.000	1785930.500	1255.047	315.003	232.502	65.000	263110.550
2	19:06:17	310.003	361937.750	235.002	60.000	5.000	20.000	1809056.400	1165.041	410.005	231.502	95.000	262348.680
3	19:06:38	240.002	359781.820	240.002	75.000	10.000	25.000	1815048.400	1370.056	405.005	252.502	70.000	265061.090
x		268.336	360861.480	238.335	70.000	6.667	18.333	1803345.100	1263.381	376.671	238.835	76.667	263506.770
σ		36.856	1077.970	2.887	8.660	2.887	7.638	15376.209	102.762	53.465	11.846	16.073	1398.943
%RSD		13.735	0.299	1.211	12.372	43.301	41.660	0.853	8.134	14.194	4.960	20.965	0.531

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:05:56	85.000	2480.185	955.027	206896.260	0.000	25.000	0.000
2	19:06:17	115.000	2620.206	1255.047	207402.490	0.000	45.000	15.000
3	19:06:38	155.001	2490.186	1375.057	209660.480	0.000	30.000	5.000
x		118.334	2530.192	1195.044	207986.410	0.000	33.333	6.667
σ		35.119	78.114	216.348	1471.717	0.000	10.408	7.638
%RSD		29.678	3.087	18.104	0.708	0.000	31.225	114.564

ICSA 1034645 5/19/2017 7:11:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:11:37	204324.830	147.501	5165.800	TM 301136880.000	T 30970552.000	T 308449550.000	TM 458786160.000	T 13094568.000	302846.710	587852.450	10468.287	8682.261
2	19:11:58	202887.430	107.500	5555.926	TM 301905460.000	T 31158551.000	T 308489070.000	TM 454164930.000	T 13161936.000	301879.400	589178.050	10733.455	8457.145
3	19:12:20	200842.890	105.000	5570.931	TM 302014350.000	T 31077589.000	T 307818570.000	TM 453187380.000	T 12993854.000	303834.450	592720.390	10733.455	8707.274
x		202685.050	120.000	5430.886	TM 301685560.000	T 31068897.000	T 308252400.000	TM 455379490.000	T 13083452.000	302853.520	589916.960	10645.066	8615.560
σ		1749.770	23.849	229.693	TM 478280.480	T 94300.497	T 376225.210	TM 2990478.600	T 84590.517	977.542	2516.683	153.095	137.760
%RSD		0.863	19.874	4.229	TM 0.159	T 0.304	T 0.122	TM 0.657	T 0.647	0.323	0.427	1.438	1.599

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:11:37	13185.213	145411.580	T 572451160.000	945.027	1180.042	3015.273	5135.791	3563.381	1106.037	502.508	502.008	2330.163
2	19:11:58	13010.076	145376.270	T 574486250.000	890.024	1365.056	3250.317	4960.738	3655.401	1045.033	507.008	502.508	2560.197
3	19:12:20	13965.849	148750.860	T 578735150.000	1030.032	1115.037	3155.299	5065.770	3507.369	1085.035	520.008	500.508	2420.176
x		13387.046	146512.900	T 575224190.000	955.027	1220.045	3140.296	5054.100	3575.384	1078.702	509.841	501.674	2436.845
σ		508.850	1938.204	T 3206325.400	70.538	129.721	118.238	88.108	74.742	30.991	9.088	1.041	115.919
%RSD		3.801	1.323	T 0.557	7.386	10.632	3.765	1.743	2.090	2.873	1.782	0.207	4.757

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:11:37	7661.761	342370.780	T 5960926.700	1625.079	1855.103	2325.162	1692824.700	2925.257	990.029	836.021	1130.038	257950.830
2	19:11:58	7836.842	350200.970	T 5982959.300	1510.068	1830.101	2375.169	1714932.700	2870.247	1195.043	886.524	1170.041	263709.910
3	19:12:20	7841.844	344504.070	T 6007929.500	1605.077	1905.109	2075.129	1712224.300	3000.270	1230.045	856.522	1110.037	265325.250
x		7780.149	345691.940	T 5983938.500	1580.075	1863.438	2258.487	1706660.600	2931.925	1138.372	859.689	1136.705	262328.660
σ		102.558	4047.992	T 23516.695	61.447	38.192	160.749	12058.476	65.267	129.656	25.400	30.553	3876.389
%RSD		1.318	1.171	T 0.393	3.889	2.050	7.118	0.707	2.226	11.390	2.955	2.688	1.478

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:11:37	1090.036	3015.273	5781.002	198120.600	0.000	180.001	85.000
2	19:11:58	1025.032	3000.270	5745.990	201855.010	0.000	180.001	75.000
3	19:12:20	1160.040	2970.265	5811.013	201531.120	0.000	120.000	55.000
x		1091.703	2995.269	5779.335	200502.240	0.000	160.001	71.667
σ		67.520	22.917	32.543	2068.913	0.000	34.641	15.275
%RSD		6.185	0.765	0.563	1.032	0.000	21.651	21.314

ICSAB 1034648 5/19/2017 7:16:56 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:17:18	195459.450	7331.612	117986.150	TM 295386480.000	T 30595957.000	T 304964560.000	TM 450433730.000	T 12818849.000	301899.760	590534.820	113847.510	196835.500
2	19:17:39	195054.750	7266.584	118822.060	TM 297242480.000	T 30602088.000	T 305493640.000	TM 454296220.000	T 12870116.000	294977.450	586873.860	112166.170	192910.000
3	19:18:00	200033.240	7251.577	119265.200	TM 295364070.000	T 30643788.000	T 304233040.000	TM 456572350.000	T 12971266.000	298875.990	587836.920	113112.540	196420.650
x		196849.150	7283.258	118691.140	TM 295997670.000	T 30613944.000	T 304897080.000	TM 453767440.000	T 12886744.000	298584.400	588415.200	113042.070	195388.720
σ		2764.919	42.543	649.500	TM 1078092.100	T 26026.389	T 633003.680	TM 3103285.800	T 77557.011	3470.354	1897.755	842.883	2156.629
%RSD		1.405	0.584	0.547	TM 0.364	T 0.085	T 0.208	TM 0.684	T 0.602	1.162	0.323	0.746	1.104

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:17:18	36289.465	298458.610	T 574631380.000	127838.410	30768.375	85548.997	76665.925	55548.415	10170.102	11349.863	493.507	2155.139
2	19:17:39	35963.760	300907.050	T 572395390.000	129385.270	30092.142	83950.901	75455.420	55470.155	9965.979	11378.383	506.508	2565.197
3	19:18:00	34966.642	302897.620	T 571627290.000	129128.290	29235.619	84825.312	76454.960	55470.155	9929.957	11234.285	481.007	2245.151
x		35739.955	300754.430	T 572884690.000	128783.990	30032.045	84775.070	76192.102	55496.241	10022.013	11320.844	493.674	2321.829
σ		689.225	2223.438	T 1560669.800	828.920	768.143	800.231	646.646	45.183	129.508	76.306	12.751	215.515
%RSD		1.928	0.739	T 0.272	0.644	2.558	0.944	0.849	0.081	1.292	0.674	2.583	9.282

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:17:18	6911.433	346729.510	T 5981196.700	134651.740	4190.527	38404.196	1716801.200	2925.257	313939.150	241682.190	301523.030	266656.240
2	19:17:39	6536.281	353162.480	T 6015793.500	136738.630	3885.453	38178.678	1719919.400	3000.270	313159.690	244572.400	303635.880	267316.690
3	19:18:00	6886.422	348577.460	T 5977400.300	135740.520	4365.572	37948.153	1735197.900	2830.240	313923.860	242497.920	302439.410	269674.220
x		6778.046	349489.820	T 5991463.500	135710.300	4147.184	38177.009	1723972.800	2918.589	313674.230	242917.500	302532.770	267882.380
σ		209.747	3312.112	T 21155.706	1043.772	242.976	228.026	9845.467	85.211	445.675	1490.088	1059.511	1586.523
%RSD		3.095	0.948	T 0.353	0.769	5.859	0.597	0.571	2.920	0.142	0.613	0.350	0.592

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:17:18	149199.840	433972.350	310337.630	198495.010	0.000	501796.980	251569.390
2	19:17:39	152766.940	443944.900	310235.760	201399.550	0.000	501323.030	252452.600
3	19:18:00	151036.270	441070.070	313694.610	201187.000	0.000	505465.360	253300.310
x		151001.020	439662.440	311422.670	200360.520	0.000	502861.790	252440.770
σ		1783.809	5133.130	1968.217	1619.069	0.000	2267.180	865.522
%RSD		1.181	1.168	0.632	0.808	0.000	0.451	0.343

CCV 1039951 5/19/2017 7:22:39 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:23:00	202057.440	182238.410	71804.343	T 30132177.000	T 9140341.400	T 92059079.000	T 46098554.000	T 3776800.000	292697.790	56500.608	T 5605283.300	1502204.200
2	19:23:21	203140.480	181505.470	73376.167	T 30602569.000	T 9269724.700	T 91983412.000	T 45845937.000	T 3807417.900	305107.390	58136.218	T 5701009.200	1507736.900
3	19:23:43	204172.980	181866.880	72868.949	T 30287866.000	T 9179197.000	T 91572078.000	T 46293626.000	T 3799704.100	296168.290	56977.226	T 5685071.300	1502155.000
x		203123.630	181870.250	72683.153	T 30340870.000	T 9196421.000	T 91871523.000	T 46079372.000	T 3794640.700	297991.160	57204.684	T 5663787.900	1504032.000
σ		1057.875	366.478	802.214	T 239633.390	T 66389.081	T 262071.900	T 224459.940	T 15924.589	6402.472	841.195	T 51289.327	3208.579
%RSD		0.521	0.202	1.104	T 0.790	T 0.722	T 0.285	T 0.487	T 0.420	2.149	1.470	T 0.906	0.213

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:23:00	184227.600	T 8641345.200	T 174522810.000	2609294.600	1449935.300	2079913.900	1846297.400	235342.940	15894.576	18508.271	514.508	14736.512
2	19:23:21	185354.990	T 8693934.400	T 176186410.000	T 2903107.300	1463028.700	2087093.800	1847188.500	234689.830	16027.703	18536.302	503.008	14456.267
3	19:23:43	183135.660	T 8703015.900	T 174589930.000	2608922.600	1452848.400	2089990.300	1856581.200	234834.850	15545.246	18695.980	508.008	14586.380
x		184239.420	T 8679431.800	T 175099720.000	T 2707108.100	1455270.800	2085666.000	1850022.300	234955.870	15822.508	18580.184	508.508	14593.053
σ		1109.713	T 33295.054	T 941699.400	T 169740.320	6874.606	5187.724	5697.565	342.964	249.171	101.257	5.766	140.242
%RSD		0.602	T 0.384	T 0.538	T 6.270	0.472	0.249	0.308	0.146	1.575	0.545	1.134	0.961

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:23:00	1898754.100	361018.130	T 3817960.600	559030.820	19130.974	303773.350	1829063.500	2277549.200	1596779.500	1232987.400	1498736.900	272265.840

2	19:23:21	1878104.100	354020.400	T3816853.300	563544.060	20707.856	304114.480	1822955.500	2268227.000	1609906.700	1236639.100	1501248.600	270060.390
3	19:23:43	1908135.200	353908.050	T3809780.300	557997.030	20322.382	301237.950	1813691.900	2261013.400	1618617.900	1245352.400	1510528.400	276830.110
x		1894997.800	356315.530	T3814864.800	560190.640	20053.737	303041.930	1821903.700	2268929.900	1608434.700	1238326.300	1503504.600	273052.120
σ		15363.877	4072.960	T4437.921	2949.791	822.051	1571.575	7739.570	8290.262	10993.371	6352.815	6211.083	3452.671
%RSD		0.811	1.143	T0.116	0.527	4.099	0.519	0.425	0.365	0.683	0.513	0.413	1.264

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:23:00	106801.100	T4070641.800	T17917038.000	211878.270	0.000	490122.160	246814.080
2	19:23:21	108179.950	T4093948.800	T18197672.000	213255.670	5.000	499041.060	250797.900
3	19:23:43	107948.460	T4087379.400	T18216577.000	211787.120	10.000	496373.130	248920.060
x		107643.170	T4083990.000	T18110429.000	212307.020	5.000	495178.780	248844.010
σ		738.381	T12017.494	T167748.350	822.818	5.000	4577.828	1992.995
%RSD		0.686	T0.294	T0.926	0.388	100.000	0.924	0.801

CCB 1035925 5/19/2017 7:28:21 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:28:42	211179.480	87.500	3195.306	538201.760	650.013	7206.558	612626.120	12965.041	316833.140	135.001	10823.513	1660.083
2	19:29:04	210328.820	102.500	3465.360	545234.900	920.025	8922.388	615426.510	12264.511	314397.670	100.000	10603.372	1845.102
3	19:29:25	212860.660	87.500	3065.282	546836.100	1370.056	12149.427	611412.770	12674.818	313531.580	65.000	10528.324	1915.110
x		211456.320	92.500	3241.983	543424.250	980.031	9426.124	613155.140	12634.790	314920.800	100.000	10651.737	1806.765
σ		1288.423	8.660	204.083	4593.126	363.753	2509.642	2058.502	351.976	1711.819	35.000	153.423	131.765
%RSD		0.609	9.362	6.295	0.845	37.116	26.624	0.336	2.786	0.544	35.000	1.440	7.293

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:28:42	4200.529	1290.050	300912.140	125.000	145.001	980.029	2100.132	2437.178	786.019	496.007	480.507	2410.174
2	19:29:04	3730.417	1305.051	309481.940	190.001	170.001	885.024	2280.156	2408.174	850.022	473.007	493.507	2255.153
3	19:29:25	3755.423	1425.061	313190.250	220.001	210.001	905.025	2395.172	2450.180	881.023	467.007	512.508	2275.155
x		3895.457	1340.054	307861.440	178.334	175.001	923.359	2258.487	2431.844	839.021	478.674	495.507	2313.494
σ		264.496	73.999	6297.421	48.563	32.788	50.086	148.709	21.505	48.448	15.308	16.094	84.323
%RSD		6.790	5.522	2.046	27.232	18.736	5.424	6.584	0.884	5.774	3.198	3.248	3.645

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:28:42	310.003	358085.880	375.004	30.000	10.000	10.000	1820519.600	1190.043	285.002	247.502	50.000	264817.260
2	19:29:04	345.004	361804.920	385.004	90.000	5.000	15.000	1828885.500	1210.044	405.005	281.002	105.000	268027.980
3	19:29:25	310.003	362407.800	540.009	65.000	5.000	25.000	1841430.500	1265.048	380.004	288.002	180.001	270720.980
x		321.670	360766.200	433.339	61.667	6.667	16.667	1830278.500	1221.712	356.671	272.169	111.667	267855.410
σ		20.208	2340.717	92.514	30.139	2.887	7.638	10524.842	38.840	63.313	21.647	65.256	2955.641
%RSD		6.282	0.649	21.349	48.873	43.301	45.826	0.575	3.179	17.751	7.954	58.438	1.103

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:28:42	105.000	3270.321	1225.045	208425.130	0.000	40.000	5.000
2	19:29:04	110.000	3415.350	1390.058	210278.190	0.000	40.000	10.000
3	19:29:25	105.000	3050.279	1900.108	211463.040	0.000	45.000	15.000
x		106.667	3245.317	1505.070	210055.460	0.000	41.667	10.000
σ		2.887	183.815	351.921	1531.154	0.000	2.887	5.000
%RSD		2.706	5.664	23.382	0.729	0.000	6.928	50.000

MB 200-116803/1-A 5/19/2017 7:34:02 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:34:24	221522.450	100.000	3055.280	371627.530	900.024	26095.413	598558.570	18420.173	324498.520	145.001	10843.526	3805.434
2	19:34:45	224430.970	97.500	2985.267	374971.180	860.022	25559.584	611454.250	19641.567	330178.460	130.001	11058.668	3615.392

3	19:35:07	224876.920	60.000	3055.280	370942.520	740.016	25669.753	601729.750	19050.882	332657.020	135.001	11458.938	3750.422
x		223610.110	85.834	3031.943	372513.740	833.354	25774.917	603914.190	19037.541	329111.330	136.667	11120.377	3723.750
σ		1821.670	22.407	40.422	2155.588	83.271	282.971	6719.631	610.806	4182.622	7.638	312.312	97.788
%RSD		0.815	26.106	1.333	0.579	9.992	1.098	1.113	3.208	1.271	5.589	2.808	2.626

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:34:24	4210.532	1900.108	364303.470	150.001	405.005	5395.873	2770.230	2521.191	868.023	487.007	511.508	2240.151
2	19:34:45	4465.598	1885.107	364604.950	180.001	335.003	5345.857	2780.232	2541.194	854.022	508.508	517.508	2375.169
3	19:35:07	4365.572	2010.121	367839.880	125.000	345.004	5475.899	2680.216	2478.184	783.018	490.007	493.007	2220.148
x		4347.234	1931.779	365582.770	151.667	361.671	5405.877	2743.559	2513.523	835.021	495.174	507.341	2278.489
σ		128.518	68.260	1960.522	27.538	37.860	65.596	55.085	32.197	45.576	11.644	12.771	84.323
%RSD		2.956	3.534	0.536	18.157	10.468	1.213	2.008	1.281	5.458	2.352	2.517	3.701

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:34:24	495.007	376985.870	375.004	50.000	0.000	5.000	1876899.000	2120.135	425.005	306.503	265.002	275335.660
2	19:34:45	660.013	377773.400	265.002	25.000	0.000	10.000	1886117.800	1890.107	390.005	292.003	230.002	281700.710
3	19:35:07	770.018	382867.690	260.002	50.000	10.000	5.000	1909901.400	1875.106	390.005	281.502	200.001	280043.120
x		641.679	379208.990	300.003	41.667	3.333	6.667	1890972.800	1961.783	401.672	293.336	231.668	279026.500
σ		138.419	3192.904	65.001	14.434	5.774	2.887	17028.393	137.342	20.208	12.553	32.532	3302.061
%RSD		21.571	0.842	21.667	34.641	173.205	43.301	0.901	7.001	5.031	4.280	14.043	1.183

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:34:24	185.001	1935.112	1685.085	214521.760	0.000	55.000	485.007
2	19:34:45	210.001	2005.121	1430.061	214714.210	0.000	50.000	465.006
3	19:35:07	200.001	1960.115	1590.076	215625.870	0.000	60.000	515.008
x		198.335	1966.783	1568.408	214953.950	0.000	55.000	488.341
σ		12.583	35.477	128.885	589.805	0.000	5.000	25.167
%RSD		6.344	1.804	8.218	0.274	0.000	9.091	5.154

LCS 200-116803/2-A 5/19/2017 7:39:43 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:40:05	222029.120	3427.853	130055.460	T 18377238.000	648828.210	1641281.700	T 27713405.000	655668.230	335411.400	145.001	242420.300	176696.710
2	19:40:26	222262.200	3235.314	131370.720	T 18115910.000	639882.120	1636614.500	T 27936806.000	657737.420	337768.290	160.001	247108.400	178101.550
3	19:40:48	224410.700	3310.329	128599.230	T 18128829.000	646365.220	1631706.500	T 27978492.000	666037.470	335646.060	150.001	246768.410	180011.910
x		222900.670	3324.498	130008.470	T 18207325.000	645025.180	1636534.300	T 27876234.000	659814.370	336275.250	151.667	245432.370	178270.060
σ		1312.905	97.048	1386.342	T 147290.400	4621.138	4788.114	T 142546.740	5487.769	1298.323	7.638	2614.063	1664.009
%RSD		0.589	2.919	1.066	T 0.809	0.716	0.293	T 0.511	0.832	0.386	5.036	1.065	0.933

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:40:05	24518.021	145714.210	T 14338459.000	59546.183	26846.605	102046.450	312961.010	51438.255	3690.409	3925.462	467.507	5490.904
2	19:40:26	25158.975	149164.530	T 14367874.000	60685.280	27567.781	103173.360	312782.710	51598.749	3787.430	3943.467	467.007	5720.982
3	19:40:48	25003.742	147328.300	T 14359165.000	61317.588	28208.852	102791.010	316206.410	52030.087	3720.415	3962.971	452.006	5770.999
x		24893.579	147402.350	T 14355166.000	60516.350	27541.079	102670.270	313983.370	51689.030	3732.751	3943.967	462.173	5660.962
σ		334.376	1726.352	T 15109.745	897.704	681.516	573.072	1927.267	306.071	49.673	18.759	8.808	149.382
%RSD		1.343	1.171	T 0.105	1.483	2.475	0.558	0.614	0.592	1.331	0.476	1.906	2.639

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:40:05	526305.770	383952.220	302525.960	64760.574	1165.041	16913.578	1912081.400	2045.126	133870.490	104628.890	134314.040	282178.690
2	19:40:26	529143.530	384341.030	304542.190	63475.645	1075.035	16102.775	1906760.400	2185.143	137066.310	105924.530	133048.950	284965.510
3	19:40:48	530170.400	385169.830	307016.980	64876.022	1210.044	16102.775	1917325.600	1945.114	137283.080	105987.940	132907.830	284650.190
x		528539.900	384487.690	304695.040	64370.747	1150.040	16373.043	1912055.800	2058.461	136073.290	105513.790	133423.610	283931.460
σ		2001.782	621.917	2249.404	777.327	68.743	468.117	5282.657	120.569	1910.760	766.999	774.357	1526.110
%RSD		0.379	0.162	0.738	1.208	5.977	2.859	0.276	5.857	1.404	0.727	0.580	0.537

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:40:05	149038.410	384433.110	134671.910	214319.180	0.000	526476.020	264441.370
2	19:40:26	149295.690	384320.560	136229.490	218229.430	0.000	534939.200	267687.570
3	19:40:48	151495.410	391622.620	138477.900	220286.220	0.000	536575.560	269577.670
x		149943.170	386792.100	136459.770	217611.610	0.000	532663.600	267235.540
σ		1350.421	4183.732	1913.420	3031.119	0.000	5420.702	2597.820
%RSD		0.901	1.082	1.402	1.393	0.000	1.018	0.972

200-38498-A-1-E 5/19/2017 7:45:24 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:45:46	220549.670	985.029	10003.001	1366287.100	ҭ4077106.900	ҭ173478950.000	ҭ18120601.000	ҭ3839934.600	381752.550	29706.451	392267.520	270177.270
2	19:46:07	225738.450	1067.534	10698.433	1395842.000	ҭ4167523.800	ҭ176087520.000	ҭ18317520.000	ҭ3912800.500	381998.080	32596.845	393429.430	274125.960
3	19:46:29	225028.950	1022.531	10973.611	1410698.000	ҭ4160764.700	ҭ175812920.000	ҭ18226374.000	ҭ3887483.300	392344.300	30593.052	395359.300	273871.840
x		223772.360	1025.032	10558.348	1390942.400	ҭ4135131.800	ҭ175126460.000	ҭ18221498.000	ҭ3880072.800	385364.970	30965.449	393685.420	272725.020
σ		2813.384	41.309	500.239	22607.202	ҭ50364.539	ҭ1433380.400	ҭ98550.471	ҭ36993.844	6045.519	1480.745	1561.705	2210.077
%RSD		1.257	4.030	4.738	1.625	ҭ1.218	ҭ0.818	ҭ0.541	ҭ0.953	1.569	4.782	0.397	0.810

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:45:46	45050.805	ҭ20754870.000	ҭ598767950.000	255523.870	119532.110	ҭ5808697.400	1236088.400	29634.322	2301.159	2173.642	688.014	8657.248
2	19:46:07	44825.198	ҭ21043578.000	ҭ603170390.000	256991.180	120443.630	ҭ5838756.000	1251088.000	29622.301	2217.148	2022.123	680.014	8967.412
3	19:46:29	44935.494	ҭ21314582.000	ҭ612290610.000	262881.990	121803.460	ҭ5904956.400	1260498.900	29961.907	2176.142	1939.613	553.509	8407.120
x		44937.166	ҭ21037676.000	ҭ604742980.000	258465.680	120593.070	ҭ5850803.300	1249225.100	29739.510	2231.483	2045.126	640.512	8677.260
σ		112.813	ҭ279902.850	ҭ6897131.200	3894.365	1143.028	ҭ49247.331	12311.401	192.695	63.729	118.698	75.453	280.682
%RSD		0.251	ҭ1.330	ҭ1.141	1.507	0.948	ҭ0.842	0.986	0.648	2.856	5.804	11.780	3.235

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:45:46	883608.030	1003507.900	15096.834	17399.077	580.010	6466.254	1850062.600	57167.877	7606.736	6171.642	802422.380	336809.170
2	19:46:07	889731.230	1012275.000	14611.402	17444.124	625.012	6721.355	1882891.800	58467.373	7896.870	6293.688	817305.030	343707.880
3	19:46:29	902015.860	1020164.900	15151.884	17504.187	660.013	6771.375	1897151.000	58221.515	8237.035	6332.203	819162.990	339105.020
x		891785.040	1011982.600	14953.374	17449.129	621.678	6652.995	1876701.800	57952.255	7913.547	6265.844	812963.470	339874.030
σ		9374.203	8332.348	297.432	52.733	40.106	163.645	24146.788	690.325	315.480	83.823	9175.995	3513.059
%RSD		1.051	0.823	1.989	0.302	6.451	2.460	1.287	1.191	3.987	1.338	1.129	1.034

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:45:46	2190.144	12699.837	2375543.800	223387.090	0.000	330295.750	129269.380
2	19:46:07	2430.177	12724.856	2423917.900	225069.500	5.000	343064.840	131380.790
3	19:46:29	2275.155	12714.848	2430058.100	230371.200	5.000	337691.760	131017.950
x		2298.492	12713.180	2409839.900	226275.930	3.333	337017.450	130556.040
σ		121.706	12.593	29859.588	3645.005	2.887	6411.196	1128.955
%RSD		5.295	0.099	1.239	1.611	86.603	1.902	0.865

200-38498-A-2-D 5/19/2017 7:51:06 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:51:28	233210.280	785.018	10903.565	ҭ1744684.600	ҭ3057331.600	ҭ138404290.000	ҭ17168718.000	1891655.900	390276.590	44389.033	307623.000	215073.810
2	19:51:49	236262.820	710.015	10503.309	ҭ1709979.300	ҭ3065641.900	ҭ139171540.000	ҭ17263560.000	1935664.900	406640.920	39145.918	310821.520	216228.600
3	19:52:10	240868.040	765.018	10128.076	ҭ1753759.200	ҭ3123740.700	ҭ138950760.000	ҭ17188849.000	1933269.300	404960.740	40193.407	314117.460	219176.740
x		236780.380	753.350	10511.650	ҭ1736141.000	ҭ3082238.100	ҭ138842200.000	ҭ17207042.000	1920196.700	400626.080	41242.786	310853.990	216826.380
σ		3855.026	38.839	387.812	ҭ23106.582	ҭ36181.718	ҭ394979.300	ҭ49969.922	24746.071	9002.207	2774.610	3247.353	2115.779
%RSD		1.628	5.156	3.689	ҭ1.331	ҭ1.174	ҭ0.284	ҭ0.290	1.289	2.247	6.728	1.045	0.976

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:51:28	36655.264	ҭ26420240.000	ҭ488638180.000	178475.520	89394.098	ҭ3744485.500	835536.500	22712.465	1862.104	1575.074	649.513	7236.571
2	19:51:49	37617.404	ҭ26869805.000	ҭ492648660.000	179147.670	88237.961	ҭ3789167.800	841069.650	23124.031	1878.106	1482.066	544.009	6721.355
3	19:52:10	37702.596	ҭ27042250.000	ҭ498043800.000	179334.660	89343.829	ҭ3794750.100	819362.450	22787.568	1961.115	1465.064	544.509	6686.341
x		37325.088	ҭ26777432.000	ҭ493110210.000	178985.950	88991.963	ҭ3776134.400	831989.530	22874.688	1900.442	1507.402	579.343	6881.422
σ		581.647	ҭ321128.620	ҭ4719768.400	451.829	653.468	ҭ27550.554	11279.911	219.178	53.151	59.220	60.769	308.065
%RSD		1.558	ҭ1.199	ҭ0.957	0.252	0.734	ҭ0.730	1.356	0.958	2.797	3.929	10.489	4.477

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:51:28	611511.280	871673.550	7511.692	11348.863	355.004	3980.475	1970908.700	37752.710	6436.243	5006.752	652138.730	325171.450

2	19:51:49	615748.070	861241.660	7226.566	11093.691	340.003	3880.452	1974846.500	38960.484	6661.331	5130.289	663972.480	333595.500
3	19:52:10	611205.360	876539.030	7131.525	11193.758	320.003	4070.497	2014666.300	39396.508	6306.193	5121.787	668659.390	331820.590
x		612821.570	869818.080	7289.928	11212.104	338.337	3977.141	1986807.200	38703.234	6467.922	5086.276	661590.200	330195.850
σ		2539.032	7815.655	197.845	128.571	17.560	95.067	24206.908	851.558	179.676	69.001	8514.077	4440.833
%RSD		0.414	0.899	2.714	1.147	5.190	2.390	1.218	2.200	2.778	1.357	1.287	1.345

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:51:28	1730.090	9322.607	1598772.600	225576.280	0.000	233149.430	76932.148
2	19:51:49	1935.112	9657.797	1642751.500	227725.210	0.000	233854.200	78378.865
3	19:52:10	1735.090	9477.694	1633164.500	227370.410	5.000	237419.080	78951.559
x		1800.098	9486.033	1624896.200	226890.630	1.667	234807.570	78087.524
σ		116.953	167.751	23125.933	1152.004	2.887	2288.917	1040.752
%RSD		6.497	1.768	1.423	0.508	173.205	0.975	1.333

200-38498-A-3-D 5/19/2017 7:56:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:57:09	233149.430	785.018	12179.449	1624446.100	T 6218893.700	T 143533780.000	T 28537766.000	T 11091074.000	413004.560	43005.412	346321.150	243977.780
2	19:57:30	229489.160	782.518	12184.452	1634468.500	T 6217231.600	T 144656650.000	T 28774640.000	T 11258958.000	421359.830	43852.616	350803.440	245043.240
3	19:57:52	234771.970	802.519	11944.278	1643384.600	T 6273816.000	T 144951260.000	T 28698736.000	T 11126241.000	414993.040	42990.374	345887.280	244956.990
x		232470.190	790.019	12102.726	1634099.700	T 6236647.100	T 144380560.000	T 28670381.000	T 11158758.000	416452.480	43282.801	347670.620	244659.330
σ		2706.117	10.898	137.243	9474.649	T 32199.956	T 747985.630	T 120955.710	T 88539.668	4364.646	493.532	2721.759	591.818
%RSD		1.164	1.379	1.134	0.580	T 0.516	T 0.518	T 0.422	T 0.793	1.048	1.140	0.783	0.242

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:57:09	44699.862	T 36830368.000	T 808723740.000	229580.400	121319.950	1228254.900	945663.250	46480.723	1330.053	922.526	535.009	13280.289
2	19:57:30	44865.306	T 37225653.000	T 817279030.000	228617.300	120358.020	1228754.800	948428.950	46328.300	1328.053	982.529	541.009	12404.615
3	19:57:52	43837.576	T 37154505.000	T 812854350.000	231516.910	121007.700	1228523.700	954294.990	46004.405	1370.056	963.528	533.009	12604.765
x		44467.581	T 37070175.000	T 812952380.000	229904.870	120895.220	1228511.100	949462.400	46271.143	1342.721	956.194	536.342	12763.223
σ		551.836	T 210703.910	T 4278485.800	1476.788	490.732	250.189	4407.690	243.249	23.694	30.667	4.163	458.839
%RSD		1.241	T 0.568	T 0.526	0.642	0.406	0.020	0.464	0.526	1.765	3.207	0.776	3.595

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:57:09	1584342.400	864272.680	7331.612	2460.182	500.008	3040.277	1964672.900	111531.940	5470.898	4198.029	907465.050	327669.670
2	19:57:30	1604077.900	863441.200	7201.556	2625.207	365.004	3290.325	1998682.700	115116.180	5665.963	4296.554	905407.550	326323.640
3	19:57:52	1598399.200	871052.310	7086.506	2375.169	330.003	2995.269	1989764.200	114169.710	5730.985	4286.551	905212.370	326925.260
x		1595606.500	866255.390	7206.558	2486.853	398.338	3108.624	1984373.300	113605.940	5622.615	4260.378	906028.320	326972.860
σ		10159.808	4174.998	122.630	127.135	89.770	158.959	17634.140	1857.439	135.354	54.227	1248.062	674.274
%RSD		0.637	0.482	1.702	5.112	22.536	5.113	0.889	1.635	2.407	1.273	0.138	0.206

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:57:09	1800.097	9092.480	1902731.700	219749.200	5.000	325773.030	47231.831
2	19:57:30	1980.118	9027.444	1897318.600	216253.930	0.000	331422.790	47678.099
3	19:57:52	1795.097	9527.722	1952409.600	221350.180	0.000	336508.180	48410.204
x		1858.437	9215.882	1917486.600	219117.770	1.667	331234.670	47773.378
σ		105.408	272.012	30365.033	2606.142	2.887	5370.049	594.937
%RSD		5.672	2.952	1.584	1.189	173.205	1.621	1.245

200-38498-A-4-D 5/19/2017 8:02:28 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:02:50	245677.470	877.523	9482.697	1300018.300	T 5210051.100	T 167511750.000	T 24177544.000	2095231.100	425533.900	37411.943	418545.230	284075.510
2	20:03:11	239721.680	937.526	9552.737	1281115.400	T 5165803.000	T 167592340.000	T 24146559.000	T 2423046.200	427000.700	35452.667	416715.220	285082.490

3	20:03:32	241699.950	957.528	9552.737	1289269.600	┬5219247.900	┬167135250.000	┬24109646.000	┬2397175.200	424641.570	35482.731	419473.130	290647.370
x		242366.370	924.192	9529.390	1290134.400	┬5198367.300	┬167413110.000	┬24144583.000	┬2305150.800	425725.390	36115.780	418244.530	286601.790
σ		3033.306	41.636	40.438	9481.082	┬28573.999	┬243984.430	┬33992.159	┬182255.430	1191.170	1122.610	1403.327	3539.569
%RSD		1.252	4.505	0.424	0.735	┬0.550	┬0.146	┬0.141	┬7.906	0.280	3.108	0.336	1.235

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:02:50	46334.317	┬8226915.900	┬573260050.000	252026.220	137898.130	┬4988671.300	┬1810910.000	44267.711	1690.086	1225.545	561.509	6271.180
2	20:03:11	46815.659	┬8313242.300	┬572665690.000	255696.490	140882.930	┬5021735.700	┬1795668.500	43887.708	1724.089	1248.047	571.510	6191.150
3	20:03:32	47487.556	┬8363033.900	┬575772890.000	251077.050	140459.380	┬5043540.100	┬1815662.800	44250.666	1735.090	1270.048	581.510	5760.996
x		46879.177	┬8301064.000	┬573899540.000	252933.250	139746.810	┬5017982.400	┬1807413.800	44135.362	1716.422	1247.880	571.510	6074.442
σ		579.237	┬68871.348	┬1649358.500	2439.639	1614.956	┬27626.292	┬10445.605	214.644	23.462	22.252	10.000	274.386
%RSD		1.236	┬0.830	┬0.287	0.965	1.156	┬0.551	┬0.578	0.486	1.367	1.783	1.750	4.517

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:02:50	548411.620	983655.300	10463.283	5745.990	760.017	10033.019	2006526.600	392876.620	12859.959	10015.008	500127.920	337707.070
2	20:03:11	553387.090	988478.480	10743.462	5335.854	830.021	9892.935	2007976.600	399567.900	13540.498	10014.008	510763.260	347178.720
3	20:03:32	555206.110	989464.480	10713.442	5635.953	725.016	9762.859	2017815.300	395702.300	13605.551	10049.529	501008.790	338553.990
x		552334.940	987199.420	10640.062	5572.599	771.685	9896.271	2010772.800	396048.940	13335.336	10026.181	503966.650	341146.590
σ		3517.320	3108.639	153.829	212.281	53.466	135.111	6141.896	3359.082	412.971	20.226	5902.489	5241.110
%RSD		0.637	0.315	1.446	3.809	6.928	1.365	0.305	0.848	3.097	0.202	1.171	1.536

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:02:50	1950.114	10633.391	┬3828249.500	233281.260	5.000	334911.500	93853.513
2	20:03:11	1920.111	10728.452	┬3802802.800	229702.060	5.000	334768.670	95181.009
3	20:03:32	2000.120	11423.914	┬3833235.100	234853.100	0.000	340416.350	94939.638
x		1956.782	10928.586	┬3821429.200	232612.140	3.333	336698.840	94658.053
σ		40.419	431.592	┬16322.375	2639.906	2.887	3220.252	707.127
%RSD		2.066	3.949	┬0.427	1.135	86.603	0.956	0.747

200-38498-A-5-D 5/19/2017 8:08:11 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:08:32	243800.210	1082.535	7926.885	┬3268010.500	┬6294573.500	┬227163720.000	┬26110331.000	2298899.000	442815.440	36299.487	454955.940	328393.710
2	20:08:53	245464.370	1215.044	8257.045	┬3286471.500	┬6273335.900	┬228258760.000	┬26254557.000	┬2704382.700	447949.950	35923.674	455716.290	331815.490
3	20:09:15	244429.320	1082.535	8337.085	┬3278297.400	┬6299190.400	┬229007270.000	┬26336274.000	┬2658060.300	440905.800	36680.319	457740.650	337931.550
x		244564.630	1126.705	8173.671	┬3277593.100	┬6289033.300	┬228143250.000	┬26233721.000	┬2553780.600	443890.400	36301.160	456137.620	332713.580
σ		840.291	76.504	217.438	┬9250.622	┬13788.929	┬927190.390	┬114403.170	┬221945.790	3643.027	378.325	1439.373	4831.927
%RSD		0.344	6.790	2.660	┬0.282	┬0.219	┬0.406	┬0.436	┬8.691	0.821	1.042	0.316	1.452

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:08:32	53480.668	┬20855309.000	┬712940960.000	306828.550	156940.450	1003152.400	720780.870	47191.717	1422.061	822.520	566.510	6466.254
2	20:08:53	54539.090	┬20931426.000	┬720131780.000	308819.830	157536.030	1017361.100	732077.600	46814.656	1428.061	821.520	574.510	6656.329
3	20:09:15	55933.700	┬21265563.000	┬722196320.000	307750.320	159842.830	1023548.200	731262.990	46952.042	1436.062	820.520	556.509	6436.243
x		54651.153	┬21017433.000	┬718423020.000	307799.560	158106.440	1014687.200	728040.490	46986.138	1428.728	821.520	565.843	6519.609
σ		1230.350	┬218231.260	┬4858533.600	996.550	1532.967	10457.467	6300.194	190.829	7.024	1.000	9.019	119.350
%RSD		2.251	┬1.038	┬0.676	0.324	0.970	1.031	0.865	0.406	0.492	0.122	1.594	1.831

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:08:32	588354.720	1104055.800	9317.604	1915.110	340.003	2185.143	2006043.200	302342.680	10528.324	8561.699	621085.750	348669.360
2	20:08:53	597258.150	1111432.700	8997.428	1880.106	375.004	2030.124	2038004.500	307638.280	11659.077	8677.758	624261.140	354490.230
3	20:09:15	595154.880	1102647.000	9432.668	1990.119	360.004	2170.141	2035504.900	305983.220	11018.641	8701.771	633448.210	353489.300
x		593589.250	1106045.200	9249.233	1928.445	358.337	2128.469	2026517.600	305321.390	11068.681	8647.076	626265.030	352216.300
σ		4653.618	4718.626	225.532	56.206	17.560	85.500	17775.275	2709.121	567.035	74.908	6420.227	3112.243
%RSD		0.784	0.427	2.438	2.915	4.900	4.017	0.877	0.887	5.123	0.866	1.025	0.884

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:08:32	880.023	11724.122	1508834.900	228495.640	0.000	456584.580	83146.886
2	20:08:53	925.026	11819.189	1551596.200	235786.140	0.000	463506.760	84026.280
3	20:09:15	825.020	11113.704	1548661.100	232054.310	0.000	470298.090	85579.151
x		876.690	11552.339	1536364.100	232112.030	0.000	463463.140	84250.772
σ		50.086	382.831	23886.111	3645.590	0.000	6856.862	1231.575
%RSD		5.713	3.314	1.555	1.571	0.000	1.479	1.462

200-38498-A-6-D 5/19/2017 8:13:53 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:14:14	237500.220	970.028	8387.110	1172137.000	┬6714118.200	┬174599560.000	┬26599860.000	┬11224424.000	432048.320	21233.517	380923.910	293186.260
2	20:14:36	238585.560	772.518	8342.087	1151264.900	┬6707432.900	┬172629610.000	┬26469760.000	┬11215563.000	440813.410	22545.238	387195.980	295801.870
3	20:14:57	235573.160	1052.533	8467.150	1169244.000	┬6756150.200	┬174372110.000	┬26627227.000	┬11355322.000	431053.040	23381.389	388848.800	298743.650
x		237219.640	931.693	8398.782	1164215.300	┬6725900.400	┬173867090.000	┬26565616.000	┬11265103.000	434638.250	22386.715	385656.230	295910.600
σ		1525.673	143.890	63.343	11308.312	┬26409.455	┬1077712.900	┬84133.440	┬78257.126	5370.944	1082.675	4180.800	2780.289
%RSD		0.643	15.444	0.754	0.971	┬0.393	┬0.620	┬0.317	┬0.695	1.236	4.836	1.084	0.940
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	20:14:14	48415.219	┬24101808.000	┬710041070.000	269150.860	142849.570	1878299.400	1196156.800	42917.185	1210.044	959.528	587.010	12189.456
2	20:14:36	49042.048	┬24353041.000	┬718113660.000	270151.860	143964.100	1879956.600	1189462.200	42888.111	1205.044	1000.530	562.009	12029.340
3	20:14:57	49097.210	┬24633336.000	┬719165400.000	270466.910	144811.390	1903061.300	1209666.500	43341.281	1271.049	1007.531	594.511	12134.416
x		48851.492	┬24362728.000	┬715773370.000	269923.210	143875.020	1887105.800	1198428.500	43048.859	1228.712	989.196	581.177	12117.737
σ		378.829	┬265896.580	┬4992096.500	687.173	983.939	13842.725	10291.928	253.662	36.750	25.931	17.018	81.351
%RSD		0.775	┬1.091	┬0.697	0.255	0.684	0.734	0.859	0.589	2.991	2.621	2.928	0.671
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	20:14:14	1476742.600	929358.380	7166.540	2450.180	390.005	3280.323	2003683.000	165679.420	4925.728	3854.446	715046.620	325385.570
2	20:14:36	1469126.700	921531.220	7551.711	2650.211	475.007	3260.319	2001413.000	162882.050	5210.815	3917.460	732594.590	328087.770
3	20:14:57	1491809.900	928407.520	7106.515	2775.231	410.005	3240.315	2018591.400	166376.310	5300.843	3991.978	730798.250	330331.440
x		1479226.400	926432.370	7274.922	2625.207	425.005	3260.319	2007895.800	164979.260	5145.795	3921.295	726146.490	327934.930
σ		11543.773	4271.070	241.578	163.962	44.442	20.004	9331.900	1849.360	195.828	68.846	9654.636	2476.478
%RSD		0.780	0.461	3.321	6.246	10.457	0.614	0.465	1.121	3.806	1.756	1.330	0.755
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	20:14:14	1120.038	8642.240	2019525.000	218938.640	5.000	353504.620	51544.582					
2	20:14:36	1345.054	8812.329	2061057.900	225779.000	0.000	360634.970	52061.184					
3	20:14:57	1305.051	8897.374	2056486.500	222515.550	0.000	357171.570	52502.566					
x		1256.714	8783.981	2045689.800	222411.060	1.667	357103.720	52036.111					
σ		120.044	129.908	22774.387	3421.375	2.887	3565.655	479.484					
%RSD		9.552	1.479	1.113	1.538	173.205	0.998	0.921					

200-38498-A-7-J 5/19/2017 8:19:35 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:19:57	242501.470	1517.569	7876.861	1452445.400	┬7878050.800	┬308177270.000	┬30131217.000	┬2595321.300	475435.820	21318.626	610432.810	457771.480
2	20:20:18	237469.790	1505.068	8447.140	1470718.300	┬8164001.600	┬318697680.000	┬30603771.000	┬2701771.800	474654.000	21949.444	626321.310	470303.230
3	20:20:40	247179.440	1477.566	8001.921	1466630.600	┬7919861.200	┬308579210.000	┬29885028.000	2266795.500	479829.060	20923.125	614892.330	463666.100
x		242383.570	1500.068	8108.641	1463264.800	┬7987304.600	┬311818050.000	┬30206672.000	┬2521296.200	476639.630	21397.065	617215.480	463913.610
σ		4855.898	20.465	299.744	9590.155	┬154445.490	┬5961317.800	┬365264.000	┬226739.700	2789.657	517.636	8195.051	6269.544
%RSD		2.003	1.364	3.697	0.655	┬1.934	┬1.912	┬1.209	┬8.993	0.585	2.419	1.328	1.351
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	20:19:57	72547.552	┬36465271.000	┬940478090.000	428657.430	202624.260	761869.230	977170.000	55575.505	1394.058	1002.530	625.512	7146.532
2	20:20:18	73772.913	┬37199849.000	┬964404820.000	437348.910	205246.040	775816.010	1006389.100	56405.285	1439.062	984.029	658.513	6586.301
3	20:20:40	71397.602	┬36430073.000	┬948364770.000	433233.490	205089.130	762439.440	984784.120	55339.722	1386.058	1013.031	615.511	7221.564
x		72572.689	┬36698398.000	┬951082560.000	433079.940	204319.810	766708.230	989447.740	55773.504	1406.393	999.863	633.179	6984.799
σ		1187.855	┬434626.310	┬12192698.000	4347.775	1470.488	7892.722	15157.536	559.695	28.574	14.684	22.503	347.143
%RSD		1.637	┬1.184	┬1.282	1.004	0.720	1.029	1.532	1.004	2.032	1.469	3.554	4.970
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	20:19:57	633048.440	1334478.500	14361.185	2820.239	500.008	2525.191	2008190.200	109342.500	5475.899	4287.051	848397.390	369061.440

2	20:20:18	643014.270	1357219.300	14421.236	2705.220	465.006	2435.178	1984262.600	110464.870	5370.865	4443.092	874369.410	367824.550
3	20:20:40	642437.660	1354782.500	15241.966	2980.266	405.005	2645.210	2022551.000	109704.870	5325.851	4367.072	855912.380	370768.720
x		639500.120	1348826.800	14674.796	2835.242	456.673	2535.193	2005001.300	109837.410	5390.872	4365.739	859559.730	369218.240
σ		5594.755	12485.572	492.101	138.136	48.046	105.373	19342.380	572.801	76.999	78.029	13364.644	1478.333
%RSD		0.875	0.926	3.353	4.872	10.521	4.156	0.965	0.521	1.428	1.787	1.555	0.400

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:19:57	1050.033	16027.703	2499195.200	231374.960	0.000	572206.850	141205.650
2	20:20:18	910.025	16142.814	2532535.600	223812.740	0.000	589416.250	149436.950
3	20:20:40	895.024	16022.698	2514281.800	231233.010	5.000	573696.780	143792.630
x		951.694	16064.405	2515337.600	228806.900	1.667	578439.960	144811.740
σ		85.494	67.950	16695.248	4325.654	2.887	9534.897	4209.221
%RSD		8.983	0.423	0.664	1.891	173.205	1.648	2.907

200-38498-A-7-J SD@5 5/19/2017 8:25:19 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:25:40	248559.740	432.506	3720.415	866125.230	1502963.200	T 66660692.000	T 7259094.700	492933.270	421482.890	4805.693	140751.830	101130.900
2	20:26:01	251097.350	367.504	3975.474	861504.750	1500505.900	T 67229913.000	T 7346238.300	496290.730	422959.600	4725.670	140161.890	99923.647
3	20:26:23	250396.930	352.504	3920.461	863999.020	1505202.400	T 67232243.000	T 7342350.700	493633.540	419606.420	4575.628	142652.890	99963.887
x		250018.010	384.171	3872.117	863876.330	1502890.500	T 67040949.000	T 7315894.600	494285.850	421349.640	4702.330	141188.870	100339.480
σ		1310.557	42.526	134.226	2312.680	2349.083	T 329314.910	T 49228.534	1771.233	1680.556	116.795	1301.739	685.684
%RSD		0.524	11.069	3.466	0.268	0.156	T 0.491	T 0.673	0.358	0.399	2.484	0.922	0.683

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:25:40	20022.019	T 7817810.200	T 207281980.000	92832.820	43817.524	165447.130	223863.420	14796.565	1120.038	715.515	608.511	3825.439
2	20:26:01	18905.717	T 7848582.900	T 207612070.000	92752.374	44629.674	165431.980	224988.410	14671.455	1199.043	648.513	591.010	3410.349
3	20:26:23	19726.667	T 7853697.800	T 207748680.000	92244.567	43551.829	166674.260	225388.770	14690.471	1157.040	704.015	636.012	3470.361
x		19551.468	T 7840030.300	T 207547580.000	92609.920	43999.676	165851.120	224746.860	14719.497	1158.707	689.348	611.845	3568.716
σ		578.406	T 19412.358	T 239944.460	318.951	561.536	712.901	790.844	67.417	39.529	35.829	22.685	224.344
%RSD		2.958	T 0.248	T 0.116	0.344	1.276	0.430	0.352	0.458	3.411	5.197	3.708	6.286

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:25:40	133069.110	622751.190	2725.223	585.010	80.000	430.006	2100270.200	23030.902	1385.058	1098.036	173740.880	301736.850
2	20:26:01	132499.600	634419.110	3160.300	630.012	100.000	555.009	2140792.500	23997.264	1610.078	1073.535	175317.260	309578.710
3	20:26:23	131995.620	626892.180	2975.266	540.009	105.000	400.005	2132730.500	23751.913	1635.080	1080.035	176014.550	311412.400
x		132521.440	628020.830	2953.596	585.010	95.000	461.673	2124597.700	23593.359	1543.405	1083.869	175024.230	307575.990
σ		537.076	5915.272	218.346	45.002	13.229	82.211	21450.461	502.313	137.702	12.693	1164.815	5139.285
%RSD		0.405	0.942	7.393	7.692	13.925	17.807	1.010	2.129	8.922	1.171	0.666	1.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:25:40	270.002	3600.389	492305.110	217104.890	0.000	111813.820	27878.296
2	20:26:01	290.003	3435.354	492083.710	220174.760	0.000	112478.260	27692.988
3	20:26:23	365.004	3795.432	499803.400	217884.970	0.000	113031.990	28344.081
x		308.336	3610.392	494730.740	218388.210	0.000	112441.360	27971.789
σ		50.084	180.247	4394.445	1595.612	0.000	609.926	335.464
%RSD		16.243	4.992	0.888	0.731	0.000	0.542	1.199

CCV 1039951 5/19/2017 8:31:01 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:31:23	219698.540	205190.360	80619.515	T 35735797.000	T 10930138.000	T 109145230.000	T 54366728.000	T 4464001.600	344412.200	64474.468	T 6677779.900	1743772.400
2	20:31:44	217408.810	203745.300	79755.372	T 35239290.000	T 10750929.000	T 107290880.000	T 53457148.000	T 4376657.600	334462.620	65418.135	T 6613218.800	1723264.900

3	20:32:05	216679.400	199742.280	78293.465	┬34999539.000	┬10681380.000	┬106666680.000	┬52802955.000	┬4319891.800	336288.820	63862.117	┬6502779.600	1692708.800
x		217928.920	202892.650	79556.117	┬35324875.000	┬10787482.000	┬107700930.000	┬53542277.000	┬4386850.300	338387.880	64584.907	┬6597926.100	1719915.400
σ		1575.337	2822.351	1175.757	┬375516.210	┬128343.870	┬1289153.300	┬785354.960	┬72593.579	5296.516	783.865	┬88496.768	25696.050
%RSD		0.723	1.391	1.478	┬1.063	┬1.190	┬1.197	┬1.467	┬1.655	1.565	1.214	┬1.341	1.494

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:31:23	211701.030	┬10057077.000	┬203919840.000	┬3391966.000	1687834.700	2422738.500	2097710.900	266256.930	17216.888	20352.419	493.507	15882.564
2	20:31:44	210511.100	┬10015845.000	┬201349110.000	┬3339504.600	1668153.400	2393874.800	2088539.100	265651.380	17401.079	20230.270	508.008	15627.323
3	20:32:05	206835.510	┬9840478.300	┬199060870.000	┬3308344.500	1645718.900	2358343.600	2068613.600	261875.320	17121.790	20046.048	468.007	15317.035
x		209682.550	┬9971133.600	┬201443270.000	┬3346605.000	1667235.700	2391652.300	2084954.600	264594.540	17246.586	20209.579	489.841	15608.974
σ		2536.376	┬115013.530	┬2430854.900	┬42260.484	21072.867	32254.900	14876.144	2374.299	141.993	154.230	20.251	283.211
%RSD		1.210	┬1.153	┬1.207	┬1.263	1.264	1.349	0.713	0.897	0.823	0.763	4.134	1.814

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:31:23	┬2402012.500	385087.970	┬4287988.600	625791.970	22074.609	330132.560	1934097.700	2457268.200	1713031.300	1333629.400	1607148.600	277836.650
2	20:31:44	2064779.000	377139.280	┬4264396.800	614964.940	21423.760	331167.800	1921262.700	2474379.200	1726577.900	1331012.600	1607489.200	278660.230
3	20:32:05	┬2350221.100	380484.030	┬4238477.500	616500.120	21834.293	326874.280	1937691.300	2464971.000	1708753.800	1317215.000	1590790.300	277501.130
x		┬2272337.500	380903.760	┬4263621.000	619085.670	21777.554	329391.540	1931017.200	2465539.400	1716121.000	1327285.700	1601809.400	277999.340
σ		┬181606.710	3990.934	┬24764.678	5858.326	329.113	2240.627	8636.672	8569.657	9305.092	8819.077	9544.300	596.430
%RSD		┬7.992	1.048	┬0.581	0.946	1.511	0.680	0.447	0.348	0.542	0.664	0.596	0.215

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:31:23	110142.740	┬4167411.600	┬18593494.000	206855.760	5.000	491574.000	246469.030
2	20:31:44	108949.940	┬4199858.600	┬18380526.000	208313.750	0.000	497815.200	251767.350
3	20:32:05	111385.970	┬4242987.900	┬18630786.000	210966.810	20.000	499695.220	249397.110
x		110159.550	┬4203419.400	┬18534935.000	208712.110	8.333	496361.470	249211.160
σ		1218.098	┬37913.804	┬135016.230	2084.274	10.408	4251.303	2654.048
%RSD		1.106	┬0.902	┬0.728	0.999	124.900	0.856	1.065

CCB 1035925 5/19/2017 8:36:42 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:37:04	233909.980	42.500	3015.273	611257.210	500.008	6751.367	755179.880	15657.351	361569.900	70.000	12604.765	2330.163
2	20:37:25	230584.110	67.500	3050.279	617210.710	630.012	8121.979	757658.660	16037.713	361018.130	115.000	13555.510	2215.147
3	20:37:47	231739.980	150.001	2935.258	632186.640	3810.436	46088.637	789852.800	17619.308	362050.160	120.000	15006.753	3095.287
x		232078.020	86.667	3000.270	620218.190	1646.818	20320.661	767563.780	16438.124	361546.060	101.667	13722.343	2546.866
σ		1688.506	56.255	58.960	10783.964	1874.875	22326.242	19342.607	1040.464	516.427	27.538	1209.654	478.416
%RSD		0.728	64.909	1.965	1.739	113.848	109.870	2.520	6.330	0.143	27.086	8.815	18.784

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:37:04	4870.712	1415.060	375666.580	110.000	110.000	1015.031	2630.208	3016.273	994.030	513.008	533.009	2370.169
2	20:37:25	4595.633	1535.071	378545.630	160.001	195.001	900.024	2710.220	3130.294	1115.037	507.508	533.009	2310.160
3	20:37:47	4715.667	5130.790	457139.480	1360.056	795.019	1950.114	3235.314	3308.328	1066.034	497.507	535.009	2385.171
x		4727.337	2693.640	403783.900	543.352	366.673	1288.390	2858.581	3151.632	1058.367	506.008	533.675	2355.166
σ		137.910	2111.486	46229.708	707.727	373.385	575.948	328.704	147.192	60.867	7.858	1.155	39.692
%RSD		2.917	78.388	11.449	130.252	101.830	44.703	11.499	4.670	5.751	1.553	0.216	1.685

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:37:04	215.001	397473.710	305.003	40.000	0.000	15.000	1976395.000	1120.038	400.005	246.502	90.000	277165.620
2	20:37:25	265.002	395876.360	375.004	60.000	0.000	30.000	1979862.600	1110.037	355.004	311.503	150.001	274390.260
3	20:37:47	1095.036	401180.960	1710.088	295.003	0.000	190.001	2008763.500	2100.132	1005.030	758.517	750.017	279422.840
x		525.013	398177.010	796.698	131.668	0.000	78.334	1988340.300	1443.402	586.680	438.841	330.006	276992.910
σ		494.287	2721.338	791.792	141.805	0.000	96.997	17771.748	568.767	363.000	278.749	364.975	2520.733
%RSD		94.148	0.683	99.384	107.699	0.000	123.826	0.894	39.405	61.874	63.519	110.597	0.910

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:37:04	155.001	2795.234	975.029	209245.310	0.000	40.000	15.000
2	20:37:25	110.000	2640.209	1585.075	209670.610	0.000	30.000	20.000
3	20:37:47	100.000	3970.473	6521.276	213063.230	0.000	255.002	90.000
x		121.667	3135.305	3027.127	210659.720	0.000	108.334	41.667
σ		29.298	727.418	3041.356	2092.336	0.000	127.117	41.933
%RSD		24.080	23.201	100.470	0.993	0.000	117.338	100.638

CCVL 1039949 5/19/2017 8:42:24 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:42:45	240482.530	475.007	16162.833	┬2659698.400	72848.862	193375.350	┬3904488.500	87318.136	377906.370	70.000	39922.758	21639.038
2	20:43:07	243384.190	462.506	16343.009	┬2678020.900	70940.657	193107.270	┬3902063.600	90836.867	379747.510	120.000	40734.719	21924.411
3	20:43:28	240026.020	487.507	16087.761	┬2705383.300	73180.309	194741.110	┬3896097.500	90203.441	375359.780	140.001	40368.830	21619.012
x		241297.580	475.007	16197.868	┬2681034.200	72323.276	193741.240	┬3900883.200	89452.815	377671.220	110.000	40342.102	21727.487
σ		1821.420	12.500	131.181	┬22991.026	1208.797	876.226	┬4318.260	1875.619	2203.298	36.056	406.640	170.835
%RSD		0.755	2.632	0.810	┬0.858	1.671	0.452	┬0.111	2.097	0.583	32.778	1.008	0.786

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:42:45	7256.579	18004.720	1790959.600	7251.577	3500.368	11704.108	41962.760	9128.499	1473.065	989.529	562.509	2920.256
2	20:43:07	7891.868	18965.785	1800838.900	7281.590	3285.324	11869.225	41611.882	9008.434	1485.066	970.028	549.509	2980.266
3	20:43:28	7361.625	18004.720	1801899.900	7196.553	3530.374	12544.719	42619.423	9366.631	1535.071	964.028	553.009	3135.295
x		7503.358	18325.075	1797899.500	7243.240	3438.688	12039.351	42064.688	9167.855	1497.734	974.528	555.009	3011.939
σ		340.535	554.871	6033.466	43.127	133.662	445.381	511.446	182.313	32.887	13.333	6.727	110.963
%RSD		4.538	3.028	0.336	0.595	3.887	3.699	1.216	1.989	2.196	1.368	1.212	3.684

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:42:45	55301.596	411590.210	31690.099	6786.381	80.000	1705.087	2026342.800	1235.046	14666.450	11251.296	13265.277	280439.710
2	20:43:07	55376.845	415157.050	32431.523	7446.663	130.001	1690.086	2046665.700	1365.056	14216.060	11425.415	14486.293	287905.390
3	20:43:28	55045.751	416910.010	32526.709	6831.400	120.000	1670.084	2069076.100	1300.051	14341.167	11431.419	13585.535	281609.180
x		55241.397	414552.420	32216.110	7021.481	110.000	1688.419	2047361.600	1300.051	14407.893	11369.377	13779.035	283318.090
σ		173.562	2710.950	458.018	368.906	26.458	17.561	21375.147	65.005	232.491	102.305	633.089	4015.519
%RSD		0.314	0.654	1.422	5.254	24.052	1.040	1.044	5.000	1.614	0.900	4.595	1.417

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:42:45	15612.309	35602.987	15287.008	210055.410	0.000	48766.240	23466.509
2	20:43:07	15652.346	36695.352	14461.271	211179.480	0.000	49673.915	24067.365
3	20:43:28	15397.109	37086.216	15276.998	212992.330	0.000	48450.321	24187.538
x		15553.921	36461.518	15008.426	211409.070	0.000	48963.492	23907.137
σ		137.271	768.766	473.876	1481.861	0.000	635.198	386.297
%RSD		0.883	2.108	3.157	0.701	0.000	1.297	1.616

200-38498-A-7-J PDS 5/19/2017 8:48:07 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:48:28	237246.650	4768.182	134782.800	┬20092101.000	┬8385463.900	┬297592550.000	┬57187657.000	┬3283353.600	454421.650	19286.152	827216.500	615799.930
2	20:48:49	231567.610	4775.684	138538.400	┬20431776.000	┬8483489.300	┬300784950.000	┬57919987.000	┬3355586.500	460340.810	20462.554	834233.610	621101.310
3	20:49:10	234062.090	4810.694	136426.090	┬20305355.000	┬8492316.800	┬300900310.000	┬57838771.000	┬3306930.100	459868.020	21809.260	838867.730	613564.720
x		234292.120	4784.853	136582.430	┬20276411.000	┬8453756.700	┬299759270.000	┬57648805.000	┬3315290.000	458210.160	20519.322	833439.280	616821.990
σ		2846.498	22.691	1882.678	┬171677.440	┬59307.777	┬1877321.400	┬401424.970	┬36834.963	3289.449	1262.512	5866.091	3870.851
%RSD		1.215	0.474	1.378	┬0.847	┬0.702	┬0.626	┬0.696	┬1.111	0.718	6.153	0.704	0.628

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:48:28	88901.473	┬34627803.000	┬915104520.000	470796.880	220656.070	821231.130	1267339.600	104403.980	4450.594	4654.150	605.511	10423.258
2	20:48:49	91017.851	┬35263278.000	┬923304150.000	471239.120	220250.760	821672.090	1272593.100	106209.340	4580.629	4786.687	614.511	10153.092
3	20:49:10	90600.586	┬35349604.000	┬925320450.000	475255.790	220549.670	834228.350	1292954.200	106879.600	4586.631	4806.193	634.512	10628.388
x		90173.304	┬35080229.000	┬921243040.000	472430.600	220485.500	825710.520	1277629.000	105830.970	4539.285	4749.010	618.178	10401.579
σ		1121.022	┬394182.270	┬5410862.400	2456.660	210.137	7379.949	13529.490	1280.445	76.867	82.728	14.844	238.389
%RSD		1.243	┬1.124	┬0.587	0.520	0.095	0.894	1.059	1.210	1.693	1.742	2.401	2.292

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:48:28	1138725.900	1286907.000	324105.990	67099.800	1770.094	19341.216	1929810.800	104219.840	141109.840	109371.190	947418.860	354142.960

2	20:48:49	1163909.400	1296704.400	329199.370	67566.681	1450.063	19196.048	1948555.200	106660.200	143232.840	110862.490	958670.690	357207.330
3	20:49:10	T 1373496.700	1304358.500	331147.400	67406.032	1540.071	19461.356	1971581.800	106086.560	144745.820	110994.870	965794.850	362295.400
x		T 1225377.300	1295990.000	328150.920	67357.504	1586.743	19332.873	1949982.600	105655.530	143029.500	110409.520	957294.800	357881.900
σ		T 128891.710	8747.636	3635.901	237.193	165.041	132.850	20922.039	1276.003	1826.499	901.652	9264.937	4117.868
%RSD		T 10.519	0.675	1.108	0.352	10.401	0.687	1.073	1.208	1.277	0.817	0.968	1.151

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:48:28	154149.580	378474.030	2556632.500	223336.420	0.000	1068635.200	396163.050
2	20:48:49	157702.590	386044.730	2570398.400	225150.580	0.000	1079364.600	394980.480
3	20:49:10	158959.450	388198.910	2567631.600	227248.770	0.000	1079551.100	402230.820
x		156937.210	384239.220	2564887.500	225245.260	0.000	1075850.300	397791.450
σ		2494.606	5107.659	7281.683	1957.895	0.000	6249.140	3889.809
%RSD		1.590	1.329	0.284	0.869	0.000	0.581	0.978

200-38498-A-7-K MS 5/19/2017 8:53:49 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:54:10	236861.220	5050.765	111441.330	T 21304638.000	T 9817987.800	T 366651560.000	T 65095440.000	T 3399456.300	483822.040	40654.523	975617.910	725426.030
2	20:54:32	238737.710	5078.274	112961.520	T 21366844.000	T 9887277.900	T 369759610.000	T 65176464.000	T 3462788.600	495188.670	37867.971	987110.890	733466.720
3	20:54:54	239812.980	5240.824	114924.870	T 21467878.000	T 9999892.700	T 371549810.000	T 65416263.000	T 3450288.300	485798.300	38324.011	981779.400	728333.820
x		238470.640	5123.288	113109.240	T 21379787.000	T 9901719.500	T 369320330.000	T 65229389.000	T 3437511.100	488269.670	38948.835	981502.730	729075.520
σ		1493.895	102.715	1746.460	T 82385.731	T 91808.308	T 2478494.300	T 166830.960	T 33543.854	6072.958	1494.665	5751.480	4071.336
%RSD		0.626	2.005	1.544	T 0.385	T 0.927	T 0.671	T 0.256	T 0.976	1.244	3.838	0.586	0.558

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:54:10	104572.030	T 39061869.000	T 1070507800.000	541346.170	259545.300	953702.470	1476917.100	121025.830	4660.652	4597.634	644.512	10858.536
2	20:54:32	104959.460	T 39105419.000	T 1069585500.000	543773.300	261332.910	956818.690	1485616.700	121361.250	4337.564	4605.136	661.013	11003.631
3	20:54:54	107505.610	T 38999301.000	T 1075543600.000	550297.270	264197.540	959639.110	1479823.800	120649.110	4495.606	4671.155	638.512	11093.691
x		105679.030	T 39055529.000	T 1071879000.000	545138.910	261691.920	956720.090	1480785.800	121012.060	4497.941	4624.642	648.013	10985.286
σ		1593.678	T 53342.195	T 3207015.300	4629.170	2346.809	2969.546	4428.847	356.271	161.556	40.456	11.652	118.646
%RSD		1.508	T 0.137	T 0.299	0.849	0.897	0.310	0.299	0.294	3.592	0.875	1.798	1.080

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:54:10	1281719.200	1480620.000	322444.230	69986.636	1530.070	19811.768	1942932.000	113464.920	46539.888	35813.938	1117408.100	372936.280
2	20:54:32	1293833.700	1488988.600	325676.160	70533.936	1825.100	20077.085	1969843.100	115307.500	47156.618	36070.991	1118962.300	374971.180
3	20:54:54	1288325.600	1486107.700	330122.360	70071.994	1770.094	19926.905	1969405.700	117225.810	48299.885	36254.890	1112441.800	377067.690
x		1287959.500	1485238.800	326080.920	70197.522	1708.421	19938.586	1960726.900	115332.740	47332.130	36046.606	1116270.700	374991.720
σ		6065.523	4251.390	3855.037	294.453	156.886	133.044	15412.388	1880.574	893.029	221.485	3405.797	2065.783
%RSD		0.471	0.286	1.182	0.419	9.183	0.667	0.786	1.631	1.887	0.614	0.305	0.551

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:54:10	53129.548	400008.280	2965840.300	223995.170	0.000	1184566.300	437436.150
2	20:54:32	53169.675	406241.350	2951840.600	229813.580	0.000	1208850.300	437620.910
3	20:54:54	53360.283	400218.230	2960451.400	228576.740	0.000	1214913.300	444576.400
x		53219.835	402155.950	2959377.400	227461.830	0.000	1202776.600	439877.820
σ		123.275	3539.615	7061.359	3065.249	0.000	16059.336	4070.139
%RSD		0.232	0.880	0.239	1.348	0.000	1.335	0.925

200-38498-A-7-L MSD 5/19/2017 8:59:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:59:53	237368.360	5010.753	120801.210	T 21610162.000	T 8844972.200	T 325284120.000	T 61344608.000	T 4804991.600	473645.920	37522.190	882148.690	658933.290
2	21:00:14	235197.910	4955.737	120997.620	T 21421985.000	T 8871787.000	T 330222930.000	T 61610889.000	T 4775639.500	472679.050	37051.138	897733.690	670272.270

3	21:00:36	237216.220	5145.794	123329.620	┬21719474.000	┬8915185.600	┬328699970.000	┬61285640.000	┬4796961.300	476063.350	37411.943	907982.100	677875.710
x		236594.160	5037.428	121709.490	┬21583874.000	┬8877314.900	┬328069010.000	┬61413712.000	┬4792530.800	474129.440	37328.423	895954.830	669027.090
σ		1211.578	97.796	1406.514	┬150476.540	┬35431.627	┬2529140.700	┬173286.640	┬15169.294	1743.194	246.382	13008.248	9532.400
%RSD		0.512	1.941	1.156	┬0.697	┬0.399	┬0.771	┬0.282	┬0.317	0.368	0.660	1.452	1.425

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:59:53	96458.321	┬40304656.000	┬934609730.000	489916.240	228556.470	901593.930	1291648.600	114184.810	4446.593	4658.651	635.512	11909.253
2	21:00:14	97685.437	┬40650964.000	┬947534360.000	498783.520	234513.370	910388.170	1292414.700	114429.480	4601.635	4555.623	601.011	12219.478
3	21:00:36	97851.406	┬40918335.000	┬956760900.000	503167.380	234807.470	917270.560	1302047.900	114440.550	4601.635	4644.647	632.512	12314.548
x		97331.721	┬40624652.000	┬946301670.000	497289.040	232625.770	909750.890	1295370.400	114351.610	4549.954	4619.640	623.012	12147.760
σ		760.926	┬307684.650	┬11126914.000	6750.795	3527.183	7857.723	5795.550	144.563	89.514	55.881	19.112	211.952
%RSD		0.782	┬0.757	┬1.176	1.358	1.516	0.864	0.447	0.126	1.967	1.210	3.068	1.745

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:59:53	1401726.400	1329222.400	328006.190	68716.367	1755.092	19916.893	1951064.900	89333.776	56922.038	44375.497	977196.480	359945.300
2	21:00:14	1432679.600	1358280.800	331759.390	70051.909	1570.074	20027.025	1960064.700	92254.623	58397.128	45059.328	993912.800	363102.690
3	21:00:36	1425474.300	1353114.900	332611.110	69032.670	1755.092	19461.356	1958798.000	92993.713	58572.742	45380.698	1001136.500	362990.280
x		1419960.100	1346872.700	330792.230	69266.982	1693.420	19801.758	1956642.500	91527.371	57963.969	44938.508	990748.590	362012.750
σ		16196.609	15502.314	2450.077	697.922	106.820	299.896	4871.722	1935.318	906.601	513.377	12279.663	1791.352
%RSD		1.141	1.151	0.741	1.008	6.308	1.514	0.249	2.114	1.564	1.142	1.239	0.495

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:59:53	58246.602	386709.890	2532072.500	221684.580	5.000	1112954.400	410626.880
2	21:00:14	59370.558	395866.120	2566819.700	222221.660	0.000	1125880.700	418801.550
3	21:00:36	59922.528	393373.130	2549463.800	221177.920	0.000	1127286.100	412743.200
x		59179.896	391983.050	2549452.000	221694.720	1.667	1122040.400	414057.210
σ		854.076	4733.753	17373.555	521.947	2.887	7900.042	4242.793
%RSD		1.443	1.208	0.681	0.235	173.205	0.704	1.025

200-38498-A-8-D 5/19/2017 9:05:12 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:05:34	236800.370	1027.532	13015.080	1494588.000	┬7588665.100	┬212877840.000	┬35227348.000	┬7762624.600	442076.200	40223.479	455998.860	362392.480
2	21:05:55	236232.390	955.027	12970.045	┬1782160.700	┬7738436.500	┬214856140.000	┬35285085.000	┬7855862.800	454195.620	39782.423	467166.850	368095.430
3	21:06:17	238666.710	945.027	12955.033	┬1757880.900	┬7633430.300	┬212143820.000	┬35212529.000	┬7714007.800	446327.280	41085.578	457781.750	359592.810
x		237233.150	975.862	12980.053	┬1678209.900	┬7653510.600	┬213292600.000	┬35241654.000	┬7777498.400	447533.030	40363.827	460315.820	363360.240
σ		1273.558	45.026	31.249	┬159483.930	┬76878.376	┬1402919.900	┬38334.956	┬72087.669	6149.018	662.817	5999.761	4333.136
%RSD		0.537	4.614	0.241	┬9.503	┬1.004	┬0.658	┬0.109	┬0.927	1.374	1.642	1.303	1.193

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:05:34	58823.624	┬31886444.000	┬841786310.000	306502.640	166184.410	2555438.500	1470625.600	43017.443	1593.076	1113.537	591.010	10288.174
2	21:05:55	60700.335	┬32351312.000	┬854154840.000	312308.950	170224.880	2614684.500	1484989.300	43702.222	1545.072	1100.036	617.011	10668.413
3	21:06:17	59711.774	┬31995046.000	┬845119200.000	309746.790	169704.610	2591316.900	1478596.700	43264.081	1561.073	1153.040	618.511	10463.283
x		59745.244	┬32077601.000	┬847020120.000	309519.460	168704.630	2587146.600	1478070.500	43327.915	1566.407	1122.205	608.844	10473.290
σ		938.803	┬243181.110	┬6399628.300	2909.822	2198.027	29842.346	7196.266	346.823	24.443	27.544	15.463	190.317
%RSD		1.571	┬0.758	┬0.756	0.940	1.303	1.153	0.487	0.800	1.560	2.454	2.540	1.817

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:05:34	1180958.300	994225.660	8161.998	3825.439	695.014	5831.020	1965592.400	210359.200	6756.369	5159.298	622144.140	333860.730
2	21:05:55	1199183.100	1005396.800	8126.981	3945.467	730.016	6041.095	1992088.900	209857.940	6541.283	5222.318	638199.410	335309.380
3	21:06:17	1180808.200	998415.320	8217.025	3960.471	600.011	6176.144	2022573.500	214552.150	6986.464	5184.306	624198.870	334217.780
x		1186983.200	999345.930	8168.668	3910.459	675.014	6016.086	1993418.300	211589.770	6761.372	5188.641	628180.810	334462.630
σ		10565.696	5643.421	45.391	74.011	67.271	173.916	28513.804	2577.711	222.632	31.733	8736.975	754.725
%RSD		0.890	0.565	0.556	1.893	9.966	2.891	1.430	1.218	3.293	0.612	1.391	0.226

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:05:34	1530.070	11018.641	2579676.400	215392.890	0.000	408864.330	68164.106
2	21:05:55	1680.085	10748.465	2597096.400	217905.230	0.000	411190.520	68977.442
3	21:06:17	1785.096	10733.455	2594069.900	215291.590	0.000	421600.820	69800.859
x		1665.084	10833.520	2590280.900	216196.570	0.000	413885.220	68980.802
σ		128.173	160.495	9307.603	1480.610	0.000	6782.372	818.382
%RSD		7.698	1.481	0.359	0.685	0.000	1.639	1.186

200-38498-A-9-D 5/19/2017 9:10:53 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:11:15	241639.080	1095.036	10553.340	1491553.400	T 7761447.000	T 212759850.000	T 34447828.000	T 6622523.500	453753.820	36575.088	450903.000	341748.200
2	21:11:36	239092.750	987.529	11298.829	T 1740978.500	T 7819952.100	T 215158440.000	T 34800021.000	T 6635379.800	457956.450	37371.853	451863.490	343355.730
3	21:11:57	237287.220	945.027	11308.835	1499861.600	T 7766100.800	T 214831340.000	T 34785933.000	T 6609944.000	457103.510	34144.941	457488.870	343284.290
x		239339.680	1009.197	11053.668	T 1577464.500	T 7782500.000	T 214249880.000	T 34677928.000	T 6622615.800	456271.260	36030.627	453418.460	342796.070
σ		2186.413	77.316	433.326	T 141668.210	T 32517.822	T 1300722.300	T 199396.200	T 12718.148	2221.488	1680.943	3557.649	908.189
%RSD		0.914	7.661	3.920	T 8.981	T 0.418	T 0.607	T 0.575	T 0.192	0.487	4.665	0.785	0.265
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	21:11:15	55788.214	T 28729884.000	T 829298070.000	307322.530	171225.050	2490311.100	1467562.500	40097.176	1543.071	1038.532	601.011	9462.685
2	21:11:36	56425.353	T 29064980.000	T 843712050.000	313653.850	175615.370	2519186.300	1471198.000	40497.141	1591.076	1038.532	633.512	9522.720
3	21:11:57	57147.808	T 28965564.000	T 838391620.000	311239.210	171593.810	2494232.700	1485463.900	40612.421	1525.070	1065.534	595.511	9472.691
x		56453.792	T 28920143.000	T 837133920.000	310738.530	172811.410	2501243.400	1474741.500	40402.246	1553.072	1047.533	610.011	9486.032
σ		680.243	T 172103.980	T 7288830.200	3195.218	2435.294	15662.224	9462.156	270.413	34.121	15.589	20.537	32.164
%RSD		1.205	T 0.595	T 0.871	1.028	1.409	0.626	0.642	0.669	2.197	1.488	3.367	0.339
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	21:11:15	1012168.800	977593.800	7301.599	2870.247	680.014	5175.804	2003919.000	101744.610	5540.921	4363.071	612159.440	334789.080
2	21:11:36	1030470.800	990333.910	7481.679	3365.340	660.013	5250.827	2021347.300	102011.240	5655.959	4495.606	622963.930	334340.200
3	21:11:57	1039150.700	988340.650	7551.711	3230.313	590.010	4860.709	2036946.100	102152.100	5986.075	4493.606	624826.750	336676.530
x		1027263.400	985422.790	7444.996	3155.300	643.346	5095.780	2020737.500	101969.320	5727.652	4450.761	619983.370	335268.600
σ		13773.904	6852.959	129.028	255.928	47.260	207.005	16521.969	206.950	231.074	75.948	6839.443	1239.786
%RSD		1.341	0.695	1.733	8.111	7.346	4.062	0.818	0.203	4.034	1.706	1.103	0.370
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	21:11:15	1130.038	9672.806	2029989.100	216183.020	0.000	428965.200	72281.399					
2	21:11:36	1310.052	9362.629	2075467.400	217499.990	0.000	430837.570	72201.052					
3	21:11:57	1220.045	9422.663	2068816.700	215879.120	0.000	429493.540	73772.913					
x		1220.045	9486.033	2058091.000	216520.710	0.000	429765.440	72751.788					
σ		90.007	164.512	24563.146	861.586	0.000	965.347	885.232					
%RSD		7.377	1.734	1.193	0.398	0.000	0.225	1.217					

200-38498-A-11-D 5/19/2017 9:16:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:16:56	242531.900	1422.561	8592.214	1503880.700	T 7727577.600	T 296693530.000	T 28568444.000	1305621.900	486436.510	27607.847	548261.810	438442.070
2	21:17:18	242379.710	1392.558	8722.282	1494336.900	T 7708260.600	T 296481180.000	T 28553047.000	1294405.700	475260.930	27387.484	552829.020	431427.540
3	21:17:40	245636.880	1350.055	8957.406	1492972.400	T 7625526.200	T 294903140.000	T 28226605.000	1298625.700	481197.680	28379.141	551320.260	434865.170
x		243516.170	1388.391	8757.301	1497063.300	T 7687121.500	T 296025950.000	T 28449365.000	1299551.100	480965.040	27791.490	550803.690	434911.600
σ		1838.169	36.432	185.098	5943.319	T 54210.419	T 978164.560	T 193069.570	5665.084	5591.421	520.711	2327.011	3507.496
%RSD		0.755	2.624	2.114	0.397	T 0.705	T 0.330	T 0.679	0.436	1.163	1.874	0.422	0.806
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	21:16:56	66904.015	T 17044275.000	T 790510950.000	342534.090	208911.160	384990.770	684175.440	39265.198	1422.061	932.526	648.513	6266.178
2	21:17:18	66135.959	T 16960287.000	T 786344920.000	341268.520	210065.540	388746.450	690696.310	39418.560	1351.055	953.027	623.012	6271.180
3	21:17:40	66467.273	T 16916612.000	T 790435670.000	343054.630	211118.720	389478.240	690816.120	39221.095	1380.057	916.025	595.511	6336.204
x		66502.416	T 16973725.000	T 789097180.000	342285.740	210031.800	387738.490	688562.630	39301.617	1384.391	933.860	622.345	6291.187
σ		385.232	T 64883.608	T 2383824.800	918.588	1104.165	2407.561	3799.882	103.648	35.701	18.537	26.507	39.066
%RSD		0.579	T 0.382	T 0.302	0.268	0.526	0.621	0.552	0.264	2.579	1.985	4.259	0.621
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	21:16:56	530779.330	1280177.200	19186.037	2250.152	380.004	1625.079	2021448.500	21844.306	3790.431	2936.759	683967.150	350262.240

2	21:17:18	527301.510	1290456.300	19781.733	2275.155	595.011	1530.070	2037813.100	22179.748	3885.453	3022.774	690133.710	358596.690
3	21:17:40	526826.850	1269818.000	19090.928	2185.143	475.007	1470.065	2037171.300	22159.722	3725.416	2954.262	683264.180	358545.610
x		528302.560	1280150.500	19352.899	2236.817	483.341	1541.738	2032144.300	22061.259	3800.433	2971.265	685788.350	355801.510
σ		2158.034	10319.194	374.413	46.464	107.745	78.163	9268.363	188.153	80.486	45.459	3779.571	4797.220
%RSD		0.408	0.806	1.935	2.077	22.292	5.070	0.456	0.853	2.118	1.530	0.551	1.348

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:16:56	675.014	12629.784	1317277.600	219526.290	5.000	749350.410	131486.620
2	21:17:18	745.017	12744.871	1324492.100	218492.850	0.000	751744.690	132953.190
3	21:17:40	770.018	12534.712	1317920.600	221046.190	5.000	745947.750	135518.730
x		730.016	12636.455	1319896.800	219688.440	3.333	749014.280	133319.510
σ		49.246	105.238	3992.646	1284.369	2.887	2913.050	2040.861
%RSD		6.746	0.833	0.302	0.585	86.603	0.389	1.531

CCV 1039951 5/19/2017 9:22:17 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:22:38	215453.660	206159.720	80333.137	T 36388789.000	T 11150824.000	T 111165050.000	T 54865264.000	T 4538489.300	348097.590	66838.754	T 6875906.900	1768057.000
2	21:22:59	217874.840	204782.900	80880.776	T 36085586.000	T 11004451.000	T 110752170.000	T 54629622.000	T 4485283.800	339931.610	65749.434	T 6802122.800	1769404.400
3	21:23:20	216588.230	201052.900	78604.926	T 35572973.000	T 10844892.000	T 109334420.000	T 53459573.000	T 4468115.700	340921.520	65121.978	T 6749134.900	1752644.600
x		216638.910	203998.500	79939.613	T 36015783.000	T 11000056.000	T 110417210.000	T 54318153.000	T 4497296.300	342983.570	65903.389	T 6809054.900	1763368.700
σ		1211.381	2642.226	1187.863	T 412363.230	T 153013.650	T 960183.840	T 752829.200	T 36692.478	4456.438	868.681	T 63669.677	9311.728
%RSD		0.559	1.295	1.486	T 1.145	T 1.391	T 0.870	T 1.386	T 0.816	1.299	1.318	T 0.935	0.528

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:22:38	217657.020	T 10294824.000	T 207370330.000	T 3448687.600	1715485.500	2450214.000	2109029.700	270207.750	17544.229	20394.470	493.007	15487.192
2	21:22:59	212647.980	T 10168498.000	T 205013440.000	T 3423081.400	1700555.500	2432861.300	2102609.400	268282.020	17588.276	20296.351	502.508	15932.612
3	21:23:20	211913.710	T 10127683.000	T 205400080.000	T 3425088.900	1679916.500	2413225.100	2092045.800	264614.070	17342.018	20426.009	462.506	15467.174
x		214072.900	T 10197002.000	T 205927950.000	T 3432286.000	1698652.500	2432100.100	2101228.300	267701.280	17491.507	20372.277	486.007	15628.993
σ		3125.572	T 87140.184	T 1264008.000	T 14239.630	17860.696	18506.169	8575.791	2841.699	131.322	67.618	20.899	263.132
%RSD		1.460	T 0.855	T 0.614	T 0.415	1.051	0.761	0.408	1.062	0.751	0.332	4.300	1.684

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:22:38	2104208.600	385845.190	T 4357814.900	624499.830	21078.320	328959.710	1932687.300	2447459.900	1694359.600	1317813.100	1617232.600	273190.800
2	21:22:59	T 2376303.100	379215.610	T 4303400.100	621391.840	22079.616	328618.070	1915737.700	2452000.300	1721412.400	1317050.700	1610285.800	278639.900
3	21:23:20	T 2396283.700	376873.370	T 4261639.900	615457.630	21739.169	323193.530	1917862.500	2434173.800	1705969.000	1313835.200	1593381.200	269877.470
x		T 2292265.100	380644.720	T 4307618.300	620449.770	21632.368	326923.770	1922095.800	2444544.700	1707247.000	1316233.000	1606966.500	273902.720
σ		T 163167.870	4653.511	T 48226.037	4594.124	509.120	3234.995	9233.797	9263.926	13571.604	2111.255	12267.271	4424.384
%RSD		T 7.118	1.223	T 1.120	0.740	2.354	0.990	0.480	0.379	0.795	0.160	0.763	1.615

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:22:38	108954.980	T 4082809.400	T 17971303.000	204142.620	0.000	475744.440	238742.780
2	21:22:59	108934.840	T 4140162.900	T 18243811.000	204679.140	0.000	486359.310	242044.900
3	21:23:20	109196.550	T 4152673.300	T 17958018.000	203940.160	10.000	486174.020	245763.730
x		109028.790	T 4125215.200	T 18057711.000	204253.970	3.333	482759.260	242183.810
σ		145.632	T 37253.399	T 161304.390	381.866	5.774	6075.716	3512.535
%RSD		0.134	T 0.903	T 0.893	0.187	173.205	1.259	1.450

CCB 1035925 5/19/2017 9:27:59 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:28:20	230999.810	72.500	3370.341	633173.040	770.018	10823.513	798605.450	17318.994	364880.890	85.000	14541.341	2420.176
2	21:28:41	231303.990	75.000	3045.278	631657.120	780.018	12504.689	792682.510	17459.140	364318.800	105.000	14996.744	2455.181

3	21:29:03	234041.810	75.000	3215.310	632871.920	1020.031	16252.921	782131.140	17238.911	364676.490	65.000	15066.807	2460.182
x		232115.200	74.167	3210.310	632567.360	856.689	13193.708	791139.700	17339.015	364625.390	85.000	14868.297	2445.179
σ		1675.409	1.443	162.589	802.543	141.547	2779.510	8344.815	111.471	284.511	20.000	285.312	21.798
%RSD		0.722	1.946	5.065	0.127	16.523	21.067	1.055	0.643	0.078	23.529	1.919	0.891

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:28:20	4830.700	1795.097	408685.010	205.001	200.001	905.025	2695.218	3499.367	1097.036	566.510	516.008	2525.191
2	21:28:41	5125.788	1990.119	414075.650	185.001	155.001	1050.033	2560.197	3457.359	1183.042	529.008	531.508	2370.169
3	21:29:03	5320.849	2445.179	427185.350	235.002	285.002	1015.031	2595.202	3465.360	1172.041	553.509	544.009	2395.172
x		5092.446	2076.798	416648.670	208.335	213.335	990.030	2616.872	3474.029	1150.706	549.676	530.508	2430.177
σ		246.770	333.597	9514.774	25.166	66.019	75.668	70.071	22.306	46.804	19.042	14.027	83.229
%RSD		4.846	16.063	2.284	12.080	30.946	7.643	2.678	0.642	4.067	3.464	2.644	3.425

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:28:20	320.003	396019.710	350.004	40.000	10.000	25.000	1955076.700	1295.050	435.006	270.502	135.001	267997.490
2	21:28:41	300.003	399644.710	375.004	40.000	5.000	10.000	1988428.000	1265.048	360.004	298.503	150.001	274115.800
3	21:29:03	380.004	405257.840	495.007	65.000	5.000	50.000	1986957.100	1210.044	345.004	290.003	170.001	273373.760
x		333.337	400307.420	406.672	48.333	6.667	28.333	1976820.600	1256.714	380.004	286.336	151.667	271829.020
σ		41.634	4654.583	77.515	14.434	2.887	20.207	18845.088	43.112	48.219	14.356	17.560	3338.874
%RSD		12.490	1.163	19.061	29.863	43.301	71.320	0.953	3.431	12.689	5.014	11.578	1.228

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:28:20	105.000	2765.229	1325.053	200134.440	0.000	30.000	5.000
2	21:28:41	100.000	2250.152	1365.056	204719.630	0.000	50.000	20.000
3	21:29:03	155.001	2460.182	1700.087	203697.220	0.000	25.000	10.000
x		120.000	2491.854	1463.398	202850.430	0.000	35.000	11.667
σ		30.414	258.995	205.952	2407.025	0.000	13.229	7.638
%RSD		25.345	10.394	14.074	1.187	0.000	37.796	65.465

CCVL 1039949 5/19/2017 9:33:40 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:34:02	241568.060	437.506	16718.381	T2798727.300	72929.212	199016.170	T4074041.400	93783.118	384238.710	90.000	43652.090	22480.150
2	21:34:24	235826.710	462.506	16603.266	T2731776.000	73742.780	200928.920	T4079584.100	93209.916	388219.380	105.000	44353.940	22655.388
3	21:34:45	239549.230	415.005	16813.477	T2786708.700	74285.181	198484.890	T4067267.000	92284.789	386489.870	125.000	43752.353	22535.225
x		238981.330	438.339	16711.708	T2772404.000	73652.391	199476.660	T4073630.800	93092.608	386315.980	106.667	43919.461	22556.921
σ		2912.501	23.762	105.264	T35694.394	682.488	1285.438	T6168.816	756.021	1996.023	17.560	379.595	89.611
%RSD		1.219	5.421	0.630	T1.287	0.927	0.644	T0.151	0.812	0.517	16.462	0.864	0.397

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:34:02	8572.204	18935.751	1861781.100	6816.394	3340.335	12689.829	42193.341	9424.664	1726.089	966.528	519.508	3025.275
2	21:34:24	8532.183	18665.446	1884488.000	7376.632	3340.335	11979.304	43130.736	9799.880	1682.085	1034.032	544.509	2840.242
3	21:34:45	7951.897	19010.836	1869647.900	6851.408	3355.338	12014.329	42569.295	9933.960	1643.081	997.530	543.009	3075.284
x		8352.095	18870.678	1871972.300	7014.811	3345.336	12227.820	42631.124	9719.501	1683.752	999.363	535.675	2980.267
σ		347.159	181.658	11530.540	313.835	8.662	400.494	471.746	263.991	41.529	33.789	14.021	123.816
%RSD		4.157	0.963	0.616	4.474	0.259	3.275	1.107	2.716	2.466	3.381	2.617	4.155

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:34:02	55246.413	411825.920	32697.041	6951.449	135.001	1955.115	2031497.300	1270.048	14336.163	11154.231	13715.641	275071.350
2	21:34:24	55793.230	411897.660	33087.812	7226.566	125.000	1905.109	2047488.100	1280.049	14531.332	11285.319	13650.588	278761.910
3	21:34:45	56084.205	420354.930	32641.934	7031.483	90.000	1970.116	2087833.400	1230.045	14726.503	11256.800	13910.803	283338.120
x		55707.950	414692.840	32808.929	7069.833	116.667	1943.447	2055606.300	1260.048	14531.333	11232.117	13759.011	279057.130
σ		425.356	4903.647	243.086	141.511	23.629	34.038	29032.146	26.460	195.170	68.942	135.420	4141.282
%RSD		0.764	1.182	0.741	2.002	20.254	1.751	1.412	2.100	1.343	0.614	0.984	1.484

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:34:02	15271.994	36414.738	13840.745	204426.060	0.000	46971.095	23872.084
2	21:34:24	14971.722	35713.222	14216.060	201045.310	0.000	47903.744	24122.444
3	21:34:45	14826.592	35683.158	14241.082	207888.490	0.000	46249.080	23321.305
x		15023.436	35937.039	14099.296	204453.290	0.000	47041.307	23771.944
σ		227.160	413.972	224.261	3421.674	0.000	829.563	409.850
%RSD		1.512	1.152	1.591	1.674	0.000	1.763	1.724

MB 200-116636/1-A 5/19/2017 9:39:22 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:39:43	243110.240	105.000	3645.399	1070424.800	8792.319	138392.200	915692.220	59014.296	389928.590	310.003	21684.097	4235.538
2	21:40:04	246560.370	95.000	4060.495	1064417.800	8802.324	137293.160	909422.530	59315.362	397494.190	170.001	22430.083	3925.462
3	21:40:26	244754.040	110.000	3350.337	1060488.800	8332.082	139355.170	908050.690	59817.150	399245.310	205.001	21543.915	3675.405
x		244808.220	103.334	3685.410	1065110.400	8642.242	138346.840	911055.150	59382.269	395556.030	228.335	21886.032	3945.469
σ		1725.703	7.638	356.766	5004.073	268.652	1031.752	4073.983	405.588	4951.532	72.859	476.347	280.602
%RSD		0.705	7.391	9.680	0.470	3.109	0.746	0.447	0.683	1.252	31.909	2.176	7.112

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:39:43	7676.768	8337.085	753872.650	640.012	435.006	2160.140	5781.002	5037.761	1673.084	552.009	541.009	2585.200
2	21:40:04	7831.840	8262.047	760959.030	600.011	435.006	2350.166	6246.170	5085.776	1531.070	566.010	567.010	2925.257
3	21:40:26	7761.807	8847.348	764301.900	465.006	450.006	2270.155	6166.140	5196.810	1665.083	557.009	581.010	2670.214
x		7756.805	8482.160	759711.200	568.343	440.006	2260.153	6064.438	5106.782	1623.079	558.343	563.010	2726.890
σ		77.657	318.480	5325.427	91.700	8.660	95.407	248.702	81.579	79.782	7.095	20.298	176.971
%RSD		1.001	3.755	0.701	16.135	1.968	4.221	4.101	1.597	4.915	1.271	3.605	6.490

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:39:43	2420.176	423164.710	945.027	145.001	15.000	50.000	2065331.600	2440.179	455.006	397.005	465.006	277206.290
2	21:40:04	2130.136	424610.800	1090.036	145.001	20.000	45.000	2086060.600	2260.153	520.008	417.505	475.007	286532.030
3	21:40:26	2280.156	433443.860	1025.032	170.001	5.000	45.000	2074750.900	2325.162	500.008	418.505	550.009	282371.920
x		2276.823	427073.120	1020.031	153.334	13.333	46.667	2075381.000	2341.831	491.674	411.005	496.674	282036.750
σ		145.049	5564.397	72.634	14.434	7.638	2.887	10378.889	91.163	33.293	12.135	46.459	4671.896
%RSD		6.371	1.303	7.121	9.413	57.282	6.186	0.500	3.893	6.771	2.953	9.354	1.656

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:39:43	210.001	1405.059	2810.237	203727.580	0.000	360.004	115.000
2	21:40:04	250.002	1125.038	3085.286	205499.130	0.000	415.005	110.000
3	21:40:26	260.002	1125.038	2795.234	207088.630	0.000	260.002	100.000
x		240.002	1218.378	2896.919	205438.450	0.000	345.004	108.334
σ		26.458	161.670	163.303	1681.343	0.000	78.583	7.638
%RSD		11.024	13.269	5.637	0.818	0.000	22.777	7.050

LCS 200-116636/2-A 5/19/2017 9:45:03 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:45:25	237297.360	3582.885	147298.040	T 22677055.000	767566.930	2007909.200	T 33575853.000	782539.660	387533.690	220.001	305112.480	215114.320
2	21:45:46	239092.750	3587.886	149290.650	T 22897583.000	773062.390	T 2306231.700	T 33859301.000	788983.020	392057.670	200.001	305087.020	213473.430
3	21:46:07	236526.520	3607.891	147146.710	T 22341883.000	766876.200	1999772.500	T 33517270.000	788207.600	388567.340	165.001	302312.140	213751.960
x		237638.880	3592.887	147911.800	T 22638840.000	769168.510	T 2104637.800	T 33650808.000	786576.760	389386.240	195.001	304170.540	214113.240
σ		1316.760	13.232	1196.514	T 279814.060	3389.838	T 174632.830	T 182920.670	3517.663	2370.555	27.839	1609.478	878.080
%RSD		0.554	0.368	0.809	T 1.236	0.441	T 8.298	T 0.544	0.447	0.609	14.276	0.529	0.410

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:45:25	32947.534	178409.820	T 17532037.000	72155.857	33177.991	117286.230	370625.580	62574.246	4907.722	4591.132	550.009	6536.281
2	21:45:46	32166.010	176302.570	T 17376022.000	73270.705	33628.893	118086.860	374342.280	62494.949	4919.726	4612.138	531.508	6361.214
3	21:46:07	31895.490	179430.690	T 17534444.000	72964.365	33328.290	117361.760	364681.600	62651.536	4752.677	4498.607	523.508	6401.229
x		32336.345	178047.690	T 17480834.000	72796.975	33378.391	117578.290	369883.150	62573.577	4860.042	4567.293	535.009	6432.908
σ		546.314	1595.190	T 90778.352	575.965	229.588	442.053	4872.941	78.295	93.174	60.403	13.593	91.732
%RSD		1.689	0.896	T 0.519	0.791	0.688	0.376	1.317	0.125	1.917	1.323	2.541	1.426

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:45:25	588727.540	415280.060	341370.580	72140.792	1205.044	17934.644	2036203.000	2315.161	143984.270	112300.570	142441.090	279433.010

2	21:45:46	586092.060	418047.980	344677.600	72592.748	1150.040	18214.948	2047826.100	2415.175	147484.680	113435.220	143606.030	287071.190
3	21:46:07	590793.760	416346.170	345795.400	72411.964	1355.055	18465.223	2044919.600	2480.185	148296.840	113483.040	142647.850	282463.460
x		588537.790	416558.070	343947.860	72381.834	1236.713	18204.939	2042982.900	2403.507	146588.590	113072.940	142898.320	282989.220
σ		2356.590	1396.075	2300.905	227.479	106.113	265.431	6048.762	83.128	2291.677	669.320	621.546	3846.135
%RSD		0.400	0.335	0.669	0.314	8.580	1.458	0.296	3.459	1.563	0.592	0.435	1.359

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:45:25	155577.760	373539.570	131834.350	197746.190	0.000	501456.970	247610.770
2	21:45:46	154684.500	372670.430	132166.970	205286.540	0.000	507140.100	255574.640
3	21:46:07	156627.520	378351.290	133643.680	206217.930	0.000	507923.420	255432.490
x		155629.930	374853.760	132548.340	203083.550	0.000	505506.830	252872.630
σ		972.560	3059.965	963.064	4645.693	0.000	3529.085	4557.461
%RSD		0.625	0.816	0.727	2.288	0.000	0.698	1.802

480-117618-E-1-A 5/19/2017 9:50:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:51:06	224349.890	60.000	17699.393	T 36850626.000	1240197.500	235857.130	T 14723077.000	T 3166538.800	353581.220	1055.033	16653.316	3830.440
2	21:51:27	225272.210	82.500	17984.698	T 36364163.000	1224293.800	236962.650	T 14489706.000	T 3145296.100	356870.220	1000.030	16638.301	3850.445
3	21:51:50	219029.830	47.500	18169.899	T 36842417.000	1233797.700	235294.260	T 14691245.000	T 3190154.900	353366.750	1130.038	17559.245	3540.376
x		222883.980	63.333	17951.330	T 36685735.000	1232763.000	236038.010	T 14634676.000	T 3167329.900	354606.060	1061.701	16950.287	3740.420
σ		3369.497	17.737	237.021	T 278519.910	8002.182	848.775	T 126552.490	T 22439.849	1963.747	65.260	527.426	173.532
%RSD		1.512	28.005	1.320	T 0.759	0.649	0.360	T 0.865	T 0.708	0.554	6.147	3.112	4.639

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:51:06	5936.057	138155.240	933035.530	685.014	685.014	3165.301	7326.610	25464.438	1333.053	526.008	506.008	7811.830
2	21:51:27	5851.027	140489.630	934673.600	780.018	825.020	3210.309	7221.564	25142.951	1311.052	505.508	529.008	7986.913
3	21:51:50	6146.133	139264.420	929537.990	670.013	675.014	3045.278	7811.830	25400.341	1420.061	526.508	513.508	7556.713
x		5977.739	139303.100	932415.710	711.682	728.349	3140.296	7453.335	25335.910	1354.722	519.341	516.175	7785.152
σ		151.904	1167.677	2623.307	59.654	83.869	85.310	314.878	170.153	57.644	11.983	11.730	216.338
%RSD		2.541	0.838	0.281	8.382	11.515	2.717	4.225	0.672	4.255	2.307	2.272	2.779

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:51:06	860789.160	391228.520	12104.394	125.000	10.000	115.000	1914932.500	1905.109	620.012	456.506	12995.064	272336.990
2	21:51:27	863446.460	395794.450	11779.161	110.000	10.000	105.000	1931500.800	1915.110	520.008	492.007	12649.799	274827.370
3	21:51:50	863162.300	392682.120	12249.500	100.000	10.000	95.000	1926050.900	1800.097	575.010	482.507	13080.131	275915.130
x		862465.970	393235.030	12044.352	111.667	10.000	105.000	1924161.400	1873.439	571.677	477.007	12908.331	274359.830
σ		1459.095	2332.639	240.849	12.583	0.000	10.000	8444.201	63.712	50.085	18.378	227.900	1834.314
%RSD		0.169	0.593	2.000	11.268	0.000	9.524	0.439	3.401	8.761	3.853	1.766	0.669

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:51:06	5005.752	1455.064	3310.329	201672.820	0.000	1195.043	88800.940
2	21:51:27	4930.729	1455.064	3485.364	202219.380	0.000	1270.048	91334.576
3	21:51:50	5175.804	1340.054	3395.346	203484.640	0.000	1345.054	91138.507
x		5037.428	1416.727	3397.013	202458.950	0.000	1270.049	90424.674
σ		125.570	66.401	87.530	929.365	0.000	75.006	1409.609
%RSD		2.493	4.687	2.577	0.459	0.000	5.906	1.559

480-117618-E-2-A 5/19/2017 9:56:28 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:56:49	230067.040	70.000	5055.767	T 22964534.000	T 4550724.400	61387.846	2406498.700	2130885.300	354623.010	225.002	21043.276	3920.461
2	21:57:11	231314.120	52.500	4460.597	T 23163760.000	T 4605388.200	62712.765	2423935.200	T 2538674.200	360251.810	290.003	19961.947	3820.438

3	21:57:32	226224.980	57.500	4660.652	┬23108654.000	┬4567862.300	61995.088	┬2777010.200	┬2531118.600	357861.130	275.002	20207.243	3950.468
x		229202.050	60.000	4725.672	┬23078983.000	┬4574658.300	62031.900	┬2535814.700	┬2400226.000	357578.650	263.335	20404.155	3897.122
σ		2652.546	9.014	302.866	┬102874.080	┬27958.404	663.226	┬209063.280	┬233286.510	2825.013	34.035	566.921	68.084
%RSD		1.157	15.023	6.409	┬0.446	┬0.611	1.069	┬8.244	┬9.719	0.790	12.925	2.778	1.747

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:56:49	7986.913	┬11536839.000	466889.230	4770.683	3645.399	3945.467	4965.740	4742.675	1516.069	500.008	532.008	6146.133
2	21:57:11	7751.802	┬11642978.000	471974.500	5120.787	3505.369	4415.585	5240.824	4451.594	1415.060	537.009	515.008	6006.082
3	21:57:32	7451.665	┬11690744.000	468519.030	5250.827	3660.402	3945.467	5005.752	4386.577	1431.061	509.008	528.008	5841.023
x		7730.127	┬11623520.000	469127.580	5047.432	3603.723	4102.173	5070.772	4526.949	1454.064	515.341	525.008	5997.746
σ		268.281	┬78775.934	2596.677	248.335	85.507	271.423	148.622	189.631	54.291	19.297	8.888	152.726
%RSD		3.471	┬0.678	0.554	4.920	2.373	6.617	2.931	4.189	3.734	3.744	1.693	2.546

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:56:49	548876.550	410780.600	655.013	100.000	10.000	125.000	1903932.900	1495.067	470.007	423.505	6061.102	270009.580
2	21:57:11	548106.830	410309.200	680.014	70.000	35.000	105.000	1928859.600	1650.082	510.008	455.006	6046.097	276403.110
3	21:57:32	552410.480	406354.050	800.019	60.000	45.000	115.000	1953496.500	1740.091	465.006	439.506	6186.148	279931.270
x		549797.960	409147.950	711.682	76.667	30.000	115.000	1928763.000	1628.413	481.674	439.339	6097.782	275447.990
σ		2295.011	2431.041	77.517	20.817	18.028	10.000	24781.952	123.941	24.665	15.751	76.894	5029.330
%RSD		0.417	0.594	10.892	27.152	60.093	8.696	1.285	7.611	5.121	3.585	1.261	1.826

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:56:49	140.001	795.019	1525.070	201338.820	0.000	230.002	505.008
2	21:57:11	185.001	930.026	1605.077	202523.040	0.000	195.001	570.010
3	21:57:32	190.001	800.019	1580.075	204810.740	0.000	240.002	525.008
x		171.668	841.688	1570.074	202890.860	0.000	221.668	533.342
σ		27.538	76.544	40.931	1764.945	0.000	23.629	33.293
%RSD		16.042	9.094	2.607	0.870	0.000	10.660	6.242

480-117618-E-3-A 5/19/2017 10:02:10 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:02:32	224988.410	72.500	4740.674	┬22540693.000	┬4442172.400	55743.063	┬2723969.600	┬2460744.900	354142.960	315.003	20462.554	4110.507
2	22:02:53	228252.340	67.500	4625.642	┬22616962.000	┬4452144.900	58121.166	┬2689058.200	2085428.400	354541.300	265.002	19976.965	3870.449
3	22:03:14	227066.310	60.000	4720.668	┬22602241.000	┬4469762.900	57333.444	┬2685979.000	2060201.000	352570.140	260.002	20007.001	3855.446
x		226769.020	66.667	4695.662	┬22586632.000	┬4454693.400	57065.891	┬2699668.900	┬2202124.800	353751.470	280.002	20148.840	3945.467
σ		1652.149	6.292	61.458	┬40459.330	┬13970.661	1211.417	┬21101.226	┬224326.550	1042.266	30.414	272.099	143.125
%RSD		0.729	9.437	1.309	┬0.179	┬0.314	2.123	┬0.782	┬10.187	0.295	10.862	1.350	3.628

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:02:32	7581.724	┬11241179.000	464046.470	4850.706	3540.376	3285.324	4980.744	4369.573	1421.061	475.507	480.507	5625.949
2	22:02:53	7316.606	┬11070739.000	459996.500	4600.635	3705.412	3130.294	4890.718	4281.550	1333.053	491.007	478.507	5781.002
3	22:03:14	7191.551	┬11287943.000	460299.700	4960.738	3625.394	3190.305	5165.800	4071.497	1286.050	515.508	493.007	6106.118
x		7363.294	┬11199954.000	461447.560	4804.026	3623.727	3201.974	5012.421	4240.873	1346.721	494.007	484.007	5837.690
σ		199.232	┬114319.990	2255.830	184.534	82.531	78.171	140.251	153.144	68.535	20.169	7.858	245.052
%RSD		2.706	┬1.021	0.489	3.841	2.278	2.441	2.798	3.611	5.089	4.083	1.624	4.198

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:02:32	524030.740	403301.220	655.013	60.000	20.000	130.001	1921229.100	1630.080	640.012	463.006	5846.025	276911.450
2	22:02:53	528405.660	410227.210	680.014	115.000	20.000	115.000	1947177.200	1615.078	580.010	462.506	5730.985	278334.860
3	22:03:14	525402.940	413691.280	785.018	65.000	40.000	155.001	1944365.700	1795.097	550.009	476.507	6136.129	279799.080
x		525946.450	409073.240	706.682	80.000	26.667	133.334	1937590.700	1680.085	590.010	467.340	5904.380	278348.460
σ		2237.531	5290.278	68.984	30.414	11.547	20.207	14239.093	99.885	45.827	7.943	208.781	1443.863
%RSD		0.425	1.293	9.762	38.017	43.301	15.156	0.735	5.945	7.767	1.700	3.536	0.519

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:02:32	225.002	875.023	1860.104	203788.320	0.000	140.001	530.008
2	22:02:53	195.001	850.022	2035.124	206805.140	0.000	155.001	455.006
3	22:03:14	165.001	650.013	1940.113	205397.900	0.000	180.001	480.007
x		195.001	791.686	1945.114	205330.450	0.000	158.334	488.341
σ		30.000	123.328	87.617	1509.541	0.000	20.207	38.189
%RSD		15.385	15.578	4.504	0.735	0.000	12.763	7.820

480-117618-E-4-A 5/19/2017 10:07:54 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:08:15	225799.270	85.000	58121.166	T 65079243.000	T 5217955.200	69173.251	T 13648062.000	T 2850509.900	342738.220	405.005	32857.356	3630.395
2	22:08:37	223356.680	102.500	58156.288	T 65166560.000	T 5227262.800	68113.901	T 13612150.000	T 2875352.300	339400.960	455.006	35237.210	3555.379
3	22:08:59	225393.840	60.000	58462.356	T 64869210.000	T 5166467.800	68199.249	T 13488132.000	T 2848611.100	344310.120	395.005	36670.297	3820.438
x		224849.930	82.500	58246.603	T 65038338.000	T 5203895.300	68495.467	T 13582781.000	T 2858157.800	342149.770	418.339	34921.621	3668.738
σ		1308.980	21.360	187.671	T 152837.120	T 32745.525	588.527	T 83912.437	T 14921.146	2506.927	32.146	1925.961	136.626
%RSD		0.582	25.891	0.322	T 0.235	T 0.629	0.859	T 0.618	T 0.522	0.733	7.684	5.515	3.724

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:08:15	12109.398	185572.390	502950.990	425.005	515.008	2430.177	5986.075	10839.524	2068.128	455.006	472.007	8282.057
2	22:08:37	12804.917	188004.420	499205.880	380.004	580.010	2375.169	5876.036	11216.773	2042.125	448.006	520.008	8192.013
3	22:08:59	12995.064	184970.760	495106.280	415.005	605.011	2305.159	6396.227	11170.742	2269.155	477.007	501.008	7791.821
x		12636.460	186182.530	499087.720	406.672	566.676	2370.169	6086.113	11075.680	2126.469	460.006	497.674	8088.630
σ		466.245	1606.229	3923.691	23.630	46.459	62.659	274.145	205.808	124.251	15.133	24.174	260.958
%RSD		3.690	0.863	0.786	5.810	8.199	2.644	4.504	1.858	5.843	3.290	4.857	3.226

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:08:15	911459.400	376044.970	4200.529	110.000	10.000	155.001	1865700.100	1630.080	585.010	404.005	3405.348	268139.760
2	22:08:37	920454.070	375400.690	4530.616	140.001	30.000	230.002	1866915.600	1570.074	555.009	430.006	3225.312	271513.720
3	22:08:59	904642.650	375871.110	4265.546	135.001	25.000	175.001	1872447.600	1690.086	625.012	416.505	3490.365	269420.160
x		912185.380	375772.260	4332.230	128.334	21.667	186.668	1868354.500	1630.080	588.344	416.839	3373.675	269691.210
σ		7930.672	333.323	174.855	16.073	10.408	38.838	3596.511	60.006	35.120	13.004	135.336	1703.237
%RSD		0.869	0.089	4.036	12.524	48.038	20.806	0.192	3.681	5.969	3.120	4.012	0.632

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:08:15	155.001	605.011	1615.078	200599.990	0.000	160.001	12469.663
2	22:08:37	195.001	610.011	1685.085	199739.750	0.000	155.001	12829.936
3	22:08:59	240.002	540.009	1745.091	201156.640	5.000	150.001	12884.979
x		196.668	585.010	1681.752	200498.790	1.667	155.001	12728.193
σ		42.525	39.053	65.071	713.844	2.887	5.000	225.578
%RSD		21.623	6.676	3.869	0.356	173.205	3.226	1.772

480-117618-E-5-A 5/19/2017 10:13:36 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:13:57	223093.190	67.500	17278.952	T 39309747.000	T 5476721.800	29976.934	T 10448420.000	2235432.900	333768.920	305.003	44323.860	3795.432
2	22:14:19	222860.100	72.500	16693.356	T 38621842.000	T 5423572.300	29551.175	T 10349075.000	T 2634483.700	329688.910	310.003	43476.633	3590.387
3	22:14:41	222434.470	37.500	17614.303	T 38986697.000	T 5455631.900	28664.629	T 10318744.000	T 2668938.700	330178.460	365.004	45075.873	3845.444
x		222795.920	59.167	17195.537	T 38972762.000	T 5451975.300	29397.579	T 10372080.000	T 2512951.800	331212.090	326.670	44292.122	3743.754
σ		334.015	18.930	466.106	T 344164.450	T 26762.740	669.500	T 67829.883	T 240955.010	2227.763	33.292	800.092	135.153
%RSD		0.150	31.994	2.711	T 0.883	T 0.491	2.277	T 0.654	T 9.589	0.673	10.191	1.806	3.610

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:13:57	15762.450	4460.597	402072.060	265.002	435.006	1340.054	4380.576	8610.224	2717.222	479.007	478.507	6971.458
2	22:14:19	15872.555	4695.661	402840.280	260.002	430.006	1555.073	4600.635	8386.109	2717.222	485.507	481.507	6991.466
3	22:14:41	16448.112	4165.521	401626.500	210.001	485.007	1465.064	4455.596	8736.289	2529.192	507.508	457.506	7306.601
x		16027.706	4440.593	402179.610	245.002	450.006	1453.397	4478.935	8577.541	2654.545	490.674	472.507	7089.842
σ		368.221	265.636	613.992	30.414	30.415	107.983	111.871	177.363	108.559	14.936	13.077	187.986
%RSD		2.297	5.982	0.153	12.414	6.759	7.430	2.498	2.068	4.090	3.044	2.768	2.651

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:13:57	752319.790	374429.200	3515.371	210.001	0.000	285.002	1836053.000	1680.085	595.011	505.008	3805.434	263415.310

2	22:14:19	747463.440	376239.280	3470.361	240.002	5.000	240.002	1844370.500	1370.056	615.011	478.007	4075.498	271300.290
3	22:14:41	760069.810	368131.210	3375.342	220.001	20.000	150.001	1851288.100	1480.066	645.012	500.008	3940.466	267814.590
x		753284.350	372933.230	3453.691	223.335	8.333	225.002	1843903.900	1510.069	618.345	494.341	3940.466	267510.060
σ		6358.292	4256.014	71.487	15.275	10.408	68.740	7628.280	157.177	25.167	14.365	135.032	3951.302
%RSD		0.844	1.141	2.070	6.840	124.900	30.551	0.414	10.409	4.070	2.906	3.427	1.477

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:13:57	180.001	550.009	1180.042	198930.150	0.000	70.000	11684.094
2	22:14:19	180.001	605.011	1255.047	201693.060	0.000	80.000	11589.028
3	22:14:41	200.001	545.009	1245.047	199679.030	0.000	95.000	12309.544
x		186.668	566.676	1226.712	200100.750	0.000	81.667	11860.889
σ		11.547	33.293	40.726	1428.917	0.000	12.583	391.444
%RSD		6.186	5.875	3.320	0.714	0.000	15.408	3.300

480-117618-E-6-A 5/19/2017 10:19:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:19:42	223579.640	50.000	4935.731	T 55541770.000	661574.910	34290.238	T 10041840.000	1569540.300	333197.660	310.003	64328.907	7601.733
2	22:20:04	223549.240	60.000	4770.683	T 54282301.000	662719.050	34465.600	T 9975597.000	1563401.600	328444.700	285.002	64524.662	7466.672
3	22:20:26	219050.090	47.500	5010.753	T 54266888.000	654732.510	34525.724	T 9863395.700	1566799.600	328291.730	235.002	64439.332	7436.659
x		222059.660	52.500	4905.722	T 54696986.000	659675.490	34427.187	T 9960277.600	1566580.500	329978.030	276.669	64430.967	7501.688
σ		2606.407	6.614	122.816	T 731644.630	4318.803	122.352	T 90203.123	3075.208	2789.328	38.189	98.145	87.932
%RSD		1.174	12.599	2.504	T 1.338	0.655	0.355	T 0.906	0.196	0.845	13.803	0.152	1.172

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:19:42	21398.728	5510.911	443944.900	190.001	445.006	4780.686	6201.153	19972.960	3492.366	458.006	459.506	9067.466
2	22:20:04	21408.741	5530.918	444037.310	195.001	440.006	4665.653	6381.221	20266.314	3448.357	470.507	452.506	9192.534
3	22:20:26	21373.696	5590.938	446779.150	140.001	420.005	4735.673	6191.150	20168.195	3412.349	452.006	453.506	8847.348
x		21393.722	5544.255	444920.450	175.001	435.006	4727.337	6257.842	20135.823	3451.024	460.173	455.173	9035.783
σ		18.051	41.647	1610.338	30.414	13.229	57.968	106.967	149.332	40.075	9.439	3.786	174.761
%RSD		0.084	0.751	0.362	17.379	3.041	1.226	1.709	0.742	1.161	2.051	0.832	1.934

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:19:42	1014669.200	364093.960	46123.734	35.000	25.000	15.000	1812980.400	1580.075	470.007	301.503	320.003	266259.980
2	22:20:04	1016761.100	364247.260	45827.919	40.000	35.000	20.000	1822688.600	1595.076	410.005	318.503	220.001	266046.610
3	22:20:26	1020796.900	370594.910	46715.378	30.000	30.000	30.000	1813958.800	1440.062	390.005	307.003	215.001	266473.350
x		1017409.100	366312.040	46222.344	35.000	30.000	21.667	1816542.600	1538.405	423.339	309.003	251.669	266259.980
σ		3114.826	3709.865	451.872	5.000	5.000	7.638	5345.005	85.497	41.634	8.675	59.232	213.368
%RSD		0.306	1.013	0.978	14.286	16.667	35.251	0.294	5.557	9.835	2.807	23.536	0.080

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:19:42	670.013	380.004	1655.082	201561.490	0.000	90.000	1341364.700
2	22:20:04	545.009	420.005	1720.089	202138.410	0.000	90.000	1370687.400
3	22:20:26	655.013	410.005	1805.098	200761.920	0.000	65.000	1378162.700
x		623.345	403.338	1726.756	201487.270	0.000	81.667	1363404.900
σ		68.254	20.817	75.230	691.238	0.000	14.434	19449.898
%RSD		10.950	5.161	4.357	0.343	0.000	17.674	1.427

480-117679-B-2-A 5/19/2017 10:25:01 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:25:21	217966.020	60.000	19376.257	T 69552656.000	T 16444312.000	28504.354	T 12441754.000	T 6364684.400	329923.480	495.007	34650.983	4545.620
2	22:25:43	215615.740	47.500	19150.997	T 70115387.000	T 16550056.000	28649.603	T 12361308.000	T 6390238.900	325365.180	565.010	34485.641	4465.598

3	22:26:06	217925.490	47.500	19311.181	┬71005636.000	┬16596927.000	28930.087	┬12470083.000	┬6410057.400	324885.960	425.005	35602.987	4810.694
x		217169.080	51.667	19279.478	┬70224559.000	┬16530432.000	28694.681	┬12424382.000	┬6388326.900	326724.870	495.007	34913.204	4607.304
σ		1345.386	7.217	115.928	┬732616.450	┬78177.465	216.417	┬56430.291	┬22746.859	2780.420	70.002	603.063	180.628
%RSD		0.620	13.968	0.601	┬1.043	┬0.473	0.754	┬0.454	┬0.356	0.851	14.142	1.727	3.920

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:25:21	12414.622	162533.670	414044.900	660.013	970.028	2565.197	5801.009	6857.410	2125.136	502.008	491.007	14981.731
2	22:25:43	13075.127	164765.420	418288.920	505.008	835.021	2550.195	6141.131	7073.501	2278.156	475.507	458.506	15862.545
3	22:26:06	12859.959	163285.970	422523.750	520.008	830.021	2385.171	6041.095	7140.529	2166.141	467.007	467.007	14911.668
x		12783.236	163528.350	418285.850	561.676	878.357	2500.188	5994.412	7023.814	2189.811	481.507	472.173	15251.981
σ		336.870	1135.449	4239.428	85.492	79.429	99.890	174.800	147.955	79.209	18.256	16.855	529.923
%RSD		2.635	0.694	1.014	15.221	9.043	3.995	2.916	2.106	3.617	3.791	3.570	3.474

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:25:21	┬2399055.000	363879.350	605.011	630.012	15.000	225.002	1788650.200	1490.067	680.014	538.509	3590.387	265894.210
2	22:25:43	2049831.700	366955.710	575.010	650.013	40.000	230.002	1790448.800	1450.063	660.013	547.509	3490.365	264705.510
3	22:26:06	┬2422901.400	363777.160	590.010	830.021	25.000	270.002	1799933.500	1385.058	745.017	582.010	3735.419	265122.050
x		┬2290596.000	364870.740	590.010	703.348	26.667	241.668	1793010.900	1441.729	695.015	556.009	3605.390	265240.590
σ		┬208848.650	1806.359	15.001	110.156	12.583	24.665	6062.241	52.998	44.443	22.963	123.214	603.149
%RSD		┬9.118	0.495	2.542	15.662	47.187	10.206	0.338	3.676	6.395	4.130	3.417	0.227

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:25:21	105.000	445.006	2135.137	199466.510	0.000	80.000	53927.103
2	22:25:43	170.001	445.006	2025.123	199122.430	0.000	60.000	55627.678
3	22:26:06	130.001	500.008	2025.123	200883.370	0.000	20.000	55843.398
x		135.001	463.340	2061.794	199824.100	0.000	53.333	55132.727
σ		32.787	31.755	63.516	933.347	0.000	30.551	1049.657
%RSD		24.287	6.854	3.081	0.467	0.000	57.282	1.904

480-117679-B-3-A 5/19/2017 10:30:43 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:31:04	223549.240	45.000	26270.688	┬51147466.000	871873.620	45326.551	┬13273044.000	┬2147366.500	325538.510	290.003	51389.103	4100.504
2	22:31:25	220732.060	62.500	26991.839	┬51321824.000	879593.830	45366.660	┬13194484.000	1812446.800	324631.070	215.001	52462.439	4015.484
3	22:31:46	220032.910	50.000	26290.720	┬51974227.000	892809.470	46008.416	┬13141559.000	┬2130949.900	325569.100	225.002	53470.636	3960.471
x		221438.070	52.500	26517.749	┬51481172.000	881425.640	45567.209	┬13203029.000	┬2030254.400	325246.230	243.335	52440.726	4025.486
σ		1861.446	9.014	410.696	┬435806.810	10587.449	382.622	┬66157.811	┬188805.420	532.963	40.723	1040.936	70.551
%RSD		0.841	17.169	1.549	┬0.847	1.201	0.840	┬0.501	┬9.300	0.164	16.735	1.985	1.753

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:31:04	17699.393	160388.030	441023.870	175.001	355.004	1400.059	4580.629	29746.522	2794.234	459.506	446.006	5490.904
2	22:31:25	17654.345	160489.000	436517.530	235.002	385.004	1265.048	4850.706	29625.306	2714.221	466.507	473.007	5645.956
3	22:31:46	18605.379	157263.470	431412.150	195.001	425.005	1465.064	4885.716	29483.054	2876.248	465.507	466.007	6081.109
x		17986.372	159380.170	436317.850	201.668	388.338	1376.724	4772.350	29618.294	2794.901	463.840	461.673	5739.323
σ		536.548	1833.809	4808.968	30.551	35.120	102.030	166.956	131.874	81.016	3.786	14.012	305.980
%RSD		2.983	1.151	1.102	15.149	9.044	7.411	3.498	0.445	2.899	0.816	3.035	5.331

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:31:04	545059.300	362346.490	12699.837	230.002	15.000	5.000	1802411.000	1310.052	430.006	367.504	31038.875	258763.280
2	22:31:25	554229.390	359373.150	12034.343	225.002	15.000	5.000	1780603.100	1400.059	505.008	381.004	31134.053	264288.980
3	22:31:46	544382.710	359689.870	11984.307	205.001	5.000	25.000	1800611.100	1570.074	460.006	421.505	32090.865	266087.250
x		547890.470	360469.840	12239.496	220.001	11.667	11.667	1794541.800	1426.728	465.007	390.005	31421.264	263046.500
σ		5500.085	1632.930	399.451	13.229	5.774	11.547	12104.693	132.047	37.750	28.103	581.841	3816.798
%RSD		1.004	0.453	3.264	6.013	49.487	98.974	0.675	9.255	8.118	7.206	1.852	1.451

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:31:04	4625.642	245.002	1120.038	200792.280	0.000	65.000	57624.445
2	22:31:25	4930.729	355.004	1015.031	200832.770	0.000	90.000	58537.619
3	22:31:46	5165.800	380.004	1030.032	198586.090	0.000	60.000	59771.989
x		4907.391	326.670	1055.034	200070.380	0.000	71.667	58644.685
σ		270.835	71.823	56.793	1285.595	0.000	16.073	1077.768
%RSD		5.519	21.986	5.383	0.643	0.000	22.427	1.838

CCV 1039951 5/19/2017 10:36:25 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:36:47	200407.700	190161.180	73521.807	┬33361776.000	┬10178215.000	┬102126090.000	┬49676908.000	┬4153273.500	304180.680	58959.101	┬6231954.700	1601353.600
2	22:37:08	202118.170	189053.690	72306.507	┬33293024.000	┬10177070.000	┬102363300.000	┬49783105.000	┬4148012.300	311840.290	59225.042	┬6215957.600	1595319.000
3	22:37:30	205225.800	188682.020	74019.000	┬33357308.000	┬10202814.000	┬101645740.000	┬49496924.000	┬4126769.700	308957.340	59370.558	┬6183805.400	1600678.200
x		202583.890	189298.960	73282.438	┬33337369.000	┬10186033.000	┬102045040.000	┬49652312.000	┬4142685.200	308326.100	59184.900	┬6210572.600	1599116.900
σ		2442.580	769.483	880.983	┬38469.361	┬14543.872	┬365581.470	┬144667.010	┬14032.017	3868.627	208.645	┬24522.178	3306.378
%RSD		1.206	0.406	1.202	┬0.115	┬0.143	┬0.358	┬0.291	┬0.339	1.255	0.353	┬0.395	0.207

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:36:47	195130.630	┬9416007.200	┬189682740.000	2715692.000	1521737.500	2165562.200	1908498.500	242965.150	15934.614	18598.872	442.506	14216.060
2	22:37:08	191549.450	┬9515256.400	┬192005020.000	┬3178930.900	1532828.000	2173321.500	1910125.000	242140.270	15529.231	18655.435	485.507	14331.159
3	22:37:30	195626.390	┬9517845.200	┬191210410.000	┬3153815.500	1520081.100	2191922.500	1915016.400	241966.780	15793.479	18603.377	467.507	14236.077
x		194102.160	┬9483036.300	┬190966060.000	┬3016146.100	1524882.200	2176935.400	1911213.300	242357.400	15752.442	18619.228	465.173	14261.099
σ		2224.565	┬58063.322	┬1180268.500	┬260503.730	6930.918	13546.640	3392.512	533.425	205.783	31.437	21.595	61.494
%RSD		1.146	┬0.612	┬0.618	┬8.637	0.455	0.622	0.178	0.220	1.306	0.169	4.642	0.431

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:36:47	┬2240001.300	346106.770	┬4021722.300	565834.740	20497.597	307755.410	1778428.300	2292512.500	1594056.400	1236646.100	1495253.900	255889.420
2	22:37:08	1898379.800	349588.310	┬4031032.400	572656.920	19651.579	306482.270	1788161.800	2284250.000	1607148.600	1243285.800	1506240.200	263425.470
3	22:37:30	1921822.000	354602.580	┬4032230.100	565865.770	20107.122	306380.420	1801344.400	2296716.600	1598756.200	1239802.100	1494729.900	260357.830
x		┬2020067.700	350099.220	┬4028328.300	568119.140	20085.432	306872.700	1789311.500	2291159.700	1599987.000	1239911.400	1498741.400	259890.900
σ		┬190828.410	4270.889	┬5752.222	3929.858	423.426	766.143	11501.233	6342.430	6632.344	3321.210	6499.465	3789.660
%RSD		┬9.447	1.220	┬0.143	0.692	2.108	0.250	0.643	0.277	0.415	0.268	0.434	1.458

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:36:47	104179.590	┬4103688.600	┬17948248.000	199537.350	5.000	482051.840	241334.710
2	22:37:08	104682.720	┬4067614.200	┬18147816.000	196612.900	0.000	485520.370	243226.920
3	22:37:30	104421.090	┬4098661.600	┬17983493.000	199679.030	0.000	480055.440	240654.990
x		104427.800	┬4089988.100	┬18026519.000	198609.760	1.667	482542.550	241738.880
σ		251.636	┬19538.761	┬106514.260	1730.781	2.887	2765.314	1332.749
%RSD		0.241	┬0.478	┬0.591	0.871	173.205	0.573	0.551

CCB 1035925 5/19/2017 10:42:06 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:42:28	210511.100	77.500	2825.239	562680.610	1520.069	13860.761	659630.060	13035.095	316221.690	75.000	13270.281	2230.149
2	22:42:49	214238.150	55.000	2535.193	563239.000	1180.042	12059.361	674476.900	15016.762	318127.450	75.000	13145.182	2080.130
3	22:43:10	213437.980	70.000	2655.212	572600.010	1250.047	11624.052	671864.500	13615.559	319941.690	55.000	12854.956	1950.114
x		212729.080	67.500	2671.881	566173.210	1316.719	12514.725	668657.150	13889.139	318096.940	68.333	13090.139	2086.798
σ		1962.044	11.456	145.740	5572.773	179.551	1185.847	7926.065	1018.766	1860.184	11.547	213.063	140.137
%RSD		0.922	16.973	5.455	0.984	13.636	9.476	1.185	7.335	0.585	16.898	1.628	6.715

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:42:28	4980.744	2040.125	345678.000	285.002	270.002	1405.059	2500.188	2715.221	924.026	470.507	435.006	2285.157
2	22:42:49	4750.677	1820.099	345616.750	310.003	170.001	1225.045	2465.182	2821.239	895.024	479.507	487.007	2340.164
3	22:43:10	4515.612	1870.105	340600.050	290.003	260.002	1120.038	2460.182	2758.228	953.027	460.506	465.507	1895.108
x		4749.011	1910.110	343964.940	295.003	233.335	1250.047	2475.184	2764.896	924.026	470.173	462.506	2173.476
σ		232.571	115.339	2914.238	13.229	55.076	144.146	21.798	53.322	29.002	9.505	26.130	242.638
%RSD		4.897	6.038	0.847	4.484	23.604	11.531	0.881	1.929	3.139	2.022	5.650	11.164

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:42:28	470.007	357207.330	595.011	65.000	10.000	55.000	1772936.900	1175.041	500.008	359.504	255.002	254467.900

2	22:42:49	395.005	363378.600	525.008	65.000	0.000	25.000	1801833.200	1070.034	525.008	314.003	160.001	260713.320
3	22:43:10	380.004	358606.900	430.006	60.000	0.000	35.000	1821309.300	1055.033	400.005	288.503	125.000	261241.490
x		415.005	359730.940	516.675	63.333	3.333	38.333	1798693.100	1100.036	475.007	320.670	180.001	258807.570
σ		48.219	3235.546	82.818	2.887	5.774	15.275	24338.623	65.388	66.146	35.967	67.269	3767.532
%RSD		11.619	0.899	16.029	4.558	173.205	39.849	1.353	5.944	13.925	11.216	37.371	1.456

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:42:28	105.000	3010.272	2325.162	194012.690	0.000	100.000	20.000
2	22:42:49	140.001	2830.240	1860.104	197756.310	0.000	70.000	15.000
3	22:43:10	75.000	2515.190	1930.112	198575.970	0.000	70.000	20.000
x		106.667	2785.234	2038.459	196781.660	0.000	80.000	18.333
σ		32.532	250.591	250.747	2432.761	0.000	17.321	2.887
%RSD		30.499	8.997	12.301	1.236	0.000	21.651	15.746

CCVL 1039949 5/19/2017 10:47:48 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:48:10	217641.820	355.004	14226.069	T 2469165.800	61593.603	167118.680	T 3482973.600	78283.418	326558.170	90.000	37006.038	19686.620
2	22:48:31	216142.500	387.505	14771.543	T 2479244.900	63229.713	171811.030	T 3521041.200	80634.587	333554.690	95.000	37867.971	19596.514
3	22:48:52	218199.040	332.503	14576.371	T 2456211.900	62446.769	170017.780	T 3516922.700	78735.540	329189.170	105.000	36474.869	19711.650
x		217327.780	358.337	14524.661	T 2468207.500	62423.362	169649.160	T 3506979.200	79217.849	329767.350	96.667	37116.292	19664.928
σ		1063.626	27.652	276.389	T 11546.332	818.306	2367.794	T 20891.159	1247.584	3533.914	7.638	703.065	60.555
%RSD		0.489	7.717	1.903	T 0.468	1.311	1.396	T 0.596	1.575	1.072	7.901	1.894	0.308

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:48:10	7016.477	16428.092	1592464.500	6346.208	2985.267	10528.324	38604.658	8121.979	1345.054	903.524	458.506	2455.181
2	22:48:31	7021.479	16312.979	1608000.200	6266.178	2755.228	10308.187	37837.903	8335.084	1300.051	914.025	474.007	2480.185
3	22:48:52	7036.485	16147.819	1603742.800	6176.144	2755.228	10418.255	39000.578	8396.114	1346.054	884.523	480.507	2755.228
x		7024.814	16296.297	1601402.500	6262.843	2831.908	10418.255	38481.046	8284.392	1330.386	900.691	471.007	2563.531
σ		10.413	140.880	8027.919	85.081	132.813	110.069	591.112	143.926	26.276	14.954	11.303	166.484
%RSD		0.148	0.864	0.501	1.359	4.690	1.056	1.536	1.737	1.975	1.660	2.400	6.494

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:48:10	49272.727	358984.910	29501.086	6031.091	75.000	1570.074	1834717.200	1075.035	12925.010	10212.628	12754.879	257148.580
2	22:48:31	50065.083	365228.380	29726.486	6176.144	100.000	1605.077	1835418.500	1005.030	13435.413	10485.297	12739.867	258143.780
3	22:48:52	50691.973	369388.570	29756.540	6466.254	60.000	1625.079	1846575.800	1065.034	13680.612	10583.359	12920.006	261536.060
x		50009.927	364533.960	29661.371	6224.496	78.334	1600.077	1838903.800	1048.366	13347.012	10427.095	12804.917	258942.810
σ		711.229	5236.479	139.621	221.574	20.207	27.841	6653.398	37.862	385.480	192.096	99.952	2300.289
%RSD		1.422	1.436	0.471	3.560	25.797	1.740	0.362	3.611	2.888	1.842	0.781	0.888

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:48:10	14941.695	35207.147	13715.641	195955.220	0.000	46504.790	23681.813
2	22:48:31	14686.468	35307.359	14491.297	200326.730	0.000	47517.641	24573.102
3	22:48:52	15146.880	34806.306	13675.608	201743.670	0.000	46946.025	23887.106
x		14925.014	35106.937	13960.849	199341.870	0.000	46989.486	24047.340
σ		230.659	265.132	459.818	3017.282	0.000	507.822	466.750
%RSD		1.545	0.755	3.294	1.514	0.000	1.081	1.941

480-117679-B-4-A 5/19/2017 10:53:29 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:53:52	213245.540	130.001	347959.750	TM 175387700.000	1237164.000	416366.670	T 15477000.000	2100654.400	321725.540	575.010	19331.204	3300.327
2	22:54:13	210956.690	147.501	350287.770	TM 177470570.000	1236798.300	418606.750	T 15416762.000	T 2450420.300	318229.370	585.010	20983.201	3295.326

3	22:54:34	208951.660	142.501	347275.710	TM 175839250.000	1238669.900	418581.120	T 15390357.000	T 2470753.100	318596.280	540.009	21228.511	3205.308
x		211051.300	140.001	348507.740	TM 176232510.000	1237544.100	417851.510	T 15428040.000	T 2340609.300	319517.060	566.676	20514.305	3266.987
σ		2148.500	9.014	1579.031	TM 1095707.900	992.008	1285.973	T 44408.957	T 208055.580	1921.374	23.630	1031.911	53.474
%RSD		1.018	6.439	0.453	TM 0.622	0.080	0.308	T 0.288	T 8.889	0.601	4.170	5.030	1.637
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	22:53:52	6816.394	314102.180	982780.910	24352.779	570.010	3790.431	5901.045	17387.065	1466.065	428.506	479.007	14146.001
2	22:54:13	7236.571	311682.380	989162.310	25394.331	600.011	3830.440	6666.333	17452.133	1541.071	441.506	461.006	13885.782
3	22:54:34	7701.779	312538.180	973451.590	25804.961	630.012	3670.404	6281.183	17684.377	1578.075	446.506	460.506	14341.167
x		7251.581	312774.250	981798.270	25184.024	600.011	3763.758	6282.854	17507.858	1528.404	438.839	466.840	14124.317
σ		442.884	1227.049	7901.321	748.586	30.001	83.285	382.647	156.294	57.069	9.292	10.540	228.466
%RSD		6.107	0.392	0.805	2.972	5.000	2.213	6.090	0.893	3.734	2.117	2.258	1.618
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	22:53:52	1825480.800	358995.130	51529.536	65.000	20.000	35.000	1749481.800	1895.108	615.011	468.007	5480.901	252924.670
2	22:54:13	1829119.100	359209.680	51995.981	100.000	40.000	90.000	1781901.500	1775.095	550.009	447.506	5625.949	262115.050
3	22:54:34	1840255.800	364778.690	51489.412	75.000	20.000	50.000	1771306.400	2030.124	705.015	461.006	5455.893	261099.290
x		1831618.600	360994.500	51671.643	80.000	26.667	58.333	1767563.200	1900.109	623.345	458.840	5520.914	258713.000
σ		7698.096	3278.962	281.601	18.028	11.547	28.431	16530.845	127.588	77.838	10.421	91.818	5038.503
%RSD		0.420	0.908	0.545	22.535	43.301	48.739	0.935	6.715	12.487	2.271	1.663	1.948
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	22:53:52	17258.931	1025.032	3510.370	194882.760	0.000	6941.445	441234.330					
2	22:54:13	18019.736	1000.030	3455.358	194710.760	0.000	7036.485	442692.230					
3	22:54:34	18089.812	945.027	3265.320	199618.310	0.000	7216.562	441532.060					
x		17789.493	990.029	3410.349	196403.940	0.000	7064.831	441819.540					
σ		460.814	40.929	128.576	2785.050	0.000	139.732	770.296					
%RSD		2.590	4.134	3.770	1.418	0.000	1.978	0.174					

480-117679-B-5-A 5/19/2017 10:59:10 PM

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	22:59:32	217135.280	77.500	32025.740	T 104135730.000	T 6057044.500	925169.720	T 11185100.000	T 3158508.500	321062.940	1655.082	28729.741	5791.006
2	22:59:53	214744.600	57.500	31364.484	T 103547890.000	T 5985575.300	T 1103318.900	T 11201959.000	T 3177852.400	326384.820	1870.105	29175.514	5750.992
3	23:00:15	216476.790	80.000	31279.324	T 103837650.000	T 6028752.300	T 1120729.400	T 11285908.000	T 3205186.900	329831.690	1490.067	29450.998	5755.994
x		216118.890	71.667	31556.516	T 103840430.000	T 6023790.700	T 1049739.300	T 11224322.000	T 3180515.900	325759.820	1671.751	29118.751	5765.997
σ		1234.870	12.332	408.584	T 293930.890	T 35992.022	T 108231.110	T 53996.727	T 23452.935	4417.660	190.567	363.964	21.802
%RSD		0.571	17.208	1.295	T 0.283	T 0.597	T 10.310	T 0.481	T 0.737	1.356	11.399	1.250	0.378
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	22:59:32	9932.959	345341.130	2006245.600	1480.066	1445.063	3275.322	9347.621	5863.031	1804.098	474.007	444.006	9067.466
2	22:59:53	9692.818	344253.980	T 2353708.900	1550.072	1410.060	3085.286	9927.956	5897.043	1744.091	446.006	446.506	9207.543
3	23:00:15	9882.929	347331.860	2023198.000	1605.077	1290.050	3305.328	9952.971	5878.036	1924.111	470.507	464.506	9667.803
x		9836.235	345642.320	T 2127717.500	1545.072	1381.724	3221.978	9742.849	5879.370	1824.100	463.506	451.673	9314.271
σ		126.697	1560.888	T 195897.760	62.656	81.298	119.326	342.506	17.045	91.662	15.257	11.184	314.077
%RSD		1.288	0.452	T 9.207	4.055	5.884	3.704	3.515	0.290	5.025	3.292	2.476	3.372
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	22:59:32	1103431.400	366056.250	1630.080	30.000	20.000	225.002	1762147.600	1570.074	1245.047	899.024	14601.393	261536.060
2	22:59:53	1105769.000	369633.920	1850.103	30.000	10.000	235.002	1768423.000	1585.075	1075.035	874.023	14561.358	265630.040
3	23:00:15	1109457.400	364124.620	1900.108	30.000	35.000	295.003	1799578.000	1520.069	1300.051	881.523	14146.001	264868.060
x		1106219.300	366604.930	1793.430	30.000	21.667	251.669	1776716.200	1558.406	1206.711	884.857	14436.251	264011.390
σ		3038.117	2795.334	143.658	0.000	12.583	37.860	20045.980	34.037	117.304	12.830	252.160	2177.291
%RSD		0.275	0.762	8.010	0.000	58.076	15.044	1.128	2.184	9.721	1.450	1.747	0.825

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:59:32	235.002	665.013	8026.933	191969.240	0.000	3910.459	59280.237
2	22:59:53	300.003	585.010	8767.305	192394.090	5.000	3895.455	59882.384
3	23:00:15	285.002	705.015	8006.923	197867.620	0.000	4145.516	60860.919
x		273.336	651.679	8267.054	194076.980	1.667	3983.810	60007.847
σ		34.035	61.103	433.346	3289.653	2.887	140.242	797.775
%RSD		12.452	9.376	5.242	1.695	173.205	3.520	1.329

480-117679-B-6-A 5/19/2017 11:04:51 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:05:13	217570.900	37.500	10583.359	T 32512259.000	1972210.000	60880.992	T 9434798.400	1877490.400	317067.540	310.003	32937.514	3745.421
2	23:05:34	218188.900	60.000	10073.043	T 32084920.000	1965513.900	61513.308	T 9457007.800	1895576.000	325314.190	345.004	33363.360	4020.485
3	23:05:55	215919.640	42.500	10473.290	T 32021259.000	1959504.200	60474.516	T 9431334.300	1880079.300	319890.720	250.002	33588.812	3745.421
x		217226.480	46.667	10376.564	T 32206146.000	1965742.700	60956.272	T 9441046.800	1884381.900	320757.480	301.669	33296.562	3837.109
σ		1173.185	11.815	268.556	T 267005.700	6355.987	523.471	T 13930.676	9780.415	4191.097	48.046	330.747	158.808
%RSD		0.540	25.317	2.588	T 0.829	0.323	0.859	T 0.148	0.519	1.307	15.927	0.993	4.139

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:05:13	12374.592	215590.420	414649.660	260.002	430.006	2160.140	4605.636	43968.922	2003.120	448.506	480.007	5575.933
2	23:05:34	12269.515	217672.210	409345.940	235.002	445.006	2180.143	4625.642	43723.277	2250.152	453.506	444.006	5685.970
3	23:05:55	12389.603	215717.040	408141.950	260.002	390.005	2105.133	4695.661	43668.132	2104.133	439.506	459.506	5991.077
x		12344.570	216326.560	410712.510	251.669	421.672	2148.472	4642.313	43786.777	2119.135	447.173	461.173	5750.993
σ		65.432	1167.092	3462.400	14.434	28.432	38.842	47.271	160.134	124.197	7.095	18.058	215.075
%RSD		0.530	0.540	0.843	5.735	6.743	1.808	1.018	0.366	5.861	1.587	3.916	3.740

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:05:13	532374.000	356267.530	6141.131	40.000	25.000	150.001	1770785.100	1340.054	275.002	266.002	2520.191	256803.310
2	23:05:34	544201.950	360497.030	6156.137	20.000	5.000	155.001	1790226.800	1385.058	355.004	264.002	2590.201	257839.120
3	23:05:55	539750.660	364196.160	6261.176	25.000	0.000	150.001	1806744.700	1585.075	335.003	280.002	2510.189	259504.670
x		538775.540	360320.240	6186.148	28.333	10.000	151.667	1789252.200	1436.729	321.670	270.002	2540.194	258049.040
σ		5973.965	3967.271	65.408	10.408	13.229	2.887	17999.574	130.428	41.634	8.718	43.596	1362.859
%RSD		1.109	1.101	1.057	36.735	132.288	1.903	1.006	9.078	12.943	3.229	1.716	0.528

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:05:13	8412.122	530.008	1415.060	195560.630	0.000	80.000	1400.059
2	23:05:34	8452.143	420.005	1240.046	196724.200	0.000	40.000	1425.061
3	23:05:55	8437.135	455.006	1380.057	199891.550	0.000	40.000	1470.065
x		8433.800	468.340	1345.054	197392.130	0.000	53.333	1431.728
σ		20.217	56.201	92.609	2241.389	0.000	23.094	35.476
%RSD		0.240	12.000	6.885	1.136	0.000	43.301	2.478

480-117756-C-1-A 5/19/2017 11:10:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:10:55	217033.970	75.000	4350.568	T 33041843.000	T 6752493.600	22940.778	T 7235114.800	T 3280742.700	322245.440	375.004	40699.633	5796.008
2	23:11:16	213063.230	40.000	4695.661	T 32913690.000	T 6709242.700	23541.614	T 7221412.000	T 3281019.600	316843.330	270.002	42499.116	6261.176
3	23:11:38	213721.580	47.500	4495.606	T 32762331.000	T 6707765.300	22925.757	T 7276492.600	T 3284738.100	321001.780	340.003	43351.307	5976.071
x		214606.260	54.167	4513.945	T 32905955.000	T 6723167.200	23136.050	T 7244339.800	T 3282166.800	320030.180	328.337	42183.352	6011.085
σ		2128.073	18.428	173.276	T 139916.720	T 25408.139	351.310	T 28675.674	T 2231.085	2829.077	53.464	1353.744	234.552
%RSD		0.992	34.021	3.839	T 0.425	T 0.378	1.518	T 0.396	T 0.068	0.884	16.283	3.209	3.902

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:10:55	15407.118	43105.671	375973.380	350.004	1625.079	1475.065	5035.761	7764.808	2485.185	439.006	444.006	10258.156
2	23:11:16	15532.234	42870.064	369725.930	320.003	1625.079	1540.071	5040.762	7905.875	2575.199	451.006	446.006	10418.255
3	23:11:38	15962.641	42408.887	368698.540	330.003	1610.078	1495.067	4690.660	8237.035	2583.200	446.506	478.007	10638.394
x		15633.998	42794.874	371465.950	333.337	1620.079	1503.401	4922.394	7969.239	2547.862	445.506	456.006	10438.268
σ		291.407	354.425	3937.204	15.276	8.661	33.295	200.703	242.406	54.426	6.062	19.079	190.908
%RSD		1.864	0.828	1.060	4.583	0.535	2.215	4.077	3.042	2.136	1.361	4.184	1.829

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:10:55	1307517.200	355603.570	110.000	25.000	30.000	150.001	1773269.600	1590.076	475.007	374.504	2805.236	258692.190

2	23:11:16	1324784.000	357963.290	165.001	25.000	15.000	185.001	1780925.000	1500.068	485.007	363.004	2730.224	261617.320
3	23:11:38	1317553.200	359097.290	200.001	30.000	5.000	165.001	1771761.100	1515.069	470.007	371.504	2975.266	262948.020
x		1316618.100	357554.720	158.334	26.667	16.667	166.668	1775318.600	1535.071	476.673	369.671	2836.908	261085.840
σ		8671.313	1782.335	45.369	2.887	12.583	17.560	4913.503	48.223	7.638	5.965	125.554	2177.124
%RSD		0.659	0.498	28.654	10.825	75.498	10.536	0.277	3.141	1.602	1.614	4.426	0.834

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:10:55	110.000	515.008	1160.040	199587.950	0.000	60.000	1985.118
2	23:11:16	220.001	565.010	1360.056	196127.230	0.000	30.000	2120.135
3	23:11:38	130.001	450.006	1380.057	198859.320	0.000	75.000	1990.119
x		153.334	510.008	1300.051	198191.500	0.000	55.000	2031.791
σ		58.595	57.665	121.664	1824.454	0.000	22.913	76.549
%RSD		38.214	11.307	9.358	0.921	0.000	41.660	3.768

480-117756-C-2-A 5/19/2017 11:16:17 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:16:38	215818.340	142.501	5856.029	T 91949020.000	T 3464946.200	T 4213292.200	T 6946470.800	1246298.300	328393.710	6806.390	53967.233	8847.348
2	23:17:00	214937.060	100.000	6116.122	T 91734797.000	T 3465130.900	T 4219525.100	T 7022298.000	1247094.700	325304.000	6826.398	55251.430	9302.595
3	23:17:21	219414.840	122.500	5846.025	T 92710320.000	T 3488806.200	T 4215092.000	T 6980804.700	1243037.800	324539.310	6806.390	55406.945	9112.490
x		216723.410	121.667	5939.392	T 92131379.000	T 3472961.100	T 4215969.800	T 6983191.200	1245477.000	326079.000	6813.059	54875.203	9087.478
σ		2372.131	21.262	153.134	T 512691.160	T 13722.583	T 3207.827	T 37969.923	2149.555	2040.732	11.552	790.160	228.652
%RSD		1.095	17.476	2.578	T 0.556	T 0.395	T 0.076	T 0.544	0.173	0.626	0.170	1.440	2.516

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:16:38	18850.654	93235.056	T 6978241.000	2215.147	3570.382	8657.248	13875.774	11046.660	2983.267	480.507	453.006	6191.150
2	23:17:00	17739.436	93169.692	T 7013915.900	2305.159	3460.359	8697.269	13380.369	11167.740	2933.258	473.507	474.507	6071.106
3	23:17:21	18194.926	94869.239	T 7065941.900	2170.141	3570.382	8957.406	13800.711	11152.730	2865.246	493.507	464.506	6296.189
x		18261.672	93757.996	T 7019366.300	2230.149	3533.708	8770.641	13685.618	11122.377	2927.257	482.507	464.006	6186.148
σ		558.608	962.920	T 44103.762	68.748	63.522	162.977	267.004	66.001	59.239	10.149	10.759	112.625
%RSD		3.059	1.027	T 0.628	3.083	1.798	1.858	1.951	0.593	2.024	2.103	2.319	1.821

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:16:38	599543.030	386295.440	1215.044	850.022	45.000	665.013	1767668.900	1525.070	1985.118	1546.072	21518.883	263466.100
2	23:17:00	605611.620	382182.230	935.026	805.019	55.000	775.018	1799333.600	1915.110	2160.140	1585.575	21553.928	264156.910
3	23:17:21	607317.030	383921.520	995.030	760.017	100.000	735.016	1801055.500	1725.089	2220.148	1592.076	21774.214	264715.670
x		604157.230	384133.060	1048.367	805.019	66.667	725.016	1789352.700	1721.756	2121.802	1574.574	21615.675	264112.890
σ		4085.980	2064.750	147.432	45.002	29.297	55.680	18798.411	195.041	122.115	24.897	138.413	625.945
%RSD		0.676	0.538	14.063	5.590	43.946	7.680	1.051	11.328	5.755	1.581	0.640	0.237

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:16:38	200.001	635.012	26125.460	194184.680	0.000	63530.855	22344.969
2	23:17:00	175.001	670.013	26911.710	199213.510	0.000	63084.163	21969.470
3	23:17:21	195.001	680.014	26150.499	200539.260	0.000	63320.055	23361.361
x		190.001	661.680	26395.890	197979.150	0.000	63311.691	22558.600
σ		13.229	23.630	446.889	3352.301	0.000	223.463	720.117
%RSD		6.963	3.571	1.693	1.693	0.000	0.353	3.192

480-117756-C-3-A 5/19/2017 11:22:00 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:22:21	219252.730	45.000	4830.700	T 23828390.000	T 3150407.800	43461.594	T 5871378.600	1987911.400	316262.460	215.001	49939.707	4460.597
2	23:22:42	214420.470	62.500	4895.719	T 23962951.000	T 3159937.000	42855.026	T 5862217.800	T 2382499.200	319126.270	270.002	49443.230	4370.573

3	23:23:02	216314.710	55.000	4805.693	T 23805323.000	T 3157019.100	43251.047	T 5920762.600	2035336.100	326874.280	275.002	49027.004	4385.577
x		216662.640	54.167	4844.037	T 23865555.000	T 3155788.000	43189.222	T 5884786.300	T 2135248.900	320754.340	253.335	49469.980	4405.582
σ		2434.846	8.780	46.471	T 85132.702	T 4882.457	307.974	T 31491.245	T 215434.010	5490.047	33.292	456.940	48.231
%RSD		1.124	16.209	0.959	T 0.357	T 0.155	0.713	T 0.535	T 10.089	1.712	13.142	0.924	1.095

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:22:21	16963.629	200964.340	402492.010	210.001	290.003	1370.056	3945.467	21808.259	2988.268	475.007	470.507	7251.577
2	23:22:42	18465.223	206815.260	398712.790	195.001	315.003	1360.056	4195.528	21995.504	2994.269	468.507	451.006	7686.772
3	23:23:02	18415.168	205489.010	400284.800	240.002	290.003	1255.047	4145.516	21975.478	3064.282	460.506	475.507	7691.775
x		17948.007	204422.870	400496.530	215.001	298.336	1328.386	4095.504	21926.414	3015.606	468.007	465.673	7543.375
σ		852.864	3067.706	1898.489	22.913	14.434	63.710	132.320	102.814	42.261	7.263	12.946	252.716
%RSD		4.752	1.501	0.474	10.657	4.838	4.796	3.231	0.469	1.401	1.552	2.780	3.350

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:22:21	793222.300	354030.610	420.005	780.018	15.000	35.000	1798167.200	1340.054	555.009	399.005	785.018	264288.980
2	23:22:42	802076.310	364727.590	380.004	850.022	10.000	65.000	1810623.700	1485.066	525.008	437.006	810.020	262186.150
3	23:23:02	805332.840	356441.180	400.005	900.024	10.000	65.000	1814714.800	1430.061	560.009	371.004	750.017	269968.930
x		800210.480	358399.800	400.005	843.355	11.667	55.000	1807835.200	1418.394	546.676	402.338	781.685	265481.350
σ		6267.158	5611.013	20.000	60.280	2.887	17.321	8619.014	73.207	18.930	33.127	30.140	4026.069
%RSD		0.783	1.566	5.000	7.148	24.744	31.492	0.477	5.161	3.463	8.234	3.856	1.517

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:22:21	470.007	400.005	1090.036	198272.380	0.000	195.001	7791.821
2	23:22:42	490.007	445.006	1300.051	203737.710	0.000	120.000	7726.791
3	23:23:02	465.006	355.004	1160.040	204041.390	0.000	125.000	7571.720
x		475.007	400.005	1183.376	202017.160	0.000	146.667	7696.777
σ		13.229	45.001	106.934	3246.623	0.000	41.933	113.079
%RSD		2.785	11.250	9.036	1.607	0.000	28.590	1.469

480-117756-C-3-A SD@5 5/19/2017 11:27:41 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:28:02	221046.190	50.000	2670.214	T 5560498.100	561894.750	16858.522	1606912.400	420652.300	322316.800	130.001	46098.665	3195.306
2	23:28:23	214714.210	47.500	3055.280	T 5525065.400	561905.090	17293.968	1603924.100	423246.750	325722.040	90.000	47161.632	3390.345
3	23:28:45	221228.580	47.500	2895.252	T 5532373.600	555970.980	17704.398	T 1877706.500	425923.670	325803.620	140.001	45637.398	3470.361
x		218996.330	48.333	2873.582	T 5539312.400	559923.610	17285.629	T 1696181.000	423274.240	324614.150	120.000	46299.232	3352.004
σ		3709.540	1.443	193.446	T 18707.683	3423.080	423.000	T 157212.780	2635.793	1989.987	26.458	781.660	141.479
%RSD		1.694	2.986	6.732	T 0.338	0.611	2.447	T 9.269	0.623	0.613	22.048	1.688	4.221

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:28:02	16763.426	43050.529	383537.840	155.001	235.002	1000.030	4365.572	11755.144	2814.238	465.006	457.006	3330.333
2	23:28:23	17409.088	44464.233	385241.460	135.001	225.002	915.025	4280.550	11603.038	2845.243	447.006	476.507	3540.376
3	23:28:45	17434.114	44439.166	381471.210	135.001	280.002	920.025	4735.673	11558.006	2817.238	473.007	485.007	3270.321
x		17202.209	43984.643	383416.840	141.667	246.669	945.027	4460.598	11638.729	2825.573	461.673	472.840	3380.343
σ		380.203	809.064	1888.034	11.547	29.298	47.700	241.985	103.302	17.101	13.317	14.356	141.804
%RSD		2.210	1.839	0.492	8.151	11.877	5.047	5.425	0.888	0.605	2.885	3.036	4.195

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:28:02	165416.830	364880.890	230.002	230.002	5.000	35.000	1828551.600	960.028	510.008	406.005	580.010	262013.470
2	23:28:23	165709.720	365361.250	245.002	210.001	0.000	45.000	1850898.200	975.029	680.014	442.506	600.011	263303.560
3	23:28:45	166346.010	364298.360	165.001	220.001	5.000	25.000	1849394.100	1040.032	510.008	420.505	565.010	267499.590
x		165824.180	364846.830	213.335	220.001	3.333	35.000	1842948.000	991.696	566.676	423.005	581.677	264272.210
σ		475.048	532.263	42.525	10.000	2.887	10.000	12490.261	42.527	98.153	18.378	17.560	2868.464
%RSD		0.286	0.146	19.933	4.545	86.603	28.571	0.678	4.288	17.321	4.345	3.019	1.085

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:28:02	475.007	630.012	1755.092	201055.430	0.000	40.000	1555.073
2	23:28:23	360.004	560.009	1455.064	204365.320	0.000	20.000	1630.080
3	23:28:45	510.008	620.012	1580.075	202361.090	0.000	55.000	1460.064
x		448.339	603.344	1596.744	202593.950	0.000	38.333	1548.405
σ		78.477	37.861	150.707	1667.188	0.000	17.559	85.204
%RSD		17.504	6.275	9.438	0.823	0.000	45.807	5.503

480-117756-C-3-A PDS 5/19/2017 11:33:23 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:33:44	214258.400	3432.854	129067.830	T 41105416.000	T 3828645.200	1617705.300	T 32155227.000	T 3047627.400	315273.990	310.003	267032.180	171942.370
2	23:34:06	211432.660	3202.808	129869.020	T 40918797.000	T 3819189.800	1613181.800	T 32178014.000	T 3062422.100	314550.510	215.001	267489.430	174513.890
3	23:34:27	207837.870	3050.279	130322.530	T 40803840.000	T 3821590.600	1605758.700	T 32006999.000	T 3036709.400	313633.470	330.003	263862.300	170937.110
x		211176.310	3228.647	129753.130	T 40942685.000	T 3823141.800	1612215.300	T 32113413.000	T 3048919.700	314485.990	285.003	266127.970	172464.460
σ		3217.936	192.592	635.331	T 152200.260	T 4914.854	6031.653	T 92859.506	T 12904.965	822.161	61.442	1975.406	1844.661
%RSD		1.524	5.965	0.490	T 0.372	T 0.129	0.374	T 0.289	T 0.423	0.261	21.558	0.742	1.070

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:33:44	34630.942	344024.310	T 14374804.000	59134.722	25569.599	93355.729	304598.200	67530.535	5323.850	3747.921	447.006	10528.324
2	23:34:06	34340.341	341676.750	T 14331634.000	58251.620	26616.236	93250.140	307989.680	67037.550	5377.868	3760.424	447.006	10738.458
3	23:34:27	34004.654	344177.420	T 14382948.000	58346.953	26115.444	93536.739	306502.640	66598.797	5178.805	3763.925	441.506	10358.218
x		34325.312	343292.830	T 14363129.000	58577.765	26100.426	93380.869	306363.500	67055.627	5293.507	3757.424	445.173	10541.667
σ		313.414	1401.655	T 27577.523	484.688	523.480	144.944	1700.015	466.132	102.942	8.413	3.176	190.471
%RSD		0.913	0.408	T 0.192	0.827	2.006	0.155	0.555	0.695	1.945	0.224	0.713	1.807

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:33:44	1275929.300	355460.570	290835.610	61227.257	995.030	15677.370	1776508.900	1615.078	130740.790	101089.140	128458.140	262043.940
2	23:34:06	1275940.100	352559.930	291670.000	61819.437	1070.034	15452.160	1796923.200	1555.073	131426.150	101965.960	127279.150	265284.610
3	23:34:27	1286993.300	351171.060	292082.130	61453.086	1225.045	15927.607	1781613.000	1650.082	132665.910	101598.730	128987.210	266259.980
x		1279620.900	353063.850	291529.250	61499.927	1096.703	15685.712	1785015.000	1606.744	131610.950	101551.280	128241.500	264529.510
σ		6384.712	2188.704	635.067	298.856	117.304	237.833	10623.849	48.050	975.776	440.330	874.394	2207.117
%RSD		0.499	0.620	0.218	0.486	10.696	1.516	0.595	2.991	0.741	0.434	0.682	0.834

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:33:44	154805.620	364630.500	128387.600	196552.190	0.000	505831.220	263836.900
2	23:34:06	155905.800	365816.060	127707.410	200478.540	0.000	509588.100	265355.730
3	23:34:27	154618.900	367875.660	130166.320	202978.530	0.000	509284.010	265640.200
x		155110.110	366107.410	128753.780	200003.090	0.000	508234.440	264944.280
σ		695.389	1642.078	1269.695	3239.444	0.000	2086.801	969.509
%RSD		0.448	0.449	0.986	1.620	0.000	0.411	0.366

480-117756-C-3-B MS 5/19/2017 11:39:06 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:39:28	208971.920	3357.838	132615.520	T 41125886.000	T 3813686.500	1627965.900	T 32110347.000	T 3049763.600	310261.230	235.002	261119.600	173912.660
2	23:39:49	211138.970	3320.331	132046.020	T 41113971.000	T 3797804.400	1634424.500	T 32533786.000	T 3060918.900	308835.110	405.005	261490.350	172578.900
3	23:40:10	205752.230	3197.807	132489.520	T 40850911.000	T 3810510.100	1646286.100	T 32639252.000	2585196.700	314336.530	280.002	261317.670	176105.500
x		208621.040	3291.992	132383.690	T 41030256.000	T 3807333.700	1636225.500	T 32427795.000	T 2898626.400	311144.290	306.670	261309.210	174199.020
σ		2710.459	83.695	299.135	T 155431.720	T 8403.991	9291.914	T 279929.830	T 271495.390	2855.042	88.083	185.517	1780.656
%RSD		1.299	2.542	0.226	T 0.379	T 0.221	0.568	T 0.863	T 9.366	0.918	28.722	0.071	1.022

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:39:28	32291.251	343350.630	T 14480154.000	58617.901	26986.831	93878.654	306966.050	66887.951	5005.752	3856.446	437.506	10508.312
2	23:39:49	31855.414	346372.200	T 14524559.000	60183.466	26270.688	93803.231	307801.240	66736.345	4842.704	3753.423	441.006	10313.190
3	23:40:10	32546.748	346494.700	T 14417137.000	58878.818	25434.392	93763.005	304888.430	66212.261	4785.687	3863.948	430.006	10313.190
x		32231.138	345405.840	T 14473950.000	59226.728	26230.637	93814.963	306551.910	66612.186	4878.047	3824.606	436.172	10378.230
σ		349.565	1780.919	T 53979.368	838.767	776.994	58.710	1499.917	354.543	114.210	61.760	5.620	112.654
%RSD		1.085	0.516	T 0.373	1.416	2.962	0.063	0.489	0.532	2.341	1.615	1.288	1.085

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:39:28	1297276.500	347638.150	295674.650	61272.423	1100.036	16152.824	1743755.800	1645.081	130307.420	102560.590	130423.320	256051.880

2	23:39:49	1300498.700	352437.380	294458.400	62055.311	1095.036	16322.989	1780725.200	1645.081	132615.520	102491.170	129491.090	258529.700
3	23:40:10	1292447.100	355797.650	293069.230	63877.175	1115.037	15782.469	1783533.000	1785.096	133245.510	103302.150	128619.380	263892.770
x		1296740.700	351957.720	294400.760	62401.636	1103.370	16086.094	1769338.000	1691.753	132056.150	102784.640	129511.260	259491.450
σ		4052.442	4100.844	1303.664	1336.465	10.409	276.370	22199.284	80.837	1546.857	449.523	902.138	4007.944
%RSD		0.313	1.165	0.443	2.142	0.943	1.718	1.255	4.778	1.171	0.437	0.697	1.545

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:39:28	153221.080	367073.250	132867.510	196612.900	0.000	516088.600	268642.760
2	23:39:49	152206.850	371883.140	131365.680	197685.470	0.000	512567.400	272336.990
3	23:40:10	150960.590	374168.440	130594.650	200883.370	5.000	514768.710	271244.390
x		152129.510	371041.610	131609.280	198393.910	1.667	514474.900	270741.380
σ		1132.227	3621.676	1155.845	2221.633	2.887	1778.891	1897.789
%RSD		0.744	0.976	0.878	1.120	173.205	0.346	0.701

480-117756-C-3-C MSD 5/19/2017 11:44:50 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:45:12	208091.000	3262.819	127616.720	┬40381835.000	┬3755550.800	1606604.700	┬31800456.000	┬3009335.300	311371.650	330.003	253889.170	171432.160
2	23:45:33	211108.590	3102.789	127984.520	┬40111675.000	┬3712041.400	1608758.400	┬31809270.000	2551891.700	316242.070	290.003	255848.800	170669.390
3	23:45:55	205539.630	3107.790	127631.830	┬40165360.000	┬3746501.700	1599332.700	┬31780017.000	┬3028639.600	313643.660	240.002	250955.240	170088.500
x		208246.410	3157.799	127744.360	┬40219623.000	┬3738031.300	1604898.600	┬31796581.000	┬2863288.800	313752.460	286.669	253564.400	170730.020
σ		2787.732	90.984	208.126	┬143021.240	┬22958.195	4939.007	┬15006.571	┬269850.560	2437.034	45.093	2462.894	673.879
%RSD		1.339	2.881	0.163	┬0.356	┬0.614	0.308	┬0.047	┬9.424	0.777	15.730	0.971	0.395

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:45:12	31098.987	334896.200	┬14098596.000	57493.996	25915.132	90751.404	298300.820	64800.730	4620.640	3806.935	443.506	10433.265
2	23:45:33	30738.319	337191.790	┬14151375.000	57579.290	25594.637	91746.831	301650.310	65139.045	4685.659	3791.931	437.506	10183.110
3	23:45:55	29440.980	336253.110	┬14117354.000	57383.617	25734.853	92913.266	305025.910	64746.520	4539.618	3784.430	424.505	10188.113
x		30426.096	336113.700	┬14122442.000	57485.634	25748.208	91803.834	301659.010	64895.431	4615.306	3794.432	435.172	10268.162
σ		871.986	1154.130	┬26755.086	98.104	160.664	1082.058	3362.554	212.709	73.166	11.459	9.713	143.004
%RSD		2.866	0.343	┬0.189	0.171	0.624	1.179	1.115	0.328	1.585	0.302	2.232	1.393

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:45:12	1262093.000	352253.550	285875.900	60258.737	970.028	15417.127	1755276.100	1560.073	129445.740	99656.052	128206.220	263638.800
2	23:45:33	1260369.700	347995.490	285647.030	60399.244	1175.041	15502.206	1772448.800	1630.080	130236.870	100249.090	126659.460	262440.100
3	23:45:55	1264576.100	352039.090	286409.960	60278.809	1160.040	15842.526	1783066.800	1735.090	130040.340	100637.930	126805.560	264014.680
x		1262346.300	350762.710	285977.630	60312.263	1101.703	15587.287	1770263.900	1641.748	129907.650	100181.020	127223.740	263364.530
σ		2114.601	2398.881	391.504	75.993	114.280	225.100	14023.598	88.090	411.918	494.463	853.975	822.339
%RSD		0.168	0.684	0.137	0.126	10.373	1.444	0.792	5.366	0.317	0.494	0.671	0.312

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:45:12	146526.280	358949.150	127692.290	197574.170	0.000	500009.440	261749.370
2	23:45:33	149194.800	364886.000	130514.020	197675.360	0.000	501590.910	266580.030
3	23:45:55	148745.810	367977.880	129213.950	197240.250	0.000	503976.270	265320.170
x		148155.630	363937.680	129140.090	197496.590	0.000	501858.870	264549.860
σ		1428.804	4588.458	1412.315	227.692	0.000	1996.947	2505.766
%RSD		0.964	1.261	1.094	0.115	0.000	0.398	0.947

CCV 1039951 5/19/2017 11:50:32 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:50:54	198717.640	186752.970	73140.133	┬33608973.000	┬10295484.000	┬102485970.000	┬49883720.000	┬4168542.900	309813.010	58663.059	┬6230848.800	1591608.200
2	23:51:16	201379.300	188168.760	74425.806	┬33777339.000	┬10220358.000	┬102892020.000	┬49970286.000	┬4189192.200	308590.640	58547.655	┬6262605.900	1601639.200

3	23:51:38	200367.210	186725.160	77213.444	┬33435586.000	┬10254560.000	┬101162590.000	┬49416516.000	┬4147339.800	303243.830	58542.637	┬6228972.600	1584869.100
x		200154.720	187215.630	74926.461	┬33607299.000	┬10256800.000	┬102180190.000	┬49756841.000	┬4168358.300	307215.830	58584.450	┬6240809.100	1592705.500
σ		1343.494	825.552	2082.296	┬170882.860	┬37612.986	┬904355.770	┬297891.000	┬20926.793	3493.721	68.124	┬18899.934	8438.738
%RSD		0.671	0.441	2.779	┬0.508	┬0.367	┬0.885	┬0.599	┬0.502	1.137	0.116	┬0.303	0.530

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:50:54	193562.500	┬9505924.400	┬190533410.000	┬3156625.900	1510757.900	2161570.400	1909839.900	241234.280	15943.622	18383.633	480.007	14821.587
2	23:51:16	194928.280	┬9541436.200	┬193451110.000	┬3172551.700	1537872.500	2188055.400	1918555.900	242337.100	15825.510	18594.867	455.006	14636.424
3	23:51:38	192722.860	┬9520747.100	┬191293090.000	┬3158566.400	1519425.200	2175324.300	1903435.600	240645.860	15814.499	18509.773	452.006	14221.065
x		193737.880	┬9522702.600	┬191759200.000	┬3162581.300	1522685.200	2174983.400	1910610.500	241405.750	15861.211	18496.091	462.340	14559.692
σ		1113.124	┬17836.465	┬1513669.100	┬8688.907	13848.132	13245.770	7589.509	858.560	71.583	106.280	15.374	307.527
%RSD		0.575	┬0.187	┬0.789	┬0.275	0.909	0.609	0.397	0.356	0.451	0.575	3.325	2.112

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:50:54	┬2244984.900	352202.490	┬4052906.800	569744.620	19561.473	304180.680	1769199.200	2278159.800	1592184.500	1232252.400	1499998.100	263760.710
2	23:51:16	1910929.900	352325.040	┬4066894.700	575430.020	19756.703	305876.290	1776275.900	2289137.400	1609093.500	1236822.000	1498436.600	261718.890
3	23:51:38	1909923.700	349598.520	┬4069787.200	570877.410	19466.362	306360.050	1783799.300	2302824.600	1621669.200	1240344.300	1497104.500	260896.150
x		┬2021946.100	351375.350	┬4063196.200	572017.350	19594.846	305472.340	1776424.800	2290040.600	1607649.100	1236472.900	1498513.100	262125.250
σ		┬193157.850	1540.000	┬9027.477	3009.245	148.020	1144.466	7301.191	12357.158	14795.313	4057.241	1448.328	1474.880
%RSD		┬9.553	0.438	┬0.222	0.526	0.755	0.375	0.411	0.540	0.920	0.328	0.097	0.563

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:50:54	103812.310	┬4061530.400	┬18058911.000	196501.600	20.000	469609.070	237956.660
2	23:51:16	104043.740	┬4151188.100	┬18120727.000	197857.500	5.000	476804.080	244449.620
3	23:51:38	104003.490	┬4123025.400	┬18133897.000	196349.820	5.000	481146.230	240401.370
x		103953.180	┬4111914.600	┬18104512.000	196902.970	10.000	475853.130	240935.880
σ		123.649	┬45849.895	┬40036.420	830.118	8.660	5827.072	3279.314
%RSD		0.119	┬1.115	┬0.221	0.422	86.603	1.225	1.361

CCB 1035925 5/19/2017 11:56:15 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:56:36	208040.370	95.000	3735.419	560953.840	3290.325	34355.372	654878.060	13685.617	311483.720	110.000	13805.716	2405.174
2	23:56:57	205104.320	132.501	3555.379	557935.010	3660.402	35607.997	658215.760	13895.790	308824.920	70.000	13825.732	2220.148
3	23:57:18	207898.620	82.500	3585.386	558276.150	2310.160	23982.242	666079.090	13515.478	317006.390	95.000	13540.498	2180.143
x		207014.430	103.334	3625.394	559055.000	3086.962	31315.204	659724.300	13698.962	312438.340	91.667	13723.982	2268.488
σ		1655.729	26.021	96.458	1653.270	697.714	6381.341	5750.874	190.507	4173.440	20.207	159.217	120.051
%RSD		0.800	25.182	2.661	0.296	22.602	20.378	0.872	1.391	1.336	22.044	1.160	5.292

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:56:36	4835.701	3960.471	378540.520	945.027	675.014	1765.094	2885.250	2769.230	930.026	451.006	488.007	2095.132
2	23:56:57	4370.573	3865.448	376551.210	950.027	620.012	1590.076	2730.224	2765.229	890.024	459.506	447.506	2210.147
3	23:57:18	4560.624	2870.247	357074.530	720.016	365.004	1410.060	2485.185	2887.250	947.027	444.006	459.006	1965.116
x		4588.966	3565.389	370722.080	871.690	553.343	1588.410	2700.220	2807.237	922.359	451.506	464.840	2090.131
σ		233.856	603.882	11860.912	131.378	165.409	177.523	201.713	69.323	29.265	7.762	20.871	122.592
%RSD		5.096	16.937	3.199	15.072	29.893	11.176	7.470	2.469	3.173	1.719	4.490	5.865

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:56:36	955.027	344126.390	1475.065	260.002	15.000	170.001	1741784.800	1595.076	860.022	656.013	600.011	255605.100
2	23:56:57	940.027	355501.430	1485.066	220.001	15.000	110.000	1763101.000	1610.078	745.017	647.013	555.009	252660.720
3	23:57:18	720.016	346933.690	895.024	115.000	0.000	75.000	1792636.300	1430.061	700.015	484.507	330.003	254264.840
x		871.690	348853.840	1285.052	198.335	10.000	118.334	1765840.700	1545.072	768.351	595.844	495.008	254176.890
σ		131.568	5925.631	337.811	74.890	8.660	48.045	25536.230	99.884	82.517	96.526	144.659	1474.163
%RSD		15.093	1.699	26.288	37.759	86.603	40.602	1.446	6.465	10.739	16.200	29.224	0.580

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:56:36	150.001	3920.461	6431.241	193992.460	0.000	195.001	105.000
2	23:56:57	180.001	3640.398	5225.819	196299.230	0.000	240.002	85.000
3	23:57:18	205.001	2940.259	4000.480	198626.560	0.000	195.001	65.000
x		178.334	3500.373	5219.180	196306.090	0.000	210.001	85.000
σ		27.538	504.880	1215.394	2317.060	0.000	25.981	20.000
%RSD		15.442	14.424	23.287	1.180	0.000	12.372	23.529

CCVL 1039949 5/20/2017 12:01:56 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	00:02:17	212252.990	342.504	15026.771	T 2434841.500	63219.675	164437.210	T 3423197.100	77590.188	316598.750	45.000	35668.126	18585.357
2	00:02:39	211098.460	320.003	15972.650	T 2400205.500	63972.539	166184.410	T 3402373.500	76876.894	322500.290	80.000	36149.160	19941.923
3	00:03:00	212718.870	392.505	14816.583	T 2435742.100	65157.115	165285.540	T 3429817.500	76746.294	326078.920	50.000	35011.736	19171.020
x		212023.440	351.670	15272.001	T 2423596.400	64116.443	165302.380	T 3418462.700	77071.125	321725.990	58.333	35609.674	19232.766
σ		834.236	37.110	615.813	T 20262.070	976.704	873.723	T 14321.497	454.240	4787.282	18.930	570.961	680.388
%RSD		0.393	10.552	4.032	T 0.836	1.523	0.529	T 0.419	0.589	1.488	32.451	1.603	3.538

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	00:02:17	7026.481	15397.109	1558864.800	5921.052	2770.230	10168.101	36905.816	8030.934	1379.057	896.024	496.007	2665.213
2	00:02:39	6931.441	15897.578	1557144.600	6241.168	2900.252	10188.113	37376.864	8030.934	1311.052	852.522	458.006	2800.235
3	00:03:00	6306.193	16353.019	1564442.900	6311.195	2970.265	10183.110	38003.278	7782.817	1332.053	884.523	444.506	2600.203
x		6754.705	15882.569	1560150.700	6157.805	2880.249	10179.775	37428.653	7948.229	1340.721	877.690	466.173	2688.550
σ		391.319	478.132	3815.307	208.002	101.506	10.415	550.561	143.251	34.821	22.542	26.704	102.038
%RSD		5.793	3.010	0.245	3.378	3.524	0.102	1.471	1.802	2.597	2.568	5.728	3.795

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	00:02:17	48981.871	354990.710	28684.663	5630.951	90.000	1780.095	1789727.200	900.024	13330.329	10144.586	12254.504	255645.720
2	00:02:39	48660.933	362918.740	29035.269	5941.059	160.001	1635.080	1799311.400	865.022	13545.502	10217.631	12509.693	259829.680
3	00:03:00	50055.053	359996.380	30362.632	5976.071	145.001	1560.073	1809823.400	1010.031	13935.824	10437.267	12724.856	262602.630
x		49232.619	359301.950	29360.855	5849.360	131.667	1658.416	1799620.600	925.026	13603.885	10266.495	12496.351	259359.340
σ		730.101	4009.375	885.098	189.956	36.856	111.852	10051.675	75.668	306.940	152.336	235.460	3502.224
%RSD		1.483	1.116	3.015	3.247	27.992	6.745	0.559	8.180	2.256	1.484	1.884	1.350

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	00:02:17	14426.241	34681.046	13205.229	194457.840	0.000	47337.129	24102.415
2	00:02:39	14976.726	35618.019	13905.799	196511.720	0.000	46785.575	23301.277
3	00:03:00	14801.570	35377.507	14756.530	197442.620	0.000	47256.902	24412.867
x		14734.846	35225.524	13955.853	196137.390	0.000	47126.535	23938.853
σ		281.243	486.625	776.861	1527.195	0.000	297.993	573.561
%RSD		1.909	1.381	5.567	0.779	0.000	0.632	2.396

Analyte ICPS

STD0 1035925 5/19/2017 6:19:58 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:20:19	99.411%	10.001	-143.220	537.328	-25.504	-35.372	-3679.246	210.545	98.623%	60.812	612.788	23.392
2	18:20:41	101.787%	0.754	19.742	3028.425	42.848	13.534	-959.144	0.154	99.544%	55.250	386.379	58.720
3	18:21:02	98.801%	-12.275	155.589	-4910.216	7.066	31.652	-11502.522	258.773	101.833%	63.859	496.313	24.230
x		100.000%	-0.506	10.703	-448.154	8.137	3.271	-5380.304	156.491	100.000%	59.974	498.493	35.447
σ		1.578%	11.192	149.610	4060.035	34.189	34.671	5473.656	137.522	1.653%	4.365	113.220	20.159
%RSD		1.578	2209.976	1397.783	905.946	420.170	1059.866	101.735	87.879	1.653	7.279	22.713	56.871

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:20:19	5646.483	-18.437	512.788	6.560	10.904	37.628	4.141	-3982.160	1126.618	-43.288	526.530	2415.217
2	18:20:41	5839.190	17.862	1562.098	26.183	60.196	15.993	9.857	-3947.443	1153.659	-57.715	509.743	2377.005
3	18:21:02	5770.132	34.680	-7108.830	39.333	-36.482	-9.293	212.986	-4331.475	1234.366	-96.367	507.341	2522.723
x		5751.935	11.368	-1677.982	24.025	11.539	14.776	75.661	-4087.026	1171.547	-65.790	514.538	2438.315
σ		97.634	27.147	4732.425	16.492	48.342	23.484	118.961	212.410	56.057	27.446	10.455	75.555
%RSD		1.697	238.793	282.031	68.646	418.933	158.934	157.228	5.197	4.785	41.717	2.032	3.099

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:20:19	11.718	99.550%	30.113	4.195	-212.721	33.187	99.521%	567.729	41.626	6.121	-1.510	98.995%
2	18:20:41	70.488	99.617%	15.025	-0.855	-157.819	-35.825	100.052%	554.722	44.785	-2.962	-1.564	100.416%
3	18:21:02	34.572	100.833%	24.579	-5.853	-179.585	-14.470	100.427%	637.290	-5.977	-0.209	3.378	100.589%
x		38.926	100.000%	23.239	-0.837	-183.375	-5.702	100.000%	586.580	26.811	0.983	0.101	100.000%
σ		29.626	0.722%	7.633	5.024	27.646	35.332	0.455%	44.395	28.440	4.658	2.838	0.875%
%RSD		76.108	0.722	32.844	599.896	15.076	619.604	0.455	7.568	106.074	473.708	2803.190	0.875

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:20:19	-34.778	616.212	-25.210	99.206%	0.000	-9.602	6309.150
2	18:20:41	-5.975	208.631	28.814	100.380%	0.000	15.067	6309.150
3	18:21:02	-21.067	272.823	73.308	100.414%	0.000	-4.865	6309.150
x		-20.607	365.889	25.637	100.000%	0.000	0.200	6309.150
σ		14.407	219.150	49.335	0.688%	0.000	13.092	0.000
%RSD		69.915	59.895	192.436	0.688	0.000	6548.294	0.000

STD1 1039949 5/19/2017 6:25:40 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:26:02	100.281%	310.958	12002.198	1527451.800	61324.483	156508.860	T 2693352.400	65224.548	100.294%	69.774	21550.866	16953.391
2	18:26:24	98.884%	351.743	13099.716	T 1824017.300	63330.489	160397.170	T 2669005.100	64739.280	99.814%	105.225	23731.855	16608.979
3	18:26:45	99.857%	357.643	13352.379	1515551.900	62147.404	156420.680	T 2631381.500	63489.216	101.674%	34.445	22736.943	16679.574
x		99.674%	340.115	12818.098	T 1622340.300	62267.459	157775.570	T 2664579.700	64484.348	100.594%	69.815	22673.221	16747.315
σ		0.716%	25.422	717.794	T 174758.690	1008.377	2270.802	T 31221.589	895.314	0.966%	35.390	1091.890	181.924
%RSD		0.719	7.475	5.600	T 10.772	1.619	1.439	T 1.172	1.388	0.960	50.692	4.816	1.086

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:26:02	6331.472	14514.897	1208588.400	5909.405	2556.926	9525.956	34335.069	764.254	1214.634	318.566	505.471	2412.759
2	18:26:24	5705.035	14298.705	1203193.400	5707.562	2785.110	9299.381	35614.726	853.454	1261.207	349.321	489.207	2366.161
3	18:26:45	5907.727	13910.779	1167597.100	5858.111	2560.338	9146.421	35328.886	1260.550	1100.219	321.959	499.968	2282.872
x		5981.411	14241.460	1193126.300	5825.026	2634.125	9323.919	35092.893	959.419	1192.020	329.949	498.215	2353.930
σ		319.652	306.100	22272.860	104.910	130.768	190.954	671.677	264.573	82.842	16.862	8.273	65.802
%RSD		5.344	2.149	1.867	1.801	4.964	2.048	1.914	27.576	6.950	5.111	1.660	2.795

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:26:02	50130.522	100.958%	27588.713	6081.962	-159.446	1717.908	99.315%	775.331	13553.138	10325.536	12493.763	98.631%
2	18:26:24	49879.109	99.212%	28781.300	6225.124	-143.518	1542.598	100.164%	758.776	13666.816	10419.662	12817.409	99.970%
3	18:26:45	49752.728	100.312%	28725.085	6131.840	-101.384	1591.893	100.708%	809.290	13414.695	10250.977	12981.587	101.759%
x		49920.786	100.161%	28365.032	6146.308	-134.782	1617.466	100.062%	781.132	13544.883	10332.058	12764.253	100.120%
σ		192.314	0.883%	672.899	72.669	30.001	90.409	0.702%	25.752	126.263	84.531	248.218	1.570%
%RSD		0.385	0.881	2.372	1.182	22.258	5.590	0.702	3.297	0.932	0.818	1.945	1.568

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:26:02	15439.379	35526.667	25361.562	99.387%	0.000	48774.692	31708.850
2	18:26:24	15361.282	36472.445	26258.407	98.944%	0.000	49992.089	31347.069
3	18:26:45	14759.712	34384.843	25285.564	102.080%	0.000	47772.326	31043.803
x		15186.791	35461.318	25635.178	100.137%	0.000	48846.369	31366.574
σ		371.917	1045.334	541.069	1.697%	0.000	1111.616	332.953
%RSD		2.449	2.948	2.111	1.695	0.000	2.276	1.061

STD2 1039950 5/19/2017 6:31:22 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:31:43	100.380%	1740.251	65018.128	T 8838550.300	311678.370	775344.110	T 13322960.000	309551.430	100.028%	60.007	108378.010	81429.485
2	18:32:05	98.166%	1648.642	66845.451	T 8780366.400	310141.500	773254.010	T 13193034.000	305670.950	100.763%	89.344	109351.750	82236.416
3	18:32:27	99.445%	1603.897	64694.559	T 8563981.600	308302.600	762191.930	T 12919611.000	305649.300	102.096%	102.911	108488.660	82163.132
x		99.330%	1664.263	65519.380	T 8727632.800	310040.830	770263.350	T 13145202.000	306957.220	100.962%	84.087	108739.480	81943.011
σ		1.111%	69.506	1159.752	T 144681.120	1690.135	7067.744	T 205884.800	2246.673	1.049%	21.930	533.126	446.233
%RSD		1.119	4.176	1.770	T 1.658	0.545	0.918	T 1.566	0.732	1.039	26.080	0.490	0.545

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:31:43	6822.544	69497.520	T 6647078.700	28938.017	12680.861	46326.018	163514.680	21389.911	1176.815	1950.692	543.576	2414.174
2	18:32:05	6283.494	69750.899	T 6590400.800	28701.779	12677.099	45699.593	162331.090	21413.633	1130.325	1982.628	523.281	2406.975
3	18:32:27	6054.718	68325.268	T 6587003.900	28419.486	12402.494	46012.242	162611.950	20921.576	1145.997	1977.360	506.547	2448.872
x		6386.918	69191.229	T 6608161.100	28686.427	12586.818	46012.618	162819.240	21241.707	1151.046	1970.226	524.468	2423.340
σ		394.223	760.570	T 33746.367	259.606	159.641	313.212	618.423	277.495	23.653	17.121	18.543	22.402
%RSD		6.172	1.099	T 0.511	0.905	1.268	0.681	0.380	1.306	2.055	0.869	3.536	0.924

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:31:43	254231.860	99.179%	142873.370	30457.321	-132.786	8234.522	98.700%	1312.110	67351.724	51708.654	64239.237	98.541%
2	18:32:05	253845.170	100.146%	142868.020	30640.938	-49.323	7670.944	99.661%	1169.001	66045.876	51516.919	64772.744	99.655%
3	18:32:27	249740.830	100.662%	142792.520	29804.962	-30.966	7743.685	100.288%	1116.817	67683.371	51455.047	63411.667	100.015%
x		252605.950	99.995%	142844.640	30301.074	-71.025	7883.050	99.550%	1199.309	67026.990	51560.207	64141.216	99.404%
σ		2488.789	0.753%	45.218	439.345	54.268	306.549	0.800%	101.113	865.700	132.229	685.813	0.768%
%RSD		0.985	0.753	0.032	1.450	76.407	3.889	0.804	8.431	1.292	0.256	1.069	0.773

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:31:43	76844.289	183418.240	122947.220	98.409%	0.000	248114.210	132262.290
2	18:32:05	76523.494	178119.790	121501.340	99.559%	0.000	252250.600	133954.420
3	18:32:27	77367.590	183721.790	125076.100	99.321%	0.000	251778.560	133140.120
x		76911.791	181753.270	123174.890	99.096%	0.000	250714.460	133118.940
σ		426.077	3150.349	1798.220	0.607%	0.000	2264.214	846.263
%RSD		0.554	1.733	1.460	0.613	0.000	0.903	0.636

STD3 1039951 5/19/2017 6:37:04 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr

1	18:37:26	91.779%	210716.100	80927.058	┬33179154.000	┬10181217.000	┬101463500.000	┬50163074.000	┬4205231.300	95.695%	62315.006	┬6101902.500	1621501.900
2	18:37:48	90.681%	212778.320	82897.460	┬34294814.000	┬10561842.000	┬105602480.000	┬51823375.000	┬4340967.900	92.341%	64242.517	┬6358214.700	1681687.800
3	18:38:10	91.479%	209330.290	81915.662	┬34261177.000	┬10616777.000	┬105495850.000	┬51997896.000	┬4370408.200	91.495%	63373.800	┬6329530.100	1670446.900
x		91.313%	210941.570	81913.393	┬33911715.000	┬10453279.000	┬104187280.000	┬51328115.000	┬4305535.800	93.177%	63310.441	┬6263215.800	1657878.900
σ		0.568%	1735.034	985.203	┬634639.680	┬237207.720	┬2359462.800	┬1012721.800	┬88104.632	2.221%	965.316	┬140435.690	32000.844
%RSD		0.622	0.823	1.203	┬1.871	┬2.269	┬2.265	┬1.973	┬2.046	2.384	1.525	┬2.242	1.930

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:37:26	12023.635	┬9320508.400	┬187232680.000	┬3118537.800	1546149.800	2185681.900	1941944.100	242641.080	644.902	19343.459	520.863	1452.337
2	18:37:48	13308.173	┬9701284.600	┬194265410.000	┬3204302.700	1584097.000	2269905.400	2028781.700	243821.960	829.295	19364.634	517.041	2416.678
3	18:38:10	13749.975	┬9642431.900	┬194152850.000	2876910.800	1585449.500	2280269.000	2014038.500	239282.480	1322.071	18882.380	519.986	1637.306
x		13027.261	┬9554741.600	┬191883650.000	┬3066583.800	1571898.800	2245285.500	1994921.400	241915.170	932.089	19196.824	519.297	1835.441
σ		896.798	┬204975.160	┬4028248.300	┬169766.820	22309.541	51877.619	46468.163	2355.193	350.092	272.523	2.002	511.793
%RSD		6.884	┬2.145	┬2.099	┬5.536	1.419	2.311	2.329	0.974	37.560	1.420	0.386	27.884

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:37:26	1992466.200	96.384%	┬3984202.100	589396.400	2959.265	315087.040	95.612%	2380369.400	1677273.700	1295225.300	1581339.100	99.437%
2	18:37:48	2010616.800	96.035%	┬4035927.300	599424.430	3772.896	320644.110	94.965%	2437925.800	1696248.900	1315389.300	1588449.600	99.977%
3	18:38:10	1964168.700	95.738%	┬4010322.000	590298.460	2435.475	312571.740	96.158%	2384867.500	1663127.600	1288558.500	1561147.700	100.026%
x		1989083.900	96.052%	┬4010150.500	593039.770	3055.879	316100.970	95.578%	2401054.200	1678883.400	1299724.400	1576978.800	99.814%
σ		23408.028	0.323%	┬25863.032	5547.649	673.925	4130.596	0.597%	32010.841	16619.209	13969.751	14163.586	0.327%
%RSD		1.177	0.336	┬0.645	0.935	22.053	1.307	0.625	1.333	0.990	1.075	0.898	0.327

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:37:26	106050.000	┬4133699.500	┬34577599.000	98.333%	0.000	492383.530	253809.990
2	18:37:48	107001.540	┬4179243.700	┬34368488.000	99.335%	0.000	502124.480	255807.690
3	18:38:10	107044.910	┬4141748.500	┬34010814.000	99.836%	0.000	487978.700	251800.430
x		106698.820	┬4151563.900	┬34318967.000	99.168%	0.000	494162.240	253806.040
σ		562.310	┬24306.894	┬286619.030	0.766%	0.000	7238.688	2003.631
%RSD		0.527	┬0.585	┬0.835	0.772	0.000	1.465	0.789

STD4 1039952 5/19/2017 6:42:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:43:08	83.656%	626855.120	240013.510	┬99952037.000	┬30438961.000	┬303933490.000	┬150740710.000	┬12787215.000	85.160%	184341.190	┬18656203.000	┬5483165.000
2	18:43:29	82.838%	626940.970	247377.330	┬99588830.000	┬30500870.000	┬301983830.000	┬149562610.000	┬12644067.000	85.169%	182380.260	┬18768385.000	┬5492513.100
3	18:43:51	82.749%	622100.200	243468.110	┬98320249.000	┬30125638.000	┬299494140.000	┬148519270.000	┬12641346.000	85.685%	183401.990	┬18760429.000	┬5481207.700
x		83.081%	625298.760	243619.650	┬99287039.000	┬30355156.000	┬301803820.000	┬149607530.000	┬12690876.000	85.338%	183374.480	┬18728339.000	┬5485628.600
σ		0.500%	2770.367	3684.249	┬856733.030	┬201164.400	┬2225145.500	┬1111398.700	┬83443.216	0.301%	980.758	┬62598.103	┬6041.913
%RSD		0.602	0.443	1.512	┬0.863	┬0.663	┬0.737	┬0.743	┬0.658	0.353	0.535	┬0.334	┬0.110

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:43:08	-31259.801	┬28396973.000	┬565382610.000	┬9497525.000	┬4829614.700	┬7418801.700	┬6555690.800	729277.380	-232.931	56774.902	566.586	-6534.814
2	18:43:29	-38826.580	┬28353557.000	┬563930440.000	┬9421589.900	┬4807945.900	┬7398806.800	┬6497797.700	716998.900	303.918	56021.022	569.438	-4295.940
3	18:43:51	-35787.326	┬28084673.000	┬557913000.000	┬9368433.200	┬4804707.700	┬7331749.300	┬6423604.100	723366.770	-242.138	56522.411	582.958	-6536.688
x		-35291.236	┬28278401.000	┬562408680.000	┬9429182.700	┬4814089.400	┬7383119.300	┬6492364.200	723214.350	-57.050	56439.445	572.994	-5789.147
σ		3807.704	┬169172.100	┬3960502.100	┬64879.995	┬13542.395	┬45597.217	┬66210.799	6140.660	312.642	383.727	8.746	1293.156
%RSD		10.789	┬0.598	┬0.704	┬0.688	┬0.281	┬0.618	┬1.020	0.849	548.013	0.680	1.526	22.338

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:43:08	┬6974524.200	88.169%	┬12157629.000	1759036.600	11198.484	941105.330	87.631%	┬8054665.900	┬5680787.200	┬4443577.300	┬5512186.300	94.350%
2	18:43:29	┬7049724.000	88.376%	┬12153090.000	1801916.800	8483.696	953371.470	85.700%	┬8113471.700	┬5798240.800	┬4528634.500	┬5625271.000	94.305%
3	18:43:51	┬6967689.300	88.097%	┬12126942.000	1774615.800	9454.256	945047.000	86.886%	┬8055271.400	┬5658622.300	┬4459116.000	┬5499256.200	95.786%
x		┬6997312.500	88.214%	┬12145887.000	1778523.100	9712.145	946507.930	86.739%	┬8074469.700	┬5712550.100	┬4477109.300	┬5545571.200	94.814%

σ		₸45518.156	0.145%	₸16562.769	21705.478	1375.645	6262.214	0.974%	₸33778.101	₸75033.275	₸45293.509	₸69324.228	0.842%
%RSD		₸0.651	0.164	₸0.136	1.220	14.164	0.662	1.123	₸0.418	₸1.313	₸1.012	₸1.250	0.888
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	18:43:08	328627.120	₸12716994.000	₸103509490.000	94.024%	5.318	1530115.300	777473.690					
2	18:43:29	329232.170	₸12454607.000	₸102587610.000	95.126%	21.025	1522934.800	774259.400					
3	18:43:51	326785.280	₸12866547.000	₸104407090.000	93.075%	10.744	1561462.600	799835.270					
x		328214.860	₸12679383.000	₸103501390.000	94.075%	12.362	1538170.900	783856.120					
σ		1274.473	₸208529.820	₸909769.620	1.026%	7.978	20488.211	13931.363					
%RSD		0.388	₸1.645	₸0.879	1.091	64.532	1.332	1.777					

STD5 1039953 5/19/2017 6:48:28 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:48:49	78.371%	1048173.400	M 411133.430	T 162892430.000	TM 50193039.000	TM 497553840.000	T 249470530.000	TM 21304006.000	81.905%	311132.100	TM 31304606.000	TM 9141519.200
2	18:49:11	78.707%	M 1049522.900	M 410376.560	T 161464110.000	TM 49642675.000	TM 497866700.000	T 249122710.000	TM 21105488.000	82.282%	312458.750	TM 31640621.000	TM 9269224.300
3	18:49:32	77.733%	M 1049824.100	407109.100	T 162325720.000	TM 49635475.000	TM 498753170.000	T 250160780.000	TM 20967860.000	81.568%	314605.320	TM 31772984.000	TM 9294630.700
x		78.271%	M 1049173.500	M 409539.700	T 162227420.000	TM 49823730.000	TM 498057900.000	T 249584670.000	TM 21125785.000	81.919%	312732.060	TM 31572737.000	TM 9235124.700
σ		0.495%	M 879.061	M 2138.707	T 719218.510	TM 319851.520	TM 622108.190	T 528361.500	TM 168989.800	0.357%	1752.668	TM 241455.010	TM 82054.082
%RSD		0.632	M 0.084	M 0.522	T 0.443	TM 0.642	TM 0.125	T 0.212	TM 0.800	0.436	0.560	TM 0.765	TM 0.888

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:48:49	-58582.024	TM 47158565.000	T 940782040.000	TM 15827084.000	T 8002482.700	TM 12216610.000	TM 10601859.000	1205787.900	-1997.114	91965.212	600.180	-11728.776
2	18:49:11	-73523.116	TM 46945581.000	T 933150250.000	TM 15808276.000	T 7993395.900	TM 12214739.000	TM 10544341.000	1197604.800	-136.578	90507.713	603.380	-10067.060
3	18:49:32	-63775.413	TM 47643820.000	T 937484450.000	TM 15833719.000	TM 8037871.400	TM 12360201.000	TM 10623216.000	1187378.000	344.300	90018.897	595.638	-12133.730
x		-65293.517	TM 47249322.000	T 937138910.000	TM 15823026.000	TM 8011250.000	TM 12263850.000	TM 10589805.000	1196923.600	-596.464	90830.607	599.733	-11309.855
σ		7585.351	TM 357857.640	T 3827611.200	TM 13198.344	TM 23498.223	TM 83448.023	TM 40795.589	9223.823	1236.599	1012.537	3.890	1095.172
%RSD		11.617	TM 0.757	T 0.408	TM 0.083	TM 0.293	TM 0.680	TM 0.385	0.771	207.321	1.115	0.649	9.683

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:48:49	TM 11989552.000	84.535%	TM 20459000.000	2988538.700	15435.167	M 1584010.800	81.310%	T 13779509.000	TM 9701400.700	TM 7587022.300	TM 9562593.300	91.492%
2	18:49:11	TM 11555873.000	85.358%	TM 20173820.000	2940003.600	14604.342	1569545.300	83.531%	T 13448635.000	TM 9501081.000	TM 7407532.300	TM 9283420.400	90.375%
3	18:49:32	TM 11825249.000	85.524%	TM 20383882.000	2980542.600	15419.190	M 1585173.100	82.602%	T 13524194.000	TM 9576062.500	TM 7478079.500	TM 9372501.100	89.424%
x		TM 11790225.000	85.139%	TM 20338901.000	2969695.000	15152.900	M 1579576.400	82.481%	T 13584113.000	TM 9592848.100	TM 7490878.000	TM 9406171.600	90.430%
σ		TM 218950.510	0.530%	TM 147815.460	26022.436	475.132	M 8706.625	1.115%	T 173383.850	TM 101209.250	TM 90426.864	TM 142599.610	1.035%
%RSD		TM 1.857	0.622	TM 0.727	0.876	3.136	M 0.551	1.352	T 1.276	TM 1.055	TM 1.207	TM 1.516	1.144

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:48:49	642970.570	TM 21416546.000	TM 175216660.000	88.893%	33.748	M 3130443.200	1581477.900
2	18:49:11	661102.120	TM 21072838.000	TM 173866200.000	89.995%	55.559	TM 3543106.600	M 1594401.500
3	18:49:32	659469.730	TM 21362924.000	TM 175603200.000	89.103%	33.669	M 3178273.700	M 1590118.000
x		654514.140	TM 21284102.000	TM 174895350.000	89.330%	40.992	TM 3283941.200	M 1588665.800
σ		10030.289	TM 184914.560	TM 911988.450	0.585%	12.615	TM 225714.350	M 6583.056
%RSD		1.532	TM 0.869	TM 0.521	0.655	30.775	TM 6.873	M 0.414

ICV 1039955 5/19/2017 6:54:10 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	18:54:32	88.999%	106654.900	44967.027	T 16975433.000	T 5192541.000	T 51379344.000	T 25298995.000	1876934.200	93.341%	30744.573	T 3065769.000	826386.620
2	18:54:53	90.566%	105503.070	45466.636	T 16848595.000	T 5134619.000	T 51296004.000	T 25150491.000	1883913.700	94.443%	31107.138	T 3057027.400	821448.580
3	18:55:14	91.367%	106630.590	45023.005	T 17293003.000	T 5247930.200	T 52209000.000	T 25989341.000	1947165.500	92.777%	31831.892	T 3124668.400	839122.570
x		90.311%	101.301%	110.348%	T 104.111%	T 107.042%	T 103.811%	T 101.815%	94.819%	93.520%	31227.868	T 103.122%	91.222%
σ		1.204%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	n/a	0.847%	553.622	T n/a	n/a
%RSD		1.333	0.619	0.606	T 1.344	T 1.091	T 0.978	T 1.757	2.034	0.906	1.773	T 1.194	1.100

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	18:54:32	9309.169	T 4750632.900	T 95655187.000	1428684.400	794356.140	1142942.100	1019699.000	122418.040	699.857	9973.441	515.609	2346.827
2	18:54:53	6781.187	T 4723700.500	T 95051521.000	1428733.800	794295.500	1145832.600	1019885.100	123024.880	495.131	9910.831	514.657	2279.954
3	18:55:14	7013.198	T 4798510.300	T 97992406.000	1466221.800	814089.430	1174092.700	1039892.500	124042.430	595.350	10024.219	518.597	1954.674
x		7701.185	T 102.445%	T 101.090%	91.197%	99.978%	96.314%	98.676%	99.195%	596.779	105.299%	516.288	2193.819
σ		1397.379	T n/a	T n/a	n/a	n/a	n/a	n/a	n/a	102.370	n/a	2.056	209.787
%RSD		18.145	T 0.796	T 1.614	1.503	1.425	1.491	1.131	0.666	17.154	0.570	0.398	9.563

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	18:54:32	1005948.500	94.980%	861103.750	298727.860	374.256	159370.980	93.386%	1210358.900	864481.740	679145.930	815575.740	97.184%

2	18:54:53	1003343.300	95.683%	863580.400	300528.030	873.925	160792.380	94.530%	1209473.400	867040.580	677290.890	808535.640	97.394%
3	18:55:14	998443.160	95.149%	877975.000	297525.090	1222.576	158029.680	95.548%	1194826.900	861331.450	670336.200	802489.610	99.569%
x		1002578.300	95.270%	96.616%	99.963%	823.586	100.945%	94.488%	1204886.400	864284.590	103.679%	97.679%	98.049%
σ		3810.686	0.367%	n/a	n/a	426.395	n/a	1.081%	8723.063	2859.667	n/a	n/a	1.320%
%RSD		0.380	0.385	1.050	0.506	51.773	0.867	1.145	0.724	0.331	0.687	0.810	1.347

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	18:54:32	130634.020	1813809.600	T 17401720.000	99.216%	0.000	501897.810	257867.330
2	18:54:53	131955.890	1828446.500	T 17361579.000	99.707%	0.000	500642.030	258169.300
3	18:55:14	129045.820	1802691.100	T 17145722.000	101.068%	0.000	493937.960	255311.250
x		113.823%	88.100%	T 100.866%	99.997%	0.000	99.418%	97.437%
σ		n/a	n/a	T n/a	0.959%	0.000	n/a	n/a
%RSD		1.116	0.712	T 0.796	0.959	0.000	0.858	0.611

ICVL 1039949 5/19/2017 6:59:52 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:00:14	92.544%	399.579	15675.590	T 1785100.200	62491.947	161707.250	T 2628324.700	66160.462	95.100%	78.806	23445.389	16400.998
2	19:00:35	91.406%	383.553	15618.918	T 1721249.600	62145.781	162114.970	T 2608403.100	63220.980	96.352%	93.386	24461.509	16549.872
3	19:00:57	93.550%	439.957	15200.558	T 1760387.100	62696.955	162781.430	T 2573715.400	66544.716	95.763%	57.322	24157.963	16178.619
x		92.500%	121.456%	118.364%	T 107.269%	96.561%	97.844%	T 104.034%	97.639%	95.738%	76.504	100.453%	90.104%
σ		1.073%	n/a	n/a	T n/a	n/a	n/a	T n/a	n/a	0.626%	18.141	n/a	n/a
%RSD		1.160	7.129	1.674	T 1.834	0.446	0.334	T 1.061	2.784	0.654	23.713	2.171	1.141

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:00:14	3398.163	14303.596	1173611.600	6402.896	2664.720	10009.332	35845.771	881.107	699.857	329.761	487.500	2404.961
2	19:00:35	3024.103	14551.713	1160473.900	5851.943	2846.916	9823.844	34765.169	1020.647	681.465	353.819	476.976	2294.553
3	19:00:57	3260.015	14631.523	1175898.400	6159.786	2729.199	10222.730	35865.640	862.348	665.627	308.064	506.272	2525.509
x		3227.427	97.541%	92.178%	97.103%	107.157%	104.494%	106.620%	37.103%	682.316	87.282%	490.250	2408.341
σ		189.147	n/a	n/a	n/a	n/a	n/a	n/a	n/a	17.131	n/a	14.840	115.515
%RSD		5.861	1.180	0.711	4.498	3.363	1.992	1.774	9.387	2.511	6.924	3.027	4.796

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:00:14	50900.823	96.694%	28899.336	6544.111	-78.827	1607.797	95.591%	1788.963	13210.846	10520.400	12635.431	97.379%
2	19:00:35	49599.662	96.868%	28857.594	6284.501	-199.599	1767.042	97.071%	1756.534	13472.764	10302.319	12757.022	96.764%
3	19:00:57	50864.231	100.038%	28448.442	6068.333	-192.405	1802.797	96.985%	1685.913	13065.731	10454.554	12789.017	98.129%
x		97.892%	97.867%	100.004%	105.321%	-156.943	109.298%	96.549%	1743.803	13249.781	99.998%	96.058%	97.424%
σ		n/a	1.882%	n/a	n/a	67.747	n/a	0.831%	52.692	206.291	n/a	n/a	0.683%
%RSD		1.468	1.923	0.867	3.782	43.166	6.015	0.860	3.022	1.557	1.073	0.637	0.702

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:00:14	14488.192	40270.919	28049.822	97.455%	0.000	49680.917	31457.296
2	19:00:35	15180.871	39959.974	27359.486	97.569%	0.000	48959.586	31089.060
3	19:00:57	14835.611	38737.774	28630.049	98.791%	0.000	49079.585	31791.281
x		129.346%	96.247%	102.062%	97.938%	0.000	98.138%	119.168%
σ		n/a	n/a	n/a	0.741%	0.000	n/a	n/a
%RSD		2.335	2.044	2.271	0.756	0.000	0.785	1.117

ICBIS 1036503 5/19/2017 7:05:35 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:05:56	92.247%	46.063	1790.409	-3134.106	212.688	1632.184	-32299.382	466.151	97.535%	51.256	1433.188	-224.302
2	19:06:17	92.856%	12.990	1777.534	-3605.266	478.879	2126.866	-24677.410	182.733	97.588%	71.712	543.684	-353.435

3	19:06:38	93.720%	22.891	1667.490	8670.939	397.363	2981.944	-44047.697	458.203	97.517%	61.527	1100.078	-300.857
x		92.941%	27.315	1745.144	643.856	362.977	2246.998	-33674.830	369.029	97.547%	61.499	1025.650	-292.865
σ		0.741%	16.975	67.558	6955.648	136.387	682.852	9758.120	161.386	0.037%	10.228	449.399	64.936
%RSD		0.797	62.145	3.871	1080.312	37.574	30.390	28.977	43.733	0.038	16.631	43.816	22.173
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	19:05:56	3084.275	181.995	-29913.828	43.010	78.678	414.661	32.673	-3945.459	655.044	-47.905	493.895	2301.786
2	19:06:17	3312.447	130.127	-30791.234	73.705	124.700	362.836	415.813	-4278.238	736.450	-111.543	498.337	2558.827
3	19:06:38	3288.509	166.834	-25503.607	73.791	78.710	312.316	304.830	-4057.327	698.908	-66.464	497.713	2494.708
x		3228.411	159.652	-28736.223	63.502	94.029	363.271	251.106	-4093.675	696.801	-75.304	496.648	2451.774
σ		125.397	26.669	2833.693	17.746	26.561	51.174	197.139	169.341	40.744	32.727	2.405	133.791
%RSD		3.884	16.705	9.861	27.946	28.248	14.087	78.508	4.137	5.847	43.460	0.484	5.457
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	19:05:56	50.218	97.840%	230.209	71.966	-100.853	-86.387	96.378%	1302.212	86.581	42.377	55.884	97.101%
2	19:06:17	103.174	98.131%	224.386	55.606	-178.079	-0.441	97.626%	1193.369	180.523	38.269	85.752	96.820%
3	19:06:38	30.660	97.547%	230.947	70.718	-116.489	-55.885	97.949%	1398.739	173.629	58.926	59.907	97.821%
x		61.351	97.840%	228.514	66.097	-131.807	-47.571	97.318%	1298.106	146.911	46.524	67.181	97.248%
σ		37.517	0.292%	3.594	9.106	40.828	43.572	0.830%	102.746	52.361	10.935	16.208	0.516%
%RSD		61.152	0.299	1.573	13.777	30.975	91.593	0.853	7.915	35.641	23.505	24.126	0.531
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	19:05:56	-23.002	1108.148	913.630	97.517%	0.000	-4.126	6309.150					
2	19:06:17	8.237	1245.177	1625.208	97.755%	0.000	16.271	6324.494					
3	19:06:38	47.913	1084.736	1617.799	98.819%	0.000	0.596	6314.209					
x		11.049	1146.020	1385.546	98.030%	0.000	4.247	6315.951					
σ		35.541	86.666	408.708	0.694%	0.000	10.677	7.819					
%RSD		321.659	7.562	29.498	0.708	0.000	251.395	0.124					

ICSA 1034645 5/19/2017 7:11:16 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	**Time**	**6Li**	**9Be**	**11B**	**23Na**	**25Mg**	**27Al**	**39K**	**44Ca**	**45Sc**	**47Ti**	**51V**	**52Cr**
1	19:11:37	86.668%	99.718	3327.395	TM 326485120.000	T 33635077.000	T 334986230.000	TM 497593600.000	T 14209582.000	92.077%	638198.520	-27079.060	7297.890
2	19:11:58	86.069%	54.428	3822.154	TM 328370460.000	T 33947684.000	T 336102690.000	TM 494155250.000	T 14328549.000	91.783%	640950.410	-26386.938	7082.835
3	19:12:20	85.189%	52.784	3906.456	TM 326371800.000	T 33641601.000	T 333214170.000	TM 489913060.000	T 14054326.000	92.378%	641306.170	-29262.428	7294.313
x		85.975%	1.#IO%	1.#IO%	TM 99.924%	T 104.352%	T 100.970%	TM 98.678%	T 106.129%	92.080%	640151.700	-1.#IO%	1.#IO%
σ		0.744%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	0.297%	1700.833	n/a	n/a
%RSD		0.865	38.616	8.489	TM 0.343	T 0.529	T 0.435	TM 0.779	T 0.969	0.323	0.266	5.442	1.704
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	19:11:37	13244.754	156941.340	T 621374040.000	982.201	1191.083	2602.554	-758.260	-3841.818	1156.688	-50.466	549.529	2493.878
2	19:11:58	13124.338	157408.900	T 625583440.000	925.563	1396.766	2869.133	-974.888	-3662.045	1102.621	-95.647	542.984	2709.006
3	19:12:20	14043.656	160042.750	T 626155420.000	1070.883	1116.548	2743.488	-869.657	-3834.524	1127.511	-51.307	541.679	2561.719
x		13470.916	1.#IO%	T 98.383%	1.#IO%	1.#IO%	1.#IO%	-1.#IO%	-1.#IO%	1128.940	-1.#IO%	544.731	2588.201
σ		499.648	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	27.062	n/a	4.206	109.982
%RSD		3.709	1.057	T 0.418	7.377	11.754	4.870	12.486	2.692	2.397	39.276	0.772	4.249
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	19:11:37	8172.675	92.826%	T 6421583.900	1773.061	1850.912	531.871	91.352%	3202.169	837.854	716.299	1225.452	95.197%
2	19:11:58	8253.732	94.949%	T 6301207.100	1625.852	1752.705	649.532	92.545%	3101.445	1042.736	759.071	1252.729	97.322%
3	19:12:20	8272.550	93.405%	T 6432140.800	1731.259	1872.210	211.519	92.399%	3247.073	1081.074	728.118	1189.790	97.919%
x		1.#IO%	93.727%	T 111.105%	1.#IO%	1825.276	1.#IO%	92.099%	3183.562	987.221	1.#IO%	1.#IO%	96.813%
σ		n/a	1.098%	T n/a	n/a	63.744	n/a	0.651%	74.576	130.768	n/a	n/a	1.431%
%RSD		0.645	1.171	T 1.139	4.436	3.492	48.823	0.707	2.343	13.246	3.007	2.581	1.478

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:11:37	1034.490	1793.824	10410.371	93.380%	0.000	162.999	6400.175
2	19:11:58	942.692	1718.317	10268.661	95.140%	0.000	159.433	6387.981
3	19:12:20	1074.158	1691.796	10623.629	94.988%	0.000	96.570	6367.052
x		1.#IO%	1.#IO%	1.#IO%	94.503%	0.000	1.#IO%	1.#IO%
σ		n/a	n/a	n/a	0.975%	0.000	n/a	n/a
%RSD		6.630	3.052	1.712	1.032	0.000	26.753	0.262

ICSAB 1034648 5/19/2017 7:16:56 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:17:18	82.923%	8771.024	139651.360	TM 321246180.000	T 33332477.000	T 332240250.000	TM 490056920.000	T 13953807.000	91.790%	642667.760	79965.062	212310.710
2	19:17:39	82.741%	8711.854	140974.190	TM 330867610.000	T 34121540.000	T 340627010.000	TM 505879610.000	T 14338702.000	89.685%	652490.050	79508.739	212966.090
3	19:18:00	84.851%	8475.808	137925.860	TM 324477300.000	T 33722345.000	T 334796580.000	TM 501777020.000	T 14262828.000	90.870%	645766.110	84221.700	214023.720
x		83.505%	103.111%	106.552%	TM 99.452%	T 104.302%	T 101.308%	TM 99.747%	T 106.037%	90.782%	646974.640	67.939%	93.799%
σ		1.169%	n/a	n/a	TM n/a	T n/a	T n/a	TM n/a	T n/a	1.055%	5021.431	n/a	n/a
%RSD		1.400	1.805	1.096	TM 1.504	T 1.170	T 1.280	TM 1.645	T 1.437	1.162	0.776	3.200	0.406

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:17:18	15089.097	324173.520	T 625699330.000	139229.210	33430.063	92529.057	77209.344	50805.540	1349.931	11524.482	532.679	2275.623
2	19:17:39	15579.007	334534.070	T 637897400.000	144222.350	33462.689	92934.332	77724.064	50242.451	1159.236	11255.104	545.721	2716.043
3	19:18:00	13838.072	332348.170	T 628727070.000	142057.740	32082.444	92675.593	77790.750	50864.328	1204.146	11321.213	513.682	2347.802
x		14835.392	177.835%	T 99.392%	89.751%	102.959%	96.700%	93.215%	90.630%	1237.771	96.047%	530.694	2446.489
σ		897.769	n/a	T n/a	n/a	n/a	n/a	n/a	n/a	99.695	n/a	16.111	236.214
%RSD		6.052	1.653	T 1.007	1.765	2.387	0.221	0.410	0.678	8.054	1.235	3.036	9.655

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:17:18	7245.657	94.008%	T 6362420.000	145333.780	2226.092	39070.680	92.646%	3157.447	335913.010	260666.690	325444.660	98.410%
2	19:17:39	6827.941	95.752%	T 6282657.700	147318.810	1755.700	39214.497	92.814%	3232.545	334442.100	263307.840	327131.200	98.654%
3	19:18:00	7139.848	94.509%	T 6324673.200	144955.460	2241.275	38129.221	93.639%	3022.497	332306.970	258771.830	322972.430	99.524%
x		7071.148	94.756%	T 110.031%	97.559%	2074.355	98.298%	93.033%	3137.496	334220.690	100.103%	98.173%	98.862%
σ		217.167	0.898%	T n/a	n/a	276.068	n/a	0.531%	106.436	1813.184	n/a	n/a	0.586%
%RSD		3.071	0.948	T 0.631	0.870	13.309	1.519	0.571	3.392	0.543	0.873	0.643	0.592

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:17:18	151500.150	462424.590	625187.810	93.557%	0.000	536325.700	275203.990
2	19:17:39	154741.350	466240.550	621500.430	94.926%	0.000	528091.240	272256.470
3	19:18:00	151648.670	463702.920	623125.460	94.826%	0.000	533017.540	273431.410
x		133.079%	90.115%	90.832%	94.436%	0.000	106.125%	103.695%
σ		n/a	n/a	n/a	0.763%	0.000	n/a	n/a
%RSD		1.199	0.418	0.297	0.808	0.000	0.778	0.542

CCV 1039951 5/19/2017 7:22:39 PM QC Status: WARNING (Initial: WARNING)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:23:00	85.721%	212523.430	81131.746	T 33297360.000	T 10270754.000	T 103443800.000	T 51133525.000	T 4232319.200	88.992%	63227.807	T 6256131.400	1685893.900
2	19:23:21	86.213%	210459.800	82476.792	T 32427277.000	T 9992477.500	T 99154754.000	T 48754314.000	T 4092710.000	92.765%	62575.074	T 6103314.700	1623201.200
3	19:23:43	86.619%	209892.390	81493.154	T 33073491.000	T 10193548.000	T 101690780.000	T 50743155.000	T 4208023.800	90.047%	63098.101	T 6275125.900	1666059.000
x		86.184%	100.554%	99.834%	T 100.612%	T 104.659%	T 101.975%	T 100.319%	T 104.097%	90.601%	62966.994	T 103.901%	91.245%
σ		0.449%	n/a	n/a	T n/a	T n/a	T n/a	T n/a	T n/a	1.947%	345.553	T n/a	n/a
%RSD		0.521	0.656	0.852	T 1.372	T 1.415	T 2.126	T 2.541	T 1.785	2.149	0.549	T 1.516	1.932

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:23:00	14581.480	T 9709289.000	T 195779220.000	2932017.500	1629200.400	2336524.900	2071275.400	232797.420	1143.004	18428.890	530.497	1920.853
2	19:23:21	14523.817	T 9371035.200	T 189596160.000	T 3129490.700	1577047.000	2249204.300	1987904.300	236516.060	1256.301	18853.892	520.370	1782.184
3	19:23:43	13204.207	T 9663991.000	T 193555720.000	2897246.400	1613343.300	2320327.700	2058407.700	238775.020	605.594	19041.879	528.245	1714.922
x		14103.168	T 103.158%	T 101.358%	T 94.482%	100.271%	96.040%	98.013%	95.049%	1001.633	99.151%	526.370	1805.986
σ		779.057	T n/a	T n/a	T n/a	n/a	n/a	n/a	n/a	347.626	n/a	5.317	105.009
%RSD		5.524	T 1.916	T 1.623	T 4.195	1.664	2.018	2.201	1.279	34.706	1.673	1.010	5.814

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:23:00	1957545.300	97.882%	T 3900558.900	576397.400	1866.612	311184.590	96.986%	2348326.300	1638358.000	1271104.800	1545300.100	100.480%

2	19:23:21	1942715.900	95.985%	T3976505.800	582989.950	4116.719	310373.120	96.663%	2346519.000	1658396.800	1279125.100	1553055.300	99.666%
3	19:23:43	1983933.200	95.954%	T3970396.900	580219.500	3014.917	310081.590	96.169%	2351082.900	1669394.800	1294763.300	1570690.200	102.165%
x		1961398.100	96.607%	T109.950%	96.956%	2999.416	98.333%	96.606%	2348642.700	1655383.200	98.344%	93.972%	100.770%
σ		20876.983	1.104%	Tn/a	n/a	1125.134	n/a	0.412%	2298.387	15736.343	n/a	n/a	1.274%
%RSD		1.064	1.143	T1.068	0.571	37.512	0.184	0.426	0.098	0.951	0.939	0.836	1.264

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:23:00	106180.290	T4074720.300	T33743853.000	99.865%	0.000	490756.280	253457.550
2	19:23:21	108431.780	T4071580.600	T34009450.000	100.514%	4.974	496459.620	255824.680
3	19:23:43	105550.850	T4093242.100	T34196728.000	99.822%	10.018	497229.630	255673.650
x		93.050%	T99.019%	T99.051%	100.067%	4.997	98.619%	96.629%
σ		n/a	Tn/a	Tn/a	0.388%	5.009	n/a	n/a
%RSD		1.419	T0.287	T0.670	0.388	100.231	0.715	0.520

CCB 1035925 5/19/2017 7:28:21 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:28:42	89.595%	27.190	933.337	-3429.279	436.341	4586.142	-31405.440	1791.908	96.330%	140.094	447.475	-408.079
2	19:29:04	89.241%	44.385	1250.088	8256.388	724.039	6439.094	-23549.340	1163.315	95.589%	104.493	1771.203	-201.173
3	19:29:25	90.300%	26.427	761.506	11511.723	1198.794	9850.140	-25981.412	1629.181	95.326%	68.095	1637.733	-122.400
x		89.712%	32.667	981.644	5446.277	786.392	6958.459	-26978.731	1528.135	95.748%	104.227	1285.470	-243.884
σ		0.539%	10.155	247.847	7856.903	385.032	2670.155	4021.885	326.252	0.520%	36.001	728.787	147.551
%RSD		0.601	31.087	25.248	144.262	48.962	38.373	14.908	21.350	0.544	34.540	56.694	60.500

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:28:42	4164.106	357.474	-19509.357	85.625	60.033	345.208	85.193	-4069.607	803.908	-86.209	489.091	2451.093
2	19:29:04	3682.495	383.542	-8124.323	154.630	87.353	253.700	290.387	-4280.622	853.794	-77.574	500.026	2282.572
3	19:29:25	3710.526	513.207	-3339.842	186.651	129.806	277.240	417.569	-4362.132	892.312	-87.891	515.740	2287.390
x		3852.376	418.075	-10324.507	142.302	92.397	292.050	264.383	-4237.454	850.004	-83.891	501.619	2340.352
σ		270.330	83.412	8306.257	51.629	35.159	47.518	167.707	150.964	44.324	5.536	13.396	95.935
%RSD		7.017	19.951	80.452	36.281	38.052	16.270	63.433	3.563	5.215	6.598	2.670	4.099

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:28:42	101.175	97.087%	371.166	24.683	-164.437	-24.144	98.245%	1211.303	50.374	53.062	39.335	97.731%
2	19:29:04	135.194	98.095%	377.390	85.336	-161.355	-22.152	98.696%	1226.028	170.302	85.852	94.829	98.916%
3	19:29:25	97.592	98.259%	534.488	59.557	-160.256	-13.272	99.373%	1273.027	142.193	90.957	169.578	99.910%
x		111.320	97.814%	427.681	56.526	-162.016	-19.856	98.771%	1236.786	120.956	76.624	101.247	98.852%
σ		20.753	0.635%	92.550	30.440	2.168	5.788	0.568%	32.238	62.721	20.564	65.358	1.091%
%RSD		18.643	0.649	21.640	53.852	1.338	29.152	0.575	2.607	51.855	26.838	64.553	1.103

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:28:42	-3.102	1893.806	1327.574	98.237%	0.000	10.956	6314.239
2	19:29:04	0.666	2010.800	1822.171	99.111%	0.000	10.597	6319.239
3	19:29:25	-5.445	1625.209	2504.047	99.669%	0.000	15.387	6324.199
x		-2.627	1843.272	1884.597	99.006%	0.000	12.313	6319.226
σ		3.083	197.700	590.716	0.722%	0.000	2.668	4.980
%RSD		117.349	10.726	31.344	0.729	0.000	21.670	0.079

MB 200-116803/1-A 5/19/2017 7:34:02 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:34:24	93.988%	35.925	617.665	-185462.970	673.807	23554.729	-60686.938	7003.173	98.660%	146.737	1226.158	1725.691
2	19:34:45	95.221%	31.921	502.023	-188611.990	618.267	22565.963	-58277.604	7898.675	100.387%	129.382	612.313	1470.030

3	19:35:07	95.385%	-7.569	570.054	-195378.250	493.231	22485.185	-72430.636	7168.873	101.141%	133.322	1365.231	1576.703
x		94.864%	20.092	563.248	-189817.740	595.102	22868.625	-63798.393	7356.907	100.063%	136.480	1067.900	1590.808
σ		0.764%	24.039	58.121	5066.416	92.490	595.554	7572.182	476.444	1.272%	9.099	400.631	128.413
%RSD		0.805	119.644	10.319	2.669	15.542	2.604	11.869	6.476	1.271	6.667	37.516	8.072

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:34:24	3827.988	944.181	37363.593	107.899	320.012	4796.974	712.862	-4173.659	823.265	-61.321	505.010	2208.380
2	19:34:45	4037.800	896.106	31311.856	135.169	243.218	4653.067	674.556	-4125.426	812.417	-66.955	508.436	2329.134
3	19:35:07	3893.597	1005.719	31804.175	79.453	250.619	4741.965	555.061	-3939.802	722.887	-54.641	478.333	2148.999
x		3919.795	948.669	33493.208	107.507	271.283	4730.669	647.493	-4079.629	786.189	-60.973	497.259	2228.838
σ		107.331	54.944	3360.878	27.860	42.362	72.615	82.308	123.472	55.090	6.164	16.480	91.794
%RSD		2.738	5.792	10.035	25.915	15.615	1.535	12.712	3.027	7.007	10.110	3.314	4.118

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:34:24	274.353	102.211%	351.801	43.512	-133.335	-59.929	101.287%	2093.202	179.494	103.747	250.077	101.613%
2	19:34:45	434.076	102.425%	243.638	18.709	-175.716	-13.423	101.784%	1856.972	142.145	88.022	214.411	103.962%
3	19:35:07	532.731	103.806%	235.379	42.659	-149.660	-43.984	103.068%	1819.292	138.327	74.261	182.490	103.350%
x		413.720	102.814%	276.939	34.960	-152.904	-39.112	102.046%	1923.156	153.322	88.677	215.659	102.975%
σ		130.387	0.866%	64.963	14.080	21.376	23.633	0.919%	148.465	22.746	14.754	33.811	1.219%
%RSD		31.516	0.842	23.458	40.275	13.980	60.423	0.901	7.720	14.836	16.638	15.678	1.183

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:34:24	71.524	478.656	2123.557	101.111%	0.000	24.634	6788.829
2	19:34:45	91.458	546.118	1676.120	101.201%	0.000	19.644	6768.636
3	19:35:07	82.978	493.458	1837.254	101.631%	0.000	29.275	6815.892
x		81.987	506.077	1878.977	101.314%	0.000	24.518	6791.119
σ		10.004	35.457	226.618	0.278%	0.000	4.816	23.711
%RSD		12.202	7.006	12.061	0.274	0.000	19.645	0.349

LCS 200-116803/2-A 5/19/2017 7:39:43 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:40:05	94.219%	3567.713	135402.620	T 17458572.000	636002.080	1606544.800	T 26508374.000	631280.760	101.978%	142.056	226546.150	171137.270
2	19:40:26	94.264%	3361.703	136731.270	T 17078356.000	622851.190	1590769.700	T 26536286.000	628809.260	102.695%	155.699	228117.550	171296.200
3	19:40:48	95.195%	3406.937	132456.900	T 17202554.000	633143.770	1596036.800	T 26749139.000	640992.230	102.050%	146.836	230328.140	174264.740
x		94.559%	3445.451	134863.590	T 17246494.000	630665.680	1597783.800	T 26597933.000	633694.080	102.241%	148.197	228330.610	172232.740
σ		0.551%	108.271	2187.575	T 193879.030	6916.804	8031.344	T 131689.410	6440.052	0.395%	6.923	1899.978	1761.560
%RSD		0.583	3.142	1.622	T 1.124	1.097	0.503	T 0.495	1.016	0.386	4.671	0.832	1.023

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:40:05	4289.726	141905.530	T 13728398.000	58346.811	26235.271	99394.525	304713.600	42914.472	777.602	3302.456	453.074	1863.201
2	19:40:26	4727.978	144268.260	T 13658931.000	59048.573	26753.825	99793.610	302399.840	42669.878	889.341	3275.193	453.853	2073.302
3	19:40:48	4392.350	143387.310	T 13738858.000	60041.814	27551.751	100054.170	307680.250	43208.750	814.859	3278.246	436.854	2103.485
x		4470.018	143187.040	T 13708729.000	59145.732	26846.949	99747.434	304931.230	42931.033	827.267	3285.298	447.927	2013.329
σ		229.217	1194.031	T 43442.351	851.668	663.162	332.236	2646.923	269.817	56.893	14.937	9.598	130.888
%RSD		5.128	0.834	T 0.317	1.440	2.470	0.333	0.868	0.628	6.877	0.455	2.143	6.501

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:40:05	509844.120	104.100%	290595.580	62755.535	216.411	15983.132	103.185%	1981.992	129336.090	101200.090	130156.150	104.138%
2	19:40:26	514025.860	104.206%	292236.450	61682.003	-54.926	15507.378	102.898%	2123.599	132574.240	102742.310	129290.070	105.167%
3	19:40:48	512183.700	104.430%	293977.380	62695.399	97.028	15271.897	103.468%	1879.910	132168.810	102236.150	128440.940	105.051%
x		512017.890	104.245%	292269.800	62377.646	86.171	15587.469	103.184%	1995.167	131359.720	102059.520	129295.720	104.785%
σ		2095.795	0.169%	1691.146	603.194	135.994	362.319	0.285%	122.378	1764.194	786.138	857.615	0.563%
%RSD		0.409	0.162	0.579	0.967	157.819	2.324	0.276	6.134	1.343	0.770	0.663	0.537

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:40:05	143005.130	379134.340	255408.330	101.015%	0.000	521155.140	268092.860
2	19:40:26	141850.180	372205.840	251948.830	102.858%	0.000	520044.520	266558.200
3	19:40:48	144101.400	375750.050	251907.990	103.828%	0.000	516764.660	265948.700
x		142985.570	375696.740	253088.380	102.567%	0.000	519321.440	266866.590
σ		1125.736	3464.557	2009.236	1.429%	0.000	2282.805	1104.845
%RSD		0.787	0.922	0.794	1.393	0.000	0.440	0.414

200-38498-A-1-E 5/19/2017 7:45:24 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:45:46	90.082%	1023.011	8471.294	615007.610	T 3512449.600	T 149460300.000	T 14944683.000	T 3296681.900	116.068%	24927.555	302460.810	230643.560
2	19:46:07	92.305%	1086.059	8957.266	639697.990	T 3588041.700	T 151610240.000	T 15104198.000	T 3357293.600	116.143%	27331.026	305040.310	233893.820
3	19:46:29	92.004%	1040.926	9294.253	620459.210	T 3487751.600	T 147381960.000	T 14611889.000	T 3247229.800	119.288%	24983.945	298308.510	227456.730
x		91.464%	1049.998	8907.604	625054.930	T 3529414.300	T 149484170.000	T 14886923.000	T 3300401.800	117.166%	25747.509	301936.540	230664.700
σ		1.206%	32.488	413.721	12970.899	T 52252.991	T 2114242.600	T 251185.580	T 55126.135	1.838%	1371.656	3396.386	3218.593
%RSD		1.319	3.094	4.645	2.075	T 1.481	T 1.414	T 1.687	T 1.670	1.569	5.327	1.125	1.395
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	19:45:46	12277.799	T 17880664.000	T 515544950.000	220106.000	102894.050	T 5003891.700	1062426.900	5706.479	356.929	506.607	689.415	2671.814
2	19:46:07	11688.073	T 18117751.000	T 519003910.000	221227.860	103612.690	T 5026555.800	1074644.900	5521.969	384.429	426.319	669.519	2889.737
3	19:46:29	11496.603	T 17867140.000	T 512954420.000	220331.160	102017.960	T 4949482.600	1054142.400	5661.155	352.416	439.742	540.868	2239.120
x		11820.825	T 17955185.000	T 515834430.000	220555.010	102841.570	T 4993310.000	1063738.100	5629.868	364.591	457.556	633.267	2600.223
σ		407.166	T 140948.730	T 3035116.900	593.485	798.659	T 39611.216	10313.948	96.152	17.327	43.006	80.636	331.164
%RSD		3.444	T 0.785	T 0.588	0.269	0.777	T 0.793	0.970	1.708	4.752	9.399	12.733	12.736
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	19:45:46	885192.460	272.079%	5533.609	17428.645	-552.665	6826.334	99.797%	57284.256	7177.500	5985.345	804044.350	124.300%
2	19:46:07	875785.460	274.456%	5308.682	17169.053	-584.980	6996.273	101.568%	57565.034	7323.887	5997.694	804679.840	126.846%
3	19:46:29	881201.000	276.595%	5462.914	17098.569	-496.440	6908.432	102.337%	56891.836	7609.036	5988.724	800443.160	125.147%
x		880726.310	274.377%	5435.068	17232.089	-544.695	6910.346	101.234%	57247.042	7370.141	5990.588	803055.780	125.431%
σ		4721.432	2.259%	115.020	173.832	44.805	84.985	1.303%	338.139	219.455	6.382	2284.800	1.296%
%RSD		0.536	0.823	2.116	1.009	8.226	1.230	1.287	0.591	2.978	0.107	0.285	1.034
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	19:45:46	1651.444	10626.662	4290160.700	105.289%	0.000	313673.610	129084.690					
2	19:46:07	1805.311	10560.084	4325130.400	106.082%	4.713	323365.630	130157.300					
3	19:46:29	1707.444	10274.811	4237965.500	108.581%	4.605	310974.650	126972.920					
x		1721.400	10487.185	4284418.900	106.651%	3.106	316004.630	128738.300					
σ		77.877	186.910	43865.206	1.718%	2.690	6516.086	1620.200					
%RSD		4.524	1.782	1.024	1.611	86.620	2.062	1.259					

200-38498-A-2-D 5/19/2017 7:51:06 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:51:28	96.248%	745.146	8695.525	T 908190.660	T 2576316.800	T 116636820.000	T 13801504.000	1582519.200	118.660%	36562.838	229988.280	179121.270
2	19:51:49	97.552%	657.362	8133.854	T 820950.020	T 2479351.000	T 112563510.000	T 13295948.000	1553960.700	123.635%	30985.923	221350.200	172761.210
3	19:52:10	99.433%	698.904	7552.721	T 862245.920	T 2536825.900	T 112851220.000	T 13293202.000	1558510.800	123.124%	31930.177	225558.320	175881.280
x		97.744%	700.471	8127.367	T 863795.530	T 2530831.200	T 114017190.000	T 13463552.000	1564996.900	121.806%	33159.646	225632.270	175921.260
σ		1.601%	43.913	571.429	T 43640.958	T 48760.068	T 2273230.400	T 292678.420	15344.324	2.737%	2984.827	4319.517	3180.217
%RSD		1.638	6.269	7.031	T 5.052	T 1.927	T 1.994	T 2.174	0.980	2.247	9.001	1.914	1.808
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	19:51:28	10228.287	T 22264581.000	T 411466190.000	150365.470	75246.064	T 3154979.600	701721.210	4099.421	461.266	307.592	610.829	2906.457
2	19:51:49	10488.403	T 21732178.000	T 398138130.000	144856.240	71279.198	T 3064128.100	677874.010	4372.324	467.599	319.941	510.592	2390.156
3	19:52:10	10328.145	T 21962405.000	T 404173250.000	145609.300	72473.482	T 3081377.800	663060.190	3957.129	499.904	305.937	500.959	2339.031
x		10348.278	T 21986388.000	T 404592530.000	146943.670	72999.582	T 3100161.800	680885.130	4142.958	476.256	311.157	540.793	2545.215
σ		131.221	T 267010.690	T 6673914.300	2987.189	2035.090	T 48250.663	19505.608	210.994	20.723	7.652	60.843	313.887
%RSD		1.268	T 1.214	T 1.650	2.033	2.788	T 1.556	2.865	5.093	4.351	2.459	11.251	12.332
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	19:51:28	574876.080	236.335%	3163.320	10667.086	-393.876	3934.389	106.333%	35504.206	5718.991	4509.694	613286.610	120.005%

2	19:51:49	577710.510	233.506%	3079.713	10406.393	-455.137	3893.234	106.545%	36567.282	5897.536	4616.292	623175.480	123.114%
3	19:52:10	562107.100	237.654%	2985.711	10292.634	-424.242	3965.745	108.693%	36245.594	5473.008	4513.287	615168.780	122.459%
x		571564.560	235.832%	3076.248	10455.371	-424.418	3931.123	107.190%	36105.694	5696.512	4546.425	617210.290	121.859%
σ		8312.116	2.119%	88.855	191.971	30.631	36.366	1.306%	545.171	213.155	60.534	5251.023	1.639%
%RSD		1.454	0.899	2.888	1.836	7.217	0.925	1.218	1.510	3.742	1.331	0.851	1.345

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:51:28	1331.142	7333.157	2862478.400	106.321%	0.000	219258.410	78667.507
2	19:51:49	1461.267	7562.703	2903437.400	107.334%	0.000	217845.710	79332.564
3	19:52:10	1306.336	7408.684	2901771.000	107.167%	4.666	221512.160	79980.907
x		1366.248	7434.848	2889229.000	106.941%	1.555	219538.760	79326.992
σ		83.218	116.988	23181.623	0.543%	2.694	1849.235	656.718
%RSD		6.091	1.574	0.802	0.508	173.205	0.842	0.828

200-38498-A-3-D 5/19/2017 7:56:47 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	19:57:09	95.817%	748.817	10078.097	731523.140	T 4952298.400	T 114303020.000	T 22059233.000	T 8820925.400	125.570%	33526.349	236733.010	192165.040
2	19:57:30	94.241%	759.863	10295.944	713694.050	T 4852795.600	T 112912900.000	T 21793478.000	T 8776827.800	128.110%	33526.584	235470.550	189143.950
3	19:57:52	96.430%	761.761	9753.468	740334.220	T 4972096.600	T 114878740.000	T 22077912.000	T 8806474.800	126.174%	33351.543	237615.040	192010.120
x		95.496%	756.814	10042.503	728517.130	T 4925730.200	T 114031550.000	T 21976874.000	T 8801409.300	126.618%	33468.159	236606.200	191106.370
σ		1.129%	6.990	272.984	13572.093	T 63934.233	T 1010645.500	T 159100.300	T 22480.973	1.327%	100.992	1077.855	1701.270
%RSD		1.182	0.924	2.718	1.863	T 1.298	T 0.886	T 0.724	T 0.255	1.048	0.302	0.456	0.890

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	19:57:09	13447.809	T 29329598.000	T 643710980.000	182786.670	96525.011	977472.500	750379.610	14434.545	426.111	80.412	505.007	2396.100
2	19:57:30	13215.479	T 29056543.000	T 637618120.000	178409.490	93858.325	958466.780	737613.260	14677.859	333.380	193.816	501.987	1418.686
3	19:57:52	12611.492	T 29445952.000	T 643898700.000	183445.410	95814.586	972998.620	753608.200	14248.729	371.541	162.733	496.779	1647.470
x		13091.593	T 29277364.000	T 641742600.000	181547.190	95399.307	969645.970	747200.360	14453.711	377.011	145.654	501.258	1820.752
σ		431.703	T 199890.170	T 3573139.500	2737.219	1380.995	9936.529	8458.148	215.206	46.607	58.599	4.162	511.229
%RSD		3.298	T 0.683	T 0.557	1.508	1.448	1.025	1.132	1.489	12.362	40.232	0.830	28.078

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	19:57:09	1495283.500	234.328%	3113.688	2316.370	-354.938	3022.537	105.941%	105277.610	4836.954	3763.756	856565.940	120.927%
2	19:57:30	1488165.000	234.103%	3061.146	2430.004	-457.233	3306.204	107.773%	106813.120	4942.055	3787.791	840091.000	120.430%
3	19:57:52	1489539.000	236.166%	2985.551	2207.872	-495.305	3082.265	107.293%	106409.400	5020.902	3796.325	843672.000	120.652%
x		1490995.800	234.866%	3053.461	2318.082	-435.826	3137.002	107.002%	106166.710	4933.304	3782.624	846776.310	120.670%
σ		3776.250	1.132%	64.413	111.076	72.591	149.545	0.950%	796.004	92.285	16.888	8665.071	0.249%
%RSD		0.253	0.482	2.110	4.792	16.656	4.767	0.888	0.750	1.871	0.446	1.023	0.206

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	19:57:09	1378.043	7343.482	3480883.100	103.575%	4.827	314500.240	51910.924
2	19:57:30	1533.664	7421.565	3550403.900	101.927%	0.000	325126.880	53085.807
3	19:57:52	1377.287	7697.170	3518750.700	104.329%	0.000	322515.010	52710.573
x		1429.665	7487.406	3516679.200	103.277%	1.609	320714.050	52569.101
σ		90.067	185.809	34806.640	1.228%	2.787	5537.506	600.082
%RSD		6.300	2.482	0.990	1.189	173.205	1.727	1.142

200-38498-A-4-D 5/19/2017 8:02:28 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:02:50	100.704%	800.912	6783.298	442675.730	T 4026720.900	T 129470500.000	T 18019966.000	1607781.600	129.379%	28240.369	292555.930	217436.600
2	20:03:11	98.238%	883.867	7090.985	424663.800	T 3978804.900	T 129087820.000	T 17931906.000	T 1854723.400	129.825%	26668.610	289287.870	217457.990

3	20:03:32	98.889%	897.815	7027.020	436461.860	┬4042306.400	┬129450960.000	┬18006645.000	┬1845054.100	129.108%	26835.572	292932.160	222988.200
x		99.277%	860.864	6967.101	434600.460	┬4015944.100	┬129336420.000	┬17986172.000	┬1769186.400	129.437%	27248.184	291591.980	219294.260
σ		1.278%	52.387	162.359	9149.103	┬33094.043	┬215522.530	┬47465.943	┬139864.220	0.362%	863.303	2004.269	3199.060
%RSD		1.287	6.085	2.330	2.105	┬0.824	┬0.167	┬0.264	┬7.906	0.280	3.168	0.687	1.459

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:02:50	10782.027	┬6357776.600	┬442753000.000	194752.290	106493.900	┬3855178.000	┬1397082.700	11223.632	417.693	171.857	519.979	2364.128
2	20:03:11	11027.328	┬6402427.700	┬440773130.000	196910.220	108426.870	┬3867401.000	┬1380540.300	11010.902	414.472	187.584	528.881	2257.249
3	20:03:32	11117.636	┬6476568.400	┬445630400.000	194426.460	108701.690	┬3905779.000	┬1403707.100	11224.435	384.165	229.015	535.490	1838.682
x		10975.664	┬6412257.500	┬443052180.000	195362.990	107874.150	┬3876119.400	┬1393776.700	11152.990	405.443	196.152	528.117	2153.353
σ		173.667	┬60002.829	┬2442415.100	1349.811	1203.203	┬26403.053	┬11932.019	123.052	18.498	29.526	7.784	277.703
%RSD		1.582	┬0.936	┬0.551	0.691	1.115	┬0.681	┬0.856	1.103	4.562	15.053	1.474	12.896

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:02:50	507635.760	266.696%	3908.206	5315.154	-438.706	9525.968	107.987%	363818.770	11452.120	9075.419	463126.010	124.631%
2	20:03:11	511896.110	268.004%	3993.606	4932.005	-363.493	9316.180	108.060%	369764.520	12023.119	9068.210	472654.360	128.127%
3	20:03:32	511053.530	268.271%	3978.421	5184.079	-495.377	9280.900	108.594%	364386.990	12065.443	9055.362	461348.110	124.944%
x		510195.130	267.657%	3960.078	5143.746	-432.525	9374.349	108.214%	365990.090	11846.894	9066.330	465709.500	125.901%
σ		2256.164	0.843%	45.559	194.733	66.159	132.485	0.331%	3281.071	342.539	10.160	6079.770	1.934%
%RSD		0.442	0.315	1.150	3.786	15.296	1.413	0.306	0.896	2.891	0.112	1.305	1.536

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:02:50	1454.167	8235.685	┬6176543.700	109.953%	4.547	304566.440	91667.291
2	20:03:11	1388.062	8474.180	┬6249100.300	108.266%	4.618	309180.710	94223.483
3	20:03:32	1490.276	8885.114	┬6152856.000	110.693%	0.000	307500.870	92077.200
x		1444.168	8531.660	┬6192833.300	109.637%	3.055	307082.670	92655.991
σ		51.835	328.508	┬50147.365	1.244%	2.646	2335.390	1372.872
%RSD		3.589	3.850	┬0.810	1.135	86.610	0.761	1.482

200-38498-A-5-D 5/19/2017 8:08:11 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:08:32	99.016%	1022.820	5372.597	┬1865201.100	┬4675099.100	┬168724510.000	┬18726255.000	1695855.900	134.634%	26287.999	303519.040	241785.270
2	20:08:53	99.669%	1148.613	5651.444	┬1850933.300	┬4605915.800	┬167594540.000	┬18609858.000	┬1974007.500	136.195%	25720.266	299125.300	241501.860
3	20:09:15	99.236%	1020.400	5768.230	┬1883388.100	┬4698792.900	┬170830540.000	┬18978799.000	┬1971176.400	134.053%	26677.150	303799.510	249956.690
x		99.307%	1063.944	5597.423	┬1866507.500	┬4659935.900	┬169049870.000	┬18771638.000	┬1880346.600	134.960%	26228.471	302147.950	244414.610
σ		0.332%	73.335	203.273	┬16266.800	┬48259.545	┬1642350.700	┬188611.050	┬159779.900	1.108%	481.211	2621.444	4801.679
%RSD		0.334	6.893	3.632	┬0.872	┬1.036	┬0.972	┬1.005	┬8.497	0.821	1.835	0.868	1.965

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:08:32	11916.631	┬15489442.000	┬529209890.000	227854.870	116478.100	744426.190	532674.130	10482.521	388.144	13.455	524.404	2293.092
2	20:08:53	12270.763	┬15367776.000	┬528419980.000	226704.720	115579.260	746318.290	534840.900	10231.499	394.957	3.670	523.471	2375.324
3	20:09:15	12987.035	┬15862572.000	┬538407690.000	229529.550	119148.080	762868.030	542807.330	10417.786	389.653	18.095	507.688	2190.450
x		12391.476	┬15573263.000	┬532012520.000	228029.710	117068.480	751204.170	536774.120	10377.269	390.918	11.740	518.521	2286.289
σ		545.316	┬257828.250	┬5552445.200	1420.510	1856.215	10145.403	5336.052	130.324	3.578	7.364	9.393	92.624
%RSD		4.401	┬1.656	┬1.044	0.623	1.586	1.351	0.994	1.256	0.915	62.721	1.812	4.051

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:08:32	544411.170	299.340%	3097.624	1766.918	-685.411	2500.007	108.029%	279871.210	9292.740	7726.493	574912.290	128.677%
2	20:08:53	543984.240	301.340%	2970.714	1707.228	-449.865	2095.737	109.750%	280308.140	10150.124	7707.977	568791.130	130.825%
3	20:09:15	542728.960	298.958%	3140.090	1809.678	-580.649	2354.157	109.616%	279140.030	9593.219	7739.523	577865.710	130.456%
x		543708.120	299.880%	3069.476	1761.274	-571.975	2316.634	109.132%	279773.130	9678.694	7724.664	573856.380	129.986%
σ		874.438	1.279%	88.127	51.458	118.013	204.730	0.957%	590.201	435.036	15.852	4628.523	1.149%
%RSD		0.161	0.427	2.871	2.922	20.632	8.837	0.877	0.211	4.495	0.205	0.807	0.884

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:08:32	573.362	9451.010	2667175.000	107.697%	0.000	423923.110	83513.599
2	20:08:53	596.530	9199.952	2648838.400	111.133%	0.000	417043.240	81917.739
3	20:09:15	521.874	8725.965	2679766.000	109.374%	0.000	429959.740	84553.431
x		563.922	9125.642	2665259.800	109.402%	0.000	423642.030	83328.256
σ		38.213	368.190	15552.509	1.718%	0.000	6462.837	1327.585
%RSD		6.776	4.035	0.584	1.571	0.000	1.526	1.593

200-38498-A-6-D 5/19/2017 8:13:53 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:14:14	96.901%	930.580	6022.291	330173.400	┬5110999.400	┬132914020.000	┬19582228.000	┬8533118.700	131.360%	15813.004	257116.620	221061.670
2	20:14:36	97.459%	722.185	5926.499	296857.460	┬5004379.900	┬128801270.000	┬19082516.000	┬8356603.600	134.025%	16467.550	255974.680	218575.310
3	20:14:57	96.159%	1024.103	6172.299	330026.280	┬5154872.400	┬133047370.000	┬19649865.000	┬8652726.200	131.057%	17452.228	263640.200	225817.440
x		96.840%	892.289	6040.363	319019.050	┬5090083.900	┬131587550.000	┬19438203.000	┬8514149.500	132.147%	16577.594	258910.500	221818.140
σ		0.652%	154.559	123.893	19192.641	┬77395.661	┬2413913.000	┬309885.050	┬148969.870	1.633%	825.134	4135.641	3679.850
%RSD		0.674	17.322	2.051	6.016	┬1.521	┬1.834	┬1.594	┬1.750	1.236	4.977	1.597	1.659

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:14:14	11412.906	┬18346933.000	┬540199080.000	204851.580	108656.200	1429215.500	907848.250	11984.266	312.932	112.070	543.502	2015.776
2	20:14:36	11431.188	┬18169558.000	┬535474410.000	201524.330	107325.470	1402020.200	884762.130	12179.405	293.025	139.045	520.935	1917.473
3	20:14:57	11476.225	┬18794867.000	┬548409220.000	206328.850	110404.200	1451411.000	920258.650	12174.329	311.606	144.038	546.379	1856.411
x		11440.107	┬18437120.000	┬541360900.000	204234.920	108795.290	1427548.900	904289.680	12112.667	305.854	131.718	536.939	1929.887
σ		32.588	┬322262.240	┬6545205.600	2460.906	1544.073	24737.528	18013.839	111.228	11.130	17.197	13.934	80.404
%RSD		0.285	┬1.748	┬1.209	1.205	1.419	1.733	1.992	0.918	3.639	13.056	2.595	4.166

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:14:14	1367075.300	251.975%	2829.059	2262.726	-510.839	3343.036	108.005%	153399.620	4258.191	3369.901	662037.380	120.084%
2	20:14:36	1361541.800	249.853%	3007.375	2450.668	-544.275	3360.717	107.885%	150977.880	4518.308	3432.292	679041.650	121.081%
3	20:14:57	1370819.600	251.717%	2808.126	2544.698	-498.747	3271.950	108.809%	152906.590	4560.411	3469.928	671621.750	121.909%
x		1366478.900	251.181%	2881.520	2419.364	-517.954	3325.234	108.233%	152428.030	4445.636	3424.041	670900.260	121.025%
σ		4667.575	1.158%	109.495	143.569	23.583	46.985	0.503%	1279.836	163.692	50.522	8525.062	0.914%
%RSD		0.342	0.461	3.800	5.934	4.553	1.413	0.464	0.840	3.682	1.476	1.271	0.755

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:14:14	822.172	6939.673	3716965.500	103.193%	4.845	342538.360	56259.079
2	20:14:36	1000.329	6845.775	3670705.700	106.417%	0.000	338860.090	55231.214
3	20:14:57	959.970	7048.314	3712448.600	104.878%	0.000	340528.010	56369.564
x		927.490	6944.587	3700039.900	104.829%	1.615	340642.150	55953.285
σ		93.414	101.359	25504.376	1.613%	2.797	1841.792	627.768
%RSD		10.072	1.460	0.689	1.538	173.205	0.541	1.122

200-38498-A-7-J 5/19/2017 8:19:35 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:19:57	96.603%	1500.469	5520.825	442658.680	┬5449759.100	┬213192660.000	┬20177258.000	┬1783763.600	144.551%	14345.956	381283.800	314552.690
2	20:20:18	94.289%	1525.756	6325.714	456975.620	┬5656881.200	┬220833770.000	┬20539041.000	┬1860484.200	144.314%	14789.712	393347.410	323758.000
3	20:20:40	98.583%	1428.336	5483.899	443182.290	┬5428519.100	┬211516180.000	┬19817655.000	1542133.300	145.887%	13949.368	384671.050	315693.710
x		96.491%	1484.854	5776.813	447605.530	┬5511719.800	┬215180870.000	┬20177985.000	┬1728793.700	144.917%	14361.679	386434.090	318001.470
σ		2.149%	50.553	475.721	8118.958	┬126161.200	┬4966800.700	┬360693.500	┬166141.830	0.848%	420.393	6222.047	5017.841
%RSD		2.227	3.405	8.235	1.814	┬2.289	┬2.308	┬1.788	┬9.610	0.585	2.927	1.610	1.578

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:19:57	14086.059	┬25225517.000	┬650286320.000	296499.000	140083.990	526385.300	673207.760	10383.405	290.101	23.609	577.622	2635.922
2	20:20:18	13968.415	┬25776083.000	┬667937630.000	303010.080	142131.600	536917.640	694546.470	10403.892	273.319	51.284	615.440	2081.019
3	20:20:40	12708.221	┬24970420.000	┬649735360.000	296920.610	140490.150	521950.490	672244.480	10115.043	281.758	24.088	564.350	2627.626
x		13587.565	┬25324007.000	┬655986440.000	298809.900	140901.910	528417.810	679999.570	10300.780	281.726	32.994	585.804	2448.189
σ		763.802	┬411762.700	┬10353703.000	3643.565	1084.133	7687.794	12607.186	161.179	8.391	15.842	26.510	318.006
%RSD		5.621	┬1.626	┬1.578	1.219	0.769	1.455	1.854	1.565	2.978	48.015	4.525	12.989

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:19:57	584367.040	361.814%	3954.126	2598.465	-532.630	2659.102	108.291%	100971.090	4675.492	3759.967	783431.390	136.203%

2	20:20:18	600740.410	367.980%	3903.939	2522.419	-779.881	2845.936	106.999%	103239.370	4634.746	3953.608	817165.440	135.746%
3	20:20:40	588823.390	367.319%	4134.426	2726.692	-713.013	2929.717	109.066%	100586.120	4508.175	3805.216	784756.740	136.833%
x		591310.280	365.704%	3997.497	2615.858	-675.175	2811.585	108.118%	101598.860	4606.138	3839.597	795117.850	136.260%
σ		8465.239	3.385%	121.210	103.241	127.895	138.539	1.044%	1433.704	87.250	101.295	19105.262	0.546%
%RSD		1.432	0.926	3.032	3.947	18.942	4.927	0.966	1.411	1.894	2.638	2.403	0.400

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:19:57	660.395	13261.818	4328681.800	109.054%	0.000	524670.110	135791.320
2	20:20:18	559.847	13867.523	4551305.100	105.490%	0.000	558712.560	147969.220
3	20:20:40	543.561	13266.248	4379324.300	108.987%	4.588	526359.290	138244.460
x		587.934	13465.196	4419770.400	107.844%	1.529	536580.650	140668.340
σ		63.279	348.432	116692.770	2.039%	2.649	19185.393	6440.628
%RSD		10.763	2.588	2.640	1.891	173.205	3.575	4.579

200-38498-A-7-J SD@5 5/19/2017 8:25:19 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:25:40	104.162%	344.750	938.681	113744.840	1172599.000	T 52015781.000	T 4997263.000	372993.430	128.148%	3709.075	91543.530	76786.093
2	20:26:01	105.249%	278.704	1144.151	107792.090	1166593.400	T 52276805.000	T 5045250.700	374261.280	128.597%	3632.684	93089.921	75571.775
3	20:26:23	104.947%	265.416	1102.605	115100.760	1179599.100	T 52696412.000	T 5087854.500	375262.520	127.577%	3545.938	93822.095	76224.262
x		104.786%	296.290	1061.812	112212.560	1172930.500	T 52329666.000	T 5043456.100	374172.410	128.107%	3629.232	92818.515	76194.043
σ		0.561%	42.490	108.640	3887.811	6509.195	T 343380.680	T 45322.390	1137.154	0.511%	81.623	1163.276	607.723
%RSD		0.535	14.341	10.232	3.465	0.555	T 0.656	T 0.899	0.304	0.399	2.249	1.253	0.798

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:25:40	6627.589	T 6099647.000	T 161420620.000	72397.960	34102.516	128434.520	172446.500	2805.196	604.642	-21.159	536.960	2579.504
2	20:26:01	5843.406	T 6102277.100	T 161112570.000	72082.481	34614.684	127971.980	172692.950	2487.134	631.614	-12.866	511.647	2174.679
3	20:26:23	6530.000	T 6155059.000	T 162509790.000	72260.823	34047.164	129973.760	174422.160	2717.931	594.051	13.171	552.687	2238.017
x		6333.665	T 6118994.400	T 161681000.000	72247.088	34254.788	128793.420	173187.200	2670.087	610.102	-6.951	533.764	2330.734
σ		427.371	T 31260.532	T 734100.250	158.188	312.906	1048.040	1076.580	164.340	19.368	17.913	20.705	217.757
%RSD		6.748	T 0.511	T 0.454	0.219	0.913	0.814	0.622	6.155	3.175	257.689	3.879	9.343

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:25:40	117207.910	168.845%	1598.947	510.370	-257.935	436.935	113.325%	20322.829	985.214	770.062	153300.120	111.356%
2	20:26:01	114492.620	172.009%	1822.201	539.559	-292.618	572.031	115.511%	20774.808	1156.038	730.514	151763.340	114.250%
3	20:26:23	114488.160	169.968%	1735.397	463.408	-241.801	389.247	115.076%	20640.112	1181.187	739.675	152942.860	114.927%
x		115396.230	170.274%	1718.848	504.445	-264.118	466.071	114.638%	20579.250	1107.480	746.750	152668.780	113.511%
σ		1568.961	1.604%	112.543	38.419	25.967	94.811	1.157%	232.054	106.630	20.702	804.217	1.897%
%RSD		1.360	0.942	6.548	7.616	9.832	20.343	1.009	1.128	9.628	2.772	0.527	1.671

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:25:40	131.927	2083.272	918244.910	102.328%	0.000	109240.040	33553.152
2	20:26:01	143.291	1875.183	906421.950	103.775%	0.000	108356.770	32994.723
3	20:26:23	207.056	2260.599	923422.140	102.696%	0.000	110035.020	33909.169
x		160.758	2073.018	916029.670	102.933%	0.000	109210.610	33485.681
σ		40.496	192.912	8713.900	0.752%	0.000	839.511	460.941
%RSD		25.191	9.306	0.951	0.731	0.000	0.769	1.377

CCV 1039951 5/19/2017 8:31:01 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:31:23	93.198%	220095.910	83870.544	T 33564570.000	T 10437743.000	T 104227810.000	T 51251362.000	T 4251332.000	104.715%	61579.571	T 6341436.100	1663123.400
2	20:31:44	92.237%	220822.740	83834.799	T 34091514.000	T 10572021.000	T 105504920.000	T 51901374.000	T 4292255.100	101.690%	64314.871	T 6463097.800	1692494.700

3	20:32:05	91.891%	217298.190	82569.457	┬33668843.000	┬10446588.000	┬104321470.000	┬50976075.000	┬4213363.600	102.245%	62434.614	┬6320569.100	1653406.900
x		92.442%	104.580%	101.942%	┬103.185%	┬108.094%	┬105.248%	┬102.649%	┬105.957%	102.883%	62776.352	┬106.636%	91.866%
σ		0.677%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.610%	1399.306	┬n/a	n/a
%RSD		0.732	0.848	0.888	┬0.826	┬0.716	┬0.680	┬0.925	┬0.928	1.565	2.229	┬1.207	1.219

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:31:23	12329.636	┬9603251.100	┬194405970.000	┬3239190.300	1611745.300	2312976.600	1999850.700	249261.880	539.160	19478.393	481.384	-393.178
2	20:31:44	13825.258	┬9848410.700	┬197671020.000	┬3283961.400	1640339.900	2353419.000	2050399.000	252117.040	1156.921	19367.864	498.962	1599.130
3	20:32:05	13562.210	┬9623408.100	┬194357780.000	┬3235652.000	1609489.900	2305884.200	2019775.400	247719.670	661.134	19460.447	455.673	-601.192
x		13239.035	┬104.345%	┬102.672%	┬102.919%	101.145%	96.961%	97.251%	100.554%	785.738	102.641%	478.673	201.587
σ		798.469	┬n/a	┬n/a	┬n/a	n/a	n/a	n/a	n/a	327.188	n/a	21.771	1214.769
%RSD		6.031	┬1.404	┬0.972	┬0.828	1.061	1.103	1.258	0.894	41.641	0.305	4.548	602.603

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:31:23	┬2342788.900	104.408%	┬4106938.100	610412.540	3139.636	318743.410	102.519%	2396901.500	1670669.200	1300667.800	1567654.900	102.536%
2	20:31:44	2027797.700	102.253%	┬4170425.400	604008.590	2565.222	322555.940	101.813%	2430318.700	1693285.200	1307112.800	1578853.600	102.840%
3	20:32:05	┬2288070.900	103.160%	┬4108638.600	600247.530	2729.054	315384.370	102.707%	2400011.200	1664134.800	1282303.300	1548856.400	102.412%
x		┬2219552.500	103.274%	┬114.948%	101.139%	2811.304	100.976%	102.346%	2409077.100	1676029.700	99.498%	94.502%	102.596%
σ		┬168303.110	1.082%	┬n/a	n/a	295.908	n/a	0.471%	18461.312	15296.646	n/a	n/a	0.220%
%RSD		┬7.583	1.048	┬0.876	0.850	10.526	1.125	0.460	0.766	0.913	0.993	0.968	0.215

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:31:23	107308.080	┬4272943.900	┬35683791.000	97.497%	5.128	504161.770	259104.460
2	20:31:44	105830.740	┬4276074.400	┬35163029.000	98.185%	0.000	506989.520	262731.410
3	20:32:05	108651.900	┬4265656.000	┬35155781.000	99.435%	20.114	502504.090	257123.020
x		93.524%	┬103.672%	┬102.988%	98.372%	8.414	100.559%	98.398%
σ		n/a	┬n/a	┬n/a	0.982%	10.452	n/a	n/a
%RSD		1.316	┬0.125	┬0.857	0.999	124.217	0.450	1.095

CCB 1035925 5/19/2017 8:36:42 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:37:04	99.242%	-27.648	405.226	-6102.292	216.398	3246.442	19581.781	2575.713	109.932%	63.734	601.670	-11.763
2	20:37:25	97.829%	-1.475	484.900	171.439	335.533	4504.519	22889.987	2944.008	109.764%	104.878	2192.834	-113.308
3	20:37:47	98.313%	82.102	352.564	12173.450	3223.151	38974.210	50169.132	4339.159	110.078%	109.074	3455.862	680.502
x		98.462%	17.660	414.230	2080.866	1258.361	15575.057	30880.300	3286.293	109.924%	92.562	2083.455	185.144
σ		0.718%	57.323	66.626	9286.287	1702.600	20274.022	16786.314	930.217	0.157%	25.054	1430.236	431.987
%RSD		0.729	324.595	16.084	446.270	135.303	130.170	54.359	28.306	0.143	27.067	68.647	233.325

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:37:04	4189.032	305.493	9841.351	55.925	9.570	251.170	297.665	-4075.697	898.361	-63.706	499.742	2220.872
2	20:37:25	3956.771	416.795	12986.587	101.630	87.163	147.805	374.198	-4305.217	1009.593	-57.289	498.866	2160.500
3	20:37:47	3963.386	3679.337	83402.049	1191.404	631.742	1099.421	843.749	-4054.221	969.247	-79.917	493.537	2193.435
x		4036.397	1467.208	35409.995	449.653	242.825	499.465	505.204	-4145.045	959.067	-66.971	497.382	2191.602
σ		132.228	1916.568	41592.079	642.781	339.039	522.141	295.675	139.128	56.311	11.662	3.358	30.228
%RSD		3.276	130.627	117.459	142.951	139.623	104.540	58.526	3.356	5.871	17.413	0.675	1.379

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:37:04	-12.784	107.766%	267.933	31.651	-133.466	-50.673	106.657%	1050.132	137.294	32.255	72.825	102.288%
2	20:37:25	33.661	107.333%	334.293	50.304	-126.400	-43.597	106.844%	1038.933	94.831	92.688	128.834	101.264%
3	20:37:47	795.788	108.771%	1557.097	266.283	-138.051	115.038	108.403%	1937.340	693.669	500.859	680.321	103.121%
x		272.221	107.957%	719.774	116.079	-132.639	6.923	107.301%	1342.135	308.598	208.600	293.993	102.225%
σ		454.016	0.738%	725.901	130.414	5.869	93.698	0.959%	515.493	334.156	254.900	335.740	0.930%
%RSD		166.782	0.683	100.851	112.349	4.425	1353.499	0.893	38.408	108.282	122.196	114.200	0.910

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:37:04	40.993	1399.042	842.095	98.624%	0.000	10.796	6324.359
2	20:37:25	-1.913	1236.423	1966.804	98.824%	0.000	0.595	6329.388
3	20:37:47	-13.567	2518.540	11735.697	100.423%	0.000	224.165	6398.771
x		8.505	1718.001	4848.199	99.290%	0.000	78.519	6350.839
σ		28.733	698.038	5991.199	0.986%	0.000	126.237	41.586
%RSD		337.854	40.631	123.576	0.993	0.000	160.773	0.655

CCVL 1039949 5/19/2017 8:42:24 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:42:45	101.994%	395.250	13213.859	T 1752686.000	63164.297	165405.880	T 2730831.300	64328.724	114.899%	61.005	23943.808	16701.750
2	20:43:07	103.267%	377.401	13192.884	T 1757332.300	61204.178	164357.710	T 2712255.400	67007.889	115.458%	104.055	22949.981	16857.605
3	20:43:28	101.838%	408.237	13164.379	T 1808421.500	63884.872	167744.430	T 2746533.500	67372.521	114.124%	122.727	24197.795	16811.974
x		102.366%	117.265%	100.738%	T 108.322%	97.035%	100.037%	T 109.085%	99.026%	114.827%	95.929	99.096%	92.382%
σ		0.784%	n/a	n/a	T n/a	n/a	n/a	T n/a	n/a	0.670%	31.653	n/a	n/a
%RSD		0.766	3.933	0.188	T 1.744	2.211	1.046	T 0.629	2.509	0.583	32.996	2.783	0.477

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:42:45	4168.657	14688.368	1226844.400	6267.146	2955.992	9514.307	34418.916	1066.409	975.003	330.147	514.402	2327.627
2	20:43:07	4670.501	15444.785	1227843.700	6262.541	2754.969	9607.930	33937.958	810.970	1000.160	298.446	497.524	2358.387
3	20:43:28	4290.984	14794.680	1247005.700	6261.750	3002.953	10319.991	35241.787	883.932	1067.556	263.224	495.269	2473.695
x		4376.714	100.773%	97.213%	99.090%	113.308%	102.361%	103.738%	37.066%	1014.240	78.496%	502.398	2386.570
σ		261.675	n/a	n/a	n/a	n/a	n/a	n/a	n/a	47.856	n/a	10.456	77.004
%RSD		5.979	2.734	0.921	0.047	4.535	4.490	1.909	14.295	4.718	11.261	2.081	3.227

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:42:45	50357.638	111.594%	28382.707	6200.133	-183.858	1544.010	109.352%	1129.420	13275.618	10090.183	12119.224	103.497%
2	20:43:07	49923.640	112.561%	28797.415	6736.331	-156.591	1488.170	110.449%	1235.917	12700.539	10145.670	13104.282	106.252%
3	20:43:28	49084.039	113.036%	28760.477	6112.278	-173.658	1470.441	111.658%	1164.312	12734.077	10038.999	12155.506	103.928%
x		96.599%	112.397%	99.697%	106.167%	-171.369	95.048%	110.486%	1176.550	12903.411	96.794%	94.039%	104.559%
σ		n/a	0.735%	n/a	n/a	13.777	n/a	1.154%	54.293	322.777	n/a	n/a	1.482%
%RSD		1.300	0.654	0.801	5.320	8.039	2.558	1.044	4.615	2.501	0.529	4.483	1.417

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:42:45	14974.305	34525.392	27686.762	99.006%	0.000	49226.298	30011.362
2	20:43:07	14620.821	35431.445	26649.508	99.535%	0.000	49876.028	30488.860
3	20:43:28	14704.594	35507.006	27391.643	100.390%	0.000	48232.420	30402.765
x		128.750%	85.321%	99.255%	99.644%	0.000	97.882%	114.829%
σ		n/a	n/a	n/a	0.698%	0.000	n/a	n/a
%RSD		1.251	1.554	1.962	0.701	0.000	1.686	0.840

200-38498-A-7-J PDS 5/19/2017 8:48:07 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:48:28	94.774%	4960.627	139581.650	T 13980253.000	T 6069046.100	T 215390540.000	T 40724275.000	T 2364779.500	138.162%	13576.159	559395.860	443576.200
2	20:48:49	92.429%	5096.384	147252.900	T 14035955.000	T 6061043.200	T 214901870.000	T 40715288.000	T 2385831.600	139.962%	14220.466	553950.370	441632.920
3	20:49:10	93.503%	5074.500	143272.790	T 13960545.000	T 6073588.300	T 215205320.000	T 40699746.000	T 2353496.800	139.818%	15170.000	556869.620	436698.880
x		93.569%	5043.837	143369.110	T 13992251.000	T 6067892.600	T 215165910.000	T 40713103.000	T 2368036.000	139.314%	14322.209	556738.620	440636.000
σ		1.174%	72.888	3836.534	T 39110.605	T 6351.597	T 246704.640	T 12409.614	T 16411.558	1.000%	801.777	2725.109	3545.387
%RSD		1.255	1.445	2.676	T 0.280	T 0.105	T 0.115	T 0.030	T 0.693	0.718	5.598	0.489	0.805

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:48:28	13535.009	T 25062151.000	T 662008300.000	340712.230	159617.360	593723.750	914417.790	24862.597	316.684	1083.324	581.859	2597.125
2	20:48:49	14441.281	T 25193918.000	T 659350270.000	336646.690	157274.220	586395.940	906382.790	25202.736	299.789	1137.612	584.833	2152.551
3	20:49:10	14772.186	T 25281562.000	T 661470570.000	339865.620	157649.800	595979.920	921872.300	25367.357	250.954	1190.233	596.807	1237.874
x		14249.492	T 25179210.000	T 660943050.000	339074.850	158180.460	592033.200	914224.290	25144.230	289.142	1137.056	587.833	1995.850
σ		640.499	T 110442.810	T 1405347.300	2145.030	1258.484	5010.651	7746.568	257.415	34.134	53.457	7.913	693.042
%RSD		4.495	T 0.439	T 0.213	0.633	0.796	0.846	0.847	1.024	11.805	4.701	1.346	34.724

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:48:28	1094030.800	348.916%	92874.271	64472.908	-354.580	18738.111	104.065%	100148.820	131591.970	104900.090	910399.420	130.697%

2	20:48:49	1107483.000	351.573%	93621.176	64297.635	-742.606	18802.397	105.075%	101508.950	132304.880	105309.430	912359.280	131.828%
3	20:49:10	T 1291664.600	353.648%	93622.551	63394.687	-673.300	18770.277	106.318%	99782.541	132103.670	104200.320	908392.530	133.706%
x		T 1164392.800	351.379%	93372.666	64055.077	-590.162	18770.262	105.152%	100480.110	132000.170	104803.280	910383.740	132.077%
σ		T 110425.660	2.372%	431.623	578.590	206.942	32.143	1.128%	909.635	367.553	560.855	1983.420	1.520%
%RSD		T 9.484	0.675	0.462	0.903	35.065	0.171	1.073	0.905	0.278	0.535	0.218	1.151

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:48:28	117833.760	358107.780	4578177.600	105.265%	0.000	1015153.000	382656.360
2	20:48:49	119517.140	362344.810	4574757.200	106.120%	0.000	1017083.600	378509.540
3	20:49:10	118777.110	360997.220	4556569.100	107.109%	0.000	1007866.700	381842.120
x		118709.330	360483.270	4569834.700	106.165%	0.000	1013367.800	381002.670
σ		843.736	2164.764	11614.873	0.923%	0.000	4860.850	2197.161
%RSD		0.711	0.601	0.254	0.869	0.000	0.480	0.577

200-38498-A-7-K MS 5/19/2017 8:53:49 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:54:10	93.334%	5341.006	116767.150	T 13920844.000	T 6674069.900	T 249248340.000	T 43584775.000	T 2299297.200	147.101%	26841.956	619831.490	491016.170
2	20:54:32	94.124%	5324.822	117380.290	T 13629717.000	T 6566889.300	T 245591350.000	T 42622821.000	T 2288316.300	150.557%	24435.670	614351.620	485037.020
3	20:54:54	94.431%	5479.444	119069.840	T 13972446.000	T 6770075.000	T 251550670.000	T 43621963.000	T 2324311.300	147.702%	25200.474	616123.070	490978.700
x		93.963%	5381.757	117739.090	T 13841002.000	T 6670344.700	T 248796790.000	T 43276520.000	T 2303975.000	148.453%	25492.700	616768.730	489010.630
σ		0.566%	84.985	1192.539	T 184788.450	T 101644.050	T 3005212.500	T 566425.210	T 18447.773	1.846%	1229.471	2796.411	3441.299
%RSD		0.602	1.579	1.013	T 1.335	T 1.524	T 1.208	T 1.309	T 0.801	1.244	4.823	0.453	0.704

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:54:10	14869.672	T 26553437.000	T 727403680.000	367965.200	176349.460	647658.680	1001070.400	25087.327	317.018	942.355	615.192	2069.830
2	20:54:32	14176.847	T 25972828.000	T 710086550.000	361129.960	173486.770	634846.600	983823.570	25252.896	236.273	935.224	622.324	2100.831
3	20:54:54	16570.895	T 26403051.000	T 727852670.000	372528.360	178781.450	649040.570	998947.090	25035.950	267.837	947.179	601.281	2221.302
x		15205.804	T 26309772.000	T 721780970.000	367207.840	176205.890	643848.620	994613.700	25125.391	273.709	941.586	612.932	2130.654
σ		1231.911	T 301333.980	T 10130149.000	5736.816	2650.257	7826.536	9404.649	113.371	40.691	6.014	10.701	80.019
%RSD		8.102	T 1.145	T 1.403	1.562	1.504	1.216	0.946	0.451	14.867	0.639	1.746	3.756

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:54:10	1223196.200	401.437%	80307.383	66796.913	-713.726	19415.559	104.766%	108303.110	42736.902	33985.809	1066562.800	137.633%
2	20:54:32	1217890.300	403.706%	80656.515	66399.678	-336.854	19036.948	106.217%	108558.460	42750.035	33760.867	1053457.000	138.384%
3	20:54:54	1212990.700	402.925%	81916.381	65980.339	-460.926	19021.823	106.192%	110390.540	43775.103	33942.055	1047565.300	139.157%
x		1218025.700	402.689%	80960.093	66392.310	-503.835	19158.110	105.725%	109084.040	43087.347	33896.243	1055861.700	138.391%
σ		5104.082	1.153%	846.368	408.337	192.065	223.085	0.831%	1138.643	595.650	119.263	9724.341	0.762%
%RSD		0.419	0.286	1.045	0.615	38.121	1.164	0.786	1.044	1.382	0.352	0.921	0.551

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:54:10	38491.895	377447.350	5296557.500	105.576%	0.000	1121975.700	420642.880
2	20:54:32	38311.404	373609.220	5186471.700	108.318%	0.000	1115988.000	410323.360
3	20:54:54	38234.749	370047.930	5217819.300	107.735%	0.000	1127654.500	418965.590
x		38346.016	373701.500	5233616.200	107.210%	0.000	1121872.700	416643.950
σ		132.021	3700.573	56717.542	1.445%	0.000	5833.891	5537.657
%RSD		0.344	0.990	1.084	1.348	0.000	0.520	1.329

200-38498-A-7-L MSD 5/19/2017 8:59:31 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	20:59:53	94.383%	5238.471	125357.050	T 14444165.000	T 6141793.800	T 225877470.000	T 41930903.000	T 3324964.500	144.007%	25345.332	569330.250	455438.090
2	21:00:14	93.431%	5233.667	126871.050	T 14343921.000	T 6173016.000	T 229776080.000	T 42203325.000	T 3311365.600	143.713%	25067.398	581474.350	464264.070

3	21:00:36	94.369%	5382.370	128055.600	┬14443485.000	┬6159114.100	┬227090420.000	┬41673851.000	┬3302473.200	144.742%	25136.608	585909.440	466201.570
x		94.061%	5284.836	126761.230	┬14410524.000	┬6157974.700	┬227581320.000	┬41936026.000	┬3312934.400	144.154%	25183.112	578904.680	461967.910
σ		0.545%	84.501	1352.625	┬57680.404	┬15642.264	┬1995129.400	┬264774.370	┬11327.409	0.530%	144.685	8583.110	5737.365
%RSD		0.580	1.599	1.067	┬0.400	┬0.254	┬0.877	┬0.631	┬0.342	0.368	0.575	1.483	1.242

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	20:59:53	14818.646	┬27986952.000	┬648669940.000	340158.330	158621.280	625403.180	894063.520	26704.681	290.822	1063.870	603.966	2286.139
2	21:00:14	14803.362	┬28285173.000	┬658990840.000	347024.340	163090.920	632803.130	896420.120	25896.133	354.014	1005.603	568.565	2370.626
3	21:00:36	14213.939	┬28268811.000	┬660678210.000	347585.780	162134.060	633054.720	896687.840	26055.001	342.084	1026.094	598.756	2508.413
x		14611.982	┬28180312.000	┬656113000.000	344922.820	161282.080	630420.350	895723.830	26218.605	328.974	1031.856	590.429	2388.393
σ		344.800	┬167654.500	┬6500851.900	4135.705	2353.467	4346.810	1444.086	428.383	33.574	29.558	19.113	112.197
%RSD		2.360	┬0.595	┬0.991	1.199	1.459	0.690	0.161	1.634	10.206	2.865	3.237	4.698

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	20:59:53	1331931.300	360.389%	90999.390	65299.483	-458.609	19182.787	105.223%	84899.311	52323.778	41973.867	928677.590	132.838%
2	21:00:14	1355120.600	368.268%	90071.419	66264.235	-493.399	19234.564	105.707%	87274.165	53414.585	42427.893	940243.870	134.004%
3	21:00:36	1349184.100	366.867%	90647.511	65342.626	-546.662	18763.748	105.638%	88030.750	53609.006	42759.923	947695.480	133.962%
x		1345412.000	365.175%	90572.773	65635.448	-499.557	19060.366	105.523%	86734.742	53115.790	42387.228	938872.310	133.601%
σ		12046.036	4.203%	468.478	544.972	44.348	258.180	0.262%	1633.925	692.757	394.603	9582.842	0.661%
%RSD		0.895	1.151	0.517	0.830	8.877	1.355	0.248	1.884	1.304	0.931	1.021	0.495

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	20:59:53	43737.210	368669.040	4573304.600	104.487%	4.785	1065133.400	399303.360
2	21:00:14	44194.678	376516.420	4625039.700	104.740%	0.000	1074900.400	406158.280
3	21:00:36	44620.433	375908.580	4653593.800	104.248%	0.000	1081321.200	402233.700
x		44184.107	373698.010	4617312.700	104.492%	1.595	1073785.000	402565.110
σ		441.707	4365.813	40698.474	0.246%	2.763	8151.323	3439.457
%RSD		1.000	1.168	0.881	0.235	173.205	0.759	0.854

200-38498-A-8-D 5/19/2017 9:05:12 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:05:34	95.947%	1000.461	10931.765	549835.770	┬5645720.000	┬158377980.000	┬25541736.000	┬5763717.000	134.409%	29244.844	301474.590	267488.190
2	21:05:55	95.753%	926.918	10912.310	┬728409.570	┬5603523.900	┬155584440.000	┬24884201.000	┬5677129.100	138.094%	28162.816	298862.590	264423.640
3	21:06:17	96.835%	905.445	10745.443	┬733268.580	┬5624932.700	┬156328560.000	┬25281185.000	┬5672882.600	135.701%	29590.815	297225.090	262857.070
x		96.178%	944.275	10863.173	┬670504.640	┬5624725.500	┬156763660.000	┬25235707.000	┬5704576.200	136.068%	28999.492	299187.420	264922.970
σ		0.577%	49.829	102.420	┬104530.550	┬21098.774	┬1446703.900	┬331117.820	┬51261.375	1.870%	744.945	2143.294	2355.593
%RSD		0.600	5.277	0.943	┬15.590	┬0.375	┬0.923	┬1.312	┬0.899	1.374	2.569	0.716	0.889

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:05:34	13028.076	┬23722497.000	┬625956200.000	227993.480	123550.520	1900571.200	1091331.100	10655.889	394.442	147.962	558.001	2153.860
2	21:05:55	13568.665	┬23426111.000	┬618201430.000	226113.320	123177.270	1892742.700	1072544.800	10737.166	392.076	121.200	574.787	2364.272
3	21:06:17	13793.673	┬23576572.000	┬622447120.000	228212.180	124966.980	1908901.900	1086789.800	10725.580	379.844	148.325	567.506	2254.755
x		13463.471	┬23575060.000	┬622201580.000	227439.660	123898.260	1900738.600	1083555.200	10706.212	388.788	139.163	566.765	2257.629
σ		393.489	┬148199.130	┬3883211.700	1153.840	944.168	8080.939	9801.933	43.964	7.835	15.557	8.418	105.235
%RSD		2.923	┬0.629	┬0.624	0.507	0.762	0.425	0.905	0.411	2.015	11.179	1.485	4.661

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:05:34	1114783.300	269.562%	3012.782	3605.923	-474.192	5775.194	105.916%	198609.930	6017.027	4672.272	587383.710	123.212%
2	21:05:55	1116904.700	272.591%	2966.293	3669.613	-527.083	5949.478	107.346%	195496.690	5743.641	4666.076	594513.810	123.746%
3	21:06:17	1083219.000	270.698%	3020.404	3628.019	-501.106	5963.116	108.988%	196859.200	6068.710	4557.923	572713.020	123.344%
x		1104969.000	270.950%	2999.827	3634.518	-500.794	5895.929	107.416%	196988.600	5943.126	4632.090	584870.180	123.434%
σ		18865.942	1.530%	29.290	32.339	26.447	104.782	1.537%	1560.647	174.681	64.306	11115.618	0.279%
%RSD		1.707	0.565	0.976	0.890	5.281	1.777	1.431	0.792	2.939	1.388	1.901	0.226

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:05:34	1131.282	9418.329	4813251.100	101.521%	0.000	402707.800	73451.827
2	21:05:55	1247.144	9030.134	4805917.200	102.705%	0.000	400329.340	73469.615
3	21:06:17	1336.715	9142.391	4853817.600	101.474%	0.000	415448.820	75096.403
x		1238.380	9196.951	4824328.600	101.900%	0.000	406161.990	74005.948
σ		102.997	199.766	25800.085	0.698%	0.000	8130.082	944.403
%RSD		8.317	2.172	0.535	0.685	0.000	2.002	1.276

200-38498-A-9-D 5/19/2017 9:10:53 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:11:15	97.954%	1047.441	8140.759	519018.870	┬5625659.200	┬154216430.000	┬24302193.000	┬4788679.900	137.959%	25934.222	291576.700	245585.330
2	21:11:36	96.940%	948.227	9022.405	┬688234.280	┬5616049.100	┬154523840.000	┬24325994.000	┬4753860.900	139.237%	26253.640	288615.220	244466.590
3	21:11:57	96.140%	912.499	9129.852	517074.210	┬5587780.800	┬154576820.000	┬24362494.000	┬4744451.200	138.978%	24031.587	291596.650	244875.320
x		97.011%	969.389	8764.339	┬574775.790	┬5609829.700	┬154439030.000	┬24330227.000	┬4762330.700	138.725%	25406.483	290596.190	244975.750
σ		0.909%	69.915	542.702	┬98262.747	┬19690.205	┬194585.940	┬30372.584	┬23299.092	0.675%	1201.358	1715.598	566.093
%RSD		0.937	7.212	6.192	┬17.096	┬0.351	┬0.126	┬0.125	┬0.489	0.487	4.729	0.590	0.231

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:11:15	12198.470	┬20823922.000	┬600786180.000	222719.100	124022.260	1804433.900	1060961.300	9729.433	425.271	99.324	556.151	2406.101
2	21:11:36	12412.502	┬20873479.000	┬605621880.000	225221.970	126036.420	1808606.700	1053807.300	9657.391	433.729	101.693	581.169	2326.584
3	21:11:57	12961.359	┬20840896.000	┬602924320.000	223904.880	123378.100	1794027.800	1066046.000	9851.564	395.032	120.418	542.122	2209.641
x		12524.110	┬20846099.000	┬603110790.000	223948.650	124478.930	1802356.100	1060271.500	9746.129	418.011	107.145	559.814	2314.109
σ		393.500	┬25185.211	┬2423236.400	1252.010	1386.752	7508.301	6148.444	98.158	20.345	11.555	19.780	98.823
%RSD		3.142	┬0.121	┬0.402	0.559	1.114	0.417	0.580	1.007	4.867	10.785	3.533	4.270

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:11:15	936405.380	265.053%	2739.682	2650.157	-417.836	5003.991	108.066%	94150.317	4799.811	3838.546	566455.820	123.554%
2	21:11:36	945115.620	268.507%	2771.310	3081.432	-636.854	5246.577	109.006%	93582.736	4866.287	3925.303	571481.070	123.389%
3	21:11:57	945773.830	267.967%	2803.064	2934.855	-566.100	4785.043	109.848%	92993.904	5123.385	3891.881	568797.910	124.251%
x		942431.610	267.175%	2771.352	2888.815	-540.263	5011.870	108.974%	93575.652	4929.828	3885.243	568911.600	123.731%
σ		5229.233	1.858%	31.691	219.293	111.772	230.868	0.891%	578.239	170.889	43.758	2514.550	0.458%
%RSD		0.555	0.695	1.144	7.591	20.688	4.606	0.818	0.618	3.466	1.126	0.442	0.370

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:11:15	804.068	8057.838	3779106.200	101.894%	0.000	420963.120	77247.199
2	21:11:36	951.187	7697.788	3831404.600	102.514%	0.000	420240.440	76739.290
3	21:11:57	871.380	7825.361	3855951.000	101.750%	0.000	422075.020	78812.915
x		875.545	7860.329	3822153.900	102.053%	0.000	421092.860	77599.801
σ		73.648	182.554	39248.701	0.406%	0.000	924.145	1080.846
%RSD		8.412	2.322	1.027	0.398	0.000	0.219	1.393

200-38498-A-11-D 5/19/2017 9:16:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:16:56	97.232%	1392.578	6203.711	454713.390	┬5224765.600	┬200606530.000	┬18649190.000	871129.570	147.896%	18180.557	337751.870	294321.340
2	21:17:18	97.188%	1362.375	6341.573	472019.430	┬5334261.300	┬205176830.000	┬19092757.000	884126.010	144.498%	18448.258	348743.530	296437.910
3	21:17:40	98.570%	1299.170	6454.306	458327.910	┬5211897.300	┬201566820.000	┬18625840.000	875958.680	146.303%	18890.926	343559.170	295103.980
x		97.663%	1351.375	6333.197	461686.910	┬5256974.700	┬202450060.000	┬18789262.000	877071.420	146.233%	18506.580	343351.530	295287.740
σ		0.785%	47.666	125.508	9128.903	┬67240.675	┬2409767.700	┬263093.000	6569.284	1.700%	358.757	5498.771	1070.184
%RSD		0.804	3.527	1.982	1.977	┬1.279	┬1.190	┬1.400	0.749	1.163	1.939	1.601	0.362

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:16:56	11441.558	┬11523510.000	┬534172350.000	231560.390	141164.860	259639.470	459848.920	6248.782	317.992	19.338	594.570	2445.615
2	21:17:18	11732.471	┬11736380.000	┬543857910.000	236130.650	145285.310	268359.720	475223.460	6284.405	291.742	22.642	566.604	2451.972
3	21:17:40	11546.318	┬11561719.000	┬539940070.000	234437.680	144211.600	265540.740	469422.080	6331.516	316.949	9.750	541.764	2514.828
x		11573.449	┬11607203.000	┬539323440.000	234042.910	143553.920	264513.310	468164.820	6288.235	308.894	17.243	567.646	2470.805
σ		147.342	┬113490.180	┬4872135.000	2310.562	2137.507	4449.988	7763.998	41.500	14.864	6.696	26.419	38.257
%RSD		1.273	┬0.978	┬0.903	0.987	1.489	1.682	1.658	0.660	4.812	38.835	4.654	1.548

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:16:56	486415.470	347.092%	5512.569	2057.135	-689.036	1970.740	109.072%	20027.327	3161.232	2493.621	627064.150	129.265%

2	21:17:18	479345.200	349.878%	5638.796	2063.310	-541.081	1727.078	109.955%	20171.591	3212.269	2550.230	627637.360	132.341%
3	21:17:40	479064.420	344.283%	5530.039	1982.073	-710.201	1839.003	109.921%	20159.726	3071.054	2488.767	621585.520	132.322%
x		481608.360	347.084%	5560.468	2034.173	-646.772	1845.607	109.650%	20119.548	3148.185	2510.873	625429.010	131.309%
σ		4165.442	2.798%	68.394	45.225	92.141	121.965	0.500%	80.086	71.506	34.171	3340.876	1.770%
%RSD		0.865	0.806	1.230	2.223	14.246	6.608	0.456	0.398	2.271	1.361	0.534	1.348

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:16:56	411.655	10771.089	2406234.800	103.469%	4.832	724193.830	133386.830
2	21:17:18	452.414	10940.578	2437771.900	102.982%	0.000	729944.270	135411.990
3	21:17:40	471.388	10595.908	2405428.500	104.186%	4.799	715948.190	136383.170
x		445.152	10769.192	2416478.400	103.546%	3.210	723362.100	135060.670
σ		30.522	172.343	18445.085	0.605%	2.780	7035.012	1528.750
%RSD		6.856	1.600	0.763	0.585	86.604	0.973	1.132

CCV 1039951 5/19/2017 9:22:17 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:22:38	91.395%	225500.130	85263.808	┬33820250.000	┬10535752.000	┬105032750.000	┬51172734.000	┬4276579.300	105.836%	63186.910	┬6452346.700	1668438.600
2	21:22:59	92.412%	221526.260	84888.483	┬34352831.000	┬10647227.000	┬107156460.000	┬52190061.000	┬4328113.800	103.353%	63631.604	┬6551126.800	1709873.400
3	21:23:20	91.865%	218787.480	82933.042	┬33756907.000	┬10462376.000	┬105477540.000	┬50907776.000	┬4298949.600	103.654%	62867.586	┬6477533.200	1688733.300
x		91.891%	105.787%	103.086%	┬103.802%	┬108.743%	┬106.458%	┬102.743%	┬107.175%	104.281%	63228.700	┬108.620%	92.930%
σ		0.509%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.355%	383.719	┬n/a	n/a
%RSD		0.554	1.521	1.483	┬0.963	┬0.882	┬1.058	┬1.316	┬0.601	1.299	0.607	┬0.790	1.227

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:22:38	15210.876	┬9726207.300	┬195604470.000	┬3258489.900	1620806.600	2314442.100	1989315.900	250865.440	1075.242	19164.849	481.218	1191.469
2	21:22:59	10581.114	┬9837649.200	┬198030900.000	┬3311992.300	1645298.800	2353266.900	2030954.400	253776.130	989.300	19682.605	494.927	-176.027
3	21:23:20	11685.278	┬9769705.500	┬197827940.000	┬3304312.000	1620609.700	2327488.000	2014880.200	253167.360	553.659	20051.876	454.955	-766.901
x		12492.423	┬105.272%	┬103.553%	┬104.142%	101.668%	97.280%	96.692%	101.723%	872.734	103.684%	477.033	82.847
σ		2418.116	┬n/a	┬n/a	┬n/a	n/a	n/a	n/a	n/a	279.648	n/a	20.312	1004.522
%RSD		19.357	┬0.574	┬0.683	┬0.879	0.872	0.847	1.044	0.608	32.043	2.270	4.258	1212.501

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:22:38	2053677.400	104.613%	┬4165625.300	609560.650	1905.224	319026.740	102.450%	2388935.100	1657244.000	1286102.100	1578549.000	100.821%
2	21:22:59	┬2340240.000	102.816%	┬4185526.000	612011.720	3239.892	320283.190	101.532%	2415009.600	1692280.400	1296982.900	1585981.600	102.832%
3	21:23:20	┬2356944.500	102.181%	┬4170669.900	605403.000	2918.899	314854.480	101.660%	2394430.200	1682608.500	1292184.900	1567353.900	99.599%
x		┬2250287.300	103.203%	┬116.209%	101.825%	2688.005	100.710%	101.880%	2399458.300	1677377.700	99.119%	95.237%	101.084%
σ		┬170473.870	1.262%	┬n/a	n/a	696.648	n/a	0.497%	13745.227	18094.425	n/a	n/a	1.633%
%RSD		┬7.576	1.223	┬0.248	0.549	25.917	0.894	0.488	0.573	1.079	0.422	0.594	1.615

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:22:38	107956.740	┬4241825.400	┬35149386.000	96.219%	0.000	494411.050	254434.330
2	21:22:59	105823.790	┬4290153.800	┬35402154.000	96.472%	0.000	504118.090	257206.820
3	21:23:20	109526.050	┬4318719.300	┬35304917.000	96.123%	10.403	505752.110	261984.760
x		93.964%	┬103.963%	┬102.846%	96.271%	3.468	99.937%	97.725%
σ		n/a	┬n/a	┬n/a	0.180%	6.006	n/a	n/a
%RSD		1.724	┬0.907	┬0.361	0.187	173.205	1.223	1.481

CCB 1035925 5/19/2017 9:27:59 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:28:20	97.994%	3.512	806.275	8607.118	455.659	6861.353	52492.116	3944.278	110.938%	76.735	2497.076	50.141
2	21:28:41	98.127%	5.959	470.357	8119.136	465.758	8394.158	48255.588	4094.888	110.767%	94.889	2108.648	85.109

3	21:29:03	99.293%	5.061	605.135	8655.438	681.536	11763.640	38037.306	3880.801	110.876%	58.648	1637.322	87.445
x		98.471%	4.844	627.256	8460.564	534.318	9006.384	46261.670	3973.322	110.861%	76.758	2081.015	74.232
σ		0.715%	1.238	169.048	296.670	127.595	2507.832	7430.825	109.959	0.087%	18.121	430.543	20.896
%RSD		0.726	25.561	26.950	3.507	23.880	27.845	16.063	2.767	0.078	23.608	20.689	28.150

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:28:20	4105.704	636.378	36503.323	140.651	89.789	143.632	334.518	-3872.639	980.779	-42.967	489.078	2391.349
2	21:28:41	4374.839	814.939	41938.322	122.880	49.441	275.803	216.351	-4175.024	1055.796	-48.991	495.320	2206.897
3	21:29:03	4545.961	1223.599	53395.382	167.812	166.554	243.305	245.647	-4089.874	1016.673	-31.828	507.344	2231.343
x		4342.168	891.638	43945.675	143.781	101.928	220.913	265.506	-4045.846	1017.749	-41.262	497.248	2276.530
σ		221.939	301.030	8623.080	22.629	59.492	68.872	61.536	155.926	37.520	8.708	9.284	100.185
%RSD		5.111	33.761	19.622	15.739	58.367	31.176	23.177	3.854	3.687	21.104	1.867	4.401

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:28:20	88.936	107.372%	310.883	32.060	-149.661	-25.139	105.506%	1227.464	176.126	57.523	116.397	98.905%
2	21:28:41	65.210	108.355%	330.999	31.424	-179.022	-10.682	107.306%	1178.916	98.341	79.317	128.229	101.163%
3	21:29:03	140.027	109.877%	435.422	54.767	-185.963	33.445	107.227%	1128.491	84.578	71.595	146.985	100.889%
x		98.058	108.534%	359.101	39.417	-171.548	-0.792	106.680%	1178.290	119.682	69.478	130.537	100.319%
σ		38.233	1.262%	66.856	13.297	19.271	30.518	1.017%	49.489	49.364	11.050	15.424	1.232%
%RSD		38.991	1.163	18.618	33.735	11.233	3854.190	0.953	4.200	41.246	15.904	11.816	1.228

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:28:20	-4.377	1496.258	1458.724	94.330%	0.000	2.041	6314.450
2	21:28:41	-11.689	896.790	1648.499	96.491%	0.000	22.056	6329.877
3	21:29:03	43.095	1127.256	2427.108	96.009%	0.000	-3.723	6319.565
x		9.010	1173.435	1844.777	95.610%	0.000	6.791	6321.298
σ		29.744	302.390	513.162	1.135%	0.000	13.530	7.858
%RSD		330.141	25.770	27.817	1.187	0.000	199.224	0.124

CCVL 1039949 5/19/2017 9:33:40 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:34:02	102.474%	356.470	13681.654	T1833544.500	62188.185	167460.720	T2819963.600	68610.252	116.824%	77.201	23592.440	17111.358
2	21:34:24	100.061%	391.752	13960.076	T1752258.000	62237.348	167334.460	T2788901.500	67301.491	118.034%	89.188	24119.412	17062.512
3	21:34:45	101.608%	337.964	13914.290	T1809362.600	62978.507	166016.340	T2793886.100	66867.582	117.508%	106.526	25175.595	17046.144
x		101.381%	107.861%	105.791%	T109.885%	96.597%	100.701%	T111.923%	101.055%	117.455%	90.971	101.600%	93.938%
σ		1.223%	n/a	n/a	Tn/a	n/a	n/a	Tn/a	n/a	0.607%	14.744	n/a	n/a
%RSD		1.206	7.547	1.078	T2.321	0.709	0.479	T0.596	1.342	0.517	16.207	3.318	0.199

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:34:02	5144.039	15227.074	1261778.600	5790.622	2768.799	10190.199	34014.120	520.553	1233.470	290.129	473.873	2417.856
2	21:34:24	5040.463	14831.869	1264675.300	6205.435	2739.480	9476.854	34438.123	1219.685	1116.605	384.843	492.798	2228.157
3	21:34:45	4580.850	15196.562	1259190.800	5786.434	2764.912	9552.076	34123.821	1150.561	1119.880	301.651	481.944	2391.958
x		4921.784	101.508%	99.418%	93.770%	107.577%	101.585%	102.714%	38.804%	1156.651	85.960%	482.872	2345.990
σ		299.765	n/a	n/a	n/a	n/a	n/a	n/a	n/a	66.547	n/a	9.497	102.865
%RSD		6.091	1.458	0.217	4.061	0.577	4.024	0.644	39.980	5.753	15.875	1.967	4.385

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:34:02	50178.997	111.657%	29268.267	6334.956	-89.940	1675.891	109.630%	1158.483	12979.367	9975.540	12499.250	101.515%
2	21:34:24	50280.314	111.677%	29613.078	6534.424	-98.288	1624.904	110.493%	1158.486	13044.091	10014.718	12342.666	102.877%
3	21:34:45	49562.783	113.970%	28625.754	6234.892	-140.411	1690.647	112.671%	1091.718	12968.547	9792.034	12334.879	104.566%
x		97.024%	112.435%	101.514%	106.476%	-109.547	105.367%	110.931%	1136.229	12997.335	95.219%	93.531%	102.986%
σ		n/a	1.330%	n/a	n/a	27.054	n/a	1.567%	38.547	40.852	n/a	n/a	1.528%
%RSD		0.777	1.182	1.718	2.395	24.696	2.073	1.412	3.393	0.314	1.198	0.748	1.484

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:34:02	14933.469	36358.134	26247.343	96.352%	0.000	48719.573	31084.987
2	21:34:24	14442.426	36253.345	27596.823	94.759%	0.000	50523.570	31765.822
3	21:34:45	14068.589	34982.046	27019.831	97.984%	0.000	47170.772	30110.230
x		126.265%	87.044%	98.206%	96.365%	0.000	97.270%	117.429%
σ		n/a	n/a	n/a	1.613%	0.000	n/a	n/a
%RSD		2.995	2.136	2.512	1.674	0.000	3.438	2.685

MB 200-116636/1-A 5/19/2017 9:39:22 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:39:43	103.098%	31.372	902.784	340765.710	7177.872	113838.640	105013.000	38111.384	118.554%	261.883	1702.662	1441.261
2	21:40:04	104.588%	20.360	1249.305	318610.110	7044.994	110707.430	85124.191	37413.054	120.854%	140.984	1843.658	1116.691
3	21:40:26	103.817%	35.484	594.104	311510.350	6625.656	111907.880	80693.543	37611.166	121.387%	169.136	1218.051	896.444
x		103.834%	29.072	915.398	323628.720	6949.507	112151.320	90276.910	37711.868	120.265%	190.667	1588.124	1151.466
σ		0.745%	7.820	327.782	15259.716	288.225	1579.735	12952.677	359.892	1.505%	63.260	328.155	274.068
%RSD		0.718	26.898	35.808	4.715	4.147	1.409	14.348	0.954	1.252	33.178	20.663	23.802

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:39:43	6068.058	6050.594	304004.510	495.712	276.435	1149.916	2780.490	-4163.791	1436.853	-66.932	485.404	2304.772
2	21:40:04	6110.126	5854.657	297765.040	452.338	269.451	1272.472	3072.618	-3859.448	1347.882	-115.217	503.677	2585.687
3	21:40:26	6049.116	6306.851	297757.260	338.942	280.230	1198.028	2984.022	-4031.996	1404.613	-78.161	518.927	2371.084
x		6075.767	6070.700	299842.270	428.997	275.372	1206.806	2945.710	-4018.412	1396.449	-86.770	502.669	2420.514
σ		31.227	226.767	3604.608	80.949	5.467	61.747	149.785	152.626	45.044	25.268	16.784	146.836
%RSD		0.514	3.735	1.202	18.869	1.985	5.117	5.085	3.798	3.226	29.120	3.339	6.066

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:39:43	1957.064	114.732%	808.594	124.245	-124.086	-29.087	111.455%	2189.378	173.290	157.339	405.655	102.303%
2	21:40:04	1677.841	115.124%	931.748	122.952	-163.805	5.029	112.574%	2007.702	226.063	172.009	410.392	105.745%
3	21:40:26	1822.146	117.519%	857.139	145.983	-129.194	-28.740	111.964%	2076.710	211.181	174.925	479.680	104.210%
x		1819.017	115.791%	865.827	131.060	-139.029	-17.599	111.998%	2091.263	203.511	168.091	431.909	104.086%
σ		139.638	1.509%	62.035	12.940	21.608	19.598	0.560%	91.708	27.209	9.425	41.439	1.724%
%RSD		7.677	1.303	7.165	9.873	15.542	111.355	0.500	4.385	13.370	5.607	9.594	1.656

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:39:43	94.733	28.052	4608.592	96.023%	0.000	345.152	6428.913
2	21:40:04	125.879	-273.667	5149.303	96.858%	0.000	398.705	6422.718
3	21:40:26	138.959	-282.582	4569.726	97.607%	0.000	236.613	6411.601
x		119.857	-176.065	4775.874	96.829%	0.000	326.823	6421.078
σ		22.720	176.827	323.983	0.792%	0.000	82.586	8.772
%RSD		18.956	100.433	6.784	0.818	0.000	25.269	0.137

LCS 200-116636/2-A 5/19/2017 9:45:03 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:45:25	100.647%	3489.382	143718.150	T 18684136.000	651204.250	1701240.100	T 27828832.000	652483.120	117.826%	187.112	239069.050	180438.540
2	21:45:46	101.434%	3466.697	144547.300	T 18647056.000	648297.450	T 1931844.100	T 27737802.000	650224.900	119.201%	168.178	237829.980	176955.270
3	21:46:07	100.329%	3525.588	144031.170	T 18349229.000	648886.640	1689819.500	T 27703440.000	655514.020	118.140%	139.961	238379.820	178799.700
x		100.803%	3493.889	144098.870	T 18560140.000	649462.780	T 1774301.300	T 27756691.000	652740.680	118.389%	165.084	238426.280	178731.170
σ		0.569%	29.703	418.699	T 183592.770	1536.663	T 136555.550	T 64795.282	2653.947	0.721%	23.727	620.838	1742.643
%RSD		0.564	0.850	0.291	T 0.989	0.237	T 7.696	T 0.233	0.407	0.609	14.373	0.260	0.975

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:45:25	7149.969	150436.690	T 14547751.000	61195.349	28068.042	98869.988	312376.450	47105.017	1409.748	3525.248	500.538	2315.824
2	21:45:46	6568.760	146921.660	T 14245170.000	61423.969	28121.389	98393.022	311865.180	46781.942	1372.936	3548.000	480.957	2160.434
3	21:46:07	6371.905	150898.020	T 14510206.000	61716.807	28120.357	98669.121	306508.610	47330.767	1313.726	3460.844	474.391	2170.880
x		6696.878	149418.790	T 14434376.000	61445.375	28103.262	98644.044	310250.080	47072.575	1365.470	3511.364	485.295	2215.713
σ		404.545	2174.844	T 164928.860	261.387	30.506	239.470	3250.278	275.847	48.445	45.206	13.603	86.857
%RSD		6.041	1.456	T 1.143	0.425	0.109	0.243	1.048	0.586	3.548	1.287	2.803	3.920

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:45:25	535559.980	112.594%	303172.270	65646.223	-29.458	16154.637	109.883%	2106.923	131964.070	102000.820	129617.650	103.125%

2	21:45:46	530134.490	113.344%	304082.530	65682.601	-95.579	16380.583	110.511%	2185.468	134001.540	102447.540	129936.100	105.944%
3	21:46:07	535149.120	112.883%	306315.750	65612.175	20.599	16516.724	110.354%	2247.485	135216.780	102636.810	129252.590	104.244%
x		533614.530	112.940%	304523.520	65647.000	-34.813	16350.648	110.249%	2179.959	133727.470	102361.720	129602.110	104.438%
σ		3020.793	0.379%	1617.475	35.220	58.274	182.890	0.326%	70.443	1643.584	326.568	342.023	1.419%
%RSD		0.566	0.335	0.531	0.054	167.394	1.119	0.296	3.231	1.229	0.319	0.264	1.359

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:45:25	150752.560	399341.770	267296.380	93.204%	0.000	537991.970	271974.970
2	21:45:46	145895.360	383722.630	258420.300	96.758%	0.000	524103.540	270447.560
3	21:46:07	150141.030	387827.750	260972.230	97.197%	0.000	522542.170	269108.310
x		148929.650	390297.380	262229.640	95.720%	0.000	528212.560	270510.280
σ		2645.499	8097.141	4569.683	2.190%	0.000	8505.122	1434.357
%RSD		1.776	2.075	1.743	2.288	0.000	1.610	0.530

480-117618-E-1-A 5/19/2017 9:50:44 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:51:06	94.854%	-7.217	16026.580	T 33716623.000	1153403.600	216501.290	T 13028157.000	T 2933873.700	107.503%	982.002	1804.473	1431.698
2	21:51:27	95.282%	16.113	16242.260	T 32952362.000	1128114.000	215498.170	T 12686853.000	T 2887149.000	108.503%	922.128	2036.580	1417.297
3	21:51:50	92.607%	-19.181	16987.297	T 33729789.000	1148147.100	216110.550	T 13006841.000	T 2957642.800	107.438%	1052.245	1958.288	1163.877
x		94.248%	-3.428	16418.712	T 33466258.000	1143221.600	216036.670	T 12907284.000	T 2926221.800	107.814%	985.458	1933.114	1337.624
σ		1.436%	17.949	504.079	T 445095.900	13344.922	505.625	T 191195.850	T 35864.428	0.597%	65.127	118.084	150.642
%RSD		1.524	523.559	3.070	T 1.330	1.167	0.234	T 1.481	T 1.226	0.554	6.609	6.108	11.262

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:51:06	5115.575	127531.430	536031.450	593.068	546.714	2272.230	4573.601	16312.584	1160.976	24.298	489.656	1911.837
2	21:51:27	4987.961	128498.490	529542.230	674.755	669.876	2286.576	4416.243	15717.622	1166.884	-25.898	507.523	2046.124
3	21:51:50	5344.992	128641.820	533302.820	579.493	537.792	2162.304	5030.122	16054.738	1195.840	76.084	494.045	1639.871
x		5149.509	128223.910	532958.840	615.772	584.794	2240.370	4673.322	16028.315	1174.567	24.828	497.075	1865.944
σ		180.918	603.973	3258.258	51.530	73.818	67.987	318.857	298.360	18.659	50.993	9.310	206.979
%RSD		3.513	0.471	0.611	8.368	12.623	3.035	6.823	1.861	1.589	205.384	1.873	11.092

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:51:06	832758.920	106.073%	11396.302	115.108	-131.606	44.721	103.339%	1843.547	362.353	242.893	12563.578	100.506%
2	21:51:27	828163.070	107.311%	10961.583	99.680	-158.492	60.574	104.233%	1837.328	260.842	273.162	12124.467	101.425%
3	21:51:50	830232.970	106.467%	11490.352	90.357	-176.498	68.921	103.939%	1731.871	314.852	265.357	12572.818	101.827%
x		830384.990	106.617%	11282.746	101.715	-155.532	58.072	103.837%	1804.248	312.682	260.471	12420.288	101.253%
σ		2301.693	0.632%	282.082	12.500	22.592	12.292	0.456%	62.758	50.790	15.715	256.230	0.677%
%RSD		0.277	0.593	2.500	12.290	14.526	21.168	0.439	3.478	16.243	6.033	2.063	0.669

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:51:06	4869.994	95.567	5548.981	95.055%	0.000	1227.455	99730.138
2	21:51:27	4750.894	91.429	6035.112	95.312%	0.000	1302.752	102135.890
3	21:51:50	4972.406	-37.979	5908.290	95.909%	0.000	1372.672	101335.610
x		4864.431	49.672	5830.794	95.425%	0.000	1300.960	101067.210
σ		110.861	75.937	252.161	0.438%	0.000	72.625	1225.127
%RSD		2.279	152.875	4.325	0.459	0.000	5.582	1.212

480-117618-E-2-A 5/19/2017 9:56:28 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	21:56:49	97.585%	1.260	2547.824	T 20736910.000	T 4220447.600	54040.753	1564596.900	1964677.100	107.820%	208.381	111.458	1504.723
2	21:57:11	98.124%	-16.969	1912.802	T 20586010.000	T 4204408.100	54360.783	1545642.400	T 2306102.300	109.531%	264.582	-225.782	1356.590

3	21:57:32	95.938%	-10.538	2224.925	T 20676643.000	T 4198007.700	54083.673	T 1884931.700	T 2314641.900	108.804%	252.607	867.234	1499.400
x		97.216%	-8.749	2228.517	T 20666521.000	T 4207621.100	54161.736	T 1665057.000	T 2195140.400	108.718%	241.857	250.970	1453.571
σ		1.139%	9.245	317.526	T 75957.194	T 11559.852	173.710	T 190652.810	T 199632.740	0.859%	29.603	559.704	84.030
%RSD		1.172	105.671	14.248	T 0.368	T 0.275	0.321	T 11.450	T 9.094	0.790	12.240	223.016	5.781

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	21:56:49	6993.148	T 10699155.000	101142.410	4380.554	3290.526	2987.166	1973.538	-4043.575	1355.830	-86.556	517.790	2359.945
2	21:57:11	6679.641	T 10628873.000	99019.263	4631.059	3109.854	3359.201	2155.307	-3874.721	1219.414	-28.665	494.766	2199.916
3	21:57:32	6434.789	T 10743787.000	98722.050	4781.810	3273.722	2954.054	1971.475	-3950.680	1237.329	-17.635	500.859	1987.923
x		6702.526	T 10690605.000	99627.908	4597.808	3224.701	3100.140	2033.440	-3956.325	1270.858	-44.285	504.472	2182.595
σ		279.882	T 57932.188	1319.989	202.684	99.815	224.963	105.545	84.568	74.131	37.021	11.929	186.615
%RSD		4.176	T 0.542	1.325	4.408	3.095	7.257	5.190	2.138	5.833	83.597	2.365	8.550

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	21:56:49	533992.570	111.374%	573.030	91.475	-139.471	62.820	102.746%	1455.109	219.455	213.325	5887.551	99.647%
2	21:57:11	526350.060	111.246%	596.179	61.396	-145.211	47.670	104.091%	1585.228	251.399	238.261	5796.907	102.007%
3	21:57:32	523791.790	110.174%	711.052	51.062	-109.657	20.970	105.421%	1650.617	202.397	218.045	5856.505	103.309%
x		528044.810	110.931%	626.754	67.978	-131.446	43.820	104.086%	1563.651	224.417	223.210	5846.987	101.654%
σ		5307.363	0.659%	73.917	20.995	19.087	21.189	1.337%	99.524	24.875	13.246	46.065	1.856%
%RSD		1.005	0.594	11.794	30.885	14.521	48.355	1.285	6.365	11.084	5.934	0.788	1.826

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	21:56:49	29.956	-597.431	2008.158	94.897%	0.000	212.607	6841.313
2	21:57:11	70.821	-460.894	2027.577	95.455%	0.000	174.523	6906.298
3	21:57:32	73.375	-606.452	2123.895	96.534%	0.000	218.858	6853.010
x		58.051	-554.926	2053.210	95.629%	0.000	201.996	6866.874
σ		24.364	81.558	61.980	0.832%	0.000	23.997	34.640
%RSD		41.971	14.697	3.019	0.870	0.000	11.880	0.504

480-117618-E-3-A 5/19/2017 10:02:10 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:02:32	95.410%	5.515	2335.675	T 20372146.000	T 4125353.000	48875.435	T 1862468.000	T 2273707.600	107.674%	292.350	777.241	1686.154
2	22:02:53	96.822%	-0.757	2144.421	T 20419379.000	T 4129969.200	51023.410	T 1827238.700	1922962.700	107.795%	245.495	999.848	1459.166
3	22:03:14	96.315%	-8.177	2268.197	T 20522951.000	T 4169495.900	50590.012	T 1838313.100	1910244.900	107.195%	242.062	1373.347	1465.244
x		96.182%	-1.140	2249.431	T 20438159.000	T 4141606.000	50162.952	T 1842673.300	T 2035638.400	107.555%	259.969	1050.145	1536.854
σ		0.715%	6.854	96.998	T 77136.551	T 24263.332	1135.885	T 18014.790	T 206272.010	0.317%	28.095	301.219	129.333
%RSD		0.744	601.497	4.312	T 0.377	T 0.586	2.264	T 0.978	T 10.133	0.295	10.807	28.684	8.415

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:02:32	6606.194	T 10439070.000	99089.222	4460.872	3197.571	2379.030	2006.881	-4003.979	1259.088	-43.490	463.455	1999.454
2	22:02:53	6378.212	T 10269226.000	94847.889	4223.823	3346.979	2231.782	1923.478	-3860.192	1166.013	-53.297	455.375	2092.138
3	22:03:14	6298.807	T 10529269.000	97516.533	4583.616	3291.551	2304.001	2199.868	-4022.061	1147.539	-94.362	469.854	2424.416
x		6427.738	T 10412522.000	97151.215	4422.770	3278.701	2304.937	2043.409	-3962.078	1190.880	-63.716	462.895	2172.003
σ		159.566	T 132039.000	2144.136	182.898	75.528	73.628	141.769	88.697	59.788	26.989	7.255	223.454
%RSD		2.482	T 1.268	2.207	4.135	2.304	3.194	6.938	2.239	5.020	42.359	1.567	10.288

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:02:32	505219.660	109.346%	583.937	52.018	-167.296	93.871	103.679%	1572.232	378.594	247.713	5627.004	102.195%
2	22:02:53	502647.540	111.224%	596.301	103.588	-185.908	96.203	105.080%	1537.003	313.772	241.286	5442.384	102.720%
3	22:03:14	500513.640	112.163%	684.799	56.095	-107.980	57.957	104.928%	1710.792	285.404	255.266	5836.395	103.260%
x		502793.610	110.911%	621.679	70.567	-153.728	82.677	104.562%	1606.676	325.923	248.089	5635.261	102.725%
σ		2356.408	1.434%	55.012	28.670	40.697	21.440	0.768%	91.872	47.768	6.998	197.135	0.533%
%RSD		0.469	1.293	8.849	40.628	26.474	25.932	0.735	5.718	14.656	2.821	3.498	0.519

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:02:32	109.630	-524.208	2790.017	96.052%	0.000	115.993	6860.945
2	22:02:53	79.298	-563.146	2997.202	97.474%	0.000	129.256	6775.949
3	22:03:14	49.251	-763.770	2936.382	96.810%	0.000	156.169	6804.972
x		79.393	-617.041	2907.867	96.779%	0.000	133.806	6813.955
σ		30.189	128.554	106.495	0.711%	0.000	20.471	43.204
%RSD		38.025	20.834	3.662	0.735	0.000	15.299	0.634

480-117618-E-4-A 5/19/2017 10:07:54 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:08:15	95.550%	18.486	58195.062	T 61890300.000	T 5007103.300	63486.217	T 12429810.000	T 2723787.100	104.206%	389.047	-760.079	1352.452
2	22:08:37	94.489%	38.005	58914.857	T 62588999.000	T 5065359.300	63112.343	T 12523791.000	T 2774758.400	103.191%	441.211	-558.213	1314.012
3	22:08:59	95.383%	-7.568	58658.945	T 61404546.000	T 4935059.300	62252.742	T 12217242.000	T 2709484.900	104.684%	377.797	380.385	1518.086
x		95.141%	16.308	58589.622	T 61961281.000	T 5002507.300	62950.434	T 12390281.000	T 2736010.100	104.027%	402.685	-312.636	1394.850
σ		0.570%	22.865	364.871	T 595408.130	T 65271.447	632.477	T 157050.490	T 34310.472	0.762%	33.836	608.601	108.442
%RSD		0.599	140.209	0.623	T 0.961	T 1.305	1.005	T 1.268	T 1.254	0.733	8.402	194.668	7.774

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:08:15	11223.463	177100.370	150764.290	363.713	403.728	1659.929	3015.135	300.632	2006.153	-65.841	468.806	2088.107
2	22:08:37	12016.118	181208.230	151880.810	324.114	471.580	1629.553	2966.260	817.659	1965.085	-42.526	516.146	1936.840
3	22:08:59	11997.567	175712.650	141067.100	352.298	487.448	1529.858	3391.596	292.193	2114.605	44.277	495.817	1641.164
x		11745.716	178007.080	147904.070	346.709	454.252	1606.447	3124.330	470.161	2028.614	-21.363	493.590	1888.704
σ		452.379	2857.788	5947.245	20.383	44.468	68.044	232.745	300.971	77.250	58.029	23.748	227.326
%RSD		3.851	1.605	4.021	5.879	9.789	4.236	7.449	64.015	3.808	271.628	4.811	12.036

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:08:15	905064.780	101.956%	4104.844	103.402	-109.702	65.876	100.683%	1619.027	342.496	202.404	3370.699	98.957%
2	22:08:37	913402.830	101.782%	4436.224	133.108	-162.237	191.810	100.748%	1558.412	311.367	227.950	3189.797	100.203%
3	22:08:59	895056.770	101.909%	4170.548	127.749	-94.462	70.149	101.047%	1672.578	379.980	213.329	3442.649	99.430%
x		904508.130	101.882%	4237.206	121.420	-122.134	109.278	100.826%	1616.672	344.614	214.561	3334.382	99.530%
σ		9185.691	0.090%	175.458	15.832	35.557	71.506	0.194%	57.119	34.355	12.818	130.280	0.629%
%RSD		1.016	0.089	4.141	13.039	29.113	65.435	0.192	3.533	9.969	5.974	3.907	0.632

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:08:15	46.094	-795.308	2283.454	94.549%	0.000	139.463	19497.731
2	22:08:37	84.067	-787.240	2318.597	94.143%	0.000	134.881	19937.217
3	22:08:59	130.838	-865.638	2564.598	94.811%	5.274	128.447	19899.279
x		87.000	-816.062	2388.883	94.501%	1.758	134.264	19778.076
σ		42.448	43.123	153.185	0.336%	3.045	5.534	243.526
%RSD		48.791	5.284	6.412	0.356	173.205	4.122	1.231

480-117618-E-5-A 5/19/2017 10:13:36 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:13:57	94.455%	0.990	15660.211	T 38174668.000	T 5396659.600	26645.038	T 9628761.600	2191184.200	101.479%	300.552	-440.608	1608.704
2	22:14:19	94.341%	6.377	15061.668	T 37967780.000	T 5410425.100	26585.860	T 9657070.900	T 2616546.200	100.239%	309.021	-1720.339	1450.432
3	22:14:41	94.171%	-30.652	16071.481	T 38274100.000	T 5434338.600	25659.025	T 9611549.200	T 2646971.400	100.387%	363.691	-1780.068	1699.194
x		94.322%	-7.762	15597.787	T 38138850.000	T 5413807.800	26296.641	T 9632460.600	T 2484900.600	100.702%	324.421	-1313.671	1586.110
σ		0.143%	20.005	507.792	T 156269.620	T 19065.923	552.984	T 22985.171	T 254820.360	0.677%	34.271	756.685	125.911
%RSD		0.151	257.744	3.256	T 0.410	T 0.352	2.103	T 0.239	T 10.255	0.673	10.564	57.601	7.938

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:13:57	15106.338	3413.858	64325.834	217.002	338.173	648.364	1537.433	-3693.361	2597.150	4.273	482.937	1888.048
2	22:14:19	15426.446	3702.760	69995.480	215.245	338.490	879.213	1812.086	-3925.486	2588.053	-0.366	483.772	1932.713
3	22:14:41	15947.946	3167.719	68190.531	165.053	392.643	787.252	1660.226	-3046.474	2476.803	-23.026	457.941	2155.374
x		15493.576	3428.112	67503.948	199.100	356.435	771.609	1669.915	-3555.107	2554.002	-6.373	474.883	1992.045
σ		424.801	267.805	2896.510	29.499	31.357	116.217	137.583	455.523	67.011	14.607	14.678	143.200
%RSD		2.742	7.812	4.291	14.816	8.797	15.062	8.239	12.813	2.624	229.217	3.091	7.189

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:13:57	759070.170	101.518%	3447.711	206.093	-180.507	269.098	99.083%	1695.638	362.164	310.821	3829.105	97.214%

2	22:14:19	750765.010	102.009%	3386.928	235.278	-141.664	184.444	99.532%	1376.501	377.478	281.393	4083.110	100.124%
3	22:14:41	760577.820	99.811%	3366.657	214.358	-162.656	114.071	99.905%	1481.472	406.648	301.621	3932.652	98.837%
x		756804.330	101.113%	3400.432	218.576	-161.609	189.204	99.507%	1517.871	382.097	297.945	3948.289	98.725%
σ		5284.249	1.154%	42.180	15.043	19.443	77.623	0.412%	162.652	22.599	15.054	127.722	1.458%
%RSD		0.698	1.141	1.240	6.882	12.031	41.026	0.414	10.716	5.914	5.053	3.235	1.477

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:13:57	74.620	-848.597	1430.591	93.762%	0.000	44.895	18770.603
2	22:14:19	69.238	-798.775	1613.737	95.064%	0.000	54.392	18499.896
3	22:14:41	91.814	-856.110	1522.637	94.115%	0.000	71.178	19388.428
x		78.557	-834.494	1522.321	94.314%	0.000	56.822	18886.309
σ		11.792	31.161	91.574	0.673%	0.000	13.309	455.426
%RSD		15.010	3.734	6.015	0.714	0.000	23.423	2.411

480-117618-E-6-A 5/19/2017 10:19:20 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:19:42	94.505%	-17.565	2589.639	T 54263945.000	652811.680	30953.409	T 9245072.700	1537648.800	101.305%	306.373	3660.459	5372.371
2	22:20:04	94.451%	-6.948	2417.872	T 53796108.000	663407.770	31618.839	T 9322181.100	1553921.800	99.860%	285.546	3804.523	5345.709
3	22:20:26	92.565%	-19.157	2780.177	T 53805994.000	655715.560	31695.157	T 9214425.200	1558055.600	99.814%	235.369	3816.428	5319.124
x		93.841%	-14.557	2595.896	T 53955349.000	657311.670	31422.468	T 9260559.700	1549875.400	100.326%	275.763	3760.470	5345.735
σ		1.105%	6.637	181.233	T 267297.520	5475.396	408.006	T 55522.213	10788.393	0.848%	36.499	86.816	26.624
%RSD		1.178	45.597	6.982	T 0.495	0.833	1.298	T 0.600	0.696	0.845	13.236	2.309	0.498

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:19:42	20267.562	4458.174	106338.420	143.415	348.780	4046.925	3942.931	5157.876	3526.655	-79.530	469.662	2236.366
2	22:20:04	20586.301	4556.930	112772.550	151.136	350.129	4000.022	4211.143	5564.254	3488.883	-89.689	460.044	2337.188
3	22:20:26	20564.211	4619.643	115726.690	96.124	330.297	4072.349	4023.433	5558.085	3346.903	-32.835	463.279	1967.855
x		20472.691	4544.916	111612.550	130.225	343.069	4039.765	4059.169	5426.738	3454.147	-67.352	464.328	2180.470
σ		177.990	81.402	4800.427	29.784	11.081	36.691	137.631	232.862	94.777	30.321	4.894	190.906
%RSD		0.869	1.791	4.301	22.871	3.230	0.908	3.391	4.291	2.744	45.018	1.054	8.755

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:19:42	1036880.200	98.716%	46708.593	29.921	-127.406	-55.357	97.838%	1614.997	240.182	109.304	315.517	98.264%
2	22:20:04	1033483.200	98.758%	46389.393	34.814	-101.717	-75.581	98.362%	1621.646	177.009	124.947	212.108	98.185%
3	22:20:26	1042579.500	100.479%	46477.795	24.794	-103.586	-63.433	97.891%	1471.094	158.231	114.757	208.076	98.342%
x		1037647.600	99.317%	46525.260	29.843	-110.903	-64.790	98.030%	1569.245	191.807	116.336	245.234	98.264%
σ		4596.475	1.006%	164.808	5.010	14.322	10.180	0.288%	85.067	42.933	7.940	60.901	0.079%
%RSD		0.443	1.013	0.354	16.789	12.914	15.713	0.294	5.421	22.383	6.825	24.834	0.080

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:19:42	571.313	-1035.204	2278.595	95.002%	0.000	64.973	1418240.500
2	22:20:04	444.544	-994.360	2395.363	95.274%	0.000	64.702	1444987.900
3	22:20:26	555.514	-1001.906	2545.076	94.625%	0.000	38.930	1462751.900
x		523.790	-1010.490	2406.345	94.967%	0.000	56.202	1441993.400
σ		69.082	21.733	133.579	0.326%	0.000	14.958	22406.253
%RSD		13.189	2.151	5.551	0.343	0.000	26.616	1.554

480-117679-B-2-A 5/19/2017 10:25:01 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:25:21	92.192%	-5.391	18384.139	T 68775641.000	T 16393269.000	25521.313	T 11735944.000	T 6333354.000	100.310%	493.853	314.845	2400.167
2	22:25:43	91.161%	-18.367	18374.739	T 70315902.000	T 16729835.000	26066.248	T 11828391.000	T 6448079.000	98.924%	571.007	-1936.311	2382.762

3	22:26:06	92.146%	-18.924	18324.097	T71321709.000	T16801962.000	26392.920	T11956943.000	T6477671.000	98.778%	430.291	-25.977	2738.785
x		91.833%	-14.227	18360.992	T70137751.000	T16641689.000	25993.493	T11840426.000	T6419701.300	99.337%	498.384	-549.148	2507.238
σ		0.582%	7.657	32.295	T1282349.000	T218139.110	440.335	T110990.150	T76228.697	0.845%	70.467	1213.345	200.714
%RSD		0.634	53.822	0.176	T1.828	T1.311	1.694	T0.937	T1.187	0.851	14.139	220.951	8.005

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:25:21	11859.668	161049.810	80879.749	613.836	876.539	1885.114	1610.965	-1875.510	1523.877	680.019	508.685	-1330.086
2	22:25:43	12702.731	165575.870	90952.704	466.363	753.611	1905.775	1996.333	-3911.076	2227.239	-16.445	474.537	2033.377
3	22:26:06	12463.811	164323.790	95863.610	482.302	749.794	1742.512	1891.365	-1686.413	1555.899	692.483	480.787	-1560.327
x		12342.070	163649.820	89232.021	520.834	793.315	1844.467	1832.888	-2491.000	1769.005	452.019	488.003	-285.679
σ		434.516	2337.088	7638.690	80.936	72.100	88.898	199.228	1233.451	397.165	405.750	18.182	2011.658
%RSD		3.521	1.428	8.560	15.540	9.088	4.820	10.870	49.516	22.451	89.764	3.726	704.168

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:25:21	T2485215.700	98.658%	598.152	646.842	-192.439	226.277	96.525%	1543.715	462.999	359.035	3708.096	98.129%
2	22:25:43	2121285.100	99.492%	562.856	666.886	-113.485	153.684	96.622%	1500.761	442.143	367.790	3600.840	97.690%
3	22:26:06	T2494183.200	98.630%	583.115	848.661	-177.180	256.160	97.134%	1425.929	526.314	400.323	3834.087	97.844%
x		T2366894.700	98.927%	581.374	720.796	-161.035	212.040	96.760%	1490.135	477.152	375.716	3714.341	97.887%
σ		T212751.410	0.490%	17.712	111.186	41.880	52.700	0.327%	59.608	43.834	21.755	116.749	0.223%
%RSD		T8.989	0.495	3.047	15.425	26.007	24.854	0.338	4.000	9.187	5.790	3.143	0.227

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:25:21	-3.537	-961.863	3062.377	94.015%	0.000	55.331	63669.445
2	22:25:43	63.481	-961.045	3117.239	93.853%	0.000	34.168	65580.527
3	22:26:06	22.326	-907.111	2875.690	94.683%	0.000	-8.639	65288.789
x		27.423	-943.340	3018.435	94.183%	0.000	26.953	64846.254
σ		33.799	31.378	126.628	0.440%	0.000	32.590	1029.533
%RSD		123.249	3.326	4.195	0.467	0.000	120.911	1.588

480-117679-B-3-A 5/19/2017 10:30:43 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:31:04	94.667%	-22.937	25117.605	T51114136.000	880649.350	42900.196	T12742900.000	T2157900.700	98.977%	293.100	784.724	2011.490
2	22:31:25	93.486%	-3.618	26239.414	T51435240.000	890933.540	43068.845	T12700792.000	1824637.000	98.701%	217.960	1978.194	1936.931
3	22:31:46	93.157%	-16.800	25588.953	T51944511.000	901716.900	43584.743	T12608808.000	T2141112.100	98.986%	227.461	50.657	1869.632
x		93.770%	-14.452	25648.657	T51497962.000	891099.930	43184.595	T12684166.000	T2041216.600	98.888%	246.174	937.858	1939.351
σ		0.794%	9.871	563.283	T418725.920	10534.760	356.651	T68574.573	T187751.150	0.162%	40.916	972.850	70.960
%RSD		0.847	68.307	2.196	T0.813	1.182	0.826	T0.541	T9.198	0.164	16.621	103.731	3.659

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:31:04	17410.094	161064.540	113697.560	132.673	268.182	742.375	2420.873	17578.299	2765.626	3.251	458.536	1845.840
2	22:31:25	17422.940	161619.800	110377.460	193.957	299.580	609.541	2705.355	17858.255	2716.317	-8.132	492.251	1965.106
3	22:31:46	18339.852	157892.740	103945.520	152.861	338.867	807.914	2726.761	16906.225	2966.122	-113.792	479.578	2459.803
x		17724.295	160192.360	109340.180	159.830	302.210	719.943	2617.663	17447.593	2816.021	-39.558	476.788	2090.250
σ		533.127	2010.787	4958.078	31.231	35.416	101.071	170.761	489.288	132.308	64.540	17.030	325.551
%RSD		3.008	1.255	4.535	19.540	11.719	14.039	6.523	2.804	4.698	163.156	3.572	15.575

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:31:04	560157.160	98.242%	12911.982	230.610	-153.444	-39.978	97.267%	1346.855	203.274	178.966	31899.285	95.497%
2	22:31:25	576563.940	97.436%	12335.931	228.303	-166.719	-26.879	96.091%	1457.020	284.564	197.644	32389.188	97.536%
3	22:31:46	560022.140	97.522%	12273.748	205.119	-111.300	-60.776	97.170%	1615.799	232.798	234.919	33013.873	98.200%
x		565581.080	97.733%	12507.220	221.344	-143.821	-42.544	96.843%	1473.225	240.212	203.843	32434.116	97.078%
σ		9511.673	0.443%	351.910	14.099	28.936	17.093	0.653%	135.202	41.149	28.487	558.651	1.409%
%RSD		1.682	0.453	2.814	6.370	20.119	40.178	0.675	9.177	17.130	13.975	1.722	1.451

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:31:04	4733.219	-1176.321	1186.679	94.640%	0.000	38.919	67197.472
2	22:31:25	4944.741	-1060.164	1075.318	94.659%	0.000	65.316	68149.900
3	22:31:46	5149.957	-1029.211	1108.831	93.600%	0.000	34.341	70168.303
x		4942.639	-1088.565	1123.609	94.299%	0.000	46.192	68505.225
σ		208.377	77.558	57.133	0.606%	0.000	16.720	1516.955
%RSD		4.216	7.125	5.085	0.643	0.000	36.196	2.214

CCV 1039951 5/19/2017 10:36:25 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:36:47	84.983%	223692.810	83880.286	T35511255.000	T11005252.000	T110423910.000	T53047230.000	T4479180.700	92.483%	63709.406	T6698956.700	1729378.800
2	22:37:08	85.749%	220402.810	81690.351	T34552683.000	T10733721.000	T107961730.000	T51839866.000	T4363324.600	94.812%	62466.700	T6526881.900	1680483.500
3	22:37:30	87.040%	216704.880	82406.812	T34948782.000	T10861288.000	T108205290.000	T52025166.000	T4381534.500	93.935%	63137.738	T6542301.000	1701889.500
x		85.924%	104.991%	101.006%	T106.941%	T112.025%	T109.449%	T104.502%	T109.836%	93.743%	63104.615	T110.221%	93.750%
σ		1.040%	n/a	n/a	Tn/a	Tn/a	Tn/a	Tn/a	Tn/a	1.176%	622.015	Tn/a	n/a
%RSD		1.210	1.587	1.351	T1.376	T1.250	T1.246	T1.243	T1.413	1.255	0.986	T1.445	1.438
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	22:36:47	13598.506	T10180350.000	T204768090.000	2936376.900	1645332.500	2340905.000	2060136.300	252797.710	656.160	19937.008	469.541	-1030.482
2	22:37:08	10212.934	T10034950.000	T202179650.000	T3352838.000	1616613.900	2291573.600	2011188.400	249530.310	598.014	19276.076	512.280	1540.663
3	22:37:30	13998.012	T10131353.000	T203223430.000	T3357387.600	1618129.900	2332764.900	2035188.500	244905.060	864.790	19001.714	489.660	1263.279
x		12603.151	T108.908%	T106.828%	T101.736%	101.530%	96.863%	97.835%	100.304%	706.321	102.479%	490.494	591.153
σ		2079.604	Tn/a	Tn/a	Tn/a	n/a	n/a	n/a	n/a	140.284	n/a	21.382	1411.209
%RSD		16.501	T0.731	T0.640	T7.519	0.993	1.139	1.202	1.592	19.861	2.478	4.359	238.721
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	22:36:47	T2376641.800	93.839%	T4285747.200	600399.060	3336.170	323086.070	94.242%	2432575.600	1690732.800	1312001.200	1586596.200	94.436%
2	22:37:08	2002851.600	94.783%	T4252888.000	604230.210	2498.067	320734.320	94.774%	2410214.900	1689724.900	1311647.900	1589290.200	97.218%
3	22:37:30	2012676.900	96.143%	T4193995.300	592674.560	2600.784	318149.080	95.476%	2405550.900	1672828.200	1298353.700	1565549.000	96.085%
x		T2130723.400	94.922%	T118.165%	100.171%	2811.673	101.534%	94.831%	2416113.800	1684428.600	100.314%	95.429%	95.913%
σ		T213028.240	1.158%	Tn/a	n/a	457.122	n/a	0.619%	14445.769	10058.912	n/a	n/a	1.399%
%RSD		T9.998	1.220	T1.095	0.982	16.258	0.770	0.652	0.598	0.597	0.595	0.822	1.458
Run	**Time**	**182W**	**205Tl**	**208Pb**	**209Bi**	**220Bkg**	**232Th**	**238U**					
1	22:36:47	110206.730	T4361959.200	T35874171.000	94.048%	5.316	512529.190	262916.960					
2	22:37:08	107568.330	T4387933.000	T36656383.000	92.670%	0.000	523895.960	268775.670					
3	22:37:30	108564.750	T4353521.900	T35975216.000	94.115%	0.000	510044.270	262012.660					
x		94.846%	T106.008%	T105.420%	93.611%	1.772	102.739%	100.261%					
σ		n/a	Tn/a	Tn/a	0.816%	3.069	n/a	n/a					
%RSD		1.225	T0.411	T1.176	0.871	173.205	1.433	1.388					

CCB 1035925 5/19/2017 10:42:06 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:42:28	89.308%	16.306	530.415	23111.654	1342.597	11521.687	18713.359	1890.797	96.144%	77.982	723.616	188.183
2	22:42:49	90.872%	-9.948	156.785	20183.012	981.580	9572.900	29953.125	3858.374	96.723%	77.477	1271.966	19.186
3	22:43:10	90.559%	6.825	298.954	26504.196	1046.628	9054.697	23313.344	2329.882	97.275%	56.542	1666.799	-126.667
x		90.246%	4.394	328.718	23266.287	1123.602	10049.761	23993.276	2693.018	96.714%	70.667	1220.794	26.901
σ		0.828%	13.295	188.585	3163.428	192.424	1300.791	5650.647	1032.832	0.566%	12.235	473.669	157.567
%RSD		0.917	302.540	57.370	13.597	17.126	12.944	23.551	38.352	0.585	17.314	38.800	585.728
Run	**Time**	**53Cl O**	**55Mn**	**56Fe**	**59Co**	**60Ni**	**65Cu**	**66Zn**	**75As**	**77Ar Cl**	**82Se**	**83Kr**	**84Kr**
1	22:42:28	4916.070	1140.222	27655.919	252.295	190.339	789.252	505.420	-4226.794	948.283	-86.070	454.661	2385.077
2	22:42:49	4666.441	900.031	25438.742	276.367	85.268	594.386	453.669	-4030.590	904.626	-88.504	500.848	2403.919
3	22:43:10	4413.567	940.767	18255.288	253.989	176.793	479.255	434.119	-4094.257	916.473	-15.010	473.617	1925.505
x		4665.359	993.673	23783.316	260.883	150.800	620.964	464.403	-4117.214	923.128	-63.194	476.375	2238.167
σ		251.254	128.539	4914.091	13.436	57.155	156.699	36.842	100.096	22.576	41.747	23.217	270.937
%RSD		5.386	12.936	20.662	5.150	37.901	25.235	7.933	2.431	2.446	66.061	4.874	12.105
Run	**Time**	**88Sr**	**89Y**	**98Mo**	**107Ag**	**108Mo O**	**111Cd**	**115In**	**118Sn**	**121Sb**	**123Sb**	**135Ba**	**159Tb**
1	22:42:28	276.877	96.849%	599.280	62.084	-103.996	-36.191	95.677%	1228.134	284.010	176.886	254.965	93.912%

2	22:42:49	191.864	98.522%	517.794	60.995	-127.628	-44.760	97.236%	1100.445	300.781	124.065	152.990	96.217%
3	22:43:10	172.259	97.228%	427.174	55.193	-167.113	3.914	98.288%	1073.415	168.125	94.667	115.620	96.412%
x		213.667	97.533%	514.749	59.424	-132.912	-25.679	97.067%	1133.998	250.972	131.873	174.525	95.513%
σ		55.612	0.877%	86.094	3.705	31.888	25.984	1.313%	82.637	72.236	41.662	72.126	1.390%
%RSD		26.028	0.899	16.725	6.234	23.992	101.188	1.353	7.287	28.782	31.592	41.327	1.456

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:42:28	1.267	1856.725	3902.234	91.444%	0.000	79.594	6331.021
2	22:42:49	34.966	1601.258	2785.845	93.209%	0.000	45.338	6325.243
3	22:43:10	-32.748	1252.114	2898.679	93.595%	0.000	45.028	6330.518
x		1.162	1570.032	3195.586	92.749%	0.000	56.654	6328.927
σ		33.857	303.512	614.570	1.147%	0.000	19.868	3.201
%RSD		2914.728	19.332	19.232	1.236	0.000	35.069	0.051

CCVL 1039949 5/19/2017 10:47:48 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:48:10	92.323%	314.050	12775.901	T 1924768.600	61797.663	165424.300	T 2840623.600	67178.726	99.287%	90.730	24526.800	17696.642
2	22:48:31	91.665%	352.268	13481.652	T 1882542.700	62109.714	166520.630	T 2804578.000	67843.274	101.414%	93.778	24856.132	17191.886
3	22:48:52	92.549%	288.800	13116.819	T 1891949.600	62154.274	166975.620	T 2846506.100	67000.292	100.087%	104.906	23763.003	17563.177
x		92.179%	94.846%	100.237%	T 116.078%	95.905%	100.321%	T 113.108%	100.677%	100.262%	96.471	101.960%	96.197%
σ		0.459%	n/a	n/a	T n/a	n/a	n/a	T n/a	n/a	1.074%	7.462	n/a	n/a
%RSD		0.498	10.037	2.689	T 1.167	0.313	0.480	T 0.802	0.660	1.072	7.735	2.300	1.496

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:48:10	4806.486	15564.389	1272018.900	6347.662	2916.222	9931.802	36778.761	1196.026	986.210	392.364	463.086	2142.297
2	22:48:31	4720.728	15103.815	1253695.100	6134.676	2626.322	9492.309	35207.515	1479.700	918.544	390.640	478.558	2161.297
3	22:48:52	4785.211	15152.115	1270468.500	6126.660	2662.351	9737.078	36863.741	1120.220	1022.909	300.803	482.189	2419.980
x		4770.808	102.775%	99.695%	98.128%	106.689%	101.384%	108.996%	50.954%	975.888	95.394%	474.611	2241.192
σ		44.656	n/a	n/a	n/a	n/a	n/a	n/a	n/a	52.943	n/a	10.145	155.127
%RSD		0.936	1.657	0.803	2.021	5.777	2.266	2.570	14.976	5.425	14.497	2.138	6.922

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:48:10	49550.488	97.331%	30295.047	6085.476	-152.813	1540.018	99.011%	1085.772	12891.231	10115.768	12870.714	94.901%
2	22:48:31	50331.411	99.024%	30004.527	6229.591	-116.459	1539.051	99.049%	1014.680	13397.851	10387.109	12850.629	95.268%
3	22:48:52	50655.110	100.151%	29696.443	6483.044	-254.793	1685.176	99.651%	1068.763	13549.282	10421.556	12953.688	96.520%
x		97.357%	98.835%	104.401%	104.770%	-174.688	100.571%	99.237%	1056.405	13279.455	98.870%	97.300%	95.563%
σ		n/a	1.420%	n/a	n/a	71.714	n/a	0.359%	37.122	344.632	n/a	n/a	0.849%
%RSD		1.132	1.436	0.998	3.212	41.053	5.295	0.362	3.514	2.595	1.625	0.424	0.888

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:48:10	15633.963	36684.394	26713.216	92.360%	0.000	50322.052	31949.997
2	22:48:31	15305.361	35958.686	27354.997	94.420%	0.000	50295.986	32334.425
3	22:48:52	15582.418	35169.116	26224.784	95.088%	0.000	49341.380	31430.205
x		135.208%	87.221%	97.512%	93.956%	0.000	99.625%	120.907%
σ		n/a	n/a	n/a	1.422%	0.000	n/a	n/a
%RSD		1.140	2.109	2.118	1.514	0.000	1.118	1.422

480-117679-B-4-A 5/19/2017 10:53:29 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:53:52	90.013%	73.952	383934.230	TM 178738990.000	1264530.400	422762.090	T 15154967.000	2135859.200	97.817%	587.973	1603.580	1242.558
2	22:54:13	89.048%	95.170	390737.610	TM 182861590.000	1278047.600	429753.710	T 15266537.000	T 2520951.300	96.754%	604.454	1983.198	1274.457

3	22:54:34	88.164%	91.159	391265.350	TM 180966250.000	1278507.700	429228.990	T 15220927.000	T 2539025.300	96.866%	556.959	741.204	1177.604
x		89.075%	86.760	388645.730	TM 180855610.000	1273695.200	427248.270	T 15214144.000	T 2398611.900	97.146%	583.129	1442.661	1231.540
σ		0.925%	11.272	4088.803	TM 2063524.500	7940.280	3893.988	T 56093.544	T 227729.900	0.584%	24.115	636.442	49.357
%RSD		1.038	12.992	1.052	TM 1.141	0.623	0.911	T 0.369	T 9.494	0.601	4.136	44.116	4.008

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:53:52	6583.856	320129.020	672823.740	24852.025	492.236	3202.848	3776.104	9272.672	1448.396	-22.238	507.365	1873.984
2	22:54:13	7091.049	321155.870	690457.260	26202.033	529.646	3286.772	4631.486	9276.279	1465.234	50.496	479.414	1543.625
3	22:54:34	7573.736	321668.380	673060.850	26595.722	559.903	3116.998	4226.505	9005.021	1539.756	-24.675	481.760	1950.272
x		7082.880	320984.420	678780.610	25883.260	527.262	3202.206	4211.365	9184.657	1484.462	1.194	489.513	1789.294
σ		494.991	783.871	10112.963	914.512	33.896	84.888	427.892	155.580	48.620	42.714	15.505	216.148
%RSD		6.989	0.244	1.490	3.533	6.429	2.651	10.160	1.694	3.275	3576.458	3.167	12.080

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:53:52	1933338.900	97.334%	52926.107	62.996	-129.594	-31.467	94.411%	2007.302	412.509	296.852	5793.824	93.342%
2	22:54:13	1901941.300	97.392%	53373.424	98.141	-110.233	6.043	96.160%	1845.974	331.580	266.513	5839.035	96.734%
3	22:54:34	1924973.800	98.902%	52046.156	72.609	-177.638	30.948	95.588%	2123.819	496.821	283.421	5696.137	96.359%
x		1920084.700	97.876%	52781.896	77.915	-139.155	1.841	95.386%	1992.365	413.637	282.262	5776.332	95.478%
σ		16259.763	0.889%	675.284	18.163	34.705	31.419	0.892%	139.523	82.626	15.203	73.037	1.859%
%RSD		0.847	0.908	1.279	23.312	24.939	1706.479	0.935	7.003	19.975	5.386	1.264	1.948

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:53:52	18379.418	-319.267	6276.017	91.854%	0.000	7527.261	486672.810
2	22:54:13	18517.608	-345.524	6189.757	91.773%	0.000	7637.496	488685.730
3	22:54:34	18662.801	-430.773	5674.248	94.086%	0.000	7640.395	475593.580
x		18519.942	-365.188	6046.674	92.571%	0.000	7601.717	483650.710
σ		141.706	58.296	325.402	1.313%	0.000	64.497	7049.891
%RSD		0.765	15.963	5.381	1.418	0.000	0.848	1.458

480-117679-B-5-A 5/19/2017 10:59:10 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	22:59:32	91.764%	13.984	32267.193	T 106116880.000	T 6204736.200	944869.990	T 10790899.000	T 3223981.100	97.616%	1694.238	2392.143	3801.030
2	22:59:53	90.800%	-7.146	31909.373	T 103785040.000	T 6031539.800	T 1108940.500	T 10621055.000	T 3190715.300	99.234%	1883.700	3556.374	3663.975
3	23:00:15	91.511%	16.949	31548.040	T 102983530.000	T 6011561.000	T 1114682.900	T 10586800.000	T 3184506.900	100.282%	1486.941	3238.006	3608.399
x		91.358%	7.929	31908.202	T 104295150.000	T 6082612.300	T 1056164.500	T 10666251.000	T 3199734.400	99.044%	1688.293	3062.174	3691.135
σ		0.500%	13.139	359.578	T 1627771.300	T 106233.080	T 96426.594	T 109298.680	T 21226.461	1.343%	198.446	601.702	99.146
%RSD		0.547	165.719	1.127	T 1.561	T 1.747	T 9.130	T 1.025	T 0.663	1.356	11.754	19.650	2.686

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	22:59:32	9499.252	352793.610	1723357.800	1472.075	1389.863	2683.156	6699.265	-3446.892	1693.151	59.708	466.910	1668.027
2	22:59:53	9106.963	345929.570	T 2039991.300	1517.899	1330.452	2436.942	7148.847	-3367.271	1660.182	5.105	467.873	1792.281
3	23:00:15	9200.800	345373.440	1685622.700	1556.426	1195.930	2623.875	7065.517	-4109.434	1920.420	-58.159	478.308	2209.437
x		9269.005	348032.200	T 1816323.900	1515.467	1305.415	2581.324	6971.209	-3641.199	1757.917	2.218	471.031	1889.915
σ		204.845	4132.861	T 194618.340	42.228	99.361	128.504	239.168	407.453	141.693	58.987	6.321	283.603
%RSD		2.210	1.187	T 10.715	2.786	7.611	4.978	3.431	11.190	8.060	2659.949	1.342	15.006

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	22:59:32	1160138.800	99.248%	1627.341	25.695	-205.429	242.539	95.094%	1651.068	1066.709	746.540	15343.064	96.520%
2	22:59:53	1158470.700	100.218%	1830.988	25.583	-207.529	254.241	95.433%	1660.929	882.483	716.987	15246.627	98.031%
3	23:00:15	1142208.300	98.724%	1909.571	25.039	-106.782	212.827	97.114%	1565.235	1097.565	708.854	14554.762	97.750%
x		1153605.900	99.397%	1789.300	25.439	-173.247	236.536	95.881%	1625.744	1015.586	724.127	15048.151	97.434%
σ		9905.826	0.758%	145.660	0.351	57.570	21.350	1.082%	52.634	116.298	19.831	430.000	0.804%
%RSD		0.859	0.762	8.141	1.380	33.230	9.026	1.128	3.238	11.451	2.739	2.857	0.825

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	22:59:32	132.934	-700.224	16517.344	90.481%	0.000	4292.094	71825.933
2	22:59:53	195.488	-790.071	17251.131	90.681%	5.514	4266.005	72345.280
3	23:00:15	181.023	-679.241	15621.488	93.261%	0.000	4415.302	71567.794
x		169.815	-723.179	16463.321	91.474%	1.838	4324.467	71913.003
σ		32.749	58.873	816.163	1.551%	3.183	79.740	395.989
%RSD		19.285	8.141	4.957	1.695	173.205	1.844	0.551

480-117679-B-6-A 5/19/2017 11:04:51 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:05:13	92.177%	-29.790	8848.531	T 33163860.000	2045597.500	60258.803	T 9119643.300	1935913.200	96.401%	321.547	-1688.434	1753.835
2	23:05:34	92.461%	-5.581	8261.267	T 31876858.000	1986966.000	59297.159	T 8893998.600	1904827.600	98.908%	349.000	-746.871	1933.444
3	23:05:55	91.492%	-24.021	8814.124	T 32361378.000	2014478.300	59283.513	T 9029706.600	1921386.800	97.260%	256.871	-1034.168	1719.546
x		92.043%	-19.797	8641.307	T 32467365.000	2015680.600	59613.158	T 9014449.500	1920709.200	97.523%	309.139	-1156.491	1802.275
σ		0.498%	12.645	329.574	T 650014.680	29334.259	559.186	T 113593.430	15553.889	1.274%	47.301	482.553	114.882
%RSD		0.541	63.875	3.814	T 2.002	1.455	0.938	T 1.260	0.810	1.307	15.301	41.726	6.374

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:05:13	12393.639	222657.050	98243.245	225.571	355.566	1568.623	2384.184	35106.487	2032.405	-42.464	502.306	2057.787
2	23:05:34	11941.522	219092.610	81977.300	193.457	359.425	1532.043	2291.074	33604.190	2262.188	-44.146	459.586	2066.331
3	23:05:55	12299.693	220813.520	87756.079	223.190	310.502	1492.290	2438.131	33415.582	2159.111	-127.807	471.283	2391.323
x		12211.618	220854.390	89325.541	214.073	341.831	1530.985	2371.130	34042.086	2151.235	-71.472	477.725	2171.814
σ		238.580	1782.568	8245.765	17.893	27.200	38.177	74.392	926.609	115.094	48.794	22.076	190.148
%RSD		1.954	0.807	9.231	8.358	7.957	2.494	3.137	2.722	5.350	68.270	4.621	8.755

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:05:13	556890.930	96.594%	6342.583	36.006	-118.983	78.009	95.561%	1402.306	48.175	79.497	2625.707	94.774%
2	23:05:34	563083.960	97.741%	6283.345	14.849	-142.171	104.251	96.610%	1433.660	128.298	74.404	2669.535	95.156%
3	23:05:55	553369.520	98.744%	6325.747	19.788	-153.486	108.768	97.501%	1625.699	104.507	88.317	2562.964	95.771%
x		557781.470	97.693%	6317.225	23.548	-138.213	97.009	96.557%	1487.222	93.660	80.739	2619.402	95.233%
σ		4918.066	1.076%	30.525	11.068	17.589	16.609	0.971%	120.945	41.148	7.039	53.564	0.503%
%RSD		0.882	1.101	0.483	47.002	12.726	17.121	1.006	8.132	43.934	8.718	2.045	0.528

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:05:13	8765.478	-860.189	1731.877	92.174%	0.000	57.031	7828.084
2	23:05:34	8771.878	-982.228	1635.161	92.722%	0.000	13.377	7846.065
3	23:05:55	8699.199	-952.255	1642.088	94.215%	0.000	12.694	7869.479
x		8745.518	-931.557	1669.709	93.037%	0.000	27.701	7847.876
σ		40.241	63.598	53.951	1.056%	0.000	25.403	20.757
%RSD		0.460	6.827	3.231	1.136	0.000	91.705	0.264

480-117756-C-1-A 5/19/2017 11:10:34 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:10:55	91.845%	11.187	2103.775	T 33162473.000	T 6891786.400	20519.839	T 6717246.600	T 3336867.800	97.975%	383.035	-2409.513	3784.365
2	23:11:16	90.133%	-26.094	2576.640	T 33604438.000	T 6964396.500	21542.764	T 6828928.200	T 3394246.900	96.333%	280.185	-842.865	4368.103
3	23:11:38	90.398%	-17.927	2340.037	T 33006738.000	T 6872658.700	20595.164	T 6788253.300	T 3353934.700	97.597%	348.412	-1378.952	3991.781
x		90.792%	-10.945	2340.151	T 33257883.000	T 6909613.900	20885.922	T 6778142.700	T 3361683.100	97.302%	337.211	-1543.776	4048.083
σ		0.922%	19.596	236.432	T 310062.030	T 48397.497	570.087	T 56523.099	T 29463.884	0.860%	52.332	796.223	295.914
%RSD		1.015	179.047	10.103	T 0.932	T 0.700	2.730	T 0.834	T 0.876	0.884	15.519	51.576	7.310

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:10:55	15051.087	43014.666	51856.383	313.098	1568.167	833.387	2183.012	-3648.938	2445.780	68.570	463.982	1455.870
2	23:11:16	15382.535	43520.219	51913.833	288.046	1596.447	926.536	2260.205	-3787.208	2519.667	70.861	464.068	1494.384
3	23:11:38	15657.565	42471.184	45889.185	293.990	1559.223	859.714	1841.799	-3628.181	2569.470	9.555	499.938	1783.626
x		15363.729	43002.023	49886.467	298.378	1574.612	873.212	2095.006	-3688.109	2511.639	49.662	475.996	1577.960
σ		303.676	524.632	3461.867	13.090	19.431	48.019	222.654	86.447	62.235	34.752	20.734	179.150
%RSD		1.977	1.220	6.939	4.387	1.234	5.499	10.628	2.344	2.478	69.978	4.356	11.353

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:10:55	1366128.800	96.414%	99.001	20.272	-174.620	132.425	95.695%	1661.614	256.608	192.492	2919.887	95.471%

2	23:11:16	1378220.600	97.054%	154.919	20.160	-151.498	145.463	96.108%	1560.817	264.405	178.843	2829.234	96.550%
3	23:11:38	1377787.800	97.361%	190.331	25.524	-86.390	61.605	95.613%	1584.580	250.656	189.687	3100.211	97.041%
x		1374045.700	96.943%	148.084	21.985	-137.502	113.165	95.805%	1602.337	257.223	187.007	2949.777	96.354%
σ		6859.681	0.483%	46.047	3.065	45.749	45.125	0.265%	52.693	6.895	7.208	137.940	0.803%
%RSD		0.499	0.498	31.095	13.941	33.272	39.876	0.277	3.288	2.681	3.854	4.676	0.834

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:10:55	4.679	-887.738	1630.064	94.072%	0.000	34.019	8419.363
2	23:11:16	117.322	-823.987	1799.875	92.441%	0.000	2.691	8602.656
3	23:11:38	23.424	-955.083	1820.881	93.729%	0.000	50.256	8432.430
x		48.475	-888.936	1750.273	93.414%	0.000	28.989	8484.816
σ		60.356	65.556	104.633	0.860%	0.000	24.178	102.261
%RSD		124.508	7.375	5.978	0.921	0.000	83.406	1.205

480-117756-C-2-A 5/19/2017 11:16:17 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:16:38	91.189%	85.797	3788.798	T 91529821.000	T 3470094.100	T 4216946.900	T 6289897.100	1236568.600	99.845%	6802.515	1515.200	6729.692
2	23:17:00	90.835%	39.618	4100.190	T 92187908.000	T 3503241.800	T 4263328.500	T 6432643.200	1249229.500	98.905%	6887.686	6392.062	7274.140
3	23:17:21	92.742%	61.615	3670.477	T 93395093.000	T 3535490.600	T 4268888.000	T 6407321.100	1248089.000	98.673%	6881.625	5087.279	7103.640
x		91.588%	62.343	3853.155	T 92370941.000	T 3502942.100	T 4249721.100	T 6376620.500	1244629.000	99.141%	6857.275	4331.514	7035.824
σ		1.015%	23.098	221.968	T 946010.570	T 32699.265	T 28519.123	T 76164.357	7003.769	0.620%	47.521	2524.744	278.487
%RSD		1.108	37.050	5.761	T 1.024	T 0.933	T 0.671	T 1.194	0.563	0.626	0.693	58.288	3.958

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:16:38	17869.793	92398.266	T 6657202.800	2174.453	3485.441	7998.547	11366.313	-2293.628	2810.614	-46.853	474.887	2228.948
2	23:17:00	16863.529	93219.095	T 6759654.400	2286.533	3408.164	8121.365	10990.789	-1943.882	2772.351	-21.506	488.674	2023.728
3	23:17:21	17386.844	95163.460	T 6829089.400	2155.191	3527.910	8405.721	11445.506	-1821.196	2712.757	-44.290	477.917	2241.475
x		17373.388	93593.607	T 6748648.900	2205.392	3473.838	8175.211	11267.536	-2019.568	2765.241	-37.550	480.492	2164.717
σ		503.267	1420.130	T 86470.206	70.927	60.711	208.859	242.919	245.141	49.314	13.953	7.245	122.261
%RSD		2.897	1.517	T 1.281	3.216	1.748	2.555	2.156	12.138	1.783	37.159	1.508	5.648

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:16:38	628287.230	104.735%	1145.018	885.226	-167.101	665.427	95.392%	1598.732	1835.706	1421.887	22546.710	97.233%
2	23:17:00	623478.390	103.620%	887.269	823.201	-161.380	760.832	97.101%	1972.288	1983.503	1434.053	22185.883	97.487%
3	23:17:21	624635.800	104.092%	940.826	776.106	-96.149	654.854	97.194%	1774.892	2042.723	1439.177	22391.274	97.694%
x		625467.140	104.149%	991.038	828.178	-141.543	693.704	96.562%	1781.971	1953.977	1431.706	22374.622	97.471%
σ		2509.898	0.560%	136.013	54.730	39.417	58.374	1.014%	186.878	106.620	8.881	180.989	0.231%
%RSD		0.401	0.538	13.724	6.608	27.848	8.415	1.050	10.487	5.457	0.620	0.809	0.237

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:16:38	95.154	-741.388	54101.756	91.525%	0.000	69383.748	30723.156
2	23:17:00	68.971	-721.625	52952.736	93.895%	0.000	67155.780	29706.952
3	23:17:21	89.065	-715.763	52140.518	94.520%	0.000	66961.187	31024.854
x		84.397	-726.259	53065.003	93.314%	0.000	67833.572	30484.987
σ		13.701	13.426	985.427	1.580%	0.000	1346.013	690.478
%RSD		16.234	1.849	1.857	1.693	0.000	1.984	2.265

480-117756-C-3-A 5/19/2017 11:22:00 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:22:21	92.937%	-22.052	2564.782	T 24218731.000	T 3276098.500	42303.876	T 5438699.300	2055705.800	96.156%	223.613	1705.574	2507.488
2	23:22:42	90.870%	-1.693	2754.528	T 24135033.000	T 3256518.000	41273.111	T 5374462.200	T 2443831.200	97.027%	278.037	-3550.628	2373.077

3	23:23:02	91.665%	-10.472	2609.583	T 23391021.000	T 3176386.100	40624.662	T 5290159.200	2036308.600	99.383%	277.067	-3681.691	2281.403
x		91.824%	-11.406	2642.964	T 23914928.000	T 3236334.200	41400.550	T 5367773.600	T 2178615.200	97.522%	259.572	-1842.248	2387.323
σ		1.042%	10.212	99.180	T 455642.960	T 52831.587	846.829	T 74495.604	T 229888.430	1.669%	31.145	3073.203	113.714
%RSD		1.135	89.531	3.753	T 1.905	T 1.632	2.045	T 1.388	T 10.552	1.712	11.999	166.818	4.763

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:22:21	17112.870	208015.630	86694.573	174.258	211.102	752.662	1596.029	9185.062	3033.049	5.129	484.866	1930.709
2	23:22:42	18517.481	212170.290	79043.238	156.838	234.162	729.569	1818.846	8753.974	3018.336	-81.403	461.574	2301.384
3	23:23:02	18026.468	205783.400	70884.633	197.354	201.311	590.683	1672.805	8793.465	3164.772	-85.818	485.551	2278.757
x		17885.606	208656.440	78874.148	176.150	215.525	690.971	1695.893	8910.834	3072.052	-54.031	477.330	2170.283
σ		712.821	3241.311	7906.327	20.324	16.866	87.617	113.189	238.309	80.634	51.282	13.650	207.785
%RSD		3.985	1.553	10.024	11.538	7.826	12.680	6.674	2.674	2.625	94.912	2.860	9.574

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:22:21	817216.600	95.988%	422.472	797.971	-112.430	-49.326	97.038%	1380.952	331.622	212.320	797.418	97.536%
2	23:22:42	820655.270	98.888%	369.188	864.086	-131.716	0.068	97.711%	1519.863	298.101	248.383	817.441	96.760%
3	23:23:02	822129.640	96.641%	398.817	913.183	-105.329	-25.994	97.931%	1460.269	330.580	179.979	754.301	99.632%
x		820000.500	97.172%	396.826	858.413	-116.492	-25.084	97.560%	1453.694	320.101	213.561	789.720	97.976%
σ		2521.114	1.521%	26.698	57.815	13.654	24.709	0.465%	69.688	19.060	34.219	32.266	1.486%
%RSD		0.307	1.566	6.728	6.735	11.721	98.507	0.477	4.794	5.954	16.023	4.086	1.517

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:22:21	371.339	-1007.166	1336.800	93.452%	0.000	178.902	14646.941
2	23:22:42	395.874	-971.786	1306.908	96.028%	0.000	95.202	14355.557
3	23:23:02	356.182	-1066.061	1220.366	96.171%	0.000	100.215	14182.336
x		374.465	-1015.005	1288.025	95.217%	0.000	124.773	14394.944
σ		20.030	47.624	60.470	1.530%	0.000	46.944	234.793
%RSD		5.349	4.692	4.695	1.607	0.000	37.624	1.631

480-117756-C-3-A SD@5 5/19/2017 11:27:41 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:28:02	93.743%	-17.135	215.366	T 5112005.700	573140.140	14308.092	972381.870	417582.360	97.997%	132.601	-2036.468	1129.202
2	23:28:23	91.049%	-18.303	722.581	T 5016906.800	567156.220	14567.943	952221.610	415714.590	99.032%	90.878	-2839.520	1292.058
3	23:28:45	93.855%	-19.863	451.744	T 5022887.700	561023.580	14977.907	T 1228204.000	418309.980	99.057%	141.352	-4425.980	1371.979
x		92.883%	-18.434	463.231	T 5050600.100	567106.650	14617.981	T 1050935.800	417202.310	98.696%	121.610	-3100.656	1264.413
σ		1.589%	1.368	253.803	T 53262.845	6058.436	337.700	T 153849.330	1338.781	0.605%	26.972	1215.971	123.727
%RSD		1.711	7.423	54.790	T 1.055	1.068	2.310	T 14.639	0.321	0.613	22.179	39.217	9.785

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:28:02	16734.322	42948.656	59490.481	114.031	149.312	348.310	2287.004	-1022.994	2831.295	-76.755	463.127	2238.388
2	23:28:23	17188.891	43916.903	57119.115	92.182	136.708	251.806	2154.746	-1432.915	2908.459	-137.618	477.058	2419.662
3	23:28:45	17200.643	43880.357	53215.592	92.148	192.175	256.622	2613.961	-1171.908	2821.143	-54.989	485.964	2146.720
x		17041.286	43581.972	56608.396	99.453	159.398	285.579	2351.904	-1209.272	2853.632	-89.788	475.383	2268.257
σ		265.903	548.772	3168.467	12.624	29.077	54.379	236.387	207.499	47.751	42.828	11.510	138.900
%RSD		1.560	1.259	5.597	12.694	18.242	19.042	10.051	17.159	1.673	47.700	2.421	6.124

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:28:02	167417.800	98.929%	217.400	227.229	-161.384	-1.853	98.678%	972.885	278.354	212.580	576.219	96.696%
2	23:28:23	165687.150	99.060%	232.237	204.392	-160.787	7.144	99.884%	976.157	443.462	244.156	589.147	97.173%
3	23:28:45	166459.700	98.771%	151.963	214.583	-155.908	-17.650	99.803%	1042.084	271.849	222.473	554.565	98.721%
x		166521.550	98.920%	200.534	215.401	-159.360	-4.119	99.455%	997.042	331.222	226.403	573.311	97.530%
σ		866.981	0.144%	42.713	11.441	3.004	12.551	0.674%	39.042	97.258	16.151	17.473	1.059%
%RSD		0.521	0.146	21.299	5.311	1.885	304.689	0.678	3.916	29.363	7.134	3.048	1.085

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:28:02	380.695	-770.375	2249.773	94.764%	0.000	12.448	7950.152
2	23:28:23	259.939	-853.816	1948.884	96.324%	0.000	-8.999	8001.444
3	23:28:45	406.075	-785.149	2171.498	95.379%	0.000	27.902	7839.952
x		348.903	-803.113	2123.385	95.489%	0.000	10.451	7930.516
σ		78.083	44.527	156.108	0.786%	0.000	18.532	82.517
%RSD		22.380	5.544	7.352	0.823	0.000	177.327	1.041

480-117756-C-3-A PDS 5/19/2017 11:33:23 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:33:44	90.782%	3710.950	139540.220	T 42320387.000	T 3993930.200	1684748.500	T 32878019.000	T 3167718.200	95.856%	323.326	232713.140	177244.530
2	23:34:06	89.581%	3504.835	142340.280	T 42223884.000	T 3993230.100	1683900.200	T 32979002.000	T 3190500.700	95.636%	224.817	235581.390	180345.970
3	23:34:27	88.082%	3392.512	145322.220	T 42228433.000	T 4007424.400	1681047.700	T 32898039.000	T 3172898.900	95.357%	346.095	232230.730	177128.590
x		89.482%	3536.099	142400.910	T 42257568.000	T 3998194.900	1683232.100	T 32918353.000	T 3177039.300	95.616%	298.079	233508.420	178239.700
σ		1.353%	161.505	2891.478	T 54450.443	T 8000.631	1938.698	T 53468.292	T 11942.258	0.250%	64.460	1811.377	1825.008
%RSD		1.512	4.567	2.031	T 0.129	T 0.200	0.115	T 0.162	T 0.376	0.261	21.625	0.776	1.024

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:33:44	15679.281	357915.760	T 14664383.000	61647.150	26584.555	96719.610	315168.320	57645.829	2677.209	3399.905	466.265	1958.418
2	23:34:06	15104.952	356286.560	T 14653735.000	60865.643	27740.306	96833.208	319443.740	57381.292	2781.472	3397.078	460.968	2152.789
3	23:34:27	15224.692	359953.610	T 14751364.000	61143.713	27296.507	97418.860	318828.620	58072.145	2501.246	3511.684	459.209	1697.858
x		15336.308	358051.970	T 14689827.000	61218.835	27207.123	96990.559	317813.560	57699.755	2653.309	3436.222	462.148	1936.355
σ		302.997	1837.317	T 53557.858	396.133	583.037	375.243	2311.400	348.569	141.633	65.367	3.673	228.267
%RSD		1.976	0.513	T 0.365	0.647	2.143	0.387	0.727	0.604	5.338	1.902	0.795	11.788

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:33:44	1330688.900	96.375%	301759.200	63859.405	-24.370	16180.966	95.869%	1684.665	135972.770	105245.750	133981.260	96.708%
2	23:34:06	1315579.200	95.589%	305114.910	63744.489	64.548	15675.615	96.971%	1603.645	135115.320	104951.960	131243.100	97.904%
3	23:34:27	1338383.900	95.212%	306754.530	63911.337	70.664	16301.068	96.145%	1716.246	137340.020	105473.700	134147.690	98.264%
x		1328217.300	95.725%	304542.880	63838.410	36.947	16052.550	96.328%	1668.185	136142.700	105223.800	133124.020	97.625%
σ		11601.539	0.593%	2546.320	85.382	53.190	331.913	0.573%	58.081	1122.043	261.561	1631.042	0.815%
%RSD		0.873	0.620	0.836	0.134	143.961	2.068	0.595	3.482	0.824	0.249	1.225	0.834

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:33:44	159965.310	392159.620	261695.360	92.641%	0.000	545982.010	291103.860
2	23:34:06	159133.590	385705.780	257212.600	94.492%	0.000	539264.310	287133.550
3	23:34:27	157240.600	383090.370	256372.390	95.670%	0.000	532304.250	283972.130
x		158779.830	386985.260	258426.780	94.268%	0.000	539183.520	287403.180
σ		1396.376	4668.046	2861.677	1.527%	0.000	6839.242	3573.503
%RSD		0.879	1.206	1.107	1.620	0.000	1.268	1.243

480-117756-C-3-B MS 5/19/2017 11:39:06 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:39:28	88.555%	3721.335	147121.790	T 43034922.000	T 4042604.800	1722892.100	T 33372421.000	T 3221350.700	94.332%	249.132	238454.710	182231.310
2	23:39:49	89.479%	3640.259	144938.800	T 43223553.000	T 4044359.500	1737739.600	T 33980564.000	T 3248160.200	93.898%	430.984	240862.520	181662.220
3	23:40:10	87.187%	3597.276	149326.780	T 42181977.000	T 3986866.600	1719686.900	T 33484519.000	2693338.400	95.571%	292.855	235577.460	182135.560
x		88.407%	3652.957	147129.130	T 42813484.000	T 4024610.300	1726772.900	T 33612502.000	T 3054283.100	94.600%	324.324	238298.230	182009.700
σ		1.153%	62.997	2193.998	T 554974.050	T 32698.767	9631.763	T 323641.950	T 312874.520	0.868%	94.922	2646.003	304.707
%RSD		1.304	1.725	1.491	T 1.296	T 0.812	0.558	T 0.963	T 10.244	0.918	29.268	1.110	0.167

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:39:28	13214.218	363000.160	T 15018352.000	62095.995	28517.923	98847.475	322804.670	59788.861	2277.181	3629.156	464.928	1820.131
2	23:39:49	12973.007	367898.850	T 15136526.000	64050.243	27887.350	99226.707	325192.420	59136.115	2125.814	3516.782	458.918	1556.563
3	23:40:10	13048.666	361570.990	T 14753401.000	61563.371	26522.637	97436.217	316417.620	58442.389	1962.625	3585.765	446.767	1610.831
x		13078.630	364156.670	T 14969426.000	62569.870	27642.637	98503.466	321471.570	59122.455	2121.873	3577.234	456.871	1662.508
σ		123.366	3318.670	T 196192.210	1309.408	1019.905	943.515	4536.756	673.340	157.315	56.671	9.252	139.176
%RSD		0.943	0.911	T 1.311	2.093	3.690	0.958	1.411	1.139	7.414	1.584	2.025	8.371

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:39:28	1378373.200	94.254%	313683.630	65107.019	-29.613	16998.533	94.102%	1748.192	138156.150	108790.050	138586.470	94.496%

2	23:39:49	1353105.100	95.556%	308139.100	64569.886	110.145	16681.998	96.097%	1711.898	137897.150	106455.070	134738.920	95.411%
3	23:40:10	1342610.700	96.467%	303788.730	66361.173	77.656	16125.591	96.248%	1854.676	137978.140	107129.880	133621.240	97.390%
x		1358029.600	95.425%	308537.150	65346.026	52.729	16602.041	95.482%	1771.589	138010.480	107458.330	135648.880	95.766%
σ		18382.800	1.112%	4959.443	919.250	73.137	441.930	1.198%	74.209	132.493	1201.643	2604.683	1.479%
%RSD		1.354	1.165	1.607	1.407	138.703	2.662	1.255	4.189	0.096	1.118	1.920	1.545

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:39:28	162034.530	394674.070	268392.360	92.670%	0.000	556882.170	296201.930
2	23:39:49	159417.480	397687.100	267968.910	93.175%	0.000	550081.440	298593.890
3	23:40:10	154895.740	393747.050	260859.990	94.683%	5.281	543649.060	292787.000
x		158782.580	395369.410	265740.420	93.509%	1.760	550204.220	295860.940
σ		3611.494	2060.004	4231.876	1.047%	3.049	6617.411	2918.427
%RSD		2.274	0.521	1.592	1.120	173.205	1.203	0.986

480-117756-C-3-C MSD 5/19/2017 11:44:50 PM

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:45:12	88.205%	3628.646	142048.360	┬42093499.000	┬3966778.000	1694173.600	┬32923687.000	┬3167116.300	94.669%	348.446	232899.820	178953.660
2	23:45:33	89.473%	3397.374	140409.420	┬41155584.000	┬3860430.700	1670277.000	┬32415521.000	2642400.700	96.150%	301.875	232247.330	175371.470
3	23:45:55	87.103%	3497.461	143896.110	┬41557497.000	┬3928551.800	1674254.400	┬32658923.000	┬3164333.000	95.360%	251.669	232956.490	176232.860
x		88.261%	3507.827	142117.970	┬41602193.000	┬3918586.800	1679568.300	┬32666044.000	┬2991283.300	95.393%	300.663	232701.210	176852.660
σ		1.186%	115.984	1744.387	┬470552.040	┬53869.399	12803.926	┬254157.990	┬302144.450	0.741%	48.400	394.091	1869.796
%RSD		1.344	3.306	1.227	┬1.131	┬1.375	0.762	┬0.778	┬10.101	0.777	16.098	0.169	1.057

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:45:12	12206.395	352771.630	┬14560566.000	60687.200	27283.856	95189.228	312506.600	57804.517	1914.706	3493.763	468.210	1980.787
2	23:45:33	11733.733	349711.010	┬14386101.000	59840.590	26528.938	94748.157	311143.570	58795.334	1978.156	3573.100	457.401	1712.282
3	23:45:55	10539.924	351632.000	┬14472358.000	60131.517	26896.508	96761.865	317279.080	58132.103	1804.755	3528.134	441.167	1677.648
x		11493.351	351371.550	┬14473008.000	60219.769	26903.101	95566.416	313643.080	58243.985	1899.206	3531.666	455.593	1790.239
σ		858.847	1546.846	┬87234.197	430.150	377.502	1058.517	3221.775	504.795	87.734	39.786	13.612	165.926
%RSD		7.473	0.440	┬0.603	0.714	1.403	1.108	1.027	0.867	4.619	1.127	2.988	9.268

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:45:12	1332180.800	95.506%	299313.540	63609.465	-8.668	16088.616	94.724%	1646.974	135923.820	105008.310	135336.100	97.296%
2	23:45:33	1317470.500	94.351%	302733.540	63140.040	30.201	15981.709	95.650%	1704.207	135688.840	104609.050	132407.720	96.854%
3	23:45:55	1313996.300	95.448%	300055.410	62638.897	59.955	16209.668	96.223%	1803.193	134675.420	104389.100	131771.110	97.435%
x		1321215.800	95.101%	300700.830	63129.467	27.162	16093.331	95.532%	1718.125	135429.360	104668.820	133171.650	97.195%
σ		9653.514	0.650%	1799.033	485.371	34.412	114.053	0.757%	79.034	663.417	313.905	1901.308	0.303%
%RSD		0.731	0.684	0.598	0.769	126.691	0.709	0.792	4.600	0.490	0.300	1.428	0.312

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:45:12	150487.530	384022.780	260673.340	93.123%	0.000	536905.980	287389.020
2	23:45:33	153930.590	390197.500	262054.740	93.170%	0.000	538328.520	292429.900
3	23:45:55	152551.080	394387.270	261274.570	92.965%	0.000	542081.990	291705.880
x		152323.070	389535.850	261334.220	93.086%	0.000	539105.500	290508.270
σ		1732.817	5213.825	692.630	0.107%	0.000	2674.051	2725.493
%RSD		1.138	1.338	0.265	0.115	0.000	0.496	0.938

CCV 1039951 5/19/2017 11:50:32 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:50:54	84.275%	221528.430	84154.170	┬35117879.000	┬10929670.000	┬108798430.000	┬52290267.000	┬4413748.400	94.196%	62239.582	┬6577509.800	1687554.300
2	23:51:16	85.449%	220140.820	84466.426	┬35438660.000	┬10892894.000	┬109662190.000	┬52592303.000	┬4453286.600	93.824%	62351.198	┬6636682.800	1704938.800

3	23:51:38	84.981%	219655.830	88226.812	┬35702755.000	┬11122058.000	┬109720030.000	┬52930750.000	┬4486619.000	92.198%	63417.773	┬6718158.300	1716848.700
x		84.902%	105.074%	104.619%	┬108.210%	┬113.208%	┬109.982%	┬105.103%	┬110.913%	93.406%	62669.517	┬111.137%	93.706%
σ		0.591%	n/a	n/a	┬n/a	┬n/a	┬n/a	┬n/a	┬n/a	1.062%	650.407	┬n/a	n/a
%RSD		0.696	0.441	2.647	┬0.827	┬1.121	┬0.472	┬0.609	┬0.820	1.137	1.038	┬1.063	0.865

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:50:54	12865.977	┬10090714.000	┬201942510.000	┬3351098.400	1603762.900	2294097.900	2024052.500	245627.490	937.073	19243.298	511.980	-426.015
2	23:51:16	13153.808	┬10168538.000	┬205853510.000	┬3381346.800	1639015.400	2331416.100	2041369.600	246518.480	993.365	19015.391	483.388	1785.132
3	23:51:38	13067.256	┬10325407.000	┬207148350.000	┬3425798.900	1647907.800	2358727.200	2061018.800	246719.180	991.298	19162.207	478.191	1345.455
x		13029.014	┬109.762%	┬107.664%	┬107.132%	101.751%	97.127%	98.155%	99.180%	973.912	101.081%	491.186	901.524
σ		147.677	┬n/a	┬n/a	┬n/a	n/a	n/a	n/a	n/a	31.920	n/a	18.195	1170.512
%RSD		1.133	┬1.173	┬1.322	┬1.110	1.432	1.394	0.906	0.236	3.278	0.604	3.704	129.837

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:50:54	┬2394308.900	95.492%	┬4244228.400	607689.440	2370.622	321918.390	93.755%	2429908.000	1689472.400	1314133.900	1599901.400	97.341%
2	23:51:16	2029912.700	95.525%	┬4257395.200	611317.500	2444.358	322359.630	94.129%	2431925.800	1703291.300	1313771.800	1591892.300	96.588%
3	23:51:38	2020350.400	94.786%	┬4293650.400	603942.220	2625.797	321333.020	94.524%	2436226.100	1711098.000	1311998.100	1583819.500	96.284%
x		┬2148190.700	95.268%	┬118.747%	101.601%	2480.259	101.918%	94.136%	2432686.700	1701287.200	100.772%	96.117%	96.738%
σ		┬213198.280	0.418%	┬n/a	n/a	131.321	n/a	0.385%	3227.055	10951.217	n/a	n/a	0.544%
%RSD		┬9.925	0.438	┬0.600	0.607	5.295	0.160	0.409	0.133	0.644	0.087	0.505	0.563

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:50:54	106537.270	┬4383850.400	┬36646459.000	92.617%	21.594	507013.080	263233.960
2	23:51:16	107608.900	┬4449939.600	┬36574422.000	93.256%	5.362	511253.670	268435.760
3	23:51:38	107906.800	┬4453688.500	┬36955924.000	92.546%	5.403	519871.460	266074.180
x		93.600%	┬107.497%	┬107.044%	92.806%	10.786	102.186%	100.771%
σ		n/a	┬n/a	┬n/a	0.391%	9.360	n/a	n/a
%RSD		0.671	┬0.887	┬0.552	0.422	86.778	1.278	0.979

CCB 1035925 5/19/2017 11:56:15 PM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	23:56:36	88.239%	37.190	1600.229	30190.511	3235.908	33381.801	24131.638	2783.929	94.703%	116.232	1801.856	408.280
2	23:56:57	86.991%	81.843	1454.023	32074.968	3659.959	35028.191	33639.775	3132.182	93.895%	74.464	3262.839	233.089
3	23:57:18	88.178%	23.088	1433.020	17093.200	2158.428	21987.359	23706.145	2355.648	96.383%	98.676	2316.575	130.558
x		87.803%	47.374	1495.757	26452.893	3018.098	30132.450	27159.186	2757.253	94.994%	96.457	2460.423	257.309
σ		0.704%	30.673	91.083	8160.312	774.099	7101.728	5616.386	388.954	1.269%	20.972	741.038	140.436
%RSD		0.802	64.746	6.089	30.848	25.649	23.568	20.680	14.107	1.336	21.742	30.118	54.579

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	23:56:36	4816.625	3200.244	67825.338	953.742	622.273	1191.652	951.259	-4140.980	973.488	-64.607	519.181	2222.081
2	23:56:57	4385.188	3135.048	69147.961	967.659	569.832	1021.301	812.408	-4052.702	913.425	-80.967	470.337	2316.205
3	23:57:18	4473.928	1996.247	38590.185	702.901	288.211	790.823	483.264	-4019.735	967.145	-44.543	474.475	2026.293
x		4558.580	2777.180	58521.161	874.767	493.439	1001.259	748.977	-4071.139	951.353	-63.372	487.998	2188.193
σ		227.836	677.093	17273.396	149.003	179.656	201.165	240.359	62.690	32.999	18.243	27.085	147.897
%RSD		4.998	24.381	29.516	17.033	36.409	20.091	32.092	1.540	3.469	28.787	5.550	6.759

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	23:56:36	801.668	93.302%	1565.864	270.758	-197.618	179.120	93.996%	1696.970	674.588	499.057	626.781	94.331%
2	23:56:57	773.618	96.386%	1525.654	225.373	-110.830	28.647	95.146%	1692.220	545.273	481.160	571.766	93.245%
3	23:57:18	529.913	94.063%	936.422	113.023	-192.425	70.688	96.740%	1478.254	486.728	301.973	329.566	93.837%
x		701.733	94.584%	1342.647	203.051	-166.958	92.819	95.294%	1622.482	568.863	427.397	509.371	93.804%
σ		149.460	1.607%	352.375	81.202	48.677	77.639	1.378%	124.927	96.126	108.988	158.127	0.544%
%RSD		21.299	1.699	26.245	39.991	29.155	83.646	1.446	7.700	16.898	25.500	31.044	0.580

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	23:56:36	48.475	2852.522	11784.243	91.435%	0.000	183.506	6423.986
2	23:56:57	82.501	2499.436	9883.223	92.522%	0.000	229.638	6401.020
3	23:57:18	107.926	1705.473	6834.397	93.619%	0.000	178.530	6378.580
x		79.634	2352.477	9500.621	92.525%	0.000	197.225	6401.196
σ		29.829	587.476	2497.005	1.092%	0.000	28.180	22.703
%RSD		37.458	24.973	26.283	1.180	0.000	14.289	0.355

CCVL 1039949 5/20/2017 12:01:56 AM QC Status: FAIL (Initial: FAIL)

User Pre-dilution: 1.00

Run	Time	6Li	9Be	11B	23Na	25Mg	27Al	39K	44Ca	45Sc	47Ti	51V	52Cr
1	00:02:17	90.043%	309.905	14055.383	T 1967342.100	65438.439	167933.520	T 2888876.700	68938.847	96.259%	46.749	23419.885	17176.317
2	00:02:39	89.533%	286.939	15206.798	T 1885730.500	65004.410	166589.360	T 2802562.500	66736.354	98.053%	81.576	24292.242	18206.502
3	00:03:00	90.230%	364.533	13787.892	T 1894710.300	65483.226	163822.660	T 2792162.800	65744.166	99.141%	50.469	24550.160	17205.716
x		89.935%	95.467%	109.594%	T 117.066%	100.990%	100.205%	T 113.000%	100.377%	97.818%	59.598	100.728%	96.448%
σ		0.360%	n/a	n/a	T n/a	n/a	n/a	T n/a	n/a	1.456%	19.124	n/a	n/a
%RSD		0.401	12.438	5.254	T 2.336	0.405	1.262	T 1.877	2.435	1.488	32.088	2.459	3.346

Run	Time	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu	66Zn	75As	77Ar Cl	82Se	83Kr	84Kr
1	00:02:17	5098.503	15013.833	1287568.200	6107.051	2787.410	9891.152	36237.078	916.873	1075.457	345.284	513.554	2415.651
2	00:02:39	4750.557	15231.532	1256178.900	6320.962	2867.351	9718.260	36015.946	839.079	1041.969	263.168	471.682	2544.078
3	00:03:00	4156.400	15512.983	1246111.900	6321.740	2905.508	9599.182	36229.513	751.850	1009.686	342.451	455.121	2314.817
x		4668.487	102.636%	99.529%	98.870%	111.310%	101.548%	108.628%	33.663%	1042.371	83.696%	480.119	2424.849
σ		476.383	n/a	n/a	n/a	n/a	n/a	n/a	n/a	32.887	n/a	30.116	114.907
%RSD		10.204	1.641	1.712	1.980	2.112	1.508	0.347	9.876	3.155	14.706	6.273	4.739

Run	Time	88Sr	89Y	98Mo	107Ag	108Mo O	111Cd	115In	118Sn	121Sb	123Sb	135Ba	159Tb
1	00:02:17	50500.270	96.248%	29787.832	5824.297	-175.136	1819.250	96.583%	931.863	13606.570	10304.596	12676.456	94.346%
2	00:02:39	49899.596	98.397%	29493.098	6112.608	-105.872	1592.070	97.101%	890.852	13734.040	10323.871	12871.678	95.890%
3	00:03:00	51035.984	97.605%	31092.571	6112.925	-94.455	1494.281	97.668%	1034.150	14043.806	10487.644	13017.163	96.914%
x		97.938%	97.417%	104.839%	100.599%	-125.154	103.555%	97.117%	952.288	13794.805	99.483%	97.024%	95.717%
σ		n/a	1.087%	n/a	n/a	43.661	n/a	0.542%	73.800	224.862	n/a	n/a	1.293%
%RSD		1.126	1.116	2.826	2.768	34.885	10.196	0.559	7.750	1.630	0.970	1.330	1.350

Run	Time	182W	205Tl	208Pb	209Bi	220Bkg	232Th	238U
1	00:02:17	15180.177	36403.918	27155.130	91.654%	0.000	51617.907	32606.342
2	00:02:39	15508.033	37020.045	27715.046	92.622%	0.000	50482.613	31466.537
3	00:03:00	15162.374	36580.290	28338.224	93.061%	0.000	50750.928	32542.402
x		133.258%	88.994%	101.053%	92.446%	0.000	101.547%	122.045%
σ		n/a	n/a	n/a	0.720%	0.000	n/a	n/a
%RSD		1.273	0.865	2.134	0.779	0.000	1.165	1.989

Mercury Calibration Curve Worksheet

Instrument ID: MEPCV3II

Analyst: SJO

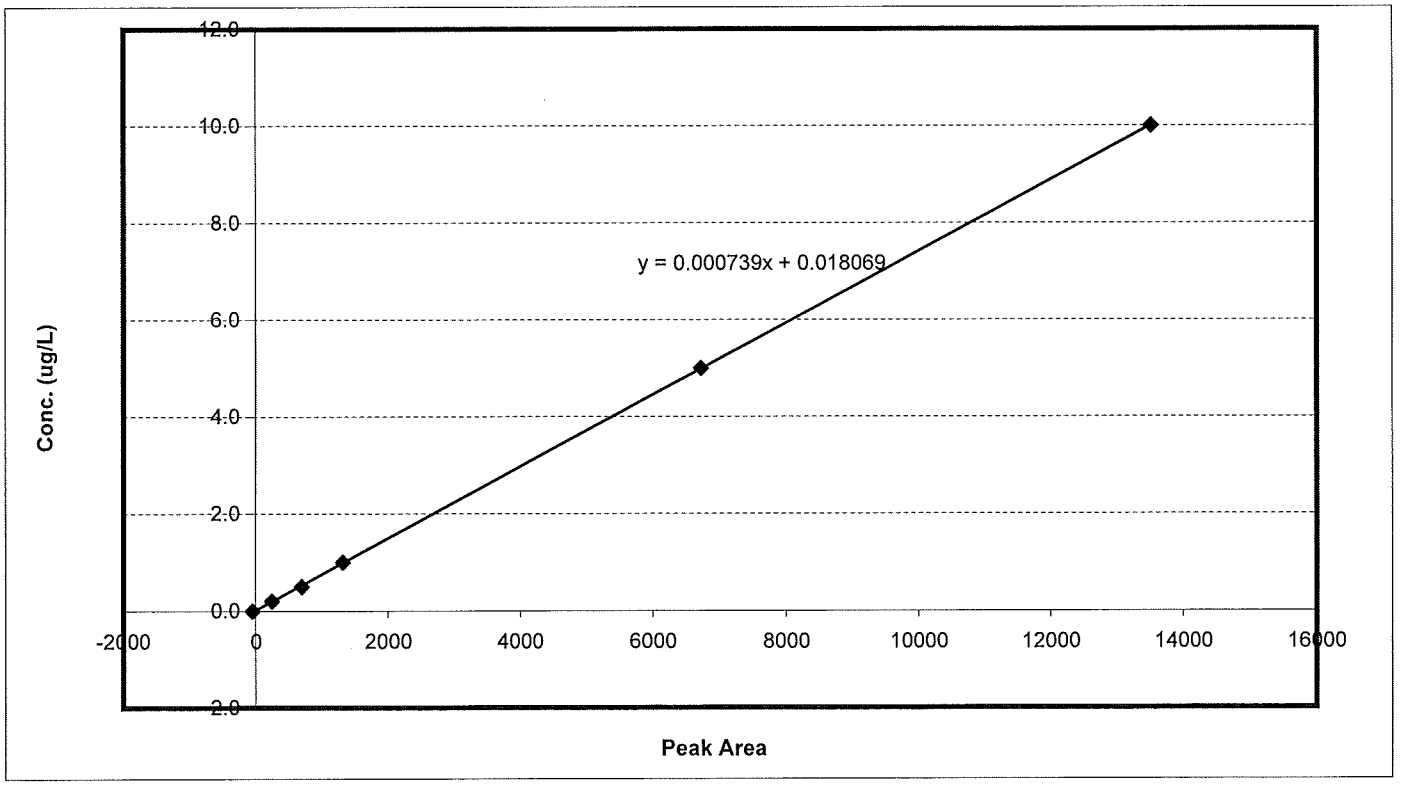
Run ID: 051117AA

Date: 5/11/2017

TALS Batch: 116629

	ICAL Conc. (ug/L)	ICAL Peak Area	Calculated Result	% Difference
Std 0	0.0	-46	-0.0159	
Std 1	0.2	243	0.1977	1.2
Std 2	0.5	695	0.5317	6.3
Std 3	1.0	1321	0.9943	0.6
Std 4	5.0	6723	4.9867	0.3
Std 5	10	13514	10.0055	0.1

N =	6
r =	0.999990574
Intercept =	0.018069192
Slope =	0.000739046



*MEPCV3II *051117AA
Folder: 030717L *7470A
Protocol: 081216L
POST-RUN REPORT *Analyst: SJO

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1 *S01				Seq: 961		14:53:48 11 May 17		HG
Hg	.000	ppb	-46					=
*** Standard: 2 Rep: 1 *S02				Seq: 962		14:55:35 11 May 17		HG
Hg	.200	ppb	243					=
*** Standard: 3 Rep: 1 *S03				Seq: 963		14:57:14 11 May 17		HG
Hg	.500	ppb	695					=
*** Standard: 4 Rep: 1 *S04				Seq: 964		14:58:55 11 May 17		HG
Hg	1.00	ppb	1321					=
*** Standard: 5 Rep: 1 *S05				Seq: 965		15:00:34 11 May 17		HG
Hg	5.00	ppb	6723					=
*** Standard: 6 Rep: 1 *S06				Seq: 966		15:02:13 11 May 17		HG
Hg	10.0	ppb	13514					=
*** Sample ID: ICV				051117AA	Seq: 967	15:03:50 11 May 17		HG
Hg	2.96	ppb	3987					=
*** Sample ID: ICB				051117AA	Seq: 968	15:05:28 11 May 17		HG
Hg	-.014	ppb	-43					=
*** Sample ID: CCV				051117AA	Seq: 969	15:07:06 11 May 17		HG
Hg	5.15	ppb	6939					=
*** Sample ID: CCB				051117AA	Seq: 970	15:08:42 11 May 17		HG
Hg	-.093	ppb	-150					=
*** Sample ID: MB				051117AA	Seq: 971	15:10:18 11 May 17		HG
Hg	.002	ppb	-22					=

*SJO
5/11/17

POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: LCS			051117AA	Seq: 972	15:11:55 11 May 17		HG	
Hg	1.02	ppb	1352					
*** Sample ID: 38498A10D			051117AA	Seq: 973	15:13:43 11 May 17		HG	
Hg	.014	ppb	-5					
*** Sample ID: 38498A10E			051117AA MS	Seq: 974	15:15:21 11 May 17		HG	
Hg	.997	ppb	1324					
*** Sample ID: 38498A10F			051117AA MSD	Seq: 975	15:16:57 11 May 17		HG	
Hg	.972	ppb	1291					
*** Sample ID: CCV			051117AA	Seq: 976	15:18:44 11 May 17		HG	
Hg	5.10	ppb	6880					
*** Sample ID: CCB			051117AA	Seq: 977	15:20:21 11 May 17		HG	
Hg	-.077	ppb	-128					

Mercury Calibration Curve Worksheet

Instrument ID: MEPCV3II

Analyst: SJO

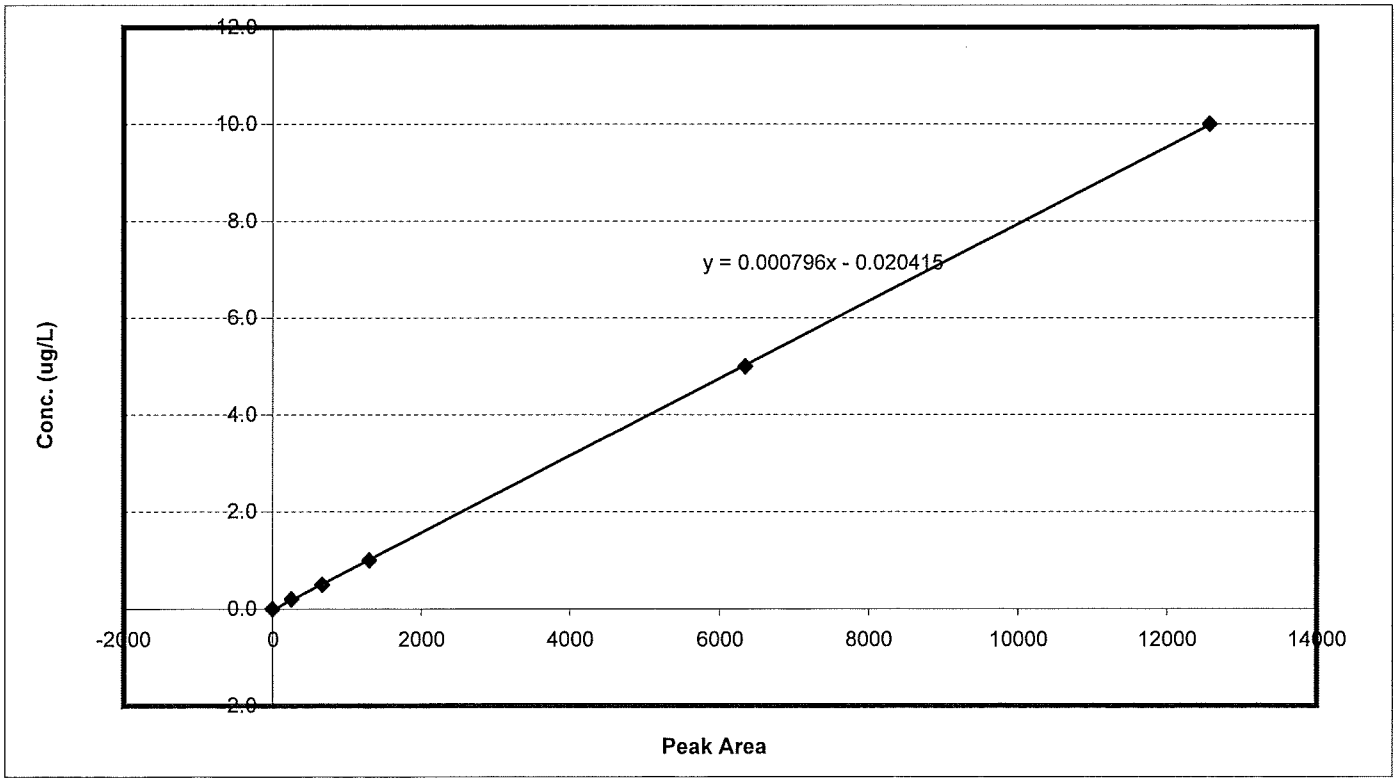
Run ID: 051117BB

Date: 5/11/2017

TALS Batch: 116630

	ICAL Conc. (ug/L)	ICAL Peak Area	Calculated Result	% Difference
Std 0	0.0	-4	-0.0236	
Std 1	0.2	259	0.1857	7.2
Std 2	0.5	667	0.5104	2.1
Std 3	1.0	1303	1.0165	1.6
Std 4	5.0	6342	5.0263	0.5
Std 5	10	12573	9.9847	0.2

N =	6
r =	0.999987055
Intercept =	-0.020414927
Slope =	0.000795766



*MEPCV 3II *051117BB
Folder: 030717L *74713
Protocol: 081216L *Analyst: SJO
POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1 *S01				Seq: 984		15:53:24 11 May 17		HG
Hg	.000	ppb	-4					
*** Standard: 2 Rep: 1 *S02				Seq: 985		15:55:03 11 May 17		HG
Hg	.200	ppb	259					
*** Standard: 3 Rep: 1 *S03				Seq: 986		15:56:42 11 May 17		HG
Hg	.500	ppb	667					
*** Standard: 4 Rep: 1 *S04				Seq: 987		15:58:20 11 May 17		HG
Hg	1.00	ppb	1303					
*** Standard: 5 Rep: 1 *S05				Seq: 988		16:00:02 11 May 17		HG
Hg	5.00	ppb	6342					
*** Standard: 6 Rep: 1 *S06				Seq: 989		16:01:40 11 May 17		HG
Hg	10.0	ppb	12573					
*** Sample ID: ICV				051117BB	Seq: 990	16:03:21 11 May 17		HG
Hg	2.93	ppb	3702					
*** Sample ID: ICB				051117BB	Seq: 991	16:04:57 11 May 17		HG
Hg	-.083	ppb	-79					
*** Sample ID: CCV				051117BB	Seq: 992	16:06:32 11 May 17		HG
Hg	4.96	ppb	6253					
*** Sample ID: CCB				051117BB	Seq: 993	16:08:11 11 May 17		HG
Hg	-.082	ppb	-78					
*** Sample ID: MB				051117BB	Seq: 994	16:09:47 11 May 17		HG
Hg	-.076	ppb	-70					

*SJO
5/11/17

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: LCS			051117BB	Seq: 995	16:11:44 11 May 17		HG	
Hg	2.41	ppb	3053					
*** Sample ID: 38498A1B			051117BB	Seq: 996	16:13:24 11 May 17		HG	
Hg	15.1	ppb	19036					
*** Sample ID: 38498A2B			051117BB	Seq: 997	16:15:05 11 May 17		HG	
Hg	7.36	ppb	9279					
*** Sample ID: 38498A3B			051117BB	Seq: 998	16:17:03 11 May 17		HG	
Hg	1.08	ppb	1382					
*** Sample ID: 38498A4B			051117BB	Seq: 999	16:18:50 11 May 17		HG	
Hg	3.68	ppb	4656					
*** Sample ID: 38498A5B			051117BB	Seq: 1000	16:20:29 11 May 17		HG	
Hg	.571	ppb	743					
*** Sample ID: 38498A6B			051117BB	Seq: 1001	16:22:06 11 May 17		HG	
Hg	1.64	ppb	2088					
*** Sample ID: 38498A7D			051117BB	Seq: 1002	16:23:52 11 May 17		HG	
Hg	2.70	ppb	3414					
*** Sample ID: 38498A7E			051117BB MS	Seq: 1003	16:25:28 11 May 17		HG	
Hg	5.05	ppb	6374					
*** Sample ID: CCV			051117BB	Seq: 1004	16:27:04 11 May 17		HG	
Hg	4.79	ppb	6047					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: CCB			051117BB	Seq: 1005	16:28:50 11 May 17		HG	
Hg	-.067	ppb	-58					
*** Sample ID: 38498A7F			051117BB	Seq: 1006	16:30:27 11 May 17		HG	
			MSD					
Hg	5.82	ppb	7341					
*** Sample ID: 38498A8B			051117BB	Seq: 1007	16:32:05 11 May 17		HG	
Hg	1.47	ppb	1876					
*** Sample ID: 38498A9B			051117BB	Seq: 1008	16:33:43 11 May 17		HG	
Hg	2.10	ppb	2664					
*** Sample ID: 38498A11B			051117BB	Seq: 1009	16:35:42 11 May 17		HG	
Hg	.728	ppb	940					
*** Sample ID: 38507A5G			051117BB	Seq: 1010	16:37:21 11 May 17		HG	
Hg	.186	ppb	260					
*** Sample ID: 38507A7Y			051117BB	Seq: 1011	16:39:00 11 May 17		HG	
Hg	.217	ppb	298					
*** Sample ID: 38507A7Z			051117BB	Seq: 1012	16:40:39 11 May 17		HG	
			DU					
Hg	.309	ppb	414					
*** Sample ID: 38507A7AA			051117BB	Seq: 1013	16:42:29 11 May 17		HG	
			MS					
Hg	2.37	ppb	3007					
*** Sample ID: 38507A7AB			051117BB	Seq: 1014	16:44:09 11 May 17		HG	
			MSD					
Hg	2.47	ppb	3128					

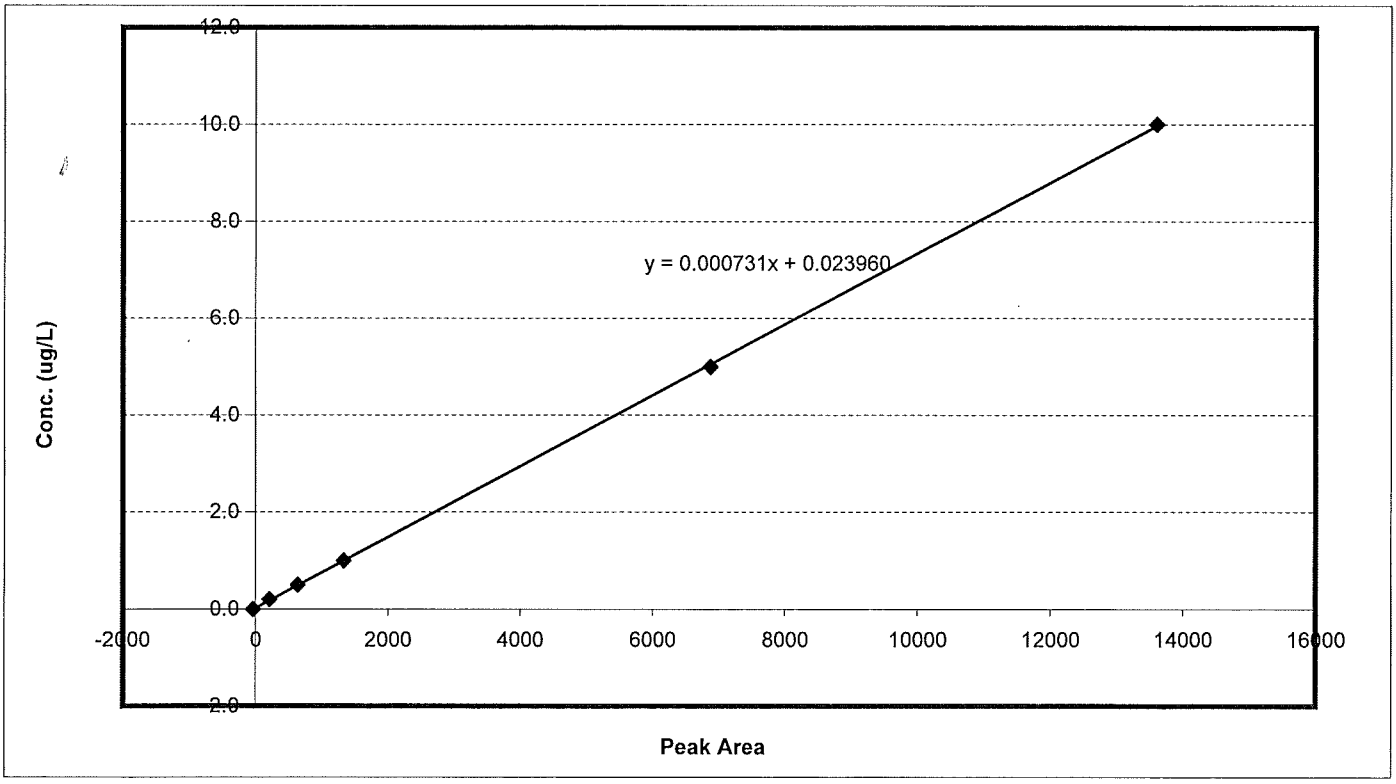
Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 38507A8H		051117BB	Seq: 1015	16:45:46 11 May 17		HG		
Hg	-.121	ppb	-127					
*** Sample ID: CCV		051117BB	Seq: 1016	16:47:23 11 May 17		HG		
Hg	4.72	ppb	5961					
*** Sample ID: CCB		051117BB	Seq: 1017	16:48:59 11 May 17		HG		
Hg	-.113	ppb	-116					

Mercury Calibration Curve Worksheet

Instrument ID:	MEPCV3II	Analyst:	SJO
Run ID:	51517	Date:	5/15/2017
TALS Batch:	116711		

	ICAL Conc. (ug/L)	ICAL Peak Area	Calculated Result	% Difference
Std 0	0.0	-34	-0.0009	
Std 1	0.2	215	0.1812	9.4
Std 2	0.5	642	0.4935	1.3
Std 3	1.0	1335	1.0004	0.0
Std 4	5.0	6873	5.0510	1.0
Std 5	10	13605	9.9748	0.3

N =	6
r =	0.999977281
Intercept =	0.023959576
Slope =	0.000731412



*MEPCV3II *051517AA

Folder: 030717L *7471B Page 568

Protocol: 081216L

POST-RUN REPORT *Analyst: SJO

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1 *S01				Seq: 1025	15:08:01 15 May 17		HG	
Hg	.000	ppb	-34					=
*** Standard: 2 Rep: 1 *S02				Seq: 1026	15:09:37 15 May 17		HG	
Hg	.200	ppb	215					=
*** Standard: 3 Rep: 1 *S03				Seq: 1027	15:11:23 15 May 17		HG	
Hg	.500	ppb	642					=
*** Standard: 4 Rep: 1 *S04				Seq: 1028	15:13:00 15 May 17		HG	
Hg	1.00	ppb	1335					=
*** Standard: 5 Rep: 1 *S05				Seq: 1029	15:14:41 15 May 17		HG	
Hg	5.00	ppb	6873					=
*** Standard: 6 Rep: 1 *S06				Seq: 1030	15:16:24 15 May 17		HG	
Hg	10.0	ppb	13605					=
*** Sample ID: ICV			051517AA	Seq: 1031	15:18:10 15 May 17		HG	
Hg	2.99	ppb	4060					=
*** Sample ID: ICB			051517AA	Seq: 1032	15:19:47 15 May 17		HG	
Hg	-.043	ppb	-91					=
*** Sample ID: CCV			051517AA	Seq: 1033	15:21:22 15 May 17		HG	
Hg	4.91	ppb	6677					=
*** Sample ID: CCB			051517AA	Seq: 1034	15:23:00 15 May 17		HG	
Hg	-.077	ppb	-138					=
*** Sample ID: MB			051517AA	Seq: 1035	15:24:39 15 May 17		HG	
Hg	.034	ppb	14					=

*SJO
5/15/17

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: LCS			051517AA	Seq: 1036	15:26:18 15 May 17		HG	
Hg	2.49	ppb	3377					
*** Sample ID: 38498A1D			051517AA	Seq: 1037	15:27:55 15 May 17		HG	
Hg	15.1	ppb	20600					
*** Sample ID: 38498A1D			051517AA @2	Seq: 1038	15:29:35 15 May 17		HG	
Hg	7.13	ppb	9719					
*** Sample ID: CCV			051517AA	Seq: 1039	15:31:14 15 May 17		HG	
Hg	4.85	ppb	6596					
*** Sample ID: CCB			051517AA	Seq: 1040	15:32:52 15 May 17		HG	
Hg	-.065	ppb	-121					

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-38498-1

SDG No.: 200-38498-1

Project: Port Ewen DNS Sediment

Client Sample ID	Lab Sample ID
PE0517-P2SCD-04-A-0006IN	200-38498-1
PE0517-P2SCD-04-B-0002IN	200-38498-2
PE0517-P2SCD-18.7-A-0001IN	200-38498-3
PE0517-P2SCD-18.7-B-0006IN	200-38498-4
PE0517-P2SCD-18.8-A-0006IN	200-38498-5
PE0517-P2SCD-18.8-B-0004IN	200-38498-6
PE0517-P2SCD-18.9-A-0012IN	200-38498-7
PE0517-P2SCD-18.9-B-0006IN	200-38498-8
PE0517-P2SCD-18.9-B-0006IN-D	200-38498-9
PE0517-P2SCD-18.9-A-1218IN	200-38498-11

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE0517-P2SCD-04-A-0006IN
Lab Sample ID: 200-38498-1
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 17:15
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	62800	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE0517-P2SCD-04-B-0002IN
Lab Sample ID: 200-38498-2
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 17:30
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	62200	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE0517-P2SCD-18.7-A-0001IN
Lab Sample ID: 200-38498-3
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 14:45
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	18700	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE0517-P2SCD-18.7-B-0006IN
Lab Sample ID: 200-38498-4
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 14:50
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	16800	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE0517-P2SCD-18.8-A-0006IN
Lab Sample ID: 200-38498-5
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 14:10
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	9600	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE0517-P2SCD-18.8-B-0004IN
Lab Sample ID: 200-38498-6
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 14:00
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	16900	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE0517-P2SCD-18.9-A-0012IN
Lab Sample ID: 200-38498-7
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 13:30
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	9890	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN
Lab Sample ID: 200-38498-8
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 13:45
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	16000	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN-D
Lab Sample ID: 200-38498-9
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 13:46
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	16200	1000	380	mg/Kg			1	Lloyd Kahn

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: PE0517-P2SCD-18.9-A-1218IN
Lab Sample ID: 200-38498-11
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 13:30
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	22000	1000	380	mg/Kg			1	Lloyd Kahn

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Analyst: KSH Batch Start Date: 05/10/2017

Reporting Units: mg/Kg Analytical Batch No.: 116601

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	ICV	11:53	Total Organic Carbon	8870	9260	96	75-125		WCLKLCSs_00019
2	ICB	11:59	Total Organic Carbon	1000				U	
3	CCV	12:05	Total Organic Carbon	33550	35000	96	75-125		WCTOCCALs_00016
4	CCB	12:12	Total Organic Carbon	1000				U	
18	CCV	14:05	Total Organic Carbon	34600	35000	99	75-125		WCTOCCALs_00016
19	CCB	14:11	Total Organic Carbon	1000				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 116601 Date: 05/10/2017 12:18							
Lloyd Kahn	MB 200-116601/5	Total Organic Carbon	1000	U	mg/Kg	1000	1

FORM III-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Matrix: Sediment

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 116601 Date: 05/10/2017 12:30											
						LCS Source: WCLKLCSs_00019					
Lloyd Kahn	LCS 200-116601/6	Total Organic Carbon	9408		mg/Kg	9260	102	75-125			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-38498-1

SDG Number: 200-38498-1

Matrix: Sediment Instrument ID: WCCH2

Method: Lloyd Kahn MDL Date: 07/26/2016 16:22

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Total Organic Carbon		1000	380

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-38498-1

SDG Number: 200-38498-1

Matrix: Sediment Instrument ID: WCCH2

Method: Lloyd Kahn XMDL Date: 07/26/2016 16:23

Analyte	Wavelength/ Mass	XRL (mg/Kg)	XMDL (mg/Kg)
Total Organic Carbon		1000	380

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job Number: 200-38498-1

SDG Number: 200-38498-1

Matrix: Sediment Instrument ID: NOEQUIP

Method: Moisture RL Date: 04/01/2009 07:55

Analyte	Wavelength/ Mass	RL (%)	
Percent Solids		0.1	

11-IN
LINEAR RANGES
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No: 200-38498-1

SDG No.: 200-38498-1

Instrument ID: WCCH2 Date: 01/01/2015 10:45

Analyte	Integ. Time (Sec.)	Concentration (mg/Kg)	Method
Total Organic Carbon		75000	Lloyd Kahn

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Instrument ID: WCCH2 Analysis Method: Lloyd Kahn

Start Date: 05/10/2017 11:53 End Date: 05/10/2017 14:11

Lab Sample Id	D/F	Type	Time	Analytes																								
				TOC																								
ICV 200-116601/1	1		11:53	X																								
ICB 200-116601/2	1		11:59	X																								
CCV 200-116601/3	1		12:05	X																								
CCB 200-116601/4	1		12:12	X																								
MB 200-116601/5	1	T	12:18	X																								
LCS 200-116601/6	1	T	12:30	X																								
ZZZZZZ			12:55																									
200-38498-1	1	T	13:02	X																								
200-38498-2	1	T	13:08	X																								
200-38498-3	1	T	13:14	X																								
200-38498-4	1	T	13:21	X																								
200-38498-5	1	T	13:27	X																								
200-38498-6	1	T	13:33	X																								
200-38498-7	1	T	13:40	X																								
200-38498-8	1	T	13:46	X																								
200-38498-9	1	T	13:52	X																								
200-38498-11	1	T	13:59	X																								
CCV 200-116601/18	1		14:05	X																								
CCB 200-116601/19	1		14:11	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Instrument ID: NOEQUIP Analysis Method: Moisture

Start Date: 05/08/2017 09:20 End Date: 05/08/2017 09:20

Lab Sample Id	D/F	Type	Time	Analytes																								
				% Sol																								
200-38498-1	1	T	09:20	X																								
200-38498-2	1	T	09:20	X																								
200-38498-3	1	T	09:20	X																								
200-38498-4	1	T	09:20	X																								
200-38498-5	1	T	09:20	X																								
200-38498-6	1	T	09:20	X																								
200-38498-7	1	T	09:20	X																								
200-38498-8	1	T	09:20	X																								
200-38498-9	1	T	09:20	X																								
200-38498-11	1	T	09:20	X																								
200-38498-11 DU	1	T	09:20	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Batch Number: 116601 Batch Start Date: 05/10/17 11:53 Batch Analyst: Henry, Kayla S

Batch Method: Lloyd Kahn Batch End Date: 05/10/17 14:11

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	WCLKLCSs 00019	WCTOCCALs 00016			
ICV 200-116601/1		Lloyd Kahn			9 mg				
CCV 200-116601/3		Lloyd Kahn		10 mg		35 uL			
LCS 200-116601/6		Lloyd Kahn			9.925 mg				
CCV 200-116601/18		Lloyd Kahn		10 mg		35 uL			

Batch Notes	
Phosphoric Acid ID	1011093

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Batch Number: 116479 Batch Start Date: 05/08/17 09:20 Batch Analyst: Henry, Kayla S

Batch Method: Moisture Batch End Date: 05/09/17 08:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
200-38498-A-1	PE0517-P2SCD-04-A-0006IN	Moisture	T	1	1.02 g	9.61 g	4.09 g		
200-38498-A-2	PE0517-P2SCD-04-B-0002IN	Moisture	T	2	1.02 g	10.02 g	3.46 g		
200-38498-A-3	PE0517-P2SCD-18.7-A-0001IN	Moisture	T	3	1.02 g	9.48 g	4.98 g		
200-38498-A-4	PE0517-P2SCD-18.7-B-0006IN	Moisture	T	4	1.02 g	10.06 g	5.90 g		
200-38498-A-5	PE0517-P2SCD-18.8-A-0006IN	Moisture	T	5	1.03 g	9.98 g	7.04 g		
200-38498-A-6	PE0517-P2SCD-18.8-B-0004IN	Moisture	T	6	0.99 g	9.48 g	5.53 g		
200-38498-A-7	PE0517-P2SCD-18.9-A-0012IN	Moisture	T	7	0.99 g	8.94 g	6.83 g		
200-38498-A-8	PE0517-P2SCD-18.9-B-0006IN	Moisture	T	8	1.06 g	8.97 g	5.58 g		
200-38498-A-9	PE0517-P2SCD-18.9-B-0006IN-D	Moisture	T	9	1.03 g	9.18 g	5.37 g		
200-38498-A-11	PE0517-P2SCD-18.9-A-1218IN	Moisture	T	10	1.03 g	10.13 g	7.34 g		
200-38498-A-11 DU	PE0517-P2SCD-18.9-A-1218IN	Moisture	T	11	1.03 g	9.45 g	7.02 g		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Batch Number: 116479 Batch Start Date: 05/08/17 09:20 Batch Analyst: Henry, Kayla S

Batch Method: Moisture Batch End Date: 05/09/17 08:45

Batch Notes	
Balance ID	M78711 No Unit
Date and Time Samples in Desiccator	5/9/17@0830
Date and Time Samples out of Desiccator	5/9/17@0845
Date samples were placed in the oven	5/8/17
Oven Temp In	105 Degrees C
Time samples were place in the oven	0920
Date samples were removed from oven	5/9/17
Oven Temp Out	106 Degrees C
Time Samples were removed from oven	0830
Oven ID	2
Thermometer ID	204
Uncorrected In Temperature	105 Celsius
Uncorrected Out Temperature	106 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TOC BY LLOYD KAHN

CHANNEL 2

CALIBRATION

Carbon - 1.741 min.

eak Type : Ordnr

ft Window : 0.3 min

ght Window : 0.6 min

esponse Base : Area

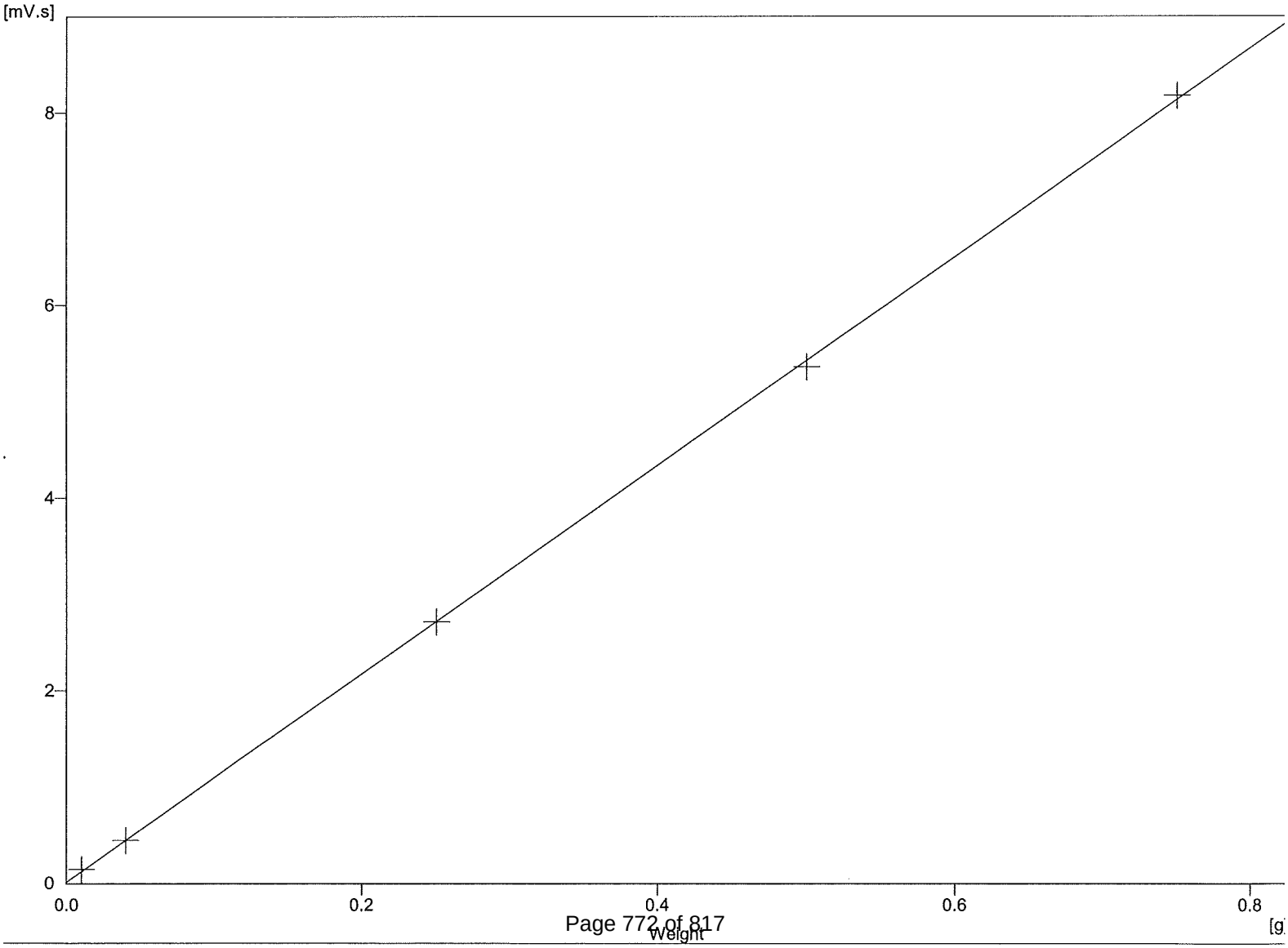
urve Fit Type : Linear

ero Type : Zero not used

ubst. Equation : Y = 10804.6226*X + 12.8174

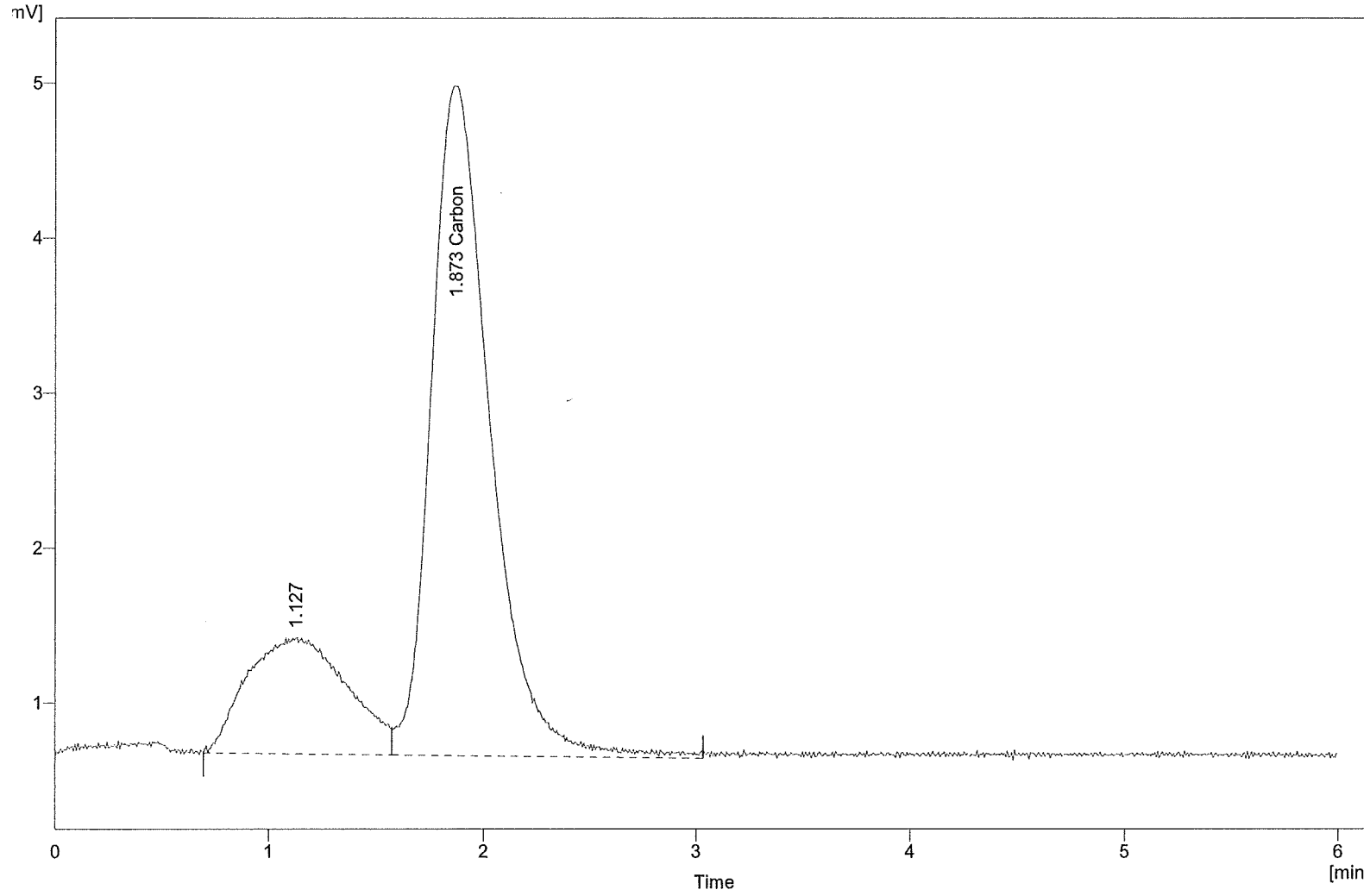
orrelation Coef. : 0.999927

	Response	Weight	Resp. Factor	Use
1	0.000	0.000	0.0000	Ye
2	145.765	0.010	0.0001	Ye
3	445.959	0.040	0.0001	Ye
4	2712.276	0.250	0.0001	Ye
5	5357.218	0.501	0.0001	Ye
6	8170.533	0.751	0.0001	Ye
7	0.000	0.000	0.0000	Ye
8	0.000	0.000	0.0000	Ye
9	0.000	0.000	0.0000	Ye
10	0.000	0.000	0.0000	Ye
11	0.000	0.000	0.0000	Ye
12	0.000	0.000	0.0000	Ye
13	0.000	0.000	0.0000	Ye
14	0.000	0.000	0.0000	Ye
15	0.000	0.000	0.0000	Ye
16	0.000	0.000	0.0000	Ye
17	0.000	0.000	0.0000	Ye
18	0.000	0.000	0.0000	Ye
19	0.000	0.000	0.0000	Ye
20	0.000	0.000	0.0000	Ye



Lloyd Kahn TOC
Instrument #2

eated	: 05/02/2017 10:55:25 AM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 0 mg		
mple	: STD 1	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\050217X001
alibration	: 050217X		

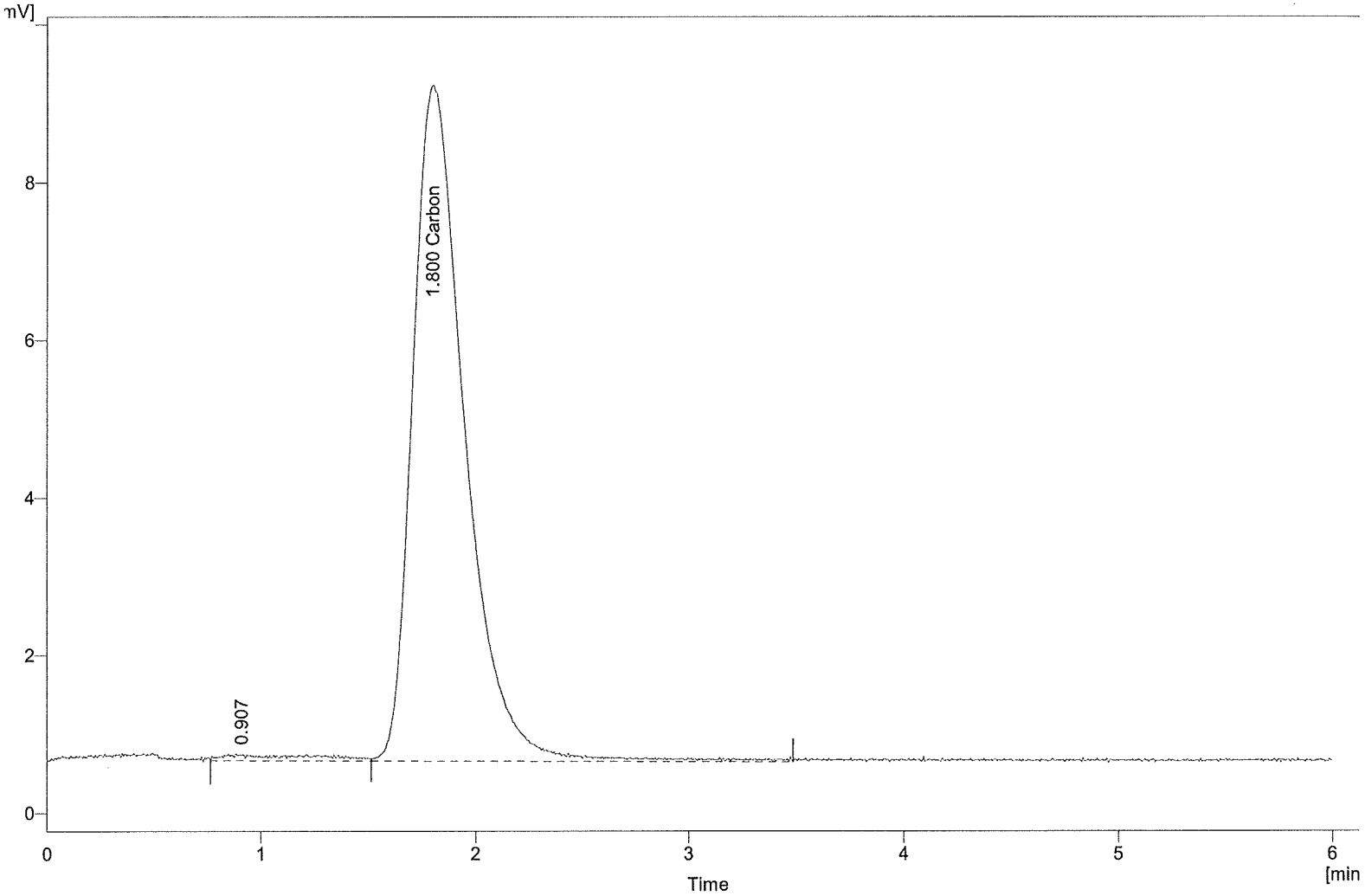


Result Table - Calculation Method ESTD

Reten. Time	Compound	Area	Area	Weight	Weight	Carbon	Peak
1.873	Carbon	83.2392	77.4	0.000	0.0000	1.0000	Free
Total		107.5534	100.0	0.000	100.0000		

Lloyd Kahn TOC
Instrument #2

eated	: 05/02/2017 11:01:37 AM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 0.0213 mg		
ımple	: STD 2	Chromatogram	: 050217X002
alibration	: 050217X		

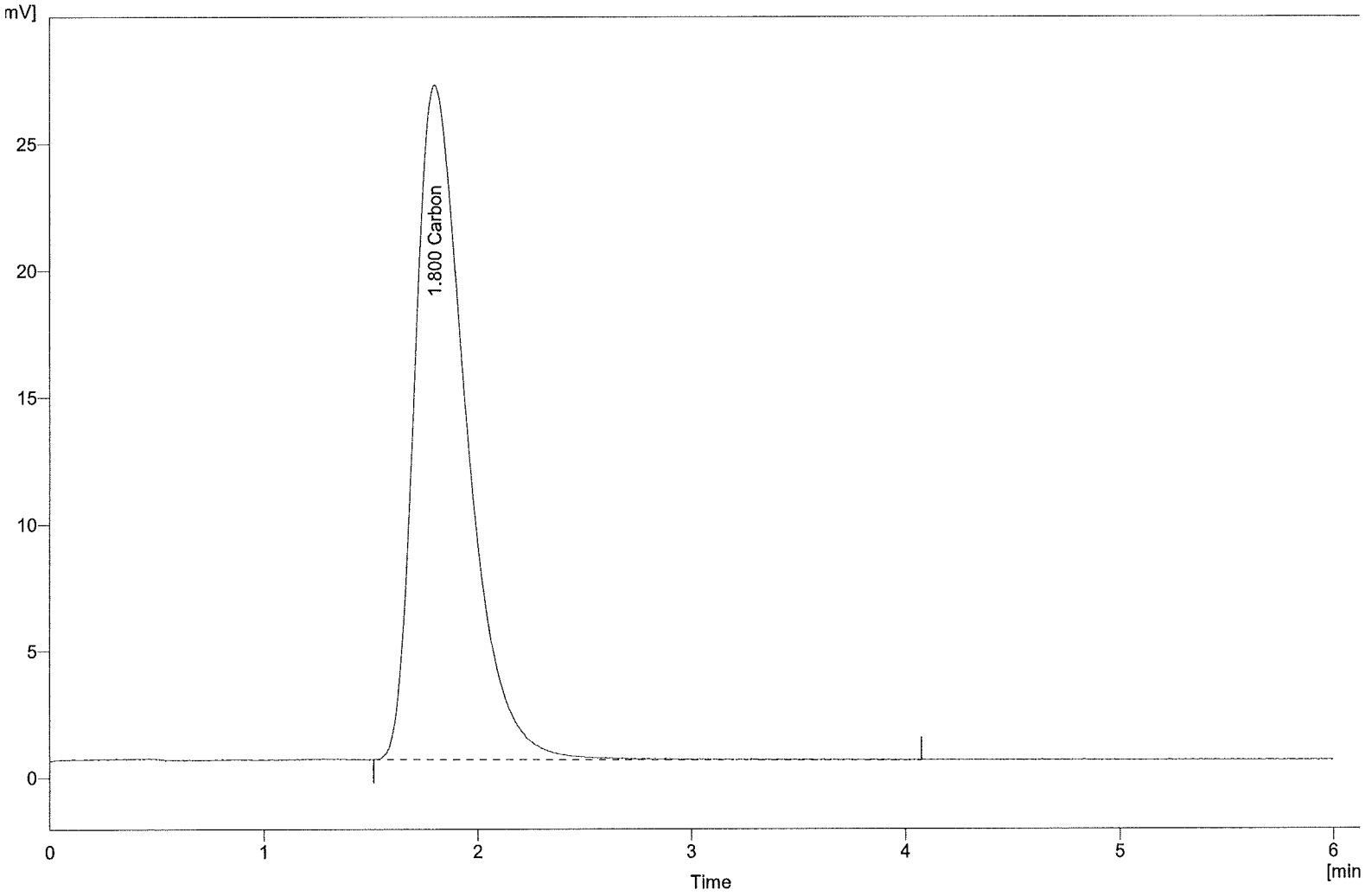


Result Table - Calculation Method ESTD

Reten. Time	Compound	Area	Area	Weight	Weight	Carbon	Peak
1.800	Carbon	145.7646	98.3	0.010	47.0500	1.0000	Ordnr
Total		148.2475	100.0	0.021	47.0500		

Lloyd Kahn TOC
Instrument #2

eated	: 05/02/2017 11:07:50 AM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 0.0851 mg		
ımple	: STD 3	Chromatogram	: 050217X003
alibration	: 050217X		

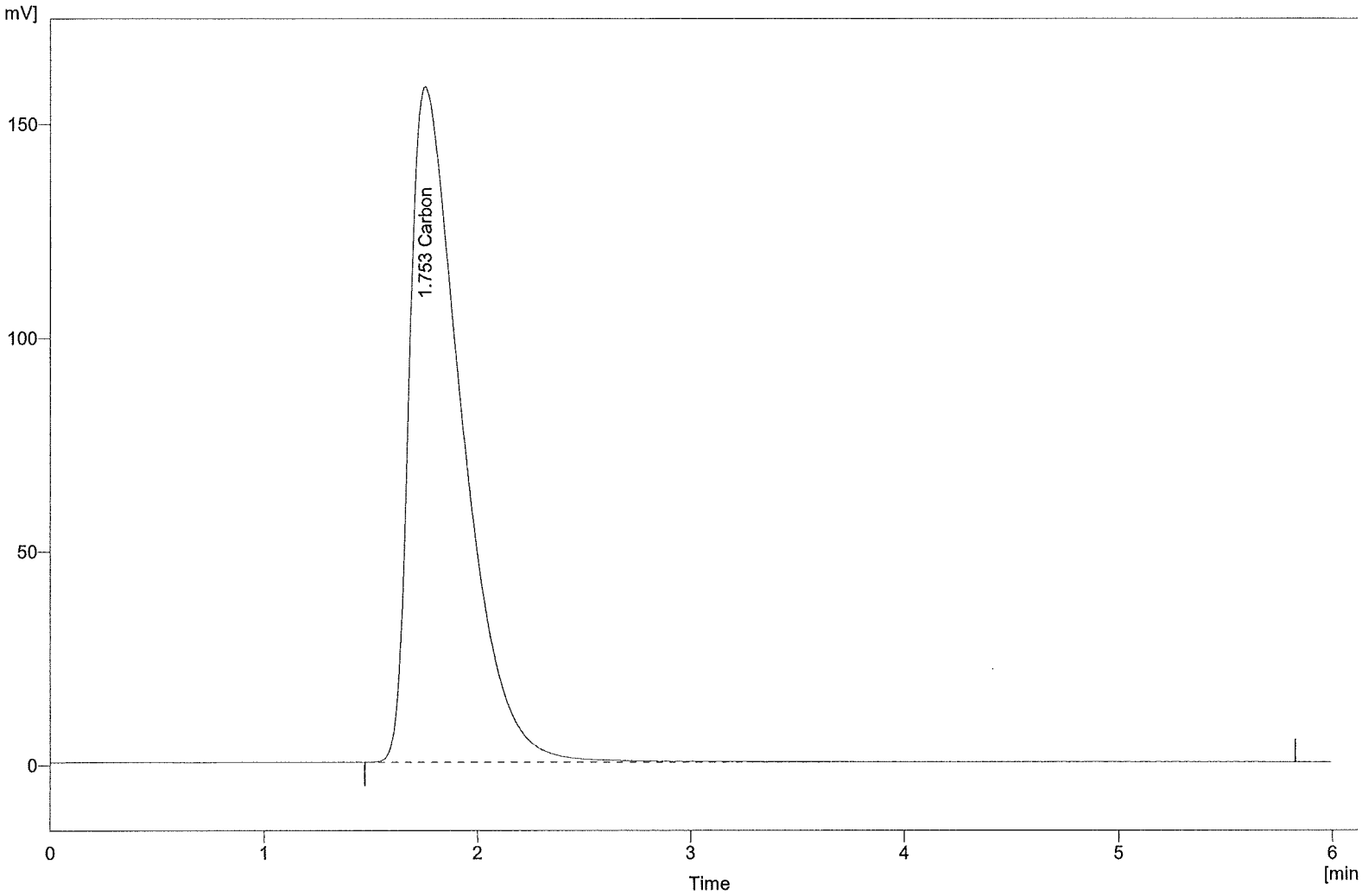


Result Table - Calculation Method ESTD

Reten. Time	Compound	Area	Area	Weight	Weight	Carbon	Peak
1.800	Carbon	445.9586	100.0	0.039	46.2143	1.0000	Ordnr
Total		445.9586	100.0	0.085	46.2143		

Lloyd Kahn TOC
Instrument #2

eated	: 05/02/2017 11:14:04 AM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 0.532 mg		
mple	: STD 4	Chromatogram	: 050217X004
alibration	: 050217X		

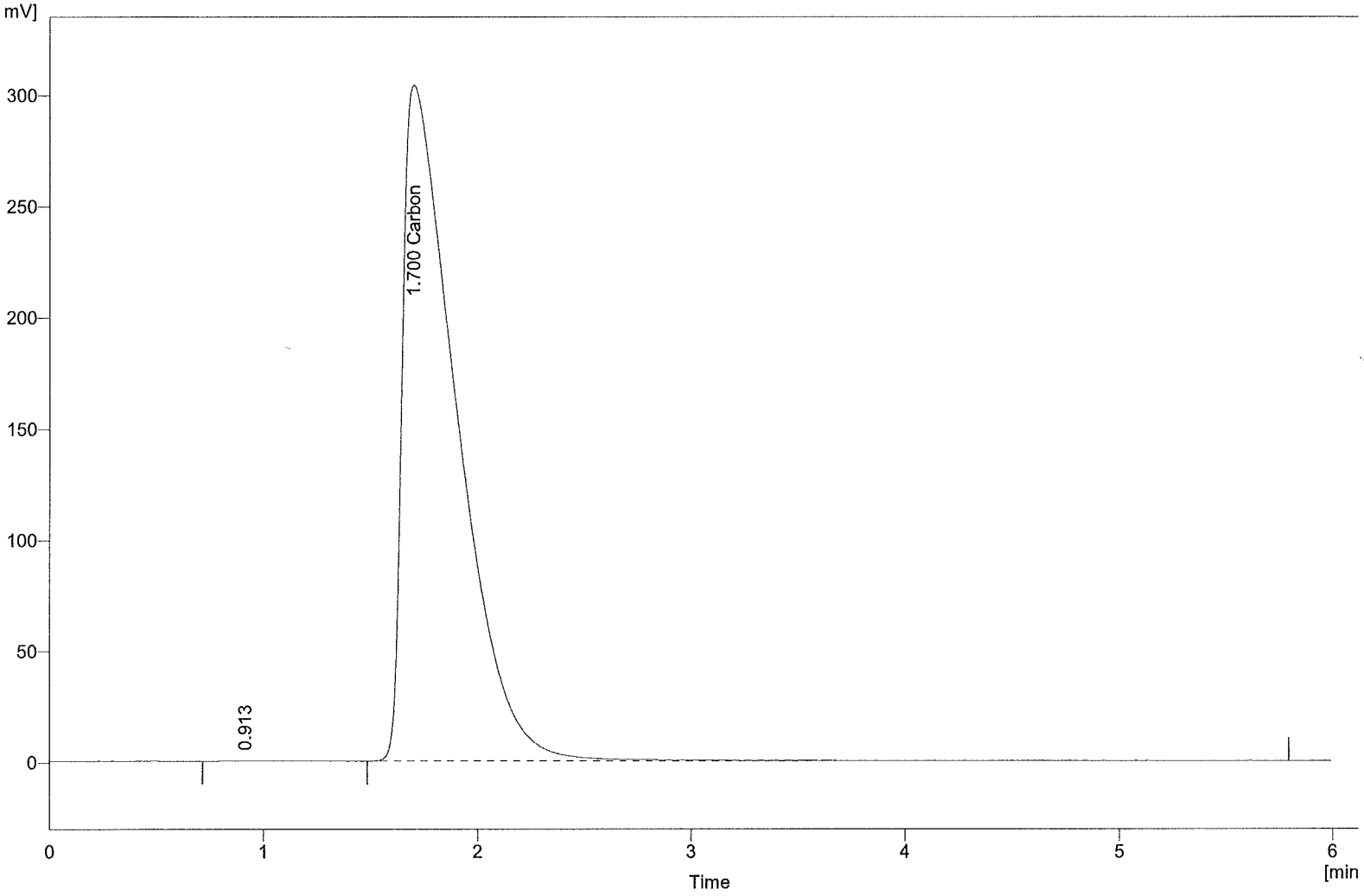


Result Table - Calculation Method ESTD

Reten. Time	Compound	Area	Area	Weight	Weight	Carbon	Peak
1.753	Carbon	2712.2765	100.0	0.250	46.9925	1.0000	Ordnr
Total		2712.2765	100.0	0.532	46.9925		

Lloyd Kahn TOC
Instrument #2

eated	: 05/02/2017 11:20:19 AM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 1.064 mg		
mple	: STD 5	Chromatogram	: 050217X005
alibration	: 050217X		

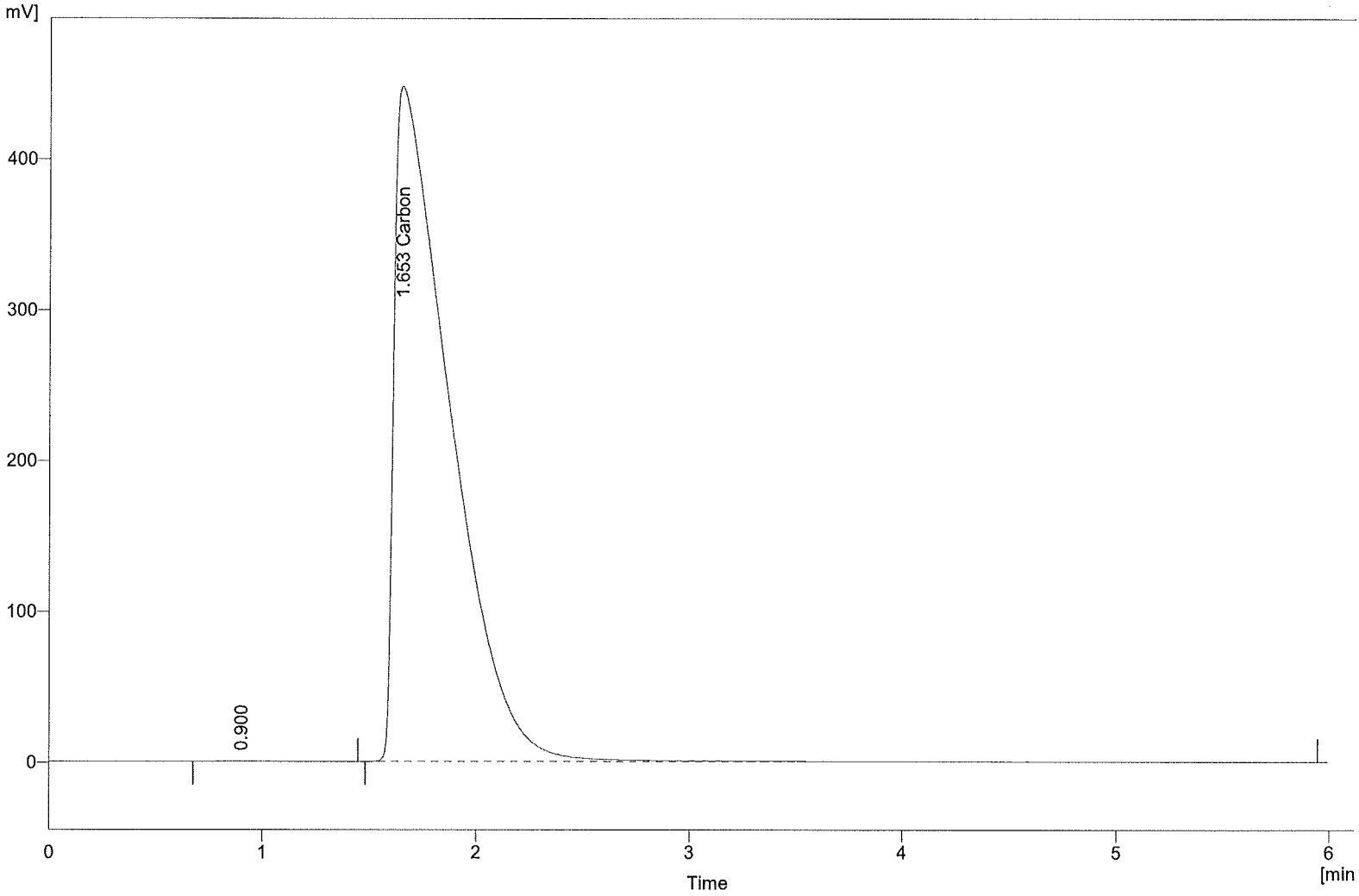


Result Table - Calculation Method ESTD

Reten. Time	Compound	Area	Area	Weight	Weight	Carbon	Peak
1.700	Carbon	5357.2176	100.0	0.499	46.9176	1.0000	Ordnr
Total		5359.7281	100.0	1.064	46.9176		

Lloyd Kahn TOC
Instrument #2

eated	: 05/02/2017 11:26:32 AM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 1.596 mg		
mple	: STD 6	Chromatogram	: 050217X006
alibration	: 050217X		



Result Table - Calculation Method ESTD

Reten. Time	Compound	Area	Area	Weight	Weight	Carbon	Peak
1.653	Carbon	8170.5332	100.0	0.755	47.2824	1.0000	Ordnr
Total		8173.1138	100.0	1.596	47.2824		

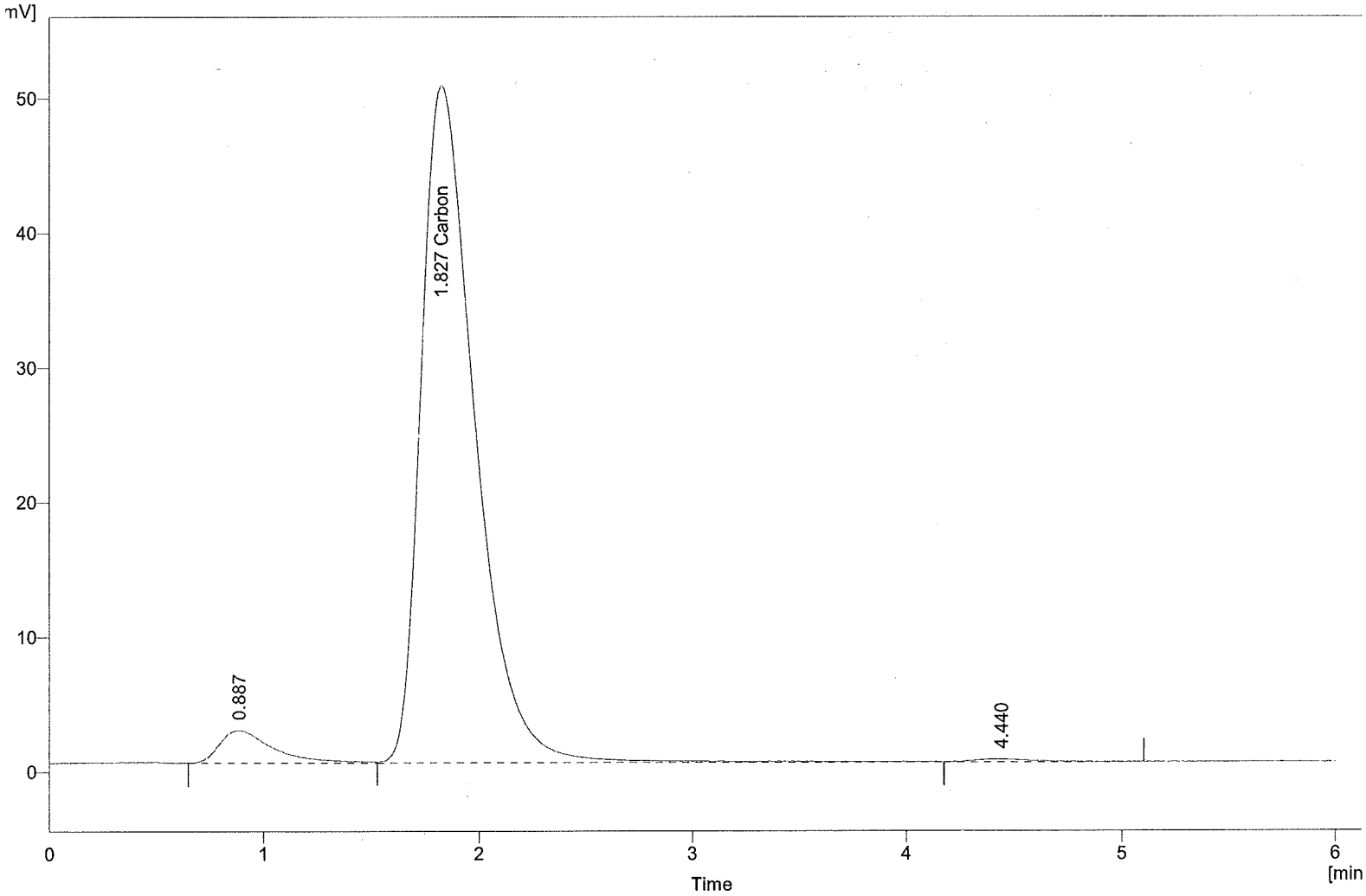
Total Organic Carbon
by Lloyd Kahn

File:	051017A				Default Mass:	10 mg
Instrument ID:	2				TALS Batch:	116601
STANDARD CURVE			**Reagent**	**Concentration**	**Amount**	
Lab ID	**Type**	**ICAL conc / ug/L**	**ID**	**ug/L**	**uL**	
CAL Level 1	CAL	0	NA	0	0	
CAL Level 2	CAL	1000	1034889	100	100	Date Analyzed: 5/2/17
CAL Level 3	CAL	4000	1034888	1001	40	Correlation Coefficient (r): 0.999927
CAL Level 4	CAL	25000	1032698	10012	25	Criteria: (r) ≥ *0.995*
CAL Level 5	CAL	50000	1032698	10012	50	Raw DataFile: 050217X
CAL Level 6	CAL	750000	1032698	10012	75	
STANDARD & REAGENT TRACEABILITY:						
ICAL/CCV Container ID:	1032698				LCS Container ID:	895119
ICV Container ID:	895119				1:19 Phosphoric Acid Container ID:	1011093
Matrix Spike Container ID:	NA					
PREPARATION INFORMATION:						
Date:	5/10/17		Start Time:	11:53	Balance ID:	1123452701
Analyst:	KSH		Stop Time:	14:11	Oven ID:	2

Drop	Weight	Sample ID	Carbon (%)	Carbon (mg/Kg)	Average Carbon (mg/Kg)	Sample RPD or RSD	RL (mg/Kg)
1	9	ICV	0.8867	8867.00			
2	10	ICB	0	0.00			
3	10	CCV	3.3545	33545.00			
4	10	CCB	0	0.00			
5	10	MB	0.007	70.00	79.00	23	U1000
6	10	MB	0.0088	88.00			
7	9.4	LCS	0.9101	9101.00	9406.75	12	1010
8	10.7	LCS	0.847	8470.00			
9	9.1	LCS	0.8981	8981.00			
10	10.5	LCS	1.1075	11075.00			
11	9.1	480-117486-D-1	2.5411	25411.00			
12	9.9	200-38498-A-1	6.2766	62766.00			
13	9.9	200-38498-A-2	6.2197	62197.00			
14	9.3	200-38498-A-3	1.8691	18691.00			
15	9.8	200-38498-A-4	1.6835	16835.00			
16	9.5	200-38498-A-5	0.9598	9598.00			
17	9.7	200-38498-A-6	1.6919	16919.00			
18	9.6	200-38498-A-7	0.9885	9885.00			
19	9.4	200-38498-A-8	1.5996	15996.00			
20	9.8	200-38498-A-9	1.6178	16178.00			
21	10.2	200-38498-A-11	2.1988	21988.00			
22	10	CCV	3.4595	34595.00			
23	10	CCB	0	0.00			

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 11:53:23 AM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 9 mg		
ımple	: ICV	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A001
ılibration	: 051017A		

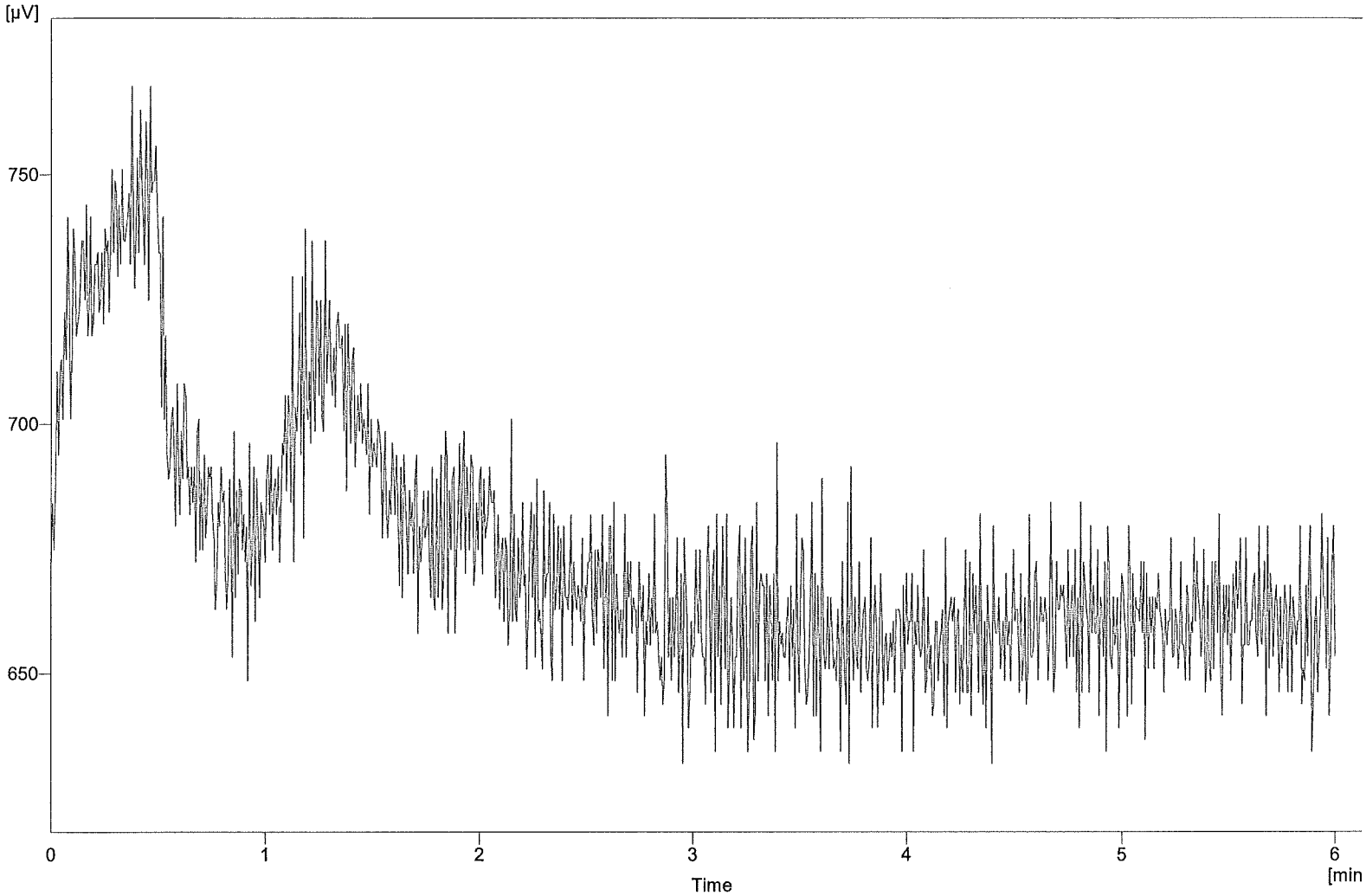


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.827	Carbon	875.0215	94.8	0.080	0.8867	1.0000	Ordnr
Total		922.6463	100.0	9.000	0.8867		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 11:59:37 AM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 10 mg		
mple	: ICB	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A002
libration	: 051017A		

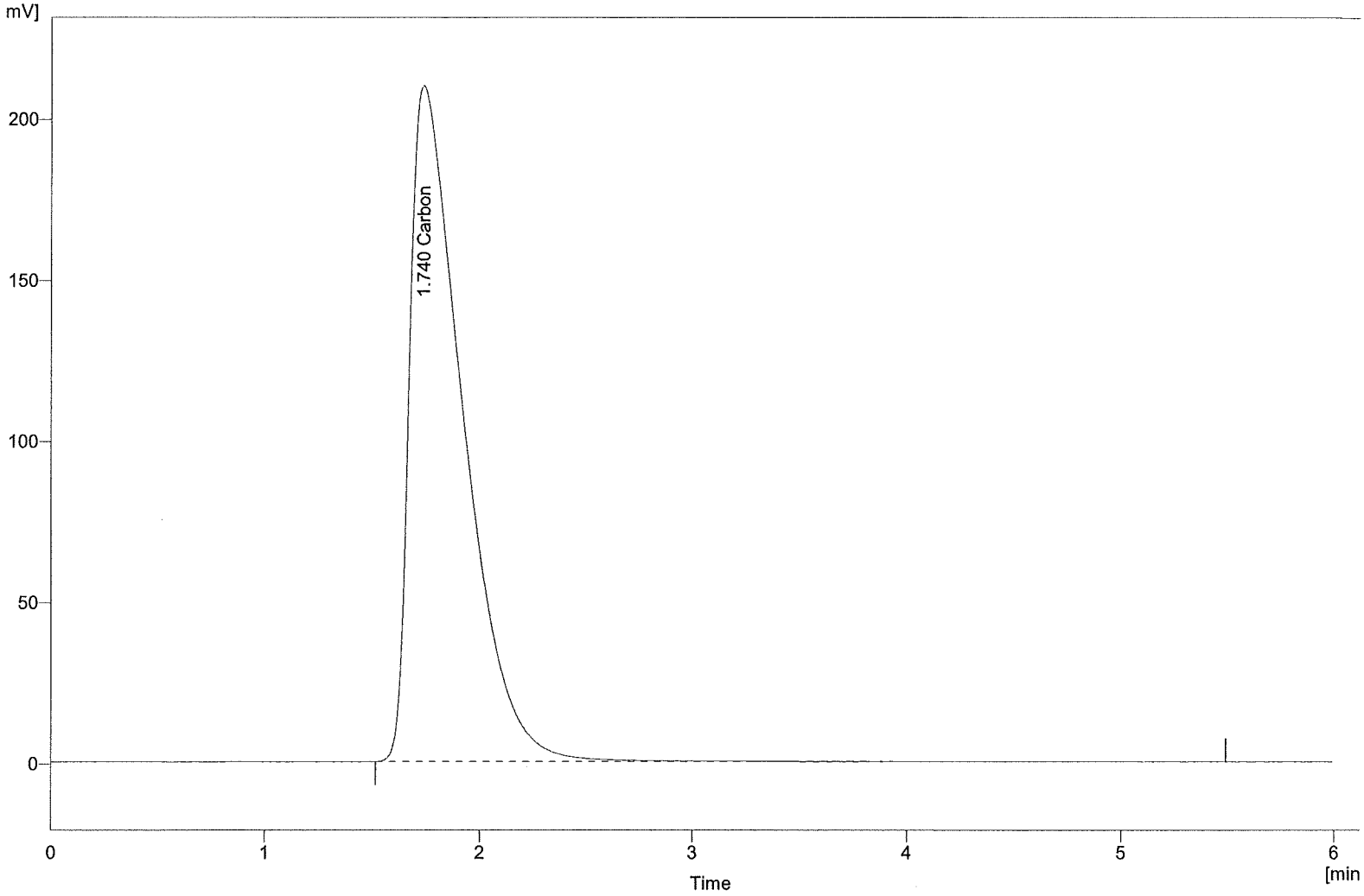


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.742	Carbon						Ordnr
Total		0.0000	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 12:05:49 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 10 mg		
mple	: CCV	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A003
alibration	: 051017A		

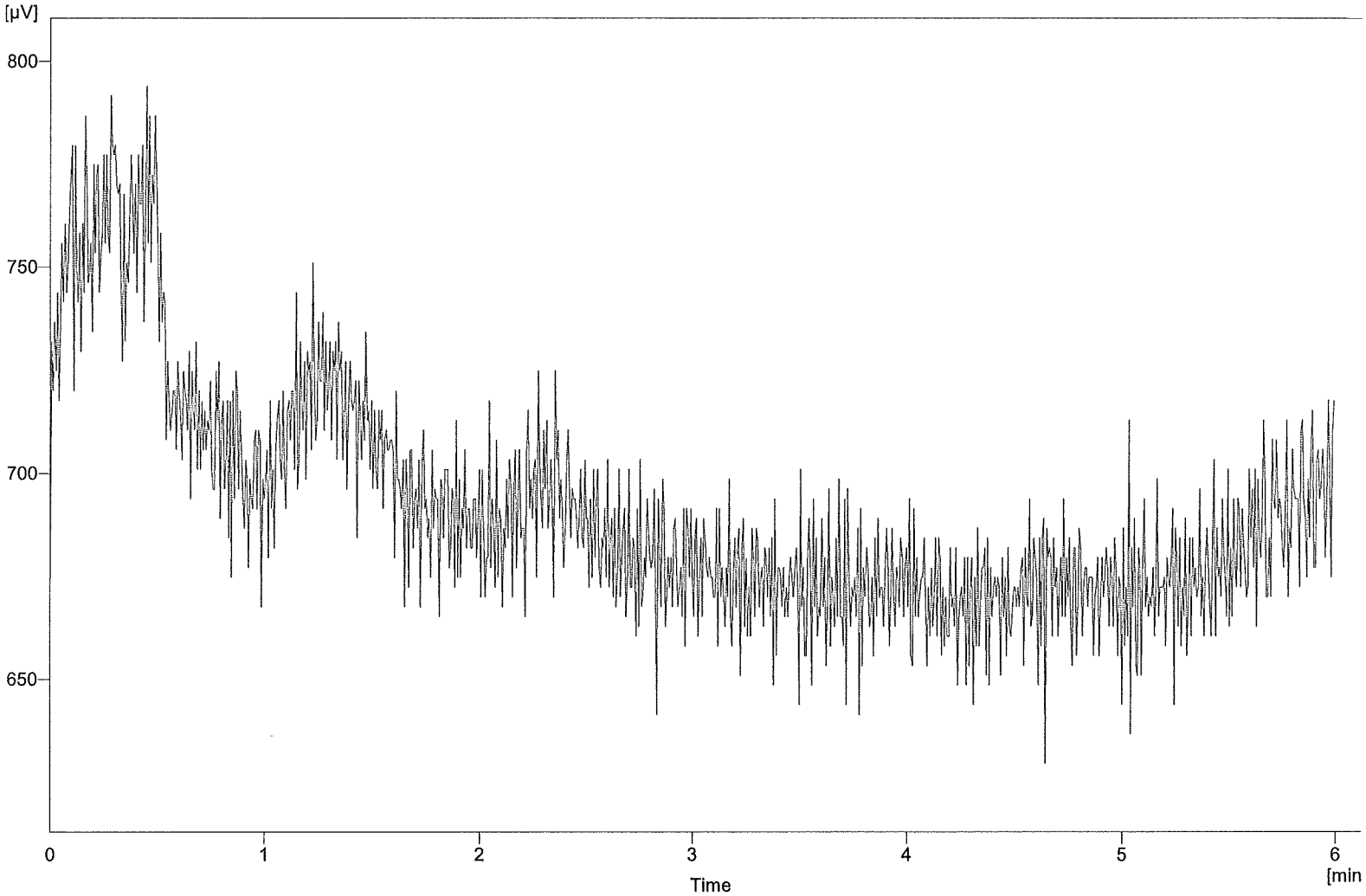


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.740	Carbon	3637.2392	100.0	0.335	3.3545	1.0000	Ordnr
Total		3637.2392	100.0	10.000	3.3545		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 12:12:02 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 10 mg		
mple	: CCB	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A004
libration	: 051017A		

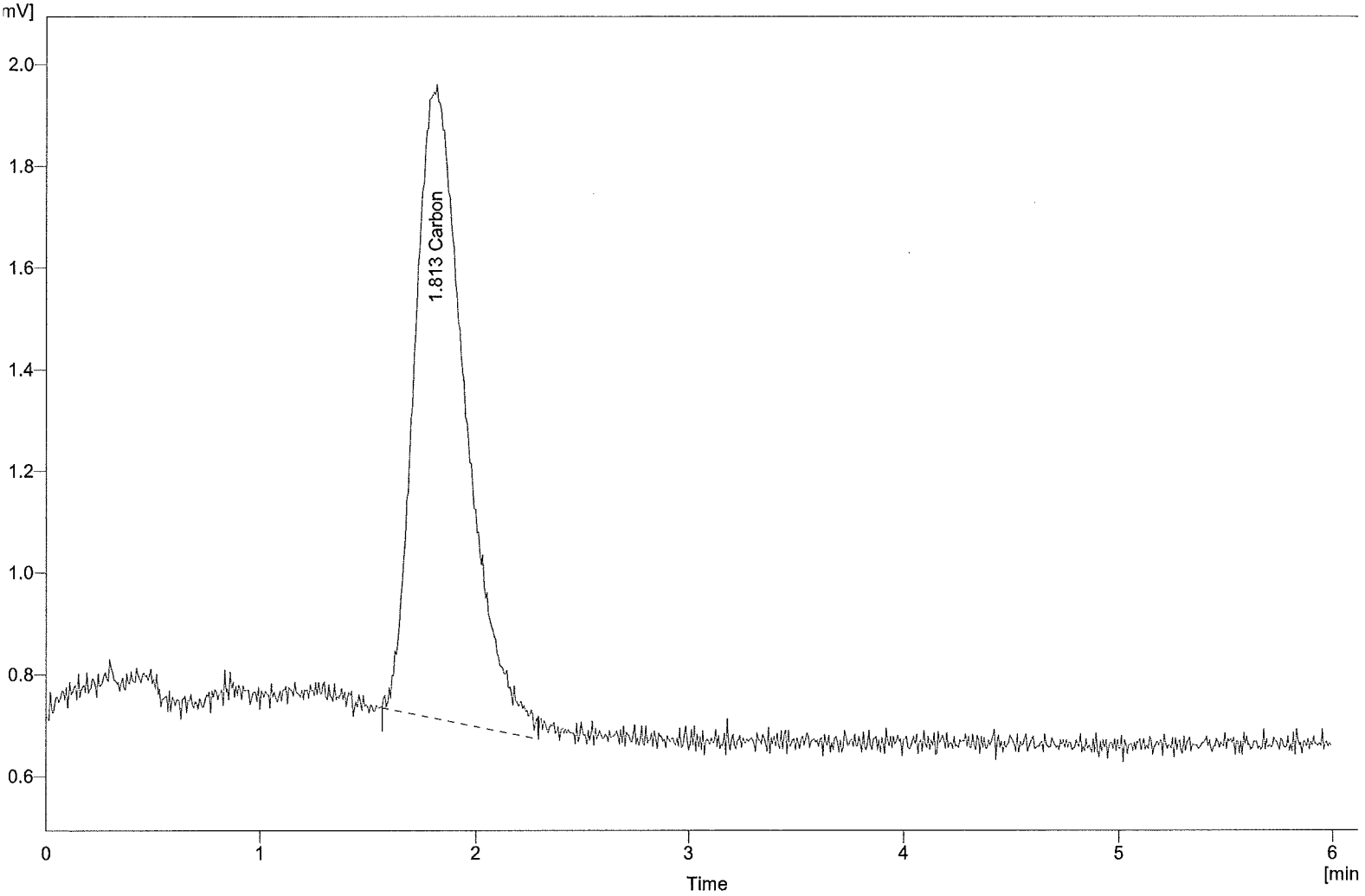


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.742	Carbon						Ordnr
Total		0.0000	100.0	10.000	0.0000		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 12:18:16 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 10 mg		
mple	: MB	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A005
alibration	: 051017A		

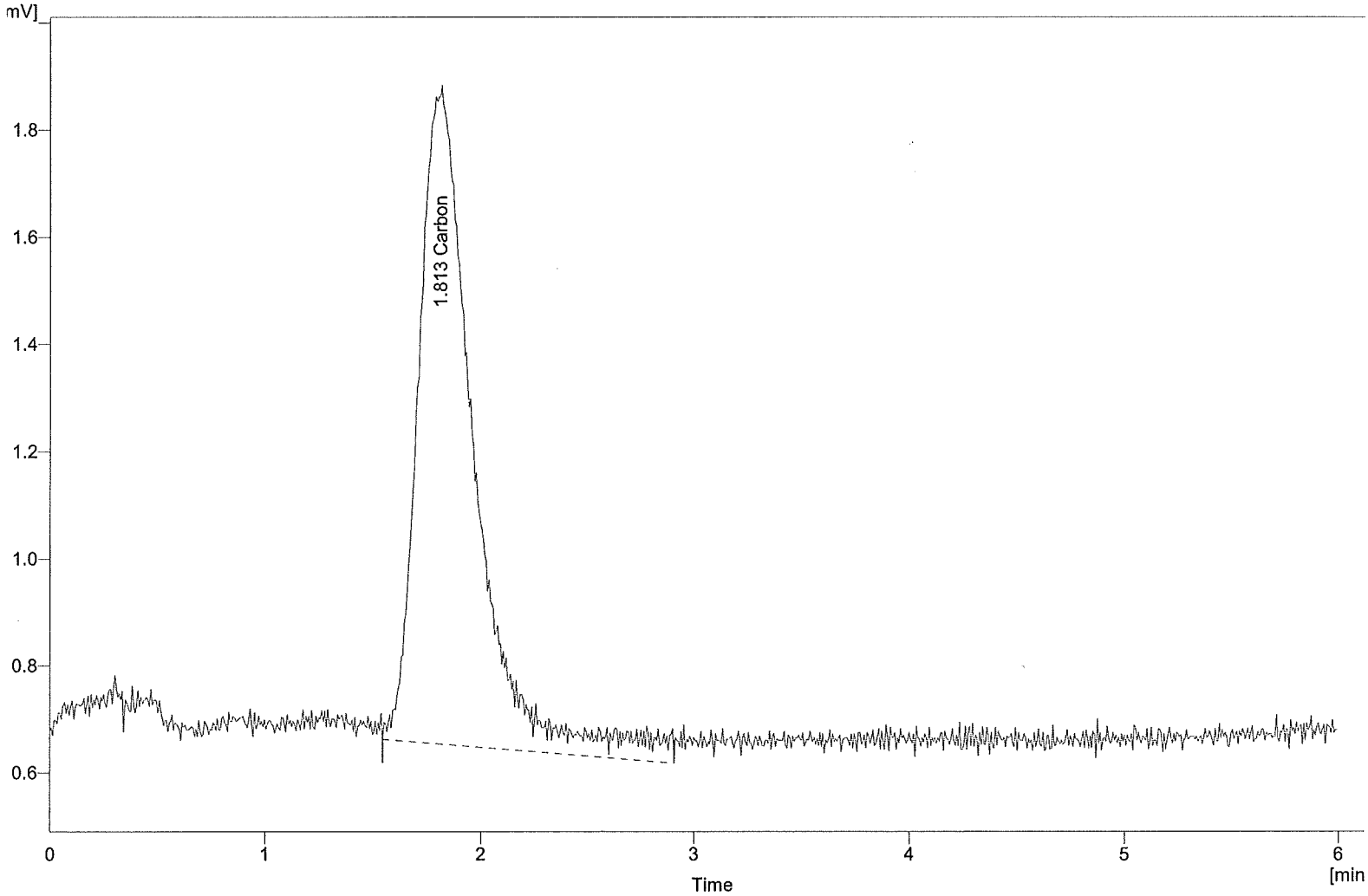


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.813	Carbon	20.3972	100.0	0.001	0.0070	1.0000	Ordnr
Total		20.3972	100.0	10.000	0.0070		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 12:24:30 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 10 mg		
mple	: MB	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A006
alibration	: 051017A		

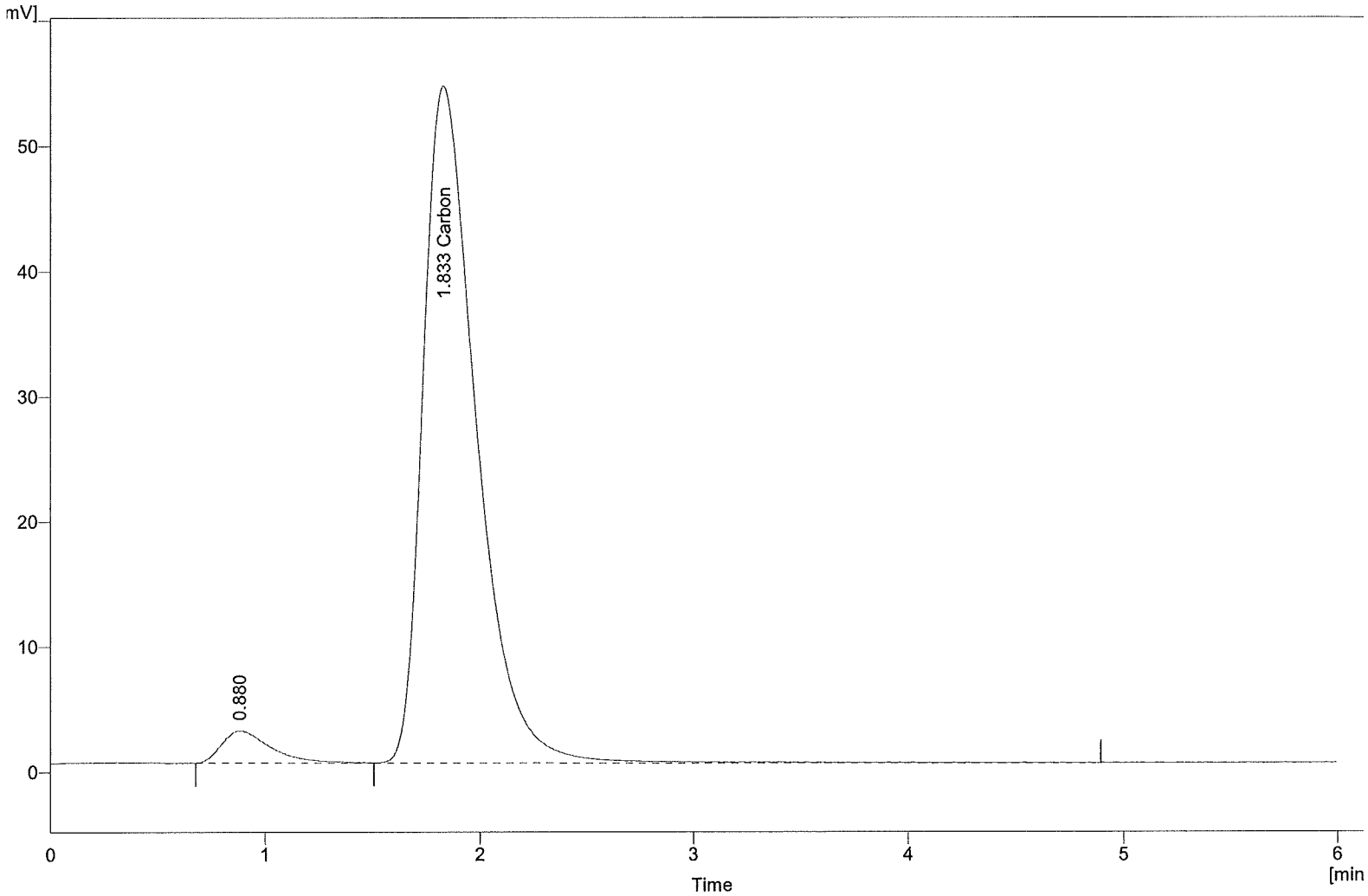


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.813	Carbon	22.2933	100.0	0.001	0.0088	1.0000	Ordnr
Total		22.2933	100.0	10.000	0.0088		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 12:30:44 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 9.4 mg		
mple	: LCS	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A007
alibration	: 051017A		

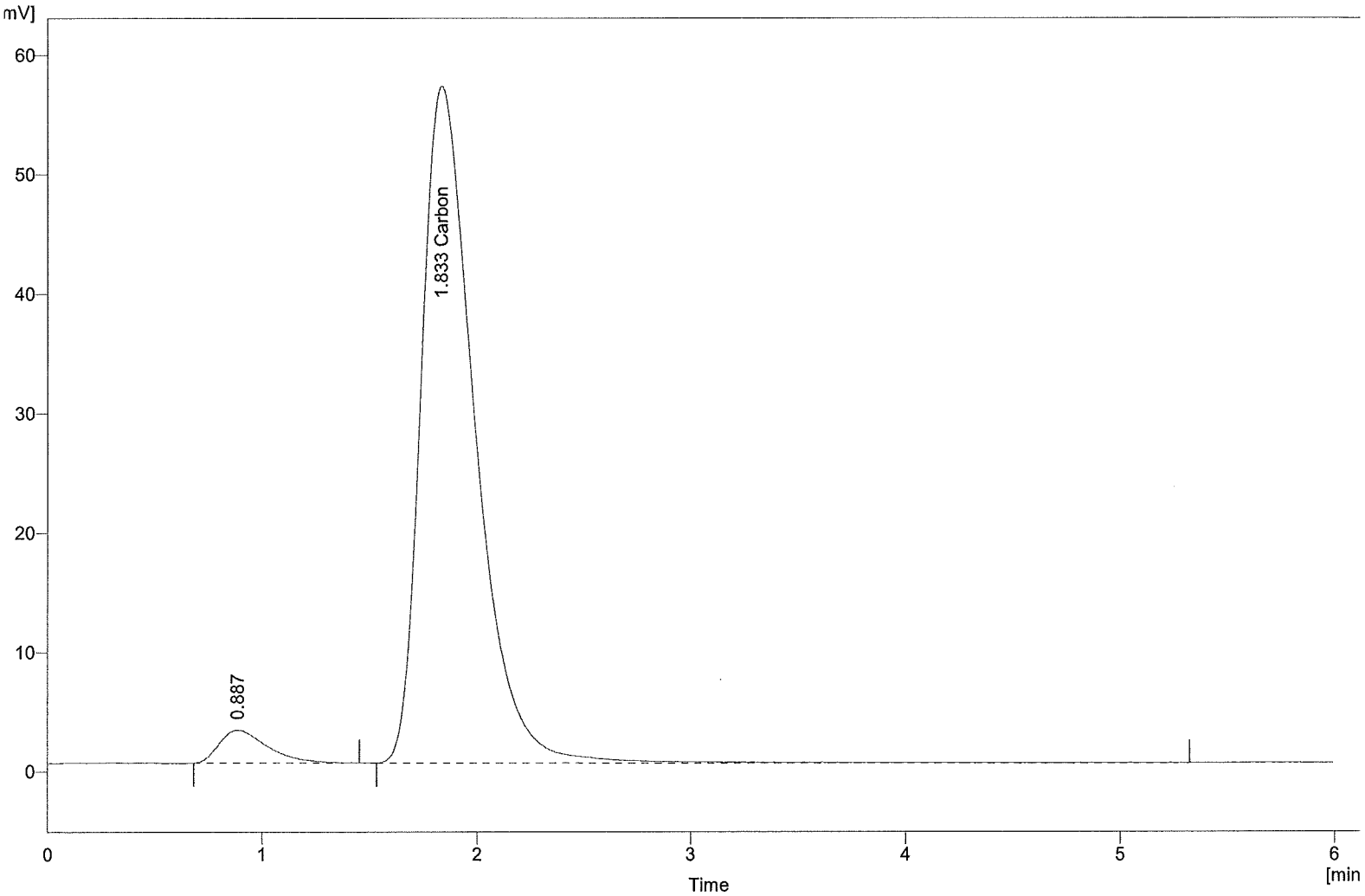


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.833	Carbon	937.1641	95.8	0.086	0.9101	1.0000	Ordnr
Total		978.6243	100.0	9.400	0.9101		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 12:36:59 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 10.7 mg		
mple	: LCS	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A008
alibration	: 051017A		

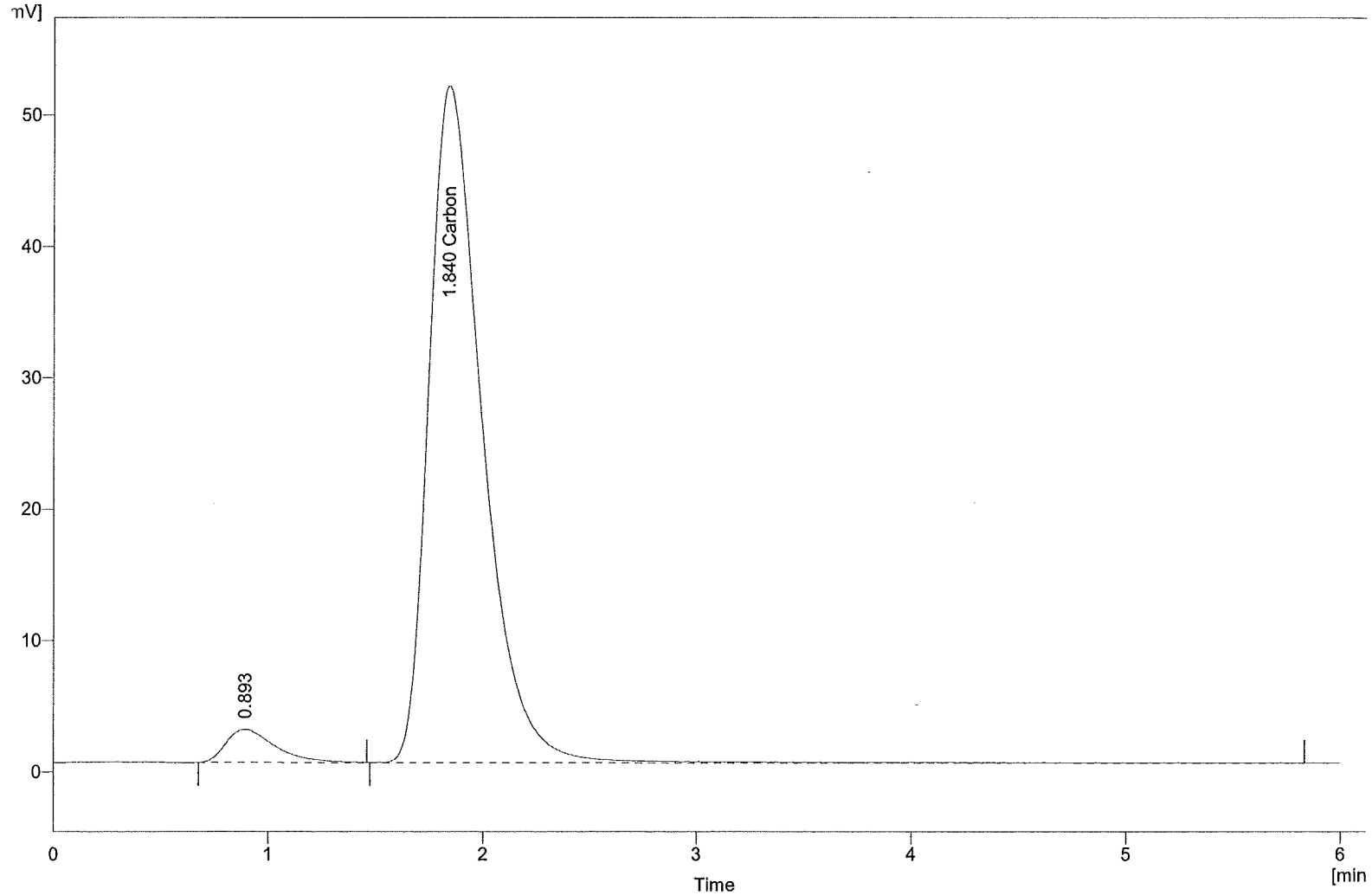


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.833	Carbon	991.9891	95.8	0.091	0.8470	1.0000	Ordnr
Total		1035.7366	100.0	10.700	0.8470		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 12:43:16 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 9.1 mg		
mple	: LCS	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A009
libration	: 051017A		



Result Table - Calculation Method ESTD

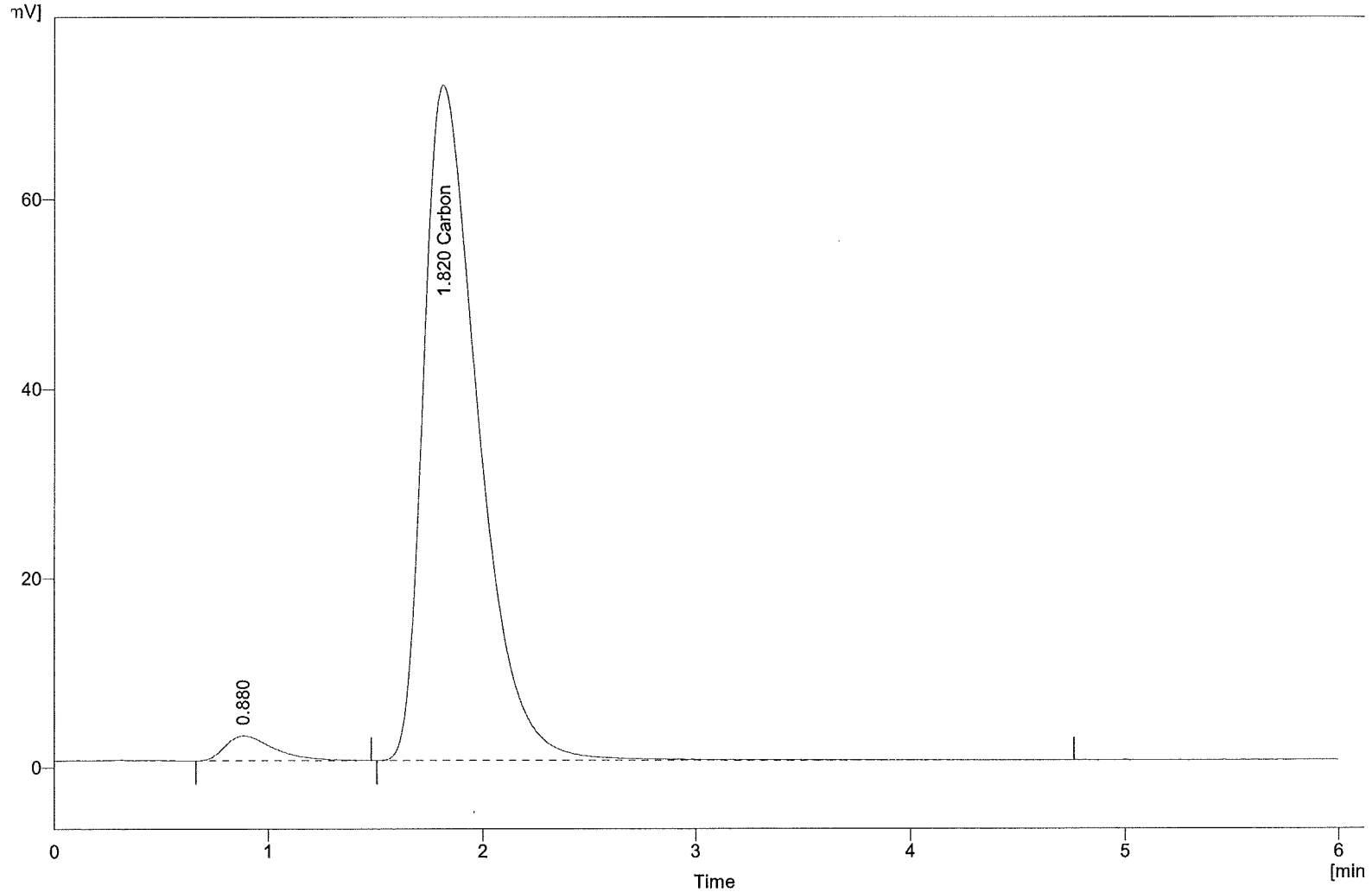
Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.840	Carbon	895.8783	95.7	0.082	0.8981	1.0000	Ordnr
Total		935.9176	100.0	9.100	0.8981		

Lloyd Kahn TOC
Instrument #2

eated : 05/10/2017 12:49:32 PM
oject : WORK2
eight : 10.5 mg
mple : LCS
alibration : 051017A

By : None
Style : chromatogram

Chromatogram : C:\EAS32\WORK2\WORK2\Data\051017A010

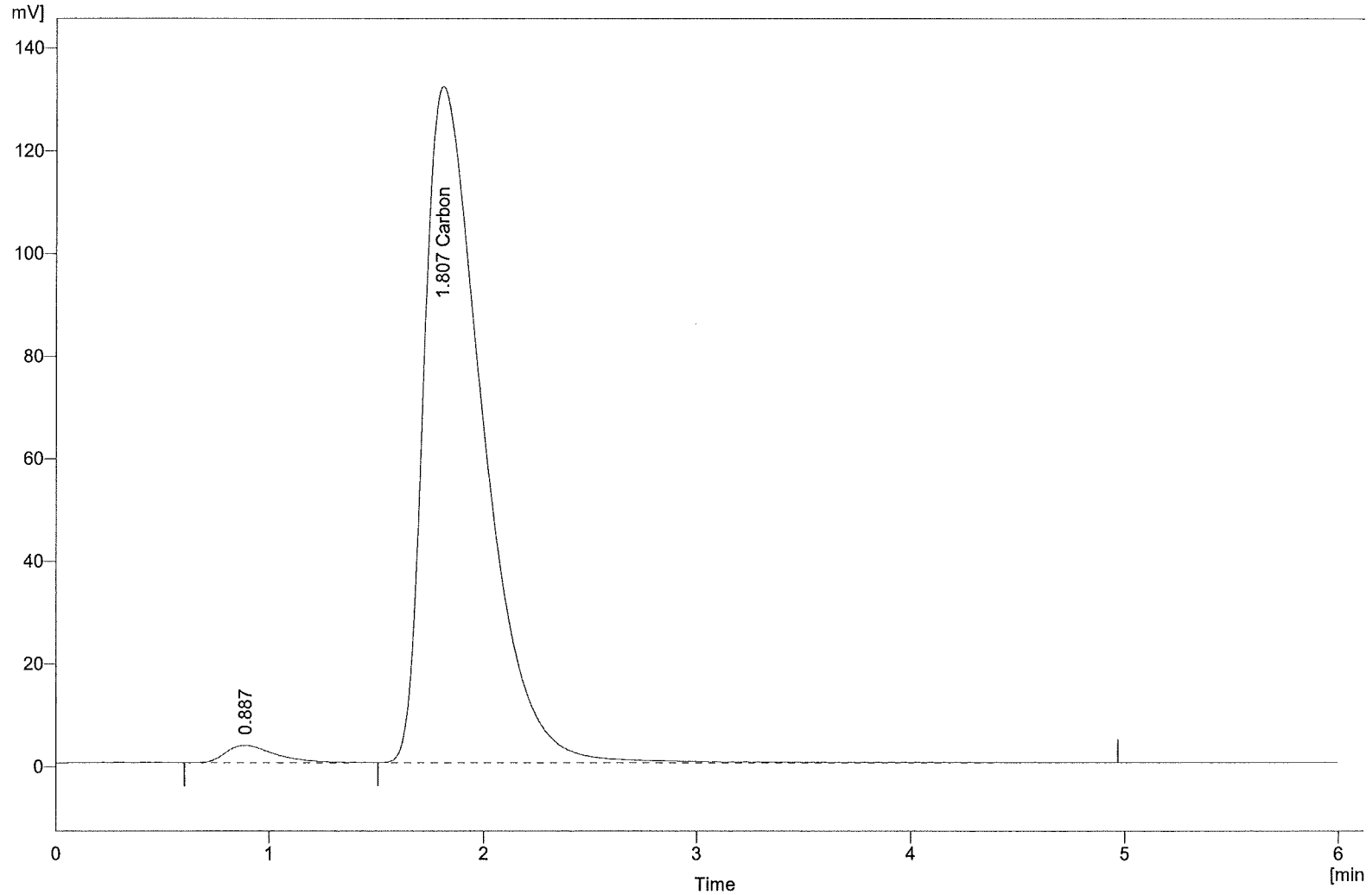


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.820	Carbon	1269.2609	96.8	0.116	1.1075	1.0000	Ordnr
Total		1311.6726	100.0	10.500	1.1075		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 12:55:48 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 9.1 mg		
mple	: 480-117486-D-1	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A011
alibration	: 051017A		

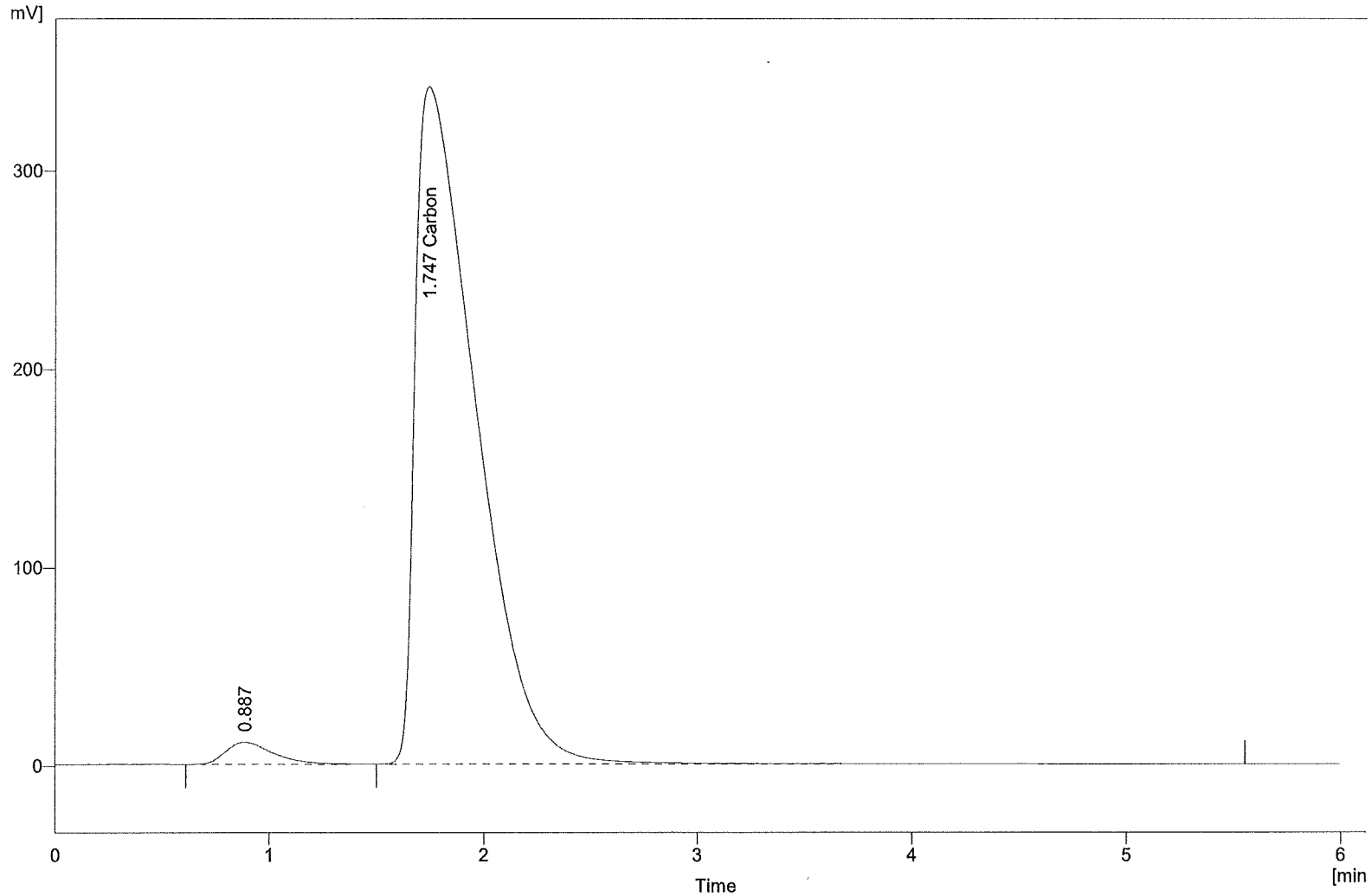


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.807	Carbon	2511.3220	97.9	0.231	2.5411	1.0000	Ordnr
Total		2566.4933	100.0	9.100	2.5411		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 1:02:06 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 9.9 mg		
mple	: 200-38498-A-1	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A012
alibration	: 051017A		

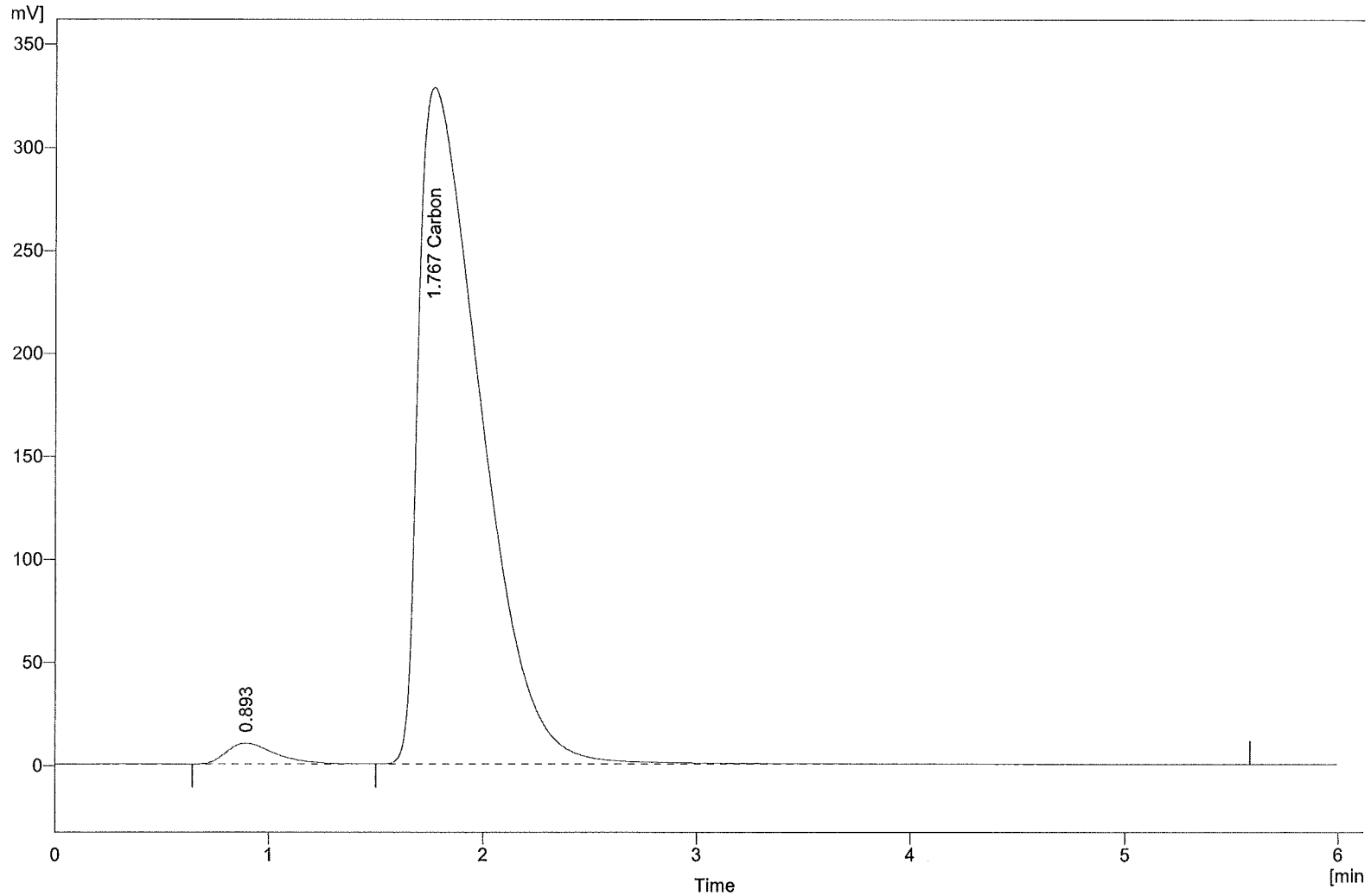


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.747	Carbon	6726.6393	97.5	0.621	6.2766	1.0000	Ordnr
Total		6902.1466	100.0	9.900	6.2766		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 1:08:24 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 9.9 mg		
mple	: 200-38498-A-2	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A013
libration	: 051017A		

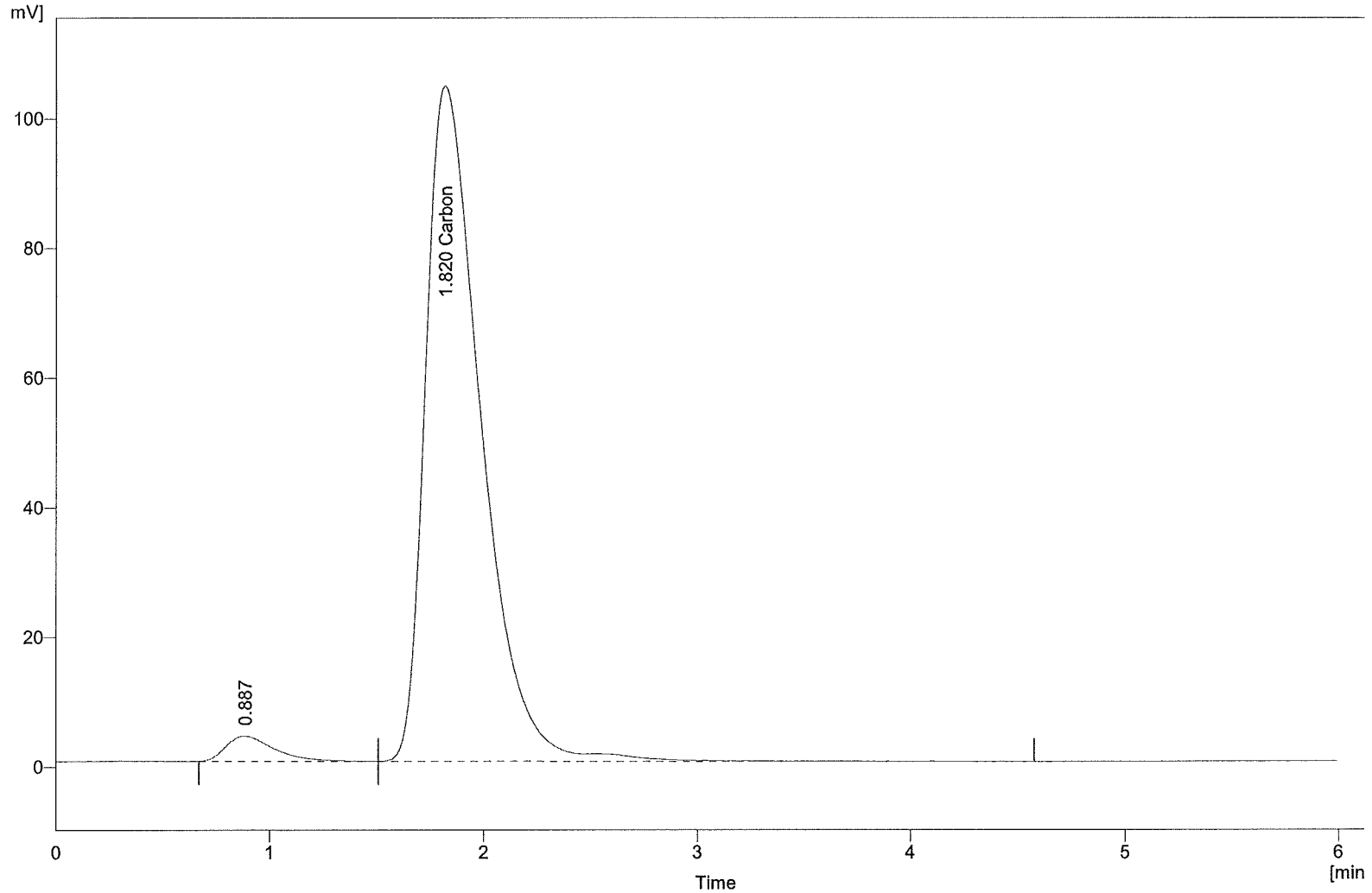


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.767	Carbon	6665.7286	97.6	0.616	6.2197	1.0000	Ordnr
Total		6828.5465	100.0	9.900	6.2197		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 1:14:42 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 9.3 mg		
mple	: 200-38498-A-3	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A014
alibration	: 051017A		

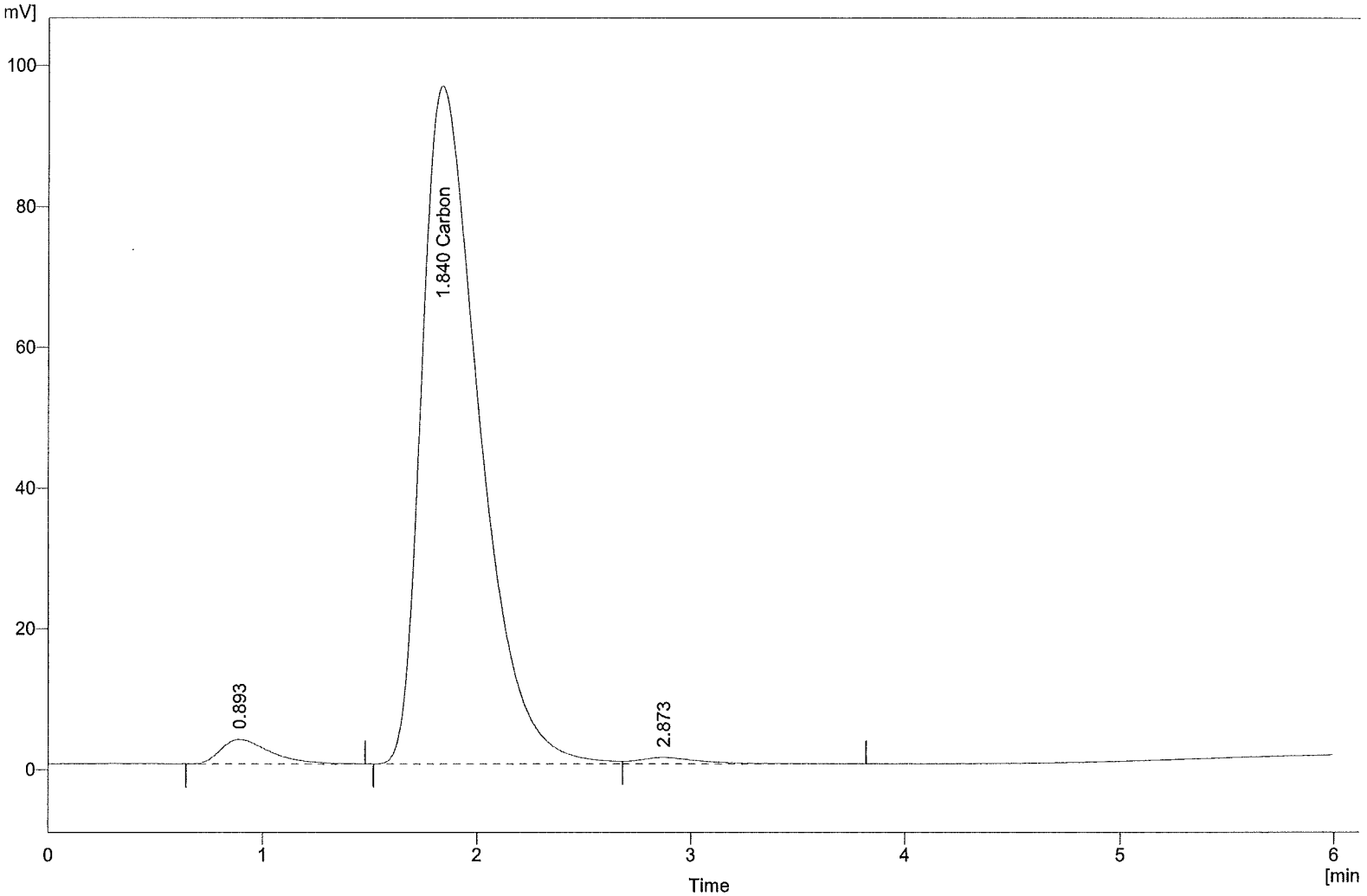


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.820	Carbon	1890.9812	96.8	0.174	1.8691	1.0000	Ordnr
Total		1953.1121	100.0	9.300	1.8691		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 1:21:01 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 9.8 mg		
mple	: 200-38498-A-4	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A015
alibration	: 051017A		

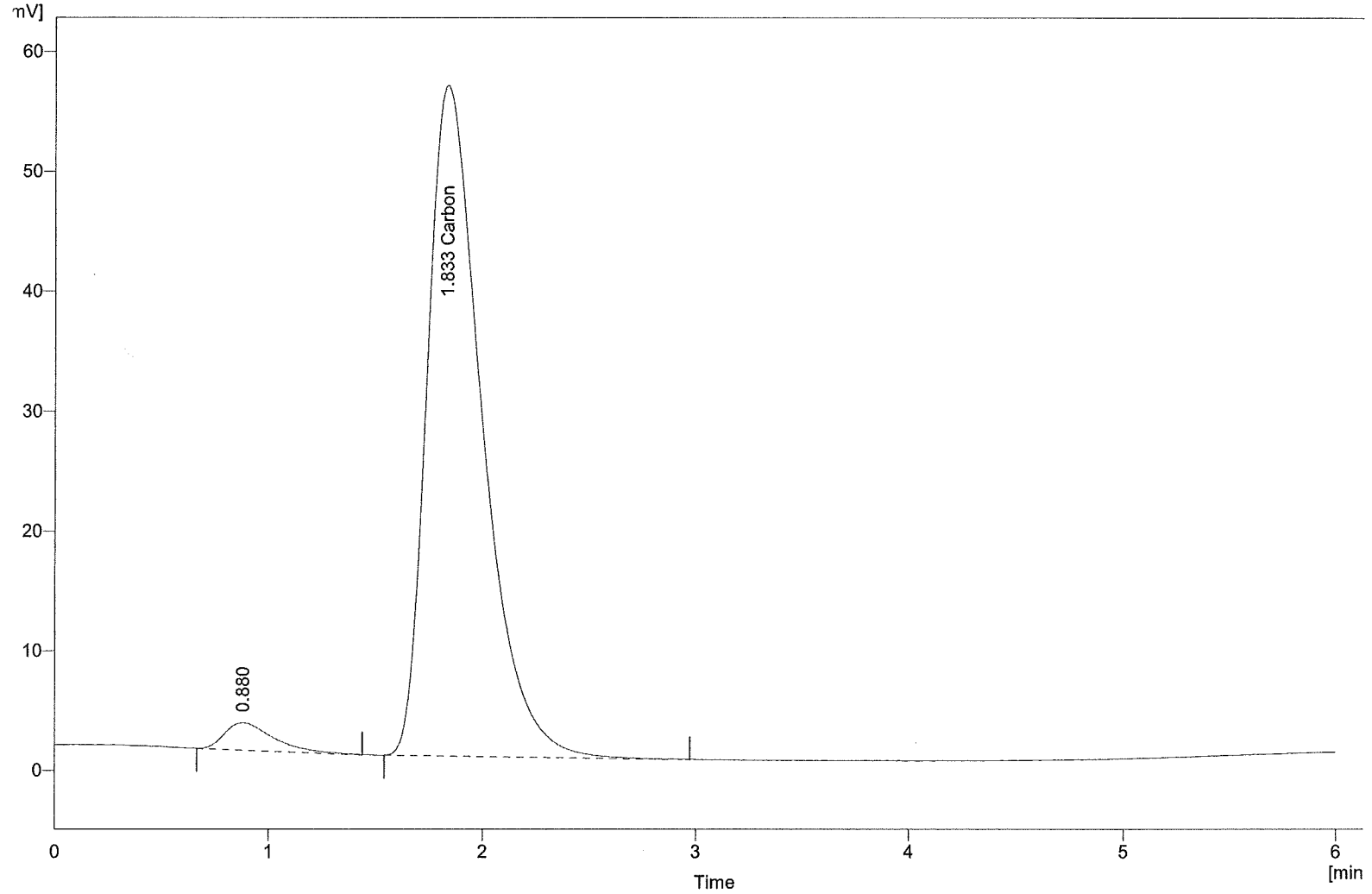


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.840	Carbon	1795.4450	95.9	0.165	1.6835	1.0000	Ordnr
Total		1872.4731	100.0	9.800	1.6835		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 1:27:21 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 9.5 mg		
mple	: 200-38498-A-5	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A016
alibration	: 051017A		

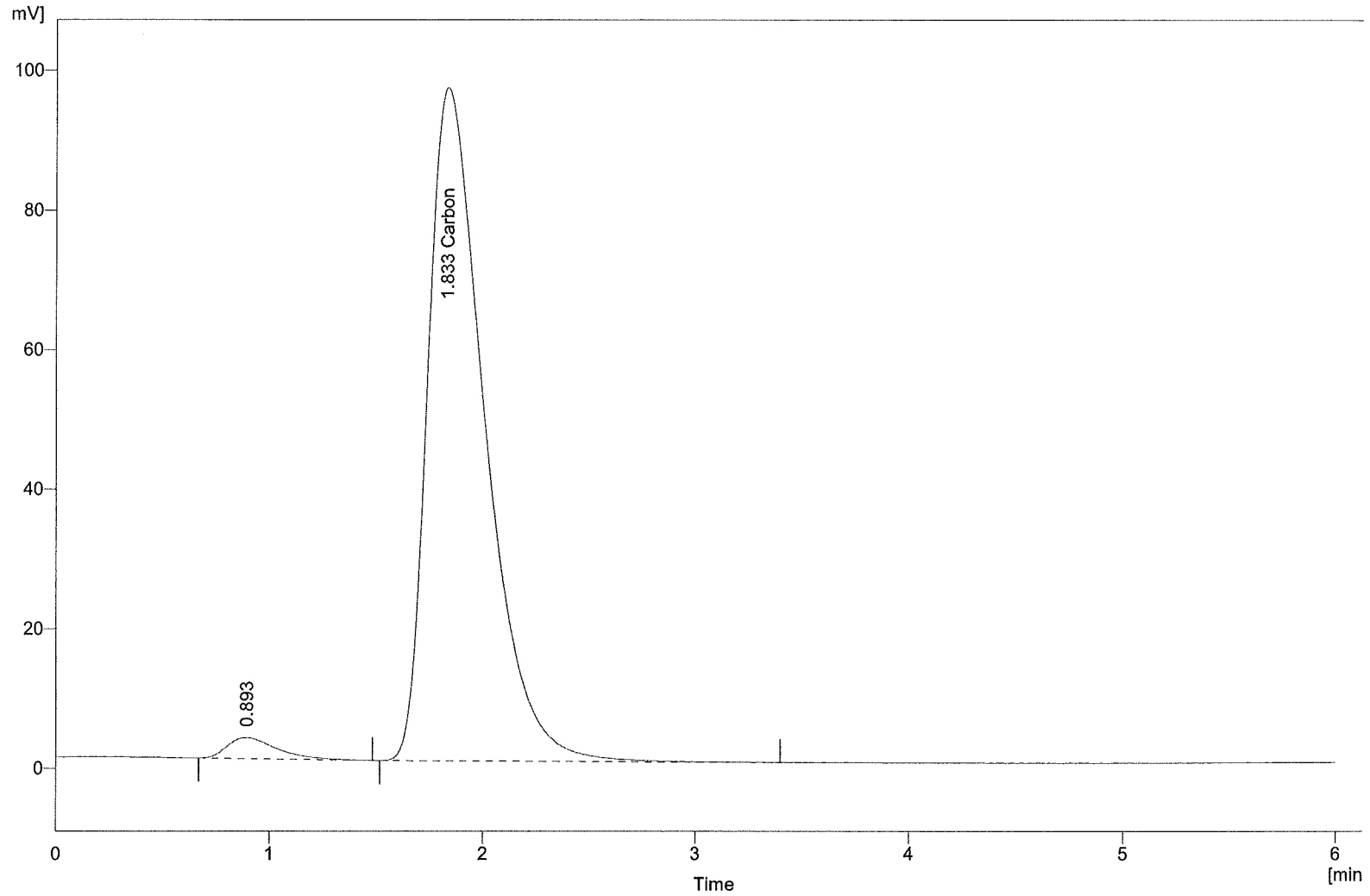


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.833	Carbon	997.9718	96.4	0.091	0.9598	1.0000	Ordnr
Total		1035.0569	100.0	9.500	0.9598		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 1:33:41 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 9.7 mg		
mple	: 200-38498-A-6	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A017
libration	: 051017A		

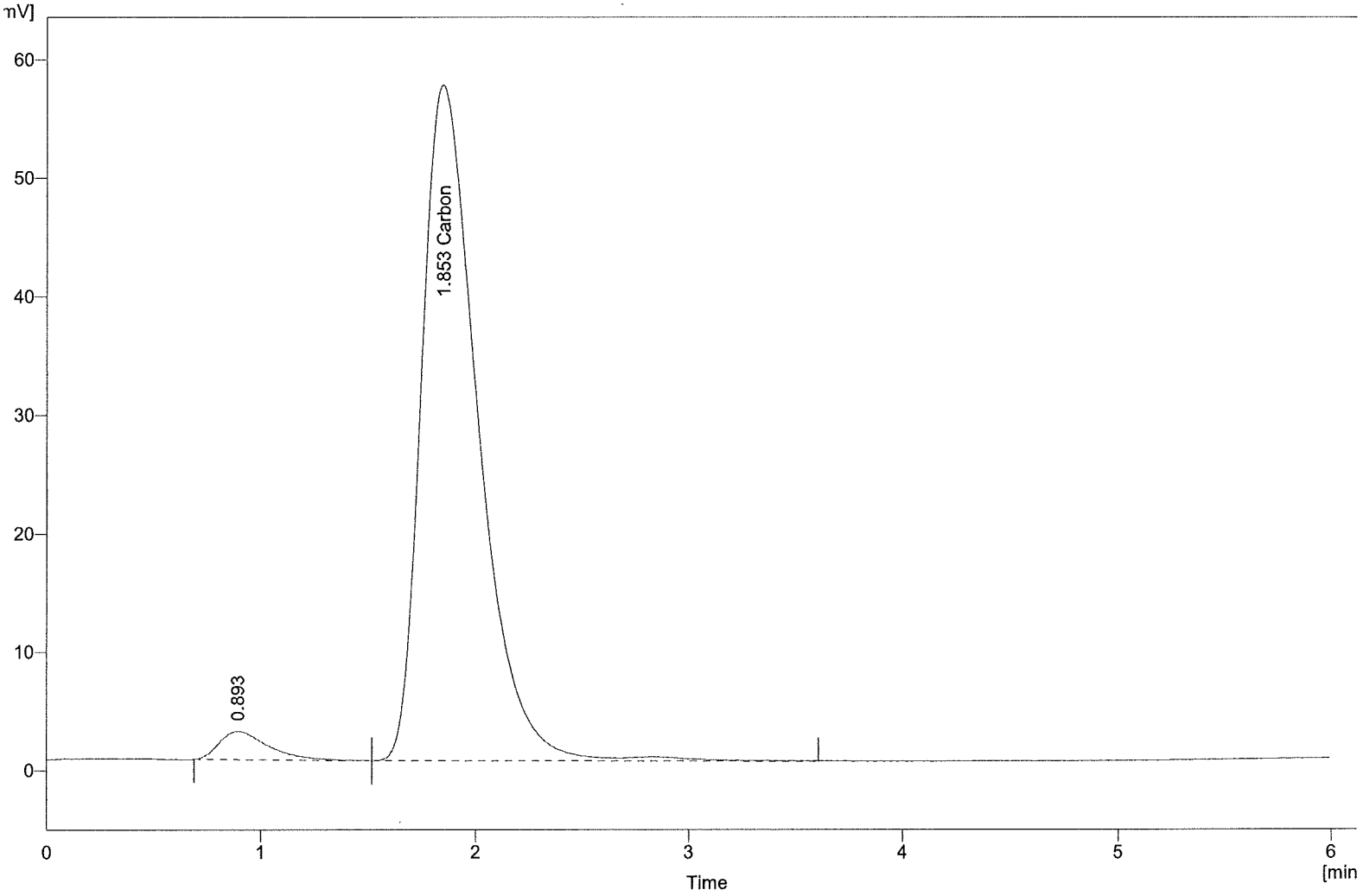


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.833	Carbon	1785.9998	97.3	0.164	1.6919	1.0000	Ordnr
Total		1835.6272	100.0	9.700	1.6919		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 1:40:02 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 9.6 mg		
ımple	: 200-38498-A-7	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A018
alibration	: 051017A		

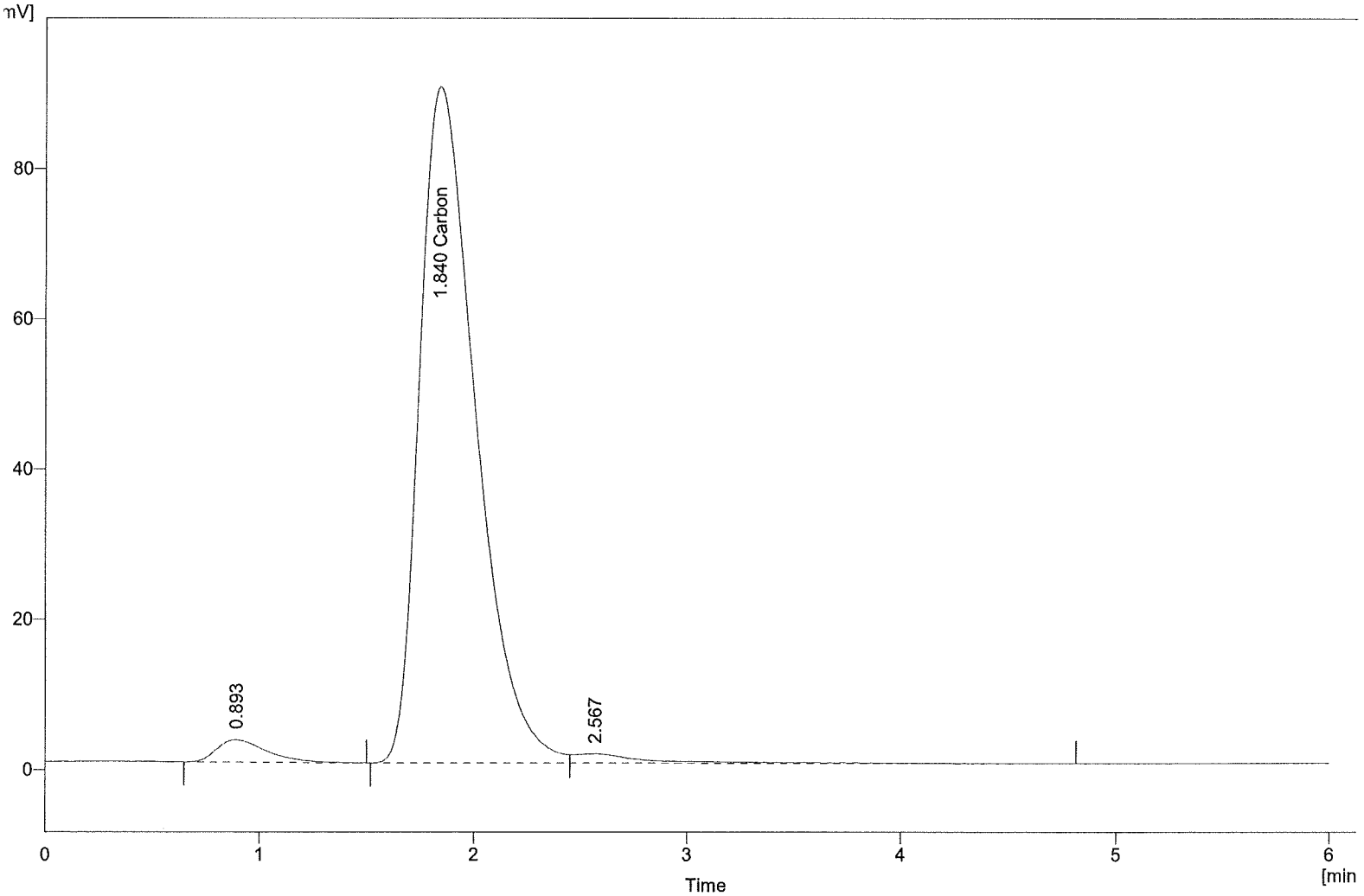


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.853	Carbon	1038.1445	96.4	0.095	0.9885	1.0000	Ordnr
Total		1076.5278	100.0	9.600	0.9885		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 1:46:23 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 9.4 mg		
mple	: 200-38498-A-8	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A019
alibration	: 051017A		

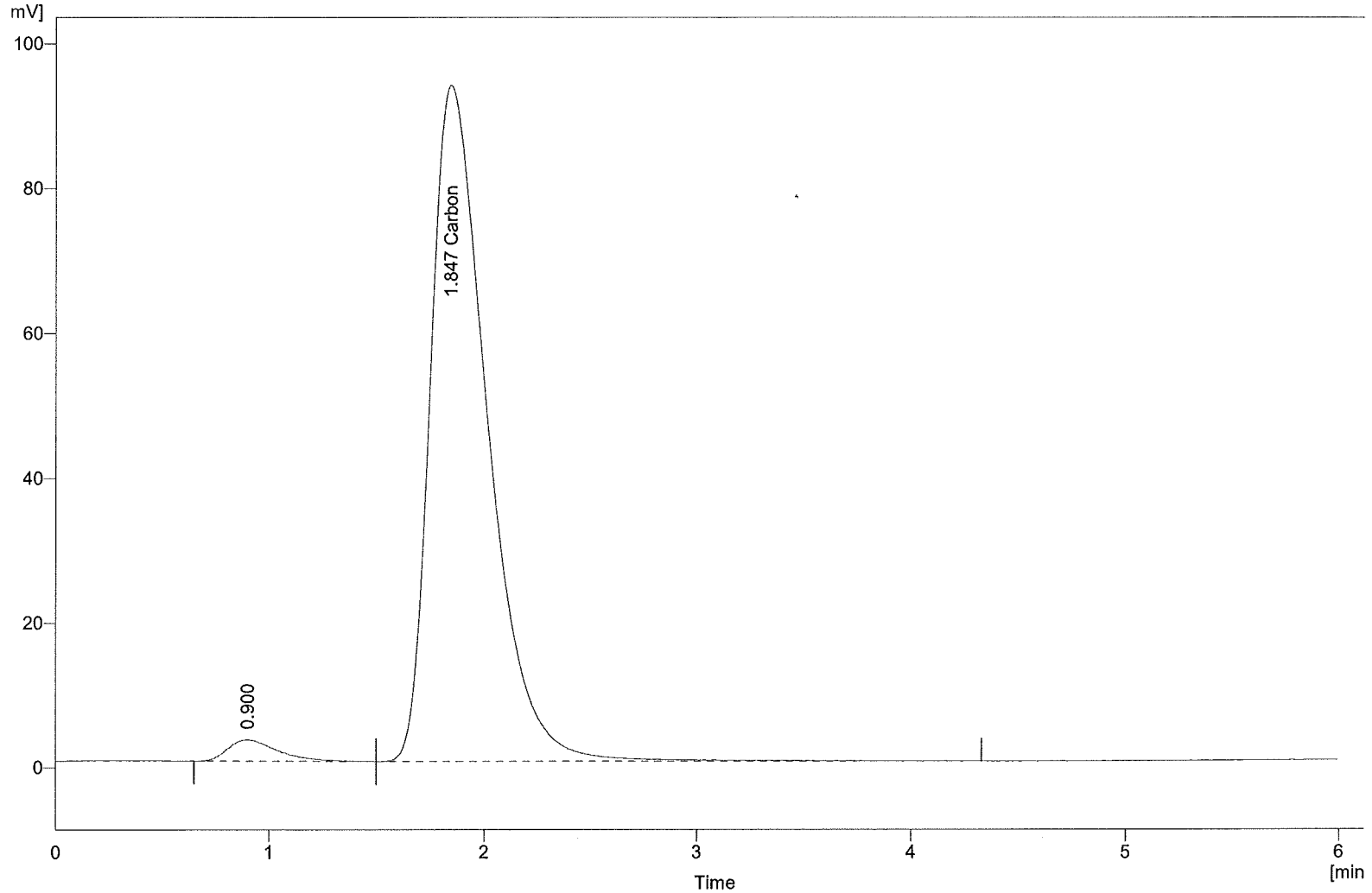


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.840	Carbon	1637.4259	95.1	0.150	1.5996	1.0000	Ordnr
Total		1721.9605	100.0	9.400	1.5996		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 1:52:45 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 9.8 mg		
mple	: 200-38498-A-9	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A020
alibration	: 051017A		

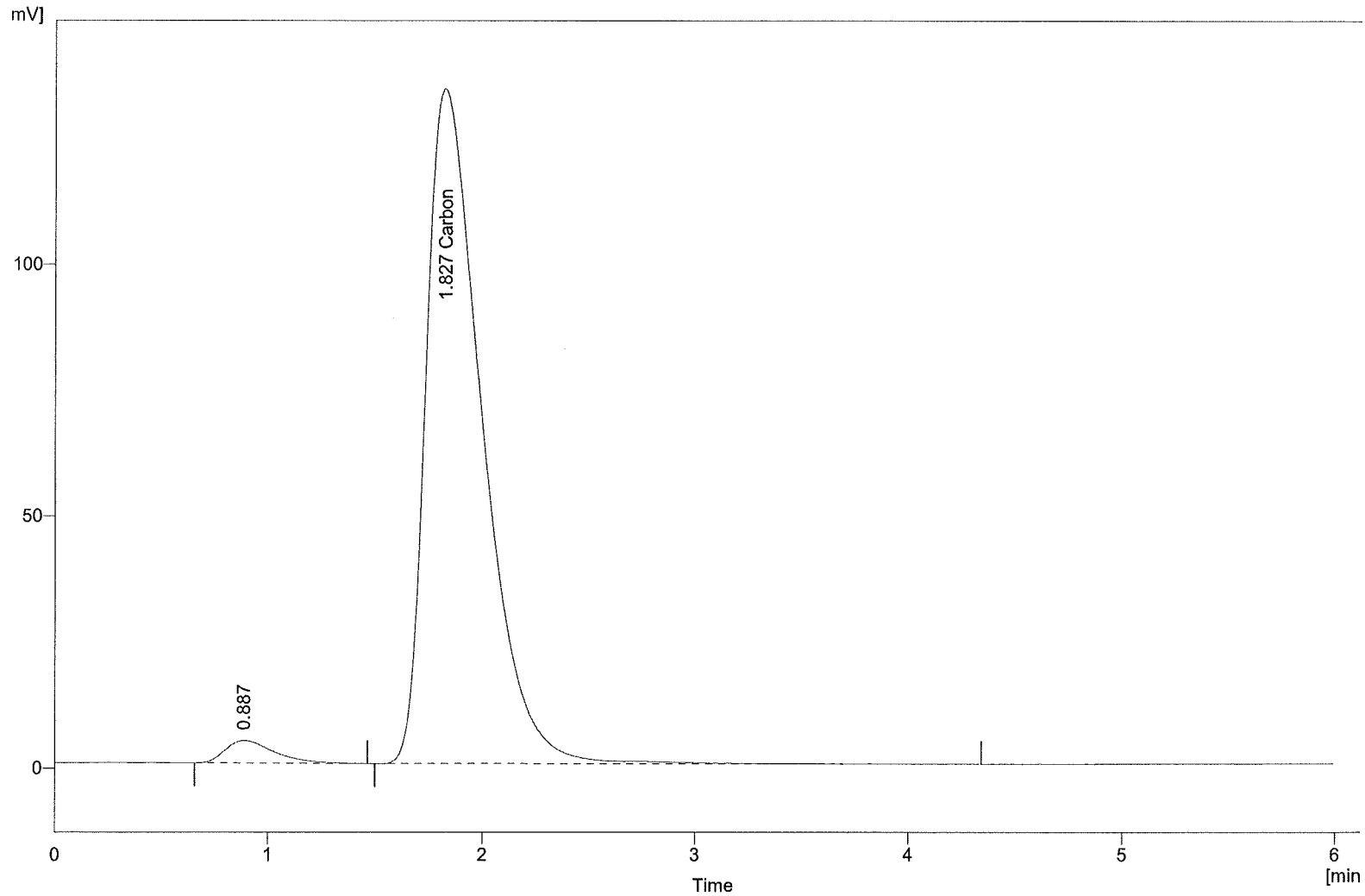


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.847	Carbon	1725.8003	97.3	0.159	1.6178	1.0000	Ordnr
Total		1773.9675	100.0	9.800	1.6178		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 1:59:07 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 10.2 mg		
ımple	: 200-38498-A-11	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A021
alibration	: 051017A		

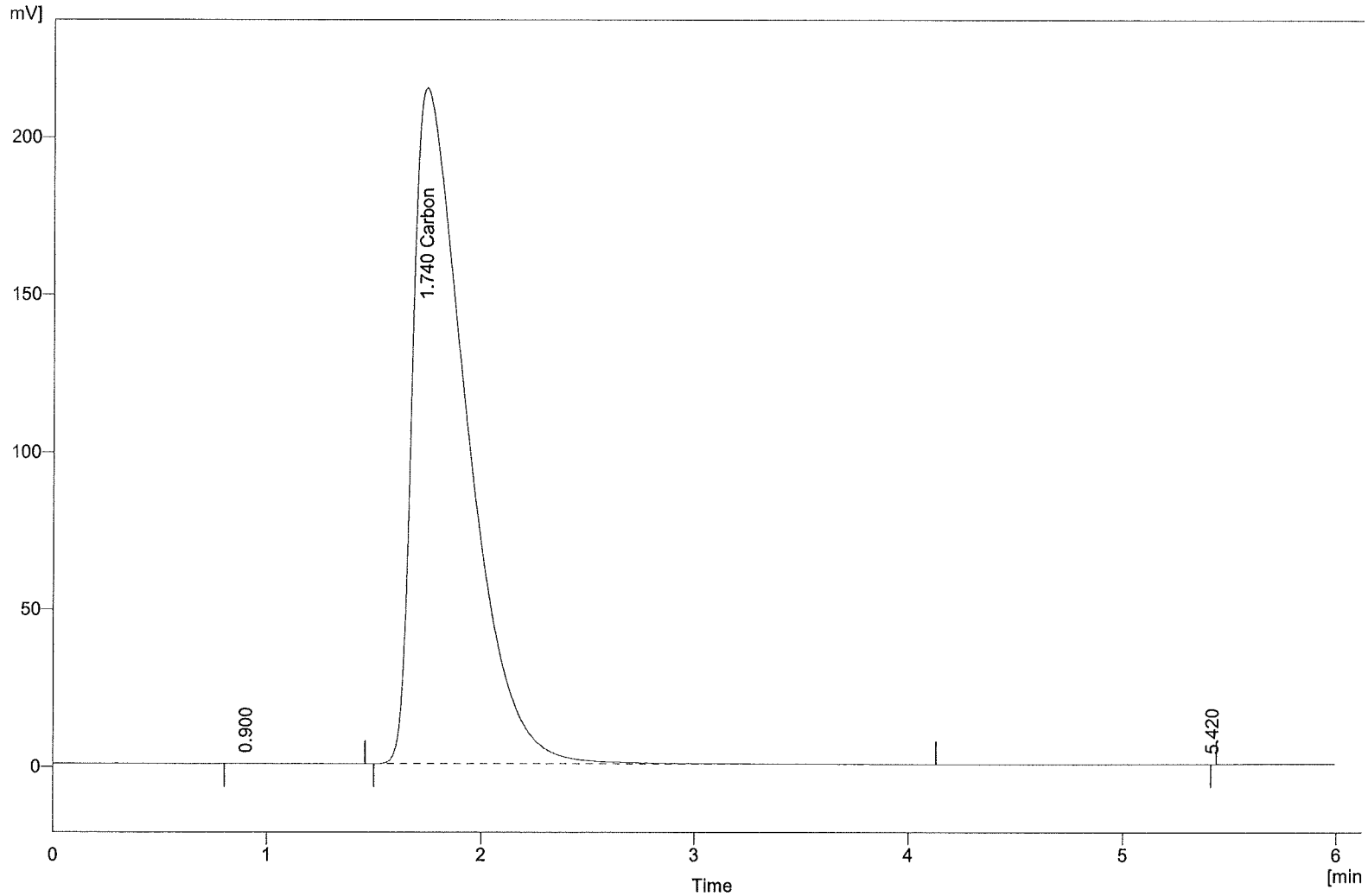


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.827	Carbon	2436.0785	97.1	0.224	2.1988	1.0000	Ordnr
Total		2507.6103	100.0	10.200	2.1988		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 2:05:30 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 10 mg		
mple	: CCV	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A022
libration	: 051017A		

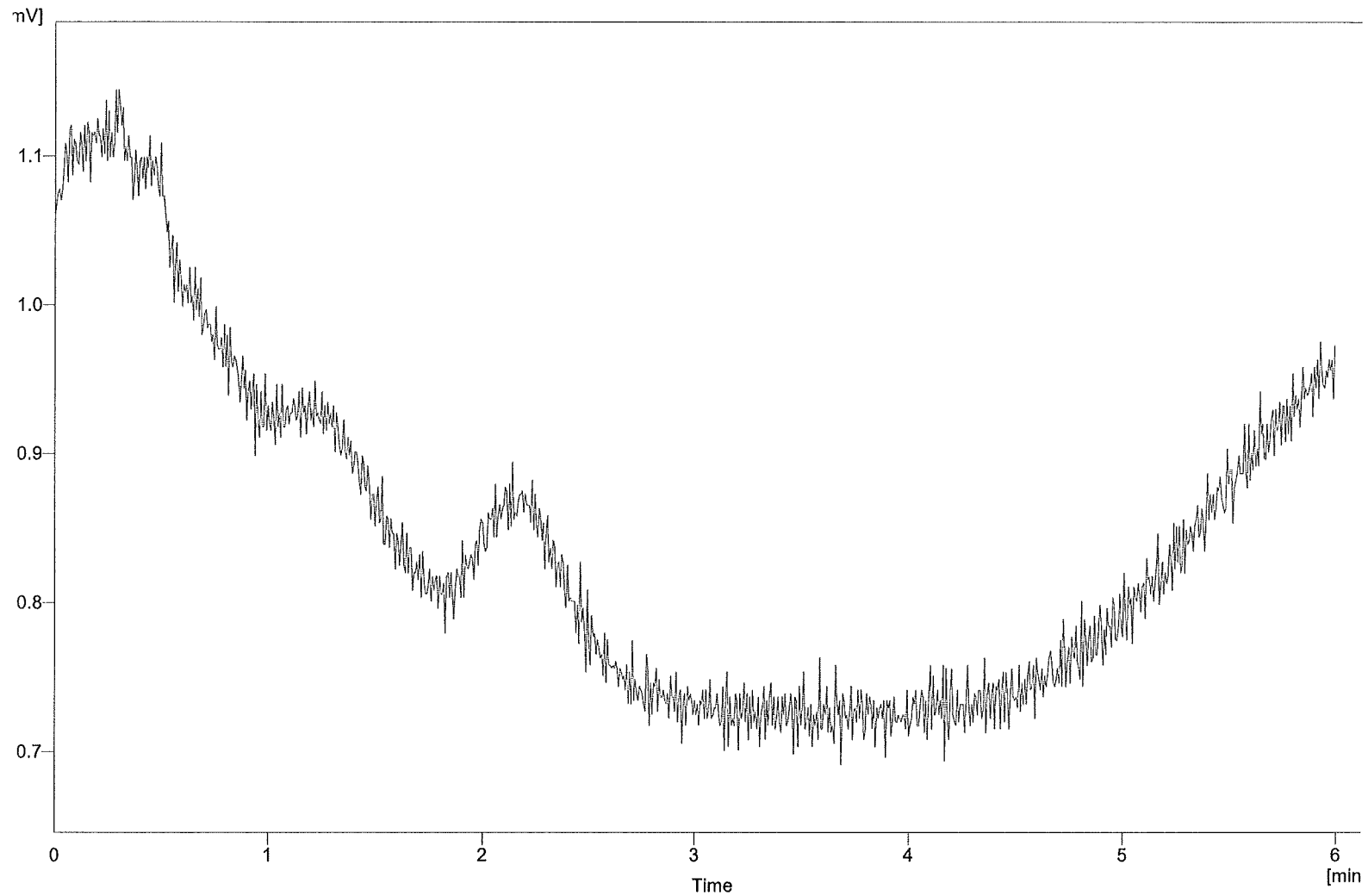


Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.740	Carbon	3750.7155	100.0	0.346	3.4595	1.0000	Ordnr
Total		3752.1913	100.0	10.000	3.4595		

Lloyd Kahn TOC
Instrument #2

eated	: 05/10/2017 2:11:54 PM	By	: None
oject	: WORK2	Style	: chromatogram
eight	: 10 mg		
mple	: CCB	Chromatogram	: C:\EAS32\WORK2\WORK2\Data\051017A023
libration	: 051017A		



Result Table - Calculation Method ESTD

Reten. Time [min]	Compound Name	Area [mV.s]	Area [%]	Weight [g]	Weight [%]	Carbon Ratio	Peak Type
1.742	Carbon						Ordnr
Total		0.0000	100.0	10.000	0.0000		

COVER PAGE
GEOTECHNICAL

Lab Name: TestAmerica Burlington Job Number: 200-38498-1

SDG No.: 200-38498-1

Project: Port Ewen DNS Sediment

Client Sample ID	Lab Sample ID
PE0517-P2SCD-04-A-0006IN	200-38498-1
PE0517-P2SCD-18.7-A-0001IN	200-38498-3
PE0517-P2SCD-18.7-B-0006IN	200-38498-4
PE0517-P2SCD-18.8-A-0006IN	200-38498-5
PE0517-P2SCD-18.8-B-0004IN	200-38498-6
PE0517-P2SCD-18.9-A-0012IN	200-38498-7
PE0517-P2SCD-18.9-B-0006IN	200-38498-8
PE0517-P2SCD-18.9-B-0006IN-D	200-38498-9
PE0517-P2SCD-18.9-A-1218IN	200-38498-11

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE0517-P2SCD-04-A-0006IN
Lab Sample ID: 200-38498-1
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 17:15
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	0.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	27.9			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	11.3			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	3.9			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	12.7			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	100.0			% Passing			1	D422
	Silt	53.4			%			1	D422
	Clay	18.7			%			1	D422
	Sieve Size #10 - Percent Finer	88.7			% Passing			1	D422
	Sieve Size #20 - Percent Finer	86.7			% Passing			1	D422
	Sieve Size #40 - Percent Finer	84.8			% Passing			1	D422
	Sieve Size #60 - Percent Finer	82.0			% Passing			1	D422
	Sieve Size #80 - Percent Finer	79.7			% Passing			1	D422
	Sieve Size #100 - Percent Finer	77.9			% Passing			1	D422
	Sieve Size #200 - Percent Finer	72.8			% Passing			1	D422
	Sieve Size #230 - Percent Finer	72.1			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	46.1			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	41.1			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	33.7			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	26.2			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	18.7			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	10			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	4.4			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE0517-P2SCD-18.7-A-0001IN
Lab Sample ID: 200-38498-3
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 14:45
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	27.4			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	57.4			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	10.4			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	16.5			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	30.5			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	87.7			% Passing			1	D422
	Sieve Size #4 - Percent Finer	72.6			% Passing			1	D422
	Silt	12.5			%			1	D422
	Clay	2.7			%			1	D422
	Sieve Size #10 - Percent Finer	62.2			% Passing			1	D422
	Sieve Size #20 - Percent Finer	57.4			% Passing			1	D422
	Sieve Size #40 - Percent Finer	45.7			% Passing			1	D422
	Sieve Size #60 - Percent Finer	30.0			% Passing			1	D422
	Sieve Size #80 - Percent Finer	23.9			% Passing			1	D422
	Sieve Size #100 - Percent Finer	21.3			% Passing			1	D422
	Sieve Size #200 - Percent Finer	16.1			% Passing			1	D422
	Sieve Size #230 - Percent Finer	15.2			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	9.1			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	7.0			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	5.9			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	4.8			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	2.7			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	2.1			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	1.9			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE0517-P2SCD-18.7-B-0006IN
Lab Sample ID: 200-38498-4
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 14:50
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	7.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	56.3			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	4.8			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	6.9			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	44.6			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	93.0			% Passing			1	D422
	Silt	27.2			%			1	D422
	Clay	9.5			%			1	D422
	Sieve Size #10 - Percent Finer	88.2			% Passing			1	D422
	Sieve Size #20 - Percent Finer	85.0			% Passing			1	D422
	Sieve Size #40 - Percent Finer	81.3			% Passing			1	D422
	Sieve Size #60 - Percent Finer	71.7			% Passing			1	D422
	Sieve Size #80 - Percent Finer	62.4			% Passing			1	D422
	Sieve Size #100 - Percent Finer	55.8			% Passing			1	D422
	Sieve Size #200 - Percent Finer	39.5			% Passing			1	D422
	Sieve Size #230 - Percent Finer	36.7			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	23.3			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	19.9			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	16.4			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	13.0			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	9.5			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	5.2			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	1.3			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE0517-P2SCD-18.8-A-0006IN
Lab Sample ID: 200-38498-5
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 14:10
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	0.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	71.2			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	2.7			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	6.5			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	62.0			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	100.0			% Passing			1	D422
	Silt	21.7			%			1	D422
	Clay	7.1			%			1	D422
	Sieve Size #10 - Percent Finer	97.3			% Passing			1	D422
	Sieve Size #20 - Percent Finer	95.0			% Passing			1	D422
	Sieve Size #40 - Percent Finer	90.8			% Passing			1	D422
	Sieve Size #60 - Percent Finer	83.5			% Passing			1	D422
	Sieve Size #80 - Percent Finer	71.5			% Passing			1	D422
	Sieve Size #100 - Percent Finer	59.8			% Passing			1	D422
	Sieve Size #200 - Percent Finer	32.2			% Passing			1	D422
	Sieve Size #230 - Percent Finer	28.8			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	15.9			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	13.7			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	10.4			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	9.3			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	7.1			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	4.4			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	1.9			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE0517-P2SCD-18.8-B-0004IN
Lab Sample ID: 200-38498-6
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 14:00
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	0.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	68.0			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	7.3			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	7.6			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	53.1			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	100.0			% Passing			1	D422
	Silt	27.2			%			1	D422
	Clay	4.8			%			1	D422
	Sieve Size #10 - Percent Finer	92.7			% Passing			1	D422
	Sieve Size #20 - Percent Finer	91.0			% Passing			1	D422
	Sieve Size #40 - Percent Finer	85.1			% Passing			1	D422
	Sieve Size #60 - Percent Finer	69.7			% Passing			1	D422
	Sieve Size #80 - Percent Finer	56.9			% Passing			1	D422
	Sieve Size #100 - Percent Finer	49.1			% Passing			1	D422
	Sieve Size #200 - Percent Finer	34.0			% Passing			1	D422
	Sieve Size #230 - Percent Finer	32.0			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	12.4			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	10.2			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	8.1			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	7.0			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	4.8			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	3.2			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	0.8			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE0517-P2SCD-18.9-A-0012IN
Lab Sample ID: 200-38498-7
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 13:30
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	3.1			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	46.6			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	2.0			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	2.5			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	42.1			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	96.9			% Passing			1	D422
	Silt	34.4			%			1	D422
	Clay	15.9			%			1	D422
	Sieve Size #10 - Percent Finer	94.9			% Passing			1	D422
	Sieve Size #20 - Percent Finer	93.6			% Passing			1	D422
	Sieve Size #40 - Percent Finer	92.4			% Passing			1	D422
	Sieve Size #60 - Percent Finer	87.5			% Passing			1	D422
	Sieve Size #80 - Percent Finer	81.3			% Passing			1	D422
	Sieve Size #100 - Percent Finer	76.1			% Passing			1	D422
	Sieve Size #200 - Percent Finer	54.3			% Passing			1	D422
	Sieve Size #230 - Percent Finer	50.3			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	35.1			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	28.7			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	22.3			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	18.5			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	15.9			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	11.5			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	4.8			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN
Lab Sample ID: 200-38498-8
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 13:45
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	0.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	81.6			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	3.9			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	6.7			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	71.0			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	100.0			% Passing			1	D422
	Silt	12.3			%			1	D422
	Clay	6.1			%			1	D422
	Sieve Size #10 - Percent Finer	96.1			% Passing			1	D422
	Sieve Size #20 - Percent Finer	94.5			% Passing			1	D422
	Sieve Size #40 - Percent Finer	89.4			% Passing			1	D422
	Sieve Size #60 - Percent Finer	65.8			% Passing			1	D422
	Sieve Size #80 - Percent Finer	48.7			% Passing			1	D422
	Sieve Size #100 - Percent Finer	39.6			% Passing			1	D422
	Sieve Size #200 - Percent Finer	20.6			% Passing			1	D422
	Sieve Size #230 - Percent Finer	18.4			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	15.6			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	12.9			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	10.2			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	7.5			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	6.1			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	2.7			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	-0.3			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE0517-P2SCD-18.9-B-0006IN-D
Lab Sample ID: 200-38498-9
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 13:46
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	0.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	72.0			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	3.5			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	5.8			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	62.7			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	100.0			% Passing			1	D422
	Silt	22.4			%			1	D422
	Clay	5.6			%			1	D422
	Sieve Size #10 - Percent Finer	96.5			% Passing			1	D422
	Sieve Size #20 - Percent Finer	95.2			% Passing			1	D422
	Sieve Size #40 - Percent Finer	90.7			% Passing			1	D422
	Sieve Size #60 - Percent Finer	70.1			% Passing			1	D422
	Sieve Size #80 - Percent Finer	55.2			% Passing			1	D422
	Sieve Size #100 - Percent Finer	47.1			% Passing			1	D422
	Sieve Size #200 - Percent Finer	30.1			% Passing			1	D422
	Sieve Size #230 - Percent Finer	28.0			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	14.3			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	11.8			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	9.3			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	6.8			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	5.6			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	2.5			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	0.9			% Passing			1	D422

1B-IN
INORGANIC ANALYSIS DATA SHEET
GEOTECHNICAL

Client Sample ID: PE0517-P2SCD-18.9-A-1218IN
Lab Sample ID: 200-38498-11
Lab Name: TestAmerica Burlington
Job No.: 200-38498-1
SDG ID.: 200-38498-1
Matrix: Sediment
Date Sampled: 05/04/2017 13:30
Reporting Basis: WET
Date Received: 05/05/2017 12:12

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	Gravel	0.0			%			1	D422
	Sieve Size 2 inch - Percent Finer	100.0			% Passing			1	D422
	Sand	57.5			%			1	D422
	Sieve Size 1.5 inch - Percent Finer	100.0			% Passing			1	D422
	Coarse Sand	2.3			%			1	D422
	Sieve Size 1 inch - Percent Finer	100.0			% Passing			1	D422
	Medium Sand	5.7			%			1	D422
	Sieve Size 0.75 inch - Percent Finer	100.0			% Passing			1	D422
	Fine Sand	49.5			%			1	D422
	Sieve Size 0.375 inch - Percent Finer	100.0			% Passing			1	D422
	Sieve Size #4 - Percent Finer	100.0			% Passing			1	D422
	Silt	33.5			%			1	D422
	Clay	9.0			%			1	D422
	Sieve Size #10 - Percent Finer	97.7			% Passing			1	D422
	Sieve Size #20 - Percent Finer	96.0			% Passing			1	D422
	Sieve Size #40 - Percent Finer	92.0			% Passing			1	D422
	Sieve Size #60 - Percent Finer	83.8			% Passing			1	D422
	Sieve Size #80 - Percent Finer	77.4			% Passing			1	D422
	Sieve Size #100 - Percent Finer	72.0			% Passing			1	D422
	Sieve Size #200 - Percent Finer	47.1			% Passing			1	D422
	Sieve Size #230 - Percent Finer	42.5			% Passing			1	D422
	Hydrometer Reading 1 - Percent Finer	28.3			% Passing			1	D422
	Hydrometer Reading 2 - Percent Finer	22.3			% Passing			1	D422
	Hydrometer Reading 3 - Percent Finer	17.5			% Passing			1	D422
	Hydrometer Reading 4 - Percent Finer	13.8			% Passing			1	D422
	Hydrometer Reading 5 - Percent Finer	9.0			% Passing			1	D422
	Hydrometer Reading 6 - Percent Finer	4.8			% Passing			1	D422
	Hydrometer Reading 7 - Percent Finer	0.9			% Passing			1	D422

GEOTECHNICAL BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 200-38498-1

SDG No.: 200-38498-1

Batch Number: 116684 Batch Start Date: 05/09/17 19:49 Batch Analyst: Peterson, Mark A

Batch Method: D422 Batch End Date: 05/19/17 12:10

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	AnalysisComment				
200-38498-B-1	PE0517-P2SCD-04-A-0006IN	D422	T	94.6 g	SEE-SAMPLE-DATA SHEETS				
200-38498-B-7	PE0517-P2SCD-18.9-A-0012IN	D422	T	88.07 g	SEE-SAMPLE-DATA SHEETS				
200-38498-B-3	PE0517-P2SCD-18.7-A-0001IN	D422	T	120.69 g	SEE-SAMPLE-DATA SHEETS				
200-38498-B-4	PE0517-P2SCD-18.7-B-0006IN	D422	T	83.73 g	SEE-SAMPLE-DATA SHEETS				
200-38498-B-8	PE0517-P2SCD-18.9-B-0006IN	D422	T	97.03 g	SEE-SAMPLE-DATA SHEETS				
200-38498-B-5	PE0517-P2SCD-18.8-A-0006IN	D422	T	103.3 g	SEE-SAMPLE-DATA SHEETS				
200-38498-B-9	PE0517-P2SCD-18.9-B-0006IN-D	D422	T	101.94 g	SEE-SAMPLE-DATA SHEETS				
200-38498-B-6	PE0517-P2SCD-18.8-B-0004IN	D422	T	129.42 g	SEE-SAMPLE-DATA SHEETS				
200-38498-B-11	PE0517-P2SCD-18.9-A-1218IN	D422	T	98.85 g	SEE-SAMPLE-DATA SHEETS				

Batch Notes	

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802.660.1990 fax 802.660.1919

200-38498 Chain of Custody

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

☐DW ☐NPDES ☐RCRA ☐Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: G. Long (EHS Support)	Site Contact: G. Long/S. Parker	Date: 04 May 2017	COC No:
Company: EHS Support, LLC	Tel/Fax: 215.498.0548 or 802.498.7849 (Parker)	Lab Contact:K. Dusablon	Carrier: EHS Support Drop Off	1 of 2 COCs
Address: 15 College Ave.	Analysis Turnaround Time			Sampler: LONG/PARKER
City/State/Zip: Collegeille, PA 19426	☐ CALENDAR DAYS ☑ WORKING DAYS			For Lab Use Only:
Phone: 215.498.0548	TAT if different from Below _____			Walk-in Client:
E-mail: Gary.Long@ehs-support.com	☑ 2 weeks			Lab Sampling:
Project Name: Port Ewen, Phase 1 Sediment Evaluation	☐ 1 week			Job / SDG No.:
Site: Dyno-Nobel, Port Ewen	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	RCRA Metals - EPA 6020A	Mercury - EPA 7471B	TOC Lloyd Khan	Percent Moisture - 2540G	Grain Size ASTM D422	Mercury - EPA 7470A	Sample Specific Notes:
PE0517-P2SCD-04-A-0006in	4-May-17	17:15	G	SED	2			X	X	X	X	X		
PE0517-P2SCD-04-B-0002in	4-May-17	17:30	G	SED	2			X	X	X	X			
PE0517-P2SCD-18.7-A-0001in	4-May-17	1445	G	SED	2			X	X	X	X	X		
PE0517-P2SCD-18.7-B-0006in	4-May-17	1450	G	SED	2			X	X	X	X	X		
PE0517-P2SCD-18.8-A-0006in	4-May-17	1410	G	SED	2			X	X	X	X	X		
PE0517-P2SCD-18.8-B-0004in	4-May-17	1400	G	SED	2			X	X	X	X	X		
PE0517-P2SCD-18.9-A-0012in	4-May-17	1330	G	SED	2			X	X	X	X	X		
PE0517-P2SCD-18.9-B-0006in	4-May-17	1345	G	SED	2			X	X	X	X	X		
PE0517-P2SCD-18.9-B-0006in-D	4-May-17	1346	G	SED	2			X	X	X	X	X		
PE0517-P2SCD-18.9-A-0012in-MS	4-May-17	1332	G	SED	2		X	X	X					
PE0517-P2SCD-18.9-A-0012in-MSD	4-May-17	1331	G	SED	2		X	X	X					
PE0517-P2SCD-EQBLK-1	4-May-17	16:45	G	AQ	1			X					X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐Return to Client ☐Disposal by Lab ☐Archive for_____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: 3.3 Corr'd: 3.8 Therm ID No.: 265

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	EHS Support	5/5/17 1200	[signature]	TA Burl	5/5/17 1212
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802.660.1990 fax 802.660.1919

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: G. Long (EHS Support)	Site Contact: G. Long/S. Parker	Date: 04 May 2017	COC No:
Company: EHS Support, LLC	Tel/Fax: 215.498.0548 or 802.498.7849 (Parker)	Lab Contact:K. Dusablon	Carrier: EHS Support Drop Off	2 of 2 COCs
Address: 15 College Ave.	Analysis Turnaround Time			Sampler: LONG/PARKER
City/State/Zip: Collegeille, PA 19426	☐ CALENDAR DAYS ☑ WORKING DAYS			For Lab Use Only:
Phone: 215.498.0548	TAT if different from Below _____			Walk-in Client:
E-mail: Gary.Long@ehs-support.com	☑ 2 weeks			Lab Sampling:
Project Name: Port Ewen, Phase 1 Sediment Evaluation	☐ 1 week			Job / SDG No.:
Site: Dyno-Nobel, Port Ewen	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	RCRA Metals - EPA 6020A	Mercury - EPA 7471B	TOC Lloyd Khan	Percent Moisture - 2540G	Grain Size ASTM D422	Sample Specific Notes:
PE0517-P2SCD-18.9-A-1218in	4-May-17	1330	G	SED	2			X	X	X	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐Return to Client ☐Disposal by Lab ☐Archive for_____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

Relinquished by:	Company: EHS Supp	Date/Time: 5/5/17 1200	Received by:	Company: TA BUR	Date/Time: 5/5/17 1212
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 200-38498-1
SDG Number: 200-38498-1

Login Number: 38498
List Number: 1
Creator: Johnson, Eleanor E

List Source: TestAmerica Burlington

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.8ºC
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	GL & SP
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 200-35736-1
SDG Number: 200-35736-1

Login Number: 35736
List Number: 1
Creator: Atherton, Joel E

List Source: TestAmerica Burlington

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8ºC
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	